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15 March 2024

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Subject: Final SWMU 54 Monitored Natural Attenuation Sampling Year Eleven Report
Contract No. W912DR-15-D-0022, Delivery Order No. W912DR18F0492
Military Munitions Response Program (MMRP) Munitions Response Services
Radford Army Ammunition Plant, Radford, Virginia

Dear Ms. Walworth:

Attached is an electronic copy (Word and PDF) of the Weston Solutions, Inc. (WESTON®) *Final SWMU 54 Monitored Natural Attenuation Sampling Year Eleven Report* for the Environmental and Munitions Response Services – Radford Army Ammunition Plant (RFAAP), in Radford, VA, for review and comment.

We have also provided a copy to RFAAP, the U.S. Army Environmental Command (USAEC), and BAE Systems for their review and comment.

If you have any questions or comments, please do not hesitate to contact me at 757.362.2461.

Very truly yours,
WESTON SOLUTIONS, INC.

Tony Pace
Principal Project Manager

Enclosures

Cc: Mark Gettel, USAEC, w/encl (1 hard copy and CD)
Laura Dickerson, RFAAP, w/encl (electronic)
Melissa Lincoln, BAE Systems, w/encl (CD)

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FINAL

**SWMU 54 MONITORED NATURAL ATTENUATION SAMPLING
YEAR ELEVEN REPORT**

**RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA**

Contract No. W912DR-15-D-0022
Delivery Order No. W912DR18F0492

Prepared For:



**U.S. ARMY CORPS OF ENGINEERS
BALTIMORE DISTRICT**
Baltimore, MD

and



RADFORD ARMY AMMUNITION PLANT
Radford, VA

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MARCH 2024

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ACRONYMS AND ABBREVIATIONS

%	percent
<	less than
°C	degrees Celsius
µg/L	micrograms per liter
µS/cm	microsiemens per centimeter
1,3,5-TNT	1,3,5-trinitrotoluene
2,3,7,8-TCDD	2,3,7,8-tetrachlorodibenzodioxin
2,4,6-TNT	2,4,6-trinitrotoluene
2,4-DNT	2,4-dinitrotoluene
2,6-DNT	2,6-dinitrotoluene
2-NT	2-nitrotoluene
2ADNT	2-amino-4,6-dinitrotoluene
4ADNT	4-amino-2,6-dinitrotoluene
amsl	above mean sea level
bgs	below ground surface
BTOC	below top of casing
C/N	carcinogenic/noncarcinogenic
CAS	Chemical Abstracts Service
CB&I	CB&I Environmental & Infrastructure, Inc.
CCV	continuing calibration verification
CMO	corrective measures objective
CMS	Corrective Measures Study
COC	chain-of-custody
COD	chemical oxygen demand
COI	chemical of interest
COPC	chemical of potential concern
DL	detection limit
DNT	dinitrotoluene
DNX	hexahydro-1,3-dinitroso-5-nitro-1,3,5-triazine
DO	dissolved oxygen
DoD	U.S. Department of Defense
FE ²⁺	dissolved ferrous iron
ft	feet
ft/day	feet per day
ft/ft	feet per foot
ft/year	feet per year
GC	gas chromatography
HHRA	human health risk assessment
HI	Hazard Index
HPLC	high-performance liquid chromatography
ICV	initial calibration verification
ID	identifier
IDW	investigation-derived waste
IM	Interim Measure

ACRONYMS AND ABBREVIATIONS (CONTINUED)

IMWP	Interim Measures Work Plan
IT	IT Corporation
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LOD	limit of detection
LOQ	limit of quantitation
LQ	laboratory qualifier
LTM	long-term monitoring
MCL	maximum contaminant level
MDL	method detection limit
mg/L	milligrams per liter
mL	milliliters
mL/min	milliliters per minute
Mn	manganese
MNA	monitored natural attenuation
MNX	hexahydro-1-nitroso-3,5-dinitro-1,3,5-triazine
mS	millisiemens
MS	matrix spike
mS/cm	millisiemens per centimeter
MSD	matrix spike duplicate
mV	millivolts
MWP	Master Work Plan
ND	not detected
NG	nitroglycerin
No.	Number
NT	not tested
NTU	nephelometric turbidity unit
ORP	oxidation reduction potential
Parsons	Parsons Engineering Science, Inc.
PDS	post digestion spike
pH	potential of hydrogen
PID	photoionization detector
ppm	parts per million
QA	quality assurance
QC	quality control
r	reason code
RBC	Risk-Based Concentration
RCRA	Resource Conservation and Recovery Act
RDX	cyclotrimethylenetrinitramine
RFAAP	Radford Army Ammunition Plant
RFI	RCRA Facility Investigation
RG	remedial goal
RL	reporting limit
RPD	relative percent difference

ACRONYMS AND ABBREVIATIONS (CONTINUED)

RSL	regional screening level
Shaw	Shaw Environmental, Inc.
SL	screening level
SU	standard unit
SWMU	solid waste management unit
TIC	total inorganic carbon
TNT	trinitrotoluene
TNX	hexahydro-1,3,5-trinitroso-1,3,5-triazine
TOC	total organic carbon
U.S.	United States
UFP-QAPP	Uniform Federal Policy – Quality Assurance Project Plan
URS	URS Corporation
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
Validata	Validata Chemical Services, Inc.
VDEQ	Virginia Department of Environmental Quality
VI	Verification Investigation
VQ	validation qualifier
WESTON®	Weston Solutions, Inc.
YSI®	Yellow Springs Instrument

1. INTRODUCTION

Weston Solutions, Inc. (WESTON®) has been contracted by the United States (U.S.) Army Corps of Engineers (USACE), Baltimore District, to perform long-term monitoring (LTM) and monitored natural attenuation (MNA) at RAAP-014, Propellant Burning Ash Disposal Area, at Radford Army Ammunition Plant (RFAAP), Radford, VA. This report provides a description of the groundwater sampling activities completed and an analysis of results from the thirty-ninth and fortieth semiannual rounds conducted in 2023 (January and July). Further, this report provides a summary of Year Eleven sampling consisting of those two sampling events.

This work was performed under Contract Number (No.) W912DR-15-D-0022, Delivery Order No. W912DR18F0492 in accordance with the *Final Master Work Plan, Quality Assurance Plan, Health and Safety Plan* (RFAAP Final MWP) (URS Corporation [URS], 2003) and with Part II (D)(11-21) Interim Measure (IM) of the RFAAP Resource Conservation and Recovery Act (RCRA) Corrective Action Permit (U.S. Environmental Protection Agency [USEPA], 2000). To maintain consistency with previous LTM and MNA sampling events (i.e., through Year Ten), the LTM and MNA activities followed the technical approach, Sampling and Analysis Plan, and quality assurance/quality control (QA/QC) procedures documented in the *Final SWMU 54 Monitored Natural Attenuation Interim Measures Work Plan* (IMWP) (Shaw Environmental, Inc. [Shaw], 2011a).

Based on the consistency of the data and the fact that quarterly monitoring had been conducted for a full 9 years, groundwater monitoring starting with Year Ten was reduced to a semiannual basis at the well locations. The Virginia Department of Environmental Quality (VDEQ) approved this recommendation, which was presented in the Year Eight report. In October 2021, VDEQ concurred with Radford's Class 1 Modification request for the permit which recommended removal of references to the sampling frequency specified in the Monitored Natural Attenuation Groundwater Monitoring Plan for SWMU-49 contained in Attachment C of the permit.

1.1 PURPOSE AND SCOPE

Soil IMs have been completed at Solid Waste Management Unit (SWMU) 54 to mitigate the threat of a contaminant release, migration, and/or exposure to the public and the environment. The IMs included site preparation, soil excavation, waste characterization and off-site disposal, confirmation sampling, and site restoration. Detailed information concerning the IMs is presented in the *Solid Waste Management Unit 54 RCRA Facility Investigation/Corrective Measures Study Report* (Final SWMU 54 RFI/CMS Report) (URS, 2008).

The corrective measures objectives (CMOs) and remedial goals (RGs) were developed and presented in the Final SWMU 54 RFI/CMS Report (URS, 2008). The site-specific CMOs for SWMU 54 Area A are: to mitigate further leaching of explosives constituents from soil to groundwater at levels that would potentially increase observed concentrations and adversely impact future beneficial use of groundwater; and, to the extent practicable, to restore site groundwater to the most beneficial use. The site-specific CMOs for SWMU 54 Area B are: to mitigate the potential hypothetical future risks that have been identified for exposure to soil under a future construction worker scenario; and to prevent leaching of contaminants of concern from soil to groundwater at levels that would potentially adversely impact future beneficial use of groundwater. The site-specific CMOs for Area A and Area B were met through the excavation and off-site disposal of contaminated soil, which was completed in 2010.

The objectives of the LTM and MNA program are to measure and track the reduction of the following compounds to levels below the RGs, as defined in **Table 1-1**:

- 2,4,6-Trinitrotoluene (2,4,6-TNT)
- Dinitrotoluene (DNT) mixture
- Cyclotrimethylenetrinitramine (RDX)
- Perchlorate

1.2 SITE DESCRIPTION AND BACKGROUND

SWMU 54 is situated in the northeastern section of RFAAP within the easternmost portion of the Horseshoe Area. The SWMU consists of two noncontiguous disposal areas, Area A and Area B. Area A is a triangular-shaped parcel located in the southeast section of SWMU 54 that covers approximately 0.58 acres. Area B is a somewhat round tract located in the northwestern section that covers approximately 1.09 acres. Both areas are open fields covered with grass and are

bordered to the east and north by the RFAAP installation security fence. The site is currently undeveloped. SWMU 54 was reportedly used as an ash disposal area in the late 1970s that received propellant ash from the Waste Propellant Burning Grounds. The location of SWMU 54 is provided in **Figure 1-1**. All figures are placed at the end of each report section.

Table 1-1 SWMU Groundwater Remedial Goals

Chemical of Interest	Groundwater RG* (mg/L)
2,4,6-TNT	0.00782
DNT Mixture	0.000932
RDX	0.0061
Perchlorate	0.0109

Notes:

*RGs were calculated using target risk 1E-5 for the lifetime resident and a target hazard of 1 for the adult and child resident (URS, 2008).

2,4,6-TNT = 2,4,6-trinitrotoluene

DNT = dinitrotoluene

mg/L = milligrams per liter

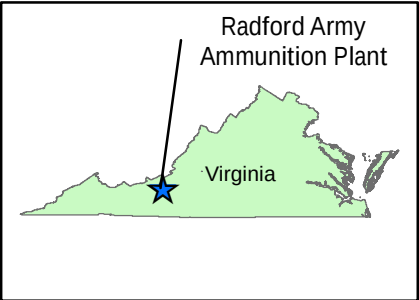
RDX= cyclotrimethylenetrinitramine

RG = remedial goal

SWMU = Solid Waste Management Unit



- Legend
-  SWMU 54 Boundary
 -  Other SWMU Boundary



Aerial Source:
ESRI Imagery Mapping Service, 2019

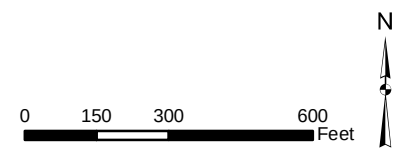


FIGURE 1-1
SWMU 54 SITE LOCATION MAP
RADFORD, VIRGINIA

2. PHYSICAL CHARACTERISTICS

2.1 TOPOGRAPHY

SWMU 54 is situated on a gently sloping terrace that leads to the New River to the east. Elevations range from a high of approximately 1,716 feet (ft) above mean sea level (amsl) in the western section of the SWMU to approximately 1,696 ft amsl in the eastern section. East and outside the SWMU boundary, the elevation steepens precipitously as it reaches the New River (at approximately 1,676 ft amsl).

2.2 SURFACE WATER

The New River is situated approximately 150 ft east of SWMU 54, and a small stream is present on the southern boundary. Surface water runoff from the SWMU flows east and possibly south to the New River and the unnamed stream. SWMU 54 is located within the easternmost portion of the Horseshoe Area at RFAAP. As it currently stands, SWMU 54 is positioned within the New River 100-year floodplain.

2.3 GEOLOGY

2.3.1 Regional Geology

SWMU 54 is located in the New River Valley, which crosses the Valley and Ridge Province, approximately perpendicular to the regional strike of bedrock, and cross cuts Cambrian and Ordovician limestone or dolostone. Deep clay-rich residuum is prevalent in areas underlain by carbonate rocks. The valley is covered by river floodplain and terrace deposits; karst topography is dominant throughout the area. A more detailed description of the regional geology is presented in the RFAAP Final MWP (URS, 2003).

2.3.2 Site-Specific Geology

Characterization of the SWMU 54 subsurface lithology was conducted during the advancement of soil and monitoring well borings at the site. Based on the borehole logs, two geologic cross sections were developed and are presented in **Figure 2-1** (plan view of the cross-sectional lines), **Figure 2-2** (cross section A-A'), and **Figure 2-3** (cross section B-B').

Soil and monitoring well borings ranged from 10 to 60 ft in depth. Depths to bedrock, which were reported to be measured directly at the monitoring well borings, ranged in elevation from approximately 1,716 to 1,670 ft amsl. Based on the borehole logs, it was determined that bedrock slopes to the east.

The site lithology consists of unconsolidated sediments comprised of alluvial deposits overlying a thin zone of saprolitic carbonate (i.e., weathered bedrock), which overlies the Cambrian-aged Elbrook Formation. The alluvial deposits consist primarily of silty sand overlying channel deposits of fine- to coarse-grained sand and gravel (river jack). These paleo-channel deposits rest directly on the saprolite, which reportedly reaches 2.5 ft in thickness. It was also reported that some areas of the SWMU contain fill material to depths of 9 to 10 ft below ground surface (bgs).

Depth to competent bedrock at the SWMU ranges from 17 to 24 ft bgs. This competent bedrock belongs to the Elbrook Formation, which is a thickly-bedded, blue-gray dolostone interspersed with blue-gray to white limestone. Locally, the formation is described as interbedded green and maroon shale, yellowish-brown dolostone, and greenish- to grayish-brown limestone and dolostone.

A more detailed discussion of the geology and soil at RFAAP is presented in Sections 3.4 through 3.7 of the RFAAP Final MWP (URS, 2003) and in the *Facility-Wide Background Study* Report (IT Corporation [IT], 2001).

2.4 HYDROGEOLOGY

2.4.1 Regional Hydrogeology

Geologically, the Appalachian Plateaus and Valley and Ridge Province encompass two major tectonic domains: the southern Appalachian Basin and the southeastern part of the Eastern Interior Basin. The hydrogeologic framework is based on generalized stratigraphic succession, with indurated sedimentary rocks of the Paleozoic age forming predominant units.

Groundwater flow paths are typically short, commonly extending no more than several miles in their longest range. The largest groundwater supplies are produced from the carbonate rocks, especially where they are associated with thick regolith, an important storage reservoir

throughout the entire area. The regolith stores recharge that otherwise would be rapidly diverted to overland flow. In addition, this unit slowly releases water to underlying carbonate aquifers. Because of the widespread distribution of carbonate rocks and associated regolith, abundant precipitation in a humid climate, and relatively steep hydraulic gradients, this region (and locally) is one of the major karstlands in the eastern United States.

Groundwater supplies in the Valley and Ridge Province are generally of good quality when compared to surface water supplies (Parsons Engineering Science, Inc. [Parsons], 1996); however, because of extended contact with minerals, many groundwater supplies contain higher levels of dissolved solids than the streams into which they discharge. Because of sinkholes and underground caverns in karst aquifers, there is a high potential for groundwater to be impacted by direct infiltration of contaminated surface water.

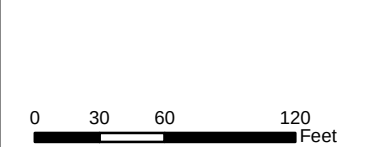
2.4.2 Site-Specific Hydrogeology

Monitoring wells installed at SWMU 54 were screened in both the shallow (surficial aquifer) and shallow bedrock aquifers. Water levels were measured in the wells to calculate the groundwater flow direction at the SWMU. Groundwater contour maps have been prepared using water level data collected prior to each round of groundwater sampling. The maps for Year Eleven of monitoring are presented in Section 4. Contour lines shown on these figures represent lines of equal elevation of the water table; consequently, groundwater flow direction is always perpendicular to the contour lines and feeds into the New River, which generally runs a south-to-north course. Groundwater at the site tends to flow east and appears to discharge to the New River along the eastern side of the site.



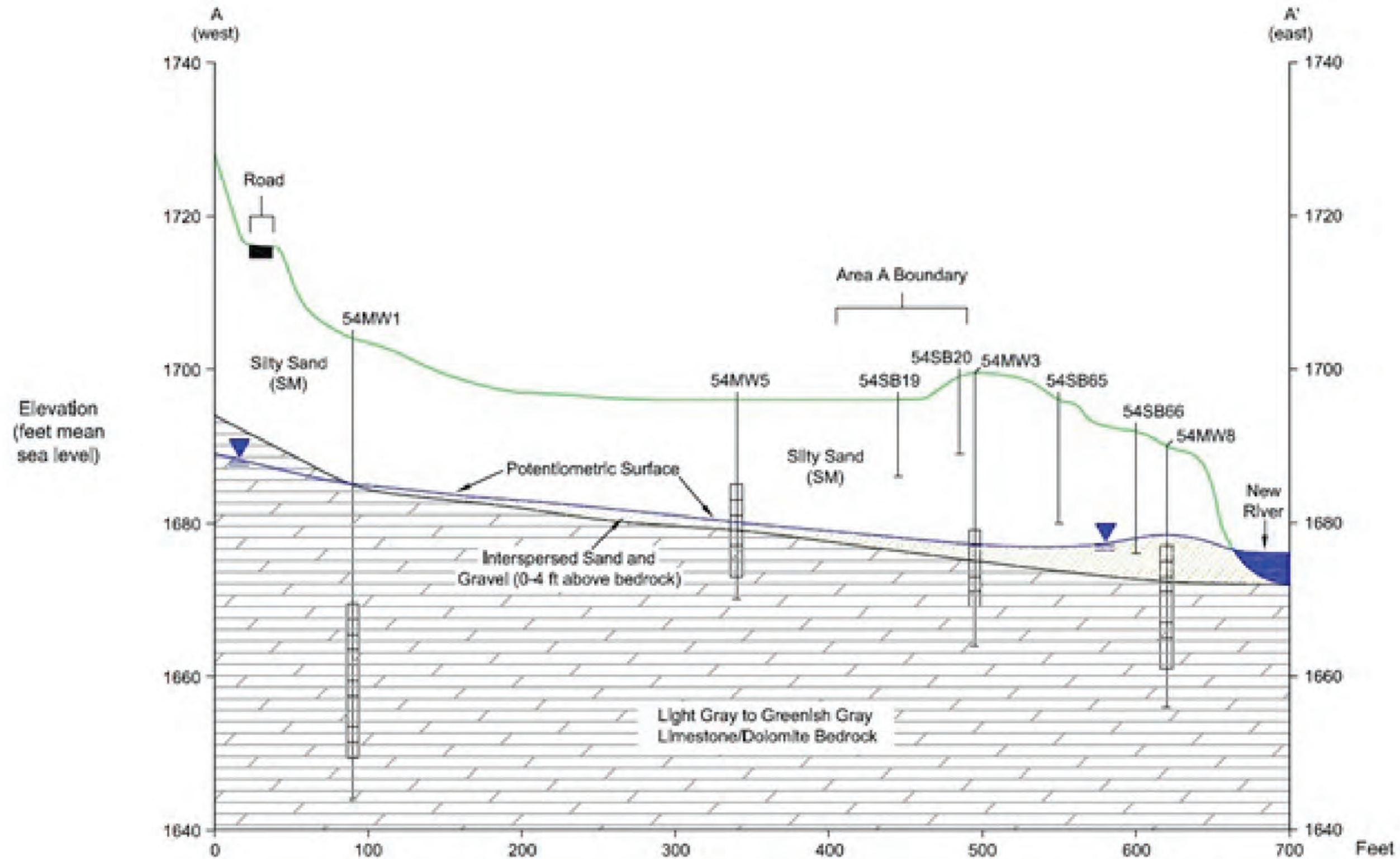
- Legend
- Well
 - Soil Sample Location
 - Fence
 - Cross Section
 - SWMU 54 Boundary

Aerial Source:
Near Map Imagery, February 2020



Prepared By: 
Baltimore District

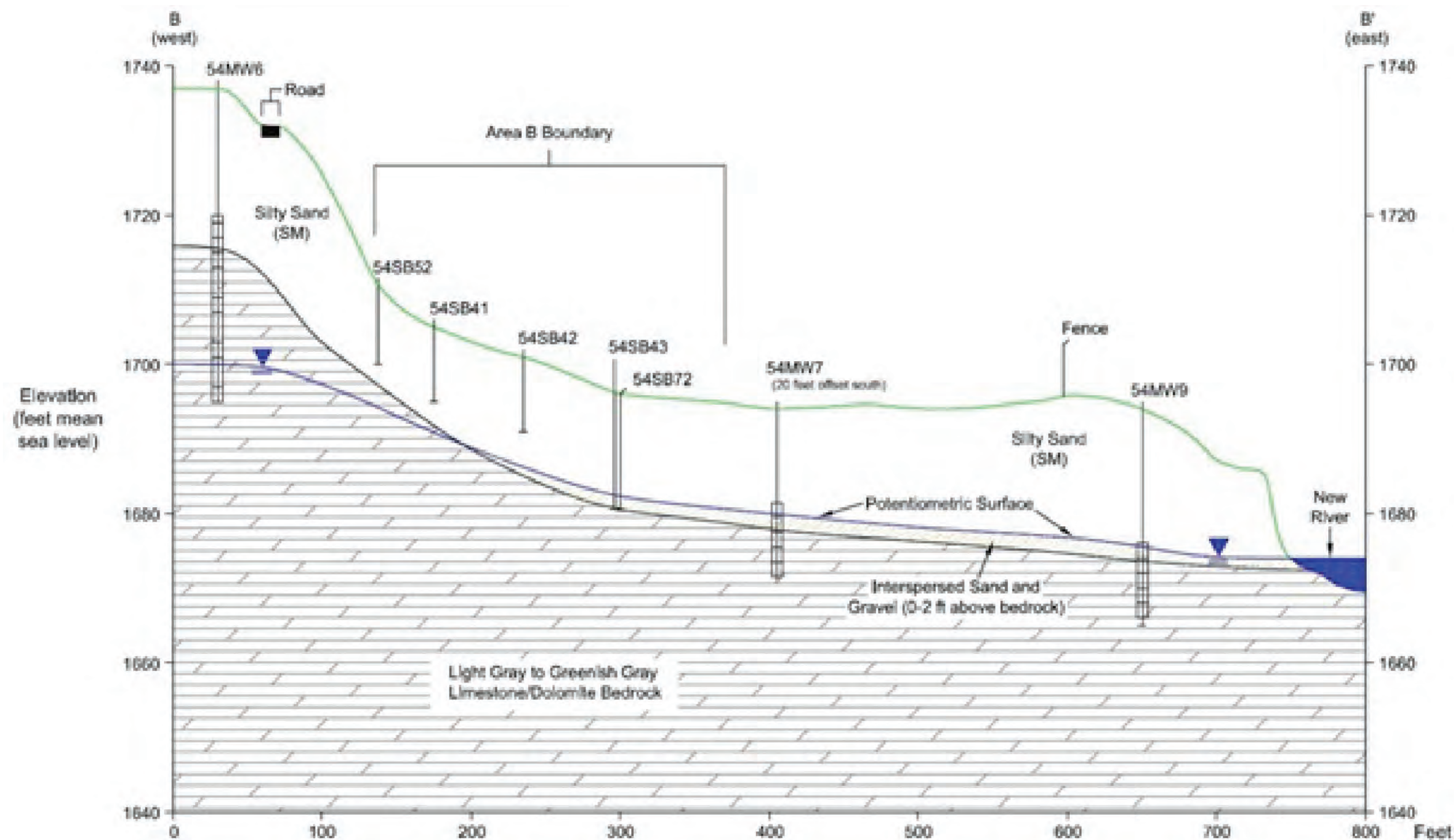
FIGURE 2-1
SWMU 54
CROSS SECTION
RADFORD, VIRGINIA



Prepared By:



FIGURE 2-2
SWMU 54
CROSS SECTION A-A'
RADFORD, VIRGINIA



Prepared By:



FIGURE 2-3
SWMU 54
CROSS SECTION B-B'
RADFORD, VIRGINIA

3. PREVIOUS INVESTIGATIONS

Four previous investigations have been conducted at this site prior to completion of an interim removal measure in 1999 by Parallax, Inc. Data obtained from previous site investigations prior to the IM were used to identify site boundaries and characteristics, and to identify chemicals of potential concern (COPCs). In 1992, the Environmental Photographic Interpretation Center provided aerial photographic analysis of SWMU 54, under the direction of USEPA. In addition, Dames & Moore conducted a RCRA Verification Investigation (VI) at the site in 1992 to identify the ash disposal at Area A under authority of the 1984 Hazardous and Solid Waste Amendments. As a follow-up to the 1992 VI, Parsons completed an RFI in 1996, as part of a multiple site investigation to, “define the extent of ash and the limits of soil contamination.” In 1998, a Supplemental RFI/CMS was conducted to investigate a flat grassy area ringed by mature pine trees northwest of Area A. This area was defined as Area B within SWMU 54. The purpose of the supplemental RFI was to, “characterize the nature and extent of contamination within SWMU 54.” In 1999, Parallax, Inc. completed IMs at Area A and Area B of SWMU 54 consisting of excavation of selected “hot spot” areas of lead and explosives in soil.

In 2008, URS conducted an RFI/CMS investigating both Area A and Area B to confirm the effectiveness of the IM, evaluate and assess current conditions at the sites, and provide recommendations regarding potential corrective measure requirements at the sites. Direct-push soil borings with chemical sampling were used to characterize the nature and extent of constituents in soil at SWMU 54, to identify the lateral and vertical extent of any waste material present, and to characterize soil lithology and depth to groundwater and bedrock. Additionally, monitoring wells were installed at the site, and groundwater samples were collected and analyzed. Details of these investigations are described in Section 3.0 (Field Investigation Program) of the Final SWMU 54 RFI/CMS Report (URS, 2008). A potentiometric map portraying the groundwater levels measured in 2007 is provided as **Figure 3-1**. Historical data listing chemical of interest (COI) concentrations in the on-site groundwater, New River surface water, and New River sediment pore water are provided in **Tables 3-1** through **3-6**.

The nature and extent assessment indicated that the main concern at the site is the fill material and grossly-contaminated soil directly below the material. Area A and Area B were evaluated

separately for the soil and groundwater nature and extent assessments, given the 200-ft separation between the areas, their topographic cross-gradient position, the lack of mobility of the chemicals in soil, and observed distributions of chemicals.

The main parameters of concern in Area A soil are lead, 2,4,6-TNT, DNT, RDX, amino-DNTs, nitroglycerin (NG), heptachlor epoxide, and dioxins/furans. The main parameters of concern in groundwater at Area A are explosives and perchlorate. Concentrations of COIs 2,4,6-TNT, DNT, RDX, and perchlorate in groundwater have decreased since RFI monitoring began in 2003 and 2004. The lateral extent of explosives and perchlorate in groundwater extends from Area A eastward to the New River. Sampling of the groundwater/surface water interface (sediment pore water) and surface water of the New River did not indicate detectable impacts to sediment pore water or surface water from COPCs in groundwater.

Parameters of concern in Area B soils include lead, DNT, amino-DNT, NG, RDX, dieldrin, Aroclor 1254, heptachlor epoxide, and dioxins/furans. No COIs were identified for Area B groundwater.

The human health risk assessment (HHRA) identified 8 COIs at Area A (2,4,6-TNT, DNT, RDX, perchlorate, amino-DNTs, NG, heptachlor epoxide, and 2,3,7,8-tetrachlorodibenzodioxin [2,3,7,8-TCDD]) and 10 COIs at Area B (2,4,6-TNT, DNT, RDX, amino-DNTs, NG, lead, Aroclor 1254, heptachlor epoxide, dieldrin, and 2,3,7,8-TCDD) under both an industrial and residential future-use scenario for total soil at SWMU 54. The HHRA determined that unacceptable risks to potential future residential and industrial receptors were associated with the COIs. As a result of the findings from the HHRA, it was concluded that, based on the levels detected in the soil hot spot areas, COIs could potentially leach from soil to groundwater at levels of concern, although groundwater impacts at levels of concern have not yet been identified at Area B. Because the RFI demonstrated that COI contamination is present at concentrations associated with unacceptable human health concerns, a CMS was performed to address the propellant ash material and grossly contaminated soil under the ash material at SWMU 54.

The alternatives evaluated were as follows:

- Alternative One: No Further Action.
- Alternative Two: Excavation of Soil at Area A and Area B, Off-Site Disposal, and MNA of Groundwater.
- Alternative Three: Excavation of Soil at Area A and Area B, Off-Site Disposal, and Enhanced In Situ Bioremediation of Groundwater.

These three alternatives were evaluated using the selection criteria of effectiveness, implementability, and cost. The site-specific CMO for SWMU 54 is to mitigate further leaching of explosives constituents from soil to groundwater at levels that would potentially increase observed concentrations and adversely impact future beneficial use of groundwater, and to eliminate the potential threats to human health and the environment that exist within materials found in SWMU 54. Observations from the SWMU 54 soil investigations indicate that the propellant ash consisted of a black, ashy material that was evident when encountered. Therefore, identification and removal of the propellant ash and grossly-contaminated soil were partially based on visual observations during excavation, with analytical samples collected to confirm the observations.

Alternative Two, which entails excavation and off-site disposal as the primary remediation process, was found to achieve the CMO. Therefore, Alternative Two was selected as the final alternative for SWMU 54 because it is implementable and provides a greater level of protection to human health and the environment not provided by other alternatives. In addition, Alternative Two is the sole alternative that facilitates RGs without potential adverse effects to groundwater (i.e., degradation of secondary water quality parameters) from remedial implementation activities, which would occur with implementation of Alternative Three.

The CMOs and RGs were developed in the Final SWMU 54 RFI/CMS Report (URS, 2008). The following is a summary of the findings from that process.

The site-specific CMO for SWMU 54 Area A is to mitigate further leaching of explosives constituents from soil to groundwater at levels that would potentially increase observed concentrations and adversely impact future beneficial use of groundwater, and, to the extent practicable, to restore site groundwater to the most beneficial use. The soil CMOs for Area A

have been met, and the purpose of this report is to implement the groundwater IMs to meet the CMOs for groundwater.

The site-specific CMO for SWMU 54 Area B is to mitigate the potential hypothetical future risks that have been identified for exposure to soil under a future construction worker scenario, and to prevent leaching of contaminants of concern from soil to groundwater at levels that would potentially adversely impact future beneficial use of groundwater. The site-specific CMOs have been met through the soil excavation and off-site disposal completed in 2010.

RGs for soil were used at SWMU 54 to confirm that all COIs were removed from soil to levels safe for human health and the environment. Results from the soil remedial action at SWMU 54 can be found in the approved Final *SWMU 54 Interim Measures Completion Report* (Shaw, 2011b). The groundwater RGs, included in **Table 1-1**, will be used to compare results from groundwater monitoring wells to assess the progress of the MNA process.

WESTON has been performing the LTM and MNA at SWMU 54 since October 2019, including the thirty-ninth and fortieth sampling rounds, for Year Eleven of sampling at RFAAP, discussed herein. Area B, although not monitored during Year Eleven, is expected to have a groundwater flow velocity similar to Area A, as reported in the Year Three MNA Report (CB&I Environmental & Infrastructure, Inc [CB&I], 2014).

Table 3-1 2002 Area A Direct-Push Groundwater Analytical Results with Remedial Goals

Sample ID Sample Date	CAS	C/N	RG	Units	54DPW1 12/11/2002		DL	RL	54DPW2 12/11/2002		MDL	RL	54DPW3 12/11/2002		MDL	RL	54GP77 10/13/2004		MDL	RL	54GP78 10/11/2004		MDL	RL	54GP78-DUP(DUP-1) 10/11/2004		MDL	RL	54GP79 10/11/2004		MDL	RL	
					Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result
Explosives																																	
2,4,6-TNT	118-96-7	N	7.82	µg/L	<7.2	U,R,l	0.73	7.2	1.5	JB,B,z	0.33	3.3	<2.1	U,R,l	0.21	2.1	NT				NT				NT					NT			
DNT Mixture*			0.932		ND				ND				ND				ND				ND				ND					ND			
RDX	121-82-4	C	6.1	µg/L	<7.2	U,R,l	1	7.2	<3.3	U,R,l	0.48	3.3	<2.1	U,R,l	0.31	2.1	NT				NT				NT					NT			
Perchlorate																																	
Perchlorate	14797-73-0	N	10.9	µg/L	5.5		0.54	1	27.7		0.54	1	2		0.54	1	3.5		0.1	1	<1	U	0.1	1	<1	U	0.1	1	<1	U	0.1	1	

Sample ID Sample Date	CAS	C/N	RG	Units	54GP80 10/13/2004		MDL	RL	54GP81 10/11/2004		MDL	RL	54GP82 10/11/2004		MDL	RL	54GP83 10/11/2004		MDL	RL	54GP84 10/13/2004		MDL	RL	54GP85 10/14/2004		MDL	RL	54GP86 10/13/2004		MDL	RL
					Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r		
Explosives																																
2,4,6-TNT	118-96-7	N	7.82	µg/L	NT				NT				NT				NT				NT				NT				NT			
DNT Mixture*			0.932		ND				ND				ND				ND				ND				ND				ND			
RDX	121-82-4	C	6.1	µg/L	NT				NT				NT				NT				NT				NT				NT			
Perchlorate																																
Perchlorate	14797-73-0	N	10.9	µg/L	<1	U	0.1	1	1		0.1	1	<1	U	0.1	1	<1	U	0.1	1	<1	U	0.1	1	<1	U	0.1	1	<1	U	0.1	1

Sample ID Sample Date	CAS	C/N	RG	Units	54GP87 10/14/2004		MDL	RL	54GW56 8/18/2004		MDL	RL	54GW57 8/17/2004		MDL	RL	54GW58 8/24/2004		MDL	RL	54GW59 8/18/2004		MDL	RL	54GW59-DUP(DUP-3) 8/18/2004		MDL	RL	54GW60 8/24/2004		MDL	RL
					Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r						
Explosives																																
2,4,6-TNT	118-96-7	N	7.82	µg/L	NT				160		0.15	1.3	1.7	J,g	0.0749	0.65	15		0.0749	0.65	4.2	L	0.0749	0.65	11	J,g	0.0749	0.65	9.3		0.0749	0.65
DNT Mixture*			0.932		ND				ND				ND	U			ND				ND				ND				ND			
RDX	121-82-4	C	6.1	µg/L	NT				35	J,g	0.164	0.65	0.69		0.164	0.65	3.7		0.164	0.65	1		0.164	0.65	1.7		0.164	0.65	0.8		0.164	0.65
Perchlorate																																
Perchlorate	14797-73-0	N	10.9	µg/L	<1	U	0.1	1	13.5		0.1	1	2		0.1	1	25.8		0.1	1	4		0.1	1	3.6		0.1	1	1.7		0.1	1

Sample ID Sample Date	CAS	C/N	RG	Units	54GW61 8/24/2004		MDL	RL	54GW62 8/23/2004		MDL	RL	54GW63 8/23/2004		MDL	RL	54GW64 8/23/2004		MDL	RL	54GW64-DUP(DUP-9) 8/23/2004		MDL	RL	54GW65 8/20/2004		MDL	RL	54GW66 8/20/2004		MDL	RL		
					Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r
Explosives																																		
2,4,6-TNT	118-96-7	N	7.82	µg/L	74		0.0749	0.65	9		0.0749	0.65	<0.65	U	0.0749	0.65	0.82	J,g	0.0749	0.65	0.76	J,g	0.0749	0.65	3		0.0749	0.65	NT					
DNT Mixture*			0.932		ND				ND				ND				ND				ND				ND				ND					
RDX	121-82-4	C	6.1	µg/L	<0.65	U	0.164	0.65	1.6		0.164	0.65	<0.65	U	0.164	0.65	0.75	J,g	0.164	0.65	0.73	J,g	0.164	0.65	0.7		0.164	0.65	NT					
Perchlorate																																		
Perchlorate	14797-73-0	N	10.9	µg/L	3		0.1	1	5.3		0.1	1	<1	U	0.1	1	1.1		0.1	1	0.97	B	0.1	1	1.7		0.1	1	0.94	B,J,m	0.1	1		

Table 3-1 2002 Area A Direct-Push Groundwater Analytical Results with Remedial Goals (Continued)

Sample ID Sample Date	CAS	C/N	RG	Units	54GW66 8/23/2004		MDL	RL	54GW67 8/20/2004		MDL	RL	54GW67 8/23/2004		MDL	RL	54GW68 8/20/2004		MDL	RL	54GW69 8/20/2004		MDL	RL	54GW69 8/23/2004		MDL	RL	54GW70 8/20/2004		MDL	RL
					Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r		
					Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r		Result
Explosives																																
2,4,6-TNT	118-96-7	N	7.82	µg/L	<0.65	U	0.0749	0.65	NT				<0.65	U	0.0749	0.65	2.6	J,g	0.0749	0.65	NT				1.4		0.0749	0.65	<0.65	U	0.0749	0.65
DNT Mixture*			0.932		ND				ND				ND				ND				ND				ND				ND			
RDX	121-82-4	C	6.1	µg/L	<0.65	U	0.164	0.65	NT				<0.65	U	0.164	0.65	<0.65	U	0.164	0.65	NT				0.51	J	0.164	0.65	<0.65	U	0.164	0.65
Perchlorate																																
Perchlorate	14797-73-0	N	10.9	µg/L	NT				0.59	B,J,m	0.1	1	NT				<1	U	0.1	1	0.65	B,J,m	0.1	1	NT				0.76	B	0.1	1

Notes:
*DNT mixture is the combined results of 2,4-DNT and 2,6-DNT.
=Exceeds RG
The CMOs and RGs were developed and presented in the Final SWMU 54 RFI/CMS Report (URS, 2008).
RBC values are from the October 11, 2007, RBC Table and November 2020 Alternate RBC Table.
< = less than
µg/L = micrograms per liter
2,4,6-TNT = 2,4,6-trinitrotoluene
C/N = carcinogenic/noncarcinogenic
CAS = Chemical Abstract Service
CMO = corrective measures objective
CMS = Corrective Measures Study
DL = detection limit
DNT = dinitrotoluene
ID = identifier
LQ = laboratory qualifier
MDL = method detection limit
ND = not detected
NT = not tested
r = reason code
RBC = Risk-Based Concentration
RDX = cyclotrimethylenetrinitramine
RG = remedial goal
RFI = RCRA Facility Investigation
RL = reporting limit
RPD = relative percent difference
SWMU = Solid Waste Management Unit
TIC = total inorganic carbon
URS = URS Corporation
USEPA = U.S. Environmental Protection Agency
VQ = validation qualifier

C = Carcinogenic per USEPA RBC Table (October 2007)
N = Noncarcinogenic per USEPA RBC Table (October 2007)

Data Qualifiers:
B = Not detected substantially above the level reported in laboratory or field blanks.
E = Concentration exceeded the upper level of the calibration range of the instrument for that specific analysis.
For TICs, compound not present in calibration standard, calculated using total peak areas ion chromatographs and response factor of 1.
J = Analyte present. Reported value may not be accurate or precise.
L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N = Sample spike recovery is outside of control limits.
P = Greater than 40% difference for detected concentrations between the two gas chromatography (GC) or high-performance liquid chromatography (HPLC) columns.
R = The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected are not usable.
U = Not detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ = Not detected, quantitation limit may be inaccurate or imprecise.
UL = Not detected, quantitation limit is probably higher.
c = Calibration failure.
d = Matrix spike/matrix spike duplicate (MS/MSD) or laboratory control sample/laboratory control sample duplicate (LCS/LCSD) RPD imprecision.
g = Dual column confirmation imprecision.
l = LCS recovery failure.
m = MS/MSD recovery failure.
o = Calibration blank contamination.
p = Preparation blank contamination.
s = Serial dilution failure.
w = Field and/or equipment blank contamination.
z = Method blank and/or storage blank contamination.

Table 3-2 2003-2004 Area A Groundwater Analytical Results with Remedial Goals

Sample ID Sample Date	CAS	C/N	RG	Units	54MW2 3/4/2003		MDL	RL	54MW3 3/4/2003		MDL	RL	54MW5 3/4/2003		MDL	RL	54MW-8 12/21/2004		MDL	RL	54MW-9 12/21/2004		MDL	RL	54MW-10 12/21/2004		MDL	RL	54MW10-DUP(DUP-1) 12/21/2004		MDL	RL
					Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r		
					Explosives																											
2,4,6-TNT	118-96-7	N	7.82	µg/L	<3.6	U	0.365	3.6	38		0.365	3.6	<4.2	U	0.43	4.2	<0.65	U	0.0749	0.65	<0.65	U	0.0749	0.65	62		0.15	1.3	65		0.15	1.3
DNT Mixture*			0.932	µg/L	ND				ND				ND				ND				ND				ND				ND			
RDX	121-82-4	C	6.1	µg/L	<3.6	U	0.526	3.6	32		0.526	3.6	<4.2	U	0.61	4.2	0.2	J,J,g	0.164	0.65	1.1	J,g	0.164	0.65	28		0.164	0.65	29		0.164	0.65
Perchlorate																																
Perchlorate	14797-73-0	N	10.90	µg/L	12		0.54	1	59.2		0.54	1	1.6		0.54	1	0.22	B	0.1	1	0.21	B	0.1	1	9.8		0.1	1	9.1		0.1	1
Field Parameters																																
DO	--	--	--	mg/L	6.97				5.18				2.88				0.25				2.56				1.25				1.25			
ORP	--	--	--	mV	159.5				119.0				95.1				215				234				208				208			
pH	--	--	--	SU	6.37				6.65				7.00				7.20				7.53				7.06				7.06			
Specific Conductivity	--	--	--	mS	0.191				0.341				0.310				0.627				0.706				0.760				0.760			
Temperature	--	--	--	°C	16.24				15.97				12.91				13.6				13.2				13.8				13.8			
Turbidity	--	--	--	NTU	0.80				1.93				12.0				4.17				4.13				3.52				3.52			

Notes:
*DNT mixture is the combined results of 2,4-DNT and 2,6-DNT
=Exceeds RG
The CMOs and RGs were developed and presented in the Final SWMU 54 RFI/CMS Report (URS, 2008).
RBC values are from the October 11, 2007, RBC Table and November 2020 Alternate RBC Table.
< = less than
µg/L = micrograms per liter
°C = degrees Celsius
2,4,6-TNT = 2,4,6-trinitrotoluene
C/N = carcinogenic/noncarcinogenic
CAS = Chemical Abstracts Service
CMO = corrective measures objective
CMS = Corrective Measures Study
DNT = dinitrotoluene
DO = dissolved oxygen
ID = identifier
LQ = laboratory qualifier
MCL = maximum contaminant level
MDL = method detection limit
mg/L = milligrams per liter
mS = millisiemens
mV = millivolts
ND = not detected
NTU = nephelometric turbidity unit
ORP = oxidation-reduction potential
pH = potential of hydrogen
r = reason code
RBC = Risk-Based Concentration
RDX = cyclotrimethylenetrinitramine
RFI = RCRA Facility Investigation
RG = remedial goal
RL = reporting limit
RPD = relative percent difference
SU = standard units
TIC = total inorganic carbon
URS = URS Corporation
USEPA = U.S. Environmental Protection Agency
VQ = Validation Qualifier
C = Carcinogenic per USEPA RBC Table (October 2007)
N = Noncarcinogenic per USEPA RBC Table (October 2007)

Data Qualifiers:
B = Not detected substantially above the level reported in laboratory or field blanks.
E = Concentration exceeded the upper level of the calibration range of the instrument for that specific analysis.
For TICs, compound not present in calibration standard, calculated using total peak areas ion chromatographs and response factor of 1.
J = Analyte present. Reported value may not be accurate or precise.
L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N = Sample spike recovery is outside of control limits.
P = Greater than 40% difference for detected concentrations between the two gas chromatography (GC) or high-performance liquid chromatography (HPLC) columns.
R = The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected are not usable.
U = Not detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ = Not detected, quantitation limit may be inaccurate or imprecise.
UL = Not detected, quantitation limit is probably higher.
c = Calibration failure.
d = Matrix spike/matrix spike duplicate (MS/MSD) or laboratory control sample/laboratory control sample duplicate (LCS/LCSD) RPD imprecision.
g = Dual column confirmation imprecision.
l = LCS recovery failure.
m = MS/MSD recovery failure.
o = Calibration blank contamination.
p = Preparation blank contamination.
s = Serial dilution failure.
w = Field and/or equipment blank contamination.
z = Method blank and/or storage blank contamination.

Table 3-3 2006-2007 Area A Quarterly Groundwater Monitoring Results with Remedial Goals

First Quarter – November/December 2006																															
Sample ID Sample Date	CAS	C/N	RG	54MW1 11/29/2006		MDL	RL	54MW2 11/29/2006		MDL	RL	54MW3 12/5/2006		MDL	RL	54MW5 11/29/2006		MDL	RL	54MW8 12/1/2006		MDL	RL	54MW9 12/1/2006		MDL	RL	54MW10 12/1/2006		MDL	RL
				Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r		
Explosives (µg/L)																															
2,4,6-TNT	118-96-7	N	7.82	<5	U	0.075	5	5.6		0.075	5	0.85	J	0.075	5	0.29	J	0.075	5	<5	U	0.075	5	<5	U	0.075	5	2.1	J	0.075	5
DNT Mixture*	--	C	0.932	<5				<5				<5				<5				<5				<5			<5				
RDX	121-82-4	C	6.100	<5	U	0.16	5	<5	U	0.16	5	<5	U	0.16	5	<5	U	0.16	5	<5	U	0.16	5	<5	U	0.16	5	3.3	J	0.16	5
Perchlorate (µg/L)																															
Perchlorate	14797-73-0	N	10.90	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10
Field Parameters																															
Dissolved Oxygen (mg/L)	--	--	--	11.95				10.29				11.94				10.1				8.94				8.51				8.13			
Oxidation Reduction Potential (mV)	--	--	--	153				159				171				231				32				53				36			
pH (SU)	--	--	--	7.86				7.15				7.26				7.2				7.53				7.65				7.39			
Specific Conductivity (mS)	--	--	--	0.44				0.533				0.580				0.557				0.605				0.790				0.733			
Temperature (°C)	--	--	--	18.6				17.7				18.3				18.5				17.1				19.1				16.3			
Turbidity (NTU)	--	--	--	4.47				1.16				0.07				16.6				11.83				23.5				10.31			

Second Quarter – March 2007																															
Sample ID Sample Date	CAS	C/N	RG	54MW-1 3/28/2007		MDL	RL	54MW-2 3/28/2007		MDL	RL	54MW-3 3/28/2007		MDL	RL	54MW-5 3/28/2007		MDL	RL	54MW-8 3/27/2007		MDL	RL	54MW-9 3/27/2007		MDL	RL	54MW10 DUP AVG 3/27/2007		MDL	RL
				Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r						
Explosives (µg/L)																															
2,4,6-TNT	118-96-7	N	7.82	<5	U	0.1	5	0.25	J,J,d	0.1	5	<5	U	0.1	5	0.84	J,J,g	0.1	5	14		0.1	5	<5	U	0.1	5	6.018		0.1	5
DNT Mixture*	--	C	0.932	<5				1.146				<5				<5				<5				<5				0.898			
RDX	121-82-4	C	6.100	<5	U	0.092	5	<5	U	0.092	5	<5	U	0.092	5	<5	U	0.092	5	8.1		0.092	5	<5	U	0.092	5	3.87		0.092	5
Perchlorate (µg/L)																															
Perchlorate	14797-73-0	N	10.90	<0.2	U	0.036	0.2	3.6		0.036	0.2	<0.2	U	0.036	0.2	0.52		0.036	0.2	0.26		0.036	0.2	0.24		0.036	0.2	2.9		0.036	0.2
Field Parameters																															
DO (mg/L)	--	--	--	8.06				7.75				6.12				8.38				6.68				6.51				8			
ORP (mV)	--	--	--	-5				44				-11				53				-17				-10				11			
pH (SU)	--	--	--	7.63				6.45				6.94				6.51				7.05				7.18				6.88			
Specific Conductivity (mS)	--	--	--	0.199				0.183				0.311				0.167				0.267				0.960				0.334			
Temperature (°C)	--	--	--	13.44				15.8				15.22				12.73				13.92				14.43				15.95			
Turbidity (NTU)	--	--	--	1.82				0.37				2.13				1.22				13.96				7.71				3.64			

Table 3-3 2006-2007 Area A Quarterly Groundwater Monitoring Results with Remedial Goals (Continued)

Fourth Quarter – September 2007																																	
Sample ID Sample Date	CAS	C/N	RG	54MW-1 6/5/2007		MDL	RL	54MW-2 6/5/2007		MDL	RL	54MW-3 6/5/2007		MDL	RL	54MW-5 6/5/2007		MDL	RL	54MW-8 6/5/2007		MDL	RL	54MW-9 6/5/2007		MDL	RL	54MW-10 6/5/2007		MDL	RL		
				Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r
Explosives (µg/L)																																	
2,4,6-TNT	118-96-7	N	7.82	<5	U	0.1	5	3.9	J	0.1	5	1	J	0.1	5	0.49	J	0.1	5	<5	U	0.1	5	<5	U	0.1	5	2.4	J	0.1	5		
DNT Mixture*	--	C	0.932	ND				ND				ND				ND				ND				0.466				ND					
RDX	121-82-4	C	6.100	<5	U	0.092	5	<5	U	0.092	5	<5	U	0.092	5	<5	U	0.092	5	6.3		0.092	5	<5	U	0.092	5	1.6	J	0.092	5		
Perchlorate (µg/L)																																	
Perchlorate	14797-73-0	N	10.90	<0.2	U	0.08	0.2	2		0.08	0.2	0.88		0.08	0.2	0.58		0.08	0.2	0.7		0.08	0.2	0.23		0.08	0.2	0.37		0.08	0.2		
Field Parameters																																	
DO (mg/L)	--	--	--	7.57				8.46				5.06				8.44				8.82				5.21				7.35					
ORP (mV)	--	--	--	297				268				109				236				285				94				187					
pH (SU)	--	--	--	7.33				6.78				6.2				6.24				6.9				6.25				6.87					
Specific Conductivity (mS)	--	--	--	0.192				0.225				0.003				0.163				0.245				0.003				0.353					
Temperature (°C)	--	--	--	13.58				13.48				15.66				21.68				13.4				15.44				14.51					
Turbidity (NTU)	--	--	--	0.48				0.29				0.36				0.67				0.06				1.67				9.37					

Fourth Quarter – September 2007																															
Sample ID Sample Date	CAS	C/N	RG	54MW-1 9/19/2007		MDL	RL	54MW-2 9/19/2007		MDL	RL	54MW-3 9/19/2007		MDL	RL	54MW-5 9/19/2007		MDL	RL	54MW-8 9/18/2007		MDL	RL	54MW-9 9/18/2007		MDL	RL	54MW-10 9/18/2007		MDL	RL
				Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r						
Explosives (µg/L)																															
2,4,6-TNT	118-96-7	N	7.82	<5	U	0.1	5	0.78	J	0.1	5	1.2	J	0.1	5	0.38	J,J,g	0.1	5	<5	U	0.1	5	<5	U	0.1	5	17		0.1	5
DNT Mixture*	--	C	0.932	ND				ND				ND				ND				ND				ND				0.696			
RDX	121-82-4	C	6.100	<5	U	0.092	5	<5	U	0.092	5	<5	U	0.092	5	<5	U	0.092	5	<5	U	0.092	5	<5	U	0.092	5	8		0.092	5
Perchlorate (µg/L)																															
Perchlorate	14797-73-0	N	10.90	<0.2	U	0.08	0.2	0.57		0.08	0.2	0.31		0.08	0.2	0.34		0.08	0.2	0.37		0.08	0.2	<0.2	U	0.08	0.2	2.9		0.08	0.2
Field Parameters																															
DO (mg/L)	--	--	--	4.03				2.37				6.34				5.53				4.06				3.78				3.89			
ORP (mV)	--	--	--	233				172				205				228				288				237				239			
pH (SU)	--	--	--	8.2				7.01				5.67				6.89				6.82				7.11				6.76			
Specific Conductivity (mS)	--	--	--	0.487				0.637				0.57				0.647				0.711				0.833				0.844			
Temperature (°C)	--	--	--	19.79				15.91				15.6				17.36				14.41				18.05				17.27			
Turbidity (NTU)	--	--	--	0.79				2.19				2.02				1.62				0.43				2.19				7.19			

Table 3-3 2006-2007 Area A Quarterly Groundwater Monitoring Results with Remedial Goals (Continued)

Notes:
*DNT mixture is the combined results of 2,4-DNT and 2,6-DNT
=Exceeds RG

The CMOs and RGs were developed and presented in the Final SWMU 54 RFI/CMS Report (URS, 2008).
RBC values are from the October 11, 2007, RBC Table and November 2020 Alternate RBC Table.

< = less than
µg/L = micrograms per liter
°C = degrees Celsius
2,4,6-TNT = 2,4,6-trinitrotoluene
C/N = carcinogenic/noncarcinogenic
CAS = Chemical Abstracts Service
CMO = corrective measures objective
CMS = Corrective Measures Study
DNT = dinitrotoluene
DO = dissolved oxygen
ID = identifier
LQ = laboratory qualifier
MCL = maximum contaminant level
MDL = method detection limit
mg/L = milligrams per liter
mS = millisiemens
mV = millivolts
ND = not detected
NTU = nephelometric turbidity unit
ORP = oxidation-reduction potential
pH = potential of hydrogen
r = reason code
RBC = Risk-Based Concentration
RDX = cyclotrimethylenetrinitramine
RFI = RCRA Facility Investigation
RG = remedial goal
RL = reporting limit
RPD = relative percent difference
SU = standard units
TIC = total inorganic carbon
URS = URS Corporation
USEPA = U.S. Environmental Protection Agency
VQ = Validation Qualifier

C = Carcinogenic per USEPA RBC Table (October 2007)
N = Noncarcinogenic per USEPA RBC Table (October 2007)

Data Qualifiers:
B = Not detected substantially above the level reported in laboratory or field blanks.
E = Concentration exceeded the upper level of the calibration range of the instrument for that specific analysis.
For TICs, compound not present in calibration standard, calculated using total peak areas ion chromatographs and response factor of 1.
J = Analyte present. Reported value may not be accurate or precise.
L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N = Sample spike recovery is outside of control limits.
P = Greater than 40% difference for detected concentrations between the two gas chromatography (GC) or high-performance liquid chromatography (HPLC) columns.
R = The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected are not usable.
U = Not detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ = Not detected, quantitation limit may be inaccurate or imprecise.
UL = Not detected, quantitation limit is probably higher.
c = Calibration failure.
d = Matrix spike/matrix spike duplicate (MS/MSD) or laboratory control sample/laboratory control sample duplicate (LCS/LCSD) RPD imprecision.
g = Dual column confirmation imprecision.
l = LCS recovery failure.
m = MS/MSD recovery failure.
o = Calibration blank contamination.
p = Preparation blank contamination.
s = Serial dilution failure.
w = Field and/or equipment blank contamination.
z = Method blank and/or storage blank contamination.

Table 3-4 2003 Area B Groundwater Analytical Results with Remedial Goals

Sample ID Sample Date	RG	Units	54MW4 3/4/2003		MDL	RL	54MW6 3/3/2003		MDL	RL	54MW7 3/4/2003		MDL	RL	54MW7-DUP (GW-DUP-1) 3/4/2003		MDL	RL
			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r		
Explosives																		
2,4,6-TNT	7.82	µg/L	<5.4	U	0.55	5.4	<4.2	U	0.43	4.2	<3.6	U	0.365	3.6	<4.8	U	0.487	4.8
DNT Mixture*	0.932	µg/L	ND				ND				ND				ND			
RDX	6.1	µg/L	<5.4	U	0.79	5.4	<4.2	U	0.61	4.2	<3.6	U	0.526	3.6	<4.8	U	0.701	4.8
Perchlorate																		
Perchlorate	10.9	µg/L	<1	U	0.54	1	<1	U	0.54	1	<1	U	0.54	1	<1	U	0.54	1

Notes:
*DNT mixture is the combined results of 2,4-DNT and 2,6-DNT
=Exceeds RG

The CMOs and RGs were developed and presented in the Final SWMU 54 RFI/CMS Report (URS, 2008).
RBC values are from the October 11, 2007, RBC Table and November 2020 Alternate RBC Table.

µg/L = micrograms per liter
2,4,6-TNT = 2,4,6-trinitrotoluene
CMO = corrective measures objective
CMS = corrective measures study
DNT = dinitrotoluene
ID = identifier
LQ = laboratory qualifier
MDL = method detection limit
mV = millivolt
mS = milliSiemen
ND = not detected
r = reason code
RBC = Risk-Based Concentration
RDX = cyclotrimethylenetrinitramine
RFI = RCRA Facility Investigation
RL = reporting limit
RG = remedial goal
SU = standard units
TIC = total inorganic carbon
URS = URS Corporation
USEPA = U.S. Environmental Protection Agency
VQ = validation qualifier

Data Qualifiers:
B = Not detected substantially above the level reported in laboratory or field blanks.
E = Concentration exceeded the upper level of the calibration range of the instrument for that specific analysis.
For TICs, compound not present in calibration standard, calculated using total peak areas ion chromatographs and response factor of 1.
J = Analyte present. Reported value may not be accurate or precise.
L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N = Sample spike recovery is outside of control limits.
P = Greater than 40% difference for detected concentrations between the two gas chromatography (GC) or high-performance liquid chromatography (HPLC) columns.
R = The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected are not usable.
U = Not detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ = Not detected, quantitation limit may be inaccurate or imprecise.
UL = Not detected, quantitation limit is probably higher.
c = Calibration failure.
d = Matrix spike/matrix spike duplicate (MS/MSD) or laboratory control sample/laboratory control sample duplicate (LCS/LCSD) RPD imprecision.
g = Dual column confirmation imprecision.
l = LCS recovery failure.
m = MS/MSD recovery failure.
o = Calibration blank contamination.
p = Preparation blank contamination.
s = Serial dilution failure.
w = Field and/or equipment blank contamination.
z = Method blank and/or storage blank contamination.

Table 3-5 2006-2007 Area B Quarterly Groundwater Monitoring Results with Remedial Goals

First Quarter – November/December 2006															
Sample ID Sample Date	CAS	C/N	Adjusted Tap Water RBC	54MW4 11/30/2006		MDL	RL	54MW6 11/29/2006		MDL	RL	54MW7 12/5/2006		MDL	RL
				Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r		
Explosives (µg/L)															
2,4,6-TNT	118-96-7	N	7.82	<5	U	0.075	5	<5	U	0.075	5	<5	U	0.075	5
DNT Mixture*	--	C	0.932	<5				<5				<5			
RDX	121-82-4	C	6.100	<5	U	0.16	5	<5	U	0.16	5	<5	U	0.16	5
Perchlorate (µg/L)															
Perchlorate	14797-73-0	N	10.90	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10
Field Parameters															
DO (mg/L)	--	--	--	9.9				11.63				10.46			
ORP (mV)	--	--	--	-92				181				170			
pH (SU)	--	--	--	7.77				8				7.56			
Specific Conductivity (mS)	--	--	--	1.13				0.297				0.729			
Temperature (°C)	--	--	--	15				16.6				15.9			
Turbidity (NTU)	--	--	--	2.66				4.87				5.91			
Second Quarter – March 2007															
Sample ID Sample Date	CAS	C/N	RG	54MW-4 3/27/2007		MDL	RL	54MW-6 3/27/2007		MDL	RL	54MW-7 3/27/2007		MDL	RL
				Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r		
Explosives (µg/L)															
2,4,6-TNT	118-96-7	N	7.82	<5	U	0.1	5	<5	U	0.1	5	<5	U	0.1	5
DNT Mixture*	--	C	0.932	<5				<5				<5			
RDX	121-82-4	C	6.100	<5	U	0.092	5	<5	U	0.092	5	<5	U	0.092	5
Perchlorate (µg/L)															
Perchlorate	14797-73-0	N	10.90	<0.2	U	0.036	0.2	<0.2	U	0.036	0.2	<0.2	U	0.036	0.2
Field Parameters															
DO (mg/L)	--	--	--	5.97				8.8				6			
ORP (mV)	--	--	--	-95				135				-44			
pH (SU)	--	--	--	7.16				8.21				7			
Specific Conductivity (mS)	--	--	--	1.11				0.314				0.323			
Temperature (°C)	--	--	--	15.68				17.77				14.25			
Turbidity (NTU)	--	--	--	1.54				31.1				6.59			
Third Quarter – June 2007															
Sample ID Sample Date	CAS	C/N	RG	54MW4 DUP AVG 6/5/2007		MDL	RL	54MW-6 6/5/2007		MDL	RL	54MW-7 6/5/2007		MDL	RL
				Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r		
Explosives (µg/L)															
2,4,6-TNT	118-96-7	N	7.82	<5	U	0.1	5	<5	U	0.1	5	<5	U	0.1	5
DNT Mixture*	--	C	0.932	<5				<5				<5			
RDX	121-82-4	C	6.100	<5	U	0.092	5	<5	U	0.092	5	<5	U	0.092	5
Perchlorate (µg/L)															
Perchlorate	14797-73-0	N	10.90	<0.2	U	0.08	0.2	<0.2	U	0.08	0.2	<0.2	U	0.08	0.2
Field Parameters															
DO (mg/L)	--	--	--	5.15				4.5				7.72			
ORP (mV)	--	--	--	91				76				225			
pH (SU)	--	--	--	6.39				6.03				6.97			
Specific Conductivity (mS)	--	--	--	0.003				0.003				0.302			
Temperature (°C)	--	--	--	14.54				19.28				3.03			
Turbidity (NTU)	--	--	--	0.67				9.96				0.71			

Table 3-5 2006-2007 Area B Quarterly Groundwater Monitoring Results with Remedial Goals (Continued)

Fourth Quarter – September 2007															
Sample ID Sample Date	CAS	C/N	RG	54MW4 9/19/2007		MDL	RL	54MW6 9/19/2007		MDL	RL	54MW7 DUP AVG 9/19/2007		MDL	RL
				Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r		
<i>Explosives (µg/L)</i>															
2,4,6-TNT	118-96-7	N	7.82	<5	U	0.1	5	<5	U	0.1	5	<5	U	0.1	5
DNT Mixture*	--	C	0.932	ND				ND				ND			
RDX	121-82-4	C	6.100	<5	U	0.092	5	<5	U	0.092	5	<5	U	0.092	5
<i>Perchlorate (µg/L)</i>															
Perchlorate	14797-73-0	N	10.90	<0.2	U	0.08	0.2	0.1	J	0.08	0.2	<0.2	U	0.08	0.2
<i>Field Parameters</i>															
DO (mg/L)	--	--	--	4.03				7.47				4.56			
ORP (mV)	--	--	--	-1				236				266			
pH (SU)	--	--	--	7.91				8.13				6.97			
Specific Conductivity (mS)	--	--	--	1.1				0.267				0.766			
Temperature (°C)	--	--	--	16.08				16.69				16.83			
Turbidity (NTU)	--	--	--	0.43				4.37				0.39			

Notes:

*DNT mixture is the combined results of 2,4-DNT and 2,6-DNT

=Exceeds RG

The CMOs and RGs were developed and presented in the Final SWMU 54 RFI/CMS Report (URS, 2008).

RBC values are from the October 11, 2007 RBC Table and November 2020 Alternate RBC Table.

<= less than

µg/L = micrograms per liter

°C = degrees Celsius

2,4,6-TNT = 2,4,6-trinitrotoluene

C/N = carcinogenic/noncarcinogenic

CAS = Chemical Abstracts Service

CMO = corrective measures objective

CMS = Corrective Measures Study

DNT = dinitrotoluene

DO = dissolved oxygen

ID = identifier

LQ = laboratory qualifier

MCL = maximum contaminant level

MDL = method detection limit

mg/L = milligrams per liter

mS = millisiemens

mV = millivolts

ND = not detected

NTU = nephelometric turbidity unit

ORP = oxidation-reduction potential

pH = potential of hydrogen

r = reason code

RBC = Risk-Based Concentration

RDX = cyclotrimethylenetrinitramine

RFI = RCRA Facility Investigation

RG = remedial goal

RL = reporting limit

RPD = relative percent difference

SU = standard units

TIC = total inorganic carbon

URS = URS Corporation

USEPA = U.S. Environmental Protection Agency

VQ = Validation Qualifier

C = Carcinogenic per USEPA RBC Table (October 2007)

N = Noncarcinogenic per USEPA RBC Table (October 2007)

Data Qualifiers:

B = Not detected substantially above the level reported in laboratory or field blanks.

E = Concentration exceeded the upper level of the calibration range of the instrument for that specific analysis.

For TICs, compound not present in calibration standard, calculated using total peak areas ion chromatographs and response factor of 1.

J = Analyte present. Reported value may not be accurate or precise.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

N = Sample spike recovery is outside of control limits.

P = Greater than 40% difference for detected concentrations between the two gas chromatography (GC) or high-performance liquid chromatography (HPLC) columns.

R = The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected are not usable.

U = Not detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

c = Calibration failure.

d = Matrix spike/matrix spike duplicate (MS/MSD) or laboratory control sample/laboratory control sample duplicate (LCS/LCSD) RPD imprecision.

g = Dual column confirmation imprecision.

l = LCS recovery failure.

m = MS/MSD recovery failure.

o = Calibration blank contamination.

p = Preparation blank contamination.

s = Serial dilution failure.

w = Field and/or equipment blank contamination.

z = Method blank and/or storage blank contamination.

Table 3-6 2006 New River Surface and Sediment Pore Water Sample Results with Remedial Goals

Surface Water																											
Sample ID Sample Date	CAS	C/N	RG	NR-SW-1 11/30/2006		MDL	RL	NR-SW-2 11/30/2006		MDL	RL	NR-SW-3 11/30/2006		MDL	RL	NR-SW-4 11/30/2006		MDL	RL	NR-SW-5 11/30/2006		MDL	RL	NR-SW-6 11/30/2006		MDL	RL
				Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r		
Explosives (µg/L)																											
2,4,6-TNT	118-96-7	C	7.82	<5	U	0.075	5	<5	U	0.075	5	<5	U	0.075	5	<5	U	0.075	5	<5	U	0.075	5	<5	U	0.075	5
2,4-DNT	121-14-2	N		<5	U	0.12	5	<5	U	0.12	5	<5	U	0.12	5	<5	U	0.12	5	<5	U	0.12	5	<5	U	0.12	5
2,6-DNT	606-20-2	N		<5	U	0.27	5	<5	U	0.27	5	<5	U	0.27	5	<5	U	0.27	5	<5	U	0.27	5	<5	U	0.27	5
DNT Mixture*			0.932	<5				<5				<5				<5				<5				<5			
RDX	121-82-4	C	6.100	<5	U	0.16	5	<5	U	0.16	5	<5	U	0.16	5	<5	U	0.16	5	<5	U	0.16	5	<5	U	0.16	5
Perchlorate (µg/L)																											
Perchlorate	14797-73-0	--	10.900	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10
Field Parameters																											
DO (mg/L)	--	--	--	17.05				15.83				14.64				12.93				14.83				15.11			
ORP (mV)	--	--	--	219				118				47				53				32				35			
pH (SU)	--	--	--	8.9				8.1				7.96				7.81				7.67				8.3			
Specific Conductivity (mS)	--	--	--	0.116				0.113				0.118				0.174				0.117				0.155			
Temperature (°C)	--	--	--	10.1				9.9				10.1				10.3				10.2				10.4			
Turbidity (NTU)	--	--	--	71.3				13.7				17.48				9.94				7.66				6.21			

Pore Water																											
Sample ID Sample Date	CAS	C/N	RG	NR-PW-1 11/30/2006		MDL	RL	NR-PW-2 11/30/2006		MDL	RL	NR-PW-3 11/30/2006		MDL	RL	NR-PW-4 11/30/2006		MDL	RL	NR-PW-5 11/30/2006		MDL	RL	NR-PW-6 11/30/2006		MDL	RL
				Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r		
Explosives (µg/L)																											
2,4,6-TNT	118-96-7	C	7.82	<5	U	0.075	5	<5	U	0.075	5	<5	U	0.075	5	<5	U	0.075	5	<5	U	0.075	5	<5	U	0.075	5
2,4-DNT	121-14-2	N		<5	U	0.12	5	<5	U	0.12	5	<5	U	0.12	5	<5	U	0.12	5	<5	U	0.12	5	<5	U	0.12	5
2,6-DNT	606-20-2	N		<5	U	0.27	5	<5	U	0.27	5	<5	U	0.27	5	<5	U	0.27	5	<5	U	0.27	5	<5	U	0.27	5
DNT Mixture*			0.932	<5				<5				<5				<5				<5				<5			
RDX	121-82-4	C	6.100	<5	U	0.16	5	<5	U	0.16	5	<5	U	0.16	5	<5	U	0.16	5	<5	U	0.16	5	<5	U	0.16	5
Perchlorate (µg/L)																											
Perchlorate	14797-73-0	--	10.900	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10
Field Parameters																											
DO (mg/L)	--	--	--	10.38				10.46				12.2				9.35				10.82				11.34			
ORP (mV)	--	--	--	-109				-174				20				-182				-44				-58			
pH (SU)	--	--	--	7.33				7.21				7.47				7.57				7.44				7.2			
Specific Conductivity (mS)	--	--	--	0.307				0.344				0.248				0.38				0.553				0.353			
Temperature (°C)	--	--	--	12.8				10.7				10.8				10.6				13.2				11.9			
Turbidity (NTU)	--	--	--	16.35				37.9				22.7				4.86				3.63				11.85			

Table 3-6 2006 New River Surface and Sediment Pore Water Sample Results with Remedial Goals (Continued)

Surface Water																							
Sample ID Sample Date	CAS	C/N	RG	NR-SW-7 12/1/2006		MDL	RL	NR-SW-8 12/1/2006		MDL	RL	NR-SW-8-DUP(DUP-4) 12/1/2006		MDL	RL	NR-SW-9 12/1/2006		MDL	RL	NR-SW-10 12/1/2006		MDL	RL
				Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r		
Explosives (µg/L)																							
2,4,6-TNT	118-96-7	C	7.82	<5	U	0.075	5	<5	U	0.075	5	<5	U	0.075	5	<5	U	0.075	5	<5	U	0.075	5
2,4-DNT	121-14-2	N		<5	U	0.12	5	<5	U	0.12	5	<5	U	0.12	5	<5	U	0.12	5	<5	U	0.12	5
2,6-DNT	606-20-2	N		<5	U	0.27	5	<5	U	0.27	5	<5	U	0.27	5	<5	U	0.27	5	<5	U	0.27	5
DNT Mixture*			0.932	<5				<5				<5				<5				<5			
RDX	121-82-4	C	6.100	<5	U	0.16	5	<5	U	0.16	5	<5	U	0.16	5	<5	U	0.16	5	<5	U	0.16	5
Perchlorate (µg/L)																							
Perchlorate	14797-73-0	--	10.900	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10
Field Parameters																							
DO (mg/L)	--	--	--	13.13				13.27				13.27				13.76				14.69			
ORP (mV)	--	--	--	10				41				41				51				52			
pH (SU)	--	--	--	8.11				7.8				7.8				7.62				7.83			
Specific Conductivity (mS)	--	--	--	0.140				0.124				0.124				0.131				0.114			
Temperature (°C)	--	--	--	11.7				12.5				12.5				11.8				11			
Turbidity (NTU)	--	--	--	148				13.8				13.8				20.5				11.46			
Pore Water																							
Sample ID Sample Date	CAS	C/N	RG	NR-PW-6-DUP(DUP-3) 11/30/2006		MDL	RL	NR-PW-7 12/1/2006		MDL	RL	NR-PW-8 12/1/2006		MDL	RL	NR-PW-9 12/1/2006		MDL	RL	NR-PW-10 12/1/2006		MDL	RL
				Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r			Result	LQ, VQ, r		
Explosives (µg/L)																							
2,4,6-TNT	118-96-7	C	7.82	<5	U	0.075	5	<5	U	0.075	5	<5	U	0.075	5	<5	U	0.075	5	<5	U	0.075	5
2,4-DNT	121-14-2	N		<5	U	0.12	5	<5	U	0.12	5	<5	U	0.12	5	<5	U	0.12	5	<5	U	0.12	5
2,6-DNT	606-20-2	N		<5	U	0.27	5	<5	U	0.27	5	<5	U	0.27	5	<5	U	0.27	5	<5	U	0.27	5
DNT Mixture*			0.932	<5				<5				<5				<5				<5			
RDX	121-82-4	C	6.100	<5	U	0.16	5	<5	U	0.16	5	<5	U	0.16	5	<5	U	0.16	5	<5	U	0.16	5
Perchlorate (µg/L)																							
Perchlorate	14797-73-0	--	10.900	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10	<10	U	1.84	10
Field Parameters																							
DO (mg/L)	--	--	--	11.34				9.25				9.74				10.55				10.18			
ORP (mV)	--	--	--	-58				-194				-173				-173				-157			
pH (SU)	--	--	--	7.2				7.54				7.36				7.23				7.47			
Specific Conductivity (mS)	--	--	--	0.353				0.517				0.660				0.533				0.479			
Temperature (°C)	--	--	--	11.9				13				12.9				13.2				13.1			
Turbidity (NTU)	--	--	--	11.85				3.72				5.6				15.87				1.66			

Table 3-6 2006 New River Surface and Sediment Pore Water Sample Results with Remedial Goals (Continued)

Notes:

*DNT mixture is the combined results of 2,4-DNT and 2,6-DNT

=Exceeds RG

The CMOs and RGs were developed and presented in the Final SWMU 54 RFI/CMS Report (URS, 2008).

RBC values are from the October 11, 2007 RBC Table and November 2020 Alternate RBC Table.

Water – BTAG Freshwater Screening Values (USEPA, 2006).

< = less than

µg/L = micrograms per liter

°C = degrees Celsius

2,4,6-TNT = 2,4,6-trinitrotoluene

BTAG = Biological Technical Assistance Group

C/N = carcinogenic/noncarcinogenic

CAS = Chemical Abstracts Service

CMO = corrective measures objective

CMS = Corrective Measures Study

DNT = dinitrotoluene

DO = dissolved oxygen

ID = identifier

LQ = laboratory qualifier

MCL = maximum contaminant level

MDL = method detection limit

mg/L = milligrams per liter

mS = millisiemens

mV = millivolts

ND = not detected

NTU = nephelometric turbidity unit

ORP = oxidation-reduction potential

pH = potential of hydrogen

r = reason code

RBC = Risk-Based Concentration

RDx = cyclotrimethylenetrinitramine

RFI = RCRA Facility Investigation

RG = remedial goal

RL = reporting limit

RPD = relative percent difference

SU = standard units

TIC = total inorganic carbon

URS = URS Corporation

USEPA = U.S. Environmental Protection Agency

VQ = Validation Qualifier

C = Carcinogenic per USEPA RBC Table (October 2007)

N = Noncarcinogenic per USEPA RBC Table (October 2007)

Data Qualifiers:

B = Not detected substantially above the level reported in laboratory or field blanks.

E = Concentration exceeded the upper level of the calibration range of the instrument for that specific analysis.

For TICs, compound not present in calibration standard, calculated using total peak areas ion chromatographs and

response factor of 1.

J = Analyte present. Reported value may not be accurate or precise.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

N = Sample spike recovery is outside of control limits.

P = Greater than 40% difference for detected concentrations between the two gas chromatography (GC) or high-performance liquid chromatography (HPLC) columns.

R = The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected are not usable.

U = Not detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

c = Calibration failure.

d = Matrix spike/matrix spike duplicate (MS/MSD) or laboratory control sample/laboratory control sample duplicate (LCS/LCSD) RPD imprecision.

g = Dual column confirmation imprecision.

l = LCS recovery failure.

m = MS/MSD recovery failure.

o = Calibration blank contamination.

p = Preparation blank contamination.

s = Serial dilution failure.

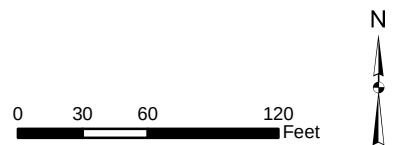
w = Field and/or equipment blank contamination.

z = Method blank and/or storage blank contamination.



- Legend
- Well (Current MNA Network)
 - Well (Removed from Network After Ninth Quarter)
 - Groundwater Contour
 - Inferred Groundwater Contour
 - Groundwater Flow Direction
 - Fence
 - SWMU 54 Boundary

Aerial Source:
Near Map Imagery, February 2020



Prepared By:

Baltimore District

FIGURE 3-1
SWMU 54
JUNE 5, 2007 GROUNDWATER
CONTOUR MAP
RADFORD, VIRGINIA

4. FIELD ACTIVITIES

The following sections provide a discussion of field activities conducted by WESTON in Year Eleven of monitoring at SWMU 54.

Year Eleven of groundwater monitoring consisted of two semiannual sampling events conducted in January 2023 (thirty-ninth event) and July 2023 (fortieth event). Multiple wells were removed from the monitoring network after the ninth and tenth quarters and were not sampled during Year Eleven. Monitoring wells that were included in Year Eleven monitoring events comprised 54MW1, 54MW10, 54MW12, and 54MW13, which monitor Area A at SWMU 54, as consistent with the eleventh through thirty-eighth quarterly or semiannual events. Field activities were conducted in accordance with the Final SWMU 54 MNA IMWP (Shaw, 2011a). Copies of the groundwater sampling forms and meter calibration records are presented in **Appendices A-1** and **A-2**, respectively. The monitoring wells were all in usable condition for the entire year of sampling.

4.1 THIRTY-NINTH GROUNDWATER SAMPLING (JANUARY 2023)

Groundwater elevation measurements and groundwater samples were collected from monitoring wells 54MW1, 54MW10, 54MW12, and 54MW13 during the thirty-ninth event. The thirty-ninth event of groundwater sampling was conducted January 23 and 25, 2023. Groundwater elevation measurements were collected prior to sampling activities. A groundwater quality meter was calibrated at the beginning of each day before groundwater sampling was initiated. The locations of monitoring wells sampled during this semiannual event are provided in **Figure 4-1**.

4.1.1 Groundwater Elevation Measurements

Water level elevations were collected during each Year Eleven semiannual event from the four monitoring wells at SWMU 54 prior to the collection of groundwater samples. **Table 4-1** provides the measured depth-to-water levels (from the top of the casing) and groundwater elevations amsl collected on January 23 and 24, 2023. **Figure 4-2** presents a groundwater elevation contour map developed from the elevation data collected during this semiannual monitoring event. Groundwater contours were derived using Esri ArcGIS Desktop Spatial Analyst 10.7.1 software and creating a spline interpolated continuous surface based on limited

groundwater data. The surface model was executed using default values in most cases and forced to cover an area inclusive of all wells using the extent polygon to define the area of interest. Contour lines were then constructed from the output splined surface at 10-ft and 2-ft intervals, depending on the site, with zero base contour. The results of the automated processing were then reviewed by subject knowledge experts and manually adjusted to accurately represent ground conditions.

Estimated groundwater flow velocity for Area A was calculated based on parameters used in the Final SWMU 54 RFI/CMS Report (URS, 2008). The Area A flow path of approximately 538.4 ft had a groundwater elevation difference of 13.55 ft, resulting in a calculated hydraulic gradient of 0.025 feet per foot (ft/ft). Using an average K value for Area A of 4.86 feet per day (ft/day) and an estimated effective porosity of 0.20, the groundwater flow velocity for Area A is approximately 0.61 ft/day (223.22 feet per year [ft/year]).

Area B, although not monitored during Year Eleven as mentioned in Section 3, is expected to have a groundwater flow velocity similar to Area A, as reported in the Year Three MNA Report (CB&I, 2014).

4.1.2 Groundwater Sampling

Groundwater samples were collected from the four monitoring wells on January 23 and 25, 2023, and were analyzed for the analytical suites covering explosives, perchlorate, and RDX and its breakdown by-products hexahydro-1,3-dinitroso-5-nitro-1,3,5-triazine (DNX), hexahydro-1-nitroso-3,5-dinitro-1,3,5-triazine (MNX), and hexahydro-1,3,5-trinitroso-1,3,5-triazine (TNX). The breakdown by-products of RDX are considered MNA indicators. In addition, the following indicator parameters were collected: total organic carbon (TOC), total inorganic carbon (TIC), dissolved ferrous iron, dissolved manganese, chlorate, chloride, chlorite, nitrate, and sulfate. Water quality parameters collected during low-flow sampling included potential of hydrogen (pH), temperature, specific conductivity, dissolved oxygen (DO), oxidation-reduction potential (ORP), and turbidity. **Table 4-2** presents the suite of analytes collected for analysis during the thirty-ninth semiannual monitoring event. Groundwater sampling was accomplished without any issues.

Groundwater samples were collected via low-flow peristaltic pumps to obtain representative groundwater samples and to minimize investigation-derived waste (IDW) purge water. The following procedures were adhered to during both semiannual groundwater monitoring events:

1. A photoionization detector (PID) reading was taken upon removing the well cap to determine the presence of potentially hazardous levels of volatile gases. The PID readings were collected during the water elevation sweeps and again during sample collection. All PID readings were within acceptable levels.
2. During the water level sweep, depth-to-water and total depth measurements were recorded to determine the amount of water in the well casing and sand pack. Only approximate total well depths were measured during the semiannual events to confirm that the total depths were consistent with the data from the previous reports.
3. Groundwater samples were collected after all water level elevations had been recorded. The general practice was to lower the peristaltic pump tubing to a depth where the pump inlet was within the screened interval. Ample hydraulic head was maintained above the pump to ensure a sufficient water supply. The pump was connected to a Geocontrol PRO control unit, whereas the discharge tubing was connected to a Yellow Springs Instrument (YSI®) 556 water quality flow cell.
4. Monitoring wells were pumped at a rate of approximately 200 milliliters per minute (mL/min). Flow rate was determined by gauging the time it took to fill a 200-milliliter (mL) vial. Water quality parameters were recorded continuously including temperature, pH, DO, ORP, turbidity, and specific conductivity. Turbidity was measured using a HACH 2100Q turbidity meter, whereas concentrations of dissolved ferrous iron and manganese were measured in the field using a HACH DR900 test kit through Methods 8146 and 8149, respectively.

Table 4-3 presents a summary of the final (stabilized) water quality readings for each well from the thirty-ninth event.

Based on the DO data collected during the thirty-ninth monitoring event, groundwater within Area A exhibits slightly aerobic conditions (i.e., DO greater than 1 part per million [ppm]). The DO levels ranged from a low of 0.29 milligrams per liter (mg/L) at monitoring well 54MW1 to a high of 10.02 mg/L at monitoring well 54MW12. ORP measurements ranged from a low of 32.3 millivolts (mV) in monitoring well 54MW1 to a high of 159.6 mV at monitoring well 54MW12. Measurements of pH ranged from a low of 6.93 standard units (SU) at monitoring well 54MW12 to a high of 7.60 SU at monitoring well 54MW3. Measurements of specific

conductivity ranged from a low of 10.9 microsiemens per centimeter ($\mu\text{S}/\text{cm}$) at monitoring well 54MW13 to a high of 819 $\mu\text{S}/\text{cm}$ at monitoring well 54MW10.

Prior to sampling, the flow cell was disconnected, and the groundwater flow rate was maintained during sample collection. Samples were collected, labeled, and packed in ice until shipment to the laboratory. Chain-of-custody (COC) forms were filled out and shipped with the samples. Copies of the COC forms are provided in **Appendix B-1** along with the raw analytical data packages.

4.1.3 Quality Control Samples

QC samples, including duplicate and matrix spike/matrix spike duplicate (MS/MSD), were collected during the thirty-ninth monitoring event.

One duplicate sample was collected during the thirty-ninth monitoring event (rate of 10 percent [%]) at 54MW13 (duplicate as 54TW13) and was analyzed for the same suite of compounds as the parent sample. Further, one MS/MSD (at a rate of 5%) was collected at monitoring well 54MW11 (54MW12 MS/MSD) and was analyzed for the same suite of compounds as the parent sample.

In previous sampling years, one equipment rinse blank was collected during each sampling event. However, because only disposable equipment was utilized during the sampling, no equipment rinse blanks were warranted. One IDW purge water sample (54-IDW) was collected and analyzed for pH, chemical oxygen demand (COD), and total metals for disposal of IDW purge water in accordance with the Final SWMU 54 MNA IMWP (Shaw, 2011a). Results of the QA/QC samples are presented in the raw analytical data package provided in **Appendix B-1** and summarized in Section 5.7.

4.2 FORTIETH GROUNDWATER SAMPLING (JULY 2023)

Groundwater elevation measurements and groundwater samples were collected from monitoring wells 54MW1, 54MW10, 54MW12, and 54MW13 on April 25, 2022. Groundwater elevation measurements were collected prior to sampling activities. A groundwater quality meter was calibrated at the beginning of each day before groundwater sampling was initiated. The locations of monitoring wells sampled during this quarterly event are provided in **Figure 4-1**.

4.2.1 Groundwater Elevation Measurements

Table 4-4 provides the measured depth-to-water levels (from the top of the casing) and groundwater elevations collected on July 10, 2023, during the fortieth monitoring event. **Figure 4-3** presents a groundwater elevation contour map developed from the elevation data collected during the quarter.

Estimated groundwater flow velocity for Area A was calculated based on parameters used in the Final SWMU 54 RFI/CMS Report (URS, 2008). The Area A flow path of approximately 538.4 ft had a groundwater elevation difference of approximately 15 ft, resulting in a calculated hydraulic gradient of 0.028 ft/ft. Using an average K value for Area A of 4.86 ft/day and an estimated effective porosity of 0.20, the groundwater flow velocity for Area A is approximately 0.66 ft/day (240.9 ft/year).

4.2.2 Groundwater Sampling

Groundwater samples were collected from monitoring wells 54MW1, 54MW10, 54MW12, and 54MW13 on July 23 and 25, 2023. The fortieth monitoring samples were tested for the same analytes as the thirty-ninth event, which are presented in **Table 4-2**. Groundwater sampling was accomplished without any issues.

Groundwater samples were collected applying the same method and approach used during the thirty-third quarterly monitoring event, specifically, through low-flow peristaltic pumps. Monitoring wells were pumped at a rate of approximately 200 mL/min. **Table 4-5** presents a summary of the final (stabilized) water quality readings for each well from the fortieth event.

Based on the DO data collected during the fortieth monitoring event, groundwater within Area A exhibits aerobic conditions (i.e., DO greater than 1 ppm). The DO levels ranged from a low of 0.22 mg/L at monitoring well 54MW10 to a high of 7.32 mg/L at monitoring well 54MW12. ORP measurements ranged from a low of 85 mV at monitoring well 54MW13 to a high of 147.2 mV at monitoring well 54MW12. Measurements of pH ranged from a low of 6.93 SU at monitoring well 54MW12 to a high of 7.69 SU at monitoring well 54MW1. Measurements of specific conductivity ranged from a low of 456.3 μ S/cm in monitoring well 54MW1 to a high of 802 μ S/cm observed at monitoring well 54MW10. Copies of the COC forms are provided in **Appendix B-1** along with the raw analytical data packages.

4.2.3 Quality Control Samples

QC samples, including duplicate and MS/MSDs, were collected during the fortieth monitoring event.

One duplicate sample was collected at 54MW13 (duplicate as 54TW13) and analyzed for the same suite of compounds as the parent sample. Further, one MS/MSD [at a rate of 5%] was collected at monitoring well 54MW12 (54MW12 MS/MSD) and was analyzed for the same suite of compounds as the parent sample.

In previous sampling years, one equipment rinse blank was collected during each quarter. However, because only disposable equipment was utilized during the sampling, no equipment rinse blanks were warranted. One IDW purge water sample (54-IDW) was collected and analyzed for pH, COD, and total metals. Results of the QA/QC samples are presented in the raw analytical data package provided in **Appendix B-1**.

Table 4-1 Thirty-Ninth Event Groundwater Elevations at SWMU 54

Well ID	Screen Interval (ft bgs)	Screen Length (ft)	Total Depth (ft)	Water Level (ft BTOC)	Elevation (top of casing) (ft amsl)	Water Level (ft amsl)	PID Reading (ppm)
54MW1	34.8 - 54.8	20	56	19.43	1,707.78	1,688.35	0.2
54MW10	12 - 27	15	30	15.84	1,691.10	1,675.26	0.0
54MW12	20 - 30	10	32	24.93	1,702.42	1,677.49	0.0
54MW13	12 - 25	10	25	21.38	1,698.90	1,677.52	0.0

Notes:

Elevation data collected on January 23 and 24, 2023.

amsl = above mean sea level

bgs = below ground surface

BTOC = below top of casing

ft = feet

ID = identifier

PID = photoionization detector

ppm = parts per million

SWMU = Solid Waste Management Unit

Table 4-2 Year Eleven Semiannual Monitoring Analytical Suite

Well/Sample ID	Frequency	Explosives	Perchlorate	RDX MNA Parameters	MNA Indicator Parameters	Water Quality Parameters
54MW1	Semiannual	X	X	X	X	X
54MW10	Semiannual	X	X	X	X	X
54MW12	Semiannual	X	X	X	X	X
54MW13	Semiannual	X	X	X	X	X

Notes:

ID = identifier

MNA = monitored natural attenuation

RDX = cyclotrimethylenetrinitramine

Table 4-3 Thirty-Ninth Semiannual Water Quality Parameters at SWMU 54

Well ID	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Temperature (°C)
54MW1	7.53	446.0	0.00	0.29	32.3	12.7
54MW10 ¹	7.57	819.0	3.59	0.31	52.9	12.3
54MW12	6.93	503.4	0.00	10.02	159.6	11.6
54MW13	7.60	10.9	0.71	10.00	52.3	8.3

Notes:

¹ Well 54MW10 is located adjacent to the New River.

°C = degrees Celsius

µS/cm = microsiemens per centimeter

DO = dissolved oxygen

ID = identifier

mg/L = milligrams per liter

mV = millivolts

NTU = nephelometric turbidity unit

ORP = oxidation reduction potential

pH = potential of hydrogen

SWMU = Solid Waste Management Unit

Table 4-4 Fortieth Event Groundwater Elevations at SWMU 54

Well ID	Screen Interval (ft bgs)	Screen Length (ft)	Total Depth (ft)	Water Level (ft BTOC)	Elevation (top of casing) (ft amsl)	Water Level (ft amsl)	PID Readings (ppm)
54MW1	34.8 - 54.8	20	57.4	19.00	1707.78	1688.78	PID = 0.0
54MW10	12 - 27	15	30.03	16.03	1691.10	1675.07	PID = 0.1
54MW12	20 - 30	10	33.85	25.11	1702.42	1677.31	PID = 0.0
54MW13	12 - 25	10	25.31	21.70	1698.90	1677.20	PID = 0.0

Notes:

Elevation data collected on 10 July 2023.

amsl = above mean sea level

bgs = below ground surface

BTOC = below top of casing

ft = feet

ID = identifier

PID = photoionization detector

ppm = parts per million

SWMU = Solid Waste Management Unit

Table 4-5 Fortieth Semiannual Water Quality Parameters at SWMU 54

Well ID	pH	Specific Conductivity (μS/cm)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Temperature (°C)
54MW1	7.69	456.3	1.14	2.45	144.7	14.9
54MW10	7.33	802	5.89	0.22	86.1	15.1
54MW12	6.93	506	1.73	7.32	147.2	15.4
54MW13	7.11	559	5.61	4.90	85.0	15.8

Notes:

°C = degrees Celsius

μS/cm = microsiemens per centimeter

DO = dissolved oxygen

ID = identifier

mg/L = milligrams per liter

mV = millivolts

NTU = nephelometric turbidity unit

ORP = oxidation reduction potential

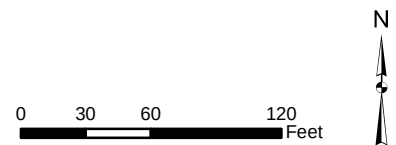
pH = potential of hydrogen

SWMU = Solid Waste Management Unit



- Legend
- Well (Current MNA Network)
 - Well (Removed from Network After Ninth Quarter)
 - × — × Fence
 - SWMU 54 Boundary

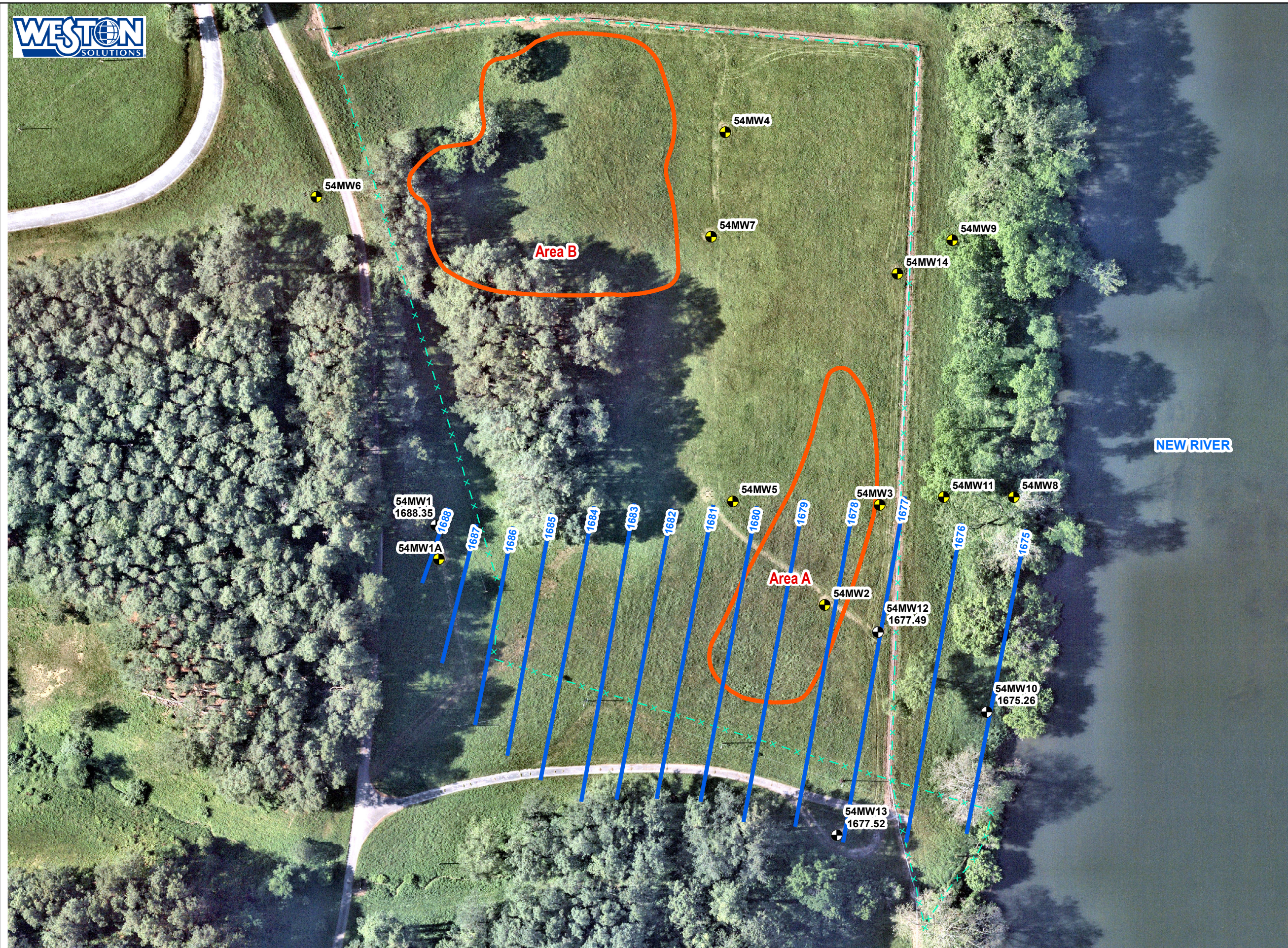
Aerial Source:
Near Map Imagery, February 2020



Prepared
By:



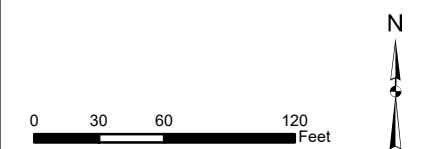
FIGURE 4-1
SWMU 54 MONITORING WELL
SAMPLE LOCATIONS
RADFORD, VIRGINIA



- Legend**
- Well (Current MNA Network)
 - Well (Removed from Network After Ninth Quarter)
 - Groundwater Contour
 - Fence
 - SWMU 54 Boundary

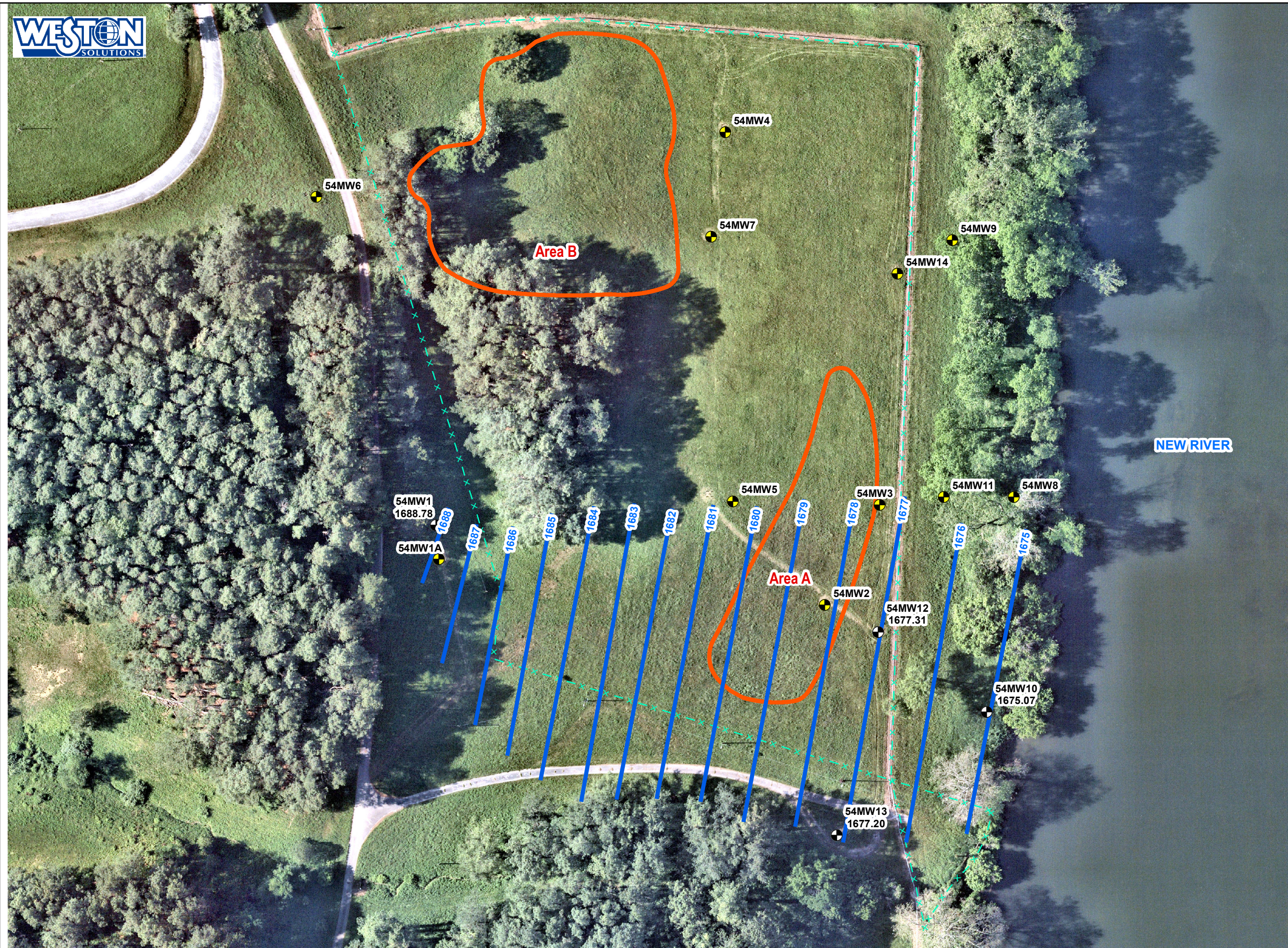
Note:
Contours are in feet above mean sea level (amsl).

Aerial Source:
Near Map Imagery, June 2023



Prepared By: 
Baltimore District

FIGURE 4-2
SWMU 54 JANUARY 2023
(THIRTY-NINTH EVENT)
GROUNDWATER CONTOUR MAP
RADFORD, VIRGINIA

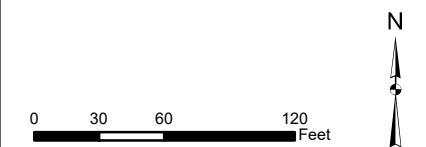


Legend

- Well (Current MNA Network)
- Well (Removed from Network After Ninth Quarter)
- Groundwater Contour
- Fence
- SWMU 54 Boundary

Note:
Contours are in feet above mean sea level (amsl).

Aerial Source:
Near Map Imagery, June 2023



Prepared By:



FIGURE 4-3
SWMU 54 JULY 2023
(FORTIETH EVENT)
GROUNDWATER CONTOUR MAP
RADFORD, VIRGINIA

5. CHEMICAL ANALYTICAL RESULTS

5.1 SELECTION OF COMPARISON CRITERIA

The analytical data collected during this investigation were compared to RGs selected in the Final SWMU 54 RFI/CMS Report (URS, 2008). For contaminants that have no RGs, the results are compared in the text to the current USEPA Regional Screening Levels (RSLs) for tap water. Screening levels (SLs) are calculated values that are derived from theoretical risk scenarios. Compounds are grouped as carcinogens or noncarcinogens, and carcinogen SL values are the lower of values calculated to represent an increase of 1E-6 in cancer risk and a Hazard Index (HI) of 0.1. To account for potential cumulative effects of exposure to noncarcinogenic compounds, values for noncarcinogens have been recalculated to an HI of 0.1. **Tables 5-1 through 5-4** present the analytical results and summaries of the thirty-ninth and fortieth semiannual monitoring data, including number of results that exceeded the RGs, frequency of detection, minimum and maximum detected concentrations, and the location of maximum concentration.

5.2 THIRTY-NINTH EVENT GROUNDWATER RESULTS (JANUARY 2023)

Four groundwater monitoring wells, 54MW1, 54MW10, 54MW12, and 54MW13, were sampled during this semiannual monitoring event, with a duplicate sample collected from monitoring well 54MW13. Samples were submitted for explosives, perchlorate, RDX breakdown by-products (DNX, MNX, and TNX), and MNA indicator parameter analyses. Detected constituents are summarized in **Table 5-1**, whereas the complete results are presented in **Table 5-2**. Sample locations are provided in **Figure 4-1**. The complete laboratory analytical reports are included in **Appendix B-1**.

Explosives

Four explosives were detected in groundwater samples: 2,4,6-TNT, 2-amino-4,6-dinitrotoluene (2ADNT), 4-amino-2,6-dinitrotoluene (4ADNT), and RDX. All four explosives were detected in monitoring wells 54MW10 and 54MW13, whereas explosives detected in 54MW12 included only 2,4,6-TNT, 2ADNT, and 4ADNT. No explosives were detected at background monitoring well 54MW1.

The explosive 2,4,6-TNT was detected at monitoring well 54MW12 at a concentration of 4.5 micrograms per liter ($\mu\text{g/L}$) and at monitoring well 54MW13 at a concentration of 5 $\mu\text{g/L}$ (original and duplicate sample). None of the concentrations of 2,4,6-TNT at monitoring wells 54MW12 and 54MW13 exceeded the RG of 7.82 $\mu\text{g/L}$.

The explosive 2ADNT was detected at monitoring well 54MW10 at an estimated concentration of 0.26 $\mu\text{g/L}$, at monitoring well 54MW12 at a concentration of 2.6 $\mu\text{g/L}$, and at monitoring well 54MW13 at concentrations of 1.7 $\mu\text{g/L}$ (original) and 1.6 $\mu\text{g/L}$ (duplicate). An RG has not been established for 2ADNT. There is no USEPA maximum contaminant level (MCL) (USEPA, 2018); however, the Tap Water RSL for 2ADNT is 39 $\mu\text{g/L}$ (USEPA, 2021).

The explosive 4ADNT was detected at monitoring well 54MW10 at concentrations of 0.37 $\mu\text{g/L}$, at monitoring well 54MW12 at a concentration of 2 $\mu\text{g/L}$, and at monitoring well 54MW13 at concentrations of 1.2 $\mu\text{g/L}$ (original) and 1.1 $\mu\text{g/L}$ (duplicate). An RG has not been established for 4ADNT. There is no USEPA MCL (USEPA, 2018); however, the Tap Water RSL for 4ADNT is 39 $\mu\text{g/L}$ (USEPA, 2021).

RDX was detected at monitoring well 54MW10 at concentrations of 0.35 $\mu\text{g/L}$, at monitoring well 54MW12 at a concentration of 0.75 $\mu\text{g/L}$, and at monitoring well 54MW13 at concentrations of 0.91 $\mu\text{g/L}$ (original) and 0.94 $\mu\text{g/L}$ (duplicate). There were no detected concentrations that exceeded the RG of 6.1 $\mu\text{g/L}$. TNX, an RDX breakdown by-product, was not detected during this semiannual monitoring event.

The monitoring wells with detected concentrations of explosives are typically the same wells with observed hits recorded during previous sampling rounds.

Perchlorate

Perchlorate was detected in three groundwater samples collected from monitoring wells 54MW12 and 54MW13 during this semiannual monitoring event. Perchlorate was detected at monitoring well 54MW12 at a concentration of 0.72 $\mu\text{g/L}$ and at monitoring well 54MW13 at concentrations of 0.24 $\mu\text{g/L}$ (original) and 0.25 $\mu\text{g/L}$ (duplicate). All detections were well below the RG of 10.9 $\mu\text{g/L}$.

Miscellaneous Analytes

Groundwater samples were also analyzed for MNA indicators (TOC, TIC, dissolved ferrous iron, dissolved manganese, chlorate, chlorite, chloride, nitrate, and sulfate) for the purposes of evaluating the effectiveness of the MNA process.

TOC was not detected in any of the four monitoring wells during this sampling event. The concentrations of TIC ranged from a low of 62 mg/L (54MW1) to a high of 88 mg/L (54MW13). Dissolved ferrous iron concentrations ranged from a low of 0.0 mg/L (54MW12) to a high of 0.20 mg/L (54MW10). Dissolved manganese concentrations ranged from a low of 0.26 mg/L (54MW13/54TW13) to a high of 0.80 mg/L (54MW1). Chloride concentrations ranged from an estimated low of 2.5 mg/L (54MW1) to a high of 6.8 mg/L (54TW13). Detected concentrations of nitrate ranged from an estimated low of 0.00 mg/L (non-detect) (54MW1/54MW10) to an estimated high of 0.68 mg/L (54MW12). Sulfate concentrations ranged from a low of 30.0 mg/L (54MW1 and 54MW12) to a high of 190.0 mg/L (54MW10). The MNA indicator parameter chlorate went undetected during this semiannual monitoring event. MNA indicator parameter chlorite was detected at concentrations of 7.4 µg/L (54MW10) and 7.5 µg/L (54MW13). **Table 5-2** presents the MNA indicator parameters sample results. A more detailed discussion of the MNA results is provided in Section 6.

5.3 FORTIETH GROUNDWATER RESULTS (JULY 2023)

Four groundwater monitoring wells, 54MW1, 54MW10, 54MW12, and 54MW13, were sampled during the fortieth monitoring event. Samples were submitted for explosives, perchlorate, RDX breakdown by-products (DNX, MNX, and TNX), and MNA indicator parameter analyses. A summary of detected and non-detected constituents is summarized in **Table 5-3**, and the analytical results are presented in **Table 5-4**. Sample locations are provided in **Figure 4-1**. The complete laboratory analytical reports are included in **Appendix B-1**.

Explosives

Four explosives were detected in groundwater samples: 2,4,6-TNT, 2ADNT, 4ADNT, and RDX. The explosives 2,4,6-TNT, 2ADNT, 4ADNT, and RDX were detected in three monitoring wells, 54MW10, 54MW12, and 54MW13, sampled during this event.

The explosive 2,4,6-TNT was detected at monitoring well 54MW10 at a concentration of 3 µg/L and at monitoring well 54MW13 at a concentration of 5.8 µg/L. The concentrations of 2,4,6-TNT at monitoring wells 54MW10 and 54MW13 did not exceed the RG of 7.82 µg/L.

The explosive 2ADNT was detected in monitoring well 54MW10 at a concentration of 0.29 µg/L, in monitoring well 54MW12 at a concentration of 3 µg/L, and at concentrations of 1.4 µg/L(original) and 1.3 µg/L (duplicate) at monitoring well 54MW13. An RG has not been established for 2ADNT. There is no USEPA MCL (USEPA, 2018); however, the Tap Water RSL for 2ADNT is 39 µg/L (USEPA, 2021).

The explosive 4ADNT was detected at monitoring well 54MW10 at a concentration of 0.25 µg/L, at monitoring well 54MW12 at a concentration of 2.0 µg/L, and at monitoring well 54MW13 at concentrations of 0.98 µg/L (original) and 0.84 µg/L (duplicate). An RG has not been established for 4ADNT. There is no USEPA MCL (USEPA, 2018); however, the Tap Water RSL for 4ADNT is 39 µg/L (USEPA, 2021).

The explosive RDX was detected at monitoring well 54MW10 at a concentration of 0.34 µg/L, at monitoring well 54MW12 at a concentration of 0.27 µg/L, and at monitoring well 54MW13 at concentrations of 0.90 µg/L (original) and 0.91 µg/L (duplicate). There were no detected concentrations that exceeded RG of 6.1 µg/L. No RDX breakdown by-products (DNX, MNX, and TNX) were detected at any of the monitoring wells during this monitoring event.

The monitoring wells with detected concentrations of explosives are typically the same wells with hits recorded during previous sampling rounds. The monitoring well location (54MW13) where 2,4,6-TNT exceeded the RG is provided in **Figure 5-1**.

Perchlorate

Perchlorate was detected in the groundwater samples collected from monitoring wells 54MW12 and 54MW13. Perchlorate was detected at monitoring well 54MW12 at a concentration of 0.61 µg/L and at monitoring well 54MW13 at concentrations of 0.30 µg/L (original) and 0.33 µg/L (duplicate). All detections are well below the RG of 10.9 µg/L.

Miscellaneous Analytes

Groundwater samples were also analyzed for MNA indicators (TOC, TIC, dissolved ferrous iron, dissolved manganese, chlorate, chlorite, chloride, nitrate, and sulfate) for the purposes of evaluating the effectiveness of the MNA process.

No TOC was detected in any of the four wells; whereas the concentrations of TIC ranged from a low of 66.0 mg/L (54MW1) to a high of 86.0 mg/L (54MW12). Dissolved ferrous iron concentrations ranged from a low of 0.10 mg/L (54MW12 and 54MW13) to a high of 0.80 mg/L (54MW10). Dissolved manganese concentrations ranged from a low of 0.2 mg/L (54MW10) to a high of 1.8 mg/L (54MW12). Chloride concentrations ranged from an estimated low of 2.3 mg/L (54MW1) to a high of 6.2 mg/L (54MW13). Detected concentrations of nitrate ranged from a low of 0.57 mg/L (54MW13) to a high of 0.71 mg/L (54MW12). Sulfate concentrations ranged from a low of 25.0 mg/L (54MW12) to a high of 170.0 mg/L (54MW10). The MNA indicator parameter of chlorate and chlorite went undetected during this semiannual monitoring event. **Table 5-4** presents the MNA indicator parameters sample results. A more detailed discussion of the MNA results is provided in Section 6.

5.4 YEAR ONE THROUGH YEAR ELEVEN SAMPLE RESULTS

Samples collected during the first 2 years were analyzed for explosives, perchlorate, and MNA indicators. The Year Two MNA Report (CB&I, 2013) recommended elimination of the wells with no COI exceedances for the first 2 years, based on criteria established in the MNA Work Plan. The ninth quarter of sampling occurred prior to regulatory approval of the Year Two MNA Report, and the original parameters were included in that sampling event. After approval of the Year Two MNA Report, the sampling plan was modified to include RDX MNA indicators in the analytical suite and to reduce the sampling program from 14 monitoring wells to 3 wells with COI exceedances (54MW10, 54MW12, and 54MW13), and an upgradient well (54MW1) to monitor background conditions. There have been no further modifications to the sampling plan.

Multiple wells were removed from the monitoring network after the ninth and tenth quarters and, therefore, were not sampled during Years Three through Seven. Monitoring wells that were included in these yearly events included 54MW1, 54MW10, 54MW12, and 54MW13, which

monitor Area A at SWMU 54. This section discusses the results from the first 9 years (36 quarters) of MNA sampling at these wells. Year Eleven of sampling did not change from Years Three through Ten and included the analyses of explosives, perchlorate, RDX, RDX breakdown by-products (DNX, MNX, and TNX), MNA indicator parameters, and water quality parameters.

5.4.1 Groundwater

Samples from the four monitoring wells within SWMU 54 were analyzed for explosives for 36 quarters and 2 semiannual events of sampling. The trends in number of detections during this period are shown in **Figures 5-3** through **5-6** and are discussed in the paragraphs that follow.

5.4.1.1 Explosives

During the Year Three sampling round (tenth through twelfth quarters), 13 explosives were detected in the samples, including DNX, MNX, and TNX. The limit of quantitation (LOQ) for all explosives during the tenth through twelfth quarters was 0.2 µg/L.

During the Year Four sampling round (thirteenth through sixteenth quarters), the number of explosives detected decreased to five compounds. The explosives included 2,4,6-TNT, 2ADNT, 4ADNT, RDX, and the RDX breakdown by-product DNX. The limit of detection (LOD) during the thirteenth through fifteenth quarters for 2,4,6-TNT, 2ADNT, 4ADNT, and RDX was 0.3 µg/L. The LOQ during the thirteenth through fifteenth quarters was 1.0 µg/L for 2,4,6-TNT and 0.5 µg/L for 2ADNT, 4ADNT, and RDX. The LODs of RDX breakdown by-products of DNX, MNX, and TNX during the thirteenth and fourteenth quarters were 0.2 µg/L, 0.1 µg/L, and 0.2 µg/L, respectively. The LOQs of RDX breakdown by-products of DNX, MNX, and TNX during the thirteenth and fourteenth quarters were 0.4 µg/L, 0.2 µg/L, and 0.4 µg/L, respectively. During the fifteenth quarter, the LOD and LOQ for all RDX breakdown by-products decreased to 0.1 µg/L and 0.2 µg/L, respectively.

During the Year Five sampling round (seventeenth through twentieth quarters), the number of detected analytes was reduced once more to four compounds: 2,4,6-TNT, 2ADNT, 4ADNT, and RDX. The LOD and LOQ for 2,4,6-TNT, 2ADNT, 4ADNT, RDX, and RDX breakdown by-products during the seventeenth through twentieth quarters were 0.1 µg/L and 0.2 µg/L,

respectively. The explosive 2,4,6-TNT was detected at concentrations above the RGs at monitoring wells 54MW12 and 54MW13, whereas RDX was detected above the RGs only at monitoring well 54MW12. The explosive 2,4,6-TNT was detected above the RG at monitoring well 54MW12 during all four quarters (seventeenth through twentieth) and at monitoring well 54MW13 during two sampling quarters (seventeenth and twentieth), whereas RDX was detected above the RG only during the nineteenth quarter at monitoring well 54MW12.

During the Year Six sampling round (twenty-first through twenty-fourth quarters), the number of detected analytes remained at four compounds: 2,4,6-TNT, 2ADNT, 4ADNT, and RDX. The LOD and LOQ for 2,4,6-TNT, 2ADNT, 4ADNT, RDX, and RDX breakdown by-products during the twenty-first through twenty-fourth quarters were 0.1 µg/L and 0.2 µg/L, respectively. The explosive 2,4,6-TNT was detected at concentrations above the RGs at monitoring wells 54MW10, 54MW12, and 54MW13, whereas RDX was detected above the RGs only at monitoring well 54MW12. The explosive 2,4,6-TNT was detected above the RG at monitoring well 54MW12 during all four quarters (twenty-first through twenty-fourth), at monitoring well 54MW10 during one sampling quarter (twenty-first), and at monitoring well 54MW13 during two sampling quarters (twenty-first and twenty-fourth). RDX was detected above the RG during all four quarters (twenty-first through twenty-fourth) at monitoring well 54MW12.

During the Year Seven sampling round (twenty-fifth through twenty-eighth quarters), the number of detected analytes expanded to five compounds: 2,4,6-TNT, 2ADNT, 4ADNT, RDX, and 2,6-DNT (and DNT mixture). The LOD and LOQ for 2,4,6-TNT, 2ADNT, 4ADNT, 2,6-DNT, RDX, and RDX breakdown by-products during the twenty-fifth through twenty-seventh quarters were 0.1 µg/L and 0.2 µg/L, respectively. The LOD and LOQ were 0.094 µg/L and 0.19 µg/L, respectively, in the twenty-eighth quarter. The explosive 2,4,6-TNT was detected at concentrations above the RG at monitoring wells 54MW10, 54MW12, and 54MW13, whereas RDX was detected above the RG only at monitoring well 54MW12 and only in the twenty-sixth quarter. The explosive 2,4,6-TNT was detected above the RG at monitoring well 54MW12 during all four quarters (twenty-fifth through twenty-eighth), at monitoring well 54MW10 during one sampling quarter (twenty-eighth), and at monitoring well 54MW13 during one sampling quarter (twenty-eighth). RDX was detected above the RG during one quarter (twenty-sixth) at monitoring well 54MW12.

During the Year Eight sampling round (twenty-ninth through thirty-second quarters), the number of detected analytes decreased to four compounds: 2,4,6-TNT, 2ADNT, 4ADNT, and RDX. The LOD and LOQ for 2,4,6-TNT, 2ADNT, 4ADNT, and RDX during the twenty-ninth through thirty-second quarters were 0.1 µg/L and 0.2 µg/L, respectively. The LOD and LOQ were 0.2 and 0.1 µg/L, respectively, in the twenty-ninth quarter. The explosive 2,4,6-TNT was detected at concentrations above the RG at monitoring wells 54MW10 in the thirtieth and thirty-first quarters, whereas 2,4,6-TNT was detected at concentrations above the RG at 54MW12 and 54MW13 during the twenty-ninth through thirty-first quarters. RDX and perchlorate were not detected at concentrations above the RG during any quarter.

During the Year Nine sampling round (thirty-third through thirty-sixth quarters), the number of detected analytes increased to six compounds: 2,4,6-TNT, 2ADNT, 4ADNT, 2-nitrotoluene (2-NT), RDX, and TNX. The LOD and LOQ for 2,4,6-TNT, 2ADNT, 4ADNT, and RDX during the thirty-third through thirty-sixth quarters were 0.1 µg/L and 0.2 µg/L, respectively. The explosive 2,4,6-TNT was detected at concentrations above the RG at monitoring wells 54MW10 and 54MW13 in all four quarters (thirty-third through thirty-sixth), whereas 2,4,6-TNT was detected at concentrations above the RG at 54MW12 during the thirty-fourth through thirty-sixth quarters. RDX and perchlorate were not detected above the RG during any quarter.

During the Year Ten sampling round (thirty-seventh and thirty-eighth semiannual events), the number of detected analytes decreased to four compounds as compared to Year Nine: 2,4,6-TNT, 2ADNT, 4ADNT, and RDX. The LOD and LOQ for 2,4,6-TNT, 2ADNT, 4ADNT, and RDX during the thirty-seventh and thirty-eighth events were 0.1 µg/L and 0.2 µg/L, respectively. The explosive 2,4,6-TNT was detected at concentrations above the RG at monitoring wells 54MW12 and 54MW13 in the thirty-seventh event. RDX and perchlorate were not detected above the RG during either semiannual event in Year Ten.

During the Year Eleven sampling round (thirty-ninth and fortieth semiannual events), the number of detected analytes decreased to four compounds as compared to Year Nine: 2,4,6-TNT, 2ADNT, 4ADNT, and RDX. The explosive 2,4,6-TNT was detected at concentrations of 8.8 µg/L (original) and 9.1 µg/L (duplicate) at monitoring well 54MW13 which are above the RG of 7.82 µg/L in the fortieth event. RDX and perchlorate were not detected above the RG during either semiannual event in Year Eleven.

Explosives had gone undetected at monitoring well 54MW1 in 35 of the previous 36 quarters, but 2-NT and RDX were detected in this well in the thirty-sixth quarter (**Figure 5-2**); however, explosives were not detected in Year Eleven at 54MW1. The explosive 2,4,6-TNT was detected at monitoring well 54MW10 above the RG during the tenth, eleventh, twelfth, sixteenth, twenty-first, twenty-eighth, twenty-ninth, thirtieth, and thirty-third through thirty-sixth quarterly monitoring events (**Figure 5-3**); however, it was not detected above its RG in the two Year Ten events (thirty-seventh and thirty-eighth events) nor two Year Eleven events (thirty-ninth and fortieth events). Monitoring well 54MW12 has had detectable concentrations of 2,4,6-TNT above the RG during all sampling events, with the exception of the sixth, seventh, sixteenth, and thirty-second quarters. The twenty-sixth quarter recorded the highest concentrations of 2,4,6-TNT at 164 µg/L (**Figure 5-4**). The explosive 2,4,6-TNT “spikes” at monitoring well 54MW12 appear fairly regularly to be not occurring in any particular season (**Figure 5-4**). Concentrations of 2,4,6-TNT at 54MW13 had historically been below the RG; however, beginning in the twentieth quarterly event, concentrations have been above the RG for most quarterly events since then, including the twenty-first, twenty-fourth, twenty-eighth, twenty-ninth, thirty-second through thirty-sixth quarterly, and thirty-seventh monitoring events of sampling where it exceeded the RG. The detected concentration in the thirty-fifth quarter was the highest value recorded to date at monitoring well 54MW13 at 19.2 µg/L, which was detected in the duplicate sample (**Figure 5-5**).

Concentrations of RDX exceeded the RG in monitoring well 54MW10 during the fifth, tenth, twelfth, and sixteenth quarters (**Figure 5-3**). Monitoring well 54MW12 had detectable concentrations of RDX above the RG during 7 of the first 12 quarters of sampling, and only one detection above the RG during Year Four (fourteenth quarter) and Year Five (nineteenth quarter) of sampling. During Year Six, however, there were two detections above the RG, once during the twenty-first quarter and once during the twenty-fourth quarter. During Year Seven, there was one RDX detection above the RG (54MW12) in the twenty-sixth quarter. It appears that elevated concentrations of RDX at 54MW12 are cyclic with periods of lower concentrations in between (**Figure 5-4**). These elevated RDX concentrations are closely aligned with those of 2,4,6-TNT with no particular seasonal pattern being apparent. Historically, monitoring well 54MW13 has not had a detection of RDX above the RG through the first 16 quarters of sampling. This trend

continued during the Year Five through Year Six monitoring events. Further, when compared to historical concentrations, the Year Nine and Ten RDX concentrations are increasing, but remain under the RG (**Figure 5-5**).

The only detections of DNX at 54MW12 occurred during the tenth and twelfth quarters, when the breakdown by-product was also detected at monitoring wells 54MW10 and 54MW13. The concentrations of these compounds were low (less than 1 µg/L), but generally mirrored the RDX concentrations in the wells. Detection of the RDX daughter products in these wells with elevated RDX concentrations suggests degradation and natural attenuation of RDX is a viable, ongoing remedial process at the site. During the Year Five through Year Seven monitoring events, DNX was not detected during any of the sampling quarters. DNX was not detected during the Year Nine or Year Ten monitoring events. TNX was detected in monitoring wells 54MW10 and 54MW13 during the thirty-third quarter but was not detected in the thirty-fourth through thirty-sixth quarters during Year Nine, was not detected during the thirty-seventh and thirty-eighth events of Year Ten, and was not detected during the thirty-ninth and fortieth events of Year Eleven.

Many of the intermediate and end-products of RDX degradation are relatively short-lived in the environment, and accumulation of these would not be expected. Studies on the fate and transport of explosives in the environment state that the nitroso intermediates of RDX (DNX, MNX, and TNX) have rarely been observed in the field at the few sites where analyses have been conducted for them (Brannon and Pennington, 2002). Many of these intermediates are observed only transiently due to their susceptibility to rapid mineralization, typically persisting only on the scale of several hours to several days. Significant observations of the final end-products are also not expected. Hydrazines, dimethylhydrazines, and methanol are not likely to accumulate in the environment, particularly at the low levels of concentration at which they would be produced as end-products, because these compounds biodegrade very rapidly. Therefore, the observation of intermediate and end-products of RDX biodegradation (DNX, MNX, and TNX), even at low concentrations, would be considered strong presumptive evidence of active and ongoing degradation processes.

The 2,4,6-TNT degradation intermediaries 2ADNT and 4ADNT have been detected with regularity at monitoring wells 54MW10, 54MW12, and 54MW13, the exceptions being: the fourteenth quarter when 4ADNT went undetected in monitoring wells 54MW12 and 54MW13; the twentieth quarter when 4ADNT went undetected in monitoring well 54MW10; the twenty-first quarter when 2ADNT went undetected in monitoring well 54MW12; the twenty-second quarter when both 2ADNT and 4ADNT went undetected in monitoring well 54MW10; the twenty-third quarter when 2ADNT went undetected in monitoring well 54MW13 and 4ADNT went undetected in monitoring well 54MW12; and the twenty-fourth quarter when 4ADNT went undetected in monitoring wells 54MW10 and 54MW12. Additionally, 4ADNT went undetected in 54MW13 during the twenty-fifth quarter. The explosive 4ADNT was detected in monitoring wells 54MW10, 54MW12, and 54MW13 during the thirty-ninth and fortieth events of Year Eleven.

The explosive 2,6-DNT was detected twice during the Year Seven monitoring event (twenty-sixth quarter). Monitoring well 54MW12 had a concentration of 3.6 µg/L and monitoring well 54MW13 had an estimated concentration of 0.91 µg/L. DNT mixture results are obtained by adding together the results of 2,4-DNT and 2,6-DNT. The RG of 0.932 µg/L for the DNT mixture was exceeded at monitoring well 54MW12. The explosive 2,6-DNT was not detected during the Year Nine monitoring event but was detected in all four wells during the thirty-seventh event of Year Ten and the two analyzed wells during the thirty-eighth event of Year Ten. It was not detected during either sampling event of Year Eleven.

Analysis of the historical and recent data for monitoring wells 54MW10, 54MW12, and 54MW13 shows a correlation in 2,4,6-TNT concentration spikes with increasing concentrations of both 2ADNT and 4ADNT, indicating a limited transformation process from 2,4,6-TNT (**Figures 5-6 through 5-9**, respectively). Degradation of 2,4,6-TNT leading to amino-DNTs is likely occurring at localized zones within the soil matrix where the conditions are more favorable.

5.4.1.2 Perchlorate

Site-wide perchlorate concentrations have typically been steady and below the RG with the exception of the concentrations detected at 54MW12 during the fourth and eighth quarters.

These spikes were reported as correlating with peaks in 2,4,6-TNT concentration. During Year Four and Year Five of monitoring, monitoring well 54MW12 continued to exhibit the highest concentrations, with the exception of the sixteenth quarter when the greatest values were detected at monitoring well 54MW10 (**Figures 5-2 through 5-5**). A summary of these results is provided in Section 6.

5.5 LABORATORY ANALYSIS, DATA VALIDATION, AND REPORTING

The Year Eleven sampling effort was collected semiannually in January and July 2023. Groundwater samples were collected in accordance with the Uniform Federal Policy – Quality Assurance Project Plan (UFP-QAPP), revised August 2015. Documentation pertaining to COC and sampling conditions was filed in field and laboratory records. **Table 5-9** summarizes the samples and analyses of the Year Eleven sampling effort.

The samples were placed into coolers with ice at the time of collection. The COC forms were completed as the samples were packaged into coolers for transport. Trip blanks, temperature blanks, and ice were added as required. The coolers for the metals, pH, COD, anions, chlorate/chlorite, TIC, and TOC were shipped to CT Laboratories in Baraboo, WI; this laboratory then repacked samples for chlorate/chlorite as necessary and shipped to Eurofins Analytical in South Bend, IN (subcontractor laboratory). The coolers containing explosive and perchlorate samples were shipped to SGS Accutest in Orlando, FL.

The analytical data were reviewed for consistency with the test methods as noted in **Table 5-6** to ensure that the data set met project data quality objectives and were usable for the purposes of the project. Validation was performed following the *National Functional Guidelines for Inorganic Superfund Data Review* (USEPA, 2014a), *National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA, 2014b), and professional judgment. Any anomalies with regard to the requirements for precision, accuracy, representativeness, completeness, comparability, and sensitivity are discussed below, and the data were flagged where appropriate. Analytical methods are shown in **Table 5-6**. Data validation reports are included as **Appendix B-2**.

Application of Data Flags

General data quality flagging conventions in **Table 5-7** were used to indicate QC anomalies. Data were flagged, where appropriate, in accordance with the National Functional Guidelines and the UFP-QAPP. A data quality summary is provided below.

Preservation, Temperature, and Hold Time

All sample preservation requirements were met. All sample analyses were within holding time. Refer to **Table 5-8** for holding time exceedances.

5.5.1 Precision

Precision was measured from the relative percent difference (RPD) between the parent sample/field duplicate, laboratory duplicates, laboratory control sample (LCS), MS/MSD pairs, and two columns.

Field Duplicates

Field duplicates were collected at a frequency of 10% of field samples. RPDs were within control limits. **Table 5-9** lists field duplicate exceedances.

Laboratory Duplicates

Laboratory duplicate analysis was performed at a frequency of 10% of laboratory samples, for inorganic analyses. RPDs were within control limits. **Table 5-14** lists laboratory duplicate exceedances.

MS/MSD Duplicate RPD

MS/MSD samples were analyzed at a frequency of 5% per preparatory batch. All results were within control limits. **Table 5-11** lists MS/MSD RPD exceedances.

RPD Between Two Columns

A few explosives were outside control limits for the January and July 2023 events. **Table 5-12** lists RPD between two columns exceedances.

5.5.2 Representativeness

The samples were collected from required sampling locations. Representativeness of the data is considered acceptable.

5.5.3 Comparability

Comparability was acceptable. Standard analytical methods were used. Standard preparatory and analytical methods were applied to the samples across sampling events. In all cases, the detection limits (DLs) and LODs attained were below the specified LOQs. All target compounds detected below the LOQs, flagged (J) by the laboratory, are considered estimated concentrations.

5.5.4 Completeness

Completeness was measured as the number of usable results versus the total number of results. The data set completeness was calculated to be 100%. The information fulfilled the data quality objectives of this investigation.

5.5.5 Accuracy

Accuracy was measured from laboratory QC sample percent recoveries, including LCS, MS, MSD, post-digestion spike (PDS), serial dilutions, and surrogates. Accuracy was also evaluated by determining whether any deviations from method or laboratory requirements for internal standard, initial calibration verification (ICV), and continuing calibration verification (CCV) recoveries were noted in the case narrative(s).

LCS/MS/MSD Recovery

One LCS was analyzed for each batch of 20 samples or fewer. Most recoveries were within control limits. There were no LCS recovery exceedances.

MS/MSD analysis was performed at a frequency of 5% of field samples. Most recoveries were within control limits. **Table 5-13** presents MS/MSD recoveries outside control limits. The data for the parent sample were flagged as indicated on the table. If no flag was indicated, the data were not flagged. Data were not flagged in cases where the parent sample concentration was greater than four times the spike concentration. Only parent samples were qualified.

PDS Recovery Exceedances

Most recoveries were within control limits. There were no PDS recovery exceedances.

Serial Dilution Percent Difference

Most percent differences were within control limits. There were no serial dilution difference exceedances.

Surrogates

All surrogate recoveries were within control limits. There were no surrogates that exceeded acceptance criteria.

Internal Standards

There were no internal standards outside control limits.

Calibration Verification

No calibration results were outside control limits. **Table 5-14** summarizes calibration exceedances.

5.5.6 Sensitivity

Sensitivity was measured by evaluating whether the LOQ was less than the RGs. All LOQs were below the RGs.

Additionally, sensitivity was evaluated by determining whether method blank and trip blanks were less than the LOQ. Some analytes were detected in some blanks, leading to qualification of sample results.

Blanks (Calibration [Instrument], Method, and Trip)

Calibration blanks were analyzed throughout analytical runs.

One method blank was analyzed with every batch of 20 samples or fewer for each matrix.

Table 5-15 presents samples flagged for blank results. Sample results greater than two times the blank concentration were not qualified. Data quality and usability were not affected.

LOQs

LOQs, before adjustments for dilutions, were below the regulatory criteria noted in the UFP-QAPP.

Data Usability Summary

In summary, all data were considered usable with the qualifications discussed above. The completeness goals for the project were met, and all sample data are usable as qualified for making project decisions and assessments. The data were considered of good quality for the project goals.

High MS/MSD (**Table 5-13**) percent recoveries indicate that the associated results may be biased high for the associated perchlorate samples but low for other analysis (sulfate, chlorate, chlorite).

The RPDs for field duplicate (**Table 5-9**), laboratory duplicate (**Table 5-10**), MS/MSD (**Table 5-11**), and between two columns (**Table 5-12**) exceedances indicate that the associated results were estimated or non-detect estimated for the associated samples.

The biases do not affect the overall conclusions.

This Data Quality Assessment was prepared by: Amy L. Hogan, Kevin C. Harmon, and Sandra Nacquin of Validata Chemical Services, Inc. (Validata). Validata has provided data validation services since 1990 with completion of over 350 environmental chemistry data validation contracts for all business sectors including 35 USACE and 252 additional U.S. Department of Defense (DoD) contracts. Validata has been audited by the USEPA Quality Assurance Section and the U.S. Navy Environmental Project Management Group, and was approved as a data validation service by both agencies. Data validation reports are presented in **Appendix B-2**.

Table 5-1 SWMU 54 Summary of Thirty-Ninth Event Groundwater Samples

Analyte	Units	RG	# of RG Exceedances	# of Detections	# of Samples ¹	Minimum Concentration	Maximum Concentration	Location of Maximum
<i>Explosives</i>								
1,3-Dinitrobenzene	µg/L	NA	NA	0	5	ND	ND	NA
2,4,6-TNT	µg/L	7.82	0	3	5	ND	5	54MW13/54TW13
DNT Mixture*	µg/L	0.932	0	0	5	ND	ND	NA
2,4-DNT	µg/L	NA	NA	0	5	ND	ND	NA
2,6-DNT	µg/L	NA	NA	0	5	ND	ND	NA
2-Amino-4,6-DNT	µg/L	NA	NA	4	5	ND	2.6	54MW12
2-Nitrotoluene	µg/L	NA	NA	0	5	ND	ND	NA
4-Amino-2,6-DNT	µg/L	NA	NA	4	5	ND	2.0	54MW12
RDX	µg/L	6.1	0	3	5	ND	0.94	54TW13
DNX	µg/L	NA	NA	0	5	ND	ND	NA
MNX	µg/L	NA	NA	0	5	ND	ND	NA
TNX	µg/L	NA	NA	0	5	ND	ND	NA
<i>Miscellaneous</i>								
Perchlorate	µg/L	10.9	0	3	5	ND	0.72	54MW12
Chlorate	µg/L	NA	NA	0	5	ND	ND	NA
Chlorite	µg/L	NA	NA	2	5	ND	7.4	54MW13
Chloride	mg/L	NA	NA	5	5	2.3	6.8	54MW13
Nitrate (as N)	mg/L	NA	NA	3	5	ND	0.68	54MW12
Sulfate	mg/L	NA	NA	5	5	28	190	54MW10
TIC	mg/L	NA	NA	5	5	62	88	54MW13
TOC	mg/L	NA	NA	0	5	ND	ND	NA

Notes:

¹One sample was a duplicate.

*DNT mixture is the combined results of 2,4-DNT and 2,6-DNT.

2,4,6-TNT = 2,4,6-trinitrotoluene

µg/L = micrograms per liter

DNT = dinitrotoluene

DNX = hexahydro-1,3-dinitroso-5-nitro-1,3,5-triazine

mg/L = milligrams per liter (parts per million)

MNX = hexahydro-1-nitroso-3,5- dinitro-1,3,5-triazine

NA = not applicable

ND = not detected

RDX = cyclotrimethylenetrinitramine

RG = remedial goal

SWMU = Solid Waste Management Unit

TIC = total inorganic carbon

TNX = hexahydro-1,3,5-trinitroso-1,3,5-triazine

TOC = total organic carbon

Table 5-2 SWMU 54 Detected Analytes in Thirty-Ninth Monitoring Event Groundwater Samples

Sample ID			54MW1					54MW10					54MW12				
Date Collected			1/25/2023					1/27/2023					1/25/2023				
Analyte	Units	Remedial Goals ¹	Result	Lab Q	Val Q	LOQ	LOD	Result	Lab Q	Val Q	LOQ	LOD	Result	Lab Q	Val Q	LOQ	LOD
Explosives																	
1,3-Dinitrobenzene	µg/L	NA	0.097	U		0.2	0.097	0.098	U		0.2	0.098	0.097	U		0.2	0.097
2,4,6-TNT	µg/L	7.82	0.097	U		0.2	0.097	0.096	U		0.2	0.098	4.5			0.2	0.097
DNT Mixture*	µg/L	0.932	0.097	U		0.2	0.097	0.098	U		0.2	0.098	0.097	U		0.2	0.097
2,4-DNT	µg/L	NA	0.097	U		0.2	0.097	0.098	U		0.2	0.098	0.097	U		0.2	0.097
2,6-DNT	µg/L	NA	0.097	U		0.2	0.097	0.098	U		0.2	0.098	0.097	U		0.2	0.097
2-Amino-4,6-DNT	µg/L	NA	0.097	U		0.2	0.097	0.26			0.2	0.098	2.6			0.2	0.097
2-Nitrotoluene	µg/L	NA	0.097	U		0.2	0.097	0.098	U		0.2	0.098	0.097	U		0.2	0.097
4-Amino-2,6-DNT	µg/L	NA	0.097	U		0.2	0.097	0.37			0.2	0.098	2			0.2	0.097
RDX	µg/L	6.1	0.097	U		0.2	0.097	0.35			0.2	0.098	0.75	J		0.2	0.097
DNX	µg/L	NA	0.097	U		0.2	0.097	0.098	U		0.2	0.098	0.097	U		0.2	0.097
MNX	µg/L	NA	0.097	U		0.2	0.097	0.098	U		0.2	0.098	0.097	U		0.2	0.097
TNX	µg/L	NA	0.097	U		0.2	0.097	0.098	U		0.2	0.098	0.097	U		0.2	0.097
Miscellaneous																	
Perchlorate	µg/L	10.9	0.1	U		0.2	0.1	0.1	U			0.05	0.72			0.2	0.1
Chlorate	µg/L	NA	10	U		10	0.1	7.9	U		10	8.2	10	U		10	0.1
Chlorite	µg/L	NA	10	U		10	0.1	7.5	J		10	7.7	10	U		10	0.1
Chloride	mg/L	NA	2.5	J		3	0.1	4.2			3	1	5.7			3	0.1
Nitrate (as N)	mg/L	NA	0.2	U		0.4	0.1	0.2	U		0.4	0.12	0.68	J	J	0.4	0.1
Sulfate	mg/L	NA	30			3	0.1	190			15	4	30			3	0.1
TIC	mg/L	NA	62			3	0.1	78			3	0.5	82			3	0.1
TOC	mg/L	NA	1.5	U		3	0.1	1.5	U		3	0.5	1.5	U		3	0.1
MNA																	
Dissolved Fe ²⁺	mg/L	NA	0.01					0.2					0.0				
Dissolved Mn	mg/L	NA	0.80					0.5					0.5				

Table 5-2 SWMU 54 Detected Analytes in Thirty-Ninth Monitoring Event Groundwater Samples (Continued)

Sample ID			54MW13					54TW13 (duplicate of 54MW13)				
Date Collected			1/23/2023					1/23/2023				
Analyte	Units	Remedial Goals ¹	Result	Lab Q	Val Q	LOQ	LOD	Result	Lab Q	Val Q	LOQ	LOD
<i>Explosives</i>												
1,3-Dinitrobenzene	µg/L	NA	0.01	U		0.2	0.01	0.097	U		0.2	0.097
2,4,6-TNT	µg/L	7.82	5			0.2	0.01	5			0.2	0.097
DNT Mixture*	µg/L	0.932	0.01	U		0.2	0.01	0.097	U		0.2	0.097
2,4-DNT	µg/L	NA	0.01	U		0.2	0.01	0.097	U		0.2	0.097
2,6-DNT	µg/L	NA	0.01	U		0.2	0.01	0.097	U		0.2	0.097
2-Amino-4,6-DNT	µg/L	NA	1.7			0.2	0.01	1.6			0.2	0.097
2-Nitrotoluene	µg/L	NA	0.01	U		0.2	0.01	0.097	U		0.2	0.097
4-Amino-2,6-DNT	µg/L	NA	1.2			0.2	0.01	1.1			0.2	0.097
RDX	µg/L	6.1	0.91			0.2	0.01	0.94			0.2	0.097
DNX	µg/L	NA	0.01	U		0.2	0.01	0.097	U		0.2	0.097
MNX	µg/L	NA	0.01	U		0.2	0.01	0.097	U		0.2	0.097
TNX	µg/L	NA	0.01	U		0.2	0.01	0.097	U		0.2	0.097
<i>Miscellaneous</i>												
Perchlorate	µg/L	10.9	0.24			0.2	0.1	0.25			0.2	0.1
Chlorate	µg/L	NA	7.9	U		10	0.1	7.9	U		10	0.1
Chlorite	µg/L	NA	7.4	J		10	0.1	5.9	U		10	0.1
Chloride	mg/L	NA	6.7		J	3	0.1	6.8			3	0.1
Nitrate (as N)	mg/L	NA	0.57			0.4	0.1	0.56			0.4	0.1
Sulfate	mg/L	NA	35			3	0.1	37			3	0.1
TIC	µg/L	NA	88			0.2	0.1	87			0.2	0.1
TOC	µg/L	NA	1.5	U		10	0.1	1.5	U		10	0.1
<i>MNA</i>												
Dissolved Fe ²⁺	mg/L	NA	0.04					0.04				
Dissolved Mn	mg/L	NA	0.26					0.26				

Table 5-2 SWMU 54 Detected Analytes in Thirty-Ninth Monitoring Event Groundwater Samples (Continued)

Notes:

¹RGs developed in SWMU 54 RFI/CMS Report, Final Document (URS, 2008).

Exceedances denoted by **bold** font.

*DNT mixture is the combined results of 2,4-DNT and 2,6-DNT.

2,4,6-TNT = 2,4,6-trinitrotoluene

µg/L = micrograms per liter (parts per billion)

CMS = Corrective Measures Study

DNT = dinitrotoluene

DNX = hexahydro-1,3-dinitroso-5-nitro-1,3,5-triazine

FE²⁺ = dissolved ferrous iron

ID = identifier

Lab Q = Lab Data Qualifiers

LOD = limit of detection

LOQ = limit of quantitation

mg/L = milligrams per liter (parts per million)

Mn =manganese

MNA = monitored natural attenuation

MXN = hexahydro-1-nitroso-3,5-dinitro-1,3,5-triazine

NA = not applicable; remedial goal not established for analyte at SWMU 54

RDX = cyclotrimethylenetrinitramine

RFI = RCRA Facility Investigation

RG = Remedial Goal

SWMU = Solid Waste Management Unit

TIC = total inorganic carbon

TNX = hexhydro-1,3,5-trinitroso-1,3,5-triazine

TOC = total organic carbon

URS = URS Corporation

Val Q = Validation Data Qualifier

Data Qualifiers:

J = Estimated value.

U = Analyte concentration was not above the detection level.

Table 5-3 SWMU 54 Summary of Fortieth Monitoring Event Groundwater Samples

Analyte	RG	# of RG Exceedances	# of Detections	# of Samples ¹	Minimum Concentration	Maximum Concentration	Location of Maximum
<i>Explosives (µg/L)</i>							
1,3-Dinitrobenzene	NA	NA	0	5	ND	ND	NA
2,4,6-TNT	7.82	0	4	5	ND	9.1	54TW13
DNT Mixture*	0.932	0	0	5	ND	ND	NA
2,4-DNT	NA	NA	0	5	ND	ND	NA
2,6-DNT	NA	NA	0	5	ND	ND	NA
2-Amino-4,6-DNT	NA	NA	4	5	ND	1.4	54MW13
2-Nitrotoluene	NA	NA	0	5	ND	ND	NA
4-Amino-2,6-DNT	NA	NA	4	5	ND	0.98	54MW13
RDX	6.1	0	4	5	ND	0.91	54MW13
DNX	NA	NA	0	5	ND	ND	NA
MNX	NA	NA	0	5	ND	ND	NA
TNX	NA	NA	0	5	ND	ND	NA
<i>Miscellaneous (µg/L)</i>							
Perchlorate	10.9	0	2	5	ND	0.61	54TW12
Chlorate	NA	NA	0	5	ND	ND	NA
Chlorite	NA	NA	0	5	ND	ND	NA
Chloride	NA	NA	5	5	2.3	6.3	54MW13
Nitrate (as N)	NA	NA	3	5	ND	0.71	54MW12
Sulfate	NA	NA	5	5	25	170	54MW10
TIC	NA	NA	5	5	66	86	54MW1
TOC	NA	NA	0	5	ND	ND	NA

Notes:

¹One sample was a duplicate.

*DNT mixture is the combined results of 2,4-DNT and 2,6-DNT.

2,4,6-TNT = 2,4,6-trinitrotoluene

µg/L = micrograms per liter

DNT = dinitrotoluene

DNX = hexahydro-1,3-dinitroso-5-nitro-1,3,5-triazine

MNX = hexahydro-1-nitroso-3,5-dinitro-1,3,5-triazine

NA = not applicable

ND = not detected

RDX = cyclotrimethylenetrinitramine

RG = remedial goal

SWMU = Solid Waste Management Unit

TIC = total inorganic carbon

TNX = hexhydro-1,3,5-trinitroso-1,3,5-triazine

TOC = total organic carbon

Table 5-4 SWMU 54 Detected Analytes in Fortieth Monitoring Event Groundwater Samples

Sample ID			54MW1					54MW10					54MW12				
Date Collected			7/10/2023					7/10/2023					7/10/23				
Analyte	Units	Remedial Goals ¹	Result	Lab Q	Val Q	LOQ	LOD	Result	Lab Q	Val Q	LOQ	LOD	Result	Lab Q	Val Q	LOQ	LOD
<i>Explosives</i>																	
1,3-Dinitrobenzene	µg/L	NA	0.11	U		0.22	0.1	0.1	U		0.21	0.1	0.1	U		0.21	0.1
2,4,6-TNT	µg/L	7.82	0.11	U		0.22	0.1	0.56			0.21	0.1	4			0.21	0.1
DNT Mixture*	µg/L	0.932	0.11	U		0.22	0.1	0.1	U		0.21	0.1	0.1	U		0.21	0.1
2,4-DNT	µg/L	NA	0.11	U		0.22	0.1	0.1	U		0.21	0.1	0.1	U		0.21	0.1
2,6-DNT	µg/L	NA	0.11	U		0.22	0.1	0.1	U		0.21	0.1	0.1	U		0.21	0.1
2-Amino-4,6-DNT	µg/L	NA	0.11	U		0.22	0.1	0.29			0.21	0.1	3.0			0.21	0.1
2-Nitrotoluene	µg/L	NA	0.11	U		0.22	0.1	0.1	U		0.21	0.1	0.1	U		0.21	0.1
4-Amino-2,6-DNT	µg/L	NA	0.11	U		0.22	0.1	0.25			0.21	0.1	2.0			0.21	0.1
RDX	µg/L	6.1	0.11	U		0.22	0.1	0.34			0.21	0.1	0.27			0.21	0.1
DNX	µg/L	NA	0.11	U		0.22	0.1	0.1	U		0.21	0.1	0.1	U		0.21	0.1
MXN	µg/L	NA	0.11	U		0.22	0.1	0.1	U		0.21	0.1	0.1	U		0.21	0.1
TNX	µg/L	NA	0.11	U		0.22	0.1	0.1	U		0.21	0.1	0.1	U		0.21	0.1
<i>Miscellaneous</i>																	
Perchlorate	µg/L	10.9	0.1	U		0.2	0.1	0.10	U		0.2	0.1	0.61			0.2	0.1
Chlorate	µg/L	NA	10	U		10	0.1	10	U		10	8.2	10	U		10	0.1
Chlorite	µg/L	NA	10	U		10	0.1	10	U		10	7.7	10	U		10	0.1
Chloride	mg/L	NA	2.3	J		3	0.1	3.9			3	1	6.2			3	0.1
Nitrate (as N)	mg/L	NA	0.2	U		0.4	0.1	0.20	U		0.4	0.12	0.71			0.4	0.1
Sulfate	mg/L	NA	29			3	0.1	170			15	4	25			3	0.1
TIC	mg/L	NA	66			3	0.1	84			3	0.5	86			3	0.1
TOC	mg/L	NA	1.5	U		3	0.1	1.5	U		3	0.5	1.5	U		3	0.1
<i>MNA</i>																	
Dissolved Fe ²⁺	mg/L	NA	0.2					0.8					0.1				
Dissolved Mn	mg/L	NA	0.90					0.2					1.8				

Table 5-4 SWMU 54 Detected Analytes in Fortieth Monitoring Event Groundwater Samples (Continued)

Sample ID			54MW13					54TW13) (duplicate of 54MW13)				
Date Collected			7/13/2023					7/13/2023				
Analyte	Units	Remedial Goals ¹	Result	Lab Q	Val Q	LOQ	LOD	Result	Lab Q	Val Q	LOQ	LOD
<i>Explosives</i>												
1,3-Dinitrobenzene	µg/L	NA	0.11	U		0.22	0.11	0.12	U		0.24	0.12
2,4,6-TNT	µg/L	7.82	8.8			0.22	0.11	9.1			0.24	0.12
DNT Mixture*	µg/L	0.932	0.11	U		0.22	0.11	0.12	U		0.24	0.12
2,4-DNT	µg/L	NA	0.11	U		0.22	0.11	0.12	U		0.24	0.12
2,6-DNT	µg/L	NA	0.11	U		0.22	0.11	0.12	U		0.24	0.12
2-Amino-4,6-DNT	µg/L	NA	1.4			0.22	0.11	1.3	J		0.24	0.12
2-Nitrotoluene	µg/L	NA	0.11	U		0.22	0.11	0.12	U		0.24	0.12
4-Amino-2,6-DNT	µg/L	NA	0.98			0.22	0.11	0.84	J		0.24	0.12
RDX	µg/L	6.1	0.90			0.22	0.11	0.91			0.24	0.12
DNX	µg/L	NA	0.11	U		0.22	0.11	0.12	U		0.24	0.12
MNX	µg/L	NA	0.11	U		0.22	0.11	0.12	U		0.24	0.12
TNX	µg/L	NA	0.11	U		0.22	0.11	0.12	U		0.24	0.12
<i>Miscellaneous</i>												
Perchlorate	µg/L	10.9	0.30			0.2	0.1	0.33			0.2	0.1
Chlorate	µg/L	NA	10	U		10	0.1	10	U		10	0.1
Chlorite	µg/L	NA	10	U		10	0.1	10	U		10	0.1
Chloride	mg/L	NA	6.3		J	3	0.1	6.2			3	0.1
Nitrate (as N)	mg/L	NA	0.56			0.4	0.1	0.57			0.4	0.1
Sulfate	mg/L	NA	31			3	0.1	30			3	0.1
TIC	µg/L	NA	85			0.2	0.1	85			0.2	0.1
TOC	µg/L	NA	1.5	U		10	0.1	1.5	U		10	0.1
<i>MNA</i>												
Dissolved Fe ²⁺	mg/L	NA	0.1					0.2				
Dissolved Mn	mg/L	NA	0.3					0.8				

Table 5-4 SWMU 54 Detected Analytes in Fortieth Monitoring Event Groundwater Samples (Continued)

Notes:

¹RGs developed in SWMU 54 RFI/CMS Report, Final Document (URS, 2008).

Exceedances denoted by **bold** font.

*DNT mixture is the combined results of 2,4-DNT and 2,6-DNT.

2,4,6-TNT = 2,4,6-trinitrotoluene

µg/L = micrograms per liter (parts per billion)

CMS = Corrective Measures Study

DNT = dinitrotoluene

DNX = hexahydro-1,3-dinitroso-5-nitro-1,3,5-triazine

Fe²⁺ = dissolved ferrous iron

ID = identifier

Lab Q = lab data qualifiers

LOD = limit of detection

LOQ = limit of quantitation

mg/L = milligrams per liter (parts per million)

Mn = manganese

MNA = monitored natural attenuation

MNX = hexahydro-1-nitroso-3,5-dinitro-1,3,5-triazine

NA = not applicable; remedial goal not established for analyte at SWMU 54

RDX = cyclotrimethylenetrinitramine

RFI = RCRA Facility Investigation

RG = Remedial Goal

SWMU = Solid Waste Management Unit

TIC = total inorganic carbon

TNX = hexahydro-1,3,5-trinitroso-1,3,5-triazine

TOC = total organic carbon

URS = URS Corporation

Val Q = validation data qualifiers

Data Qualifiers:

J = Estimated value.

U = Analyte concentration was not above the detection level.

Table 5-5 Summary of Samples and Analyses

Sampling Event ID	Data Packages	Matrix	Chloride Nitrate Sulfate	Explosives	Metals	TOC TIC	Chlorate Chlorite Perchlorate	COD pH
January 2023	SGS Labs – FC2128 and FC2200	GW		X				
	CT Labs – 175012	GW	X		X	X	X	X
July 2023	SGS Labs – FC7686	GW		X				
	CT Labs – 178887	GW	X		X	X	X	X

Notes:

COD = chemical oxygen demand

GW = groundwater

ID = identifier

pH = potential of hydrogen

TIC = total inorganic carbon

TOC = total organic carbon

Table 5-6 Analytical Methods

Analysis	Analytes	Method
Anions	Chloride Nitrate Sulfate	USEPA SW-846 Method 9056A
pH	pH	USEPA SW-846 Method 9040
Explosives	Numerous	USEPA SW-846 Method 8330B
Metals	Numerous	USEPA SW-846 Method 6010C USEPA SW-846 Method 7470A (Mercury)
TOC/TIC	TIC TOC	USEPA SW-846 Method 9060A
COD	COD	USEPA Method 410.4
Chlorate/Chlorite	Chlorate Chlorite	USEPA Method 300.1
Perchlorates	Perchlorates	USEPA SW-846 Method 6850

Notes:

COD = chemical oxygen demand
pH = potential of hydrogen
TIC = total inorganic carbon
TOC = total organic carbon
USEPA = U.S. Environmental Protection Agency

Table 5-7 Data Qualifiers

Qualifier	Description
R	Rejected: The result is rejected due to deficiencies in the analytical system or the inability to meet QC criteria.
M	Matrix effect: The concentration is estimated due to a matrix effect.
J	Estimated: The analyte was positively identified, but the quantitation is an estimate due to discrepancies in meeting certain analyte-specific QC criteria.
J+	Estimated: The analyte was positively identified, but the quantitation is an estimate, possibly biased high, due to discrepancies in meeting certain analyte-specific QC criteria.
J-	Estimated: The analyte was positively identified, but the quantitation is an estimate, possibly biased low, due to discrepancies in meeting certain analyte-specific QC criteria.
B	Blank. The analyte was detected in an associated blank.
U	Undetected: The analyte was analyzed for but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific QC criteria.

Table 5-8 Holding Time Exceedances

Sampling Event	Analysis	Analytes	Result	Samples	Qualifiers
January 2023	No holding time exceedances				
July 2023	No holding time exceedances				

Table 5-9 Field Duplicate Precision Exceedances

Sampling Event	Sample ID	Analyte	Flag	RPD
January 2023	No Exceedances			
July 2023	No Exceedances			

Notes:

ID = identifier

RPD = relative percent difference

Table 5-10 Laboratory Duplicate Precision Exceedances

Sampling Event	Analyte	Flag	RPD
January 2023	No Exceedances		
July 2023	No Exceedances		

Notes:

RPD = relative percent difference

Table 5-11 MS/MSD RPD Exceedances

Sampling Event	Sample ID	Analyte	Flag	RPD
January 2023	No Exceedances			
July 2023	No Exceedances			

Notes:

ID = identifier

MS = matrix spike

MSD = matrix spike duplicate

RPD = relative percent difference

Table 5-12 RPD Between Two Columns Exceedances

Sampling Event	Sample ID	Analyte	Flag	RPD Difference
January 2023	54MW13 / 54TW13	3,5-dinitroaniline	J / J	125.4% / 122.3%
	54MW12	3,5-dinitroaniline	J	83.3%
July 2023	54MW13	3,5-dinitroaniline 2A46DNT 4A26DNT	J	98.2% 140% 90.5%
	54TW13	3,5-dinitroaniline 2A46DNT 4A26DNT	J	101% 140% 102%
	54MW10	HMX 2A46DNT 4A26DNT	J	81.3% 178% 46.2%
	54MW12	3,5-dinitroaniline 2A46DNT 4A26DNT	J	147% 50% 93.3%

Notes:

J = Estimated value

2A46DNT = 2-amino-4,6-dinitrotoluene

4A26DNT = 4-amino-2,6-dinitrotoluene

RPD = Relative Percent Difference

Table 5-13 MS/MSD Recovery Exceedances

Sampling Event	Sample ID	Analyte	Recovery	Parent Flag
January 2023	54MW13	Sulfate	Low	J
	54MW10/54MW12	Chlorate/chlorite	Low	UJ
	All samples	Perchlorate	High	No flags
July 2023	54MW12	Sulfate	Low	J

Notes:

J = Estimated value

UJ = Not detected estimated

ID = identifier

MS = matrix spike

MSD = matrix spike duplicate

Table 5-14 Calibration Exceedances

Sampling Event	Sample ID	Analytes	Result	Samples	Qualifiers
January 2023	No exceedances				
July 2023	No exceedances				

Table 5-15 Blank Flags

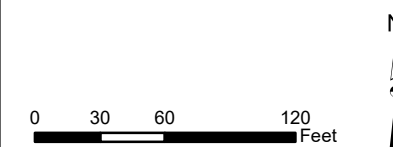
Sampling Event	Type of Blank	Parameter Group	Analyte	Samples Qualified	Flag
January 2023	No blank flags				
July 2023	No blank flags				



Legend

- Well (Current MNA Network)
- Well (Removed from Network After Ninth Quarter)
- Monitoring Well Location (Groundwater Sample Results > RGs)
- Fence
- SWMU 54 Boundary

Aerial Source:
Near Map Imagery, June 2023



Prepared By:



Baltimore District

FIGURE 5-1
SWMU 54 JULY 2023
GROUNDWATER SAMPLE
RESULTS EXCEEDING RGS
RADFORD, VIRGINIA

Figure 5-2 SWMU 54: 54MW1 Explosives Concentrations First Quarter through Fortieth Event

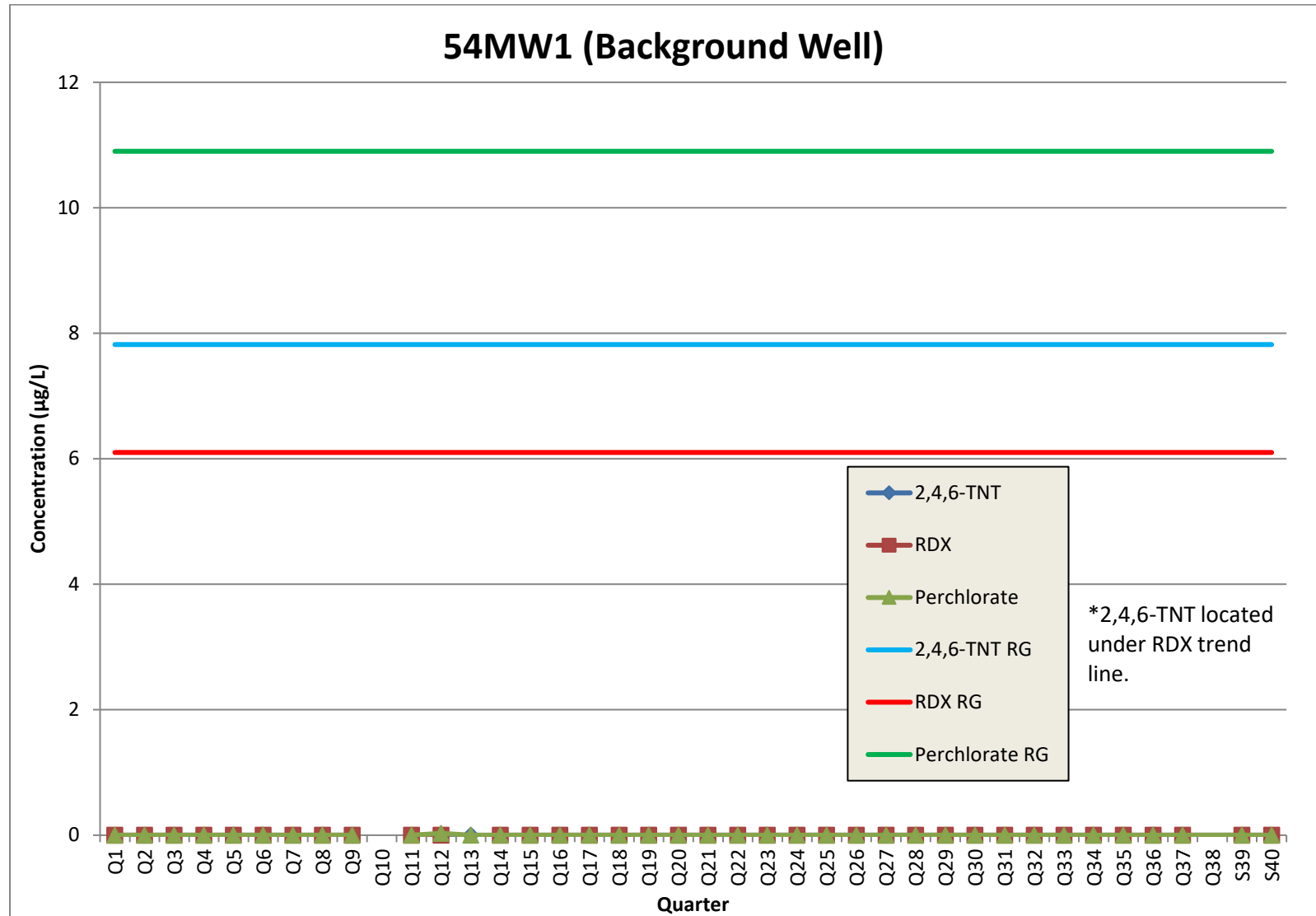


Figure 5-3 SWMU 54: 54MW10 Explosives Concentrations First Quarter through Fortieth Event

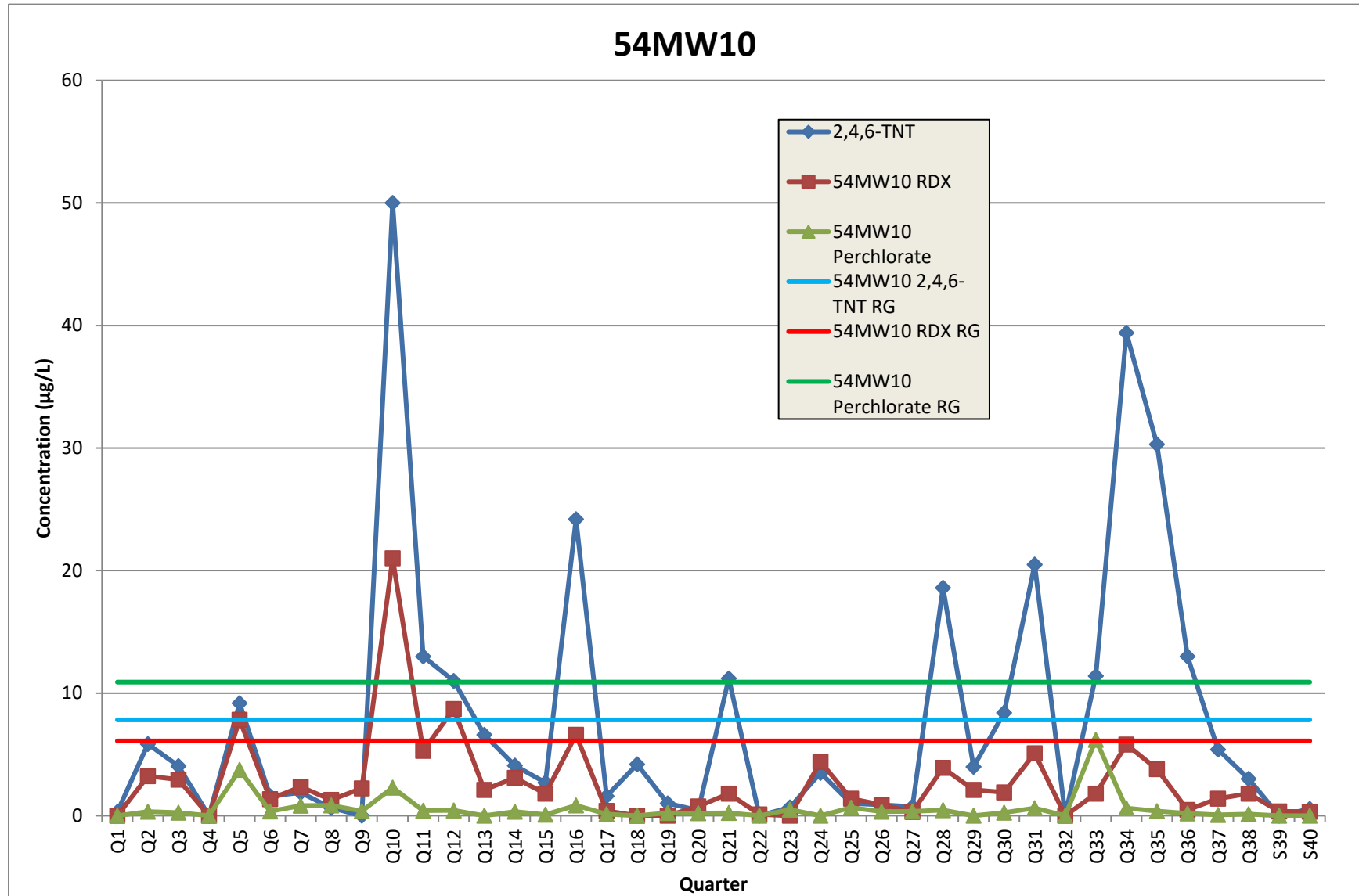


Figure 5-4 SWMU 54: 54MW12 Explosives Concentrations First Quarter through Fortieth Event

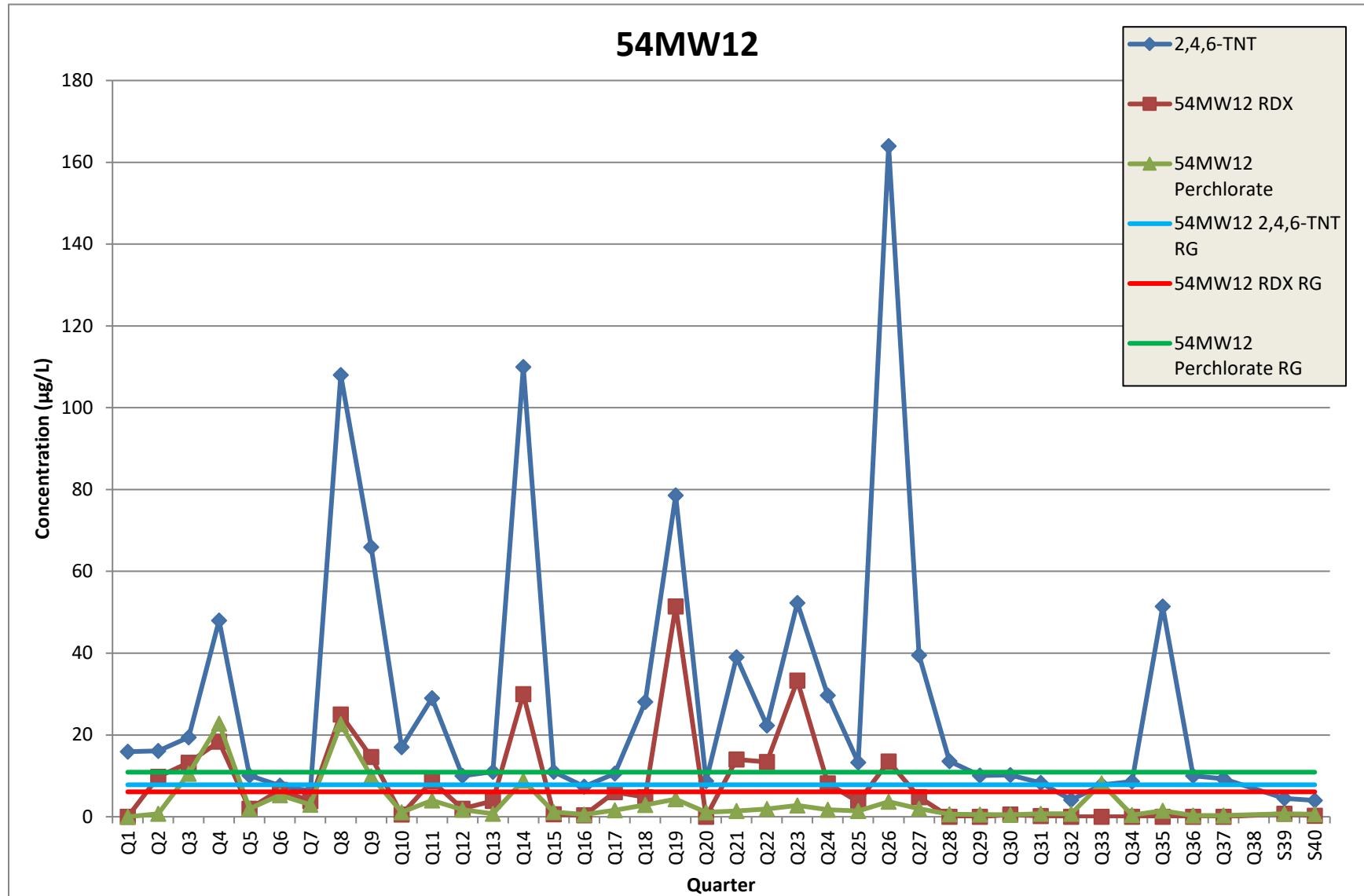


Figure 5-5 SWMU 54: 54MW13 Explosives Concentrations First Quarter through Fortieth Event

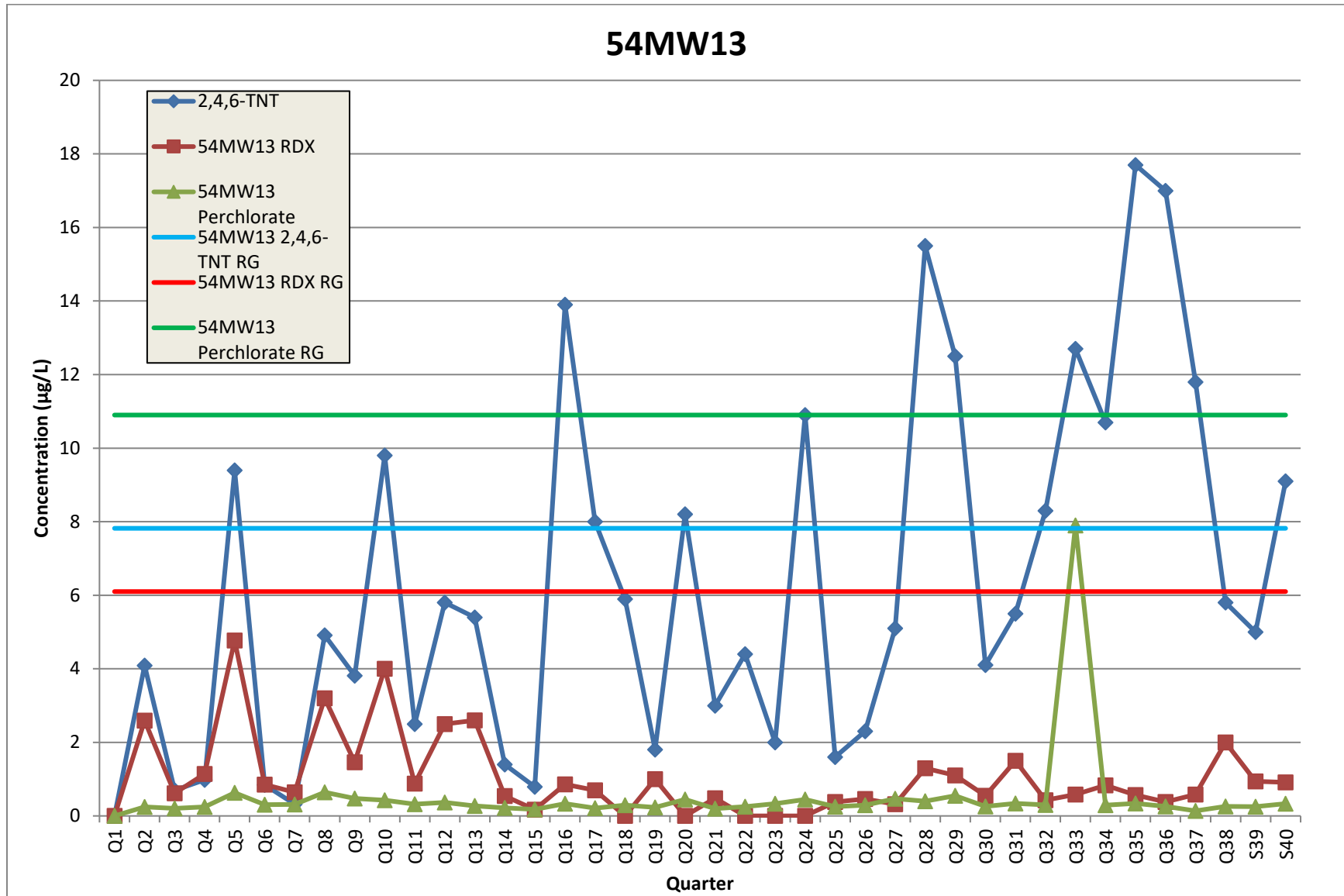


Figure 5-6 SWMU 54: 54MW1 2,4,6-TNT to Amino-DNT Correlation

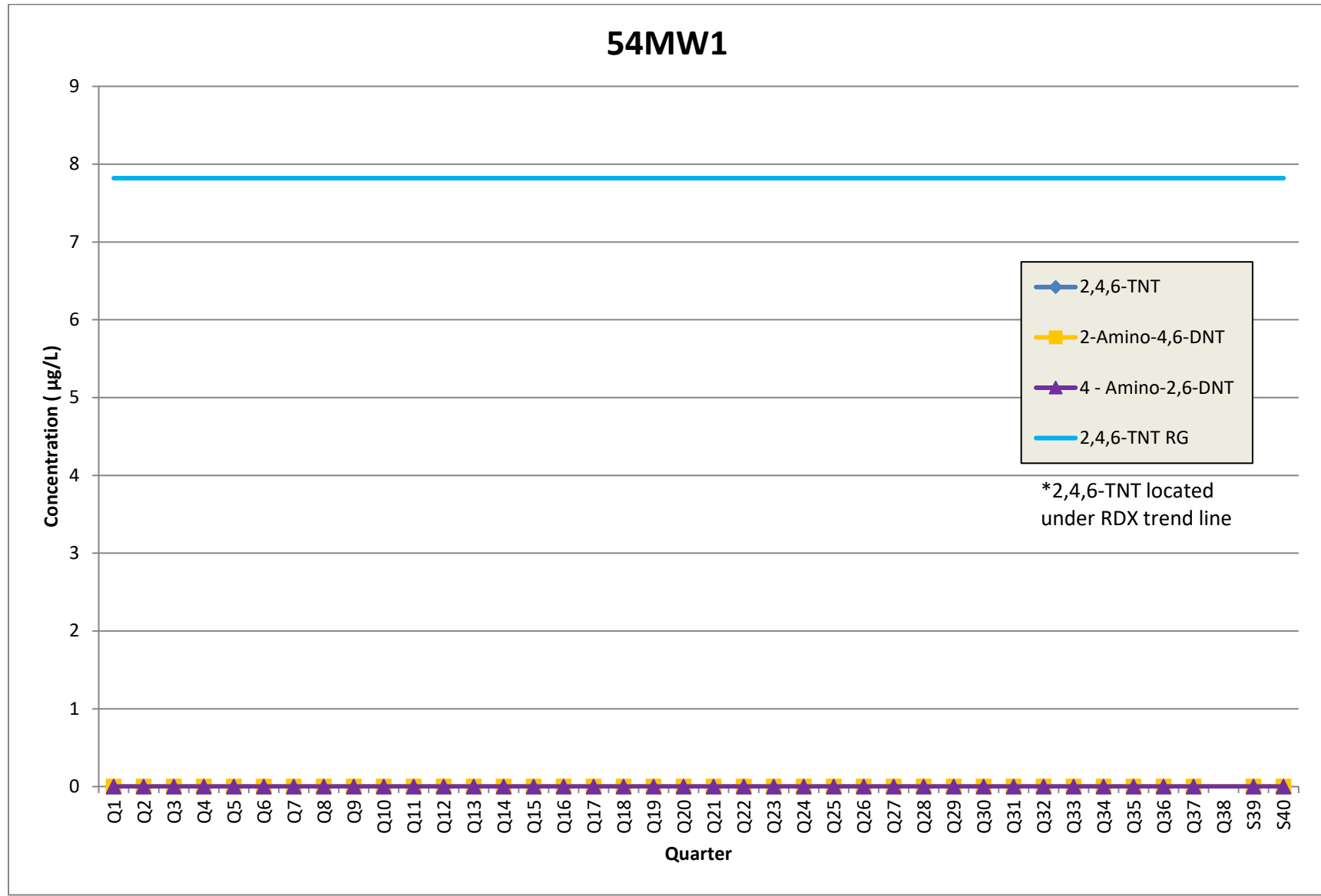


Figure 5-7 SWMU 54: 54MW10 2,4,6-TNT to Amino-DNT Correlation

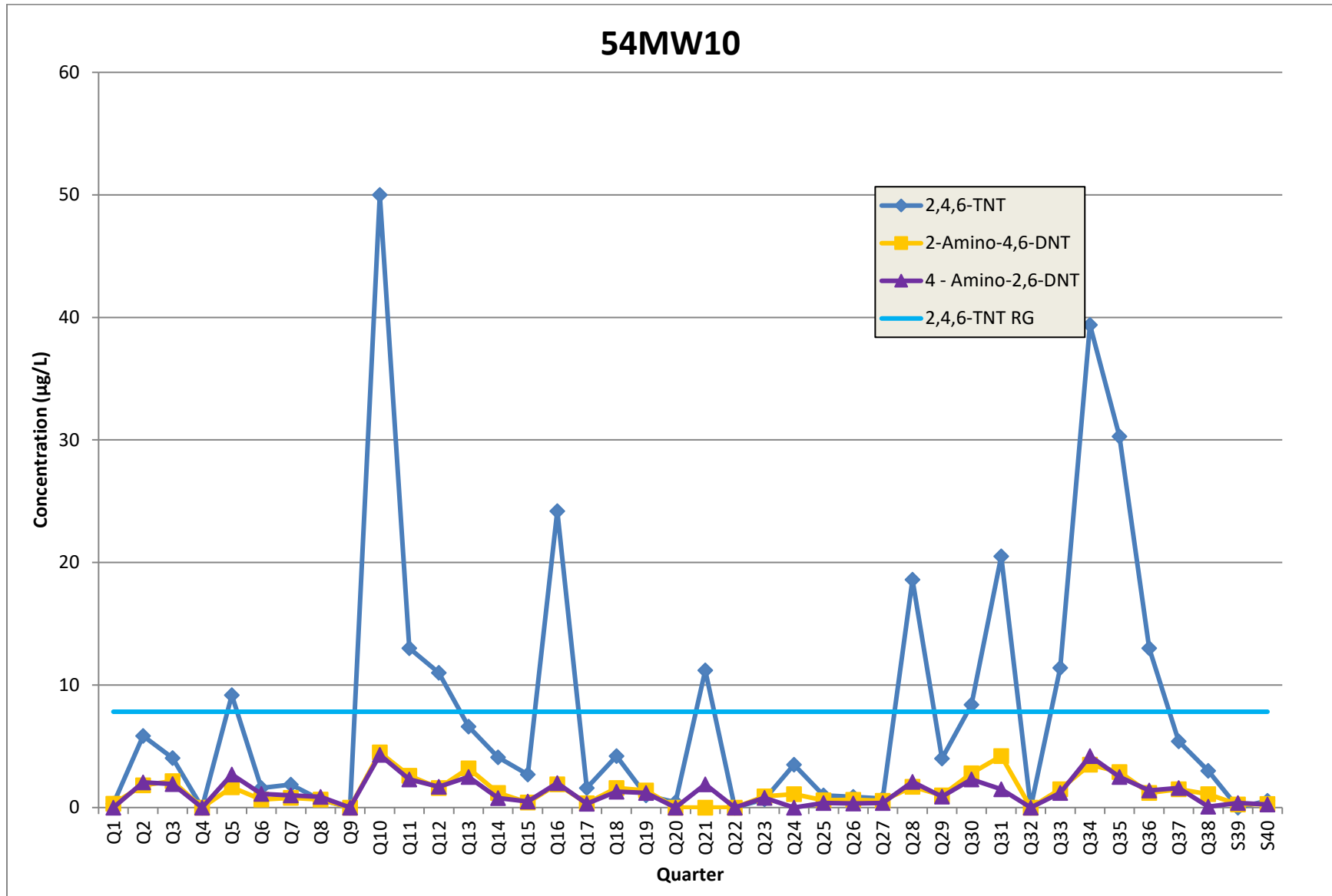


Figure 5-8 SWMU 54: 54MW12 2,4,6-TNT to Amino-DNT Correlation

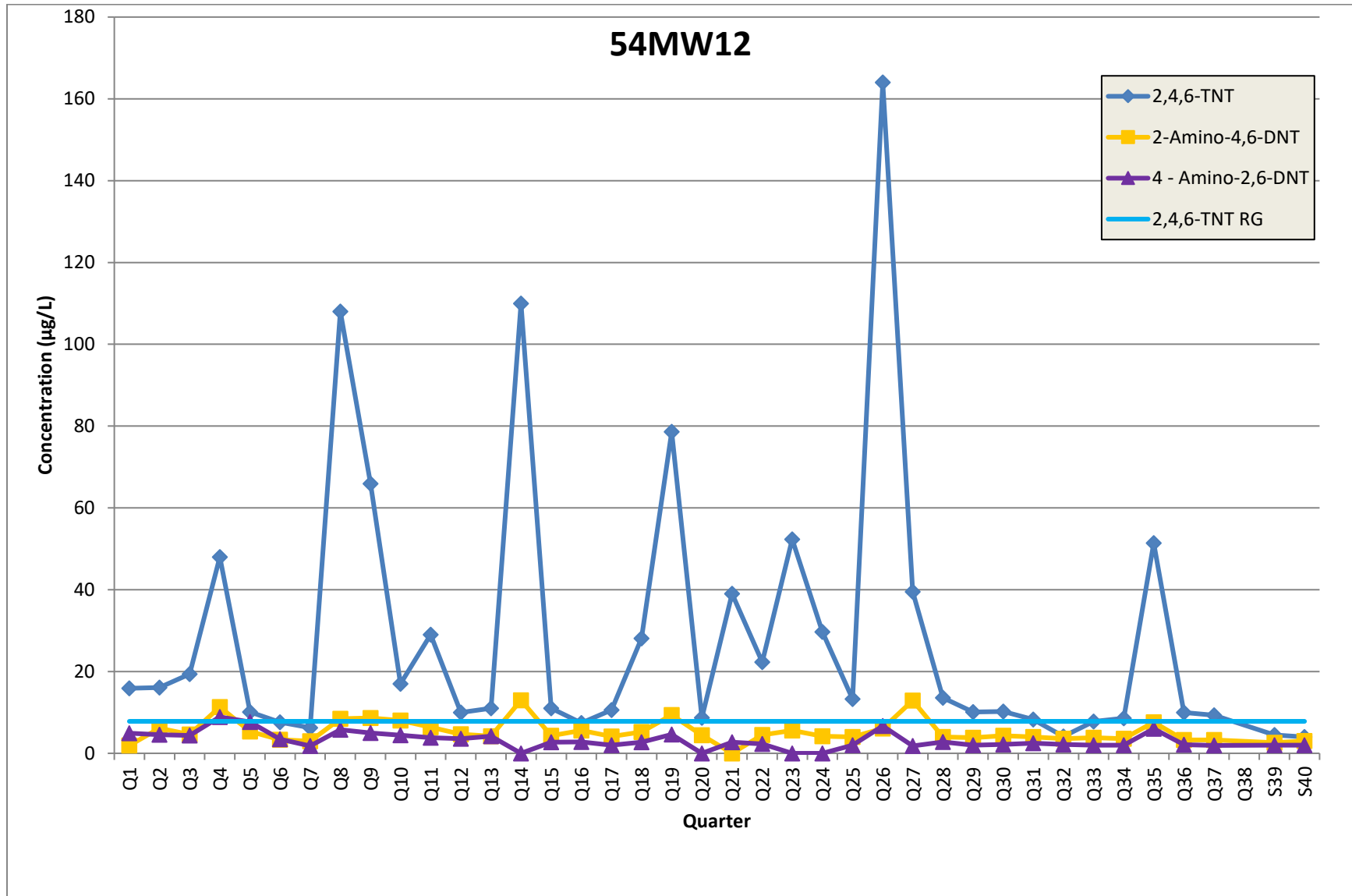
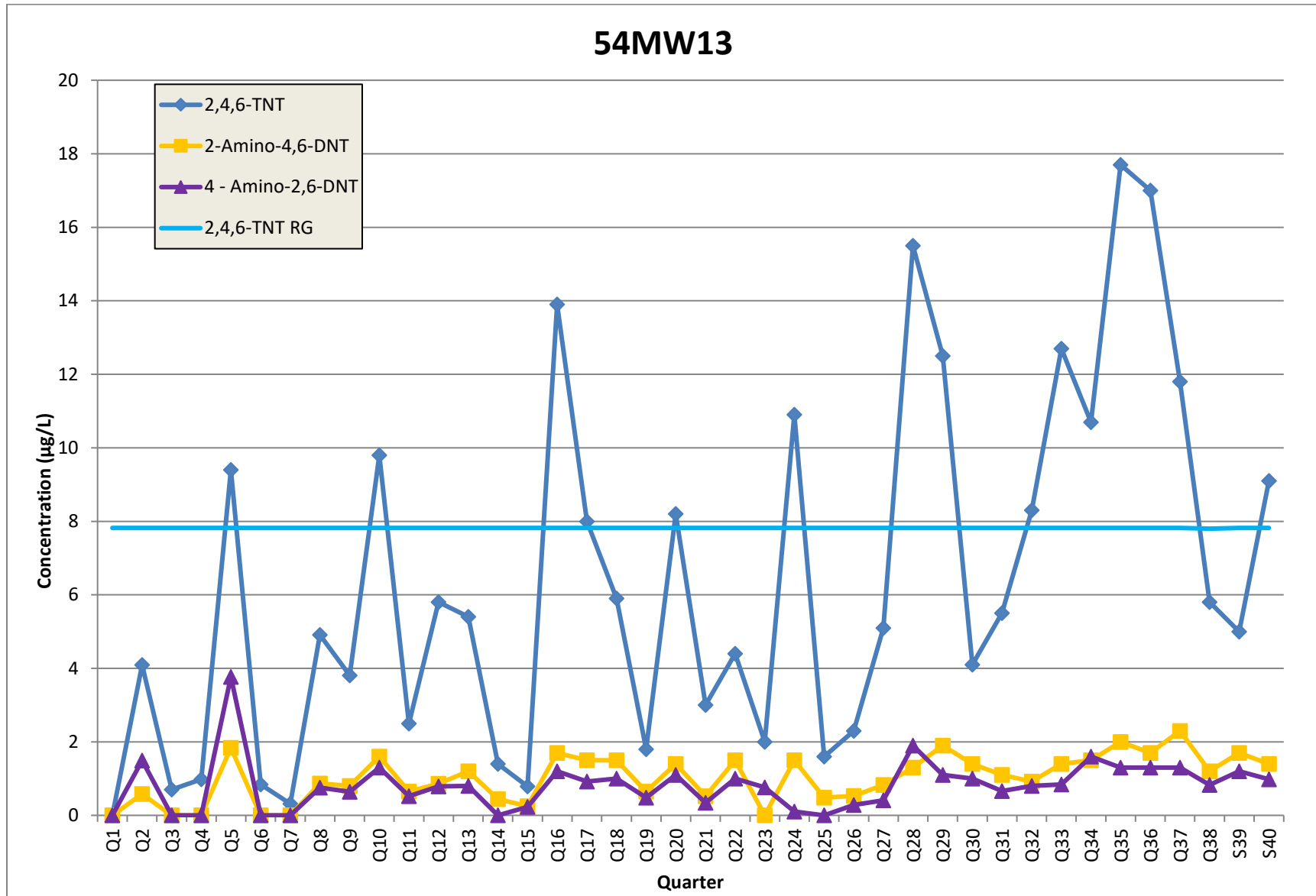


Figure 5-9 SWMU 54: 54MW13 2,4,6-TNT to Amino-DNT Correlation



6. MNA EVALUATION OF SWMU 54

MNA is a remedial approach in which physical, chemical, and biological processes occur under favorable conditions, without human interferences to reduce the mass, toxicity, volume, concentration, and mobility of contaminants in soil and groundwater. The physical, chemical, and biological processes include biodegradation, dispersion, dilution, sorption, volatilization, and chemical or biological stabilization (USEPA, 1998). Analytical results from multiple groundwater sampling events at SWMU 54 were evaluated for qualitative indications of natural attenuation processes that may reduce the concentrations of the contaminants of interest (TNT, RDX, and perchlorate). The following sections present the results as they pertain to the lines of evidence used to demonstrate the potential for MNA.

6.1 FIRST LINE OF EVIDENCE: OCCURRENCE OF CONTAMINANT TRENDS

The first line of evidence consists of evaluating contaminant and daughter product concentrations for a downward trend in monitoring wells over time. SWMU 54 contains 14 wells (54MW1, 54MW2, 54MW3, 54MW4, 54MW5, 54MW6, 54MW7, 54MW8, 54MW9, 54MW10, 54MW11, 54MW12, 54MW13, and 54MW14), which targeted areas of potential nitroaromatic and perchlorate contamination. The target wells were reduced after the ninth and tenth quarters to 54MW1 (background), 54MW10, 54MW12, and 54MW13. Historical trends and the results of quarterly and semiannual groundwater sampling are discussed below, and the data are provided in **Table 6-1**, and in **Figures 6-1** through **6-3**. **Table 6-1** also includes the sampling month and year for the first through thirty-sixth quarters, the two semiannual events (thirty-seventh and thirty-eighth) in Year Ten, and the two semiannual events (thirty-ninth and fortieth) in Year Eleven.

2,4,6-TNT

The explosive 2,4,6-TNT was detected above the RG of 7.82 µg/L in well 54MW13 during the Year Eleven monitoring period (fortieth event in July 2023 only).

Concentrations of 2,4,6-TNT have fluctuated in monitoring wells 54MW10, 54MW12, and 54MW13 during the 36 quarterly and four semiannual monitoring events. At monitoring well 54MW10, the 2,4,6-TNT concentration went from undetected in the ninth quarter to 50 µg/L in the tenth quarter, which is the highest concentration recorded in this well during the 7 years of

monitoring. The following five quarters of sampling (eleventh through fifteenth quarters) saw concentrations decline dramatically until a spike was observed during the sixteenth quarter. The concentration spike of 24.2 µg/L at 54MW10 exceeded the RG. Concentrations declined dramatically during the seventeenth through twentieth quarters of sampling, until the twenty-first quarter when concentrations spiked to 11.2 µg/L. During the twenty-second through twenty-fourth quarters, levels again receded, reaching a low of 0.67 µg/L during the twenty-third quarter and slightly elevating to 3.5 µg/L during the twenty-fourth quarter. The first three quarters of Year Seven showed levels receding again, reaching a low of 0.74 µg/L during the twenty-seventh quarter and elevating to 18.6 µg/L in the twenty-eighth quarter, with two additional spikes in the thirtieth and thirty-first quarters at 8.4 µg/L and 20.5 µg/L, respectively. Concentrations fluctuated in Year Nine but decreased in Year Ten as no TNT concentrations exceeded its RG in either semiannual event (5.4 µg/L in October 2021 and 3.0 µg/L in April 2022). However, TNT concentrations increased in the fortieth event of Year Eleven in July 2023 with a concentration of 9.1 µg/L noted in the duplicate sample 54TW13.

Monitoring well 54MW12 experienced the highest detected concentration of 2,4,6-TNT during the Year Seven monitoring period when a concentration of 164 µg/L was detected during the twenty-sixth quarter. The concentrations detected in 54MW12 in the remaining quarters, including the twenty-first through twenty-eighth quarters, were similar to historical concentrations, and a decreasing trend has been noted in the Year Eight twenty-ninth through thirty-second quarters. A spike was observed in the Year Nine thirty-fifth quarter. 2,4,6-TNT was detected at 9.3 µg/L during the thirty-seventh event in October 2021 which is consistent with concentrations noted over the past several years except for the spike noted above in the thirty-fifth event of 51.4 µg/L. Year Eleven TNT concentrations for 54MW12 were 4.5 µg/L (January 2023 event) and 4 µg/L (July 2023 event).

Monitoring well 54MW13 experienced the three high detections of 2,4,6-TNT during the Year Five monitoring period when two detections (8 µg/L and 8.5 µg/L [field duplicate 54TM13]) were observed during the seventeenth quarter, and one detection (8.2 µg/L) was observed during the twentieth quarter. Year Eight detections spiked in the twenty-ninth and thirty-second quarters at 12.5 µg/L and 8.3 µg/L, respectively. During the interim quarters, the levels returned to levels similar to historical concentrations. The highest detection happened

during the Year Nine monitoring period when levels spiked to 17.7 µg/L during the thirty-fifth and thirty-sixth quarters. TNT concentrations in Year Ten at monitoring well 54MW13 were 11.8 and 5.8 µg/L, while concentrations in Year Eleven were 5 µg/L and 9.1 µg/L which are consistent with historical levels except for some of the spiked levels noted above.

DNT Mixture

Previous reports noted that DNT was detected in the fourth, tenth, eleventh, and twelfth quarters of sampling at monitoring wells 54MW10, 54MW12, and 54MW13, yet the combined concentrations of 2,4-DNT and 2,6-DNT did not exceed the RG of 0.932 µg/L. During Year Six, neither 2,4-DNT nor 2,6-DNT were detected in any wells. Therefore, the combined concentrations of 2,4-DNT and 2,6-DNT did not exceed the RG in any of the four wells sampled. However, during Year Seven, 2,6-DNT was detected in 54MW12 (3.6 µg/L) and 54MW13 (0.91 µg/L); therefore, the combined concentrations of 2,4-DNT and 2,6-DNT for these two wells did exceed the RG of 0.932 µg/L in the twenty-sixth quarter. This sole RG exceedance for DNT mixture in the 7 years of monitoring coincides with a spike of 2,4,6-TNT in the well with the highest level of 2,4,6-TNT (54MW12). During Year Eight and Year Nine, levels returned to historical levels and no detections of these compounds were noted in Years Ten or Eleven.

RDX

RDX concentrations fluctuated in monitoring wells 54MW10 and 54MW12 during the first 16 quarterly sampling events. At monitoring well 54MW10, a sharp increase in RDX concentrations was observed from 2.23 µg/L in the ninth quarter to 21 µg/L in the tenth quarter. The tenth quarter concentration was the highest concentration reported in this well during the 36 quarters of sampling. Concentrations decreased during the next 10 quarters of sampling (eleventh through twentieth quarters) in monitoring well 54MW10; however, during the twelfth and sixteenth quarters, RDX concentrations exceeded the RG. Concentrations again decreased during the next four quarters of sampling (twenty-first through twenty-fourth quarters) in monitoring well 54MW10. Monitoring well 54MW12 had 8 reported concentrations of RDX above the RG of 6.1 µg/L in the first 16 quarters of sampling. During the Year Five monitoring period, concentrations continued to remain below the RG, with the exception of the nineteenth quarter, when concentrations spiked to 51.4 µg/L. This concentration is the highest concentration

observed at this well during all 36 quarters of sampling. The concentration then fell below the detection limit of 0.1 µg/L in the twentieth quarter. RDX was detected above the RG of 6.1 µg/L every quarter of the Year Seven monitoring period in one monitoring well (54MW12). During the Year Seven monitoring period, the RDX concentration rose above the RG at monitoring well 54MW12 during the twenty-sixth quarter (13.5 µg/L). However, during Year Eight through Year Eleven, RDX was detected below the RG of 6.1 µg/L every monitoring event.

No breakdown by-products were detected during the Year Eleven monitoring period. Historically, RDX breakdown by-products have been observed in monitoring wells 54MW10, 54MW12, and 54MW13. These detections were observed in the tenth through twelfth quarters. The highest total concentrations were observed in monitoring well 54MW10 during the tenth quarter when a spike in RDX occurred. Thereafter, the RDX by-product concentrations steadily decreased. Similar correlations with RDX concentrations were observed in monitoring wells 54MW12 and 54MW13. The highest concentrations of DNX, MNX, and TNX were identified in monitoring wells 54MW12 and 54MW13 during the eleventh and tenth quarters, respectively, which coincide with the highest RDX concentrations recorded in these wells during that time period. There was no DNX, MNX, or TNX detected in monitoring well 54MW12 during the twenty-sixth quarter, when the spike of RDX was observed. TNX was detected at 0.39 µg/L in one well (54MW10) in the thirty-third quarter, and MNX was detected at 5.3 µg/L in one well (54MW12) in the thirty-sixth quarter.

Amino-DNT

As 2,4,6-TNT is biologically degraded, the two daughter products, 2ADNT and 4ADNT, are formed. During the Year Eleven monitoring period, the by-products 2ADNT and 4ADNT were detected in monitoring wells 54MW10, 54MW12, and 54MW13 during both semiannual events (thirty-ninth and fortieth events). There is good correlation of 2ADNT and 4ADNT concentrations with 2,4,6-TNT concentrations; i.e., as 2,4,6-TNT concentrations increase or decrease, a corresponding increase or decrease of 2ADNT and 4ADNT is observed. The increased presence of 2ADNT and 4ADNT, along with the increasing concentrations of 2,4,6-TNT, continues to suggest biological degradation of 2,4,6-TNT is occurring at these locations.

Perchlorate

Perchlorate concentrations at monitoring wells 54MW10, 54MW12, and 54MW13 continued to remain well below the RG of 10.9 µg/L during Year Eleven of monitoring and are consistent with concentrations observed through the first 10 years of monitoring. Historically, monitoring well 54MW12 has had two detected concentrations above the RG, which occurred in the fourth and eight quarters. Concentrations decreased during the Year Four monitoring event; this trend first was observed after the ninth quarterly sample event. However, one exception was observed during the fourteenth quarter when the concentration spiked to 8.85 µg/L. The fifteenth and sixteenth quarters saw a return to lower concentrations and a decreasing trend in perchlorate concentrations. During the Year Five monitoring, concentrations steadily rose from 1.6 µg/L to 4.3 µg/L through the seventeenth to nineteenth quarters, though none of the concentrations were above the RG. The twentieth quarter saw a return to a lower concentration of 1.1 µg/L. During the Year Six monitoring, concentrations fluctuated from 1.4 µg/L (twenty-first quarter) to 2.8 µg/L (twenty-third quarter) and back down to 1.7 µg/L (twenty-fourth quarter). Year Seven monitoring results mimicked those of Year Six; observed concentrations ranged from 1.4 µg/L (twenty-fifth quarter) to 3.7 µg/L (twenty-sixth quarter) and back down once again to 2.0 µg/L (twenty-seventh quarter) and to 0.61 µg/L (twenty-eighth quarter). Monitoring well 54MW12 continued to have the highest observed concentrations of perchlorate at SWMU 54 during Year Seven of monitoring but at concentrations below the RG.

Chloride, chlorate, and chlorite are daughter products of perchlorate degradation. At SWMU 54, chloride is present within the groundwater system, including monitoring well 54MW1 (background). Based on the chloride background concentrations through Year Three of monitoring, a determination could not be established that any measurable change exists due to perchlorate reduction. However, although chloride was detected at monitoring well 54MW1 during all of the Year Four monitoring events, the concentrations detected at wells 54MW10, 54MW12, and 54MW13 during the same period were all slightly higher than the concentrations in 54MW1. During the Year Five monitoring event, chloride was detected at monitoring well 54MW1 during the seventeenth through nineteenth quarters but was not detected during the twentieth quarter. The concentrations detected at monitoring wells 54MW10, 54MW12, and 54MW13 from the seventeenth through nineteenth quarter were all slightly higher than the

concentrations in monitoring well 54MW1. During the twentieth quarter of the monitoring event, chloride was not detected in monitoring well 54MW10, but it was detected in monitoring wells 54MW12 and 54MW13 at concentrations similar to previous sampling quarters. During the Year Six monitoring event, chloride was detected at all wells, including 54MW1 (background). Although chloride was detected at monitoring well 54MW1 during all of the Year Six monitoring events, the concentrations detected at monitoring wells 54MW10, 54MW12, and 54MW13 during the same period were all slightly higher than the concentrations in 54MW1. Chlorate and chlorite were not detected during the Year Six monitoring period with the exception of a detection at monitoring well 54MW10 during the twenty-second quarter (11 µg/L). Chlorate and chlorite went undetected in all of the monitoring wells during the Year Seven through Year Ten monitoring period. Chlorite was detected in two wells during the Year Eleven January 2023 event. Chloride was detected in all monitoring wells for both monitoring events of Year Eleven with the lowest concentrations observed in monitoring well 54MW1 (2.3 µg/L to 2.5 µg/L). Concentrations in the remaining three wells ranged from a low of 3.9 µg/L at monitoring well 54MW10 (fortieth event) to a high of 6.8 µg/L at monitoring well 54MW13 (thirty-ninth event). This may suggest that chlorate and chlorite have been exhausted in the system and only residual amounts of chloride are being produced as perchlorate concentrations diminish.

Statistical Trends

The time series plots (**Figures 5-4 through 5-6**) show a large degree of variability in 2,4,6-TNT concentrations in wells 54MW10, 54MW12, and 54MW13; therefore, Mann-Kendall tests were run for these three monitoring wells using the USEPA software package ProUCL (USEPA, 2020). The results indicated a slight decreasing trend in 54MW12, but a slight increase at 54MW10 and a more significant increase at 54MW13 (**Appendix C**).

The contaminant concentrations for 2,4,6-TNT, RDX, and perchlorate for the three impacted wells were plotted together to assess a possible correlation between the spike timing among the three wells (**Figures 6-1 through 6-3**). None was apparent; however, there were correlations in all three wells with regard to 2,4,6-TNT, RDX, and perchlorate spikes (i.e., spikes in a given contaminant generally included spikes in the other two contaminants in each well). The two

highest 2,4,6-TNT concentrations were recorded in Year Nine monitoring but presented a decrease for Year Ten and a slight increase for Year Eleven.

Contaminant concentrations for 2,4,6-TNT, RDX, and perchlorate were plotted against groundwater elevation to determine whether the large spike seen in monitoring wells 54MW10, 54MW12, and 54MW13 may be related to water level changes. **Figures 6-1 through 6-3** demonstrate the correlation between the contaminant concentrations at all three wells and groundwater elevation. At monitoring well 54MW10, when groundwater elevation rises, contaminant concentrations appear to decrease. The data suggest a direct relationship between groundwater levels and 2,4,6-TNT, RDX, and perchlorate concentrations, in that elevated concentrations of each are observed with elevated groundwater levels at monitoring well 54MW12. At monitoring well 54MW13, however, contaminant concentrations appear to rise on the backside of a groundwater elevation rise (note fifth, tenth, twelfth, sixteenth, twentieth, twenty-fourth, and twenty-ninth through thirty-second quarters; although, the Year Ten data suggest otherwise [**Figure 6-3**]).

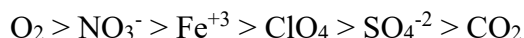
Additionally, Mann-Kendall tests were run for monitoring wells 54MW10, 54MW12, and 54MW13 to track the trend of perchlorate. The results indicated a decreasing trend for 54MW10 and 54MW12, and a slightly increasing trend at 54MW13 for perchlorate (**Appendix C**).

First Line of Evidence: Results

Although the 2,4,6-TNT concentrations have shown variability over time, the first line of evidence indicates that the presence of daughter products, 2ADNT and 4ADNT, suggests that natural attenuation through biological degradation of 2,4,6-TNT is occurring at SWMU 54. Overall decreasing trends in RDX suggest natural attenuation of RDX and perchlorate is occurring.

6.2 SECOND LINE OF EVIDENCE: GEOCHEMICAL CONDITIONS

Respiratory substrates are used preferentially during microbial metabolism based on the amount of energy that can be derived from each of them. Respiratory substrates are used in the following order:



Geochemical data are available for all 36 quarterly and four semiannual groundwater monitoring events at SWMU 54. Field parameters (DO, ORP, pH, temperature, and specific conductivity) have been collected since 2011 as part of the low-flow sampling procedures. Laboratory analyses for nitrate, sulfate, and TOC were conducted for all 36 quarterly and all four semiannual groundwater monitoring events at SWMU 54. These geochemical data are discussed regarding the potential for biodegradation in the groundwater at SWMU 54.

The microbial degradation of nitroaromatic compounds primarily occurs under nitrate-reducing conditions, whereas perchlorate requires sulfate-reducing groundwater conditions.

DO

The preferred terminal electron acceptor during aerobic microbial respiration is oxygen, and DO is measured to determine whether the groundwater is under aerobic or anaerobic conditions. Average DO values less than 1 mg/L are supportive of anaerobic microbial activities. Further, DO values higher than 8 mg/L are considered biased high given their relative magnitude to oxygen solubility at field temperatures and are not included in this analysis.

During the Year Eleven monitoring period, DO values ranged from 0.29 mg/L (54MW1) to 10.02 mg/L (54MW12) for the thirty-ninth event and from 0.22 mg/L (54MW10) to 7.32 mg/L (54MW12) for the fortieth event, which were similar to the Year Eight and Nine monitoring results. In wells where biological degradation products were observed (54MW10 and 54MW12), the DO concentrations indicate that aerobic conditions appear to be favored (**Table 6-2**). 2,4,6-TNT has been known to be reduced under a variety of conditions (aerobic and anaerobic); however, further reduction of 2,4,6-TNT breakdown products, including 2ADNT and 4ADNT, and reduction of RDX and perchlorate are more favorable under anaerobic conditions (Spain, 1995).

The increase in concentrations of explosive constituents at monitoring wells 54MW10, 54MW12, and 54MW13 during the Year Nine monitoring event took place under aerobic conditions. Under aerobic conditions, biodegradation is not as effective in the reduction of explosives and perchlorates. As a result of the subsurface biochemistry, the decreased biological activity may have also led to an increase in the explosive and perchlorate concentrations during

the Year Nine monitoring period. Explosive constituent concentrations for Year Eleven were generally less than Year Nine and Ten.

ORP

ORP values indicate the groundwater's reductive potential and are used to confirm the DO measurements in groundwater. ORP values less than +50 mV typically correspond to mildly reducing anaerobic conditions, whereas ORP values less than -200 mV correspond to highly reducing anaerobic conditions. As mentioned previously, TNT reduction can occur in aerobic systems, but the reduction of TNT breakdown products, RDX, and perchlorate are favored under anaerobic conditions (generally observed when ORP values are between -100 mV and 0 mV).

ORP concentrations during the first 12 quarterly sampling events (early 2011 to May 2014) ranged from -33 to 297 mV, indicating both anaerobic and aerobic conditions were present at the site. However, it was reported that aerobic conditions appeared to be more prevalent (**Table 6-2**). Further, the Year Three ORP values and DO readings did not show a clear corresponding trend for samples taken at the same well and same sampling event. At monitoring wells with elevated concentrations of TNT and RDX (54MW10, 54MW12, and 54MW13), it was suggested that ORP readings were in agreement with DO concentrations, indicating aerobic conditions.

The Year Four ORP readings ranged from -10.1 mV to 264 mV, indicating that both anaerobic and aerobic conditions were present at SWMU 54. However, there was only one reading (at 54MW1 in the sixteenth quarter), indicating reducing conditions; as such, it would appear that aerobic conditions are more prevalent at the SWMU. The Year Four ORP trends were generally in agreement with Year Three.

The Year Five ORP readings ranged from 15.5 mV (54MW13) to 138.2 mV (54MW1), indicating aerobic conditions were present at SWMU 54. The data suggest that aerobic conditions are more prevalent at the SWMU. The Year Five ORP trends are generally in agreement with Year Four.

The Year Six ORP readings ranged from -19.9 mV (54MW10) to 204.7 mV (54MW12), indicating both anaerobic and aerobic conditions were present at SWMU 54.

The Year Seven ORP ranged from -34.5 mV (54MW1) to 238.7 mV (54MW12), once again indicating both anaerobic and aerobic conditions were present at SWMU 54. The data suggest that aerobic conditions continue to be more prevalent at the site.

ORP readings from Year Eight ranged from 32.8 mV (54MW10) to 161.5 mV (54MW12), indicating both anaerobic and aerobic conditions at minimum were present at SWMU 54. Year Eight data suggest that aerobic conditions continue to be more prevalent at the site.

ORP readings from Year Nine ranged from 19.8 mV (54MW10) to 195.9 mV (54MW12), indicating both anaerobic and aerobic conditions at minimum were present at SWMU 54. Year Nine data suggest that aerobic conditions continue to be more prevalent at the site.

ORP readings from Year Ten ranged from 52.7 mV (54MW1) to 193.4 mV (54MW12), indicating both anaerobic and aerobic conditions at minimum were present at SWMU 54. Year Ten data suggest that aerobic conditions continue to be more prevalent at the site.

ORP readings from Year Eleven ranged from 32.3 mV (54MW1) to 159.6 mV (54MW12), indicating both anaerobic and aerobic conditions at minimum were present at SWMU 54. Year Eleven data suggest that aerobic conditions continue to be more prevalent at the site.

pH

The pH for optimum microbial activity ranges from 6.06 SU to 7.59 SU (USEPA, 1998). Microbial activity may decrease at lower pH values. The first 6 years of pH data are within this optimal pH range (**Table 6-2**) and continued during Year Eleven. In general, the pH environment at SWMU 54 is suitable for microbial activity.

Nitrate

Following oxygen, microorganisms preferentially use nitrate as a terminal electron acceptor. Diminished nitrate concentrations may indicate nitrate-reducing conditions, which promote the degradation of nitroaromatics (including 2,4,6-TNT) forming breakdown by-products. It should be noted that elevated nitrate concentrations (greater than 1 mg/L) will inhibit perchlorate reduction, and, additionally, any nitrate would preferentially be reduced to nitrite before TNT and RDX could be reduced (Interstate Technology and Regulatory Council [Perchlorate Team], 2008).

Nitrate concentrations during the first 36 sampling events were generally low (overall less than 1 mg/L) with concentrations ranging from non-detect to 4.8 mg/L, suggesting that perchlorate reduction is not inhibited (**Table 6-2**). Year Ten monitoring nitrate concentrations ranged from non-detect to 0.75 mg/L, which is consistent with previous monitoring events.

Monitoring well 54MW12, where historically the highest and more persistent perchlorate concentrations have been identified, consistently had nitrate concentrations greater than 1 mg/L during the first 16 quarters of monitoring.

During the Year Five monitoring period, however, the nitrate concentrations were only greater than or equal to 1 mg/L during two sampling events (seventeenth and nineteenth quarters).

During the Year Six monitoring period, nitrate concentrations were consistently higher than 1 mg/L for the twenty-second through twenty-fourth quarters. Only during the twenty-first quarter was the concentration below 1 mg/L.

During the Year Seven monitoring period, nitrate concentrations were consistently higher than 1 mg/L for the twenty-fifth through twenty-seventh quarters. Only during the twenty-eighth quarter was the concentration below 1 mg/L. In contrast, the corresponding reduction of 2,4,6-TNT concentrations and accrual of 2ADNT and 4ADNT present suggest the biodegradation of TNT.

During the Year Nine monitoring period, nitrate concentrations were only higher than 1 mg/L during the thirty-fifth quarter.

During the Year Ten monitoring period, nitrate concentrations were less than 1 mg/L for both semiannual monitoring events.

During the Year Eleven monitoring period, nitrate concentrations were less than 1 mg/L for both semiannual monitoring events.

Ferrous Iron

Ferric iron is reduced to soluble ferrous iron in the groundwater where iron-reducing bacteria have been active. An increase in ferrous iron concentrations is indicative of iron-reducing

conditions. Biological reduction of TNT is favored in iron-reducing conditions; therefore, elevated concentrations of ferrous iron are an indicator of favorable groundwater conditions for TNT degradation.

Ferrous iron concentrations for all wells during the 5 previous years of monitoring have been less than 0.2 mg/L (non-detect) or equal to 0.2 mg/L, indicating that iron-reducing conditions are not present at this time, or that the iron has been reduced previously.

During the Year Five monitoring events, ferrous iron concentrations for all wells was less than 0.2 mg/L (non-detect) with the exception of monitoring well 54MW10 during the seventeenth quarter, when concentrations increased to 0.52 mg/L and then decreased to 0.04 mg/L during the eighteenth quarter.

During the Year Six monitoring events, ferrous iron concentrations for all wells were less than 0.2 mg/L with the exception of monitoring well 54MW13 during the twenty-second quarter, when concentrations increased to 0.26 mg/L, and then decreased to 0.0 mg/L (non-detect) during the twenty-third quarter.

During the Year Seven monitoring events, ferrous iron concentrations for all wells were less than 0.2 mg/L with the exception of monitoring well 54MW12 during the twenty-seventh quarter, when concentrations increased to 0.21 mg/L, and then decreased to 0.14 mg/L during the twenty-eighth quarter.

During the Year Eight monitoring events, ferrous iron concentrations for all wells were less than 0.20 mg/L, whereas Year Nine indicated ferrous iron concentrations were less than 0.10 mg/L.

For the Year Ten monitoring events, an increase in ferrous iron concentrations was noted with concentrations noted up to 2.01 mg/L. Ferrous iron concentration ranges of 0.01 to 0.10 mg/L were noted for the thirty-seventh monitoring event and 0.01 to 2.01 mg/L noted for the thirty-eighth event.

For the Year Eleven monitoring events, ferrous iron concentrations were similar to Year Ten. Ferrous iron concentration ranges of 0.00 to 0.2 mg/L were noted for the thirty-ninth monitoring event and 0.10 to 0.80 mg/L noted for the fortieth event.

Sulfate

Biological degradation of TNT breakdown products (2ADNT and 4ADNT), RDX, and perchlorate actively occurs under sulfate-reducing conditions. Sulfate concentrations greater than 20 µg/L may cause competitive exclusion (USEPA, 2008). Sulfate concentrations were measured in the groundwater during each of the first 12 quarterly monitoring events and were found to generally be greater than 20 mg/L (ranging from 15.0 mg/L to 403 mg/L), indicating that biological degradation of 2ADNT and 4ADNT may be inhibited at SWMU 54 (**Table 6-2**).

During Year Four of monitoring, sulfate concentrations were slightly lower (ranging from 19 mg/L to 93 mg/L), but again suggested inhibition of biological degradation of the 2,4,6-TNT by-products 2ADNT and 4ADNT.

During Year Five of monitoring, sulfate concentrations were found to be greater than 20 mg/L (ranging from 28.0 mg/L to 150.0 mg/L), again indicating that biological degradation of 2ADNT and 4ADNT is inhibited at SWMU 54.

During Year Six of monitoring, sulfate concentrations were again greater than 20 mg/L (ranging from 25.0 mg/L to 100.0 mg/L).

During Year Seven of monitoring, sulfate concentrations were again greater than 20 mg/L (ranging from 23 mg/L to 69 mg/L) for all monitoring wells with the exception of 54MW13, where concentrations dropped to 16 mg/L and 15 mg/L (twenty-fifth and twenty-sixth quarters, respectively).

Year Eight sulfate concentrations were generally greater than 20 mg/L (ranging from 17 mg/L to 140 mg/L) for all monitoring wells, where concentrations dropped to 17 mg/L in the thirty-second quarter.

Sulfate concentrations were lower in Year Nine than Year Eight, but similar to Year Seven, with a concentration range of 24 mg/L to 96 mg/L. This indicates that biological degradation of 2ADNT and 4ADNT is inhibited at SWMU 54, but conditions clearly appear to be improving.

Sulfate was detected at a concentration range of 28 mg/L to 120 mg/L in Year Ten which is slightly higher than Year Nine.

Sulfate was detected at a concentration range of 29 mg/L to 190 mg/L in Year Eleven with the maximum concentration slightly higher than Year Ten.

TOC

Organic carbon is a required source of reduced carbon and energy needed to sustain microbial degradation of nitroaromatics and perchlorate. TOC concentrations greater than 20 mg/L are considered adequate to support microbial activity. For the majority of the first 3 years of monitoring, TOC concentrations were found to be considerably lower than what is considered adequate to support microbial activity. TOC concentrations during this timeframe ranged from less than 0.50 mg/L (non-detect) to 7.47 mg/L (**Table 6-2**). However, measured TOC concentrations during the twelfth quarter exceeded 20 mg/L in monitoring wells 54MW1 (51.0 mg/L) and 54MW10 (63.0 mg/L). The Year Four, Year Five, Year Six, and Year Seven TOC results, however, again indicated low concentrations considered inadequate to support microbial activity. The range of TOC during the Year Four, Year Five, Year Six, and Year Seven monitoring periods ranged from 0.3 mg/L to 13 mg/L. This trend continued throughout the Year Eight monitoring events, with concentrations ranging from 0.53 mg/L to 0.99 mg/L, whereas Year Nine indicated TOC concentrations ranging from non-detect to 2.4 mg/L. Year Ten indicated TOC concentrations ranging from non-detect to 1.5 mg/L which is similar to the past 2 years. No TOC was noted for the Year Eleven monitoring events.

TIC

Inorganic carbon species include carbon dioxide, carbonic acid, and carbonate. The presence of TIC is a useful source of carbon needed to sustain microbial degradation. The oxidation of organic matter should lead to an increase of TIC in groundwater. TIC concentrations during this monitoring period ranged from 62 mg/L to 88 mg/L with only slight variations noted during each semiannual monitoring event (**Table 6-2**). In addition, TIC concentrations have shown little variation over the last 5 years of monitoring, which is consistent with the general low variability of organic contaminant concentrations in groundwater samples over the same period.

Specific Conductivity

Figure 6-4 provides a time series plot of specific conductivity at all four wells. Specific conductivity is the indirect measure of the presence of dissolved solids, such as chloride, nitrate,

sulfate, iron, and all degradation by-products. **Figures 6-5** through **6-7** provide time series plots of MNA indicators sulfate and nitrate alongside water quality parameters iron and manganese at monitoring wells 54MW10, 54MW12, and 54MW13 for all 11 years. Additionally, **Figures 6-8** through **6-10** provide time series plots of MNA indicator TOC alongside water quality parameters DO and ORP at monitoring wells 54MW10, 54MW12, and 54MW13 for all 11 years. Biodegradation of 2,4,6-TNT, RDX, perchlorate, and more dissolved inorganic ions (such as chlorides, nitrates, sulfates, and iron) would create the electrical current witnessed in the specific conductivity readings.

Monitoring wells 54MW10, 54MW12, and 54MW13 all appear to have similar specific conductivity activity according to **Figure 6-4**. Additionally, **Figures 6-5** through **6-7** demonstrate that iron and dissolved manganese have been reduced to concentrations at or very near zero at all three wells. Overall, there are sulfate-reducing conditions at all three wells, which is indicative of biodegradation of 2ADNT, 4ADNT, RDX, and perchlorate. Nitrate concentrations at monitoring well 54MW13 have always been at or slightly above zero. Nitrate reducing conditions remain present at monitoring well 54MW12.

Figures 6-8 through **6-10** demonstrate that ORP conditions at monitoring well 54MW10 support mildly anaerobic conditions; at monitoring wells 54MW12 and 54MW13, ORP is declining overall and beginning to support mildly reducing anaerobic conditions, although both of these wells saw increases in ORP in the thirty-first and thirty-second quarters. DO conditions at all three wells are aerobic. TOC conditions at monitoring well 54MW10 fluctuate between inadequate and adequate conditions. Since the seventeenth quarter and continuing through the fortieth event (Year Eleven), TOC concentrations have remained below 20 mg/L, which is considered inadequate. Meanwhile, conditions at monitoring wells 54MW12 and 54MW13 have consistently been considered inadequate and have remained so since the first quarter. TOC concentrations at monitoring wells 54MW12 and 54MW13 have ranged between less than 0.5 mg/L and 13 mg/L; these concentrations are considered inadequate for sustaining microbial degradation of nitroaromatics and perchlorate. Overall, the data suggest that MNA conditions are still favorable at all three wells.

Table 6-1 Analytical Results for Groundwater Performance Monitoring at SWMU 54

Parameter	RG	July 2011 (Q1)	Oct 2011 (Q2)	Jan 2012 (Q3)	Apr 2012 (Q4)	Aug 2012 (Q5)	Nov 2012 (Q6)	Feb 2013 (Q7)	May 2013 (Q8)	Aug 2013 (Q9)	Nov 2013 (Q10)	Feb 2014 (Q11)	May 2014 (Q12)	Sept 2015 (Q13)	Jan 2016 (Q14)	Apr 2016 (Q15)	July 2016 (Q16)	Oct 2016 (Q17)	Jan 2017 (Q18)	Apr 2017 (Q19)	July 2017 (Q20)	Oct 2017 (Q21)	Jan 2018 (Q22)	Apr 2018 (Q23)	July 2018 (Q24)	Oct 2018 (Q25)	Jan 2019 (Q26)	Apr 2019 (Q27)	July 2019 (Q28)	Oct 2019 (Q29)	Jan 2020 (Q30)	Apr 2020 (Q31)	July 2020 (Q32)	Oct 2020 (Q33)	Jan 2021 (Q34)	Apr 2021 (Q35)	July 2021 (Q36)	Oct 2021 (E37)	Apr 2022 (E38)	Jan 2023 (E39)	July 2023 (E40)		
54MW1																																											
2,4,6-TNT	7.82	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	ND	ND	
RDX	6.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	ND	ND
DNT Mixture	0.932	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	ND	ND
Perchlorate	10.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	ND	ND
54MW2																																											
2,4,6-TNT	7.82	2.1	0.9	2.08	--	--	--	--	0.749	0.974	0.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
RDX	6.1	0.572	ND	ND	--	--	--	--	ND	ND	0.075	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
DNT Mixture	0.932	ND	ND	ND	--	--	--	--	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Perchlorate	10.9	3.07	0.547	1.91	--	--	--	--	1.82	1	0.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
54MW3																																											
2,4,6-TNT	7.82	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
RDX	6.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
DNT Mixture	0.932	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Perchlorate	10.9	0.53	0.18	ND	ND	0.405	0.303	0.309	0.59	0.446	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
54MW4																																											
2,4,6-TNT	7.82	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
RDX	6.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
DNT Mixture	0.932	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Perchlorate	10.9	ND	ND	ND	ND	ND	0.141	ND	ND	ND	-	-	-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
54MW5																																											
2,4,6-TNT	7.82	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
RDX	6.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
DNT Mixture	0.932	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Perchlorate	10.9	0.311	0.393	0.313	0.301	0.42	0.28	0.255	0.309	0.389	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
54MW6																																											
2,4,6-TNT	7.82	ND	ND	ND	ND	ND	Dry	ND	ND	Dry	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
RDX	6.1	ND	ND	ND	ND	ND	Dry	ND	ND	Dry	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
DNT Mixture	0.932	ND	ND	ND	ND	ND	Dry	ND	ND	Dry	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Perchlorate	10.9	ND	0.127	0.159	ND	0.175	Dry	0.16	0.171	Dry	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
54MW7																																											
2,4,6-TNT	7.82	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
RDX	6.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
DNT Mixture	0.932	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Perchlorate	10.9	0.321	ND	ND	0.365	ND	0.103	0.162	0.103	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
54MW8																																											
2,4,6-TNT	7.82	0.928	0.433	ND	0.301	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
RDX	6.1	0.761	0.567	0.493	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
DNT Mixture	0.932	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Perchlorate	10.9	ND	0.408	0.355	0.388	0.392	0.286	0.484	0.118	0.334	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
54MW9																																											
2,4,6-TNT	7.82	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
RDX	6.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
DNT Mixture	0.932	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Perchlorate	10.9	ND	0.229	0.262	0.217	ND	ND	1.07	0.923	0.327	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
54MW10																																											
2,4,6-TNT	7.82	0.305	5.84	4.05	ND	9.17	1.59	1.88	0.637	ND	50	13	11	6.6	4.1	2.7	24.2	1.6	4.2	1	0.44	11.2	ND	0.67	3.5	1	0.88	0.74	18.6	4	8.4	20.5	ND	11.4	39.4	30.3	13	5.4	3	ND	0.56		
RDX	6.1	ND	3.24	2.95	ND	7.84	1.35	2.36	1.29	2.23	21	5.3	8.7	2.1	3.1	1.8	6.6	0.4	1.1	ND	0.76	1.8	0.1	ND	4.4	1.4	0.88	0.32	3.9	2.1	1.9	5.1	ND	1.8	5.8	3.8	0.48	1.4	1.8	0.35	0.34		
DNT Mixture	0.932	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2	0.068	0.13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Perchlorate	10.9	ND	0.325	0.258	ND	3.74	0.344	0.832	0.835	0.365	2.3	0.42	0.44	ND	0.326	0.082	.84	0.12	0.1	0.24	0.2	0.23	ND	0.5	0.22	0.65	0.34	0.35	0.45	ND	0.25	0.61	ND	6.2	0.62	0.38	0.19	0.072	0.12	ND	ND		

Table 6-1 Analytical Results for Groundwater Performance Monitoring at SWMU 54 (Continued)

Parameter	RG	July 2011 (Q1)	Oct 2011 (Q2)	Jan 2012 (Q3)	Apr 2012 (Q4)	Aug 2012 (Q5)	Nov 2012 (Q6)	Feb 2013 (Q7)	May 2013 (Q8)	Aug 2013 (Q9)	Nov 2013 (Q10)	Feb 2014 (Q11)	May 2014 (Q12)	Sept 2015 (Q13)	Jan 2016 (Q14)	Apr 2016 (Q15)	July 2016 (Q16)	Oct 2016 (Q17)	Jan 2017 (Q18)	Apr 2017 (Q19)	July 2017 (Q20)	Oct 2017 (Q21)	Jan 2018 (Q22)	Apr 2018 (Q23)	July 2018 (Q24)	Oct 2018 (Q25)	Jan 2019 (Q26)	Apr 2019 (Q27)	July 2019 (Q28)	Oct 2019 (Q29)	Jan 2020 (Q30)	Apr 2020 (Q31)	July 2020 (Q32)	Oct 2020 (Q33)	Jan 2021 (Q34)	Apr 2021 (Q35)	July 2021 (Q36)	Oct 2021 (E37)	Apr 2022 (E38)	Jan 2023 (E39)	July 2023 (E40)				
54MW11																																													
2,4,6-TNT	7.82	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--						
RDX	6.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
DNT Mixture	0.932	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Perchlorate	10.9	ND	ND	0.239	ND	ND	ND	0.263	0.43	0.132	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
54MW12																																													
2,4,6-TNT	7.82	15.9	16.1	19.4	48	10.1	7.62	6.29	108	65.9	17	29	10	11	110	11	7.4	10.6	28.1	78.6	8.7	39	22.3	52.3	29.7	13.3	164	39.5	13.6	10.1	10.2	8.3	4.1	7.8	8.6	51.4	10	9.3	--	4.5	4				
RDX	6.1	ND	9.77	13.2	18.4	1.95	6.59	3.79	25	14.6	0.54	8.7	2	3.9	30	0.62	.37	6	4.8	51.4	ND	14	13.4	33.3	8.2	3.6	13.5	4.8	ND	ND	0.56	0.17	ND	ND	ND	ND	ND	ND	ND	--	ND	0.27			
DNT Mixture	0.932	ND	ND	ND	0.381	ND	ND	ND	ND	ND	0.2	0.31	0.93	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	0.75	ND		
Perchlorate	10.9	ND	0.726	10.5	22.8	2	5.31	2.98	22.7	9.88	1.1	4	1.7	0.737	8.85	1.2	.56	1.6	2.9	4.3	1.1	1.4	1.9	2.8	1.7	1.4	3.7	2	0.61	0.53	0.49	0.73	0.75	8.2	0.46	1.5	0.30	0.30	--	0.72	0.61				
54MW13																																													
2,4,6-TNT	7.82	ND	4.09	0.699	0.979	9.4	0.843	0.318	4.91	3.81	9.8	2.5	5.8	5.4	1.4	0.79	13.9	8	5.9	1.8	8.2	3	4.4	2	10.9	1.6	2.3	5.1	15.5	12.5	4.1	5.5	8.3	12.7	11.1	19.2	17.7	11.8	5.8	5	9.1				
RDX	6.1	ND	2.59	0.614	1.14	4.77	0.855	0.642	3.2	1.46	4	0.88	2.5	2.6	0.54	0.17	.86	0.7	ND	1	ND	0.48	ND	ND	ND	0.38	0.46	0.32	1.3	ND	0.55	1.5	0.43	0.58	0.83	0.57	0.43	0.58	2	0.94	0.91				
DNT Mixture	0.932	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11	ND	0.099	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Perchlorate	10.9	ND	0.244	0.206	0.243	0.627	0.308	0.313	0.64	0.477	0.43	0.32	0.37	0.270	0.216	0.18	.33	0.21	0.29	0.23	0.45	0.2	0.25	0.33	0.45	0.25	0.29	0.47	0.4	0.55	0.26	0.34	0.30	7.9	0.29	0.34	0.41	0.14	0.26	0.25	0.33				
54MW14																																													
2,4,6-TNT	7.82	0.928	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--				
RDX	6.1	0.761	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--				
DNT Mixture	0.932	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--				
Perchlorate	10.9	ND	ND	0.215	0.181	0.214	0.24	ND	ND	0.195	0.456	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--				

Notes:
All units are µg/L.
'--' = not sampled
Bolded data indicate exceedances of RGs.
2,4,6-TNT = 2,4,6-trinitrotoluene
µg/L = micrograms per liter
DNT = dinitrotoluene
ND = not detected
RDX = cyclotrimethylenetrinitramine
RG = remedial goal
SWMU = Solid Waste Management Unit

Table 6-2 Water Quality Parameters for Groundwater for Performance Monitoring at SWMU 54

Well ID	54MW1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>SWMU 54 First Quarter (July 2011) Water Quality Parameters</i>														
pH	7.7	6.36	6.86	7.19	6.36	7.33	6.6	6.98	6.29	7.13	7.14	6.67	6.75	7.23
Specific Conductivity (mS/cm)	0.357	0.526	0.491	0.949	0.371	0.449	0.419	0.544	0.535	1.68	0.651	0.568	0.676	0.582
Turbidity (NTU)	5.6	0	1.5	1.9	3	0.2	0	4.6	6	89.8	62.6	100	94	16.9
DO (mg/L)	4.86	2.35	4.71	0	4.87	0.68	3.91	3.53	1.23	0.51	0	3.52	0.9	1.06
ORP (mV)	130	178	121	-18	178	110	170	134	198	67	96	152	29	73
Temperature (°C)	14.12	17.07	19.82	15.52	19.88	19.32	18.87	17.86	14.3	25.19	14.94	18.38	20.09	23.76
Dissolved Manganese	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	<0.05	0.2	<0.05	0.05	<0.05	0.65	<0.05
Dissolved Ferrous Iron (mg/L)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nitrate (mg/L)	25.2	1.09	0.967	0	0.613	0	0.119	0.639	0.233	0	0	2.79	0.439	0.242
Sulfate (mg/L)	27.1	39.8	23.6	329	15.1	27.4	61.5	40	62.2	167	93.6	38.1	38.8	33.6
TOC (mg/L)	3.9	3.51	7.26	2.51	6.14	1.95	3.17	6.05	5.1	1.61	5.97	2.64	2.55	6.73
<i>SWMU 54 Second Quarter (October 2011) Water Quality Parameters</i>														
pH	7.49	7.02	7.05	7.27	6.78	7.49	7.3	7.09	7.2	6.83	7.31	6.7	7.05	7.16
Specific Conductivity (mS/cm)	0.432	0.56	0.674	0.912	0.502	0.305	0.734	0.541	0.562	0.677	0.654	0.523	0.831	0.568
Turbidity (NTU)	164	167	160	81.1	231	107	155	104	79.9	236	685	69	--	157
DO (mg/L)	0	0	0	2.44	2.68	3.8	0.1	0.05	0.06	0	0	1.72	0.37	0
ORP (mV)	102	117	107	-15	143	122	66	151	146	82	-13	144	126	73
Temperature (°C)	18.04	14.77	14.16	14.32	15.48	13.18	18.01	14.94	14.75	14.75	13.73	14.81	14.63	14.93
Dissolved Manganese (mg/L)	<0.05	<0.05	0.1	0.05	0.1	0.05	0.4	0.05	0.2	0.15	0.3	<0.05	0.35	0.05
Dissolved Ferrous Iron (mg/L)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nitrate (mg/L)	0	0.394	0.357	0	0.568	0.167	0	0.514	0.184	0.388	0	2	0.21	0.202
Sulfate (mg/L)	27.1	27	44.4	210	17.4	7.06	216	39.9	46.9	96.7	119	31.8	90.2	34.1
TOC (mg/L)	3.9	3.2	3.22	1.38	1.88	2.68	1.31	7.47	6.78	6.98	3.22	4.71	3.31	4.64
<i>SWMU 54 Third Quarter (January 2011) Water Quality Parameters</i>														
pH	7.59	7.48	7.4	7.36	7.15	7.53	7.43	7.08	7.4	7.46	7.59	6.09	7.45	7.48
Specific Conductivity (mS/cm)	0.498	0.662	0.762	1.11	0.628	0.305	0.905	0.492	0.674	0.707	0.763	0.595	0.687	0.651
Turbidity (NTU)	8.9	15.3	19.2	55.6	32.1	72.4	26.8	66.7	36.8	1.1	6.8	---	226	0
DO (mg/L)	0	0	0	0	7.81	12.01	0	16.65	8.48	6.06	5.09	4.02	7.63	1.66
ORP (mV)	100	33	24	5	121	191	3	104	111	118	101	186	25	61
Temperature (°C)	13.2	13.91	13.26	13.04	13.58	11.93	12.73	9.72	9.65	11.16	11.4	12.86	11.53	12.91
Dissolved Manganese (mg/L)	<0.05	<0.05	0.1	0.05	0.1	0.05	0.4	0.05	0.2	0.15	0.3	<0.05	0.35	0.05
Dissolved Ferrous Iron (mg/L)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nitrate (mg/L)	0	0.609	0	0	0.578	0.158	0	0.401	0.174	0.572	0.158	1.94	0.237	0.241
Sulfate (mg/L)	26.3	28.2	73.7	480	20.3	4.55	249	41.5	62.5	72.7	93	37.6	53.9	32.2
TOC (mg/L)	2.1	1.8	2.39	1.16	1.42	1.94	2.38	1.66	2.78	1.66	6.71	5.09	6.63	1.68

Table 6-2 Water Quality Parameters for Groundwater Performance Monitoring at SWMU 54 (Continued)

Well ID	54MW1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>SWMU 54 Fourth Quarter (April 2012) Water Quality Parameters</i>														
pH	5.42	5.19	5.38	5.33	4.99	5.76	5.57	5.38	5.46	5.48	5.59	5.05	5.32	5.5
Specific Conductivity (mS/cm)	0.958	1.12	1.46	0.001	0.891	0.73	1.58	1.21	1.26	1.73	1.4	1.35	0.981	1.2
Turbidity (NTU)	2.5	4.4	2.4	125	70.1	318	38	3.4	65.3	30.8	94.7	37	312	36
DO (mg/L)	7.36	7.18	2.24	23.45	10.47	6.49	2.01	7.43	11.29	2.83	5.8	9.44	7.1	5.55
ORP (mV)	-30	236	225	180	168	132	162	134	145	61	36	267	116	149
Temperature (°C)	13.37	12.44	12.02	11.56	20.98	19.09	12.57	14.69	14.21	15.5	14.11	12.67	15.52	12.69
Dissolved Manganese (mg/L)	<0.05	<0.05	0.1	0.5	<0.05	0.05	0.4	0.05	0.2	0.1	0.3	<0.05	0.35	<0.05
Dissolved Ferrous Iron (mg/L)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nitrate (mg/L)	0	1.33	0	0	0.677	0.129	0.231	0.483	0.139	0	0	2.65	0.294	0.386
Sulfate (mg/L)	34.9	34.9	80	432	14	14.9	69.4	40.1	56	221	104	37.9	35.4	29.3
TOC (mg/L)	1.8	1.57	1.18	1.82	2.33	5.46	0.99	2.36	3.01	2.4	2.68	2.34	3.51	1.09
<i>SWMU 54 Fifth Quarter (August 2012) Water Quality Parameters</i>														
pH	7.08	6.94	6.71	7.05	6.71	7.47	7.03	6.87	6.84	6.71	7.06	6.61	6.97	7.05
Specific Conductivity (mS/cm)	0.395	0.722	0.644	0.968	0.58	0.363	0.817	0.599	0.752	0.693	0.715	0.665	0.697	0.625
Turbidity (NTU)	4.1	43	19	14	23	0	7.4	19	5.2	0.8	10.8	48	95	9.2
DO (mg/L)	5.34	0	0	0.23	3.96	4.84	0	2.78	0.56	0.4	0	0.33	1.75	0
ORP (mV)	212	65	209	-33	200	134	128	125	-10	47	-22	226	135	-13
Temperature (°C)	13.89	13.49	12.93	15.06	13.44	16.52	13.66	13.7	14.09	13.93	13.64	13.71	16.12	14.08
Dissolved Manganese (mg/L)	<0.05	<0.05	0.05	0.05	<0.05	0.05	0.05	0.05	0.2	0.05	0.05	<0.05	0.3	<0.05
Dissolved Ferrous Iron (mg/L)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nitrate (mg/L)	0.600	0.190	0.613	3.00	0.728	0.120	3.00	0.581	1.80	0.594	1.80	1.06	0.681	0.214
Sulfate (mg/L)	26.1	95.5	23.8	378	18.0	15.7	186	41.8	87.2	102	97.6	27.0	38.2	31.8
TOC (mg/L)	0.721	2.00	2.00	1.10	2.00	1.00	1.02	2.00	2.00	1.37	2.00	2.00	1.05	2.04
<i>SWMU 54 Sixth Quarter (November 2012) Water Quality Parameters</i>														
pH	7.63	7.21	6.97	7.03	6.99	Dry	7.31	7.23	7.23	7.29	7.28	7.6	5.72	7.3
Specific Conductivity (mS/cm)	0.443	0.62	0.561	1.01	0.612	Dry	0.826	0.628	0.784	0.779	0.698	0.635	0.918	0.6
Turbidity (NTU)	2.9	11.4	0.2	17	5.5	Dry	46	3.9	27.7	4.7	2.5	2.4	35	43
DO (mg/L)	1.44	0.86	4.09	1	1.01	Dry	0.56	2.71	1.14	0.38	1.1	0.26	0.95	0.45
ORP (mV)	148	141	145	72	167	Dry	59	101	-28	43	117	135	209	100
Temperature (°C)	10.03	13.43	12.22	11.27	11.21	Dry	10.83	11.98	11.35	13.61	12.95	13.99	12.26	10.61
Dissolved Manganese (mg/L)	0.05	0.05	0.05	0.05	0.05	Dry	0.05	0.05	0.2	0.05	0.05	0.1	0.3	0.05
Dissolved Ferrous Iron (mg/L)	<0.2	<0.2	<0.2	<0.2	<0.2	Dry	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nitrate (mg/L)	0.600	0.327	0.656	3.00	0.944	Dry	1.80	0.403	1.80	0.381	0.600	2.86	0.369	0.600
Sulfate (mg/L)	31.3	35.4	22.9	403	21.5	Dry	179	60.3	199	151	99.1	49.8	76.7	39.0
TOC (mg/L)	1.96	2.68	3.29	2.93	4.31	Dry	3.72	4.90	6.73	5.55	5.88	3.41	2.00	2.12

Table 6-2 Water Quality Parameters for Groundwater Performance Monitoring at SWMU 54 (Continued)

Well ID	54MW1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>SWMU 54 Seventh Quarter (February 2013) Water Quality Parameters</i>														
pH	7.85	6.89	6.76	7.52	6.56	7.08	7.4	7.03	7.04	6.69	7.09	6.36	6.96	7.45
Specific Conductivity (mS/cm)	0.465	0.682	0.504	1.01	0.417	0.293	0.474	0.498	0.487	0.542	0.687	0.464	0.37	0.619
Turbidity (NTU)	0	20	9	16	0	44.3	16	9.2	10.9	13.2	2	14.2	6.8	1.2
DO (mg/L)	0.71	1.43	6.97	0.53	9.19	9.28	2.83	5.36	8.28	2.97	0.58	1.27	8.39	0.47
ORP (mV)	-5	156	171	-56	168	72	12	168	194	125	169	168	158	56
Temperature (°C)	12.17	8.28	11.98	12.09	11.18	13.15	11.48	9.89	9.74	11.22	10.14	10.31	7.98	12.26
Dissolved Manganese (mg/L)	0.05	<0.05	0.1	0.05	<0.05	0.05	0.1	0.05	0.2	0.1	0.25	<0.05	0.2	<0.05
Dissolved Ferrous Iron (mg/L)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nitrate (mg/L)	0.600	0.315	0.423	3.00	0.636	0.209	0.205	0.336	0.510	0.477	0.346	1.95	0.501	0.600
Sulfate (mg/L)	27.1	36.8	25.3	340	15.5	4.29	34.2	44.6	117	70.1	120	35.8	23.1	41.1
TOC (mg/L)	1.19	0.916	1.07	1.35	1.00	1.50	0.791	1.00	2.09	1.14	1.88	1.21	0.683	1.46
<i>SWMU 54 Eighth Quarter (May 2013) Water Quality Parameters</i>														
pH	7.38	6.52	7.06	7.51	6.83	7.33	7.41	7.47	7.95	6.94	7.59	6.78	6.97	7.31
Specific Conductivity (mS/cm)	0.398	0.315	0.499	1.021	0.4	0.494	0.674	0.596	0.521	0.537	0.592	0.665	0.44	0.608
Turbidity (NTU)	1.2	0.2	1.4	6.2	8.9	7.1	0.5	1.6	5.2	1.4	0.3	3.8	0.2	6.4
DO (mg/L)	4.13	2.74	3.55	1.05	3.28	1.29	3.24	0.4	7.58	2.43	1.17	2.54	1.4	4.13
ORP (mV)	122	254.3	273.6	257.1	283.1	128.4	282.7	255.1	244.2	287.8	255.8	292.4	284	296.5
Temperature (°C)	13.43	12.22	13.31	11.73	12.2	13.48	12.74	13.32	11.12	12.89	12.42	13.28	12.84	13.42
Dissolved Manganese (mg/L)	<0.05	0.05	0.05	0.05	<0.05	<0.05	0.05	0.05	0.1	0.05	0.05	<0.05	0.15	0.05
Dissolved Ferrous Iron (mg/L)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nitrate (mg/L)	0.368	0.988	0.911	3.00	1.60	0.600	1.10	0.600	0.637	0.740	0.647	4.03	1.05	0.543
Sulfate (mg/L)	26.1	24.1	29.0	329	15.7	14.0	137	41.1	96.7	48.8	89.4	47.6	29.2	37.0
TOC (mg/L)	0.949	1.68	1.36	0.619	1.06	2.41	0.793	1.00	1.38	1.00	0.635	1.36	0.817	0.583
<i>SWMU 54 Ninth Quarter (August 2013) Water Quality Parameters</i>														
pH	7.82	6.91	6.75	6.96	6.28	Dry	6.71	6.95	7.12	6.48	7.04	6.36	6.57	6.84
Specific Conductivity (mS/cm)	0.452	0.592	0.617	0.937	0.333	Dry	0.478	0.559	0.419	0.496	0.637	0.491	0.351	0.554
Turbidity (NTU)	3	0	0	0	0	Dry	7.2	0	6.1	0	0	7.0	0	0
DO (mg/L)	0.136	0.8	1.69	0.39	6.28	Dry	2.4	0.67	2.36	0.86	4.65	2.85	6.57	0.52
ORP (mV)	223.2	84	96	-18	129	Dry	86	42	-13	35	68	91	146	50
Temperature (°C)	14.51	15.25	15.08	13.22	15.49	Dry	13.05	13.4	13.25	14.51	13.46	15.7	13.89	13.21
Dissolved Manganese (mg/L)	0.05	NM	<0.05	0.05	0.05	Dry	<0.05	<0.05	0.05	<0.05	0.05	0.05	0.15	0.05
Dissolved Ferrous Iron (mg/L)	<0.2	NM	<0.2	<0.2	<0.2	Dry	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nitrate (mg/L)	<0.600	0.326	0.521	<0.600	0.849	Dry	<0.600	0.273	0.194	0.206	0.12	4.8	0.591	0.29
Sulfate (mg/L)	26.7	30.8	26.1	322	15.0	Dry	27.3	38.0	39.2	44.3	91.8	39.6	23.3	28.2
TOC (mg/L)	3.32	1.5	1.11	2.7	0.91	Dry	0.822	2.30	4.17	4.28	3.11	3.27	2.35	3.64

Table 6-2 Water Quality Parameters for Groundwater Performance Monitoring at SWMU 54 (Continued)

Well ID	54MW1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>SWMU 54 Tenth Quarter (November 2013) Water Quality Parameters</i>														
pH	--	7.45	--	--	--	--	--	--	--	6.89	--	NM	7.29	--
Specific Conductivity (mS/cm)	--	0.635	--	--	--	--	--	--	--	0.615	--	0.469	0.643	--
Turbidity (NTU)	--	0	--	--	--	--	--	--	--	0	--	4.6	0.4	--
DO (mg/L)	--	2.7	--	--	--	--	--	--	--	2.45	--	1.17	1.32	--
ORP (mV)	--	51	--	--	--	--	--	--	--	18	--	108	25	--
Temperature (°C)	--	14.09	--	--	--	--	--	--	--	15.25	--	14.96	15.96	--
Dissolved Manganese (mg/L)	--	<0.05	--	--	--	--	--	--	--	<0.05	--	0.05	0.05	--
Dissolved Ferrous Iron (mg/L)	--	<0.2	--	--	--	--	--	--	--	<0.2	--	<0.2	<0.2	--
Nitrate (mg/L)	--	0.25	--	--	--	--	--	--	--	0.670	--	1.1	0.45	--
Sulfate (mg/L)	--	29.0	--	--	--	--	--	--	--	57.0	--	26.0	39.0	--
TOC (mg/L)	--	2.5	--	--	--	--	--	--	--	0.68	--	0.5	<0.50	--
<i>SWMU 54 Eleventh Quarter (February 2014) Water Quality Parameters</i>														
pH	8.1	--	--	--	--	--	--	--	--	6.89	--	7.21	7.21	--
Specific Conductivity (mS/cm)	0.41	--	--	--	--	--	--	--	--	0.587	--	0.643	0.481	--
Turbidity (NTU)	0	--	--	--	--	--	--	--	--	0	--	3.8	14	--
DO (mg/L)	1.32	--	--	--	--	--	--	--	--	1.43	--	0.7	2.09	--
ORP (mV)	127	--	--	--	--	--	--	--	--	153	--	150	142	--
Temperature (°C)	12.34	--	--	--	--	--	--	--	--	13.2	--	14.11	12.04	--
Dissolved Manganese (mg/L)	<0.05	--	--	--	--	--	--	--	--	<0.05	--	<0.05	0.05	--
Dissolved Ferrous Iron (mg/L)	<0.2	--	--	--	--	--	--	--	--	0.2	--	0.2	<0.2	--
Nitrate (mg/L)	<0.025	--	--	--	--	--	--	--	--	0.470	--	3.1	0.44	--
Sulfate (mg/L)	30.00	--	--	--	--	--	--	--	--	89.0	--	36.0	31.0	--
TOC (mg/L)	1.00	--	--	--	--	--	--	--	--	0.53	--	1.00	<0.50	--
<i>SWMU 54 Twelfth Quarter (May 2014) Water Quality Parameters</i>														
pH	7.79	--	--	--	--	--	--	--	--	6.93	--	NM	NM	--
Specific Conductivity (mS/cm)	0.469	--	--	--	--	--	--	--	--	0.582	--	0.453	0.47	--
Turbidity (NTU)	3	--	--	--	--	--	--	--	--	3.8	--	10	9	--
DO (mg/L)	1.65	--	--	--	--	--	--	--	--	1.56	--	2.25	1.14	--
ORP (mV)	222.3	--	--	--	--	--	--	--	--	127.4	--	272.1	71.3	--
Temperature (°C)	16.61	--	--	--	--	--	--	--	--	12.81	--	14.61	16.57	--
Dissolved Manganese (mg/L)	0.05	--	--	--	--	--	--	--	--	0.1	--	0.1	0.05	--
Dissolved Ferrous Iron (mg/L)	0.2	--	--	--	--	--	--	--	--	<0.2	--	0.2	0.2	--
Nitrate (mg/L)	0.031	--	--	--	--	--	--	--	--	0.330	--	1.6	0.41	--
Sulfate (mg/L)	29.0	--	--	--	--	--	--	--	--	58.0	--	31.0	27.0	--
TOC (mg/L)	51.0	--	--	--	--	--	--	--	--	62.0	--	<0.50	<0.50	--

Table 6-2 Water Quality Parameters for Groundwater Performance Monitoring at SWMU 54 (Continued)

Well ID	54MW1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>SWMU 54 Thirteenth Quarter (September 2015) Water Quality Parameters</i>														
pH	6.7	--	--	--	--	--	--	--	--	6.8	--	5.4	6.69	--
Specific Conductivity (mS/cm)	0.471	--	--	--	--	--	--	--	--	329	--	0.557	0.529	--
Turbidity (NTU)	0.65	--	--	--	--	--	--	--	--	30.7	--	2.66	1.00	--
DO (mg/L)	0.75	--	--	--	--	--	--	--	--	8.2	--	6.0	6.53	--
ORP (mV)	180	--	--	--	--	--	--	--	--	71	--	264	198.0	--
Temperature (°C)	14.14	--	--	--	--	--	--	--	--	15.8	--	14.8	14.83	--
Dissolved Manganese (mg/L)	0.087	--	--	--	--	--	--	--	--	0.081	--	0.066	0.081	--
Dissolved Ferrous Iron (mg/L)	0	--	--	--	--	--	--	--	--	0.11	--	0.07	0.11	--
Nitrate (mg/L)	0.14	--	--	--	--	--	--	--	--	0.25	--	0.92	0.5	--
Sulfate (mg/L)	25	--	--	--	--	--	--	--	--	23	--	24	26	--
TOC (mg/L)	4.1	--	--	--	--	--	--	--	--	8.1	--	8.3	13	--
<i>SWMU 54 Fourteenth Quarter (January 2016) Water Quality Parameters</i>														
pH	7.60	--	--	--	--	--	--	--	--	6.16	--	6.79	7.01	--
Specific Conductivity (mS/cm)	2.8	--	--	--	--	--	--	--	--	0.54	--	589.5	324.0	--
Turbidity (NTU)	0.78	--	--	--	--	--	--	--	--	0.88	--	5.8	7.99	--
DO (mg/L)	9.89	--	--	--	--	--	--	--	--	6.70	--	8.6	8.74	--
ORP (mV)	76.2	--	--	--	--	--	--	--	--	89.3	--	92.4	73.2	--
Temperature (°C)	9.6	--	--	--	--	--	--	--	--	12.7	--	12.4	11.6	--
Dissolved Manganese (mg/L)	0.063	--	--	--	--	--	--	--	--	0.054	--	0.030	0.063	--
Dissolved Ferrous Iron (mg/L)	0	--	--	--	--	--	--	--	--	0.0	--	0.10	0.05	--
Nitrate (mg/L)	0.15	--	--	--	--	--	--	--	--	0.45	--	2.5	0.46	--
Sulfate (mg/L)	26	--	--	--	--	--	--	--	--	76	--	45	20	--
TOC (mg/L)	1.5	--	--	--	--	--	--	--	--	0.97	--	1.8	1.8	--
<i>SWMU 54 Fifteenth Quarter (April 2016) Water Quality Parameters</i>														
pH	7.61	--	--	--	--	--	--	--	--	6.71	--	6.44	6.77	--
Specific Conductivity (mS/cm)	440	--	--	--	--	--	--	--	--	602	--	353	229	--
Turbidity (NTU)	0.3	--	--	--	--	--	--	--	--	3.74	--	5.7	1.16	--
DO (mg/L)	4	--	--	--	--	--	--	--	--	0.61	--	5.8	6.86	--
ORP (mV)	51	--	--	--	--	--	--	--	--	73.5	--	93.4	76.8	--
Temperature (°C)	12.01	--	--	--	--	--	--	--	--	13.4	--	14.32	13.52	--
Dissolved Manganese (mg/L)	0.021	--	--	--	--	--	--	--	--	0.057	--	0.020	0.025	--
Dissolved Ferrous Iron (mg/L)	0.02	--	--	--	--	--	--	--	--	0.03	--	0.04	0.02	--
Nitrate (mg/L)	0.14	--	--	--	--	--	--	--	--	0.18	--	1.3	0.43	--
Sulfate (mg/L)	29	--	--	--	--	--	--	--	--	83	--	27	19	--
TOC (mg/L)	4.2	--	--	--	--	--	--	--	--	8.9	--	6.8	0.68	--

Table 6-2 Water Quality Parameters for Groundwater Performance Monitoring at SWMU 54 (Continued)

Well ID	54MW1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>SWMU 54 Sixteenth Quarter (July 2016) Water Quality Parameters</i>														
pH	6.82	--	--	--	--	--	--	--	--	7.39	--	6.32	7.27	--
Specific Conductivity (mS/cm)	619	--	--	--	--	--	--	--	--	775	--	499	473.0	--
Turbidity (NTU)	4.62	--	--	--	--	--	--	--	--	5.36	--	6.50	0.72	--
DO (mg/L)	3.14	--	--	--	--	--	--	--	--	0.37	--	4.60	2.09	--
ORP (mV)	-10.1	--	--	--	--	--	--	--	--	109	--	8.2	12.0	--
Temperature (°C)	16.56	--	--	--	--	--	--	--	--	13.79	--	14.33	15.2	--
Dissolved Manganese (mg/L)	0.062	--	--	--	--	--	--	--	--	0.048	--	0.033	0.031	--
Dissolved Ferrous Iron (mg/L)	0.14	--	--	--	--	--	--	--	--	0.02	--	0.02	0.00	--
Nitrate (mg/L)	0.15	--	--	--	--	--	--	--	--	0.47	--	0.81	0.60	--
Sulfate (mg/L)	29	--	--	--	--	--	--	--	--	93	--	25	36	--
TOC (mg/L)	0.92	--	--	--	--	--	--	--	--	0.58	--	1.2	0.78	--
<i>SWMU 54 Seventeenth Quarter (October 2016) Water Quality Parameters</i>														
pH	7.28	--	--	--	--	--	--	--	--	5.91	--	6.34	6.92	--
Specific Conductivity (mS/cm)	474	--	--	--	--	--	--	--	--	839	--	579	673	--
Turbidity (NTU)	0.14	--	--	--	--	--	--	--	--	3.22	--	3.02	9.98	--
DO (mg/L)	2.60	--	--	--	--	--	--	--	--	0.54	--	5.05	3.40	--
ORP (mV)	138.2	--	--	--	--	--	--	--	--	69.1	--	30.4	44.8	--
Temperature (°C)	14.48	--	--	--	--	--	--	--	--	14.63	--	15.55	13.10	--
Dissolved Manganese (mg/L)	0.049	--	--	--	--	--	--	--	--	0.003	--	0.038	0.061	--
Dissolved Ferrous Iron (mg/L)	0.05	--	--	--	--	--	--	--	--	0.52	--	0.00	0.08	--
Nitrate (mg/L)	0.15	--	--	--	--	--	--	--	--	0.26	--	1.2	0.49	--
Sulfate (mg/L)	30	--	--	--	--	--	--	--	--	150	--	41	38	--
TOC (mg/L)	1.5	--	--	--	--	--	--	--	--	0.55	--	0.99	1.5	--
<i>SWMU 54 Eighteenth Quarter (January 2017) Water Quality Parameters</i>														
pH	7.43	--	--	--	--	--	--	--	--	7.19	--	6.70	7.04	--
Specific Conductivity (mS/cm)	486.2	--	--	--	--	--	--	--	--	854	--	647.5	740	--
Turbidity (NTU)	0.28	--	--	--	--	--	--	--	--	1.39	--	1.04	8.20	--
DO (mg/L)	2.21	--	--	--	--	--	--	--	--	1.40	--	5.40	3.29	--
ORP (mV)	74.8	--	--	--	--	--	--	--	--	49	--	75	71	--
Temperature (°C)	12.8	--	--	--	--	--	--	--	--	12.5	--	11.8	11.7	--
Dissolved Manganese (mg/L)	0.036	--	--	--	--	--	--	--	--	0.069	--	0.040	0.060	--
Dissolved Ferrous Iron (mg/L)	0.00	--	--	--	--	--	--	--	--	0.04	--	0.00	0.03	--
Nitrate (mg/L)	0.15	--	--	--	--	--	--	--	--	0.38	--	0.94	0.48	--
Sulfate (mg/L)	31	--	--	--	--	--	--	--	--	110	--	38	42	--
TOC (mg/L)	0.56	--	--	--	--	--	--	--	--	1.5	--	1.4	1.5	--

Table 6-2 Water Quality Parameters for Groundwater Performance Monitoring at SWMU 54 (Continued)

Well ID	54MW1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>SWMU 54 Nineteenth Quarter (April 2017) Water Quality Parameters</i>														
pH	7.65	--	--	--	--	--	--	--	--	6.88	--	6.70	6.97	--
Specific Conductivity (mS/cm)	0.443	--	--	--	--	--	--	--	--	0.614	--	0.627	0.474	--
Turbidity (NTU)	0.25	--	--	--	--	--	--	--	--	0.71	--	1.92	14.2	--
DO (mg/L)	8.38	--	--	--	--	--	--	--	--	3.2	--	5.39	4.74	--
ORP (mV)	91.0	--	--	--	--	--	--	--	--	57.3	--	93.4	77.5	--
Temperature (°C)	13.1	--	--	--	--	--	--	--	--	13.80	--	13.1	14	--
Dissolved Manganese (mg/L)	0.049	--	--	--	--	--	--	--	--	0.039	--	0.036	0.067	--
Dissolved Ferrous Iron (mg/L)	0.00	--	--	--	--	--	--	--	--	0.04	--	0.02	0.14	--
Nitrate (mg/L)	0.15	--	--	--	--	--	--	--	--	0.3	--	1	0.44	--
Sulfate (mg/L)	33	--	--	--	--	--	--	--	--	65	--	47	30	--
TOC (mg/L)	3.3	--	--	--	--	--	--	--	--	6.9	--	6.7	4.4	--
<i>SWMU 54 Twentieth Quarter (July 2017) Water Quality Parameters</i>														
pH	7.43	--	--	--	--	--	--	--	--	7.00	--	6.63	7.00	--
Specific Conductivity (mS/cm)	468	--	--	--	--	--	--	--	--	740	--	505	600	--
Turbidity (NTU)	0.52	--	--	--	--	--	--	--	--	0.52	--	0.71	1.36	--
DO (mg/L)	0.69	--	--	--	--	--	--	--	--	0.83	--	0.11	0.01	--
ORP (mV)	116.5	--	--	--	--	--	--	--	--	24.1	--	85.5	15.5	--
Temperature (°C)	14.8	--	--	--	--	--	--	--	--	14.9	--	13.7	14.8	--
Dissolved Manganese (mg/L)	0.031	--	--	--	--	--	--	--	--	0.060	--	0.073	0.084	--
Dissolved Ferrous Iron (mg/L)	0.00	--	--	--	--	--	--	--	--	0.05	--	0.07	0.08	--
Nitrate (mg/L)	0.15	--	--	--	--	--	--	--	--	0.10	--	0.75	0.56	--
Sulfate (mg/L)	28	--	--	--	--	--	--	--	--	110	--	32	32	--
TOC (mg/L)	0.71	--	--	--	--	--	--	--	--	2.6	--	1.5	1.9	--
<i>SWMU 54 Twenty-First Quarter (October 2017) Water Quality Parameters</i>														
pH	7.23	--	--	--	--	--	--	--	--	6.71	--	6.49	6.68	--
Specific Conductivity (mS/cm)	468.6	--	--	--	--	--	--	--	--	462.3	--	577.5	537.5	--
Turbidity (NTU)	0.17	--	--	--	--	--	--	--	--	0.8	--	8.75	0.74	--
DO (mg/L)	7.98	--	--	--	--	--	--	--	--	8.60	--	6.43	5.71	--
ORP (mV)	63.6	--	--	--	--	--	--	--	--	45.6	--	97.4	88.3	--
Temperature (°C)	14.2	--	--	--	--	--	--	--	--	14.9	--	12.7	14.6	--
Dissolved Manganese (mg/L)	0.21	--	--	--	--	--	--	--	--	0.044	--	0.051	0.032	--
Dissolved Ferrous Iron (mg/L)	0.00	--	--	--	--	--	--	--	--	0.00	--	0.07	0.00	--
Nitrate (mg/L)	0.15	--	--	--	--	--	--	--	--	0.34	--	0.86	0.45	--
Sulfate (mg/L)	31	--	--	--	--	--	--	--	--	38	--	37	29	--
TOC (mg/L)	2.6	--	--	--	--	--	--	--	--	2.6	--	1.2	2.2	--

Table 6-2 Water Quality Parameters for Groundwater Performance Monitoring at SWMU 54 (Continued)

Well ID	54MW1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>SWMU 54 Twenty-Second Quarter (January 2018) Water Quality Parameters</i>														
pH	7.46	--	--	--	--	--	--	--	--	7.14	--	6.57	7.00	--
Specific Conductivity (mS/cm)	438.4	--	--	--	--	--	--	--	--	734	--	531.7	640.2	--
Turbidity (NTU)	0.32	--	--	--	--	--	--	--	--	0.92	--	2.17	7.34	--
DO (mg/L)	0.53	--	--	--	--	--	--	--	--	0.95	--	8.45	4.51	--
ORP (mV)	69	--	--	--	--	--	--	--	--	45.9	--	83.2	75.3	--
Temperature (°C)	13	--	--	--	--	--	--	--	--	12.5	--	10.4	12	--
Dissolved Manganese (mg/L)	0.038	--	--	--	--	--	--	--	--	0.000	--	0.000	0.064	--
Dissolved Ferrous Iron (mg/L)	0.02	--	--	--	--	--	--	--	--	0.00	--	0.00	0.26	--
Nitrate (mg/L)	0.15	--	--	--	--	--	--	--	--	0.15	--	1.4	0.33	--
Sulfate (mg/L)	25	--	--	--	--	--	--	--	--	98	--	46	34	--
TOC (mg/L)	6.5	--	--	--	--	--	--	--	--	3.7	--	13	10	--
<i>SWMU 54 Twenty-Third Quarter (April 2018) Water Quality Parameters</i>														
pH	7.59	--	--	--	--	--	--	--	--	6.87	--	6.68	6.76	--
Specific Conductivity (mS/cm)	441.6	--	--	--	--	--	--	--	--	553.7	--	584	520	--
Turbidity (NTU)	0.59	--	--	--	--	--	--	--	--	0.78	--	10.4	3.15	--
DO (mg/L)	5.28	--	--	--	--	--	--	--	--	4.37	--	6.5	6.18	--
ORP (mV)	63.8	--	--	--	--	--	--	--	--	50	--	204.7	73.5	--
Temperature (°C)	13.6	--	--	--	--	--	--	--	--	13.1	--	12.4	13.4	--
Dissolved Manganese (mg/L)	0.024	--	--	--	--	--	--	--	--	0.11	--	0.046	0.032	--
Dissolved Ferrous Iron (mg/L)	0.00	--	--	--	--	--	--	--	--	0.00	--	0.06	0.00	--
Nitrate (mg/L)	0.2	--	--	--	--	--	--	--	--	0.68	--	1.2	0.62	--
Sulfate (mg/L)	28	--	--	--	--	--	--	--	--	47	--	41	30	--
TOC (mg/L)	1.5	--	--	--	--	--	--	--	--	1.5	--	0.72	1.5	--
<i>SWMU 54 Twenty-Fourth Quarter (July 2018) Water Quality Parameters</i>														
pH	6.87	--	--	--	--	--	--	--	--	6.56	--	6.06	6.55	--
Specific Conductivity (mS/cm)	390.9	--	--	--	--	--	--	--	--	629	--	375.6	549	--
Turbidity (NTU)	0.3	--	--	--	--	--	--	--	--	0.89	--	39.5	2.03	--
DO (mg/L)	6.96	--	--	--	--	--	--	--	--	0.78	--	9.17	3.42	--
ORP (mV)	0.5	--	--	--	--	--	--	--	--	-19.9	--	2.9	0.7	--
Temperature (°C)	14	--	--	--	--	--	--	--	--	14.7	--	15.6	16	--
Dissolved Manganese (mg/L)	0.041	--	--	--	--	--	--	--	--	0.121	--	0.039	0.143	--
Dissolved Ferrous Iron (mg/L)	0.00	--	--	--	--	--	--	--	--	0.03	--	0.04	0.00	--
Nitrate (mg/L)	0.2	--	--	--	--	--	--	--	--	0.19	--	1.6	0.43	--
Sulfate (mg/L)	26	--	--	--	--	--	--	--	--	100	--	40	32	--
TOC (mg/L)	1.5	--	--	--	--	--	--	--	--	1.5	--	1.5	1.5	--

Table 6-2 Water Quality Parameters for Groundwater Performance Monitoring at SWMU 54 (Continued)

Well ID	54MW1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>SWMU 54 Twenty-Fifth Quarter (October 2018) Water Quality Parameters</i>														
pH	7.39	--	--	--	--	--	--	--	--	6.89	--	6.41	6.63	--
Specific Conductivity (mS/cm)	374.1	--	--	--	--	--	--	--	--	707	--	372.6	220	--
Turbidity (NTU)	0.34	--	--	--	--	--	--	--	--	0.56	--	28.90	10.90	--
DO (mg/L)	8.05	--	--	--	--	--	--	--	--	2.68	--	5.84	5.5	--
ORP (mV)	-34.5	--	--	--	--	--	--	--	--	71.7	--	118.5	110.4	--
Temperature (°C)	13.3	--	--	--	--	--	--	--	--	15.4	--	14.7	14.8	--
Dissolved Manganese (mg/L)	0.22	--	--	--	--	--	--	--	--	0.024	--	0.045	0.024	--
Dissolved Ferrous Iron (mg/L)	0.00	--	--	--	--	--	--	--	--	0.00	--	0.16	0.00	--
Nitrate (mg/L)	0.2	--	--	--	--	--	--	--	--	0.62	--	2	0.41	--
Sulfate (mg/L)	28	--	--	--	--	--	--	--	--	61	--	32	16	--
TOC (mg/L)	1.5	--	--	--	--	--	--	--	--	0.81	--	1	1.5	--
<i>SWMU 54 Twenty-Sixth Quarter (February 2019) Water Quality Parameters</i>														
pH	7.14	--	--	--	--	--	--	--	--	6.57	--	6.46	6.28	--
Specific Conductivity (mS/cm)	471.5	--	--	--	--	--	--	--	--	566.6	--	532.6	267.6	--
Turbidity (NTU)	0.32	--	--	--	--	--	--	--	--	0.26	--	6.2	8.99	--
DO (mg/L)	3.02	--	--	--	--	--	--	--	--	0.11	--	1.39	8.02	--
ORP (mV)	10.3	--	--	--	--	--	--	--	--	45.7	--	102.1	79.3	--
Temperature (°C)	13.7	--	--	--	--	--	--	--	--	13.5	--	13.2	13.1	--
Dissolved Manganese (mg/L)	0.029	--	--	--	--	--	--	--	--	0.04	--	0.046	0.045	--
Dissolved Ferrous Iron (mg/L)	0.02	--	--	--	--	--	--	--	--	0.05	--	0.06	0.14	--
Nitrate (mg/L)	0.2	--	--	--	--	--	--	--	--	1.1	--	2	0.48	--
Sulfate (mg/L)	25	--	--	--	--	--	--	--	--	31	--	43	15	--
TOC (mg/L)	1.5	--	--	--	--	--	--	--	--	0.72	--	2.3	1.5	--
<i>SWMU 54 Twenty-Seventh Quarter (April 2019) Water Quality Parameters</i>														
pH	7.33	--	--	--	--	--	--	--	--	6.52	--	5.8	6.34	--
Specific Conductivity (mS/cm)	372.8	--	--	--	--	--	--	--	--	402.4	--	324.6	270.4	--
Turbidity (NTU)	0.28	--	--	--	--	--	--	--	--	1.19	--	46.7	10.17	--
DO (mg/L)	8.4	--	--	--	--	--	--	--	--	4.32	--	6.77	5.9	--
ORP (mV)	62.1	--	--	--	--	--	--	--	--	89.7	--	118.3	116.6	--
Temperature (°C)	13.2	--	--	--	--	--	--	--	--	12.2	--	14.2	14.3	--
Dissolved Manganese (mg/L)	0.023	--	--	--	--	--	--	--	--	0.00	--	0.085	0.04	--
Dissolved Ferrous Iron (mg/L)	0.00	--	--	--	--	--	--	--	--	0.00	--	0.21	0.02	--
Nitrate (mg/L)	0.2	--	--	--	--	--	--	--	--	2	--	2.5	0.58	--
Sulfate (mg/L)	27	--	--	--	--	--	--	--	--	30	--	56	41	--
TOC (mg/L)	1.4	--	--	--	--	--	--	--	--	1.5	--	0.84	1.5	--

Table 6-2 Water Quality Parameters for Groundwater Performance Monitoring at SWMU 54 (Continued)

Well ID	54MW1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>SWMU 54 Twenty-Eighth Quarter (July 2019) Water Quality Parameters</i>														
pH	7.49	--	--	--	--	--	--	--	--	6.9	--	6.54	7.01	--
Specific Conductivity (mS/cm)	479.5	--	--	--	--	--	--	--	--	570.1	--	470.5	577	--
Turbidity (NTU)	0.21	--	--	--	--	--	--	--	--	1.71	--	2.58	1.82	--
DO (mg/L)	3.54	--	--	--	--	--	--	--	--	5.33	--	4.29	6.24	--
ORP (mV)	212.5	--	--	--	--	--	--	--	--	79	--	238.7	225.1	--
Temperature (°C)	14.7	--	--	--	--	--	--	--	--	15.3	--	15.2	18.1	--
Dissolved Manganese (mg/L)	0.035	--	--	--	--	--	--	--	--	0.026	--	0.04	0.038	--
Dissolved Ferrous Iron (mg/L)	0.07	--	--	--	--	--	--	--	--	1.71	--	2.58	1.82	--
Nitrate (mg/L)	0.2	--	--	--	--	--	--	--	--	0.46	--	0.84	0.5	--
Sulfate (mg/L)	26	--	--	--	--	--	--	--	--	65	--	23	31	--
TOC (mg/L)	1.5	--	--	--	--	--	--	--	--	1.5	--	1.5	1.5	--
<i>SWMU 54 Twenty-Ninth Quarter (October 2019) Water Quality Parameters</i>														
pH	7.33	--	--	--	--	--	--	--	--	6.99	--	7	7.01	--
Specific Conductivity (mS/cm)	431	--	--	--	--	--	--	--	--	728	--	601	519	--
Turbidity (NTU)	0.22	--	--	--	--	--	--	--	--	2.52	--	3.06	1.97	--
DO (mg/L)	14.8	--	--	--	--	--	--	--	--	18.3	--	48.6	77	--
ORP (mV)	41.3	--	--	--	--	--	--	--	--	32	--	80.6	44.3	--
Temperature (°C)	14.97	--	--	--	--	--	--	--	--	15.16	--	14.95	16.38	--
Dissolved Manganese (mg/L)	0.02	--	--	--	--	--	--	--	--	0.014	--	0.042	0.04	--
Dissolved Ferrous Iron (mg/L)	0.24	--	--	--	--	--	--	--	--	0	--	0.12	0.16	--
Nitrate (mg/L)	ND	--	--	--	--	--	--	--	--	0.18	--	0.58	0.52	--
Sulfate (mg/L)	28	--	--	--	--	--	--	--	--	140	--	32	33	--
TOC (mg/L)	ND	--	--	--	--	--	--	--	--	0.62	--	0.69	0.53	--
TIC (mg/L)	61	--	--	--	--	--	--	--	--	85	--	86	97	--

Table 6-2 Water Quality Parameters for Groundwater Performance Monitoring at SWMU 54 (Continued)

Well ID	54MW1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>SWMU 54 Thirtieth Quarter (January 2020) Water Quality Parameters</i>														
pH	7.5	--	--	--	--	--	--	--	--	6.87	--	6.51	6.93	--
Specific Conductivity (mS/cm)	462	--	--	--	--	--	--	--	--	508	--	540	600	--
Turbidity (NTU)	0.34	--	--	--	--	--	--	--	--	0.43	--	1.13	1.86	--
DO (mg/L)	2.4	--	--	--	--	--	--	--	--	0.43	--	7.2	6.54	--
ORP (mV)	95.3	--	--	--	--	--	--	--	--	126.8	--	116.8	108.7	--
Temperature (°C)	13.33	--	--	--	--	--	--	--	--	12.6	--	12.72	12.48	--
Dissolved Manganese (mg/L)	0.01	--	--	--	--	--	--	--	--	0.05	--	0.33	0.1	--
Dissolved Ferrous Iron (mg/L)	0.04	--	--	--	--	--	--	--	--	0.06	--	0.07	0.1	--
Nitrate (mg/L)	ND	--	--	--	--	--	--	--	--	0.58	--	0.76	0.63	--
Sulfate (mg/L)	29	--	--	--	--	--	--	--	--	59	--	29	27	--
TOC (mg/L)	ND	--	--	--	--	--	--	--	--	ND	--	ND	ND	--
TIC (mg/L)	56	--	--	--	--	--	--	--	--	59	--	84	70	--
<i>SWMU 54 Thirty-First Quarter (April 2020) Water Quality Parameters</i>														
pH	7.65	--	--	--	--	--	--	--	--	6.83	--	6.62	6.68	--
Specific Conductivity (mS/cm)	339.6	--	--	--	--	--	--	--	--	364.9	--	357.2	241.6	--
Turbidity (NTU)	1.86	--	--	--	--	--	--	--	--	35.68	--	77.81	50.12	--
DO (mg/L)	4.46	--	--	--	--	--	--	--	--	5.28	--	7.34	8.21	--
ORP (mV)	111	--	--	--	--	--	--	--	--	112.6	--	127.8	96	--
Temperature (°C)	13.4	--	--	--	--	--	--	--	--	11.9	--	13.5	12	--
Dissolved Manganese (mg/L)	0.021	--	--	--	--	--	--	--	--	0.07	--	0.08	0.05	--
Dissolved Ferrous Iron (mg/L)	0	--	--	--	--	--	--	--	--	0.02	--	0.1	0.02	--
Nitrate (mg/L)	ND	--	--	--	--	--	--	--	--	1.1	--	1	5.6	--
Sulfate (mg/L)	28	--	--	--	--	--	--	--	--	52	--	28	0.97	--
TOC (mg/L)	ND	--	--	--	--	--	--	--	--	0.99	--	ND	0.46	--
TIC (mg/L)	56	--	--	--	--	--	--	--	--	63	--	85	21	--

Table 6-2 Water Quality Parameters for Groundwater Performance Monitoring at SWMU 54 (Continued)

Well ID	54MW1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>SWMU 54 Thirty-Second Quarter (July 2020) Water Quality Parameters</i>														
pH	7.5	--	--	--	--	--	--	--	--	6.87	--	6.51	6.93	--
Specific Conductivity (mS/cm)	462	--	--	--	--	--	--	--	--	508	--	540	600	--
Turbidity (NTU)	0.34	--	--	--	--	--	--	--	--	0.43	--	1.13	1.86	--
DO (mg/L)	2.4	--	--	--	--	--	--	--	--	0.43	--	7.2	6.54	--
ORP (mV)	95.3	--	--	--	--	--	--	--	--	126.8	--	116.8	108.7	--
Temperature (°C)	13.33	--	--	--	--	--	--	--	--	12.6	--	12.72	12.48	--
Dissolved Manganese (mg/L)	0.04	--	--	--	--	--	--	--	--	0.31	--	0.1	0.037	--
Dissolved Ferrous Iron (mg/L)	0.09	--	--	--	--	--	--	--	--	0.07	--	0.017	0.07	--
Nitrate (mg/L)	0.12	--	--	--	--	--	--	--	--	ND	--	1	1	--
Sulfate (mg/L)	28	--	--	--	--	--	--	--	--	15	--	22	20	--
TOC (mg/L)	ND	--	--	--	--	--	--	--	--	ND	--	ND	ND	--
TIC (mg/L)	63	--	--	--	--	--	--	--	--	63	--	65	48	--
<i>SWMU 54 Thirty-Third Quarter (October 2020) Water Quality Parameters</i>														
pH	7.5	--	--	--	--	--	--	--	--	7.33	--	6.9	7.08	--
Specific Conductivity (mS/cm)	486	--	--	--	--	--	--	--	--	831	--	516	453	--
Turbidity (NTU)	10.3	--	--	--	--	--	--	--	--	28.3	--	15.9	35.8	--
DO (mg/L)	1.81	--	--	--	--	--	--	--	--	1.37	--	5.27	5.19	--
ORP (mV)	123.9	--	--	--	--	--	--	--	--	19.8	--	153.1	106.1	--
Temperature (°C)	15.46	--	--	--	--	--	--	--	--	14.4	--	14.25	14.19	--
Dissolved Manganese (mg/L)	0.00	--	--	--	--	--	--	--	--	0.00	--	0.0	0.0	--
Dissolved Ferrous Iron (mg/L)	0.03	--	--	--	--	--	--	--	--	0.00	--	0.0	0.0	--
Nitrate (mg/L)	0.17	--	--	--	--	--	--	--	--	0.25	--	0.46	0.48	--
Sulfate (mg/L)	31	--	--	--	--	--	--	--	--	95	--	32	30	--
TOC (mg/L)	ND	--	--	--	--	--	--	--	--	1.2	--	1.5	1.2	--
TIC (mg/L)	55	--	--	--	--	--	--	--	--	66	--	69	58	--

Table 6-2 Water Quality Parameters for Groundwater Performance Monitoring at SWMU 54 (Continued)

Well ID	54MW1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>SWMU 54 Thirty-Fourth Quarter (January 2021) Water Quality Parameters</i>														
pH	7.49	--	--	--	--	--	--	--	--	6.77	--	6.6	6.69	--
Specific Conductivity (mS/cm)	471	--	--	--	--	--	--	--	--	629	--	542	400	--
Turbidity (NTU)	11	--	--	--	--	--	--	--	--	8.72	--	2.23	6.53	--
DO (mg/L)	5.06	--	--	--	--	--	--	--	--	5.37	--	6.92	7.63	--
ORP (mV)	99.9	--	--	--	--	--	--	--	--	93.3	--	123.7	167.7	--
Temperature (°C)	13.5	--	--	--	--	--	--	--	--	12.9	--	12.5	12.7	--
Dissolved Manganese (mg/L)	0.0	--	--	--	--	--	--	--	--	0.0	--	0.02	0.02	--
Dissolved Ferrous Iron (mg/L)	0.02	--	--	--	--	--	--	--	--	0.0	--	0.0	0.0	--
Nitrate (mg/L)	0.2	--	--	--	--	--	--	--	--	0.66	--	0.73	0.8	--
Sulfate (mg/L)	28	--	--	--	--	--	--	--	--	75	--	33	24	--
TOC (mg/L)	ND	--	--	--	--	--	--	--	--	1.3	--	1.2	1.5	--
TIC (mg/L)	56	--	--	--	--	--	--	--	--	67	--	66	49	--
<i>SWMU 54 Thirty-Fifth Quarter (April 2021) Water Quality Parameters</i>														
pH	7.58	--	--	--	--	--	--	--	--	6.72	--	6.48	6.68	--
Specific Conductivity (mS/cm)	424	--	--	--	--	--	--	--	--	520	--	502	459	--
Turbidity (NTU)	29.8	--	--	--	--	--	--	--	--	31.72	--	68.62	13.2	--
DO (mg/L)	4.29	--	--	--	--	--	--	--	--	3.98	--	3.96	4.67	--
ORP (mV)	128	--	--	--	--	--	--	--	--	145.7	--	171.3	158.3	--
Temperature (°C)	13.9	--	--	--	--	--	--	--	--	13.1	--	14.5	12.8	--
Dissolved Manganese (mg/L)	0.0	--	--	--	--	--	--	--	--	0.3	--	0.0	0.0	--
Dissolved Ferrous Iron (mg/L)	0.03	--	--	--	--	--	--	--	--	0.01	--	0.02	0.02	--
Nitrate (mg/L)	0.13	--	--	--	--	--	--	--	--	0.71	--	1.1	0.64	--
Sulfate (mg/L)	28	--	--	--	--	--	--	--	--	58	--	34	34	--
TOC (mg/L)	ND	--	--	--	--	--	--	--	--	ND	--	0.84	2.4	--
TIC (mg/L)	57	--	--	--	--	--	--	--	--	71	--	80	63	--

Table 6-2 Water Quality Parameters for Groundwater Performance Monitoring at SWMU 54 (Continued)

Well ID	54MW1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>SWMU 54 Thirty-Sixth Quarter (July 2021) Water Quality Parameters</i>														
pH	7.25	--	--	--	--	--	--	--	--	7.12	--	6.87	7.44	--
Specific Conductivity (mS/cm)	482.9	--	--	--	--	--	--	--	--	661	--	570	614	--
Turbidity (NTU)	1.24	--	--	--	--	--	--	--	--	0.65	--	3.38	0.44	--
DO (mg/L)	5.41	--	--	--	--	--	--	--	--	4.59	--	6.04	6.77	--
ORP (mV)	137.7	--	--	--	--	--	--	--	--	131.7	--	195.9	189.6	--
Temperature (°C)	18.5	--	--	--	--	--	--	--	--	14.6	--	18.2	19.8	--
Dissolved Manganese (mg/L)	0.09	--	--	--	--	--	--	--	--	0.2	--	0.5	0.6	--
Dissolved Ferrous Iron (mg/L)	0.01	--	--	--	--	--	--	--	--	0.1	--	0.06	0.02	--
Nitrate (mg/L)	ND	--	--	--	--	--	--	--	--	0.42	--	0.61	0.54	--
Sulfate (mg/L)	28	--	--	--	--	--	--	--	--	96	--	30	34	--
TOC (mg/L)	ND	--	--	--	--	--	--	--	--	ND	--	0.50	1.8	--
TIC (mg/L)	56	--	--	--	--	--	--	--	--	68	--	73	74	--
<i>SWMU 54 Thirty-Seventh Event (October 2021) Water Quality Parameters</i>														
pH	7.59	--	--	--	--	--	--	--	--	7.28	--	6.82	7.14	--
Specific Conductivity (mS/cm)	420	--	--	--	--	--	--	--	--	705	--	470.4	598	--
Turbidity (NTU)	39.72	--	--	--	--	--	--	--	--	7.3	--	24.22	8.56	--
DO (mg/L)	0.42	--	--	--	--	--	--	--	--	0.46	--	6.84	4.39	--
ORP (mV)	165.8	--	--	--	--	--	--	--	--	123.7	--	193.4	164.8	--
Temperature (°C)	13.9	--	--	--	--	--	--	--	--	13.4	--	13.2	13.3	--
Dissolved Manganese (mg/L)	0.40	--	--	--	--	--	--	--	--	1.1	--	0.40	0	--
Dissolved Ferrous Iron (mg/L)	0.03	--	--	--	--	--	--	--	--	0.10	--	0.01	0.07	--
Nitrate (mg/L)	ND	--	--	--	--	--	--	--	--	0.25	--	0.66	0.49	--
Sulfate (mg/L)	28	--	--	--	--	--	--	--	--	120	--	28	37	--
TOC (mg/L)	ND	--	--	--	--	--	--	--	--	ND	--	ND	ND	--
TIC (mg/L)	60	--	--	--	--	--	--	--	--	77	--	76	91	--
<i>SWMU 54 Thirty-Eighth Event (April 2022) Water Quality Parameters</i>														
pH	7.44	--	--	--	--	--	--	--	--	6.75	--	6.68	6.95	--
Specific Conductivity (mS/cm)	428	--	--	--	--	--	--	--	--	521.7	--	479.9	514.4	--
Turbidity (NTU)	0.74	--	--	--	--	--	--	--	--	0.28	--	0.67	1.25	--
DO (mg/L)	2.04	--	--	--	--	--	--	--	--	1.81	--	6.19	4.58	--
ORP (mV)	52.7	--	--	--	--	--	--	--	--	126.6	--	184.3	154.3	--
Temperature (°C)	13.3	--	--	--	--	--	--	--	--	13.8	--	13.4	14.0	--
Dissolved Manganese (mg/L)	0.50	--	--	--	--	--	--	--	--	0	--	2.3	3.0	--
Dissolved Ferrous Iron (mg/L)	0.93	--	--	--	--	--	--	--	--	2.01	--	0.01	0.50	--
Nitrate (mg/L)	0.13	--	--	--	--	--	--	--	--	0.30	--	0.73	0.64	--
Sulfate (mg/L)	31	--	--	--	--	--	--	--	--	72	--	33	33	--
TOC (mg/L)	ND	--	--	--	--	--	--	--	--	ND	--	ND	ND	--
TIC (mg/L)	60	--	--	--	--	--	--	--	--	78	--	82	83	--

Table 6-2 Water Quality Parameters for Groundwater Performance Monitoring at SWMU 54 (Continued)

Well ID	54MW1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>SWMU 54 Thirty-Ninth Event (January 2023) Water Quality Parameters</i>														
pH	7.53	--	--	--	--	--	--	--	--	7.57	--	6.93	7.60	--
Specific Conductivity (mS/cm)	446	--	--	--	--	--	--	--	--	819	--	503.4	10.9	--
Turbidity (NTU)	0.00	--	--	--	--	--	--	--	--	3.59	--	0.00	0.71	--
DO (mg/L)	0.29	--	--	--	--	--	--	--	--	0.31	--	10.02	10.00	--
ORP (mV)	32.3	--	--	--	--	--	--	--	--	52.9	--	159.6	52.3	--
Temperature (°C)	12.7	--	--	--	--	--	--	--	--	12.3	--	11.6	8.3	--
Dissolved Manganese (mg/L)	0.80	--	--	--	--	--	--	--	--	0.50	--	0.50	0.26	--
Dissolved Ferrous Iron (mg/L)	0.01	--	--	--	--	--	--	--	--	0.20	--	0.0	0.04	--
Nitrate (mg/L)	ND	--	--	--	--	--	--	--	--	ND	--	0.68	0.57	--
Sulfate (mg/L)	30	--	--	--	--	--	--	--	--	190	--	30	37	--
TOC (mg/L)	ND	--	--	--	--	--	--	--	--	ND	--	ND	ND	--
TIC (mg/L)	62	--	--	--	--	--	--	--	--	78	--	72	88	--
<i>SWMU 54 Fortieth Event (July 2023) Water Quality Parameters</i>														
pH	7.69	--	--	--	--	--	--	--	--	7.33	--	6.93	7.11	--
Specific Conductivity (mS/cm)	456.3	--	--	--	--	--	--	--	--	802	--	606	559	--
Turbidity (NTU)	1.14	--	--	--	--	--	--	--	--	5.89	--	1.73	5.61	--
DO (mg/L)	2.45	--	--	--	--	--	--	--	--	0.22	--	7.32	4.9	--
ORP (mV)	144.7	--	--	--	--	--	--	--	--	86.1	--	147.2	85	--
Temperature (°C)	14.9	--	--	--	--	--	--	--	--	15.1	--	15.4	15.8	--
Dissolved Manganese (mg/L)	0.90	--	--	--	--	--	--	--	--	0.2	--	1.8	0.3	--
Dissolved Ferrous Iron (mg/L)	0.2	--	--	--	--	--	--	--	--	0.8	--	0.1	0.1	--
Nitrate (mg/L)	ND	--	--	--	--	--	--	--	--	ND	--	0.71	0.57	--
Sulfate (mg/L)	29	--	--	--	--	--	--	--	--	170	--	25	31	--
TOC (mg/L)	ND	--	--	--	--	--	--	--	--	ND	--	ND	ND	--
TIC (mg/L)	66	--	--	--	--	--	--	--	--	84	--	86	85	--

Notes:

-- = Wells eliminated from monitoring program
°C = degrees Celsius
< = less than
DO = dissolved oxygen
ID = identifier
mg/L = milligrams per liter
mS/cm = millisiemens per centimeter
mV = millivolt

ND = non detect
NM = not measured
NTU = Nephelometric Turbidity Unit
ORP = oxidation reduction potential
pH = potential of hydrogen
SWMU = Solid Waste Management Unit
TIC = total inorganic carbon
TOC = total organic carbon

Figure 6-1 SWMU 54: 54MW10 Contaminant Concentration to Groundwater Elevation Correlation

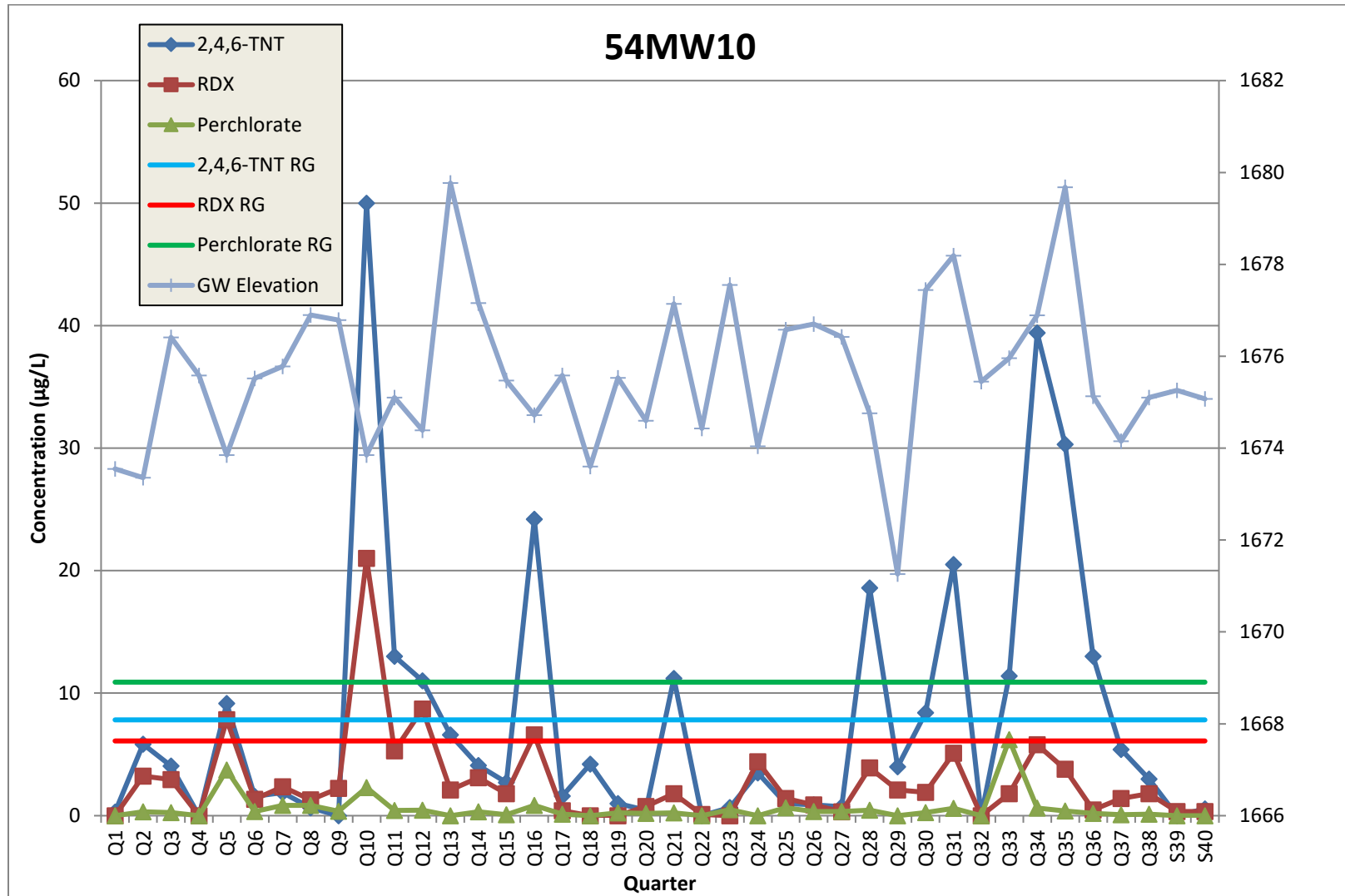


Figure 6-2 SWMU 54: 54MW12 Contaminant Concentration to Groundwater Elevation Correlation

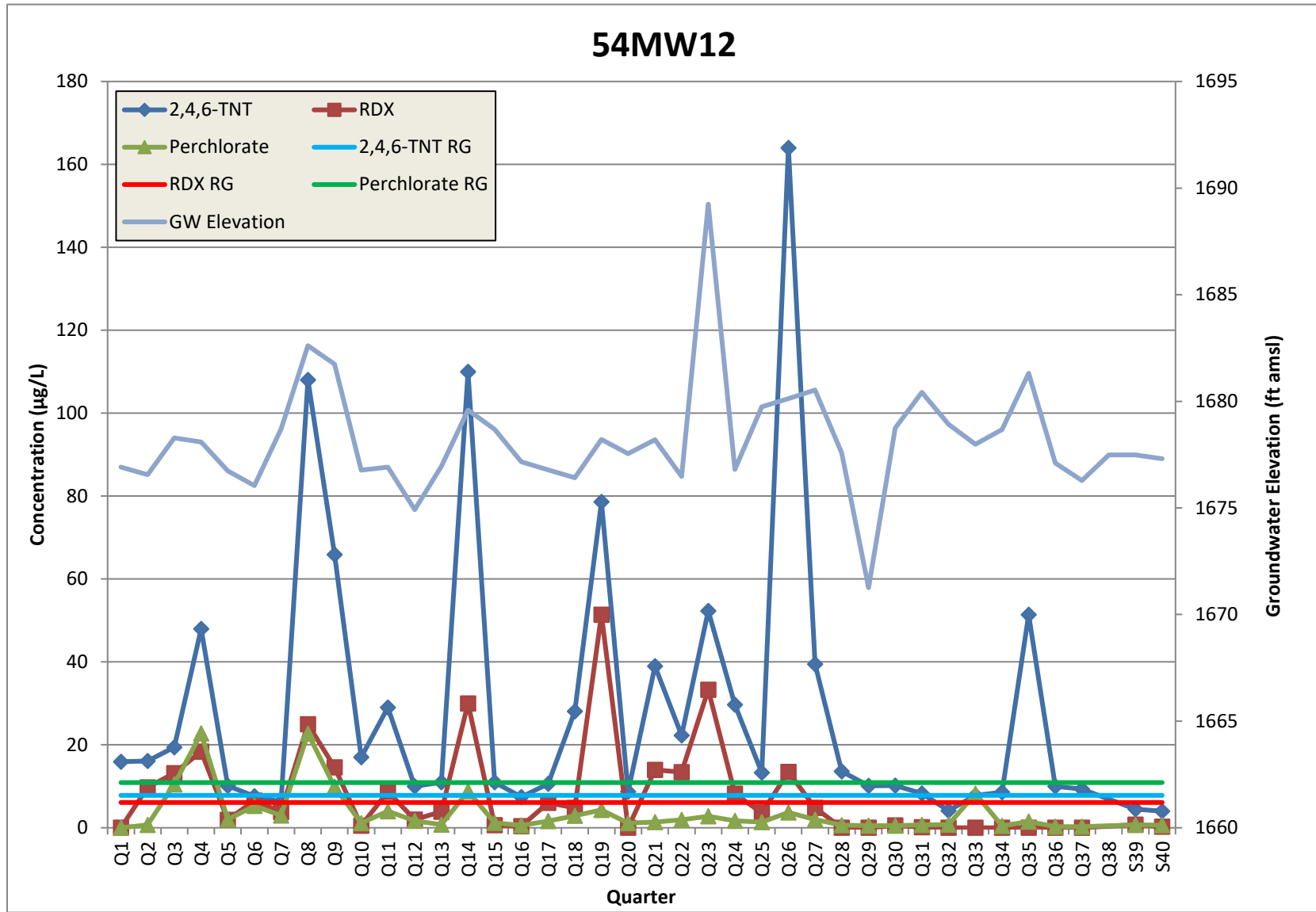


Figure 6-3 SWMU 54: 54MW13 Contaminant Concentration to Groundwater Elevation Correlation

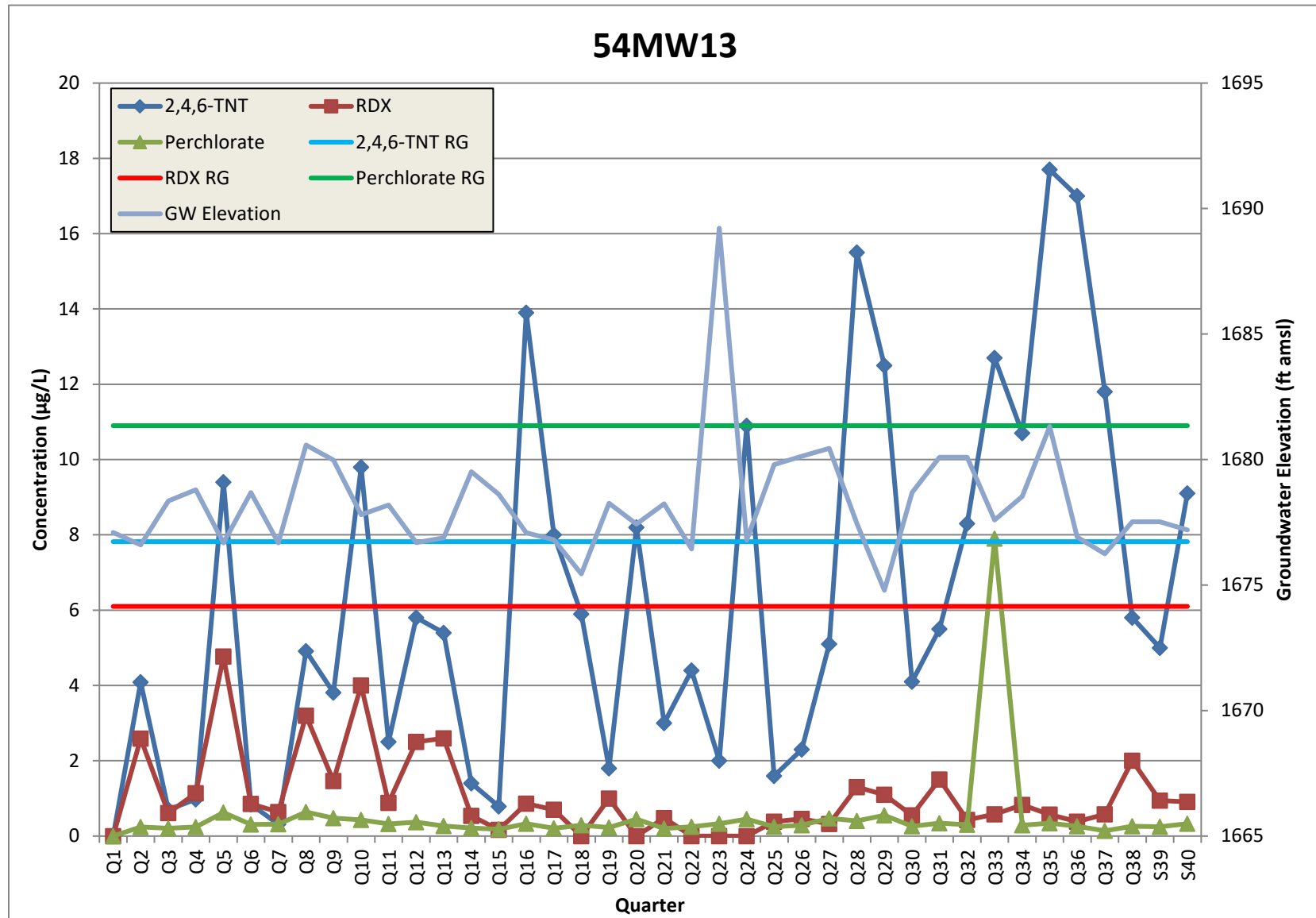
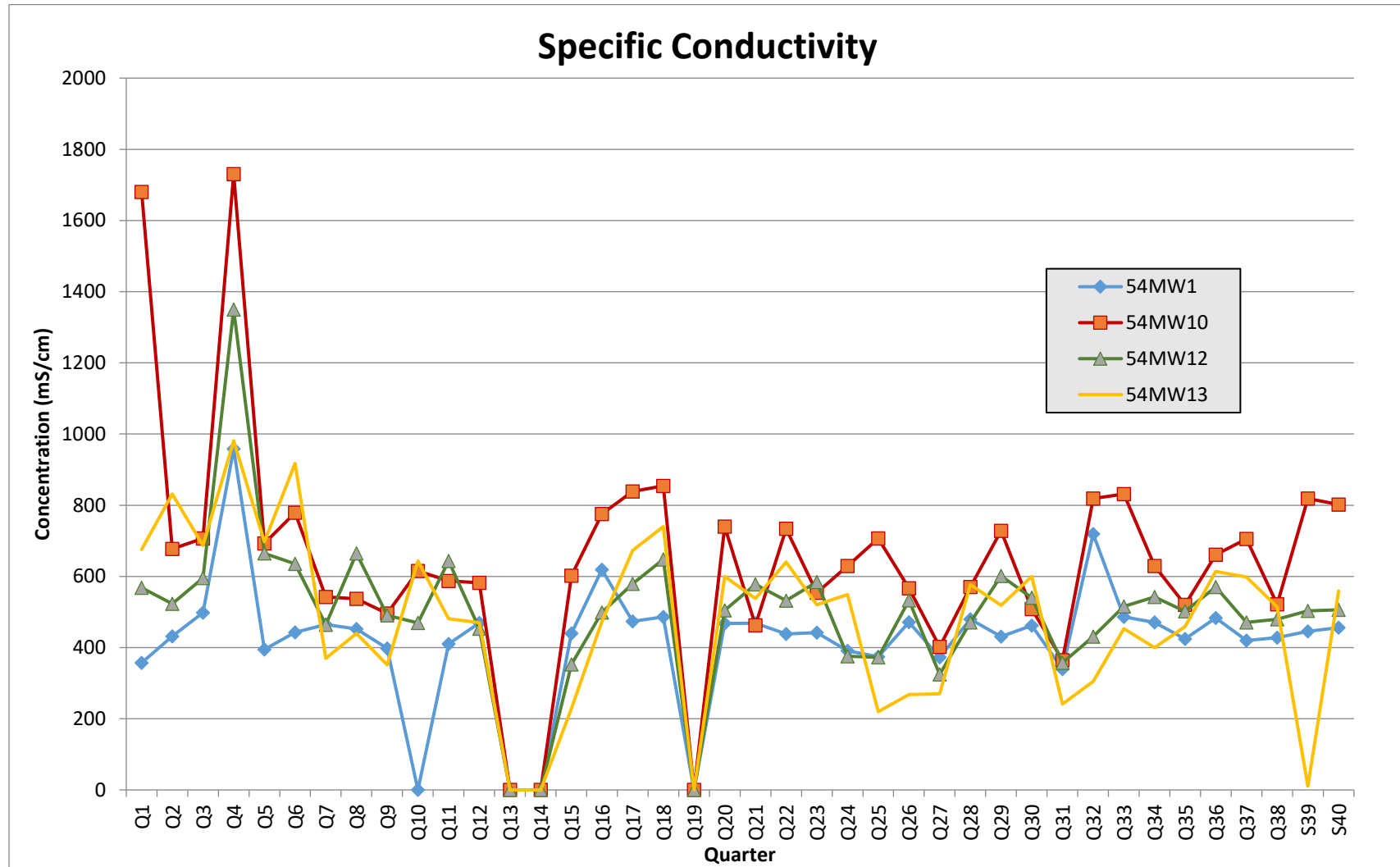


Figure 6-4 SWMU 54: Specific Conductivity



Notes:

1. Specific conductivity was not measured at 54MW1 during the tenth quarter.
2. Specific conductivity readings for the thirteenth, fourteenth, and nineteenth quarters for all four wells were not used due to possible unit entry error.

Figure 6-5 SWMU 54: 54MW10 Ferrous Iron, Dissolved Manganese, Nitrate, and Sulfate Concentrations

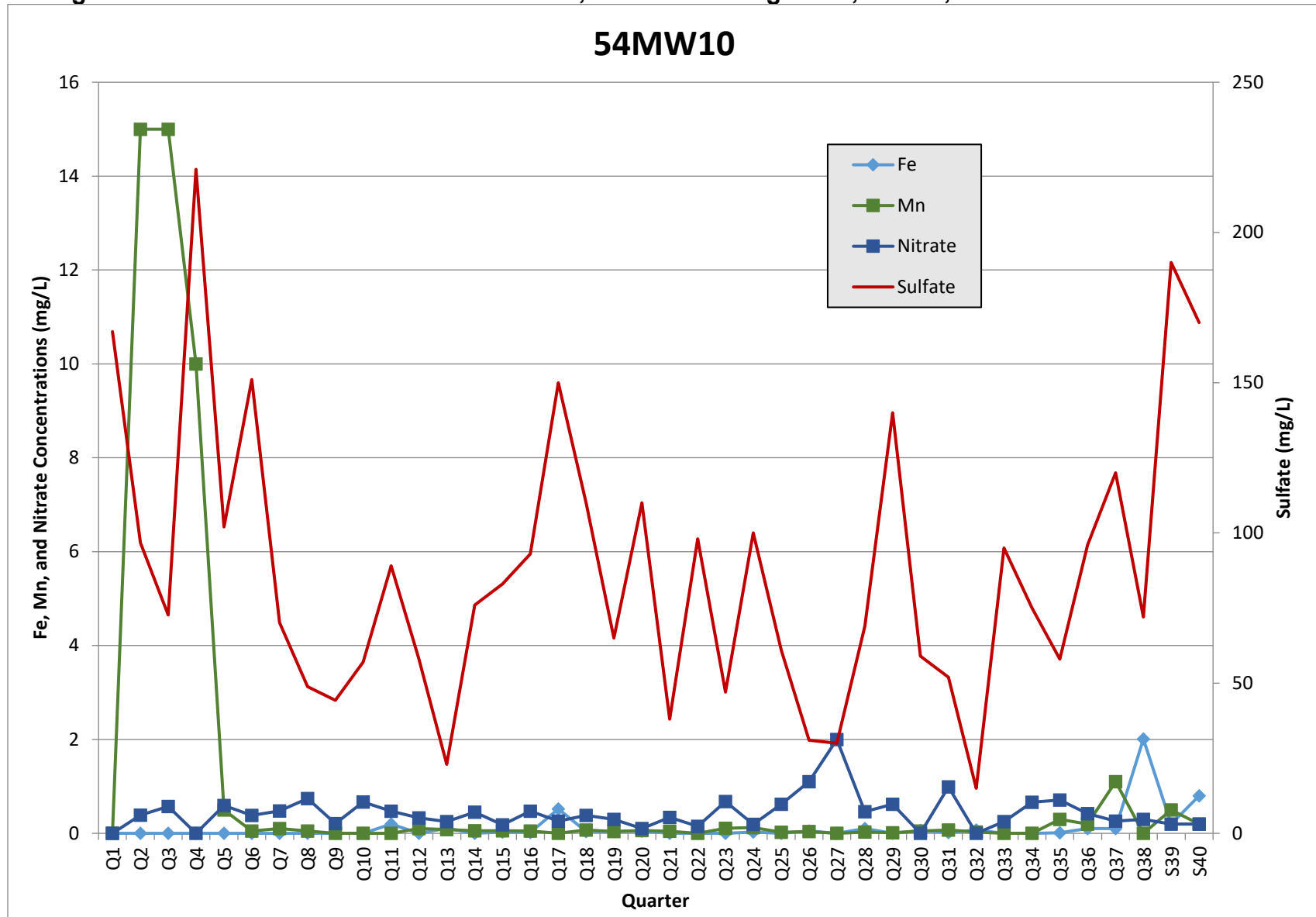


Figure 6-6 SWMU 54: 54MW12 Ferrous Iron, Dissolved Manganese, Nitrate, and Sulfate Concentrations

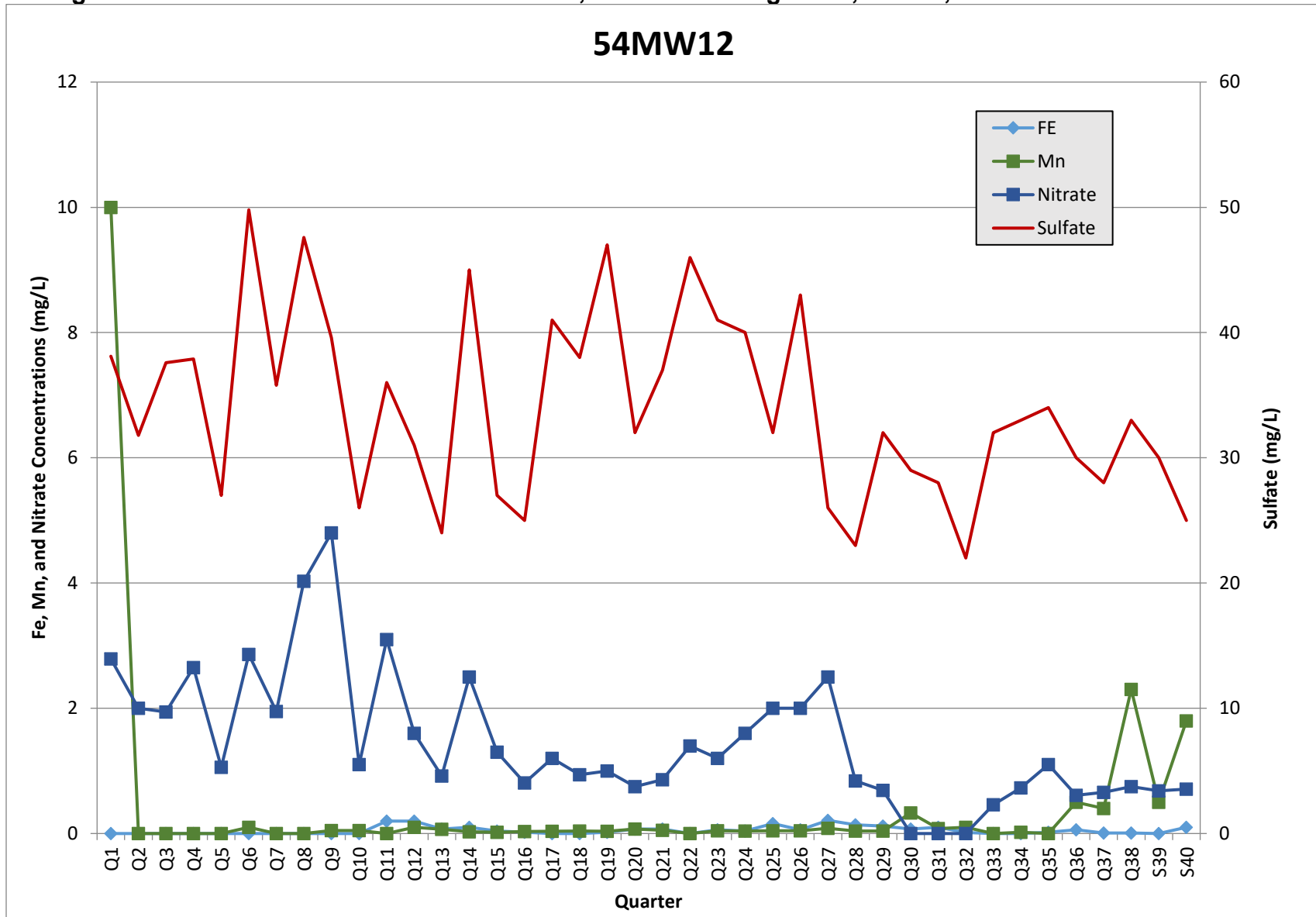


Figure 6-7 SWMU 54: 54MW13 Ferrous Iron, Dissolved Manganese, Nitrate, and Sulfate Concentrations

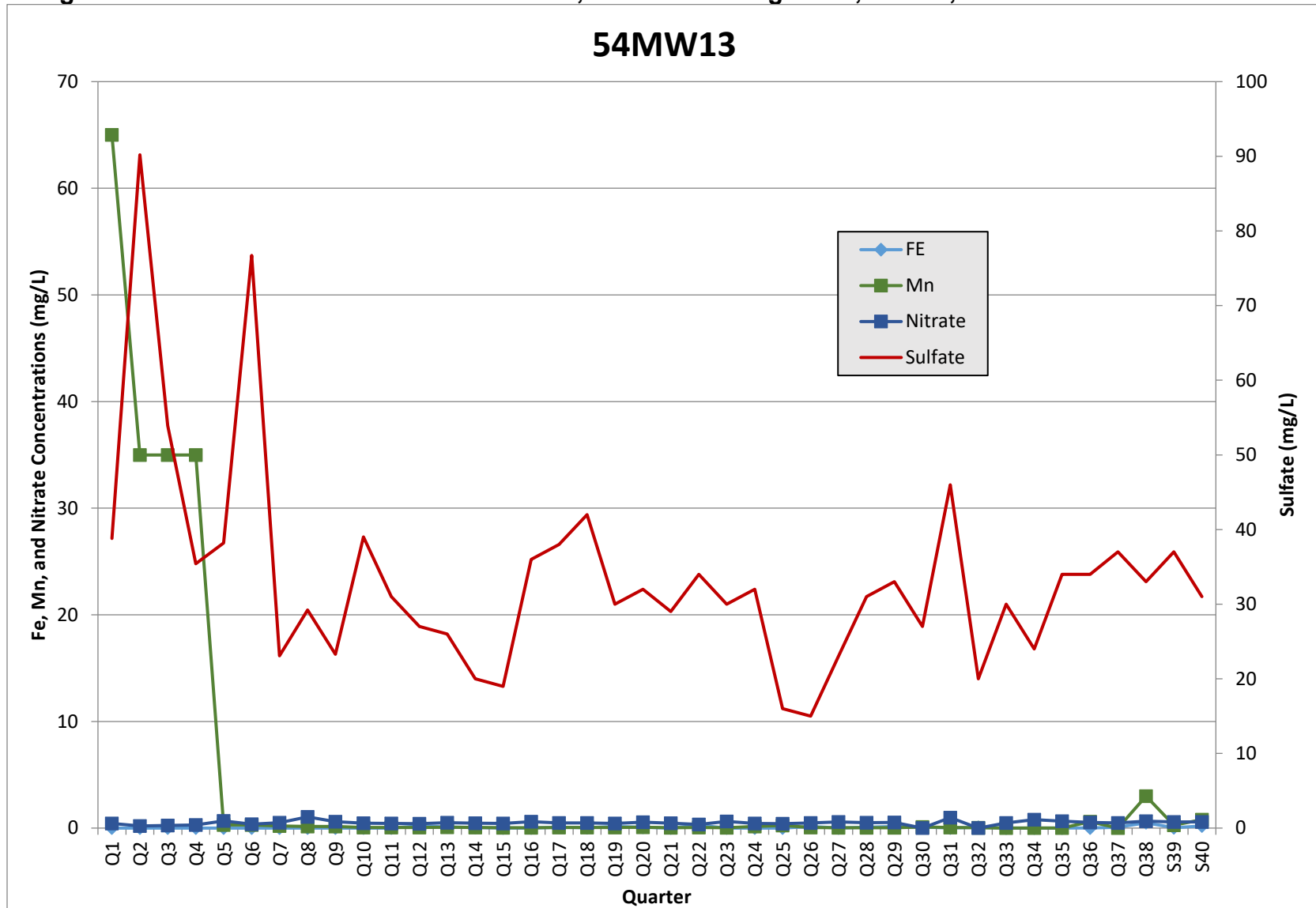


Figure 6-8 SWMU 54: 54MW10 TOC, DO, and ORP Concentrations

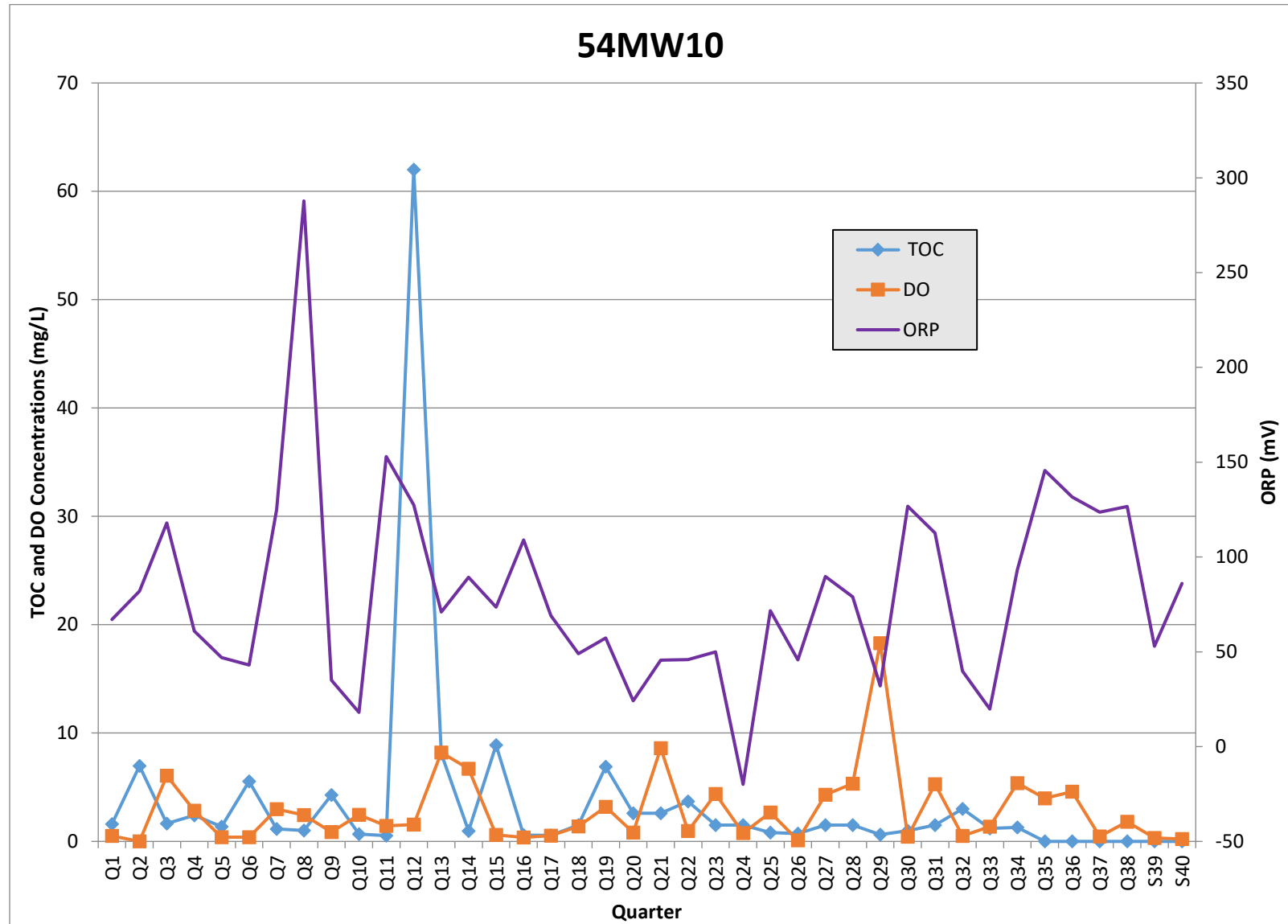


Figure 6-9 SWMU 54: 54MW12 TOC, DO, and ORP Concentrations

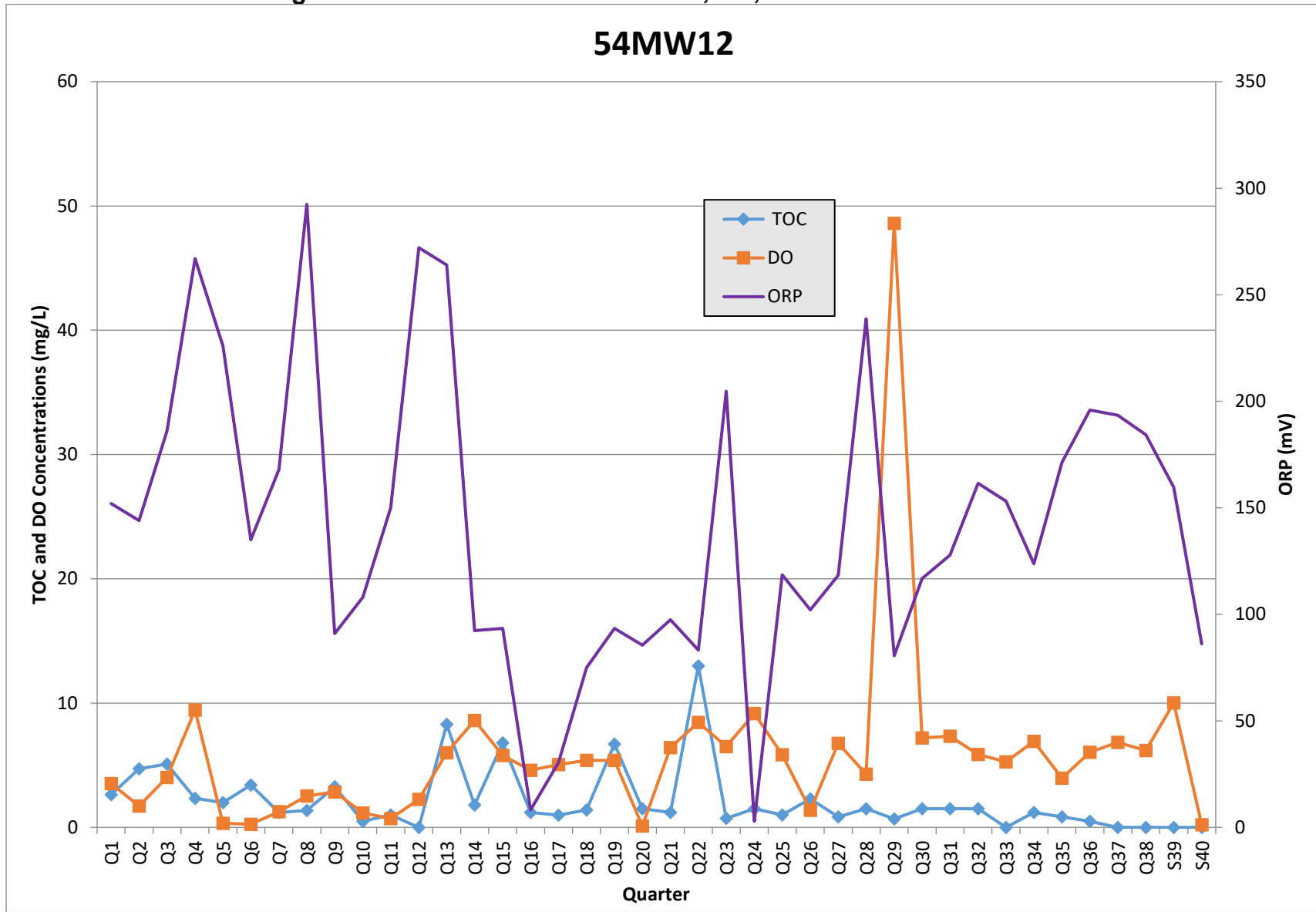
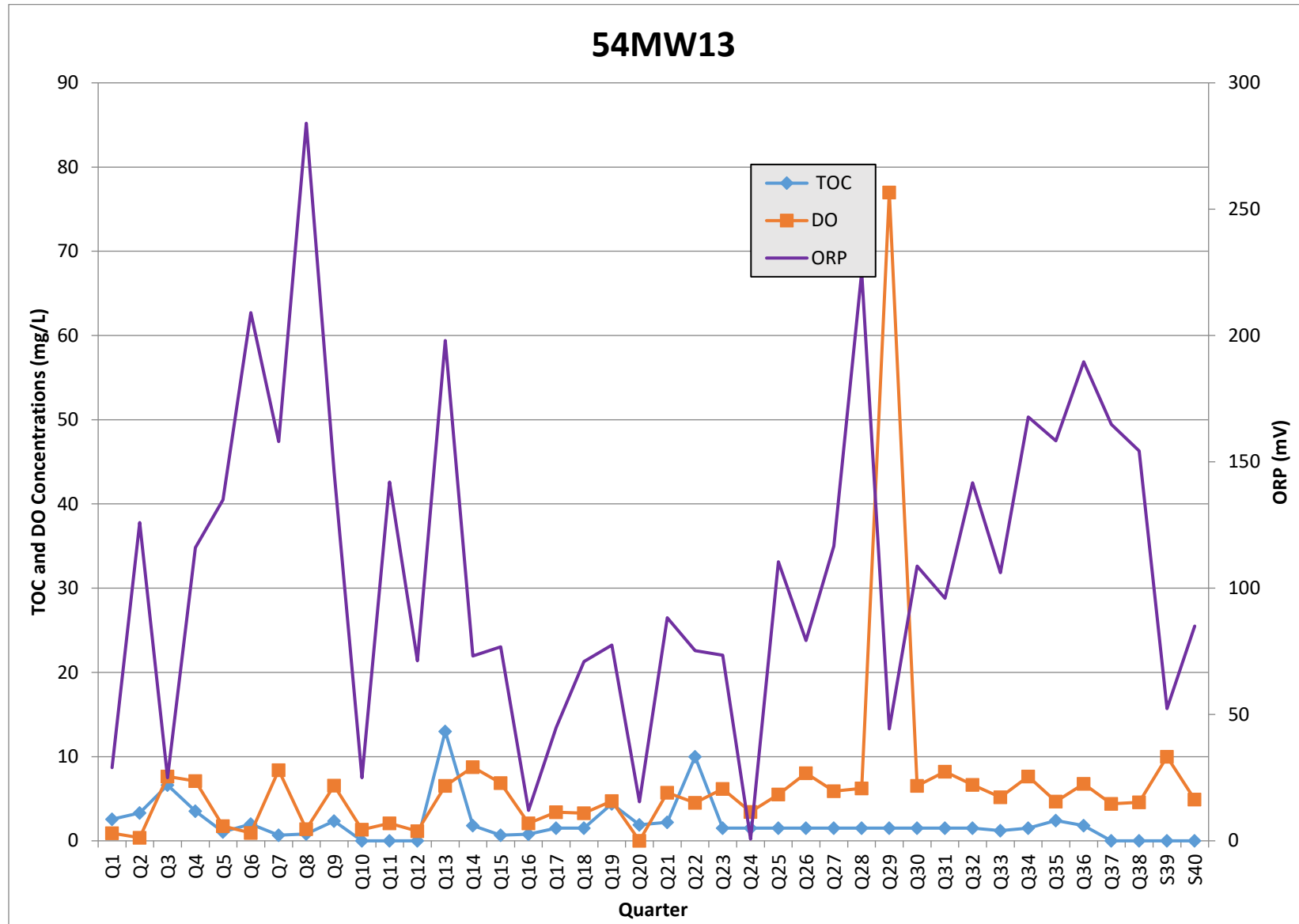


Figure 6-10 SWMU 54: 54MW13 TOC, DO, and ORP Concentrations



7. SUMMARY AND CONCLUSIONS

This report covers the first 11 years (36 quarters and 4 semiannual events) of groundwater monitoring, herein Year Eleven's data are discussed in detail. The first 10 years were described in previous annual reports. Fourteen groundwater monitoring wells were sampled on a quarterly basis for over 2 years (nine quarters) at SWMU 54. After the ninth and tenth quarters, the monitoring program was reduced to the three wells (54MW10, 54MW12, and 54MW13), which have had COI concentrations above RGs, and an upgradient well (54MW1). Sampling of the monitoring wells associated with Area B were also discontinued after the tenth quarter because no concentrations were detected above their RGs.

Samples collected during the first 12 quarters were analyzed for explosives, perchlorate, and MNA indicators. During the tenth through thirty-sixth quarters, samples were also analyzed for RDX breakdown by-products. Sample results were compared to RGs and evaluated to determine whether MNA is occurring at the SWMU. This report presents and summarizes the analytical results of the first 11 years (36 quarters and 4 semiannual events) of monitoring.

Based on contaminant concentrations and biological indicator parameters measured in groundwater at SWMU 54 during Year Eleven, concentrations of 2,4,6-TNT remain above RGs for Year Eleven at 54MW13 but continue to be below the RG at 54MW12. MNA processes have been reducing the concentrations; however, TNT concentrations have been consistently below the RG for the past 2 years at 54MW10.

In summary, the following conclusions and recommendations are made regarding the potential for MNA in contaminated groundwater at SWMU 54:

- Presence of 2,4,6-TNT daughter products 2ADNT and 4ADNT is further evidence that biological degradation has occurred, which may be aiding in removing mass in the groundwater.
- Identification of RDX breakdown by-products DNX, MNX, and TNX indicates active degradation of RDX. Historically, RDX concentrations at monitoring wells 54MW10, 54MW12, and 54MW13 are consistently below the RG of 6.1 µg/L. During the Year Eleven monitoring period, the only detections noted above the RG in any of the two semiannual events (thirty-ninth and fortieth events) was the TNT concentration at 54MW13 during the fortieth event in July 2023.

- All perchlorate concentrations in Year Three through Year Eleven of monitoring are below the RG and showed a steady decline in concentrations during this 8-year period, with the exception of results at monitoring wells 54MW10 and 54MW12 in the thirty-third quarter.

Observed concentrations of DO and ORP during Year Eleven indicate both aerobic and anaerobic conditions exist at SWMU 54. However, aerobic conditions were determined to be more prevalent. Although TNT has been known to be degraded under a variety of conditions (aerobic and anaerobic), further degradation of 2ADNT and 4ADNT, and reduction of RDX and perchlorate, are more favorable under anaerobic conditions (Spain, 1995).

The source removal efforts at SWMU 54 appear to have been effective in significantly lowering the site-wide COIs in groundwater. This is evident by the fact that 11 of the 14 monitoring well locations (54MW1 through 54MW9, 54MW11, and 54MW14) observed concentrations below the site-selected RGs for eight consecutive quarters for 2,4,6-TNT, DNT mixture, RDX, and perchlorate. As recommended in the Final SWMU 54 MNA IMWP (Shaw, 2011a), and Year Two MNA Report (CB&I, 2013), these wells were removed from the MNA sampling program after the ninth and tenth quarters.

Explosive concentrations through 36 quarters and 4 semiannual events of groundwater monitoring indicate that limited biodegradation at well locations 54MW10, 54MW12, and 54MW13 (SWMU 54 Area A wells) is occurring. Based on the localized distribution of elevated constituents, the generally declining concentrations site-wide, and the fact that groundwater is bounded within RFAAP by the New River and its use can be controlled by RFAAP, an active groundwater remedy at SWMU 54 does not appear necessary at this time.

The direction and speed of groundwater flow is consistent across all reporting periods and the current network of groundwater monitoring wells is adequate for future groundwater monitoring events.

8. REFERENCES

- Brannon, J.M. and J.C. Pennington. 2002. *Environmental Fate and Transport Process Descriptors For Explosives*. Prepared for U.S. Army Corps of Engineers. May.
- CB&I (CB&I Environmental and Infrastructure, Inc.). 2013. *SWMU 54 Monitored Natural Attenuation Sampling Year Two Report*. Prepared for U.S. Army Corps of Engineers, Baltimore District. December.
- CB&I. 2014. *SWMU 54 Monitored Natural Attenuation Sampling Year Three Report*. Prepared for U.S. Army Corps of Engineers, Baltimore District. October.
- Interstate Technology and Regulatory Council (Perchlorate Team). 2008. *Remediation Technologies for Perchlorate Contamination in Water and Soil*. Interstate Technology and Regulatory Council, Washington, DC.
- IT (IT Corporation). 2001. *Facility-Wide Background Study*. Radford Army Ammunition Plant, Virginia. Final Report. Delivery Order No. 0008, Contract No. DACA31-94-D-0064.
- Parsons (Parsons Engineering Science, Inc.). 1996. *RCRA Facility Investigation for Solid Waste Management Units 17, 31, 48, and 54 at Radford Army Ammunition Plant, Virginia*. Prepared for U.S. Army Environmental Center.
- Shaw (Shaw Environmental, Inc.). 2011a. *SWMU 54 Monitored Natural Attenuation Interim Measures Work Plan*. Radford Army Ammunition Plant, Virginia. Final Report.
- Shaw. 2011b. *SWMU 54 Interim Measures Completion Report*. Radford Army Ammunition Plant, Radford, Virginia. April.
- Spain, J.C. 1995. Biodegradation of Nitroaromatic Compounds. *Annual Review of Microbiology*. 49: 523-555.
- URS (URS Corporation). 2003. *Final Master Work Plan, Quality Assurance Plan, Health and Safety Plan*. Radford Army Ammunition Plant, Radford, Virginia. Prepared for the U.S. Army Corps of Engineers, Baltimore District. August.
- URS. 2008. *Solid Waste Management Unit 54 RCRA Facility Investigation/Corrective Measures Study Report*. Radford Army Ammunition Plant, Radford, Virginia. September.
- USEPA (U.S. Environmental Protection Agency). 1998. *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater*, EPA/600/R-98/128, Wiedemeier, T.H., M.A. Swanson, D.E. Moutoux, E.K. Gordon, J.T. Wilson, B.H. Wilson, D.H. Kampbell, P.E. Haas, R.N. Miller, J.E. Hansen, and F.H. Chapelle. Cincinnati, Ohio.

- USEPA. 2000. *Permit for Corrective Action and Waste Minimization*: Pursuant to the Resource Conservation and Recovery Act as Amended by the Hazardous and Solid Waste Amendment of 1984, Radford Army Ammunition Plant, Radford, Virginia. VA1210020730.
- USEPA. 2006. EPA Region III BTAG, Freshwater Sediment Screening Benchmarks. https://www.epa.gov/sites/default/files/2015-09/documents/r3_btag_fw_sediment_benchmarks_8-06.pdf. August.
- USEPA. 2008. *Site Characterization to Support Use of Monitored Natural Attenuation for Remediation of Inorganic Contaminants in Ground Water*. November.
- USEPA. 2014a. *National Functional Guidelines for Inorganic Superfund Data Review*. OSWER 9355.0-131, EPA-540-R-013-001. August.
- USEPA. 2014b. *National Functional Guidelines for Superfund Organic Methods Data Review*. OSWER 9355.0-132, EPA-540-R-014-002. August.
- USEPA. 2018. *2018 Edition of the Drinking Water Standards and Health Advisories Tables*. March.
- USEPA. 2020. ProUCL Software, Version 5.1.00.
- USEPA. 2021. *Regional Screening Levels (RSL) – Generic Tables*. May.
- WESTON (Weston Solutions, Inc.). 2022. *SWMU 54 Monitored Natural Attenuation Sampling Year Nine Report, Radford Army Ammunition Plant, Radford, Virginia*. Final. October.

**APPENDIX A-1
FIELD SAMPLING LOGS**

WELL EVACUATION/SAMPLING FORM

GENERAL INFORMATION

Radford Army Ammunition Plant SWMUs 49 & 54

Date: 1/25/23

Well ID: 54 MW 1

Weather: 37°F rain

Sampling Team: P. Taylor / O. McMullen

Sampler's Signature: Olivia McMullen

WELL INSPECTION

Protective Casing: ☒ Intact ☐ Damaged

Well ID Tag Condition: good

Locked: ☒ YES ☐ NOMeasuring Point Marked: ☒ YES ☐ NOConcrete Base: ☒ Intact ☐ Damaged

Comments:

Casing Diameter: ½ in., ¾ in., 1 in., 1 ½ in., 2 in., 3 in., 4 in., 6 in., 8 in.

WELL EVACUATION INFORMATION

Total Depth (feet Below Top of Casing = ft. BTOC): 57.30

Well Evacuation Method: ☒ Peristaltic, ☐ bladder pump, other:

Depth to Water (ft. BTOC): 19.38

Screen Interval (ft. BGS):

Begin Well Evacuation (Time): 1044

Evacuation Rate (Lpm): 0.3

Stop Evacuation (Time/Reason):

Restart Time:

Headspace (ppm): 0.2

INDICATOR PARAMETERS

Time: (5-minute intervals)	Volume Purged (L):	Depth to Water (ft. BTOC):	Temperature (°C): (3%)	Specific Conductivity (µS/cm): (3%)	D.O. (mg/L): (10%)	pH: (±0.1)	ORP (mV): (±10 mV)	Turbidity (NTU): (10%)
1045	0.3	19.91	12.5	446.1	2.41	7.52	-32.4	5.84
1050	1.8	19.99	12.6	445.6	0.81	7.61	-57.7	3.65
1055	3.3	21.09	12.6	445.9	0.44	7.58	-50.3	1.02
1100	4.8	21.58	12.7	445.3	0.35	7.57	-41.6	0.07
1105	6.3	22.15	12.6	444.80	0.30	7.55	-36.0	0.01
1110	7.8	22.25	12.7	446.0	0.29	7.53	-32.3	0.00

Red font indicates stabilization criteria to be achieved over three consecutive readings.

Final Depth to Water (ft. BTOC): 22.5

Drawdown Observed (ft): 3.12

Odor: ☒ YES ☐ NO sulfurWell Pumped Dry: YES / ☒ NO

End Well Evacuation (Time): 1130

Total Volume Purged (L): 7.8

SAMPLE COLLECTION INFORMATION

Sample ID: 54 MW 1

PARAMETERS (Circle all applicable):

Sample Date & Time: 1/25/23 1115

SWMU 49: VOCs, MEE, Chloride/Nitrate/Sulfate, TOC, Ferrous Fe, & Mn

Duplicate Sample ID: NA

☒ SWMU 54: Explosives, Perchlorate, Chlorate/Chlorite, Chloride/Nitrate/Sulfate, TIC, TOC, Ferrous Fe, & Mn

Manganese (mg/L): 0.20

Sample Collection Method: ☒ Low Flow ☐ Other:

Ferrous Iron (mg/L): 0.18

Sample Collection Depth (ft. BTOC): 56

COMMENTS

water level acting up

[illegible]

[illegible]

WELL EVACUATION/SAMPLING FORM									
GENERAL INFORMATION									
Radford Army Ammunition Plant SWMUs 49 & 54					Date: 7/10/2023				
Well ID: 54MW10					Weather: 75°, Partly Cloudy				
Sampling Team: P. Taylor + K. Martindale					Sampler's Signature: [Signature]				
WELL INSPECTION									
Protective Casing: <u>Intact</u> Damaged					Well ID Tag Condition: <u>Good</u>				
Locked: <u>YES</u> / NO					Measuring Point Marked: <u>YES</u> / NO				
Concrete Base: <u>Intact</u> Damaged					Comments:				
Casing Diameter: 1/2 in., 3/4 in., 1 in., 1 1/2 in., 2 in., 3 in., <u>4 in.</u> , 6 in., 8 in.									
WELL EVACUATION INFORMATION									
Total Depth (feet Below Top of Casing = ft. BTOC): 30.00					Well Evacuation Method: <u>peristaltic</u> bladder pump, other):				
Depth to Water (ft. BTOC): 16.03					Screen Interval (ft. BGS): 25-30				
Begin Well Evacuation (Time): 1200					Evacuation Rate (Lpm): 0.250				
Stop Evacuation (Time/Reason):					Restart Time: *				
					Headspace (ppm): 0.1				
INDICATOR PARAMETERS									
Time: (5-minute intervals)	Volume Purged (L):	Depth to Water (ft. BTOC):	Temperature (°C): (3%)	Specific Conductivity (µS/cm): (3%)	D.O. (mg/L): (10%)	pH: (±0.1)	ORP (mV): (±10 mV)	Turbidity (NTU): (10%)	
1210	2.5	16.14	15.3	886	0.40	7.32	22.2	11.4	
1215	3.75	16.15	15.2	833	0.26	7.33	42.2	39.7	
1220	5	16.12	15.6	813	0.25	7.33	60.2	15.9	
1225	6.75	16.12	15.3	806	0.24	7.33	70.7	8.94	
1230	8	16.10	15.6	805	0.22	7.33	77.6	29.5	
1235	9.75	16.09	15.4	804	0.21	7.32	87.2	4.28	
1240	11	16.08	15.1	802	0.22	7.33	86.1	5.89	
Red font indicates stabilization criteria to be achieved over three consecutive readings.									
Final Depth to Water (ft. BTOC): 16.08					Drawdown Observed (ft): 0.12				
Odor: YES / <u>NO</u>					Well Pumped Dry: YES / <u>NO</u>				
End Well Evacuation (Time): 1249					Total Volume Purged (L): 11				
SAMPLE COLLECTION INFORMATION									
Sample ID: 54MW10				PARAMETERS (Circle all applicable):					
Sample Date & Time: 7/10/2023 1245				SWMU 49: VOCs, MEE, Chloride/Nitrate/Sulfate, TOC, Ferrous Fe, & Mn					
Duplicate Sample ID: —				SWMU 54: Explosives, Perchlorate, Chlorate/Chlorite, Chloride/Nitrate/Sulfate, TIC, TOC, Ferrous Fe, & Mn					
Manganese (mg/L): 4.1				Sample Collection Method: <u>Low Flow</u> Other:					
Ferrous Iron (mg/L): 0.08				Sample Collection Depth (ft. BTOC): 28.5					
COMMENTS									

WELL EVACUATION/SAMPLING FORM

GENERAL INFORMATION

Radford Army Ammunition Plant SWMUs 49 & 54

Date: 1/25/23

Well ID: 54MW12

Weather: 38°F rain

Sampling Team: P. Taylor / O. McMillen

Sampler's Signature: O. McMillen

WELL INSPECTION

Protective Casing: Intact/Damaged

Well ID Tag Condition:

Locked: YES/NO

Measuring Point Marked: YES/NO

Concrete Base: Intact/Damaged

Comments:

Casing Diameter: 1/2 in., 3/4 in., 1 in., 1 1/2 in., 2 in., 3 in., 4 in., 6 in., 8 in.

WELL EVACUATION INFORMATION

Total Depth (feet Below Top of Casing = ft. BTOC): 32.86

Well Evacuation Method: peristaltic/bladder pump, other:

Depth to Water (ft. BTOC): 24.83

Screen Interval (ft. BGS):

Begin Well Evacuation (Time): 0825

Evacuation Rate (Lpm): 0.25

Stop Evacuation (Time/Reason):

Restart Time:

Headspace (ppm): 0.0

INDICATOR PARAMETERS

Time: (5-minute intervals)	Volume Purged (L):	Depth to Water (ft. BTOC):	Temperature (°C): (3%)	Specific Conductivity (µS/cm): (3%)	D.O. (mg/L): (10%)	pH: (±0.1)	ORP (mV): (±10 mV)	Turbidity (NTU): (10%)
0830	1.25	24.85	12.2	649.8	0.72	8.08	183.7	12.47
0835	2.50	24.84	12.1	591.0	2.70	7.96	176.8	6.92
0840	3.75	24.84	12.1	528.6	6.22	7.37	172.0	4.60
0845	4.00	24.84	12.2	510.0	7.32	7.22	168.4	3.30
0850	5.25	24.84	12.0	505.2	8.84	7.12	165.9	2.28
0855	6.50	24.84	12.2	501.8	9.66	7.07	163.7	1.33
0900	7.75	24.84	11.5	502.6	9.91	7.03	162.1	0.25
0905	8.00	24.84	11.7	502.9	10.00	6.93	162.3	0.00
0910	9.25	24.84	11.4	503.4	10.02	6.93	159.6	0.0
0915								

Red font indicates stabilization criteria to be achieved over three consecutive readings.

Final Depth to Water (ft. BTOC): 24.84

Drawdown Observed (ft): 0.01

Odor: YES/NO

Well Pumped Dry: YES/NO

End Well Evacuation (Time): 1010

Total Volume Purged (L): 9.25

SAMPLE COLLECTION INFORMATION

Sample ID: 54MW12

PARAMETERS (Circle all applicable):

Sample Date & Time: 1/25/23 0915

SWMU 49: VOCs, MEE, Chloride/Nitrate/Sulfate, TOC, Ferrous Fe, & Mn

Duplicate Sample ID: NA

SWMU 54: Explosives, Perchlorate, Chlorate/Chlorite, Chloride/Nitrate/Sulfate, TIC, TOC, Ferrous Fe, & Mn

Manganese (mg/L): 1.1

Sample Collection Method: Low Flow Other:

Ferrous Iron (mg/L): 0.0

Sample Collection Depth (ft. BTOC): 31

COMMENTS

MS/MSD collected

[illegible]

WELL EVACUATION/SAMPLING FORM

GENERAL INFORMATION

Radford Army Ammunition Plant SWMUs 49 & 54

Date: 1/23/2023

Well ID: 54MW13

Weather: 37°F wind / light snow

Sampling Team: PT / OM

Sampler's Signature: Olivia Miller

WELL INSPECTION

Protective Casing: ☒ Intact ☐ Damaged

Well ID Tag Condition: N/A

Locked: ☒ YES ☐ NOMeasuring Point Marked: ☒ YES ☐ NOConcrete Base: ☒ Intact ☐ Damaged

Comments:

Casing Diameter: ½ in., ¾ in., 1 in., 1 ½ in., 2 in., 3 in., 4 in., 6 in., 8 in.

WELL EVACUATION INFORMATION

Total Depth (feet Below Top of Casing = ft. BTOC): 25.24

Well Evacuation Method: ☒ peristaltic bladder pump, other):

Depth to Water (ft. BTOC): 21.38

Screen Interval (ft. BGS):

Begin Well Evacuation (Time): 1206

Evacuation Rate (L/pm): 0.2

Stop Evacuation (Time/Reason):

Restart Time:

Headspace (ppm): 0.0 ppm

INDICATOR PARAMETERS

Time: (5 minute intervals)	Volume Purged (L):	Depth to Water (ft. BTOC):	Temperature (°C): (3%)	Specific Conductivity (µS/cm): (3%)	D.O. (mg/L): (10%)	pH: (±0.1)	ORP (mV): (±10 mV)	Turbidity (NTU): (10%)
1210	0.8	21.68	10.90	7.50	9.67	9.49	-136.2	44.36
1215	1.8	21.70	11.10	7.20	9.52	9.22	-124.7	47.3
1220	2.8	21.72	11.00	7.20	9.49	8.84	-66.9	7.82
1225	3.8	21.74	11.20	7.10	9.34	8.54	-15.0	4.68
1230	4.8	21.78	10.40	7.30	9.81	8.28	-13.2	3.31
1235	5.8	21.79	10.30	7.10	9.76	8.03	26.60	1.66
1240	6.8	21.80	10.20	7.10	9.78	7.93	27.60	1.02
1245	7.8	21.67	10.20	7.20	9.73	7.84	31.02	1.18
1250	8.8	21.58	10.35	13.90	10.29	7.74	45.2	0.68
1255	9.8	21.55	9.5	10.60	10.36	7.65	49.1	6.94
1300	10.8	21.58	8.2	10.70	10.10	7.61	44.3	0.87
1305	11.8	21.58	8.3	10.90	10.00	7.60	52.3	0.71

Red font indicates stabilization criteria to be achieved over three consecutive readings.

Final Depth to Water (ft. BTOC): 21.58

Drawdown Observed (ft): 0.2

Odor: ☒ YES ☐ NO sulfur odorWell Pumped Dry: YES ☒ NO

End Well Evacuation (Time): 1350

Total Volume Purged (L): 11.8

SAMPLE COLLECTION INFORMATION

Sample ID: 54MW13

PARAMETERS (Circle all applicable):

Sample Date & Time: 1/23/23 1310

SWMU 49: VOCs, MEE, Chloride/Nitrate/Sulfate, TOC, Ferrous FE, & Mn

Duplicate Sample ID: 54MW13

☒ SWMU 54: Explosives, Perchlorate, Chlorate/Chlorite, Chloride/Nitrate/Sulfate, TIC, TOC, Ferrous FE, & Mn

Manganese (mg/L): not measured

Sample Collection Method: ☒ Low Flow (LF) ☐ Other:

Ferrous Iron (mg/L): not measured

Sample Collection Depth (ft. BTOC): 24.0

COMMENTS

Reagent kits not delivered yet unable to measure Manganese/Ferrous Iron

[illegible]

Synoptic Water Level Measurements

Radford Army Ammunition Plant SWMUs 49 & 54

Radford AAP, Virginia

Well Identification	Date	Time	Headspace Reading (ppm)	Depth to Water (ft BTOC)	Total Well Depth (ft BTOC)	Notes/Field Observations
SWMU 49						
13MW2	1/24/2023	13:18	2.8	21.73	30.40	Hard bottom
13MW3	1/24/2023	10:51	0.0	15.20	22.32	Hard bottom
13MW4	1/24/2023	10:01	0.4	16.73	25.25	Hard bottom
13MW5	1/24/2023	8:58	0.2	16.63	25.25	Soft bottom
49MW04	1/24/2023	12:01	8.4	20.94	72.75	Hard bottom
49MW05	1/24/2023	14:03	0.0	20.25	39.40	Soft bottom
48MW1	1/26/2023	13:15	0.0	110.56	145.46	Soft bottom
48MW2	1/26/2023	15:25	0.1	125.13	136.40	Soft bottom
48MW3	1/26/2023	15:30	0.0	97.03	122.23	Hard bottom
48MW6	1/26/2023	11:45	0.4	66.52	80.20	Soft bottom
48MW7	1/26/2023	10:05	0.0	50.19	83.35	Soft bottom
49MW01	1/26/2023	15:40	0.1	115.70	123.22	Soft bottom
49MW02	1/26/2023	15:45	0.0	92.74	134.60	Soft bottom
49MW03	1/26/2023	15:15	0.0	105.43	119.70	Soft bottom
50MW2	1/26/2023	15:20	0.0	116.50	120.36	Soft bottom
SWMU 54						
54MW1	1/24/2023	8:20	0.2	19.43	57.30	Hard bottom
54MW10	1/23/2023	14:40	0.0	15.84	30.25	Soft bottom
54MW12	1/24/2023	7:55	0.0	24.93	32.86	Hard bottom
54MW13	1/23/2023	11:55	0.0	21.38	25.24	Hard bottom

Key: ppm = parts per million ft = feet TOC = top of casing BTOC = below top of casing

Synoptic Water Level Measurements
Radford Army Ammunition Plant SWMUs 49 & 54
Radford AAP, Virginia

Well Identification	Date	Time	Headspace Reading (ppm)	Depth to Water (ft BTOC)	Total Well Depth (ft BTOC)	Notes/Field Observations
SWMU 49						
13MW2	7/11/2023	1150	0.0	21.28	30.48	
13MW3	7/11/2023	0935	0.0	15.15	22.40	
13MW4	7/11/2023	0826	0.0	16.71	25.33	
13MW5	7/11/2023	0813 0744	0.0	16.77	25.33	
49MW04	7/11/2023	1035	0.0	20.76	72.25	
49MW05	7/11/2023	1247	0.0	20.26	39.47	
48MW1	7/12/2023	1425	0.0	106.46	142.07	
* 48MW2	7/13/2023	1045	0.1	124.06	136.40	Muddy bottom
* 48MW3	7/13/2023	1045	0.0	96.85	122.20	Hard bottom
48MW6	7/12/2023	0812	0.0	66.47	79.55	Muddy bottom
48MW7	7/12/2023	0745	0.0	48.55	83.90	Muddy bottom
49MW01	7/12/2023	1049	0.0	115.65	124.10	Muddy bottom
* 49MW02	7/13/2023	1045	0.0	92.65	134.59	
49MW03	7/12/2023	0802	0.0	104.40	119.75	Muddy bottom
50MW2	7/13/2023	1045	0.0	115.12	120.71	
SWMU 54						
54MW1	7/10/2023	1448	0.0	19.00	57.36	
54MW10	7/10/2023	1148	0.1	16.03	30.00	
54MW12	7/10/2023	1322	0.1	25.11	32.93	
54MW13	7/10/2023	0841	0.0	21.70	25.32	

Key: ppm = parts per million ft = feet TOC = top of casing BTOC = below top of casing

* = Water levels taken on 7/14/2023

**APPENDIX A-2
CALIBRATION FORMS**

Equipment Calibration Log

Date/Time	Equipment Description	Equipment ID	Calibration				
			Calibration Standard/Value	Pre-Calibration Readings	Post-Calibration Readings	Performed By	Lot No./Expiration Date/Comments
October 2021 Sampling Event							
10-26-21/11:03	MultiRAE	22414	CO/50 ppm	35 ppm	49 ppm	Paul Taylor	Lot No. 304-401842189-1 Expires: 04/12/2022
			H ₂ S/10 ppm	12.5 ppm	10.0 ppm	Paul Taylor	
			LEL/50%	48.0%	49%	Paul Taylor	
			O ₂ /18.0%	18.1%	18.0%	Paul Taylor	
			VOC/100 ppm	91.2 ppm	100.4 ppm	Paul Taylor	Lot No. 304-40180617-1 Expires: 08/12/2023
10-26-2021/11:10	YSI – DSS	22813	Turbidity/123 NTU	143.44 NTU	122.11 NTU	Paul Taylor	
April 2022 Sampling Event							
04-26-21/10:55	MultiRAE	22110	CO/50 ppm	39 ppm	48 ppm	Paul Taylor	Lot No. 304-401842189-1 Expires: 04/12/2022
			H ₂ S/10 ppm	13.8 ppm	10.2 ppm	Paul Taylor	
			LEL/50%	48.0%	50%	Paul Taylor	
			O ₂ /18.0%	18.0%	18.1%	Paul Taylor	
			VOC/100 ppm	94.1 ppm	101.0 ppm	Paul Taylor	Lot No. 304-40180617-1 Expires: 08/12/2023
04-26-2021/11:02	YSI – DSS	22549	Turbidity/123 NTU	132.22 NTU	123.71 NTU	Paul Taylor	

Notes:

CO = carbon monoxide

DSS = digital sampling system

H₂S = hydrogen sulfide

ID = identification

LEL = lower explosive limit

No. = number

NTU = nephelometric turbidity unit

O₂ = oxygen

ppm = parts per million

SWMU = Solid Waste Management Unit

VOC = volatile organic compound

YSI = Yellow Springs Instrument

**APPENDIX B-1
LABORATORY ANALYTICAL REPORTS**

ANALYTICAL RESULTS FOR:

**ANTHONY PACE
WESTON SOLUTIONS, INC.
2 EATON STREET
SUITE 603
HAMPTON, VA 23669**

PROJECT SITE: RFAAP SWMU-54; RADFORD, VA

DOD CONTRACT #:

PROJECT #:

SDG: **175012**

FOLDERS: 175012, 175069

PREPARED: February 16, 2023

TOTAL # OF PAGES: 995

The data contained in the following report have been reviewed by the appropriate CT Laboratories' LLC staff members. In addition, CT Laboratories LLC certifies that to the best of our knowledge that the analyses reported herein are true, complete and correct within the limits of the methods employed and that they follow the applicable requirements as specified by the project plan, state-specific, NELAC or DOD QSM requirements. The estimated uncertainty of measurement is only available upon request. The reported results relate only to the tested samples. This report shall not be reproduced, except in full, without written approval of CT Laboratories LLC.

APPROVED BY: *Brett Symonski*
PROJECT MANAGER

Certifications: IL (NELAP 200073), KS (NELAP E-10368), WI (157066030), DOD ELAP (A2LA 3806.01), VA (NELAP 460203), LA (primary NELAP 115843), ISO17025 (A2LA 3806.01)



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Case Narrative

Client: Weston Solutions

Project: RFAAP SWMU-54, Radford, VA

Sample Receipt Date(s): 01/24/2023 & 01/26/2023

SDG #: 175012 (Folders 175012 & 175069)

Six water samples were received for a variety of analytical parameters, including: Metals, pH, COD, Anions, Chlorate/Chlorite, TIC, and TOC. The Chlorate/Chlorite analysis was subcontracted to Eurofins Eaton Analytical in South Bend, IN. The assigned sample ID number, date sampled, and date received are indicated in the attached Project Summary. The samples were received intact and at a temperature within method specified acceptance limits. A breakdown of sample receipt information can be found on the Sample Condition Report located in the last section of the data package and any exceptions are noted below. The analyses were performed following DOD QSM 5.4 requirements.

Manual integrations may have been performed on the data provided with this package. If manual integrations were performed, a Reason #(s) was included on the raw data that corresponds to the "Index Key for Manual Integration Rationale." The raw data includes a "Before" and "After" manual integration illustration. The manual integrations were initialed and dated by the analyst, as well as, by the person reviewing the data.

Sample Analysis and Quality Control

Metals Analysis:

The samples were analyzed using US EPA Methods 6010C (ICP) and 7470A (Hg). All samples were analyzed within the holding time. The following summaries of quality control procedures are included:

Initial and Continuing Calibration Verification

Blanks Summary

ICP Interference Check Data

Spike Sample Recovery

Duplicates Data

Laboratory Control Sample Data

Analysis Run Log

All analysis results met the method specified quality control criteria with the following exceptions:

ICP Metals (6010C) Water Analysis

Continuing Calibration Verification (CCV) standards were analyzed at two levels (CCV1 & CCV2) with potentially differing wavelengths. Data associated with CCV's were evaluated based on the concentration of the element in the samples and compared to the appropriate CCV level/wavelength.

Some samples may have been analyzed and/or reanalyzed diluted to obtain results for all target analytes within the calibration range of the instrument.

Analytical Run # 268847

The Duplicate (DUP) for sample # 1283774 was not applicable for antimony, arsenic, beryllium, cadmium, chromium, cobalt, copper, lead, nickel, selenium, silver, thallium, vanadium, and zinc because the results were less than the adjusted Limit of Quantitation (LOQ). A Matrix Spike Duplicate (MSD) was analyzed to demonstrate precision and was acceptable. The parent sample was reported and not qualified.

The MSD for sample # 1283774 had a recovery outside the specified limits for cobalt. A Serial Dilution (L) was analyzed and was not applicable for cobalt because the parent sample raw result was less than 50 times the LOQ. A Post Digestion Spike (PDS) was analyzed and was acceptable. The parent sample was reported and not qualified.

Analytical Run # 268848

All analytical results for this run met the method/project specified quality control criteria.

CVAA Mercury (7470A) Water Analysis

Analytical Run # 268967

The DUP for sample # 1283774 was not applicable for mercury because the parent sample result was less than the adjusted LOQ. An MSD was analyzed to demonstrate precision and was acceptable. The parent sample was reported and not qualified.

The Matrix Spike (MS) and MSD for sample # 1283774 had recoveries outside the specified limits for mercury. The parent sample was reported and qualified with an "M" flag for the failing element.

Inorganic Analysis:

The samples were analyzed using US EPA Methods 9060A (TIC/TOC), 9040C (pH), 410.4 (COD) and 9056A (Anions). All samples were analyzed within the holding time unless noted below. The following summaries of quality control procedures are included:

Duplicate Analysis Data
Laboratory Control Spike Data
Method Blank Data
Initial Calibration Summary
Calibration Check Summary
Analysis Run Log
Prep Log

All analysis results met the method specified quality control criteria with the following exceptions:

Some samples may have been analyzed and/or reanalyzed diluted to obtain results for all target analytes within the calibration range of the instrument.

Anions (9056A) Water Analysis

Analytical Run # 268741

The MS and the MSD for sample # 1282988 had a low recovery for sulfate. The parent sample result for this compound was qualified with an "M" flag.

Analytical Run # 268844

All analytical results for this run met the method/project specified quality control criteria.

COD (410.4) Water Analysis

Analytical Run # 269035

The MSD for sample # 1283774 had a high recovery. The parent sample result was qualified with an "M" flag.

pH (9040C) Water Analysis

Analytical Run # 268842

All analytical results for these runs met the method/project specified quality control criteria.

TIC (9060A) Water Analysis

Analytical Run # 268835

All analytical results for these runs met the method/project specified quality control criteria.

TOC (9060A) Water Analysis

Analytical Run # 268891

All analytical results for these runs met the method/project specified quality control criteria.

Data Qualifiers

Code	Description
A	Analyte averaged calibration criteria within acceptable limits.
B	Analyte detected in associated Method Blank.
C	Toxicity present in BOD sample.
D	Diluted Out.
E	Safe, No Total Coliform detected.
F	Unsafe, Total Coliform detected, no E. Coli detected.
G	Unsafe, Total Coliform detected and E. Coli detected.
H	Holding time exceeded.
J	Estimated value.
L	Significant peaks were detected outside the chromatographic window.
M	Matrix spike and/or Matrix Spike Duplicate recovery outside acceptance limits.
N	Insufficient BOD oxygen depletion.
O	Complete BOD oxygen depletion.
P	Concentration of analyte differs more than 40% between primary and confirmation analysis.
Q	Laboratory Control Sample outside acceptance limits.
R	See Narrative at end of report.
S	Surrogate standard recovery outside acceptance limits due to apparent matrix effects.
T	Sample received with improper preservation or temperature.
U	Analyte concentration was not above the detection level.
V	Raised Quantitation or Reporting Limit due to limited sample amount or dilution for matrix background interference.
W	Sample amount received was below program minimum.
X	Analyte exceeded calibration range.
Y	Replicate/Duplicate precision outside acceptance limits.
Z	Calibration criteria exceeded.

MANUAL INTEGRATION REASON CODES

CTLaboratories has identified four general cases with valid reasons supporting the use of manual integration techniques. These codes are used on chromatograms in this data package to document the reasons for manual integrations per CTLaboratories' SOP SS-10 current revision.

#1: Data system failed to select the correct peak or missed the peak entirely.

In some cases the chromatography system selects and integrates the "wrong peak". In this case the analyst must correct the selection and force the system to integrate the proper peak. In other instances the system may miss the peak completely. In this case the analyst manually integrated the peak

#2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak.

This phenomenon is common at low concentrations where the signal to noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low or high area counts for the target compound.

#3: Improperly Integrated Isomers and/or coeluting compounds.

For when the system fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations may be inaccurate, and they must be corrected by manual integration. Prime examples are compounds that are unresolved and integrated improperly when present at low concentrations in standards or samples.

#4: System Established Incorrect Baseline.

There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and may be corrected via manual procedures.

#5: Miscellaneous.

Some situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the group supervisor. If the form of manual integration is not clearly covered by these four cases, then review and approval by the group supervisor or the QA/QC Supervisor will be required.

Sample Delivery Group
175012

WESTON SOLUTIONS, INC.
 ANTHONY PACE
 2 EATON STREET
 HAMPTON, VA 23669

Project Name: RADFORD AAP SWMU 54
 Project #:

	CT Sample #	Folder #	Client Sample #	Sample Description	Matrix	Date Sampled	Date Received
1	1282988	175012		54MW13	GROUND WATER	01/23/2023	01/24/2023
2	1282989	175012		54TW13	GROUND WATER	01/23/2023	01/24/2023
3	1282990	175012		54MW10	GROUND WATER	01/23/2023	01/24/2023
4	1283772	175069		54MW12	GROUND WATER	01/25/2023	01/26/2023
5	1283773	175069		54MW1	GROUND WATER	01/25/2023	01/26/2023
6	1283774	175069		54IDW	GROUND WATER	01/25/2023	01/26/2023

QC Batch Cross Reference Summary

Page 1 of 2

WESTON SOLUTIONS, INC.
 ANTHONY PACE
 2 EATON STREET
 HAMPTON, VA 23669

Project Name: RADFORD AAP SWMU 54
 Project #:
 Report Date: 02/14/2023
 Date Received: 1/26/2023
 SDG #: 175012

Inorganic Parameters

CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
1283774	pH	EPA 9040C	GROUND WATER		268842
CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
1282988	Carbon , Total Inorganic and Organic	EPA 9060A	GROUND WATER		268835
1282989	Carbon , Total Inorganic and Organic	EPA 9060A	GROUND WATER		268835
1282990	Carbon , Total Inorganic and Organic	EPA 9060A	GROUND WATER		268835
1283772	Carbon , Total Inorganic and Organic	EPA 9060A	GROUND WATER		268835
1283773	Carbon , Total Inorganic and Organic	EPA 9060A	GROUND WATER		268835
CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
1283774	COD QSM	EPA 410.4	GROUND WATER	128537	269035
CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
1282988	Anions QSM 5.0	EPA 9056A	GROUND WATER		268741
1282989	Anions QSM 5.0	EPA 9056A	GROUND WATER		268741
1282990	Anions QSM 5.0	EPA 9056A	GROUND WATER		268741
1283772	Anions QSM 5.0	EPA 9056A	GROUND WATER		268844
1283773	Anions QSM 5.0	EPA 9056A	GROUND WATER		268844
1282990	Anions QSM 5.0	EPA 9056A	GROUND WATER		268741
CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
1282988	Organic Carbon, Total QSM 5.0	EPA 9060A	GROUND WATER		268891
1282989	Organic Carbon, Total QSM 5.0	EPA 9060A	GROUND WATER		268891
1282990	Organic Carbon, Total QSM 5.0	EPA 9060A	GROUND WATER		268891
1283772	Organic Carbon, Total QSM 5.0	EPA 9060A	GROUND WATER		268891
1283773	Organic Carbon, Total QSM 5.0	EPA 9060A	GROUND WATER		268891

Metal Parameters

Project Name: RADFORD AAP SWMU 54

Project #:

SDG #: 175012

CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
1283774	Potassium, Total QSM 5.0	EPA 6010C	GROUND WATER	128465	268848
CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
1283774	Sodium, Total QSM 5.0	EPA 6010C	GROUND WATER	128465	268848
CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
1283774	ICP Metals, Total QSM 5.0	EPA 6010C	GROUND WATER	128465	268847
CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
1283774	Mercury, Total QSM	EPA 7470A	GROUND WATER	128485	268967

Summary of Methods associated with SDG

SDG: 175012

Company: WESTON SOLUTIONS, INC.

Project: RADFORD AAP SWMU 54

Matrix	Analytical Method	Prep Method	Cleanup Method(s) - if applicable
GROUND WATER	EPA 9040C	NONE	
GROUND WATER	EPA 9060A	NONE	
GROUND WATER	EPA 410.4	EPA 414	
GROUND WATER	EPA 6010C	EPA 3010A	
GROUND WATER	EPA 6010C	EPA 3010A	
GROUND WATER	EPA 6010C	EPA 3010A	
GROUND WATER	EPA 7470A	EPA 7470A	
GROUND WATER	EPA 9056A	NONE	
GROUND WATER	EPA 9060A	NONE	

**METALS
CLP FORMS
DOCUMENTS**

INORGANIC ANALYSIS DATA SHEET

Sample Description

54 IDW

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1283774	
Analytical Method:	EPA 7470A	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268967	Extraction Date/time:		
Analytical Prep Batch #:	128485	Analysis Date/Time:	02/02/2023	10:37
		Prep. Date/Time:	01/31/2023	14:30

Concentration Units: ug/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-97-6	Total Mercury	0.080	U M	0.020	0.080	0.12	0.12

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

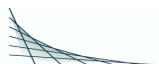
54 IDW

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1283774	
Analytical Method:	EPA 6010C	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268847	Extraction Date/time:		
Analytical Prep Batch #:	128465	Analysis Date/Time:	01/27/2023	16:43
		Prep. Date/Time:	01/26/2023	13:10

Concentration Units: ug/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7429-90-5	Total Aluminum	461		29	60	120	120
7440-36-0	Total Antimony	10	U	4.4	10	20	20
7440-38-2	Total Arsenic	20	U	7.7	20	40	40
7440-39-3	Total Barium	55.4		0.71	2.0	4.0	4.0
7440-41-7	Total Beryllium	3.0	U	0.95	3.0	8.0	8.0
7440-43-9	Total Cadmium	1.0	U	0.41	1.0	2.0	2.0
7440-70-2	Total Calcium	51900		17	50	100	100
7440-47-3	Total Chromium	3.1	J	1.1	2.5	5.0	5.0
7440-48-4	Total Cobalt	2.5	U	0.55	2.5	5.0	5.0
7440-50-8	Total Copper	20	U	5.2	20	40	40
7439-89-6	Total Iron	484		11	40	80	80
7439-92-1	Total Lead	2.0	U	1.4	2.0	4.0	4.6
7439-95-4	Total Magnesium	24300		10	25	40	40
7439-96-5	Total Manganese	19.0		1.4	3.0	5.0	5.0
7440-02-0	Total Nickel	3.0	U	1.5	3.0	5.0	5.0
7440-09-7	Total Potassium	1500		120	250	500	500
7782-49-2	Total Selenium	20	U	10	20	40	40
7440-22-4	Total Silver	2.5	U	1.1	2.5	5.0	5.0
7440-23-5	Total Sodium	19400		200	500	700	700
7440-28-0	Total Thallium	20	U	6.8	20	40	40
7440-62-2	Total Vanadium	3.0	U	1.3	3.0	5.0	5.0
7440-66-6	Total Zinc	7.8	J	4.5	10	20	20

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



2A-1

INITIAL CALIBRATION VERIFICATION

Sample No.

ICV

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268967

Lab Sample ID: 1285973

ICAL Calibration #: 02022023

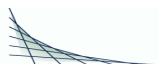
Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Mercury	2/2/23	10:12	3.0	3.06	102	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



2A-1

INITIAL CALIBRATION VERIFICATION

Sample No.

ICV

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268848

Lab Sample ID: 1284823

ICAL Calibration #:

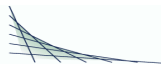
Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Potassium	1/27/23	10:19	100000	104000	104	90	110
Sodium	1/27/23	10:19	100000	101000	101	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



2A-1

LOWER LIMIT OF QUANTITATION CHECK (LLQC)

Sample No.

LLQC

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268848

Lab Sample ID: 1284824

ICAL Calibration #:

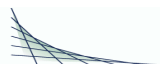
Concentration Units:

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Potassium	1/27/23	10:33	3000	3160	105	80	120
Sodium	1/27/23	10:33	6000	6380	106	80	120

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



2A-1

INITIAL CALIBRATION VERIFICATION

Sample No.

ICV

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268847

Lab Sample ID: 1285319

ICAL Calibration #: _____

Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Aluminum	1/27/23	10:19	12000	11400	95	90	110
Antimony	1/27/23	10:19	500.0	503.0	101	90	110
Arsenic	1/27/23	10:19	2000	2050	102	90	110
Barium	1/27/23	10:19	2000	1960	98	90	110
Beryllium	1/27/23	10:19	50.0	50.20	100	90	110
Cadmium	1/27/23	10:19	50.0	47.80	96	90	110
Calcium	1/27/23	10:19	10000	9670	97	90	110
Chromium	1/27/23	10:19	200.0	199.0	100	90	110
Cobalt	1/27/23	10:19	500.0	494.0	99	90	110
Copper	1/27/23	10:19	250.0	243.0	97	90	110
Iron	1/27/23	10:19	5000	5330	107	90	110
Lead	1/27/23	10:19	500.0	476.0	95	90	110
Magnesium	1/27/23	10:19	10000	9660	97	90	110
Manganese	1/27/23	10:19	500.0	454.0	91	90	110
Nickel	1/27/23	10:19	500.0	497.0	99	90	110
Selenium	1/27/23	10:19	2000	2040	102	90	110
Silver	1/27/23	10:19	50.0	46.80	94	90	110
Thallium	1/27/23	10:19	2000	1910	96	90	110
Vanadium	1/27/23	10:19	500.0	497.0	99	90	110
Zinc	1/27/23	10:19	500.0	508.0	102	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130

LOWER LIMIT OF QUANTITATION CHECK (LLQC)

LLQC

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268847

Lab Sample ID: 1285320

ICAL Calibration #:

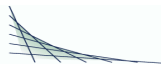
Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Aluminum	1/27/23	10:33	1200	1230	102	80	120
Antimony	1/27/23	10:33	60.0	61.00	102	80	120
Arsenic	1/27/23	10:33	60.0	58.50	98	80	120
Barium	1/27/23	10:33	30.0	32.00	107	80	120
Beryllium	1/27/23	10:33	12.00	12.80	107	80	120
Cadmium	1/27/23	10:33	15.00	15.70	105	80	120
Calcium	1/27/23	10:33	1500	1550	103	80	120
Chromium	1/27/23	10:33	30.0	31.30	104	80	120
Cobalt	1/27/23	10:33	30.0	30.80	103	80	120
Copper	1/27/23	10:33	30.0	31.60	105	80	120
Iron	1/27/23	10:33	900.0	851.0	95	80	120
Lead	1/27/23	10:33	30.0	27.50	92	80	120
Magnesium	1/27/23	10:33	1500	1460	97	80	120
Manganese	1/27/23	10:33	30.0	29.10	97	80	120
Nickel	1/27/23	10:33	30.0	30.50	102	80	120
Selenium	1/27/23	10:33	60.0	63.10	105	80	120
Thallium	1/27/23	10:33	60.0	60.90	102	80	120
Vanadium	1/27/23	10:33	30.0	27.20	91	80	120
Zinc	1/27/23	10:33	30.0	29.30	98	80	120

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



2A-1

LOWER LIMIT OF QUANTITATION CHECK (LLQC)

Sample No.

LLQC

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268847

Lab Sample ID: 1285324

ICAL Calibration #: _____

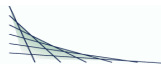
Concentration Units: _____

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Silver	1/27/23	11:24	0	11.40	0		

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 175012

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 268967
 ICAL Calibration #: 02022023

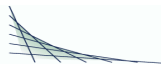
Lab Sample ID: 1285975
 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Mercury	2/2/23	10:53	3.0	2.87	96	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 175012

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 268967
 ICAL Calibration #: 02022023

Lab Sample ID: 1285977
 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Mercury	2/2/23	11:34	3.0	2.69	90	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130

CONTINUING CALIBRATION VERIFICATION

CCV

Lab Name: CT Laboratories
 SDG No.: 175012

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 268967
 ICAL Calibration #: 02022023

Lab Sample ID: 1285978
 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Mercury	2/2/23	11:37	3.0	3.13	104	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 1 - HIGH RANGE)

Sample No.

CCV High
Level

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268848

Lab Sample ID: 1284829

ICAL Calibration #:

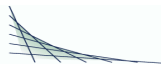
Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Potassium	1/27/23	15:45	50000	52200	104	90	110
Sodium	1/27/23	15:45	50000	48000	96	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 2 - LOW RANGE)

Sample No.

**CCV Low
Level**

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268848

Lab Sample ID: 1284830

ICAL Calibration #: _____

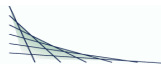
Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Potassium	1/27/23	15:51	5000	5180	104	90	110
Sodium	1/27/23	15:51	5000	5080	102	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 1 - HIGH RANGE)

Sample No.

**CCV High
Level**

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268848

Lab Sample ID: 1284833

ICAL Calibration #: _____

Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Potassium	1/27/23	17:20	50000	50600	101	90	110
Sodium	1/27/23	17:20	50000	49100	98	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 2 - LOW RANGE)

Sample No.

CCV Low
Level

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268848

Lab Sample ID: 1284834

ICAL Calibration #:

Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Potassium	1/27/23	17:26	5000	5200	104	90	110
Sodium	1/27/23	17:26	5000	5040	101	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 1 - HIGH RANGE)

Sample No.

CCV High
Level

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268848

Lab Sample ID: 1284837

ICAL Calibration #:

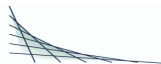
Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Potassium	1/27/23	18:53	50000	50300	101	90	110
Sodium	1/27/23	18:53	50000	47500	95	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 2 - LOW RANGE)

Sample No.

CCV Low
Level

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268848

Lab Sample ID: 1284838

ICAL Calibration #:

Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Potassium	1/27/23	18:59	5000	5300	106	90	110
Sodium	1/27/23	18:59	5000	4990	100	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 1 - HIGH RANGE)

Sample No.

**CCV High
Level**

Lab Name: CT Laboratories
 SDG No.: 175012

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 268847

Lab Sample ID: 1285325

ICAL Calibration #: _____

Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Aluminum	1/27/23	15:45	5000	4840	97	90	110
Antimony	1/27/23	15:45	5000	4870	97	90	110
Arsenic	1/27/23	15:45	5000	4910	98	90	110
Barium	1/27/23	15:45	5000	4690	94	90	110
Beryllium	1/27/23	15:45	500.0	491.0	98	90	110
Cadmium	1/27/23	15:45	500.0	494.0	99	90	110
Calcium	1/27/23	15:45	5000	4970	99	90	110
Chromium	1/27/23	15:45	5000	5230	105	90	110
Cobalt	1/27/23	15:45	5000	4710	94	90	110
Copper	1/27/23	15:45	5000	4750	95	90	110
Iron	1/27/23	15:45	5000	4970	99	90	110
Lead	1/27/23	15:45	5000	4870	97	90	110
Magnesium	1/27/23	15:45	5000	4690	94	90	110
Manganese	1/27/23	15:45	5000	4710	94	90	110
Nickel	1/27/23	15:45	5000	4770	95	90	110
Selenium	1/27/23	15:45	5000	4960	99	90	110
Silver	1/27/23	15:45	500.0	493.0	99	90	110
Thallium	1/27/23	15:45	5000	4800	96	90	110
Vanadium	1/27/23	15:45	5000	4680	94	90	110
Zinc	1/27/23	15:45	5000	4680	94	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130

CONTINUING CALIBRATION VERIFICATION (LEVEL 2 - LOW RANGE)

**CCV Low
Level**

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268847

Lab Sample ID: 1285326

ICAL Calibration #: _____

Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Aluminum	1/27/23	15:51	500.0	528.0	106	90	110
Antimony	1/27/23	15:51	500.0	497.0	99	90	110
Arsenic	1/27/23	15:51	500.0	506.0	101	90	110
Barium	1/27/23	15:51	500.0	536.0	107	90	110
Beryllium	1/27/23	15:51	50.0	50.30	101	90	110
Cadmium	1/27/23	15:51	50.0	50.20	100	90	110
Calcium	1/27/23	15:51	500.0	478.0	96	90	110
Chromium	1/27/23	15:51	500.0	528.0	106	90	110
Cobalt	1/27/23	15:51	500.0	498.0	100	90	110
Copper	1/27/23	15:51	500.0	502.0	100	90	110
Iron	1/27/23	15:51	500.0	478.0	96	90	110
Lead	1/27/23	15:51	500.0	499.0	100	90	110
Magnesium	1/27/23	15:51	500.0	474.0	95	90	110
Manganese	1/27/23	15:51	500.0	504.0	101	90	110
Nickel	1/27/23	15:51	500.0	517.0	103	90	110
Selenium	1/27/23	15:51	500.0	516.0	103	90	110
Silver	1/27/23	15:51	50.0	50.30	101	90	110
Thallium	1/27/23	15:51	500.0	546.0	109	90	110
Vanadium	1/27/23	15:51	500.0	459.0	92	90	110
Zinc	1/27/23	15:51	500.0	511.0	102	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130

CONTINUING CALIBRATION VERIFICATION (LEVEL 1 - HIGH RANGE)

Sample No.

**CCV High
Level**

Lab Name: CT Laboratories
 SDG No.: 175012

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 268847

Lab Sample ID: 1285329

ICAL Calibration #: _____

Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Aluminum	1/27/23	17:20	5000	4880	98	90	110
Antimony	1/27/23	17:20	5000	4780	96	90	110
Arsenic	1/27/23	17:20	5000	4800	96	90	110
Barium	1/27/23	17:20	5000	4660	93	90	110
Beryllium	1/27/23	17:20	500.0	496.0	99	90	110
Cadmium	1/27/23	17:20	500.0	496.0	99	90	110
Calcium	1/27/23	17:20	5000	5050	101	90	110
Chromium	1/27/23	17:20	5000	5290	106	90	110
Cobalt	1/27/23	17:20	5000	4680	94	90	110
Copper	1/27/23	17:20	5000	4760	95	90	110
Iron	1/27/23	17:20	5000	4920	98	90	110
Lead	1/27/23	17:20	5000	4820	96	90	110
Magnesium	1/27/23	17:20	5000	4710	94	90	110
Manganese	1/27/23	17:20	5000	4720	94	90	110
Nickel	1/27/23	17:20	5000	4750	95	90	110
Selenium	1/27/23	17:20	5000	4870	97	90	110
Silver	1/27/23	17:20	500.0	489.0	98	90	110
Thallium	1/27/23	17:20	5000	4780	96	90	110
Vanadium	1/27/23	17:20	5000	4630	93	90	110
Zinc	1/27/23	17:20	5000	4640	93	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130

CONTINUING CALIBRATION VERIFICATION (LEVEL 2 - LOW RANGE)

Sample No.

**CCV Low
Level**

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268847

Lab Sample ID: 1285330

ICAL Calibration #: _____

Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Aluminum	1/27/23	17:26	500.0	527.0	105	90	110
Antimony	1/27/23	17:26	500.0	486.0	97	90	110
Arsenic	1/27/23	17:26	500.0	500.0	100	90	110
Barium	1/27/23	17:26	500.0	536.0	107	90	110
Beryllium	1/27/23	17:26	50.0	50.50	101	90	110
Cadmium	1/27/23	17:26	50.0	50.90	102	90	110
Calcium	1/27/23	17:26	500.0	477.0	95	90	110
Chromium	1/27/23	17:26	500.0	526.0	105	90	110
Cobalt	1/27/23	17:26	500.0	487.0	97	90	110
Copper	1/27/23	17:26	500.0	501.0	100	90	110
Iron	1/27/23	17:26	500.0	479.0	96	90	110
Lead	1/27/23	17:26	500.0	495.0	99	90	110
Magnesium	1/27/23	17:26	500.0	463.0	93	90	110
Manganese	1/27/23	17:26	500.0	510.0	102	90	110
Nickel	1/27/23	17:26	500.0	512.0	102	90	110
Selenium	1/27/23	17:26	500.0	515.0	103	90	110
Silver	1/27/23	17:26	50.0	50.40	101	90	110
Thallium	1/27/23	17:26	500.0	543.0	109	90	110
Vanadium	1/27/23	17:26	500.0	463.0	93	90	110
Zinc	1/27/23	17:26	500.0	508.0	102	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130

CONTINUING CALIBRATION VERIFICATION (LEVEL 1 - HIGH RANGE)

Sample No.

**CCV High
Level**

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268847

Lab Sample ID: 1285333

ICAL Calibration #: _____

Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Aluminum	1/27/23	18:53	5000	4850	97	90	110
Antimony	1/27/23	18:53	5000	4820	96	90	110
Arsenic	1/27/23	18:53	5000	4850	97	90	110
Barium	1/27/23	18:53	5000	4590	92	90	110
Beryllium	1/27/23	18:53	500.0	491.0	98	90	110
Cadmium	1/27/23	18:53	500.0	506.0	101	90	110
Calcium	1/27/23	18:53	5000	5020	100	90	110
Chromium	1/27/23	18:53	5000	5280	106	90	110
Cobalt	1/27/23	18:53	5000	4690	94	90	110
Copper	1/27/23	18:53	5000	4730	95	90	110
Iron	1/27/23	18:53	5000	4890	98	90	110
Lead	1/27/23	18:53	5000	4920	98	90	110
Magnesium	1/27/23	18:53	5000	4690	94	90	110
Manganese	1/27/23	18:53	5000	4660	93	90	110
Nickel	1/27/23	18:53	5000	4740	95	90	110
Selenium	1/27/23	18:53	5000	4910	98	90	110
Silver	1/27/23	18:53	500.0	488.0	98	90	110
Thallium	1/27/23	18:53	5000	4780	96	90	110
Vanadium	1/27/23	18:53	5000	4640	93	90	110
Zinc	1/27/23	18:53	5000	4580	92	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130

CONTINUING CALIBRATION VERIFICATION (LEVEL 2 - LOW RANGE)

Sample No.

**CCV Low
Level**

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268847

Lab Sample ID: 1285334

ICAL Calibration #: _____

Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Aluminum	1/27/23	18:59	500.0	527.0	105	90	110
Antimony	1/27/23	18:59	500.0	477.0	95	90	110
Arsenic	1/27/23	18:59	500.0	495.0	99	90	110
Barium	1/27/23	18:59	500.0	536.0	107	90	110
Beryllium	1/27/23	18:59	50.0	49.10	98	90	110
Cadmium	1/27/23	18:59	50.0	51.80	104	90	110
Calcium	1/27/23	18:59	500.0	475.0	95	90	110
Chromium	1/27/23	18:59	500.0	534.0	107	90	110
Cobalt	1/27/23	18:59	500.0	480.0	96	90	110
Copper	1/27/23	18:59	500.0	491.0	98	90	110
Iron	1/27/23	18:59	500.0	483.0	97	90	110
Lead	1/27/23	18:59	500.0	491.0	98	90	110
Magnesium	1/27/23	18:59	500.0	455.0	91	90	110
Manganese	1/27/23	18:59	500.0	520.0	104	90	110
Nickel	1/27/23	18:59	500.0	508.0	102	90	110
Selenium	1/27/23	18:59	500.0	503.0	101	90	110
Silver	1/27/23	18:59	50.0	51.30	103	90	110
Thallium	1/27/23	18:59	500.0	540.0	108	90	110
Vanadium	1/27/23	18:59	500.0	468.0	94	90	110
Zinc	1/27/23	18:59	500.0	505.0	101	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130

INITIAL CALIBRATION BLANKS

Sample No.

ICB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
SDG No.: 175012
Analytical Run #: 268967 Lab Sample ID: 1285974
Analytical Prep Batch #: 0 Preparation Date/Time:
ICAL Calibration #: 02022023 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Mercury	02/02/2023 10:18	0.002	U	0.020	0.080

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

INITIAL CALIBRATION BLANKS

Sample No.

ICB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268848 Lab Sample ID: 1284825

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Potassium	01/27/2023 10:47	-52.0	U	120	250
Sodium	01/27/2023 10:47	-1.00	U	200	350

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

INITIAL CALIBRATION BLANKS

ICB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268847 Lab Sample ID: 1285321

Analytical Prep Batch #: 0 Preparation Date/Time: _____

ICAL Calibration #: _____ Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Aluminum	01/27/2023	10:47	0.403	U	29	60
Antimony	01/27/2023	10:47	-0.177	U	4.4	10
Arsenic	01/27/2023	10:47	2.09	U	7.7	20
Barium	01/27/2023	10:47	-0.033	U	0.71	2.0
Beryllium	01/27/2023	10:47	-0.23	U	0.95	4.0
Cadmium	01/27/2023	10:47	0.047	U	0.41	1.0
Calcium	01/27/2023	10:47	-0.021	U	17	50
Chromium	01/27/2023	10:47	-0.055	U	1.1	2.5
Cobalt	01/27/2023	10:47	0.161	U	0.55	2.5
Copper	01/27/2023	10:47	-1.77	U	5.2	20
Iron	01/27/2023	10:47	0.242	U	11	40
Lead	01/27/2023	10:47	-0.994	U	1.4	2.0
Magnesium	01/27/2023	10:47	0.09	U	10	20
Manganese	01/27/2023	10:47	-0.016	U	1.4	2.5
Nickel	01/27/2023	10:47	0.075	U	1.5	2.5
Selenium	01/27/2023	10:47	2.62	U	10	20
Silver	01/27/2023	10:47	1.10		1.1	2.5
Thallium	01/27/2023	10:47	0.50	U	6.8	20
Vanadium	01/27/2023	10:47	-0.007	U	1.3	2.5
Zinc	01/27/2023	10:47	-0.827	U	4.5	10

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268967 Lab Sample ID: 1285976

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: 02022023 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Mercury	02/02/2023 10:59	0.001	U	0.020	0.080

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

Sample No.

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
SDG No.: 175012
Analytical Run #: 268967 Lab Sample ID: 1285979
Analytical Prep Batch #: 0 Preparation Date/Time:
ICAL Calibration #: 02022023 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Mercury	02/02/2023 11:44	0	U	0.020	0.080

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

Sample No.

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268848 Lab Sample ID: 1284831

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Potassium	01/27/2023	15:58	-34.0	U	120	250
Sodium	01/27/2023	15:58	27.00	U	200	350

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

Sample No.

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268848 Lab Sample ID: 1284835

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Potassium	01/27/2023 17:33	-5.00	U	120	250
Sodium	01/27/2023 17:33	25.00	U	200	350

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

Sample No.

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268848 Lab Sample ID: 1284839

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Potassium	01/27/2023	19:06	-19.0	U	120	250
Sodium	01/27/2023	19:06	55.00	U	200	350

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268847 Lab Sample ID: 1285327

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Aluminum	01/27/2023	15:58	-0.124	U	29	60
Antimony	01/27/2023	15:58	-0.113	U	4.4	10
Arsenic	01/27/2023	15:58	-3.45	U	7.7	20
Barium	01/27/2023	15:58	0.116	U	0.71	2.0
Beryllium	01/27/2023	15:58	-0.02	U	0.95	4.0
Cadmium	01/27/2023	15:58	0.072	U	0.41	1.0
Calcium	01/27/2023	15:58	0.574	U	17	50
Chromium	01/27/2023	15:58	-0.11	U	1.1	2.5
Cobalt	01/27/2023	15:58	-0.10	U	0.55	2.5
Copper	01/27/2023	15:58	-1.16	U	5.2	20
Iron	01/27/2023	15:58	-0.121	U	11	40
Lead	01/27/2023	15:58	-0.412	U	1.4	2.0
Magnesium	01/27/2023	15:58	0.352	U	10	20
Manganese	01/27/2023	15:58	0.031	U	1.4	2.5
Nickel	01/27/2023	15:58	0.303	U	1.5	2.5
Selenium	01/27/2023	15:58	-0.529	U	10	20
Silver	01/27/2023	15:58	1.18		1.1	2.5
Thallium	01/27/2023	15:58	-1.91	U	6.8	20
Vanadium	01/27/2023	15:58	0.149	U	1.3	2.5
Zinc	01/27/2023	15:58	-0.842	U	4.5	10

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268847 Lab Sample ID: 1285331

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Aluminum	01/27/2023	17:33	0.086	U	29	60
Antimony	01/27/2023	17:33	-0.353	U	4.4	10
Arsenic	01/27/2023	17:33	-2.87	U	7.7	20
Barium	01/27/2023	17:33	-0.036	U	0.71	2.0
Beryllium	01/27/2023	17:33	-0.255	U	0.95	4.0
Cadmium	01/27/2023	17:33	-0.04	U	0.41	1.0
Calcium	01/27/2023	17:33	1.11	U	17	50
Chromium	01/27/2023	17:33	-0.078	U	1.1	2.5
Cobalt	01/27/2023	17:33	-0.065	U	0.55	2.5
Copper	01/27/2023	17:33	-5.60	U	5.2	20
Iron	01/27/2023	17:33	0.938	U	11	40
Lead	01/27/2023	17:33	-0.916	U	1.4	2.0
Magnesium	01/27/2023	17:33	0.691	U	10	20
Manganese	01/27/2023	17:33	0.066	U	1.4	2.5
Nickel	01/27/2023	17:33	0.034	U	1.5	2.5
Selenium	01/27/2023	17:33	-1.46	U	10	20
Silver	01/27/2023	17:33	0.969	U	1.1	2.5
Thallium	01/27/2023	17:33	-0.571	U	6.8	20
Vanadium	01/27/2023	17:33	-0.025	U	1.3	2.5
Zinc	01/27/2023	17:33	-0.764	U	4.5	10

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268847 Lab Sample ID: 1285335

Analytical Prep Batch #: 0 Preparation Date/Time: _____

ICAL Calibration #: _____ Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Aluminum	01/27/2023	19:06	0.089	U	29	60
Antimony	01/27/2023	19:06	-0.899	U	4.4	10
Arsenic	01/27/2023	19:06	-2.56	U	7.7	20
Barium	01/27/2023	19:06	0.078	U	0.71	2.0
Beryllium	01/27/2023	19:06	-0.022	U	0.95	4.0
Cadmium	01/27/2023	19:06	0.089	U	0.41	1.0
Calcium	01/27/2023	19:06	1.51	U	17	50
Chromium	01/27/2023	19:06	-0.051	U	1.1	2.5
Cobalt	01/27/2023	19:06	0.033	U	0.55	2.5
Copper	01/27/2023	19:06	-8.78	U	5.2	20
Iron	01/27/2023	19:06	0.558	U	11	40
Lead	01/27/2023	19:06	-0.174	U	1.4	2.0
Magnesium	01/27/2023	19:06	0.814	U	10	20
Manganese	01/27/2023	19:06	0.05	U	1.4	2.5
Nickel	01/27/2023	19:06	0.251	U	1.5	2.5
Selenium	01/27/2023	19:06	-3.38	U	10	20
Silver	01/27/2023	19:06	1.11		1.1	2.5
Thallium	01/27/2023	19:06	-0.567	U	6.8	20
Vanadium	01/27/2023	19:06	-0.008	U	1.3	2.5
Zinc	01/27/2023	19:06	-0.681	U	4.5	10

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268967 Lab Sample ID: 1284467

Analytical Prep Batch #: 128485 Preparation Date/Time: 01/31/2023 14:30

ICAL Calibration #: 02022023 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Total Mercury	02/02/2023 10:28	0.00200	U	0.020	0.06

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268848 Lab Sample ID: 1283873

Analytical Prep Batch #: 128465 Preparation Date/Time: 01/26/2023 13:10

ICAL Calibration #: Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Total Aluminum	01/27/2023	16:35	1.49	U	29	60
Total Antimony	01/27/2023	16:35	0.745	U	4.4	10
Total Arsenic	01/27/2023	16:35	0.439	U	7.7	20
Total Barium	01/27/2023	16:35	0.278	U	0.71	2.0
Total Beryllium	01/27/2023	16:35	0.273	U	0.95	4.0
Total Cadmium	01/27/2023	16:35	0.0310	U	0.41	1.0
Total Calcium	01/27/2023	16:35	3.26	U	19	50
Total Chromium	01/27/2023	16:35	-0.327	U	1.1	2.5
Total Cobalt	01/27/2023	16:35	-0.239	U	0.55	2.5
Total Copper	01/27/2023	16:35	-4.25	U	5.2	20
Total Iron	01/27/2023	16:35	3.57	U	11	40
Total Lead	01/27/2023	16:35	-0.874	U	1.4	2.0
Total Magnesium	01/27/2023	16:35	1.04	U	10	20
Total Manganese	01/27/2023	16:35	-0.00600	U	1.4	2.5
Total Nickel	01/27/2023	16:35	-0.050	U	1.5	2.5
Total Potassium	01/27/2023	16:35	82.00	U	120	250
Total Selenium	01/27/2023	16:35	0.712	U	10	20
Total Silver	01/27/2023	16:35	0.780	U	1.1	2.5
Total Sodium	01/27/2023	16:35	70.00	U	200	350
Total Thallium	01/27/2023	16:35	0.849	U	6.8	20
Total Vanadium	01/27/2023	16:35	0.00700	U	1.3	2.5
Total Zinc	01/27/2023	16:35	-0.765	U	4.5	10

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268848 Lab Sample ID: 1283873

Analytical Prep Batch #: 128465 Preparation Date/Time: 01/26/2023 13:10

ICAL Calibration #: Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Total Aluminum	01/27/2023	16:35	1.49	U	29	60
Total Antimony	01/27/2023	16:35	0.745	U	4.4	10
Total Arsenic	01/27/2023	16:35	0.439	U	7.7	20
Total Barium	01/27/2023	16:35	0.278	U	0.71	2.0
Total Beryllium	01/27/2023	16:35	0.273	U	0.95	4.0
Total Cadmium	01/27/2023	16:35	0.0310	U	0.41	1.0
Total Calcium	01/27/2023	16:35	3.26	U	19	50
Total Chromium	01/27/2023	16:35	-0.327	U	1.1	2.5
Total Cobalt	01/27/2023	16:35	-0.239	U	0.55	2.5
Total Copper	01/27/2023	16:35	-4.25	U	5.2	20
Total Iron	01/27/2023	16:35	3.57	U	11	40
Total Lead	01/27/2023	16:35	-0.874	U	1.4	2.0
Total Magnesium	01/27/2023	16:35	1.04	U	10	20
Total Manganese	01/27/2023	16:35	-0.00600	U	1.4	2.5
Total Nickel	01/27/2023	16:35	-0.050	U	1.5	2.5
Total Potassium	01/27/2023	16:35	82.00	U	120	250
Total Selenium	01/27/2023	16:35	0.712	U	10	20
Total Silver	01/27/2023	16:35	0.780	U	1.1	2.5
Total Sodium	01/27/2023	16:35	70.00	U	200	350
Total Thallium	01/27/2023	16:35	0.849	U	6.8	20
Total Vanadium	01/27/2023	16:35	0.00700	U	1.3	2.5
Total Zinc	01/27/2023	16:35	-0.765	U	4.5	10

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268848 Lab Sample ID: 1283873

Analytical Prep Batch #: 128465 Preparation Date/Time: 01/26/2023 13:10

ICAL Calibration #: Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Total Aluminum	01/27/2023	16:35	1.49	U	29	60
Total Antimony	01/27/2023	16:35	0.745	U	4.4	10
Total Arsenic	01/27/2023	16:35	0.439	U	7.7	20
Total Barium	01/27/2023	16:35	0.278	U	0.71	2.0
Total Beryllium	01/27/2023	16:35	0.273	U	0.95	4.0
Total Cadmium	01/27/2023	16:35	0.0310	U	0.41	1.0
Total Calcium	01/27/2023	16:35	3.26	U	19	50
Total Chromium	01/27/2023	16:35	-0.327	U	1.1	2.5
Total Cobalt	01/27/2023	16:35	-0.239	U	0.55	2.5
Total Copper	01/27/2023	16:35	-4.25	U	5.2	20
Total Iron	01/27/2023	16:35	3.57	U	11	40
Total Lead	01/27/2023	16:35	-0.874	U	1.4	2.0
Total Magnesium	01/27/2023	16:35	1.04	U	10	20
Total Manganese	01/27/2023	16:35	-0.00600	U	1.4	2.5
Total Nickel	01/27/2023	16:35	-0.050	U	1.5	2.5
Total Potassium	01/27/2023	16:35	82.00	U	120	250
Total Selenium	01/27/2023	16:35	0.712	U	10	20
Total Silver	01/27/2023	16:35	0.780	U	1.1	2.5
Total Sodium	01/27/2023	16:35	70.00	U	200	350
Total Thallium	01/27/2023	16:35	0.849	U	6.8	20
Total Vanadium	01/27/2023	16:35	0.00700	U	1.3	2.5
Total Zinc	01/27/2023	16:35	-0.765	U	4.5	10

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

4-1

ICP INTERFERENCE CHECK SAMPLE (SOL. A)

ICSA

Lab Name:	CT Laboratories
ICP ID Number:	TJA 6000
ICS Source:	SPEX

Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
SDG No.:	175012

Analytical Run #: 268848

Inorganics MRL Standard Source:

ICAL Calibration #:

Lab Sample ID: 1284826

SPEX, Ultra, Inorganic Ventures and Mallinckrodt

Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R	Lower Limit (1)	Upper Limit (1)
Aluminum	01/27/2023	11:02	500000	496000	99	80	120
Calcium	01/27/2023	11:02	500000	480000	96	80	120
Iron	01/27/2023	11:02	500000	468000	94	80	120
Magnesium	01/27/2023	11:02	500000	480000	96	80	120
Potassium	01/27/2023	11:02	0	-24.0	0	-500	500
Sodium	01/27/2023	11:02	0	189.0	0	-500	500

ICP INTERFERENCE CHECK SAMPLE (SOL. A)

ICSA

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 ICP ID Number: TJA 6000 SDG No.: 175012
 ICS Source: SPEX
 Analytical Run #: 268847 Lab Sample ID: 1285322
 Inorganics MRL Standard Source: SPEX, Ultra, Inorganic Ventures and Mallinkrodt
 ICAL Calibration #: _____ Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R	Lower Limit (1)	Upper Limit (1)
Aluminum	01/27/2023	11:02	500000	496000	99	80	120
Antimony	01/27/2023	11:02	0	1.61	0	-10	10
Arsenic	01/27/2023	11:02	0	-0.02	0	-20	20
Barium	01/27/2023	11:02	0	0.242	0	-2.0	2.0
Beryllium	01/27/2023	11:02	0	0	0	-4.0	4.0
Cadmium	01/27/2023	11:02	0	-0.003	0	-1.0	1.0
Calcium	01/27/2023	11:02	500000	480000	96	80	120
Chromium	01/27/2023	11:02	0	-0.397	0	-13	13
Cobalt	01/27/2023	11:02	0	-0.08	0	-2.5	2.5
Copper	01/27/2023	11:02	0	-0.305	0	-20	20
Iron	01/27/2023	11:02	500000	468000	94	80	120
Lead	01/27/2023	11:02	0	0	0	-2.0	2.0
Magnesium	01/27/2023	11:02	500000	480000	96	80	120
Manganese	01/27/2023	11:02	0	1.31	0	-7.3	7.3
Nickel	01/27/2023	11:02	0	0.001	0	-2.5	2.5
Selenium	01/27/2023	11:02	0	3.26	0	-20	20
Silver	01/27/2023	11:02	0	-0.125	0	-2.5	2.5
Thallium	01/27/2023	11:02	0	0.002	0	-20	20
Vanadium	01/27/2023	11:02	10000	8940	0	8000	12000
Zinc	01/27/2023	11:02	0	0.408	0	-10	10

4-2

ICP INTERFERENCE CHECK SAMPLE (SOL. AB)

ICSAB

Lab Name:	CT Laboratories
ICP ID Number:	TJA 6000
ICS Source:	SPEX, Ultra

Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
SDG No.:	175012

Analytical Run #: 268848

Inorganics MRL Standard Source:

ICAL Calibration #:

Lab Sample ID: 1284827

SPEX, Ultra, Inorganic Ventures and Mallinckrodt

Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R	Lower Limit (1)	Upper Limit (1)
Aluminum	01/27/2023	11:10	500000	493000	99	80	120
Calcium	01/27/2023	11:10	500000	475000	95	80	120
Iron	01/27/2023	11:10	500000	459000	92	80	120
Magnesium	01/27/2023	11:10	500000	475000	95	80	120
Potassium	01/27/2023	11:10	100000	109000	109	80	120
Sodium	01/27/2023	11:10	100000	104000	104	80	120

Sample No:

4-2

ICP INTERFERENCE CHECK SAMPLE (SOL. AB)

ICSAB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 ICP ID Number: TJA 6000 SDG No.: 175012
 ICS Source: SPEX, Ultra
 Analytical Run #: 268848 Lab Sample ID: 1284827
 Inorganics MRL Standard Source: SPEX, Ultra, Inorganic Ventures and Mallinkrodt
 ICAL Calibration #: _____ Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Spiked Conc.	Measured Conc.	%R	Lower Limit (1)	Upper Limit (1)
Aluminum	01/27/2023 11:10	500000	493000	99	80	120
Calcium	01/27/2023 11:10	500000	475000	95	80	120
Iron	01/27/2023 11:10	500000	459000	92	80	120
Magnesium	01/27/2023 11:10	500000	475000	95	80	120
Potassium	01/27/2023 11:10	100000	109000	109	80	120
Sodium	01/27/2023 11:10	100000	104000	104	80	120

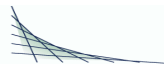
ICP INTERFERENCE CHECK SAMPLE (SOL. AB)

ICSAB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 ICP ID Number: TJA 6000 SDG No.: 175012
 ICS Source: SPEX, Ultra
 Analytical Run #: 268847 Lab Sample ID: 1285323
 Inorganics MRL Standard Source: SPEX, Ultra, Inorganic Ventures and Mallinkrodt
 ICAL Calibration #: _____ Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Spiked Conc.	Measured Conc.	%R	Lower Limit (1)	Upper Limit (1)
Aluminum	01/27/2023 11:10	500000	493000	99	80	120
Antimony	01/27/2023 11:10	500.0	477.0	95	80	120
Arsenic	01/27/2023 11:10	500.0	492.0	98	80	120
Barium	01/27/2023 11:10	500.0	503.0	101	80	120
Beryllium	01/27/2023 11:10	500.0	521.0	104	80	120
Cadmium	01/27/2023 11:10	500.0	519.0	104	80	120
Calcium	01/27/2023 11:10	500000	475000	95	80	120
Chromium	01/27/2023 11:10	500.0	501.0	100	80	120
Cobalt	01/27/2023 11:10	500.0	453.0	91	80	120
Copper	01/27/2023 11:10	500.0	511.0	102	80	120
Iron	01/27/2023 11:10	500000	459000	92	80	120
Lead	01/27/2023 11:10	500.0	421.0	84	80	120
Magnesium	01/27/2023 11:10	500000	475000	95	80	120
Manganese	01/27/2023 11:10	500.0	469.0	94	80	120
Nickel	01/27/2023 11:10	500.0	454.0	91	80	120
Selenium	01/27/2023 11:10	500.0	486.0	97	80	120
Silver	01/27/2023 11:10	500.0	492.0	98	80	120
Thallium	01/27/2023 11:10	500.0	502.0	100	80	120
Vanadium	01/27/2023 11:10	500.0	444.0	89	80	120
Zinc	01/27/2023 11:10	500.0	498.0	100	80	120



5A

Sample Description

SPIKE SAMPLE RECOVERY

54 IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solids for Sample:

Concentration Units: ug/L

Sample No.: 1284470

Parent Sample No.: 1283774

Analytical Prep Batch #: 128485

Analytical Preparation Date/Time: 01/31/2023 14:30

Analytical Run #: 268967

ICAL Calibration #: 02022023

Analysis Type Initial Analysis Analysis Date: ----- 02/02/2023 Analysis Time: ----- 11:03

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Total Mercury	82-119	0.92		BDL	U	2.0	46		CV FAIL

BDL = analyte concentration was below detection limit

5A

Sample Description

SPIKE SAMPLE RECOVERY

54 IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solids for Sample:

Concentration Units: ug/L

Sample No.: 1283876

Parent Sample No.: 1283774

Analytical Prep Batch #: 128465

Analytical Preparation Date/Time: 01/26/2023 13:10

Analytical Run #: 268847

ICAL Calibration #:

Analysis Type Initial Analysis Analysis Date: ----- 01/27/2023 Analysis Time: ----- 17:06

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Total Aluminum	86-115	1310		461		800	106		P
Total Antimony	88-113	193		BDL	U	200	96		P
Total Arsenic	87-113	825		BDL	U	800	103		P
Total Barium	88-113	870		55.4		800	102		P
Total Beryllium	89-112	20.3		BDL	U	20.0	102		P
Total Cadmium	88-113	20.0		BDL	U	20.0	100		P
Total Calcium	87-113	250000		51900		200000	99		P
Total Chromium	90-113	86.8		3.1	J	80.0	105		P
Total Cobalt	89-114	181		BDL	U	200	90		P
Total Copper	86-114	94.0		BDL	U	100	94		P
Total Iron	87-115	850		484		400	92		P
Total Lead	86-113	181		BDL	U	200	90		P
Total Magnesium	85-113	119000		24300		100000	95		P
Total Manganese	90-114	213		19.0		200	97		P
Total Nickel	88-113	189		BDL	U	200	94		P
Total Selenium	83-114	790		BDL	U	800	99		P
Total Silver	84-115	21.4		BDL	U	20.0	107		P
Total Thallium	85-114	733		BDL	U	800	92		P
Total Vanadium	90-111	196		BDL	U	200	98		P
Total Zinc	87-115	212		7.8	J	200	102		P

BDL = analyte concentration was below detection limit

5A

Sample Description

SPIKE SAMPLE RECOVERY

54 IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solids for Sample:

Concentration Units: ug/L

Sample No.: 1283876

Parent Sample No.: 1283774

Analytical Prep Batch #: 128465

Analytical Preparation Date/Time: 01/26/2023 13:10

Analytical Run #: 268848

ICAL Calibration #:

Analysis Type	Initial Analysis	Analysis Date: -----	01/27/2023	Analysis Time: -----	17:06
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Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Total Potassium	86-114	101000		1500		100000	100		P
Total Sodium	87-115	118000		19400		100000	99		P

BDL = analyte concentration was below detection limit

5B

Sample Description

POST DIGESTION SPIKE SAMPLE RECOVERY

54 IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solids for Sample:

Concentration Units: ug/L

Sample No.: 1285332

Parent Sample No.: 1283774

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 268847

ICAL Calibration #:

Analysis Type Initial Analysis Analysis Date: 01/27/2023 Analysis Time: 17:40

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Aluminum	80-120	4090		461		4000	91		P
Antimony	80-120	864		BDL	U	1000	86		P
Arsenic	80-120	3710		BDL	U	4000	93		P
Barium	80-120	3530		55.4		4000	87		P
Beryllium	80-120	91.7		BDL	U	100	92		P
Cadmium	80-120	97.5		BDL	U	100	98		P
Calcium	80-120	411000		51900		400000	90		P
Chromium	80-120	377		3.1	J	400	93		P
Cobalt	80-120	804		BDL	U	1000	80		P
Copper	80-120	434		BDL	U	500	87		P
Iron	80-120	2280		484		2000	90		P
Lead	80-120	800		BDL	U	1000	80		P
Magnesium	80-120	195000		24300		200000	85		P
Manganese	80-120	887		19.0		1000	87		P
Nickel	80-120	838		BDL	U	1000	84		P
Selenium	80-120	3590		BDL	U	4000	90		P
Silver	80-120	91.3		BDL	U	100	91		P
Thallium	80-120	3180		BDL	U	4000	80		P
Vanadium	80-120	819		BDL	U	1000	82		P
Zinc	80-120	919		7.8	J	1000	91		P

BDL = analyte concentration was below detection limit

5B

Sample Description

POST DIGESTION SPIKE SAMPLE RECOVERY

54 IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solids for Sample:

Concentration Units: ug/L

Sample No.: 1285346

Parent Sample No.: 1283774

Analytical Prep Batch #:

Analytical Preparation Date/Time:

Analytical Run #: 268848

ICAL Calibration #:

Analysis Type Initial Analysis

Analysis Date: ----- 01/27/2023

Analysis Time: ----- 17:40

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Sodium	80-120	197000		19400		200000	89		P

BDL = analyte concentration was below detection limit

5B

Sample Description

POST DIGESTION SPIKE SAMPLE RECOVERY

54 IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solids for Sample:

Concentration Units: ug/L

Sample No.: 1285347

Parent Sample No.: 1283774

Analytical Prep Batch #:

Analytical Preparation Date/Time:

Analytical Run #: 268848

ICAL Calibration #:

Analysis Type Initial Analysis

Analysis Date: ----- 01/27/2023

Analysis Time: ----- 17:40

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Potassium	80-120	186000		1500		200000	92		P

BDL = analyte concentration was below detection limit

5C

Sample Description

SPIKE DUPLICATE SAMPLE RECOVERY

54 IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solids for Sample:

Concentration Units: ug/L

Sample No.: 1284471

Parent Sample No.: 1284470

Analytical Prep Batch #: 128485

Analytical Preparation Date/Time: 01/31/2023 14:30

Analytical Run #: 268967

ICAL Calibration #: 02022023

Analysis Type Initial Analysis Analysis Date: ----- 02/02/2023 Analysis Time: ----- 11:06

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Total Mercury	82-119	0.92		BDL	U	2.0	46	CV	FAIL

BDL = analyte concentration was below detection limit

5C

Sample Description

SPIKE DUPLICATE SAMPLE RECOVERY

54 IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solids for Sample:

Concentration Units: ug/L

Sample No.: 1283877

Parent Sample No.: 1283876

Analytical Prep Batch #: 128465

Analytical Preparation Date/Time: 01/26/2023 13:10

Analytical Run #: 268847

ICAL Calibration #:

Analysis Type Initial Analysis Analysis Date: ----- 01/27/2023 Analysis Time: ----- 17:13

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Total Aluminum	86-115	1300		461		800	105		P
Total Antimony	88-113	191		BDL	U	200	96		P
Total Arsenic	87-113	811		BDL	U	800	101		P
Total Barium	88-113	862		55.4		800	101		P
Total Beryllium	89-112	19.5		BDL	U	20.0	98		P
Total Cadmium	88-113	19.7		BDL	U	20.0	98		P
Total Calcium	87-113	249000		51900		200000	99		P
Total Chromium	90-113	85.8		3.1	J	80.0	103		P
Total Cobalt	89-114	177		BDL	U	200	88		P
Total Copper	86-114	95.2		BDL	U	100	95		P
Total Iron	87-115	864		484		400	95		P
Total Lead	86-113	178		BDL	U	200	89		P
Total Magnesium	85-113	118000		24300		100000	94		P
Total Manganese	90-114	216		19.0		200	98		P
Total Nickel	88-113	186		BDL	U	200	93		P
Total Selenium	83-114	784		BDL	U	800	98		P
Total Silver	84-115	21.3		BDL	U	20.0	106		P
Total Thallium	85-114	725		BDL	U	800	91		P
Total Vanadium	90-111	192		BDL	U	200	96		P
Total Zinc	87-115	209		7.8	J	200	101		P

BDL = analyte concentration was below detection limit

5C

Sample Description

SPIKE DUPLICATE SAMPLE RECOVERY

54 IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solids for Sample:

Concentration Units: ug/L

Sample No.: 1283877

Parent Sample No.: 1283876

Analytical Prep Batch #: 128465

Analytical Preparation Date/Time: 01/26/2023 13:10

Analytical Run #: 268848

ICAL Calibration #:

Analysis Type Initial Analysis Analysis Date: ----- 01/27/2023 Analysis Time: ----- 17:13

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Total Potassium	86-114	102000		1500		100000	100		P
Total Sodium	87-115	113000		19400		100000	94		P

BDL = analyte concentration was below detection limit

6

Sample Description

DUPLICATES

54 IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solid for Sample:

Concentration Units: ug/L

Analytical Prep Batch #: 128485

Analytical Preparation Date/Time: 01/31/2023 14:30

Analytical Run #: 268967

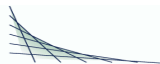
ICAL Calibration #: 02022023

Sample #: 1284469

Parent Sample #: 1283774

Analysis Type Initial Analysis

Analyte	Analysis Date/Time	RPD Limit	Original Parent Conc. (S)	C	Duplicate Conc. (D)	C	RPD	Q	M
Total Mercury	02/02/2023 10:44	20	0.020	U	0.020	U	0		CV



6

Sample Description

DUPLICATES

54 IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solid for Sample: _____

Concentration Units: ug/L

Analytical Prep Batch #: 128465

Analytical Preparation Date/Time: 01/26/2023 13:10

Analytical Run #: 268847

ICAL Calibration #: _____

Sample #: 1283875

Parent Sample #: 1283774

Analysis Type *Initial Analysis*

Analyte	Analysis Date/Time	RPD Limit	Original Parent Conc. (S)	C	Duplicate Conc. (D)	C	RPD	Q	M
Total Aluminum	01/27/2023	16:58	20	461		420	9		P
Total Antimony	01/27/2023	16:58	20	4.4	U	4.4	0		P
Total Arsenic	01/27/2023	16:58	20	7.7	U	7.7	0		P
Total Barium	01/27/2023	16:58	20	55.4		61.4	10		P
Total Beryllium	01/27/2023	16:58	20	0.95	U	0.95	0		P
Total Cadmium	01/27/2023	16:58	20	0.41	U	0.41	0		P
Total Calcium	01/27/2023	16:58	20	51900		55200	6		P
Total Chromium	01/27/2023	16:58	20	3.1	J	3.2	3		P
Total Cobalt	01/27/2023	16:58	20	0.55	U	0.55	0		P
Total Copper	01/27/2023	16:58	20	5.2	U	5.2	0		P
Total Iron	01/27/2023	16:58	20	484		511	5		P
Total Lead	01/27/2023	16:58	20	1.4	U	1.4	0		P
Total Magnesium	01/27/2023	16:58	20	24300		25700	6		P
Total Manganese	01/27/2023	16:58	20	19.0		20.1	6		P
Total Nickel	01/27/2023	16:58	20	1.5	U	1.5	0		P
Total Selenium	01/27/2023	16:58	20	10	U	10	0		P
Total Silver	01/27/2023	16:58	20	1.1	U	1.1	0		P
Total Thallium	01/27/2023	16:58	20	6.8	U	6.8	0		P
Total Vanadium	01/27/2023	16:58	20	1.3	U	1.3	0		P
Total Zinc	01/27/2023	16:58	20	7.8	J	10.8	32		P <i>FAIL</i>

6

Sample Description

DUPLICATES

54 IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solid for Sample:

Concentration Units: ug/L

Analytical Prep Batch #: 128465

Analytical Preparation Date/Time: 01/26/2023 13:10

Analytical Run #: 268848

ICAL Calibration #:

Sample #: 1283875

Parent Sample #: 1283774

Analysis Type Initial Analysis

Analyte	Analysis Date/Time	RPD Limit	Original Parent Conc. (S)	C	Duplicate Conc. (D)	C	RPD	Q	M
Total Potassium	01/27/2023 16:58	20	1500		1590		6		P
Total Sodium	01/27/2023 16:58	20	19400		20500		6		P

6A

Sample Description

MATRIX SPIKE DUPLICATES

54 IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solid for Sample:

Concentration Units: ug/L

Analytical Prep Batch #: 128485

Analytical Preparation Date/Time: 01/31/2023 14:30

Analytical Run #: 268967

ICAL Calibration #: 02022023

Sample #: 1284471

Parent Sample #: 1284470

Analysis Type Initial Analysis

Analyte	Analysis Date/Time	RPD Limit	Matrix Spike Parent Conc. (S)	C	Matrix Spike Duplicate Conc. (D)	C	RPD	Q	M
Total Mercury	02/02/2023 11:06	20	0.92		0.92		1		CV

6A
MATRIX SPIKE DUPLICATES

Sample Description

54 IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solid for Sample:

Concentration Units: ug/L

Analytical Prep Batch #: 128465

Analytical Preparation Date/Time: 01/26/2023 13:10

Analytical Run #: 268847

ICAL Calibration #:

Sample #: 1283877

Parent Sample #: 1283876

Analysis Type *Initial Analysis*

Analyte	Analysis Date/Time	RPD Limit	Matrix Spike Parent Conc. (S)	C	Matrix Spike Duplicate Conc. (D)	C	RPD	Q	M
Total Aluminum	01/27/2023 17:13	20	1310		1300		1		P
Total Antimony	01/27/2023 17:13	20	193		191		1		P
Total Arsenic	01/27/2023 17:13	20	825		811		2		P
Total Barium	01/27/2023 17:13	20	870		862		1		P
Total Beryllium	01/27/2023 17:13	20	20.3		19.5		4		P
Total Cadmium	01/27/2023 17:13	20	20.0		19.7		2		P
Total Calcium	01/27/2023 17:13	20	250000		249000		0		P
Total Chromium	01/27/2023 17:13	20	86.8		85.8		1		P
Total Cobalt	01/27/2023 17:13	20	181		177		2		P
Total Copper	01/27/2023 17:13	20	94.0		95.2		1		P
Total Iron	01/27/2023 17:13	20	850		864		2		P
Total Lead	01/27/2023 17:13	20	181		178		2		P
Total Magnesium	01/27/2023 17:13	20	119000		118000		1		P
Total Manganese	01/27/2023 17:13	20	213		216		1		P
Total Nickel	01/27/2023 17:13	20	189		186		2		P
Total Selenium	01/27/2023 17:13	20	790		784		1		P
Total Silver	01/27/2023 17:13	20	21.4		21.3		0		P
Total Thallium	01/27/2023 17:13	20	733		725		1		P
Total Vanadium	01/27/2023 17:13	20	196		192		2		P
Total Zinc	01/27/2023 17:13	20	212		209		1		P

6A

Sample Description

MATRIX SPIKE DUPLICATES

54 IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solid for Sample:

Concentration Units: ug/L

Analytical Prep Batch #: 128465

Analytical Preparation Date/Time: 01/26/2023 13:10

Analytical Run #: 268848

ICAL Calibration #:

Sample #: 1283877

Parent Sample #: 1283876

Analysis Type Initial Analysis

Analyte	Analysis Date/Time	RPD Limit	Matrix Spike Parent Conc. (S)	C	Matrix Spike Duplicate Conc. (D)	C	RPD	Q	M
Total Potassium	01/27/2023 17:13	20	101000		102000		1		P
Total Sodium	01/27/2023 17:13	20	118000		113000		4		P

7-1

Sample No:

LABORATORY CONTROL SAMPLE - AQUEOUS

LCS

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 LCS Source: SPEX and Ultra SDG No.: 175012
 Concentration Units: ug/L
 Analytical Run #: 268967 Sample No.:# 1284468
 Analytical Prep Batch #: 128485 Preparation Date/Time: 01/31/2023 14:30
 ICAL Calibration #: 02022023

Analysis Type -----

Initial Analysis

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	C	Spike Amount	%R	Q	M
Total Mercury	02/02/2023	10:21	82-119	1.90		2.00	95		CV

LABORATORY CONTROL SAMPLE - AQUEOUS

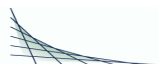
LCS

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 LCS Source: SPEX and Ultra SDG No.: 175012
 Concentration Units: ug/L
 Analytical Run #: 268848 Sample No.:# 1283874
 Analytical Prep Batch #: 128465 Preparation Date/Time: 01/26/2023 13:10
 ICAL Calibration #: _____

Analysis Type -----

Initial Analysis

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	C	Spike Amount	%R	Q	M
Total Aluminum	01/27/2023	16:28	86-115	772.0		800.0	96		P
Total Antimony	01/27/2023	16:28	88-113	193.0		200.0	96		P
Total Arsenic	01/27/2023	16:28	87-113	823.0		800.0	103		P
Total Barium	01/27/2023	16:28	88-113	815.0		800.0	102		P
Total Beryllium	01/27/2023	16:28	89-112	19.90		20.0	100		P
Total Cadmium	01/27/2023	16:28	88-113	20.0		20.0	100		P
Total Calcium	01/27/2023	16:28	87-113	193000		200000	96		P
Total Chromium	01/27/2023	16:28	90-113	84.00		80.0	105		P
Total Cobalt	01/27/2023	16:28	89-114	183.0		200.0	92		P
Total Copper	01/27/2023	16:28	86-114	89.20		100.0	89		P
Total Iron	01/27/2023	16:28	87-115	365.0		400.0	91		P
Total Lead	01/27/2023	16:28	86-113	184.0		200.0	92		P
Total Magnesium	01/27/2023	16:28	85-113	91900		100000	92		P
Total Manganese	01/27/2023	16:28	90-114	194.0		200.0	97		P
Total Nickel	01/27/2023	16:28	88-113	191.0		200.0	96		P
Total Potassium	01/27/2023	16:28	86-114	99900		100000	100		P
Total Selenium	01/27/2023	16:28	83-114	799.0		800.0	100		P
Total Silver	01/27/2023	16:28	84-115	21.20		20.0	106		P
Total Sodium	01/27/2023	16:28	87-115	94200		100000	94		P
Total Thallium	01/27/2023	16:28	85-114	746.0		800.0	93		P
Total Vanadium	01/27/2023	16:28	90-111	192.0		200.0	96		P
Total Zinc	01/27/2023	16:28	87-115	204.0		200.0	102		P



9

ICP SERIAL DILUTION

Sample Description

54 IDW

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID SDG No.: 175012

Concentration Units: ug/L

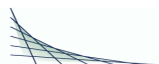
Sample No.: 1285328 Parent Sample No.: 1283774

LIMS Run #: 268847 ICAL Calibration #.:

Analysis Type -----

Initial Analysis

Analyte	Analysis Date/Time		Initial Sample Result (I)	C (I)	Serial Dilution Result (S)	C (S)	% Diff.	Q	M
Aluminum	01/27/2023	16:50	461	J	404	J	12	P	INVALID
Antimony	01/27/2023	16:50	BDL	U	22	U	0	P	INVALID
Arsenic	01/27/2023	16:50	BDL	U	38.5	U	0	P	INVALID
Barium	01/27/2023	16:50	55.4		52		6	P	INVALID
Beryllium	01/27/2023	16:50	BDL	U	4.75	U	0	P	INVALID
Cadmium	01/27/2023	16:50	BDL	U	2.05	U	0	P	INVALID
Calcium	01/27/2023	16:50	51900		71000		37	P	FAIL
Chromium	01/27/2023	16:50	3.08	U	5.5	U	100	P	INVALID
Cobalt	01/27/2023	16:50	BDL	U	2.75	U	0	P	INVALID
Copper	01/27/2023	16:50	BDL	U	26	U	0	P	INVALID
Iron	01/27/2023	16:50	484		459		5	P	INVALID
Lead	01/27/2023	16:50	BDL	U	7	U	0	P	INVALID
Magnesium	01/27/2023	16:50	24300		33250		37	P	FAIL
Manganese	01/27/2023	16:50	19.0	J	18.7	J	2	P	INVALID
Nickel	01/27/2023	16:50	BDL	U	7.5	U	0	P	INVALID
Selenium	01/27/2023	16:50	BDL	U	50	U	0	P	INVALID
Silver	01/27/2023	16:50	BDL	U	5.85	J	0	P	INVALID
Thallium	01/27/2023	16:50	BDL	U	34	U	0	P	INVALID
Vanadium	01/27/2023	16:50	BDL	U	6.5	U	0	P	INVALID
Zinc	01/27/2023	16:50	7.75	U	22.5	U	100	P	INVALID



9

ICP SERIAL DILUTION

Sample Description

54 IDW

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID SDG No.: 175012

Concentration Units: mg/L

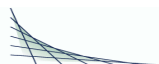
Sample No.: 1285342 Parent Sample No.: 1283774

LIMS Run #: 268848 ICAL Calibration #.:

Analysis Type -----

Initial Analysis

Analyte	Analysis Date/Time		Initial Sample Result (I)	C (I)	Serial Dilution Result (S)	C (S)	% Diff.	Q	M
Sodium	01/27/2023	16:50	19.4	U	1000	U	100		P
INVALID									



9

ICP SERIAL DILUTION

Sample Description

54 IDW

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID SDG No.: 175012

Concentration Units: mg/L

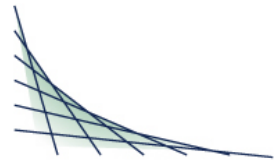
Sample No.: 1285343 Parent Sample No.: 1283774

LIMS Run #: 268848 ICAL Calibration #.:

Analysis Type -----

Initial Analysis

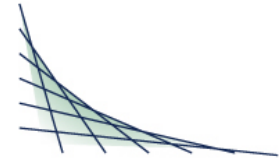
Analyte	Analysis Date/Time		Initial Sample Result (I)	C (I)	Serial Dilution Result (S)	C (S)	% Diff.	Q	M
Potassium	01/27/2023	16:50	1.50	U	600	U	100		P
INVALID									



ICP INTERELEMENT CORRECTION FACTORS (ANNUAL)

ICP ID NUMBER: TA ICAP6000 / ICAP6500

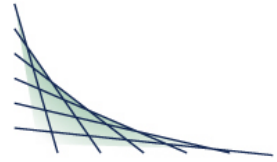
Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Ag 328.068 {103}	☒	2	Fe	0.000006	0.000000	No
			Ce	0.000000	0.000000	No
Ag 338.289 {100}	☒	1	Fe	0.000906	0.000000	No
Al 167.079 {501}	☒	None				
Al 308.215 {109}	☒	None				
Al 396.152 {85}	☒	None				
As 193.759 {474}	☒	1	Al	0.001713	0.000000	No
As 197.262 {471}	☒	1	Al	-0.000113	0.000000	No
Ba 233.527 {445}	☒	3	Fe	-0.000038	0.000000	No
			V	0.000180	0.000000	No
			Al	0.000000	0.000000	No
Ba 455.403 {74}	☒	1	Fe	0.000002	0.000000	No
Ba 493.409 {68}	☒	1	Fe	0.000029	0.000000	No
Be 313.042 {108}	☒	1	Fe	0.000000	0.000000	No
Be 234.861 {144}	☒	1	Fe	-0.000016	0.000000	No
Ca 315.887 {107}	☒	None				
Ca 317.933 {106}	☒	None				
Ca 393.366 {86}	☒	1	Cu	0.000000	0.000000	No
Ca 396.847 {85}	☒	None				
Cd 226.502 {449}	☒	2	Fe	0.000090	0.000000	No
			Al	0.000000	0.000000	No
Cd 228.802 {147}	☒	None				
Co 228.616 {447}	☒	5	Fe	0.000009	0.000000	No
			Ti	0.003000	0.000000	No
			Ba	-0.001300	0.000000	No
			Ni	0.000040	0.000000	No
			Al	0.000001	0.000000	No
Co 238.892 {141}	☒	1	Fe	0.000188	0.000000	No
Cr 205.560 {464}	☒	1	Fe	-0.000004	0.000000	No
Cr 267.716 {126}	☒	1	Fe	-0.000014	0.000000	No
Cu 224.700 {450}	☒	5	Fe	0.000274	0.000000	No
			Mo	0.001320	0.000000	No
			Ni	-0.006000	0.000000	No
			Pb	0.003030	0.000000	No
			Al	0.000000	0.000000	No
Cu 324.754 {104}	☒	1	Fe	-0.000136	0.000000	No
Cu 327.396 {103}	☒	1	Fe	0.000069	0.000000	No
Fe 234.349 {144}	☒	None				
Fe 239.562 {140}	☒	None				
Fe 259.940 {129}	☒	None				
Mg 202.582 {466}	☒	None				
Mg 279.079 {121}	☒	None				
Mg 280.270 {120}	☒	None				
Mn 257.610 {131}	☒	1	Al	-0.000086	0.000000	No



ICP INTERELEMENT CORRECTION FACTORS (ANNUAL)

ICP ID NUMBER: TA ICAP6000 / ICAP6500

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Mn 259.373 {130}	☒	1	Mg	0.001339	0.000000	No
Mo 202.030 {466}	☒	1	Fe	-0.000011	0.000000	No
Mo 203.844 {465}	☒	1	Fe	-0.000020	0.000000	No
Mo 204.598 {464}	☒	1	Fe	0.000036	0.000000	No
Ni 221.647 {452}	☒	1	Ca	0.000021	0.000000	No
Ni 231.604 {445}	☒	3	Fe	0.000012	0.000000	No
			Co	0.000000	0.000000	No
			Mo	0.000000	0.000000	No
Pb 216.999 {455}	☒	2	Al	0.001241	0.000000	No
			Na	0.000000	0.000000	No
Pb 220.353 {453}	☒	3	Si	0.000000	0.000000	No
			Al	0.000001	0.000000	No
			Fe	0.000018	0.000000	No
Pb 220.353 {153}	☒	1	Al	-0.000040	0.000000	No
Sb 206.833 {463}	☒	1	Fe	0.000009	0.000000	No
Sb 217.581 {455}	☒	3	Fe	-0.000069	0.000000	No
			V	0.002070	0.000000	No
			Pb	-0.001040	0.000000	No
Se 196.090 {472}	☒	1	Fe	-0.000360	0.000000	No
Se 206.279 {463}	☒	1	Fe	0.001308	0.000000	No
Tl 190.856 {476}	☒	5	Fe	0.000024	0.000000	No
			Be	-0.000013	0.000000	No
			Ti	0.000050	0.000000	No
			Cr	0.000251	0.000000	No
			V	-0.003800	0.000000	No
Tl 190.856 {477}	☒	1	Fe	-0.000048	0.000000	No
V 290.882 {116}	☒	1	Fe	0.000073	0.000000	No
V 292.402 {115}	☒	3	Fe	0.000020	0.000000	No
			Cr	-0.000400	0.000000	No
			Al	0.000000	0.000000	No
Zn 202.548 {466}	☒	1	Fe	-0.000239	0.000000	No
Zn 206.200 {463}	☒	1	Fe	-0.000003	0.000000	No
Zn 213.856 {457}	☒	2	Fe	0.000167	0.000000	No
			Cu	0.007413	0.000000	No
Y 324.228 {104}*	☒	None				
Y 371.030 {91}*	☒	None				
Y 224.306 {451}*	☒	None				
Na 588.995 {57}	☒	1	Fe	0.000106	0.000000	No
Si 251.611 {134}	☒	2	Fe	-0.000105	0.000000	No
			Mo	0.005400	0.000000	No
Ti 323.452 {104}	☒	1	Fe	0.000036	0.000000	No
Ti 334.941 {101}	☒	1	Fe	0.000052	0.000000	No
Sr 407.771 {83}	☒	1	Fe	0.000014	0.000000	No
Sr 421.552 {80}	☒	1	Fe	0.000014	0.000000	No



ICP INTERELEMENT CORRECTION FACTORS (ANNUAL)

ICP ID NUMBER: TA ICAP6000 / ICAP6500

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Sn 189.989 {477}	☒	1	Fe	0.000013	0.000000	No
B 249.678 {135}	☒	2	Fe	0.000001	0.000000	No
			Co	0.003970	0.000000	No
B 249.773 {135}	☒	1	Fe	0.000357	0.000000	No
Li 670.784 {50}	☒	1	Fe	0.000011	0.000000	No
K 766.490 {44}	☒	1	Fe	0.000216	0.000000	No
P 213.618 {457}	☒	1	Fe	-0.000079	0.000000	No
S 182.034 {485}	☒	1	Mg	0.000100	0.000000	No
Hg 184.950 {482}	☒	1	Fe	0.000001	0.000000	No
Ce 404.076 {83}	☒	1	Fe	0.000227	0.000000	No

ICP LINEAR RANGES (QUARTERLY)

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 ICP ID Number: TA SDG No.: 175012

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	M
Aluminum	15.00	1000000	P
Antimony	15.00	10000	P
Arsenic	15.00	10000	P
Barium	15.00	10000	P
Beryllium	15.00	1000	P
Boron	15.00	1000	P
Cadmium	15.00	1000	P
Calcium	15.00	1000000	P
Chromium	15.00	100000	P
Cobalt	15.00	10000	P
Copper	15.00	100000	P
Iron	15.00	1000000	P
Lead	15.00	100000	P
Lithium	15.00	10000	P
Magnesium	15.00	1000000	P
Manganese	15.00	100000	P
Molybdenum	15.00	10000	P
Nickel	15.00	10000	P
Potassium	15.00	200000	P
Selenium	15.00	10000	P
Silicon	15.00	1000	P
Silver	15.00	100	P
Sodium	15.00	200000	P
Strontium	15.00	10000	P
Thallium	15.00	10000	P
Tin	15.00	10000	P
Titanium	15.00	1000	P
Tungsten	15.00	10000	P
Vanadium	15.00	10000	P
Zinc	15.00	100000	P

PREPARATION LOG

Lab Name:	CT Laboratories	Project:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
Method:	EPA 3010A	SDG No.:	175012
Preparation Batch #:	128465	Preparation Date/Time:	01/26/2023 / 13:10

Lab Sample #	QC Type	Sample Description	Matrix	Weight (g for solid/soil) or Volume (mL for liquid/aqueous)
1283774	Normal Sample	54 IDW	GROUND WATER	
1283873	Method Blank		LIQUID	50.0
1283874	Lab Control Spike		LIQUID	50.0
1283875	Lab Duplicate	54 IDW	GROUND WATER	
1283876	Matrix Spike	54 IDW	GROUND WATER	
1283877	Matrix Spike Duplicate	54 IDW	GROUND WATER	

PREPARATION LOG

Lab Name: CT Laboratories Project: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 Method: EPA 7470A SDG No.: 175012
 Preparation Batch #: 128485 Preparation Date/Time: 01/31/2023 / 14:30

Lab Sample #	QC Type	Sample Description	Matrix	Weight (g for solid/soil) or Volume (mL for liquid/aqueous)
1283774	Normal Sample	54 IDW	GROUND WATER	
1284325	Normal Sample	49IDW	GROUND WATER	
1284467	Method Blank		LIQUID	
1284468	Lab Control Spike		LIQUID	
1284469	Lab Duplicate	49IDW	GROUND WATER	
1284470	Matrix Spike	49IDW	GROUND WATER	
1284471	Matrix Spike Duplicate	49IDW	GROUND WATER	

ANALYSIS RUN LOG

Lab Name: CT Laboratories
 Lab Code: CTL
 Instrument ID Number: CETAC
 Start & End Date: 02/02/2023 to 02/02/2023

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 SDG No.: 175012
 Method Number: CV
 Analytical Run #: 268967

Sample Number	Analysis or QC Type	DF	Analysis Date/Time	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Mo	Li	Ni	K	Se	Si	Ag	Na	Sr	Tl	Sn	W	V	Zn
1285973	ICV	1	2/02 10:12																	X													
1285974	ICB	1	2/02 10:18																	X													
1284468	LCSW	1	2/02 10:21																	X													
1284467	MBW	1	2/02 10:28																	X													
1283774	Initial	1	2/02 10:37																	X													
1284325	Initial	1	2/02 10:40																	X													
1284469	DUP	1	2/02 10:44																	X													
1285975	CCV	1	2/02 10:53																	X													
1285976	CCB	1	2/02 10:59																	X													
1284470	MSW	1	2/02 11:03																	X													
1284471	MSDW	1	2/02 11:06																	X													
1285977	CCV	1	2/02 11:34																	X													
1285978	CCV	1	2/02 11:37																	X													
1285979	CCB	1	2/02 11:44																	X													

ANALYSIS RUN LOG

Lab Name: CT Laboratories

Lab Code: CTL

Instrument ID Number: TJA

Start & End Date: 01/27/2023 to 01/27/2023

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Method Number: P

Analytical Run #: 268847

Sample Number	Analysis or QC Type	DF	Analysis Date/ Time	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Mo	Li	Ni	K	Se	Si	Ag	Na	Sr	Tl	Sn	W	V	Zn
1285319	ICV	1	1/27 10:19	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X		X			X			X	X	
1285320	ICVLL	1	1/27 10:33	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X				X			X	X		
1285321	ICB	1	1/27 10:47	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X		X			X			X	X	
1285322	ICSA	1	1/27 11:02	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X		X			X			X	X	
1285323	ICSAB	1	1/27 11:10	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X		X			X			X	X	
1285324	ICVLL	1	1/27 11:24																						X								
1285325	CCV1	1	1/27 15:45	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X		X			X			X	X	
1285326	CCV2	1	1/27 15:51	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X		X			X			X	X	
1285327	CCB	1	1/27 15:58	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X		X			X			X	X	
1283774	Initial	1	1/27 16:43	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X		X			X			X	X	
1285328	L	5	1/27 16:50	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X		X			X			X	X	
1283875	DUP	1	1/27 16:58	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X		X			X			X	X	
1283876	MSW	1	1/27 17:06	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X		X			X			X	X	
1283877	MSDW	1	1/27 17:13	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X		X			X			X	X	
1285329	CCV1	1	1/27 17:20	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X		X			X			X	X	
1285330	CCV2	1	1/27 17:26	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X		X			X			X	X	
1285331	CCB	1	1/27 17:33	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X		X			X			X	X	
1285332	PDSW	1	1/27 17:40	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X		X			X			X	X	
1285333	CCV1	1	1/27 18:53	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X		X			X			X	X	
1285334	CCV2	1	1/27 18:59	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X		X			X			X	X	
1285335	CCB	1	1/27 19:06	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X		X			X			X	X	

ANALYSIS RUN LOG

Lab Name: CT Laboratories

Lab Code: CTL

Instrument ID Number: TJA

Start & End Date: 01/27/2023 to 01/27/2023

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Method Number: P

Analytical Run #: 268848

Sample Number	Analysis or QC Type	DF	Analysis Date/ Time	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Mo	Li	Ni	K	Se	Si	Ag	Na	Sr	Tl	Sn	W	V	Zn
1284823	ICV	1	1/27 10:19																				X				X						
1284824	ICVLL	1	1/27 10:33																				X				X						
1284825	ICB	1	1/27 10:47																				X				X						
1284826	ICSA	1	1/27 11:02	X							X				X		X						X				X						
1284827	ICSAB	1	1/27 11:10	X							X				X		X						X				X						
1284829	CCV1	1	1/27 15:45																				X				X						
1284830	CCV2	1	1/27 15:51																				X				X						
1284831	CCB	1	1/27 15:58																				X				X						
1283874	LCSW	1	1/27 16:28	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X			X	X	X		X	X		X			X	X
1283873	MBW	1	1/27 16:35	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X			X	X	X		X	X		X			X	X
1283774	Initial	1	1/27 16:43																				X				X						
1285342	L	5	1/27 16:50																								X						
1285343	L	5	1/27 16:50																				X										
1283875	DUP	1	1/27 16:58																				X				X						
1283876	MSW	1	1/27 17:06																				X				X						
1283877	MSDW	1	1/27 17:13																				X				X						
1284833	CCV1	1	1/27 17:20																				X				X						
1284834	CCV2	1	1/27 17:26																				X				X						
1284835	CCB	1	1/27 17:33																				X				X						
1285346	PDSW	1	1/27 17:40																								X						
1285347	PDSW	1	1/27 17:40																				X										
1284837	CCV1	1	1/27 18:53																				X				X						
1284838	CCV2	1	1/27 18:59																				X				X						
1284839	CCB	1	1/27 19:06																				X				X						

**METALS
RAW DATA
DOCUMENTS**

	Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)	Correlation	Std Error of Est	Predicted MDL	Predicted MQL
	Ag 328.068 {103}	01/30/2023 09:31:39	01/27/2023 09:18:25	Linear	1/Var	-0.000006	0.000013	0.000000	1.000000	0.999018	0.000020	0.358561	1.195202
	Ag 338.289 {100}	01/30/2023 09:31:39	01/27/2023 10:11:48	Linear	1/Conc	0.000029	0.000005	0.000000	1.000000	0.999569	0.000001	0.923389	3.077965
	Al 167.079 {501}	01/30/2023 09:31:39	01/27/2023 09:25:01	Linear	1/Conc	0.000021	0.000008	0.000000	1.000000	0.999450	0.000001	0.444509	1.481695
	Al 309.271 {109}	01/30/2023 09:31:39	01/27/2023 10:04:05	Linear	1/Var	0.000780	0.000003	0.000000	1.000000	0.965178	0.001181	14.167396	47.224652
	Al 396.152 { 85}	01/30/2023 09:31:39	01/27/2023 10:04:06	Linear	1/Conc	-0.000195	0.000005	0.000000	1.000000	0.999995	0.000025	10.913364	36.377879
	As 193.759 {474}	01/30/2023 09:31:39	01/27/2023 09:25:02	Linear	1/Conc	0.000022	0.000003	0.000000	1.000000	0.999819	0.000000	3.802906	12.676352
	As 197.262 {471}	01/30/2023 09:31:39	01/27/2023 09:32:20	Linear	1/Conc	-0.000017	0.000001	0.000000	1.000000	0.999840	0.000000	5.591024	18.636747
	Ba 233.527 {145}	01/30/2023 09:31:39	01/27/2023 10:11:48	Linear	1/Conc	0.000006	0.000003	0.000000	1.000000	0.999974	0.000000	3.059430	10.198101
	Ba 233.527 {445}	01/30/2023 09:31:39	01/27/2023 09:32:20	Linear	1/Conc	-0.000001	0.000036	0.000000	1.000000	0.999928	0.000002	0.237026	0.790085
	Ba 455.403 { 74}	01/30/2023 09:31:39	01/27/2023 10:11:48	Linear	None	-0.010531	0.000157	0.000000	1.000000	0.998775	0.055222	0.290623	0.968742
	Ba 493.409 { 68}	01/30/2023 09:31:39	01/27/2023 10:11:48	Linear	1/Var	0.057562	0.000123	0.000000	1.000000	0.999319	0.002364	1.131867	3.772889
	Be 234.861 {144}	01/30/2023 09:31:39	01/27/2023 09:25:02	Linear	1/Conc	-0.000005	0.000026	0.000000	1.000000	0.999877	0.000000	0.350300	1.167668
	Be 313.042 {108}	01/30/2023 09:31:39	01/27/2023 09:25:02	Linear	1/Conc	0.000051	0.000265	0.000000	1.000000	0.999940	0.000003	0.017443	0.058144
	Be 313.107 {108}	01/30/2023 09:31:39	01/27/2023 09:25:02	Linear	1/Conc	0.000073	0.000129	0.000000	1.000000	0.999906	0.000002	0.220139	0.733795
	Ca 184.006 {483}	01/30/2023 09:31:39	01/27/2023 09:47:48	Linear	1/Conc	-0.000149	0.000007	0.000000	1.000000	0.999365	0.000112	1.175056	3.916853
	Ca 315.887 {107}	01/30/2023 09:31:39	01/27/2023 10:04:06	Curvili	1/Var	0.000025	0.000002	0.000000	1.000000	0.999773	0.000057	6.332774	21.109247
	Ca 317.933 {106}	01/30/2023 09:31:39	01/27/2023 10:04:06	Linear	1/Conc	0.002214	0.000007	0.000000	1.000000	0.999646	0.000304	2.709422	9.031406
	Ca 393.366 { 86}	01/30/2023 09:31:39	01/27/2023 09:25:02	Linear	1/Conc	-0.000101	0.000622	0.000000	1.000000	0.999873	0.000106	0.087960	0.293201
	Ca 396.847 { 85}	01/30/2023 09:31:39	01/27/2023 09:32:20	Linear	1/Conc	0.000092	0.000326	0.000000	1.000000	0.999841	0.000273	0.113485	0.378283
	Cd 226.502 {449}	01/30/2023 09:31:39	01/27/2023 09:25:02	Linear	1/Conc	-0.000012	0.000111	0.000000	1.000000	0.999922	0.000001	0.123441	0.411470
	Cd 228.802 {448}	01/30/2023 09:31:39	01/27/2023 09:25:02	Linear	1/Conc	0.000004	0.000017	0.000000	1.000000	0.999885	0.000000	0.455145	1.517150
	Co 228.616 {447}	01/30/2023 09:31:39	01/27/2023 09:32:20	Linear	1/Conc	-0.000005	0.000061	0.000000	1.000000	0.999995	0.000001	0.244736	0.815786
	Co 238.892 {141}	01/30/2023 09:31:39	01/27/2023 09:32:20	Linear	1/Conc	0.000008	0.000009	0.000000	1.000000	0.999645	0.000011	0.359465	1.198218
	Cr 205.560 {464}	01/30/2023 09:31:39	01/27/2023 09:40:20	Linear	1/Conc	-0.000020	0.000040	0.000000	1.000000	0.999854	0.000008	0.265684	0.885614
	Cr 267.716 {126}	01/30/2023 09:31:39	01/27/2023 09:32:20	Linear	1/Conc	-0.000017	0.000014	0.000000	1.000000	0.999824	0.000001	0.285029	0.950097
	Cu 223.008 {451}	01/30/2023 09:31:39	01/27/2023 09:32:21	Linear	1/Conc	0.000023	0.000023	0.000000	1.000000	0.999883	0.000005	0.847427	2.824757
	Cu 324.754 {104}	01/30/2023 09:31:39	01/27/2023 09:40:20	Linear	1/Var	0.000180	0.000011	0.000000	1.000000	0.999940	0.000022	2.747943	9.159809
	Cu 327.396 {103}	01/30/2023 09:31:39	01/27/2023 09:40:20	Linear	1/Conc	-0.000022	0.000008	0.000000	1.000000	0.999951	0.000002	4.570156	15.233854
	Fe 234.349 {144}	01/30/2023 09:31:39	01/27/2023 09:47:48	Linear	1/Conc	0.000020	0.000003	0.000000	1.000000	0.999637	0.000013	0.514933	1.716444
	Fe 239.562 {140}	01/30/2023 09:31:39	01/27/2023 10:04:06	Linear	1/Var	0.000011	0.000006	0.000000	1.000000	0.999016	0.000174	2.493635	8.312116
	Fe 259.940 {129}	01/30/2023 09:31:39	01/27/2023 10:04:06	Linear	1/Var	0.000024	0.000010	0.000000	1.000000	0.999193	0.000255	2.003140	6.677133
	Mg 202.582 {466}	01/30/2023 09:31:39	01/27/2023 10:04:06	Curvili	1/Var	-0.000057	0.000004	-0.000000	1.000000	0.997749	0.000129	2.344521	7.815069
	Mg 279.079 {121}	01/30/2023 09:31:39	01/27/2023 10:04:06	Linear	1/Var	0.000006	0.000000	0.000000	1.000000	0.999963	0.000011	22.985230	76.617434
	Mg 280.270 {120}	01/30/2023 09:31:39	01/27/2023 09:32:21	Linear	1/Var	0.000125	0.000148	0.000000	1.000000	0.999974	0.000013	0.015335	0.051118
	Mn 257.610 {131}	01/30/2023 09:31:39	01/27/2023 09:32:21	Linear	1/Conc	-0.000004	0.000059	0.000000	1.000000	0.999838	0.000009	0.036749	0.122495
	Mn 259.373 {130}	01/30/2023 09:31:39	01/27/2023 09:40:20	Linear	1/Conc	0.000008	0.000053	0.000000	1.000000	0.999999	0.000032	0.374879	1.249595
	Mo 202.030 {466}	01/30/2023 09:31:39	01/27/2023 09:32:21	Linear	1/Conc	0.000016	0.000023	0.000000	1.000000	0.999997	0.000000	0.392458	1.308193
	Mo 204.598 {464}	01/30/2023 09:31:39	01/27/2023 09:32:21	Linear	1/Conc	0.000007	0.000015	0.000000	1.000000	0.999998	0.000000	0.665141	2.217135
	Ni 221.647 {452}	01/30/2023 09:31:39	01/27/2023 09:32:21	Linear	1/Conc	0.000012	0.000036	0.000000	1.000000	0.999993	0.000006	0.464443	1.548143
	Ni 231.604 {445}	01/30/2023 09:31:39	01/27/2023 09:32:21	Linear	1/Conc	-0.000039	0.000048	0.000000	1.000000	0.999972	0.000001	0.362556	1.208518
	Pb 216.999 {455}	01/30/2023 09:31:39	01/27/2023 09:40:20	Linear	1/Conc	-0.000014	0.000004	0.000000	1.000000	0.999913	0.000002	4.026136	13.420454
	Pb 220.353 {153}	01/30/2023 09:31:39	01/27/2023 09:40:20	Linear	1/Conc	-0.000001	0.000001	0.000000	1.000000	0.999729	0.000002	2.261953	7.539844
	Pb 220.353 {453}	01/30/2023 09:31:39	01/27/2023 09:25:03	Linear	1/Conc	0.000035	0.000010	0.000000	1.000000	0.999925	0.000000	1.773105	5.910348
	Sb 206.833 {463}	01/30/2023 09:31:39	01/27/2023 09:32:21	Linear	1/Var	0.000004	0.000005	0.000000	1.000000	0.999954	0.000010	2.156428	7.188094

Element, Wavelength and Order	Status	Reslope		QC Norm	
		Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	OK.	1.000000	0.000000	1	0
Ag 338.289 {100}	OK.	1.000000	0.000000	1	0
Al 167.079 {501}	OK.	1.000000	0.000000	1	0
Al 309.271 {109}	OK.	1.000000	0.000000	1	0
Al 396.152 { 85}	OK.	1.000000	0.000000	1	0
As 193.759 {474}	OK.	1.000000	0.000000	1	0
As 197.262 {471}	OK.	1.000000	0.000000	1	0
Ba 233.527 {145}	OK.	1.000000	0.000000	1	0
Ba 233.527 {445}	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	OK.	1.000000	0.000000	1	0
Ba 493.409 { 68}	OK.	1.000000	0.000000	1	0
Be 234.861 {144}	OK.	1.000000	0.000000	1	0
Be 313.042 {108}	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	OK.	1.000000	0.000000	1	0
Ca 184.006 {483}	OK.	1.000000	0.000000	1	0
Ca 315.887 {107}	OK.	1.000000	0.000000	1	0
Ca 317.933 {106}	OK.	1.000000	0.000000	1	0
Ca 393.366 { 86}	OK.	1.000000	0.000000	1	0
Ca 396.847 { 85}	OK.	1.000000	0.000000	1	0
Cd 226.502 {449}	OK.	1.000000	0.000000	1	0
Cd 228.802 {448}	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	OK.	1.000000	0.000000	1	0
Co 238.892 {141}	OK.	1.000000	0.000000	1	0
Cr 205.560 {464}	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	OK.	1.000000	0.000000	1	0
Cu 223.008 {451}	OK.	1.000000	0.000000	1	0
Cu 324.754 {104}	OK.	1.000000	0.000000	1	0
Cu 327.396 {103}	OK.	1.000000	0.000000	1	0
Fe 234.349 {144}	OK.	1.000000	0.000000	1	0
Fe 239.562 {140}	OK.	1.000000	0.000000	1	0
Fe 259.940 {129}	OK.	1.000000	0.000000	1	0
Mg 202.582 {466}	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	OK.	1.000000	0.000000	1	0
Mg 280.270 {120}	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	OK.	1.000000	0.000000	1	0
Mn 259.373 {130}	OK.	1.000000	0.000000	1	0
Mo 202.030 {466}	OK.	1.000000	0.000000	1	0
Mo 204.598 {464}	OK.	1.000000	0.000000	1	0
Ni 221.647 {452}	OK.	1.000000	0.000000	1	0
Ni 231.604 {445}	OK.	1.000000	0.000000	1	0
Pb 216.999 {455}	OK.	1.000000	0.000000	1	0
Pb 220.353 {153}	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	OK.	1.000000	0.000000	1	0

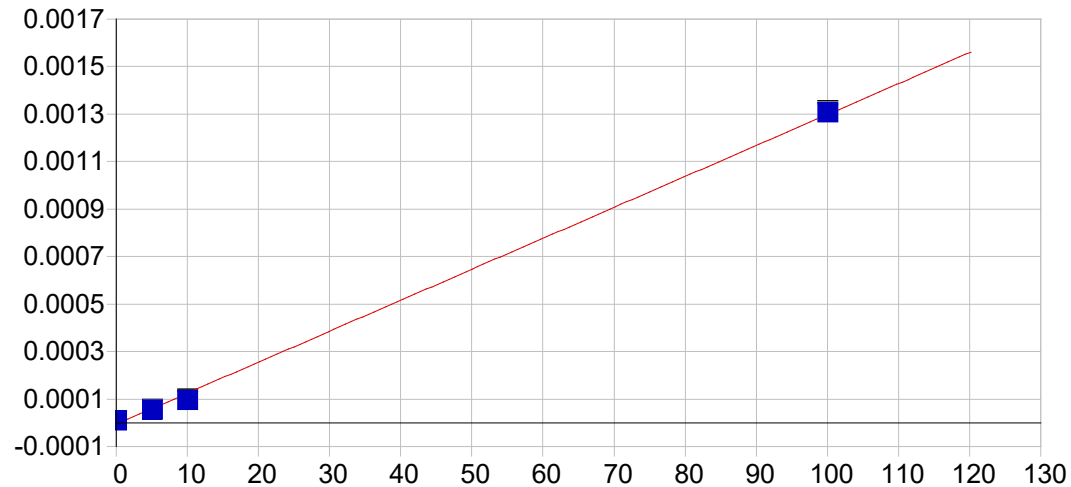
	Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)	Correlation	Std Error of Est	Predicted MDL	Predicted MQL
	Sb 217.581 {455}	01/30/2023 09:31:39	01/27/2023 09:32:21	Linear	1/Conc	0.000020	0.000006	0.000000	1.000000	0.999988	0.000000	2.056131	6.853768
	Se 196.090 {472}	01/30/2023 09:31:39	01/27/2023 09:32:21	Linear	1/Var	-0.000004	0.000003	0.000000	1.000000	0.999960	0.000008	3.774392	12.581305
	Se 206.279 {463}	01/30/2023 09:31:39	01/27/2023 09:32:21	Linear	1/Conc	0.000005	0.000001	0.000000	1.000000	0.999986	0.000000	15.844913	52.816377
	Tl 190.856 {476}	01/30/2023 09:31:39	01/27/2023 09:32:21	Linear	1/Conc	-0.000009	0.000006	0.000000	1.000000	0.999811	0.000001	1.795192	5.983972
	Tl 190.856 {477}	01/30/2023 09:31:39	01/27/2023 09:32:21	Linear	1/Conc	-0.000001	0.000002	0.000000	1.000000	0.999850	0.000001	2.663207	8.877356
	V 290.882 {116}	01/30/2023 09:31:39	01/27/2023 09:32:21	Curvili	1/Conc	0.000067	0.000005	-0.000000	1.000000	1.000000	0.000000	3.941340	13.137801
	V 292.402 {115}	01/30/2023 09:31:39	01/27/2023 09:32:22	Linear	1/Conc	0.000007	0.000026	0.000000	1.000000	0.999263	0.000012	0.286576	0.955252
	Zn 206.200 {463}	01/30/2023 09:31:39	01/27/2023 09:40:20	Linear	1/Var	-0.000010	0.000063	0.000000	1.000000	0.999429	0.000080	0.179866	0.599552
	Zn 213.856 {457}	01/30/2023 09:31:39	01/27/2023 09:25:03	Linear	None	0.000138	0.000125	0.000000	1.000000	0.999998	0.000143	0.100832	0.336105
	Y 224.306 {450}*	01/30/2023 09:31:39	01/27/2023 08:27:20	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	-1.000000	-1.000000
	Y 324.228 {104}*	01/30/2023 09:31:39	01/27/2023 08:27:20	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	-1.000000	-1.000000
	Y 371.030 {91}*	01/30/2023 09:31:39	01/27/2023 08:27:20	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	-1.000000	-1.000000
	Na 330.237 {102}	01/30/2023 09:31:39	01/27/2023 10:04:06	Curvili	1/Conc	-0.000029	0.000027	-0.000000	1.000000	0.999995	0.000002	1.256071	4.186902
	Na 588.995 {57}	01/30/2023 09:31:39	01/27/2023 09:47:48	Linear	1/Conc	0.036880	0.027018	0.000000	1.000000	0.999869	0.000206	0.006575	0.021915
	Na 589.592 {57}	01/30/2023 09:31:39	01/27/2023 09:47:48	Linear	1/Conc	16.960923	822.72160	0.000000	1.000000	0.999943	4.140703	0.008350	0.027833
	Si 212.412 {458}	01/30/2023 09:31:39	01/27/2023 09:47:48	Linear	1/Conc	0.000136	0.000011	0.000000	1.000000	0.997837	0.000345	1.179481	3.931603
	Si 251.611 {134}	01/30/2023 09:31:39	01/27/2023 09:47:49	Linear	1/Conc	0.000068	0.000003	0.000000	1.000000	0.999103	0.000054	6.240280	20.800932
	Ti 323.452 {104}	01/30/2023 09:31:39	01/27/2023 09:32:22	Linear	1/Conc	0.001257	0.000034	0.000000	1.000000	0.999934	0.000003	1.133871	3.779570
	Sr 407.771 {83}	01/30/2023 09:31:39	01/27/2023 09:32:22	Linear	1/Conc	0.000119	0.000351	0.000000	1.000000	0.999940	0.000015	0.146546	0.488488
	Sr 421.552 {80}	01/30/2023 09:31:39	01/27/2023 09:32:22	Linear	1/Conc	-0.000152	0.000423	0.000000	1.000000	0.999954	0.000016	0.128684	0.428948
	Sn 189.989 {477}	01/30/2023 09:31:39	01/27/2023 09:32:22	Linear	1/Conc	0.000005	0.000015	0.000000	1.000000	0.999975	0.000001	0.573331	1.911103
	Sn 189.989 {478}	01/30/2023 09:31:39	01/27/2023 09:32:22	Linear	1/Conc	0.000000	0.000002	0.000000	1.000000	0.999934	0.000000	2.758296	9.194319
	B 249.678 {135}	01/30/2023 09:31:39	01/27/2023 09:32:22	Linear	1/Conc	0.000031	0.000006	0.000000	1.000000	0.999373	0.000003	0.700610	2.335368
	B 249.773 {135}	01/30/2023 09:31:39	01/27/2023 09:32:22	Linear	1/Conc	0.000014	0.000010	0.000000	1.000000	0.999253	0.000005	0.314351	1.047835
	Li 610.353 {55}	01/30/2023 09:31:39	01/27/2023 09:32:22	Linear	1/Var	0.000719	0.000011	0.000000	1.000000	0.999340	0.000587	16.329268	54.430893
	Li 670.776 {50}	01/30/2023 09:31:39	01/27/2023 09:32:22	Linear	1/Conc	-0.000063	0.000073	0.000000	1.000000	0.999982	0.000006	1.646885	5.489616
	K 766.490 {44}	01/30/2023 09:31:39	01/27/2023 09:47:49	Linear	None	33.054932	257.72707	0.000000	1.000000	0.999994	51.843361	0.029146	0.097155
	K 769.896 {44}	01/30/2023 09:31:39	01/27/2023 10:04:06	Linear	1/Conc	25.354879	79.832896	0.000000	1.000000	0.999890	1.608461	0.069040	0.230135
	P 177.495 {489}	01/30/2023 09:31:39	01/27/2023 09:32:22	Linear	1/Conc	-0.000004	0.000002	0.000000	1.000000	0.999811	0.000009	2.160267	7.200889
	S 182.034 {485}	01/30/2023 09:31:39	01/27/2023 10:04:06	Curvili	1/Conc	-0.000004	0.000002	0.000000	1.000000	0.999992	0.000013	3.475684	11.585613
	Hg 184.950 {482}	01/30/2023 09:31:39	01/27/2023 09:25:04	Linear	1/Conc	-0.000020	0.000012	0.000000	1.000000	0.999932	0.000000	0.637636	2.125454
	Hg 194.227 {473}	01/30/2023 09:31:39	01/27/2023 09:25:04	Linear	1/Conc	-0.000006	0.000012	0.000000	1.000000	0.999917	0.000000	0.694540	2.315135
	Ce 404.076 {83}	01/30/2023 09:31:39	01/27/2023 09:25:04	Linear	1/Conc	0.000249	0.000002	0.000000	1.000000	1.000000	0.000000	22.416142	74.720473

	Element, Wavelength and Order	Status	Reslope		QC Norm	
			Slope	Y-int	Slope factor	Offset
	Sb 217.581 {455}	OK.	1.000000	0.000000	1	0
	Se 196.090 {472}	OK.	1.000000	0.000000	1	0
	Se 206.279 {463}	OK.	1.000000	0.000000	1	0
	Tl 190.856 {476}	OK.	1.000000	0.000000	1	0
	Tl 190.856 {477}	OK.	1.000000	0.000000	1	0
	V 290.882 {116}	OK.	1.000000	0.000000	1	0
	V 292.402 {115}	OK.	1.000000	0.000000	1	0
	Zn 206.200 {463}	OK.	1.000000	0.000000	1	0
	Zn 213.856 {457}	OK.	1.000000	0.000000	1	0
	Y 224.306 {450}*	Warnin	1.000000	0.000000	1	0
	Y 324.228 {104}*	Warnin	1.000000	0.000000	1	0
	Y 371.030 { 91}*	Warnin	1.000000	0.000000	1	0
	Na 330.237 {102}	OK.	1.000000	0.000000	1	0
	Na 588.995 { 57}	OK.	1.000000	0.000000	1	0
	Na 589.592 { 57}	OK.	1.000000	0.000000	1	0
	Si 212.412 {458}	OK.	1.000000	0.000000	1	0
	Si 251.611 {134}	OK.	1.000000	0.000000	1	0
	Ti 323.452 {104}	OK.	1.000000	0.000000	1	0
	Sr 407.771 { 83}	OK.	1.000000	0.000000	1	0
	Sr 421.552 { 80}	OK.	1.000000	0.000000	1	0
	Sn 189.989 {477}	OK.	1.000000	0.000000	1	0
	Sn 189.989 {478}	OK.	1.000000	0.000000	1	0
	B 249.678 {135}	OK.	1.000000	0.000000	1	0
	B 249.773 {135}	OK.	1.000000	0.000000	1	0
	Li 610.353 { 55}	OK.	1.000000	0.000000	1	0
	Li 670.776 { 50}	OK.	1.000000	0.000000	1	0
	K 766.490 { 44}	OK.	1.000000	0.000000	1	0
	K 769.896 { 44}	OK.	1.000000	0.000000	1	0
	P 177.495 {489}	OK.	1.000000	0.000000	1	0
	S 182.034 {485}	OK.	1.000000	0.000000	1	0
	Hg 184.950 {482}	OK.	1.000000	0.000000	1	0
	Hg 194.227 {473}	OK.	1.000000	0.000000	1	0
	Ce 404.076 { 83}	OK.	1.000000	0.000000	1	0

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Ag 328.068 {103}	☒	2	Ce	-0.001158	0.000000	No
			Ti	0.000000	0.000000	No
Ag 338.289 {100}	☒	2	Fe	0.000307	0.000000	No
			Ti	0.000000	0.000000	No
Al 167.079 {501}	☒	None				
Al 309.271 {109}	☒	None				
Al 396.152 { 85}	☒	None				
As 193.759 {474}	☒	1	Al	0.001563	0.000000	No
As 197.262 {471}	☒	1	Al	0.000027	0.000000	No
Ba 233.527 {145}	☒	1	Fe	0.000004	0.000000	No
Ba 233.527 {445}	☒	2	Fe	-0.000002	0.000000	No
			Cu	0.000181	0.000000	No
Ba 455.403 { 74}	☒	1	Fe	0.000006	0.000000	No
Ba 493.409 { 68}	☒	1	S	0.000000	0.000000	No
Be 234.861 {144}	☒	None				
Be 313.042 {108}	☒	1	Fe	0.000008	0.000000	No
Be 313.107 {108}	☒	1	Fe	0.000010	0.000000	No
Ca 184.006 {483}	☒	None				
Ca 315.887 {107}	☒	1	Fe	0.000000	0.000000	No
Ca 317.933 {106}	☒	None				
Ca 393.366 { 86}	☒	None				
Ca 396.847 { 85}	☒	None				
Cd 226.502 {449}	☒	1	Fe	0.000079	0.000000	No
Cd 228.802 {448}	☒	1	Fe	-0.000007	0.000000	No
Co 228.616 {447}	☒	4	Fe	0.000005	0.000000	No
			Ba	0.000092	0.000000	No
			Ti	0.002165	0.000000	No
			Ni	0.003013	0.000000	No
Co 238.892 {141}	☒	1	Fe	0.000226	0.000000	No
Cr 205.560 {464}	☒	1	Fe	0.000000	0.000000	No
Cr 267.716 {126}	☒	1	Fe	0.000008	0.000000	No
Cu 223.008 {451}	☒	4	Fe	-0.000011	0.000000	No
			Ti	0.000000	0.000000	No
			Mo	0.007000	0.000000	No
			Ti	0.007000	0.000000	No
Cu 324.754 {104}	☒	1	Fe	-0.000217	0.000000	No
Cu 327.396 {103}	☒	2	Fe	0.000021	0.000000	No
			Ti	0.000000	0.000000	No
Fe 234.349 {144}	☒	None				
Fe 239.562 {140}	☒	None				
Fe 259.940 {129}	☒	None				
Mg 202.582 {466}	☒	None				
Mg 279.079 {121}	☒	None				
Mg 280.270 {120}	☒	None				

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Mn 257.610 {131}	☒	1	Al	-0.000002	0.000000	No
Mn 259.373 {130}	☒	1	Mg	0.001189	0.000000	No
Mo 202.030 {466}	☒	1	Fe	-0.000021	0.000000	No
Mo 204.598 {464}	☒	1	Fe	0.000037	0.000000	No
Ni 221.647 {452}	☒	2	Ca	-0.000003	0.000000	No
Ni 231.604 {445}	☒	5	Mg	-0.000003	0.000000	No
			Fe	-0.000014	0.000000	No
			Co	-0.000134	0.000000	No
			Mo	0.000840	0.000000	No
			Mn	0.000019	0.000000	No
Pb 216.999 {455}	☒	2	Be	-0.001918	0.000000	No
			Al	0.007139	0.000000	No
Pb 220.353 {153}	☒	2	Na	0.000000	0.000000	No
			Fe	-0.000017	0.000000	No
Pb 220.353 {453}	☒	2	Al	-0.000040	0.000000	No
			Si	0.000000	0.000000	No
Sb 206.833 {463}	☒	2	Al	-0.000044	0.000000	No
			Fe	-0.000097	0.000000	No
Sb 217.581 {455}	☒	2	Cr	0.000000	0.000000	No
			Fe	-0.000109	0.000000	No
Se 196.090 {472}	☒	1	Ni	0.000133	0.000000	No
			Fe	-0.000012	0.000000	No
Se 206.279 {463}	☒	1	Fe	0.000965	0.000000	No
Tl 190.856 {476}	☒	1	Fe	-0.000180	0.000000	No
Tl 190.856 {477}	☒	1	Fe	-0.000065	0.000000	No
V 290.882 {116}	☒	1	Fe	0.000207	0.000000	No
V 292.402 {115}	☒	6	Fe	0.000045	0.000000	No
			Cr	-0.000051	0.000000	No
			Al	0.000000	0.000000	No
			Ti	0.000420	0.000000	No
			Mo	-0.000481	0.000000	No
Zn 206.200 {463}	☒	1	Cu	-0.001538	0.000000	No
			Fe	0.000015	0.000000	No
Zn 213.856 {457}	☒	1	Fe	0.000122	0.000000	No
Y 224.306 {450}*	☒	None				
Y 324.228 {104}*	☒	None				
Y 371.030 { 91}*	☒	None				
Na 330.237 {102}	☒	1	Sr	0.000000	0.000000	No
Na 588.995 { 57}	☒	1	Fe	0.000000	0.000000	No
Na 589.592 { 57}	☒	1	Fe	-0.000000	0.000000	No
Si 212.412 {458}	☒	1	Fe	-0.000017	0.000000	No
Si 251.611 {134}	☒	1	Fe	-0.000026	0.000000	No
Ti 323.452 {104}	☒	None				
Sr 407.771 { 83}	☒	1	Fe	0.000018	0.000000	No

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Sr 421.552 { 80}	☒	1	Ca	0.000013	0.000000	No
Sn 189.989 {477}	☒	1	Fe	0.000023	0.000000	No
Sn 189.989 {478}	☒	1	Fe	0.000007	0.000000	No
B 249.678 {135}	☒	1	Fe	-0.000026	0.000000	No
B 249.773 {135}	☒	1	Fe	0.003795	0.000000	No
Li 610.353 { 55}	☒	1	Fe	-0.000109	0.000000	No
Li 670.776 { 50}	☒	1	Fe	0.000023	0.000000	No
K 766.490 { 44}	☒	1	Fe	0.000000	0.000000	No
K 769.896 { 44}	☒	2	Fe	-0.000002	0.000000	No
			Cu	0.000000	0.000000	No
P 177.495 {489}	☒	None				
S 182.034 {485}	☒	2	Mn	0.002145	0.000000	No
			Fe	0.000075	0.000000	No
Hg 184.950 {482}	☒	1	Fe	-0.000010	0.000000	No
Hg 194.227 {473}	☒	1	Fe	0.000043	0.000000	No
Ce 404.076 { 83}	☒	1	Fe	0.000227	0.000000	No

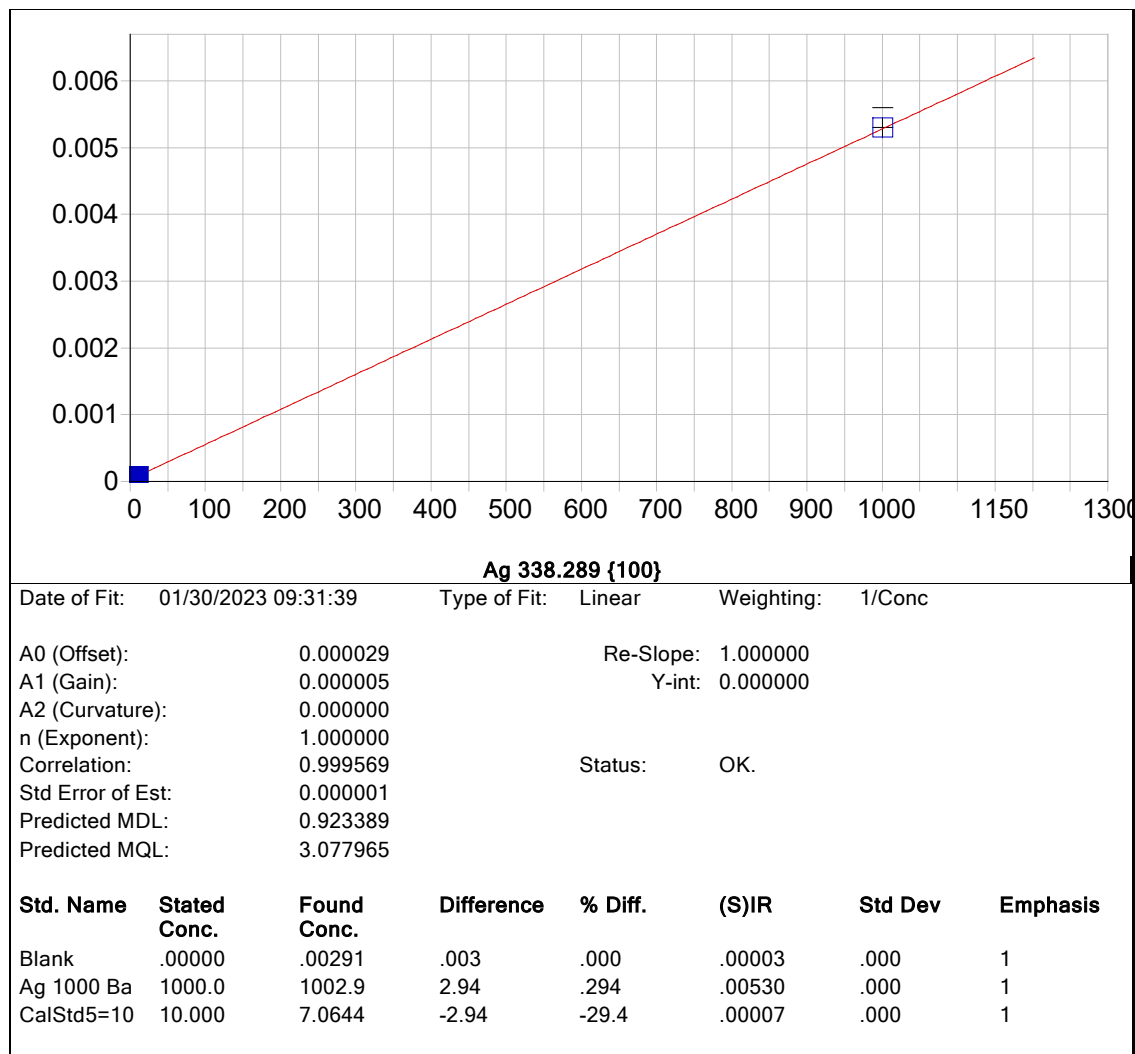


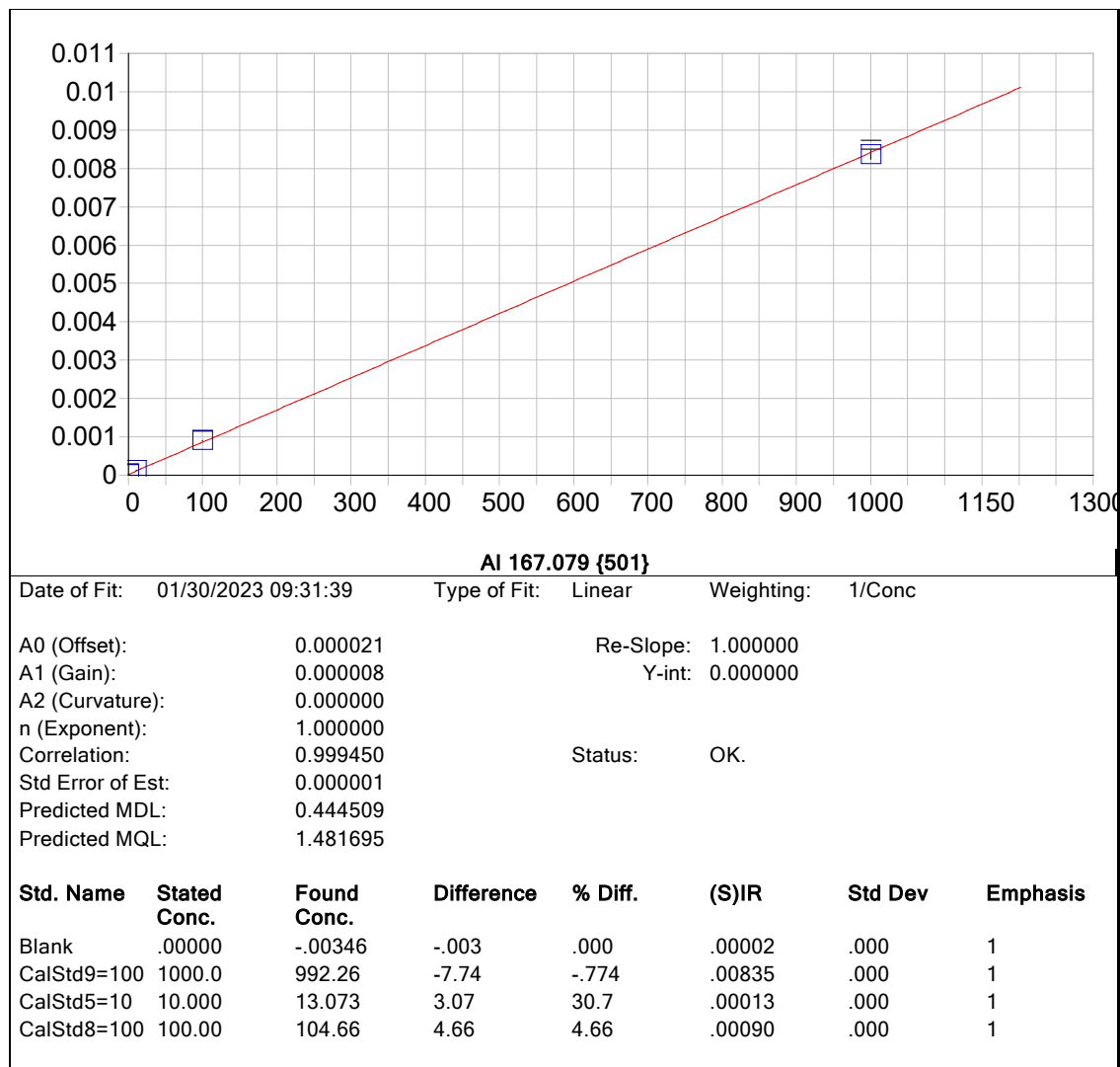
Ag 328.068 {103}

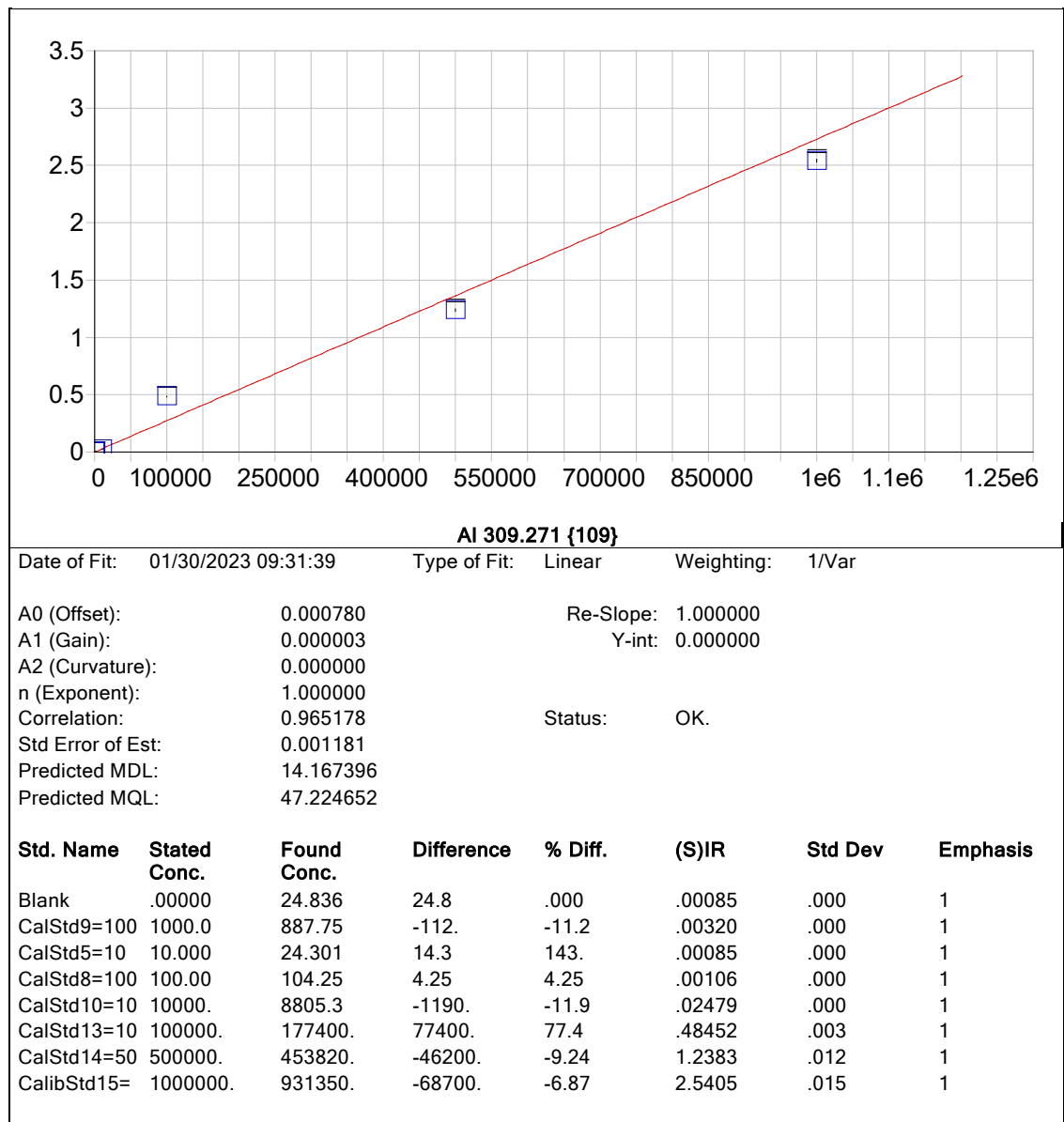
Date of Fit: 01/30/2023 09:31:39 Type of Fit: Linear Weighting: 1/Var

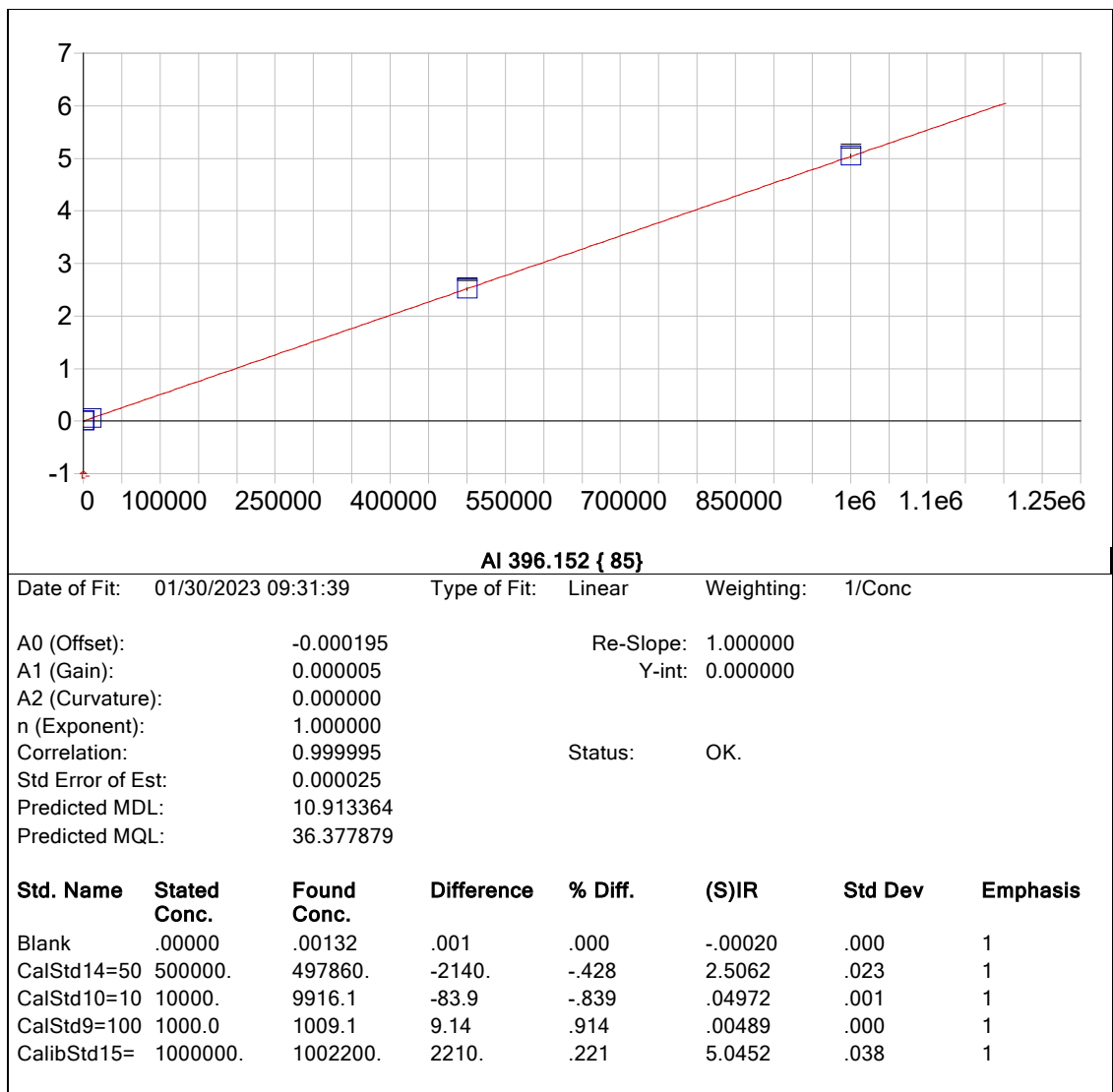
A0 (Offset):	-0.000006	Re-Slope:	1.000000
A1 (Gain):	0.000013	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999018	Status:	OK.
Std Error of Est:	0.000020		
Predicted MDL:	0.358561		
Predicted MQL:	1.195202		

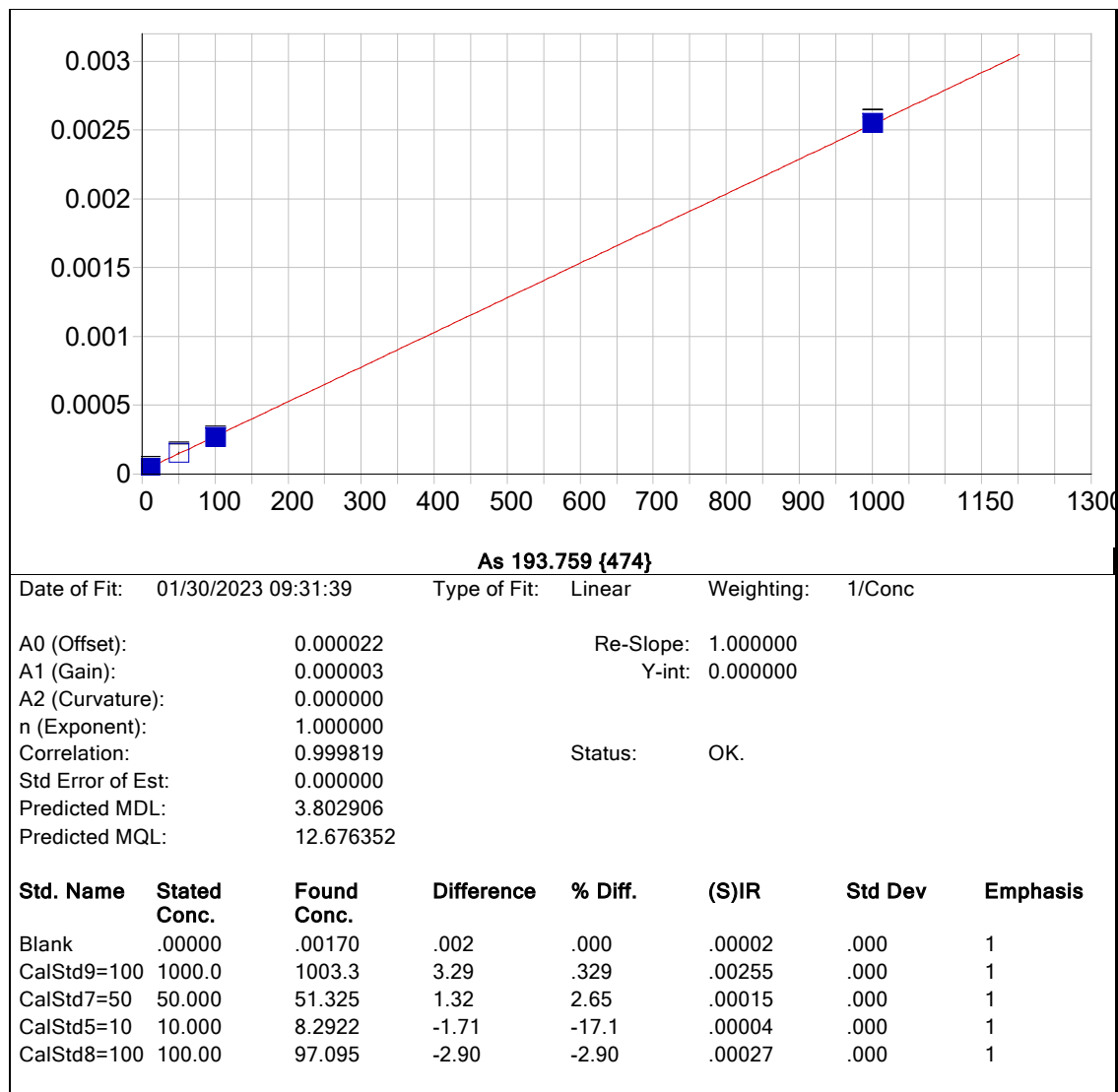
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	1.0348	1.03	.000	.00001	.000	1
CalStd8=100	100.00	100.53	.534	.534	.00131	.000	1
CalStd4=5	5.0000	4.4823	-.518	-10.4	.00005	.000	1
CalStd5=10	10.000	7.6600	-2.34	-23.4	.00009	.000	1

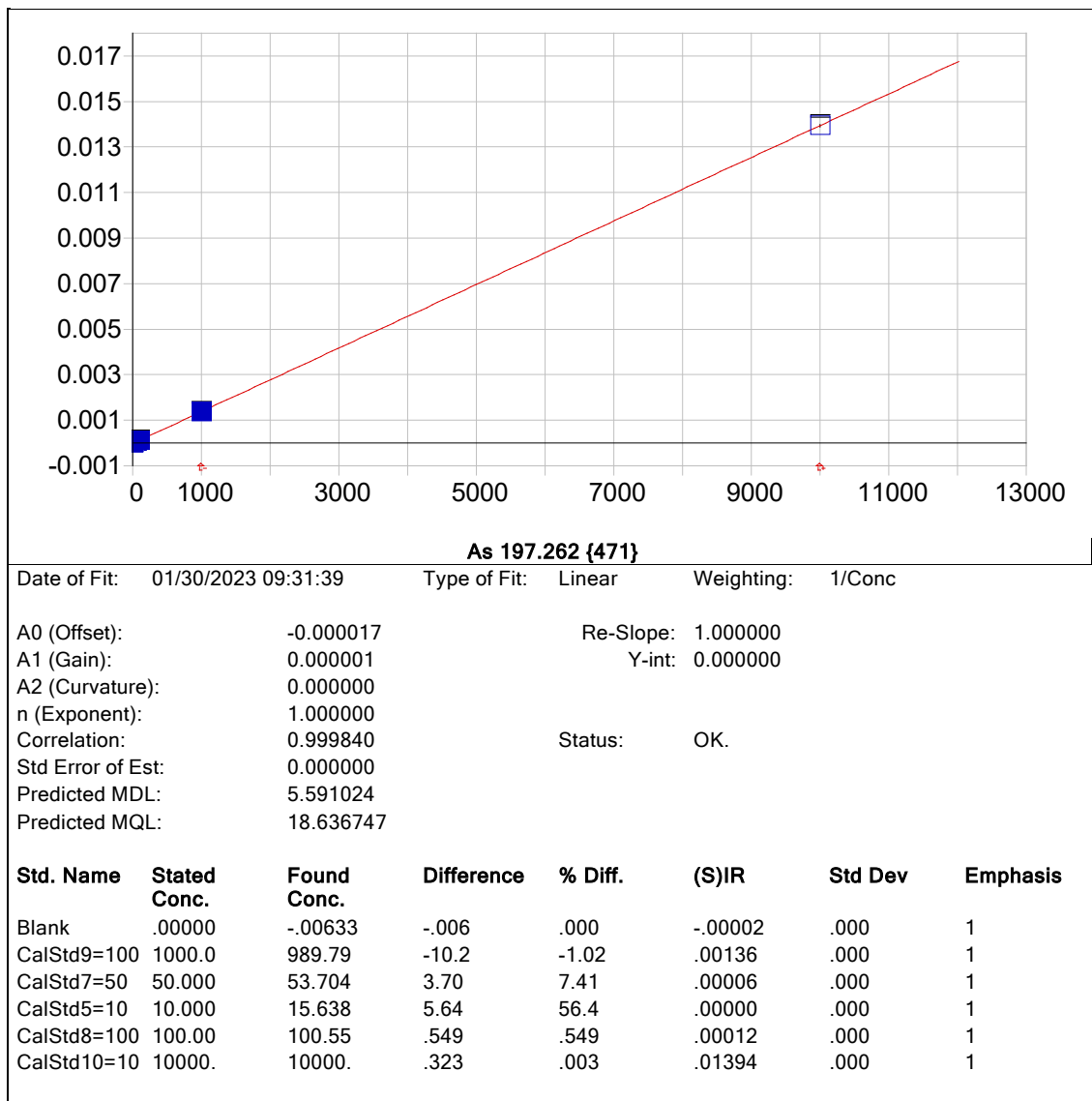


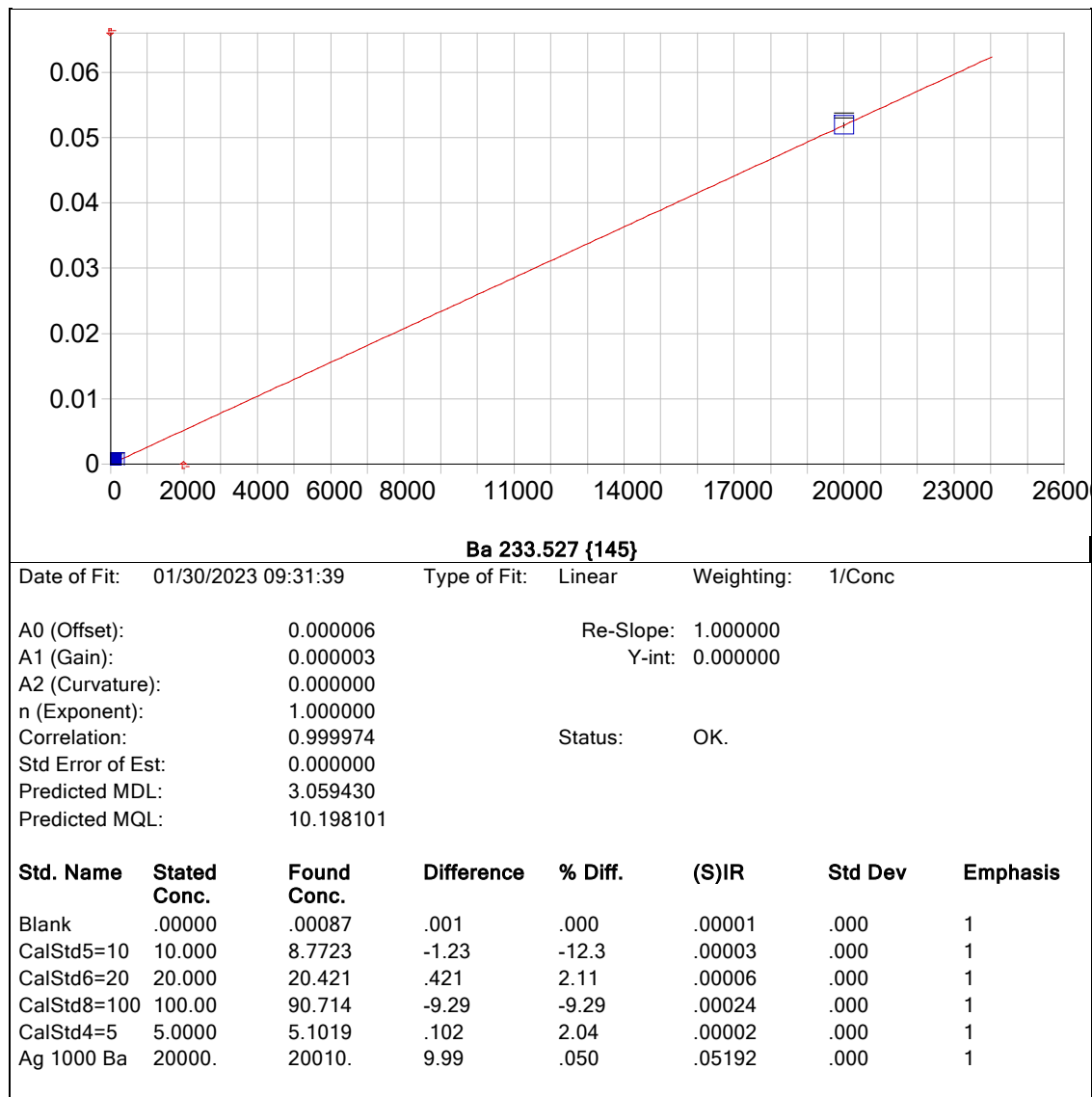


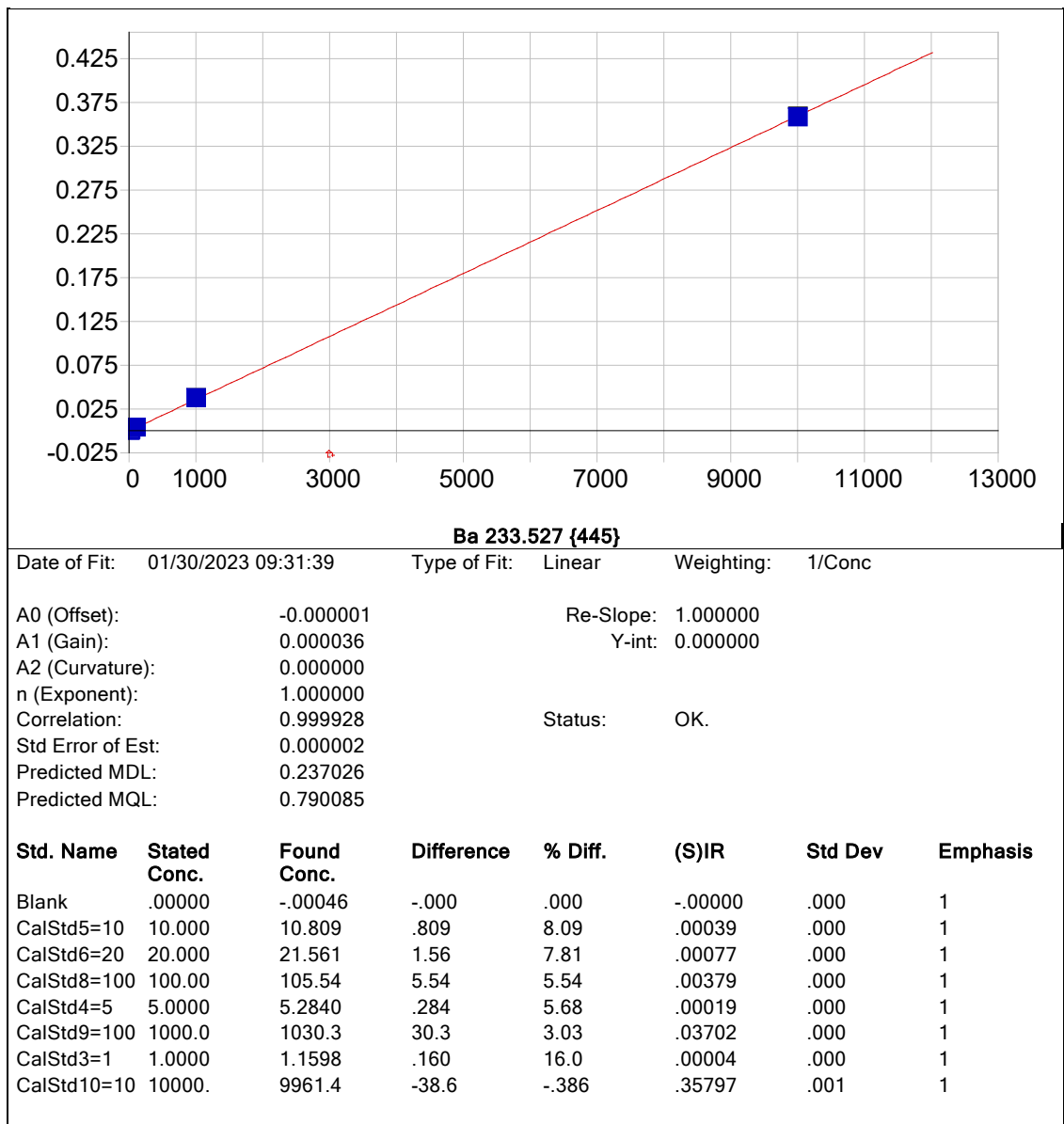


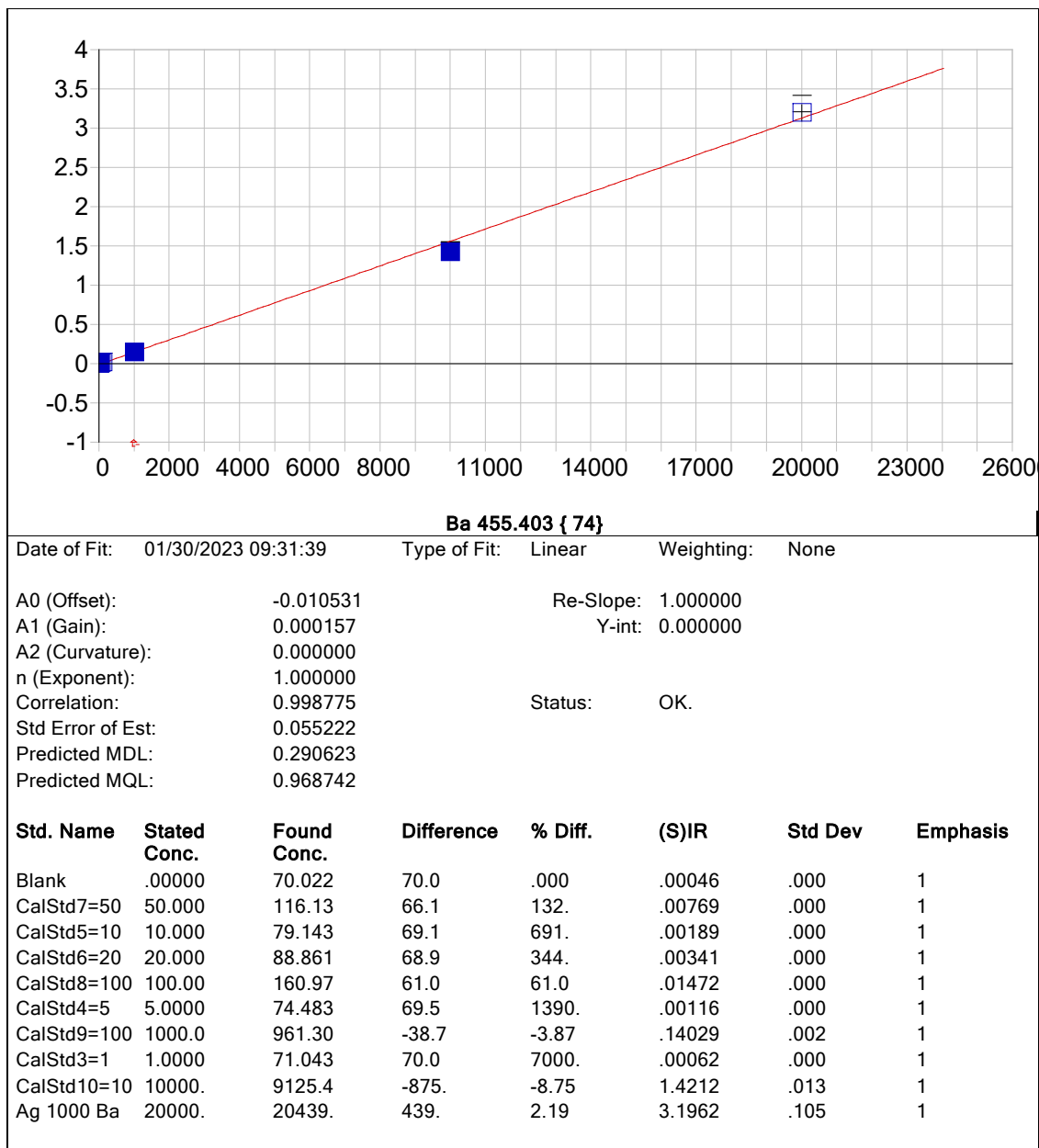


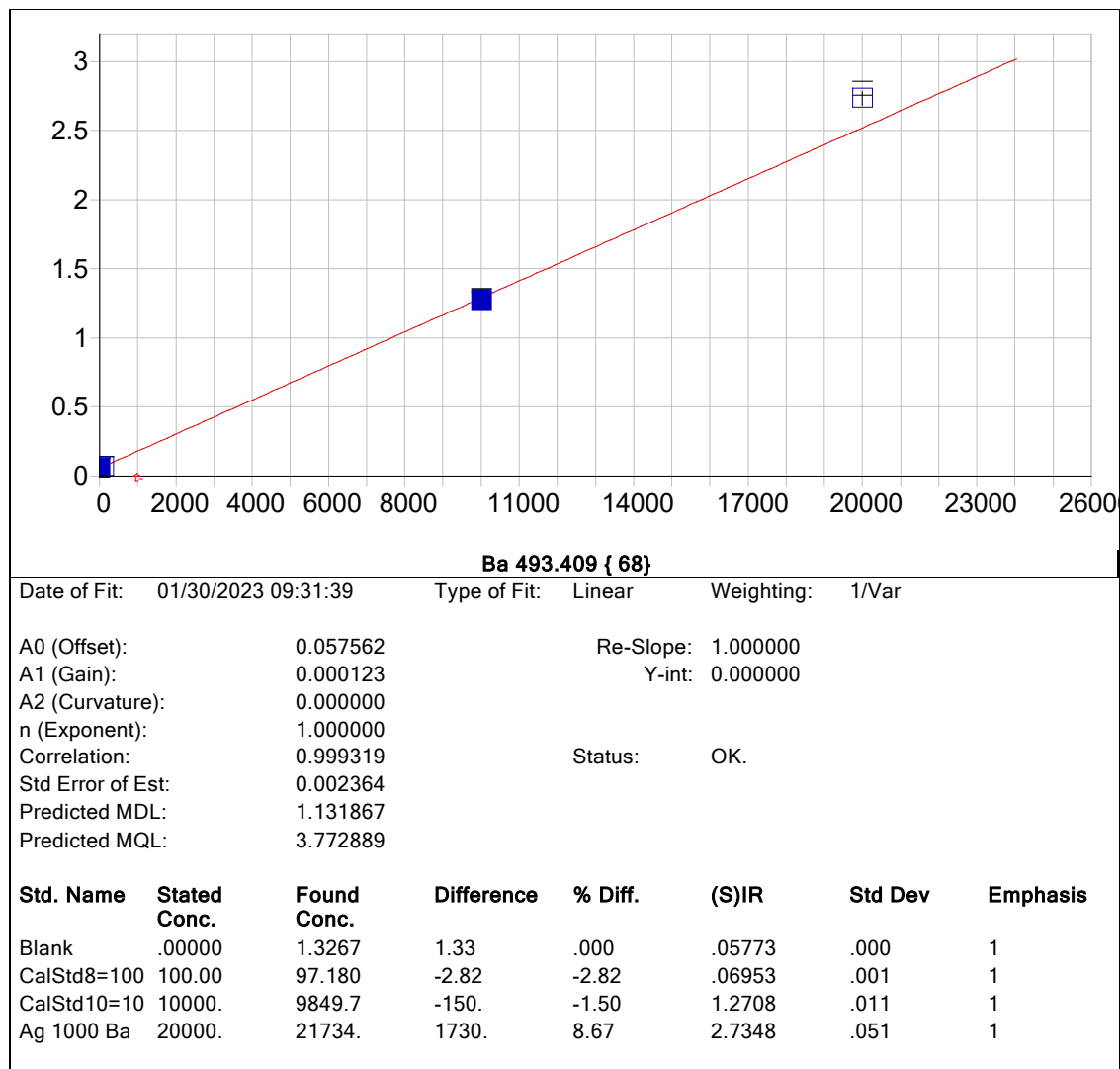


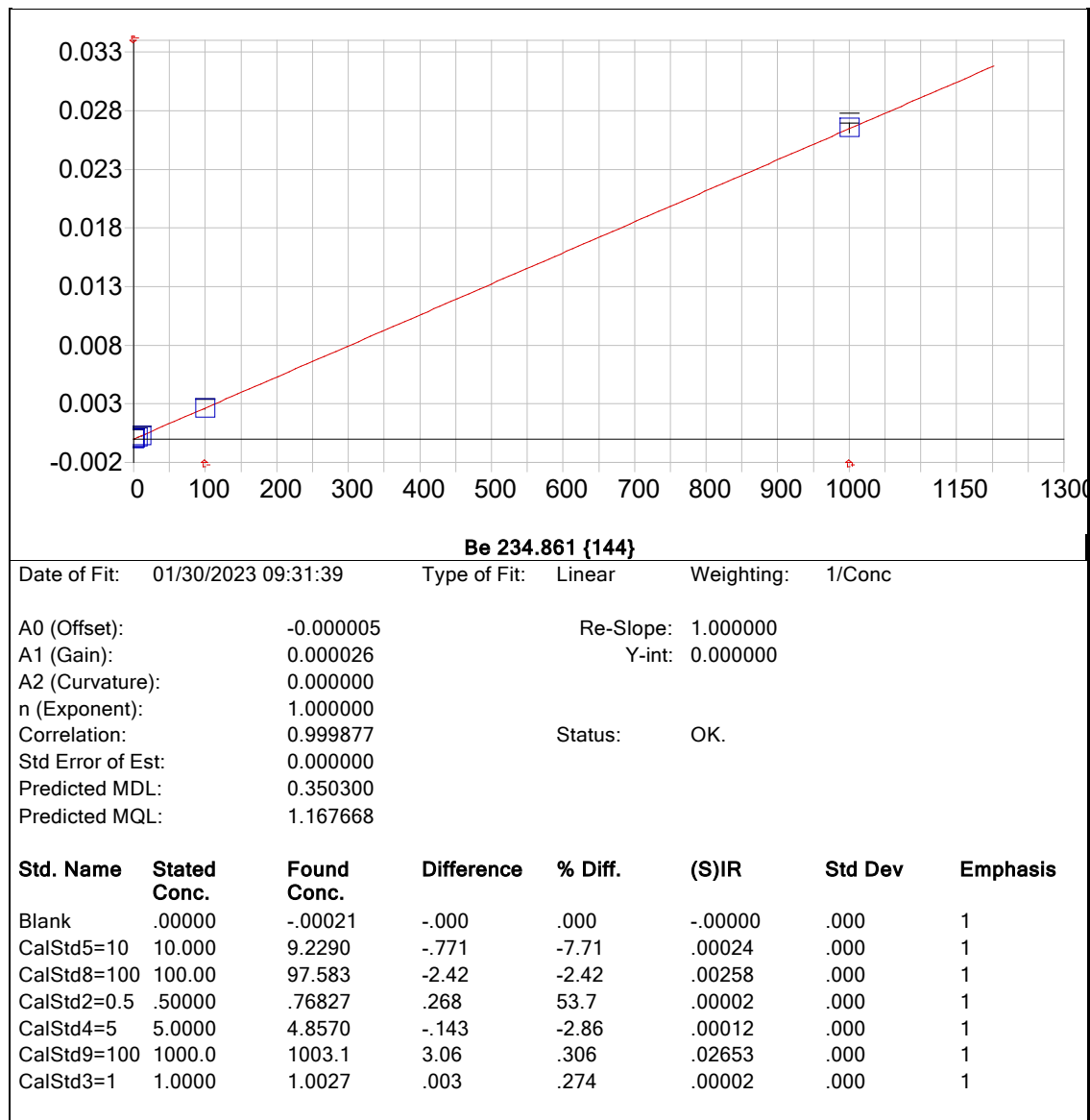


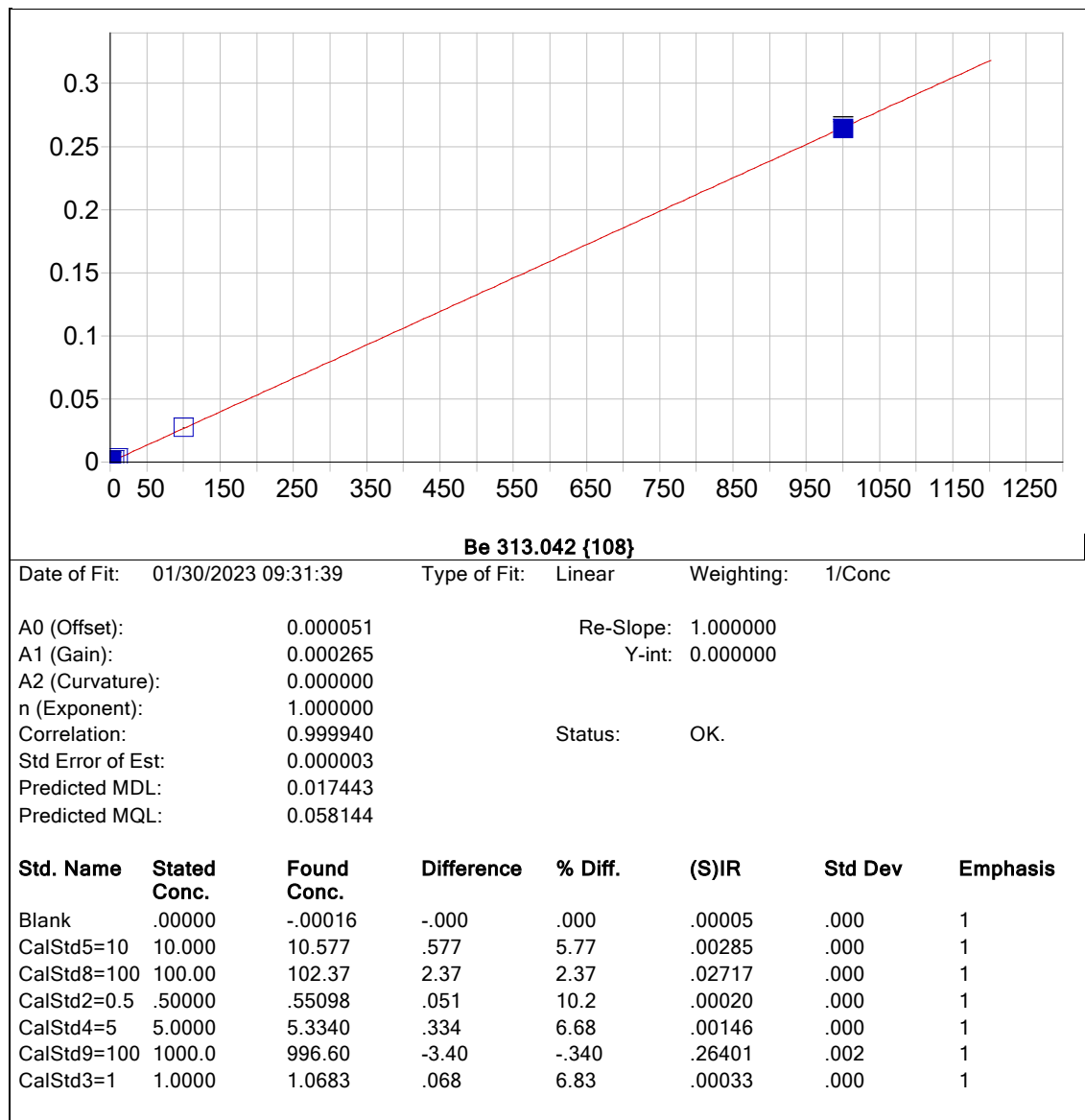


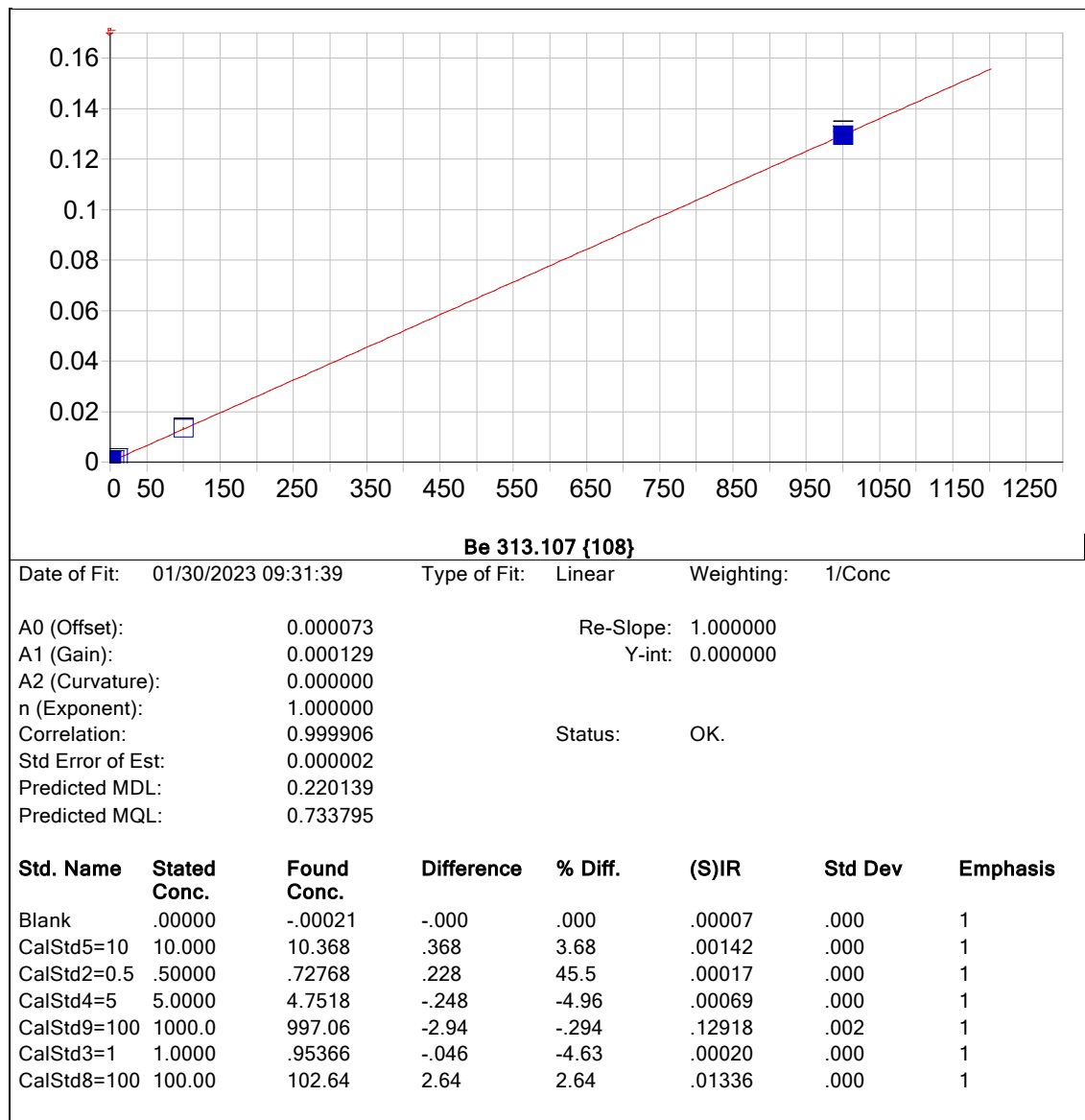


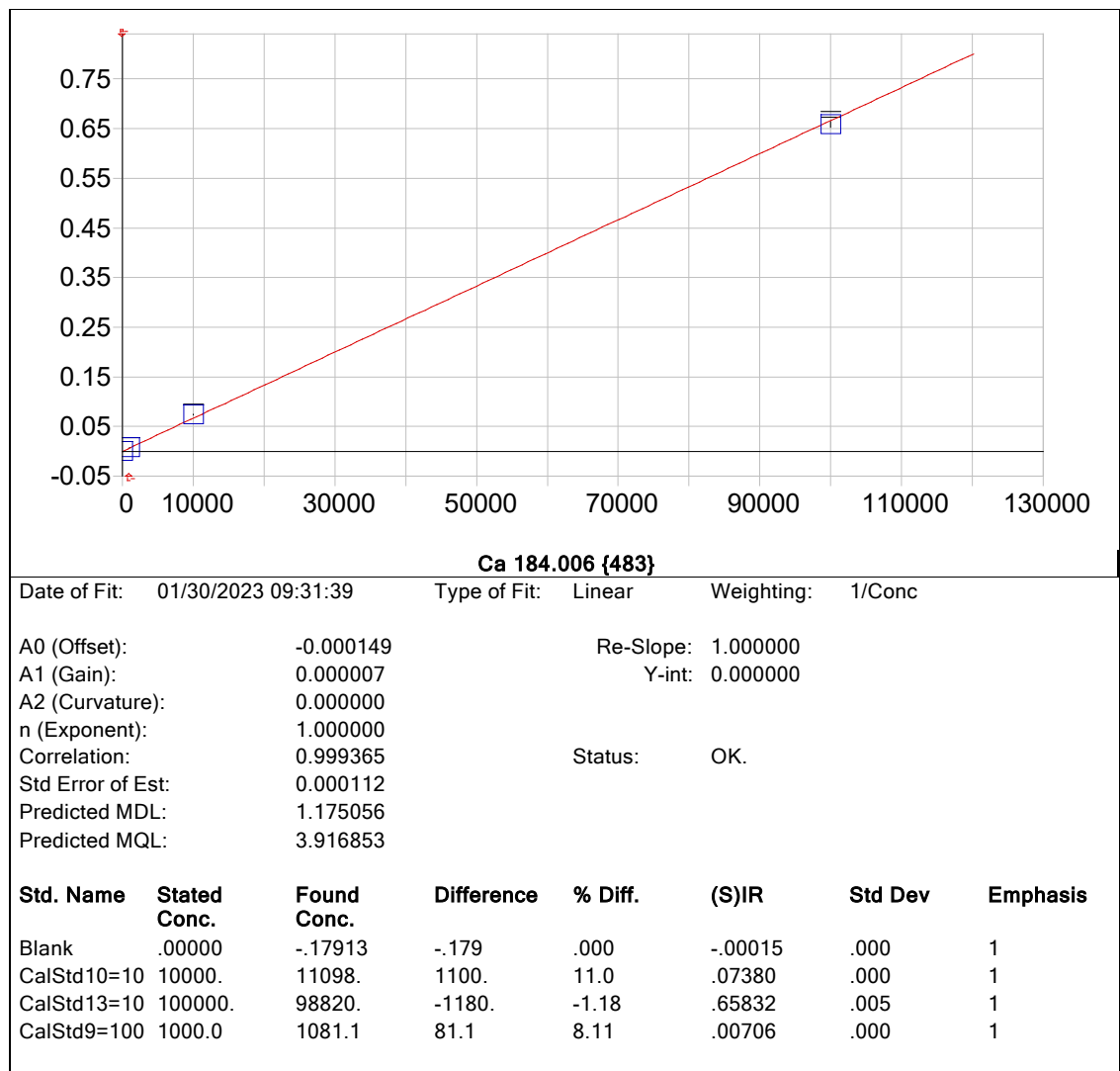


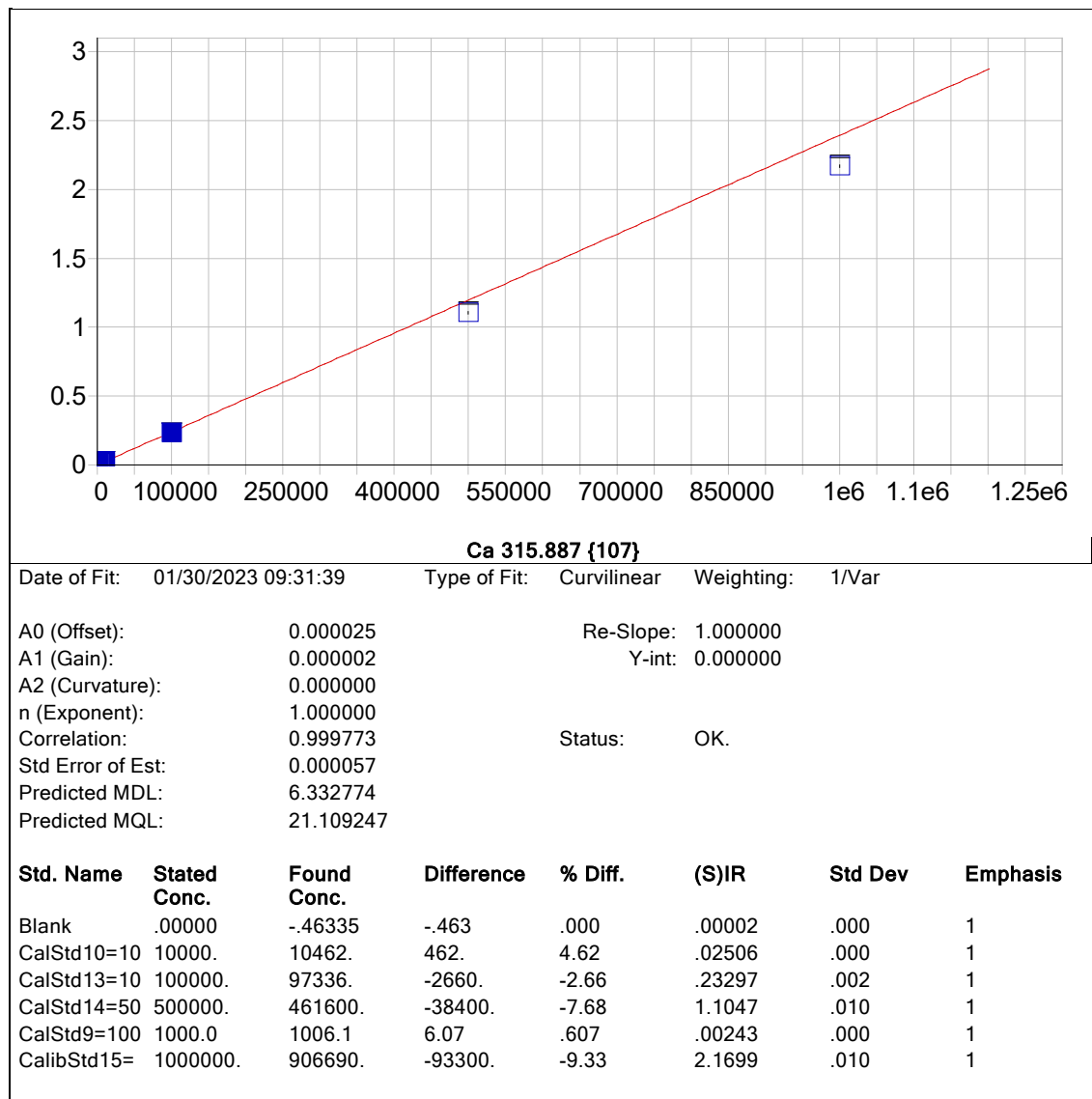


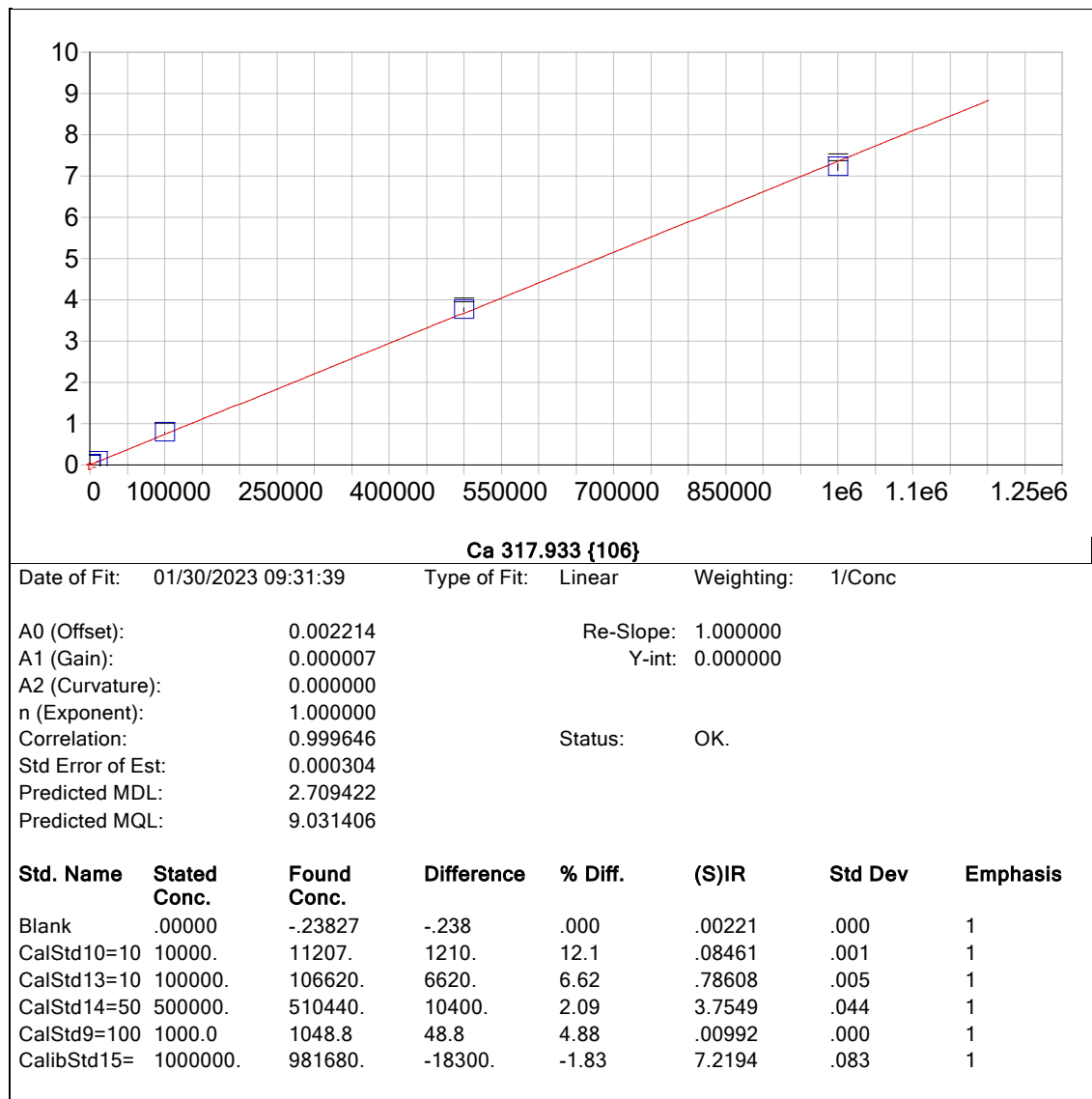


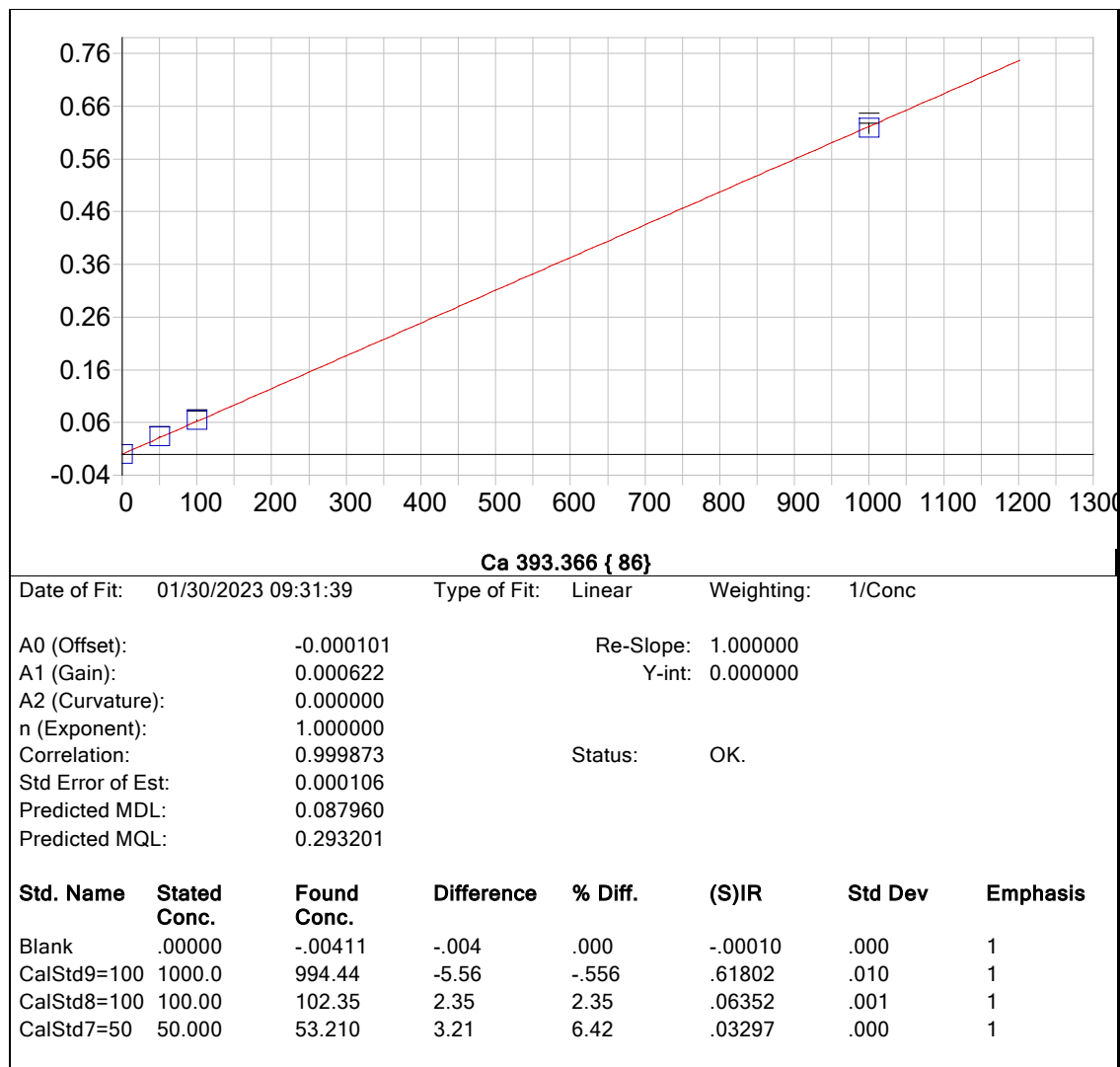


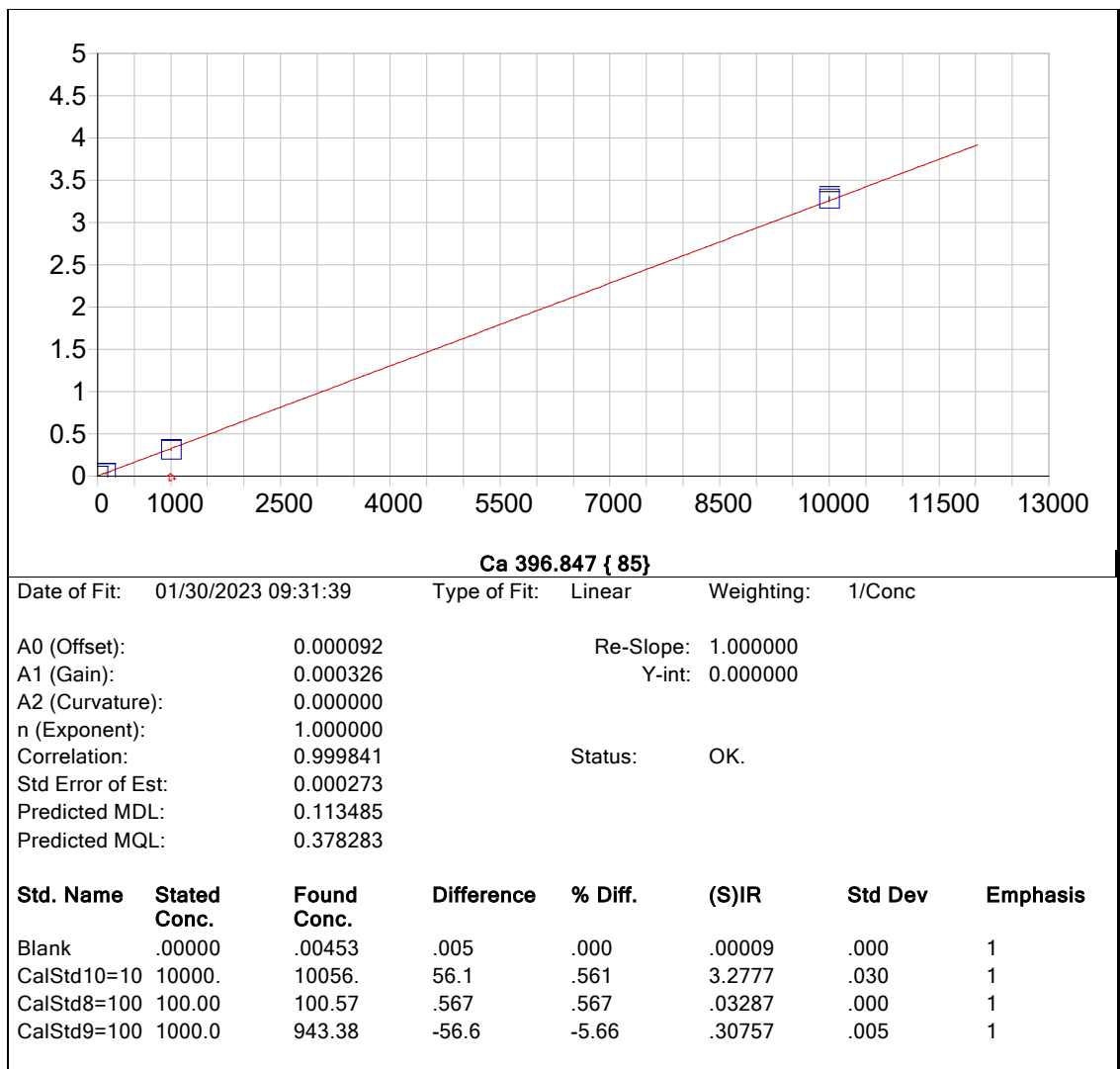


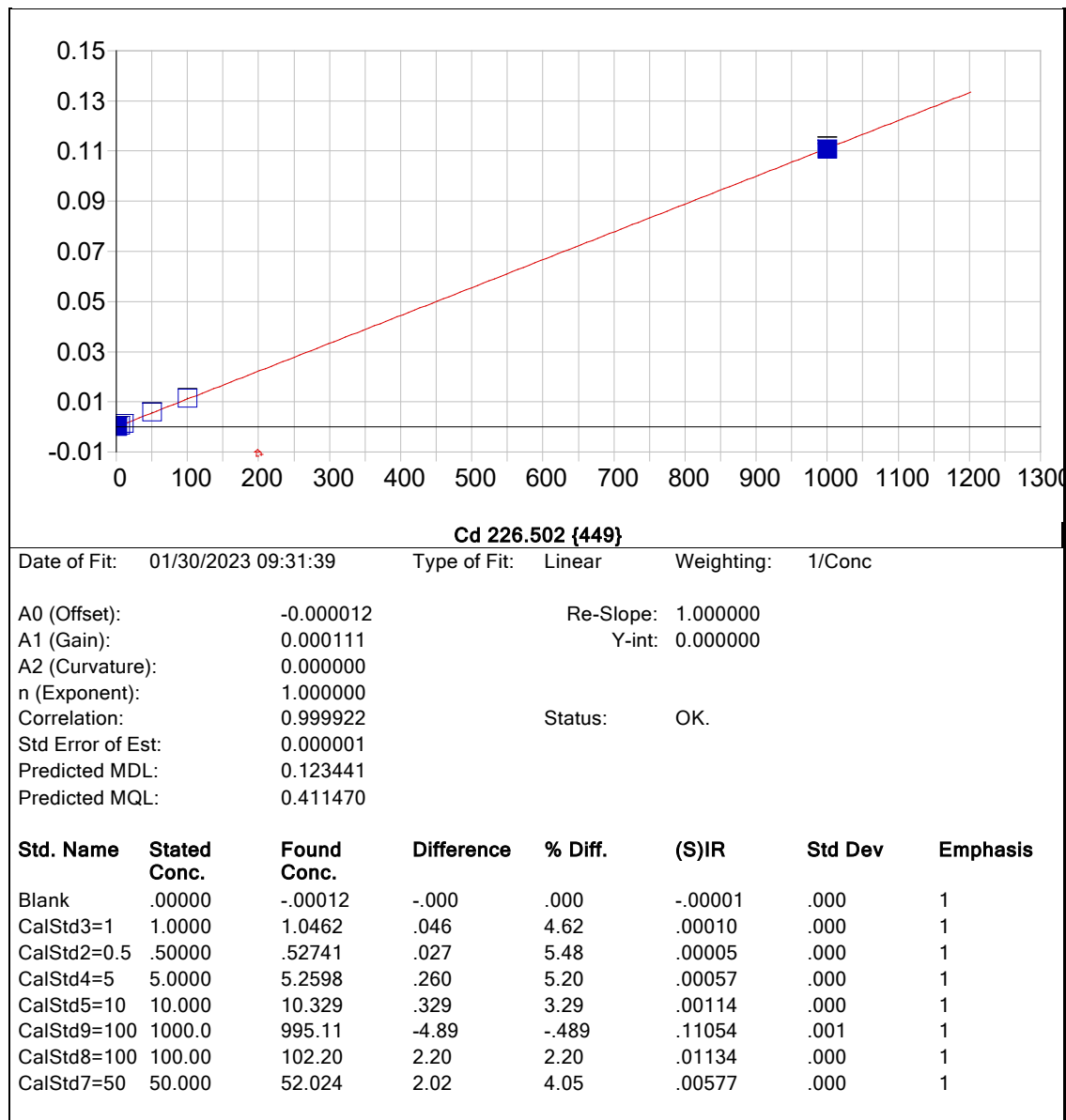


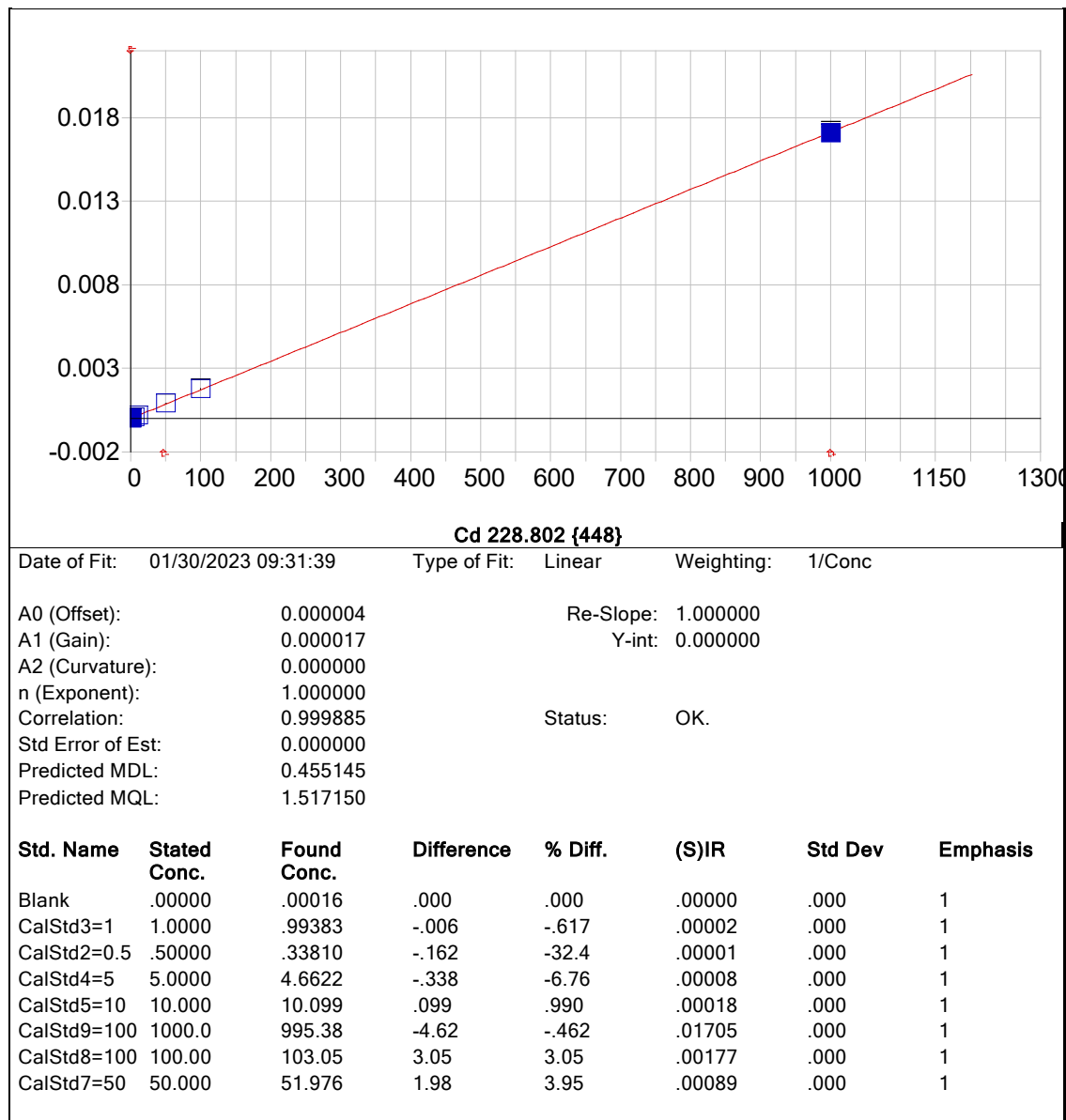


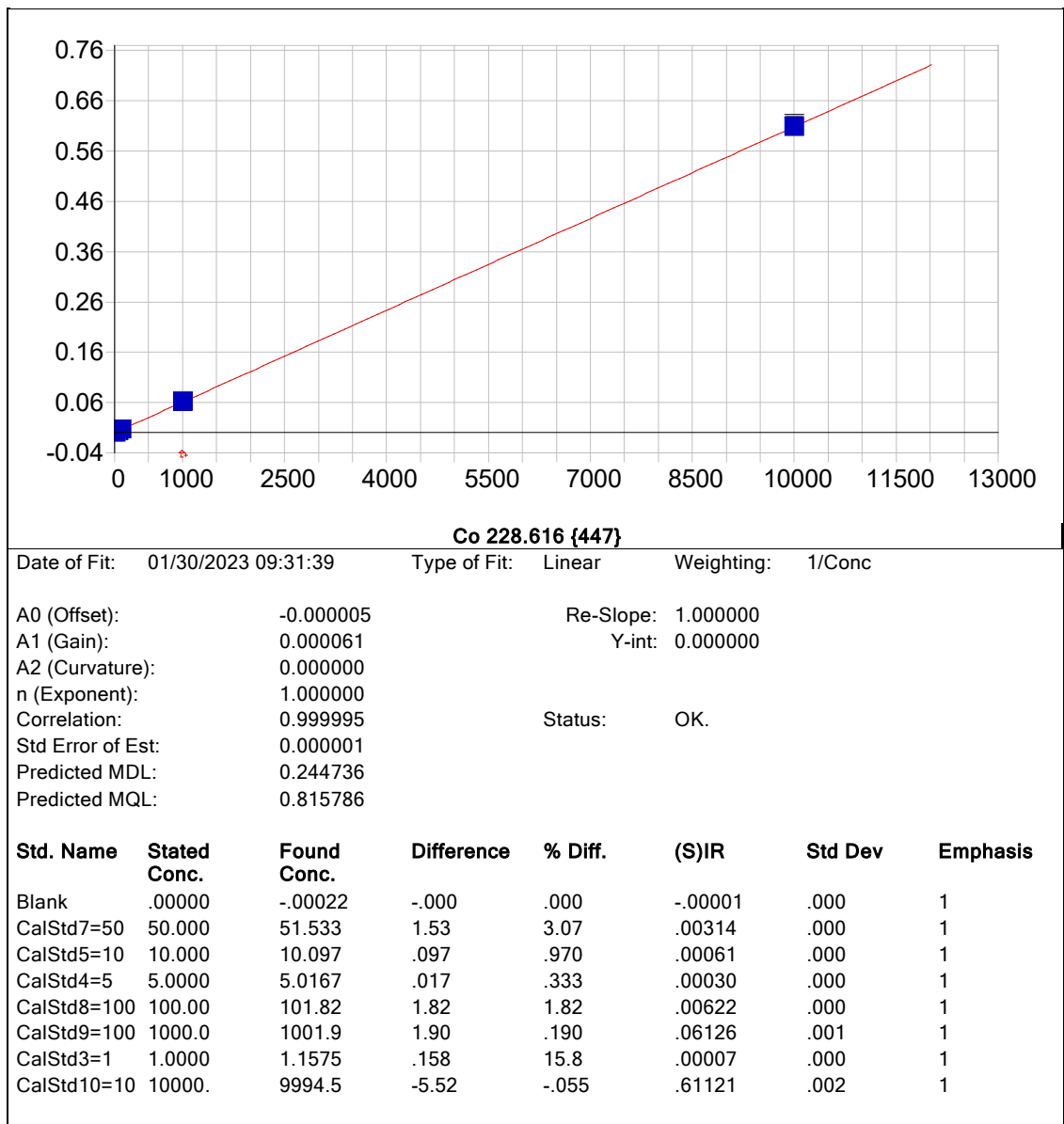


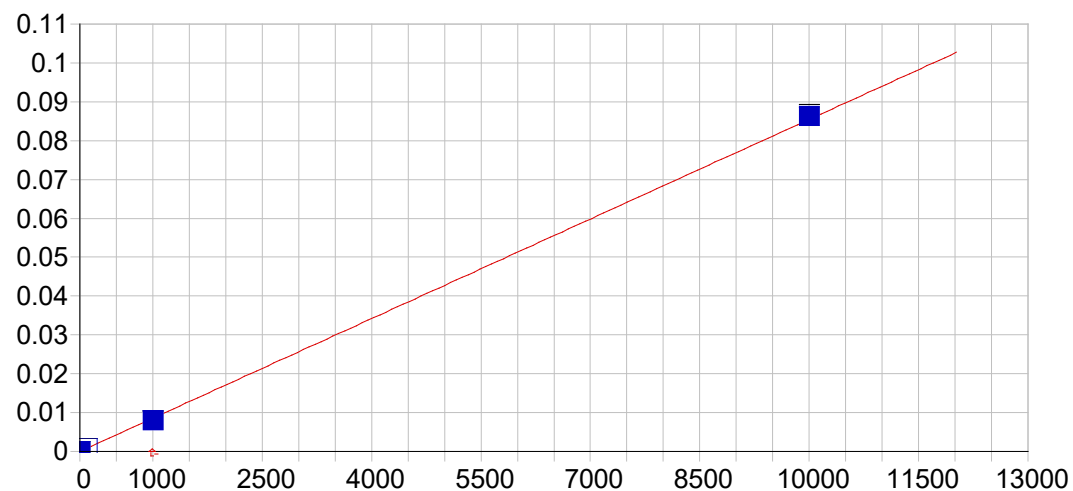










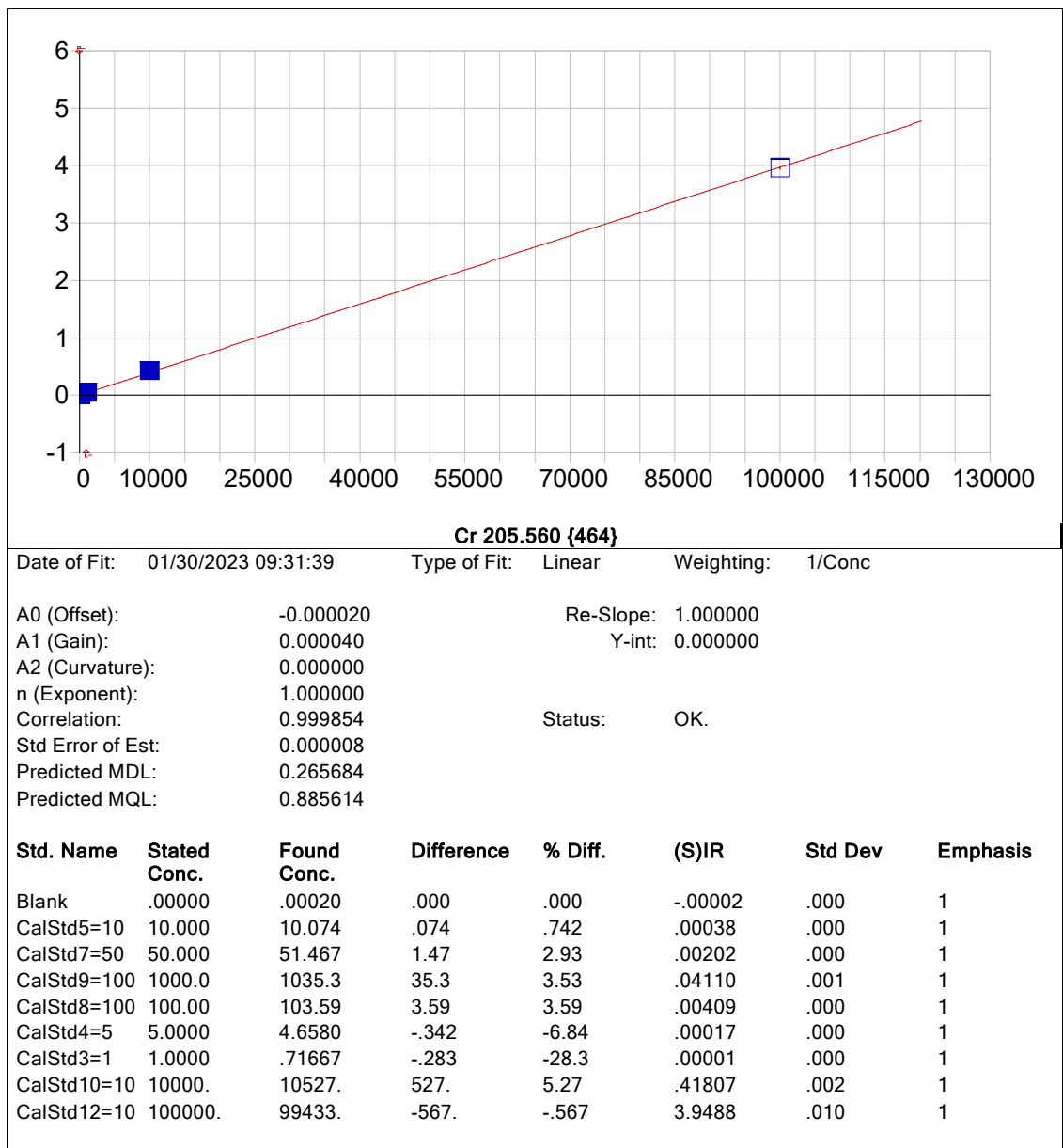


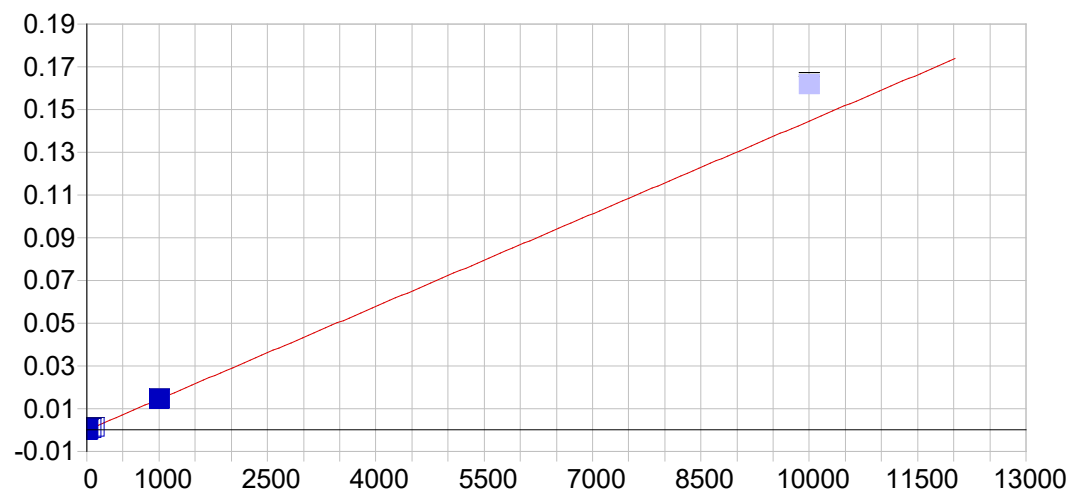
Co 238.892 {141}

Date of Fit: 01/30/2023 09:31:39 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset):	0.000008	Re-Slope:	1.000000
A1 (Gain):	0.000009	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999645	Status:	OK.
Std Error of Est:	0.000011		
Predicted MDL:	0.359465		
Predicted MQL:	1.198218		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.01318	.013	.000	.00001	.000	1
CalStd9=100	1000.0	917.66	-82.3	-8.23	.00785	.000	1
CalStd10=10	10000.	10088.	88.2	.882	.08623	.000	1
CalStd8=100	100.00	94.170	-5.83	-5.83	.00081	.000	1



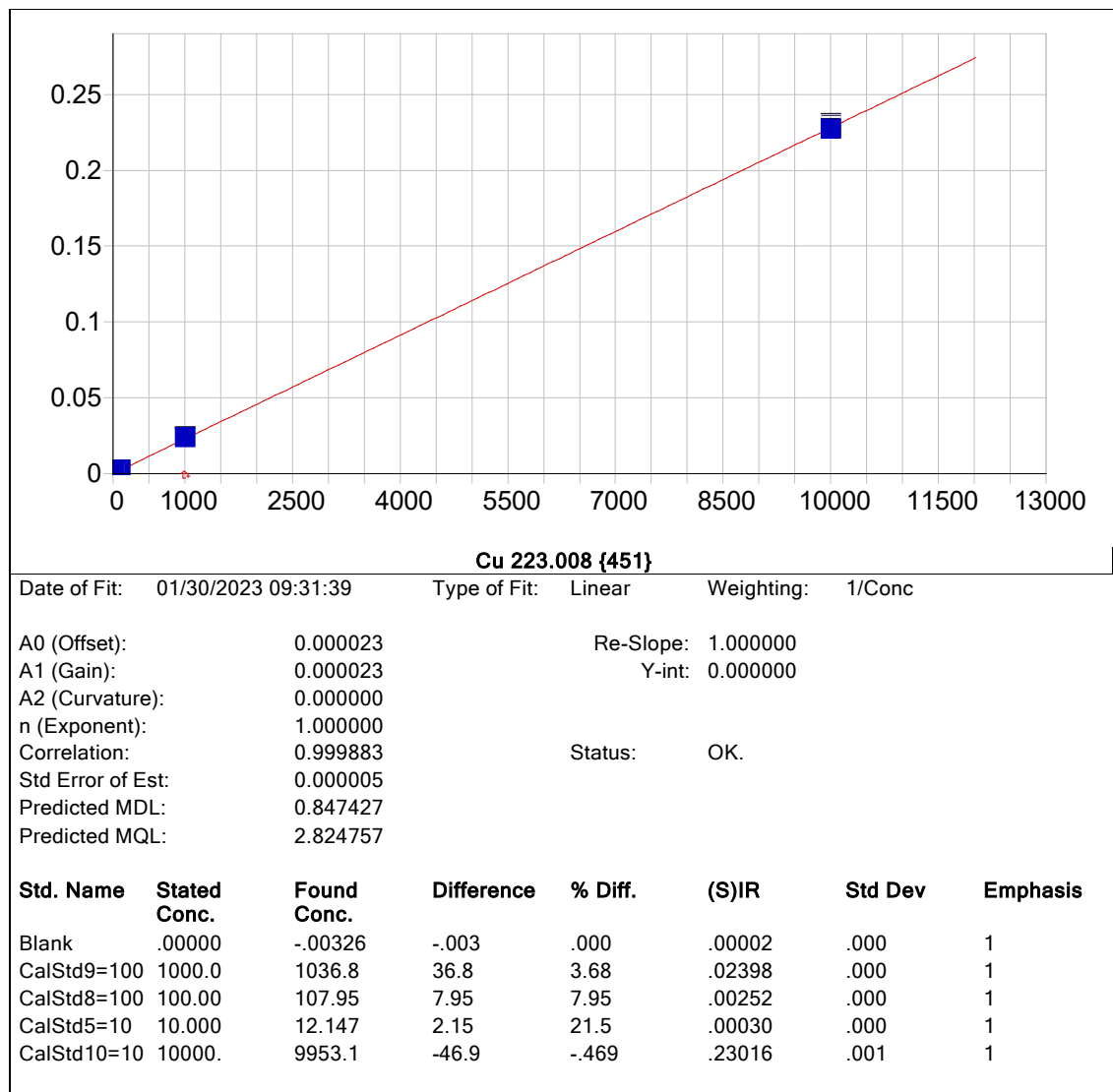


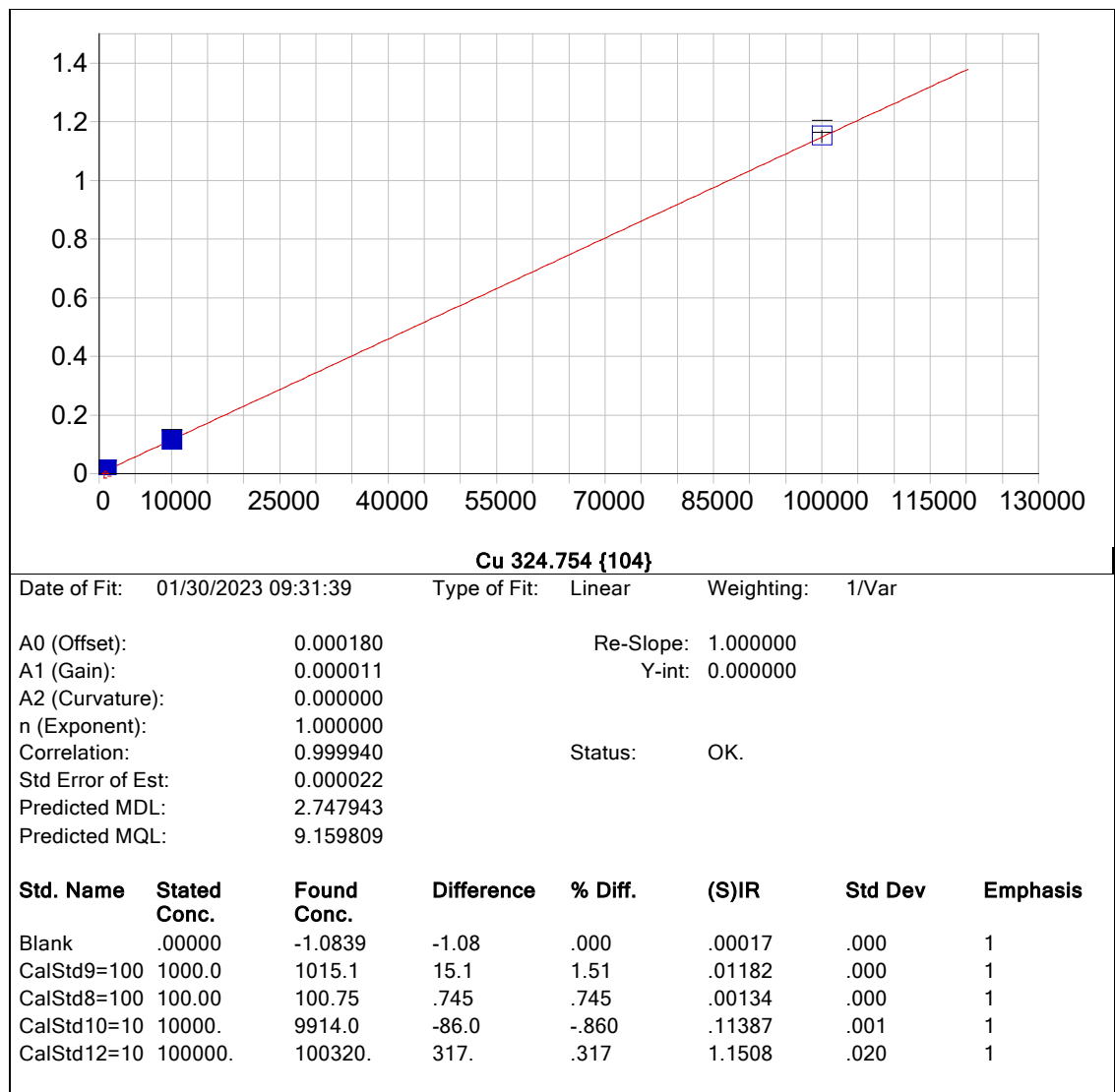
Cr 267.716 {126}

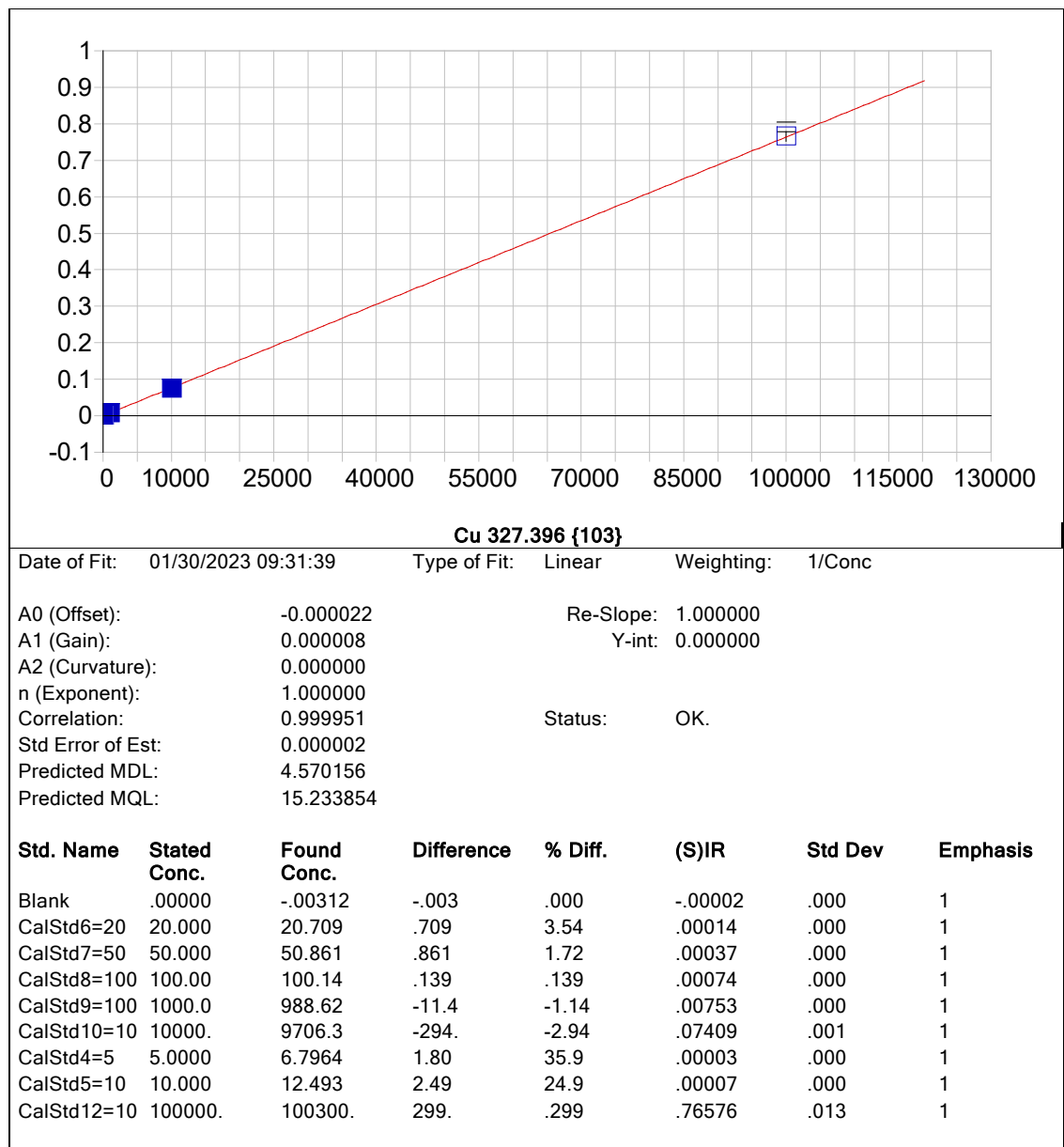
Date of Fit: 01/30/2023 09:31:39 Type of Fit: Linear Weighting: 1/Conc

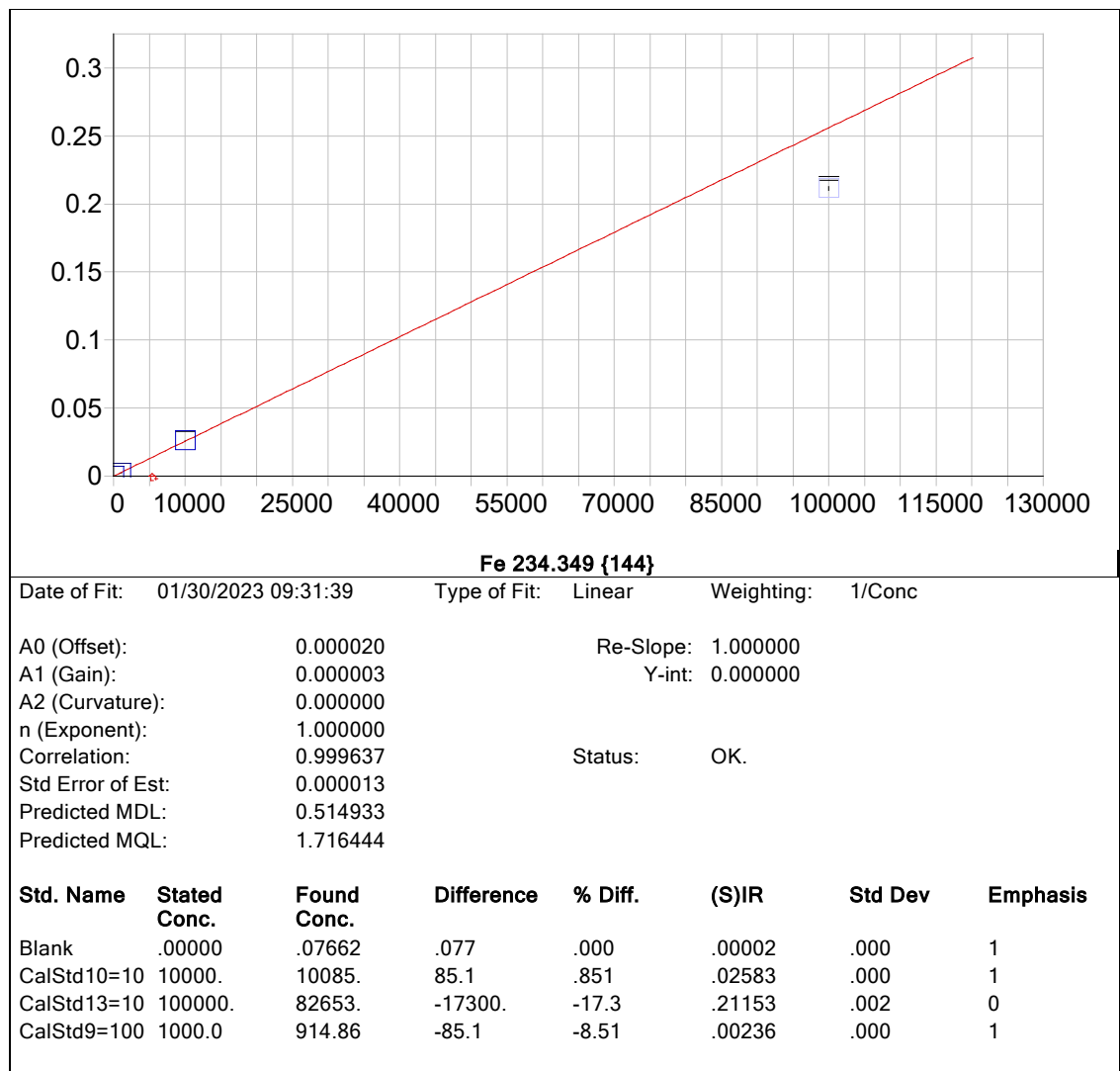
A0 (Offset):	-0.000017	Re-Slope:	1.000000
A1 (Gain):	0.000014	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999824	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	0.285029		
Predicted MQL:	0.950097		

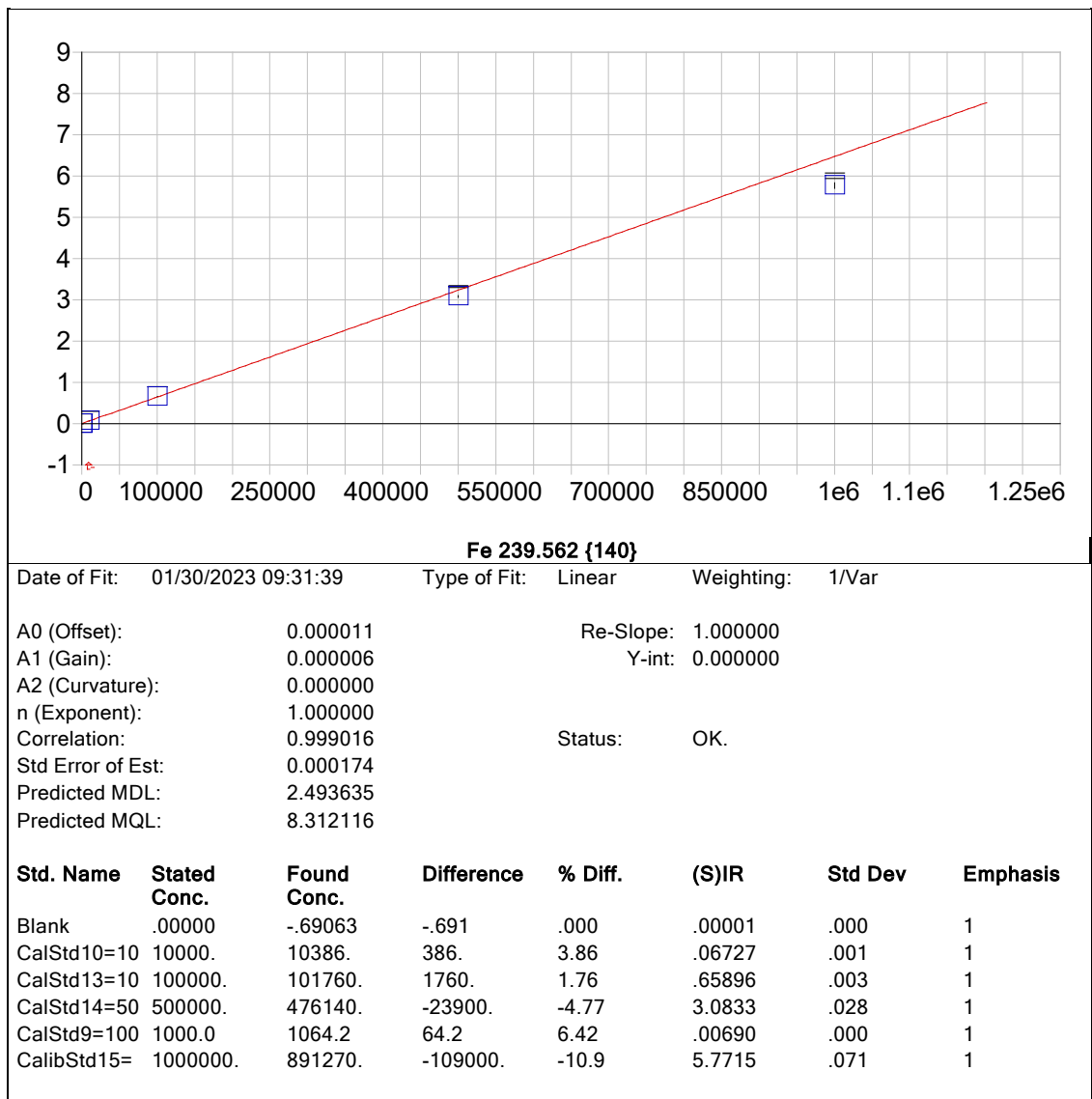
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00089	-.001	.000	-.000002	.000	1
CalStd5=10	10.000	10.670	.670	6.70	.00014	.000	1
CalStd7=50	50.000	53.336	3.34	6.67	.00075	.000	1
CalStd9=100	1000.0	992.89	-7.11	-.711	.01434	.000	1
CalStd8=100	100.00	103.00	3.00	3.00	.00147	.000	1
CalStd4=5	5.0000	5.1038	.104	2.08	.00006	.000	1
CalStd10=10	10000.	11182.	1180.	11.8	.16172	.001	0

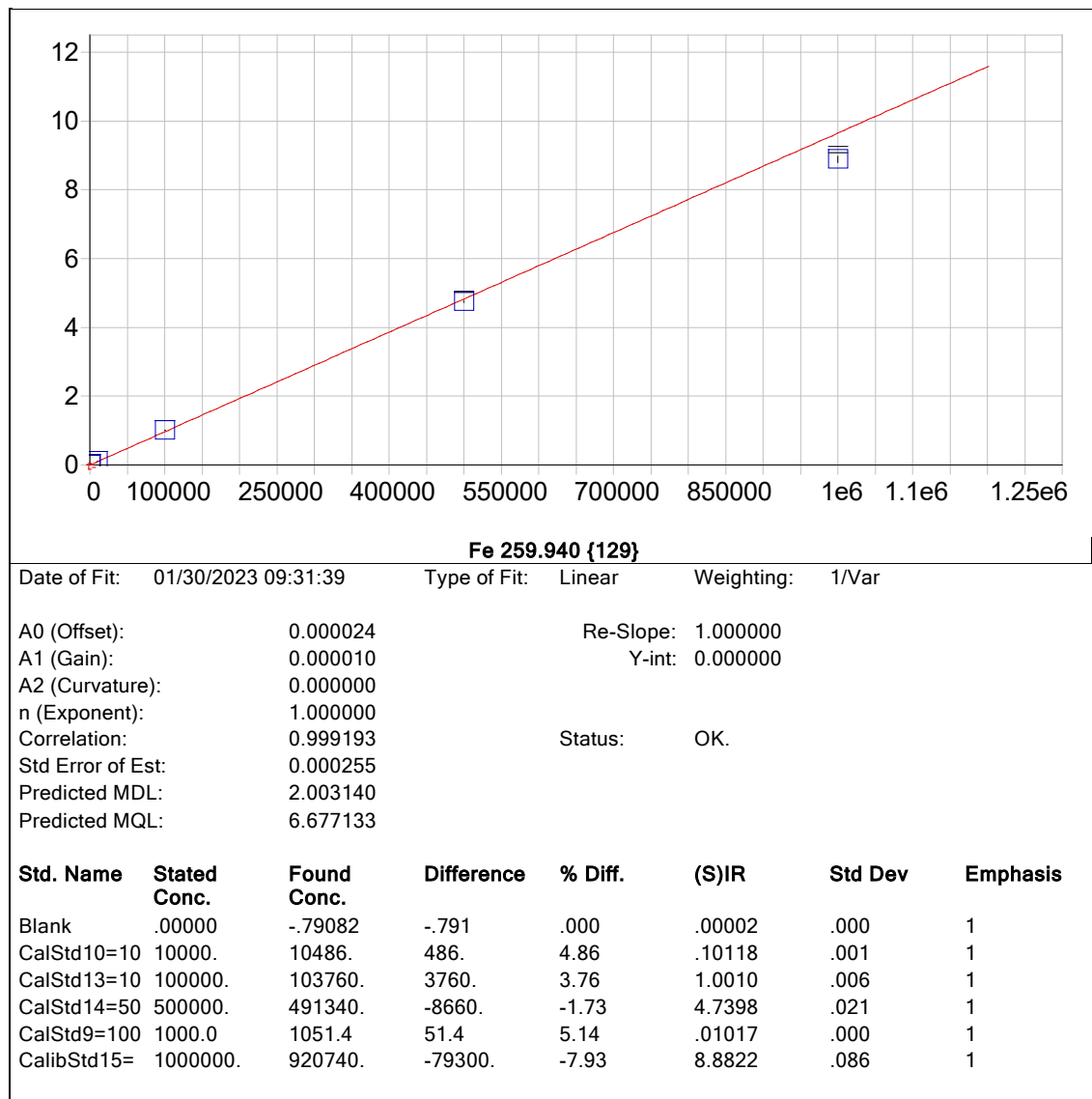


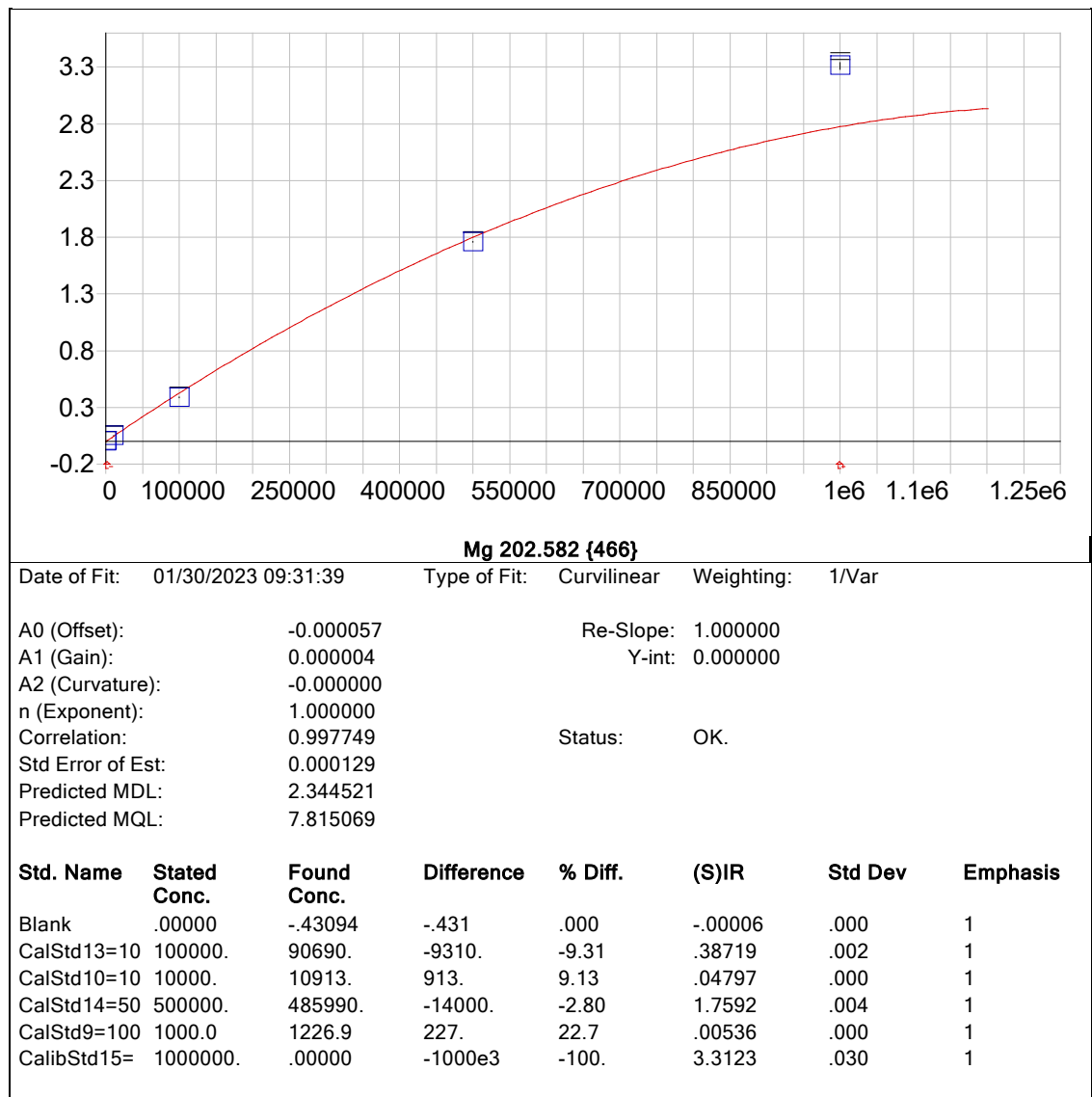


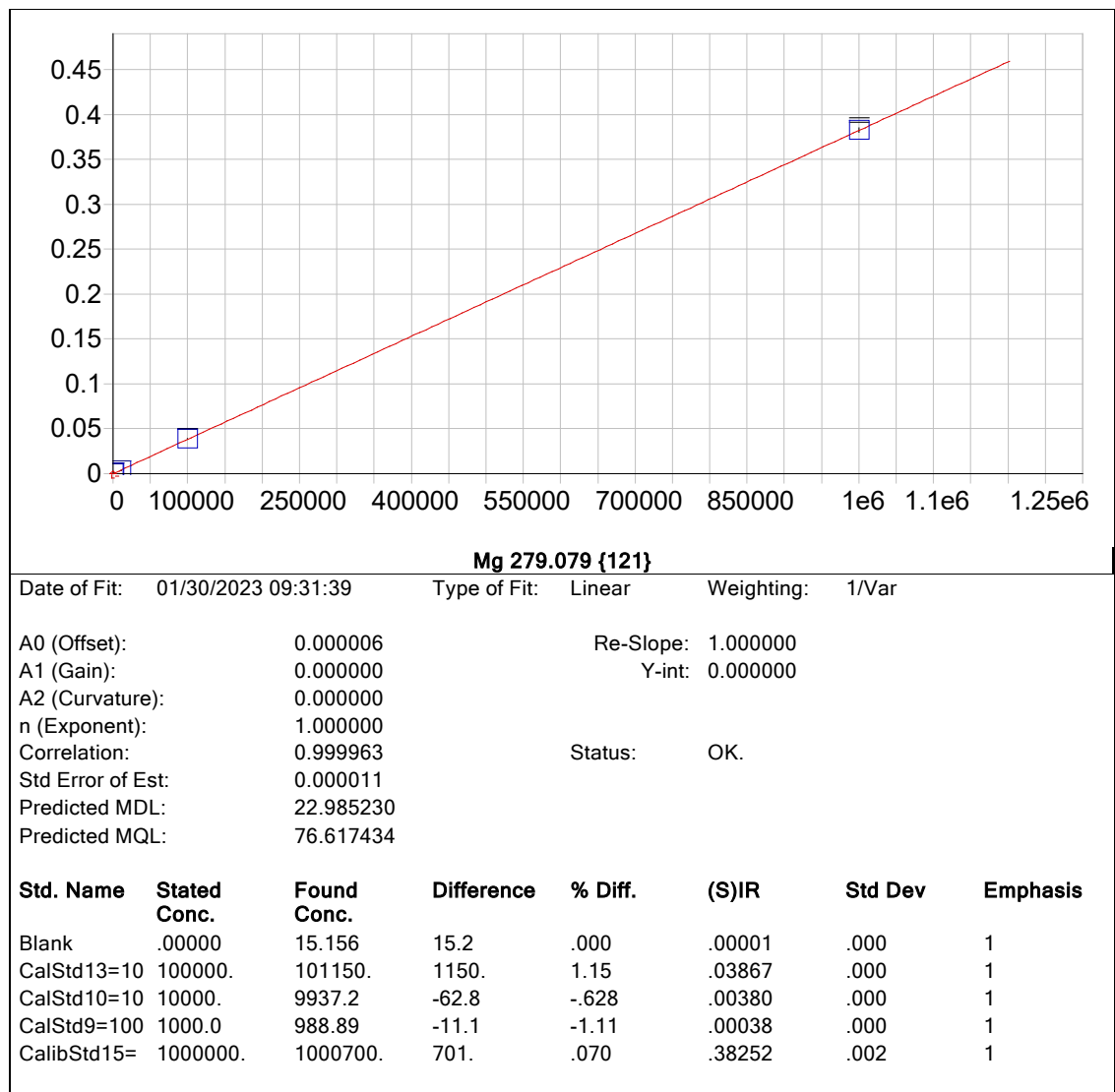


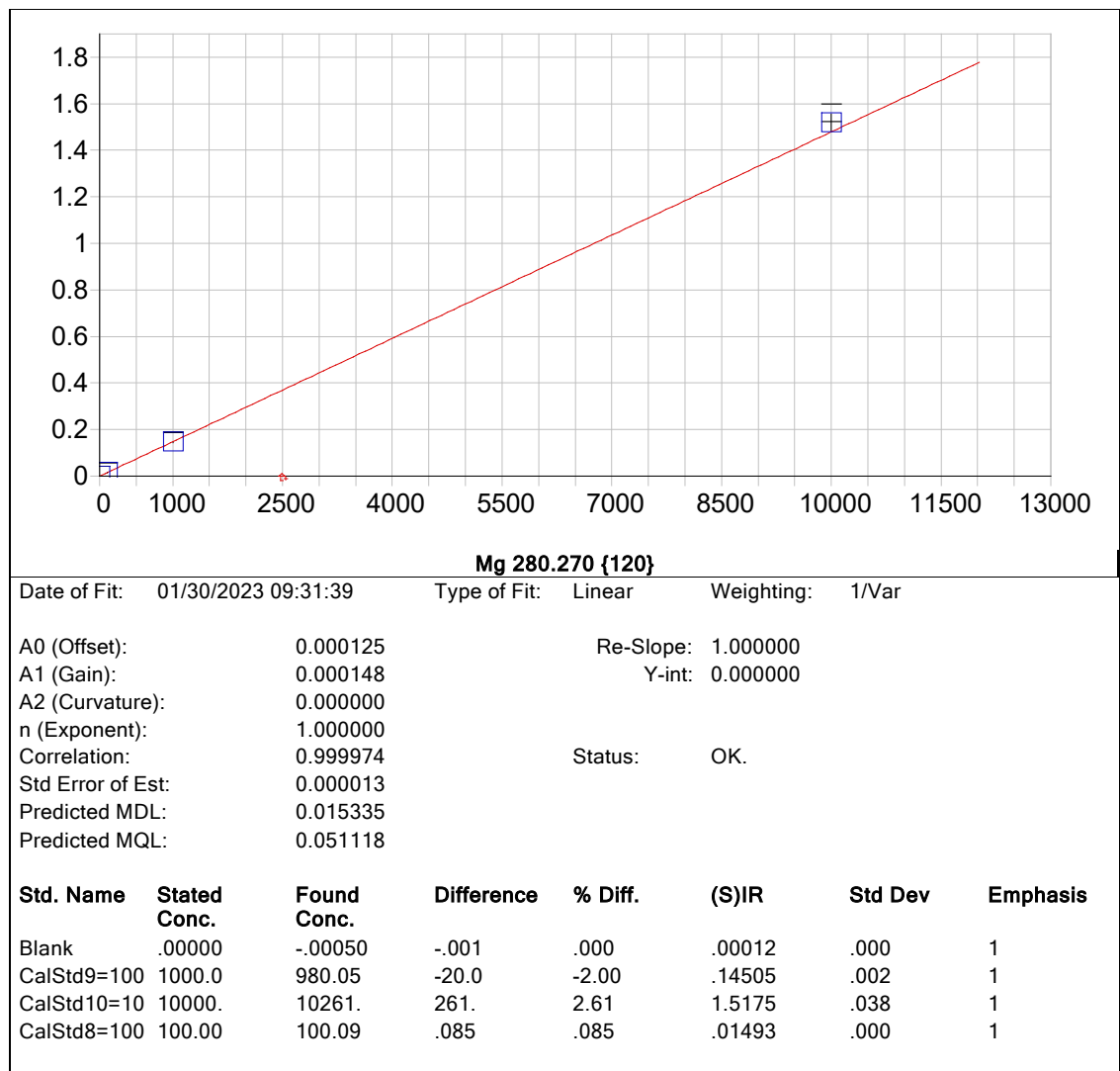


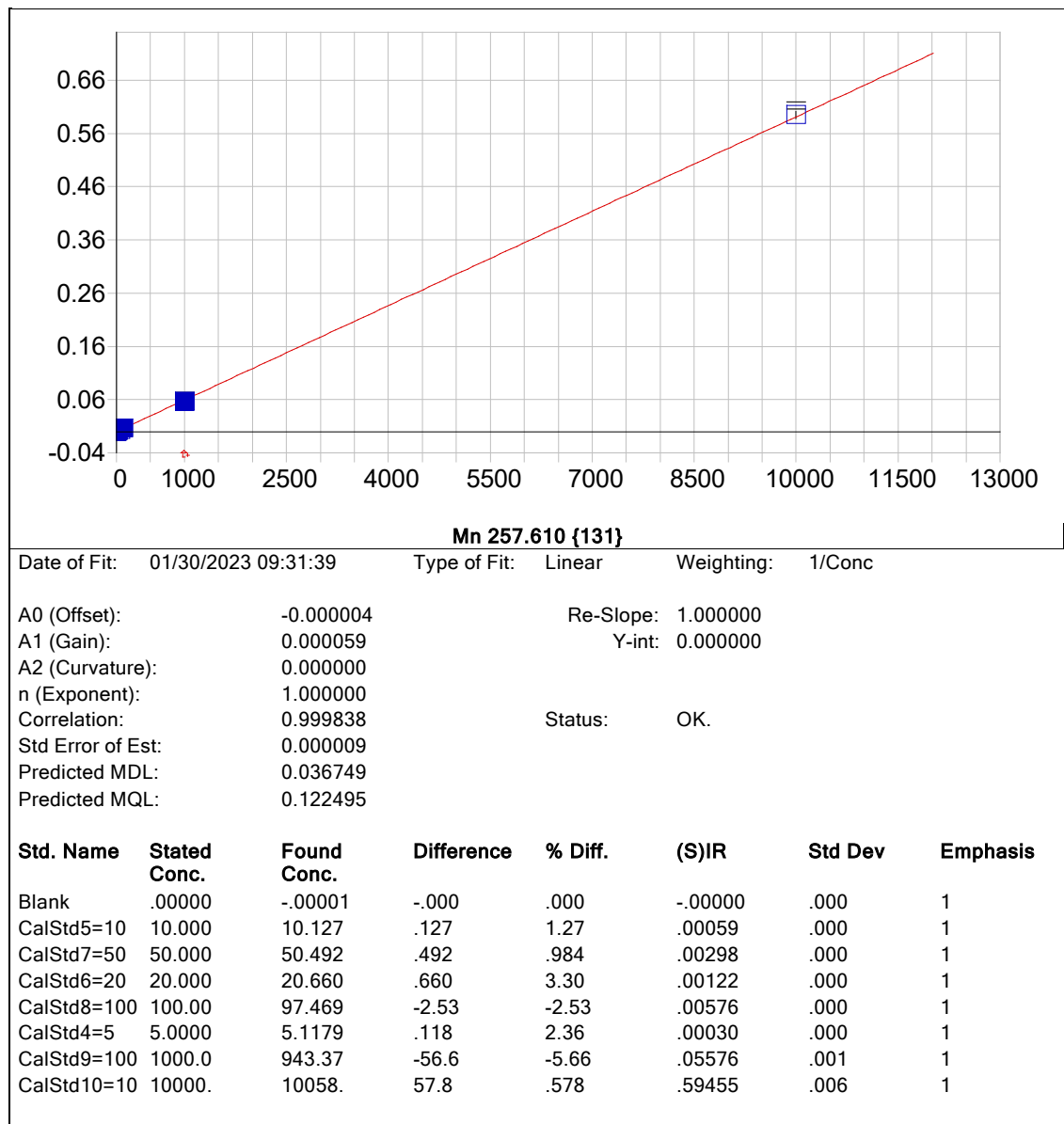


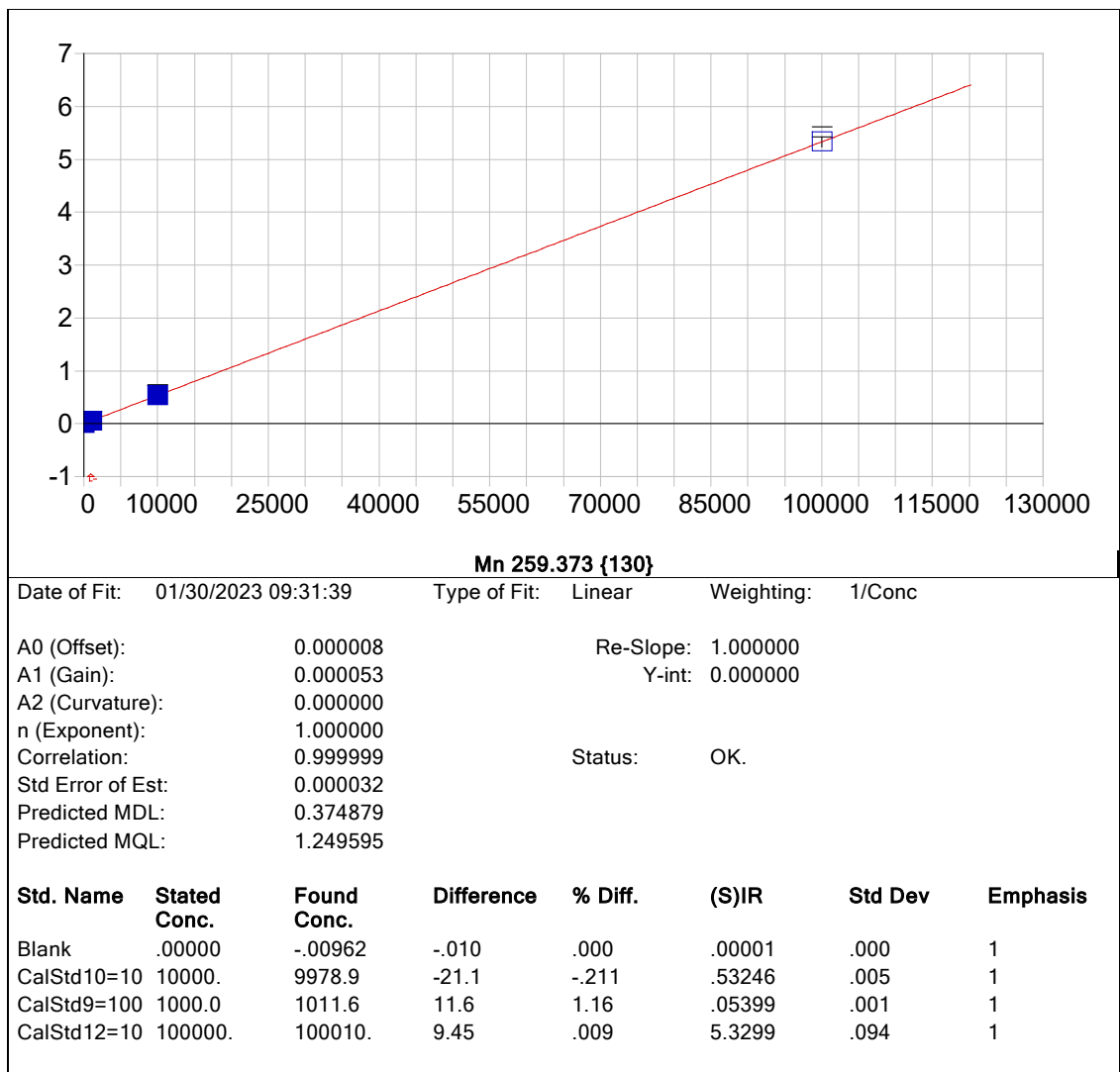


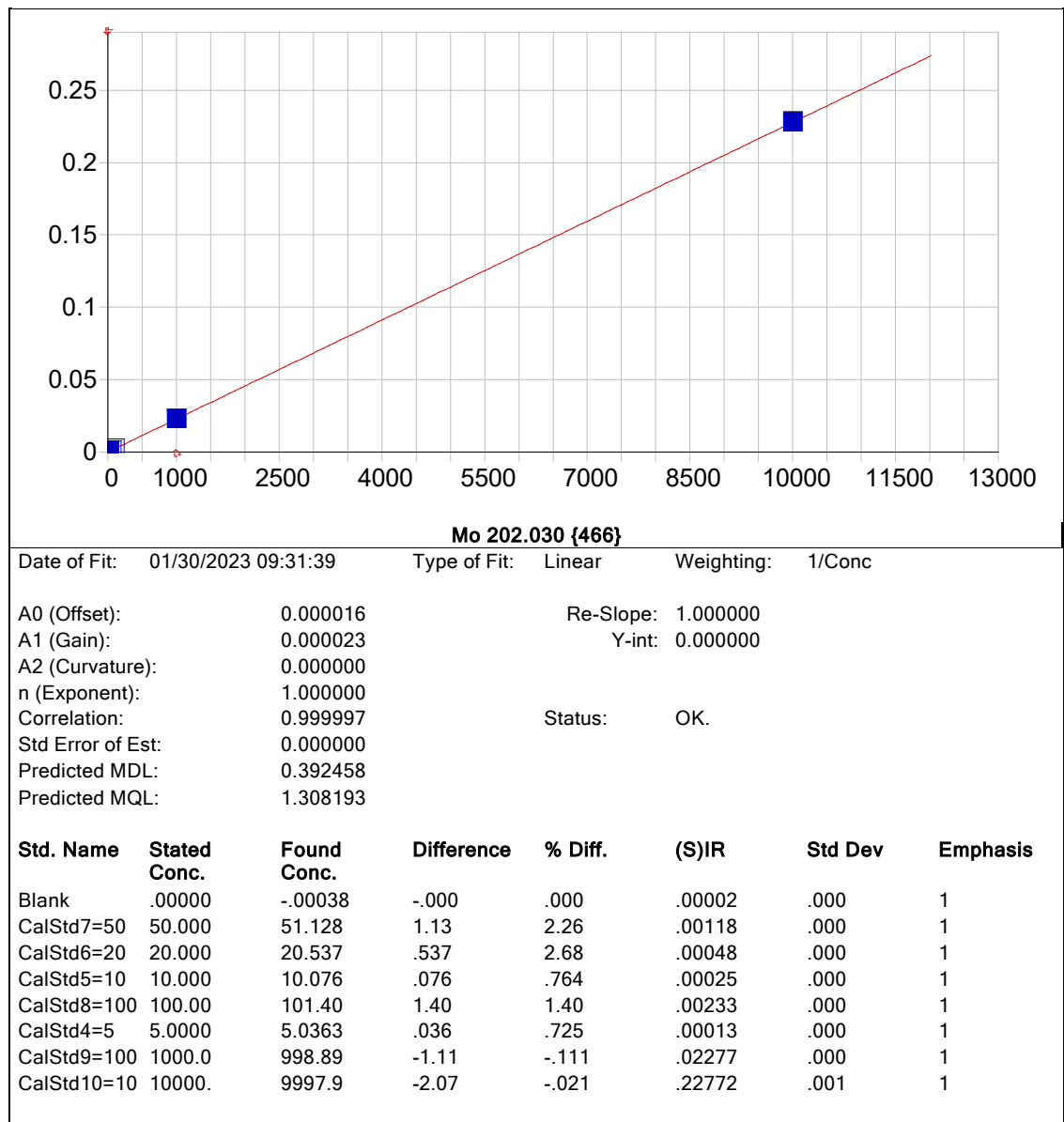


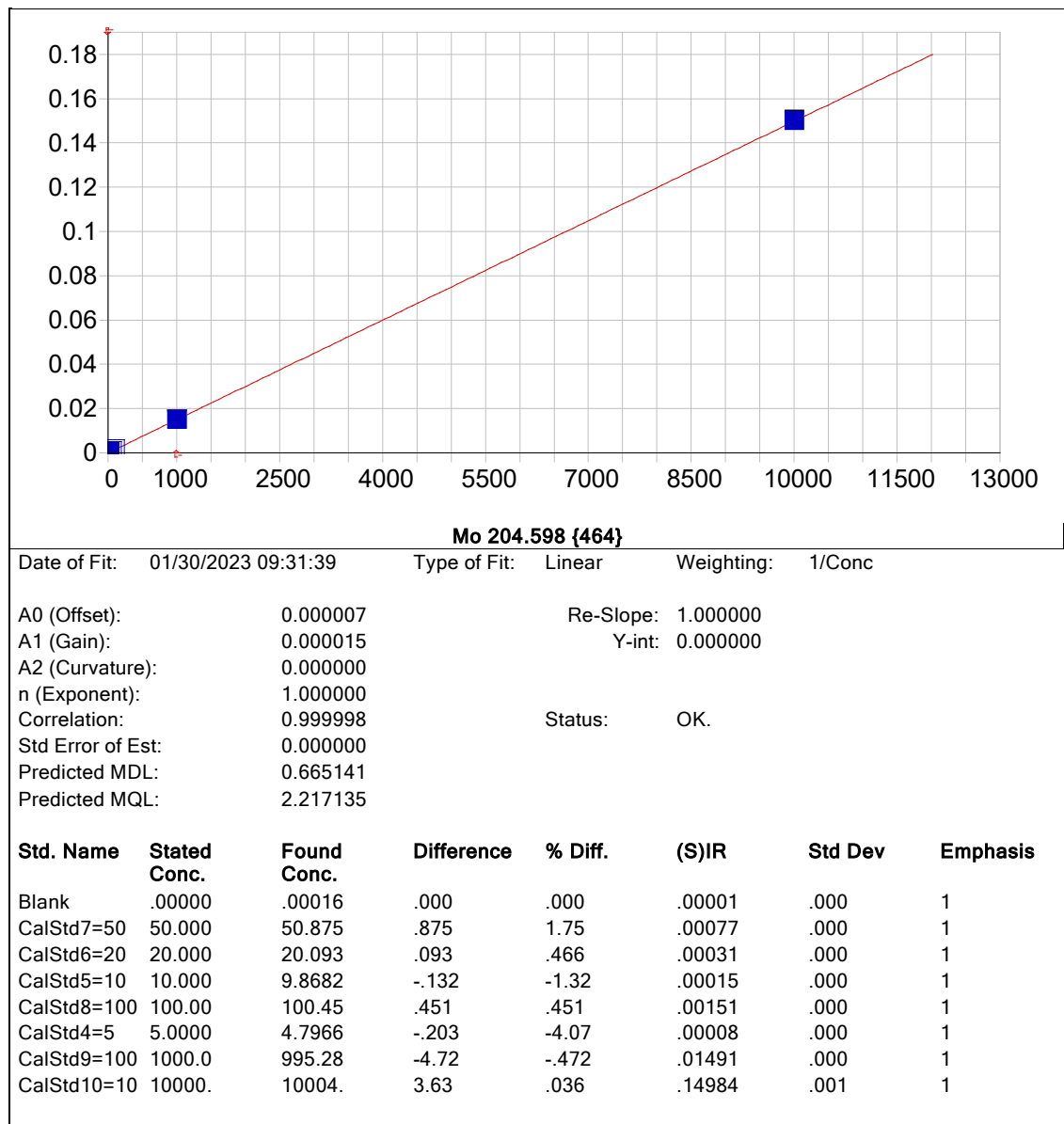


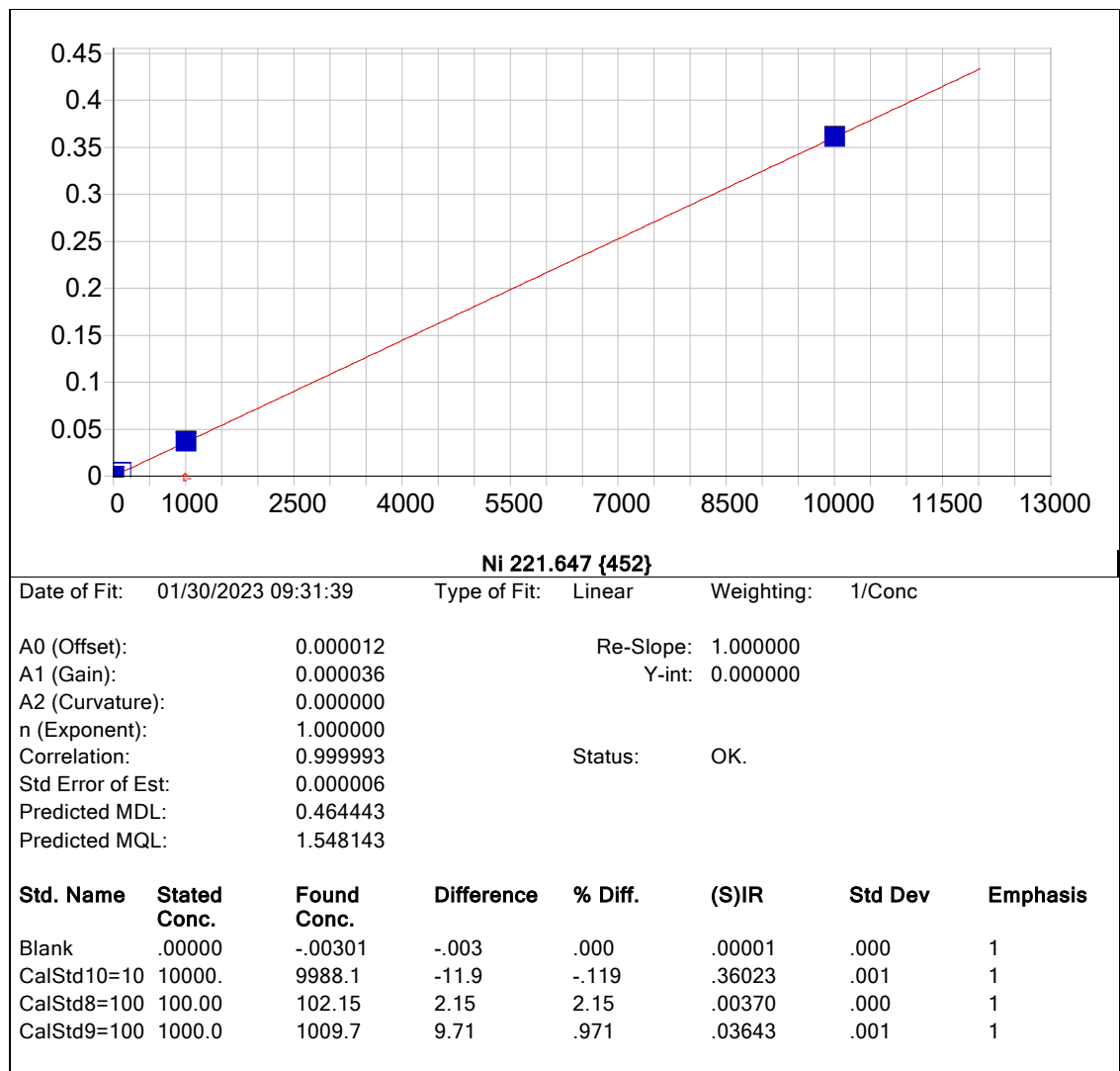


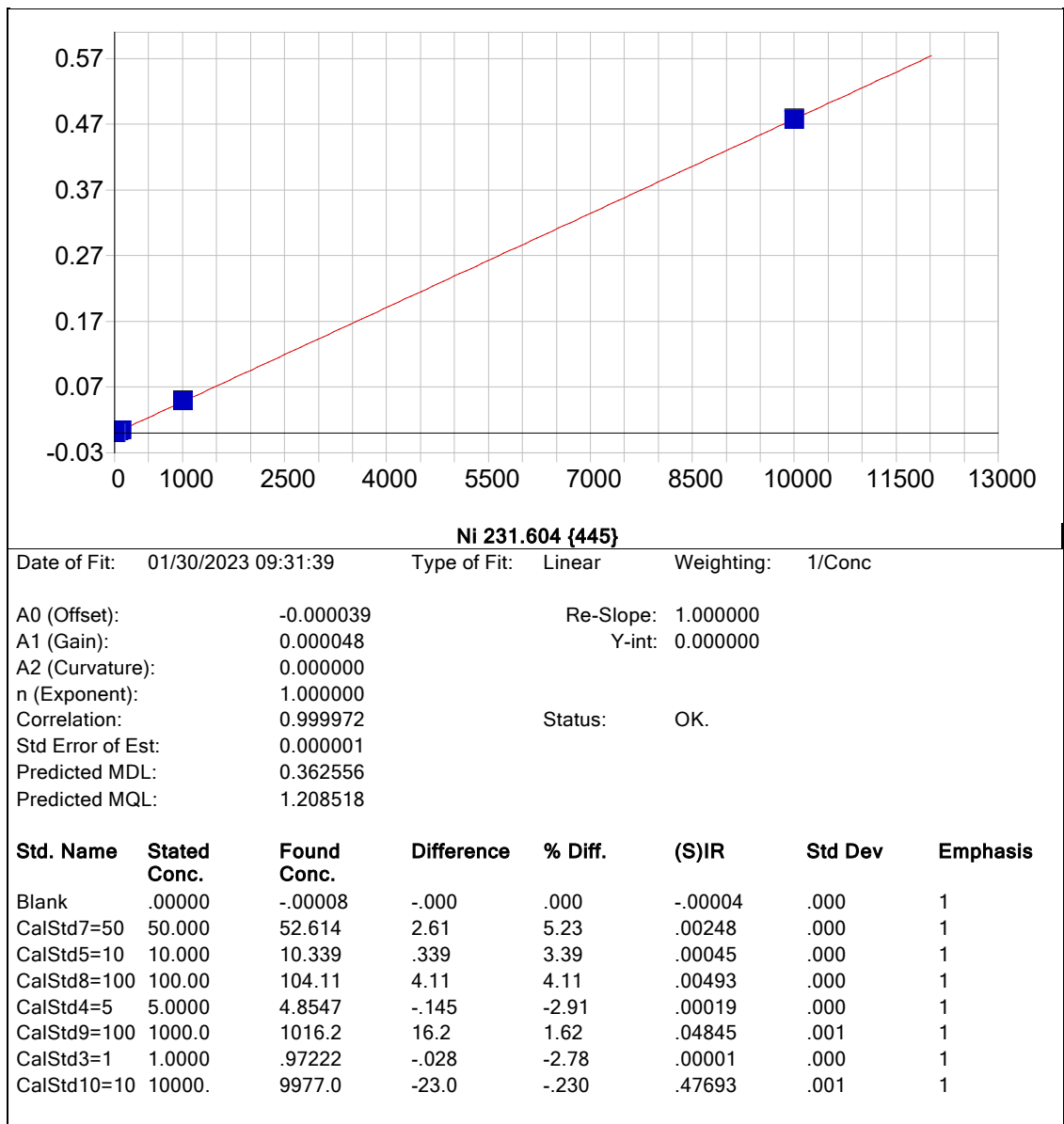


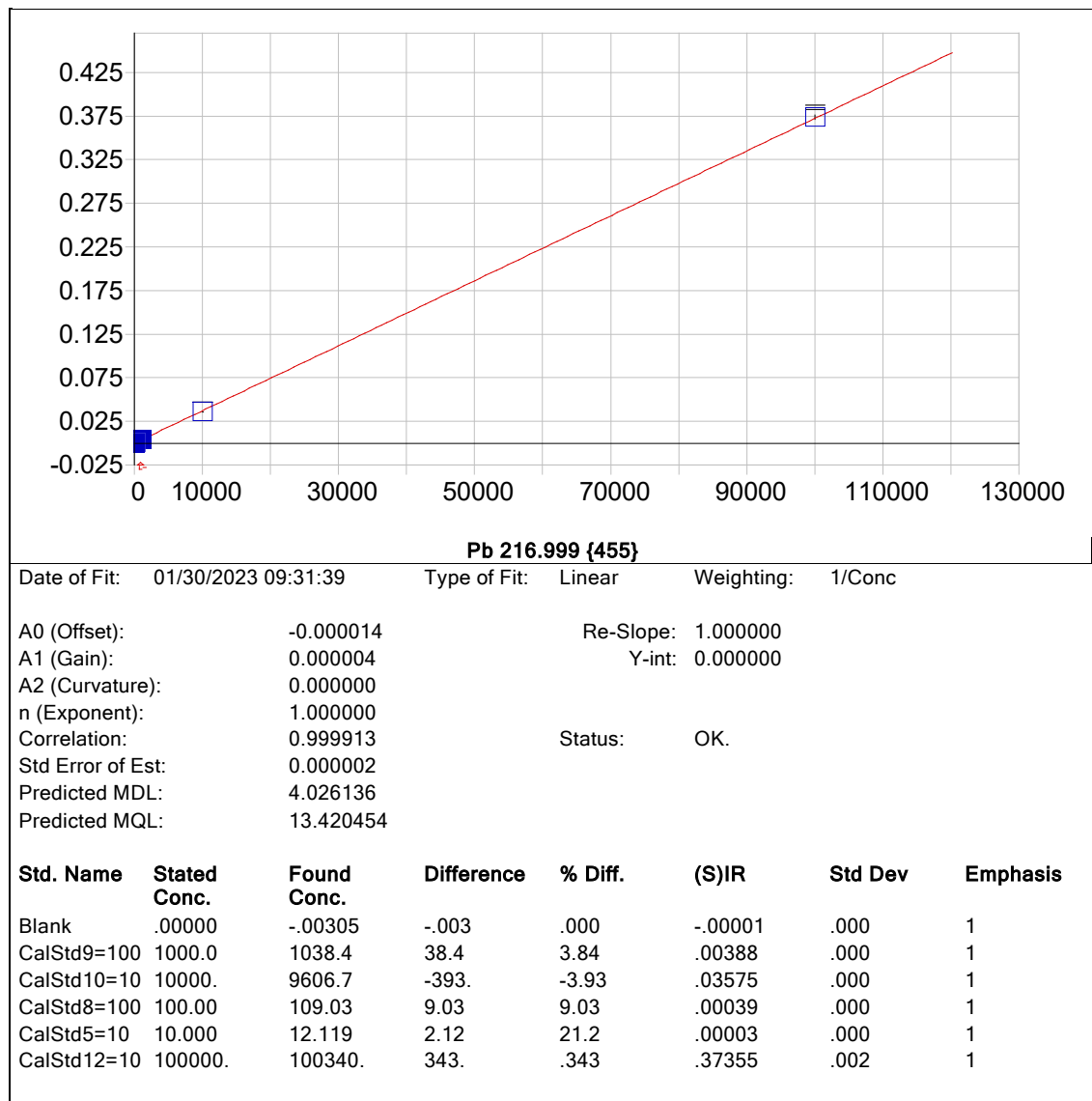


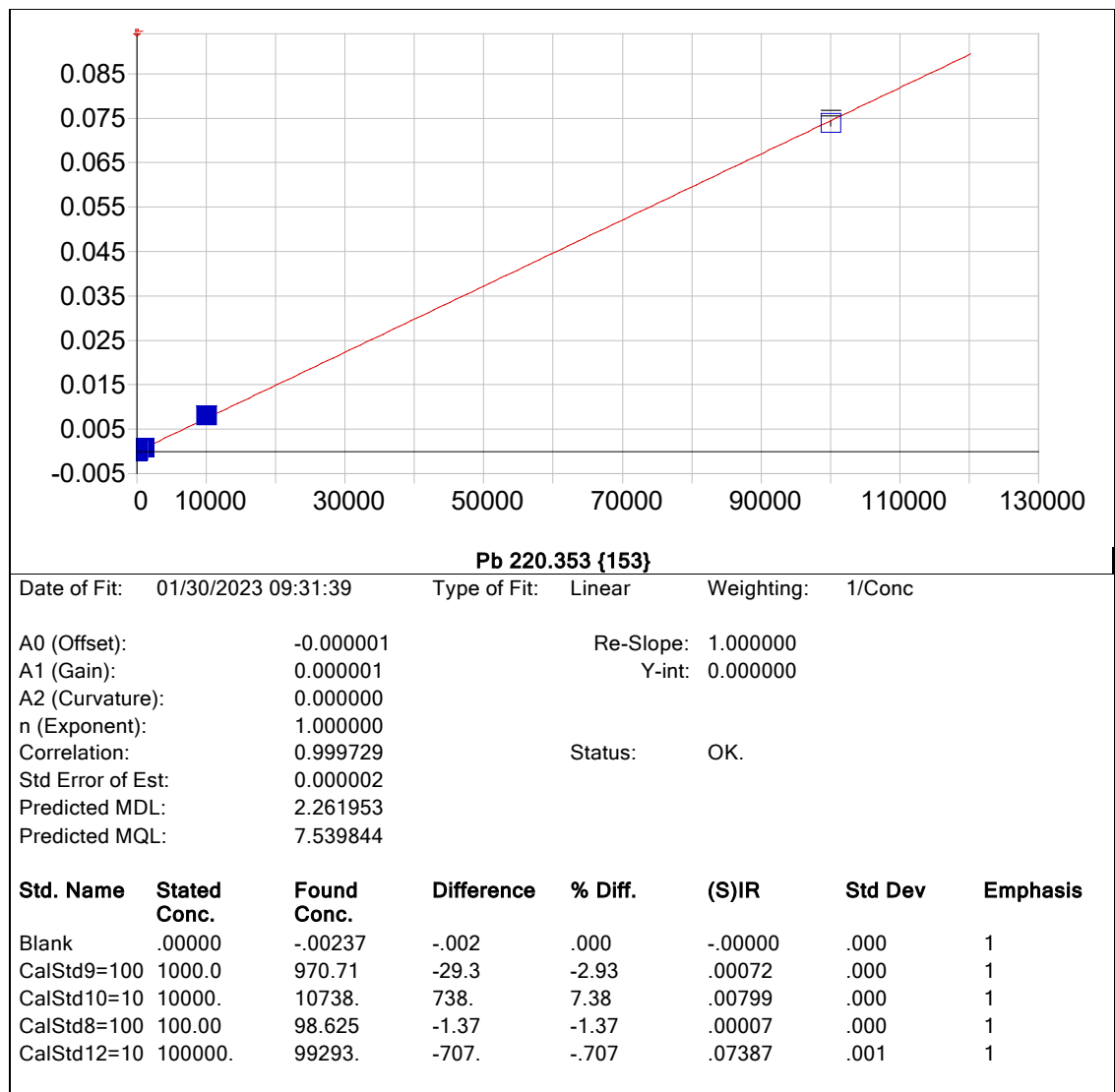


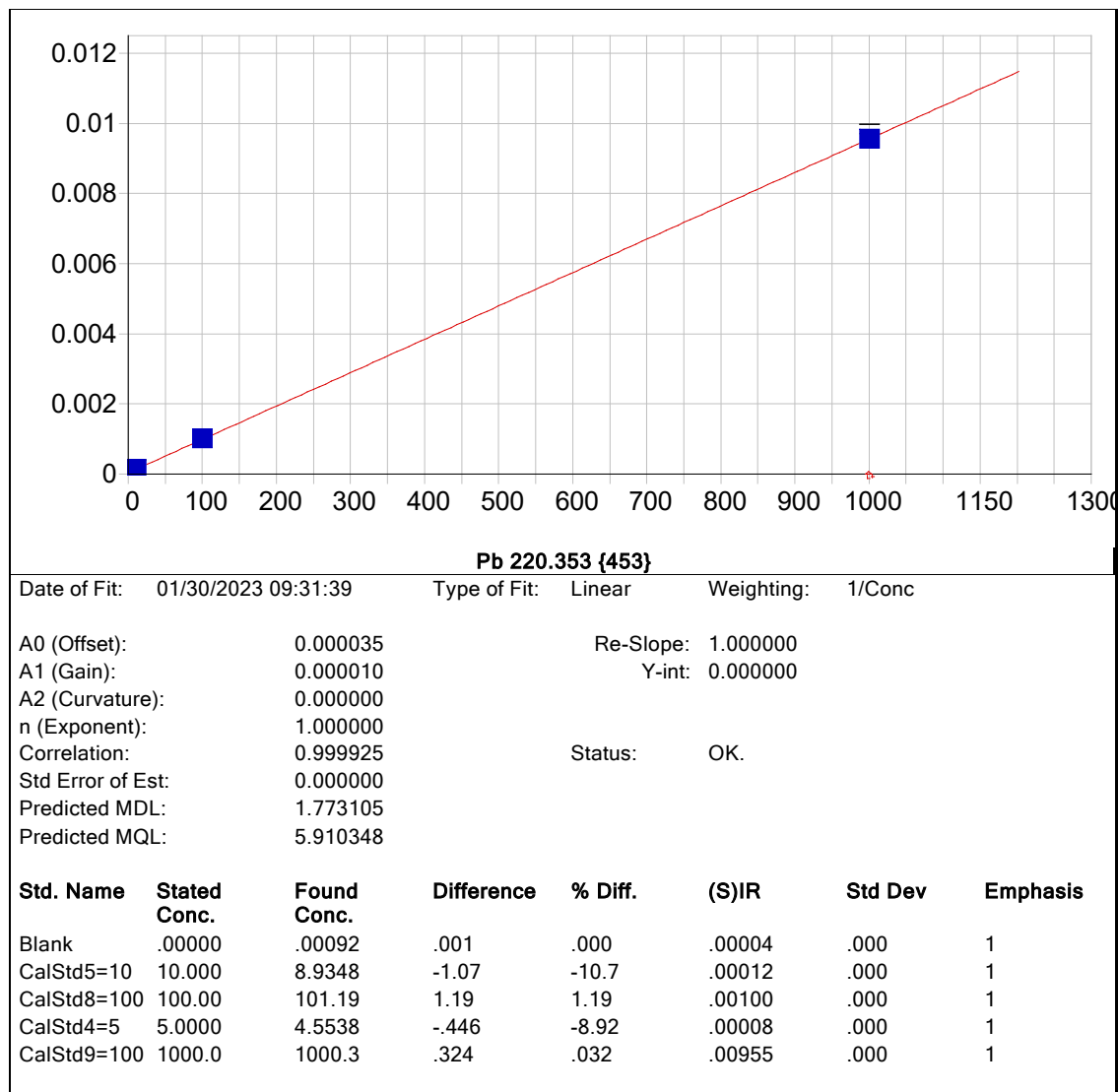


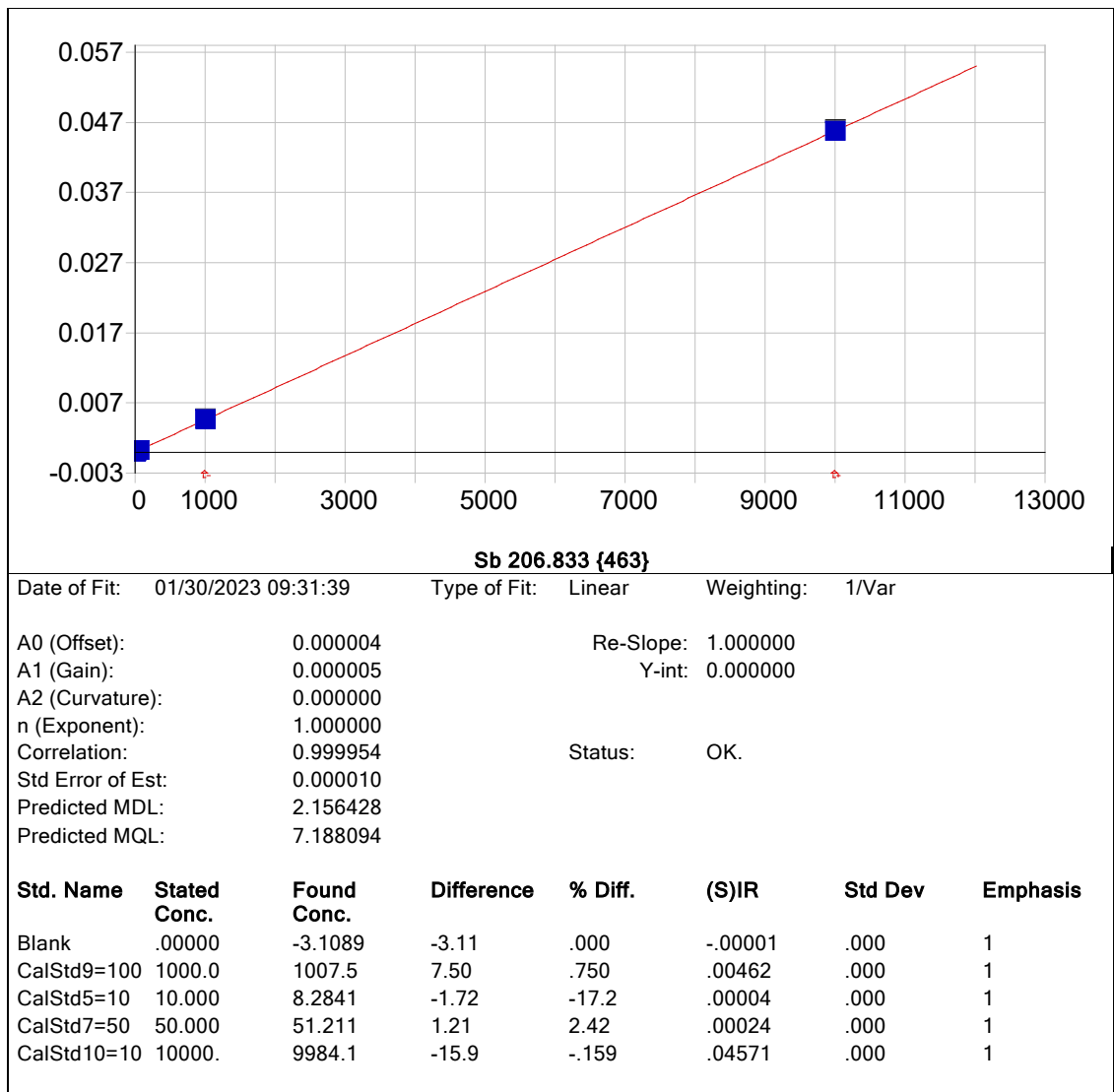


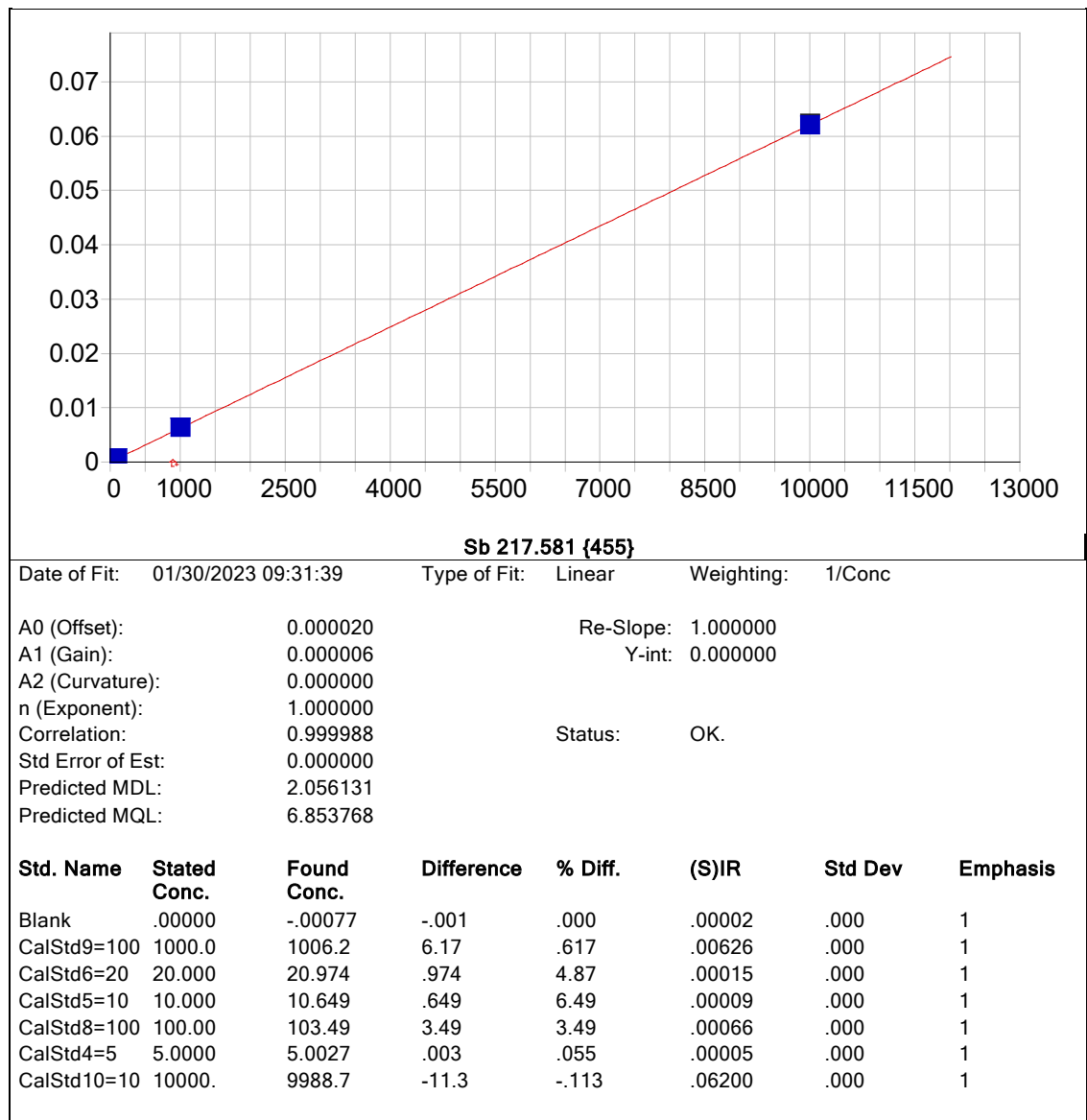


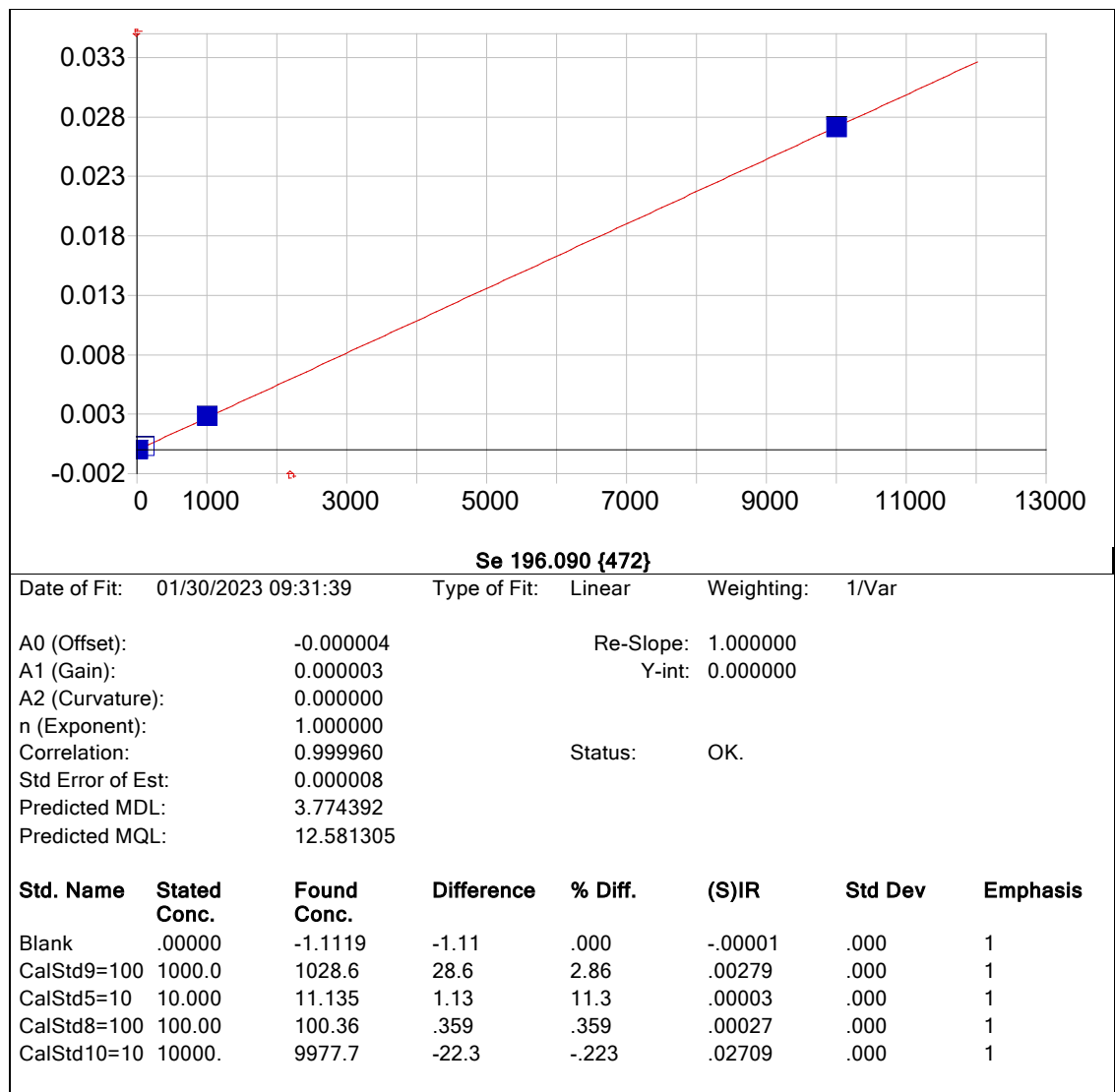


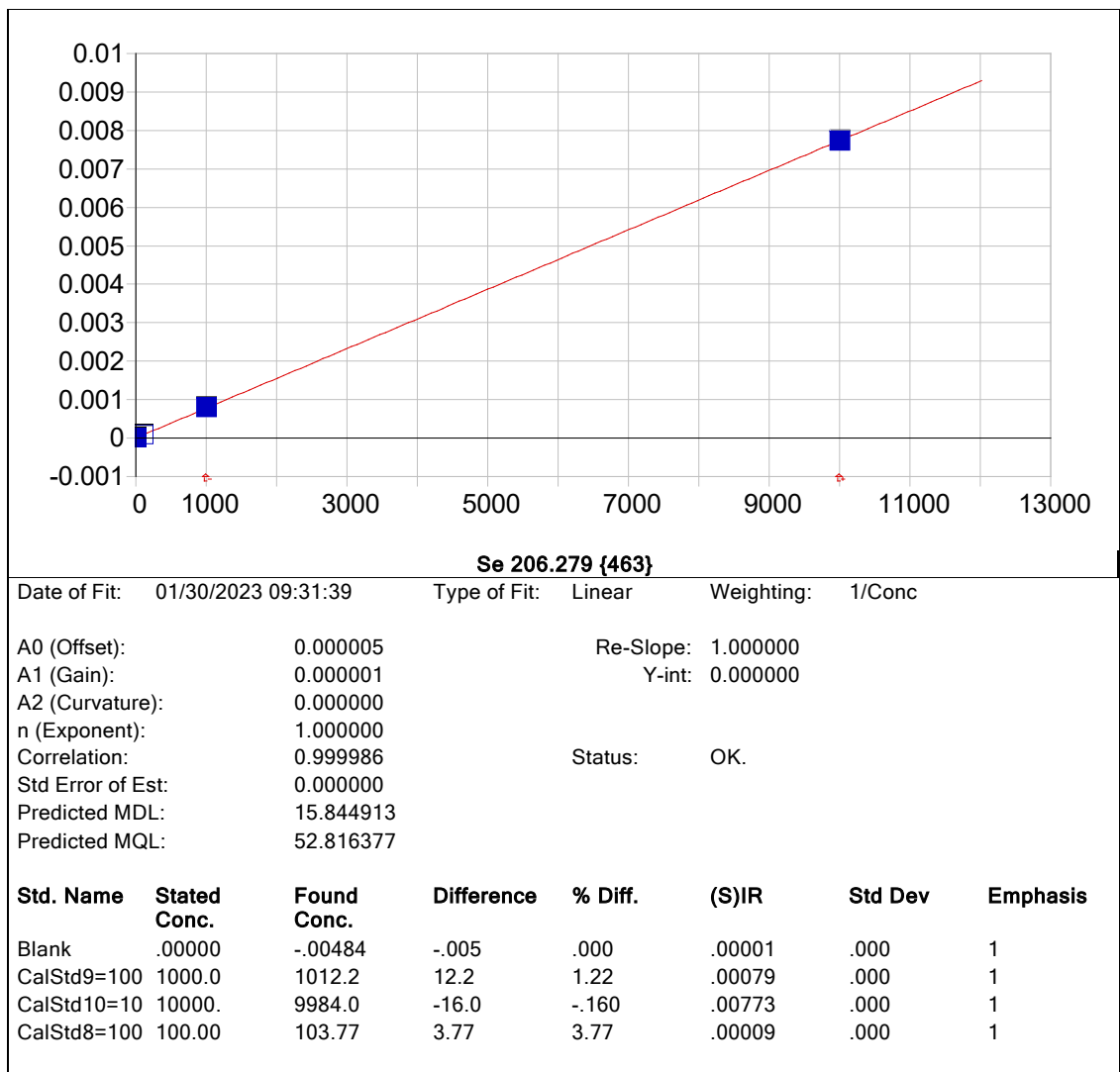


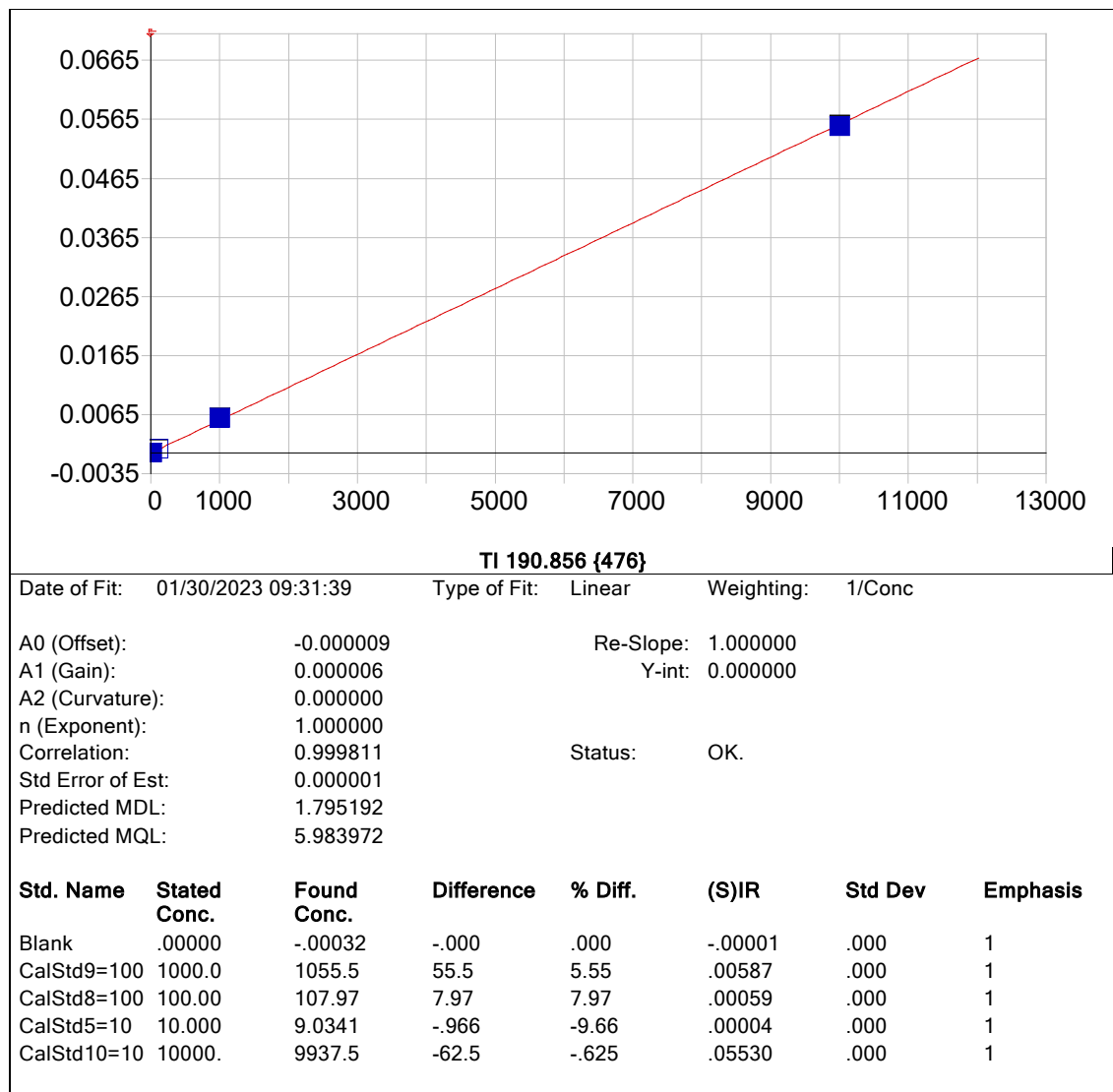


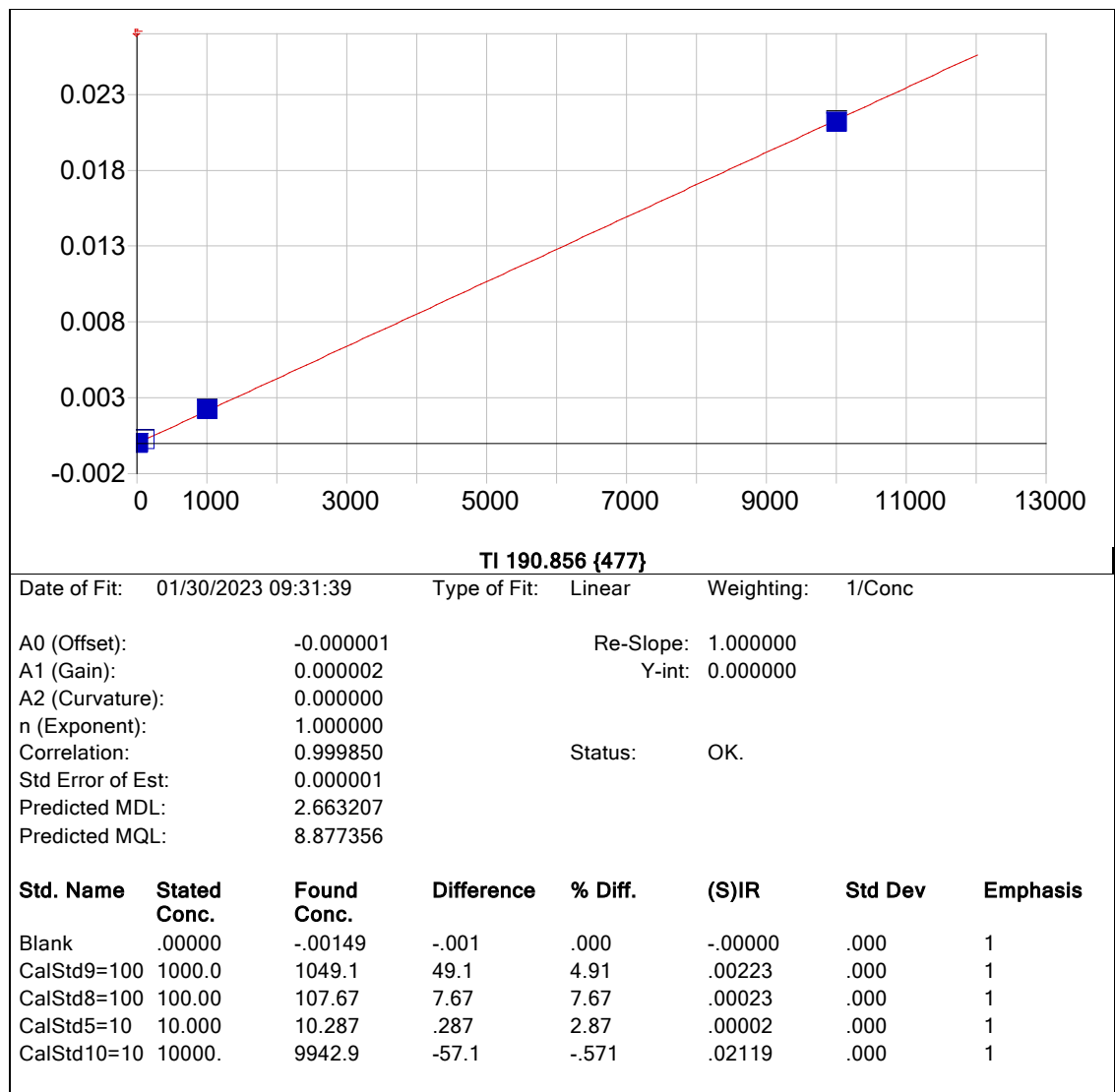


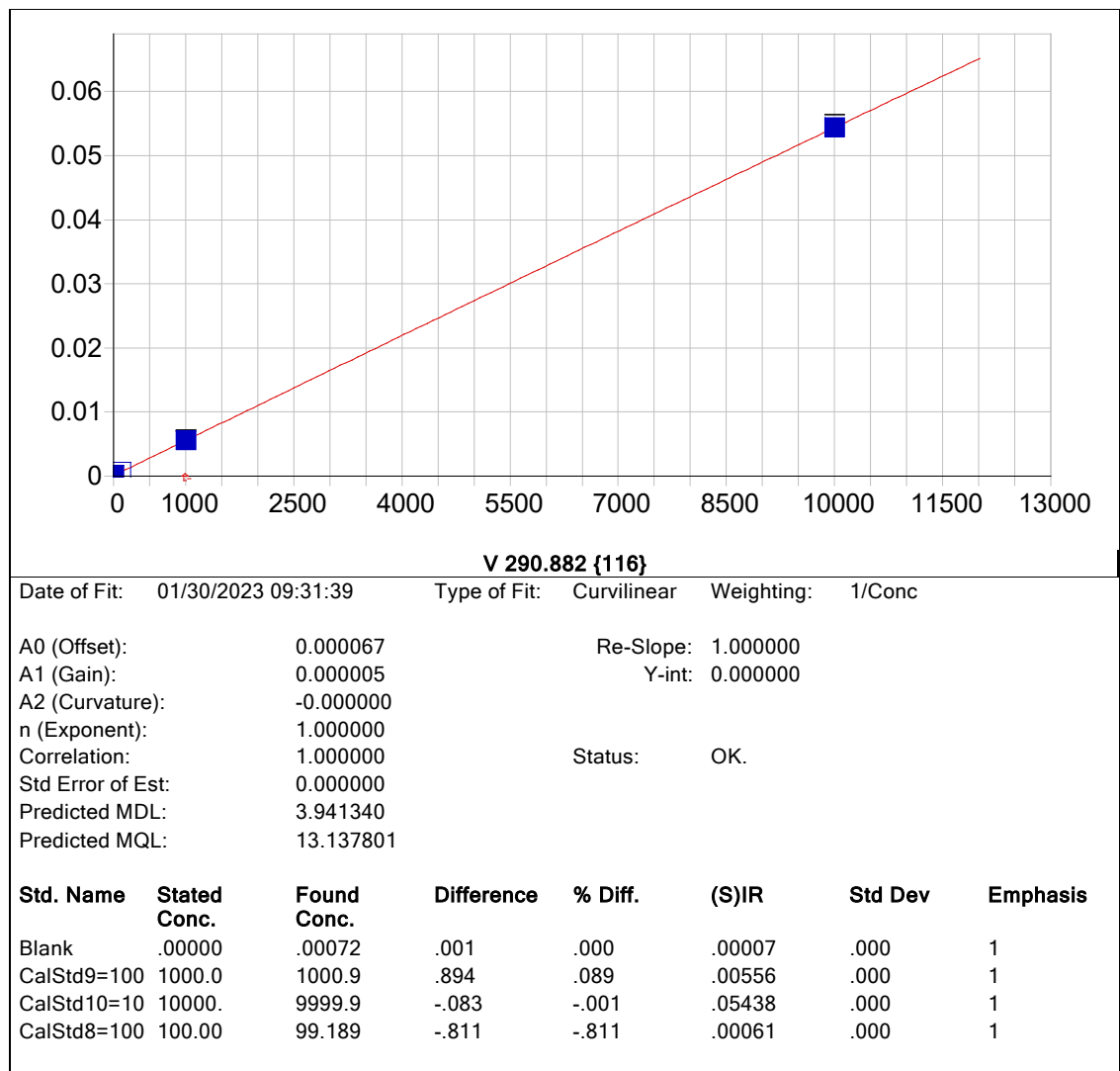


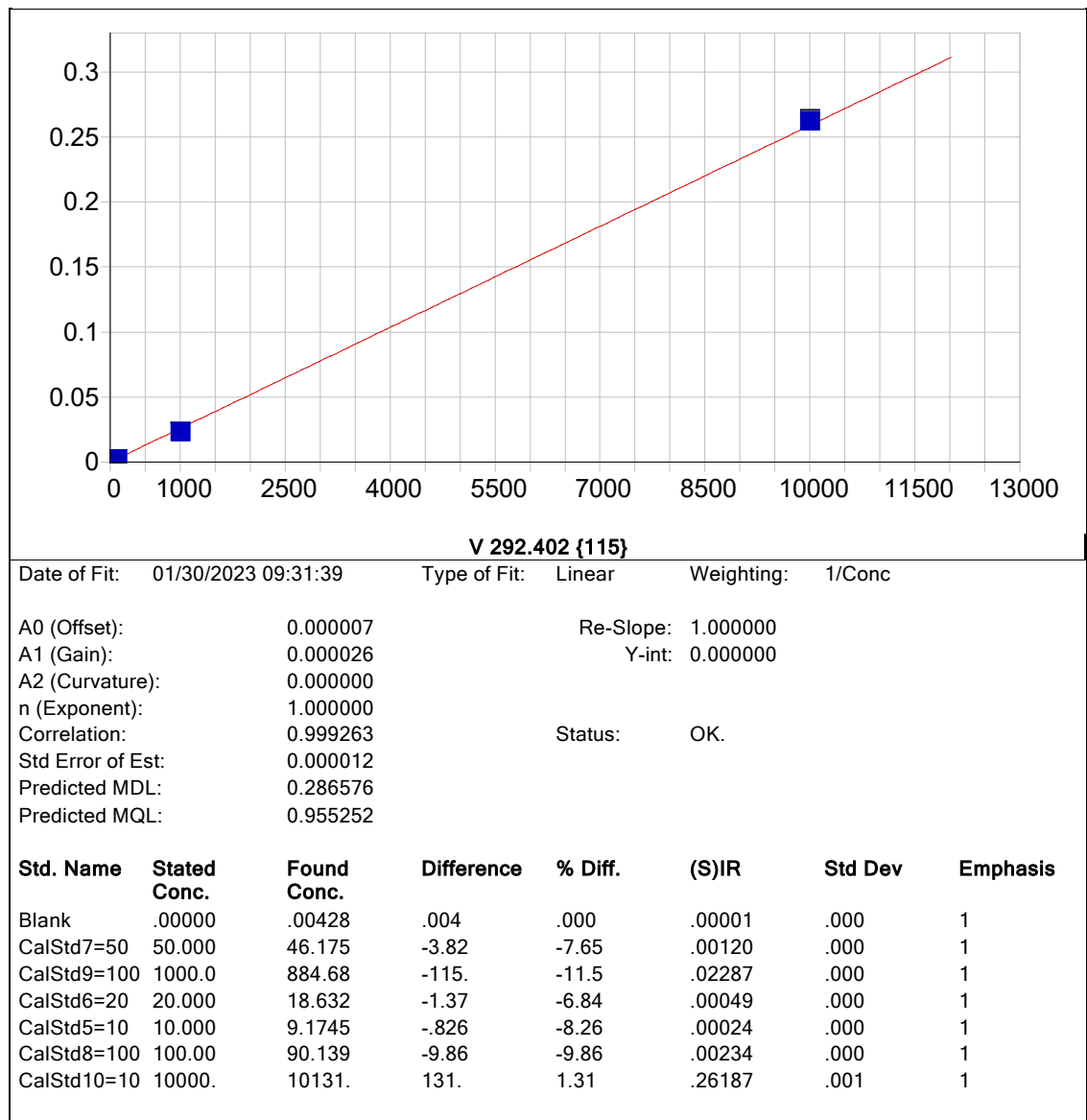


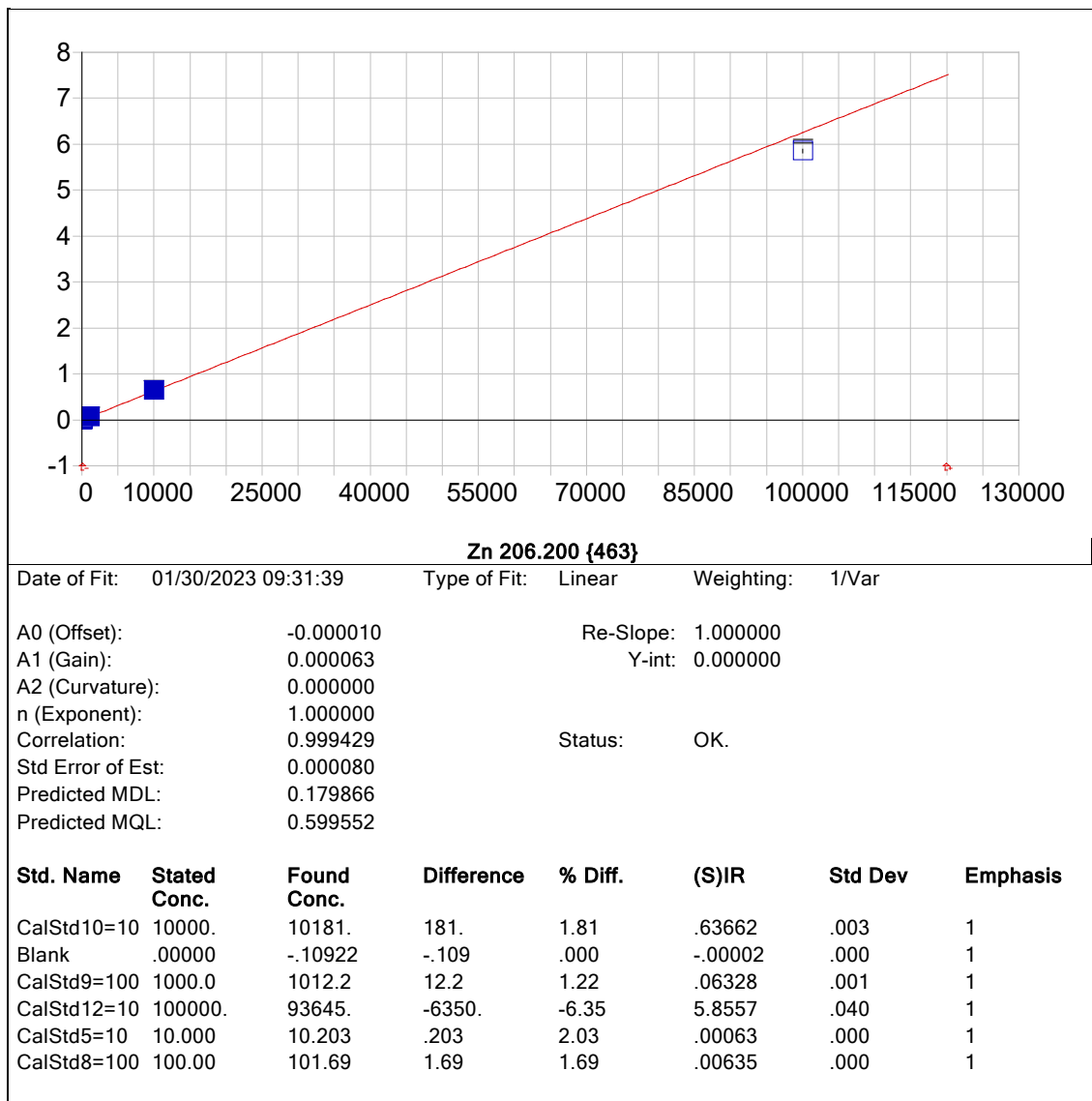


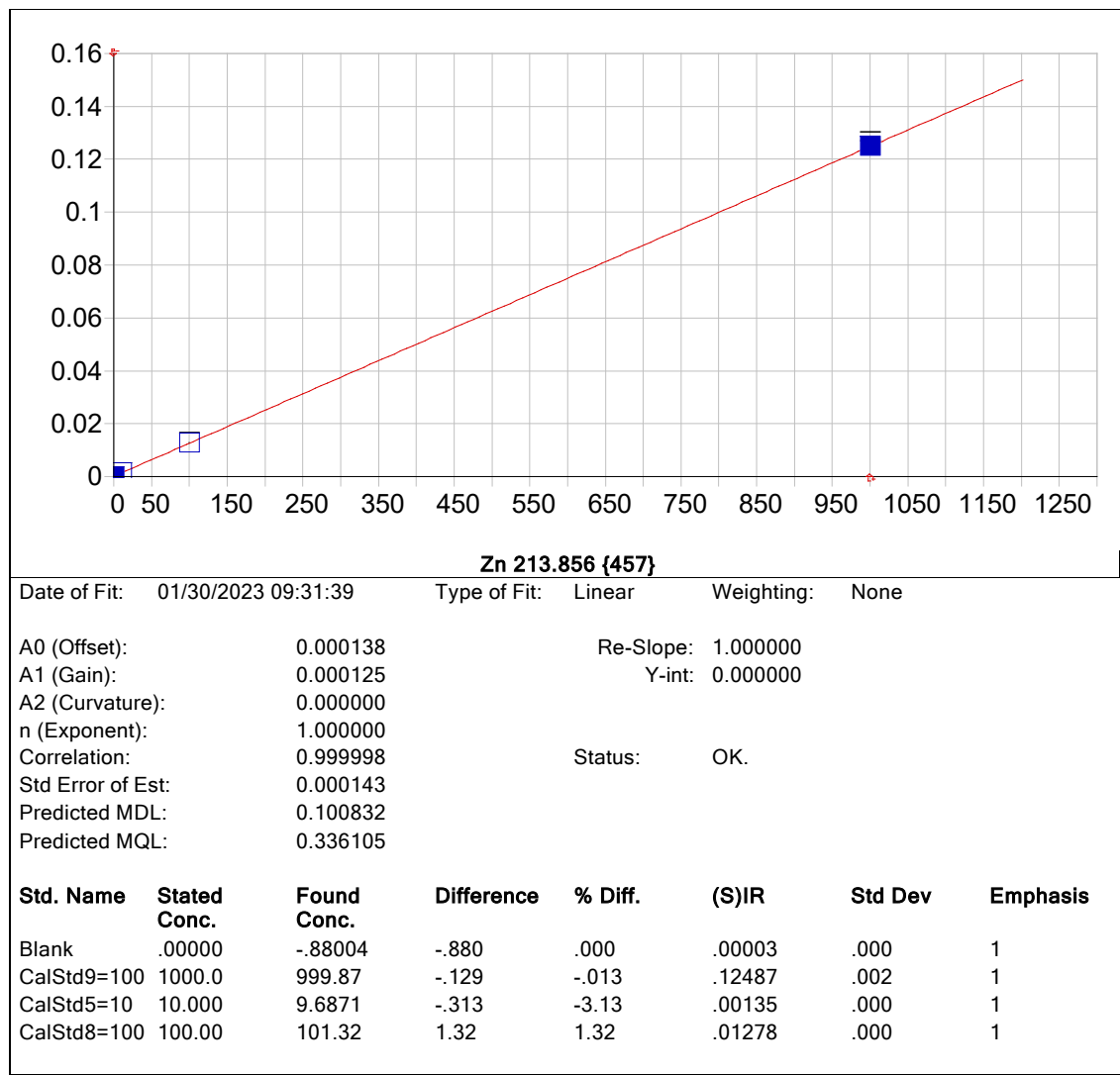


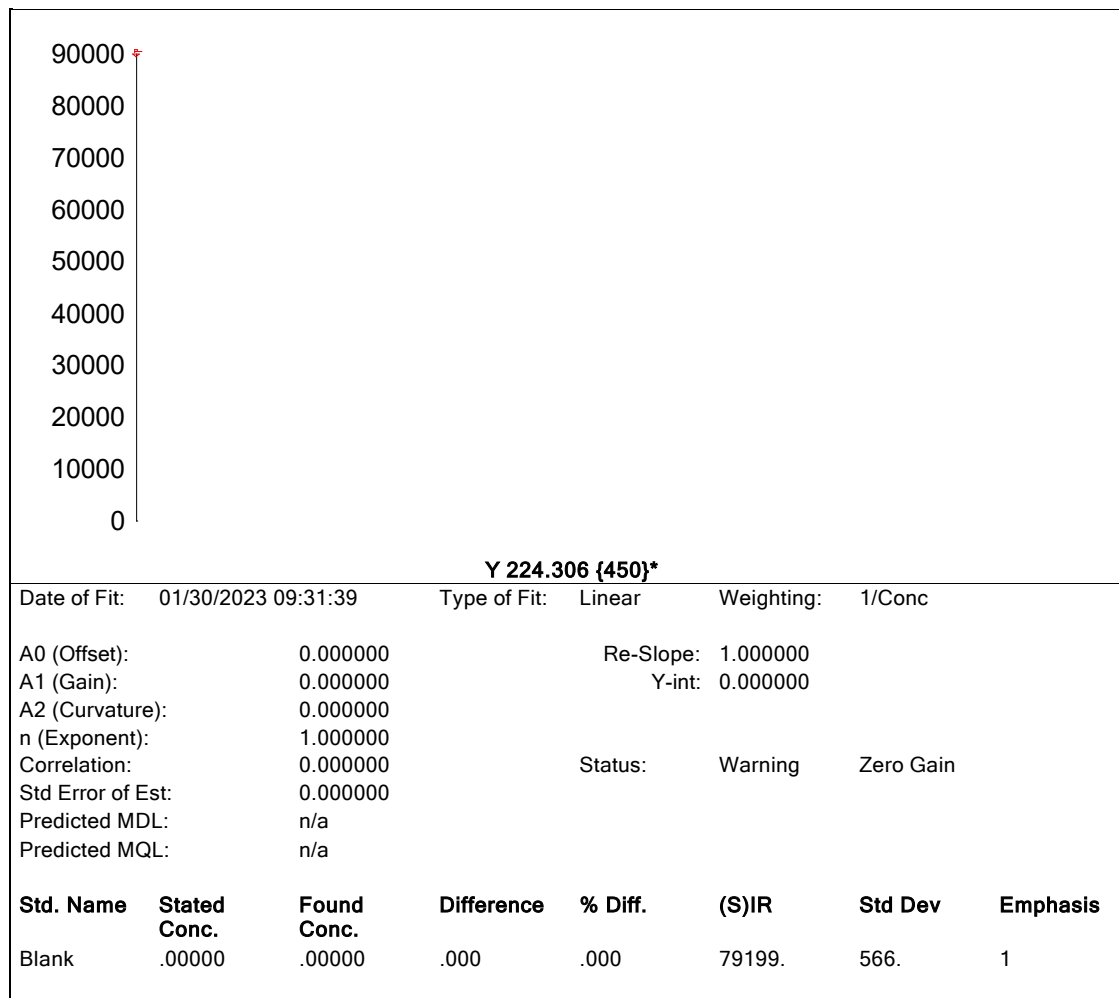


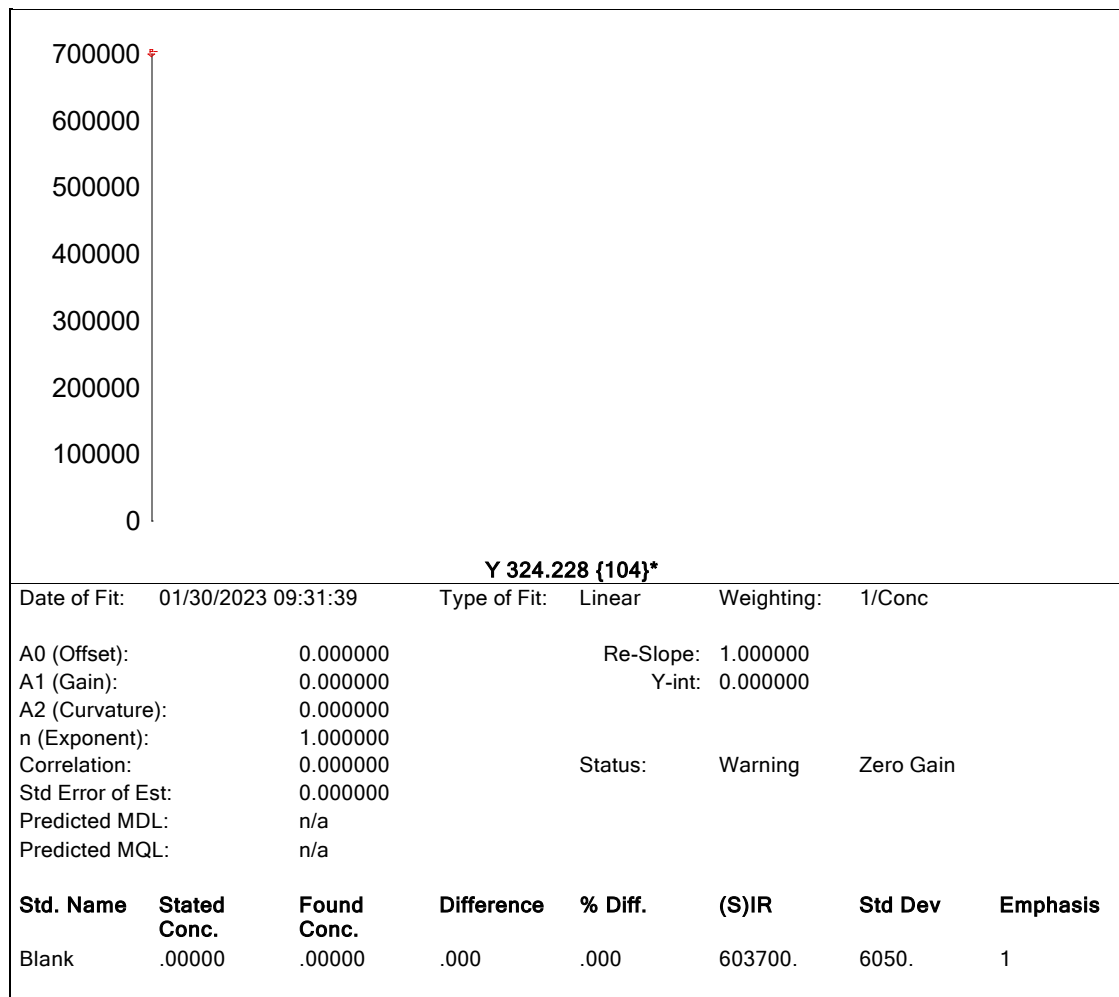


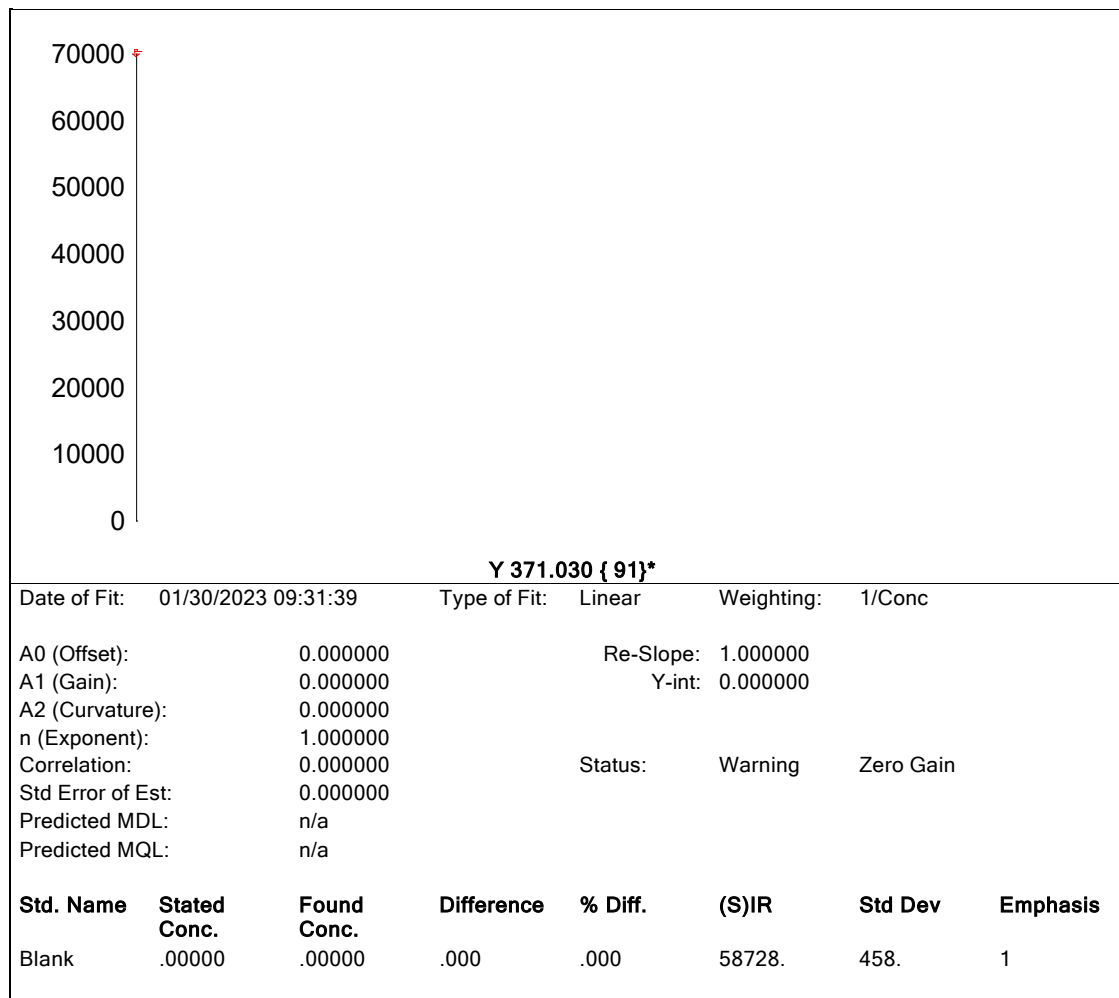


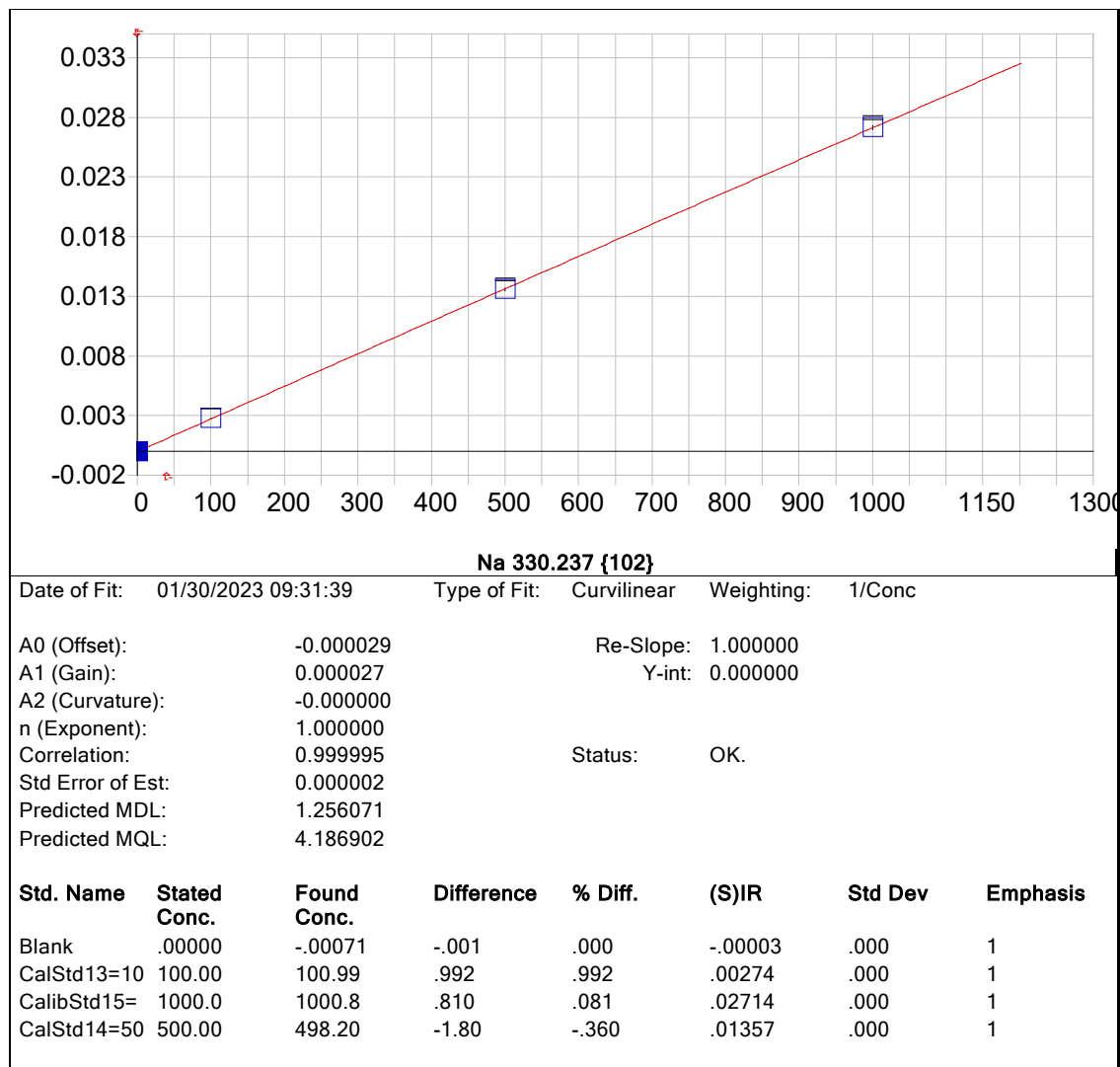


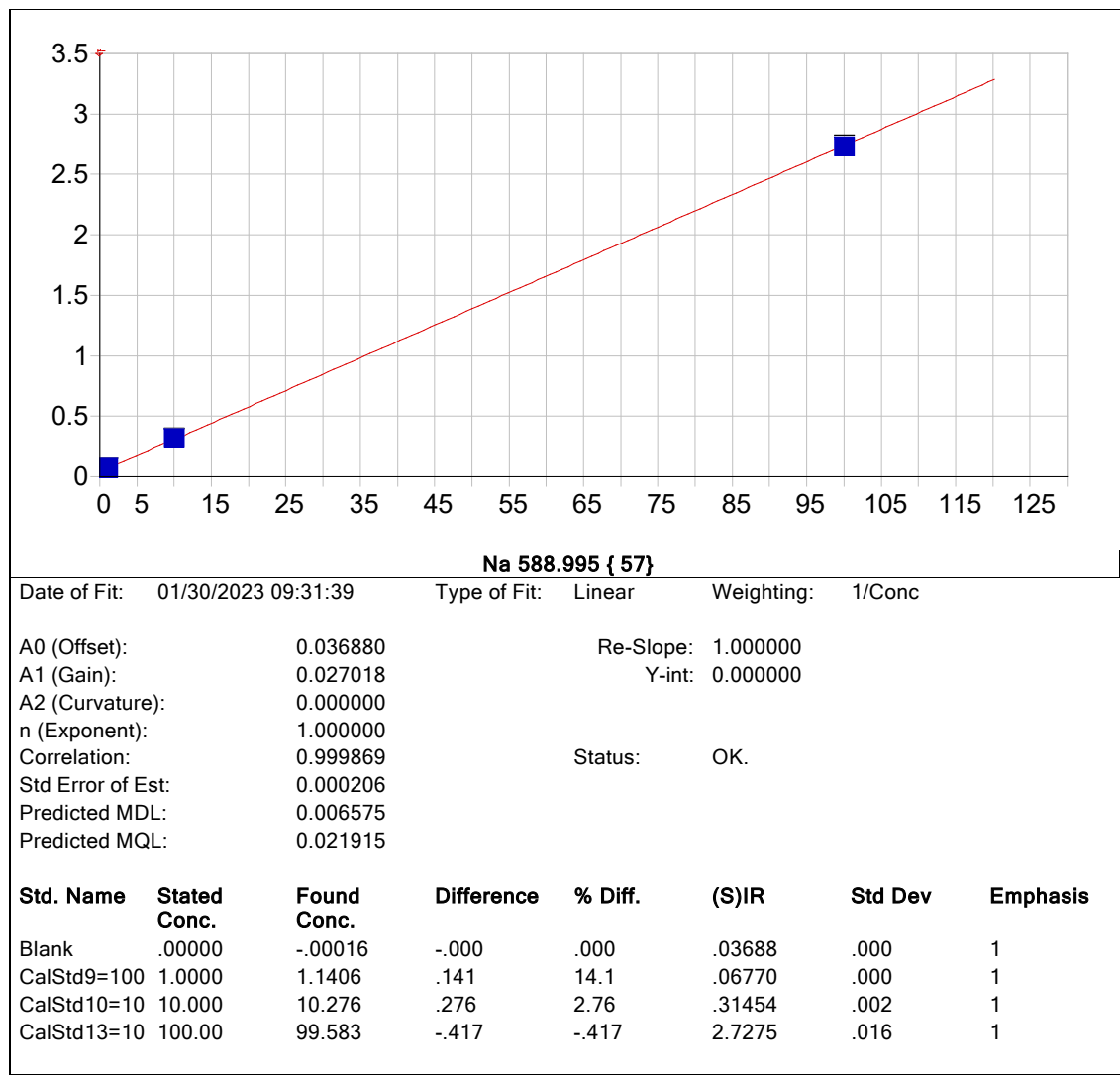


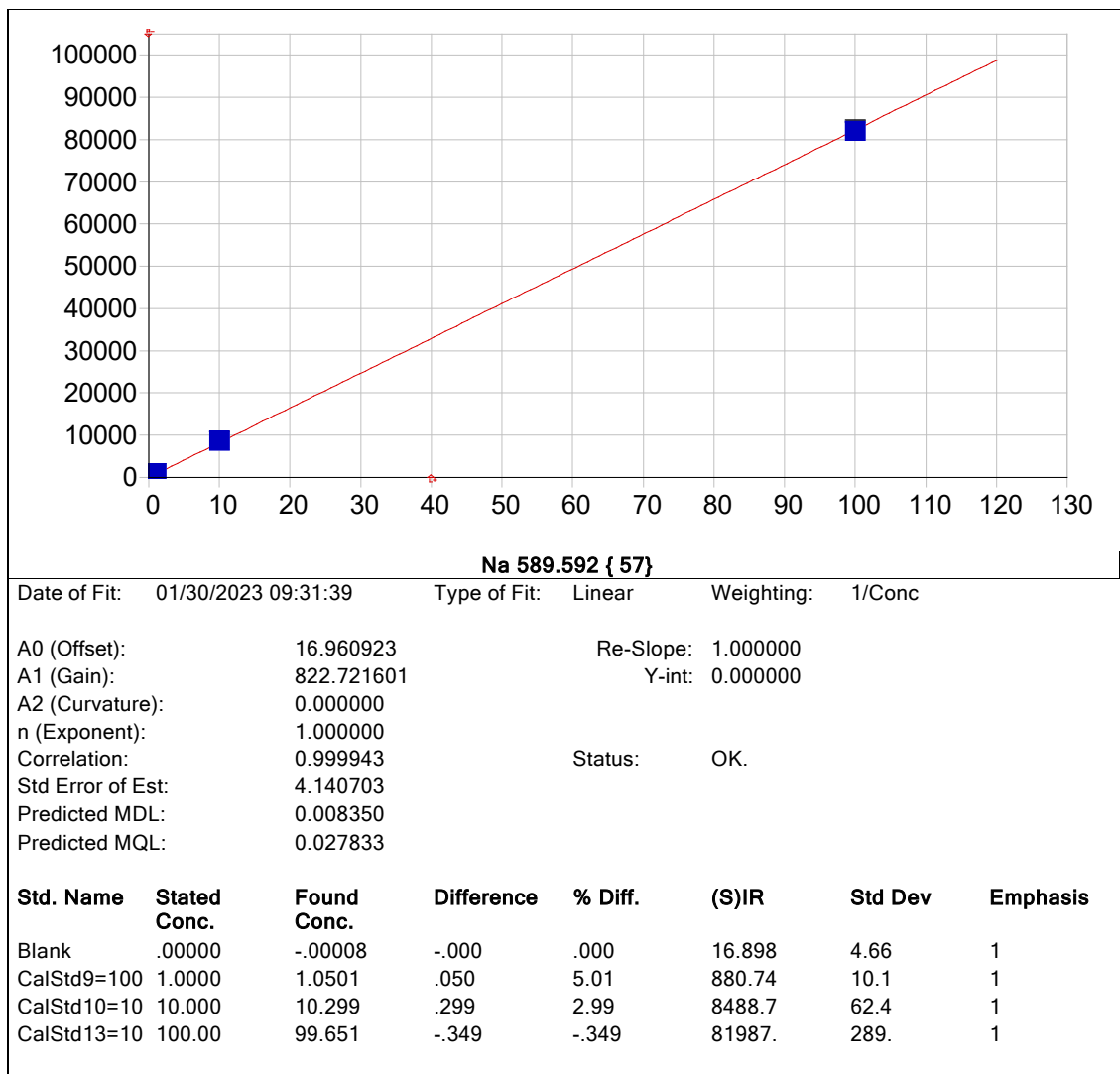


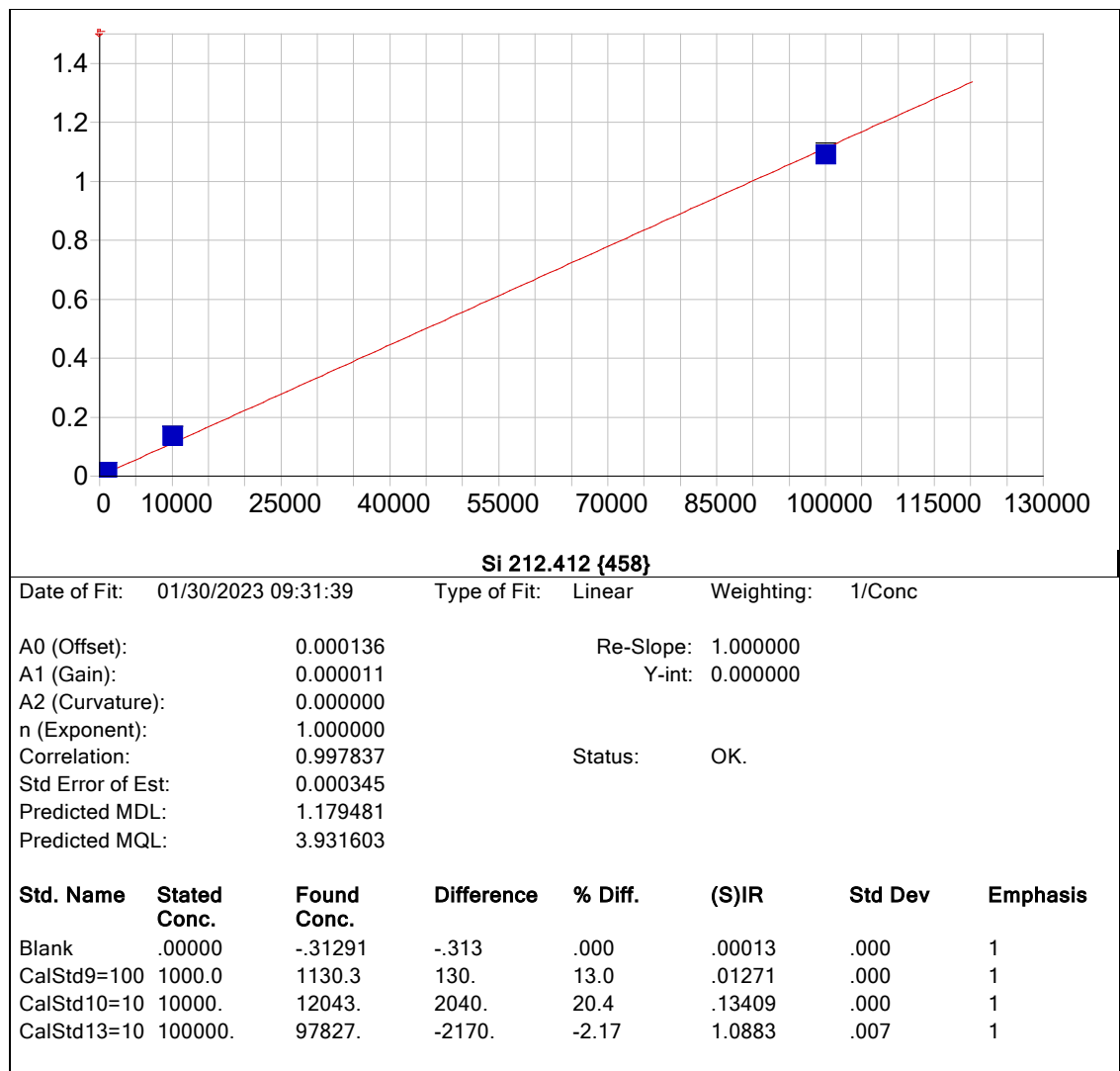


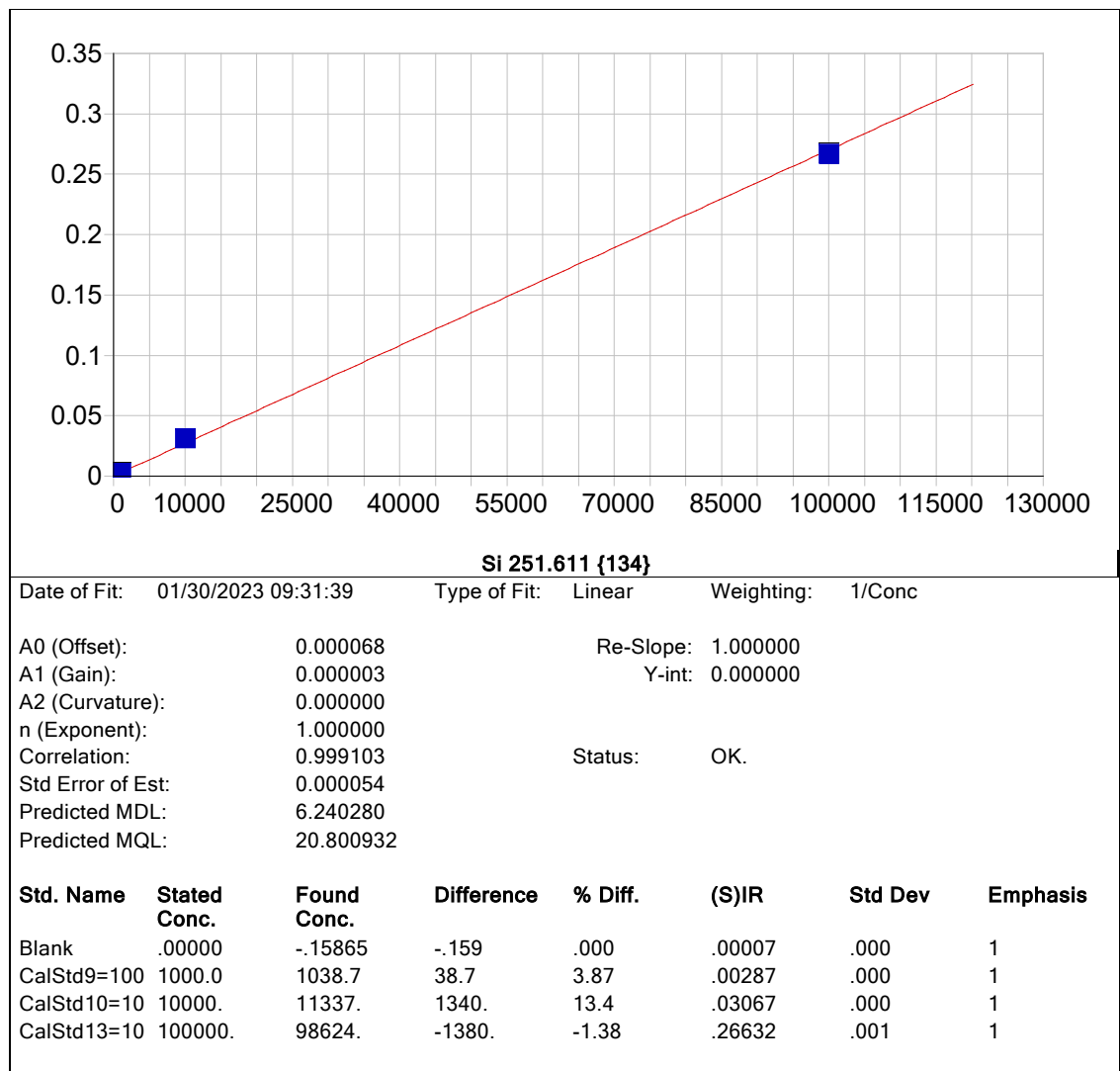


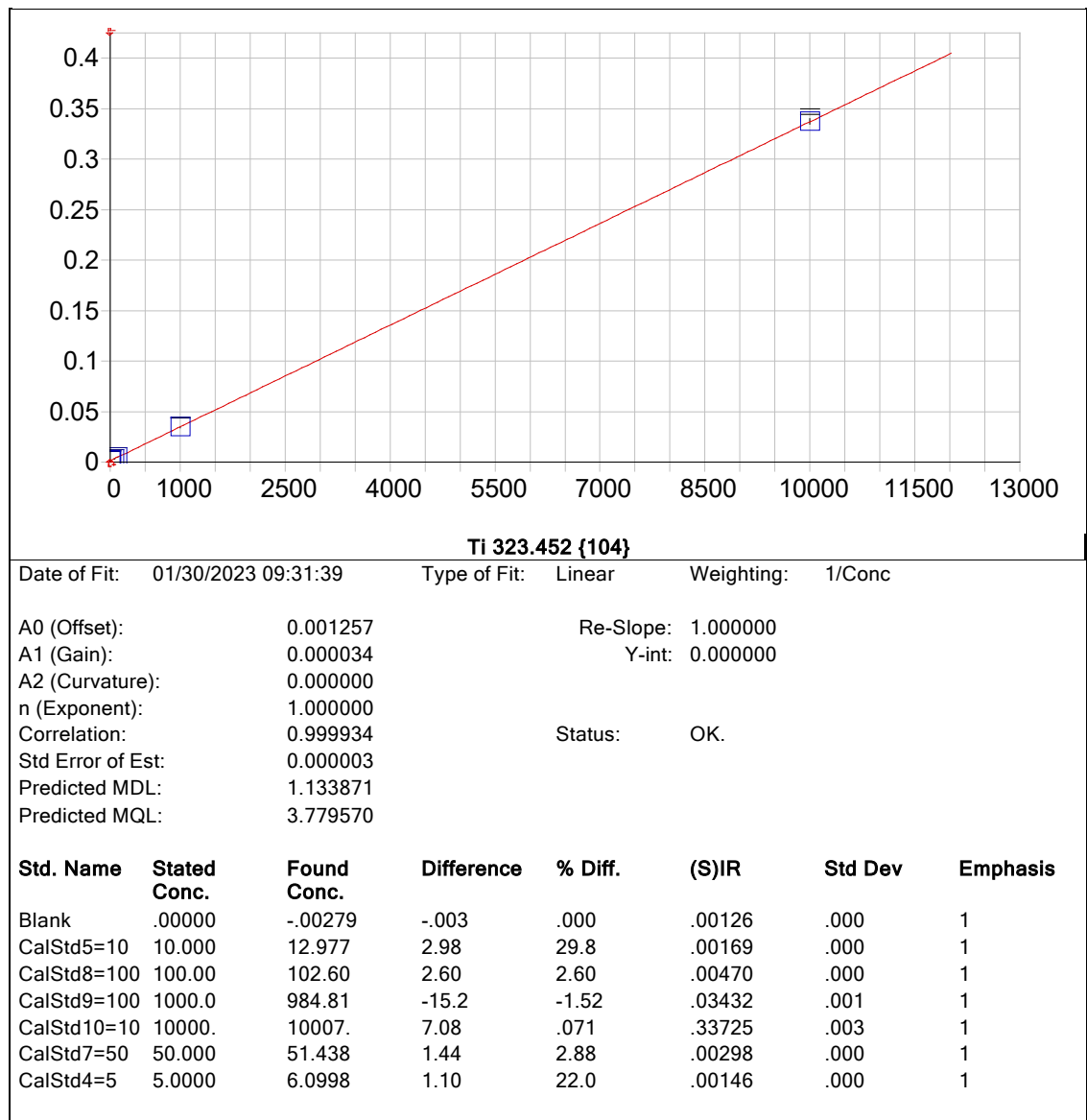


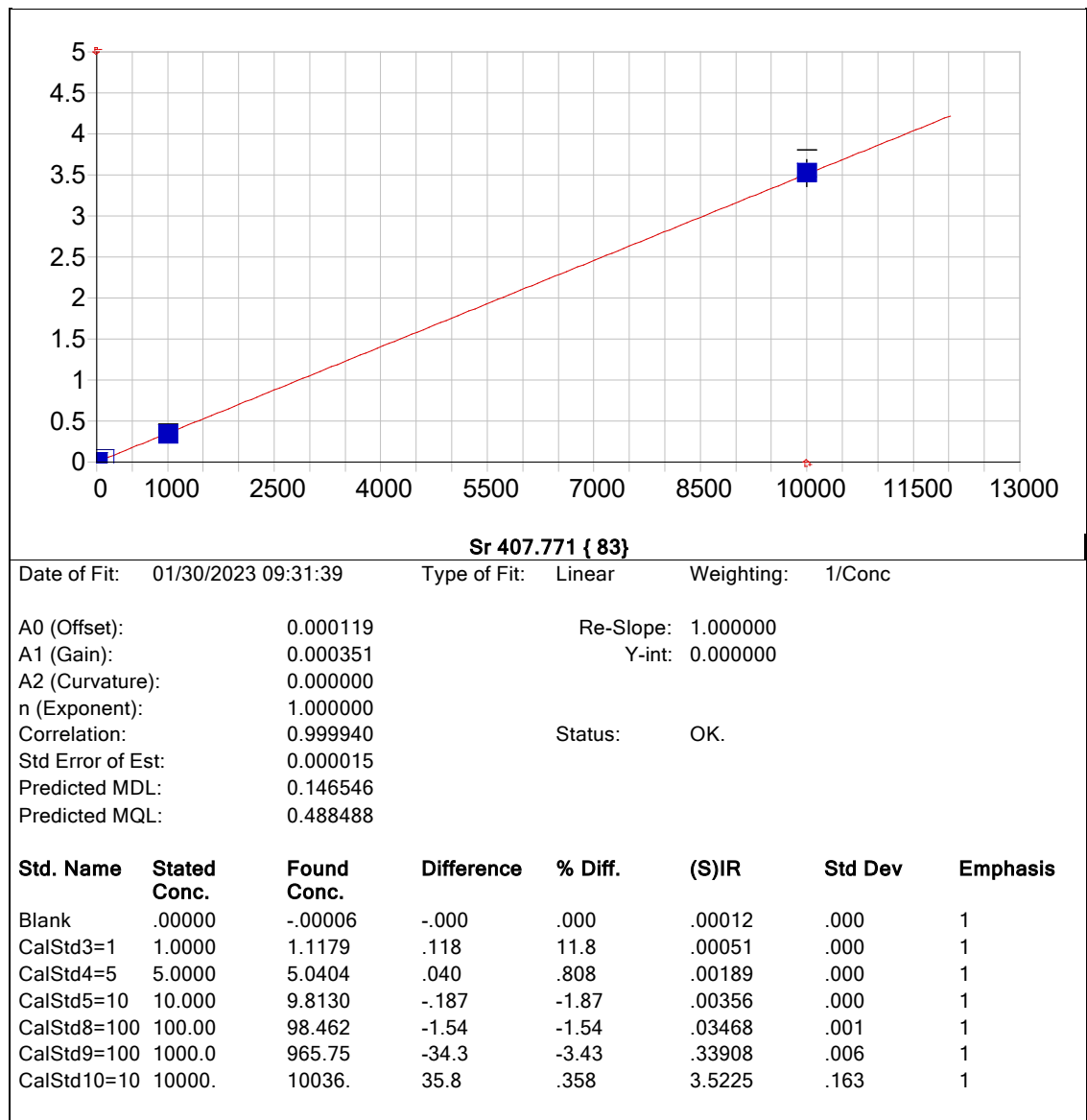


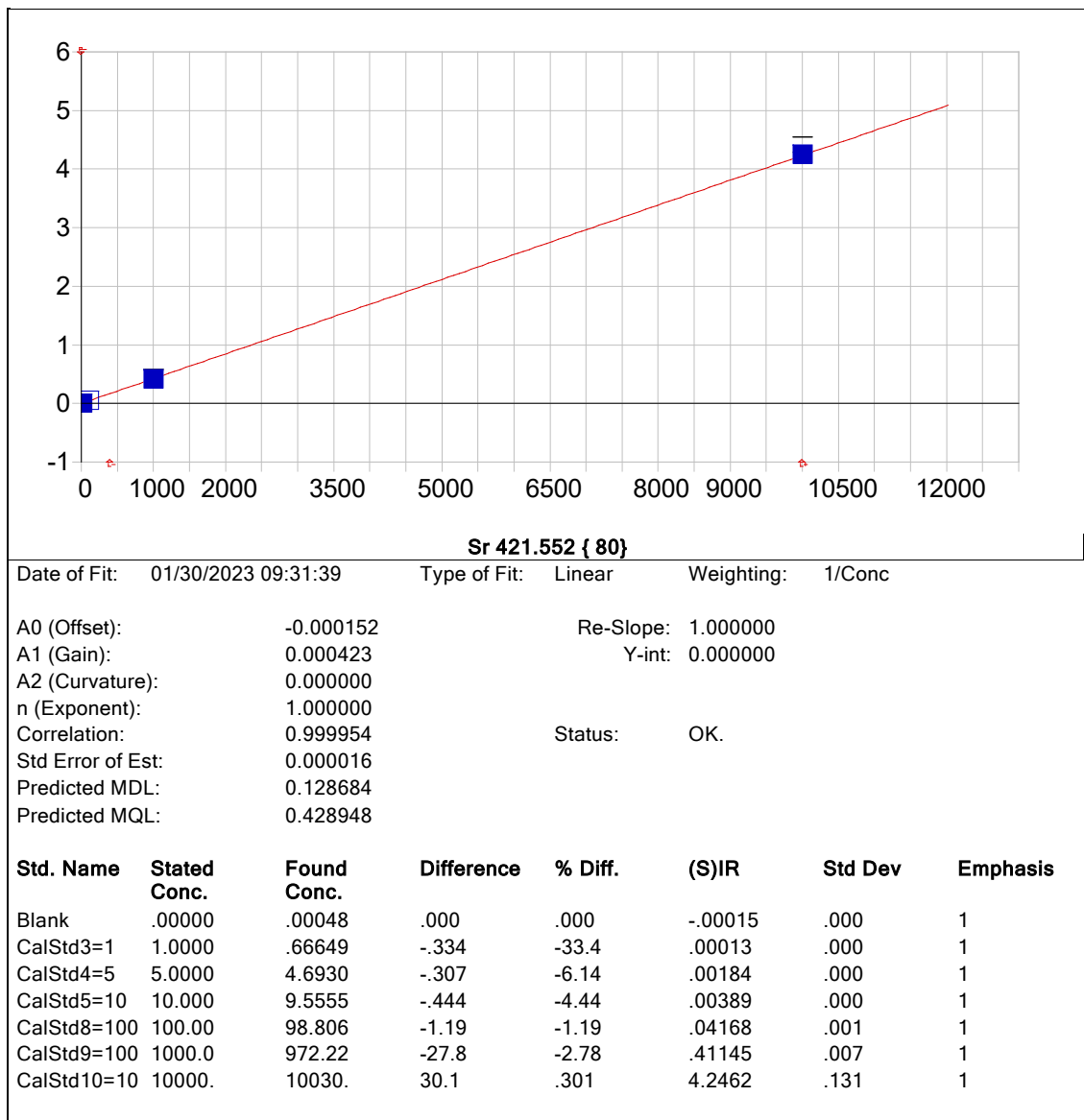


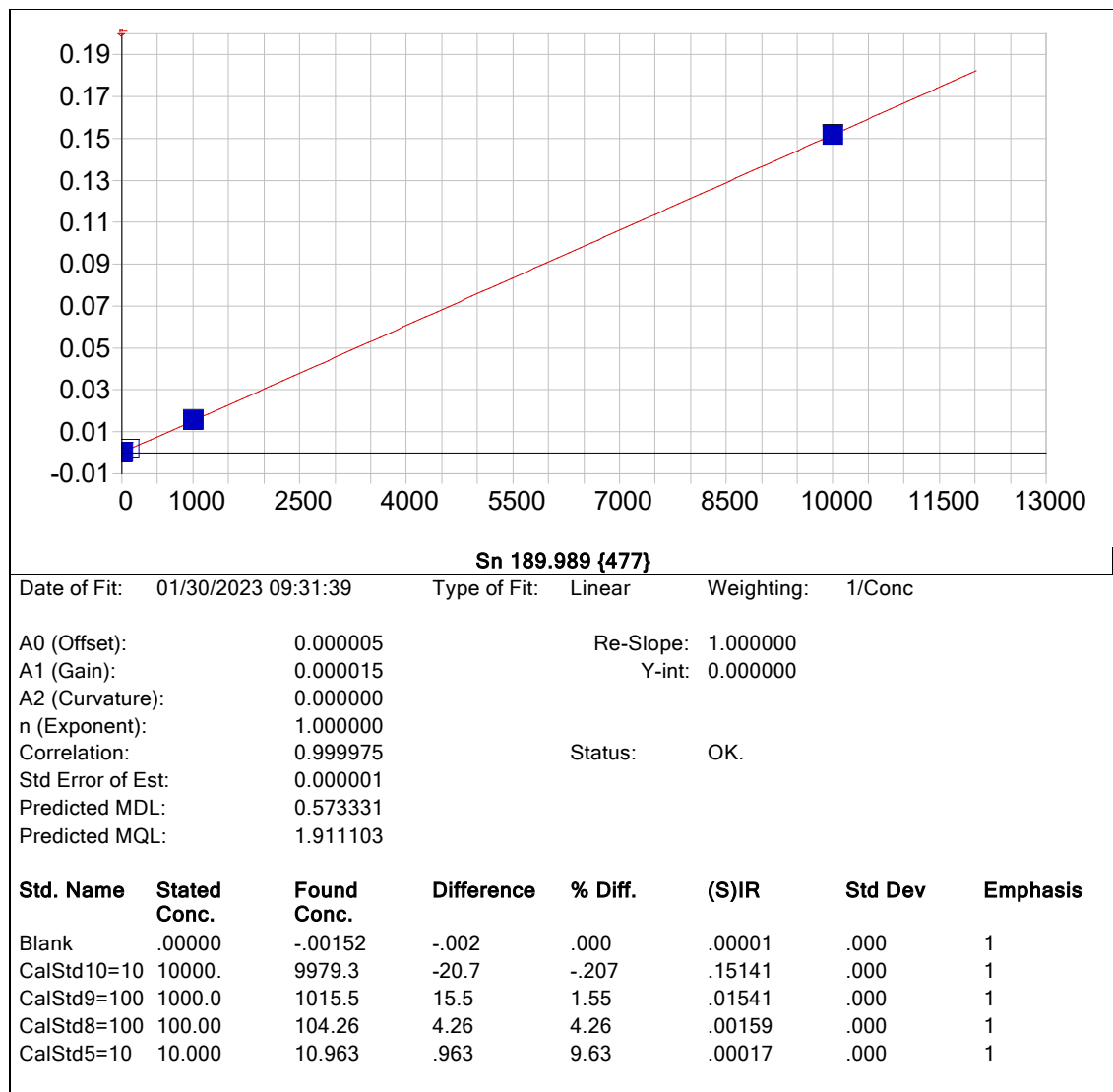


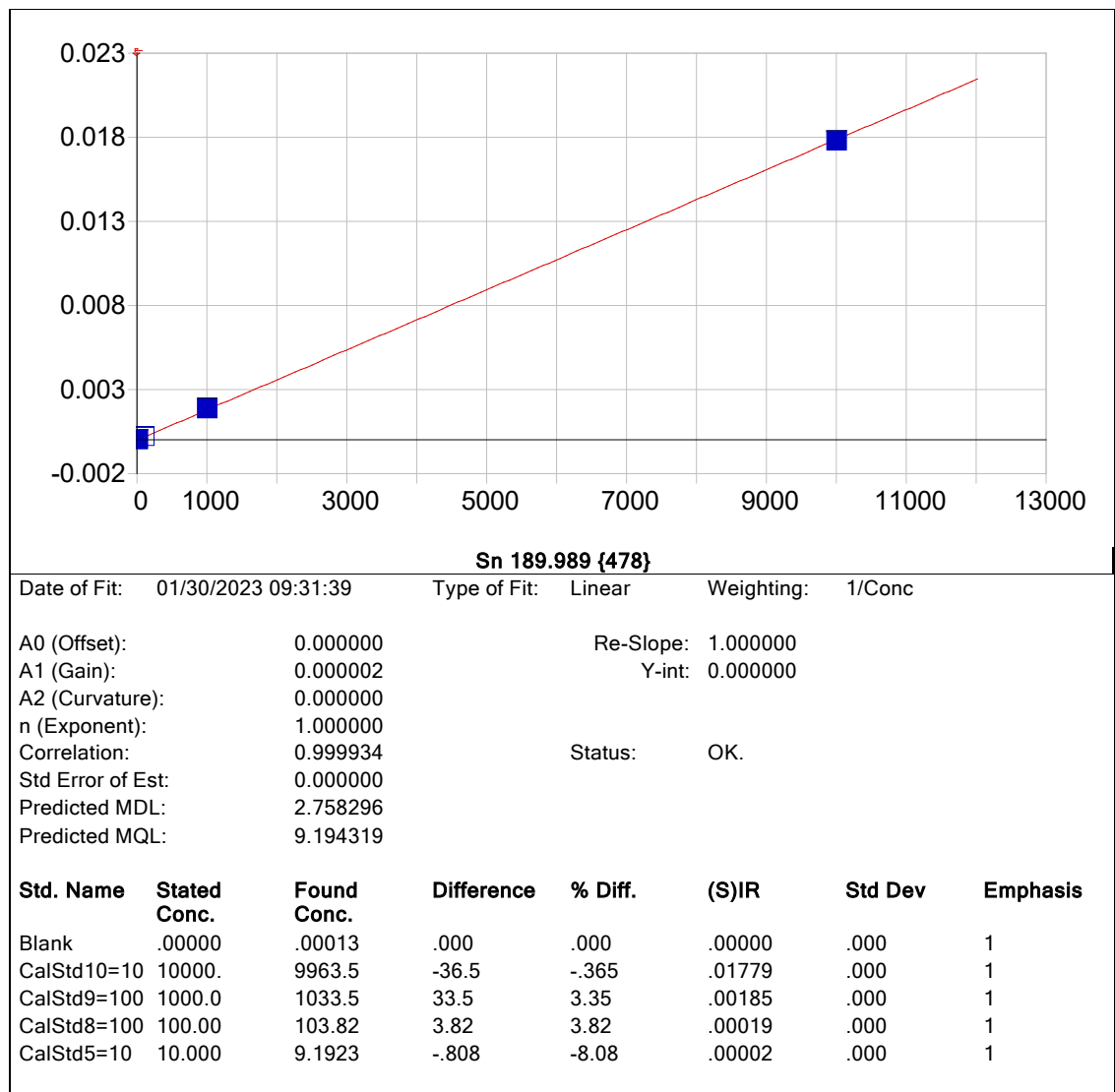


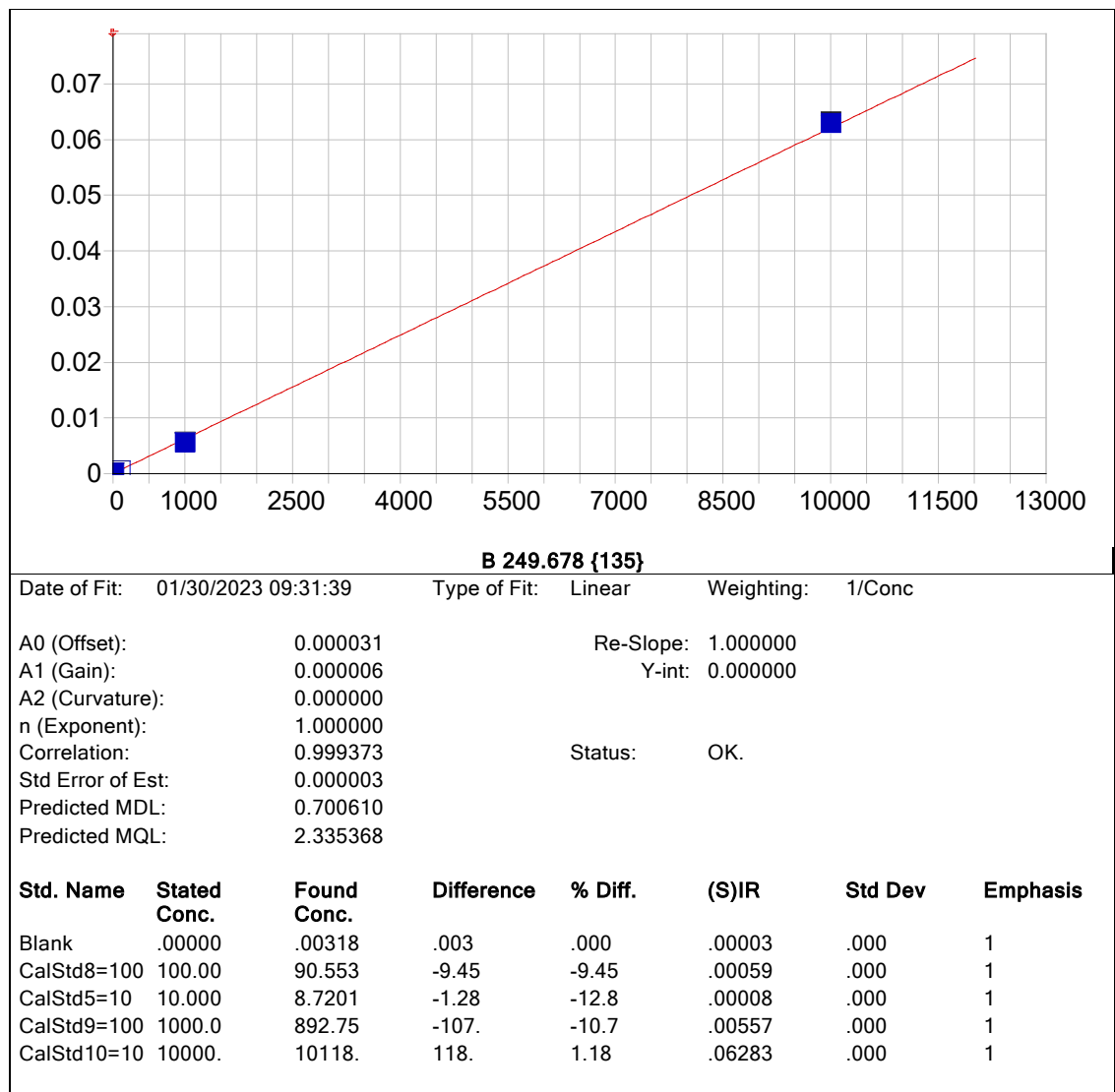


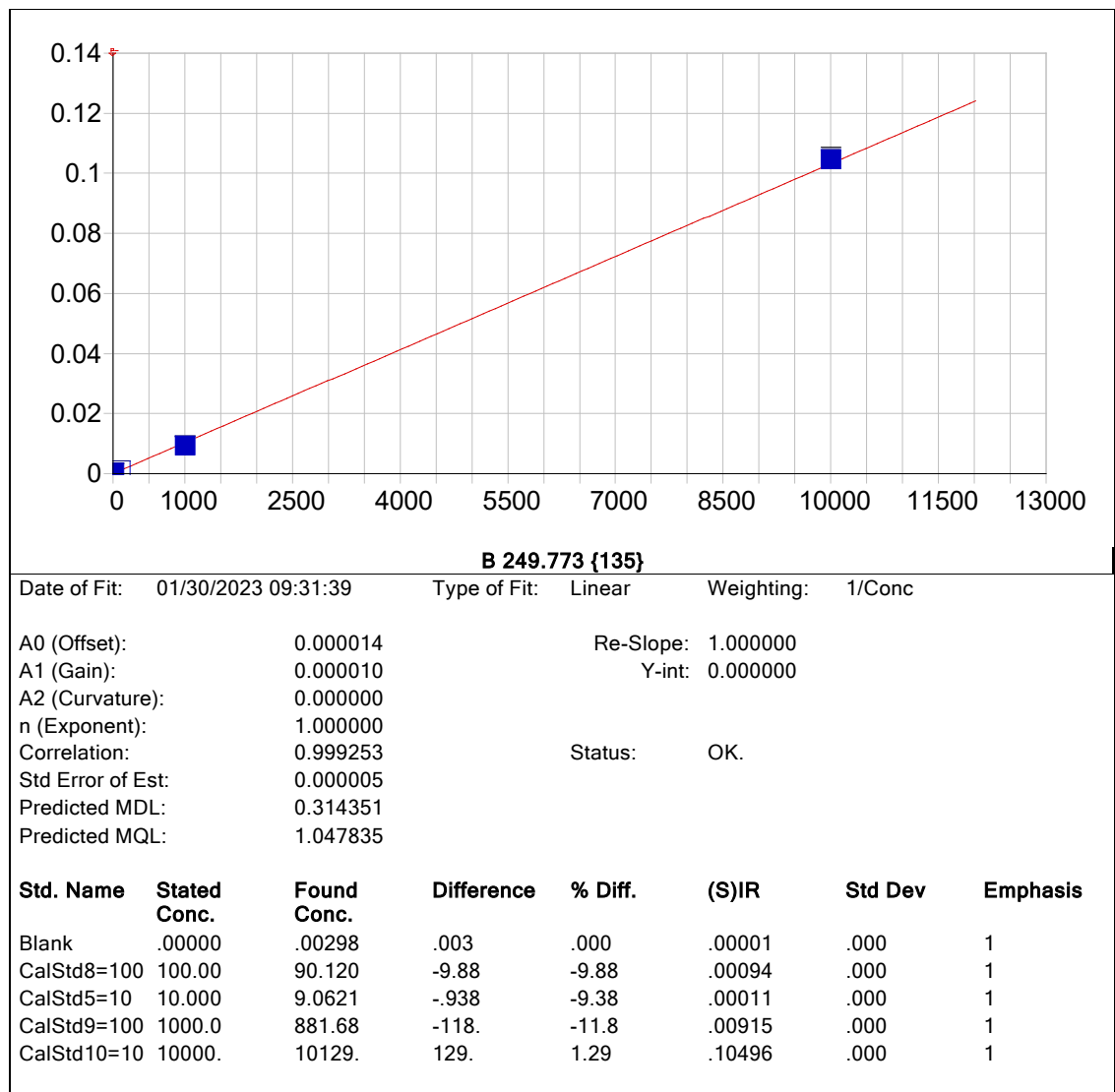


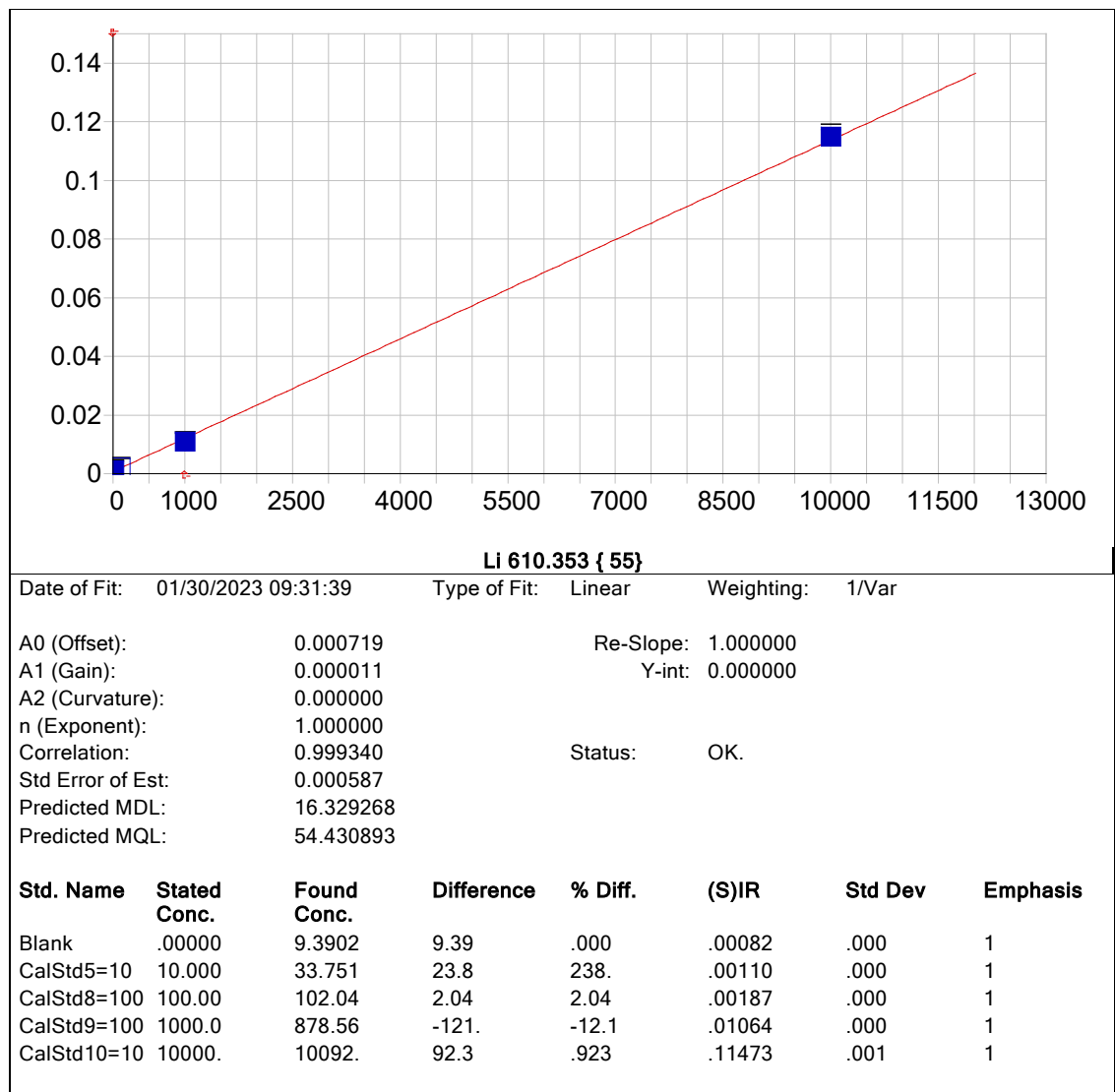


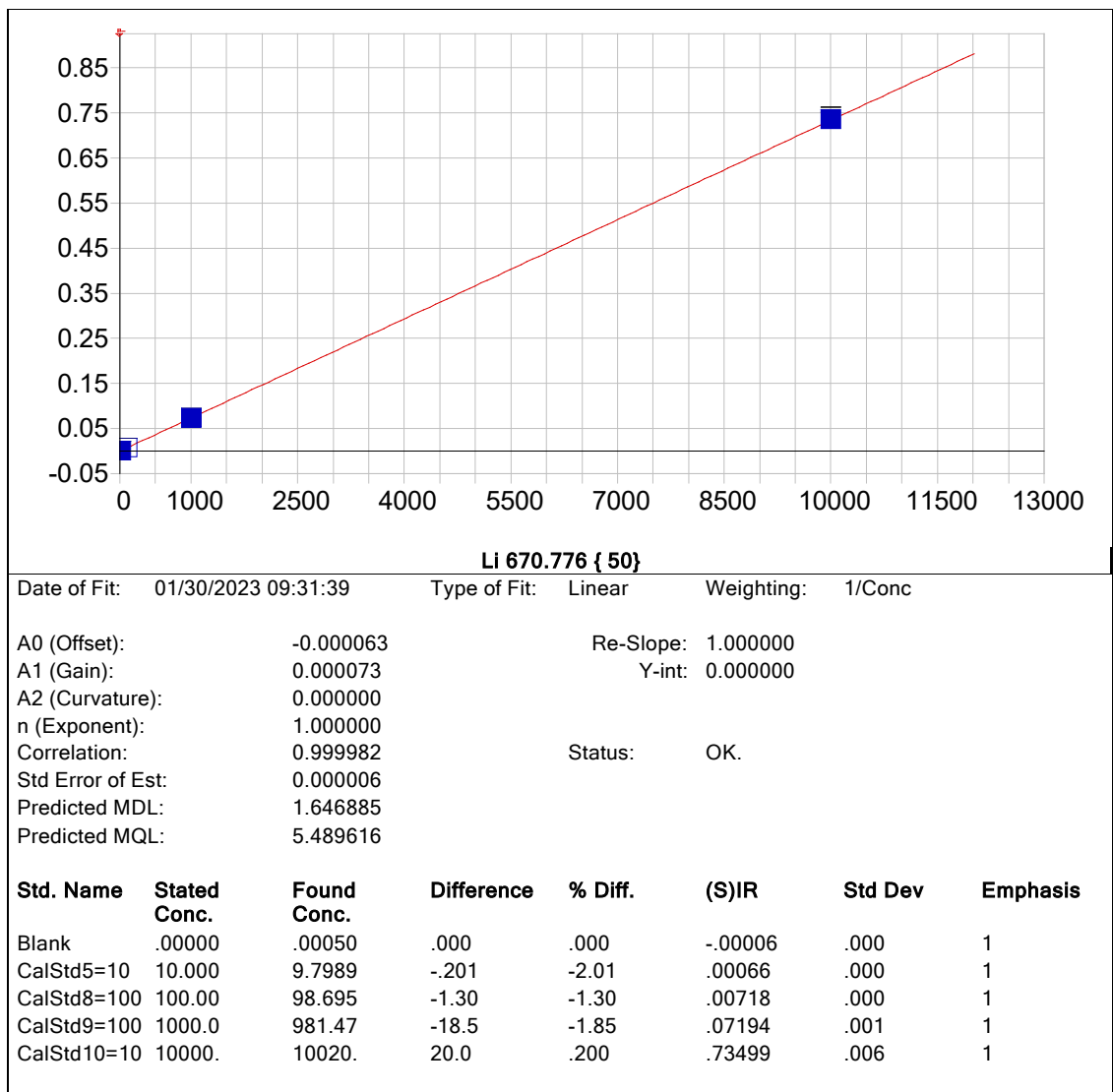


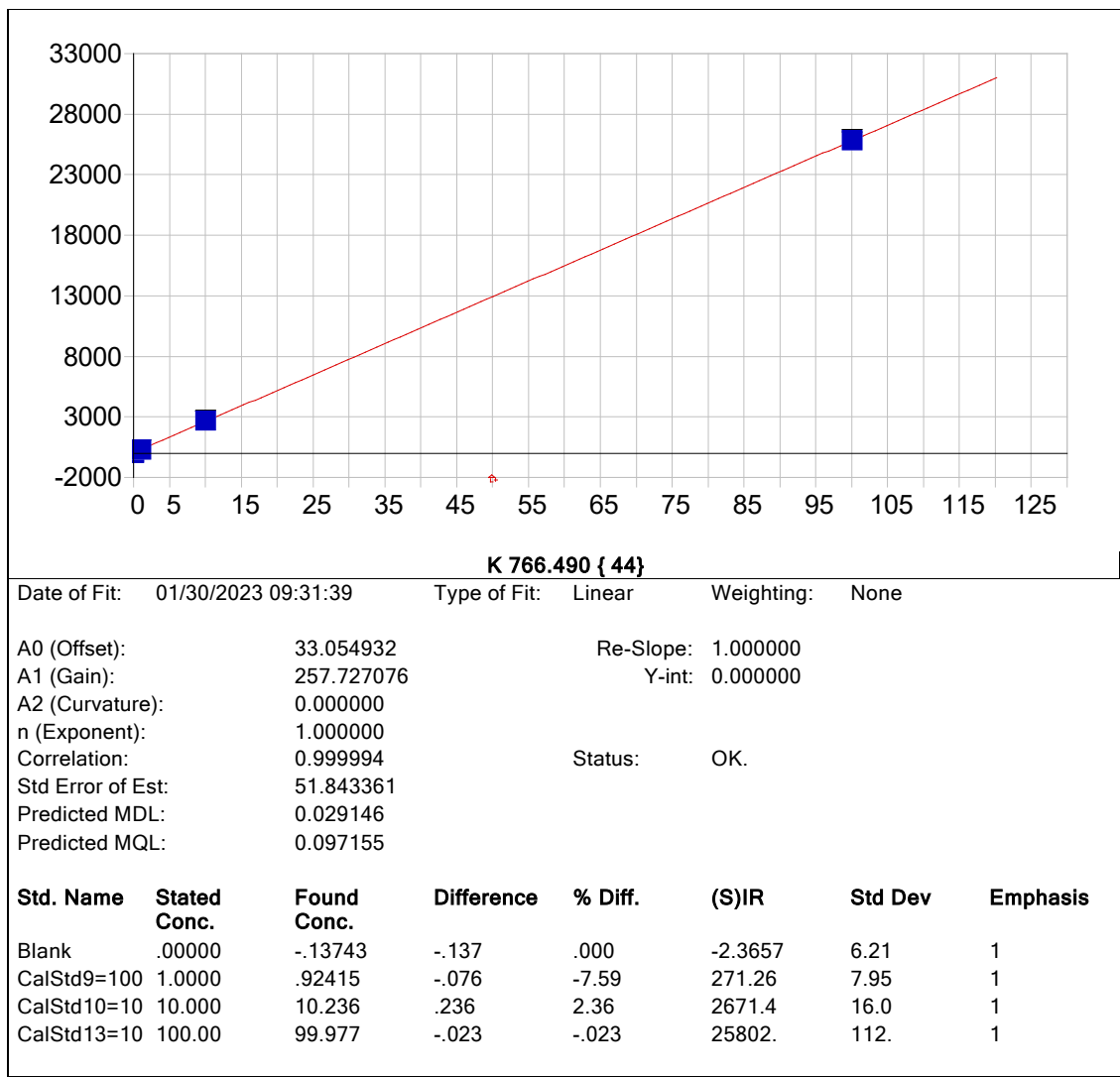


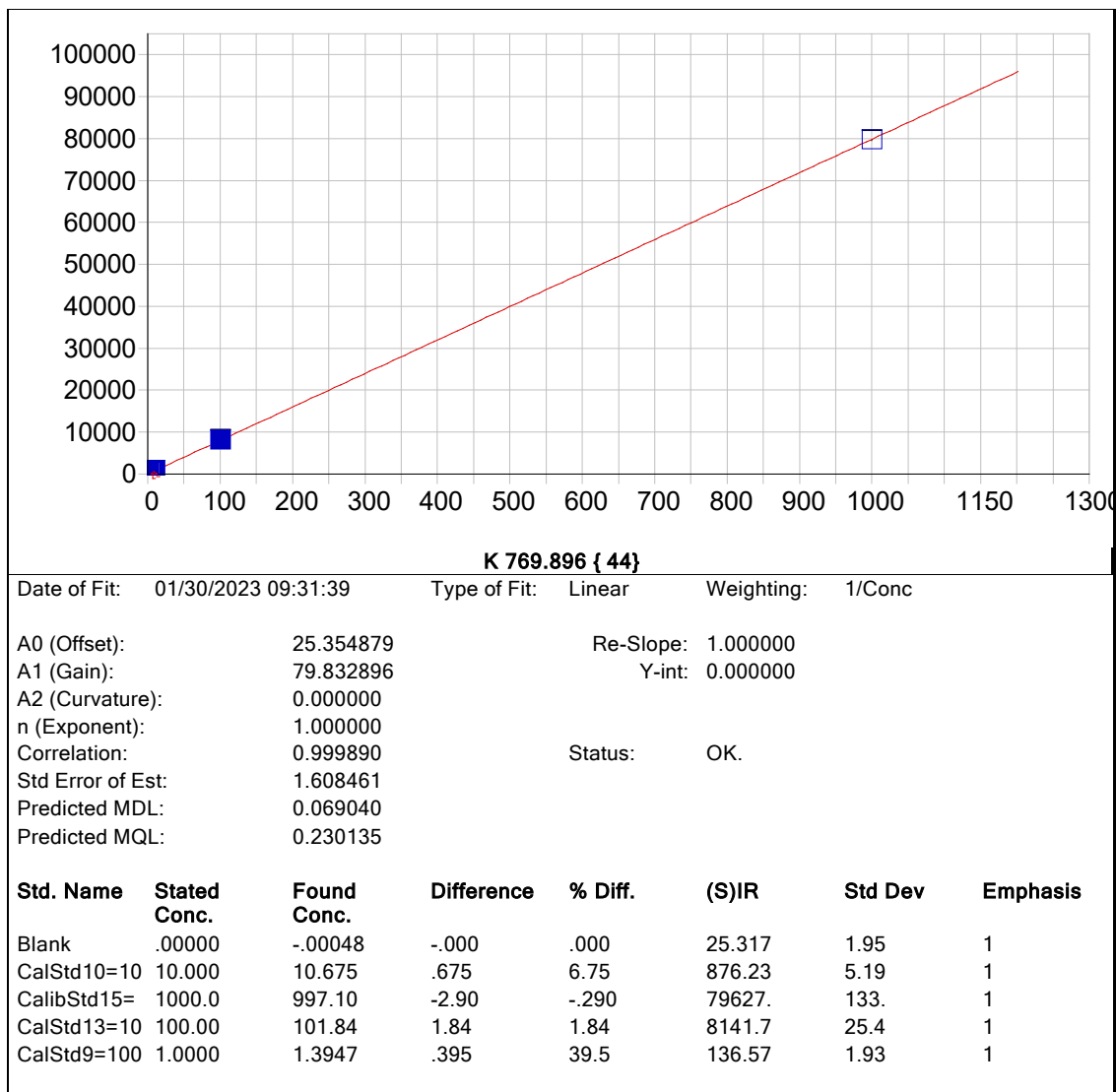


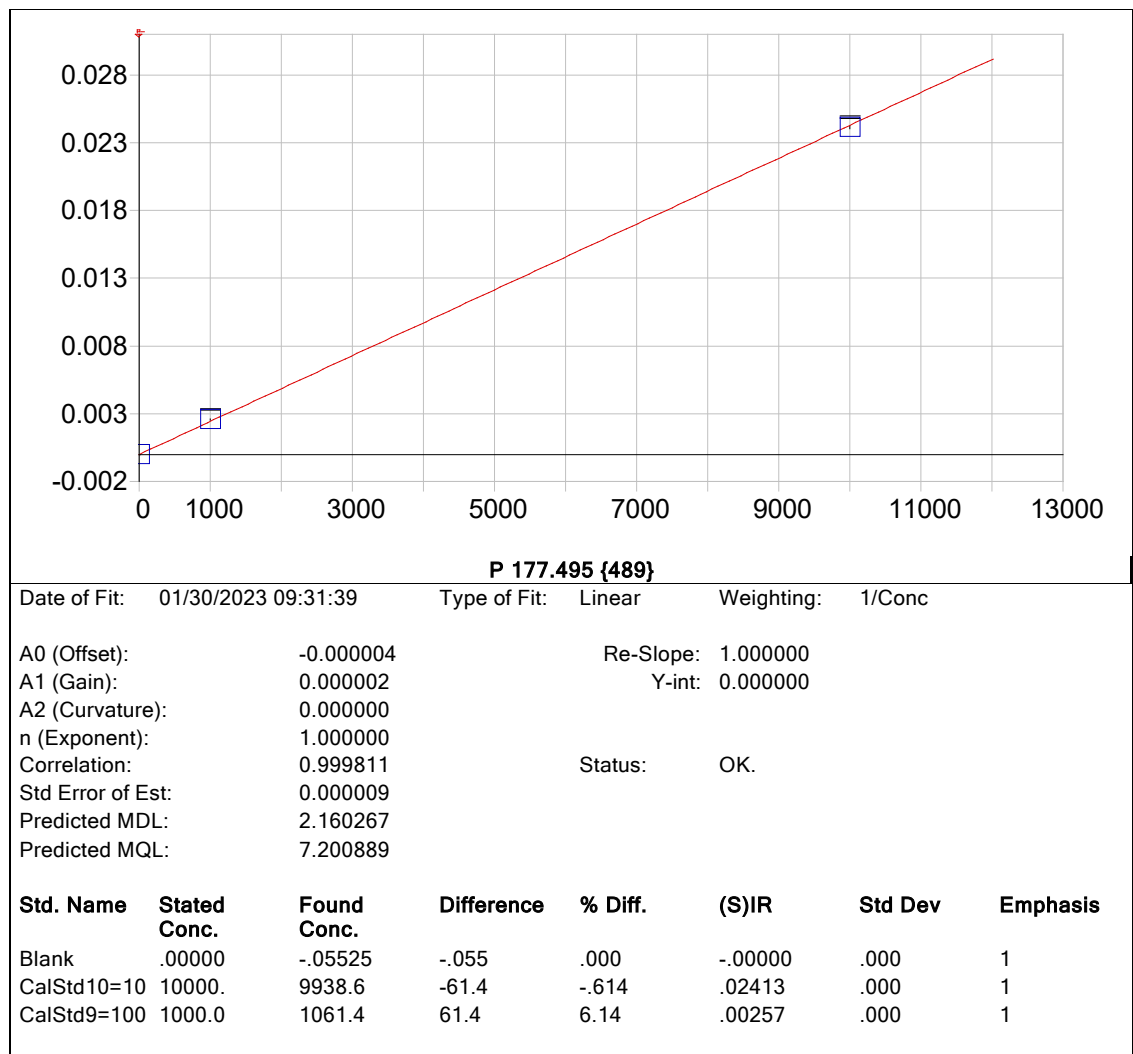


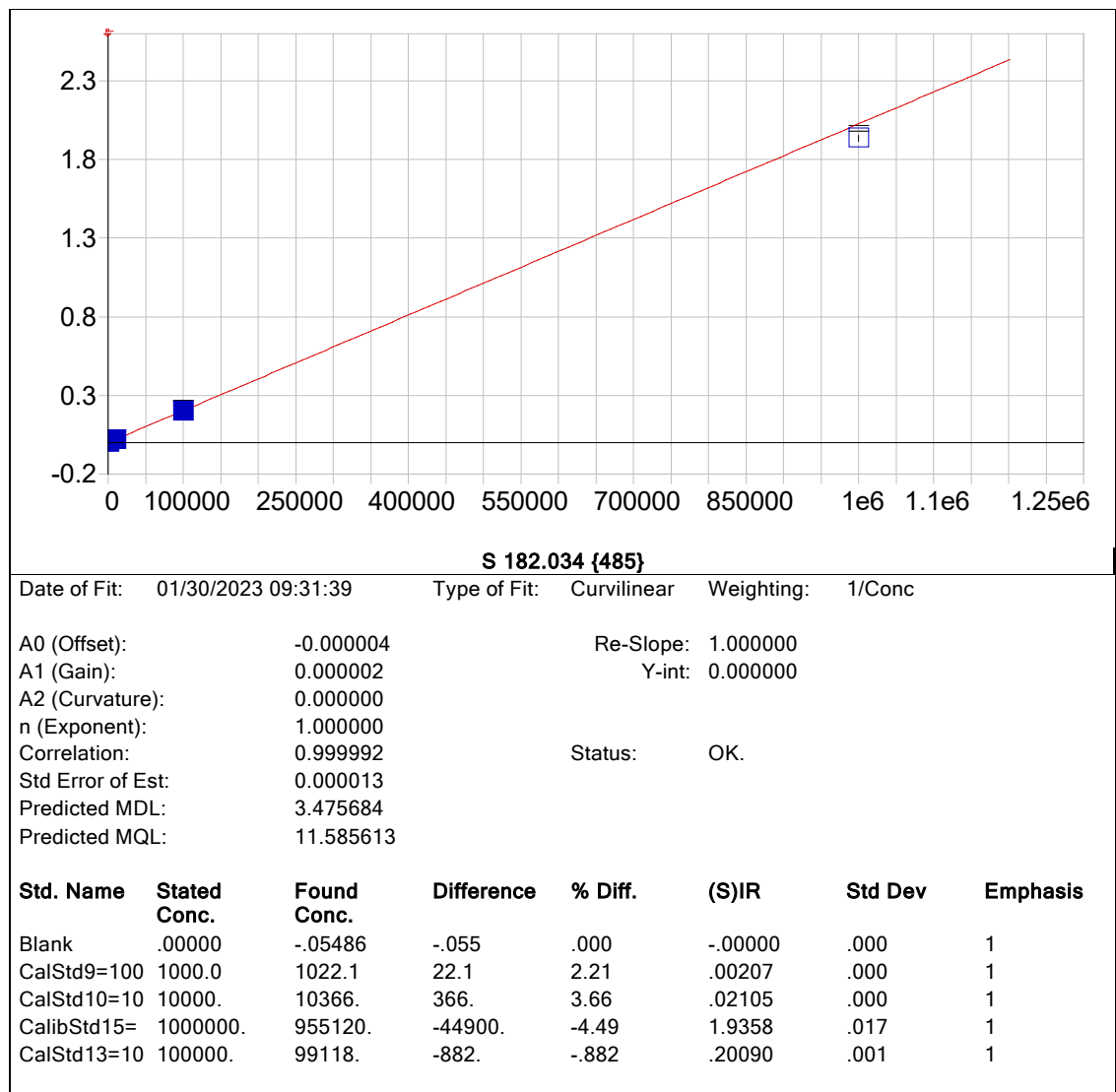


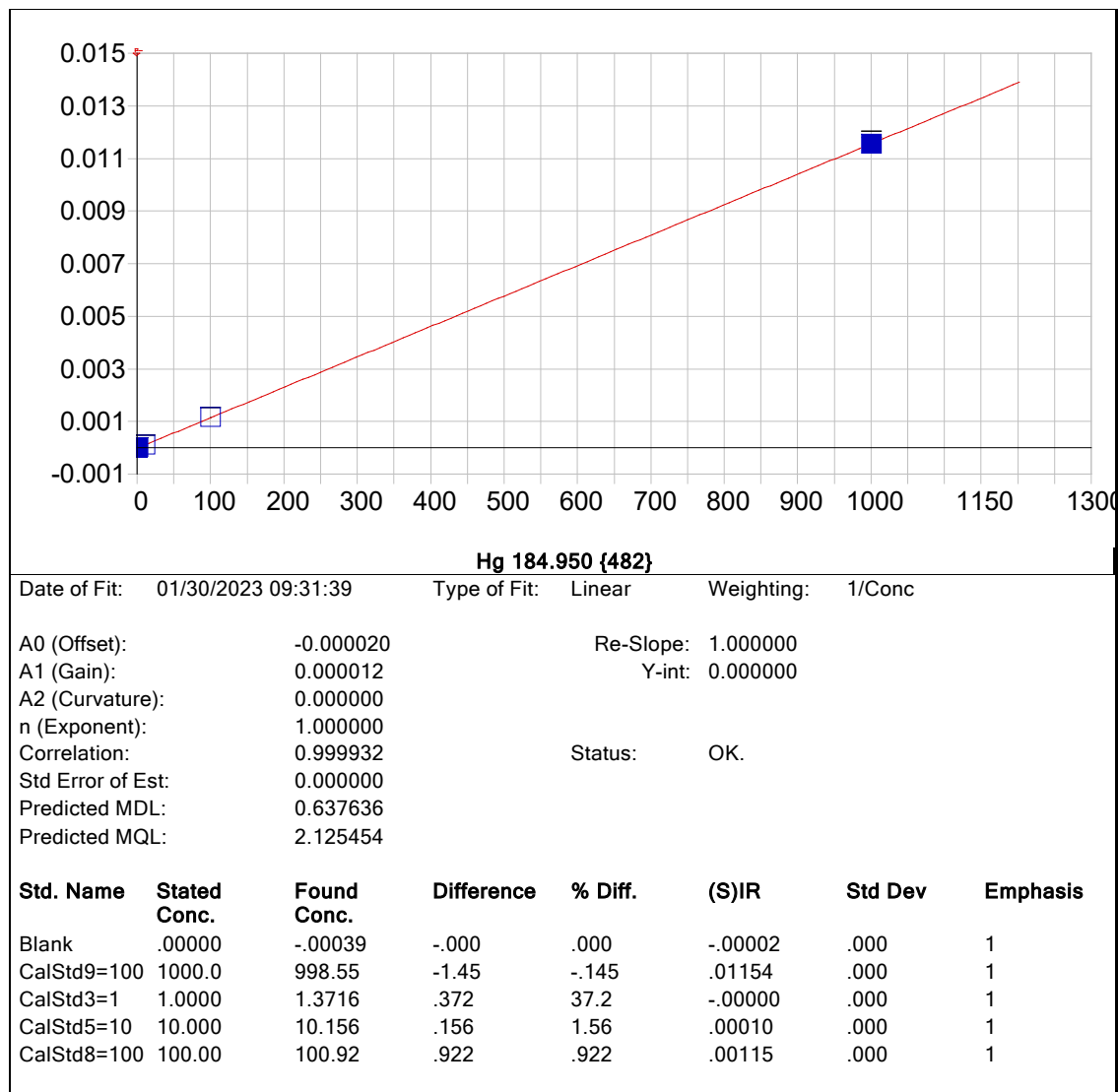


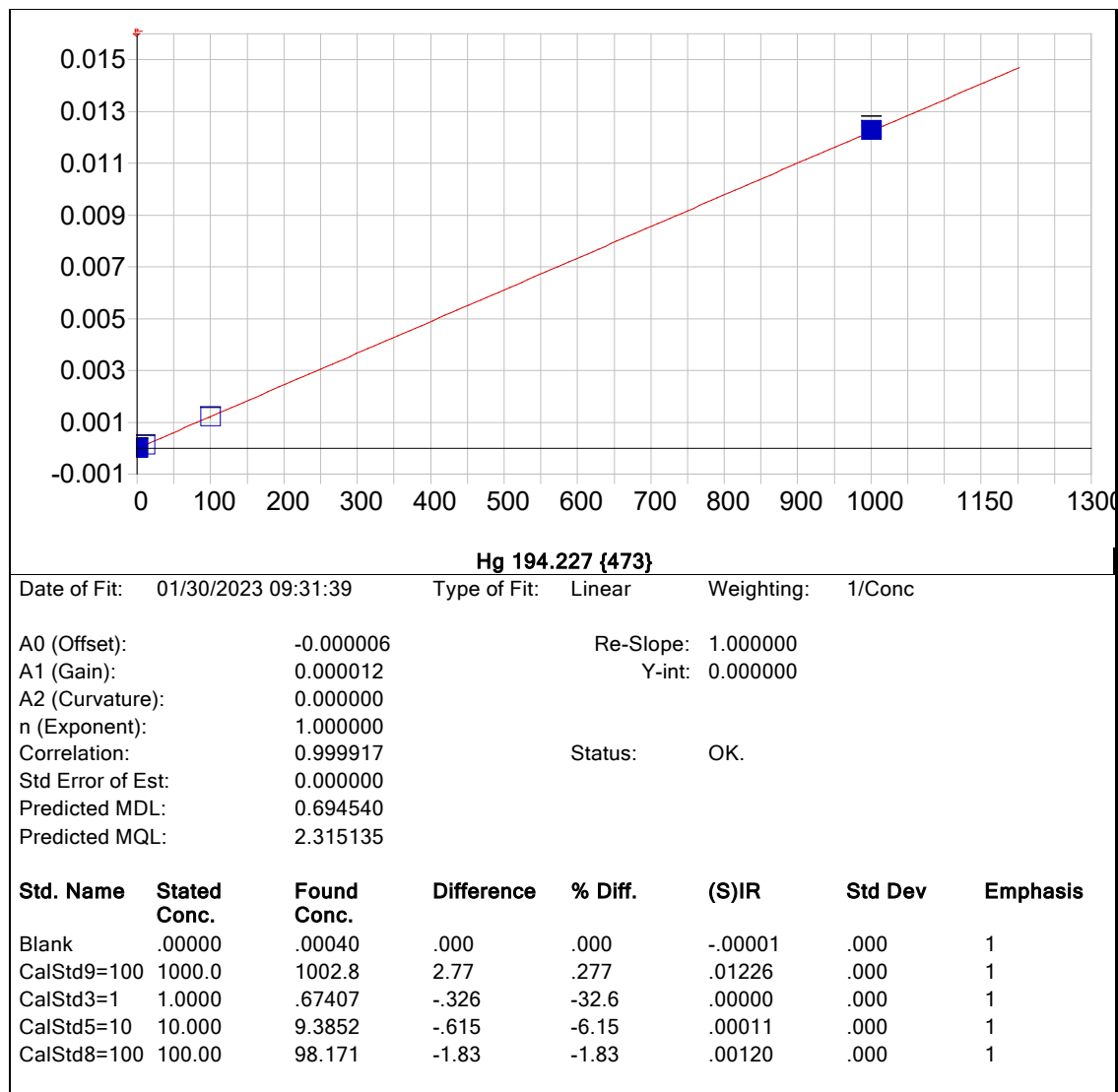


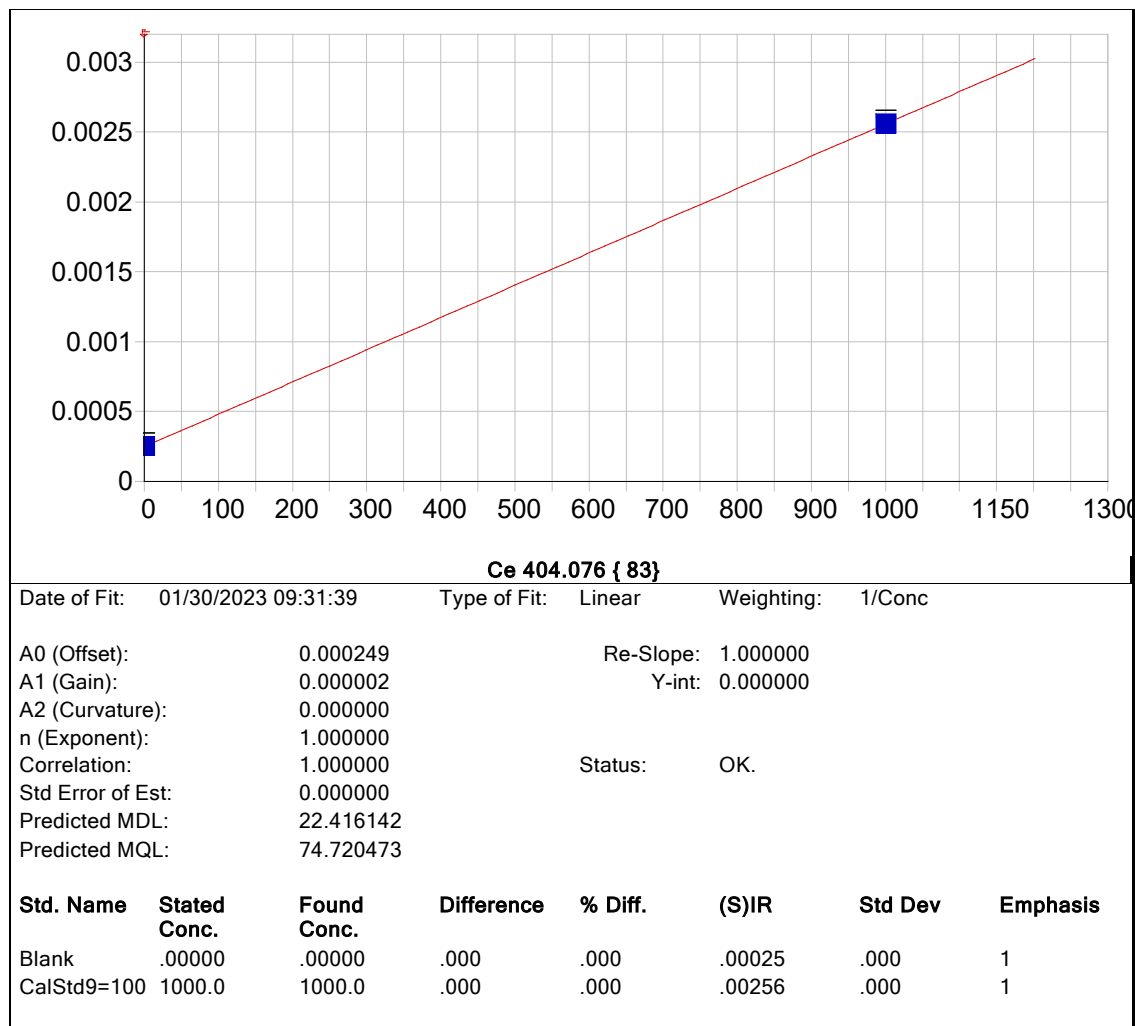












Sample Name: Blank Acquired: 01/27/2023 08:19:58 Type: Cal
Method: DOD Calibration Updated 060614(v5472) Mode: IR Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	Al3961	As1937	As1972	Ba2335	Ba4934	Be3131	Ca3158	Ca3968	Cd2265	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.000	.000	-.000	.000	-.000	-.000	.058	.000	.000	.000	-.000	.000	-.000
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	34.4	17.4	24.3	55.2	32.8	486.	.760	17.2	26.7	46.6	60.8	134.	324.

Elem	Co2388	Cr2677	Cu2230	Cu3247	Cu3273	Fe2343	Fe2395	Fe2599	Mg2790	Mg2802	Mn2576	Mn2593	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.000	-.000	.000	.000	-.000	.000	.000	.000	.000	.000	-.000	.000	.000
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	17.4	21.1	18.3	10.5	62.7	7.11	162.	96.7	47.0	4.67	19.5	207.	31.8

Elem	Mo2045	Ni2316	Pb2169	Pb2203	Sb2068	Sb2175	Se1960	Se2062	Tl1908	V_2908	V_2924	Zn2062	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.000	-.000	-.000	.000	-.000	.000	-.000	.000	-.000	.000	.000	-.000	.000
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	78.8	47.5	154.	56.7	78.6	78.5	46.6	241.	104.	37.9	38.1	39.6	47.8

Elem	Na3302	Na5895	K_7664	K_7698
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.000	16.9	-2.37	25.3
Stddev	.000	4.7	6.21	2.0
%RSD	78.1	27.6	263.	7.69

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	79199.	603700.	58728.
Stddev	566.	6050.	458.
%RSD	.71518	1.0022	.78007

Sample Name: CalStd2=0.5 Acquired: 01/27/2023 08:27:23 Type: Cal
 Method: DOD Calibration Updated 060614(v5472) Mode: IR Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	Be3131	Cd2265	Cd2288
Units	Cts/S	Cts/S	Cts/S
Avg	.000	.000	.000
Stddev	.000	.000	.000
%RSD	17.8	33.0	52.9

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	77616.	604340.	57264.
Stddev	444.	7861.	130.
%RSD	.57248	1.3008	.22753

Sample Name: CalStd3=1 Acquired: 01/27/2023 08:34:47 Type: Cal
 Method: DOD Calibration Updated 060614(v5472) Mode: IR Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	Ba2335	Be3131	Cd2265	Cd2288	Co2286	Ni2316
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.000	.000	.000	.000	.000	.000
Stddev	.000	.000	.000	.000	.000	.000
%RSD	26.1	3.20	18.0	27.3	16.4	158.

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	78012.	605010.	57217.
Stddev	425.	9723.	299.
%RSD	.54443	1.6071	.52258

Sample Name: CalStd4=5 Acquired: 01/27/2023 08:42:11 Type: Cal
Method: DOD Calibration Updated 060614(v5472) Mode: IR Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Ba2335	Be3131	Cd2265	Cd2288	Co2286	Cr2677	Cu3273	Mn2576	Mo2020	Mo2045	Ni2316	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.000	.000	.001	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	5.41	3.55	4.67	3.59	9.01	3.82	3.78	73.2	.852	5.28	6.59	5.74	5.01

Elem	Sb2175
Units	Cts/S
Avg	.000
Stddev	.000
%RSD	15.8

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	77912.	601570.	57487.
Stddev	924.	2885.	408.
%RSD	1.1853	.47965	.71001

Sample Name: CalStd5=10 Acquired: 01/27/2023 08:49:34 Type: Cal
Method: DOD Calibration Updated 060614(v5472) Mode: IR Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	As1972	Ba2335	Be3131	Cd2265	Cd2288	Co2286	Cr2677	Cu2230	Cu3273	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.000	.000	.000	.000	.000	.001	.001	.000	.001	.000	.000	.000	.001
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	5.42	2.42	22.2	174.	2.18	1.81	1.01	3.90	2.82	3.67	9.13	19.0	.473

Elem	Mo2020	Mo2045	Ni2316	Pb2169	Pb2203	Sb2068	Sb2175	Se1960	Tl1908	V_2924	Zn2062	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.001	.001
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	5.75	.703	3.82	25.4	8.16	15.5	10.0	14.5	6.78	2.01	2.17	.681

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	77987.	600920.	57463.
Stddev	320.	2351.	360.
%RSD	.41005	.39116	.62708

Sample Name: CalStd6=20 Acquired: 01/27/2023 08:56:56 Type: Cal
 Method: DOD Calibration Updated 060614(v5472) Mode: IR Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	Ba2335	Cu3273	Mn2576	Mo2020	Mo2045	Sb2175	V_2924
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.001	.000	.001	.000	.000	.000	.000
Stddev	.000	.000	.000	.000	.000	.000	.000
%RSD	1.53	30.6	.776	2.15	3.53	6.14	1.21

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	78292.	599480.	57476.
Stddev	468.	2197.	130.
%RSD	.59733	.36649	.22678

Sample Name: CalStd7=50 Acquired: 01/27/2023 09:04:18 Type: Cal
 Method: DOD Calibration Updated 060614(v5472) Mode: IR Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	As1937	As1972	Cd2265	Cd2288	Co2286	Cr2677	Cu3273	Mn2576	Mo2020	Mo2045	Ni2316	Sb2068	V_2924
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.000	.000	.006	.001	.003	.001	.000	.003	.001	.001	.002	.000	.001
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	4.13	5.75	1.46	.917	1.38	1.43	6.40	1.21	2.01	1.61	1.22	1.56	1.21
Int. Std.	Y_2243	Y_3242	Y_3710										
Units	Cts/S	Cts/S	Cts/S										
Avg	77443.	596110.	56690.										
Stddev	449.	5766.	215.										
%RSD	.58026	.96725	.37877										

Sample Name: CalStd8=100 Acquired: 01/27/2023 09:11:29 Type: Cal
Method: DOD Calibration Updated 060614(v5472) Mode: IR Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	As1972	Ba2335	Ba4934	Be3131	Ca3968	Cd2265	Cd2288	Co2286	Co2388	Cr2677
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.001	.001	.000	.000	.004	.070	.013	.033	.011	.002	.006	.001	.001
Stddev	.000	.000	.000	.000	.000	.001	.000	.000	.000	.000	.000	.000	.000
%RSD	.508	.559	2.44	7.32	.140	.963	1.37	1.35	.294	.980	.149	.640	.467

Elem	Cu2230	Cu3247	Cu3273	Mg2802	Mn2576	Mo2020	Mo2045	Ni2316	Pb2169	Pb2203	Sb2175	Se1960	Se2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.003	.001	.001	.015	.006	.002	.002	.005	.000	.001	.001	.000	.000
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	.646	1.12	1.68	.458	.542	.332	.913	.548	3.79	.732	.958	3.39	15.5

Elem	Tl1908	V_2908	V_2924	Zn2062	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.001	.001	.002	.006	.013
Stddev	.000	.000	.000	.000	.000
%RSD	1.05	1.55	.549	.547	.281

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	77055.	598090.	55939.
Stddev	79.	4128.	463.
%RSD	.10294	.69024	.82764

Sample Name: CalStd9=1000 Acquired: 01/27/2023 09:18:31 Type: Cal
Method: DOD Calibration Updated 060614(v5472) Mode: IR Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Al1670	Al3961	As1937	As1972	Ba2335	Be3131	Ca3158	Ca3968	Cd2265	Cd2288	Co2286	Co2388	Cr2677
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.008	.005	.003	.001	.037	.129	.002	.308	.111	.017	.061	.008	.014
Stddev	.000	.000	.000	.000	.000	.002	.000	.005	.001	.000	.001	.000	.000
%RSD	1.38	1.70	1.10	1.18	1.33	1.64	1.67	1.71	1.16	1.00	1.51	1.06	1.03

Elem	Cu2230	Cu3247	Cu3273	Fe2343	Fe2395	Fe2599	Mg2790	Mg2802	Mn2576	Mn2593	Mo2020	Mo2045	Ni2316
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.024	.012	.008	.002	.007	.010	.000	.145	.056	.054	.023	.015	.048
Stddev	.000	.000	.000	.000	.000	.000	.000	.002	.001	.001	.000	.000	.001
%RSD	1.11	1.97	1.19	1.13	1.68	1.44	1.40	1.61	.960	1.67	1.34	1.46	1.36

Elem	Pb2169	Pb2203	Sb2068	Sb2175	Se1960	Se2062	Tl1908	V_2908	V_2924	Zn2062	Zn2138	Na5895	K_7664
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.004	.010	.005	.006	.003	.001	.006	.006	.023	.063	.125	881.	271.
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.001	.002	10.	8.
%RSD	1.32	1.34	1.44	1.42	1.31	1.80	1.42	1.69	1.03	1.40	1.33	1.15	2.93

Elem	K_7698
Units	Cts/S
Avg	137.
Stddev	2.
%RSD	1.42

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	77080.	597490.	55720.
Stddev	435.	5206.	310.
%RSD	.56478	.87137	.55615

Sample Name: CalStd10=10000 Acquired: 01/27/2023 09:25:08 Type: Cal
Method: DOD Calibration Updated 060614(v5472) Mode: IR Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Al3961	As1972	Ba2335	Ba4934	Ca3158	Ca3968	Co2286	Co2388	Cr2677	Cu2230	Cu3247	Cu3273	Fe2343
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.050	.014	.358	1.27	.025	3.28	.611	.086	.162	.230	.114	.074	.026
Stddev	.001	.000	.001	.01	.000	.03	.002	.000	.001	.001	.001	.001	.000
%RSD	1.03	.376	.203	.857	.924	.929	.372	.454	.517	.248	.985	.989	.434

Elem	Fe2395	Fe2599	Mg2790	Mg2802	Mn2576	Mn2593	Mo2020	Mo2045	Ni2316	Pb2169	Sb2068	Sb2175	Se1960
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.067	.101	.004	1.52	.595	.532	.228	.150	.477	.036	.046	.062	.027
Stddev	.001	.001	.000	.04	.006	.005	.001	.001	.001	.000	.000	.000	.000
%RSD	.957	.792	.582	2.49	1.06	.850	.312	.338	.310	.285	.367	.267	.367

Elem	Se2062	Tl1908	V_2908	V_2924	Zn2062	Na5895	K_7664	K_7698
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.008	.055	.054	.262	.637	8490.	2670.	876.
Stddev	.000	.000	.000	.001	.003	62.	16.	5.
%RSD	.240	.288	.774	.507	.443	.736	.599	.593

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	74186.	516080.	54325.
Stddev	312.	2361.	203.
%RSD	.42001	.45754	.37354

Sample Name: CalStd12=100K Acquired: 01/27/2023 09:32:26 Type: Cal
 Method: DOD Calibration Updated 060614(v5472) Mode: IR Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	Cu3247	Cu3273	Mn2593	Pb2169	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.15	.766	5.33	.374	5.86
Stddev	.02	.013	.09	.002	.04
%RSD	1.77	1.71	1.76	.652	.685

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	73032.	582450.	53893.
Stddev	252.	1806.	432.
%RSD	.34554	.31013	.80198

Sample Name: CalStd13=100000 Acquired: 01/27/2023 09:40:24 Type: Cal
Method: DOD Calibration Updated 060614(v5472) Mode: IR Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ca3158	Fe2343	Fe2395	Fe2599	Mg2790	Na3302	Na5895	K_7664	K_7698
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.233	.212	.659	1.00	.039	.003	82000.	25800.	8140.
Stddev	.002	.002	.003	.01	.000	.000	289.	112.	25.
%RSD	.709	.710	.426	.591	.707	.514	.353	.434	.313
Int. Std.	Y_2243	Y_3242	Y_3710						
Units	Cts/S	Cts/S	Cts/S						
Avg	71945.	560980.	52693.						
Stddev	260.	4863.	372.						
%RSD	.36123	.86680	.70561						

Sample Name: CalStd14=500000 Acquired: 01/27/2023 09:47:53 Type: Cal
 Method: DOD Calibration Updated 060614(v5472) Mode: IR Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	Al3961	Ca3158	Fe2395	Fe2599	Na3302
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2.51	1.10	3.08	4.74	.014
Stddev	.02	.01	.03	.02	.000
%RSD	.932	.906	.922	.442	.705

Int. Std.	Y_2243	Y_3710
Units	Cts/S	Cts/S
Avg	64294.	50092.
Stddev	42.	295.
%RSD	.06584	.58912

Sample Name: CalibStd15=1000k Acquired: 01/27/2023 09:55:57 Type: Cal
 Method: DOD Calibration Updated 060614(v5472) Mode: IR Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	Al3961	Ca3158	Fe2395	Fe2599	Mg2790	Na3302	K_7698
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5.05	2.17	5.77	8.88	.383	.027	79600.
Stddev	.04	.01	.07	.09	.002	.000	133.
%RSD	.746	.467	1.23	.963	.605	.630	.167

Int. Std.	Y_2243	Y_3710
Units	Cts/S	Cts/S
Avg	60469.	48896.
Stddev	400.	334.
%RSD	.66130	.68373

Sample Name: Ag 1000 Ba 20000 Acquired: 01/27/2023 10:04:10 Type: Cal
Method: DOD Calibration Updated 060614(v5472) Mode: IR Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ba4934
Units	Cts/S
Avg	2.73
Stddev	.05
%RSD	1.87

Int. Std.	Y_3242
Units	Cts/S
Avg	608160.
Stddev	12722.
%RSD	2.0919

Int. Std.	Y_3710
Units	Cts/S
Avg	54781.
Stddev	157.
%RSD	.28742

Sample Name: icv Acquired: 01/27/2023 10:19:14 Type: QC
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al3961	As1937	As1972	Ba2335	Ba4934	Be3131	Ca3158	Cd2265	Cd2288	Co2286	Cr2677
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	46.8	11400.	2090.	2050.	1980.	1960.	50.2	9670.	49.5	47.8	494.	199.
Stddev	.6	124.	9.	10.	4.	17.	.5	89.	.2	.5	1.	1.
%RSD	1.21	1.09	.407	.505	.193	.847	.940	.921	.482	1.04	.300	.701

Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Cu2230	Cu3273	Fe2343	Fe2599	Mg2790	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Se2062
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	243.	236.	4410.	5330.	9660.	454.	534.	497.	476.	503.	2070.	2040.
Stddev	1.	2.	17.	25.	64.	2.	2.	1.	2.	3.	11.	23.
%RSD	.444	.652	.377	.476	.659	.478	.424	.267	.356	.567	.516	1.12

Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Tl1908	V_2908	Zn2062	Zn2138	Na3302	K_7698
Units	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L
Avg	1910.	497.	523.	508.	101.	104.
Stddev	6.	7.	2.	1.	1.	.
%RSD	.307	1.46	.442	.198	1.17	.466

Check ?	None	None	None	None	None	None
Value						
Range						

Sample Name: icv Acquired: 01/27/2023 10:19:14 Type: QC
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	75029.	585330.	55868.
Stddev	183.	4214.	164.
%RSD	.24414	.72001	.29314

Sample Name: ICVLL Acquired: 01/27/2023 10:33:04 Type: QC
 Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	Ag3280	Al1670	Al3961	As1937	Ba2335	Be3131	Ca3158	Cd2265	Co2286	Cr2677	Cu2230	Cu3273	Fe2343
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	F 49.0	1220.	1230.	58.5	32.0	12.8	1550.	15.7	30.8	31.3	33.0	31.6	851.
Stddev	.4	2.	8.	4.7	.3	.2	5.	.1	.3	.6	.3	3.8	5.
%RSD	.878	.150	.612	8.09	.840	1.19	.315	.709	.829	1.81	1.05	11.9	.548

Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	20.0												
Range	30.0%												

Elem	Mg2790	Mg2802	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Na5895	K_7664
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L
Avg	1500.	1460.	29.1	31.8	30.5	27.5	61.0	63.1	60.9	27.2	29.3	6.38	3.16
Stddev	23.	11.	.2	.4	.3	1.2	1.4	2.9	.9	.4	.2	.03	.02
%RSD	1.52	.737	.593	1.33	.983	4.48	2.22	4.56	1.52	1.39	.749	.506	.705

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	77998.	607840.	57607.
Stddev	185.	4245.	272.
%RSD	.23762	.69842	.47198

Sample Name: icb Acquired: 01/27/2023 10:47:43 Type: QC
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3131	Ca3158	Ca3968	Cd2265	Co2286	Cr2677	Cu2230	Cu3273	Fe2343
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	1.10	.403	2.09	-.033	-.230	4.22	-.021	.047	.161	-.055	-.368	-1.77	.242
Stddev	.16	.398	2.53	.269	.146	3.75	.115	.066	.250	.122	.319	2.82	.391
%RSD	14.8	98.9	122.	809.	63.2	89.0	534.	140.	155.	223.	86.5	159.	161.

Check ?	None	None	None	None	None	None	None	None	None	None	None	None	None
Value													
Range													

Elem	Mg2802	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Na5895	K_7664
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L
Avg	.090	-.016	-.465	.075	-.994	-.177	2.62	.500	-.007	-.827	-.001	-.052
Stddev	.067	.017	.377	.508	1.83	1.49	3.92	.462	.140	.043	.003	.015
%RSD	74.5	107.	81.1	681.	184.	841.	150.	92.4	1880.	5.24	289.	28.2

Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	79148.	604790.	58665.
Stddev	364.	6834.	225.
%RSD	.46025	1.1299	.38292

Sample Name: MRL/LLOQ Acquired: 01/27/2023 10:55:06 Type: QC
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3131	Ca3158	Ca3968	Cd2265	Co2286	Cr2677	Cu2230	Cu3273	Fe2343
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	F 13.9	419.	15.7	10.8	4.16	516.	482.	5.33	10.1	10.5	11.5	7.91	293.
Stddev	.4	6.	.8	.2	.15	3.	2.	.07	.2	.3	1.1	2.31	2.
%RSD	2.62	1.47	5.00	2.22	3.66	.541	.382	1.36	2.27	2.49	9.06	29.2	.545

Check ? **Chk Fail** Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value **10.0**
Range **30.0%**

Elem	Mg2802	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Na5895	K_7664
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L
Avg	488.	9.83	10.5	10.00	9.02	20.8	21.8	19.3	9.11	9.38	2.11	.944
Stddev	2.	.06	.4	.323	1.35	1.8	4.4	1.1	.21	.19	.01	.024
%RSD	.435	.565	3.59	3.23	15.0	8.88	20.0	5.52	2.32	2.01	.571	2.52

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value
Range

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	77703.	604550.	57022.
Stddev	456.	2778.	252.
%RSD	.58741	.45948	.44229

Sample Name: ICSA Acquired: 01/27/2023 11:02:30 Type: QC
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3131	Ca3158	Cd2265	Co2286	Cr2677	Cu2230	Cu3273
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	-.125	496000.	-.020	.242	.000	480000.	-.003	-.080	-.397	-2.13	-.305
Stddev	.358	1650.	11.8	.232	.167	2060.	.914	.506	.142	.87	1.19
%RSD	286.	.334	57600.	95.9	1090000.	.430	30500.	634.	35.9	40.8	390.

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit											
Low Limit											

Elem	Fe2395	Fe2599	Mg2790	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2908
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	480000.	468000.	480000.	1.31	1.45	.001	-.000	1.61	3.26	.002	10300.
Stddev	2160.	5020.	2850.	.03	.29	.300	2.15	1.62	2.55	2.18	42.
%RSD	.451	1.07	.594	2.40	20.1	23000.	454000.	101.	78.1	120000.	.404

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit											
Low Limit											

Elem	V_2924	Zn2138	Na5895	K_7664
Units	ug/L	ug/L	mg/L	mg/L
Avg	8940.	.408	.189	-.024
Stddev	170.	1.21	.006	.034
%RSD	1.90	296.	2.97	144.

Check ?	None	Chk Pass	Chk Pass	Chk Pass
High Limit				
Low Limit				

Sample Name: ICSA Acquired: 01/27/2023 11:02:30 Type: QC
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	69106.	543160.	55199.
Stddev	517.	8960.	249.
%RSD	.74857	1.6496	.45160

Sample Name: ICSAB Acquired: 01/27/2023 11:10:15 Type: QC
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3131	Ca3158	Cd2288	Co2286	Cr2677	Cu2230	Cu3273
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	492.	493000.	492.	503.	521.	475000.	519.	453.	501.	509.	511.
Stddev	5.	5160.	21.	3.	6.	3590.	3.	3.	4.	4.	5.
%RSD	1.04	1.05	4.20	.678	1.06	.757	.512	.630	.833	.858	.957

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Fe2395	Fe2599	Mg2790	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	478000.	459000.	475000.	469.	500.	454.	421.	477.	486.	502.	444.
Stddev	4890.	8670.	4200.	4.	2.	3.	3.	3.	5.	2.	5.
%RSD	1.02	1.89	.885	.851	.451	.750	.680	.656	.955	.466	1.05

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Zn2062	Zn2138	Na3302	K_7698
Units	ug/L	ug/L	mg/L	mg/L
Avg	464.	498.	104.	109.
Stddev	3.	5.	1.	.
%RSD	.666	.999	.645	.457

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Sample Name: ICSAB Acquired: 01/27/2023 11:10:15 Type: QC
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	69375.	532620.	54877.
Stddev	391.	4845.	271.
%RSD	.56417	.90955	.49308

Sample Name: ICVLL ag Acquired: 01/27/2023 11:24:50 Type: Unk
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3131	Ca3158	Ca3968	Cd2265	Co2286	Cr2677	Cu2230	Cu3273	Fe2343
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	11.4	4.40	-4.66	.078	.100	3.68	6.60	.026	-.152	1.16	2.01	-1.23	27.3
Stddev	.4	.36	3.03	.139	.253	2.00	.11	.051	.211	.22	.67	5.30	3.6
%RSD	3.36	8.25	64.9	178.	254.	54.4	1.61	197.	138.	18.8	33.3	430.	13.4

Elem	Mg2802	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Na5895	K_7664
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L
Avg	3.51	1.08	.244	-.021	-.623	-.298	1.27	-.850	.133	.428	.020	-.080
Stddev	.04	.03	.241	.368	1.44	1.73	2.65	1.33	.268	.066	.006	.020
%RSD	1.16	2.31	98.7	1780.	232.	579.	208.	157.	202.	15.4	27.8	24.8

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	77677.	599520.	56940.
Stddev	209.	9688.	377.
%RSD	.26937	1.6159	.66148

Sample Name: ccv1 Acquired: 01/27/2023 15:45:01 Type: QC
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al3961	As1972	Ba4934	Be3131	Ca3158	Cd2288	Co2388	Cr2677	Cu3247	Cu3273	Fe2343	Fe2599
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	493.	4840.	4910.	4690.	491.	4970.	494.	4710.	5230.	5040.	4750.	4650.	4970.
Stddev	4.	2.	24.	11.	1.	8.	3.	38.	32.	19.	10.	38.	16.
%RSD	.713	.045	.492	.230	.231	.159	.620	.807	.610	.368	.208	.806	.326

Check ? None Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value
Range

Elem	Mg2790	Mn2593	Mo2045	Ni2316	Pb2169	Sb2068	Se2062	Tl1908	V_2908	V_2924	Zn2062	Na3302	K_7698
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L
Avg	4690.	4710.	4810.	4770.	4870.	4870.	4960.	4800.	4960.	4680.	4680.	48.0	52.2
Stddev	22.	14.	23.	27.	28.	19.	31.	27.	19.	36.	32.	1.8	.2
%RSD	.470	.297	.483	.563	.569	.396	.616	.558	.377	.768	.687	3.68	.365

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value
Range

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	76355.	551430.	57052.
Stddev	279.	3657.	205.
%RSD	.36555	.66322	.35971

Sample Name: ccv2 Acquired: 01/27/2023 15:51:18 Type: QC
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3131	Ca3158	Ca3968	Cd2265	Cd2288	Co2286	Cr2677	Cu2230	Cu3273
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	50.3	528.	506.	536.	50.3	531.	478.	52.1	50.2	498.	528.	541.	502.
Stddev	.5	2.	6.	1.	.2	5.	1.	.2	.6	1.	3.	2.	2.
%RSD	.972	.290	1.22	.249	.416	.912	.305	.335	1.22	.221	.627	.457	.379

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value
Range

Elem	Fe2343	Mg2802	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2062	Zn2138	Na5895
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L
Avg	478.	474.	504.	507.	517.	499.	497.	516.	546.	459.	500.	511.	5.08
Stddev	3.	2.	3.	2.	2.	2.	4.	4.	3.	2.	2.	2.	.02
%RSD	.702	.441	.534	.348	.331	.465	.722	.773	.542	.507	.365	.313	.374

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value
Range

Elem	K_7664
Units	mg/L
Avg	5.18
Stddev	.03
%RSD	.579

Check ? Chk Pass
Value
Range

Sample Name: ccv2 Acquired: 01/27/2023 15:51:18 Type: QC
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	78154.	596070.	56782.
Stddev	175.	1549.	98.
%RSD	.22382	.25992	.17203

Sample Name: ccb Acquired: 01/27/2023 15:58:00 Type: QC
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3131	Ca3158	Ca3968	Cd2265	Co2286	Cr2677	Cu2230	Cu3273	Fe2343
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	1.18	-.124	-3.45	.116	-.020	1.70	.574	.072	-.100	-.110	-.474	-1.16	-.121
Stddev	.34	.411	2.32	.157	.259	5.00	.218	.087	.028	.244	1.08	2.95	.507
%RSD	29.0	331.	67.4	136.	1280.	295.	37.9	121.	27.5	221.	228.	255.	418.

Check ?	None	None	None	None	None	None	None	None	None	None	None	None	None
Value													
Range													

Elem	Mg2802	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Na5895	K_7664
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L
Avg	.352	.031	.384	.303	-.412	-.113	-.529	-1.91	.149	-.842	.027	-.034
Stddev	.044	.028	.301	.293	1.44	.894	3.18	1.25	.093	.043	.002	.037
%RSD	12.4	89.2	78.4	96.8	350.	788.	600.	65.5	62.2	5.10	7.15	108.

Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	79559.	614940.	56642.
Stddev	521.	15072.	206.
%RSD	.65440	2.4509	.36345

Sample Name: lcsW128465 Acquired: 01/27/2023 16:28:34 Type: Unk
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3131	Ca3158	Cd2265	Co2286	Cr2677	Cu2230	Cu3273
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	21.2	772.	823.	815.	19.9	193000.	20.0	183.	84.0	112.	89.2
Stddev	.3	6.	9.	7.	.2	540.	.1	1.	.7	3.	4.2
%RSD	1.56	.719	1.11	.810	.879	.279	.722	.752	.871	2.25	4.72

Elem	Fe2343	Mg2790	Mn2576	Mo2045	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2908	Zn2062
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	365.	91900.	194.	2070.	191.	184.	193.	799.	746.	192.	193.
Stddev	6.	303.	3.	14.	2.	.	1.	4.	5.	4.	1.
%RSD	1.52	.330	1.36	.688	.835	.145	.754	.530	.683	1.95	.720

Elem	Zn2138	Na3302	K_7698
Units	ug/L	mg/L	mg/L
Avg	204.	94.2	99.9
Stddev	2.	1.0	.1
%RSD	.784	1.02	.098

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	72489.	550280.	55460.
Stddev	172.	7904.	113.
%RSD	.23730	1.4364	.20346

Sample Name: mbw128465 Acquired: 01/27/2023 16:35:48 Type: Unk
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3131	Ca3158	Ca3968	Cd2265	Co2286	Cr2677	Cu2230	Cu3273	Fe2343
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	.780	1.49	.439	.278	.273	4.74	3.26	.031	-.239	-.327	-.330	-4.25	3.57
Stddev	.125	.44	1.70	.268	.147	4.40	.42	.063	.100	.374	.855	2.59	.23
%RSD	16.1	29.4	387.	96.2	53.9	92.8	12.9	201.	41.8	114.	259.	60.9	6.44

Elem	Mg2802	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Na5895	K_7664
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L
Avg	1.04	-.006	1.07	-.050	-.874	.745	.712	.849	.007	-.765	.070	.082
Stddev	.69	.016	.19	.204	1.84	2.62	3.46	1.47	.088	.146	.008	.023
%RSD	66.3	264.	18.2	405.	211.	352.	486.	173.	1270.	19.1	11.6	27.7

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	79510.	593350.	56757.
Stddev	448.	19188.	125.
%RSD	.56383	3.2338	.22017

Sample Name: 1283774 Acquired: 01/27/2023 16:43:11 Type: Unk
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3131	Ca3158	Cd2265	Co2286	Cr2677	Cu2230	Cu3273	Fe2343
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	.926	461.	-1.92	55.4	-.070	51900.	.046	.014	3.08	2.45	-3.50	484.
Stddev	.375	2.	2.29	.4	.217	432.	.195	.299	.20	.35	3.92	1.
%RSD	40.5	.534	119.	.758	309.	.831	424.	2120.	6.53	14.5	112.	.215

Elem	Mg2790	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Na5895	K_7664
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L
Avg	24300.	19.0	1.66	.183	-.004	.452	-2.00	-.961	.652	7.75	19.4	1.50
Stddev	204.	.1	.22	.319	1.47	.812	2.29	1.25	.125	.04	.1	.04
%RSD	.838	.266	13.0	174.	33000.	180.	114.	130.	19.2	.491	.626	2.85

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	76954.	579500.	56322.
Stddev	192.	2013.	156.
%RSD	.24908	.34733	.27708

Sample Name: I1283774 Acquired: 01/27/2023 16:50:46 Type: Unk
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3131	Ca3158	Cd2265	Co2286	Cr2677	Cu2230	Cu3273	Fe2343
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	1.17	80.8	-5.29	10.4	-.182	14200.	.066	-.056	.841	-.133	-2.48	91.8
Stddev	.43	1.0	3.56	.2	.182	1850.	.122	.058	.132	.247	4.03	6.5
%RSD	36.6	1.18	67.3	2.14	100.	13.0	186.	102.	15.6	186.	163.	7.10

Elem	Mg2790	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Na5895	K_7664
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L
Avg	6650.	3.74	.525	-.053	-.951	.162	-1.44	-.336	.217	.956	5.32	.398
Stddev	878.	.28	.369	.356	3.17	.785	2.07	1.33	.148	.160	.63	.049
%RSD	13.2	7.38	70.3	666.	334.	485.	144.	397.	68.1	16.7	11.9	12.4

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	79094.	606140.	56855.
Stddev	271.	7097.	182.
%RSD	.34314	1.1708	.31965

Sample Name: dup1283774 Acquired: 01/27/2023 16:58:26 Type: Unk
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3131	Ca3158	Cd2265	Co2286	Cr2677	Cu2230	Cu3273	Fe2343
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	.794	420.	.079	61.4	-.071	55200.	-.031	.118	3.17	2.44	.182	511.
Stddev	.113	2.	5.93	.3	.116	376.	.116	.258	.11	.84	4.64	4.
%RSD	14.3	.535	7510.	.450	163.	.681	375.	218.	3.54	34.3	2540.	.690

Elem	Mg2790	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Na5895	K_7664
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L
Avg	25700.	20.1	1.72	.354	-.437	.001	-1.68	-2.69	.658	10.8	20.5	1.59
Stddev	136.	.2	.07	.414	1.52	.599	2.72	.72	.226	.1	.1	.03
%RSD	.528	.974	3.85	117.	348.	43300.	162.	26.7	34.3	.568	.383	1.55

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	76900.	580200.	56735.
Stddev	146.	3183.	361.
%RSD	.18939	.54860	.63667

Sample Name: msw1283774 Acquired: 01/27/2023 17:06:00 Type: Unk
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	Al3961	As1937	Ba2335	Be3131	Ca3158	Cd2265	Co2286	Cr2677	Cu2230
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	21.4	1310.	1460.	825.	870.	20.3	250000.	20.0	181.	86.8	113.
Stddev	.3	8.	12.	5.	4.	.2	413.	.2	1.	.5	1.
%RSD	1.19	.611	.824	.658	.491	.896	.165	.776	.470	.534	.655

Elem	Cu3273	Fe2343	Mg2790	Mn2576	Mo2045	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2908
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	94.0	850.	119000.	213.	2110.	189.	181.	193.	790.	733.	196.
Stddev	2.0	8.	326.	2.	10.	1.	3.	3.	7.	3.	3.
%RSD	2.18	.923	.274	.967	.488	.562	1.38	1.37	.823	.427	1.59

Elem	V_2924	Zn2062	Zn2138	Na3302	K_7698
Units	ug/L	ug/L	ug/L	mg/L	mg/L
Avg	171.	198.	212.	118.	101.
Stddev	2.	1.	1.	.	.
%RSD	.912	.575	.464	.349	.161

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	72297.	544700.	54671.
Stddev	192.	4393.	131.
%RSD	.26497	.80642	.23953

Sample Name: msdw1283774 Acquired: 01/27/2023 17:13:06 Type: Unk
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	Al3961	As1937	Ba2335	Be3131	Ca3158	Cd2265	Co2286	Cr2677	Cu2230
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	21.3	1300.	1430.	811.	862.	19.5	249000.	19.7	177.	85.8	112.
Stddev	.2	4.	10.	4.	2.	.2	735.	.2	.	2.0	1.
%RSD	1.06	.331	.678	.484	.232	.946	.295	.911	.119	2.30	1.01

Elem	Cu3273	Fe2343	Mg2790	Mn2576	Mo2045	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2908
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	95.2	864.	118000.	216.	2080.	186.	178.	191.	784.	725.	192.
Stddev	4.0	20.	307.	5.	5.	1.	1.	1.	3.	2.	5.
%RSD	4.16	2.33	.260	2.21	.247	.389	.495	.711	.339	.211	2.64

Elem	V_2924	Zn2062	Zn2138	Na3302	K_7698
Units	ug/L	ug/L	ug/L	mg/L	mg/L
Avg	173.	194.	209.	113.	102.
Stddev	4.	.	.	2.	.
%RSD	2.25	.083	.164	1.53	.426

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	72457.	534990.	55308.
Stddev	198.	12407.	97.
%RSD	.27284	2.3191	.17541

Sample Name: ccv1 Acquired: 01/27/2023 17:20:12 Type: QC
 Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	Ag3280	Al3961	As1972	Ba4934	Be3131	Ca3158	Cd2288	Co2388	Cr2677	Cu3247	Cu3273	Fe2343	Fe2599
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	489.	4880.	4800.	4660.	496.	5050.	496.	4680.	5290.	5080.	4760.	4610.	4920.
Stddev	2.	27.	14.	23.	3.	32.	2.	23.	20.	34.	34.	21.	34.
%RSD	.462	.554	.296	.484	.671	.643	.425	.480	.370	.670	.715	.460	.693

Check ? None Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 Value
 Range

Elem	Mg2790	Mn2593	Mo2045	Ni2316	Pb2169	Sb2068	Se2062	Tl1908	V_2908	V_2924	Zn2062	Na3302	K_7698
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L
Avg	4710.	4720.	4760.	4750.	4820.	4780.	4870.	4780.	5010.	4630.	4640.	49.1	50.6
Stddev	35.	38.	12.	13.	19.	18.	27.	12.	43.	23.	8.	1.1	.1
%RSD	.750	.807	.257	.273	.390	.369	.550	.253	.863	.493	.173	2.17	.157

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 Value
 Range

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	76274.	552250.	55577.
Stddev	125.	2403.	306.
%RSD	.16347	.43517	.54980

Sample Name: ccv2 Acquired: 01/27/2023 17:26:29 Type: QC
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3131	Ca3158	Ca3968	Cd2265	Cd2288	Co2286	Cr2677	Cu2230	Cu3273
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	50.4	527.	500.	536.	50.5	541.	477.	52.7	50.9	487.	526.	541.	501.
Stddev	.6	2.	5.	2.	.4	7.	4.	.3	.5	3.	7.	4.	5.
%RSD	1.28	.469	.997	.416	.798	1.33	.853	.510	.887	.640	1.26	.723	1.07

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value
Range

Elem	Fe2343	Mg2802	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2062	Zn2138	Na5895
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L
Avg	479.	463.	510.	502.	512.	495.	486.	515.	543.	463.	488.	508.	5.04
Stddev	7.	6.	6.	3.	3.	3.	2.	6.	3.	6.	3.	3.	.02
%RSD	1.39	1.24	1.26	.558	.595	.534	.482	1.17	.500	1.22	.601	.599	.434

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value
Range

Elem	K_7664
Units	mg/L
Avg	5.20
Stddev	.04
%RSD	.776

Check ? Chk Pass
Value
Range

Sample Name: ccv2 Acquired: 01/27/2023 17:26:29 Type: QC
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	79288.	596440.	56528.
Stddev	130.	6976.	317.
%RSD	.16343	1.1696	.56141

Sample Name: ccb Acquired: 01/27/2023 17:33:12 Type: QC
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3131	Ca3158	Ca3968	Cd2265	Co2286	Cr2677	Cu2230	Cu3273	Fe2343
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	.969	.086	-2.87	-.036	-.255	4.98	1.11	-.040	-.065	-.078	-.478	-5.60	.938
Stddev	.147	.162	1.87	.202	.170	6.11	.28	.142	.203	.269	.489	2.69	1.05
%RSD	15.2	188.	65.3	558.	66.9	123.	25.7	353.	310.	344.	102.	48.0	112.

Check ?	None	None	None	None	None	None	None	None	None	None	None	None	None
Value													
Range													

Elem	Mg2802	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Na5895	K_7664
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L
Avg	.691	.066	.141	.034	-.916	-.353	-1.46	-.571	-.025	-.764	.025	-.005
Stddev	.067	.005	.287	.185	1.33	1.82	2.05	.797	.159	.036	.008	.024
%RSD	9.69	7.48	204.	551.	146.	516.	141.	140.	626.	4.69	31.3	526.

Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	79344.	586920.	57607.
Stddev	541.	21433.	475.
%RSD	.68224	3.6518	.82432

Sample Name: pdsw1283774 Acquired: 01/27/2023 17:40:34 Type: Unk
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al3961	As1972	Ba4934	Be3131	Ca3158	Cd2265	Cd2288	Co2286	Cr2677	Cu2230
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	91.3	4090.	3710.	3530.	91.7	411000.	89.7	97.5	804.	377.	450.
Stddev	1.3	73.	3.	76.	2.1	7760.	.5	.3	2.	3.	.
%RSD	1.37	1.79	.080	2.14	2.27	1.89	.589	.258	.247	.807	.080

Elem	Cu3273	Fe2343	Fe2599	Mg2790	Mn2576	Mo2045	Ni2316	Pb2203	Sb2175	Se2062	Tl1908
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	434.	2000.	2280.	195000.	887.	1830.	838.	800.	864.	3590.	3180.
Stddev	12.	12.	36.	3940.	6.	16.	3.	2.	5.	30.	9.
%RSD	2.70	.614	1.58	2.02	.725	.851	.312	.187	.570	.837	.288

Elem	V_2924	Zn2062	Zn2138	Na3302	K_7698
Units	ug/L	ug/L	ug/L	mg/L	mg/L
Avg	819.	836.	919.	197.	186.
Stddev	6.	2.	2.	4.	4.
%RSD	.724	.297	.251	2.12	2.03

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	70219.	529830.	54205.
Stddev	97.	3690.	59.
%RSD	.13781	.69652	.10811

Sample Name: ccv1 Acquired: 01/27/2023 18:53:32 Type: QC
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al3961	As1972	Ba4934	Be3131	Ca3158	Cd2288	Co2388	Cr2677	Cu3247	Cu3273	Fe2343	Fe2599
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	488.	4850.	4850.	4590.	491.	5020.	506.	4690.	5280.	5040.	4730.	4600.	4890.
Stddev	4.	8.	23.	12.	2.	17.	4.	36.	30.	11.	14.	32.	9.
%RSD	.719	.168	.466	.254	.414	.347	.774	.765	.567	.208	.290	.690	.181

Check ? None Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value
Range

Elem	Mg2790	Mn2593	Mo2045	Ni2316	Pb2169	Sb2068	Se2062	Tl1908	V_2908	V_2924	Zn2062	Na3302	K_7698
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L
Avg	4690.	4660.	4750.	4740.	4920.	4820.	4910.	4780.	4990.	4640.	4580.	47.5	50.3
Stddev	25.	10.	19.	23.	33.	15.	24.	13.	14.	34.	25.	1.3	.1
%RSD	.522	.207	.409	.490	.664	.319	.487	.280	.291	.729	.541	2.67	.265

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value
Range

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	76750.	553140.	55374.
Stddev	142.	4001.	100.
%RSD	.18476	.72328	.18110

Sample Name: ccv2 Acquired: 01/27/2023 18:59:49 Type: QC
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3131	Ca3158	Ca3968	Cd2265	Cd2288	Co2286	Cr2677	Cu2230	Cu3273
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	51.3	527.	495.	536.	49.1	546.	475.	52.6	51.8	480.	534.	537.	491.
Stddev	.6	2.	3.	1.	.2	9.	1.	.1	.5	2.	4.	2.	4.
%RSD	1.21	.349	.627	.205	.379	1.66	.268	.216	1.03	.358	.692	.310	.845

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value
Range

Elem	Fe2343	Mg2802	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2062	Zn2138	Na5895
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L
Avg	483.	455.	520.	497.	508.	491.	477.	503.	540.	468.	480.	505.	4.99
Stddev	3.	3.	3.	1.	1.	3.	2.	4.	3.	4.	3.	1.	.01
%RSD	.603	.731	.652	.105	.164	.553	.478	.788	.535	.760	.596	.148	.306

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value
Range

Elem	K_7664
Units	mg/L
Avg	5.30
Stddev	.06
%RSD	1.06

Check ? Chk Pass
Value
Range

Sample Name: ccv2 Acquired: 01/27/2023 18:59:49 Type: QC
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	79273.	586900.	56331.
Stddev	87.	5636.	98.
%RSD	.10917	.96037	.17446

Sample Name: ccb Acquired: 01/27/2023 19:06:33 Type: QC
Method: DOD Calibration Updated 060614(v5472) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3131	Ca3158	Ca3968	Cd2265	Co2286	Cr2677	Cu2230	Cu3273	Fe2343
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	1.11	.089	-2.56	.078	-.022	7.43	1.51	.089	.033	-.051	-.589	-8.78	.558
Stddev	.50	.069	1.12	.076	.209	3.49	.32	.021	.172	.218	.201	6.06	.246
%RSD	45.1	77.9	43.8	97.7	964.	46.9	21.0	23.4	515.	431.	34.1	69.0	44.2

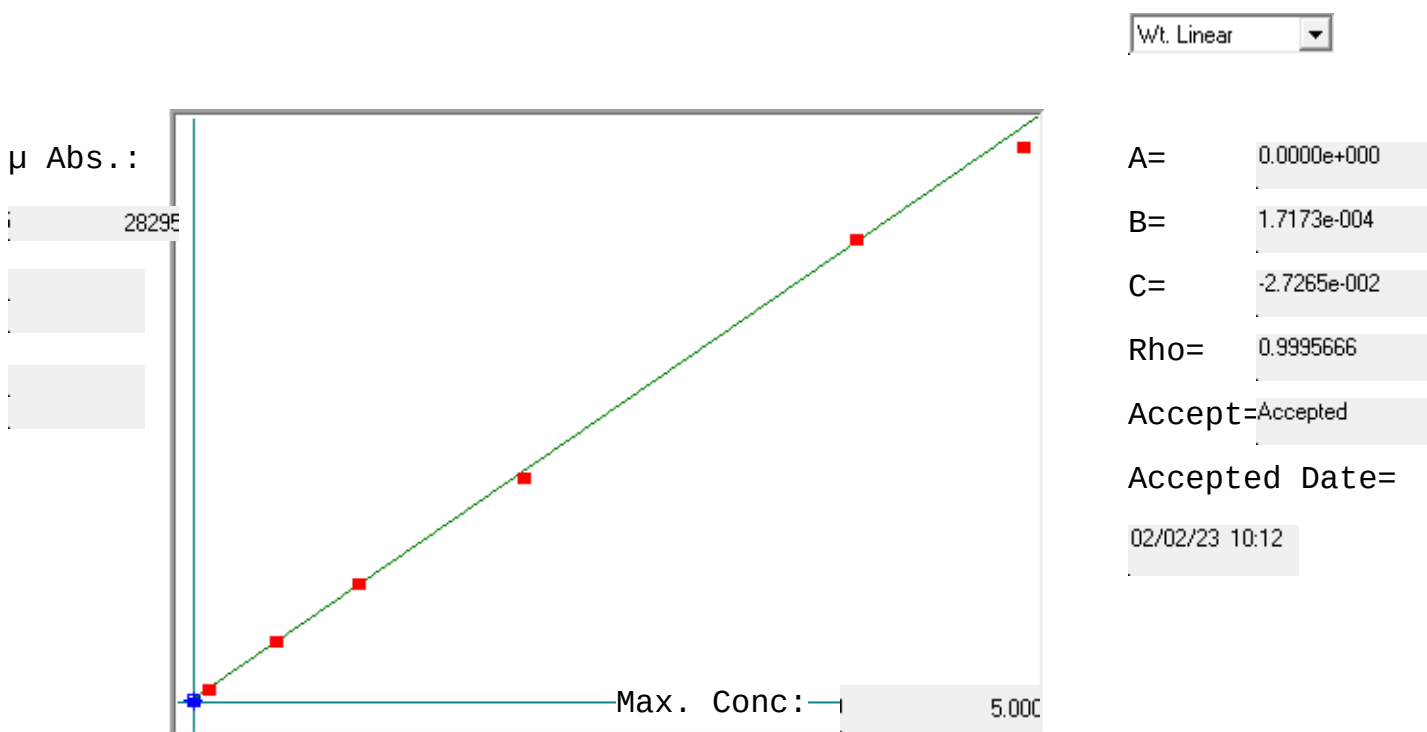
Check ?	None	None	None	None	None	None	None	None	None	None	None	None	None
Value													
Range													

Elem	Mg2802	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Na5895	K_7664
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L
Avg	.814	.050	.489	.251	-.174	-.899	-3.38	-.567	-.008	-.681	.055	-.019
Stddev	.020	.025	.204	.065	.981	1.14	2.97	1.43	.248	.086	.003	.012
%RSD	2.49	49.1	41.6	25.8	563.	127.	87.8	252.	3000.	12.6	4.78	65.4

Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	80464.	595210.	55810.
Stddev	391.	2503.	412.
%RSD	.48532	.42048	.73794

Hg LIQUIDS



Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
CALIBRATION BLANK	0.000	-0.000	-0.000	157	5.679	149	161	156	164	
0.1	0.100	0.104	0.004	762	3.4 %	730	748	774	798	
0.5	0.500	0.524	0.024	3208	4.0 %	3029	3154	3281	3369	
1.0	1.000	1.018	0.018	6088	3.9 %	5775	5972	6200	6407	
2.0	2.000	1.951	-0.049	11521	3.1 %	11036	11363	11698	11988	
4.0	4.000	4.027	0.027	23607	3.4 %	22454	23332	24085	24559	
5.0	5.000	4.832	-0.168	28295	3.2 %	27030	27922	28730	29498	

Sample ID	Date	Element	Units	Extended ID	Mean
CALIBRATION BLANK	02 Feb 2023	09:50:15Hg			158
0.1	02 Feb 2023	09:53:24Hg			763
0.5	02 Feb 2023	09:56:36Hg			3208
1.0	02 Feb 2023	09:59:48Hg			6089
2.0	02 Feb 2023	10:02:59Hg			11521
4.0	02 Feb 2023	10:06:09Hg			23608
5.0	02 Feb 2023	10:09:20Hg			28295
ICV	02 Feb 2023	10:12:30Hg			102.0% 3.061
ICB	02 Feb 2023	10:18:49Hg			0.002
LCSW	02 Feb 2023	10:21:58Hg			1.902
MBW	02 Feb 2023	10:28:16Hg			0.002
1281965	02 Feb 2023	10:31:26Hg			0.078
1283582	02 Feb 2023	10:34:35Hg	5		0.135
1283774	02 Feb 2023	10:37:45Hg			-0.009
1284325	02 Feb 2023	10:40:54Hg			-0.020
DUP1283774	02 Feb 2023	10:44:04Hg			-0.009
1285221	02 Feb 2023	10:47:14Hg			-0.002
1285222	02 Feb 2023	10:50:24Hg			-0.004
CCV	02 Feb 2023	10:53:34Hg			95.7% 2.871
CCB	02 Feb 2023	10:59:53Hg			0.001
MSW1283774	02 Feb 2023	11:03:02Hg			0.920
MSDW1283774	02 Feb 2023	11:06:13Hg			0.915
MSW1285221	02 Feb 2023	11:09:24Hg			1.956
MSDW1285221	02 Feb 2023	11:12:34Hg			1.986
MSW1283582	02 Feb 2023	11:15:44Hg	5		0.409
MSDW1283582	02 Feb 2023	11:18:53Hg	5		0.487
MBW128499	02 Feb 2023	11:25:12Hg			-0.001
1283177	02 Feb 2023	11:28:21Hg			-0.000
1284025	02 Feb 2023	11:31:31Hg			-0.002
CCV	02 Feb 2023	11:34:41Hg			(L)89.8% 2.693
CCV	02 Feb 2023	11:37:50Hg			104.5% 3.134
CCB	02 Feb 2023	11:44:08Hg			-0.006
DUP1284025	02 Feb 2023	11:47:18Hg			0.001
1284027	02 Feb 2023	11:50:28Hg			0.007
1284029	02 Feb 2023	11:53:39Hg			0.010
1284031	02 Feb 2023	11:56:50Hg			0.009
1284339	02 Feb 2023	12:00:01Hg			0.011
1284325	02 Feb 2023	12:03:11Hg			-0.032
MSW1284025	02 Feb 2023	12:06:21Hg			2.169
MSDW1284025	02 Feb 2023	12:09:31Hg			2.262
CCV	02 Feb 2023	12:12:40Hg			103.2% 3.095
CCB	02 Feb 2023	12:18:59Hg			-0.004

Sample ID	Date	Element	Units	Extended ID	µ Abs.	Conc.
CALIBRATION BLANK - 1	02 Feb 2023	09:50:15Hg			149	-
CALIBRATION BLANK - 2	02 Feb 2023	09:50:15Hg			161	-
CALIBRATION BLANK - 3	02 Feb 2023	09:50:15Hg			156	-
CALIBRATION BLANK - 4	02 Feb 2023	09:50:15Hg			164	-
0.1 - 1	02 Feb 2023	09:53:24Hg			730	-
0.1 - 2	02 Feb 2023	09:53:24Hg			748	-
0.1 - 3	02 Feb 2023	09:53:24Hg			774	-
0.1 - 4	02 Feb 2023	09:53:24Hg			798	-
0.5 - 1	02 Feb 2023	09:56:36Hg			3029	-
0.5 - 2	02 Feb 2023	09:56:36Hg			3154	-
0.5 - 3	02 Feb 2023	09:56:36Hg			3281	-
0.5 - 4	02 Feb 2023	09:56:36Hg			3369	-
1.0 - 1	02 Feb 2023	09:59:48Hg			5775	-
1.0 - 2	02 Feb 2023	09:59:48Hg			5972	-
1.0 - 3	02 Feb 2023	09:59:48Hg			6200	-
1.0 - 4	02 Feb 2023	09:59:48Hg			6407	-
2.0 - 1	02 Feb 2023	10:02:59Hg			11036	-
2.0 - 2	02 Feb 2023	10:02:59Hg			11363	-
2.0 - 3	02 Feb 2023	10:02:59Hg			11698	-
2.0 - 4	02 Feb 2023	10:02:59Hg			11988	-
4.0 - 1	02 Feb 2023	10:06:09Hg			22454	-
4.0 - 2	02 Feb 2023	10:06:09Hg			23332	-
4.0 - 3	02 Feb 2023	10:06:09Hg			24085	-
4.0 - 4	02 Feb 2023	10:06:09Hg			24559	-
5.0 - 1	02 Feb 2023	10:09:20Hg			27030	-
5.0 - 2	02 Feb 2023	10:09:20Hg			27922	-
5.0 - 3	02 Feb 2023	10:09:20Hg			28730	-
5.0 - 4	02 Feb 2023	10:09:20Hg			29498	-
ICV - 1	02 Feb 2023	10:12:30Hg			17099	97.0% 2.909
ICV - 2	02 Feb 2023	10:12:30Hg			17700	100.4% 3.012
ICV - 3	02 Feb 2023	10:12:30Hg			18316	103.9% 3.118
ICV - 4	02 Feb 2023	10:12:30Hg			18826	106.9% 3.206
ICB - 1	02 Feb 2023	10:18:49Hg			169	0.002
ICB - 2	02 Feb 2023	10:18:49Hg			161	0.000
ICB - 3	02 Feb 2023	10:18:49Hg			170	0.002
ICB - 4	02 Feb 2023	10:18:49Hg			179	0.003
LCSW - 1	02 Feb 2023	10:21:58Hg			10676	1.806
LCSW - 2	02 Feb 2023	10:21:58Hg			11094	1.878
LCSW - 3	02 Feb 2023	10:21:58Hg			11450	1.939
LCSW - 4	02 Feb 2023	10:21:58Hg			11721	1.986
MBW - 1	02 Feb 2023	10:28:16Hg			160	0.000
MBW - 2	02 Feb 2023	10:28:16Hg			162	0.001
MBW - 3	02 Feb 2023	10:28:16Hg			173	0.002
MBW - 4	02 Feb 2023	10:28:16Hg			178	0.003
1281965 - 1	02 Feb 2023	10:31:26Hg			591	0.074
1281965 - 2	02 Feb 2023	10:31:26Hg			606	0.077
1281965 - 3	02 Feb 2023	10:31:26Hg			620	0.079
1281965 - 4	02 Feb 2023	10:31:26Hg			632	0.081
1283582 - 1	02 Feb 2023	10:34:35Hg	5		918	0.130
1283582 - 2	02 Feb 2023	10:34:35Hg	5		945	0.135
1283582 - 3	02 Feb 2023	10:34:35Hg	5		953	0.136
1283582 - 4	02 Feb 2023	10:34:35Hg	5		974	0.140
1283774 - 1	02 Feb 2023	10:37:45Hg			107	-0.009
1283774 - 2	02 Feb 2023	10:37:45Hg			104	-0.009
1283774 - 3	02 Feb 2023	10:37:45Hg			110	-0.008
1283774 - 4	02 Feb 2023	10:37:45Hg			103	-0.010
1284325 - 1	02 Feb 2023	10:40:54Hg			35	-0.021
1284325 - 2	02 Feb 2023	10:40:54Hg			46	-0.019
1284325 - 3	02 Feb 2023	10:40:54Hg			44	-0.020
1284325 - 4	02 Feb 2023	10:40:54Hg			40	-0.020
DUP1283774 - 1	02 Feb 2023	10:44:04Hg			102	-0.010
DUP1283774 - 2	02 Feb 2023	10:44:04Hg			106	-0.009
DUP1283774 - 3	02 Feb 2023	10:44:04Hg			112	-0.008
DUP1283774 - 4	02 Feb 2023	10:44:04Hg			110	-0.008
1285221 - 1	02 Feb 2023	10:47:14Hg			145	-0.002
1285221 - 2	02 Feb 2023	10:47:14Hg			152	-0.001
1285221 - 3	02 Feb 2023	10:47:14Hg			149	-0.002
1285221 - 4	02 Feb 2023	10:47:14Hg			149	-0.002
1285222 - 1	02 Feb 2023	10:50:24Hg			132	-0.005
1285222 - 2	02 Feb 2023	10:50:24Hg			136	-0.004
1285222 - 3	02 Feb 2023	10:50:24Hg			131	-0.005
1285222 - 4	02 Feb 2023	10:50:24Hg			142	-0.003
CCV - 1	02 Feb 2023	10:53:34Hg			16035	90.9% 2.726
CCV - 2	02 Feb 2023	10:53:34Hg			16649	94.4% 2.832
CCV - 3	02 Feb 2023	10:53:34Hg			17211	97.6% 2.928
CCV - 4	02 Feb 2023	10:53:34Hg			17622	100.0% 2.999
CCB - 1	02 Feb 2023	10:59:53Hg			157	-0.000
CCB - 2	02 Feb 2023	10:59:53Hg			164	0.001
CCB - 3	02 Feb 2023	10:59:53Hg			171	0.002

Sample ID	Date	Element	Units	Extended ID	µ Abs.	Conc.
CCB - 4	02 Feb 2023	10:59:53Hg			174	0.003
MSW1283774 - 1	02 Feb 2023	11:03:02Hg			5475	0.913
MSW1283774 - 2	02 Feb 2023	11:03:02Hg			5526	0.922
MSW1283774 - 3	02 Feb 2023	11:03:02Hg			5532	0.923
MSW1283774 - 4	02 Feb 2023	11:03:02Hg			5533	0.923
MSDW1283774 - 1	02 Feb 2023	11:06:13Hg			5409	0.902
MSDW1283774 - 2	02 Feb 2023	11:06:13Hg			5515	0.920
MSDW1283774 - 3	02 Feb 2023	11:06:13Hg			5529	0.922
MSDW1283774 - 4	02 Feb 2023	11:06:13Hg			5495	0.916
MSW1285221 - 1	02 Feb 2023	11:09:24Hg			10983	1.859
MSW1285221 - 2	02 Feb 2023	11:09:24Hg			11393	1.929
MSW1285221 - 3	02 Feb 2023	11:09:24Hg			11746	1.990
MSW1285221 - 4	02 Feb 2023	11:09:24Hg			12085	2.048
MSDW1285221 - 1	02 Feb 2023	11:12:34Hg			11261	1.907
MSDW1285221 - 2	02 Feb 2023	11:12:34Hg			11660	1.975
MSDW1285221 - 3	02 Feb 2023	11:12:34Hg			11894	2.015
MSDW1285221 - 4	02 Feb 2023	11:12:34Hg			12088	2.049
MSW1283582 - 1	02 Feb 2023	11:15:44Hg	5		2432	0.390
MSW1283582 - 2	02 Feb 2023	11:15:44Hg	5		2505	0.403
MSW1283582 - 3	02 Feb 2023	11:15:44Hg	5		2563	0.413
MSW1283582 - 4	02 Feb 2023	11:15:44Hg	5		2660	0.430
MSDW1283582 - 1	02 Feb 2023	11:18:53Hg	5		2779	0.450
MSDW1283582 - 2	02 Feb 2023	11:18:53Hg	5		2921	0.474
MSDW1283582 - 3	02 Feb 2023	11:18:53Hg	5		3073	0.500
MSDW1283582 - 4	02 Feb 2023	11:18:53Hg	5		3194	0.521
MBW128499 - 1	02 Feb 2023	11:25:12Hg			143	-0.003
MBW128499 - 2	02 Feb 2023	11:25:12Hg			149	-0.002
MBW128499 - 3	02 Feb 2023	11:25:12Hg			153	-0.001
MBW128499 - 4	02 Feb 2023	11:25:12Hg			168	0.002
1283177 - 1	02 Feb 2023	11:28:21Hg			155	-0.001
1283177 - 2	02 Feb 2023	11:28:21Hg			157	-0.000
1283177 - 3	02 Feb 2023	11:28:21Hg			157	-0.000
1283177 - 4	02 Feb 2023	11:28:21Hg			163	0.001
1284025 - 1	02 Feb 2023	11:31:31Hg			144	-0.003
1284025 - 2	02 Feb 2023	11:31:31Hg			138	-0.004
1284025 - 3	02 Feb 2023	11:31:31Hg			153	-0.001
1284025 - 4	02 Feb 2023	11:31:31Hg			149	-0.002
CCV - 1	02 Feb 2023	11:34:41Hg			14991	(L)84.9% 2.547
CCV - 2	02 Feb 2023	11:34:41Hg			15558	(L)88.1% 2.644
CCV - 3	02 Feb 2023	11:34:41Hg			16181	91.7% 2.751
CCV - 4	02 Feb 2023	11:34:41Hg			16626	94.3% 2.828
CCV - 1	02 Feb 2023	11:37:50Hg			17451	99.0% 2.970
CCV - 2	02 Feb 2023	11:37:50Hg			18163	103.1% 3.092
CCV - 3	02 Feb 2023	11:37:50Hg			18820	106.8% 3.205
CCV - 4	02 Feb 2023	11:37:50Hg			19210	109.1% 3.272
CCB - 1	02 Feb 2023	11:44:08Hg			118	-0.007
CCB - 2	02 Feb 2023	11:44:08Hg			117	-0.007
CCB - 3	02 Feb 2023	11:44:08Hg			130	-0.005
CCB - 4	02 Feb 2023	11:44:08Hg			128	-0.005
DUP1284025 - 1	02 Feb 2023	11:47:18Hg			156	-0.000
DUP1284025 - 2	02 Feb 2023	11:47:18Hg			163	0.001
DUP1284025 - 3	02 Feb 2023	11:47:18Hg			170	0.002
DUP1284025 - 4	02 Feb 2023	11:47:18Hg			164	0.001
1284027 - 1	02 Feb 2023	11:50:28Hg			187	0.005
1284027 - 2	02 Feb 2023	11:50:28Hg			187	0.005
1284027 - 3	02 Feb 2023	11:50:28Hg			206	0.008
1284027 - 4	02 Feb 2023	11:50:28Hg			207	0.008
1284029 - 1	02 Feb 2023	11:53:39Hg			204	0.008
1284029 - 2	02 Feb 2023	11:53:39Hg			215	0.010
1284029 - 3	02 Feb 2023	11:53:39Hg			221	0.011
1284029 - 4	02 Feb 2023	11:53:39Hg			231	0.012
1284031 - 1	02 Feb 2023	11:56:50Hg			206	0.008
1284031 - 2	02 Feb 2023	11:56:50Hg			205	0.008
1284031 - 3	02 Feb 2023	11:56:50Hg			217	0.010
1284031 - 4	02 Feb 2023	11:56:50Hg			225	0.011
1284339 - 1	02 Feb 2023	12:00:01Hg			218	0.010
1284339 - 2	02 Feb 2023	12:00:01Hg			236	0.013
1284339 - 3	02 Feb 2023	12:00:01Hg			218	0.010
1284339 - 4	02 Feb 2023	12:00:01Hg			230	0.012
1284325 - 1	02 Feb 2023	12:03:11Hg			-24	-0.031
1284325 - 2	02 Feb 2023	12:03:11Hg			-26	-0.032
1284325 - 3	02 Feb 2023	12:03:11Hg			-28	-0.032
1284325 - 4	02 Feb 2023	12:03:11Hg			-23	-0.031
MSW1284025 - 1	02 Feb 2023	12:06:21Hg			12393	2.101
MSW1284025 - 2	02 Feb 2023	12:06:21Hg			12668	2.148
MSW1284025 - 3	02 Feb 2023	12:06:21Hg			12914	2.190
MSW1284025 - 4	02 Feb 2023	12:06:21Hg			13191	2.238
MSDW1284025 - 1	02 Feb 2023	12:09:31Hg			12746	2.162
MSDW1284025 - 2	02 Feb 2023	12:09:31Hg			13176	2.235

Method: Hg LIQUIDS		Operator: Admin		Date of Analysis: 02 Feb 2023 09:35:25			
Sample ID	Date	Element	Units	Extended ID	μ Abs.	Conc.	
MSDW1284025 - 3	02 Feb 2023	12:09:31Hg			13539	2.298	
MSDW1284025 - 4	02 Feb 2023	12:09:31Hg			13857	2.352	
CCV - 1	02 Feb 2023	12:12:40Hg			17510	99.3%	2.980
CCV - 2	02 Feb 2023	12:12:40Hg			17901	101.6%	3.047
CCV - 3	02 Feb 2023	12:12:40Hg			18363	104.2%	3.126
CCV - 4	02 Feb 2023	12:12:40Hg			18961	107.6%	3.229
CCB - 1	02 Feb 2023	12:18:59Hg			129	-0.005	
CCB - 2	02 Feb 2023	12:18:59Hg			138	-0.004	
CCB - 3	02 Feb 2023	12:18:59Hg			139	-0.003	
CCB - 4	02 Feb 2023	12:18:59Hg			144	-0.003	

**METALS
LOGBOOK
DOCUMENTS**

MICP WATER QSM Analytical Run
268847 on 1/31/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	SAMPLE DESCRIPTION	SAMPLE DATE/TIME	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1285319			ICV			MICP WATER QSM	0			
	1285320			ICVLL			MICP WATER QSM	0			
	1285321			ICB			MICP WATER QSM	0			
	1285322			ICSA			MICP WATER QSM	0			
	1285323			ICSAB			MICP WATER QSM	0			
	1285324			ICVLL			MICP WATER QSM	0			
	1285325			CCV1			MICP WATER QSM	0			
	1285326			CCV2			MICP WATER QSM	0			
	1285327			CCB			MICP WATER QSM	0			
175069	1283774		1/25/2023 14:25		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ICP TOTAL QSM 5.0		GW	4	
		54 IDW						128465			
	1285328			L	1283774		ICP TOTAL QSM 5.0	0			
	1283875		1/25/2023 14:25				ICP TOTAL QSM 5.0				
		54 IDW		DUP	1283774			128465			
	1283876		1/25/2023 14:25				ICP TOTAL QSM 5.0				
		54 IDW		MSW	1283774			128465			
	1283877		1/25/2023 14:25				ICP TOTAL QSM 5.0				
		54 IDW		MSDW	1283876			128465			
	1285329			CCV1			MICP WATER QSM	0			
	1285330			CCV2			MICP WATER QSM	0			
	1285331			CCB			MICP WATER QSM	0			
	1285332			PDSW	1283774		ICP TOTAL QSM 5.0	0			
	1285333			CCV1			MICP WATER QSM	0			

Matrix: S-Soil Sig-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

Distribution:

C:\Windows\ServiceProfiles\LocalService\AppData\Local\Temp\mpA59.jpg

MICP WATER QSM Analytical Run
268847 on 1/31/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	SAMPLE DESCRIPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1285334			CCV2			MICP WATER QSM	0			
	1285335			CCB			MICP WATER QSM	0			
21	SAMPLE COUNT ON RUN, INCLUDING METHOD AND INSTRUMENT QC										

Matrix: S-Soil Slg-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

Distribution:

C:\Windows\ServiceProfiles\LocalService\AppData\Local\Temp\A59.tmp

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MICP WATER QSM K&Na Analytical Run
268848 on 1/31/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	SAMPLE DESCRIPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1284823			ICV			MICP WATER QSM K&Na	0			
	1284824			ICVLL			MICP WATER QSM K&Na	0			
	1284825			ICB			MICP WATER QSM K&Na	0			
	1284826			ICSA			MICP WATER QSM K&Na	0			
	1284827			ICSAB			MICP WATER QSM K&Na	0			
	1284829			CCV1			MICP WATER QSM K&Na	0			
	1284830			CCV2			MICP WATER QSM K&Na	0			
	1284831			CCB			MICP WATER QSM K&Na	0			
175069	1283774		1/25/2023 14:25		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ICP K TOTAL QSM 5.0		GW	4	
175069	1283774	54 IDW	1/25/2023 14:25		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ICP NA TOTAL QSM 5.0	128465	GW	4	
	1285342	54 IDW					ICP NA TOTAL QSM 5.0	128465			
	1285343			L 1283774			ICP K TOTAL QSM 5.0				
	1283875		1/25/2023 14:25	L 1283774			ICP K TOTAL QSM 5.0				
	1283875	54 IDW	1/25/2023 14:25	DUP 1283774			ICP NA TOTAL QSM 5.0	128465			
	1283875	54 IDW	1/25/2023 14:25	DUP 1283774			ICP K TOTAL QSM 5.0	128465			
	1283876	54 IDW	1/25/2023 14:25	MSW 1283774			ICP NA TOTAL QSM 5.0	128465			
	1283876	54 IDW	1/25/2023 14:25	MSW 1283774			ICP K TOTAL QSM 5.0	128465			
	1283877	54 IDW	1/25/2023 14:25	MSDW 1283876			ICP NA TOTAL QSM 5.0	128465			
	1283877	54 IDW	1/25/2023 14:25	MSDW 1283876			MICP WATER QSM K&Na	128465			
	1284833			CCV1				0			

Matrix: S-Soil Sig-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

Distribution:

C:\Windows\ServiceProfiles\LocalService\AppData\Local\Temp\725C4mp

MICP WATER QSM K&Na Analytical Run
268848 on 1/31/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	SAMPLE DESCRIPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1284834			CCV2			MICP WATER QSM K&Na	0			
	1284835			CCB			MICP WATER QSM K&Na	0			
	1285346			PDSW	1283774		ICP NA TOTAL QSM 5.0				
	1285347			PDSW	1283774		ICP K TOTAL QSM 5.0				
	1284837			CCV1			MICP WATER QSM K&Na	0			
	1284838			CCV2			MICP WATER QSM K&Na	0			
	1284839			CCB			MICP WATER QSM K&Na	0			
	1283874			LCSW			ICP K TOTAL QSM 5.0	128465			
	1283874			LCSW			ICP NA TOTAL QSM 5.0	128465			
	1283874			LCSW			ICP TOTAL QSM 5.0	128465			
	1283873			LCSW			ICP K TOTAL QSM 5.0	128465			
	1283873			MBW			ICP NA TOTAL QSM 5.0	128465			
	1283873			MBW			ICP TOTAL QSM 5.0	128465			
	1283873			MBW				128465			

32 SAMPLE COUNT ON RUN, INCLUDING METHOD AND INSTRUMENT QC

Matrix: S-Soil Sig-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

Distribution:

C:\Windows\ServiceProfiles\LocalService\AppData\Local\Temp\725C4mp

Page 1 of 1

MERCURY QSM 5.0 Analytical Run
268967 on 2/2/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	SAMPLE DESCRIPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1285973			ICV			MERCURY QSM 5.0	0			
	1285974			ICB			MERCURY QSM 5.0	0			
	1284468			LCSW			MERCURY TOTAL QSM 5.0	128485			
	1284467			MBW			MERCURY TOTAL QSM 5.0	128485			
175069	1283774		1/25/2023 14:25		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	MERCURY TOTAL QSM 5.0		GW	4	
175116	1284325	54 IDW	1/27/2023 15:50		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 49	MERCURY TOTAL QSM 5.0		GW	4	
	1284469	49IDW	1/27/2023 15:50				MERCURY TOTAL QSM 5.0	128485			
	1285975	49IDW		DUP 1283774			MERCURY TOTAL QSM 5.0	128485			
	1285976			CCV			MERCURY QSM 5.0	0			
	1284470		1/27/2023 15:50	CCB			MERCURY QSM 5.0	0			
	1284471	49IDW	1/27/2023 15:50	MSW 1283774			MERCURY TOTAL QSM 5.0	128485			
	1285977	49IDW		MSDW 1284470			MERCURY TOTAL QSM 5.0	128485			
	1285978			CCV			MERCURY QSM 5.0	0			
	1285979			CCV			MERCURY QSM 5.0	0			
				CCB			MERCURY QSM 5.0	0			
14	SAMPLE COUNT ON RUN, INCLUDING METHOD AND INSTRUMENT QC										

Matrix: S-Soil Slg-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

Distribution:

C:\Windows\ServiceProfiles\LocalService\AppData\Local\Temp\tmp3663.tmp

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PrepWrkSht2
on 1/31/2023

Prep Batch: 128465

Prepped By: _____

Date Prepped: _____

Date Entered: _____

Folder #	Order	QC Type	Link	Test	Client Company Name	Client Sample Description	Matrix	Sample Date / Time	Due Date	SDG Level
	1283873	MBW	0	ICP K TOTAL QSM 5.0			LIQUID			
	1283873	MBW	0	ICP NA TOTAL QSM 5.0			LIQUID			
	1283873	MBW	0	ICP TOTAL QSM 5.0			LIQUID			
	1283874	LCSW	0	ICP K TOTAL QSM 5.0			LIQUID			
	1283874	LCSW	0	ICP NA TOTAL QSM 5.0			LIQUID			
	1283874	LCSW	0	ICP TOTAL QSM 5.0			LIQUID			
175069	1283774			ICP NA TOTAL QSM 5.0	WESTON SOLUTIONS, INC.	54 IDW	GROUND WATER	1/25/23 14:25	2/7/23	4
	1283774			ICP K TOTAL QSM 5.0	WESTON SOLUTIONS, INC.	54 IDW	GROUND WATER	1/25/23 14:25	2/7/23	4
	1283774			ICP TOTAL QSM 5.0	WESTON SOLUTIONS, INC.	54 IDW	GROUND WATER	1/25/23 14:25	2/7/23	4
	1283875	DUP	1283774	ICP K TOTAL QSM 5.0		54 IDW	GROUND WATER	1/25/23 14:25		
	1283875	DUP	1283774	ICP NA TOTAL QSM 5.0		54 IDW	GROUND WATER	1/25/23 14:25		
	1283875	DUP	1283774	ICP TOTAL QSM 5.0		54 IDW	GROUND WATER	1/25/23 14:25		
	1283876	MSW	1283774	ICP K TOTAL QSM 5.0		54 IDW	GROUND WATER	1/25/23 14:25		
	1283876	MSW	1283774	ICP NA TOTAL QSM 5.0		54 IDW	GROUND WATER	1/25/23 14:25		
	1283876	MSW	1283774	ICP TOTAL QSM 5.0		54 IDW	GROUND WATER	1/25/23 14:25		
	1283877	MSDW	1283876	ICP K TOTAL QSM 5.0		54 IDW	GROUND WATER	1/25/23 14:25		
	1283877	MSDW	1283876	ICP NA TOTAL QSM 5.0		54 IDW	GROUND WATER	1/25/23 14:25		

Folder #	Order	QC Type	Link	Test	Client Company Name	Client Sample Description	Matrix	Sample Date / Time	Due Date	SDG Level
	1283877	MSDW	1283876	ICP TOTAL QSM 5.0		54 IDW	GROUND WATER	1/25/23 14:25		

Control Spike/Control Spike Dup Reference Number: _____ Methanol Supplier/Lot #: _____

Notes: _____

PrepWrkSht2
on 2/13/2023

Prep Batch: 128485

Prepped By: _____

Date Prepped: _____

Date Entered: _____

Folder #	Order	QC Type	Link	Test	Client Company Name	Client Sample Description	Matrix	Sample Date / Time		Due Date	SDG Level
	1284467	MBW		MERCURY TOTAL QSM 5.0			LIQUID				
	1284468	LCSW		MERCURY TOTAL QSM 5.0			LIQUID				
175069	1283774			MERCURY TOTAL QSM 5.0	WESTON SOLUTIONS, INC.	54IDW	GROUND WATER	1/25/23	14:25	2/7/23	4
175116	1284325			MERCURY TOTAL QSM 5.0	WESTON SOLUTIONS, INC.	49IDW	GROUND WATER	1/27/23	15:50	2/9/23	4
	1284469	DUP	1283774	MERCURY TOTAL QSM 5.0		49IDW	GROUND WATER	1/27/23	15:50		
	1284470	MSW	1283774	MERCURY TOTAL QSM 5.0		49IDW	GROUND WATER	1/27/23	15:50		
	1284471	MSDW	1284470	MERCURY TOTAL QSM 5.0		49IDW	GROUND WATER	1/27/23	15:50		

Control Spike/Control Spike Dup Reference Number: _____

Methanol Supplier/Lot #: _____

Notes: _____

Metals Digestion Bench Sheet

Prep Methods:

200.2= ICP/GFAA Liquids

3010= ICP Liquids

3020= GFAA Liquids

3005= Sb Liquids

3050= ICP/GFAA Solids

7060/7740= GFAA As & Se Liquids

Prep Batch #:	128465
Prep Method:	200.2
Analyst:	NAH
Date:	01/26/2023
Start Time:	13:10

Reagent:	Ref. #
----------	--------

Nitric Acid: AB.717

Hydrochloric Acid: AB.716

Hydrogen Peroxide:

Program: QSM

*Matrix: liquid

Prep Analyst: NAH

Balance ID: _____

End Date: 01/27/2023

End Time: 01:56

Digestion Tube Lot #: 3743

Block Used: D2

Cell Position for Temp. Check: 60

Initial-DigestionTemp (°C,corrected): 94

Final-Digestion Temp (°C,corrected): 92

[illegible]

Leave >>
blank
if N/A

MB=Method Blank, LCS=Laboratory Control Sample, DUP=Duplicate, MS=Matrix Spike & MSD=Matrix Spike Duplicate

*Matrix: Soil, Sludge, Waste, GW=Groundwater, WW=Wastewater, Tissue, TLCP, SPLP, ASTM or other.

MS/MSD	Spike Amount (ml)	Spike Ref. #
	0.1	M15663
	0.2	M15695
	0.5	M15601
	0.5	M15632

LCS	Spike Amount (ml)	Spike Ref. #
	0.1	M15663
	0.2	M15695
	0.5	M15601
	0.5	M15632

Reviewed X

Mercury Digestion Bench Sheet

CCV ID: M15806

ICV/LCSW ID: M15807

*Matrix: GW

Balance ID:

7470A= Hg Liquids

7471A= Hg Solids

End Date: 01/31/2023

End Time: 16:30

Reagent:	Ref. #
----------	--------

HNO3: AB.719

H2SO4: AB.718

H2SO4: AB.718

NaCl/Hydrox.SO4: M15811

KMnO4: M15808

K2S2O8: M15809

Aqua-Regia:

Digestion Tube Lot #: 24322023

Block Used: A

Cell Position for Temp. Check: B-4

Initial-DigestionTemp (°C,corrected): 91.6

Final-Digestion Temp (°C,corrected): 91.6

Additional KMnO_4 added (ml):

Agua Regia added (ml)

Calibration Std: M15805

Leave >>
blank

if N/A

MB=Method Blank, LCS=Laboratory Control Sample, DUP=Duplicate, MS=Matrix Spike & MSD=Matrix Spike Duplicate

*Matrix: Soil, Sludge, Waste, GW=Groundwater, WW=Wastewater, Tissue, TLCP, SPLP, ASTM or other.

A: Spike Amount (ml)	Spike Conc. (ug/L)	Spike Ref. #
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B: Spike Amount (ml)	Spike Conc. (ug/L)	Spike Ref. #
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Reviewed By/Date: X

iCAP 6000 / 6500 Data Review Checklist		Analysis Date: 1-27-23		Data File: 0007210123		Date of review: 2/1/23	
Cal Std ID: M15480 LIMS #: 268847.48		Analyst: SA		Reviewer: MOS		Approved? Yes No	
Is Audit Trail turned on or Manual Manipulations addressed? Yes / No (If no, any manual manipulations must be initialed, dated, and reason(s) stated for change)							
Prep Batch Check							
QC Parameters : 6010 / 200.7 / QSM / Other	YES	NO	YES	NO	Comments:		
1) Calibration linearity: $r \geq 0.995$ / $r > 0.998$	✓		✓				
2) ICV: $< 90-110\%$ / $95-105\%$	✓		✓				
2) ICVLL: $70-130\%$ / $80-120\%$	✓		✓				
3) ICB: $< 3X IDL$ / $< LOD$ / $< LOQ$	✓		✓				
4) ICSA: $< ABS LOB$	✓		✓				
5) ICSAB: $80-120\%$	✓		✓				
6) MRL: $70-130\%$ / $80-120\%$							
7) MDL Check: $> LOD$							
8) CCV1/CCB1 (CCV: $90-110\%$)	✓		✓				
9) CCV2/CCB2 (CCB: $< 3X IDL$ / $< LOD$ / $< LOQ$)	✓		✓				
10) CCV3/CCB3							
11) CCV4/CCB4							
12) CCV5/CCB5							
Preparation Batch Parameters	YES	NO	YES	NO			
Prep Batch ID#: 128465 Dig. Meth. 200.2	✓		✓				
LCS - generated limits or project specific limits	✓		✓				
MB - $< LOD$ or $\leq \frac{1}{2} RL$	✓		✓				
Spiked samples in batch:							
a) 128374 matrix = 520	✓	✓	✓	✓	Co MSD - PDS Para		
b) matrix =							
c) matrix =							
PDS: $\pm 15\%$ / 20% / 25% Sample#:							
Prep Batch ID#: Dig. Meth.							
LCS - generated limits or project specific limits							
MB - $< LOD$ or $\leq \frac{1}{2} RL$							
Spiked samples in batch:							
a) matrix =							
b) matrix =							
c) matrix =							
PDS: $\pm 15\%$ / 20% / 25% Sample#:							
Prep Batch ID#: Dig. Meth.							
LCS - generated limits or project specific limits							
MB - $< LOD$ or $\leq \frac{1}{2} RL$							
Spiked samples in batch:							
a) matrix =							
b) matrix =							
c) matrix =							
PDS: $\pm 15\%$ / 20% / 25% Sample#:							
Prep Batch ID#: Dig. Meth.							
LCS - generated limits or project specific limits							
MB - $< LOD$ or $\leq \frac{1}{2} RL$							
Spiked samples in batch:							
a) matrix =							
b) matrix =							
c) matrix =							
PDS: $\pm 15\%$ / 20% / 25% Sample#:							

GFAA / FLAA / CVAA Data Review checklist		Method: 200.9		7000 series AA		245.1 & 245.2		245.7		7470a / 7471a		
Instrumentation:		THERMO M SERIES AA				Hydra II Hg ANALYZER						
Analysis Date: 2/2/23		Data File: 020223W		Date Review: 2/3/23		Analyte: Hg						
Cal Std ID: M15805		LIMS #: 268967		Analyst: MMS		Reviewer: [Signature]		Approved? Yes		No		
Prep Batch Check												
Is Audit Trail turned on or Manual Manipulations addressed? (Yes) No (If no, any manual manipulations must be initiated, dated, and reason(s) stated for change)												
Calibration Parameters -			YES	NO	YES	NO	Comments:					
1) Calibration linearity - r > 0.995			✓		✓							
2) ICV: 90-110% 95-105%			✓		✓							
2) ICVLL: 70-130% 80-120%												
3) ICB: <IDL / <LOD / <LOQ / <½ RL			✓		✓							
6) MRL: 70-130%					✓							
7) CCV1/CCB1- (CCV: 90-110% / 80-120%)			✓		✓							
8) CCV2/CCB2 (CCB: <IDL / <LOD / <LOQ / <½ RL)												
9) CCV3/CCB3												
10) CCV4/CCB4												
11) CCV5/CCB5												
Preparation Batch Parameters			YES	NO	YES	NO						
Prep Batch ID#: 128465 Dig. Meth. 7470a			✓		✓							
LCS - generated limits or project specific limits			✓		✓							
MB - <LOD / <2.2X LOD / ≤ ½RL			✓		✓							
Spiked samples in batch:												
a) 1283714 matrix = Gw			✓	✓	✓	✓	Dup invalid MS/MSD Failed "M"					
b) matrix =												
c) matrix =												
d) matrix =												
e) matrix =												
PDS: ±15% / 20% / 25% Sample#												
MSA Performed? Yes No												
Prep Batch ID#: Dig. Meth.												
LCS - generated limits or project specific limits												
MB - <LOD / <2.2X LOD / ≤ ½RL												
Spiked samples in batch:												
a) matrix =												
b) matrix =												
c) matrix =												
d) matrix =												
e) matrix =												
PDS: ±15% / 20% / 25% Sample#												
MSA Performed? Yes No												
Prep Batch ID#: Dig. Meth.												
LCS - generated limits or project specific limits												
MB - <LOD / <2.2X LOD / ≤ ½RL												
Spiked samples in batch:												
a) matrix =												
b) matrix =												
c) matrix =												
d) matrix =												
e) matrix =												

ICP-6500 Instrument Run Logbook

Date	Time: Start / End	Analyst	Analytes / Sequence I.D.	Method	LIMS # or Sample Description	Nebulizer Pressure (kpa)	Calib. Std ID	Version	Comments
1/27/23	0619 / 2026	J	6127 23	DOO CAL h	268853 268847.48 268854 268847.50 268851.52 268824	250	M15480 M15481 M15482	V5472	M15483.84 M15574.75.76
1/30/23	1237 / 2123	J	6130 23	DOO CAL h	268851.52 268908 268911.12 268909.10	250	M15480 M15481 M15482	V5474 V5473	M15483.84 M15574.75.76
2/1/23	1249 / 2135	J	0201 23	DOO CAL h	268913 268934 2689164	250	M15796 M15797 M15798	V5475	M15799, M15800 M15801 M15802
2/2/23	/								
	/								
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	/								
	/								
	/								
	/								
	/								
	/								

Comments: _____

Checked By / Date: _____

Mercury Analyzer Instrument Run Log

Reviewed By/Date: _____

[illegible]

Type	Date/Time	Message	User name	Application	Sequence Name
	01/26/2023 17:33:08	Running 1283534 (22)	NAH	Analyst	S_DOD Calibration
	01/26/2023 17:40:44	Running MSW1283534 (23)	NAH	Analyst	S_DOD Calibration
	01/26/2023 17:47:40	Running MSDW1283534 (24)	NAH	Analyst	S_DOD Calibration
	01/26/2023 17:54:38	Running MRL/LLOQ (25)	NAH	Analyst	S_DOD Calibration
	01/26/2023 18:01:53	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	01/26/2023 18:08:11	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	01/26/2023 18:14:54	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	01/26/2023 18:22:16	Plasma extinguished successfully	NAH	Analyst	
	01/26/2023 18:22:16	Plasma off	NAH	iTEVA Control Center	
	01/26/2023 18:22:18	Autosampler Run Completed	NAH	Analyst	S_DOD Calibration
	01/27/2023 06:50:33	Plasma On	NAH	iTEVA Control Center	
	01/27/2023 06:50:40	Plasma ignition successful	NAH	Analyst	
	01/27/2023 06:51:26	D33534 - Debug:Wavelength check : x = -0.553, y = -0.231	NAH	Analyst	
	01/27/2023 08:19:38	Sequence Started	NAH	Analyst	S_DOD Calibration
	01/27/2023 08:19:38	Autosampler Run Started	NAH	Analyst	
	01/27/2023 08:19:58	Running Blank (1)	NAH	Analyst	S_DOD Calibration
	01/27/2023 08:27:23	Running CalStd2=0.5 (2)	NAH	Analyst	S_DOD Calibration
	01/27/2023 08:34:47	Running CalStd3=1 (3)	NAH	Analyst	S_DOD Calibration
	01/27/2023 08:42:11	Running CalStd4=5 (4)	NAH	Analyst	S_DOD Calibration
	01/27/2023 08:49:34	Running CalStd5=10 (5)	NAH	Analyst	S_DOD Calibration
	01/27/2023 08:56:56	Running CalStd6=20 (6)	NAH	Analyst	S_DOD Calibration
	01/27/2023 09:04:18	Running CalStd7=50 (7)	NAH	Analyst	S_DOD Calibration
	01/27/2023 09:11:29	Running CalStd8=100 (8)	NAH	Analyst	S_DOD Calibration
	01/27/2023 09:18:31	Running CalStd9=1000 (9)	NAH	Analyst	S_DOD Calibration
	01/27/2023 09:25:08	Running CalStd10=10000 (10)	NAH	Analyst	S_DOD Calibration
	01/27/2023 09:32:26	Running CalStd12=100K (11)	NAH	Analyst	S_DOD Calibration
	01/27/2023 09:33:20	Closing will close the method and all associated samples.	NAH	Analyst	
	01/27/2023 09:40:24	Running CalStd13=100000 (12)	NAH	Analyst	S_DOD Calibration
	01/27/2023 09:47:53	Running CalStd14=500000 (13)	NAH	Analyst	S_DOD Calibration
	01/27/2023 09:55:57	Running CalibStd15=1000k (14)	NAH	Analyst	S_DOD Calibration
	01/27/2023 10:04:10	Running Ag 1000 Ba 20000 (15)	NAH	Analyst	S_DOD Calibration
	01/27/2023 10:08:41	Closing will close the method and all associated samples.	NAH	Analyst	
	01/27/2023 10:11:05	Closing will close the method and all associated samples.	NAH	Analyst	
	01/27/2023 10:11:52	Running blkrinse (22)	NAH	Analyst	S_DOD Calibration
	01/27/2023 10:19:14	Running icv (16)	NAH	Analyst	S_DOD Calibration
	01/27/2023 10:26:07	Running icv (16)	NAH	Analyst	S_DOD Calibration
	01/27/2023 10:33:04	Running ICVLL (24)	NAH	Analyst	S_DOD Calibration
	01/27/2023 10:40:21	Running icb (17)	NAH	Analyst	S_DOD Calibration
	01/27/2023 10:41:14	Closing will close the method and all associated samples.	NAH	Analyst	
	01/27/2023 10:47:43	Running icb (17)	NAH	Analyst	S_DOD Calibration
	01/27/2023 10:55:06	Running MRL/LLOQ (25)	NAH	Analyst	S_DOD Calibration
	01/27/2023 10:56:59	Closing will close the method and all associated samples.	NAH	Analyst	
	01/27/2023 11:02:30	Running ICSA (20)	NAH	Analyst	S_DOD Calibration
	01/27/2023 11:10:15	Running ICSAB (21)	NAH	Analyst	S_DOD Calibration
	01/27/2023 11:17:28	Running blkrinse (22)	NAH	Analyst	S_DOD Calibration
	01/27/2023 11:24:50	Running ICVLL ag (1)	NAH	Analyst	S_DOD Calibration
	01/27/2023 11:28:31	Closing will close the method and all associated samples.	NAH	Analyst	
	01/27/2023 11:32:13	Running lcsW128463 (2)	NAH	Analyst	S_DOD Calibration
	01/27/2023 11:39:26	Running mbW128463 (3)	NAH	Analyst	S_DOD Calibration
	01/27/2023 11:46:49	Running 1283677 (4)	NAH	Analyst	S_DOD Calibration
	01/27/2023 11:54:10	Running msw1283677 (5)	NAH	Analyst	S_DOD Calibration
	01/27/2023 12:01:31	Running msdW1283677 (6)	NAH	Analyst	S_DOD Calibration

Type	Date/Time	Message	User name	Application	Sequence Name
	01/27/2023 12:08:50	Running pdsw1283677 (7)	NAH	Analyst	S_DOD Calibration
	01/27/2023 12:10:10	Closing will close the method and all associated samples.	NAH	Analyst	
	01/27/2023 12:16:01	Running 1283678 (8)	NAH	Analyst	S_DOD Calibration
	01/27/2023 12:19:29	Closing will close the method and all associated samples.	NAH	Analyst	
	01/27/2023 12:23:12	Running 1283679 (9)	NAH	Analyst	S_DOD Calibration
	01/27/2023 12:30:52	Running 1283680 (10)	NAH	Analyst	S_DOD Calibration
	01/27/2023 12:38:25	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	01/27/2023 12:44:42	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	01/27/2023 12:51:25	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	01/27/2023 12:58:49	Running msw1283680 (11)	NAH	Analyst	S_DOD Calibration
	01/27/2023 13:06:09	Running msdw1283680 (12)	NAH	Analyst	S_DOD Calibration
	01/27/2023 13:13:31	Running pdsw1283680 (13)	NAH	Analyst	S_DOD Calibration
	01/27/2023 13:20:31	Running 1283681 (14)	NAH	Analyst	S_DOD Calibration
	01/27/2023 13:28:00	Running 1283682 (15)	NAH	Analyst	S_DOD Calibration
	01/27/2023 13:35:18	Running 1283683 (16)	NAH	Analyst	S_DOD Calibration
	01/27/2023 13:42:35	Running 1283684 (17)	NAH	Analyst	S_DOD Calibration
	01/27/2023 13:49:55	Running 1283685 (18)	NAH	Analyst	S_DOD Calibration
	01/27/2023 13:57:16	Running 1283686 (19)	NAH	Analyst	S_DOD Calibration
	01/27/2023 14:04:26	Running 1283687 (20)	NAH	Analyst	S_DOD Calibration
	01/27/2023 14:11:47	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	01/27/2023 14:18:04	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	01/27/2023 14:24:50	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	01/27/2023 14:32:13	Running 1283688 (21)	NAH	Analyst	S_DOD Calibration
	01/27/2023 14:39:17	Running 1283762 (22)	NAH	Analyst	S_DOD Calibration
	01/27/2023 14:46:40	Running 1283763 (23)	NAH	Analyst	S_DOD Calibration
	01/27/2023 14:54:04	Running lcs128454 (24)	NAH	Analyst	S_DOD Calibration
	01/27/2023 15:01:17	Running mbw128454 (25)	NAH	Analyst	S_DOD Calibration
	01/27/2023 15:08:40	Running 1283517 (26)	NAH	Analyst	S_DOD Calibration
	01/27/2023 15:16:20	Running msw1283517 (27)	NAH	Analyst	S_DOD Calibration
	01/27/2023 15:23:35	Running msdw1283517 (28)	NAH	Analyst	S_DOD Calibration
	01/27/2023 15:30:51	Running pdsw1283517 (29)	NAH	Analyst	S_DOD Calibration
	01/27/2023 15:37:45	Running 1283543 (30)	NAH	Analyst	S_DOD Calibration
	01/27/2023 15:45:01	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	01/27/2023 15:51:18	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	01/27/2023 15:58:00	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	01/27/2023 16:05:23	Running 1283545 (31)	NAH	Analyst	S_DOD Calibration
	01/27/2023 16:13:11	Running 1283556 (32)	NAH	Analyst	S_DOD Calibration
	01/27/2023 16:21:03	Running 1283582 (33)	NAH	Analyst	S_DOD Calibration
	01/27/2023 16:28:34	Running lcs128465 (34)	NAH	Analyst	S_DOD Calibration
	01/27/2023 16:35:48	Running mbw128465 (35)	NAH	Analyst	S_DOD Calibration
	01/27/2023 16:43:11	Running 1283774 (36)	NAH	Analyst	S_DOD Calibration
	01/27/2023 16:50:46	Running l1283774 (37)	NAH	Analyst	S_DOD Calibration
	01/27/2023 16:58:26	Running dup1283774 (38)	NAH	Analyst	S_DOD Calibration
	01/27/2023 17:06:00	Running msw1283774 (39)	NAH	Analyst	S_DOD Calibration
	01/27/2023 17:13:06	Running msdw1283774 (40)	NAH	Analyst	S_DOD Calibration
	01/27/2023 17:20:12	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	01/27/2023 17:26:29	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	01/27/2023 17:33:12	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	01/27/2023 17:40:34	Running pdsw1283774 (41)	NAH	Analyst	S_DOD Calibration
	01/27/2023 17:47:31	Running lcs128468 (42)	NAH	Analyst	S_DOD Calibration
	01/27/2023 17:54:45	Running mbw128468 (43)	NAH	Analyst	S_DOD Calibration
	01/27/2023 18:02:08	Running 1283766 (44)	NAH	Analyst	S_DOD Calibration

Type	Date/Time	Message	User name	Application	Sequence Name
	01/27/2023 18:09:49	Running I1283766 (45)	NAH	Analyst	S_DOD Calibration
	01/27/2023 18:17:12	Running dup1283766 (46)	NAH	Analyst	S_DOD Calibration
	01/27/2023 18:24:53	Running msw1283766 (47)	NAH	Analyst	S_DOD Calibration
	01/27/2023 18:32:00	Running pdsw1283766 (48)	NAH	Analyst	S_DOD Calibration
	01/27/2023 18:39:01	Running lcs128466 (49)	NAH	Analyst	S_DOD Calibration
	01/27/2023 18:46:10	Running mbw128466 (50)	NAH	Analyst	S_DOD Calibration
	01/27/2023 18:53:32	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	01/27/2023 18:59:49	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	01/27/2023 19:06:33	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	01/27/2023 19:13:56	Running 1283767 (51)	NAH	Analyst	S_DOD Calibration
	01/27/2023 19:21:38	Running I1283767 (52)	NAH	Analyst	S_DOD Calibration
	01/27/2023 19:29:03	Running dup1283767 (53)	NAH	Analyst	S_DOD Calibration
	01/27/2023 19:36:45	Running msw1283767 (54)	NAH	Analyst	S_DOD Calibration
	01/27/2023 19:43:53	Running pdsw1283767 (55)	NAH	Analyst	S_DOD Calibration
	01/27/2023 19:50:52	Running 1283173 (56)	NAH	Analyst	S_DOD Calibration
	01/27/2023 19:58:16	Running 1283174 (57)	NAH	Analyst	S_DOD Calibration
	01/27/2023 20:05:50	Running MRL/LLOQ (25)	NAH	Analyst	S_DOD Calibration
	01/27/2023 20:13:06	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	01/27/2023 20:19:24	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	01/27/2023 20:26:08	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	01/27/2023 20:33:30	Plasma off	NAH	iTEVA Control Center	
	01/27/2023 20:33:30	Plasma extinguished successfully	NAH	Analyst	
	01/27/2023 20:33:32	Autosampler Run Completed	NAH	Analyst	S_DOD Calibration
	01/30/2023 07:10:32	Plasma On	NAH	iTEVA Control Center	
	01/30/2023 07:10:37	Plasma ignition successful	NAH	Analyst	
	01/30/2023 07:11:24	D33534 - Debug:Wavelength check : x = -0.973, y = -0.230	NAH	Analyst	
	01/30/2023 12:42:18	Plasma extinguished successfully	NAH	Analyst	
	01/30/2023 12:42:19	Plasma off	NAH	iTEVA Control Center	
	01/31/2023 07:05:05	Plasma On	NAH	iTEVA Control Center	
	01/31/2023 07:05:11	Plasma ignition successful	NAH	Analyst	
	01/31/2023 07:05:58	D33534 - Debug:Wavelength check : x = -0.847, y = -0.347	NAH	Analyst	
	01/31/2023 12:36:54	Sequence Started	NAH	Analyst	S_DOD Calibration
	01/31/2023 12:36:54	Autosampler Run Started	NAH	Analyst	
	01/31/2023 12:37:15	Running Blank (1)	NAH	Analyst	S_DOD Calibration
	01/31/2023 12:44:39	Running CalStd2=0.5 (2)	NAH	Analyst	S_DOD Calibration
	01/31/2023 12:52:03	Running CalStd3=1 (3)	NAH	Analyst	S_DOD Calibration
	01/31/2023 12:59:28	Running CalStd4=5 (4)	NAH	Analyst	S_DOD Calibration
	01/31/2023 13:06:53	Running CalStd5=10 (5)	NAH	Analyst	S_DOD Calibration
	01/31/2023 13:14:16	Running CalStd6=20 (6)	NAH	Analyst	S_DOD Calibration
	01/31/2023 13:21:38	Running CalStd7=50 (7)	NAH	Analyst	S_DOD Calibration
	01/31/2023 13:28:51	Running CalStd8=100 (8)	NAH	Analyst	S_DOD Calibration
	01/31/2023 13:35:57	Running CalStd9=1000 (9)	NAH	Analyst	S_DOD Calibration
	01/31/2023 13:42:27	Running CalStd10=10000 (10)	NAH	Analyst	S_DOD Calibration
	01/31/2023 13:49:16	Running CalStd12=100K (11)	NAH	Analyst	S_DOD Calibration
	01/31/2023 13:57:13	Running CalStd13=100000 (12)	NAH	Analyst	S_DOD Calibration
	01/31/2023 14:04:41	Running CalStd14=500000 (13)	NAH	Analyst	S_DOD Calibration
	01/31/2023 14:12:26	Running CalibStd15=1000k (14)	NAH	Analyst	S_DOD Calibration
	01/31/2023 14:20:32	Running Ag 1000 Ba 20000 (15)	NAH	Analyst	S_DOD Calibration
	01/31/2023 14:28:05	Running blkrinse (22)	NAH	Analyst	S_DOD Calibration
	01/31/2023 14:35:27	Running icv (16)	NAH	Analyst	S_DOD Calibration
	01/31/2023 14:42:30	Running icv (16)	NAH	Analyst	S_DOD Calibration
	01/31/2023 14:49:31	Running ICVLL (24)	NAH	Analyst	S_DOD Calibration

Standard Log #:	M15822	Instrument:	GFAA																																			
Analyst:	MDS	Standard:	MDL Spiking Solution																																			
Prep Date:	02/08/2023	Expiration Date:	06/2023																																			
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (2% HNO₃) <table border="1"> <thead> <tr> <th>Analyte</th> <th>Final MDL Conc. (ug/L)</th> <th>Std. ID #</th> <th>Std. Conc. (mg/L)</th> <th>Volume (mL) pipetted</th> </tr> </thead> <tbody> <tr> <td>Ag</td> <td>0.2</td> <td>M15222</td> <td>1000</td> <td>0.01</td> </tr> <tr> <td>As</td> <td>2</td> <td>M15223</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Pb</td> <td>2</td> <td>M15289 (0.1)</td> <td>10000</td> <td>0.01</td> </tr> <tr> <td>Sb</td> <td>2</td> <td>M15220</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Se</td> <td>2</td> <td>M15217</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Tl</td> <td>2</td> <td>M15782</td> <td>1000</td> <td>0.1</td> </tr> </tbody> </table> Of this base standard, pipetted 1 mL into a 50 mL digestion tube for a digested working standard.			Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted	Ag	0.2	M15222	1000	0.01	As	2	M15223	1000	0.1	Pb	2	M15289 (0.1)	10000	0.01	Sb	2	M15220	1000	0.1	Se	2	M15217	1000	0.1	Tl	2	M15782	1000	0.1
Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted																																		
Ag	0.2	M15222	1000	0.01																																		
As	2	M15223	1000	0.1																																		
Pb	2	M15289 (0.1)	10000	0.01																																		
Sb	2	M15220	1000	0.1																																		
Se	2	M15217	1000	0.1																																		
Tl	2	M15782	1000	0.1																																		

Standard Log #:	M15817	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	02/07/2023	Expiration Date:	03/07/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15818	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	02/07/2023	Expiration Date:	03/07/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15819	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	02/07/2023	Expiration Date:	02/08/2023
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15820	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	02/08/2023	Expiration Date:	03/08/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15821	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	02/08/2023	Expiration Date:	03/08/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15707 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15814	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	02/07/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15815	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	02/07/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15816	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	02/07/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15813	Standard:	GFAA Instrument Check
Analyst:	MDS	Final Concentration:	10 µg/L As 6 µg/L Pb 10 µg/L Sb 20 µg/L Se 10 µg/L Tl 0.6 µg/L Ag
Prep Date:	02/06/2023	Expiration Date:	06/2023

Into six, 100 mL volumetric flasks, add the following and bring up to volume with milli-Q H₂O.

Element	Volume Pipetted (mL)	Standard Conc. (µg/mL)	Standard ID	New Conc. (µg/L)
As	1	1000	M15223	10,000
Pb	1	1000	M15289	10,000
Tl	1	1000	M15782	10,000
Se	1	1000	M15217	10,000
Sb	1	1000	M15220	10,000
Ag	0.1	1000	M15222	1000

Into a 1 L volumetric flask, add the following and bring up to volume with Milli-Q H₂O. (1% HNO₃)

Element	Volume Pipetted (mL)	Standard Conc. (µg/L)	New Conc. (µg/L)
As	1.0	10,000	10
Pb	0.6	10,000	6
Tl	1.0	10,000	10
Se	2.0	10,000	20
Sb	1.0	10,000	10
Ag	0.6	1000	0.6

		Instrument:	CETAC
Standard Log #:	M15810	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	01/31/2023	Expiration Date:	02/01/2023
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15811	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	02/01/2023	Expiration Date:	03/01/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15812	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	02/01/2023	Expiration Date:	03/01/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15707 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15807	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/31/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15808	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/31/2023	Expiration Date:	02/28/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15809	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/31/2023	Expiration Date:	02/28/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15805	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/31/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15806	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/31/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

Standard Log #:	M15804	Instrument:	ICP 6500
Analyst:	NAH	Standard:	MDL LOQ SOLID
Prep Date:	02/01/2023	Expiration Date:	03/2023

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	40	M15222	1000	2
Al	800	M15787	10000	4
As	40	M15223	1000	2
Ba	40	M15540	1000	2
Be	8	M15767	1000	0.4
Ca	1000	M15783	10000	5
Cd	10	M15766	1000	0.5
Co	20	M15788	1000	1
Cr	20	M15791	10000	0.1
Cu	20	M15780	10000	0.1
Fe	600	M15522	10000	3
Mg	1000	M15790	10000	5
Mn	20	M15789	10000	0.1
Mo	20	M15785	1000	1
Ni	20	M15095	1000	1
Pb	20	M15045	10000	0.1
Sb	40	M15220	1000	2
Se	40	M15217	1000	2
Tl	40	M15782	1000	2
V	20	M15781	1000	1.0
Zn	20	M15114	10000	0.1
Na	10000	M15764	10000	50
K	10000	M15631	10000	50
B	40	M15523	1000	2
Si	xxxxxxxx	xxxxxxx	1000	xxxxxx
Li	xxxxxxxx	xxxxxxx	1000	xxxxxx
Sr	20	M15526	1000	1
Sn	40	M15502	1000	2
Ti	xxxxxxx	xxxxxxxxxx	1000	xxxxxx
S	xxxxxxxx	xxxxxxxxxx	10000	xxxxxx

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M15803	Instrument:	ICP 6500
Analyst:	NAH	Standard:	MDL LOQ LIQUID
Prep Date:	02/01/2023	Expiration Date:	03/2023

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	5	M15222	1000	0.25
Al	120	M15787	10000	0.6
As	40	M15223	1000	0.2
Ba	4	M15540	1000	0.2
Be	8	M15767	1000	0.4
Ca	100	M15783	10000	0.5
Cd	2	M15766	1000	0.1
Co	5	M15788	1000	0.25
Cr	5	M15791	10000	0.025
Cu	40	M15780	10000	0.2
Fe	80	M15522	10000	0.4
Mg	40	M15790	10000	0.2
Mn	5	M15789	10000	.025
Mo	5	M15785	1000	0.25
Ni	5	M15095	1000	0.25
Pb	10	M15045	10000	0.05
Sb	20	M15220	1000	1.0
Se	40	M15217	1000	2.0
Tl	40	M15782	1000	2.0
V	5	M15781	1000	0.25
Zn	20	M15114	10000	0.1
Na	700	M15764	10000	3.5
K	500	M15631	10000	2.5
B	40	M15523	1000	2.0
Si	200	M15792	1000	10
Li	20	M15504	1000	1.0
Sr	20	M15526	1000	1.0
Sn	40	M15502	1000	2.0
Ti	xxxxx	xxxxxxxxx	1000	xxxxxx
S	800	M15786	10000	4

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

		Instrument:	ICP 6500
Standard Log #:	M15802	Standard:	ICV Std. all
Analyst:	NAH	Concentrations:	12,000 ug/L Al 10,000 ug/L Ca, Mg 5000 ug/L Fe 2000 ug/L As, Ba, Se, Tl 500 ug/L B, Co, Li, Mn, Mo, Ni, Pb, Sb, Sn, Sr, Ti, V, Zn 250 ug/L Cu 200 ug/L Cr 50 ug/L Ag, Be, Cd 100 mg/L Na,K,S 500 ug/L Si
Prep Date:	02/01/2023	Expiration Date:	06/2023
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with milli-Q H₂O. 10 mL Custom Assurance Standard #18 ((200 mg/L Al, As, Ba, Se, Tl) (100 mg/L Fe) (50 mg/L Co, Mn, Ni, Pb, Sb, V, Zn) (25 mg/L Cu) (20 mg/L Cr) (5 mg/L Ag, Be, Cd)) M15729, 2 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe) M15717, 0.5 mL Mo (1000 mg/L) M15785, 0.5 mL B (1000 mg/L) M15523, 0.5 mL Sr (1000 mg/L) M15526, 0.5 mL Li (1000 mg/L) M15504, 0.5 mL Sn (1000 mg/L) M15502, 0.5 mL Ti (1000 mg/L) xxxxxxxxxxxx, xxxxxxxxxxxx, 0.5 mL Si (1000 mg/L) M15542, 10 mL S (10000 mg/L) M15786, 10 mL k 10000 mg/L) M15632, 10 mL Na (10000 /L) M15664		

		Instrument:	ICP 6500
Standard Log #:	M15800	Standard:	ICSA
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 10,000 V, Ce
Prep Date:	02/01/2023	Expiration Date:	06/2023
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interference A std M15505 and 15 mL 10000 mg/L Fe M15660 5.0 mL 1000 mg/L V M15781 5.0 mL 1000 mg/L Ce M15499 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15801	Standard:	ICSAB
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 500 ug/L Ag, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn, K, Na, S, 50000 ug/L Si 1000 ug/L.
Prep Date:	02/01/2023	Expiration Date:	06/2023
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M15505, 15 mL Fe (10,000 mg/L) M15660, 2.5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M15779, 2.5 mL Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn), M15630, 2.5 mLs Na 10,000 ug/mL M15764, 2.5 mLs k 10,000 ug/mL M15765 2.5 mLs S 10,000 ug/mL M15501, 0.5 mls Si 1000 ug/mL M15792 and brought up to volume with milli-Q .		

MRL BASE STD	M15799	Analyst	NAH
		Prep Date	02/01/2023

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	(ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L	Expiration Date
Ag	20	M15222	1000	1	03/2023
Al	400	M15787	10000	2	x
Ba	10	M15540	1000	0.5	x
Be	4	M15767	1000	0.2	x
Cd	5	M15766	1000	0.25	x
Co	10	M15788	1000	0.5	x
Cr	10	M15791	10000	0.05	x
Cu	10	M15780	10000	0.05	x
Mg	500	M15790	10000	2.5	x
Mn	10	M15789	10000	0.05	x
Mo	10	M15785	1000	0.5	x
Ni	10	M15095	1000	0.5	x
Pb	10	M15045	10000	0.05	x
Sb	20	M15220	1000	1	x
V	10	M15781	1000	0.5	x
Zn	10	M15114	10000	0.05	x
K	1000	M15631	10000	5	x
Na	1000	M15764	10000	5	2000 ug/L 10 mls of stanard
As	20	M15223	1000	1	x
Ca	500	M15783	10000	2.5	x
Fe	300	M15522	10000	1.5	x
Se	20	M15217	1000	1	x
Tl	20	M15782	1000	1	x
Si	100	M15792	1000	5	x
B	20	M15523	1000	1	x
Li	20	M15504	1000	1	x
W	50	xxxxxxxxx	1000	2.5	x
Ti	10	M15503	1000	0.5	x
Sr	10	M15526	1000	0.5	x
Sn	50	M15502	1000	2.5	x
S	300	M15786	10000	1.5	03/2023

Of this Base standard, pipet 10 mls into 500 ml volumetric to create a working std or 1 ml into 50 ml digestion tube for a digested working standard.

		Instrument:	ICP 6500
Standard Log #:	M15797	Standard:	CCV1
Analyst:	NAH	Concentrations:	500 ug/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn, Si. 10,000 ug/L K, Na, S 50 ug/L Ag, Be, Cd
Prep Date:	02/01/2023	Expiration Date:	09/2023
Prep:	Into a 1 L volumetric flask, pipetted 50 mL Custom Assurance Standard #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15630 and 5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M15779 and 5 ml M15793 Si and 5 ml 10,000 mg/L M15765 K, M15764 Na, M15501 S and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15798	Standard:	CCV2
Analyst:	NAH	Concentrations:	500 ug/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn, Si. 10,000 ug/L K, Na, S 50 ug/L Ag, Be, Cd
Prep Date:	02/01/2023	Expiration Date:	09/2023
Prep:	Into a 1 L volumetric flask, pipetted 5 mL Custom Assurance Standard #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15630 and 0.5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M15779 and .5 ml M15793 Si and 1 ml 10,000 mg/L M15765 K, M15764 Na, M15501 S and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15796	Standard:	ICAL
Analyst:	NAH	Concentrations:	0.25, 0.5, 1, 5, 10, 20, 50, 100, 1000, 10,000, 100k, 100,000, 500,000 and 1000k (ug/L)
Prep Date:	02/01/2023	Expiration Date:	03/2023
Prep:	Using 1 L volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (5% HNO₃, 5% HCl) 1000 ug/L Std. - 10 mL of Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15630, 10 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M15779 and 1 mL of Si (1000 mg/L) M15792 and 1 mL M15499 Ce and 1 ml M15643 Hg and 0.1 ml of 10,000 mg/L M15631 K and M15664 Na and M15786 S and M15784 P. 0.25 ug/L Std. - 0.25 mL of the 1000 ug/L Std. 0.5 ug/L Std. - 0.5 mL of the 1000 ug/L Std. 1 ug/L Std. - 1 mL of the 1000 ug/L Std. 5 ug/L Std. - 5 mL of the 1000 ug/L Std. 10 ug/L Std. - 10 mL of the 1000 ug/L Std. 20 ug/L Std. - 20 mL of the 1000 ug/L Std. 50 ug/L Std. - 50 mL of the 1000 ug/L Std. 100 ug/L Std. - 1 mL of Custom Assurance Std. (CAS) #23 and 1 mL of CAS #3 10,000 ug/L Std. - 100 mL CAS #23, 100 mL CAS #3. 100k ug/L Std. - 10 mL of Cu (10,000 mg/L) M15780, 10 mL of Mn (10,000 mg/L) M15789, 10 mL of Cr (10,000 mg/L) M15791, 10 mL Pb (10,000 mg/L) M15045, 10 mL of Zn (10,000 mg/L) M15114. 100,000 ug/L Std. - 10 mL of Mg (10,000 mg/L) M15790, 10 mL of Fe (10,000 mg/L) M15660, 10 mL of Ca (10,000 mg/L) M15783 and 10 mL Al (10,000 mg/L) M15787, 10 mL of Na (10,000) M15764, 10 mL K (10,000) M15765, 10 mL S (10,000) M15501, 10 mL P (10,1000), M15784 10 mL Si (1000) M15792. 500,000 ug/L Std. - 50 mL of Mg (10,000 mg/L), 50 mL of Fe (10,000 mg/L), 50 mL of Ca (10,000 mg/L), 50 mL of Al (10,000 mg/L), 50 mL of Na (10,000), 50 mL of K (10,000). 1000k ug/L Std. - 100 mL of Mg (10,000 mg/L), 100 mL of Fe (10,000 mg/L), 100 mL of Ca (10,000 mg/L) 100 mL of Al (10,000 mg/L), 100 mL of Na (10,000 mg/L) 100 mL of K (10,000 mg/L) 100 mL S (10,000 mg/L) 100 ml of P (10,000 mg/L).		

		Instrument:	GFAA
Standard Log #:	M15793	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	01/27/2023	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15794	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	01/27/2023	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15795	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	01/27/2023	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M15317 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard ID#:	M15789	Vendor:	CPI
Analyst:	NAH	Chemical:	Mn 10000 ug/mL
Date Received:	01/26/2023	Lot #:	1283873-5
Expiration Date (if any):	07/2024	Catalog #:	S4400-10M321

Standard ID#:	M15790	Vendor:	CPI
Analyst:	NAH	Chemical:	Mg 10000 ug/mL
Date Received:	01/26/2023	Lot #:	1194653-34
Expiration Date (if any):	07/2024	Catalog #:	4400-10M311

Standard ID#:	M15791	Vendor:	CPI
Analyst:	NAH	Chemical:	Cr 10000 ug/mL
Date Received:	01/26/2023	Lot #:	1242583-7
Expiration Date (if any):	07/2024	Catalog #:	S4400-10M121

Standard ID#:	M15792	Vendor:	CPI
Analyst:	NAH	Chemical:	Si 1000 ug/mL
Date Received:	01/26/2023	Lot #:	1285486-10
Expiration Date (if any):	07/2024	Catalog #:	S4400-1000504F

Standard ID#:	M15784	Vendor:	CPI
Analyst:	NAH	Chemical:	P 10000 ug/mL
Date Received:	01/26/2023	Lot #:	1257053
Expiration Date (if any):	07/2024	Catalog #:	S4400-10M391

Standard ID#:	M15785	Vendor:	CPI
Analyst:	NAH	Chemical:	Mo 1000 ug/mL
Date Received:	01/26/2023	Lot #:	1228777-28
Expiration Date (if any):	07/2024	Catalog #:	S4400-1000343

Standard ID#:	M15786	Vendor:	CPI
Analyst:	NAH	Chemical:	S 10000 ug/mL
Date Received:	01/26/2023	Lot #:	1205121-25
Expiration Date (if any):	07/2024	Catalog #:	4400-10M544

Standard ID#:	M15787	Vendor:	CPI
Analyst:	NAH	Chemical:	Al 10000 ug/mL
Date Received:	01/26/2023	Lot #:	1257043-3
Expiration Date (if any):	07/2024	Catalog #:	4400-10M11

Standard ID#:	M15788	Vendor:	CPI
Analyst:	NAH	Chemical:	Co 1000 ug/mL
Date Received:	01/26/2023	Lot #:	1222807-35
Expiration Date (if any):	07/2024	Catalog #:	S4400-1000131

Standard ID#:	M15779	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	01/26/2023	Lot #:	7-008AJ
Expiration Date (if any):	01/30/2024	Catalog #:	XCTWI-4-500

Standard ID#:	M15780	Vendor:	CPI
Analyst:	NAH	Chemical:	10000 ug/mL
Date Received:	01/26/2023	Lot #:	1207839-25
Expiration Date (if any):	07/2024	Catalog #:	S4400-10M141

Standard ID#:	M15781	Vendor:	CPI
Analyst:	NAH	Chemical:	V 10000 ug/mL
Date Received:	01/26/2023	Lot #:	1220562-41
Expiration Date (if any):	07/2024	Catalog #:	S4400-1000651

Standard ID#:	M15782	Vendor:	CPI
Analyst:	NAH	Chemical:	TL 1000 UG/ML
Date Received:	01/26/2023	Lot #:	1239312-22
Expiration Date (if any):	07/2024	Catalog #:	S4400-1000581

Standard ID#:	M15783	Vendor:	CPI
Analyst:	NAH	Chemical:	Ca 10000 ug/mL
Date Received:	01/26/2023	Lot #:	1268108-9
Expiration Date (if any):	07/2024	Catalog #:	4400-10M91

Standard Log #:	M15774	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/24/2023	Expiration Date:	02/24/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15775	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/24/2023	Expiration Date:	02/24/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15776	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	01/24/2023	Expiration Date:	01/25/2023
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15777	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/25/2023	Expiration Date:	02/25/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15778	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/25/2023	Expiration Date:	02/25/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15707 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15771	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/24/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15772	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/24/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15773	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/24/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15768	Vendor:	Thermo Scientific
Analyst:	MDS	Chemical:	Potassium Persulfate
Date Received:	01/23/2023	Lot #:	A0442803
Expiration Date (if any):		Catalog #:	424185000

Standard Log #:	M15769	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	01/23/2023	Expiration Date:	01/23/2024
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15683. Dilute to 20 L and mix.		

Standard Log #:	M15770	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	01/23/2023	Expiration Date:	01/23/2024
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15683. Dilute to 20 L and mix.		

Standard ID#:	M15764	Vendor:	CPI International
Analyst:	NAH	Chemical:	Sodium 10000 mg/L
Date Received:	01/19/2023	Lot #:	4400-10M521
Expiration Date (if any):	02/2024	Catalog #:	1122472-51

Standard ID#:	M15765	Vendor:	CPI International
Analyst:	NAH	Chemical:	Potassium 10000 mg/L
Date Received:	01/19/2023	Lot #:	4400-10M411
Expiration Date (if any):	02/2024	Catalog #:	1137797-61

Standard ID#:	M15766	Vendor:	CPI International
Analyst:	NAH	Chemical:	Cadmium 1000 mg/L
Date Received:	01/19/2023	Lot #:	1144943-25
Expiration Date (if any):	02/2024	Catalog #:	S4400-100081

Standard ID#:	M15767	Vendor:	CPI International
Analyst:	NAH	Chemical:	Be 1000 mg/L
Date Received:	01/19/2023	Lot #:	1143802-45
Expiration Date (if any):	02/2024	Catalog #:	S4400-100051

Standard Log #:	M15759	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/17/2023	Expiration Date:	02/17/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15760	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/17/2023	Expiration Date:	02/17/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15761	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	01/17/2023	Expiration Date:	01/18/2023
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15762	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/18/2023	Expiration Date:	02/18/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15763	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/18/2023	Expiration Date:	02/18/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15707 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15756	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/17/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15757	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/17/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15758	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/17/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15751	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/09/2023	Expiration Date:	02/09/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15752	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/09/2023	Expiration Date:	02/09/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15753	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	01/09/2023	Expiration Date:	01/10/2023
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15754	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/10/2023	Expiration Date:	02/10/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15755	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/10/2023	Expiration Date:	02/10/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15748	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/09/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15749	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/09/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15750	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/09/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15745	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	12/28/2022	Expiration Date:	12/28/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15683. Dilute to 20 L and mix.		

Standard Log #:	M15746	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	12/28/2022	Expiration Date:	12/28/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15683. Dilute to 20 L and mix.		

Standard Log #:	M15747	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	12/28/2022	Expiration Date:	12/28/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15683. Dilute to 20 L and mix.		

Standard Log #:	M15740	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	12/27/2022	Expiration Date:	01/27/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15741	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	12/27/2022	Expiration Date:	01/27/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15742	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	12/27/2022	Expiration Date:	12/28/2022
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15743	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	12/28/2022	Expiration Date:	01/28/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15744	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	12/28/2022	Expiration Date:	01/28/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15737	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	12/27/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15738	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	12/27/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15739	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	12/27/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15733	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	12/19/2022	Expiration Date:	01/19/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15734	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	12/19/2022	Expiration Date:	01/19/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

Standard Log #:	M15735	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	12/20/2022	Expiration Date:	01/20/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15736	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	12/20/2022	Expiration Date:	01/20/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15730	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	12/19/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15731	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	12/19/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15732	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	12/19/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15729	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	12/19/2022	Lot #:	59-138CR
Expiration Date (if any):	12/30/2023	Catalog #:	XSPIKE-1-250

		Instrument:	CETAC
Standard Log #:	M15728	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	12/15/2022	Expiration Date:	12/16/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15723	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	12/12/2022	Expiration Date:	01/12/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15724	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	12/12/2022	Expiration Date:	01/12/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15725	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	12/13/2022	Expiration Date:	12/14/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15726	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	12/13/2022	Expiration Date:	01/13/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15727	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	12/13/2022	Expiration Date:	01/13/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.717 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15720	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	12/12/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15721	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	12/12/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15722	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	12/12/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15717	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	12/07/2022	Lot #:	5-109AJ
Expiration Date (if any):	12/30/2023	Catalog #:	XCTWI-1-500

Standard Log #:	M15718	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	12/08/2022	Expiration Date:	12/08/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15683. Dilute to 20 L and mix.		

Standard Log #:	M15719	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	12/08/2022	Expiration Date:	12/08/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15683. Dilute to 20 L and mix.		

Standard Log #:	M15712	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	12/06/2022	Expiration Date:	01/06/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15713	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	12/06/2022	Expiration Date:	01/06/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15714	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	12/06/2022	Expiration Date:	12/07/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15715	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	12/07/2022	Expiration Date:	01/07/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15716	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	12/07/2022	Expiration Date:	01/07/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.717 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15709	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	12/06/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15710	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	12/06/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15711	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	12/06/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15707	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	12/02/2022	Lot #:	M227-04
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M15708	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	12/02/2022	Lot #:	M227-04
Expiration Date (if any):		Catalog #:	LC251701

		Instrument:	GFAA
Standard Log #:	M15704	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	12/02/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15705	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	12/02/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15706	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	12/02/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M15317 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M15699	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	11/28/2022	Expiration Date:	12/28/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15700	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	11/28/2022	Expiration Date:	12/28/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15701	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	11/28/2022	Expiration Date:	11/29/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15702	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	11/29/2022	Expiration Date:	12/29/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15703	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	11/29/2022	Expiration Date:	12/29/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.717 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15696	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	11/28/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15697	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	11/28/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15698	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	11/28/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15695	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	11/22/2022	Lot #:	59-114CR
Expiration Date (if any):	11/30/2023	Catalog #:	XSPIKE-1-250

Standard ID#:	M15693	Vendor:	SSI PRODUCTS LLC
Analyst:	BMM	Chemical:	TCLP AWR FILTERS 110mm
Date Received:	11/02/2022	Lot #:	400027
Expiration Date (if any):		Catalog #:	

Standard ID#:	M15694	Vendor:	SSI PRODUCTS LLC
Analyst:	BMM	Chemical:	TCLP AWR FILTERS 150mm
Date Received:	11/02/2022	Lot #:	400194
Expiration Date (if any):		Catalog #:	

Standard Log #:	M15688	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	11/15/2022	Expiration Date:	12/15/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15689	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	11/15/2022	Expiration Date:	12/15/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15690	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	11/15/2022	Expiration Date:	11/16/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15691	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	11/16/2022	Expiration Date:	12/16/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15692	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	11/16/2022	Expiration Date:	12/16/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.717 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15685	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	11/15/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15686	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	11/15/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15687	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	11/15/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15681	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	11/07/2022	Expiration Date:	11/07/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15551. Dilute to 20 L and mix.		

Standard Log #:	M15682	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	11/07/2022	Expiration Date:	11/07/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15551. Dilute to 20 L and mix.		

Standard Log #:	M15683	Reagent:	10N NaOH
Analyst:	BMM		
Prep Date:	11/07/2022	Expiration Date:	04/07/2023
Prep:	Into a 1 L volumetric flask, added 400 g NaOH WC438 and brought up to volume.		

Standard Log #:	M15684	Reagent:	TCLP 1 N HCL
Analyst:	BMM		
Prep Date:	11/07/2022	Expiration Date:	04/07/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, added 83 mL HCL AB.716 and brought up to volume.		

Standard Log #:	M15676	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	11/07/2022	Expiration Date:	12/07/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15677	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	11/07/2022	Expiration Date:	12/07/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15678	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	11/07/2022	Expiration Date:	11/08/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15679	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	11/08/2022	Expiration Date:	12/08/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15680	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	11/08/2022	Expiration Date:	12/08/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.717 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15673	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	11/07/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15674	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	11/07/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15675	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	11/07/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15668	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	10/31/2022	Expiration Date:	11/31/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15669	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	10/31/2022	Expiration Date:	11/31/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15670	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	10/31/2022	Expiration Date:	11/01/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15671	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	11/2/2022	Expiration Date:	12/2/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15672	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	11/2/2022	Expiration Date:	12/2/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.717 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15665	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	10/31/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15666	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	10/31/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15667	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	10/31/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15660	Vendor:	CPI
Analyst:	NAH	Chemical:	Iron 10000 ug/mL
Date Received:	10/31/2022	Lot #:	1240670-1
Expiration Date (if any):	02/2024	Catalog #:	4400-10M261

Standard ID#:	M15661	Vendor:	CPI
Analyst:	NAH	Chemical:	Magnesium 10000 ug/mL
Date Received:	10/31/2022	Lot #:	1194653.23
Expiration Date (if any):	02/2024	Catalog #:	4400-10M311

Standard ID#:	M15662	Vendor:	CPI
Analyst:	NAH	Chemical:	Phosphorus 10000 ug/mL
Date Received:	10/31/2022	Lot #:	1257053-2
Expiration Date (if any):	04/2024	Catalog #:	S4400-10M391

Standard ID#:	M15663	Vendor:	CPI
Analyst:	NAH	Chemical:	Mollybdenum 1000 ug/mL
Date Received:	10/31/2022	Lot #:	1228777-7
Expiration Date (if any):	04/2024	Catalog #:	S4400-1000343

Standard ID#:	M15664	Vendor:	CPI
Analyst:	NAH	Chemical:	Sodium 10000 ug/mL
Date Received:	10/31/2022	Lot #:	1122472-51
Expiration Date (if any):	04/2024	Catalog #:	4400-10M521

		Instrument:	CETAC
Standard Log #:	M15659	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	10/26/2022	Expiration Date:	10/27/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15655	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	10/25/2022	Expiration Date:	11/25/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15656	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	10/25/2022	Expiration Date:	11/25/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

Standard Log #:	M15657	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	10/26/2022	Expiration Date:	11/26/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15658	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	10/26/2022	Expiration Date:	11/26/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.717 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15652	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	10/25/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15653	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	10/25/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15654	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	10/25/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15647	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	10/18/2022	Expiration Date:	11/18/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15648	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	10/18/2022	Expiration Date:	11/18/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15649	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	10/18/2022	Expiration Date:	10/19/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15650	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	10/19/2022	Expiration Date:	11/19/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15651	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	10/19/2022	Expiration Date:	11/19/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.717 and dissolved 100 g Stannous chloride M15468 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15644	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	10/18/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15645	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	10/18/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15646	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	10/18/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15643	Vendor:	SPEX CertiPrep
Analyst:	MDS	Chemical:	Mercury 1000µg/mL
Date Received:	10/18/2022	Lot #:	CL13-88HGY
Expiration Date (if any):	10/30/2023	Catalog #:	CLHG4-2Y

Standard Log #:	M15638	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	10/11/2022	Expiration Date:	11/11/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15639	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	10/11/2022	Expiration Date:	11/11/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15640	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	10/11/2022	Expiration Date:	10/12/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15641	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	10/12/2022	Expiration Date:	11/12/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15642	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	10/12/2022	Expiration Date:	11/12/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.717 and dissolved 100 g Stannous chloride M15468 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15635	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	10/11/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15636	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	10/11/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15637	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	10/11/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15634	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance std
Date Received:	10/11/2022	Lot #:	59-092CR
Expiration Date (if any):	10/30/2023	Catalog #:	XSPIKE-1-500

Standard ID#:	M15629	Vendor:	CPI International
Analyst:	NAH	Chemical:	Hg 1000 ug/mL
Date Received:	10/05/2022	Lot #:	1141387-57
Expiration Date (if any):	04/2024	Catalog #:	S4400-1000331

Standard ID#:	M15630	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance std
Date Received:	10/05/2022	Lot #:	3-134EL
Expiration Date (if any):	09/30/2023	Catalog #:	XCTWI-5-500

Standard ID#:	M15631	Vendor:	CPI International
Analyst:	NAH	Chemical:	K 10000 ug/mL
Date Received:	10/05/2022	Lot #:	1137797-61
Expiration Date (if any):	04/2024	Catalog #:	4400-10M411

Standard ID#:	M15632	Vendor:	CPI
Analyst:	NAH	Chemical:	K 10000 ug/ML
Date Received:	10/05/2022	Lot #:	1137797-60
Expiration Date (if any):	04/2024	Catalog #:	4400-10M411-500

Standard ID#:	M15633	Vendor:	GFS Chemicals
Analyst:	NAH	Chemical:	Amco Clear turb std
Date Received:	10/05/2022	Lot #:	22160094
Expiration Date (if any):	10/2023	Catalog #:	8008

		Instrument:	CETAC
Standard Log #:	M15628	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	10/04/2022	Expiration Date:	10/05/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15624	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	10/03/2022	Expiration Date:	11/03/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15625	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	10/03/2022	Expiration Date:	11/03/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

Standard Log #:	M15626	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	10/04/2022	Expiration Date:	11/04/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15627	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	10/04/2022	Expiration Date:	11/04/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15468 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15621	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	10/03/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15622	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	10/03/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15623	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	10/03/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	GFAA
Standard Log #:	M15617	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	10/03/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15618	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	10/03/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15619	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	10/03/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M15317 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard ID#:	M15620	Vendor:	ThermoFisher
Analyst:	MDS	Chemical:	Nickel Nitrate Matrix Modifier
Date Received:	10/03/2022	Lot #:	276713
Expiration Date (if any):	07/31/2023	Catalog #:	39043

Standard ID#:	M15615	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	09/15/2022	Lot #:	M138-15
Expiration Date (if any):		Catalog #:	LC25170

Standard ID#:	M15616	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	09/15/2022	Lot #:	M138-15
Expiration Date (if any):		Catalog #:	LC25170

Standard Log #:	M15610	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	09/26/2022	Expiration Date:	10/26/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15611	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	09/26/2022	Expiration Date:	10/26/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15612	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	09/26/2022	Expiration Date:	09/27/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15613	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	09/27/2022	Expiration Date:	10/27/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15614	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	09/27/2022	Expiration Date:	10/27/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15468 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15607	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	09/26/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15608	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	09/26/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15609	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	09/26/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15604	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	09/27/2022	Expiration Date:	09/27/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15551. Dilute to 20 L and mix.		

Standard Log #:	M15605	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	09/27/2022	Expiration Date:	09/27/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15551. Dilute to 20 L and mix.		

Standard Log #:	M15606	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	09/27/2022	Expiration Date:	09/27/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15551. Dilute to 20 L and mix.		

Standard ID#:	M15603	Vendor:	Supelco
Analyst:	NAH	Chemical:	100 NTU formazin
Date Received:	09/23/2022	Lot #:	LRAD2638
Expiration Date (if any):	05/2024	Catalog #:	TURB100-100ML

Standard ID#:	M15601	Vendor:	Spec Certiprep
Analyst:	NAH	Chemical:	Custom Assurance std
Date Received:	09-19-2022	Lot #:	3-097EL
Expiration Date (if any):	09-30-2023	Catalog #:	XCTWI-1-500

Standard ID#:	M15602	Vendor:	Lab Chem
Analyst:	NAH	Chemical:	4000 NTU
Date Received:	09-15-2022	Lot #:	M201-23
Expiration Date (if any):	07/28/2023	Catalog #:	LC262901

Standard Log #:	M15596	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	09/13/2022	Expiration Date:	10/13/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15597	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	09/13/2022	Expiration Date:	10/13/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15598	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	09/13/2022	Expiration Date:	09/14/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15599	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	09/14/2022	Expiration Date:	10/14/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15600	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	09/14/2022	Expiration Date:	10/14/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15468 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15593	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	09/13/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15594	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	09/13/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15595	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	09/13/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15588	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	09/07/2022	Expiration Date:	10/07/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15589	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	09/07/2022	Expiration Date:	10/07/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15590	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	09/07/2022	Expiration Date:	09/08/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15591	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	09/08/2022	Expiration Date:	10/08/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15592	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	09/08/2022	Expiration Date:	10/08/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15467 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15585	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	09/07/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15586	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	09/07/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15587	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	09/07/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15584	Vendor:	ThermoFisher
Analyst:	MDS	Chemical:	Sodium Chloride
Date Received:	09/06/2022	Lot #:	218977
Expiration Date (if any):		Catalog #:	S271

Standard Log #:	M15582	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	08/31/2022	Expiration Date:	09/31/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15583	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	08/31/2022	Expiration Date:	09/31/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15467 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15578	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	08/30/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15579	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	08/30/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15580	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/30/2022	Expiration Date:	09/30/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15581	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	08/30/2022	Expiration Date:	09/30/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	ICP 6500
Standard Log #:	M15575	Standard:	ICSA
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 10,000 V, Ce
Prep Date:	08/31/2022	Expiration Date:	02/2023
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interference A std M15505 and 15 mL 10000 mg/L Fe M15522 5.0 mL 1000 mg/L V M15020 5.0 mL 1000 mg/L Ce M15499 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15576	Standard:	ICSAB
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 500 ug/L Ag, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn, K, Na, S, 50000 ug/L Si 1000 ug/L.
Prep Date:	08/31/2022	Expiration Date:	02/2023
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M15505, 15 mL Fe (10,000 mg/L) M15522, 2.5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M15259, 2.5 mL Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn), M15455, 2.5 mLs Na 10,000 ug/mL M15528, 2.5 mLs k 10,000 ug/mL M15477 2.5 mLs S 10,000 ug/mL M15395, 0.5 mLs Si 1000 ug/mL M15088 and brought up to volume with milli-Q.		

		Instrument:	HydraII
Standard Log #:	M15577	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	08/30/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

MRL BASE STD	M15574	Analyst	NAH
		Prep Date	08/31/2022

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	(ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L	Expiration Date
Ag	20	M15222	1000	1	01/2023
Al	400	M15397	10000	2	--
Ba	10	M15540	1000	0.5	--
Be	4	M15091	1000	0.2	
Cd	5	M15098	1000	0.25	
Co	10	M15019	1000	0.5	
Cr	10	M15027	10000	0.05	
Cu	10	M15021	10000	0.05	
Mg	500	M15174	10000	2.5	
Mn	10	M15023	10000	0.05	
Mo	10	M15170	1000	0.5	
Ni	10	M15095	1000	0.5	
Pb	10	M15045	10000	0.05	
Sb	20	M15045	1000	1	
V	10	M15020	1000	0.5	
Zn	10	M15114	10000	0.05	
K	1000	M15477	10000	5	
Na	1000	M15528	10000	5	
As	20	M15223	1000	1	
Ca	500	M15026	10000	2.5	
Fe	300	M15169	10000	1.5	
Se	20	M15217	1000	1	
Tl	20	M15221	1000	1	
Si	100	M15171	1000	5	
B	20	M15523	1000	1	
Li	20	M15504	1000	1	
W	50	XXXXXX	1000	2.5	
Ti	10	M15221	1000	0.5	
Sr	10	M15526	1000	0.5	
Sn	50	M15502	1000	2.5	
S	300	M15501	10000	1.5	

Of this Base standard, pipet 10 mls into 500 ml volumetric to create a working std or 1 ml into 50 ml digestion tube for a digested working standard.

Standard Log #:	M15569	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/23/2022	Expiration Date:	09/23/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15570	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	08/23/2022	Expiration Date:	09/23/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15571	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	08/23/2022	Expiration Date:	09/23/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15572	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	08/24/2022	Expiration Date:	09/24/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15573	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	08/24/2022	Expiration Date:	09/24/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15467 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15566	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	08/23/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15567	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	08/23/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15568	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	08/23/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15564	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/15/2022	Expiration Date:	09/15/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15565	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	08/16/2022	Expiration Date:	09/16/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15467 and brought up to volume.		

Standard ID#:	M15563	Vendor:	SCP Science
Analyst:	MDS	Chemical:	Palladium/Magnesium Matrix Modifier
Date Received:	08/15/2022	Lot #:	S220707011
Expiration Date (if any):	07/2024	Catalog #:	140-003-192

Standard Log #:	M15562	Instrument:	ICP 6500
Analyst:	NAH	Standard:	MDL spiking soln
Prep Date:	08/12/2022	Expiration Date:	01/2023

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	40	M15222	1000	2
Al	800	M15397	10000	4
As	40	M15223	1000	2
Ba	20	M15540	1000	1
Be	8	M15091	1000	0.4
Ca	1000	M15026	10000	5
Cd	10	M15098	1000	0.5
Co	20	M15019	1000	1
Cr	20	M15027	10000	0.1
Cu	20	M15021	10000	0.1
Fe	600	M15169	10000	3
Mg	1000	M15174	10000	5
Mn	20	M15023	10000	0.1
Mo	20	M15170	1000	1
Ni	20	M15095	1000	1
Pb	20	M15045	10000	0.1
Sb	40	M15220	1000	2
Se	40	M15217	1000	2
Tl	40	M15221	1000	2
V	20	M15020	1000	1
Zn	20	M15114	10000	0.1
Na	10000	M15528	10000	50
K	10000	M15477	10000	50
B	40	M15523	1000	2
Si	200	M15171	1000	10
Li	20	M15504	1000	1
Sr	20	M15526	1000	1
Sn	40	M15502	1000	2
Ti	20	M15503	1000	1
S	400	M15501	10000	20

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M15561	Instrument:	ICP 6500																																																																																																																																																											
Analyst:	NAH	Standard:	LOQ solid QSM																																																																																																																																																											
Prep Date:	08/12/2022	Expiration Date:	01/2023																																																																																																																																																											
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S	400	M15501	10000	20																																																																																																																																																										

Standard Log #:	M15560	Instrument:	ICP 6500
Analyst:	NAH	Standard:	LOQ water QSM
Prep Date:	08/12/2022	Expiration Date:	01/2023

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	5	M15222	1000	0.25
Al	120	M15397	10000	0.6
As	40	M15223	1000	0.2
Ba	4	M15540	1000	0.2
Be	8	M15091	1000	0.4
Ca	100	M15026	10000	0.5
Cd	2	M15098	1000	0.1
Co	5	M15019	1000	0.25
Cr	5	M15027	10000	0.025
Cu	40	M15021	10000	0.2
Fe	80	M15169	10000	0.40
Mg	40	M15174	10000	0.20
Mn	5	M15023	10000	0.025
Mo	5	M15170	1000	0.25
Ni	5	M15095	1000	0.25
Pb	20	M15045	10000	0.10
Sb	20	M15220	1000	1
Se	20	M15217	1000	1
Tl	40	M15221	1000	2
V	5	M15020	1000	0.25
Zn	20	M15114	10000	0.10
Na	700	M15528	10000	3.5
K	500	M15477	10000	2.5
B	40	M15523	1000	2
Si	200	M15171	1000	10
Li	20	M15504	1000	1
Sr	20	M15526	1000	1
Sn	40	M15502	1000	2
Ti	20	M15503	1000	1
S	400	M15501	10000	2

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

		Instrument:	GFAA
Standard Log #:	M15559	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	08/10/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M15317 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M15555	Reagent:	SPLP ACID MIX
Analyst:	NAH		60/40 H ₂ SO ₄ - HNO ₃
Prep Date:	08/11/2022	Expiration Date:	08/11/2023
Prep:	Into a 200 mL volumetric flask, partially filled with DI H ₂ O, add 12 g H ₂ SO ₄ AB.713 and 8 g HNO ₃ AB.715 and bring up to volume using DI H ₂ O.		

Standard Log #:	M15556	Reagent:	SPLP EXTRACTION FLUID EAST #
Analyst:	NAH	pH:	4.20 ± 0.05
Prep Date:	08/11/2022 pH=4.21	Expiration Date:	08/11/2023
Prep:	Into a 20 L carboy filled with DI H ₂ O, adjust pH to 4.20 ± 0.05 using 60/40 HNO ₃ - H ₂ SO ₄ M15555.		

		Instrument:	GFAA
Standard Log #:	M15557	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	08/10/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15558	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	08/10/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M15551	Reagent:	10N NaOH
Analyst:	BMM		
Prep Date:	08/11/2022	Expiration Date:	08/11/2023
Prep:	Into a 1 L volumetric flask, added 400 g NaOH WC438 and brought up to volume.		

Standard Log #:	M15552	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	08/11/2022	Expiration Date:	08/11/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15551. Dilute to 20 L and mix.		

Standard Log #:	M15553	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	08/11/2022	Expiration Date:	08/11/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15551. Dilute to 20 L and mix.		

Standard Log #:	M15554	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	08/11/2022	Expiration Date:	08/11/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15551. Dilute to 20 L and mix.		

Standard Log #:	M15546	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/10/2022	Expiration Date:	09/10/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15547	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	08/10/2022	Expiration Date:	09/10/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15548	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	08/10/2022	Expiration Date:	08/11/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15549	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	08/11/2022	Expiration Date:	09/11/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15550	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	08/11/2022	Expiration Date:	09/11/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15467 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15543	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	08/10/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15544	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	08/10/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15545	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	08/10/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15540	Vendor:	CPI
Analyst:	NAH	Chemical:	Ba 1000 mg/L
Date Received:	08/09/2022	Lot #:	1232359-4
Expiration Date (if any):	01/2024	Catalog #:	S4400-100041

Standard ID#:	M15541	Vendor:	CPI
Analyst:	NAH	Chemical:	K 10000 mg/L
Date Received:	08/09/2022	Lot #:	1137797-46
Expiration Date (if any):	01/2024	Catalog #:	4400-10M411

Standard ID#:	M15542	Vendor:	CPI
Analyst:	NAH	Chemical:	Si 1000 mg/L
Date Received:	08/09/2022	Lot #:	1000504F
Expiration Date (if any):	01/2024	Catalog #:	1197533-32

		Instrument:	CETAC
Standard Log #:	M15539	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	08/05/2022	Expiration Date:	08/06/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15537	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	08/04/2022	Expiration Date:	09/04/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15538	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	08/04/2022	Expiration Date:	09/04/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15467 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15533	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	08/03/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15534	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/03/2022	Expiration Date:	09/03/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15535	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	08/03/2022	Expiration Date:	09/03/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15536	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	08/03/2022	Expiration Date:	08/04/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard ID#:	M15530	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	08/03/2022	Lot #:	59-034CR
Expiration Date (if any):	07/30/2023	Catalog #:	XSPIKE-1-250

		Instrument:	HydraII
Standard Log #:	M15531	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	08/03/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15532	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	08/03/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

Standard Log #:	M15529	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/01/2022	Expiration Date:	09/01/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard ID#:	M15522	Vendor:	CPI
Analyst:	NAH	Chemical:	Fe 10,000 mg/L
Date Received:	07/29/2022	Lot #:	1240670-1
Expiration Date (if any):	01/2024	Catalog #:	4400-10M261

Standard ID#:	M15523	Vendor:	CPI
Analyst:	NAH	Chemical:	B 1000 mg/L
Date Received:	07/29/2022	Lot #:	1209884-23
Expiration Date (if any):	01//2024	Catalog #:	S4400-100074

Standard ID#:	M15524	Vendor:	CPI
Analyst:	NAH	Chemical:	Mo 1000 mg/L
Date Received:	07/29/2022	Lot #:	1228777-7
Expiration Date (if any):	01/2024	Catalog #:	S4400-1000343

Standard ID#:	M15525	Vendor:	CPI
Analyst:	NAH	Chemical:	Ca 10,000 mg/L
Date Received:	07/29/2022	Lot #:	1112960-75
Expiration Date (if any):	01/2024	Catalog #:	4400-10M91

Standard ID#:	M15526	Vendor:	CPI
Analyst:	NAH	Chemical:	Sr 1000 mg/L
Date Received:	07/29/2022	Lot #:	1194650-12
Expiration Date (if any):	01/2024	Catalog #:	S4400-1000531

Standard ID#:	M15527	Vendor:	CPI
Analyst:	NAH	Chemical:	Al 10,000 mg/L
Date Received:	07/29/2022	Lot #:	1144484-33
Expiration Date (if any):	01/2024	Catalog #:	4400-10M11

Standard ID#:	M15528	Vendor:	CPI
Analyst:	NAH	Chemical:	Na 10,000 mg/L
Date Received:	07/29/2022	Lot #:	1122472-51
Expiration Date (if any):	01/2024	Catalog #:	4400-10M521

Standard Log #:	M15517	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/27/2022	Expiration Date:	08/27/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15518	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	07/27/2022	Expiration Date:	08/27/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15519	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/27/2022	Expiration Date:	07/28/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15520	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/28/2022	Expiration Date:	08/28/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15521	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/28/2022	Expiration Date:	08/28/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15467 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15514	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	07/27/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15515	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	07/27/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15516	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	07/27/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15509	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/20/2022	Expiration Date:	08/20/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15510	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	07/20/2022	Expiration Date:	08/20/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15511	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/20/2022	Expiration Date:	07/21/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15512	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/21/2022	Expiration Date:	08/21/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15513	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/21/2022	Expiration Date:	08/21/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15306 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15506	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	07/20/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15507	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	07/20/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15508	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	07/20/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15505	Vendor:	SpexCertiPrep
Analyst:	NAH	Chemical:	Interference-A
Date Received:	07/19/2022	Lot #:	3-137SGX
Expiration Date (if any):	07/30/2023	Catalog #:	INT_A1

Standard ID#:	M15499	Vendor:	CPI
Analyst:	NAH	Chemical:	Ce 1000 mg/L
Date Received:	07/14/2022	Lot #:	1237797-6
Expiration Date (if any):	01/2024	Catalog #:	S4400-1000101

Standard ID#:	M15500	Vendor:	CPI
Analyst:	NAH	Chemical:	Fe 10,000 mg/L
Date Received:	07/14/2022	Lot #:	12240670-1
Expiration Date (if any):	01/2024	Catalog #:	4400-10M261

Standard ID#:	M15501	Vendor:	CPI
Analyst:	NAH	Chemical:	S 10,000 mg/L
Date Received:	07/14/2022	Lot #:	1205121-18
Expiration Date (if any):	01/2024	Catalog #:	4400-10M544

Standard ID#:	M15502	Vendor:	CPI
Analyst:	NAH	Chemical:	Sn 1000 mg/L
Date Received:	07/14/2022	Lot #:	1128650-39
Expiration Date (if any):	01/2024	Catalog #:	S4400-1000613

Standard ID#:	M15503	Vendor:	CPI
Analyst:	NAH	Chemical:	Ti 1000 mg/L
Date Received:	07/14/2022	Lot #:	1195496-15
Expiration Date (if any):	01/2024	Catalog #:	S4400-1000623

Standard ID#:	M15504	Vendor:	CPI
Analyst:	NAH	Chemical:	Li 1000 mg/L
Date Received:	07/14/2022	Lot #:	1186016-18
Expiration Date (if any):	01/2024	Catalog #:	S4400-1000291

Standard Log #:	M15495	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/12/2022	Expiration Date:	08/12/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15496	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/12/2022	Expiration Date:	07/13/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15497	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/13/2022	Expiration Date:	08/13/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15498	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/13/2022	Expiration Date:	08/13/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15306 and brought up to volume.		

Standard Log #:	M15494	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/07/2022	Expiration Date:	08/07/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15489	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/06/2022	Expiration Date:	08/06/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15490	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/06/2022	Expiration Date:	07/07/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15491	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	07/07/2022	Expiration Date:	08/07/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

Standard Log #:	M15492	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/07/2022	Expiration Date:	08/07/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15493	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/07/2022	Expiration Date:	08/07/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15306 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15486	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	07/06/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15487	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	07/06/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15488	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	07/06/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	ICP 6500
Standard Log #:	M15483	Standard:	ICV Std.
Analyst:	NAH	Concentrations:	12,000 mg/L Al 10,000 mg/L Ca, Mg 5000 mg/L Fe 2000 mg/L As, Ba, Se, Tl 500 mg/L B, Co, Li, Mn, Mo, Ni, Pb, Sb, Sn, Sr, Ti, V, Zn 250 mg/L Cu 200 mg/L Cr 50 mg/L Ag, Be, Cd
Prep Date:	07/05/2022	Expiration Date:	02/2023
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with milli-Q H₂O. 10 mL Custom Assurance Standard #18 ((200 mg/L Al, As, Ba, Se, Tl) (100 mg/L Fe) (50 mg/L Co, Mn, Ni, Pb, Sb, V, Zn) (25 mg/L Cu) (20 mg/L Cr) (5 mg/L Ag, Be, Cd)) <15434, 2 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M15069, 0.5 mL Mo (1000 mg/L) M15022, 0.5 mL B (1000 mg/L) M14966, 0.5 mL Sr (1000 mg/L) M14775, 0.5 mL Li (1000 mg/L) M14681, 0.5 mL Sn (1000 mg/L) M14774, 0.5 mL Ti (1000 mg/L) M14674, 0.5 mL W (1000 mg/L) xxxxxxxx, 0.5 mL Si (1000 mg/L) M15168, 0.5 mL S (10000 mg/L) M14677, 0.5 mL K (10000 mg/L) M15479, and 0.5 mL Na (10000 mg/L) M15287		

		Instrument:	ICP 6500
Standard Log #:	M15484	Standard:	ICSA
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 10,000 V, Ce
Prep Date:	07/05/2022	Expiration Date:	09/2022
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interference A std M15068 and 15 mL 10000 mg/L Fe M15169 5.0 mL 1000 mg/L V M15020 5.0 mL 1000 mg/L Ce M14682 and brought up to volume with milli-Q H₂O.		

Standard ID#:	M15485	Vendor:	Fisher Chemical
Analyst:	MDS	Chemical:	Potassium Permanganate
Date Received:	06/30/2022	Lot #:	217686
Expiration Date (if any):		Catalog #:	P279-212

		Instrument:	ICP 6500
Standard Log #:	M15481	Standard:	CCV1
Analyst:	NAH	Concentrations:	5000 µg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn, Si. 100,000 µg/L K, Na, S. 500 µg/L Ag, Be, Cd
Prep Date:	07/05/2022	Expiration Date:	02/2023
Prep:	Into a 1 L volumetric flask, pipetted 50 mL Custom Assurance Standard #23 XCTWI-5-500 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15274 and 5.0 mL of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) M15259 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15482	Standard:	CCV2
Analyst:	NAH	Concentrations:	500 µg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn 50 µg/L Ag, Be, Cd
Prep Date:	07/05/2022	Expiration Date:	02/2023
Prep:	Into a 1 L volumetric flask, pipetted 5 mL Custom Assurance Standard #23 XCTWI-5-500 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15274 and 0.5 mL of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) M15259 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15480	Standard:	ICAL
Analyst:	NAH	Concentrations:	0.25, 0.5, 1, 5, 10, 20, 50, 100, 1000, 10,000, 100k, 100,000, 500,000 and 1000k (ug/L)
Prep Date:	07/05/2022	Expiration Date:	02/28/2023
Prep:	Using 1 L volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (5% HNO₃, 5% HCl) 1000 ug/L Std. - 10 mL of Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15274, 10 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M15259 and 1 mL of Si (1000 mg/L) M15398 and 1 mL M14682 Ce and 1 ml M15108 Hg and 0.1 ml of 10,000 mg/L M15477 K and M15287 Na and M15395 S and M15166 P. 0.25 ug/L Std. - 0.25 mL of the 1000 ug/L Std. 0.5 ug/L Std. - 0.5 mL of the 1000 ug/L Std. 1 ug/L Std. - 1 mL of the 1000 ug/L Std. 5 ug/L Std. - 5 mL of the 1000 ug/L Std. 10 ug/L Std. - 10 mL of the 1000 ug/L Std. 20 ug/L Std. - 20 mL of the 1000 ug/L Std. 50 ug/L Std. - 50 mL of the 1000 ug/L Std. 100 ug/L Std. - 1 mL of Custom Assurance Std. (CAS) #23 and 1 mL of CAS #3 10,000 ug/L Std. - 100 mL CAS #23, 100 mL CAS #3. 100k ug/L Std. - 10 mL of Cu (10,000 mg/L) M15021, 10 mL of Mn (10,000 mg/L) M15023, 10 mL of Cr (10,000 mg/L) M15027, 10 mL Pb (10,000 mg/L) M15114, 10 mL of Zn (10,000 mg/L) M15045. 100,000 ug/L Std. - 10 mL of Mg (10,000 mg/L) M15396, 10 mL of Fe (10,000 mg/L) M15169, 10 mL of Ca (10,000 mg/L) M15399 and 10 mL Al (10,000 mg/L) M15397, 10 mL of Na (10,000) M15287, 10 mL K (10,000) M15477, 10 mL S (10,000) M15395, 10 mL P (10,1000), M15166 10 mL Si (1000) M15398. 500,000 ug/L Std. - 50 mL of Mg (10,000 mg/L), 50 mL of Fe (10,000 mg/L), 50 mL of Ca (10,000 mg/L), 50 mL of Al (10,000 mg/L), 50 mL of Na (10,000), 50 mL of K (10,000). 1000k ug/L Std. - 100 mL of Mg (10,000 mg/L), 100 mL of Fe (10,000 mg/L), 100 mL of Ca (10,000 mg/L) 100 mL of Al (10,000 mg/L), 100 mL of Na (10,000 mg/L) 100 mL of K (10,000 mg/L) 100 mL S (10,000 mg/L) 100 ml of P (10,000 mg/L).		

Standard ID#:	M15477	Vendor:	CPI
Analyst:	NAH	Chemical:	K 10,000 mg/L
Date Received:	06/28/2022	Lot #:	11337797-46
Expiration Date (if any):	12/2023	Catalog #:	4400-10M411

Standard ID#:	M15478	Vendor:	CPI
Analyst:	NAH	Chemical:	Y 10,000 mg/L
Date Received:	06/28/2022	Lot #:	1157358-27
Expiration Date (if any):	12/2023	Catalog #:	4400-10M671

Standard ID#:	M15479	Vendor:	CPI
Analyst:	NAH	Chemical:	K 10,000 mg/L
Date Received:	06/28/2022	Lot #:	4400-10M411-500
Expiration Date (if any):	12/2023	Catalog #:	1137797-52

Standard Log #:	M15472	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/28/2022	Expiration Date:	07/28/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15473	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/28/2022	Expiration Date:	07/28/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15474	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/28/2022	Expiration Date:	06/29/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15475	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/29/2022	Expiration Date:	07/29/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15476	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/29/2022	Expiration Date:	07/29/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15306 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15469	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/28/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15470	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/28/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15471	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/28/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15467	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	06/23/2022	Lot #:	M151-22
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M15468	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	06/23/2022	Lot #:	M151-22
Expiration Date (if any):		Catalog #:	LC251701

Standard Log #:	M15464	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	06/22/2022	Expiration Date:	06/22/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15384. Dilute to 20 L and mix.		

Standard Log #:	M15465	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	06/22/2022	Expiration Date:	06/22/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15384. Dilute to 20 L and mix.		

Standard Log #:	M15466	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	06/22/2022	Expiration Date:	06/22/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15384. Dilute to 20 L and mix.		

Standard Log #:	M15459	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/21/2022	Expiration Date:	07/21/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15460	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/21/2022	Expiration Date:	07/21/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15461	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/21/2022	Expiration Date:	06/22/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15462	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/22/2022	Expiration Date:	07/22/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15463	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/22/2022	Expiration Date:	07/22/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15306 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15456	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/21/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15457	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/21/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15458	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/21/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	CETAC
Standard Log #:	M15454	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/15/2022	Expiration Date:	06/16/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard ID#:	M15455	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Std
Date Received:	06/15/2022	Lot #:	3-020AJ
Expiration Date (if any):	06/30/2023	Catalog #:	XCTIWI-5-500

Standard Log #:	M15449	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/14/2022	Expiration Date:	07/14/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15450	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/14/2022	Expiration Date:	07/14/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15451	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/14/2022	Expiration Date:	06/15/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15452	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/15/2022	Expiration Date:	07/15/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15453	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/15/2022	Expiration Date:	07/15/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15306 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15446	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/14/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15447	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/14/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15448	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/14/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15441	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/08/2022	Expiration Date:	07/08/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15442	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/08/2022	Expiration Date:	07/08/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15443	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/08/2022	Expiration Date:	06/09/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15444	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/09/2022	Expiration Date:	07/09/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15445	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/09/2022	Expiration Date:	07/09/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15306 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15438	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/08/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15439	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/08/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15440	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/08/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	GFAA
Standard Log #:	M15435	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	06/06/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15436	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	06/06/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15437	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	06/06/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M15317 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard ID#:	M15433	Vendor:	Acros Organics
Analyst:	MDS	Chemical:	Hydroxylamine Sulfate
Date Received:	06/02/2022	Lot #:	A0432704
Expiration Date (if any):		Catalog #:	198530010

Standard ID#:	M15434	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	06/02/2022	Lot #:	58-230CR
Expiration Date (if any):	May 30, 2023	Catalog #:	XSPIKE-1-500

Standard Log #:	M15428	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/01/2022	Expiration Date:	07/01/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15429	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/01/2022	Expiration Date:	07/01/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15430	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/01/2022	Expiration Date:	06/02/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15431	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/02/2022	Expiration Date:	07/02/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15432	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/02/2022	Expiration Date:	07/02/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15306 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15425	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/01/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15426	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/01/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15427	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/01/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15424	Vendor:	HPS Environmental Express
Analyst:	NAH	Chemical:	Yttrium 10,000 mg/L
Date Received:	05/31/2022	Lot #:	2123812-500
Expiration Date (if any):	11/30/2023	Catalog #:	HP10M67-1-500

Standard Log #:	M15419	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	05/23/2022	Expiration Date:	06/23/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15420	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	05/24/2022	Expiration Date:	06/24/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15421	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	05/23/2022	Expiration Date:	05/24/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15422	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	05/24/2022	Expiration Date:	06/24/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15423	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	05/24/2022	Expiration Date:	06/24/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15416	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/23/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15417	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	05/23/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15418	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/23/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15411	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	05/17/2022	Expiration Date:	06/17/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15412	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	05/17/2022	Expiration Date:	06/17/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15413	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	05/17/2022	Expiration Date:	05/18/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15414	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	05/18/2022	Expiration Date:	06/18/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15415	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	05/18/2022	Expiration Date:	06/18/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15408	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/17/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15409	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	05/17/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15410	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/17/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15404	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	05/10/2022	Expiration Date:	06/10/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15405	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	05/10/2022	Expiration Date:	06/10/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

Standard Log #:	M15406	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	05/11/2022	Expiration Date:	06/11/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15407	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	05/11/2022	Expiration Date:	06/11/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15401	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/10/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15402	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	05/10/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15403	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/10/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15395	Vendor:	CPI
Analyst:	NAH	Chemical:	Sulfur 10,000 ug/mL
Date Received:	05/03/2022	Lot #:	1154439-14
Expiration Date (if any):	10/2023	Catalog #:	4400-10M544

Standard ID#:	M15396	Vendor:	CPI
Analyst:	NAH	Chemical:	Mg 10,000 ug/mL
Date Received:	05/03/2022	Lot #:	1191653-5
Expiration Date (if any):	10/2023	Catalog #:	4400-10M311

Standard ID#:	M15397	Vendor:	CPI
Analyst:	NAH	Chemical:	Al 10,000 ug/mL
Date Received:	05/03/2022	Lot #:	1144484-28
Expiration Date (if any):	10/2023	Catalog #:	4400-10M11

Standard ID#:	M15398	Vendor:	CPI
Analyst:	NAH	Chemical:	Si 1000 ug/mL
Date Received:	05/03/2022	Lot #:	1197533-32
Expiration Date (if any):	10/2023	Catalog #:	S4400-1000504F

Standard ID#:	M15399	Vendor:	CPI
Analyst:	NAH	Chemical:	Ca 10,000 ug/mL
Date Received:	05/03/2022	Lot #:	1112960-63
Expiration Date (if any):	10/2023	Catalog #:	4400-10M91

Standard ID#:	M15400	Vendor:	ThermoFisher
Analyst:	MDS	Chemical:	Nickel Nitrate Matrix Mod.
Date Received:	05/04/2022	Lot #:	276712
Expiration Date (if any):	07/31/2023	Catalog #:	39043

Standard Log #:	M15390	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	05/03/2022	Expiration Date:	06/03/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15391	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	05/03/2022	Expiration Date:	06/03/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15392	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	05/03/2022	Expiration Date:	05/04/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.711 in a hood.		

Standard Log #:	M15393	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	05/04/2022	Expiration Date:	06/04/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15394	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	05/04/2022	Expiration Date:	06/04/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15387	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/03/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15388	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	05/03/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15389	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/03/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15385	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	05/02/2022	Expiration Date:	05/02/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15384. Dilute to 20 L and mix.		

Standard Log #:	M15386	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	05/02/2022	Expiration Date:	05/02/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15384. Dilute to 20 L and mix.		

Standard Log #:	M15382	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/27/2022	Expiration Date:	05/27/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15383	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/27/2022	Expiration Date:	05/27/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

Standard Log #:	M15384	Reagent:	10N NaOH
Analyst:	BMM		
Prep Date:	04/27/2022	Expiration Date:	09/27/2022
Prep:	Into a 1 L volumetric flask, added 400 g NaOH WC310 and brought up to volume.		

Standard Log #:	M15379	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/26/2022	Expiration Date:	05/26/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15380	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/26/2022	Expiration Date:	05/26/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15381	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/26/2022	Expiration Date:	04/27/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.711 in a hood.		

		Instrument:	HydraII
Standard Log #:	M15376	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/26/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15377	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/26/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15378	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/26/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15374	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/21/2022	Expiration Date:	05/21/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15375	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/21/2022	Expiration Date:	05/21/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.711 in a hood.		

Standard Log #:	M15372	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/20/2022	Expiration Date:	05/20/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15373	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/20/2022	Expiration Date:	05/20/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15307 and brought up to volume.		

Standard Log #:	M15370	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/19/2022	Expiration Date:	05/19/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15371	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/19/2022	Expiration Date:	05/19/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15367	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/19/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15368	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/19/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15369	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/19/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15366	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	04/18/2022	Expiration Date:	04/18/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15153. Dilute to 20 L and mix.		

Standard Log #:	M15365	Instrument:	GFAA
Analyst:	MDS	Reagent:	Pd/Mg Matrix Modifier
Prep Date:	04/15/2022	Expiration Date:	08/31/2022
Prep:	Into a 50 mL volumetric flask, partially filled with milli-Q H ₂ O, pipetted 15 mL Pd Modifier M15008 and 10 mL Mg (10,000 mg/L) M15174 and brought up to volume.		

		Instrument:	GFAA
Standard Log #:	M15362	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	04/13/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15363	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	04/13/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15364	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	04/13/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M15317 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M15357	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/12/2022	Expiration Date:	05/12/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15358	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/12/2022	Expiration Date:	05/12/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15359	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/12/2022	Expiration Date:	04/13/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.711 in a hood.		

Standard Log #:	M15360	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/13/2022	Expiration Date:	05/13/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15361	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/13/2022	Expiration Date:	05/13/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15354	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/12/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15355	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/12/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15356	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/12/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15352	Reagent:	1:3 HNO ₃
Analyst:	MDS		
Prep Date:	04/06/2022	Expiration Date:	04/06/2023
Prep:	Carefully mixed 3 parts DI with 1 part HNO ₃ AB.711 in a hood.		

Standard ID#:	M15353	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	04/06/2022	Lot #:	1-129AJ
Expiration Date (if any):	04/30/2022	Catalog #:	XCTWI-1-500

Standard Log #:	M15347	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/04/2022	Expiration Date:	05/04/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15348	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/04/2022	Expiration Date:	05/04/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15349	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/04/2022	Expiration Date:	04/05/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.711 in a hood.		

Standard Log #:	M15350	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/05/2022	Expiration Date:	05/05/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15351	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/05/2022	Expiration Date:	05/05/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15344	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/04/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15345	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/04/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15346	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/04/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	ICP 6500
Standard Log #:	M15342	Standard:	ICSA3_Cr_Cu_Co_Mo
Analyst:	NAH	Concentrations:	10,000 ug/L Cr, Cu, Co and Mo
Prep Date:	03/29/2022	Expiration Date:	02/2023
Prep:	Into a 500 mL volumetric flask, pipetted 0.5 mL 10000 mg/L Cr M152027 0.5 mL 10000 mg/L Cu M15021 5.0 mL 1000 mg/L Co M15019 5.0 mL 1000 mg/L Mo M15170 brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15343	Standard:	ICSA4_Ni_Ti
Analyst:	NAH	Concentrations:	10,000 ug/L Ni and Ti
Prep Date:	03/29/2022	Expiration Date:	07/2022
Prep:	Into a 500 mL volumetric flask, pipetted 5.0 mL 1000 mg/L Ni M15095 5.0 mL 10000 mg/L Ti M14674 brought up to volume with milli-Q H ₂ O.		

Standard Log #:	M15338	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/29/2022	Expiration Date:	04/29/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15339	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	03/29/2022	Expiration Date:	03/29/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15153. Dilute to 20 L and mix.		

		Instrument:	ICP 6500
Standard Log #:	M15340	Standard:	ICSA1_Mn
Analyst:	NAH	Concentrations:	10,000 ug/L Mn
Prep Date:	03/29/2022	Expiration Date:	02/2023
Prep:	Into a 500 mL volumetric flask, pipetted 0.5 mL 10000 mg/L mn M15023 brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15341	Standard:	ICSA2_Ba_Be_Sn
Analyst:	NAH	Concentrations:	10,000 ug/L Mn
Prep Date:	03/29/2022	Expiration Date:	09/2022
Prep:	Into a 500 mL volumetric flask, pipetted 5.0 mL 1000 mg/L Ba M14772 5.0 mL 1000 mg/L Be M15091 5.0 mL 1000 mg/L Sn M14774 brought up to volume with milli-Q H ₂ O.		

Standard Log #:	M15333	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/28/2022	Expiration Date:	04/28/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15334	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/28/2022	Expiration Date:	04/28/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15335	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/28/2022	Expiration Date:	03/29/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.711 in a hood.		

Standard Log #:	M15336	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/29/2022	Expiration Date:	04/29/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15337	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/29/2022	Expiration Date:	04/29/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15330	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/28/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15331	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/28/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15332	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/28/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	ICP
Standard Log #:	M15329	Standard:	Pb ICV
Analyst:	NAH	Concentrations:	500 ug/L (Pb)
Prep Date:	03/21/2022	Expiration Date:	06/23
Prep:	Into a 1 L volumetric flask, pipetted 0.5 mL Pb (1000 mg/L) M15289 and brought to volume with Milli-Q H ₂ O. (2% HNO ₃ , 2% HCl)		

		Instrument:	ICP 6500
Standard Log #:	M15326	Standard:	Pb ICAL
Analyst:	NAH	Concentrations:	10,100, 1000, and 10,000, 100,000 µg/L (Pb)
Prep Date:	03/21/2022	Expiration Date:	03/2023
Prep:	Into four, 1 L volumetric flasks, pipetted the following from Pb (10000 µg/mL) M15045 and brought up to volume using milli-Q H ₂ O. (0.5% HNO ₃ , 0.5% HCl) 10 µg/L std. - 0.001mL 100 µg/L std. - 0.01mL 1000 µg/L std - 0.10 mL 10,000 µg/L std. - 1.0 mL 100,000 µg/L std - 10.0 mL		

		Instrument:	ICP 6500
Standard Log #:	M15327	Standard:	CCV1
Analyst:	NAH	Concentrations:	5000 µg/L Pb
Prep Date:	03/21/2022	Expiration Date:	03/23
Prep:	Into a 1 L volumetric flask, pipetted 0.5 mL 10,000 mg/L M15045 Pb and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15328	Standard:	CCV2
Analyst:	NAH	Concentrations:	500 µg/L Pb,
Prep Date:	03/21/2022	Expiration Date:	03/23
Prep:	Into a 1 L volumetric flask, pipetted .05 mL ml 10,000 mg/L M15045 Pb and brought up to volume with milli-Q H ₂ O.		

Standard Log #:	M15321	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/22/2022	Expiration Date:	04/22/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15322	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/22/2022	Expiration Date:	04/22/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15323	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/22/2022	Expiration Date:	03/23/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.711 in a hood.		

Standard Log #:	M15324	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/23/2022	Expiration Date:	04/23/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15325	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/23/2022	Expiration Date:	04/23/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15318	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/22/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15319	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/22/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15320	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/22/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15316	Vendor:	Inorganic Ventures
Analyst:	MDS	Chemical:	GFAA ICAL/CCV
Date Received:	03/18/2022	Lot #:	T2-MEB716384
Expiration Date (if any):		Catalog #:	CTI-SPK-1

Standard ID#:	M15317	Vendor:	Inorganic Ventures
Analyst:	MDS	Chemical:	GFAA ICV/Spike
Date Received:	03/18/2022	Lot #:	T2-MEB716383
Expiration Date (if any):		Catalog #:	CTI-GFCAL-1

Standard Log #:	M15311	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/15/2022	Expiration Date:	04/15/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15312	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/15/2022	Expiration Date:	04/15/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15313	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/15/2022	Expiration Date:	03/16/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15314	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/16/2022	Expiration Date:	04/16/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15315	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/16/2022	Expiration Date:	04/16/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15308	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/15/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15309	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/15/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15310	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/15/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15305	Vendor:	Acros Organics
Analyst:	MDS	Chemical:	Potassium Persulfate 99%
Date Received:	03/10/2022	Lot #:	A0426185
Expiration Date (if any):		Catalog #:	424185000

Standard ID#:	M15306	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	03/10/2022	Lot #:	M012-04
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M15307	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	03/10/2022	Lot #:	M012-04
Expiration Date (if any):		Catalog #:	LC251701

Standard Log #:	M15300	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/08/2022	Expiration Date:	04/08/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15301	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/08/2022	Expiration Date:	04/08/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15302	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/08/2022	Expiration Date:	03/09/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15303	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/09/2022	Expiration Date:	04/09/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15304	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/09/2022	Expiration Date:	04/09/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15297	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/08/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15298	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/08/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15299	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/08/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15296	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	03/07/2022	Expiration Date:	03/07/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15153. Dilute to 20 L and mix.		

		Instrument:	GFAA
Standard Log #:	M15292	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	03/07/2022	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15293	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	03/07/2022	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15294	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	03/07/2022	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M14798 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M15295	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	03/07/2022	Expiration Date:	03/07/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15153. Dilute to 20 L and mix.		

Standard Log #:	M15291	Instrument:	GFAA																																			
Analyst:	MDS	Standard:	MDL Spiking Solution																																			
Prep Date:	03/04/2022	Expiration Date:	01/2023																																			
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (2% HNO₃) <table border="1"> <thead> <tr> <th>Analyte</th> <th>Final MDL Conc. (ug/L)</th> <th>Std. ID #</th> <th>Std. Conc. (mg/L)</th> <th>Volume (mL) pipetted</th> </tr> </thead> <tbody> <tr> <td>Ag</td> <td>0.2</td> <td>M15222</td> <td>1000</td> <td>0.01</td> </tr> <tr> <td>As</td> <td>2</td> <td>M15223</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Pb</td> <td>2</td> <td>M15045</td> <td>10000</td> <td>0.01</td> </tr> <tr> <td>Sb</td> <td>2</td> <td>M15220</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Se</td> <td>2</td> <td>M15217</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Tl</td> <td>2</td> <td>M15221</td> <td>1000</td> <td>0.1</td> </tr> </tbody> </table> Of this base standard, pipetted 1 mL into a 50 mL digestion tube for a digested working standard.			Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted	Ag	0.2	M15222	1000	0.01	As	2	M15223	1000	0.1	Pb	2	M15045	10000	0.01	Sb	2	M15220	1000	0.1	Se	2	M15217	1000	0.1	Tl	2	M15221	1000	0.1
Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted																																		
Ag	0.2	M15222	1000	0.01																																		
As	2	M15223	1000	0.1																																		
Pb	2	M15045	10000	0.01																																		
Sb	2	M15220	1000	0.1																																		
Se	2	M15217	1000	0.1																																		
Tl	2	M15221	1000	0.1																																		

Standard Log #:	M15290	Standard:	GFAA Instrument Check
Analyst:	MDS	Final Concentration:	10 µg/L As 6 µg/L Pb 10 µg/L Sb 20 µg/L Se 10 µg/L Tl 0.6 µg/L Ag
Prep Date:	03/04/2022	Expiration Date:	01/2023

Into six, 100 mL volumetric flasks, add the following and bring up to volume with milli-Q H₂O.

Element	Volume Pipetted (mL)	Standard Conc. (µg/mL)	Standard ID	New Conc. (µg/L)
As	1	1000	M15223	10,000
Pb	0.1	10,000	M15045	10,000
Tl	1	1000	M15221	10,000
Se	1	1000	M15217	10,000
Sb	1	1000	M15220	10,000
Ag	0.1	1000	M15222	1000

Into a 1 L volumetric flask, add the following and bring up to volume with Milli-Q H₂O. (1% HNO₃)

Element	Volume Pipetted (mL)	Standard Conc. (µg/L)	New Conc. (µg/L)
As	1.0	10,000	10
Pb	0.6	10,000	6
Tl	1.0	10,000	10
Se	2.0	10,000	20
Sb	1.0	10,000	10
Ag	0.6	1000	0.6

Standard ID#:	M15286	Vendor:	CPI
Analyst:	NAH	Chemical:	Si 1000 ug/mL
Date Received:	03/02/2022	Lot #:	211029
Expiration Date (if any):	04/30/2023	Catalog #:	S4400-1000504F

Standard ID#:	M15287	Vendor:	CPI
Analyst:	NAH	Chemical:	Na 10000 ug/mL
Date Received:	03/02/2022	Lot #:	1055526-35
Expiration Date (if any):	01/2023	Catalog #:	4400-10M521

Standard ID#:	M15288	Vendor:	CPI
Analyst:	NAH	Chemical:	K 10000 ug/mL
Date Received:	03/02/2022	Lot #:	1137797-18
Expiration Date (if any):	06/2023	Catalog #:	4400-10M411

Standard ID#:	M15289	Vendor:	CPI
Analyst:	NAH	Chemical:	Pb 1000 ug/mL
Date Received:	03/02/2022	Lot #:	1046594-72
Expiration Date (if any):	06/2023	Catalog #:	S4400-1000281

Standard Log #:	M15281	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/01/2022	Expiration Date:	04/01/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15282	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/01/2022	Expiration Date:	03/02/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15283	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/02/2022	Expiration Date:	04/02/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

Standard Log #:	M15284	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/02/2022	Expiration Date:	04/02/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15285	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/02/2022	Expiration Date:	04/02/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15164 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15278	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/01/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15279	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/01/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15280	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/01/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15277	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	02/28/2022	Lot #:	58-137CR
Expiration Date (if any):	02/28/2023	Catalog #:	XSPIKE-1-250

Standard Log #:	M15275	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	02/23/2022	Expiration Date:	03/23/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15276	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	02/23/2022	Expiration Date:	03/23/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

Standard Log #:	M15270	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	02/21/2022	Expiration Date:	03/21/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15271	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	02/21/2022	Expiration Date:	02/22/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15272	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	02/22/2022	Expiration Date:	03/22/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15273	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	02/22/2022	Expiration Date:	03/22/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15164 and brought up to volume.		

Standard ID#:	M15274	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	02/23/2022	Lot #:	1-021JA
Expiration Date (if any):	02/28/2023	Catalog #:	XCTWI-5-500

		Instrument:	HydraII
Standard Log #:	M15267	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	02/21/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15268	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	02/21/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15269	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	02/21/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15263	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	02/15/2022	Expiration Date:	03/15/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15264 and brought up to volume.		

Standard Log #:	M15264	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	02/15/2022	Expiration Date:	03/15/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

Standard Log #:	M15265	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	02/16/2022	Expiration Date:	03/16/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15266	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	02/16/2022	Expiration Date:	03/16/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15164 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15260	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	02/15/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15261	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	02/15/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15262	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	02/15/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15259	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	100 mg/mL Custom Standard
Date Received:	02/11/2022	Lot #:	58-054CR
Expiration Date (if any):	02/28/2023	Catalog #:	XCTWI-4-500

Standard Log #:	M15254	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	02/09/2022	Expiration Date:	03/09/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15255	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	02/09/2022	Expiration Date:	03/09/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15256	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	02/09/2022	Expiration Date:	02/10/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15257	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	02/10/2022	Expiration Date:	03/10/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15258	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	02/10/2022	Expiration Date:	03/10/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15164 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15251	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	02/09/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15252	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	02/09/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15253	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	02/09/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15250	Vendor:	CPI
Analyst:	NAH	Chemical:	Ag 10 ICVLL
Date Received:	02/08/2022	Lot #:	.01 mls m15222 into 1000 ml vol.
Expiration Date (if any):	06/2023	Catalog #:	

MRL BASE STD	M15249	Analyst	NAH
		Prep Date	02/08/2022

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	(ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L	Expiration Date
Ag	20	M15222	1000	1	07/2022
Al	400	M15112	10000	2	xx
Ba	10	M14772	1000	0.5	xx
Be	4	M15091	1000	0.2	xx
Cd	5	M15098	1000	0.25	xx
Co	10	M15019	1000	0.5	xx
Cr	10	M15027	10000	0.05	xx
Cu	10	M15021	10000	0.05	xx
Mg	500	M15174	10000	2.5	xx
Mn	10	M15023	10000	0.05	xx
Mo	10	M15170	1000	0.5	xx
Ni	10	M15095	1000	0.5	xx
Pb	10	M15045	10000	0.05	xx
Sb	20	M15229	1000	1	xx
V	10	M15020	1000	0.5	xx
Zn	10	M15114	10000	0.05	xx
K	1000	M15173	10000	5	xx
Na	1000	M15172	10000	5	xx
As	20	M15223	1000	1	xx
Ca	500	M15026	10000	2.5	xx
Fe	300	M15169	10000	1.5	xx
Se	20	M15217	1000	1	xx
Tl	20	M15221	1000	1	xx
Si	100	M15171	1000	5	xx
B	20	M14966	1000	1	xx
Li	20	M14681	1000	1	xx
W	50	Mxxxxxxx	1000	2.5	xx
Ti	10	M14674	1000	0.5	xx
Sr	10	M14775	1000	0.5	xx
Sn	50	M14774	1000	2.5	xx
S	300	M15025	10000	1.5	xx

Of this Base standard, pipet 10 mls into 500 ml volumetric to create a working std or 1 ml into 50 ml digestion tube for a digested working standard.

		Instrument:	ICP 6500
Standard Log #:	M15248	Standard:	ICSA
Analyst:	NAH	Concentrations:	500,000 µg/L Al, Ca, Fe, Mg 10,000 V, Ce
Prep Date:	02/08/2022	Expiration Date:	07/2022
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interference A std M15068 and 15 mL 10000 mg/L Fe M15169 5.0 mL 1000 mg/L V M15020 5.0 mL 1000 mg/L Ce M14682 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15246	Standard:	ICV Std.
Analyst:	NAH	Concentrations:	12,000 mg/L Al 10,000 mg/L Ca, Mg 5000 mg/L Fe 2000 mg/L As, Ba, Se, Tl 500 mg/L B, Co, Li, Mn, Mo, Ni, Pb, Sb, Sn, Sr, Ti, V, Zn 250 mg/L Cu 200 mg/L Cr 50 mg/L Ag, Be, Cd
Prep Date:	02/0/2022	Expiration Date:	07/2022
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with milli-Q H ₂ O. 10 mL Custom Assurance Standard #18 ((200 mg/L Al, As, Ba, Se, Tl) (100 mg/L Fe) (50 mg/L Co, Mn, Ni, Pb, Sb, V, Zn) (25 mg/L Cu) (20 mg/L Cr) (5 mg/L Ag, Be, Cd)) M15167, 2 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M15068, 0.5 mL Mo (1000 mg/L) M15022, 0.5 mL B (1000 mg/L) M14966, 0.5 mL Sr (1000 mg/L) M14775, 0.5 mL Li (1000 mg/L) M14681, 0.5 mL Sn (1000 mg/L) M14774, 0.5 mL Ti (1000 mg/L) M14674, 0.5 mL W (1000 mg/L) Mxxxxxxx, 0.5 mL Si (1000 mg/L) M15219, 0.5 mL S (10000 mg/L) M14677, 0.5 mL K (10000 mg/L) M15116, and 0.5 mL K (10000 mg/L) Na M15097		

		Instrument:	ICP 6500
Standard Log #:	M15247	Standard:	ICSAB
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 500 ug/L Ag, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn, K, Na, S, 50000 ug/L Si 1000 ug/L .
Prep Date:	02/08/2022	Expiration Date:	11/2022
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M15068, 15 mL Fe (10,000 mg/L) M15169, 2.5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M14685, 2.5 mL Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn), M15134, 2.5 mLs Na 10,000 ug/mL M15172, 2.5 mLs k 10,000 ug/mL M15173, 2.5 mLs S 10,000 ug/mL M15025, 0.5 mls Si 1000 ug/mL M15088 and brought up to volume with milli-Q .		

		Instrument:	ICP 6500
Standard Log #:	M15244	Standard:	CCV1
Analyst:	NAH	Concentrations:	5000 µg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn, Si. 100,000 µg/L K, Na, S. 500 µg/L Ag, Be, Cd
Prep Date:	02/08/2022	Expiration Date:	07/2022
Prep:	Into a 1 L volumetric flask, pipetted 50 mL Custom Assurance Standard #23 XCTWI-5-500 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn Si) M15134, M15 and 5.0 mL of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) 0.5 ml M15C 10 mls of 10,000 mg/L M15173 K, M15172 Na, M15025 S and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15245	Standard:	CCV2
Analyst:	NAH	Concentrations:	500 µg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn, Si. 10,000 µg/L K, Na, S 50 µg/L Ag, Be, Cd
Prep Date:	02/08/2022	Expiration Date:	07/2022
Prep:	Into a 1 L volumetric flask, pipetted 5 mL Custom Assurance Standard #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15134 and 0.5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) .05 ml M152 and .5 ml M15171 Si and 1 ml 10,000 mg/L M15173 K, M15172 Na, M15025 S and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15243	Standard:	ICAL
Analyst:	NAH	Concentrations:	0.25, 0.5, 1, 5, 10, 20, 50, 100, 1000, 10,000, 100k, 100,000, 500,000 and 1000k (ug/L)
Prep Date:	02/08/2022	Expiration Date:	11/2022
Prep:	Using 1 L volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (5% HNO₃, 5% HCl) 1000 ug/L Std. - 10 mL of Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15134, 10 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M15098, M15098, and 1 mL of Si (1000 mg/L) M15171 and 1 mL M14682 Ce and 1 ml M15108 Hg and 0.1 ml of 10,000 mg/L M15173 K and M15172 Na and M15025 S and M15166 P. 0.25 ug/L Std. - 0.25 mL of the 1000 ug/L Std. 0.5 ug/L Std. - 0.5 mL of the 1000 ug/L Std. 1 ug/L Std. - 1 mL of the 1000 ug/L Std. 5 ug/L Std. - 5 mL of the 1000 ug/L Std. 10 ug/L Std. - 10 mL of the 1000 ug/L Std. 20 ug/L Std. - 20 mL of the 1000 ug/L Std. 50 ug/L Std. - 50 mL of the 1000 ug/L Std. 100 ug/L Std. - 1 mL of Custom Assurance Std. (CAS) #23 and 1 mL of CAS #3 10,000 ug/L Std. - 100 mL CAS #23, 100 mL CAS #3. 100k ug/L Std. - 10 mL of Cu (10,000 mg/L) M15021, 10 mL of Mn (10,000 mg/L) M15023, 10 mL of Cr (10,000 mg/L) M15027, 10 mL Pb (10,000 mg/L) M15045, 10 mL of Zn (10,000 mg/L) M15114. 100,000 ug/L Std. - 10 mL of Mg (10,000 mg/L) M15174, 10 mL of Fe (10,000 mg/L) M15169, 10 mL of Ca (10,000 mg/L) M15026 and 10 mL Al (10,000 mg/L) M15112, 10 mL of Na (10,000) M15172, 10 mL K (10,000) M15173, 10 mL S (10,000) M15025, 10 mL P (10,000), M15166 10 mL Si (1000) M15171. 500,000 ug/L Std. - 50 mL of Mg (10,000 mg/L), 50 mL of Fe (10,000 mg/L), 50 mL of Ca (10,000 mg/L), 50 mL of Al (10,000 mg/L), 50 mL of Na (10,000), 50 mL of K (10,000). 1000k ug/L Std. - 100 mL of Mg (10,000 mg/L), 100 mL of Fe (10,000 mg/L), 100 mL of Ca (10,000 mg/L) 100 mL of Al (10,000 mg/L), 100 mL of Na (10,000 mg/L) 100 mL of K (10,000 mg/L) 100 mL S (10,000 mg/L) 100 ml of P (10,000 mg/L).		

Standard Log #:	M15242	Instrument:	ICP 6500
Analyst:	NAH	Standard:	MDL Spike Soln
Prep Date:	02/08/2022	Expiration Date:	07/2022

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	40	M15222	1000	2
Al	800	M15112	10000	4
As	40	M15223	1000	2
Ba	20	M14772	1000	1
Be	8	M15091	1000	0.4
Ca	1000	M15026	10000	5
Cd	10	M15098	1000	0.5
Co	20	M15019	1000	1
Cr	20	M15027	10000	0.1
Cu	20	M15021	10000	0.1
Fe	600	M15169	10000	3
Mg	1000	M15174	10000	5
Mn	20	M15023	10000	0.1
Mo	20	M15170	1000	1
Ni	20	M15095	1000	1
Pb	20	M15045	10000	0.1
Sb	40	M15220	1000	2
Se	40	M15217	1000	2
Tl	40	M15221	1000	2
V	20	M15020	1000	1
Zn	20	M15114	10000	0.1
Na	10000	M15172	10000	50
K	10000	M15173	10000	50
B	40	M14966	1000	2
Si	200	M15171	1000	10
Li	20	M14681	1000	1
Sr	20	M14775	1000	1
Sn	40	M14774	1000	2
Ti	20	M14674	1000	1
S	400	M15025	10000	20

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M15241	Instrument:	ICP 6500
Analyst:	NAH	Standard:	LOQ solid QSM
Prep Date:	02/08/2022	Expiration Date:	07/2022

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	40	M15222	1000	2
Al	800	M15112	10000	4
As	40	M15223	1000	2
Ba	40	M14772	1000	2
Be	8	M15091	1000	0.4
Ca	1000	M15026	10000	5
Cd	10	M15098	1000	0.5
Co	20	M15019	1000	1
Cr	20	M15027	10000	0.1
Cu	20	M15021	10000	0.1
Fe	600	M15169	10000	3
Mg	1000	M15174	10000	5
Mn	20	M15023	10000	0.1
Mo	20	M15170	1000	1
Ni	20	M15095	1000	1
Pb	20	M15045	10000	0.1
Sb	40	M15220	1000	2
Se	40	M15217	1000	2
Tl	40	M15221	1000	2
V	20	M15020	1000	1
Zn	20	M15114	10000	0.1
Na	10000	M15172	10000	50
K	10000	M15173	10000	50
B	40	M14966	1000	2
Si	200	M15171	1000	10
Li	20	M14681	1000	1
Sr	20	M14775	1000	1
Sn	40	M14774	1000	2
Ti	20	M14674	1000	1
S	400	M15025	10000	20

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M15240	Instrument:	ICP 6500
Analyst:	NAH	Standard:	LOQ water QSM
Prep Date:	02/08/2022	Expiration Date:	07/2022

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	5	M15222	1000	0.25
Al	120	M15112	10000	0.6
As	40	M15223	1000	2
Ba	4	M14772	1000	0.2
Be	8	M15091	1000	0.4
Ca	100	M15026	10000	0.5
Cd	2	M15098	1000	0.1
Co	5	M15019	1000	0.25
Cr	5	M15027	10000	0.025
Cu	40	M15021	10000	0.2
Fe	80	M15169	10000	0.4
Mg	40	M15174	10000	0.2
Mn	5	M15023	10000	0.025
Mo	5	M15170	1000	0.25
Ni	5	M15095	1000	0.25
Pb	20	M15045	10000	0.1
Sb	20	M15220	1000	1.0
Se	20	M15217	1000	2
Tl	40	M15221	1000	2
V	5	M15020	1000	0.25
Zn	20	M15114	10000	0.1
Na	700	M15172	10000	3.5
K	500	M15173	10000	2.5
B	40	M14966	1000	2
Si	200	M15171	1000	10
Li	20	M14681	1000	1
Sr	20	M14775	1000	1
Sn	40	M14774	1000	2
Ti	20	M14674	1000	1
S	400	M15025	10000	20

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M15236	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/25/2022	Expiration Date:	02/25/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15237	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/25/2022	Expiration Date:	02/25/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

Standard Log #:	M15238	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/26/2022	Expiration Date:	02/26/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15239	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/26/2022	Expiration Date:	02/26/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15164 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15233	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/25/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15234	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/25/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15235	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/25/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15232	Vendor:	Alfa Aesar Specpure
Analyst:	MDS	Chemical:	Nickel Nitrate Matrix Mod
Date Received:	01/18/2022	Lot #:	276713
Expiration Date (if any):	07/31/2023	Catalog #:	39043

Standard Log #:	M15227	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/18/2022	Expiration Date:	02/18/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15228	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/18/2022	Expiration Date:	02/18/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15229	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	01/18/2022	Expiration Date:	01/19/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15230	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/19/2022	Expiration Date:	02/19/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15231	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/19/2022	Expiration Date:	02/19/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15164 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15224	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/18/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15225	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/18/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15226	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/18/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15217	Vendor:	CPI
Analyst:	NAH	Chemical:	Se 1000 mg/L
Date Received:	01/13/2022	Lot #:	1135995-21
Expiration Date (if any):	06/2023	Catalog #:	S4400-1000491

Standard ID#:	M15218	Vendor:	CPI
Analyst:	NAH	Chemical:	Y 10000 mg/L
Date Received:	01/13/2022	Lot #:	1157358-14
Expiration Date (if any):	06/2023	Catalog #:	4400-10M671

Standard ID#:	M15219	Vendor:	CPI
Analyst:	NAH	Chemical:	Si 1000 mg/L
Date Received:	01/13/2022	Lot #:	211029
Expiration Date (if any):	04/30/2022	Catalog #:	S4400-1000504F

Standard ID#:	M15220	Vendor:	CPI
Analyst:	NAH	Chemical:	Sb 1000 mg/L
Date Received:	1/13/2022	Lot #:	1129139-6
Expiration Date (if any):	06/2023	Catalog #:	S4400-100023

Standard ID#:	M15221	Vendor:	CPI
Analyst:	NAH	Chemical:	Tl 1000 mg/L
Date Received:	01/13/2022	Lot #:	1025512-61
Expiration Date (if any):	01/2023	Catalog #:	S4400-1000581

Standard ID#:	M15222	Vendor:	CPI
Analyst:	NAH	Chemical:	Ag 1000 mg/L
Date Received:	01/13/2022	Lot #:	1106123-69
Expiration Date (if any):	06/2023	Catalog #:	S4400-1000511

Standard ID#:	M15223	Vendor:	CPI
Analyst:	NAH	Chemical:	As 1000 mg/L
Date Received:	01/13/2022	Lot #:	1103713-64
Expiration Date (if any):	06/2023	Catalog #:	S4400-100031

Standard Log #:	M15213	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/11/2022	Expiration Date:	02/11/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15214	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/11/2022	Expiration Date:	02/11/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

Standard Log #:	M15215	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/12/2022	Expiration Date:	02/12/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15216	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/12/2022	Expiration Date:	02/12/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15057 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15210	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/11/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15211	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/11/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15212	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/11/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15205	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/04/2022	Expiration Date:	02/04/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15206	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/04/2022	Expiration Date:	02/04/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15207	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	01/04/2022	Expiration Date:	01/05/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15208	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/05/2022	Expiration Date:	02/05/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15209	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/05/2022	Expiration Date:	02/05/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15057 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15202	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/04/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15203	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/04/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15204	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/04/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	GFAA
Standard Log #:	M15199	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	01/03/2022	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15200	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	01/03/2022	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15201	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	01/03/2022	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M14798 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M15194	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	12/28/2021	Expiration Date:	01/28/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15195	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	12/28/2021	Expiration Date:	01/28/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15196	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	12/28/2021	Expiration Date:	12/29/2021
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15197	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	12/29/2021	Expiration Date:	01/29/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15198	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	12/29/2021	Expiration Date:	01/29/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15057 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15191	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	12/28/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15192	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	12/28/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15193	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	12/28/2021	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15186	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	12/20/2021	Expiration Date:	01/20/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15187	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	12/20/2021	Expiration Date:	01/20/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15188	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	12/20/2021	Expiration Date:	12/21/2021
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15189	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	12/21/2021	Expiration Date:	01/21/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15190	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	12/21/2021	Expiration Date:	01/21/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15057 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15183	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	12/20/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15184	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	12/20/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15185	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	12/20/2021	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15180	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	12/15/2021	Expiration Date:	01/15/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15181	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	12/15/2021	Expiration Date:	01/15/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15057 and brought up to volume.		

Standard Log #:	M15182	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	MRZ	pH:	4.93 ± 0.05
Prep Date:	12/20/2021	Expiration Date:	12/20/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15153. Dilute to 20 L and mix.		

Standard Log #:	M15178	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	12/14/2021	Expiration Date:	01/14/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15179	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	12/14/2021	Expiration Date:	01/14/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15175	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	12/14/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15176	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	12/14/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15177	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	12/14/2021	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15169	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	10,000 ug/mL Iron
Date Received:	12/13/2021	Lot #:	1034257-77
Expiration Date (if any):	06/13/2023	Catalog #:	4400-10M261

Standard ID#:	M15170	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	1,000 ug/mL Molybdenum
Date Received:	12/13/2021	Lot #:	1138256-5
Expiration Date (if any):	06/13/2023	Catalog #:	S4400-1000343

Standard ID#:	M15171	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	1,000 ug/mL Silicon
Date Received:	12/13/2021	Lot #:	1198119-3
Expiration Date (if any):	06/13/2023	Catalog #:	S4400-1000504F

Standard ID#:	M15172	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	10,000 ug/mL Sodium
Date Received:	12/13/2021	Lot #:	1122472-6
Expiration Date (if any):	06/13/2023	Catalog #:	4400-10M521

Standard ID#:	M15173	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	10,000 ug/mL Potassium
Date Received:	12/13/2021	Lot #:	1137797-18
Expiration Date (if any):	06/13/2023	Catalog #:	4400-10M411

Standard ID#:	M15174	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	10,000 ug/mL Magnesium
Date Received:	12/13/2021	Lot #:	1075232-54
Expiration Date (if any):	06/13/2023	Catalog #:	4400-10M311

Standard ID#:	M15164	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	12/10/2021	Lot #:	L259-10
Expiration Date (if any):	N/A	Catalog #:	LC251701

Standard ID#:	M15165	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	12/10/2021	Lot #:	L259-10
Expiration Date (if any):	N/A	Catalog #:	LC251701

Standard ID#:	M15166	Vendor:	SPEX CERTIPREP
Analyst:	BMM	Chemical:	10,000 ug/mL Phosphorus
Date Received:	12/13/2021	Lot #:	AR18-111PY
Expiration Date (if any):	12/30/2022	Catalog #:	PLP9-3Y

Standard ID#:	M15167	Vendor:	SPEX CERTIPREP
Analyst:	BMM	Chemical:	CUSTOM ASSURANCE STANDARD
Date Received:	12/13/2021	Lot #:	57-204CR
Expiration Date (if any):	12/30/2022	Catalog #:	XSPIKE-1-250

Standard ID#:	M15168	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	1,000 ug/mL Silicon
Date Received:	12/13/2021	Lot #:	1198119-3
Expiration Date (if any):	06/13/2023	Catalog #:	S4400-1000504F

Standard ID#:	M15163	Vendor:	Decon Labs
Analyst:	NAH	Chemical:	Dri-Clean lab detergent
Date Received:	12/08/2021	Lot #:	1J519
Expiration Date (if any):	-----	Catalog #:	2502

Standard Log #:	M15158	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	12/07/2021	Expiration Date:	01/07/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15159	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	12/07/2021	Expiration Date:	01/07/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15160	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	12/07/2021	Expiration Date:	12/08/2021
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15161	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	12/08/2021	Expiration Date:	01/08/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15056 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15162	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	12/08/2021	Expiration Date:	01/08/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15057 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15155	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	12/07/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15156	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	12/07/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15157	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	12/07/2021	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15153	Reagent:	10N NaOH
Analyst:	BMM		
Prep Date:	12/01/2021	Expiration Date:	05/01/2022
Prep:	Into a 1 L volumetric flask, added 400 g NaOH WC310 and brought up to volume.		

Standard Log #:	M15154	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	MRZ	pH:	4.93 ± 0.05
Prep Date:	12/01/2021	Expiration Date:	12/01/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14946. Dilute to 20 L and mix.		

Standard Log #:	M15148	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	11/30/2021	Expiration Date:	12/30/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15149	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	11/30/2021	Expiration Date:	12/30/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15150	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	11/30/2021	Expiration Date:	12/01/2021
Prep:	Carefully mixed 3 parts HCl AB.707 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15151	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	12/01/2021	Expiration Date:	01/01/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15056 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15152	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	12/01/2021	Expiration Date:	01/01/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.707 and dissolved 100 g Stannous chloride M15057 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15145	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	11/30/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15146	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	11/30/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15147	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	11/30/2021	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15144	Vendor:	Acros Organics
Analyst:	MDS	Chemical:	Hydroxylamine Sulfate
Date Received:	11/29/2021	Lot #:	A0431536
Expiration Date (if any):		Catalog #:	198530010

Standard ID#:	M15143	Vendor:	Environmental Express
Analyst:	NAH	Chemical:	Yttrium 10,000 mg/L
Date Received:	11/22/2021	Lot #:	2123812-500
Expiration Date (if any):	05/31/2023	Catalog #:	HP10M67-1-500

Standard Log #:	M15138	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	11/16/2021	Expiration Date:	12/16/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15139	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	11/16/2021	Expiration Date:	12/16/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15140	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	11/16/2021	Expiration Date:	11/17/2021
Prep:	Carefully mixed 3 parts HCl AB.707 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M15141	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	11/17/2021	Expiration Date:	12/17/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15056 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15142	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	11/17/2021	Expiration Date:	12/17/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.707 and dissolved 100 g Stannous chloride M15058 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15135	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	11/16/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15136	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	11/16/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15137	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	11/16/2021	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15134	Vendor:	SpexCertiprep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	11/11/2021	Lot #:	1-040EL
Expiration Date (if any):	11/20/2022	Catalog #:	XCTWI-5-500

Standard Log #:	M15129	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	11/10/2021	Expiration Date:	12/10/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15130	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	11/10/2021	Expiration Date:	12/10/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15131	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	11/10/2021	Expiration Date:	11/11/2021
Prep:	Carefully mixed 3 parts HCl AB.707 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M15132	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	11/11/2021	Expiration Date:	12/11/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15133	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	11/11/2021	Expiration Date:	12/11/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.707 and dissolved 100 g Stannous chloride M15058 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15126	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	11/10/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15127	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	11/10/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15128	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	11/10/2021	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15124	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	11/04/2021	Expiration Date:	12/04/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15125	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	11/05/2021	Expiration Date:	12/05/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.707 and dissolved 100 g Stannous chloride M15057 and brought up to volume.		

Standard Log #:	M15121	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	11/03/2021	Expiration Date:	12/03/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15122	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	11/03/2021	Expiration Date:	12/03/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15123	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	11/03/2021	Expiration Date:	11/04/2021
Prep:	Carefully mixed 3 parts HCl AB.707 with 1 part HNO ₃ AB.705 in a hood.		

Standard ID#:	M15117	Vendor:	SPEX CertiPrep
Analyst:	MDS	Chemical:	Mercury 1000 µg/mL
Date Received:	11/03/2021	Lot #:	CL12-145HGY
Expiration Date (if any):	10/30/2022	Catalog #:	CLHG4-2Y

		Instrument:	HydraII
Standard Log #:	M15118	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	11/03/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15119	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	11/03/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15120	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	11/03/2021	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15112	Vendor:	CPI
Analyst:	NAH	Chemical:	Al 10,000 mg/L
Date Received:	10/25/2021	Lot #:	1144484-5
Expiration Date (if any):	04/2023	Catalog #:	4400-10M11

Standard ID#:	M15113	Vendor:	CPI
Analyst:	NAH	Chemical:	K 10,000 mg/L
Date Received:	10/25/2021	Lot #:	KD37797-20
Expiration Date (if any):	04/2023	Catalog #:	4400-10M411-500

Standard ID#:	M15114	Vendor:	CPI
Analyst:	NAH	Chemical:	ZN 10,000 mg/L
Date Received:	10/25/2021	Lot #:	1149838-4
Expiration Date (if any):	04/2023	Catalog #:	S4400-10M681

Standard ID#:	M15115	Vendor:	CPI
Analyst:	NAH	Chemical:	Y 10,000 mg/L
Date Received:	10/25/2021	Lot #:	1157358-4
Expiration Date (if any):	04/2023	Catalog #:	4400-10M671

Standard ID#:	M15116	Vendor:	CPI
Analyst:	NAH	Chemical:	K 10,000 mg/L
Date Received:	10/25/2021	Lot #:	1137797-18
Expiration Date (if any):	04/2023	Catalog #:	4400-10M411

		Instrument:	GFAA
Standard Log #:	M15109	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	10/25/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15110	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	10/25/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15111	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	10/25/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M14798 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard ID#:	M15108	Vendor:	CPI International
Analyst:	MDS	Chemical:	Mercury 1000 µg/mL
Date Received:	10/21/2021	Lot #:	1084154-49
Expiration Date (if any):	01/22/2023	Catalog #:	S4400-1000331

Standard Log #:	M15103	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	10/19/2021	Expiration Date:	11/19/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15104	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	10/19/2021	Expiration Date:	11/19/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15105	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	10/19/2021	Expiration Date:	10/20/2021
Prep:	Carefully mixed 3 parts HCl AB.707 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M15106	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	10/20/2021	Expiration Date:	11/20/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15107	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	10/20/2021	Expiration Date:	11/20/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.707 and dissolved 100 g Stannous chloride M15058 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15100	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	10/19/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15101	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	10/19/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15102	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	10/19/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15099	Instrument:	GFAA																																			
Analyst:	MDS	Standard:	MDL Spiking Solution																																			
Prep Date:	10/15/2021	Expiration Date:	02/2022																																			
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (2% HNO₃) <table border="1"> <thead> <tr> <th>Analyte</th> <th>Final MDL Conc. (ug/L)</th> <th>Std. ID #</th> <th>Std. Conc. (mg/L)</th> <th>Volume (mL) pipetted</th> </tr> </thead> <tbody> <tr> <td>Ag</td> <td>0.2</td> <td>M14623</td> <td>1000</td> <td>0.01</td> </tr> <tr> <td>As</td> <td>2</td> <td>M14621</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Pb</td> <td>2</td> <td>M15045</td> <td>10000</td> <td>0.01</td> </tr> <tr> <td>Sb</td> <td>2</td> <td>M14622</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Se</td> <td>2</td> <td>M14624</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Tl</td> <td>2</td> <td>M14626</td> <td>1000</td> <td>0.1</td> </tr> </tbody> </table> Of this base standard, pipetted 1 mL into a 50 mL digestion tube for a digested working standard.			Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted	Ag	0.2	M14623	1000	0.01	As	2	M14621	1000	0.1	Pb	2	M15045	10000	0.01	Sb	2	M14622	1000	0.1	Se	2	M14624	1000	0.1	Tl	2	M14626	1000	0.1
Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted																																		
Ag	0.2	M14623	1000	0.01																																		
As	2	M14621	1000	0.1																																		
Pb	2	M15045	10000	0.01																																		
Sb	2	M14622	1000	0.1																																		
Se	2	M14624	1000	0.1																																		
Tl	2	M14626	1000	0.1																																		

Standard ID#:	M15094	Vendor:	CPI
Analyst:	NAH	Chemical:	MG 10,000 mg/L
Date Received:	10/14/2021	Lot #:	1075232-5
Expiration Date (if any):	09/2022	Catalog #:	4400-10M311

Standard ID#:	M15095	Vendor:	CPI
Analyst:	NAH	Chemical:	Ni 1000 mg/L
Date Received:	10/14/2021	Lot #:	1049780-73
Expiration Date (if any):	03/2023	Catalog #:	S4400-1000361

Standard ID#:	M15096	Vendor:	CPI
Analyst:	NAH	Chemical:	Si 1000 mg/L
Date Received:	10/14/2021	Lot #:	1047570-102
Expiration Date (if any):	03/2023	Catalog #:	S4400-1000504F

Standard ID#:	M15097	Vendor:	CPI
Analyst:	NAH	Chemical:	Na 10,000 mg/L
Date Received:	10/14/2021	Lot #:	1055526-35
Expiration Date (if any):	11/2022	Catalog #:	4400-10M521

Standard ID#:	M15098	Vendor:	CPI
Analyst:	NAH	Chemical:	Cd 1000 mg/L
Date Received:	10/14/2021	Lot #:	1080470-23
Expiration Date (if any):	01/2023	Catalog #:	S4400-100081

Standard ID#:	M15090	Vendor:	CPI
Analyst:	NAH	Chemical:	P 10,000 mg/L
Date Received:	10/14/2021	Lot #:	1079898-11
Expiration Date (if any):	01/2023	Catalog #:	S4400-10M391

Standard ID#:	M15091	Vendor:	CPI
Analyst:	NAH	Chemical:	Be 1000 mg/L
Date Received:	10/14/2021	Lot #:	1072683-57
Expiration Date (if any):	01/2023	Catalog #:	S4400-100051

Standard ID#:	M15092	Vendor:	CPI
Analyst:	NAH	Chemical:	Ca 10,000 mg/L
Date Received:	10/14/2021	Lot #:	1072921-23
Expiration Date (if any):	01/2023	Catalog #:	4400-10M91

Standard ID#:	M15093	Vendor:	CPI
Analyst:	NAH	Chemical:	Fe 10,000 mg/L
Date Received:	10/14/2021	Lot #:	1034257-71
Expiration Date (if any):	03/2023	Catalog #:	4400-10M261

Standard Log #:	M15086	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	10/13/2021	Expiration Date:	11/13/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15087	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	10/13/2021	Expiration Date:	11/13/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.707 and dissolved 100 g Stannous chloride M14949 and brought up to volume.		

Standard ID#:	M15088	Vendor:	CPI
Analyst:	NAH	Chemical:	Silicon 1000 ug/L
Date Received:	10/13/2021	Lot #:	1047570-102
Expiration Date (if any):	03/2023	Catalog #:	S4400-1000504F

Standard ID#:	M15089	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	10/13/2021	Lot #:	57-130CR
Expiration Date (if any):	10/30/2022	Catalog #:	XSPIKE-1-250

Standard Log #:	M15083	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	10/12/2021	Expiration Date:	11/12/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15084	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	10/12/2021	Expiration Date:	11/12/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15085	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	10/12/2021	Expiration Date:	10/13/2021
Prep:	Carefully mixed 3 parts HCl AB.707 with 1 part HNO ₃ AB.705 in a hood.		

		Instrument:	HydraII
Standard Log #:	M15080	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	10/12/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15081	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	10/12/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15082	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	10/12/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15079	Standard:	GFAA Instrument Check
Analyst:	MDS	Final Concentration:	8 µg/L As 10 µg/L Pb 8 µg/L Sb 16 µg/L Se 10 µg/L Tl 0.6 µg/L Ag
Prep Date:	10/11/2021	Expiration Date:	02/2022

Into six, 100 mL volumetric flasks, add the following and bring up to volume with milli-Q H₂O.

Element	Volume Pipetted (mL)	Standard Conc. (µg/mL)	Standard ID	New Conc. (µg/L)
As	1	1000	M14621	10,000
Pb	0.1	10,000	M15045	10,000
Tl	1	1000	M14626	10,000
Se	1	1000	M14624	10,000
Sb	1	1000	M14622	10,000
Ag	0.1	1000	M14623	1000

Into a 1 L volumetric flask, add the following and bring up to volume with Milli-Q H₂O. (1% HNO₃)

Element	Volume Pipetted (mL)	Standard Conc. (µg/L)	New Conc. (µg/L)
As	0.8	10,000	8
Pb	1.0	10,000	10
Tl	1.0	10,000	10
Se	1.6	10,000	16
Sb	0.8	10,000	8
Ag	0.6	1000	0.6

Standard Log #:	M15074	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	10/05/2021	Expiration Date:	11/05/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15075	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	10/05/2021	Expiration Date:	11/05/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15076	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	10/05/2021	Expiration Date:	10/06/2021
Prep:	Carefully mixed 3 parts HCl AB.707 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M15077	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	10/06/2021	Expiration Date:	11/06/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15078	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	10/06/2021	Expiration Date:	11/06/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.707 and dissolved 100 g Stannous chloride M14939 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15071	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	10/05/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15072	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	10/05/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15073	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	10/05/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15067	Instrument:	GFAA
Analyst:	MDS	Reagent:	Pd/Mg Matrix Modifier
Prep Date:	10/04/2021	Expiration Date:	08/20/2022
Prep:	Into a 50 mL volumetric flask, partially filled with milli-Q H ₂ O, pipetted 15 mL Pd Modifier M15008 and 10 mL Mg (10,000 mg/L) M14739 and brought up to volume.		

Standard ID#:	M15068	Vendor:	Spex Certi Prep
Analyst:	NAH	Chemical:	Interference A
Date Received:	10/4/2021	Lot #:	18-102WLX
Expiration Date (if any):	09/22	Catalog #:	INT-A1

Standard ID#:	M15069	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	10/04/2021	Lot #:	1-181-PC
Expiration Date (if any):	09/30/2022	Catalog #:	XCTWI-1-500

MRL BASE STD	M15066	Analyst	NAH
		Prep Date	10/04/2021

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	(ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L	Expiration Date
Ag	20	M14623	1000	1	02/22
Al	400	M15098	10000	2	02/23
Ba	10	M14772	1000	0.5	09/22
Be	4	M15203	1000	0.2	09/22
Cd	5	M14201	1000	0.25	09/22
Co	10	M15019	1000	0.5	02/23
Cr	10	M15027	10000	0.05	02/23
Cu	10	M15021	10000	0.05	02/23
Mg	500	M14739	10000	2.5	08/22
Mn	10	M15023	10000	0.05	02/23
Mo	10	M15022	1000	0.5	02/23
Ni	10	M14196	1000	0.5	xx
Pb	10	M15045	10000	0.05	03/23
Sb	20	M14622	1000	1	02/22
V	10	M15020	1000	0.5	02/23
Zn	10	M14197	10000	0.05	xx
K	1000	M14887	10000	5	11/22
Na	1000	M14969	10000	5	01/23
As	20	M14621	1000	1	02/22
Ca	500	M15026	10000	2.5	02/23
Fe	300	M15024	10000	1.5	02/23
Se	20	M14624	1000	1	02/22
Tl	20	M14626	1000	1	02/22
Si	100	M14968	1000	5	01/23
B	20	M14966	1000	1	01/23
Li	20	M14681	1000	1	07/22
W	50	xxxxx	1000	2.5	xxxxx
Ti	10	M14674	1000	0.5	07/22
Sr	10	M14683	1000	0.5	07/22
Sn	50	M14774	1000	2.5	09/22
S	300	M14773	10000	1.5	09/22

Of this Base standard, pipet 10 mls into 500 ml volumetric to create a working std or 1 ml into 50 ml digestion tube for a digested working standard.

		Instrument:	ICP 6500
Standard Log #:	M15064	Standard:	ICSAB
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 500 ug/L Ag, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
Prep Date:	10/04/2021	Expiration Date:	01/30/2022
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M14833, 15 mL Fe (10,000 mg/L) M15204, 2.5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M14685 and 2.5 mL Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15028 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15065	Standard:	ICSA
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg
Prep Date:	10/04/2021	Expiration Date:	01/30/2022
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M14833 and 15 mL Fe (10000 mg/L) M15024 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15061	Standard:	CCV1
Analyst:	NAH	Concentrations:	5000 µg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn 500 µg/L Ag, Be, Cd
Prep Date:	10/04/2021	Expiration Date:	01/30/2022
Prep:	Into a 1 L volumetric flask, pipetted 50 mL Custom Assurance Standard #23 XCTWI-5-500 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15028 and 5.0 mL of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) M14685 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15062	Standard:	CCV2
Analyst:	NAH	Concentrations:	500 µg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn 50 µg/L Ag, Be, Cd
Prep Date:	10/04/2021	Expiration Date:	01/30/2022
Prep:	Into a 1 L volumetric flask, pipetted 5 mL Custom Assurance Standard #23 XCTWI-5-500 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15028 and 0.5 mL of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) M14685 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15063	Standard:	ICV Std.
Analyst:	NAH	Concentrations:	12,000 mg/L Al 10,000 mg/L Ca, Mg 5000 mg/L Fe 2000 mg/L As, Ba, Se, Tl 500 mg/L B, Co, Li, Mn, Mo, Ni, Pb, Sb, Sn, Sr, Ti, V, Zn 250 mg/L Cu 200 mg/L Cr 50 mg/L Ag, Be, Cd
Prep Date:	10/04/2021	Expiration Date:	01/30/2022
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with milli-Q H ₂ O. 10 mL Custom Assurance Standard #18 ((200 mg/L Al, As, Ba, Se, Tl) (100 mg/L Fe) (50 mg/L Co, Mn, Ni, Pb, Sb, V, Zn) (25 mg/L Cu) (20 mg/L Cr) (5 mg/L Ag, Be, Cd)) M14988, 2 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M14833, 0.5 mL Mo (1000 mg/L) M15022, 0.5 mL B (1000 mg/L) M14966, 0.5 mL Sr (1000 mg/L) M14683, 0.5 mL Li (1000 mg/L) M14681, 0.5 mL Sn (1000 mg/L) M14774 and 0.5 mL Ti (1000 mg/L) M14674.		

		Instrument:	ICP 6500
Standard Log #:	M15060	Standard:	ICAL
Analyst:	NAH	Concentrations:	0.25, 0.5, 1, 5, 10, 20, 50, 100, 1000, 10,000, 100k, 100,000, 500,000 and 1000k (ug/L)
Prep Date:	10/14/2021	Expiration Date:	01/30/2022
Prep:	Using 1 L volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (5% HNO₃, 5% HCl) 1000 ug/L Std. - 10 mL of Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15828, 10 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M14685 and 1 mL of Si (1000 mg/L) M14968 and 1 mL M14682 Ce 0.25 ug/L Std. - 0.25 mL of the 1000 ug/L Std. 0.5 ug/L Std. - 0.5 mL of the 1000 ug/L Std. 1 ug/L Std. - 1 mL of the 1000 ug/L Std. 5 ug/L Std. - 5 mL of the 1000 ug/L Std. 10 ug/L Std. - 10 mL of the 1000 ug/L Std. 20 ug/L Std. - 20 mL of the 1000 ug/L Std. 50 ug/L Std. - 50 mL of the 1000 ug/L Std. 100 ug/L Std. - 1 mL of Custom Assurance Std. (CAS) #23 and 1 mL of CAS #3 10,000 ug/L Std. - 100 mL CAS #23, 100 mL CAS #3 and 1 mL of K (10,000 mg/L) M15046. 100k ug/L Std. - 10 mL of Cu (10,000 mg/L) M15021, 10 mL of Mn (10,000 mg/L) M15023, 10 mL of Cr (10,000 mg/L) M15027, 10 mL Pb (10,000 mg/L) M15045, 10 mL of Zn (10,000 mg/L) M14197 and 10 mL of Na (10,000 mg/L) M14969. 100,000 ug/L Std. - 10 mL of Mg (10,000 mg/L) M14739, 10 mL of Fe (10,000 mg/L) M15024, 10 mL of Ca (10,000 mg/L) M14740 and 10 mL Al (10,000 mg/L) M14737. 500,000 ug/L Std. - 50 mL of Mg (10,000 mg/L), 50 mL of Fe (10,000 mg/L), 50 mL of Ca (10,000 mg/L) and 50 mL of Al (10,000 mg/L) 1000k ug/L Std. - 100 mL of Mg (10,000 mg/L), 100 mL of Fe (10,000 mg/L), 100 mL of Ca (10,000 mg/L) and 100 mL of Al (10,000 mg/L)		

Standard Log #:	M15059	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	MRZ	pH:	4.93 ± 0.05
Prep Date:	09/29/2021	Expiration Date:	10/29/2021
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14946. Dilute to 20 L and mix.		

Standard ID#:	M15057	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	09/23/2021	Lot #:	L069-02
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M15058	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	09/23/2021	Lot #:	L069-02
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M15056	Vendor:	Acros Organics
Analyst:	MDS	Chemical:	Hydroxylamine Sulfate
Date Received:	09/22/2021	Lot #:	A0428169
Expiration Date (if any):		Catalog #:	198531000

Standard Log #:	M15051	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	09/20/2021	Expiration Date:	10/20/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15052	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	09/20/2021	Expiration Date:	10/20/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15053	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	09/20/2021	Expiration Date:	09/21/2021
Prep:	Carefully mixed 3 parts HCl AB.707 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M15054	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	09/21/2021	Expiration Date:	10/21/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15055	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	09/21/2021	Expiration Date:	10/21/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.707 and dissolved 100 g Stannous chloride M14939 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15048	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	09/20/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15049	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	09/20/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15050	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	09/20/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15047	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	MRZ	pH:	4.93 ± 0.05
Prep Date:	09/09/2021	Expiration Date:	09/09/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14964. Dilute to 20 L and mix.		

Standard ID#:	M15045	Vendor:	CPI
Analyst:	NAH	Chemical:	Pb 10,000 mg/L
Date Received:	09/15/2021	Lot #:	1035677-18
Expiration Date (if any):	03/2023	Catalog #:	4400-10M281

Standard ID#:	M15046	Vendor:	CPI
Analyst:	NAH	Chemical:	K 10,1000 mg/L
Date Received:	09/15/2021	Lot #:	1137797-13
Expiration Date (if any):	03/2023	Catalog #:	4400-10M411-500

Standard Log #:	M15040	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	09/14/2021	Expiration Date:	10/14/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15041	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	09/14/2021	Expiration Date:	10/14/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15042	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	09/14/2021	Expiration Date:	09/15/2021
Prep:	Carefully mixed 3 parts HCl AB.707 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M15043	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	09/15/2021	Expiration Date:	10/15/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15044	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	09/15/2021	Expiration Date:	10/15/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.707 and dissolved 100 g Stannous chloride M14939 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15037	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	09/14/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15038	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	09/14/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15039	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	09/14/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15032	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	09/01/2021	Expiration Date:	10/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15033	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	09/01/2021	Expiration Date:	10/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15034	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	09/01/2021	Expiration Date:	09/02/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M15035	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	09/02/2021	Expiration Date:	10/02/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15036	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	09/02/2021	Expiration Date:	10/02/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14940 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15029	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	09/01/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15030	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	09/01/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15031	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	09/01/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15023	Vendor:	CPI
Analyst:	NAH	Chemical:	Mn 10,000 mg/L
Date Received:	08/30/2021	Lot #:	985851-80
Expiration Date (if any):	02/2023	Catalog #:	S4400-10M321

Standard ID#:	M15024	Vendor:	CPI
Analyst:	NAH	Chemical:	Fe 10,000 mg/L
Date Received:	08/30/2021	Lot #:	1034257-71
Expiration Date (if any):	02/2023	Catalog #:	4400-10M261

Standard ID#:	M15025	Vendor:	CPI
Analyst:	NAH	Chemical:	S 10,000 mg/L
Date Received:	08/30/2021	Lot #:	1050965-59
Expiration Date (if any):	02/2023	Catalog #:	4400-10M544

Standard ID#:	M15026	Vendor:	CPI
Analyst:	NAH	Chemical:	Ca 10,000 mg/L
Date Received:	08/30/2021	Lot #:	1072921-23
Expiration Date (if any):	02/2023	Catalog #:	4400-10M91

Standard ID#:	M15027	Vendor:	CPI
Analyst:	NAH	Chemical:	Cr 10,000 mg/L
Date Received:	08/30/2021	Lot #:	1076194-26
Expiration Date (if any):	02/2023	Catalog #:	S4400-10M121

Standard ID#:	M15028	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	NAH	Lot #:	17-023AB
Expiration Date (if any):	AUG 30,2022	Catalog #:	XCTWI-5-500

Standard ID#:	M15018	Vendor:	CPI
Analyst:	NAH	Chemical:	Al 10,000 mg/L
Date Received:	08/30/2021	Lot #:	1077245-48
Expiration Date (if any):	02/2023	Catalog #:	4400-10M11

Standard ID#:	M15019	Vendor:	CPI
Analyst:	NAH	Chemical:	Co 1000 mg/L
Date Received:	08/30/2021	Lot #:	1107088-1
Expiration Date (if any):	02/2023	Catalog #:	S4400-1000131

Standard ID#:	M15020	Vendor:	CPI
Analyst:	NAH	Chemical:	V 1000 mg/L
Date Received:	08/30/2021	Lot #:	1055682-88
Expiration Date (if any):	02/2023	Catalog #:	S4400-1000651

Standard ID#:	M15021	Vendor:	CPI
Analyst:	NAH	Chemical:	Cu 10,000 mg/L
Date Received:	08/30/2021	Lot #:	1063159-57
Expiration Date (if any):	02/2023	Catalog #:	S4400-10M141

Standard ID#:	M15022	Vendor:	CPI
Analyst:	NAH	Chemical:	Mo 1000 mg/L
Date Received:	08/30/2021	Lot #:	1075718-15
Expiration Date (if any):	02/2023	Catalog #:	S4400-1000343

Standard Log #:	M15013	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/24/2021	Expiration Date:	09/24/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15014	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	08/24/2021	Expiration Date:	09/24/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15015	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	08/24/2021	Expiration Date:	08/25/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M15016	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	08/25/2021	Expiration Date:	09/25/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15017	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	08/25/2021	Expiration Date:	09/25/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14939 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15010	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	08/24/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15011	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	08/24/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15012	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	08/24/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15009	Vendor:	ThermoFisher Scientific
Analyst:	MDS	Chemical:	Nickel Nitrate Matrix Modifier
Date Received:	08/23/2021	Lot #:	225022
Expiration Date (if any):	03/31/2022	Catalog #:	39043

Standard ID#:	M15008	Vendor:	Environmental Express
Analyst:	MDS	Chemical:	Palladium Matrix Modifier
Date Received:	08/19/2021	Lot #:	2113302-100
Expiration Date (if any):	08/31/2022	Catalog #:	HP1900-100

Standard Log #:	M15003	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/18/2021	Expiration Date:	09/18/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15004	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	08/18/2021	Expiration Date:	09/18/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15005	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	08/18/2021	Expiration Date:	08/19/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M15006	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	08/18/2021	Expiration Date:	09/18/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15007	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	08/18/2021	Expiration Date:	09/18/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14939 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15000	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	08/18/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15001	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	08/18/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15002	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	08/18/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	GFAA
Standard Log #:	M14997	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	08/13/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14998	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	08/13/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14999	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	08/13/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M14798 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M14992	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/10/2021	Expiration Date:	09/10/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14993	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	08/10/2021	Expiration Date:	09/10/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14994	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	08/10/2021	Expiration Date:	08/11/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14995	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	08/11/2021	Expiration Date:	09/11/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14996	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	08/11/2021	Expiration Date:	09/11/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14844 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14989	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	08/10/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14990	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	08/10/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14991	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	08/10/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14987	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance Std
Date Received:	08/09/2021	Lot #:	5-190MF
Expiration Date (if any):	08/30/2022	Catalog #:	XCTWI-1-500

Standard ID#:	M14988	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance Std
Date Received:	08/09/2021	Lot #:	5-189MF
Expiration Date (if any):	08/30/2021	Catalog #:	XSPIKE-1-250

Standard Log #:	M14982	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/03/2021	Expiration Date:	09/03/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14983	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	08/03/2021	Expiration Date:	09/03/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14984	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	08/03/2021	Expiration Date:	08/04/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14985	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	08/04/2021	Expiration Date:	09/04/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14986	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	08/04/2021	Expiration Date:	09/04/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14844 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14979	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	08/03/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14980	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	08/03/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14981	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	08/03/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14978	Vendor:	Enviromental Express
Analyst:	BMM	Chemical:	Acid Washed TCLP Filters
Date Received:	05/20/2021	Lot #:	400175-1116-T
Expiration Date (if any):		Catalog #:	FG77150MM

Standard Log #:	M14973	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/27/2021	Expiration Date:	08/27/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14974	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	07/27/2021	Expiration Date:	08/27/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14975	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/27/2021	Expiration Date:	07/28/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14976	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/29/2021	Expiration Date:	08/29/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14977	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/29/2021	Expiration Date:	08/29/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14844 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14970	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	07/27/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14971	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	07/27/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14972	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	07/27/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14966	Vendor:	CPI
Analyst:	NAH	Chemical:	Boron 10,000 mg/L
Date Received:	07/27/2021	Lot #:	1101946-16
Expiration Date (if any):	01/2023	Catalog #:	S4400-100074

Standard ID#:	M14967	Vendor:	CPI
Analyst:	NAH	Chemical:	Yttrium 10000 mk/L
Date Received:	07/27/2021	Lot #:	1109477-26
Expiration Date (if any):	01/2023	Catalog #:	4400-10M671

Standard ID#:	M14968	Vendor:	CPI
Analyst:	NAH	Chemical:	Si 1000 mg/L
Date Received:	07/27/2021	Lot #:	1047570-64
Expiration Date (if any):	01/2023	Catalog #:	S4400-1000504F

Standard ID#:	M14969	Vendor:	CPI
Analyst:	NAH	Chemical:	Na 10000
Date Received:	07/27/2021	Lot #:	1055526-35
Expiration Date (if any):	01/2023	Catalog #:	4400-10M521

		Instrument:	CETAC
Standard Log #:	M14963	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/21/2021	Expiration Date:	08/21/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14844 and brought up to volume.		

Standard Log #:	M14964	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	07/22/2021	Expiration Date:	07/22/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14964. Dilute to 20 L and mix.		

Standard Log #:	M14965	Reagent:	TCLP 1 N HCL
Analyst:	BMM		
Prep Date:	07/23/2021	Expiration Date:	07/23/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, added 83 mL HCL AB.704 and brought up to volume.		

Standard Log #:	M14959	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/20/2021	Expiration Date:	08/20/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14960	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	07/20/2021	Expiration Date:	08/20/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14961	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/20/2021	Expiration Date:	07/21/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14962	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/21/2021	Expiration Date:	08/21/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14956	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	07/20/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14957	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	07/20/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14958	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	07/20/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14955	Vendor:	GFS Chemicals
Analyst:	NAH	Chemical:	AMCO Clear 2.0 NTU
Date Received:	07/16/2021	Lot #:	21150075
Expiration Date (if any):	07/22/2022	Catalog #:	8008

Standard Log #:	M14950	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/14/2021	Expiration Date:	08/14/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14951	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	07/14/2021	Expiration Date:	08/14/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14952	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/14/2021	Expiration Date:	07/15/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14953	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/15/2021	Expiration Date:	08/15/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14954	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/15/2021	Expiration Date:	08/15/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14844 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14947	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	07/14/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14948	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	07/14/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14949	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	07/14/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	ICP 6500
Standard Log #:	M14944	Standard:	ICV Std.
Analyst:	nah	Concentrations:	12,000 mg/L Al 10,000 mg/L Ca, Mg 5000 mg/L Fe 2000 mg/L As, Ba, Se, Tl 500 mg/L B, Co, Li, Mn, Mo, Ni, Pb, Sb, Sn, Sr, Ti, V, Zn 250 mg/L Cu 200 mg/L Cr 50 mg/L Ag, Be, Cd
Prep Date:	07/09/2021	Expiration Date:	08/2022
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with milli-Q H ₂ O. 10 mL Custom Assurance Standard #18 ((200 mg/L Al, As, Ba, Se, Tl) (100 mg/L Fe) (50 mg/L Co, Mn, Ni, Pb, Sb, V, Zn) (25 mg/L Cu) (20 mg/L Cr) (5 mg/L Ag, Be, Cd)) M14874, 2 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M14833, 0.5 mL Mo (1000 mg/L) M14888, 0.5 mL B (1000 mg/L) M14675, 0.5 mL Sr (1000 mg/L) M14683, 0.5 mL Li (1000 mg/L) M14681, 0.5 mL Sn (1000 mg/L) M14774, 0.5 mL Ti (1000 mg/L) M14674, 0.5 mL W (1000 mg/L) XXXXXXXX, 0.5 mL Si (1000 mg/L) M14680, 0.5 mL S (10000 mg/L) M14570, 0.5 mL K (10000 mg/L) M14887, and 0.5 mL Na (10000 mg/L) M14736		

Standard Log #:	M14945	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	07/12/2021	Expiration Date:	07/12/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14785. Dilute to 20 L and mix.		

Standard Log #:	M14946	Reagent:	10N NaOH
Analyst:	BMM		
Prep Date:	07/14/2021	Expiration Date:	12/14/2021
Prep:	Into a 1 L volumetric flask, added 400 g NaOH WC272 and brought up to volume.		

Standard ID#:	M14939	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	07/09/2021	Lot #:	L069-02
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M14940	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	07/09/2021	Lot #:	L069-02
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M14941	Vendor:	GFS
Analyst:	NAH	Chemical:	AMCO Clear 0.1 ntu
Date Received:	07/12/2021	Lot #:	Returned to manufacturer
Expiration Date (if any):	not used	Catalog #:	not used

		Instrument:	ICP 6500
Standard Log #:	M14942	Standard:	ICSA
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 10,000 V, Ce
Prep Date:	07/09/2021	Expiration Date:	09/2021
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interference A std M14833 and 15 mL 10000 mg/L Fe M14676 5.0 mL 1000 mg/L V M14198 5.0 mL 1000 mg/L Ce M14682 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M14943	Standard:	ICSAB
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 500 ug/L Ag, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn, K, Na, S, 50000 ug/L Si 1000 ug/L.
Prep Date:	07/09/2021	Expiration Date:	12/2021
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe) M14833, 15 mL Fe (10,000 mg/L) M14676, 2.5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M14685, 2.5 mL Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn), M14788, 2.5 mLs Na 10,000 ug/mL M14736, 2.5 mLs k 10,000 ug/mL M14370 2.5 mLs S 10,000 ug/mL M14677, 0.5 mls Si 1000 ug/mL M14735 and brought up to volume with milli-Q .		

Standard Log #:	M14938	Reagent:	TCLP EXTRACTION FLUID #2
Analyst:	BMM	pH:	2.88 ± 0.05
Prep Date:	07/08/2021	Expiration Date:	07/08/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703. Dilute to 20 L and mix.		

Standard Log #:	M14933	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/07/2021	Expiration Date:	08/07/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14934	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	07/07/2021	Expiration Date:	08/07/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14935	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/07/2021	Expiration Date:	07/08/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14936	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/08/2021	Expiration Date:	08/08/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14937	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/08/2021	Expiration Date:	08/08/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14844 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14930	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	07/07/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14931	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	07/07/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14932	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	07/07/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M14925	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/01/2021	Expiration Date:	08/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14926	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	07/01/2021	Expiration Date:	08/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14927	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/01/2021	Expiration Date:	07/02/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14928	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/01/2021	Expiration Date:	08/01/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14929	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/01/2021	Expiration Date:	08/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14845 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14922	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/30/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14923	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/30/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14924	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/30/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14921	Vendor:	LabChem
Analyst:	NAH	Chemical:	Turbidity Standard(Formazin) 4000NT
Date Received:	06/25/2021	Lot #:	L147-07
Expiration Date (if any):	06/08/2022	Catalog #:	LC26290

		Instrument:	ICP 6500
Standard Log #:	M14919	Standard:	ICSA3_Cr_Cu_Co_Mo
Analyst:	NAH	Concentrations:	10,000 ug/L Cr, Cu, Co and Mo
Prep Date:	06/24/2021	Expiration Date:	09/2021
Prep:	Into a 500 mL volumetric flask, pipetted 0.5 mL 10000 mg/L Cr M14205 0.5 mL 10000 mg/L Cu M14199 5.0 mL 1000 mg/L Co M14204 5.0 mL 1000 mg/L Mo M14888 brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M14920	Standard:	ICSA4_Ni_Ti
Analyst:	NAH	Concentrations:	10,000 ug/L Ni and Ti
Prep Date:	06/24/2021	Expiration Date:	09/2021
Prep:	Into a 500 mL volumetric flask, pipetted 5.0 mL 1000 mg/L Ni M14196 5.0 mL 10000 mg/L Ti M14674 brought up to volume with milli-Q H ₂ O.		

		Instrument:	CETAC
Standard Log #:	M14916	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/23/2021	Expiration Date:	07/23/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14845 and brought up to volume.		

		Instrument:	ICP 6500
Standard Log #:	M14917	Standard:	ICSA1_Mn
Analyst:	NAH	Concentrations:	10,000 ug/L Mn
Prep Date:	06/24/2021	Expiration Date:	09/2021
Prep:	Into a 500 mL volumetric flask, pipetted 0.5 mL 10000 mg/L mn M14200 brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M14918	Standard:	ICSA2_Ba_Be_Sn
Analyst:	NAH	Concentrations:	10,000 ug/L Ba, Be, and Sn
Prep Date:	06/24/2021	Expiration Date:	09/2021
Prep:	Into a 500 mL volumetric flask, pipetted 5.0 mL 1000 mg/L Ba M14772 5.0 mL 10000 mg/L Be M14203 5.0 mL 10000 mg/L Sn M14774 brought up to volume with milli-Q H ₂ O.		

Standard Log #:	M14912	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/22/2021	Expiration Date:	07/22/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14913	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/22/2021	Expiration Date:	07/22/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14914	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/22/2021	Expiration Date:	06/23/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14915	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/23/2021	Expiration Date:	07/23/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14909	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/22/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14910	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/22/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14911	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/22/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M14904	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/16/2021	Expiration Date:	07/16/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14905	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/16/2021	Expiration Date:	07/16/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14906	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/16/2021	Expiration Date:	06/17/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14907	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/17/2021	Expiration Date:	07/17/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14908	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/17/2021	Expiration Date:	07/17/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14845 and brought up to volume.		

Standard Log #:	M14903	Instrument:	ICP 6500
Analyst:	NAH	Standard:	Dissolved MDL Verificaion
Prep Date:	06/16/2021	Expiration Date:	09/2021

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	2.7	M14623	1000	0.135
Al	10	M14736	10000	.05
As	20	M14621	1000	1
Ba	2	M14772	1000	0.1
Be	1	M14203	1000	0.05
Ca	50	M14740	10000	0.25
Cd	0.5	M14201	1000	.025
Co	2.5	M14204	1000	0.125
Cr	5	M14205	10000	.025
Cu	10	M14199	10000	.05
Fe	40	M14738	10000	0.2
Mg	25	M14676	10000	0.125
Mn	3	M14200	10000	.015
Mo	2.5	M14888	1000	0.125
Ni	3	M14196	1000	0.15
Pb	20	M14202	10000	0.1
Sb	10	M14622	1000	0.5
Se	20	M14624	1000	1
Tl	20	M14626	1000	1
V	3	M14198	1000	0.15
Zn	5	M14197	10000	0.025
Na	150	M14736	10000	0.75
K	150	M14741	10000	0.75
B	20	M14675	1000	1
Si	200	M14735	1000	10
Li	10	M14681	1000	0.5
Sr	20	M14775	1000	1
Sn	20	M14774	1000	1
Ti	5	M14674	1000	0.25
S	200	M14773	10000	10

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M14902	Instrument:	ICP 6500		
Analyst:	NAH	Standard:	MDL spike Soln.		
Prep Date:	06/16/2021	Expiration Date:	09//2021		
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H ₂ O. (5% HNO ₃ , 5% HCl)				
	Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
	Ag	40	M14623	1000	2
	Al	800	M14736	10000	4
	As	40	M14621	1000	2
	Ba	20	M14772	1000	1
	Be	8	M14203	1000	0.4
	Ca	1000	M14740	10000	5
	Cd	10	M14201	1000	0.5
	Co	20	M14204	1000	1
	Cr	20	M14205	10000	0.1
	Cu	20	M14199	10000	0.1
	Fe	600	M14738	10000	3
	Mg	1000	M14676	10000	5
	Mn	20	M14200	10000	0.1
	Mo	20	M14888	1000	1
	Ni	20	M14196	1000	1
	Pb	20	M14202	10000	0.1
	Sb	40	M14622	1000	2
	Se	40	M14624	1000	2
	Tl	40	M14626	1000	2
	V	20	M14198	1000	1
	Zn	20	M14197	10000	0.1
	Na	10000	M14736	10000	50
	K	10000	M14741	10000	50
	B	40	M14675	1000	2
	Si	200	M14735	1000	10
	Li	20	M14681	1000	1
	Sr	20	M14775	1000	1
	Sn	40	M14774	1000	2
	Ti	20	M14674	1000	1
	S	400	M14773	10000	20
	Of this Base standard, pipet 10 mL into a 500 mL volumetric flask to create a working std or 1 mL into a 50 mL digestion tube for a digested working standard.				

Standard Log #:	M14901	Instrument:	ICP 6500
Analyst:	NAH	Standard:	LOQ Solid QSM
Prep Date:	06/16/2021	Expiration Date:	09/2021

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	40	M14623	1000	2
Al	800	M14736	10000	4
As	40	M14621	1000	2
Ba	40	M14772	1000	2
Be	8	M14203	1000	0.4
Ca	1000	M14740	10000	5
Cd	10	M14201	1000	0.5
Co	20	M14204	1000	1
Cr	20	M14205	10000	0.1
Cu	20	M14199	10000	0.1
Fe	600	M14738	10000	3
Mg	1000	M14676	10000	5
Mn	20	M14200	10000	0.1
Mo	20	M14888	1000	1
Ni	20	M14196	1000	1
Pb	20	M14202	10000	0.1
Sb	40	M14622	1000	2
Se	40	M14624	1000	2
Tl	40	M14626	1000	2
V	20	M14198	1000	1
Zn	20	M14197	10000	0.1
Na	10000	M14736	10000	50
K	10000	M14741	10000	50
B	40	M14675	1000	2
Si	200	M14735	1000	10
Li	20	M14681	1000	1
Sr	20	M14775	1000	1
Sn	40	M14774	1000	2
Ti	20	M14674	1000	1
S	400	M14773	10000	20

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M14900	Instrument:	ICP 6500		
Analyst:	NAH	Standard:	LOQ water QSM		
Prep Date:	06/16/2021	Expiration Date:	09/2021		
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H ₂ O. (5% HNO ₃ , 5% HCl)				
	Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
	Ag	5	M14623	1000	0.25
	Al	120	M14737	10000	0.6
	As	40	M14621	1000	2
	Ba	4	M14772	1000	0.2
	Be	8	M14203	1000	0.4
	Ca	100	M14740	10000	0.5
	Cd	2	M14201	1000	0.1
	Co	5	M14204	1000	0.25
	Cr	5	M14205	10000	0.025
	Cu	40	M14199	10000	0.2
	Fe	80	M14738	10000	0.4
	Mg	40	M14676	10000	0.2
	Mn	5	M14200	10000	0.025
	Mo	5	M14888	1000	0.25
	Ni	5	M14196	1000	0.25
	Pb	20	M14202	10000	0.1
	Sb	20	M14622	1000	1.0
	Se	40	M14624	1000	2
	Tl	40	M14626	1000	2
	V	5	M14198	1000	0.25
	Zn	20	M14197	10000	0.1
	Na	700	M14736	10000	3.5
	K	500	M14741	10000	2.5
	B	40	M14675	1000	2
	Si	200	M14735	1000	10
	Li	20	M14681	1000	1
	Sr	20	M14775	1000	1
	Sn	40	M14774	1000	2
	Ti	20	M14674	1000	1
	S	400	M14773	10000	20
	Of this Base standard, pipet 10 mL into a 500 mL volumetric flask to create a working std or 1 mL into a 50 mL digestion tube for a digested working standard.				

		Instrument:	GFAA
Standard Log #:	M14897	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	06/14/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14898	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	06/14/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14899	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	06/14/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M14798 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M14892	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/08/2021	Expiration Date:	07/08/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14893	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/08/2021	Expiration Date:	07/08/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14894	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/08/2021	Expiration Date:	06/09/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14895	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/09/2021	Expiration Date:	07/09/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14896	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/09/2021	Expiration Date:	07/09/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14845 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14889	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/08/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14890	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/08/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14891	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/08/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14886	Vendor:	ThermoFisher Scientific
Analyst:	MDS	Chemical:	Hydroxylamine Sulfate
Date Received:	06/04/2021	Lot #:	Y20F051
Expiration Date (if any):		Catalog #:	88944

Standard ID#:	M14887	Vendor:	CPI
Analyst:	NAH	Chemical:	Potassium 10,000 mg/L
Date Received:	06/04/2021	Lot #:	1053109-69
Expiration Date (if any):	11/2022	Catalog #:	4400-10M411500

Standard ID#:	M14888	Vendor:	CPI
Analyst:	NAH	Chemical:	Mo 1000 mg/L
Date Received:	06/04/2021	Lot #:	1075718-15
Expiration Date (if any):	11/2022	Catalog #:	S4400-1000343

Standard Log #:	M14885	Reagent:	1:3 HNO ₃
Analyst:	MDS		
Prep Date:	06/03/2021	Expiration Date:	06/03/2022
Prep:	Carefully mixed 3 parts DI with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14883	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	06/03/2021	Expiration Date:	06/03/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14785. Dilute to 20 L and mix.		

Standard Log #:	M14884	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	06/03/2021	Expiration Date:	06/03/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14785. Dilute to 20 L and mix.		

Standard Log #:	M14878	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/01/2021	Expiration Date:	07/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14879	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/01/2021	Expiration Date:	07/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14880	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/01/2021	Expiration Date:	06/02/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14881	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/02/2021	Expiration Date:	07/02/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14882	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/02/2021	Expiration Date:	07/02/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14845 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14875	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/01/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14876	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/01/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14877	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/01/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14874	Vendor:	Spex Certi Prep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	05/24/2021	Lot #:	16-115AB
Expiration Date (if any):	05/30/2022	Catalog #:	XSPIKE-1-250

Standard Log #:	M14869	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	05/18/2021	Expiration Date:	06/18/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14870	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	05/18/2021	Expiration Date:	06/18/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14871	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	05/18/2021	Expiration Date:	05/19/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14872	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	05/19/2021	Expiration Date:	06/19/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14873	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	05/19/2021	Expiration Date:	06/19/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14713 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14866	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/18/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14867	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	05/18/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14868	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/18/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M14865	Instrument:	GFAA
Analyst:	MDS	Reagent:	Pd/Mg Matrix Modifier
Prep Date:	05/12/2021	Expiration Date:	09/30/2021
Prep:	Into a 50 mL volumetric flask, partially filled with milli-Q H ₂ O, pipetted 15 mL Pd Modifier M14508 and 10 mL Mg (10,000 mg/L) M14676 and brought up to volume.		

Standard Log #:	M14860	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	05/11/2021	Expiration Date:	06/11/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14861	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	05/11/2021	Expiration Date:	06/11/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14862	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	05/11/2021	Expiration Date:	05/12/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14863	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	05/12/2021	Expiration Date:	06/12/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14864	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	05/12/2021	Expiration Date:	06/12/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14713 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14857	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/11/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14858	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	05/11/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14859	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/11/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	CETAC
Standard Log #:	M14854	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	05/05/2021	Expiration Date:	06/05/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14713 and brought up to volume.		

Standard Log #:	M14855	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	05/05/2021	Expiration Date:	05/05/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14785. Dilute to 20 L and mix.		

Standard Log #:	M14856	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	05/05/2021	Expiration Date:	05/05/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14785. Dilute to 20 L and mix.		

Standard Log #:	M14850	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	05/04/2021	Expiration Date:	06/04/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14851	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	05/04/2021	Expiration Date:	06/04/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14852	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	05/04/2021	Expiration Date:	05/05/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14853	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	05/05/2021	Expiration Date:	06/05/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14847	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/04/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14848	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	05/04/2021	Expiration Date:	05/02/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14849	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/04/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14846	Vendor:	ENVIROMENTAL EXPRESS
Analyst:	BMM	Chemical:	ACID WASHED TCLP FILTERS
Date Received:	04/29/2021	Lot #:	400175-1081-AG
Expiration Date (if any):	N/A	Catalog #:	FG77150MM

		Instrument:	CETAC
Standard Log #:	M14842	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/28/2021	Expiration Date:	05/28/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14713 and brought up to volume.		

Standard Log #:	M14843	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	04/19/2021	Expiration Date:	04/19/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14785. Dilute to 20 L and mix.		

Standard ID#:	M14844	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	04/28/2021	Lot #:	L060-06
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M14845	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	04/28/2021	Lot #:	L060-06
Expiration Date (if any):		Catalog #:	LC251701

Standard Log #:	M14838	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/27/2021	Expiration Date:	05/27/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14839	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/27/2021	Expiration Date:	05/27/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14840	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/27/2021	Expiration Date:	04/28/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14841	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/28/2021	Expiration Date:	05/28/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14835	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/27/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14836	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/27/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14837	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/27/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	CETAC
Standard Log #:	M14832	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/21/2021	Expiration Date:	05/21/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14713 and brought up to volume.		

Standard ID#:	M14833	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Interference A
Date Received:	04/21/2021	Lot #:	18-102WLX
Expiration Date (if any):	04/30/2022	Catalog #:	INT-A1

Standard ID#:	M14834	Vendor:	Custom Assurance Std
Analyst:	NAH	Chemical:	Ca 20000 Mg,Na 10000: THardness
Date Received:	04/21/2021	Lot #:	16-022AB
Expiration Date (if any):	04/30/2022	Catalog #:	XCTIWI-1-500

Standard Log #:	M14828	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/20/2021	Expiration Date:	05/20/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14829	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/20/2021	Expiration Date:	05/20/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14830	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/20/2021	Expiration Date:	04/21/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14831	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/21/2021	Expiration Date:	05/21/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14825	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/20/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14826	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/20/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14827	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/20/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	ICP 6500
Standard Log #:	M14824	Standard:	CCV2
Analyst:	NAH	Concentrations:	500 µg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn 50 µg/L Ag, Be, Cd
Prep Date:	04/15/2021	Expiration Date:	09/21
Prep:	Into a 1 L volumetric flask, pipetted 5 mL Custom Assurance Standard #23 XCTWI-5-500 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M14788 and 0.5 mL of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) M14685 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M14821	Standard:	ICSAB
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 500 ug/L Ag, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn, K, Na, S, 50000 ug/L Si 1000 ug/L.
Prep Date:	04/15/2021	Expiration Date:	06/21
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M14395, 15 mL Fe (10,000 mg/L) M14738, 2.5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M14685, 2.5 mL Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn), M14788, 2.5 mLs Na 10,000 ug/mL M14736, 2.5 mLs k 10,000 ug/mL 14625 2.5 mLs S 10,000 ug/mL M14570, 0.5 mls Si 1000 ug/mL M14477 and brought up to volume with milli-Q .		

		Instrument:	ICP 6500
Standard Log #:	M14822	Standard:	ICSA
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 10,000 V, Ce
Prep Date:	04/15/2021	Expiration Date:	06/21
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interference A std M14395 and 15 mL 10000 mg/L Fe M14738 5.0 mL 1000 mg/L V M14198 5.0 mL 1000 mg/L Ce M14682 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M14823	Standard:	CCV1
Analyst:	NAH	Concentrations:	5000 ug/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn 500 ug/L Ag, Be, Cd
Prep Date:	04/15/2021	Expiration Date:	09/21
Prep:	Into a 1 L volumetric flask, pipetted 50 mL Custom Assurance Standard #23 XCTWI-5-500 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M14788 and 5.0 mL of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) M14685 and brought up to volume with milli- Q H ₂ O.		

MRL BASE STD	M14820	Analyst	NAH
		Prep Date	04/15/2021

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	(ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L	Expiration Date
Ag	20	M14623	1000	1	XX
Al	400	M14737	10000	2	XX
Ba	10	M14772	1000	0.5	XX
Be	4	M14203	1000	0.2	09/21
Cd	5	M14740	1000	0.25	09/21
Co	10	M14204	1000	0.5	09/21
Cr	10	M14205	10000	0.05	09/21
Cu	10	M14199	10000	0.05	09/21
Mg	500	M14676	10000	2.5	XX
Mn	10	M14200	10000	0.05	09/21
Mo	10	M14684	1000	0.5	XX
Ni	10	M14196	1000	0.5	09/21
Pb	10	M14202	10000	0.05	09/21
Sb	20	M14622	1000	1	XX
V	10	M14198	1000	0.5	09/21
Zn	10	M14197	10000	0.05	09/21
K	1000	M14741	10000	5	XX
Na	1000	M14736	10000	5	XX
As	20	M14621	1000	1	XX
Ca	500	M14740	10000	2.5	XX
Fe	300	M14738	10000	1.5	XX
Se	20	M14624	1000	1	XX
Tl	20	M14674	1000	1	XX
Si	100	M14735	1000	5	XX
B	20	M14675	1000	1	09/21
Li	20	M14681	1000	1	XX
W	50	MXXX	1000	2.5	XXXXXX
Ti	10	M14674	1000	0.5	XX
Sr	10	M14775	1000	0.5	XX
Sn	50	M14774	1000	2.5	XX
S	300	M14773	10000	1.5	XX

Of this Base standard, pipet 10 mls into 500 ml volumetric to create a working std or 1 ml into 50 ml digestion tube for a digested working standard.

Standard Log #:	M14815	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/14/2021	Expiration Date:	05/14/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14816	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/14/2021	Expiration Date:	05/14/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14817	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/14/2021	Expiration Date:	04/15/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14818	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/15/2021	Expiration Date:	05/15/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14819	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/15/2021	Expiration Date:	05/15/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14714 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14812	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/14/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14813	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/14/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14814	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/14/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	ICP 6500
Standard Log #:	M14811	Standard:	ICAL
Analyst:	NAH	Concentrations:	0.25, 0.5, 1, 5, 10, 20, 50, 100, 1000, 10,000, 100k, 100,000, 500,000 and 1000k (ug/L)
Prep Date:	04/13/2021	Expiration Date:	09/2021
Prep:	Using 1 L volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (5% HNO₃, 5% HCl) 1000 ug/L Std. - 10 mL of Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M14788, 10 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M14685 and 1 mL of Si (1000 mg/L) M14477. 0.25 ug/L Std. - 0.25 mL of the 1000 ug/L Std. 0.5 ug/L Std. - 0.5 mL of the 1000 ug/L Std. 1 ug/L Std. - 1 mL of the 1000 ug/L Std. 5 ug/L Std. - 5 mL of the 1000 ug/L Std. 10 ug/L Std. - 10 mL of the 1000 ug/L Std. 20 ug/L Std. - 20 mL of the 1000 ug/L Std. 50 ug/L Std. - 50 mL of the 1000 ug/L Std. 100 ug/L Std. - 1 mL of Custom Assurance Std. (CAS) #23 and 1 mL of CAS #3 10,000 ug/L Std. - 100 mL CAS #23, 100 mL CAS #3 and 1 mL of K (10,000 mg/L) M14625. 100k ug/L Std. - 10 mL of Cu (10,000 mg/L) M14199, 10 mL of Mn (10,000 mg/L) M14200, 10 mL of Cr (10,000 mg/L) M14205, 10 mL Pb (10,000 mg/L) M14202, 10 mL of Zn (10,000 mg/L) M14197 and 10 mL of Na (10,000 mg/L) M14736. 100,000 ug/L Std. - 10 mL of Mg (10,000 mg/L) M14676, 10 mL of Fe (10,000 mg/L) M14676, 10 mL of Ca (10,000 mg/L) M14740 and 10 mL Al (10,000 mg/L) M14478. 500,000 ug/L Std. - 50 mL of Mg (10,000 mg/L), 50 mL of Fe (10,000 mg/L), 50 mL of Ca (10,000 mg/L) and 50 mL of Al (10,000 mg/L) 1000k ug/L Std. - 100 mL of Mg (10,000 mg/L), 100 mL of Fe (10,000 mg/L), 100 mL of Ca (10,000 mg/L) and 100 mL of Al (10,000 mg/L)		

		Instrument:	GFAA
Standard Log #:	M14808	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	04/12/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14809	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	04/12/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14810	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	04/12/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M14798 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M14803	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/06/2021	Expiration Date:	05/06/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14804	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/06/2021	Expiration Date:	05/06/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14805	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/06/2021	Expiration Date:	04/07/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14806	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/07/2021	Expiration Date:	05/07/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14807	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/07/2021	Expiration Date:	05/07/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14714 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14800	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/06/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14801	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/06/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14802	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/06/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14799	Vendor:	Acros Organics
Analyst:	MDS	Chemical:	Potassium Persulfate
Date Received:	04/06/2021	Lot #:	A0417285
Expiration Date (if any):		Catalog #:	424185000

Standard ID#:	M14797	Vendor:	Inorganic Ventures
Analyst:	MDS	Chemical:	GFAA ICAL/CCV
Date Received:	04/05/2021	Lot #:	S2-MEB703691
Expiration Date (if any):	04/12/2021	Catalog #:	CTI-SPK-1

Standard ID#:	M14798	Vendor:	Inorganic Ventures
Analyst:	MDS	Chemical:	GFAA ICV/SPIKE
Date Received:	04/05/2021	Lot #:	S2-MEB703690
Expiration Date (if any):	04/12/2021	Catalog #:	CTI-GFCAL-1

Standard Log #:	M14792	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/30/2021	Expiration Date:	04/30/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14793	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/30/2021	Expiration Date:	03/31/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14794	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/31/2021	Expiration Date:	05/01/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

Standard Log #:	M14795	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/31/2021	Expiration Date:	05/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14796	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/31/2021	Expiration Date:	05/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14714 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14789	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/30/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14790	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/30/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14791	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/30/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14787	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Phosphorus 10,000 mg/L
Date Received:	03/29/2021	Lot #:	AR18-111PY
Expiration Date (if any):	3/29/2022	Catalog #:	PLP9-3Y

Standard ID#:	M14788	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	03/29/2021	Lot #:	4-070MF
Expiration Date (if any):	03/29/2021	Catalog #:	XCTWI-5-500

Standard Log #:	M14786	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	03/25/2021	Expiration Date:	03/25/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14785. Dilute to 20 L and mix.		

Standard Log #:	M14785	Reagent:	10N NaOH
Analyst:	BMM		
Prep Date:	03/24/2021	Expiration Date:	08/24/2021
Prep:	Into a 1 L volumetric flask, added 400 g NaOH WC208 and brought up to volume.		

Standard Log #:	M14780	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/23/2021	Expiration Date:	04/23/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14781	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/23/2021	Expiration Date:	04/23/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14782	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/23/2021	Expiration Date:	03/24/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14783	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/24/2021	Expiration Date:	04/24/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14784	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/24/2021	Expiration Date:	04/24/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14714 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14777	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/23/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14778	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/23/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14779	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/23/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14772	Vendor:	CPI
Analyst:	NAH	Chemical:	Ba 1000 mg/mL
Date Received:	03/22/2021	Lot #:	994634-134
Expiration Date (if any):	09/2022	Catalog #:	S4400-100041

Standard ID#:	M14773	Vendor:	CPI
Analyst:	NAH	Chemical:	S 10000 mg/mL
Date Received:	03/22/2021	Lot #:	1050965-34
Expiration Date (if any):	09/2022	Catalog #:	4400-10M544

Standard ID#:	M14774	Vendor:	CPI
Analyst:	NAH	Chemical:	Sn 1000 mg/mL
Date Received:	03/22/2021	Lot #:	1066479-21
Expiration Date (if any):	09/2022	Catalog #:	S4400-1000613

Standard ID#:	M14775	Vendor:	CPI
Analyst:	NAH	Chemical:	Sr 1000 mg/mL
Date Received:	03/22/2021	Lot #:	1096004-1
Expiration Date (if any):	09/2022	Catalog #:	S4400-1000531

Standard ID#:	M14776	Vendor:	Spex Certi Prep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	03/23/2021	Lot #:	56-049CR
Expiration Date (if any):	03/30/2022	Catalog #:	XSPIKE-1-250

Standard Log #:	M14767	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/16/2021	Expiration Date:	04/16/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14768	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/16/2021	Expiration Date:	03/17/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14769	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/16/2021	Expiration Date:	04/16/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

Standard Log #:	M14770	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/17/2021	Expiration Date:	04/17/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14771	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/17/2021	Expiration Date:	04/17/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14714 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14764	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/16/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14765	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/16/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14766	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/16/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14763	Vendor:	ENVIROMENTAL EXPRESS
Analyst:	BMM	Chemical:	TCLP Acid Washed Filters
Date Received:	01/05/21	Lot #:	400182-0364-T
Expiration Date (if any):	N/A	Catalog #:	FG77150MM

Standard Log #:	M14758	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/09/2021	Expiration Date:	04/09/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14759	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/09/2021	Expiration Date:	03/10/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14760	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/10/2021	Expiration Date:	04/10/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

Standard Log #:	M14761	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/10/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14762	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/10/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14598 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14755	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/09/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14756	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/09/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14757	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/09/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14754	Vendor:	ThermoFisher Scientific
Analyst:	MDS	Chemical:	Nickel Nitrate Matrix Mod.
Date Received:	03/04/2021	Lot #:	225022
Expiration Date (if any):	03/31/2022	Catalog #:	39043

		Instrument:	GFAA
Standard Log #:	M14751	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	03/03/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14227 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14752	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	03/03/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14227 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14753	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	03/03/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M14228 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M14748	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/02/2021	Expiration Date:	04/02/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14749	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/02/2021	Expiration Date:	04/02/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14598 and brought up to volume.		

Standard Log #:	M14750	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	03/02/2021	Expiration Date:	03/02/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14545. Dilute to 20 L and mix.		

Standard Log #:	M14745	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/01/2021	Expiration Date:	04/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14746	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/01/2021	Expiration Date:	04/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14747	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/01/2021	Expiration Date:	03/02/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

		Instrument:	HydraII
Standard Log #:	M14742	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/01/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14743	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/01/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14744	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/01/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14740	Vendor:	CPI INTERNATIONAL
Analyst:	MDS	Chemical:	Calcium 10,000 µg/mL
Date Received:	02/25/2021	Lot #:	1072921-23
Expiration Date (if any):	08/20/2022	Catalog #:	4400-10M91

Standard ID#:	M14741	Vendor:	CPI INTERNATIONAL
Analyst:	MDS	Chemical:	Potassium 10,000 µg/mL
Date Received:	02/25/2021	Lot #:	1053109-37
Expiration Date (if any):	08/20/2022	Catalog #:	4400-10M411

Standard ID#:	M14735	Vendor:	CPI INTERNATIONAL
Analyst:	MDS	Chemical:	Silicon 1000 µg/mL
Date Received:	02/25/2021	Lot #:	1047570-64
Expiration Date (if any):	08/20/2021	Catalog #:	S4400-1000504F

Standard ID#:	M14736	Vendor:	CPI INTERNATIONAL
Analyst:	MDS	Chemical:	Sodium 10,000 µg/mL
Date Received:	02/25/2021	Lot #:	1055526-35
Expiration Date (if any):	08/20/2022	Catalog #:	4400-10M521

Standard ID#:	M14737	Vendor:	CPI INTERNATIONAL
Analyst:	MDS	Chemical:	Aluminum 10,000 µg/mL
Date Received:	02/25/2021	Lot #:	1077245-17
Expiration Date (if any):	08/20/2022	Catalog #:	4400-10M11

Standard ID#:	M14738	Vendor:	CPI INTERNATIONAL
Analyst:	MDS	Chemical:	Iron 10,000 µg/mL
Date Received:	02/25/2021	Lot #:	1034257-40
Expiration Date (if any):	08/20/2022	Catalog #:	4400-10M261

Standard ID#:	M14739	Vendor:	CPI INTERNATIONAL
Analyst:	MDS	Chemical:	Magnesium 10,000 µg/mL
Date Received:	02/25/2021	Lot #:	1075232-5
Expiration Date (if any):	08/20/2022	Catalog #:	4400-10M311

Standard Log #:	M14731	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	02/16/2021	Expiration Date:	03/16/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14732	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	02/16/2021	Expiration Date:	03/16/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

Standard Log #:	M14733	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	02/17/2021	Expiration Date:	03/17/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14734	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	02/17/2021	Expiration Date:	03/17/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14598 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14728	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	02/16/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14729	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	02/16/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14730	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	02/16/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	GFAA
Standard Log #:	M14725	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	02/15/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14227 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14726	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	02/15/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14227 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14727	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	02/15/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M14228 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M14720	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	02/09/2021	Expiration Date:	03/09/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14721	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	02/09/2021	Expiration Date:	03/09/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

Standard Log #:	M14722	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	02/10/2021	Expiration Date:	03/10/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14723	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	02/10/2021	Expiration Date:	03/10/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14598 and brought up to volume.		

Standard ID#:	M14724	Vendor:	ThermoFisher Scientific
Analyst:	MDS	Chemical:	Potassium Permanganate
Date Received:	02/08/2021	Lot #:	201466
Expiration Date (if any):	Suggested Retest 04/2022	Catalog #:	P279

		Instrument:	HydraII
Standard Log #:	M14717	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	02/09/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14718	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	02/09/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14719	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	02/09/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14713	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	02/05/2021	Lot #:	L022-06
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M14714	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	02/05/2021	Lot #:	L022-06
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M14715 (1) & (2)	Vendor:	Environmental Express
Analyst:	NAH	Chemical:	Yttrium 10000 mg/L
Date Received:	02/3/2021	Lot #:	2023715-500
Expiration Date (if any):	08/31/2022	Catalog #:	10M67-1-500

Standard ID#:	M14716	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Phosphorus 10000 mg/L
Date Received:	02/08/2021	Lot #:	AR18-111PY
Expiration Date (if any):	02/28/2022	Catalog #:	PLP9--3Y

Standard Log #:	M14708	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	02/02/2021	Expiration Date:	03/02/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14709	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	02/02/2021	Expiration Date:	03/02/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14710	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	02/02/2021	Expiration Date:	02/03/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14711	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	02/03/2021	Expiration Date:	03/03/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14712	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	02/03/2021	Expiration Date:	03/03/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14598 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14705	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	02/02/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14706	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	02/02/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14707	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	02/02/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M14702	Reagent:	1:3 HNO ₃
Analyst:	MDS		
Prep Date:	01/27/2021	Expiration Date:	01/27/2022
Prep:	Carefully mixed 3 parts DI with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14703	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/28/2021	Expiration Date:	02/28/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14704	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/28/2021	Expiration Date:	02/28/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14598 and brought up to volume.		

Standard Log #:	M14699	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/27/2021	Expiration Date:	02/27/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14700	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/27/2021	Expiration Date:	02/27/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14701	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	01/27/2021	Expiration Date:	01/28/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

		Instrument:	HydraII
Standard Log #:	M14696	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/27/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14697	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/27/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14698	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/27/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	GFAA
Standard Log #:	M14694	Standard:	LODS/LOQS Spiking Sol'n
Analyst:	MDS	Concentrations:	60 ug/L (Sb) 160 ug/L (As,Se) 40 ug/L (Pb) 50 ug/L (Tl)
Prep Date:	01/26/2021	Expiration Date:	09/2021
Prep:	Into a 200 mL volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. 1.2 mL of Sb (1000 mg/L) N/A 3.2 mL of As (1000 mg/L) M14621 3.2 mL of Se (1000 mg/L) M14624 0.08 mL of Pb (10,000 mg/L) M14202 1.0 mL of Tl (1000 mg/L) M14626 From this diluted standard solution, pipetted 10 mL into a 1 L volumetric flask and brought up to volume with Milli-Q H₂O to make the spiking solution. (1% HNO₃) *Pipette 1 mL spiking solution into 50 mL H₂O for LOD (1.2 ug/L Sb, 3.2 ug/L As, 3.2 ug/L Se, 0.8 ug/L Pb, 1 ug/L Tl) and 2 mL spiking solution for LOQ (2.4 ug/L Sb, 6.4 ug/L As, 6.4 ug/L Se, 1.6 ug/L Pb, 2 ug/L Tl)		

		Instrument:	GFAA
Standard Log #:	M14695	Standard:	LODW/LOQW Spiking Sol'n
Analyst:	MDS	Concentrations:	150 ug/L (Sb) 100 ug/L (As) 200 ug/L (Se) 45 ug/L (Pb) 40 ug/L (Tl)
Prep Date:	01/26/2021	Expiration Date:	09/2021
Prep:	Into a 100 mL volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. 1.5 mL of Sb (1000 mg/L) M14622 1.0 mL of As (1000 mg/L) M14621 2.0 mL of Se (1000 mg/L) M14624 0.045 mL of Pb (10,000 mg/L) M14202 0.4 mL of Tl (1000 mg/L) M14626 From this diluted standard solution, pipetted 10 mL into a 1 L volumetric flask and brought up to volume with Milli-Q H₂O to make the spiking solution. (1% HNO₃) *Pipette 1 mL spiking solution into 50 mL H₂O for LOD (3 ug/L Sb, 2 ug/L As, 4 ug/L Se, 0.9 ug/L Pb, 0.8 ug/L Tl) and 2 mL spiking solution for LOQ (6 ug/L Sb, 4 ug/L As, 8 ug/L Se, 1.8 ug/L Pb, 1.6 ug/L Tl)		

Standard Log #:	M14689	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/19/2021	Expiration Date:	02/19/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14690	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/19/2021	Expiration Date:	02/19/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14691	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	01/19/2021	Expiration Date:	01/20/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14692	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/20/2021	Expiration Date:	02/20/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14693	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/20/2021	Expiration Date:	02/20/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14598 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14686	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/19/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14687	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/19/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14688	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/19/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14680	Vendor:	CPI
Analyst:	NAH	Chemical:	Si 1000 mg/L
Date Received:	01/15/2021	Lot #:	1047870-29
Expiration Date (if any):	07/2022	Catalog #:	S4400-1000504F

Standard ID#:	M14681	Vendor:	CPI
Analyst:	NAH	Chemical:	Li 1000 mg/L
Date Received:	01/15/2021	Lot #:	104768-6
Expiration Date (if any):	07/2022	Catalog #:	S4400-1000291

Standard ID#:	M14682	Vendor:	CPI
Analyst:	NAH	Chemical:	Ce 1000 mg/L
Date Received:	01/15/2021	Lot #:	S4400-1000101
Expiration Date (if any):	07/2022	Catalog #:	S4400-1000101

Standard ID#:	M14683	Vendor:	CPI
Analyst:	NAH	Chemical:	Sr 1000 mg/L
Date Received:	01/15/2021	Lot #:	1096004-1
Expiration Date (if any):	07/2022	Catalog #:	S4400-1000531

Standard ID#:	M14684	Vendor:	CPI
Analyst:	NAH	Chemical:	Mo 1000 mg/L
Date Received:	01/15/2021	Lot #:	1075718-2
Expiration Date (if any):	07/2022	Catalog #:	S4400-1000343

Standard ID#:	M14685	Vendor:	SpexCertiPrep
Analyst:	NAH	Chemical:	Custom Assurance standard
Date Received:	01/18/2021	Lot #:	XCTWI-4-500
Expiration Date (if any):	01/30/2022	Catalog #:	14-242AB

Standard ID#:	M14674	Vendor:	CPI
Analyst:	NAH	Chemical:	Ti 1000 mg/L
Date Received:	01/15/2021	Lot #:	1038255-27
Expiration Date (if any):	07/2022	Catalog #:	S4400-1000623

Standard ID#:	M14675	Vendor:	CPI
Analyst:	NAH	Chemical:	B 1000 mg/L
Date Received:	01/15/2021	Lot #:	1024903-65
Expiration Date (if any):	07/2022	Catalog #:	S4400-100074

Standard ID#:	M14676	Vendor:	CPI
Analyst:	NAH	Chemical:	M 10000 mg/L
Date Received:	01/15/2021	Lot #:	1013353
Expiration Date (if any):	07/2022	Catalog #:	4400-10M311

Standard ID#:	M14677	Vendor:	CPI
Analyst:	NAH	Chemical:	S 10000 mg/L
Date Received:	01/15/2021	Lot #:	1050965-25
Expiration Date (if any):	07/2022	Catalog #:	4400-10M544

Standard ID#:	M14678	Vendor:	CPI
Analyst:	NAH	Chemical:	P 10000 mg/L
Date Received:	01/15/2021	Lot #:	1079898-6
Expiration Date (if any):	07/2022	Catalog #:	S4400-10M391

Standard ID#:	M14679	Vendor:	CPI
Analyst:	NAH	Chemical:	Fe 10000 mg/L
Date Received:	01/15/2021	Lot #:	1034527-40
Expiration Date (if any):	07/2022	Catalog #:	4400-10M261

Standard Log #:	M14673	Instrument:	GFAA																																			
Analyst:	MDS	Standard:	MDL Spiking Solution																																			
Prep Date:	01/13/2021	Expiration Date:	09/2021																																			
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (2% HNO₃) <table border="1"> <thead> <tr> <th>Analyte</th> <th>Final MDL Conc. (ug/L)</th> <th>Std. ID #</th> <th>Std. Conc. (mg/L)</th> <th>Volume (mL) pipetted</th> </tr> </thead> <tbody> <tr> <td>Ag</td> <td>0.2</td> <td>M14623</td> <td>1000</td> <td>0.01</td> </tr> <tr> <td>As</td> <td>2</td> <td>M14621</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Pb</td> <td>2</td> <td>M14202</td> <td>10000</td> <td>0.01</td> </tr> <tr> <td>Sb</td> <td>2</td> <td>M14622</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Se</td> <td>2</td> <td>M14624</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Tl</td> <td>2</td> <td>M14626</td> <td>1000</td> <td>0.1</td> </tr> </tbody> </table> Of this base standard, pipetted 1 mL into a 50 mL digestion tube for a digested working standard.			Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted	Ag	0.2	M14623	1000	0.01	As	2	M14621	1000	0.1	Pb	2	M14202	10000	0.01	Sb	2	M14622	1000	0.1	Se	2	M14624	1000	0.1	Tl	2	M14626	1000	0.1
Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted																																		
Ag	0.2	M14623	1000	0.01																																		
As	2	M14621	1000	0.1																																		
Pb	2	M14202	10000	0.01																																		
Sb	2	M14622	1000	0.1																																		
Se	2	M14624	1000	0.1																																		
Tl	2	M14626	1000	0.1																																		

Standard Log #:	M14670	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/12/2021	Expiration Date:	02/12/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14671	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/12/2021	Expiration Date:	02/12/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14597 and brought up to volume.		

Standard Log #:	M14672	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	01/12/2021	Expiration Date:	01/12/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14545. Dilute to 20 L and mix.		

Standard Log #:	M14667	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/11/2021	Expiration Date:	02/11/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14668	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/11/2021	Expiration Date:	02/11/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14669	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	01/11/2021	Expiration Date:	01/12/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

		Instrument:	HydraII
Standard Log #:	M14664	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/11/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14665	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/11/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14666	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/11/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M14663	Standard:	GFAA Instrument Check
Analyst:	MDS	Final Concentration:	8 µg/L As 10 µg/L Pb 8 µg/L Sb 16 µg/L Se 10 µg/L Tl 0.6 µg/L Ag
Prep Date:	01/06/2021	Expiration Date:	09/2021

Into six, 100 mL volumetric flasks, add the following and bring up to volume with milli-Q H₂O.

Element	Volume Pipetted (mL)	Standard Conc. (µg/mL)	Standard ID	New Conc. (µg/L)
As	1	1000	M14621	10,000
Pb	0.1	10,000	M14202	10,000
Tl	1	1000	M14626	10,000
Se	1	1000	M14624	10,000
Sb	1	1000	M14622	10,000
Ag	0.1	1000	M14623	1000

Into a 1 L volumetric flask, add the following and bring up to volume with Milli-Q H₂O. (1% HNO₃)

Element	Volume Pipetted (mL)	Standard Conc. (µg/L)	New Conc. (µg/L)
As	0.8	10,000	8
Pb	1.0	10,000	10
Tl	1.0	10,000	10
Se	1.6	10,000	16
Sb	0.8	10,000	8
Ag	0.6	1000	0.6

		Instrument:	GFAA
Standard Log #:	M14660	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	01/04/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14227 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14661	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	01/04/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14227 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14662	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	01/04/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M14228 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

MRL BASE STD	M14659	Analyst	NAH
		Prep Date	01/04/2021

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	(ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L	Expiration Date
Ag	20	M14623	1000	1	02/22
Al	400	M14478	10000	2	02/22
Ba	10	M14568	1000	0.5	05/22
Be	4	M14203	1000	0.2	09/21
Cd	5	M14201	1000	0.25	09/21
Co	10	M14204	1000	0.5	09/21
Cr	10	M14205	10000	0.05	09/21
Cu	10	M14199	10000	0.05	09/21
Mg	500	M14472	10000	2.5	02/22
Mn	10	M14200	10000	0.05	09/21
Mo	10	M14569	1000	0.5	05/22
Ni	10	M14196	1000	0.5	09/21
Pb	10	M14202	10000	0.05	09/21
Sb	20	M14622	1000	1	02/22
V	10	M14198	1000	0.5	09/21
Zn	10	M14197	10000	0.05	09/21
K	1000	M14436	10000	5	02/22
Na	1000	M14559	10000	5	02/22
As	20	M14621	1000	1	02/22
Ca	500	M14476	10000	2.5	02/22
Fe	300	M14470	10000	1.5	02/22
Se	20	M14624	1000	1	02/22
Tl	20	M14626	1000	1	02/22
Si	100	M14435	1000	5	02/22
B	20	M14131	1000	1	07/21
Li	20	M14127	1000	1	07/21
W	50	xxxxxxx	1000	2.5	xxxxxx
Ti	10	M14009	1000	0.5	04/21
Sr	10	M14007	1000	0.5	04/21
Sn	50	M14008	1000	2.5	04/21
S	300	M14570	10000	1.5	05/22

Of this Base standard, pipet 10 mls into 500 ml volumetric to create a working std or 1 ml into 50 ml digestion tube for a digested working standard.

		Instrument:	ICP 6500
Standard Log #:	M14658	Standard:	ICSAB
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 500 ug/L Ag, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn, K, Na, S, 50000 ug/L Si 1000 ug/L.
Prep Date:	1/04/2021	Expiration Date:	03/30/2021
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M14359, 15 mL Fe (10,000 mg/L) M14470, 2.5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M14195, 2.5 mL Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn), M14628, 2.5 mLs Na 10,000 ug/mL M14473, 2.5 mLs k 10,000 ug/mL M14436 2.5 mLs S 10,000 ug/mL M14570, 0.5 mls Si 1000 ug/mL M14477 and brought up to volume with milli-Q .		

		Instrument:	ICP 6500
Standard Log #:	M14656	Standard:	ICV Std.
Analyst:	NAH	Concentrations:	12,000 mg/L Al 10,000 mg/L Ca, Mg 5000 mg/L Fe 2000 mg/L As, Ba, Se, Tl 500 mg/L B, Co, Li, Mn, Mo, Ni, Pb, Sb, Sn, Sr, Ti, V, Zn 250 mg/L Cu 200 mg/L Cr 50 mg/L Ag, Be, Cd
Prep Date:	01/04/2021	Expiration Date:	06/30/2021
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with milli-Q H ₂ O. 10 mL Custom Assurance Standard #18 ((200 mg/L Al, As, Ba, Se, Tl) (100 mg/L Fe) (50 mg/L Co, Mn, Ni, Pb, Sb, V, Zn) (25 mg/L Cu) (20 mg/L Cr) (5 mg/L Ag, Be, Cd)) M14639, 2 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M14359, 0.5 mL Mo (1000 mg/L) M14569, 0.5 mL B (1000 mg/L) M14131, 0.5 mL Sr (1000 mg/L) M14007, 0.5 mL Li (1000 mg/L) M14127, 0.5 mL Sn (1000 mg/L) M14008, 0.5 mL Ti (1000 mg/L) M14009, 0.5 mL W (1000 mg/L) xxxxxx, 0.5 mL Si (1000 mg/L) M14567, 0.5 mL S (10000 mg/L) M14372, 0.5 mL K (10000 mg/L) M14436, and 0.5 mL Na (10000 mg/L) M14559		

		Instrument:	ICP 6500
Standard Log #:	M14657	Standard:	ICSA
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 10,000 V, Ce
Prep Date:	01/04/2021	Expiration Date:	06/30/2021
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interference A std M14359 and 15 mL 10000 mg/L Fe M14470 5.0 mL 1000 mg/L V M14198 5.0 mL 1000 mg/L Ce M1359 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M14655	Standard:	ICAL
Analyst:	NAH	Concentrations:	0.25, 0.5, 1, 5, 10, 20, 50, 100, 1000, 10,000, 100k, 100,000, 500,000 and 1000k (ug/L)
Prep Date:	01/04/2021	Expiration Date:	03/30/2021
Prep:	Using 1 L volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (5% HNO₃, 5% HCl) 1000 ug/L Std. - 10 mL of Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M14628, 10 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M14195 and 1 mL of Si (1000 mg/L) M14435 and 1 mL M13859 Ce 0.25 ug/L Std. - 0.25 mL of the 1000 ug/L Std. 0.5 ug/L Std. - 0.5 mL of the 1000 ug/L Std. 1 ug/L Std. - 1 mL of the 1000 ug/L Std. 5 ug/L Std. - 5 mL of the 1000 ug/L Std. 10 ug/L Std. - 10 mL of the 1000 ug/L Std. 20 ug/L Std. - 20 mL of the 1000 ug/L Std. 50 ug/L Std. - 50 mL of the 1000 ug/L Std. 100 ug/L Std. - 1 mL of Custom Assurance Std. (CAS) #23 and 1 mL of CAS #3 10,000 ug/L Std. - 100 mL CAS #23, 100 mL CAS #3 and 1 mL of K (10,000 mg/L) M14625. 100k ug/L Std. - 10 mL of Cu (10,000 mg/L) M14199, 10 mL of Mn (10,000 mg/L) M14200, 10 mL of Cr (10,000 mg/L) M14205, 10 mL Pb (10,000 mg/L) M14202, 10 mL of Zn (10,000 mg/L) M14197 and 10 mL of Na (10,000 mg/L) M14559. 100,000 ug/L Std. - 10 mL of Mg (10,000 mg/L) M14472, 10 mL of Fe (10,000 mg/L) M14470, 10 mL of Ca (10,000 mg/L) M14476 and 10 mL Al (10,000 mg/L) M14478. 500,000 ug/L Std. - 50 mL of Mg (10,000 mg/L), 50 mL of Fe (10,000 mg/L), 50 mL of Ca (10,000 mg/L) and 50 mL of Al (10,000 mg/L) 1000k ug/L Std. - 100 mL of Mg (10,000 mg/L), 100 mL of Fe (10,000 mg/L), 100 mL of Ca (10,000 mg/L) and 100 mL of Al (10,000 mg/L)		

**INORGANIC
CLP FORMS
DOCUMENTS**

INORGANIC ANALYSIS DATA SHEET

Sample Description

54IDW

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1283774	
Analytical Method:	EPA 410.4	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	269035	Extraction Date/time:		
Analytical Prep Batch #:	128537	Analysis Date/Time:	02/07/2023	13:36
		Prep. Date/Time:	02/04/2023	08:39

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
COD	COD	50	U M	18	50	75	75

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



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INORGANIC ANALYSIS DATA SHEET

Sample Description

54IDW

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1283774	
Analytical Method:	EPA 9040C	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268842	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/26/2023	15:30
		Prep. Date/Time:		

Concentration Units: S.U.

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
PH	pH	7.76		0.1	0.1	0.1	0.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



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INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW1

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175012</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1283773</u>	
Analytical Method:	<u>EPA 9060A</u>	Date Received:	<u>01/26/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>268835</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/27/2023</u>	<u>10:34</u>
		Prep. Date/Time:	<u></u>	

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	62		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW1

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1283773	
Analytical Method:	EPA 9060A	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268891	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	19:44
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW1

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1283773	
Analytical Method:	EPA 9056A	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268844	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/26/2023	21:46
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	2.5	J	1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.20	U	0.12	0.20	0.40	0.40
14808-79-8	Sulfate	30		0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW10

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1282990	
Analytical Method:	EPA 9060A	Date Received:	01/24/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268835	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/27/2023	10:03
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	78		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW10

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1282990	
Analytical Method:	EPA 9060A	Date Received:	01/24/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268891	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	14:27
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW10

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1282990	
Analytical Method:	EPA 9056A	Date Received:	01/24/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268741	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/24/2023	15:02
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	4.2		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.20	U	0.12	0.20	0.40	0.40

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW10

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1282990	
Analytical Method:	EPA 9056A	Date Received:	01/24/2023	
Dilution Factor:	5	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268741	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/24/2023	15:22
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
14808-79-8	Sulfate	190		4.0	7.5	15	15

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW12

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1283772	
Analytical Method:	EPA 9060A	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268835	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/27/2023	10:18
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	82		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW12

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1283772	
Analytical Method:	EPA 9060A	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268891	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	17:52
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW12

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175012</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1283772</u>	
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>01/26/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>268844</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/26/2023</u>	<u>19:44</u>
		Prep. Date/Time:	<u></u>	

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	5.7		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.68		0.12	0.20	0.40	0.40
14808-79-8	Sulfate	30		0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW13

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1282988	
Analytical Method:	EPA 9060A	Date Received:	01/24/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268835	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/27/2023	09:34
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	88		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW13

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1282988	
Analytical Method:	EPA 9060A	Date Received:	01/24/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268891	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	13:54
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW13

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1282988	
Analytical Method:	EPA 9056A	Date Received:	01/24/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268741	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/24/2023	14:21
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	6.7		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.57		0.12	0.20	0.40	0.40
14808-79-8	Sulfate	35	M	0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54TW13

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1282989	
Analytical Method:	EPA 9060A	Date Received:	01/24/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268835	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/27/2023	09:49
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	87		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54TW13

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1282989	
Analytical Method:	EPA 9060A	Date Received:	01/24/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268891	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	14:09
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

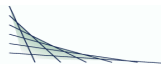
54TW13

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175012</u>
% Solids:	<u></u>	Lab Sample ID:	<u>1282989</u>
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>01/24/2023</u>
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>
Analytical Run #:	<u>268741</u>	Extraction Date/time:	<u></u>
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/24/2023 14:41</u>
		Prep. Date/Time:	<u></u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	6.8		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.56		0.12	0.20	0.40	0.40
14808-79-8	Sulfate	37		0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



2A-1

INITIAL CALIBRATION VERIFICATION

Sample No.

ICV

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268741

Lab Sample ID: 1283394

ICAL Calibration #:

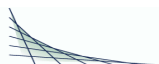
Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Chloride	11/1/22	09:41	15.00	13.71	91	90	110
Nitrate Nitrogen	11/1/22	09:41	3.50	3.317	95	90	110
Sulfate	11/1/22	09:41	25.00	22.65	91	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-1

INITIAL CALIBRATION VERIFICATION

Sample No.

ICV

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 269035

Lab Sample ID: 1286926

ICAL Calibration #:

Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
COD	2/7/23	13:36	400.0	388.2	97	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

INITIAL CALIBRATION VERIFICATION

ICV

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268891

Lab Sample ID: 1285557

ICAL Calibration #: _____

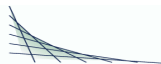
Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Total Organic Carbon	4/27/22	11:14	50.0	49.82	100	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268741

Lab Sample ID: 1283241

ICAL Calibration #:

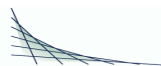
Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Chloride	1/24/23	13:20	15.00	14.51	97	90	110
Nitrate Nitrogen	1/24/23	13:20	3.50	3.671	105	90	110
Sulfate	1/24/23	13:20	25.00	24.57	98	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268741

Lab Sample ID: 1283247

ICAL Calibration #:

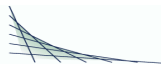
Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Chloride	1/24/23	17:43	15.00	15.09	101	90	110
Nitrate Nitrogen	1/24/23	17:43	3.50	3.765	108	90	110
Sulfate	1/24/23	17:43	25.00	25.33	101	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 175012

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 268844
 ICAL Calibration #: _____

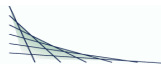
Lab Sample ID: 1284727
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Chloride	1/26/23	16:42	15.00	14.50	97	90	110
Nitrate Nitrogen	1/26/23	16:42	3.50	3.666	105	90	110
Sulfate	1/26/23	16:42	25.00	24.40	98	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 175012

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 268844
 ICAL Calibration #: _____

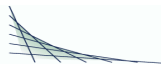
Lab Sample ID: 1284733
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Chloride	1/26/23	21:05	15.00	15.00	100	90	110
Nitrate Nitrogen	1/26/23	21:05	3.50	3.724	106	90	110
Sulfate	1/26/23	21:05	25.00	25.02	100	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 175012

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 268844
 ICAL Calibration #: _____

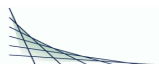
Lab Sample ID: 1284735
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Chloride	1/27/23	00:28	15.00	14.93	100	90	110
Nitrate Nitrogen	1/27/23	00:28	3.50	3.704	106	90	110
Sulfate	1/27/23	00:28	25.00	24.98	100	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 175012

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 269035
 ICAL Calibration #:

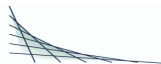
Lab Sample ID: 1286928
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
COD	2/7/23	13:36	400.0	402.6	101	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 269035

Lab Sample ID: 1286930

ICAL Calibration #:

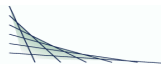
Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
COD	2/7/23	13:36	400.0	405.0	101	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 175012

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 268835
 ICAL Calibration #: ICAL0590

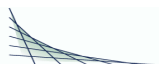
Lab Sample ID: 1285114
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Total Inorganic Carbon	1/27/23	08:52	50.0	50.41	101	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 175012

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 268835
 ICAL Calibration #: ICAL0590

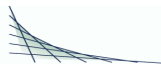
Lab Sample ID: 1285117
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Total Inorganic Carbon	1/27/23	10:49	50.0	52.28	105	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 175012

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 268891
 ICAL Calibration #: ICAL0590

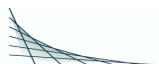
Lab Sample ID: 1285119
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Total Organic Carbon	1/30/23	12:04	50.0	46.07	92	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 175012

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 268891
 ICAL Calibration #: ICAL0590

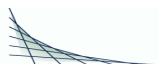
Lab Sample ID: 1285123
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Total Organic Carbon	1/30/23	15:19	50.0	45.70	91	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 175012

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 268891
 ICAL Calibration #: ICAL0590

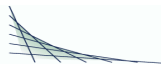
Lab Sample ID: 1285128
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Total Organic Carbon	1/30/23	18:32	50.0	45.64	91	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 175012

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 268891
 ICAL Calibration #: ICAL0590

Lab Sample ID: 1285133
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Total Organic Carbon	1/30/23	21:56	50.0	45.07	90	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

INITIAL CALIBRATION BLANKS

Sample No.

ICB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268891 Lab Sample ID: 1285558

Analytical Prep Batch #: Preparation Date/Time:

ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Total Organic Carbon	04/27/2022 11:28	0	U	0.5	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

INITIAL CALIBRATION BLANKS

Sample No.

ICB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
SDG No.: 175012
Analytical Run #: 269035 Lab Sample ID: 1286927
Analytical Prep Batch #: Preparation Date/Time:
ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
COD	02/07/2023 13:36	0			37

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

INITIAL CALIBRATION BLANKS

Sample No.

ICB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268741 Lab Sample ID: 1283393

Analytical Prep Batch #: Preparation Date/Time:

ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Chloride	10/31/2022	16:43	0.5780	U	1.0	1.5
Nitrate Nitrogen	10/31/2022	16:43	0	U	0.12	0.20
Sulfate	10/31/2022	16:43	0	U	0.8	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268835 Lab Sample ID: 1285118

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: ICAL0590 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Total Inorganic Carbon	01/27/2023 11:04	0	U	0.5	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268891 Lab Sample ID: 1285124

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: ICAL0590 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Total Organic Carbon	01/30/2023 15:33	0	U	0.5	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

Sample No.

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
SDG No.: 175012
Analytical Run #: 268891 Lab Sample ID: 1285134
Analytical Prep Batch #: 0 Preparation Date/Time:
ICAL Calibration #: ICAL0590 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Total Organic Carbon	01/30/2023 22:10	0	U	0.5	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

Sample No.

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268891 Lab Sample ID: 1285136

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: ICAL0590 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Total Organic Carbon	01/30/2023 19:01	0	U	0.5	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

Sample No.

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 269035 Lab Sample ID: 1286929

Analytical Prep Batch #: Preparation Date/Time:

ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
COD	02/07/2023 13:36	0			37

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

Sample No.

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
SDG No.: 175012
Analytical Run #: 269035 Lab Sample ID: 1286931
Analytical Prep Batch #: Preparation Date/Time:
ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
COD	02/07/2023 13:36	0			37

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

Sample No.

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268741 Lab Sample ID: 1283248

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Chloride	01/24/2023	18:04	0.5746	U	1.0	1.5
Nitrate Nitrogen	01/24/2023	18:04	0	U	0.12	0.20
Sulfate	01/24/2023	18:04	0	U	0.8	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

Sample No.

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268844 Lab Sample ID: 1284734

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Chloride	01/26/2023	21:26	0.5838	U	1.0	1.5
Nitrate Nitrogen	01/26/2023	21:26	0	U	0.12	0.20
Sulfate	01/26/2023	21:26	0	U	0.8	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

Sample No.

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268844 Lab Sample ID: 1284736

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Chloride	01/27/2023 00:48	0.5908	U	1.0	1.5
Nitrate Nitrogen	01/27/2023 00:48	0	U	0.12	0.20
Sulfate	01/27/2023 00:48	0	U	0.8	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268835 Lab Sample ID: 1285116

Analytical Prep Batch #: 0 Preparation Date/Time: _____

ICAL Calibration #: ICAL0590 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Total Inorganic Carbon	01/27/2023 09:20	0	U	0.5	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268891 Lab Sample ID: 1285121

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: ICAL0590 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Total Organic Carbon	01/30/2023 12:32	0	U	0.5	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

3-3

METHOD BLANKS

Sample No.

MB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 269035 Lab Sample ID: 1286257

Analytical Prep Batch #: 128537 Preparation Date/Time: 02/04/2023 08:39

ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Total COD	02/07/2023 13:36	0	U	18	37

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268741 Lab Sample ID: 1283243

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Chloride	01/24/2023	14:01	0.5789	U	1.0	1.5
Nitrate Nitrogen	01/24/2023	14:01	0	U	0.12	0.20
Sulfate	01/24/2023	14:01	0	U	0.8	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 175012

Analytical Run #: 268844 Lab Sample ID: 1284729

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: Concentration Units: mg/L

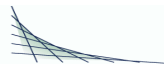
Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Chloride	01/26/2023	17:23	0.5755	U	1.0	1.5
Nitrate Nitrogen	01/26/2023	17:23	0	U	0.12	0.20
Sulfate	01/26/2023	17:23	0	U	0.8	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.



5A

Sample Description

SPIKE SAMPLE RECOVERY

54MW12

Lab Name: CT Laboratories
Matrix: LIQUID
% Solids for Sample:
Sample No.: 1285131
Analytical Prep Batch #: 0
Analytical Run #: 268891

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
SDG No.: 175012
Concentration Units: mg/L
Parent Sample No.: 1283772
Analytical Preparation Date/Time:
ICAL Calibration #: ICAL0590

Analysis Type	Initial Analysis	Analysis Date: -----	01/30/2023	Analysis Time: -----	19:18
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Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Total Organic Carbon	85-111	46.5		BDL	U	50.0	93		TOC

BDL = analyte concentration was below detection limit

5A

Sample Description

SPIKE SAMPLE RECOVERY

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solids for Sample:

Concentration Units: mg/L

Sample No.: 1286260

Parent Sample No.: 1283774

Analytical Prep Batch #: 128537

Analytical Preparation Date/Time: 02/04/2023 08:39

Analytical Run #: 269035

ICAL Calibration #:

Analysis Type Initial Analysis

Analysis Date: ----- 02/07/2023

Analysis Time: ----- 13:36

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
COD	90-110	163		BDL	U	148	110		SP

BDL = analyte concentration was below detection limit

5A

Sample Description

SPIKE SAMPLE RECOVERY

54MW13

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solids for Sample:

Concentration Units: mg/L

Sample No.: 1283245

Parent Sample No.: 1282988

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 268741

ICAL Calibration #:

Analysis Type Initial Analysis Analysis Date: 01/24/2023 Analysis Time: 16:02

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Chloride	87-111	14.3		6.7		8.0	95		IC
Nitrate Nitrogen	88-111	2.61		0.57		2.0	102		IC
Sulfate	87-112	41.8		35		8.0	85		IC <i>FAIL</i>

BDL = analyte concentration was below detection limit

5A

Sample Description

SPIKE SAMPLE RECOVERY

54MW12

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solids for Sample:

Concentration Units: mg/L

Sample No.: 1284731

Parent Sample No.: 1283772

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 268844

ICAL Calibration #:

Analysis Type Initial Analysis

Analysis Date: ----- 01/26/2023

Analysis Time: ----- 20:25

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Chloride	87-111	13.5		5.7		8.0	98		IC
Nitrate Nitrogen	88-111	2.72		0.68		2.0	102		IC
Sulfate	87-112	37.3		30		8.0	91		IC

BDL = analyte concentration was below detection limit

5C

Sample Description

SPIKE DUPLICATE SAMPLE RECOVERY

54MW12

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solids for Sample:

Concentration Units: mg/L

Sample No.: 1285132

Parent Sample No.: 1285131

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 268891

ICAL Calibration #: ICAL0590

Analysis Type Initial Analysis

Analysis Date: ----- 01/30/2023

Analysis Time: ----- 19:31

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Total Organic Carbon	85-111	46.2		BDL	U	50.0	92		TOC

BDL = analyte concentration was below detection limit

5C

Sample Description

SPIKE DUPLICATE SAMPLE RECOVERY

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solids for Sample:

Concentration Units: mg/L

Sample No.: 1286261

Parent Sample No.: 1286260

Analytical Prep Batch #: 128537

Analytical Preparation Date/Time: 02/04/2023 08:39

Analytical Run #: 269035

ICAL Calibration #:

Analysis Type Initial Analysis Analysis Date: ----- 02/07/2023 Analysis Time: ----- 13:36

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
COD	90-110	165		BDL	U	148	111		SP FAIL

BDL = analyte concentration was below detection limit

5C

Sample Description

SPIKE DUPLICATE SAMPLE RECOVERY

54MW13

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solids for Sample:

Concentration Units: mg/L

Sample No.: 1283246

Parent Sample No.: 1283245

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 268741

ICAL Calibration #:

Analysis Type	Initial Analysis	Analysis Date: -----	01/24/2023	Analysis Time: -----	16:22
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Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Chloride	87-111	14.4		6.7		8.0	96		IC
Nitrate Nitrogen	88-111	2.66		0.57		2.0	104		IC
Sulfate	87-112	41.9		35		8.0	86		IC <i>FAIL</i>

BDL = analyte concentration was below detection limit

5C

Sample Description

SPIKE DUPLICATE SAMPLE RECOVERY

54MW12

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solids for Sample:

Concentration Units: mg/L

Sample No.: 1284732

Parent Sample No.: 1284731

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 268844

ICAL Calibration #:

Analysis Type Initial Analysis

Analysis Date: ----- 01/26/2023

Analysis Time: ----- 20:45

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Chloride	87-111	14.0		5.7		8.0	104		IC
Nitrate Nitrogen	88-111	2.86		0.68		2.0	109		IC
Sulfate	87-112	37.6		30		8.0	95		IC

BDL = analyte concentration was below detection limit

6

Sample Description

DUPLICATES

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solid for Sample:

Concentration Units: S.U.

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 268842

ICAL Calibration #:

Sample #: 1283945

Parent Sample #: 1283774

Analysis Type Initial Analysis

Analyte	Analysis Date/Time	RPD Limit	Original Parent Conc. (S)	C	Duplicate Conc. (D)	C	RPD	Q	M
pH	01/26/2023 15:30	1	7.76		7.77		0		ECTRC

6

Sample Description

DUPLICATES

54MW12

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solid for Sample:

Concentration Units: mg/L

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 268891

ICAL Calibration #: ICAL0590

Sample #: 1285127

Parent Sample #: 1283772

Analysis Type Initial Analysis

Analyte	Analysis Date/Time	RPD Limit	Original Parent Conc. (S)	C	Duplicate Conc. (D)	C	RPD	Q	M
Total Organic Carbon	01/30/2023 18:12	20	0.5	U	0.5	U	0		TOC

6

Sample Description

DUPLICATES

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solid for Sample:

Concentration Units: mg/L

Analytical Prep Batch #: 128537

Analytical Preparation Date/Time: 02/04/2023 08:39

Analytical Run #: 269035

ICAL Calibration #:

Sample #: 1286259

Parent Sample #: 1283774

Analysis Type Initial Analysis

Analyte	Analysis Date/Time	RPD Limit	Original Parent Conc. (S)	C	Duplicate Conc. (D)	C	RPD	Q	M
COD	02/07/2023 13:36	20	18	U	18	U	0		SP

6

Sample Description

DUPLICATES

54MW13

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solid for Sample:

Concentration Units: mg/L

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 268741

ICAL Calibration #:

Sample #: 1283244

Parent Sample #: 1282988

Analysis Type *Initial Analysis*

Analyte	Analysis Date/Time	RPD Limit	Original Parent Conc. (S)	C	Duplicate Conc. (D)	C	RPD	Q	M
Chloride	01/24/2023 15:42	10	6.7		6.69		0		IC
Nitrate Nitrogen	01/24/2023 15:42	10	0.57		0.566		1		IC
Sulfate	01/24/2023 15:42	10	35		35.0		0		IC

6

Sample Description

DUPLICATES

54MW12

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solid for Sample:

Concentration Units: mg/L

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 268844

ICAL Calibration #:

Sample #: 1284730

Parent Sample #: 1283772

Analysis Type *Initial Analysis*

Analyte	Analysis Date/Time	RPD Limit	Original Parent Conc. (S)	C	Duplicate Conc. (D)	C	RPD	Q	M
Chloride	01/26/2023 20:05	10	5.7		5.68		0		IC
Nitrate Nitrogen	01/26/2023 20:05	10	0.68		0.678		0		IC
Sulfate	01/26/2023 20:05	10	30		29.6		1		IC

6A

Sample Description

MATRIX SPIKE DUPLICATES

54MW12

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solid for Sample:

Concentration Units: mg/L

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 268891

ICAL Calibration #: ICAL0590

Sample #: 1285132

Parent Sample #: 1285131

Analysis Type Initial Analysis

Analyte	Analysis Date/Time	RPD Limit	Matrix Spike Parent Conc. (S)	C	Matrix Spike Duplicate Conc. (D)	C	RPD	Q	M
Total Organic Carbon	01/30/2023 19:31	20	46.5		46.2		1		TOC

6A

Sample Description

MATRIX SPIKE DUPLICATES

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solid for Sample:

Concentration Units: mg/L

Analytical Prep Batch #: 128537

Analytical Preparation Date/Time: 02/04/2023 08:39

Analytical Run #: 269035

ICAL Calibration #:

Sample #: 1286261

Parent Sample #: 1286260

Analysis Type Initial Analysis

Analyte	Analysis Date/Time	RPD Limit	Matrix Spike Parent Conc. (S)	C	Matrix Spike Duplicate Conc. (D)	C	RPD	Q	M
COD	02/07/2023 13:36	20	163		165		1		SP

6A

Sample Description

MATRIX SPIKE DUPLICATES

54MW13

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solid for Sample:

Concentration Units: mg/L

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 268741

ICAL Calibration #:

Sample #: 1283246

Parent Sample #: 1283245

Analysis Type *Initial Analysis*

Analyte	Analysis Date/Time	RPD Limit	Matrix Spike Parent Conc. (S)	C	Matrix Spike Duplicate Conc. (D)	C	RPD	Q	M
Chloride	01/24/2023 16:22	15	14.3		14.4		1		IC
Nitrate Nitrogen	01/24/2023 16:22	15	2.61		2.66		2		IC
Sulfate	01/24/2023 16:22	15	41.8		41.9		0		IC

6A

Sample Description

MATRIX SPIKE DUPLICATES

54MW12

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 175012

% Solid for Sample:

Concentration Units: mg/L

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 268844

ICAL Calibration #:

Sample #: 1284732

Parent Sample #: 1284731

Analysis Type Initial Analysis

Analyte	Analysis Date/Time	RPD Limit	Matrix Spike Parent Conc. (S)	C	Matrix Spike Duplicate Conc. (D)	C	RPD	Q	M
Chloride	01/26/2023 20:45	15	13.5		14.0		4		IC
Nitrate Nitrogen	01/26/2023 20:45	15	2.72		2.86		5		IC
Sulfate	01/26/2023 20:45	15	37.3		37.6		1		IC

7-1

Sample No:

LABORATORY CONTROL SAMPLE - AQUEOUS

LCS

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 LCS Source: SPEX and Ultra SDG No.: 175012
 Concentration Units: mg/L
 Analytical Run #: 268835 Sample No.:# 1285115
 Analytical Prep Batch #: 0 Preparation Date/Time: _____
 ICAL Calibration #: ICAL0590

Analysis Type -----

Initial Analysis

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	C	Spike Amount	%R	Q	M
Total Inorganic Carbon	01/27/2023	09:06	85-111	49.80		50.0	100		TOC

7-1

Sample No:

LABORATORY CONTROL SAMPLE - AQUEOUS

LCS

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 LCS Source: SPEX and Ultra SDG No.: 175012
 Concentration Units: mg/L
 Analytical Run #: 268891 Sample No.:# 1285120
 Analytical Prep Batch #: 0 Preparation Date/Time: _____
 ICAL Calibration #: ICAL0590

Analysis Type -----

Initial Analysis

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	C	Spike Amount	%R	Q	M
Total Organic Carbon	01/30/2023	12:18	85-111	47.64		50.0	95		TOC

7-1

Sample No:

LABORATORY CONTROL SAMPLE - AQUEOUS

LCS

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 LCS Source: SPEX and Ultra SDG No.: 175012
 Concentration Units: mg/L
 Analytical Run #: 269035 Sample No.:# 1286258
 Analytical Prep Batch #: 128537 Preparation Date/Time: 02/04/2023 08:39
 ICAL Calibration #: _____

Analysis Type -----

Initial Analysis

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	C	Spike Amount	%R	Q	M
COD	02/07/2023	13:36	90-110	388.2		400.0	97		SP

7-1

Sample No:

LABORATORY CONTROL SAMPLE - AQUEOUS

LCS

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 LCS Source: SPEX and Ultra SDG No.: 175012
 Concentration Units: mg/L
 Analytical Run #: 268741 Sample No.:# 1283242
 Analytical Prep Batch #: 0 Preparation Date/Time: _____
 ICAL Calibration #: _____

Analysis Type -----

Initial Analysis

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	C	Spike Amount	%R	Q	M
Chloride	01/24/2023	13:40	87-111	14.79		15.00	99		IC
Nitrate Nitrogen	01/24/2023	13:40	88-111	3.628		3.50	104		IC
Sulfate	01/24/2023	13:40	87-112	25.55		25.00	102		IC

7-1

Sample No:

LABORATORY CONTROL SAMPLE - AQUEOUS

LCS

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 LCS Source: SPEX and Ultra SDG No.: 175012
 Concentration Units: mg/L
 Analytical Run #: 268844 Sample No.:# 1284728
 Analytical Prep Batch #: 0 Preparation Date/Time: _____
 ICAL Calibration #: _____

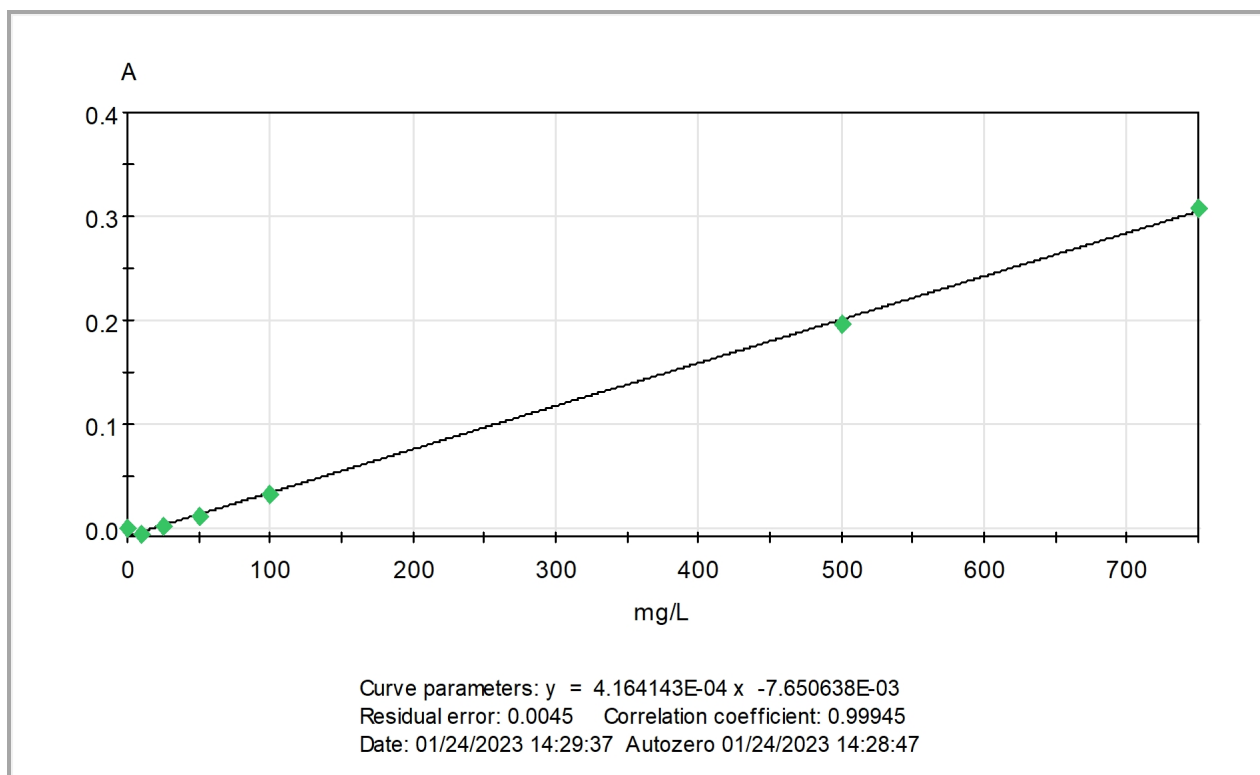
Analysis Type -----

Initial Analysis

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	C	Spike Amount	%R	Q	M
Chloride	01/26/2023	17:03	87-111	14.75		15.00	98		IC
Nitrate Nitrogen	01/26/2023	17:03	88-111	3.600		3.50	103		IC
Sulfate	01/26/2023	17:03	87-112	25.35		25.00	101		IC

**INORGANICS
RAW DATA
DOCUMENTS**

Method: W54109.mqa (600 nm)
 Last modified: 01/24/2023 14:30:05 by CTLABORATORIES\SPEC
 Spectrophotometer: GENESYS 30
 Serial number: 9A1W117104
 Firmware: 104
 Autozero: 01/24/2023 15:24:32
 Measured: 01/24/2023 15:39:29 by CTLABORATORIES\SPEC
 Result filename: 268744 745 746 DATA.rqa

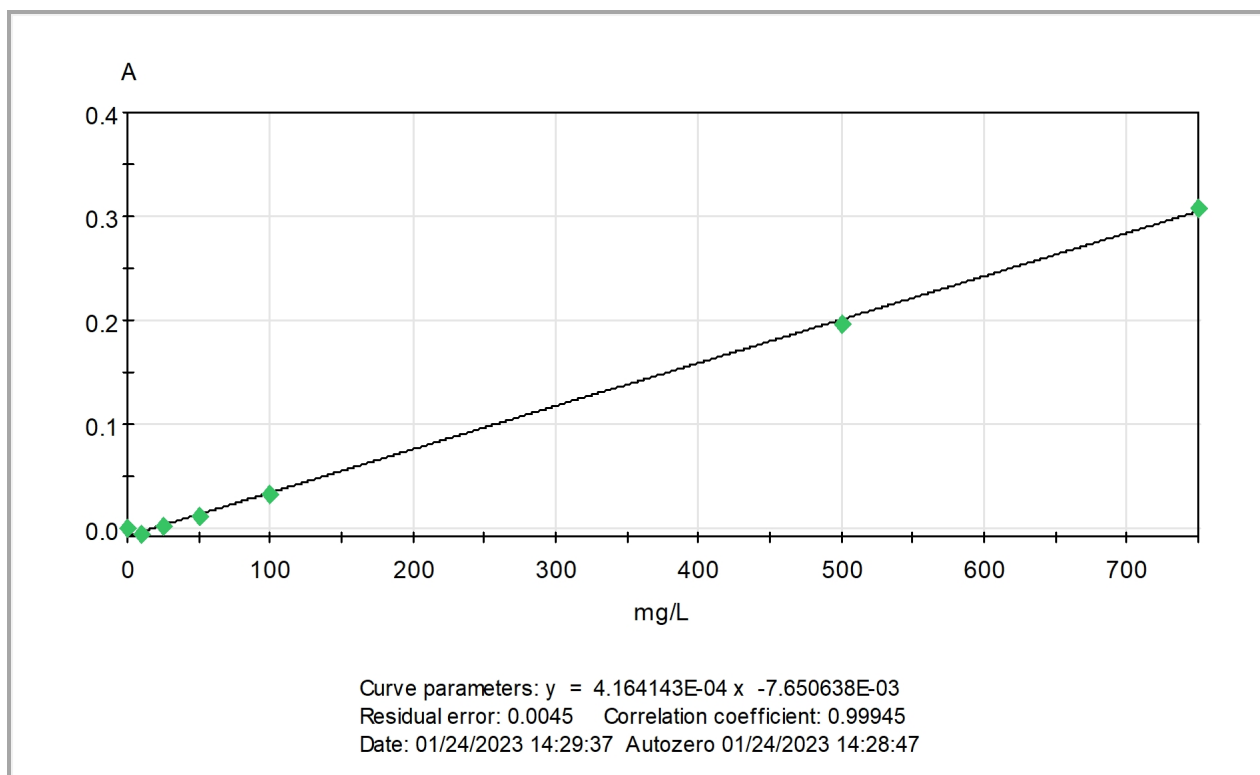


Standards

No.	Concentration [mg/L]	Ordinate [A]	Error [A]	Used
1	0.0	0.000	0.008	Yes
2	10.0	-0.006	-0.003	Yes
3	25.0	0.001	-0.002	Yes
4	50.0	0.012	-0.001	Yes
5	100.0	0.033	-0.001	Yes
6	500.0	0.196	-0.005	Yes
7	750.0	0.308	0.003	Yes

Sample	Dilution Factor	Ordinate [A]	Concentration [mg/L]
ICV	1	0.162	407.4
ICB	1	-0.006	4.0

Method: W54109.mqa (600 nm)
 Last modified: 01/24/2023 14:30:05 by CTLABORATORIES\SPEC
 Spectrophotometer: GENESYS 30
 Serial number: 9A1W117104
 Firmware: 104
 Autozero: 02/07/2023 13:33:52
 Measured: 02/07/2023 13:36:37 by CTLABORATORIES\SPEC
 Result filename: 269035 DATA.rqa



Sample	Dilution Factor	Ordinate [A]	Concentration [mg/L]
ICV	1	0.154	388.2
ICB	1	-0.011	-8.0
CCV	1	0.160	402.6
CCB	1	-0.008	-0.8
1286258	1	0.154	388.2
1286257	1	-0.010	-5.6
1283774	1	-0.003	11.2
DUP1283774	1	-0.002	13.6
MSW1283774	1	0.060	162.5
MSDW1283774	1	0.061	164.9
CCV	1	0.161	405.0
CCB	1	-0.010	-5.6

Line	Sample	Sample Type	Level	Method	Data File
4	STD1	Calibration St	1	ic4429.met	std1_004.dxd
5	STD2	Calibration St	2	ic4429.met	std2_005.dxd
6	STD3	Calibration St	3	ic4429.met	std3_006.dxd
7	STD4	Calibration St	4	ic4429.met	std4_007.dxd
8	STD5	Calibration St	5	ic4429.met	std5_008.dxd
9	STD6	Calibration St	6	ic4429.met	std6_009.dxd
10	STD7	Calibration St	7	ic4429.met	std7_010.dxd
11	STD8	Calibration St	8	ic4429.met	std8_011.dxd
12	STD9	Calibration St	9	ic4429.met	std9_012.dxd
16	ICB	Sample		ic4429.met	icb_016.dxd
19	ICV	Sample		ic4429.met	icv_019.dxd

Calibration Concentrations

Instrument:	DX-120 (2)	Cal. File:	IC4429		ICV	IC4419 IC4431	Analyst/Date: TMG 10/31/2022			
Analyte	Cal Level 1 (mg/L)	Cal Level 2 (mg/L)	Cal Level 3 (mg/L)	Cal Level 4 (mg/L)	Cal Level 5 (mg/L)	Cal Level 6 (mg/L)	Cal Level 7 (mg/L)	Cal Level 8 (mg/L)	Cal Level 9 (mg/L)	ICV (mg/L)
Fluoride	0.0	0.1	0.30	0.5	1.0	2.0	5.0			3.5
Chloride	0.0	0.5	0.75	1.0	5.0	10.0	20.0	30.0	40.0	15.0
Bromide	0.0	0.1	0.30	0.5	1.0	2.0	5.0			3.5
Nitrite	0.0	0.1	0.30	0.5	1.0	2.0	5.0			3.5
Nitrate	0.0	0.1	0.30	0.5	1.0	2.0	5.0	7.0		3.5
O-Phosphorous	0.0	0.1	0.30	0.5	1.0	2.0	5.0			3.5
Sulfate	0.0	0.5	0.75	1.0	5.0	10.0	30.0	50.0	70.0	25.0

Rd 11/30/2022

Calibration Update Report

Sample Name : STD1

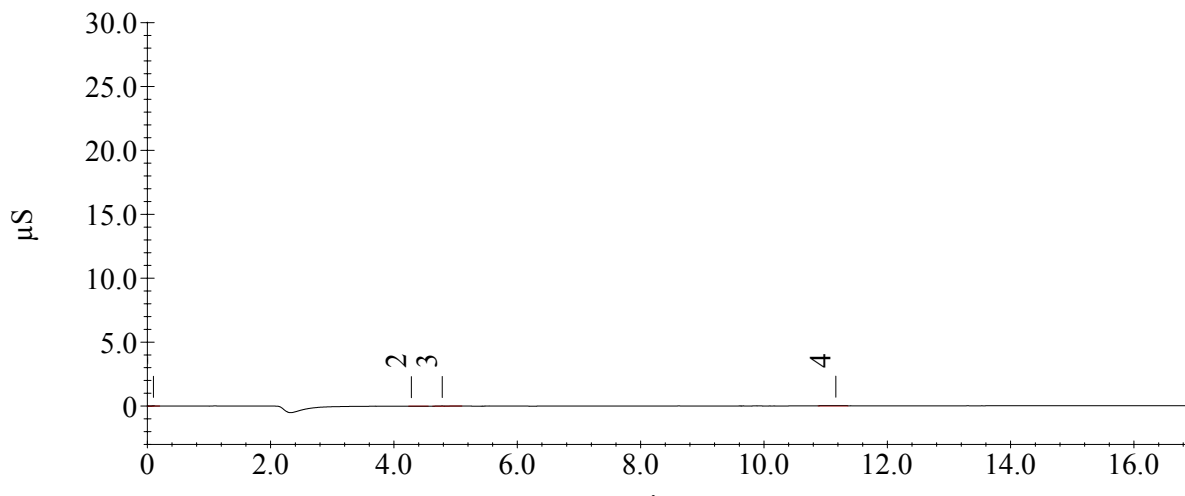
Data File Name : C:\INSTARCH\DATA\SYSTEM 2\103122 -\STD1_004.DXD

Method File Name : c:\instarch\methods\system 2\ic4429.met
Schedule File Name : c:\instarch\sequences\system 2\103122 - ic4429.sch
Date Time Collected : 10/31/22 12:52
Calibration Date : 10/31/22 13:09
System Operator : TMG

Peak Information : All Components

Peak #	Component Name	Retention Time	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
3	Chloride	4.78	0	2074	2074
4	O.Phos	11.17	0	1376	1376

STD1



Calibration Update Report

Sample Name : STD5

Data File Name : C:\INSTARCH\DATA\SYSTEM 2\103122 -\STD5_008.DXD

Method File Name : c:\instarch\methods\system 2\ic4429.met

Schedule File Name : c:\instarch\sequences\system 2\103122 - ic4429.sch

Date Time Collected : 10/31/22 14:09

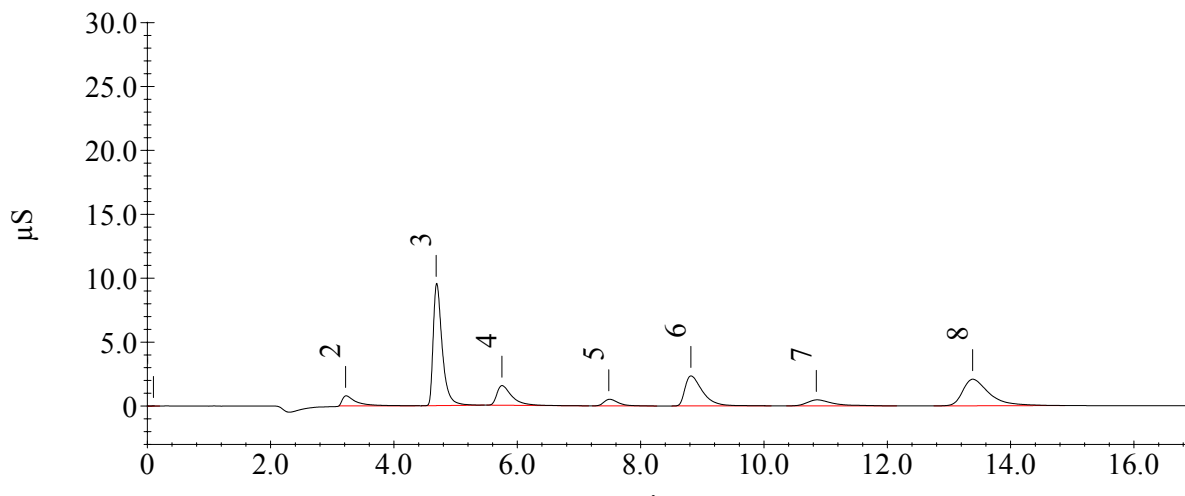
Calibration Date : 10/31/22 14:26

System Operator : TMG

Peak Information : All Components

Peak #	Component Name	Retention Time	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
2	Fluoride	3.22	0	124279	124279
3	Chloride	4.68	0	966865	966865
4	Nitrite	5.75	0	259453	259453
5	Bromide	7.48	0	83785	83785
6	Nitrate	8.82	0	463577	463577
7	O.Phos	10.85	0	138520	138520
8	Sulfate	13.38	0	620958	620958

STD5



Calibration Update Report

Sample Name : STD6

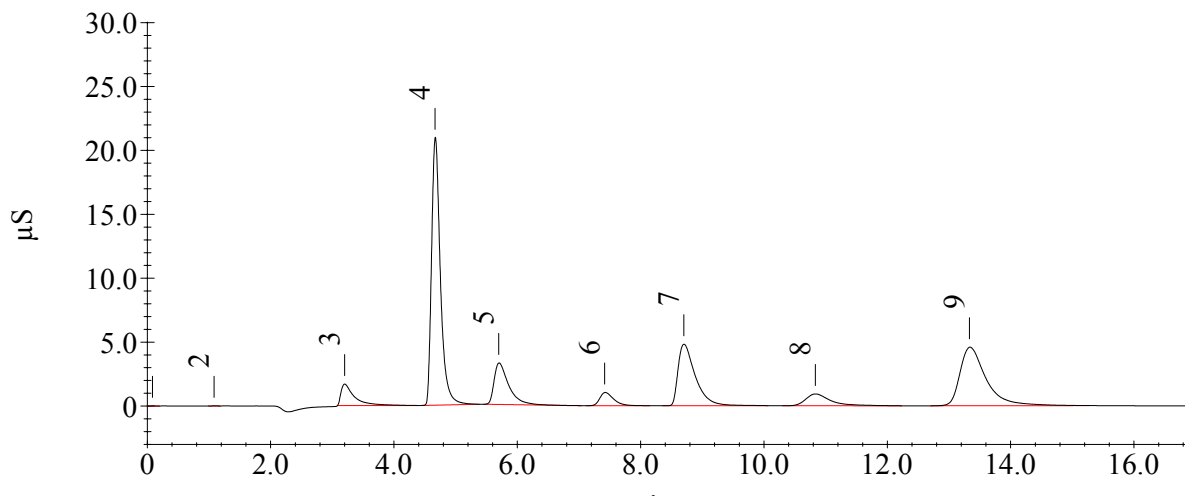
Data File Name : C:\INSTARCH\DATA\SYSTEM 2\103122 -\STD6_009.DXD

Method File Name : c:\instarch\methods\system 2\ic4429.met
Schedule File Name : c:\instarch\sequences\system 2\103122 - ic4429.sch
Date Time Collected : 10/31/22 14:28
Calibration Date : 10/31/22 14:45
System Operator : TMG

Peak Information : All Components

Peak #	Component Name	Retention Time	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
3	Fluoride	3.20	0	257541	257541
4	Chloride	4.67	0	2070790	2070790
5	Nitrite	5.70	0	531142	531142
6	Bromide	7.42	0	161497	161497
7	Nitrate	8.70	0	933734	933734
8	O.Phos	10.83	0	260177	260177
9	Sulfate	13.33	0	1345254	1345254

STD6



Calibration Update Report

Sample Name : STD7

Data File Name : C:\INSTARCH\DATA\SYSTEM 2\103122 -\STD7_010.DXD

Method File Name : c:\instarch\methods\system 2\ic4429.met

Schedule File Name : c:\instarch\sequences\system 2\103122 - ic4429.sch

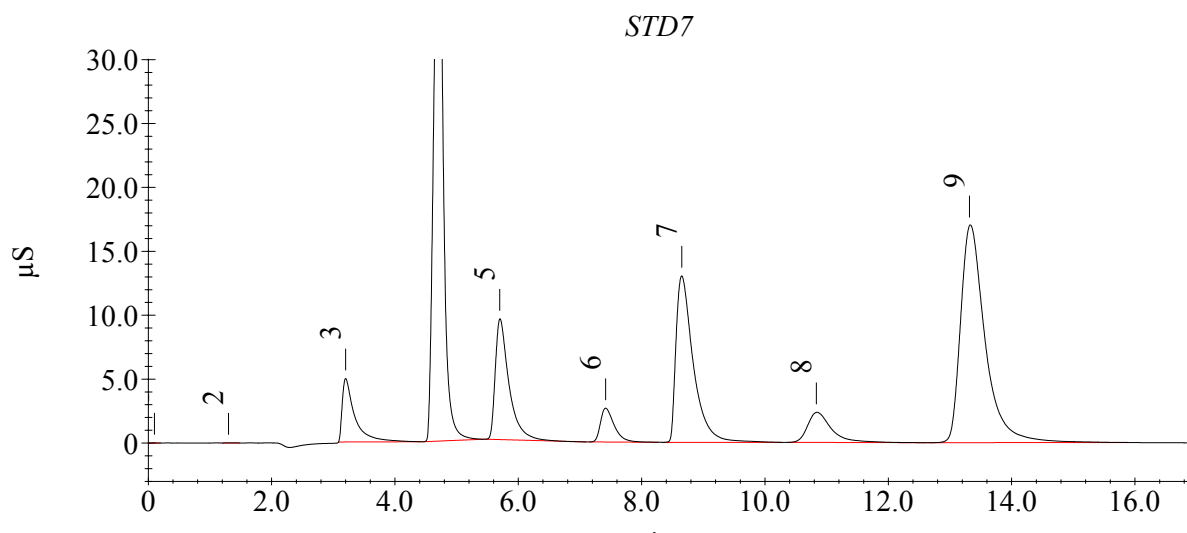
Date Time Collected : 10/31/22 14:47

Calibration Date : 10/31/22 15:04

System Operator : TMG

Peak Information : All Components

Peak #	Component Name	Retention Time	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
3	Fluoride	3.20	0	701888	701888
4	Chloride	4.70	0	4922856	4922856
5	Nitrite	5.70	0	1457843	1457843
6	Bromide	7.42	0	409419	409419
7	Nitrate	8.65	0	2538123	2538123
8	O.Phos	10.83	0	633374	633374
9	Sulfate	13.32	0	4711014	4711014



Calibration Update Report

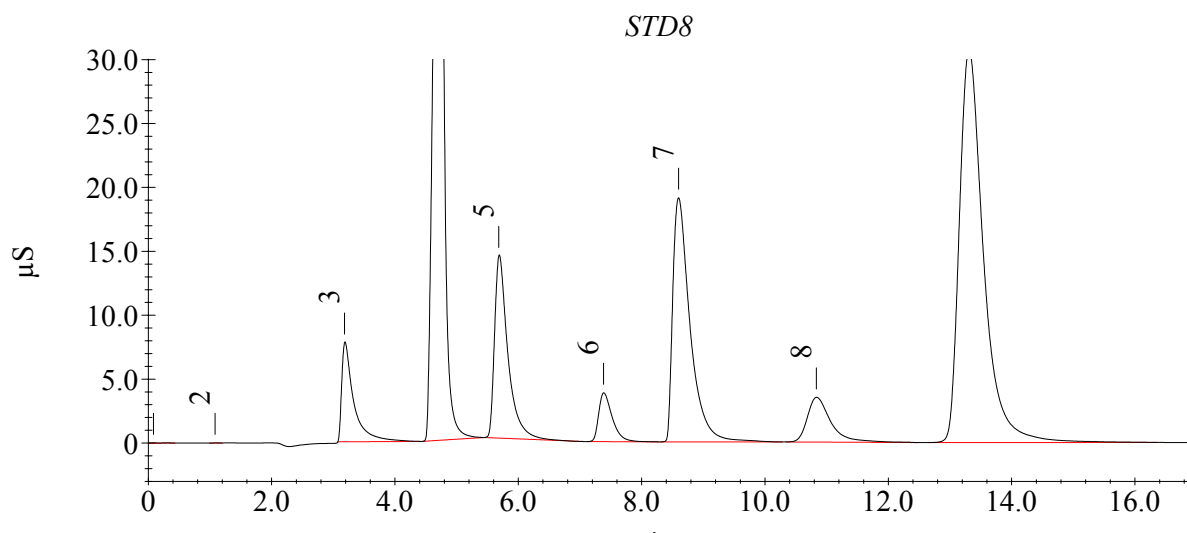
Sample Name : STD8

Data File Name : C:\INSTARCH\DATA\SYSTEM 2\103122 -\STD8_011.DXD

Method File Name : c:\instarch\methods\system 2\ic4429.met
Schedule File Name : c:\instarch\sequences\system 2\103122 - ic4429.sch
Date Time Collected : 10/31/22 15:07
Calibration Date : 10/31/22 15:24
System Operator : TMG

Peak Information : All Components

Peak #	Component Name	Retention Time	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
3	Fluoride	3.18		1052583	
4	Chloride	4.72	0	7447795	7447795
5	Nitrite	5.68		2153344	
6	Bromide	7.38		581733	
7	Nitrate	8.60	0	3723065	3723065
8	O.Phos	10.83		922366	
9	Sulfate	13.30	0	8361825	8361825



Calibration Update Report

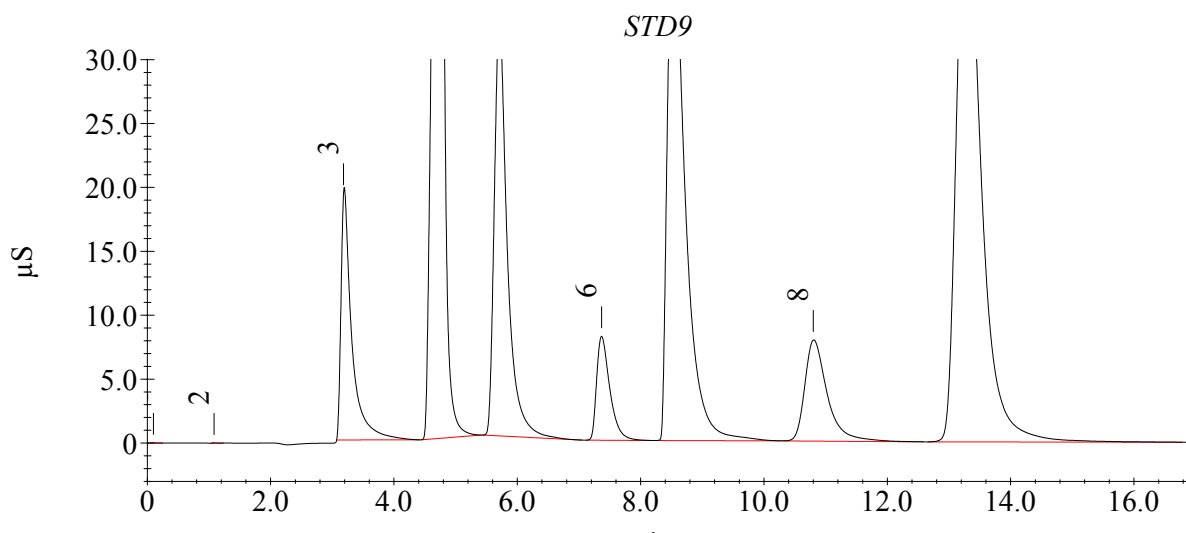
Sample Name : STD9

Data File Name : C:\INSTARCH\DATA\SYSTEM 2\103122 -\STD9_012.DXD

Method File Name : c:\instarch\methods\system 2\ic4429.met
Schedule File Name : c:\instarch\sequences\system 2\103122 - ic4429.sch
Date Time Collected : 10/31/22 15:26
Calibration Date : 10/31/22 15:43
System Operator : TMG

Peak Information : All Components

Peak #	Component Name	Retention Time	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
3	Fluoride	3.18		2384042	
4	Chloride	4.73	0	10208007	10208007
5	Nitrite	5.70		4779544	
6	Bromide	7.37		1211000	
7	Nitrate	8.52		8174131	
8	O.Phos	10.80		1995564	
9	Sulfate	13.28	0	12147893	12147893



Sample Analysis Report

Sample Name : ICB

Data File Name : C:\INSTARCH\DATA\SYSTEM 2\103122 -\ICB_016.DXD

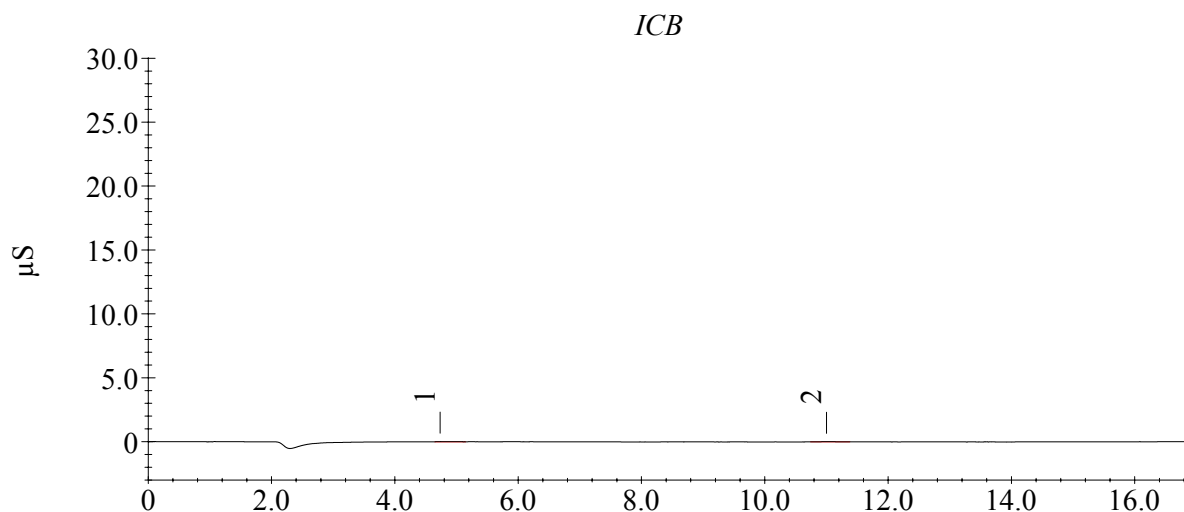
Method File Name : c:\instarch\methods\system 2\ic4429.met

Date Time Collected : 10/31/22 16:43

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
1	Chloride	4.73	0.5780	2169	127	
2	O.Phos	11.00	-0.0216	2357	113	



Sample Analysis Report

Sample Name : ICV

Data File Name : C:\INSTARCH\DATA\SYSTEM 2\103122 -ICV_019.DXD

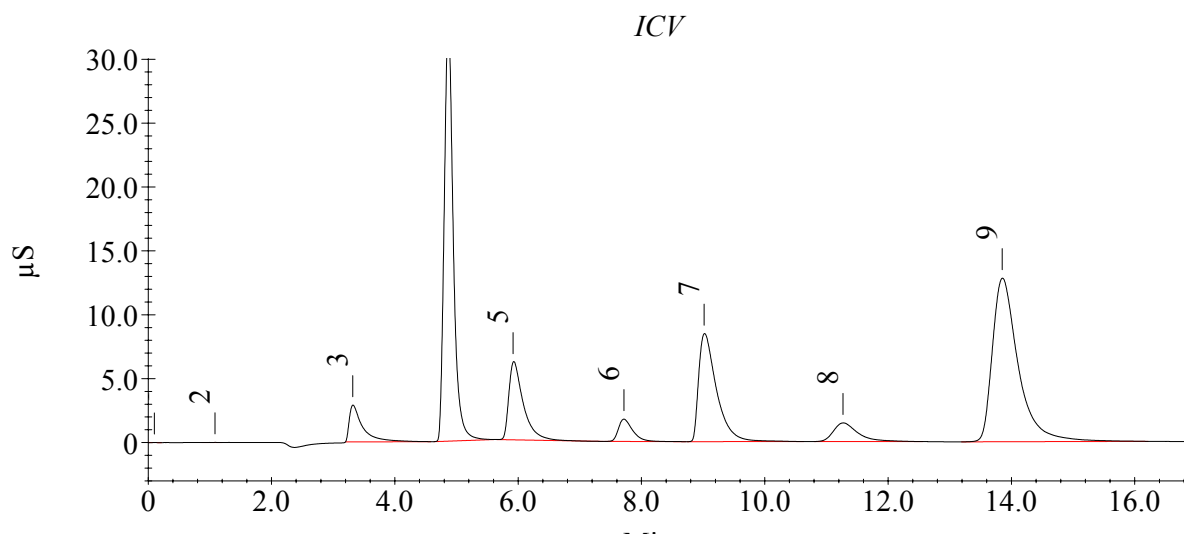
Method File Name : c:\instarch\methods\system 2\ic4429.met

Date Time Collected : 11/1/22 09:41

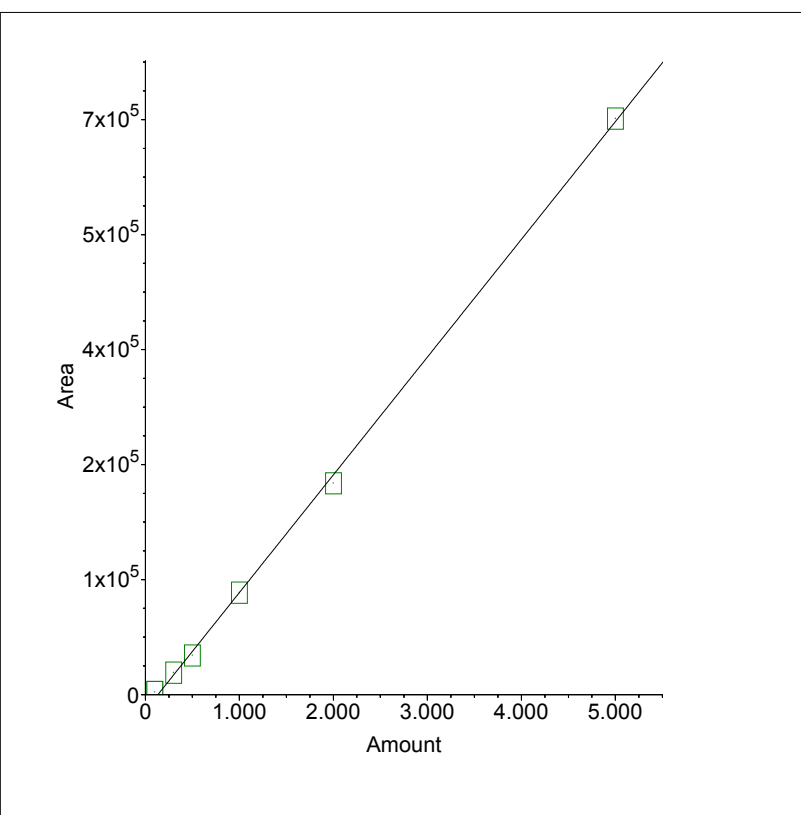
System Operator : TMG

Peak Information : Found Components

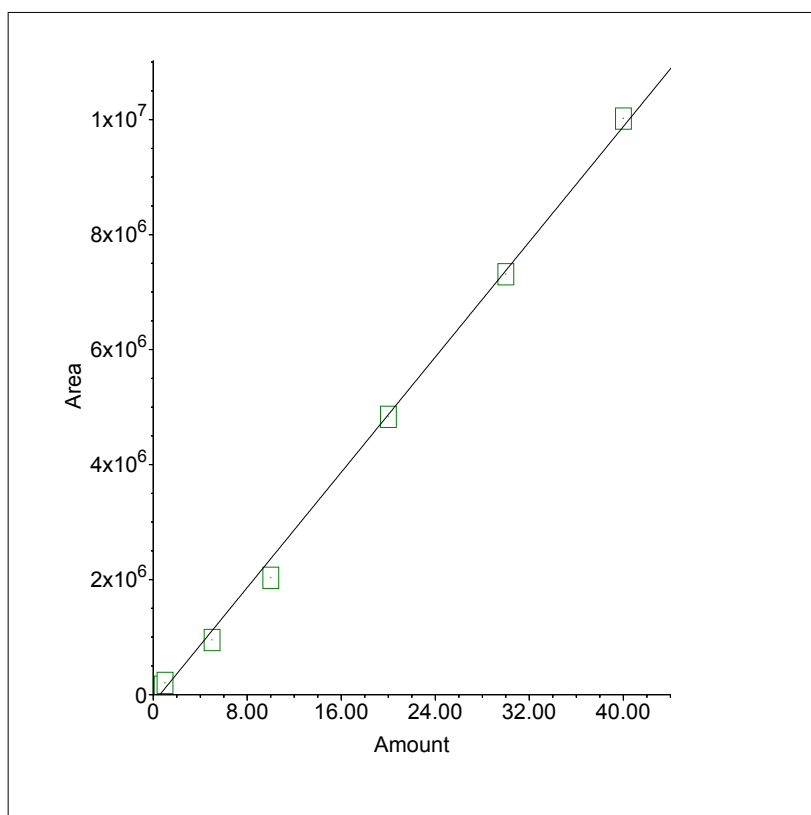
Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
3	Fluoride	3.32	3.1934	438861	28784	
4	Chloride	4.87	13.7061	3353008	327339	
5	Nitrite	5.92	3.4701	995133	60639	
6	Bromide	7.72	3.4514	282135	17437	
7	Nitrate	9.02	3.3174	1702320	84372	
8	O.Phos	11.27	3.1701	405013	14566	
9	Sulfate	13.85	22.6485	3733979	127856	



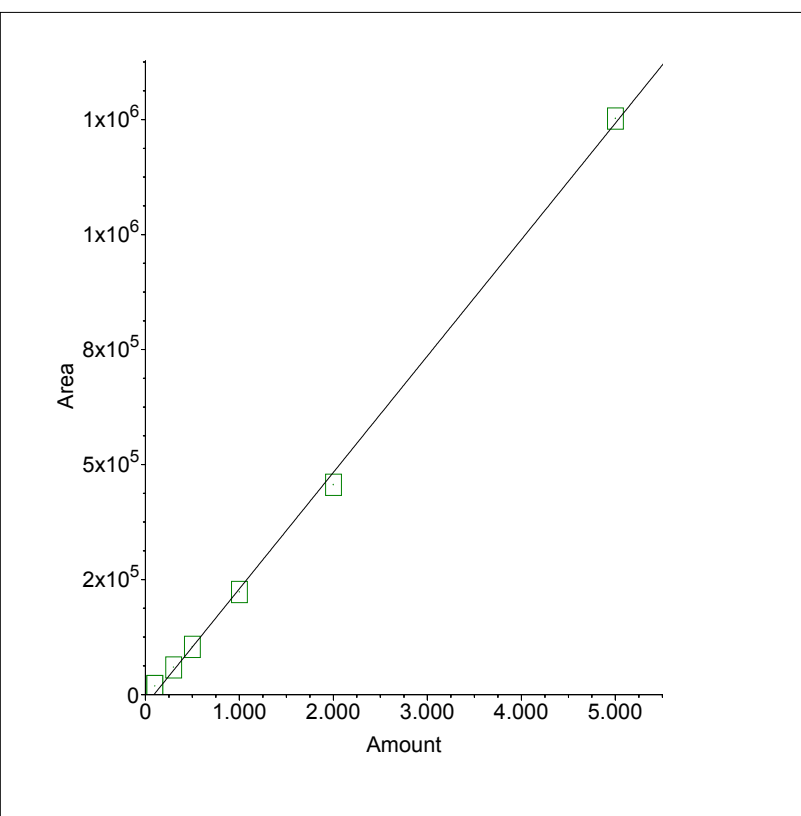
1. Component:Fluoride
Standard:External Fit Type:Linear
Origin:Ignore Calibration:Area
 $r^2=0.999396$
Amt= $6.971e-006$ *Resp+0.1339



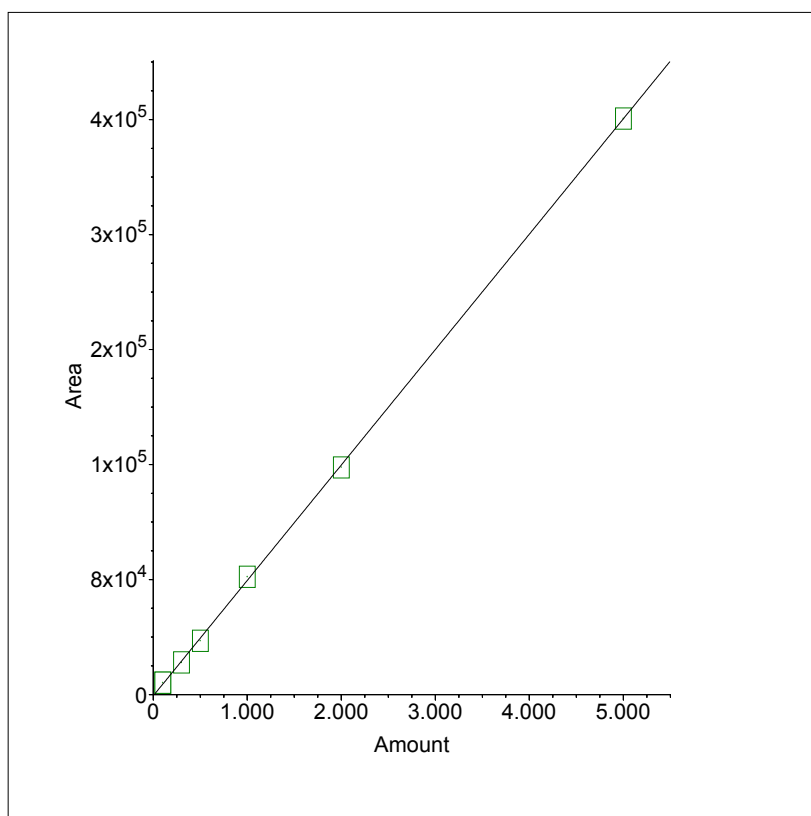
2. Component:Chloride
Standard:External Fit Type:Linear
Origin:Ignore Calibration:Area
 $r^2=0.998069$
Amt= $3.918e-006$ *Resp+0.5695



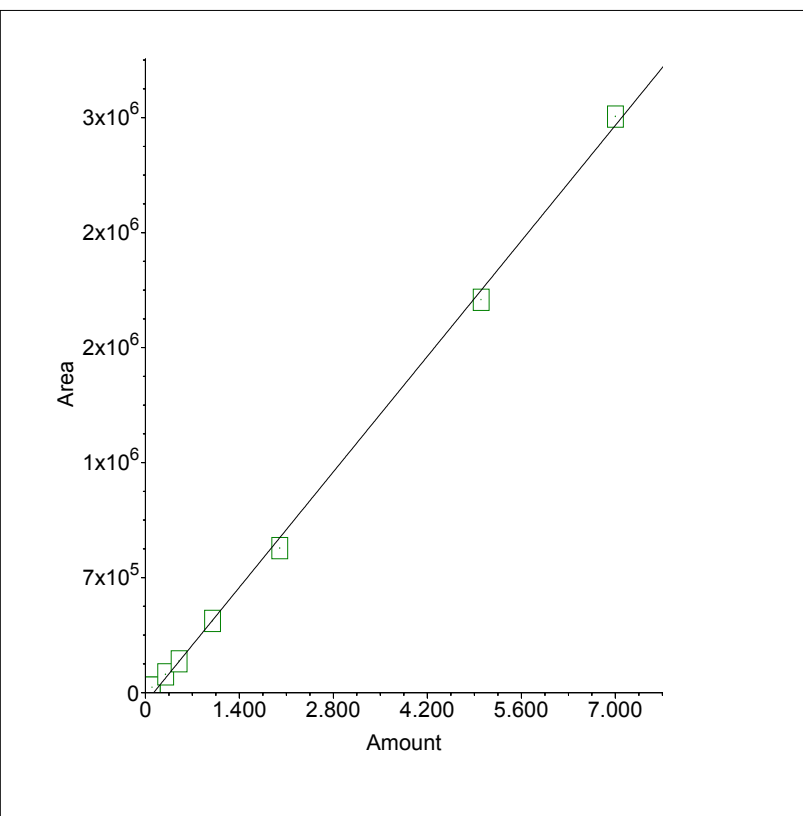
3. Component:Nitrite
Standard:External Fit Type:Linear
Origin:Ignore Calibration:Area
 $r^2=0.998934$
Amt= $3.395e-006$ *Resp+0.09182



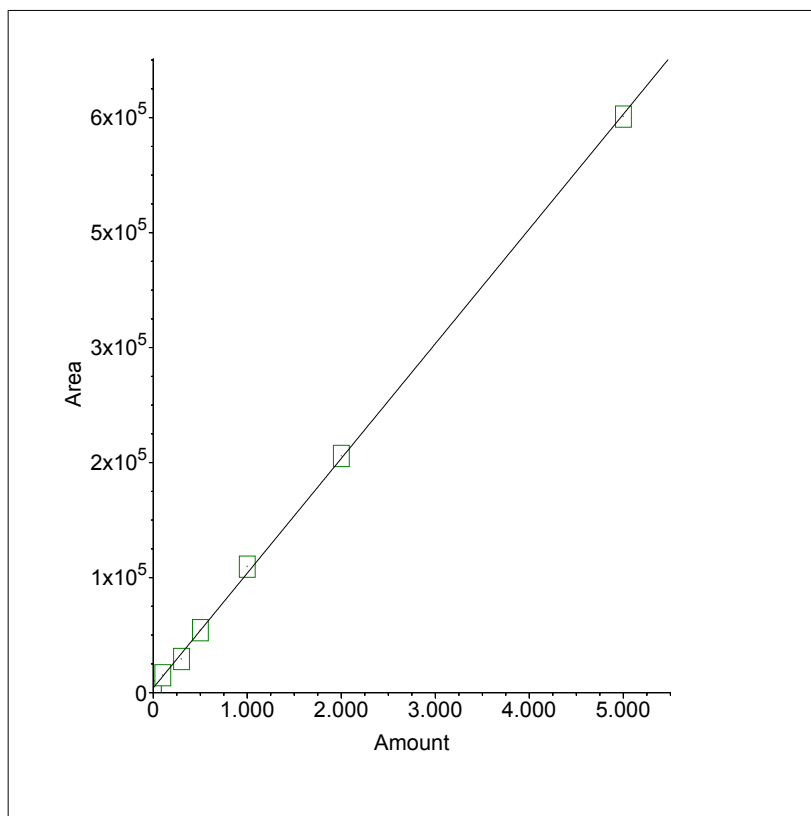
4. Component:Bromide
Standard:External Fit Type:Linear
Origin:Ignore Calibration:Area
 $r^2=0.999867$
Amt= $1.219e-005$ *Resp+0.01159



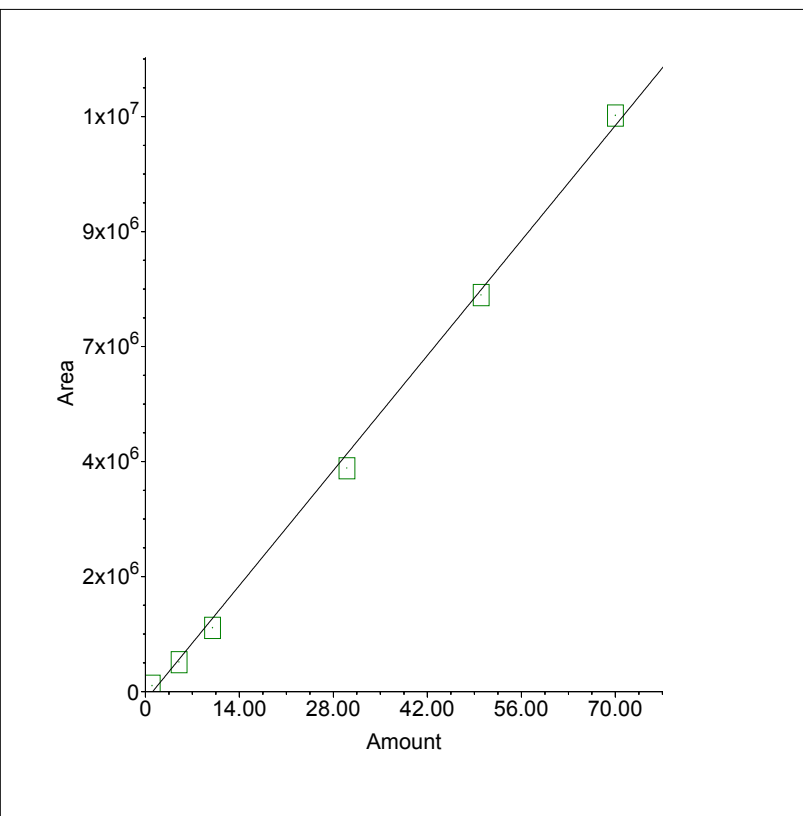
5. Component:Nitrate
 Standard:External Fit Type:Linear
 Origin:Ignore Calibration:Area
 $r^2=0.998844$
 $Amt=1.876e-006*Resp+0.1244$



6. Component:O.Phos
 Standard:External Fit Type:Linear
 Origin:Ignore Calibration:Area
 $r^2=0.999612$
 $Amt=7.927e-006*Resp+-0.0403$



7. Component:Sulfate
 Standard:External Fit Type:Linear
 Origin:Ignore Calibration:Area
 $r^2=0.998282$
 $Amt=5.773e-006*Resp+1.091$



RJ 11/30/2022

Line	Sample	Sample Type	Level	Method
32	CCV	Sample		ic4429.met
33	LCSW	Sample		ic4429.met
34	MBW-CCB	Sample		ic4429.met
35	1282988	Sample		ic4429.met
36	1282989	Sample		ic4429.met
37	1282990	Sample		ic4429.met
38	1282990X5	Sample		ic4429.met
39	DUP1282988	Sample		ic4429.met
40	MSW1282988	Sample		ic4429.met
41	MSDW1282988	Sample		ic4429.met
45	CCV	Sample		ic4429.met
46	CCB	Sample		ic4429.met

Sample Analysis Report

Sample Name : CCV

Data File Name : c:\instarch\data\system 2\012323 -ACCV_032.DXD

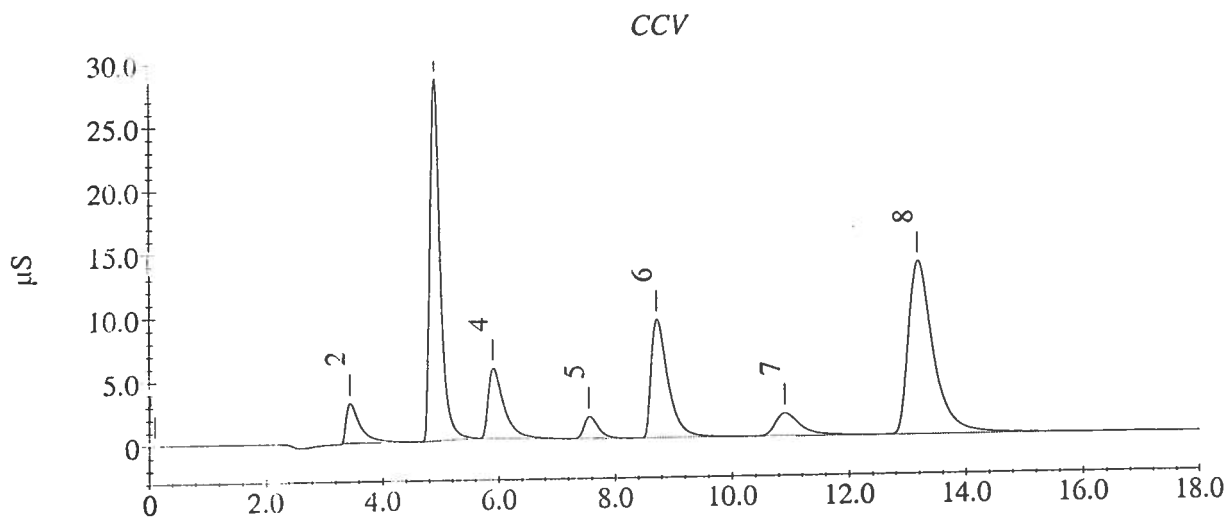
Method File Name : c:\instarch\methods\system 2\ic4429.met

Date Time Collected : 1/24/23 13:20

System Operator : TMO

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
2	Fluoride	3.45	3.7955	525221	30984	
3	Chloride	4.90	14.5134	3559075	284273	
4	Nitrite	5.90	3.6338	1043372	54600	
5	Bromide	7.55	3.5987	294225	17116	
6	Nitrate	8.72	3.6710	1890840	92934	
7	O.Phos	10.90	4.2359	539462	17873	
8	Sulfate	13.17	24.5736	4067434	136157	



Sample Analysis Report

Sample Name : LCSW

Data File Name : c:\instarch\data\system 2\012323 -LCSW_033.DXD

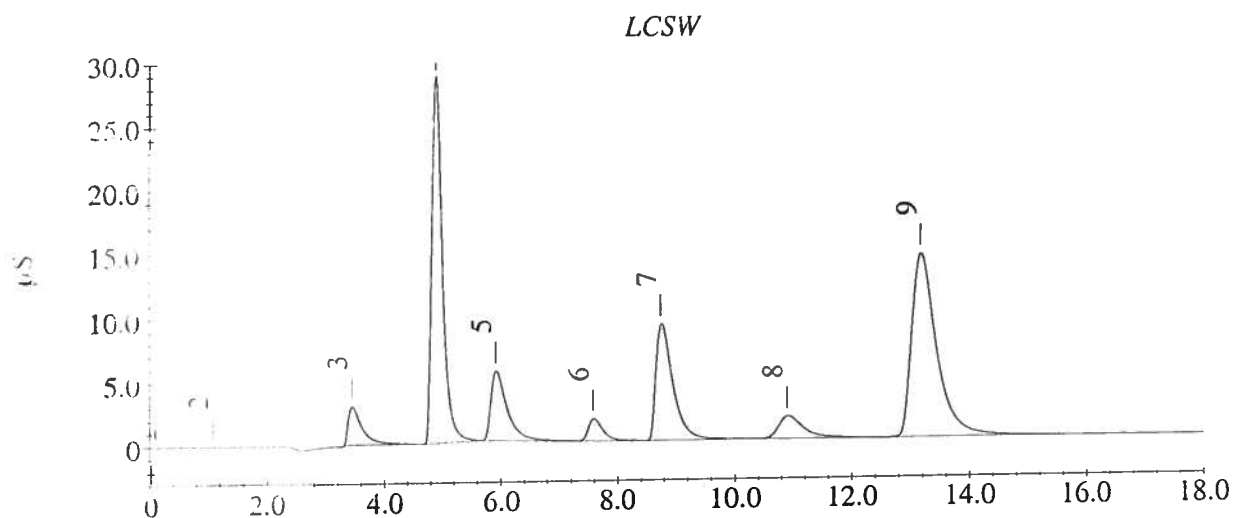
Method File Name : c:\instarch\methods\system 2\ic4429.met

Date Time Collected : 1/24/23 13:40

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
3	Fluoride	3.45	3.7341	516424	30250	
4	Chloride	4.90	14.7893	3629482	285837	
5	Nitrite	5.92	3.6479	1047516	54522	
6	Bromide	7.58	3.6652	299671	17388	
7	Nitrate	8.75	3.6285	1868158	90970	
8	O.P.hos	10.90	4.1674	530816	17618	
9	Sulfate	13.18	25.5531	4237085	142891	



Sample Analysis Report

Sample Name : MBW-CCB

Data File Name : c:\instarch\data\system 2\012323 -MBW-CCB_034.DXD

Method File Name : c:\instarch\methods\system 2\ic4429.met

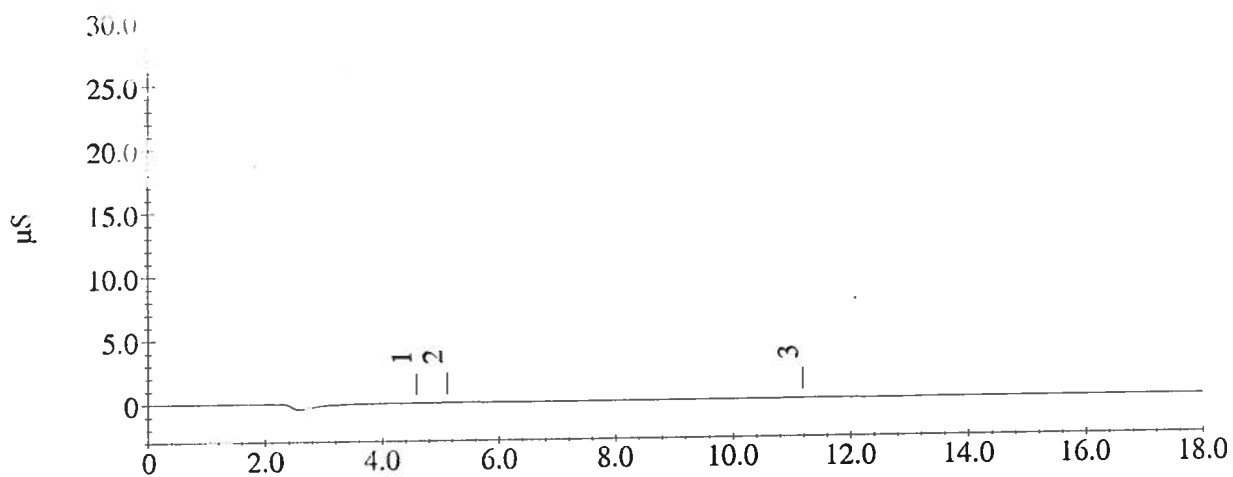
Date Time Collected : 1/24/23 14:01

System Operator : TMO

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
2	Chloride	5.12	0.5789	2391	166	
3	O.Phos	11.18	0.0058	5815	172	

MBW-CCB



Sample Analysis Report

Sample Name : 1282988

Data File Name : c:\instarch\data\system 2012323 -A1282988_035.DXD

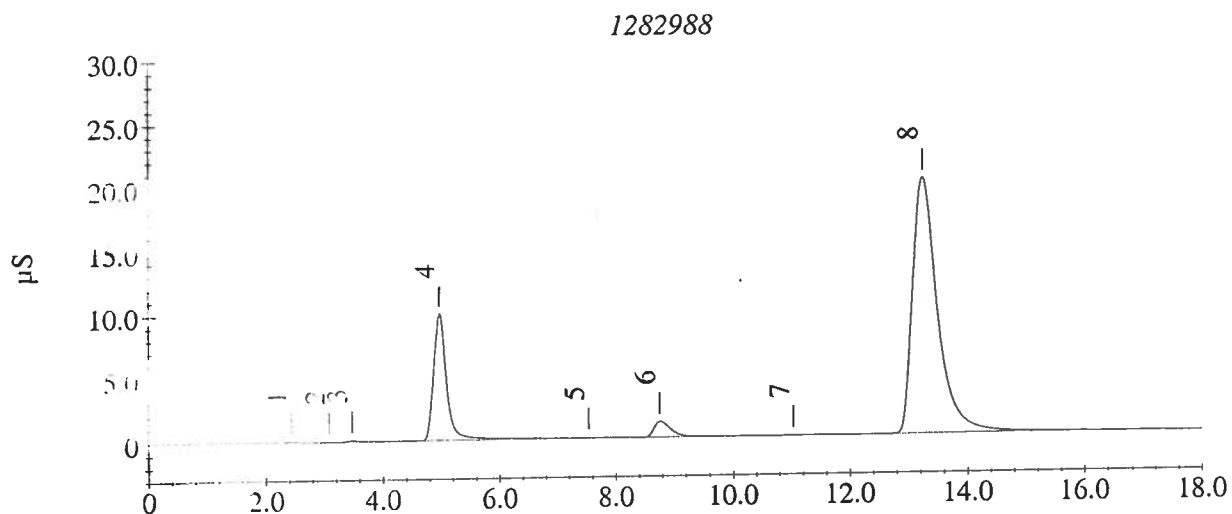
Method File Name : c:\instarch\methods\system 2\ic4429.met

Date Time Collected : 1/24/23 14:21

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
3	Fluoride	3.47	0.2465	16148	978	
4	Chloride	4.97	6.6745	1558257	98602	
5	Bromide	7.53	0.0283	1369	103	
6	Nitrate	8.75	0.5749	240170	12110	
7	O.Phos	11.03	-0.0252	1908	119	
8	Sulfate	13.23	35.1235	5894816	202022	



Sample Analysis Report

Sample Name : 1282989

Data File Name : c:\msd\chdata\system 2\012323 -A1282989_036.DXD

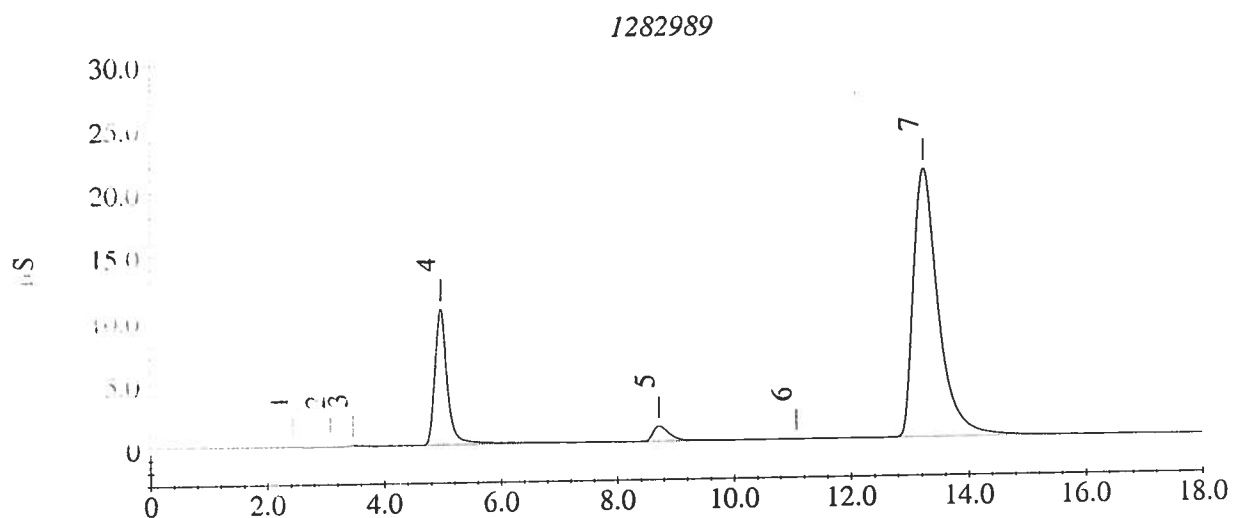
Method File Name : c:\msd\chdata\system 2\ic4429.met

Date Time Collected : 1/26/23 14:41

System Operator : TMO

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
3	Fluoride	3.45	0.2452	15953	991	
4	Chloride	4.97	6.7763	1584239	106552	
5	Nitrate	8.72	0.5590	231726	11859	
6	O.Phos	11.07	-0.0291	1415	93	
7	Sulfate	13.23	36.8462	6193208	210915	



Sample Analysis Report

Sample Name : 1282990

Data File Name : c:\instarch\data\system 2\012323 -\1282990_037.DXD

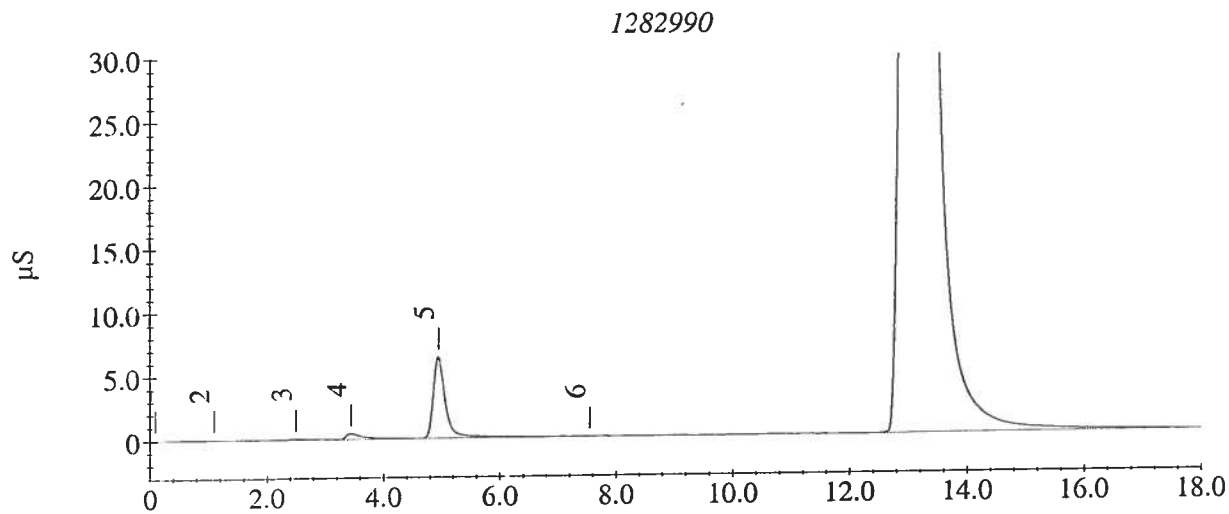
Method File Name : c:\instarch\methods\system 2\ic4429.met

Date Time Collected : 1/24/23 15:02

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
4	Fluoride	3.45	0.7380	86654	4379	
5	Chloride	4.95	4.2182	931288	63353	
6	Bromide	7.55	0.0413	2438	116	
7	Sulfate	13.10	240.6543	41495515	1315116	+



Sample Analysis Report

Sample Name : 1282990X5

Data File Name : c:\instarch\data\system 2\012323 -1282990X5_038.DXD

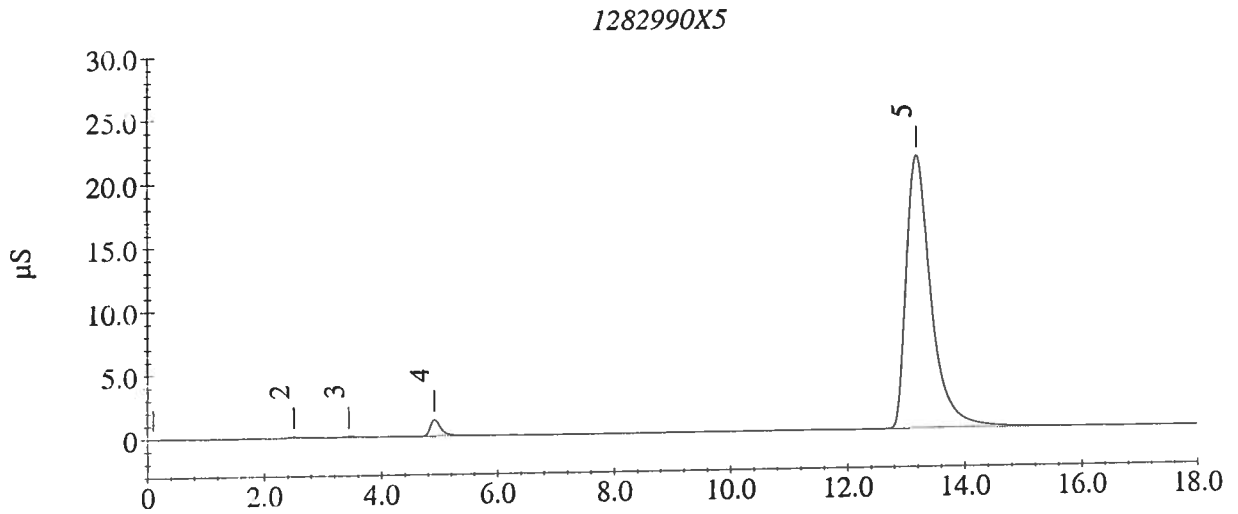
Method File Name : c:\instarch\methods\system 2\ic4429.net

Date Time Collected : 1/24/23 15:22

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
3	Fluoride	3.43	0.2338	14325	778	
4	Chloride	4.90	1.2545	174830	12866	
5	Sulfate	13.17	37.6503	6332496	214684	



Sample Analysis Report

Sample Name : DUP1282988

Data File Name : c:\instarch\data\system 2\012323 -DUP1282988_039.DXD

Method File Name : c:\instarch\methods\system 2\ic4429.met

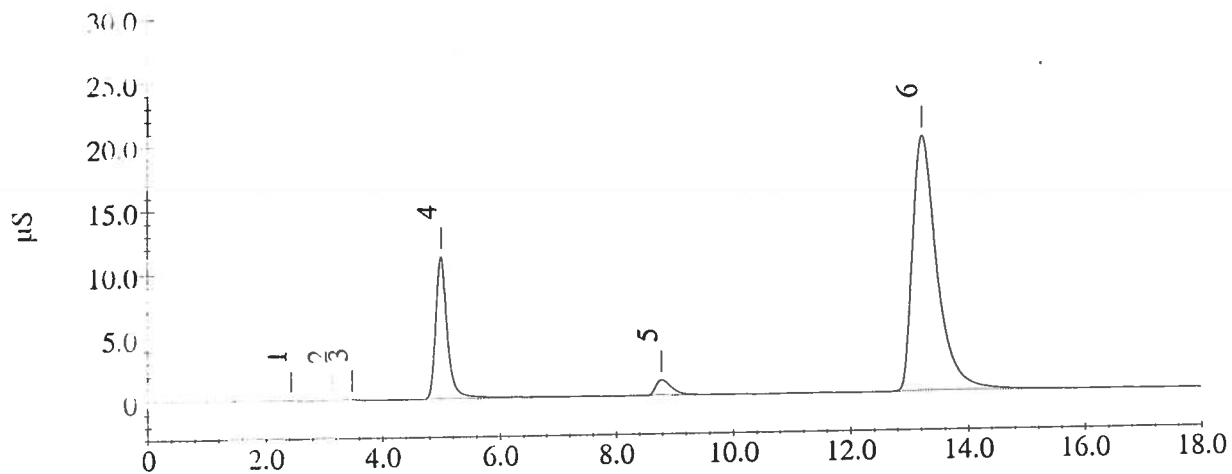
Date Time Collected : 1/23/23 15:42

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
3	Fluoride	3.48	0.2514	16846	1026	
4	Chloride	5.00	6.6913	1562528	111986	
5	Nitrate	8.78	0.5665	235676	12321	
6	Sulfate	13.22	34.9740	5868918	201210	

DUP1282988



Sample Analysis Report

Sample Name : MSW1282988

Data File Name : c:\instarch\data\system 2\012323 -MSW1282988_040.DXD

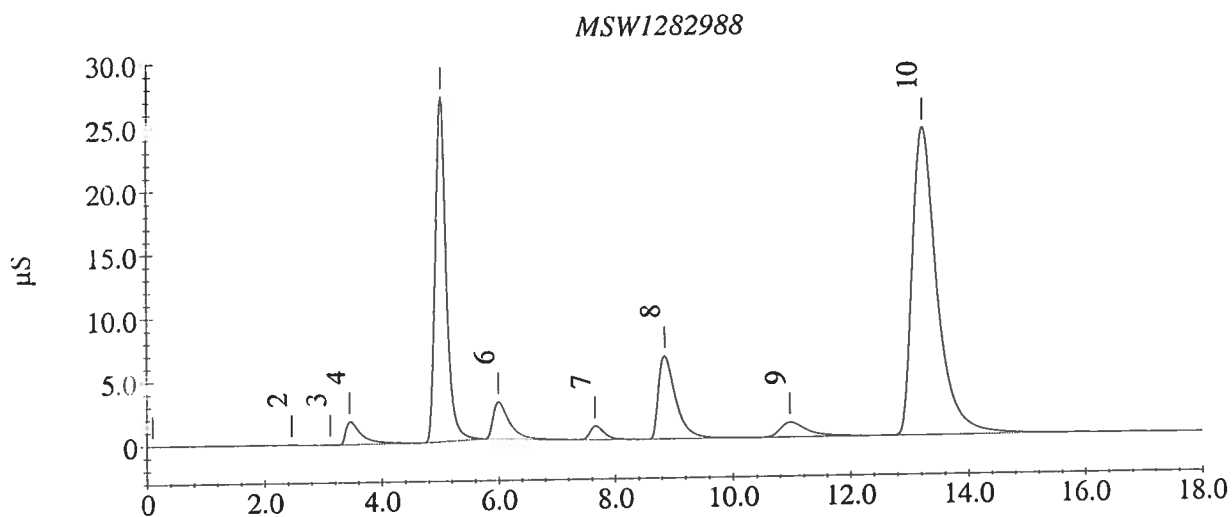
Method File Name : c:\instarch\methods\system 2\ic4429.met

Date Time Collected : 1/24/23 16:02

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
4	Fluoride	3.45	2.4902	337994	17614	
5	Chloride	5.02	14.3276	3511653	270264	
6	Nitrite	6.00	1.9829	557069	29054	
7	Bromide	7.65	2.1896	178645	10419	
8	Nitrate	8.85	2.6103	1325302	65056	
9	O.Phos	10.97	2.8710	367274	11329	
10	Sulfate	13.22	41.8254	7055677	242037	



Sample Analysis Report

Sample Name : MSDW1282988

Data File Name : c:\instarch\data\system 2\012323 -AMSDW1282988_041.DXD

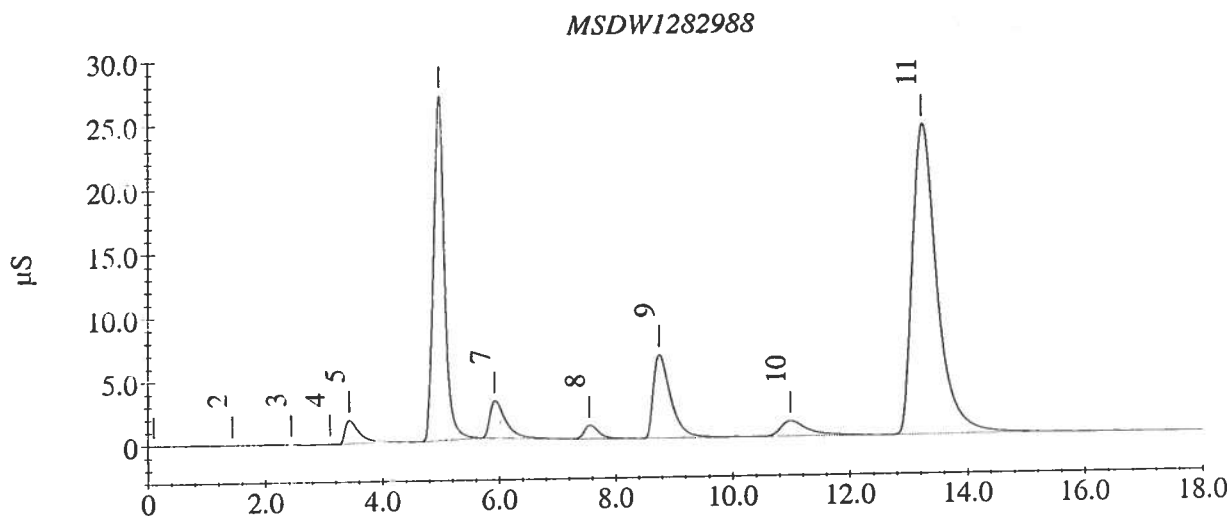
Method File Name : c:\instarch\methods\system 2\ic4429.met

Date Time Collected : 1/24/23 16:22

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
5	Fluoride	3.43	2.5335	344198	18583	
6	Chloride	4.97	14.4138	3533648	269848	
7	Nitrite	5.92	1.9902	559212	29229	
8	Bromide	7.55	2.2608	184487	10535	
9	Nitrate	8.75	2.6646	1354286	65566	
10	O.Phos	10.98	3.1731	405383	12144	
11	Sulfate	13.22	41.9094	7070226	243376	



: PeakNet 5.2

Page 1 of 1

Current Date : 1/2
Current Time : 16:4

Sample Analysis Report

Sample Name : CCV

Data File Name : c:\instarch\data\system 2\012323 -ACCV_045.DXD

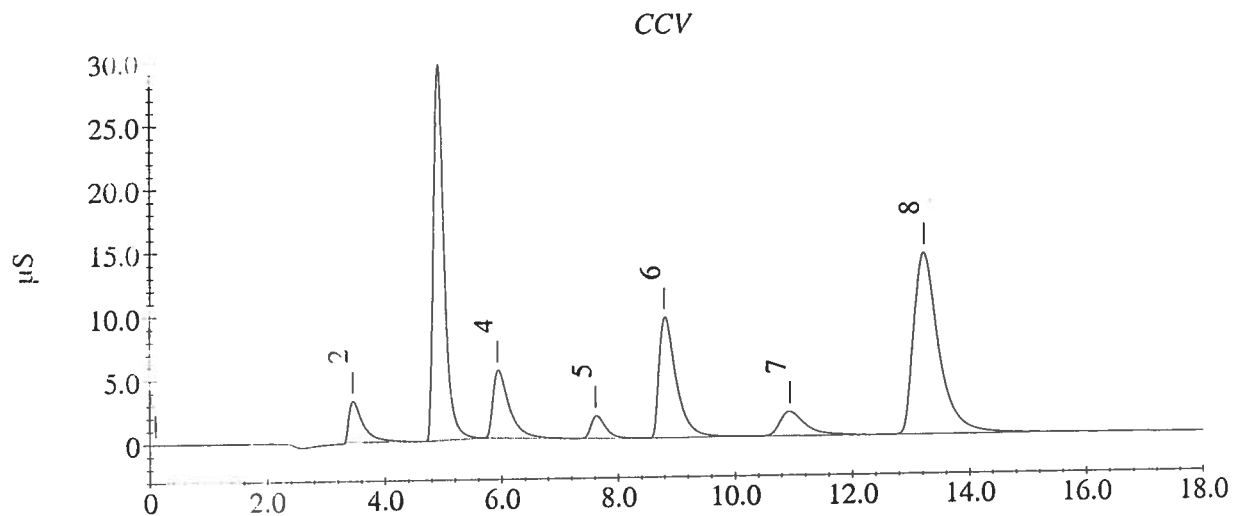
Method File Name : c:\instarch\methods\system 2\ic4429.met

Date Time Collected : 1/24/23 17:43

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
2	Fluoride	3.45	4.0089	555834	32085	
3	Chloride	4.92	15.0867	3705385	293610	
4	Nitrite	5.93	3.6072	1035540	52795	
5	Bromide	7.62	3.7176	303976	17440	
6	Nitrate	8.80	3.7649	1940868	93838	
7	O-Phos	10.93	4.5462	578604	18845	
8	Sulfate	13.22	25.3340	4199139	141756	



Sample Analysis Report

Sample Name : CCB

Data File Name : c:\instarch\data\system 2\012323 -ACCB_046.DXD

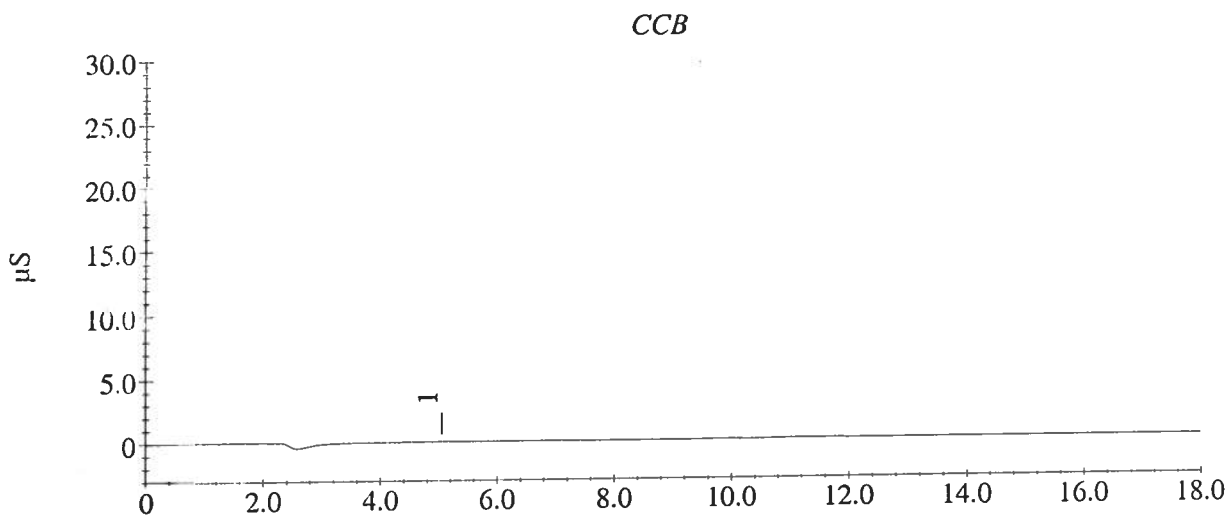
Method File Name : c:\instarch\methods\system 2\ic4429.met

Date Time Collected : 1/24/23 18:04

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
1	Chloride	5.05	0.5746	1305	87	



Line	Sample	Sample Type	Level	Method
13	CCV	Sample		system 2\ic4429.met
14	LCSW	Sample		system 2\ic4429.met
15	MBW-CCB	Sample		system 2\ic4429.met
22	1283772	Sample		system 2\ic4429.met
23	DUP1283772	Sample		system 2\ic4429.met
24	MSW1283772	Sample		system 2\ic4429.met
25	MSDW1283772	Sample		system 2\ic4429.met
26	CCV	Sample		system 2\ic4429.met
27	CCB	Sample		system 2\ic4429.met
28	1283773	Sample		system 2\ic4429.met
36	CCV	Sample		system 2\ic4429.met
37	CCB	Sample		system 2\ic4429.met

Sample Analysis Report

Sample Name : CCV

Data File Name : c:\instarch\data\system 2\012623 -\CCV_013.DXD

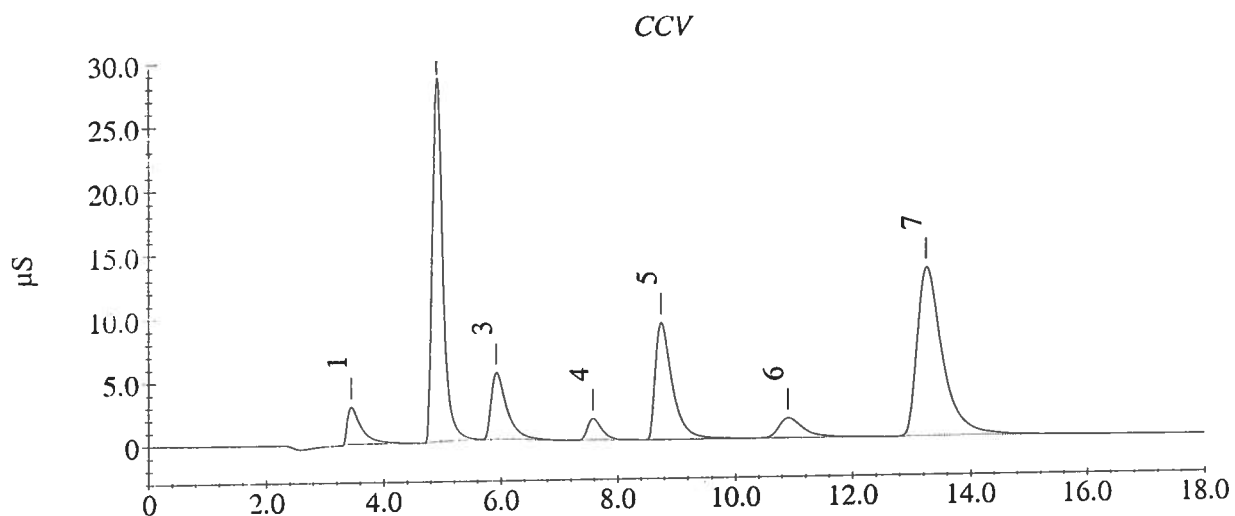
Method File Name : c:\instarch\methods\system 2\ic4429.met

Date Time Collected : 1/26/23 16:42

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
1	Fluoride	3.45	3.6983	511283	29423	
2	Chloride	4.90	14.4987	3555309	281606	
3	Nitrite	5.92	3.5322	1013442	52771	
4	Bromide	7.58	3.6596	299212	17271	
5	Nitrate	8.75	3.6658	1888073	92513	
6	O.Phos	10.90	3.6945	471170	15778	
7	Sulfate	13.25	24.3997	4037311	133208	



: PeakNet 5.2

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Current Date
Current Time :

Sample Analysis Report

Sample Name : LCSW

Data File Name : c:\instarch\data\system 2\012623 -\LCSW_014.DXD

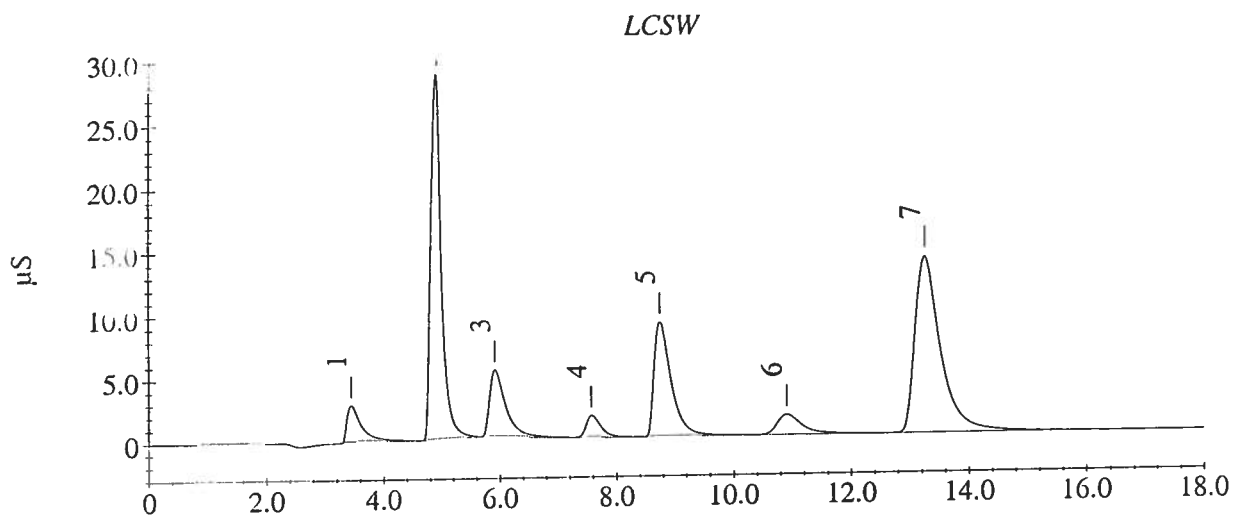
Method File Name : c:\instarch\methods\system 2\ic4429.met

Date Time Collected : 1/26/23 17:03

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
1	Fluoride	3.45	3.6455	503708	28374	
2	Chloride	4.90	14.7453	3618267	288119	
3	Nitrite	5.92	3.5350	1014267	52609	
4	Bromide	7.57	3.6417	297745	17081	
5	Nitrate	8.75	3.6000	1852982	90195	
6	O.Phos	10.90	3.6883	470378	15700	
7	Sulfate	13.25	25.3465	4201297	138510	



: PeakNet 5.2

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Current Dat
Current Time

Sample Analysis Report

Sample Name : MBW-CCB

Data File Name : c:\msdatab\data\system 2\012623 -MBW-CCB_015.DXD

Method File Name : c:\instarchem\methods\system 2\vic4429.met

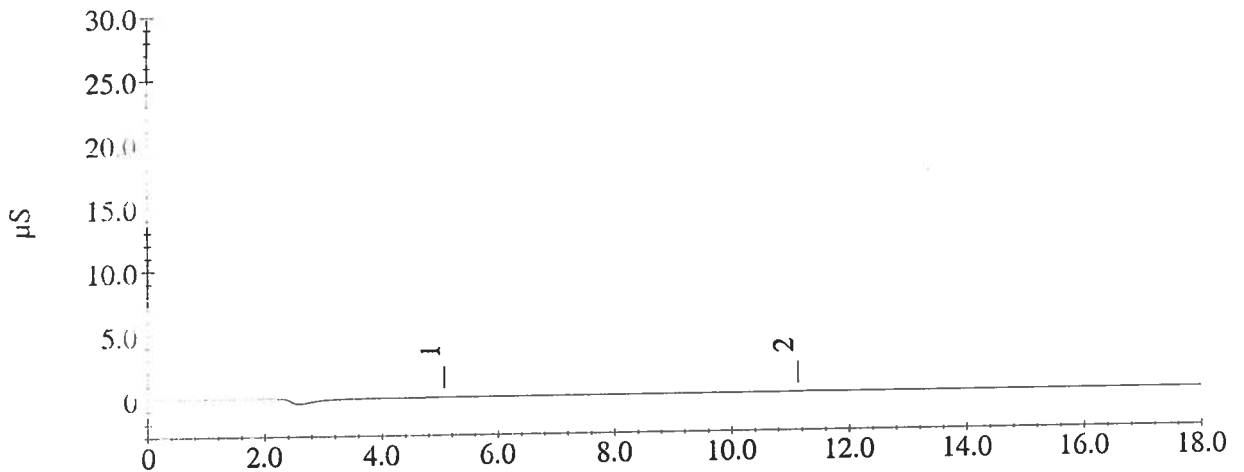
Date Time Collected : 1/26/23 17:23

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
1	Chloride	5.08	0.5755	1535	103	

MBW-CCB



PeakNet 5.2

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Current Date
Current Time

Sample Analysis Report

Not used

Sample Name : 1283674X5

Data File Name : c:\instarch\data\system 2\012623 -\1283674X5_021.DXD

Method File Name : c:\instarch\methods\system 2\ic4429.met

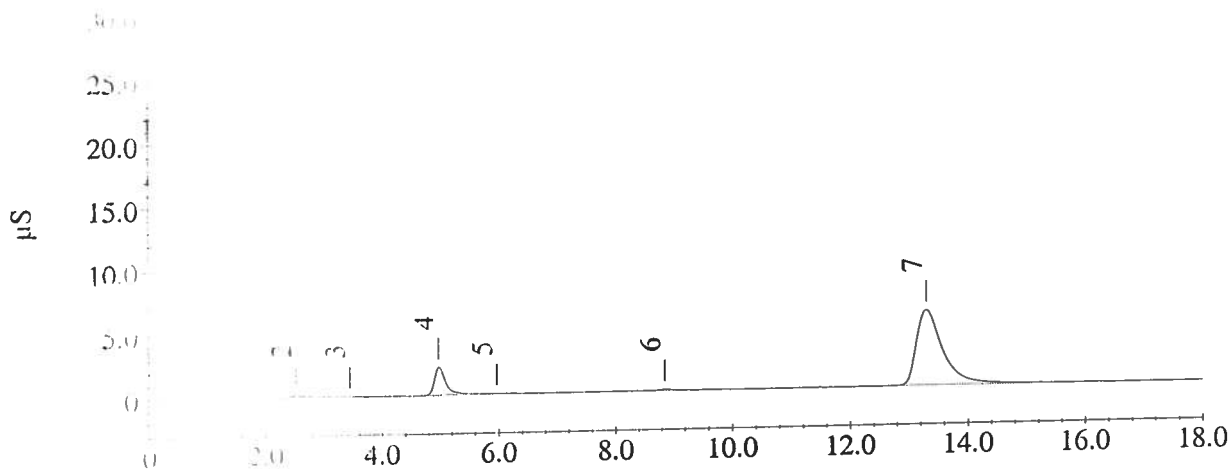
Date Time Collected : 1/26/23 19:24

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
3	Fluoride	3.45	0.1736	5683	360	
4	Chloride	4.97	1.7365	297870	21697	
5	Nitrite	5.97	0.0988	2057	142	
6	Nitrate	8.85	0.1509	14105	806	
7	Sulfate	13.30	11.7759	1850694	59068	

1283674X5



PeakNet 5.2

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Current Date
Current Time

Sample Analysis Report

Sample Name : 1283772

Data File Name : c:\instarch\data\system 2\012623 -\1283772_022.DXD

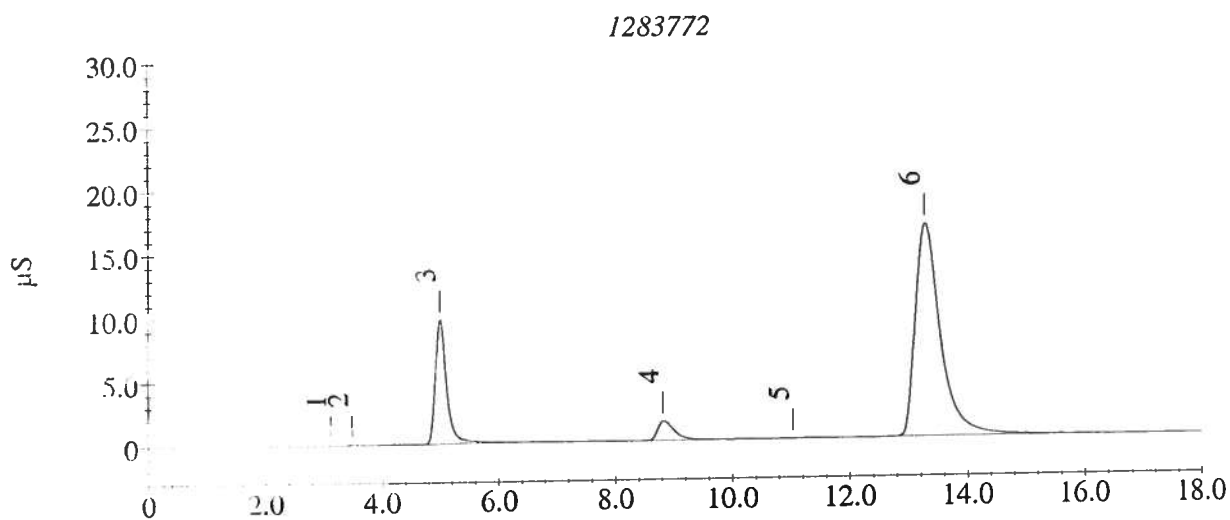
Method File Name : c:\instarch\methods\system 2\ic4429.met

Date Time Collected : 1/26/23 19:44

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
2	Fluoride	3.48	0.2255	13135	789	
3	Chloride	4.98	5.6733	1302706	96936	
4	Nitrate	8.82	0.6817	297109	15162	
5	O.Phos	11.03	-0.0186	2739	92	
6	Sulfate	13.27	29.7160	4958165	166775	



PeakNet 5.2

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Current Date
Current Time :

Sample Analysis Report

Sample Name : DUP1283772

Data File Name : c:\msdarch\data\system 2\012623 -\DUP1283772_023.DXD

Method File Name : c:\msdarch\methods\system 2\vic4429.met

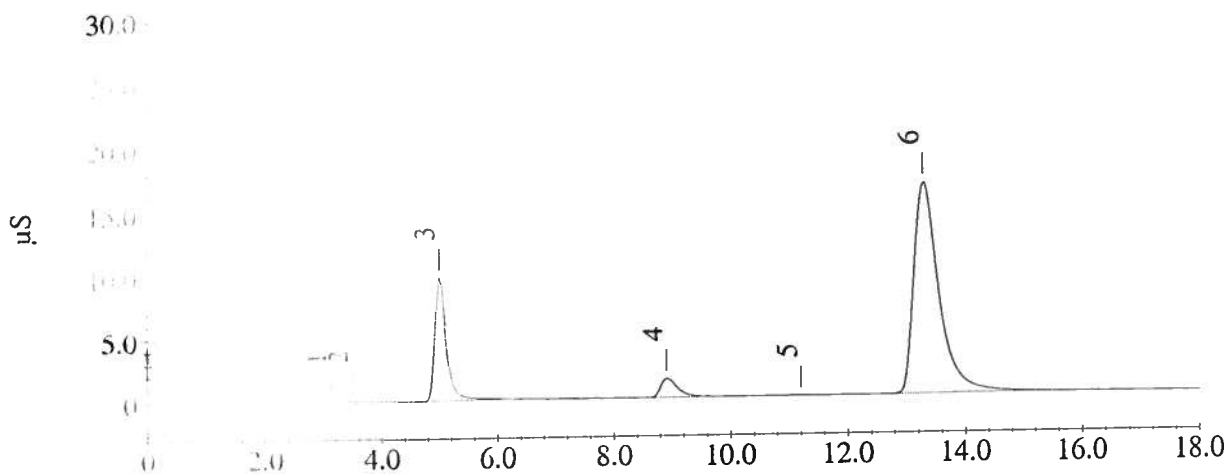
Date Time Collected : 4/26/23 20:05

System Operator : TMO

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
2	Fluoride	3.50	0.2458	16051	830	
3	Chloride	5.00	5.6816	1304812	96927	
4	Nitrate	8.90	0.6779	295104	14989	
5	Ortho	11.20	-0.0231	2167	62	
6	Sulfate	13.28	29.6334	4943862	166161	

DUP1283772



PeakNet 5.2

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Current Date
Current Time

Sample Analysis Report

Sample Name : MSW1283772

Data File Name : c:\instarch\data\system 2\012623 -MSW1283772_024.DXD

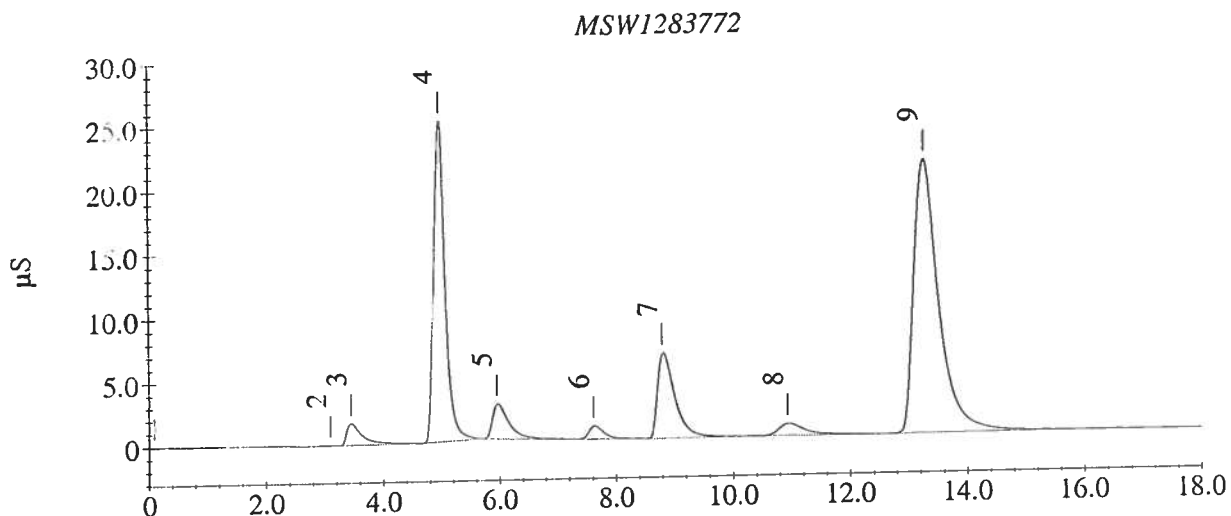
Method File Name : c:\instarch\methods\system 2\ic4429.met

Date Time Collected : 1/26/23 20:25

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
3	Fluoride	3.45	2.3765	321679	16665	
4	Chloride	4.97	13.4858	3296776	251304	
5	Nitrite	5.95	1.9156	537233	27209	
6	Bromide	7.62	2.1793	177802	10202	
7	Nitrate	8.80	2.7160	1381679	66273	
8	O.Phos	10.93	2.2680	291205	9444	
9	Sulfate	13.27	37.3339	6277690	214124	



: PeakNet 5.2

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Current Dat
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Sample Analysis Report

Sample Name : MSDW1283772

Data File Name : c:\instarch\data\system 2\012623 -\MSDW1283772_025.DXD

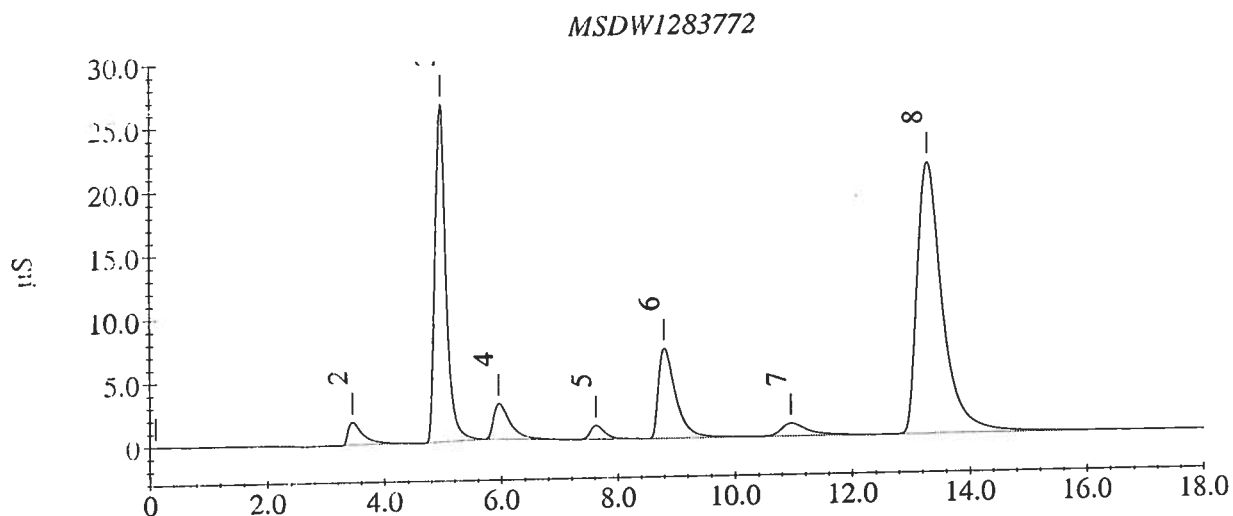
Method File Name : c:\instarch\methods\system 2\nic4429.met

Date Time Collected : 1/26/23 20:45

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
2	Fluoride	3.45	2.3980	324761	17479	
3	Chloride	4.97	14.0489	3440501	265285	
4	Nitrite	5.95	1.9729	554117	27962	
5	Bromide	7.62	2.2986	187582	10814	
6	Nitrate	8.80	2.8561	1456383	70669	
7	O.Phos	10.95	2.4772	317591	9911	
8	Sulfate	13.28	37.6457	6331687	213557	



: PeakNet 5.2

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Current Date
Current Time

Sample Analysis Report

Sample Name : CCV

Data File Name : C:\INSTARCH\DATA\SYSTEM 2\012623 -CCV_026.DXD

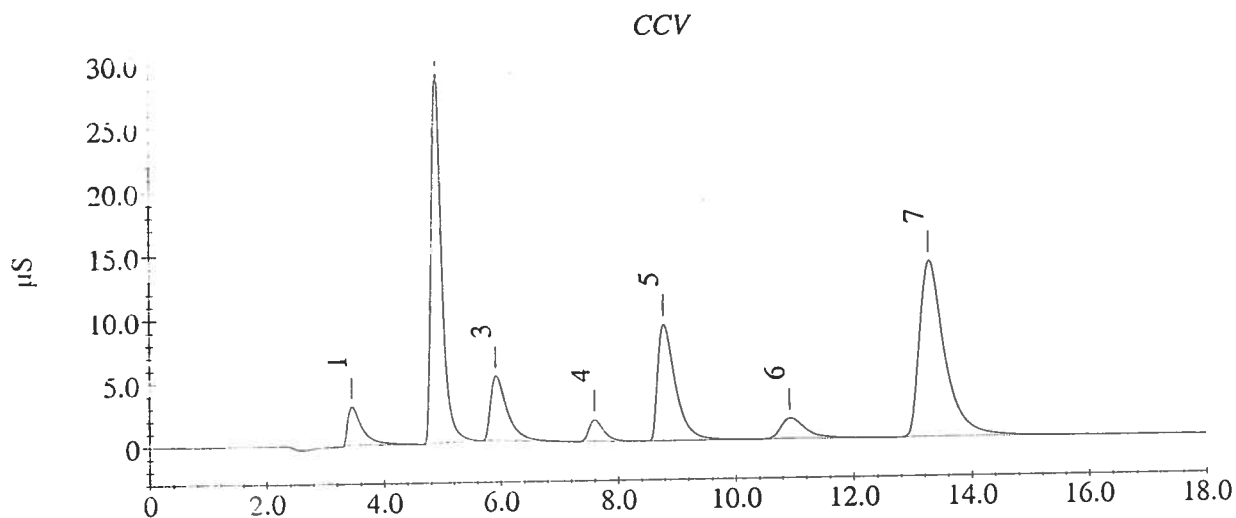
Method File Name : c:\instarch\methods\system 2\ic4429.met

Date Time Collected : 1/26/23 21:05

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
1	Fluoride	3.45	3.7755	522355	30378	
2	Chloride	4.90	15.0006	3683423	288528	
3	Nitrite	5.92	3.5558	1020371	50997	
4	Bromide	7.60	3.7062	303039	17093	
5	Nitrate	8.78	3.7244	1919269	91223	
6	O.Phos	10.92	3.8226	487321	16275	
7	Sulfate	13.28	25.0166	4144160	137795	



: PeakNet 5.2

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Current Dat
Current Time

Sample Analysis Report

Sample Name : CCB

Data File Name : c:\instarch\data\system 2\012623 -\CCB_027.DXD

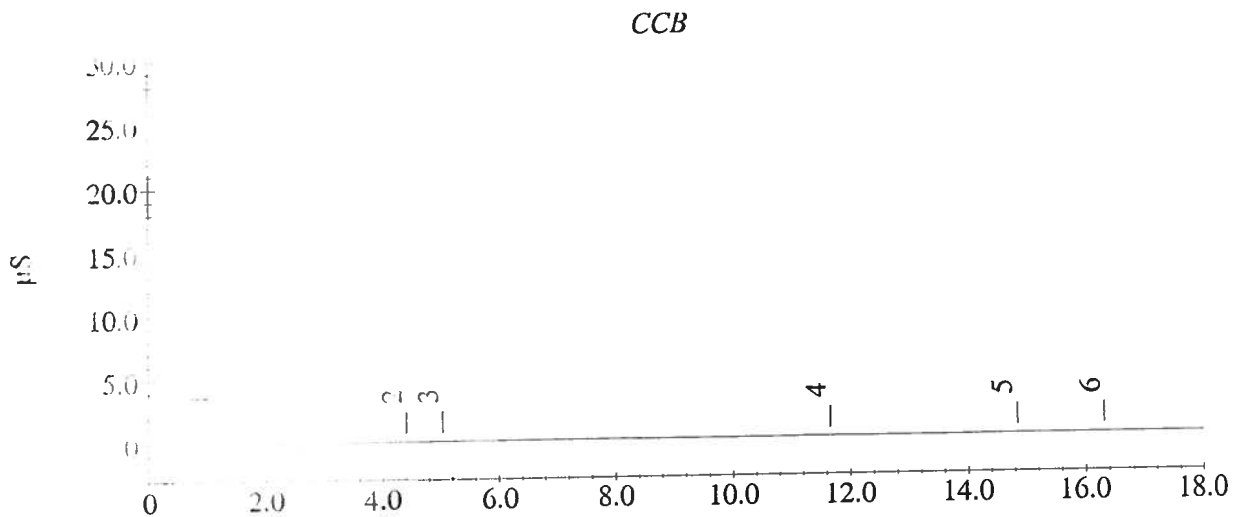
Method File Name : c:\instarch\methods\system 2\ic4429.met

Date Time Collected : 1/26/23 21:26

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
3	Chloride	5.03	0.5838	3636	195	
4	O.Phos	11.67	-0.0001	5075	79	



PeakNet 5.2

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Current Date
Current Time

Sample Analysis Report

Sample Name : 1283773

Data File Name : c:\instarch\data\system 2\012623 -\1283773_028.DXD

Method File Name : c:\instarch\data\system 2\ic4429.met

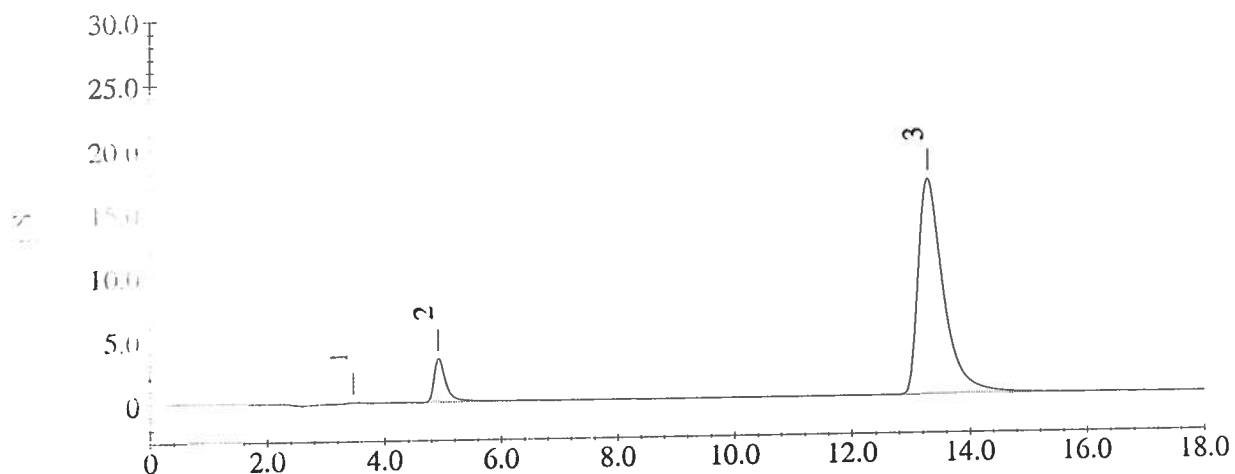
Date Time Collected : 1/26/23 21:16

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
1	Fluoride	3.47	0.2027	9860	675	
2	Chloride	4.92	2.4877	489596	33723	
3	Sulfate	13.30	29.9330	4995740	167698	

1283773



PeakNet 5.2

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Current Date
Current Time

Sample Analysis Report

Sample Name : CCV

Data File Name : c:\instarch\data\system 2\012623 -\CCV_036.DXD

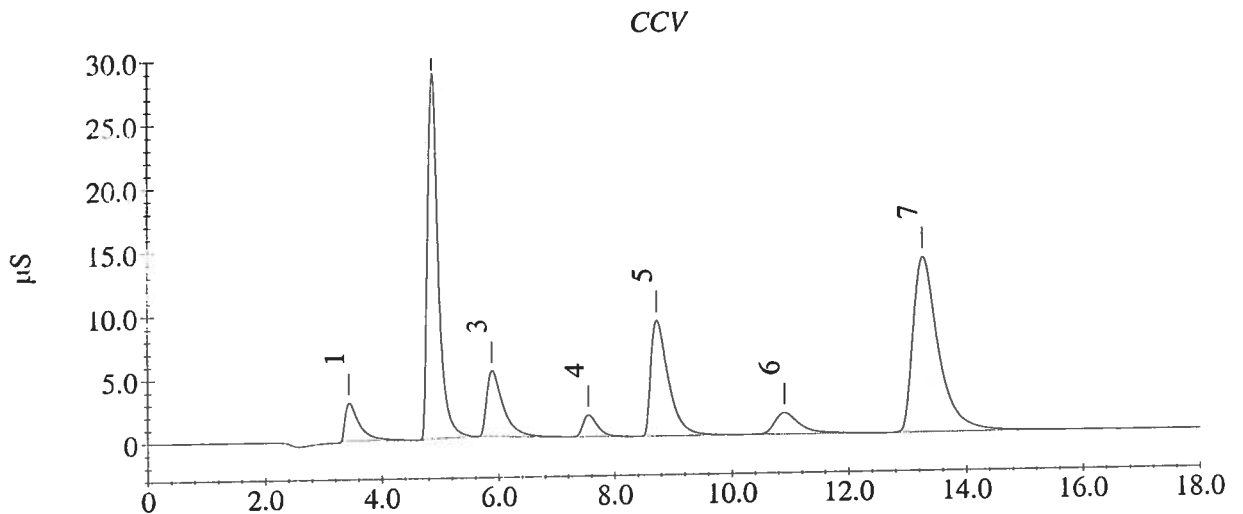
Method File Name : c:\instarch\methods\system 2\ic4429.met

Date Time Collected : 1/27/23 00:28

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
1	Fluoride	3.43	3.8413	531791	30031	
2	Chloride	4.87	14.9250	3664111	283021	
3	Nitrite	5.88	3.5472	1017855	51703	
4	Bromide	7.55	3.6982	302379	17167	
5	Nitrate	8.73	3.7040	1908433	91261	
6	O.Phos	10.90	3.9669	505527	16893	
7	Sulfate	13.27	24.9807	4137952	137858	



PeakNet 5.2

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Current Date
Current Time :

Sample Analysis Report

Sample Name : CCB

Data File Name : C:\INSTARCH\DATA\SYSTEM 2\012623 -ACCB_037.DXD

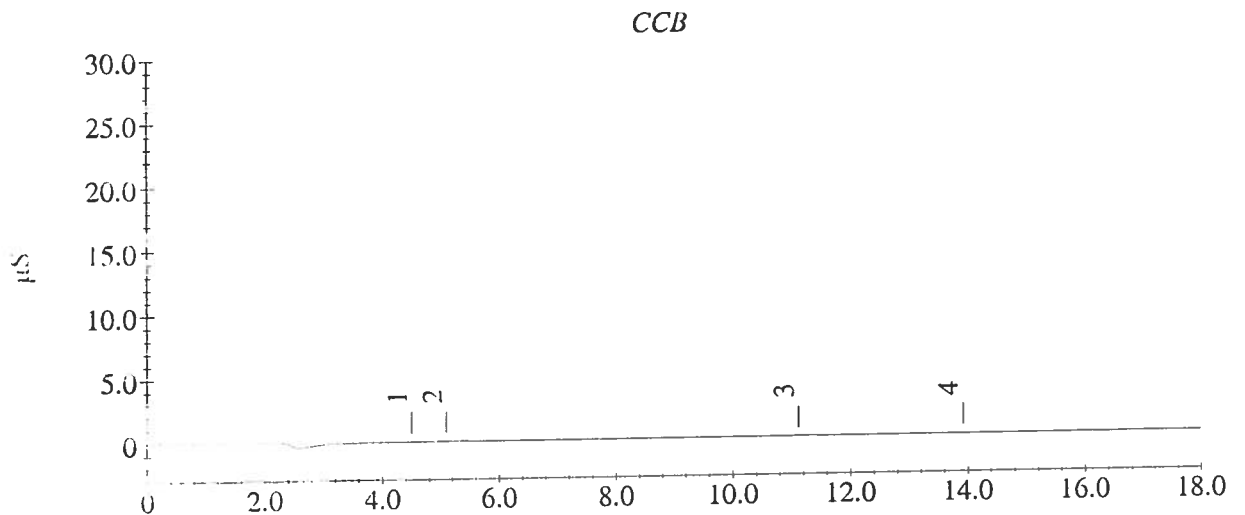
Method File Name : c:\instarch\methods\system 2\ic4429.met

Date Time Collected : 1/27/23 00:48

System Operator : TMG

Peak Information : Found Components

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height	Limit Exceeded
2	Chloride	5.10	0.5908	5421	199	
3	O.Phos	11.12	-0.0284	1502	99	



: PeakNet 5.2

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Current Date
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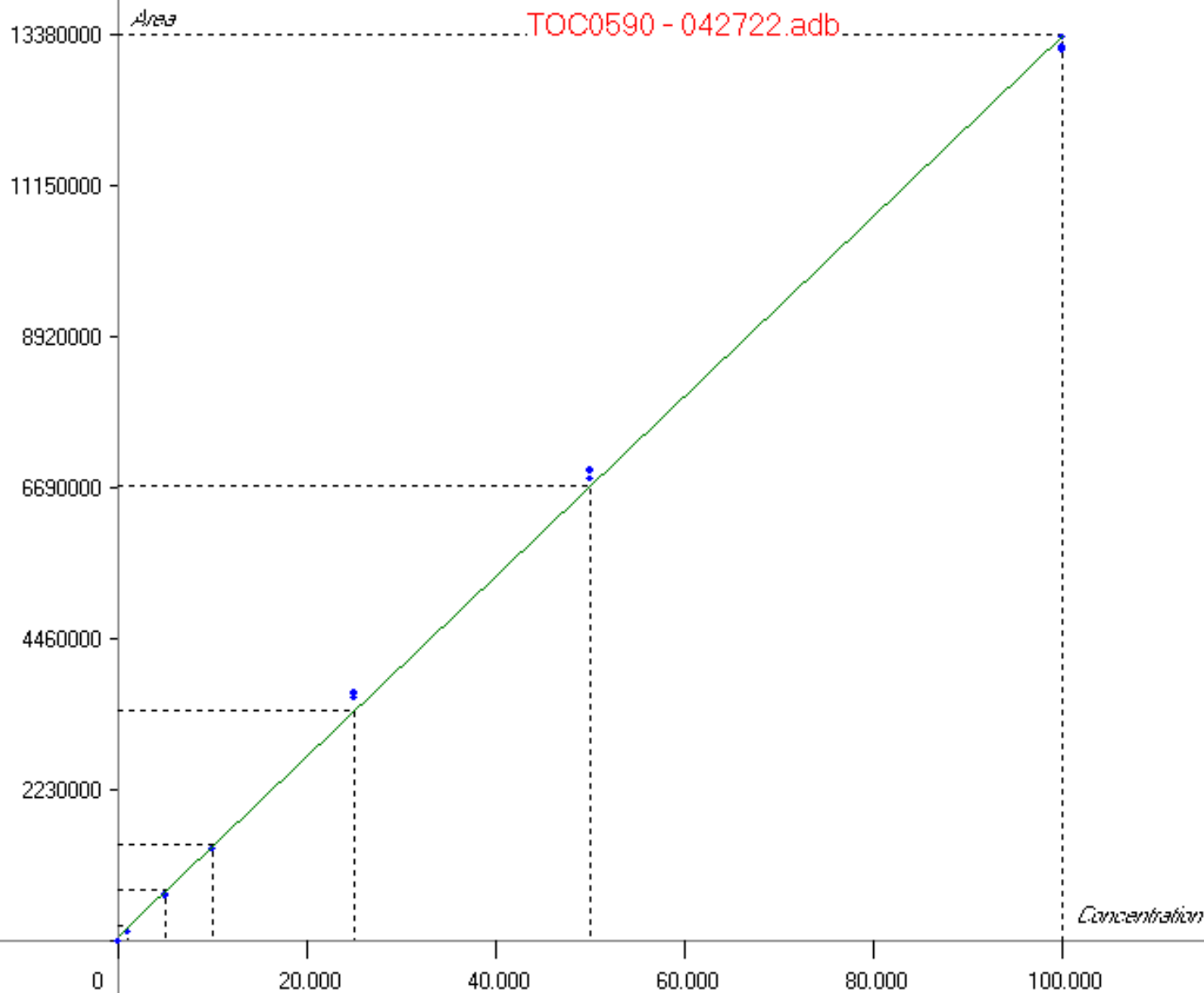
pH - Mettler Toledo Seven Easy							
(Methods: pH EPA 150.1, SM4500H+B, EPA 9040C, EPA 9045D)							
Date:		01/26/2023		Analyst:		RLB	
Lims #:		268842		Slope (%)		97%	
GRP	Sample ID#	Matrix	DF		Corrected Temp (°C)*	Result	
1	BUFFER 7	QC	1		23.0	7.00	
2			1				
3			1				
4			1				
5			1				
6			1				
7			1				
8			1				
9			1				
10			1				
11	1283774	GW	1		8.1	7.76	
dup 11	1283774	GW	1		8.4	7.77	
12	BUFFER 7	QC	1		22.2	7.02	
13			1				
14			1				
15			1				
16			1				
17			1				
18			1				
19			1				
20			1				
21			1				
23			1				
dup 23			1				
24	BUFFER 7		1				
25			1				
dup 25			1				
26			1				
dup 26			1				

To datacapture: Save CSV file under the TSS datacapture folder.

*Temperature of samples should be room temperature around 25°C

Buffer Standard IDs:

pH 4: WC507 pH 7: WC550 pH 10: WC453



Cursor Position

Concentration	Area
119.800 mg/l	-1895500

A2	0
A1	132871
A0	95820

Correlation	0.99952
Order	1
Volume	100 µl

Conc.	100.00
-------	--------

Area	13373923
------	----------

☐ Confidence Intervals 95% ▼

☐ Detection/Determination 95% ▼

Conc.	Area	Sel.
0	0	☒
0	0	☒
0	0	☒
0	0	☒
1	165320	☒
1	148018	☒
1	166376	☒
1	149662	☒

• Used Value
• Ignored Value

CurveNo:1

CurveType:TC

<--

-->

Print...

Exit

Analysis Name

TOC0590 - 042722.adb

Template Name

CURVE TEMP.tdb

Method Name

N / A

Operator

TMG

Date

Wednesday, April 27, 2022

Time

9:08

Start Oven Temp.

752 °C

Start Cooler Temp.

2 °C

Version

2.55 Release

Info

ICAL: TOC0590 INSTRUMENT:TOCW

Element	Integration Time	Samples	Extra Samples	Max. CV
Carbon	60 s	4	1	10 %

SampleTime 240 s

No	Type	FileName	Date/Time	Max. Area	Max Conc.	Order	Correlation	Volume	Sel.
1	TC	This Analysis	Apr 27 2022, 9:08	13373923	100	1	0.99952	100 µl	Yes
	A2: 0		A1: 132870.760830549		A0: 95820.1687664372				

Inj. Order	Position	Type	Identification	Dilution Factor
1	1	Unknown	BLANK	1 x

	Injection Type	Conc.	Area	CV	Inj. Volume			
	TC	0.00	0	0.00	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	4/27/2022 9:19:28	ZERO !	86217	1	756	2	-	-
2	4/27/2022 9:22:21	0.00	0	0	755	2	-	Yes
3	4/27/2022 9:26:23	0.00	0	0	757	2	-	Yes
4	4/27/2022 9:30:24	0.00	0	0	758	2	-	Yes
5	4/27/2022 9:34:26	0.00	0	0	758	2	-	Yes

2	S1	Standard	TC Std	0.00 mg/l	1 x
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	Injection Type	Conc.	Area	CV	Inj. Volume			
	TC	0.00	0	0.00	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	4/27/2022 9:39:18	0.00	0	1	760	2	-	Yes
2	4/27/2022 9:43:56	0.00	0	1	759	2	-	Yes
3	4/27/2022 9:47:58	0.00	0	1	759	2	-	Yes
4	4/27/2022 9:52:00	0.00	0	1	759	2	-	Yes

3	S2	Standard	TC Std	1.00 mg/l	1 x
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	Injection Type	Conc.	Area	CV	Inj. Volume			
	TC	0.46	157344	6.26	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	4/27/2022 9:56:53	0.52	165320	1	758	2	-	Yes
2	4/27/2022 9:59:54	0.39	148018	1	758	2	-	Yes
3	4/27/2022 10:02:12	0.53	166376	1	757	2	-	Yes
4	4/27/2022 10:04:34	0.41	149662	1	757	2	-	Yes

4	S3	Standard	TC Std.	5.00 mg/l	1 x
---	----	----------	---------	-----------	-----

	Injection Type	Conc.	Area	CV	Inj. Volume			
	TC	4.56	700856	0.90	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	4/27/2022 10:08:04	4.62	709067	1	757	2	-	Yes
2	4/27/2022 10:11:22	4.51	695235	1	756	2	-	Yes
3	4/27/2022 10:13:57	4.57	702460	1	757	2	-	Yes
4	4/27/2022 10:16:36	4.52	696665	1	756	2	-	Yes

5	S4	Standard	TC Std.	10.00 mg/l	1 x
---	----	----------	---------	------------	-----

	Injection Type	Conc.	Area	CV	Inj. Volume			
	TC	9.67	1380399	0.64	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.

1	4/27/2022 10:20:05	9.63	1375951	1	757	2	-	Yes
2	4/27/2022 10:23:28	9.59	1370364	1	757	2	-	Yes
3	4/27/2022 10:26:11	9.71	1385504	1	756	2	-	Yes
4	4/27/2022 10:28:58	9.74	1389779	1	756	2	-	Yes
6	S5	Standard	TC Std. 25.00 mg/l	1 x				
	TC	26.66	3638253	0.96	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	4/27/2022 10:32:38	26.77	3653032	1	757	2	-	Yes
2	4/27/2022 10:36:19	26.47	3612880	1	757	2	-	Yes
3	4/27/2022 10:39:12	26.42	3606492	1	757	2	-	Yes
4	4/27/2022 10:42:08	26.98	3680609	1	756	2	-	Yes
7	S6	Standard	TC Std. 50.00 mg/l	1 x				
	TC	51.46	6933403	0.82	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	4/27/2022 10:45:53	50.86	6853888	1	756	2	-	Yes
2	4/27/2022 10:49:34	51.52	6941430	1	756	2	-	Yes
3	4/27/2022 10:52:51	51.88	6989245	1	755	2	-	Yes
4	4/27/2022 10:55:58	51.58	6949049	1	756	2	-	Yes
8	S7	Standard	TC Std. 100.00 mg/l	1 x				
	TC	98.91	13238800	0.71	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	4/27/2022 10:59:59	98.31	13158295	1	755	2	-	Yes
2	4/27/2022 11:03:59	99.93	13373923	1	755	2	-	Yes
3	4/27/2022 11:07:16	98.77	13219156	1	755	2	-	Yes
4	4/27/2022 11:10:35	98.65	13203826	1	754	2	-	Yes
9	S8	Unknown	ICV - 50.00 mg/L	1 x				
	TC	49.82	6715782	0.53	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	4/27/2022 11:14:34	49.90	6726441	1	754	2	-	Yes
2	4/27/2022 11:18:15	49.63	6689710	1	754	2	-	Yes
3	4/27/2022 11:21:15	50.16	6761041	1	754	2	-	Yes
4	4/27/2022 11:24:16	49.60	6685936	1	754	2	-	Yes
10	2	Unknown	ICB	1 x				
	TC	0.00	0	0.00	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	4/27/2022 11:28:12	0	0	0	754	2	-	Yes
2	4/27/2022 11:32:49	0	0	0	754	2	-	Yes
3	4/27/2022 11:36:50	0	0	0	754	2	-	Yes
4	4/27/2022 11:40:52	0	0	0	753	2	-	Yes

Analysis Name 012723 - 268835.adb

Template Name 012723 - 268835.tdb

Method Name N / A

Operator TMG

Date Friday, January 27, 2023
Time 8:34

Start Oven Temp. 754 °C
Start Cooler Temp. 2 °C

Version 2.55 Release
Info ICAL0590 INSTRUMENT:TOCW
CCV0649 LCS0650 SPIKE0623

Element Integration Time Samples Extra Samples Max. CV
Carbon 60 s 4 1 10 %

SampleTime 240 s

No	Type	FileName	Date/Time	Max. Area	Max Conc.	Order	Correlation	Volume	Sel.
1	TC	TOC0590 - 042722	Apr 27 2022, 9:08	13373923	100	1	0.99952	100 µl	Yes
	A2: 0		A1: 132870.760830549		A0: 95820.1687664372				

Inj. Order	Position	Type	Identification	Dilution Factor
1	1	Unknown	IB	1 x

	Injection Type	Conc.	Area	CV	Inj. Volume			
	TC	0.09	59658	115.61	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	1 27 2023 8:35:01	3.64	579640	1	754	2	-	-
2	1 27 2023 8:38:28	0	0	0	754	2	-	Yes
3	1 27 2023 8:42:31	0.21	123419	1	755	2	-	Yes
4	1 27 2023 8:44:57	0.15	115215	1	756	2	-	Yes
5	1 27 2023 8:47:25	0	0	0	756	2	-	Yes

2	S1	Unknown	CCV	1 x
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	TC	50.41	6794043	0.99	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	1 27 2023 8:52:19	49.84	6718611	1	757	2	-	Yes
2	1 27 2023 8:56:03	50.12	6755948	1	758	2	-	Yes
3	1 27 2023 8:59:11	50.85	6852698	1	758	2	-	Yes
4	1 27 2023 9:02:27	50.82	6848918	1	758	2	-	Yes

3	S5	Unknown	LCSW	1 x
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	TC	49.80	6712050	1.08	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	1 27 2023 9:06:21	49.91	6727355	1	758	2	-	Yes
2	1 27 2023 9:10:09	49.41	6660332	1	758	2	-	Yes
3	1 27 2023 9:13:12	49.35	6652354	1	758	2	-	Yes
4	1 27 2023 9:16:12	50.52	6808161	1	757	2	-	Yes

4	2	Unknown	MBW	1 x
---	---	---------	-----	-----

	TC	ZERO !	86479	15.37	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	1 27 2023 9:20:14	1.32	271715	1	757	2	-	-
2	1 27 2023 9:23:36	ZERO !	68675	1	757	2	-	Yes
3	1 27 2023 9:26:08	0.04	100661	1	756	2	-	Yes
4	1 27 2023 9:28:31	ZERO !	89937	1	756	2	-	Yes
5	1 27 2023 9:30:54	ZERO !	86645	1	756	2	-	Yes

5	3	Unknown	1282988	738 of 995	1 x
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		TC	88.06	11797475	0.35	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	1 27 2023 9:34:01	88.45	11848661	1	755	2	-	Yes
	2	1 27 2023 9:37:47	87.71	11749855	1	756	2	-	Yes
	3	1 27 2023 9:41:18	88.11	11803719	1	757	2	-	Yes
	4	1 27 2023 9:44:50	87.99	11787665	1	757	2	-	Yes
6	4	Unknown	1282989				1 x		
		TC	87.19	11680603	1.03	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	1 27 2023 9:49:14	88.46	11849890	1	757	2	-	Yes
	2	1 27 2023 9:53:11	86.31	11563927	1	756	2	-	Yes
	3	1 27 2023 9:56:14	87.03	11659303	1	756	2	-	Yes
	4	1 27 2023 9:59:32	86.95	11649295	1	756	2	-	Yes
7	5	Unknown	1282990				1 x		
		TC	78.12	10475019	0.68	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	1 27 2023 10:03:30	78.58	10537003	1	756	2	-	Yes
	2	1 27 2023 10:07:38	77.60	10406341	1	755	2	-	Yes
	3	1 27 2023 10:11:12	77.71	10421352	1	755	2	-	Yes
	4	1 27 2023 10:14:31	78.57	10535382	1	755	2	-	Yes
8	6	Unknown	1283772				1 x		
		TC	81.86	10972726	1.61	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	1 27 2023 10:18:43	83.72	11219838	1	755	2	-	Yes
	2	1 27 2023 10:23:01	81.77	10961107	1	754	2	-	Yes
	3	1 27 2023 10:26:26	81.32	10901120	1	754	2	-	Yes
	4	1 27 2023 10:30:06	80.63	10808839	1	754	2	-	Yes
9	7	Unknown	1283773				1 x		
		TC	61.56	8275101	0.40	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	1 27 2023 10:34:25	61.55	8274604	1	754	2	-	Yes
	2	1 27 2023 10:38:10	61.35	8247486	1	754	2	-	Yes
	3	1 27 2023 10:41:19	61.42	8257121	1	754	2	-	Yes
	4	1 27 2023 10:44:46	61.91	8321194	1	753	2	-	Yes
10	S1	Unknown	CCV				1 x		
		TC	52.28	7042914	1.20	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	1 27 2023 10:49:23	52.60	7084518	1	754	2	-	Yes
	2	1 27 2023 10:53:29	51.35	6918762	1	753	2	-	Yes
	3	1 27 2023 10:56:44	52.74	7103560	1	753	2	-	Yes
	4	1 27 2023 11:00:17	52.45	7064817	1	753	2	-	Yes
11	8	Unknown	CCB				1 x		
		TC	ZERO !	84862	29.53	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	1 27 2023 11:04:30	0.68	186424	1	753	2	-	-
	2	1 27 2023 11:07:35	0.05	102765	1	753	2	-	Yes
	3	1 27 2023 11:09:54	0.07	105513	1	752	2	-	Yes
	4	1 27 2023 11:12:16	ZERO !	79627	1	752	2	-	Yes
	5	1 27 2023 11:14:37	ZERO !	51543	1	752	2	-	Yes

Analysis Name 013023 - 268891 268892 268893 268894.adb

Template Name 013023 - 268891 268892 268893 268894.tdb
 Method Name N / A
 Operator TMG

Date Monday, January 30, 2023
 Time 11:37

Start Oven Temp. 769 °C
 Start Cooler Temp. 2 °C

Version 2.55 Release
 Info ICAL0590 INSTRUMENT:TOCW
 CCV0649 LCS0650 SPIKE0623

Element Integration Time Samples Extra Samples Max. CV
 Carbon 60 s 4 1 10 %

SampleTime 240 s

No	Type	FileName	Date/Time	Max. Area	Max Conc.	Order	Correlation	Volume	Sel.
1	TC	TOC0590 - 042722	Apr 27 2022, 9:08	13373923	100	1	0.99952	100 µl	Yes
	A2: 0		A1: 132870.760830549		A0: 95820.1687664372				

Inj. Order	Position	Type	Identification	Dilution Factor
1	1	Unknown	IB	1 x

Sample	Inj. Time	Conc.	Area	CV	Inj. Volume	Sel.		
		ZERO !	227149	94.19	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	1 30 2023 11:48:29	3.28	532235	1	768	2	-	Yes
2	1 30 2023 11:52:06	0.90	214839	1	766	2	-	Yes
3	1 30 2023 11:54:34	0.07	105660	1	765	2	-	Yes
4	1 30 2023 11:56:58	0	0	0	764	2	-	-
5	1 30 2023 12:01:00	ZERO !	55864	1	764	2	-	Yes

Inj. Order	Position	Type	Identification	Dilution Factor
2	S1	Unknown	CCV	1 x

Sample	Inj. Time	Conc.	Area	CV	Inj. Volume	Sel.		
		46.07	6217180	1.79	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	1 30 2023 12:04:09	46.05	6214212	1	763	2	-	Yes
2	1 30 2023 12:08:05	44.90	6061372	1	763	2	-	Yes
3	1 30 2023 12:11:24	46.56	6282595	1	762	2	-	Yes
4	1 30 2023 12:14:31	46.77	6310544	1	761	2	-	Yes

Inj. Order	Position	Type	Identification	Dilution Factor
3	S5	Unknown	LCSW	1 x

Sample	Inj. Time	Conc.	Area	CV	Inj. Volume	Sel.		
		47.64	6425204	1.41	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	1 30 2023 12:18:34	48.30	6513084	1	760	2	-	Yes
2	1 30 2023 12:22:21	47.88	6457119	1	760	2	-	Yes
3	1 30 2023 12:25:28	46.69	6298987	1	759	2	-	Yes
4	1 30 2023 12:28:32	47.68	6431628	1	759	2	-	Yes

Inj. Order	Position	Type	Identification	Dilution Factor
4	2	Unknown	MBW	1 x

Sample	Inj. Time	Conc.	Area	CV	Inj. Volume	Sel.		
		ZERO !	35514	115.63	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	1 30 2023 12:32:41	ZERO !	73647	1	758	2	-	Yes
2	1 30 2023 12:35:43	0	0	0	757	2	-	Yes
3	1 30 2023 12:39:44	0	0	0	757	2	-	Yes
4	1 30 2023 12:43:47	ZERO !	68410	1	757	2	-	Yes
5	1 30 2023 12:46:03	0	0	0	756	2	-	-

10	8	Unknown	1282988				1 x		
		TC	ZERO !	127753	26.27		100 µl		
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	1 30 2023 13:54:52	0.58	173337	1	753	2	-	Yes
	2	1 30 2023 13:57:46	0.22	124649	1	752	2	-	Yes
	3	1 30 2023 14:00:00	0.19	120480	1	752	2	-	Yes
	4	1 30 2023 14:02:13	ZERO !	92546	1	752	2	-	Yes
	5	1 30 2023 14:04:25	0	0	0	752	2	-	-

11	9	Unknown	1282989						1 x
		TC	ZERO !	-8123	0.00		100 µl		
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	1 30 2023 14:09:19	0	0	0	753	2	-	Yes
	2	1 30 2023 14:13:57	ZERO !	54422	1	753	2	-	Yes
	3	1 30 2023 14:16:06	ZERO !	66447	1	752	2	-	-
	4	1 30 2023 14:18:15	ZERO !	-86917	1	751	2	-	Yes
	5	1 30 2023 14:22:16	0	0	0	752	2	-	Yes

12	10	Unknown	1282990				1 x		
		TC	0.00	0	0.00		100 µl		
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	1 30 2023 14:27:09	0	0	0	752	2	-	Yes
	2	1 30 2023 14:31:47	0	0	0	752	2	-	Yes
	3	1 30 2023 14:35:49	0	0	0	752	2	-	Yes

4	1 30 2023 14:39:51	0	0	0	752	2	-	Yes
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25	22	Unknown	1283772				1 x		
		TC	0.00	0	0.00	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	1 30 2023 17:52:28	0	0	0	752	2	-	Yes
	2	1 30 2023 17:57:05	0	0	0	752	2	-	Yes
	3	1 30 2023 18:01:07	0	0	0	752	2	-	Yes
	4	1 30 2023 18:05:07	ZERO !	41773	1	752	2	-	-
	5	1 30 2023 18:07:18	0	0	0	751	2	-	Yes
26	23	Unknown	DUP1283772				1 x		
		TC	ZERO !	-9264	0.00	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	1 30 2023 18:12:11	ZERO !	-37058	1	752	2	-	Yes
	2	1 30 2023 18:15:55	0	0	0	752	2	-	-
	3	1 30 2023 18:19:56	0	0	0	752	2	-	Yes
	4	1 30 2023 18:23:58	0	0	0	752	2	-	Yes
	5	1 30 2023 18:28:00	0	0	0	752	2	-	Yes
27	S1	Unknown	CCV				1 x		
		TC	45.64	6160015	0.85	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	1 30 2023 18:32:54	45.16	6096590	1	752	2	-	Yes
	2	1 30 2023 18:36:45	45.65	6161458	1	752	2	-	Yes
	3	1 30 2023 18:39:49	45.62	6156921	1	751	2	-	Yes
	4	1 30 2023 18:42:55	46.13	6225091	1	752	2	-	Yes

29	24	Unknown	MBW-CCB				1 x		
		TC	0.00	0	0.00	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	1 30 2023 19:01:00	0	0	0	752	2	-	Yes
	2	1 30 2023 19:05:37	0	0	0	752	2	-	Yes
	3	1 30 2023 19:09:39	0	0	0	752	2	-	Yes
	4	1 30 2023 19:13:41	0	0	0	752	2	-	Yes
30	25	Unknown	MSW1283772				1 x		
		TC	46.48	6272106	0.61	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	1 30 2023 19:18:34	46.59	6286645	1	752	2	-	Yes
	2	1 30 2023 19:22:07	46.80	6313794	1	752	2	-	Yes
	3	1 30 2023 19:24:59	46.11	6222860	1	752	2	-	Yes
	4	1 30 2023 19:27:51	46.43	6265125	1	751	2	-	Yes
31	26	Unknown	MSDW1283772				1 x		
		TC	46.18	6231573	1.27	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	1 30 2023 19:31:38	45.29	6113290	1	752	2	-	Yes
	2	1 30 2023 19:35:08	46.54	6279494	1	752	2	-	Yes
	3	1 30 2023 19:38:00	46.40	6261499	1	752	2	-	Yes
	4	1 30 2023 19:40:52	46.48	6272011	1	752	2	-	Yes
32	27	Unknown	1283773				1 x		
		TC	0.00	0	0.00	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	1 30 2023 19:44:35	0	0	0	752	2	-	Yes
	2	1 30 2023 19:49:13	0	0	0	752	2	-	Yes
	3	1 30 2023 19:53:15	0	0	0	752	2	-	Yes
	4	1 30 2023 19:57:16	0	0	0	752	2	-	Yes

40	S2	Unknown	CCV	1 x					
		TC	45.07	6084438	0.93	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	1 30 2023 21:56:35	44.90	6061129	1	752	2	-	Yes
	2	1 30 2023 22:00:29	44.65	6028803	1	752	2	-	Yes
	3	1 30 2023 22:03:28	45.08	6086078	1	752	2	-	Yes
	4	1 30 2023 22:06:29	45.65	6161743	1	752	2	-	Yes

41	35	Unknown	CCB				1 x		
		TC	0.00	0		0.00	100 µl		
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	1 30 2023 22:10:24	0	0	0	752	2	-	Yes
	2	1 30 2023 22:15:02	0	0	0	752	2	-	Yes
	3	1 30 2023 22:19:04	0	0	0	752	2	-	Yes
	4	1 30 2023 22:23:06	0	0	0	752	2	-	Yes

**INORGANICS
LOGBOOK
DOCUMENTS**

WCOD QSM Analytical Run
269035 on 2/8/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	SAMPLE DECRPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)		CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
175069	1283774		1/25/2023	14:25		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	COD QSM		GW	4	
		54 IDW							128537			
	1286257							COD QSM				
					MBW				128537			
	1286258							COD QSM				
					LCSW				128537			
	1286259		1/25/2023	14:25				COD QSM				
		54 IDW			DUP	1283774			128537			
	1286260		1/25/2023	14:25				COD QSM				
		54 IDW			MSW	1283774			128537			
	1286261		1/25/2023	14:25				COD QSM				
		54 IDW			MSDW	1286260			128537			
	1286926							WCOD QSM				
					ICV							
	1286927							WCOD QSM				
					ICB							
	1286928							WCOD QSM				
					CCV							
	1286929							WCOD QSM				
					CCB							
	1286930							WCOD QSM				
					CCV							
	1286931							WCOD QSM				
					CCB							
12	SAMPLE COUNT ON RUN, INCLUDING METHOD AND INSTRUMENT QC											

Matrix: S-Soil Slg-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

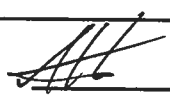
Distribution:

C:\Windows\ServiceProfiles\LocalService\AppData\Local\Temp\FEC51mp

Page 1 of 1

PrepWrkSht2
on 2/7/2023

Prep Batch: 128537
Date Prepped: 2-7-23

Prepped By: 
Date Entered: _____

Folder #	Order	QC Type	Link	Test	Client Company Name	Client Sample Description	Matrix	Sample Date / Time	Due Date	SDG Level
	1286257	31 MBW		COD QSM			LIQUID			
	1286258	30 LCSW		COD QSM			LIQUID			
175069	1283774	22, 23, 24, 25		COD QSM	WESTON SOLUTIONS, INC.	54 IDW	GROUND WATER	1/25/23 14:25	2/7/23	4
	1286259	DUP	1283774	COD QSM		54 IDW	GROUND WATER	1/25/23 14:25		
	1286260	MSW	1283774	COD QSM		54 IDW	GROUND WATER	1/25/23 14:25		
	1286261	MSDW	1286260	COD QSM		54 IDW	GROUND WATER	1/25/23 14:25		

Control Spike/Control Spike Dup Reference Number: _____ Methanol Supplier/Lot #: _____

Notes: _____

COD Data Validation Checklist

		Method: Chemical Oxygen Demand EPA 410.4			
LIMS Run #(s)	Analysis Date	Analyst / Data Interpreter	Independent Reviewer	Date of Review	Approved? (Yes or No)
269035	02/07/2023	ATJ	HLB	02/08/2023	Yes

Instructions: Complete one checklist per *analytical run*. Enter the appropriate response for each question.

Each "No" response requires an explanation in the Comments section, and may require the initiation of a Nonconformance Report.

Requirement:	Acceptance Criteria	Analyst Review		Independent Review		Comments:
		Yes	No	Yes	No	(indicate reference to an attachment if necessary)
1. Does a digestion sheet accompany the data package?	---	Yes		Yes		
2. Does the digestion sheet include all reagent and standard prep log numbers?	---	Yes		Yes		
3. Was a passing calibration test applied to sample analysis?	≥0.995	Yes		Yes		
4. Was a passing ICV analyzed immediately after the calibration?	90-110%	Yes		Yes		
5. Was a passing ICB analyzed immediately after the ICV?	< LOD or client/project specific	Yes		Yes		
6. Were CCVs and CCB analyzed at the required frequency?	1 per 10 samples	Yes		Yes		
7. Did analyzed CCVs meet the required acceptance criteria?	90-110%	Yes		Yes		
8. Did analyzed CCBs meet the acceptance criteria?	< LOD or client/project specific	Yes		Yes		
9. Was a Method Blank prepared at the required frequency?	1 per 20 samples or at contract/program specific frequencies	Yes		Yes		
10. Was the method blank within acceptance criteria?	< LOD or client/project specific	Yes		Yes		
11. Was an LCS prepared at the required frequency?	1 per 20 samples or at contract/program specific frequencies	Yes		Yes		
12. Did the LCS meet the acceptance criteria?	90-110% or Within in-house or contract/program specific limits	Yes		Yes		
13. Was an MS and MSD prepared at the required frequency?	1 per 10 per batch or at contract/program specific frequencies	Yes		Yes		
14. Did the MS/ MSD's meet the acceptance criteria?	90-110% or Within in-house or contract/program specific limits		No		No	1283774 MSDW failed high, no flag as parent is below ADJ LOD

15. Did the MS/MSD's meet the RPD criteria?	Within in-house or contract/program specific limits	Yes		Yes		
16. Was a Duplicate prepared at the required frequency?	1per 10 per batch or at contract/program specific frequencies	Yes		Yes		
17. Did the Duplicate meet the RPD criteria?	Within in-house or contract/program specific limits	Yes		Yes		
18. Were the samples digested within hold time?	28 days	Yes		Yes		
19. Was the max temperature(s) for reactor(s) documented?	---	Yes		Yes		
20. Was the method specifed temperature reached?		Yes		Yes		
21. Were reagents/standards used before expiration date?	---	Yes		Yes		
22. Are all samples on the job lists accounted for?	---	Yes		Yes		

CHEMICAL OXYGEN DEMAND REAGENT LOG

Prep Batch(es): 128537
Date/Time/Analyst: 02/07/2023 10:30:00 ATJ
Run(s): 269035
Date/Time/Analyst: 02-07-2023 13:36 ATJ

Reagents:	W #	Exp Date
ICAL Preparation.....	54109	04/24/2023
CCV Preparation.....	54110	04/24/2023
LCS/ICV Preparation.....	54111	04/24/2023
Silver Sulfate Acid.....	53466	09/21/2023
Potassium Dichromate Dig Solution...	52963	07/07/2023
Date: 02/07/2023 Time: 10:30		
COD DIGESTION BLOCK TEMPS		
	A	B
Temperature (Max) 150°C ± 2°C:		
	E	D
Temperature (Max) 150°C ± 2°C:	151.7	

Spiked Samples:	W #	Exp Date
Spiking Solution.....	54108	04/24/2023
Concentration..... 2000 mg/L		
Volume of Spike Used... 0.2 mL		
Final Sample Volume..... 2.5 mL		
Final Spike Concentration... 148.2 mg/L		

GENESYS 30 Instrument Run Logbook						
Date	Start Time	End Time	Analyst	Test/Analyte	Calibration Test #	Run #/ Comments
02/07/23	13:36	14:10	ATJ	COD	CODW54109	269035 036 074

WANIONS IC QSM 5.0 Anion Run
268741 on 2/3/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	ANALYTE	SAMPLE DATE:	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1283393						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		ICB							
		Chloride		ICB							
		Sulfate		ICB							
	1283394						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		ICV							
		Chloride		ICV							
		Sulfate		ICV							
	1283241						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		CCV				0			
		Chloride		CCV				0			
		Sulfate		CCV				0			
	1283242						WANIONS IC QSM 5.0				
		Chloride		LCSW				0			
		Nitrate Nitrogen		LCSW				0			
		Sulfate		LCSW				0			
	1283243						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		MBW				0			
		Chloride		MBW				0			
		Sulfate		MBW				0			

Matrix: S-Soil Slg-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

WANIONS IC QSM 5.0 Anion Run
268741 on 2/3/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	ANALYTE	SAMPLE DATE:	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
175012	1282988		1/23/2023	13:10	WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ANIONS IC QSM 5.0		GW	4	
		Chloride									
		Nitrate Nitrogen									
		Sulfate									
175012	1282989		1/23/2023	13:10	WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ANIONS IC QSM 5.0		GW	4	
		Sulfate									
		Nitrate Nitrogen									
		Chloride									
175012	1282990		1/23/2023	15:20	WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ANIONS IC QSM 5.0		GW	4	
		Chloride									
		Nitrate Nitrogen									
		Sulfate									
175012	1282990		1/23/2023	15:20	WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ANIONS IC QSM 5.0		GW	4	
		Sulfate									
		Nitrate Nitrogen									
		Chloride									
	1283244		1/23/2023	13:10			ANIONS IC QSM 5.0				
		Nitrate Nitrogen			DUP	1282988				0	
		Chloride			DUP	1282988				0	
		Sulfate			DUP	1282988				0	

Matrix: S-Soil Slg-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

WANIONS IC QSM 5.0 Anion Run
268741 on 2/3/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	ANALYTE	SAMPLE DATE:	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1283245		1/23/2023	13:10			ANIONS IC QSM 5.0				
		Nitrate Nitrogen		MSW	1282988			0			
		Chloride		MSW	1282988			0			
		Sulfate		MSW	1282988			0			
	1283246		1/23/2023	13:10			ANIONS IC QSM 5.0				
		Nitrate Nitrogen		MSDW	1283245			0			
		Chloride		MSDW	1283245			0			
		Sulfate		MSDW	1283245			0			
	1283247						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		CCV				0			
		Chloride		CCV				0			
		Sulfate		CCV				0			
	1283248						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		CCB				0			
		Chloride		CCB				0			
		Sulfate		CCB				0			

FWC37-01 Data Review Checklist

LIMS Run #(s)		Analysis Date		Analyst/Data Interpreter	Independent Data Review Checklist		Instrument: DX120-System 2
268711 268741 268752		01/23/2023		TMG	RLD	01/25/2023	Yes
Instructions: Complete one checklist per <i>analytical sequence</i> . Enter the appropriate response for each question. Each "No" response requires an explanation in the Comments section, and may require the initiation of a Nonconformance Report.							
Requirement	Acceptance Criteria	Analyst Review		Independent Review		Comments (Indicate reference to an attachment if necessary)	
		Yes	No	Yes	No		
1. Were the samples analyzed within hold time?	28 days for Cl, F, SO ₄ ; 14 days for preserved NO ₂ +NO ₃ ; 48 hours for O.Phos, and unpreserved NO ₂ and NO ₃	Yes		Yes			
2. Was the calibration performed using the required number of standards?	Minimum three plus a blank	Yes		Yes			
3. Is the standard prep log number noted on the analytical report bench sheet?	---	Yes		Yes			
4. Was the correlation coefficient acceptable?	≥ .995	Yes		Yes			
5. Were the ICV and ICB run immediately after the calibration check standard?	---	Yes		Yes			
6. Was the ICV recovery acceptable?	90 – 110 % or contract/program specific	Yes		Yes			
7. Was the ICB result acceptable?	< LOD or contract/program specific	Yes		Yes			
8. Were the CCV's and the CCB's analyzed at the required frequency?	1 / 10 samples or contract/program specific	Yes		Yes			
9. Were the CCV recoveries acceptable?	90 – 110 % or contract/program specific	Yes		Yes			
10. Were the CCB results acceptable?	< LOD or program/project specific	Yes		Yes			
11. Was the MB analyzed at the required frequency?	1 / 20 samples or contract/program specific	Yes		Yes			
12. Were the MB results acceptable?	< LOD or contract/program specific	Yes		Yes			

13. Was a LCS run at the required frequency?	1 / 20 samples or contract/program specific	Yes		Yes		
14. Was the LCS recovery acceptable?	Within in-house or contract/program specific limits	Yes		Yes		
15. Was the LCS used before the indicated expiration date?	---	Yes		Yes		
16. Were the MS and MSD (when required) prepared at the required frequency?	1 per 20 samples per matrix or contract/program specific	Yes		Yes		
17. Were the MS and MSD (when required) recoveries acceptable?	Within In-house or contract/program specific limits		No		No	Affected sample results were "M" flagged
18. Was the RPD between the MS and MSD (when required) acceptable?	Within in house or contract/program specific limits	Yes		Yes		
19. Was a sample duplicate prepared at the required frequency?	Contract/program specific or 1 per 20 samples (1 / 10 for SDWA samples)	Yes		Yes		
20. Was the duplicate within precision limits?	Within in-house or contract/program specific limits	Yes		Yes		
21. Were all chromatograms checked to ensure accurate peak identification?	---	Yes		Yes		
22. Are all samples on the job lists accounted for?	---	Yes		Yes		
23. Were all samples having analytes detected in amounts exceeding the calibration range diluted, reanalyzed and DF applied to the final results?	---	Yes		Yes		
24. Were non-matrix related nonconformities (if applicable) documented in the NCR spreadsheet?	---	Yes		Yes		

Non-Applicable Yes/No Cells Are Left Blank

Comments:

WANIONS IC QSM 5.0 Anion Run
268844 on 2/15/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	ANALYTE	SAMPLE DATE:	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1284727						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		CCV				0			
		Chloride		CCV				0			
		Sulfate		CCV				0			
	1284728						WANIONS IC QSM 5.0				
		Chloride		LCSW				0			
		Nitrate Nitrogen		LCSW				0			
		Sulfate		LCSW				0			
	1284729						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		MBW				0			
		Chloride		MBW				0			
		Sulfate		MBW				0			
175069	1283772		1/25/2023	09:15	WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ANIONS IC QSM 5.0		GW	4	
		Chloride		*							
		Nitrate Nitrogen		*							
		Sulfate		*							
	1284730		1/25/2023	09:15			ANIONS IC QSM 5.0				
		Nitrate Nitrogen		DUP	1283772			0			
		Chloride		DUP	1283772			0			
		Sulfate		DUP	1283772			0			

Matrix: S-Soil Slg-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

WANIONS IC QSM 5.0 Anion Run
268844 on 2/15/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	ANALYTE	SAMPLE DATE:	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1284731		1/25/2023	09:15			ANIONS IC QSM 5.0				
		Nitrate Nitrogen		MSW	1283772			0			
		Chloride		MSW	1283772			0			
		Sulfate		MSW	1283772			0			
	1284732		1/25/2023	09:15			ANIONS IC QSM 5.0				
		Nitrate Nitrogen		MSDW	1284731			0			
		Chloride		MSDW	1284731			0			
		Sulfate		MSDW	1284731			0			
	1284733						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		CCV				0			
		Chloride		CCV				0			
		Sulfate		CCV				0			
	1284734						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		CCB				0			
		Chloride		CCB				0			
		Sulfate		CCB				0			
175069	1283773		1/25/2023	11:15	WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ANIONS IC QSM 5.0		GW	4	
		Sulfate									
		Nitrate Nitrogen									
		Chloride									

Matrix: S-Soil Slg-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

WANIONS IC QSM 5.0 Anion Run
268844 on 2/15/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	ANALYTE	SAMPLE DATE:	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1284735						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		CCV				0			
		Chloride		CCV				0			
		Sulfate		CCV				0			
	1284736						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		CCB				0			
		Chloride		CCB				0			
		Sulfate		CCB				0			

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Matrix: S-Soil Slg-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

FWC37-01 Data Review Checklist

		Method: Anions by Ion Chromatography 300.0/9056		Independent Data Review Checklist		Instrument: DX120-System 2
LIMS Run #(s)	Analysis Date	Analyst/Data Interpreter	Independent Reviewer	Date of Review	Approved? (Yes/No)	
268838 268843 268844 268845	01/26/2023	TMG	RLD	01/30/2023	Yes	
Instructions: Complete one checklist per analytical sequence. Enter the appropriate response for each question. Each "No" response requires an explanation in the Comments section, and may require the initiation of a Nonconformance Report.						
Requirement	Acceptance Criteria	Analyst Review		Independent Review		Comments
		Yes	No	Yes	No	(Indicate reference to an attachment if necessary)
1. Were the samples analyzed within hold time?	28 days for Cl, F, SO ₄ ; 14 days for preserved NO ₂ +NO ₃ ; 48 hours for O.Phos, and unpreserved NO ₂ and NO ₃		No		No	Affected sample results were "H" flagged
2. Was the calibration performed using the required number of standards?	Minimum three plus a blank	Yes		Yes		
3. Is the standard prep log number noted on the analytical report bench sheet?	---	Yes		Yes		
4. Was the correlation coefficient acceptable?	≥ .995	Yes		Yes		
5. Were the ICV and ICB run immediately after the calibration check standard?	---	Yes		Yes		
6. Was the ICV recovery acceptable?	90 – 110 % or contract/program specific	Yes		Yes		
7. Was the ICB result acceptable?	< LOI) or contract/program specific	Yes		Yes		
8. Were the CCV's and the CCB's analyzed at the required frequency?	1 / 10 samples or contract/program specific	Yes		Yes		
9. Were the CCV recoveries acceptable?	90 – 110 % or contract/program specific	Yes		Yes		
10. Were the CCB results acceptable?	< LOI) or program/project specific	Yes		Yes		
11. Was the MB analyzed at the required frequency?	1 / 20 samples or contract/program specific	Yes		Yes		
12. Were the MB results acceptable?	< LOI) or contract/program specific	Yes		Yes		

13. Was a LCS run at the required frequency?	1 / 20 samples or contract/program specific	Yes		Yes		
14. Was the LCS recovery acceptable?	Within in-house or contract/program specific limits	Yes		Yes		
15. Was the LCS used before the indicated expiration date?	---	Yes		Yes		
16. Were the MS and MSD (when required) prepared at the required frequency?	1 per 20 samples per matrix or contract/program specific	Yes		Yes		
17. Were the MS and MSD (when required) recoveries acceptable?	Within In-house or contract/program specific limits		No		No	Affected sample results were "M" flagged
18. Was the RPD between the MS and MSD (when required) acceptable?	Within in house or contract/program specific limits	Yes		Yes		
19. Was a sample duplicate prepared at the required frequency?	Contract/program specific or 1 per 20 samples (1 / 10 for SDWA samples)	Yes		Yes		
20. Was the duplicate within precision limits?	Within in-house or contract/program specific limits	Yes		Yes		
21. Were all chromatograms checked to ensure accurate peak identification?	---	Yes		Yes		
22. Are all samples on the job lists accounted for?	---	Yes		Yes		
23. Were all samples having analytes detected in amounts exceeding the calibration range diluted, reanalyzed and DF applied to the final results?	---	Yes		Yes		
24. Were non-matrix related nonconformities (if applicable) documented in the NCR spreadsheet?	---	Yes		Yes		

Non-Applicable Yes/No Cells Are Left Blank

Comments:

WPH Analytical Run
268842 on 1/27/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	SAMPLE DECRPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
175069	1283774		1/25/2023 14:25		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	PH		GW	4	
		54 IDW									
	1283945		1/25/2023 14:25				PH				
		54 IDW		DUP 1283774				0			
2	SAMPLE COUNT ON RUN, INCLUDING METHOD AND INSTRUMENT QC										

Matrix: S-Soil Sig-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

Distribution:

C:\Windows\ServiceProfiles\LocalService\AppData\Local\Temp\BC1D.tmp

Page 1 of 1

pH Data Validation Checklist

		Method: pH EPA 150.1, SM 4500-H+B, EPA 9040C, EPA 9045D			
LIMS Run #(s)	Analysis Date	Analyst / Data Interpreter	Independent Reviewer	Date of Review	Approved? (Yes or No)
268842	01/26/2023	RLB	HLB	01/27/2023	Yes

Instructions: Complete one checklist per *analytical run*. Enter the appropriate response for each question.

Each "No" response requires an explanation in the Comments section, and may require the initiation of a Nonconformance Report.

Requirement:	Acceptance Criteria	Analyst Review		Independent Review		Comments:
		Yes	No	Yes	No	(indicate reference to an attachment if necessary)
1. Was the calibration slope recorded on the bench sheet?	95-110%	Yes		Yes		
2. Were reagents/standards used before expiration date?	---	Yes		Yes		
3. Were duplicates analyzed at the appropriate frequency?	1 every 20 samples of the same matrix	Yes		Yes		
4. Were the duplicates within acceptable limits?	Differ by ≤ 0.10 pH units	Yes		Yes		
5. Are all samples on the job lists accounted for?	---	Yes		Yes		
6. Were SM 4500-H+B samples bracketed by calibration buffer 7?	Every 10 samples, Differ by ≤ 0.10 pH units	Yes		Yes		

Mettler Toledo (Easy Seven) Instrument Run Logbook

Date	Start Time	End Time	Analyst	Analyte	Lims Run #(s)
01/26/23	15:30	15:35	RLB	PH	268842

Mettler Toledo (Easy Seven) pH Calibration & Maintenance Run Logb									
		pH Buffer Reference ID #			3 Point Calibration				
Date	Analyst	pH 7	pH 4	pH 10	1st Buffer	2nd Buffer	3rd Buffer	Slope (95-110%)	Temp ° C
01/26/23	SJP	WC550 EX: 12/01/2023	WC507 EX: 08/29/2023	WC453 EX: 01/31/2024	7	4	10.02	97%	24.3

W CARBON, INORG & ORG Analytical Run
268835 on 2/1/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	SAMPLE DECRPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1285114			CCV			W CARBON, INORG & ORG	0			
	1285115			LCSW			W CARBON, INORG & ORG	0			
	1285116			MBW			W CARBON, INORG & ORG	0			
175012	1282988		1/23/2023 13:10		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	CARBON, INORG & ORG		GW	4	
		54MW13									
175012	1282989		1/23/2023 13:10		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	CARBON, INORG & ORG		GW	4	
		54TW13									
175012	1282990		1/23/2023 15:20		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	CARBON, INORG & ORG		GW	4	
		54MW10									
175069	1283772		1/25/2023 09:15		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	CARBON, INORG & ORG		GW	4	
		54MW12		Designated MS/MSD							
175069	1283773		1/25/2023 11:15		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	CARBON, INORG & ORG		GW	4	
		54MW1									
	1285117			CCV			W CARBON, INORG & ORG	0			
	1285118			CCB			W CARBON, INORG & ORG	0			
10	SAMPLE COUNT ON RUN, INCLUDING METHOD AND INSTRUMENT QC										

Matrix: S-Soil Sig-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

Distribution:

C:\Windows\ServiceProfiles\LocalService\AppData\Local\Temp\tmpA98B.tmp

Page 1 of 1

FWC39-01 Data Review Checklist

		Method: Total Organic Carbon Method 415.1/9060		Independent Data Review Checklist		Instrument: TOCW	
LIMS Run #(s)	Analysis Date	Analyst / Data Interpreter		Independent Reviewer	Date of Review	Approved? (Yes or No)	
268835	01/27/2023	TMG		RLD	02/01/2023	Yes	
Instructions: Complete one checklist per <i>analytical sequence</i> . Enter the appropriate response for each question. Each "No" response requires an explanation in the Comments section, and may require the initiation of a Nonconformance Report.							
Requirement	Acceptance Criteria	Analyst Review		Independent Review		Comments	
		Yes	No	Yes	No	(Indicate reference to an attachment if necessary)	
1. Were the samples preserved prior to analysis and analyzed within hold time?	pH <2, 28 days or program/project specific	Yes		Yes			
2. Was the calibration curve performed using the required number of standards?	3 standards and a blank	Yes		Yes			
3. Was the correlation coefficient acceptable?	$r \geq .995$	Yes		Yes			
4. Were the ICV and ICB analyzed?	---	Yes		Yes			
5. Was the ICV result acceptable?	90 – 110 % Rec. or contract/program specific	Yes		Yes			
6. Was the ICB result acceptable?	< LOD or contract/program specific	Yes		Yes			
7. Was an LCS & MB run with each batch of samples?	One each per analytical batch or contract/program specific frequency.	Yes		Yes			
8. Was the LCS recovery acceptable?	In-house derived or contract/program specific limits.	Yes		Yes			
9. Were the MB results acceptable?	< LOD or project/ program specific (<1/2 RL for DOD-QSM).	Yes		Yes			
10. Were the CCV's analyzed at the required frequency?	Beginning, after every 10 sample, & at the end of a sequence.	Yes		Yes			
11. Were the CCB's analyzed at the required frequency?	After each CCV (unless MB analyzed after CCV)	Yes		Yes			
12. Were the CCV recoveries acceptable?	90 – 110 % Rec. or project/ program specific	Yes		Yes			
13. Were the CCB results acceptable?	< LOD or project/ program specific	Yes		Yes			

14. Were all positive results that were reported within the calibration curve?	---	Yes		Yes		
15. Was an MS and MSD analyzed at the required frequency?	1 / 20 of the same matrix or project/ program specific	Yes		Yes		
16. Were the MS and MSD recoveries acceptable?	In-house derived or project/ program specific limits	Yes		Yes		
17. Was the RPD between the MS and MSD acceptable?	In-house derived or project/ program specific limits	Yes		Yes		
18. Was a Duplicate analyzed at the required frequency?	1 per 20 of the same matrix or contract/program specific	Yes		Yes		
19. Was the RPD between the Duplicate (if valid) and the sample acceptable?	In-house derived or project/ program specific limits (QSM samples, duplicate only valid when sample result $\geq 5x$ the LOQ)	Yes		Yes		
20. Are all samples on the job lists accounted for?	---	Yes		Yes		
21. Is the standards prep log numbers noted on the analytical report?	---	Yes		Yes		
22. Were post analysis corrections addressed and/or the Audit Trail function turned on (if available)?	Correction should be initiated, dated, and reason given. Audit trail must be on (if available)	Yes		Yes		
23. Were non-matrix related nonconformities (if applicable) documented in the NCR spreadsheet?	---	Yes		Yes		

Non-Applicable Yes/No Cells Are Left Blank

Comments:

WORGANIC CARBON QSM 5.0 Analytical Run
268891 on 2/6/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	SAMPLE DECRPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1285557			ICV			WORGANIC CARBON QSM 5.0				
	1285558			ICB			WORGANIC CARBON QSM 5.0				
	1285119			CCV			WORGANIC CARBON QSM 5.0	0			
	1285120			LCSW			WORGANIC CARBON QSM 5.0	0			
	1285121			MBW			WORGANIC CARBON QSM 5.0	0			
175012	1282988	54MW13	1/23/2023 13:10		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ORGAN CARBON T QSM 5.0		GW	4	
175012	1282989	54TW13	1/23/2023 13:10		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ORGAN CARBON T QSM 5.0		GW	4	
175012	1282990		1/23/2023 15:20		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ORGAN CARBON T QSM 5.0		GW	4	

Matrix: S-Soil Sig-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

Distribution: WetChem

C:\Windows\ServiceProfiles\LocalService\AppData\Local\Temp\tmp35F8.tmp

Page 1 of 1

WORGANIC CARBON QSM 5.0 Analytical Run
268891 on 2/6/2023

Date Reviewed: _____

Date Validated: _____

Matrix: S-Soil Slg-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

FWC39-01 Data Review Checklist

		Method: Total Organic Carbon Method 415.1/9060		Independent Data Review Checklist		Instrument: TOCW	
LIMS Run #(s)	Analysis Date	Analyst / Data Interpreter		Independent Reviewer	Date of Review	Approved? (Yes or No)	
268891 268892 268893 268894	01/30/2023	TMG		RLD	02/06/2023	Yes	
Instructions: Complete one checklist per <i>analytical sequence</i> . Enter the appropriate response for each question. Each "No" response requires an explanation in the Comments section, and may require the initiation of a Nonconformance Report.							
Requirement	Acceptance Criteria	Analyst Review		Independent Review		Comments	
		Yes	No	Yes	No	(Indicate reference to an attachment if necessary)	
1. Were the samples preserved prior to analysis and analyzed within hold time?	pH <2, 28 days or program/project specific	Yes		Yes			
2. Was the calibration curve performed using the required number of standards?	3 standards and a blank	Yes		Yes			
3. Was the correlation coefficient acceptable?	$r \geq .995$	Yes		Yes			
4. Were the ICV and ICB analyzed?	---	Yes		Yes			
5. Was the ICV result acceptable?	90 – 110 % Rec. or contract/program specific	Yes		Yes			
6. Was the ICB result acceptable?	< LOD or contract/program specific	Yes		Yes			
7. Was an LCS & MB run with each batch of samples?	One each per analytical batch or contract/program specific frequency.	Yes		Yes			
8. Was the LCS recovery acceptable?	In-house derived or contract/program specific limits.	Yes		Yes			
9. Were the MB results acceptable?	< LOD or project/ program specific (<1/2 RL for DOD-QSM).	Yes		Yes			
10. Were the CCV's analyzed at the required frequency?	Beginning, after every 10 sample, & at the end of a sequence.	Yes		Yes			
11. Were the CCB's analyzed at the required frequency?	After each CCV (unless MB analyzed after CCV)	Yes		Yes			
12. Were the CCV recoveries acceptable?	90 – 110 % Rec. or project/ program specific	Yes		Yes			
13. Were the CCB results acceptable?	< LOD or project/ program specific	Yes		Yes			

14. Were all positive results that were reported within the calibration curve?	---	Yes		Yes		
15. Was an MS and MSD analyzed at the required frequency?	1 / 20 of the same matrix or project/ program specific	Yes		Yes		
16. Were the MS and MSD recoveries acceptable?	In-house derived or project/ program specific limits	Yes		Yes		
17. Was the RPD between the MS and MSD acceptable?	In-house derived or project/ program specific limits	Yes		Yes		
18. Was a Duplicate analyzed at the required frequency?	1 per 20 of the same matrix or contract/program specific	Yes		Yes		
19. Was the RPD between the Duplicate (if valid) and the sample acceptable?	In-house derived or project/ program specific limits (QSM samples, duplicate only valid when sample result $\geq 5 \times$ the LOQ)	Yes		Yes		
20. Are all samples on the job lists accounted for?	---	Yes		Yes		
21. Is the standards prep log numbers noted on the analytical report?	---	Yes		Yes		
22. Were post analysis corrections addressed and/or the Audit Trail function turned on (if available)?	Correction should be initiated, dated, and reason given. Audit trail must be on (if available)	Yes		Yes		
23. Were non-matrix related nonconformities (if applicable) documented in the NCR spreadsheet?	---	Yes		Yes		

Non-Applicable Yes/No Cells Are Left Blank

Comments:

[illegible]

Reviewed By: _____

**SUBCONTRACTED ANALYSIS
DOCUMENTS**



ANALYTICAL REPORT

PREPARED FOR

Attn: Brett Szymanski
CT Laboratories
Environmental & Analytical Services
1230 Lange Court
Baraboo WI 53913

Generated 2/7/2023 12:10 PM

JOB DESCRIPTION

1282988-90 / Chlorite, Chlorate

JOB NUMBER

810-51679-1

South Bend, IN

Job Notes

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Eaton Analytical, LLC Project Manager.

Authorization



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2/7/2023 12:10 PM

Authorized for release by
Traci Chlebowska, Project Manager
Traci.Chlebowska@et.eurofinsus.com
574 233-4777

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Definitions/Glossary

Client: CT Laboratories
Project/Site: 1282988-90 / Chlorite, Chlorate

Job ID: 810-51679-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Reported value was between the limit of detection and the limit of quantitation.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job Narrative
810-51679-1

Receipt

The samples were received on 1/27/2023 8:45 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.2°C

HPLC/IC

Method 300_OF_14D_B: The Chlorite matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 810-46114 were outside control limits of 90-110%. MS -85%, MSD-86% recovery. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: CT Laboratories
Project/Site: 1282988-90 / Chlorite, Chlorate

Job ID: 810-51679-1

Client Sample ID: 54MW13

Lab Sample ID: 810-51679-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Chlorite	7.4	J	10	5.9	ug/L	1		300.0	Total/NA

Client Sample ID: 54TW13

Lab Sample ID: 810-51679-2

No Detections.

Client Sample ID: 54MW10

Lab Sample ID: 810-51679-3

No Detections.

Client Sample Results

Client: CT Laboratories
Project/Site: 1282988-90 / Chlorite, Chlorate

Job ID: 810-51679-1

Client Sample ID: 54MW13

Date Collected: 01/23/23 13:10

Date Received: 01/27/23 08:45

Lab Sample ID: 810-51679-1

Matrix: Drinking Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	<7.9		10	7.9	ug/L			01/30/23 22:09	1
Chlorite	7.4	J	10	5.9	ug/L			01/30/23 22:09	1

Client Sample ID: 54TW13

Date Collected: 01/23/23 13:10

Date Received: 01/27/23 08:45

Lab Sample ID: 810-51679-2

Matrix: Drinking Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	<7.9		10	7.9	ug/L			01/30/23 22:39	1
Chlorite	<5.9		10	5.9	ug/L			01/30/23 22:39	1

Client Sample ID: 54MW10

Date Collected: 01/23/23 15:20

Date Received: 01/27/23 08:45

Lab Sample ID: 810-51679-3

Matrix: Drinking Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	<7.9		10	7.9	ug/L			01/31/23 00:09	1
Chlorite	<5.9	F1	10	5.9	ug/L			01/31/23 00:09	1

Action Limit Summary

Client: CT Laboratories
Project/Site: 1282988-90 / Chlorite, Chlorate

Job ID: 810-51679-1

Client Sample ID: 54MW13

Lab Sample ID: 810-51679-1

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits have been highlighted for your convenience.

Analyte	Result	Qualifier	Unit	Limit	LOQ	Method	Prep Type
Chlorite	7.4	J	ug/L	1000	10	300.0	Total/NA

Client Sample ID: 54TW13

Lab Sample ID: 810-51679-2

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits have been highlighted for your convenience.

Analyte	Result	Qualifier	Unit	Limit	LOQ	Method	Prep Type
Chlorite	<5.9		ug/L	1000	10	300.0	Total/NA

Client Sample ID: 54MW10

Lab Sample ID: 810-51679-3

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits have been highlighted for your convenience.

Analyte	Result	Qualifier	Unit	Limit	LOQ	Method	Prep Type
Chlorite	<5.9	F1	ug/L	1000	10	300.0	Total/NA

Default Detection Limits

Client: CT Laboratories

Job ID: 810-51679-1

Project/Site: 1282988-90 / Chlorite, Chlorate

Method: 300.0 - Anions, Ion Chromatography

Analyte	LOQ	LOD	Units
Chlorate	10	7.9	ug/L
Chlorite	10	5.9	ug/L

QC Sample Results

Client: CT Laboratories
Project/Site: 1282988-90 / Chlorite, Chlorate

Job ID: 810-51679-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 810-46114/5
Matrix: Drinking Water
Analysis Batch: 46114

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	<7.9		10	7.9	ug/L			01/30/23 16:08	1
Chlorite	<5.9		10	5.9	ug/L			01/30/23 16:08	1

Lab Sample ID: LCS 810-46114/6
Matrix: Drinking Water
Analysis Batch: 46114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorate	250	246		ug/L		98	90 - 110
Chlorite	250	236		ug/L		94	90 - 110

Lab Sample ID: LLCS 810-46114/2
Matrix: Drinking Water
Analysis Batch: 46114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorate	10.0	9.82	J	ug/L		98	50 - 150
Chlorite	10.0	12.6		ug/L		126	50 - 150

Lab Sample ID: 810-51679-3 MS
Matrix: Drinking Water
Analysis Batch: 46114

Client Sample ID: 54MW10
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorate	<7.9		250	226		ug/L		90	90 - 110
Chlorite	<5.9	F1	250	212	F1	ug/L		85	90 - 110

Lab Sample ID: 810-51679-3 MSD
Matrix: Drinking Water
Analysis Batch: 46114

Client Sample ID: 54MW10
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	<7.9		250	226		ug/L		91	90 - 110	0	20
Chlorite	<5.9	F1	250	216	F1	ug/L		86	90 - 110	2	20

QC Association Summary

Client: CT Laboratories
Project/Site: 1282988-90 / Chlorite, Chlorate

Job ID: 810-51679-1

HPLC/IC

Analysis Batch: 46114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-51679-1	54MW13	Total/NA	Drinking Water	300.0	
810-51679-2	54TW13	Total/NA	Drinking Water	300.0	
810-51679-3	54MW10	Total/NA	Drinking Water	300.0	
MB 810-46114/5	Method Blank	Total/NA	Drinking Water	300.0	
LCS 810-46114/6	Lab Control Sample	Total/NA	Drinking Water	300.0	
LLCS 810-46114/2	Lab Control Sample	Total/NA	Drinking Water	300.0	
810-51679-3 MS	54MW10	Total/NA	Drinking Water	300.0	
810-51679-3 MSD	54MW10	Total/NA	Drinking Water	300.0	

Lab Chronicle

Client: CT Laboratories
Project/Site: 1282988-90 / Chlorite, Chlorate

Job ID: 810-51679-1

Client Sample ID: 54MW13

Date Collected: 01/23/23 13:10

Date Received: 01/27/23 08:45

Lab Sample ID: 810-51679-1

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	46114	JL	EA SB	01/30/23 22:09

Client Sample ID: 54TW13

Date Collected: 01/23/23 13:10

Date Received: 01/27/23 08:45

Lab Sample ID: 810-51679-2

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	46114	JL	EA SB	01/30/23 22:39

Client Sample ID: 54MW10

Date Collected: 01/23/23 15:20

Date Received: 01/27/23 08:45

Lab Sample ID: 810-51679-3

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	46114	JL	EA SB	01/31/23 00:09

Laboratory References:

EA SB = Eurofins Eaton South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

Accreditation/Certification Summary

Client: CT Laboratories
Project/Site: 1282988-90 / Chlorite, Chlorate

Job ID: 810-51679-1

Laboratory: Eurofins Eaton South Bend

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999766900	08-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
300.0		Drinking Water	Chlorate

Method Summary

Client: CT Laboratories
Project/Site: 1282988-90 / Chlorite, Chlorate

Job ID: 810-51679-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EA SB

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EA SB = Eurofins Eaton South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

Sample Summary

Client: CT Laboratories
Project/Site: 1282988-90 / Chlorite, Chlorate

Job ID: 810-51679-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
810-51679-1	54MW13	Drinking Water	01/23/23 13:10	01/27/23 08:45
810-51679-2	54TW13	Drinking Water	01/23/23 13:10	01/27/23 08:45
810-51679-3	54MW10	Drinking Water	01/23/23 15:20	01/27/23 08:45

Quantitation Limit Exceptions Summary

Client: CT Laboratories

Job ID: 810-51679-1

Project/Site: 1282988-90 / Chlorite, Chlorate

The requested project specific reporting limits listed below were less than laboratory standard quantitation limits (PQL) but greater than or equal to the laboratory method detection limits (MDL). It must be noted that results reported below lab standard quantitation limits may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

Method	Analyte	Matrix	Prep Type	Unit	Client RL	Lab PQL
300.0	Chlorate	Drinking Water	Total/NA	ug/L	10	43
300.0	Chlorite	Drinking Water	Total/NA	ug/L	10	41

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1

SDG No.: _____

Instrument ID: IC-GP Analysis Batch Number: 46114Lab Sample ID: LLCS 810-46114/2 Client Sample ID: _____Date Analyzed: 01/30/23 14:38 Lab File ID: 013023A_9.d GC Column: IonPac AS-19 ID: _____

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Chlorite	5.08	Incomplete Integration	U3JL	02/06/23 12:35
Chlorate	11.47	Incomplete Integration	U3JL	02/06/23 12:36

Lab Sample ID: CCB 810-46114/4 Client Sample ID: _____Date Analyzed: 01/30/23 15:38 Lab File ID: 013023A_11.d GC Column: IonPac AS-19 ID: _____

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Chlorite		Invalid Compound ID	U3JL	02/06/23 12:36

Lab Sample ID: MB 810-46114/5 Client Sample ID: _____Date Analyzed: 01/30/23 16:08 Lab File ID: 013023A_12.d GC Column: IonPac AS-19 ID: _____

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Chlorite		Invalid Compound ID	U3JL	02/06/23 12:38
Chlorate	11.50	Incomplete Integration	U3JL	02/06/23 12:39

Lab Sample ID: CCB 810-46114/20 Client Sample ID: _____Date Analyzed: 01/30/23 23:39 Lab File ID: 013023A_27.d GC Column: IonPac AS-19 ID: _____

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Chlorite		Invalid Compound ID	U3JL	02/06/23 13:05

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
IC-300B CalSS_00007	05/30/23	11/30/22	MilliQ Water, Lot 111021	100 mL	IC-BR-CalSt_00003	2500 uL	Bromide	25 mg/L
					IC-CLO2-CalSt_00003	2500 uL	Chlorite	25 mg/L
					IC-CLO3-CalSt_00003	2500 uL	Chlorate	25 mg/L
.IC-BR-CalSt_00003	07/26/23	Inorganic Venture, Lot T2-BR715284			(Purchased Reagent)		Bromide	1000 ug/mL
.IC-CLO2-CalSt_00003	07/26/23	Inorganic Venture, Lot S2-CLOX706256			(Purchased Reagent)		Chlorite	1000 ug/mL
.IC-CLO3-CalSt_00003	07/26/23	Inorganic Venture, Lot S2-CLOX707224			(Purchased Reagent)		Chlorate	1000 ug/mL

Method 300.0

Anions (IC) by Method 300.0

FORM III
HPLC/IC LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Matrix: Drinking Water Level: Low Lab File ID: 013023A_13.d
Lab ID: LCS 810-46114/6 Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
Chlorate	250	246	98	90-110	
Chlorite	250	236	94	90-110	

Column to be used to flag recovery and RPD values

FORM III 300.0

FORM III
HPLC/IC LOW LEVEL CONTROL SAMPLE RECOVERY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Matrix: Drinking Water Level: Low Lab File ID: 013023A_9.d
Lab ID: LLCS 810-46114/2 Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LLCS CONCENTRATION (ug/L)	LLCS % REC	QC LIMITS REC	#
Chlorate	10.0	9.82 J	98	50-150	
Chlorite	10.0	12.6	126	50-150	

Column to be used to flag recovery and RPD values

FORM III 300.0

FORM III
HPLC/IC MATRIX SPIKE RECOVERY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Matrix: Drinking Water Level: Low Lab File ID: 013023A_29.d
Lab ID: 810-51679-3 MS Client ID: 54MW10 MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
Chlorate	250	<7.9	226	90	90-110	
Chlorite	250	<5.9	212	85	90-110	F1

Column to be used to flag recovery and RPD values

FORM III 300.0

FORM III
HPLC/IC MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Matrix: Drinking Water Level: Low Lab File ID: 013023A_30.d
Lab ID: 810-51679-3 MSD Client ID: 54MW10 MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Chlorate	250	226	91	0	20	90-110	
Chlorite	250	216	86	2	20	90-110	F1

Column to be used to flag recovery and RPD values

FORM III 300.0

FORM IV
HPLC/IC METHOD BLANK SUMMARY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
 SDG No.: _____
 Lab File ID: 013023A_12.d Lab Sample ID: MB 810-46114/5
 Matrix: Drinking Water Date Extracted: _____
 Instrument ID: IC-GP Date Analyzed: 01/30/2023 16:08
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LLCS 810-46114/2	013023A_9.d	01/30/2023 14:38
	LCS 810-46114/6	013023A_13.d	01/30/2023 16:38
54MW13	810-51679-1	013023A_24.d	01/30/2023 22:09
54TW13	810-51679-2	013023A_25.d	01/30/2023 22:39
54MW10	810-51679-3	013023A_28.d	01/31/2023 00:09
54MW10 MS	810-51679-3 MS	013023A_29.d	01/31/2023 00:39
54MW10 MSD	810-51679-3 MSD	013023A_30.d	01/31/2023 01:09

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Client Sample ID: 54MW13 Lab Sample ID: 810-51679-1
Matrix: Drinking Water Lab File ID: 013023A_24.d
Analysis Method: 300.0 Date Collected: 01/23/2023 13:10
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/30/2023 22:09
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 46114 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD
14866-68-3	Chlorate	<7.9		10	7.9
14998-27-7	Chlorite	7.4	J	10	5.9

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_24.d
Lims ID: 810-51679-A-1
Client ID: 54MW13
Sample Type: Client
Inject. Date: 30-Jan-2023 22:09:00 ALS Bottle#: 0 Worklist Smp#: 17
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 810-51679-A-1
Misc. Info.: 810-0011430-017
Operator ID: Instrument ID: IC-GP
Method: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\300B_IC_GP.m
Limit Group: IC - 300 - B
Last Update: 06-Feb-2023 13:06:41 Calib Date: 19-Jan-2023 15:03:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
Process Host: CTX1676

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
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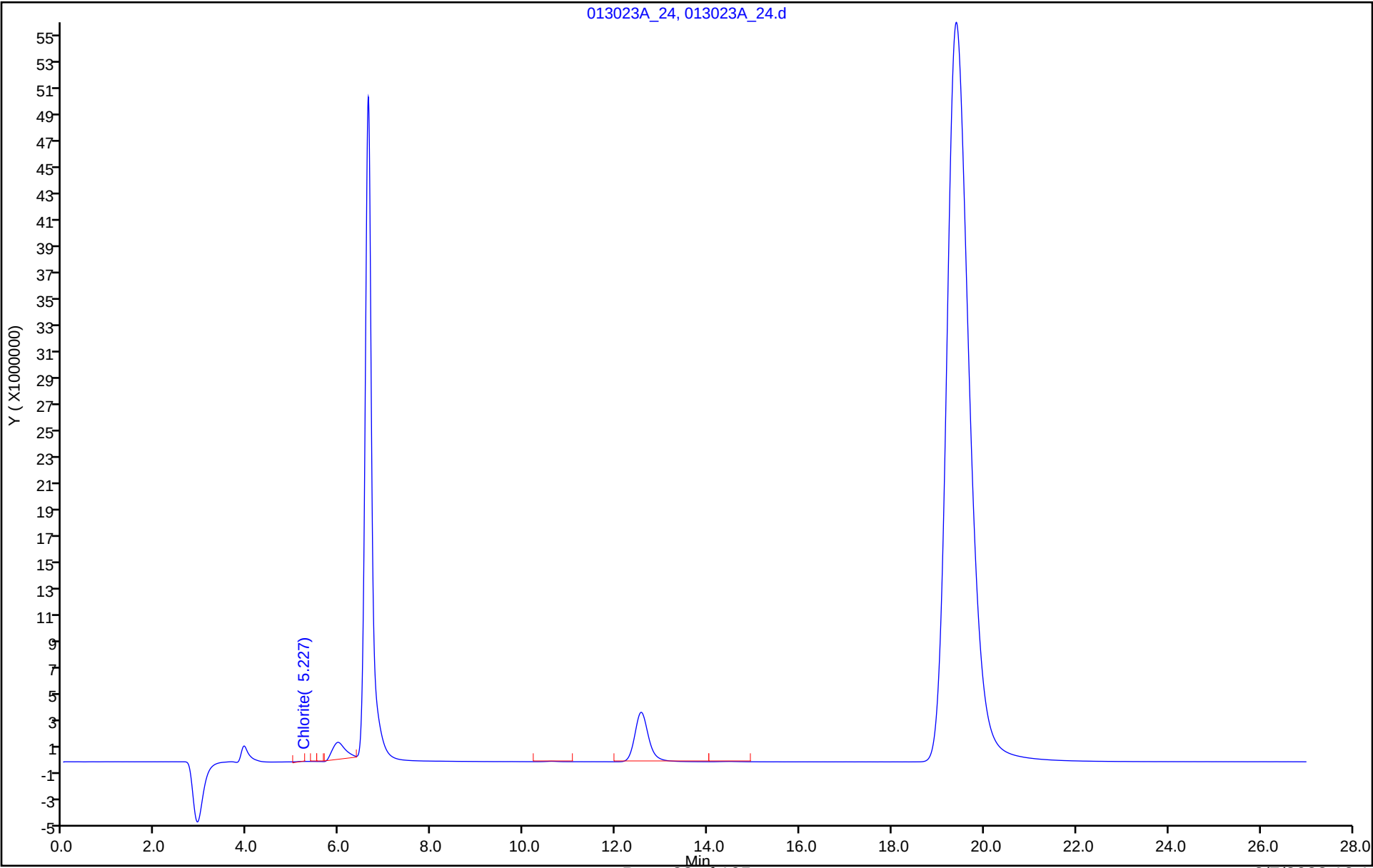
10 Chlorite

5.227 5.130 0.097 72063 0.007369

South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_24.d
Injection Date: 30-Jan-2023 22:09:00 Instrument ID: IC-GP
Lims ID: 810-51679-A-1 Lab Sample ID: 810-51679-1
Client ID: 54MW13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 300B_IC_GP Limit Group: IC - 300 - B
Column: IC IonPac AS-19 (0.00 mm)

Operator ID:
Worklist Smp#: 17
ALS Bottle#: 0



FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Client Sample ID: 54TW13 Lab Sample ID: 810-51679-2
Matrix: Drinking Water Lab File ID: 013023A_25.d
Analysis Method: 300.0 Date Collected: 01/23/2023 13:10
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/30/2023 22:39
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 46114 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD
14866-68-3	Chlorate	<7.9		10	7.9
14998-27-7	Chlorite	<5.9		10	5.9

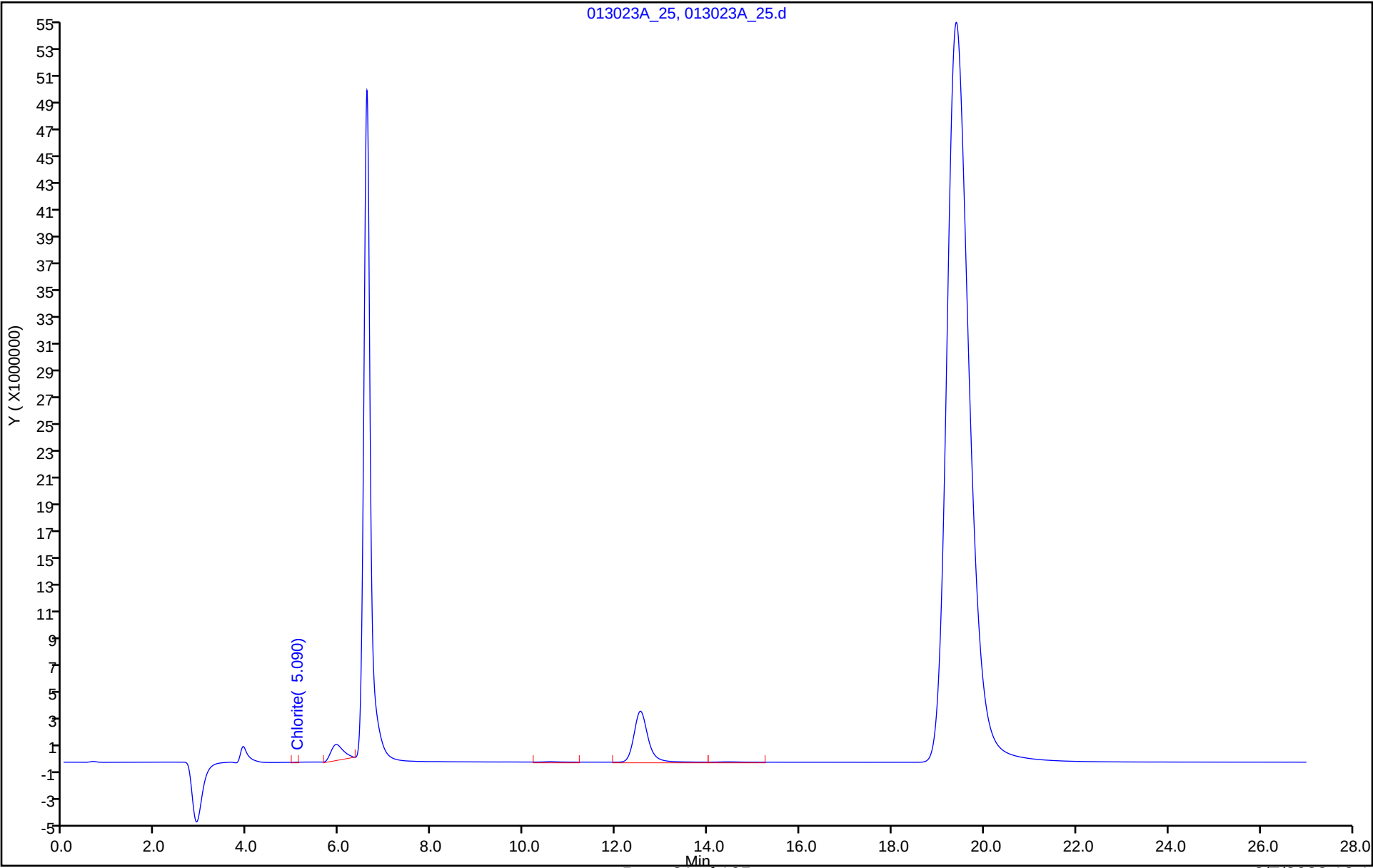
South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_25.d
Lims ID: 810-51679-A-2
Client ID: 54TW13
Sample Type: Client
Inject. Date: 30-Jan-2023 22:39:00 ALS Bottle#: 0 Worklist Smp#: 18
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 810-51679-A-2
Misc. Info.: 810-0011430-018
Operator ID: Instrument ID: IC-GP
Method: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\300B_IC_GP.m
Limit Group: IC - 300 - B
Last Update: 06-Feb-2023 13:06:41 Calib Date: 19-Jan-2023 15:03:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
Process Host: CTX1676

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
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10 Chlorite

5.090 5.130 -0.040 13593 0.005276



FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Client Sample ID: 54MW10 Lab Sample ID: 810-51679-3
Matrix: Drinking Water Lab File ID: 013023A_28.d
Analysis Method: 300.0 Date Collected: 01/23/2023 15:20
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/31/2023 00:09
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 46114 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD
14866-68-3	Chlorate	<7.9		10	7.9
14998-27-7	Chlorite	<5.9	F1	10	5.9

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_28.d
Lims ID: 810-51679-A-3
Client ID: 54MW10
Sample Type: Client
Inject. Date: 31-Jan-2023 00:09:00 ALS Bottle#: 0 Worklist Smp#: 21
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 810-51679-A-3
Misc. Info.: 810-0011430-021
Operator ID: Instrument ID: IC-GP
Method: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\300B_IC_GP.m
Limit Group: IC - 300 - B
Last Update: 06-Feb-2023 13:06:46 Calib Date: 19-Jan-2023 15:03:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
Process Host: CTX1676

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
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10 Chlorite

5.073 5.130 -0.057 11046 0.005185

3 Bromide

10.587 10.607 -0.020 488500 0.0170

South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_28.d

Injection Date: 31-Jan-2023 00:09:00

Instrument ID: IC-GP

Operator ID:

Lims ID: 810-51679-A-3

Lab Sample ID: 810-51679-3

Worklist Smp#: 21

Client ID: 54MW10

Injection Vol: 1.0 ul

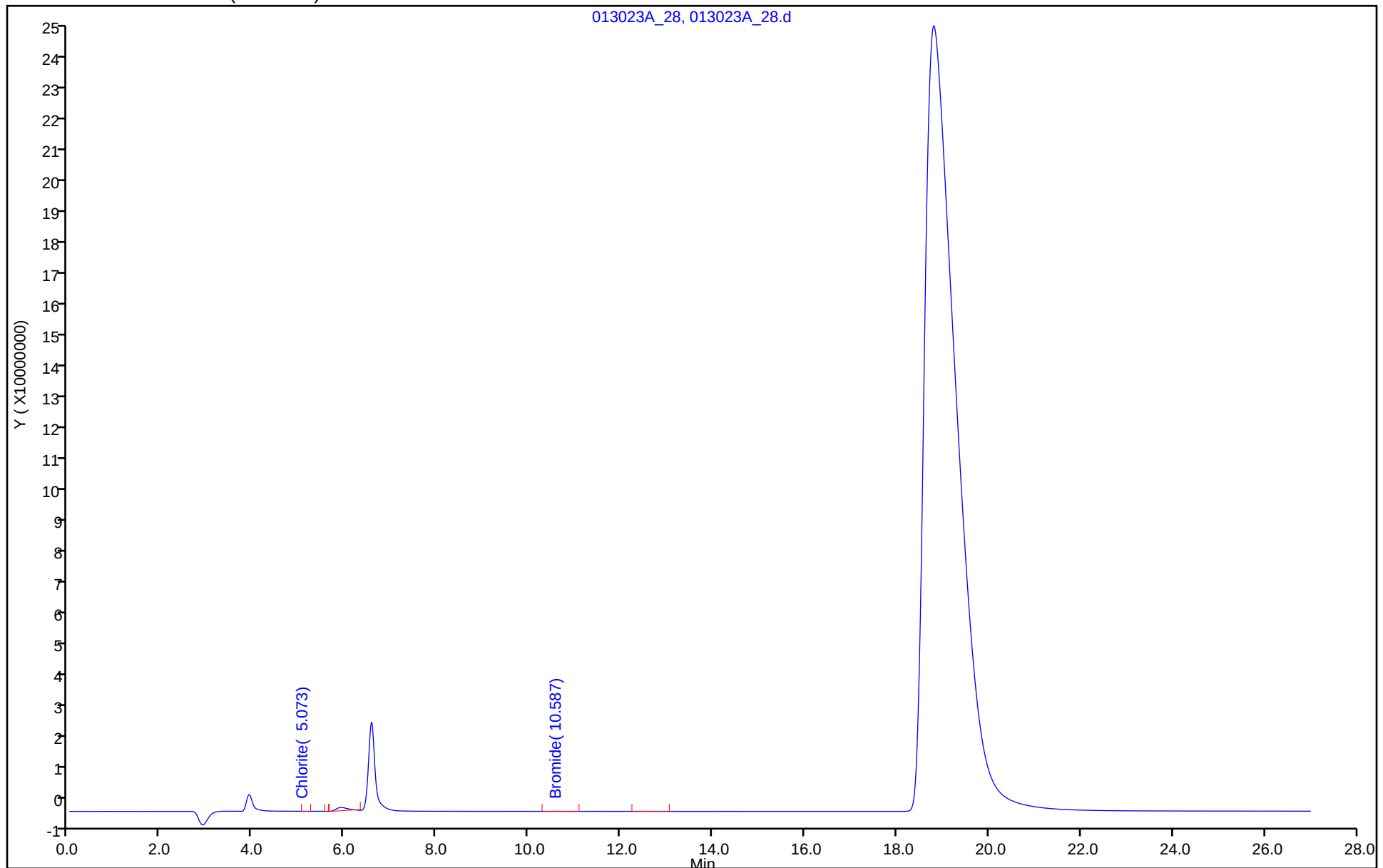
Dil. Factor: 1.0000

ALS Bottle#: 0

Method: 300B_IC_GP

Limit Group: IC - 300 - B

Column: IC IonPac AS-19 (0.00 mm)



FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1 Analy Batch No.: 44974

SDG No.: _____

Instrument ID: IC-GP GC Column: IonPac AS-1 ID: _____ Heated Purge: (Y/N) N

Calibration Start Date: 01/19/2023 12:03 Calibration End Date: 01/19/2023 15:03 Calibration ID: 6305

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 810-44974/1	011923A_Cal_2.d
Level 2	IC 810-44974/2	011923A_Cal_3.d
Level 3	IC 810-44974/3	011923A_Cal_4.d
Level 4	IC 810-44974/4	011923A_Cal_5.d
Level 5	IC 810-44974/5	011923A_Cal_6.d
Level 6	ICRT 810-44974/6	011923A_Cal_7.d
Level 7	IC 810-44974/7	011923A_Cal_8.d

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
Chlorite		5.137	5.127	5.130	5.130	5.147	5.147				4.889 - 5.404	5.136
Bromide		10.610	10.603	10.607	10.630	10.663	10.643				10.130 - 11.197	10.626
Chlorate		11.613	11.600	11.610	11.643	11.677	11.643				11.093 - 12.261	11.631

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1 Analy Batch No.: 44974

SDG No.: _____

Instrument ID: IC-GP GC Column: IonPac AS-1 ID: _____ Heated Purge: (Y/N) N

Calibration Start Date: 01/19/2023 12:03 Calibration End Date: 01/19/2023 15:03 Calibration ID: 6305

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 810-44974/1	011923A_Cal_2.d
Level 2	IC 810-44974/2	011923A_Cal_3.d
Level 3	IC 810-44974/3	011923A_Cal_4.d
Level 4	IC 810-44974/4	011923A_Cal_5.d
Level 5	IC 810-44974/5	011923A_Cal_6.d
Level 6	ICRT 810-44974/6	011923A_Cal_7.d
Level 7	IC 810-44974/7	011923A_Cal_8.d

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD /RSE	#	MAX %RSD /RSE	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
Chlorite	27006056	23151400 27300278	21730300 27928737	25923530	Lin	-133824.2 7	27939166. 4							1.0000		0.9950
Bromide	27084436	37854800 26833748	26849200 27137771	28077270	Lin	29579.847 1	27043592. 6							1.0000		0.9950
Chlorate	25447724	31211300 24755408	23791150 24945387	26518770	Lin	52626.038 1	24870453. 6							1.0000		0.9950

Note: The M1 coefficient is the same as Ave CF for an Ave curve type. RSD is calculated for Ave curve types. RSE is used for all other types.

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1 Analy Batch No.: 44974

SDG No.: _____

Instrument ID: IC-GP GC Column: IonPac AS-1 ID: _____ Heated Purge: (Y/N) N

Calibration Start Date: 01/19/2023 12:03 Calibration End Date: 01/19/2023 15:03 Calibration ID: 6305

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 810-44974/1	011923A_Cal_2.d
Level 2	IC 810-44974/2	011923A_Cal_3.d
Level 3	IC 810-44974/3	011923A_Cal_4.d
Level 4	IC 810-44974/4	011923A_Cal_5.d
Level 5	IC 810-44974/5	011923A_Cal_6.d
Level 6	ICRT 810-44974/6	011923A_Cal_7.d
Level 7	IC 810-44974/7	011923A_Cal_8.d

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Chlorite	Lin	13650139	231514 27928737	434606	2592353	6751514	0.000000 0.500	0.0100 1.00	0.0200	0.100	0.250
Bromide	Lin	13416874	378548 27137771	536984	2807727	6771109	0.000000 0.500	0.0100 1.00	0.0200	0.100	0.250
Chlorate	Lin	12377704	312113 24945387	475823	2651877	6361931	0.000000 0.500	0.0100 1.00	0.0200	0.100	0.250

Curve Type Legend

Lin = Linear

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
READBACK PERCENT ERROR

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1 Analy Batch No.: 44974

SDG No.: _____

Instrument ID: IC-GP GC Column: IonPac AS-1 ID: _____ Heated Purge: (Y/N) N

Calibration Start Date: 01/19/2023 12:03 Calibration End Date: 01/19/2023 15:03 Calibration ID: 6305

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 810-44974/1	011923A_Cal_2.d
Level 2	IC 810-44974/2	011923A_Cal_3.d
Level 3	IC 810-44974/3	011923A_Cal_4.d
Level 4	IC 810-44974/4	011923A_Cal_5.d
Level 5	IC 810-44974/5	011923A_Cal_6.d
Level 6	ICRT 810-44974/6	011923A_Cal_7.d
Level 7	IC 810-44974/7	011923A_Cal_8.d

ANALYTE	PERCENT ERROR						PERCENT ERROR LIMIT					
	LVL 1 # LVL 7 #	LVL 2 #	LVL 3 #	LVL 4 #	LVL 5 #	LVL 6 #	LVL 1 LVL 7	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6
Chlorite	0.4	30.8 *	1.7	-2.4	-1.4	-1.3	50 10	10	10	10	10	10
Bromide	0.2	29.0 *	-6.2	2.7	-0.3	-1.0	50 10	10	10	10	10	10
Chlorate	0.1	4.3	-14.9 *	4.5	1.5	-0.9	50 10	10	10	10	10	10

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_2.d
Lims ID: IC L0
Client ID:
Sample Type: IC Calib Level: 0
Inject. Date: 19-Jan-2023 12:03:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: IC L0
Misc. Info.: 810-0011170-001
Operator ID: Instrument ID: IC-GP
Sublist: chrom-300B_IC_GP*sub2
Method: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\300B_IC_GP.m
Limit Group: IC - 300 - B
Last Update: 20-Jan-2023 12:19:51 Calib Date: 19-Jan-2023 15:03:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
Process Host: CTX1610

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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Reagents:

IC-300B CalSS_00007

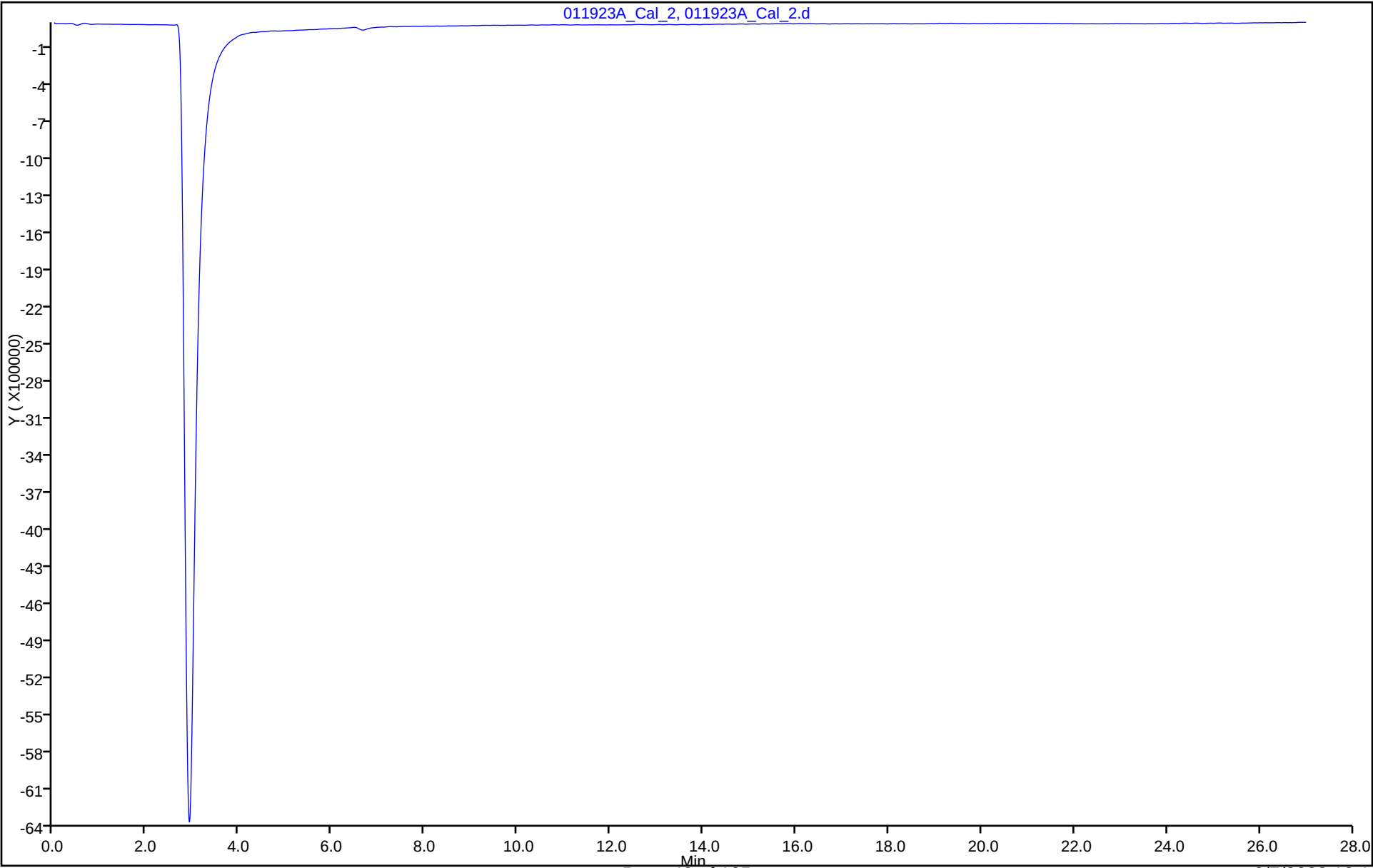
Amount Added: 0.00

Units: uL

South Bend, IN
Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_2.d
Injection Date: 19-Jan-2023 12:03:00 Instrument ID: IC-GP
Lims ID: IC L0
Client ID:
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 300B_IC_GP Limit Group: IC - 300 - B
Column: IC IonPac AS-19 (0.00 mm)

Operator ID:
Worklist Smp#: 1

ALS Bottle#: 0



South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_3.d
 Lims ID: IC L1
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 19-Jan-2023 12:33:00 ALS Bottle#: 0 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC L1
 Misc. Info.: 810-0011170-002
 Operator ID: Instrument ID: IC-GP
 Sublist: chrom-300B_IC_GP*sub2
 Method: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\300B_IC_GP.m
 Limit Group: IC - 300 - B
 Last Update: 20-Jan-2023 12:19:51 Calib Date: 19-Jan-2023 15:03:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1610

First Level Reviewer: U3JL

Date: 20-Jan-2023 12:19:07

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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10 Chlorite

5.137 5.147 -0.010 231514 0.0100 0.0131

3 Bromide

10.610 10.663 -0.053 378548 0.0100 0.0129

2 Chlorate

11.613 11.677 -0.064 312113 0.0100 0.0104

QC Flag Legend

Processing Flags

Reagents:

IC-300B CalSS_00007

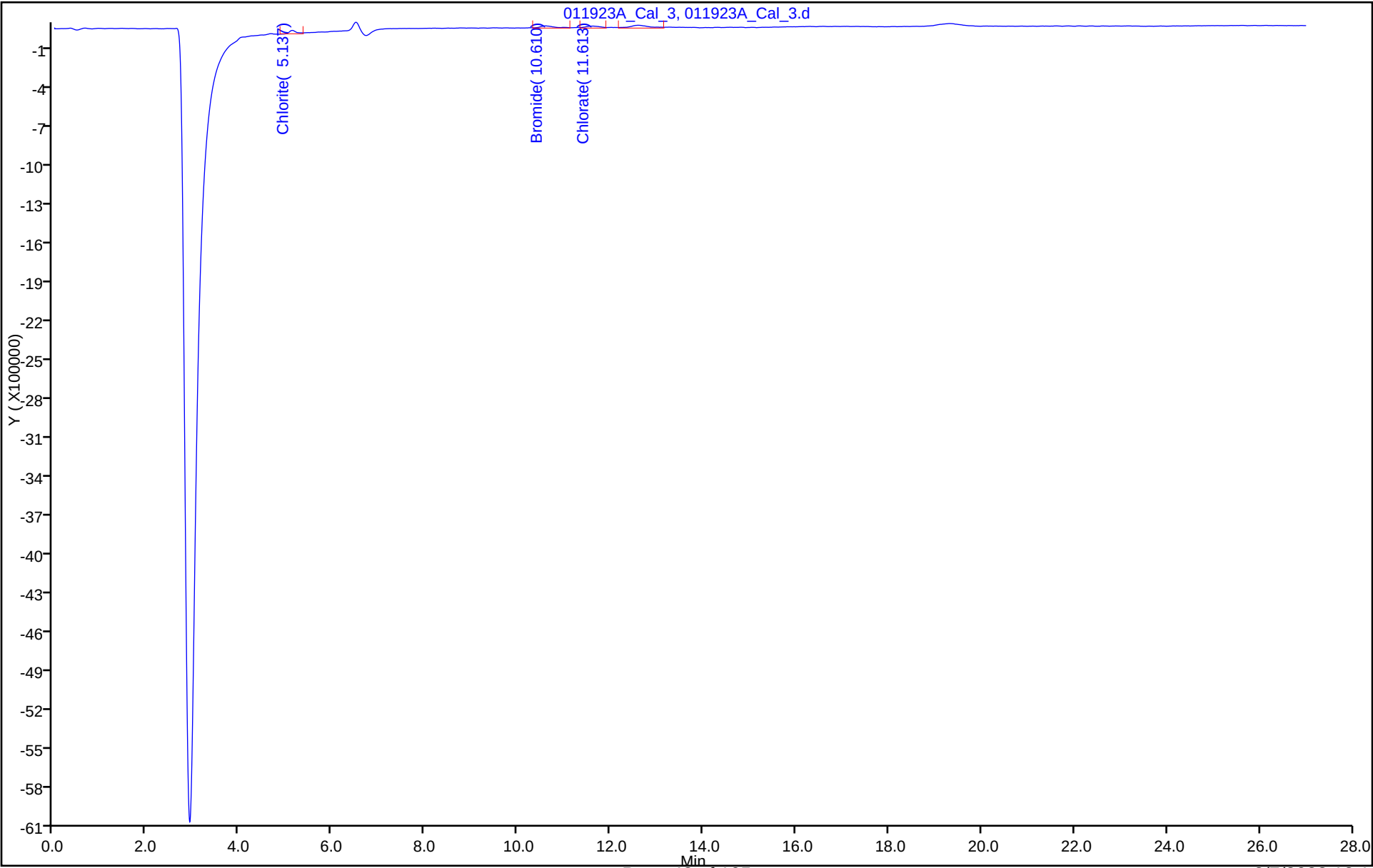
Amount Added: 40.00

Units: uL

South Bend, IN
Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_3.d
Injection Date: 19-Jan-2023 12:33:00 Instrument ID: IC-GP
Lims ID: IC L1
Client ID:
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 300B_IC_GP Limit Group: IC - 300 - B
Column: IC IonPac AS-19 (0.00 mm)

Operator ID:
Worklist Smp#: 2

ALS Bottle#: 0



South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_4.d
 Lims ID: IC L2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 19-Jan-2023 13:03:00 ALS Bottle#: 0 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC L2
 Misc. Info.: 810-0011170-003
 Operator ID: Instrument ID: IC-GP
 Sublist: chrom-300B_IC_GP*sub2
 Method: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\300B_IC_GP.m
 Limit Group: IC - 300 - B
 Last Update: 20-Jan-2023 12:19:52 Calib Date: 19-Jan-2023 15:03:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1610

First Level Reviewer: U3JL

Date: 20-Jan-2023 12:19:02

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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10 Chlorite

5.127	5.147	-0.020	434606	0.0200	0.0203
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3 Bromide

10.603	10.663	-0.060	536984	0.0200	0.0188
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2 Chlorate

11.600	11.677	-0.077	475823	0.0200	0.0170
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QC Flag Legend

Processing Flags

Reagents:

IC-300B CalSS_00007

Amount Added: 80.00

Units: uL

South Bend, IN
Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_4.d
Injection Date: 19-Jan-2023 13:03:00 Instrument ID: IC-GP
Lims ID: IC L2
Client ID:
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 300B_IC_GP Limit Group: IC - 300 - B
Column: IC IonPac AS-19 (0.00 mm)

Operator ID:
Worklist Smp#: 3

ALS Bottle#: 0



South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_5.d
 Lims ID: IC L3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 19-Jan-2023 13:33:00 ALS Bottle#: 0 Worklist Smp#: 4
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC L3
 Misc. Info.: 810-0011170-004
 Operator ID: Instrument ID: IC-GP
 Sublist: chrom-300B_IC_GP*sub2
 Method: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\300B_IC_GP.m
 Limit Group: IC - 300 - B
 Last Update: 20-Jan-2023 12:19:52 Calib Date: 19-Jan-2023 15:03:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1610

First Level Reviewer: U3JL

Date: 20-Jan-2023 12:18:56

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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10 Chlorite

5.130 5.130 0.000 2592353 0.1000 0.0976

3 Bromide

10.607 10.607 0.000 2807727 0.1000 0.1027

2 Chlorate

11.610 11.610 0.000 2651877 0.1000 0.1045

QC Flag Legend

Processing Flags

Reagents:

IC-300B CalSS_00007

Amount Added: 400.00

Units: uL

Report Date: 20-Jan-2023 12:19:52

Chrom Revision: 2.3 09-Jan-2023 13:34:20

South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_5.d

Injection Date: 19-Jan-2023 13:33:00

Instrument ID: IC-GP

Operator ID:

Lims ID: IC L3

Worklist Smp#: 4

Client ID:

Injection Vol: 1.0 ul

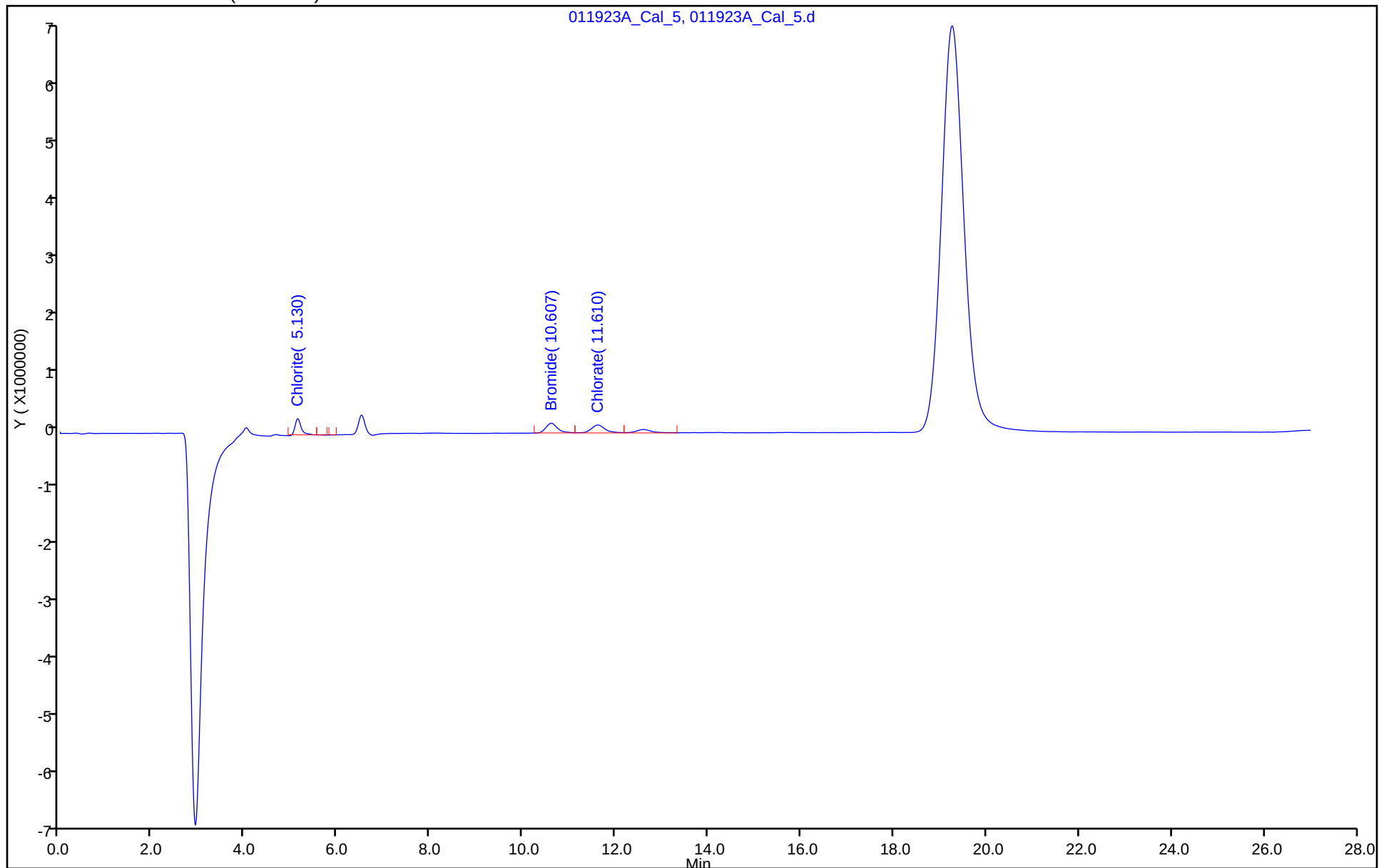
Dil. Factor: 1.0000

ALS Bottle#: 0

Method: 300B_IC_GP

Limit Group: IC - 300 - B

Column: IC IonPac AS-19 (0.00 mm)



South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_6.d
 Lims ID: IC L4
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 19-Jan-2023 14:03:00 ALS Bottle#: 0 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC L4
 Misc. Info.: 810-0011170-005
 Operator ID: Instrument ID: IC-GP
 Sublist: chrom-300B_IC_GP*sub2
 Method: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\300B_IC_GP.m
 Limit Group: IC - 300 - B
 Last Update: 20-Jan-2023 12:19:53 Calib Date: 19-Jan-2023 15:03:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1610

First Level Reviewer: U3JL

Date: 20-Jan-2023 12:18:51

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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10 Chlorite

5.130 5.130 0.000 6751514 0.2500 0.2464

3 Bromide

10.630 10.607 0.023 6771109 0.2500 0.2493

2 Chlorate

11.643 11.610 0.033 6361931 0.2500 0.2537

QC Flag Legend

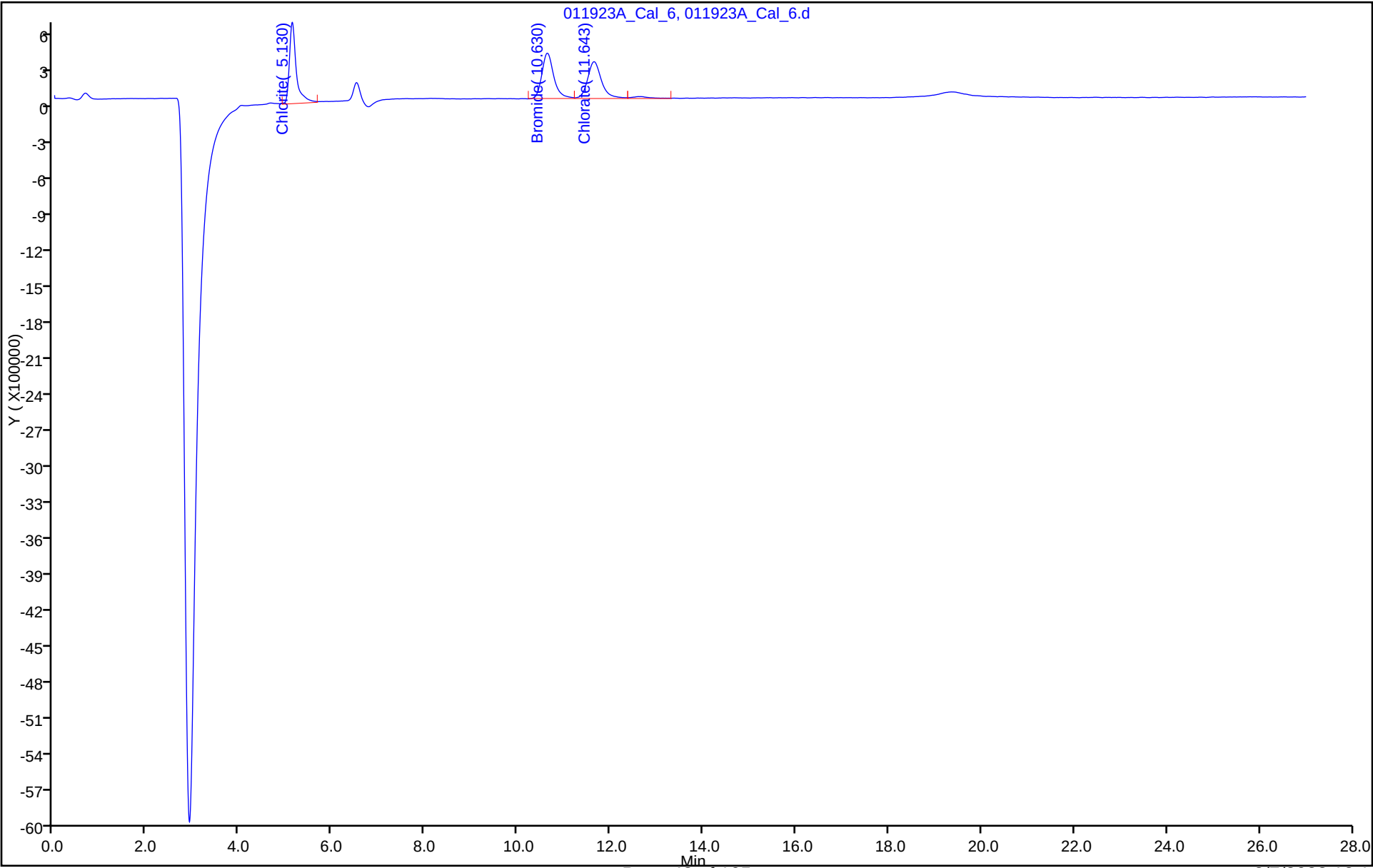
Processing Flags

Reagents:

IC-300B CalSS_00007

Amount Added: 1000.00

Units: uL



South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_7.d
 Lims ID: ICRT L5
 Client ID:
 Sample Type: ICRT Calib Level: 5
 Inject. Date: 19-Jan-2023 14:33:00 ALS Bottle#: 0 Worklist Smp#: 6
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICRT L5
 Misc. Info.: 810-0011170-006
 Operator ID: Instrument ID: IC-GP
 Sublist: chrom-300B_IC_GP*sub2
 Method: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\300B_IC_GP.m
 Limit Group: IC - 300 - B
 Last Update: 20-Jan-2023 12:19:50 Calib Date: 19-Jan-2023 15:03:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1610

First Level Reviewer: U3JL

Date: 20-Jan-2023 12:19:50

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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10 Chlorite

5.147 5.147 0.000 13650139 0.5000 0.4934

3 Bromide

10.663 10.663 0.000 13416874 0.5000 0.4950

2 Chlorate

11.677 11.677 0.000 12377704 0.5000 0.4956

QC Flag Legend

Processing Flags

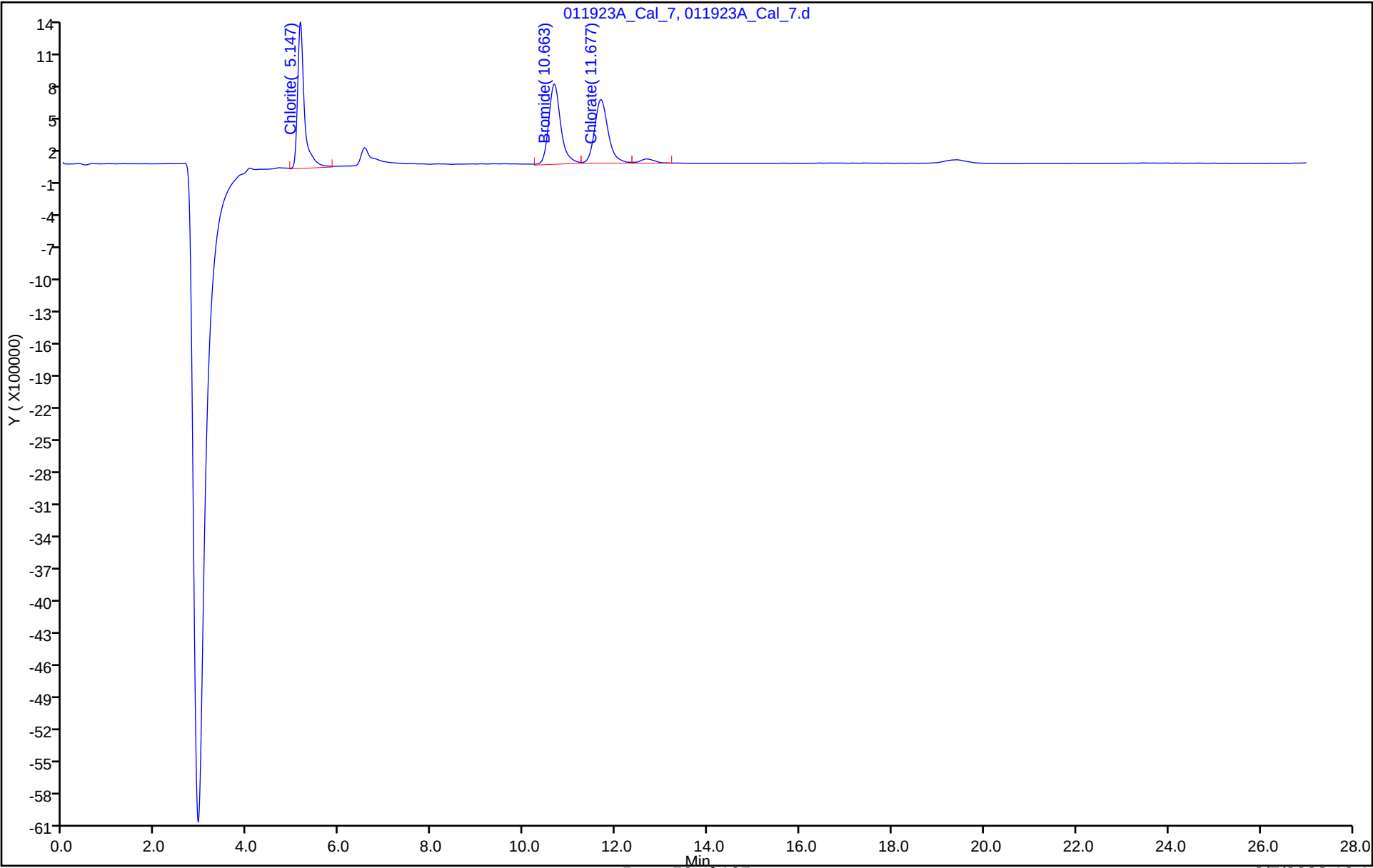
Reagents:

IC-300B CalSS_00007

Amount Added: 1000.00

Units: uL

Report Date: 20-Jan-2023 12:19:50
Chrom Revision: 2.3 09-Jan-2023 13:34:20
South Bend, IN
Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_7.d
Injection Date: 19-Jan-2023 14:33:00 Instrument ID: IC-GP
Lims ID: ICRT L5 Operator ID:
Client ID: Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0
Method: 300B_IC_GP Limit Group: IC - 300 - B
Column: IC IonPac AS-19 (0.00 mm)



South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
 Lims ID: IC L6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 19-Jan-2023 15:03:00 ALS Bottle#: 0 Worklist Smp#: 7
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC L6
 Misc. Info.: 810-0011170-007
 Operator ID: Instrument ID: IC-GP
 Sublist: chrom-300B_IC_GP*sub2
 Method: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\300B_IC_GP.m
 Limit Group: IC - 300 - B
 Last Update: 20-Jan-2023 12:19:53 Calib Date: 19-Jan-2023 15:03:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1610

First Level Reviewer: U3JL

Date: 20-Jan-2023 12:18:44

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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10 Chlorite

5.147 5.130 0.017 27928737 1.00 1.00

3 Bromide

10.643 10.607 0.036 27137771 1.00 1.00

2 Chlorate

11.643 11.610 0.033 24945387 1.00 1.00

QC Flag Legend

Processing Flags

Reagents:

IC-300B CalSS_00007

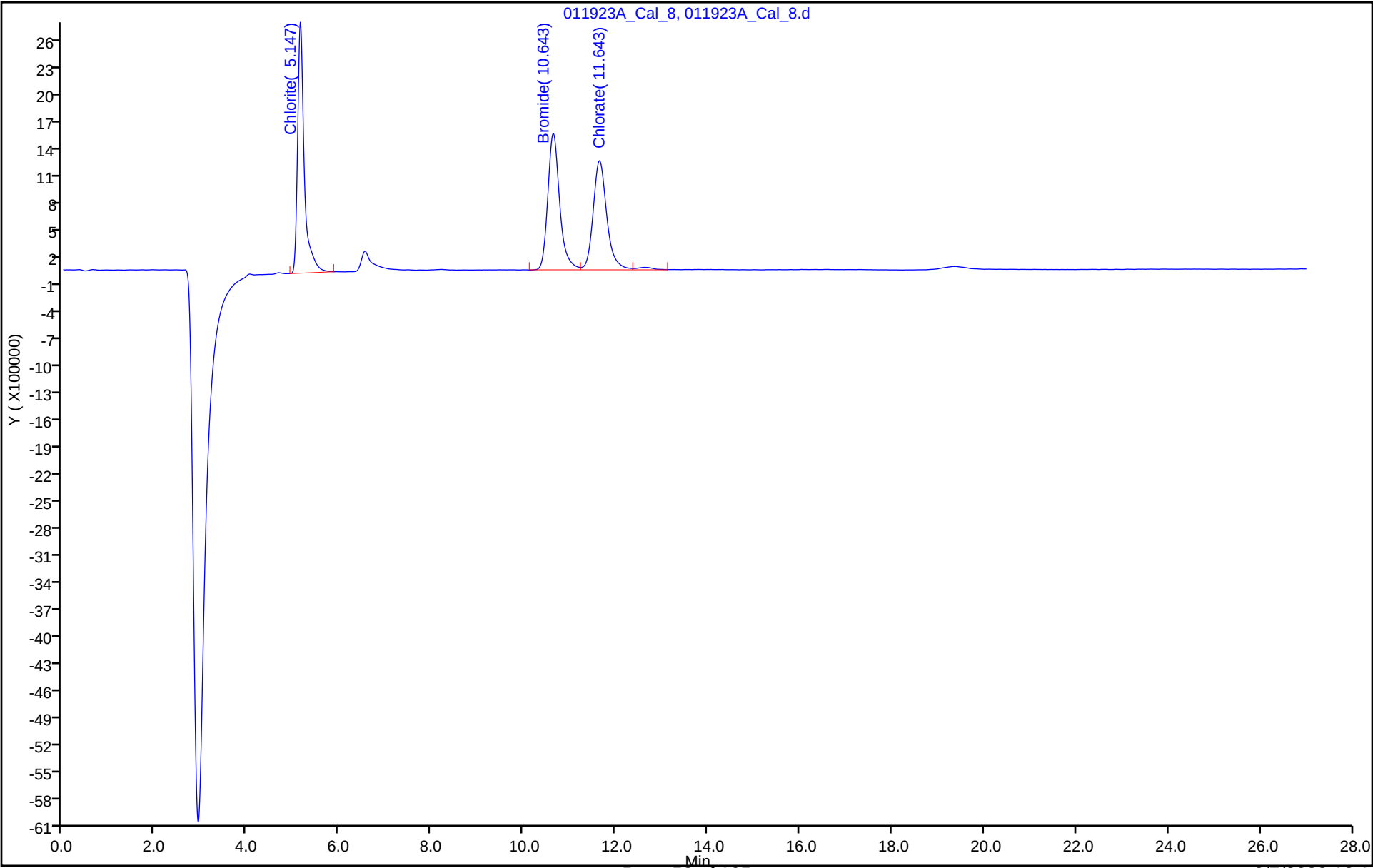
Amount Added: 1000.00

Units: uL

South Bend, IN
Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
Injection Date: 19-Jan-2023 15:03:00 Instrument ID: IC-GP
Lims ID: IC L6
Client ID:
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 300B_IC_GP Limit Group: IC - 300 - B
Column: IC IonPac AS-19 (0.00 mm)

Operator ID:
Worklist Smp#: 7

ALS Bottle#: 0



Calibration

/ Chlorite

Curve Type: Linear
 Weighting: None
 Origin: None
 Dependency: Response
 Calib Mode: ESTD
 Response Base: AREA
 RF Rounding: 0

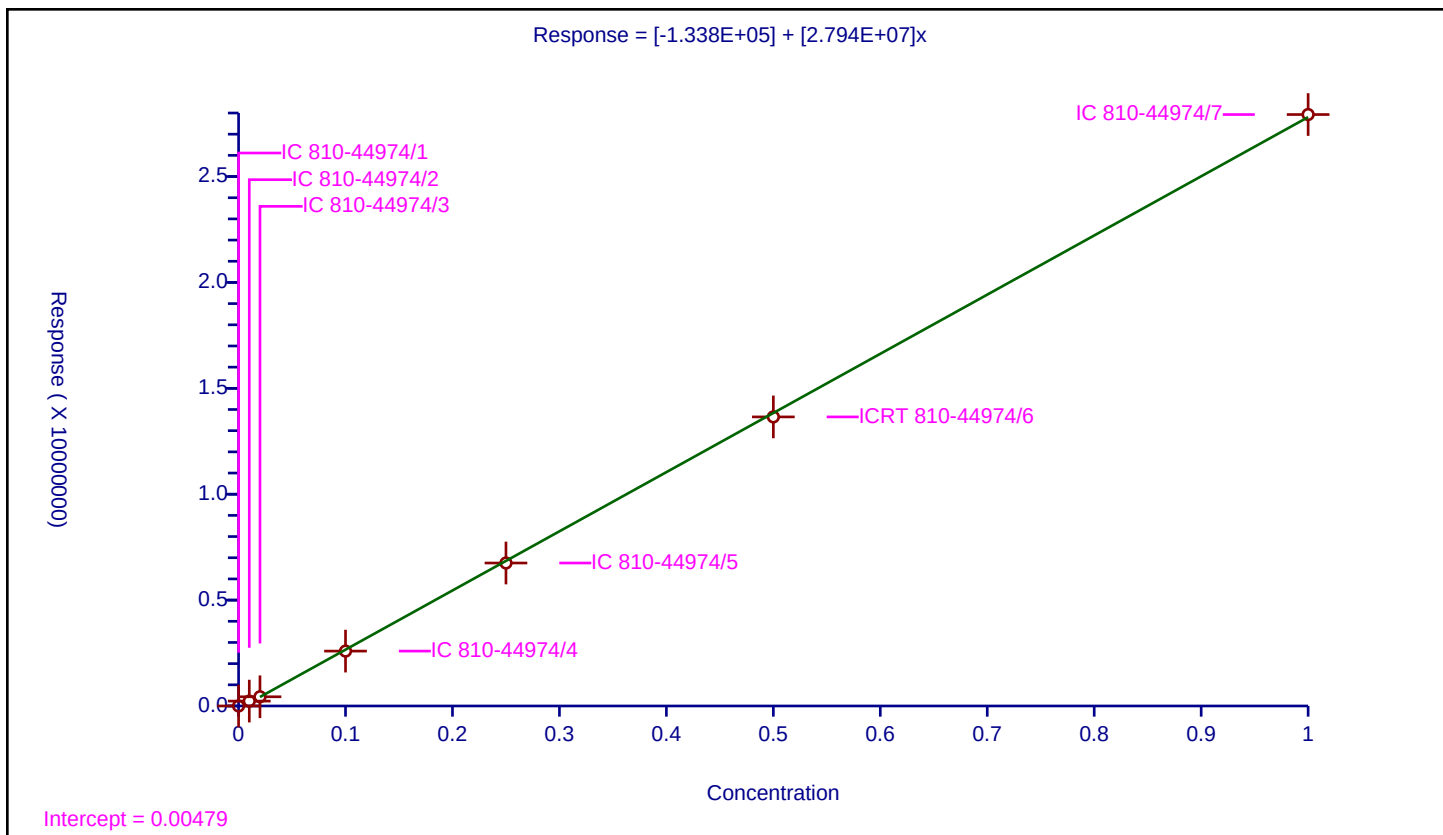
Curve Coefficients

Intercept: -1.338E+05
 Slope: 2.794E+07

Error Coefficients

Standard Error: 134000
 Relative Standard Error: 15.5
 Correlation Coefficient: 1.000
 Coefficient of Determination (Adjusted): 1.000

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	IC 810-44974/1	0.0	0.0			NaN	Y
2	IC 810-44974/2	0.01	231514.0			23151400.0	Y
3	IC 810-44974/3	0.02	434606.0			21730300.0	Y
4	IC 810-44974/4	0.1	2592353.0			25923530.0	Y
5	IC 810-44974/5	0.25	6751514.0			27006056.0	Y
6	ICRT 810-44974/6	0.5	13650139.0			27300278.0	Y
7	IC 810-44974/7	1.0	27928737.0			27928737.0	Y



Calibration

/ Bromide

Curve Type: Linear
Weighting: None
Origin: None
Dependency: Response
Calib Mode: ESTD
Response Base: AREA
RF Rounding: 0

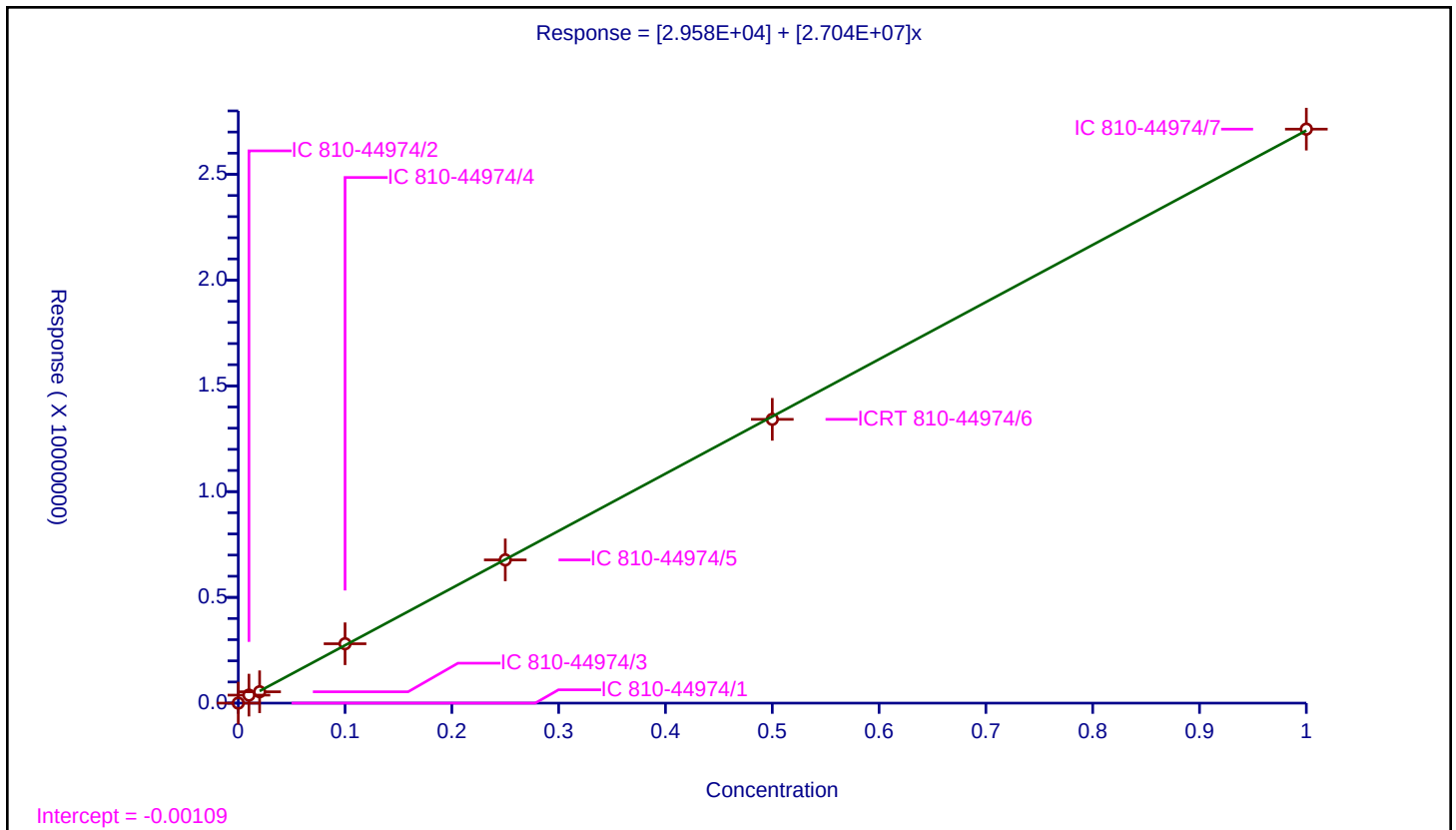
Curve Coefficients

Intercept: 2.958E+04
Slope: 2.704E+07

Error Coefficients

Standard Error: 85100
Relative Standard Error: 14.9
Correlation Coefficient: 1.000
Coefficient of Determination (Adjusted): 1.000

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	IC 810-44974/1	0.0	0.0			NaN	Y
2	IC 810-44974/2	0.01	378548.0			37854800.0	Y
3	IC 810-44974/3	0.02	536984.0			26849200.0	Y
4	IC 810-44974/4	0.1	2807727.0			28077270.0	Y
5	IC 810-44974/5	0.25	6771109.0			27084436.0	Y
6	ICRT 810-44974/6	0.5	13416874.0			26833748.0	Y
7	IC 810-44974/7	1.0	27137771.0			27137771.0	Y



Calibration

/ Chlorate

Curve Type: Linear
Weighting: None
Origin: None
Dependency: Response
Calib Mode: ESTD
Response Base: AREA
RF Rounding: 0

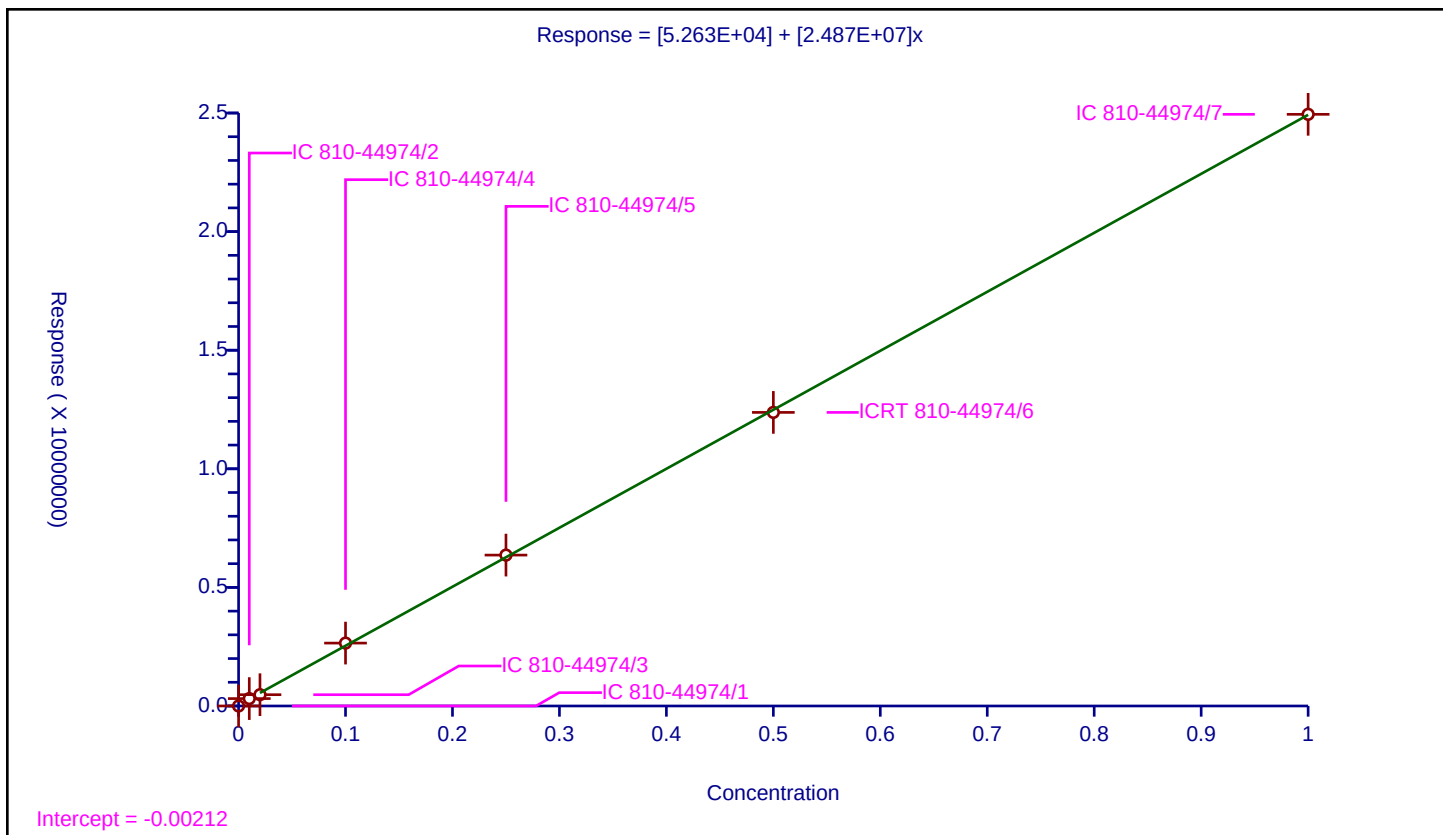
Curve Coefficients

Intercept: 5.263E+04
Slope: 2.487E+07

Error Coefficients

Standard Error: 91700
Relative Standard Error: 8.1
Correlation Coefficient: 1.000
Coefficient of Determination (Adjusted): 1.000

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	IC 810-44974/1	0.0	0.0			NaN	Y
2	IC 810-44974/2	0.01	312113.0			31211300.0	Y
3	IC 810-44974/3	0.02	475823.0			23791150.0	Y
4	IC 810-44974/4	0.1	2651877.0			26518770.0	Y
5	IC 810-44974/5	0.25	6361931.0			25447724.0	Y
6	ICRT 810-44974/6	0.5	12377704.0			24755408.0	Y
7	IC 810-44974/7	1.0	24945387.0			24945387.0	Y



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Lab Sample ID: CCV 810-46114/3 Calibration Date: 01/30/2023 15:08
Instrument ID: IC-GP Calib Start Date: 01/19/2023 12:03
GC Column: IonPac AS-19 ID: _____ Calib End Date: 01/19/2023 15:03
Lab File ID: 013023A_10.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
Chlorite	Lin		25695044		235	250	94	90-110
Bromide	Lin		27122040		250	250	100	90-110
Chlorate	Lin		25371568		253	250	101	90-110

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Lab Sample ID: CCV 810-46114/3 Calibration Date: 01/30/2023 15:08
Instrument ID: IC-GP Calib Start Date: 01/19/2023 12:03
GC Column: IonPac AS-19 ID: _____ Calib End Date: 01/19/2023 15:03
Lab File ID: 013023A_10.d

Analyte	RT	RT WINDOW	
		FROM	TO
Chlorite	5.08	4.87	5.39
Bromide	10.47	10.08	11.14
Chlorate	11.44	11.03	12.19

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_10.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 30-Jan-2023 15:08:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV
Misc. Info.: 810-0011430-003
Operator ID: Instrument ID: IC-GP
Sublist: chrom-300B_IC_GP*sub2
Method: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\300B_IC_GP.m
Limit Group: IC - 300 - B
Last Update: 06-Feb-2023 13:06:41 Calib Date: 19-Jan-2023 15:03:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
Process Host: CTX1676

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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10 Chlorite

5.080	5.130	-0.050	6423761	0.2500	0.2347	
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3 Bromide

10.467	10.607	-0.140	6780510	0.2500	0.2496	
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2 Chlorate

11.443	11.610	-0.167	6342892	0.2500	0.2529	
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Reagents:

IC-300B CalSS_00007

Amount Added: 1000.00

Units: uL

Report Date: 06-Feb-2023 13:06:41

Chrom Revision: 2.3 01-Feb-2023 13:23:06

South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_10.d

Injection Date: 30-Jan-2023 15:08:00

Instrument ID: IC-GP

Operator ID:

Lims ID: CCV

Worklist Smp#: 3

Client ID:

Injection Vol: 1.0 ul

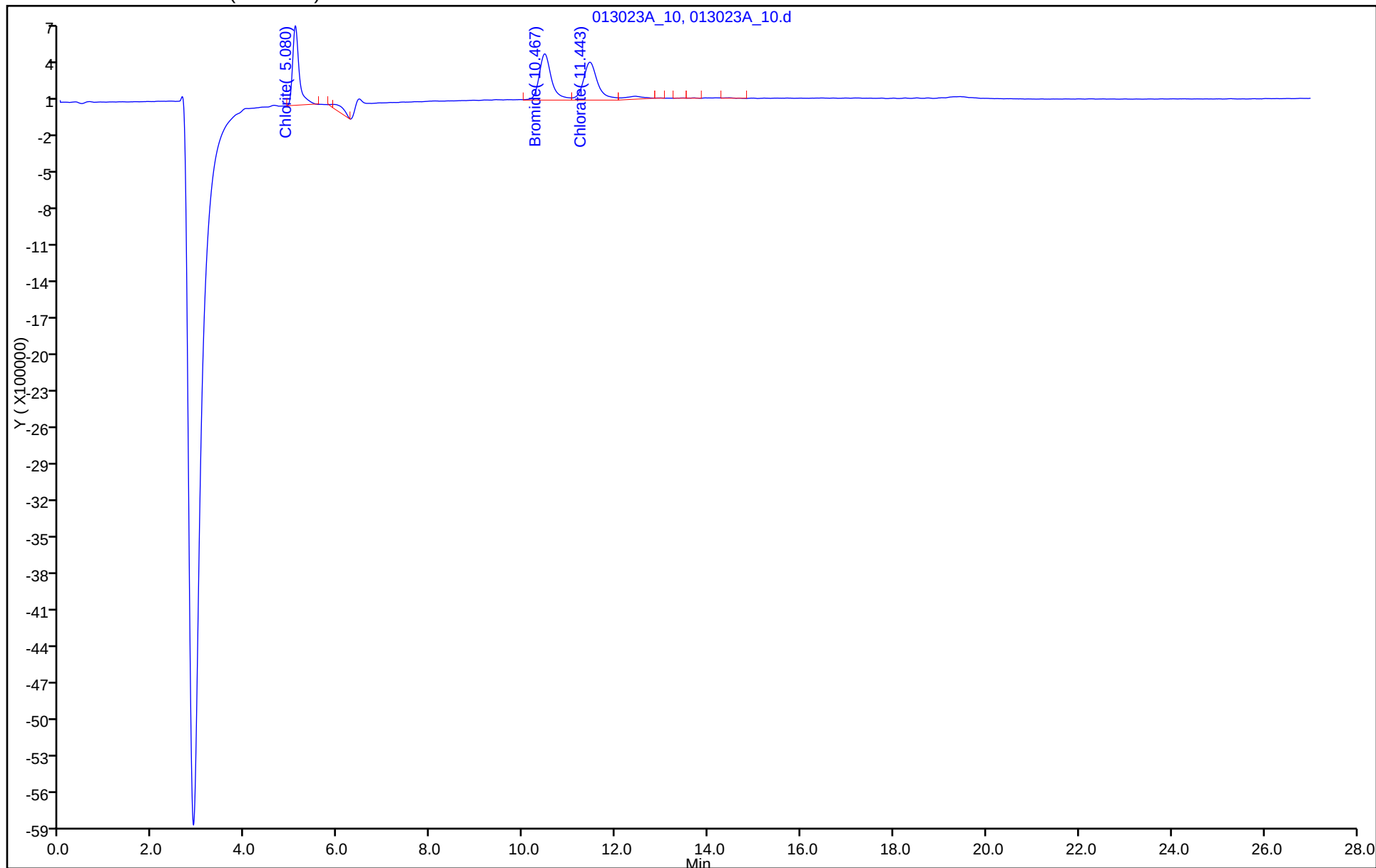
Dil. Factor: 1.0000

ALS Bottle#: 0

Method: 300B_IC_GP

Limit Group: IC - 300 - B

Column: IC IonPac AS-19 (0.00 mm)



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Lab Sample ID: CCV 810-46114/19 Calibration Date: 01/30/2023 23:09
Instrument ID: IC-GP Calib Start Date: 01/19/2023 12:03
GC Column: IonPac AS-19 ID: _____ Calib End Date: 01/19/2023 15:03
Lab File ID: 013023A_26.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
Chlorite	Lin		26043500		238	250	95	90-110
Bromide	Lin		26453988		243	250	97	90-110
Chlorate	Lin		24254912		242	250	97	90-110

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Lab Sample ID: CCV 810-46114/19 Calibration Date: 01/30/2023 23:09
Instrument ID: IC-GP Calib Start Date: 01/19/2023 12:03
GC Column: IonPac AS-19 ID: _____ Calib End Date: 01/19/2023 15:03
Lab File ID: 013023A_26.d

Analyte	RT	RT WINDOW	
		FROM	TO
Chlorite	5.14	4.87	5.39
Bromide	10.59	10.08	11.14
Chlorate	11.57	11.03	12.19

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_26.d
 Lims ID: CCV
 Client ID:
 Sample Type: CCV
 Inject. Date: 30-Jan-2023 23:09:00 ALS Bottle#: 0 Worklist Smp#: 19
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCV
 Misc. Info.: 810-0011430-019
 Operator ID: Instrument ID: IC-GP
 Sublist: chrom-300B_IC_GP*sub2
 Method: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\300B_IC_GP.m
 Limit Group: IC - 300 - B
 Last Update: 06-Feb-2023 13:06:46 Calib Date: 19-Jan-2023 15:03:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1676

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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10 Chlorite

5.140	5.130	0.010	6510875	0.2500	0.2378
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3 Bromide

10.587	10.607	-0.020	6613497	0.2500	0.2435
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2 Chlorate

11.573	11.610	-0.037	6063728	0.2500	0.2417
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Reagents:

IC-300B CalSS_00007

Amount Added: 1000.00

Units: uL

Report Date: 06-Feb-2023 13:06:46

Chrom Revision: 2.3 01-Feb-2023 13:23:06

South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_26.d

Injection Date: 30-Jan-2023 23:09:00

Instrument ID: IC-GP

Operator ID:

Lims ID: CCV

Worklist Smp#: 19

Client ID:

Injection Vol: 1.0 ul

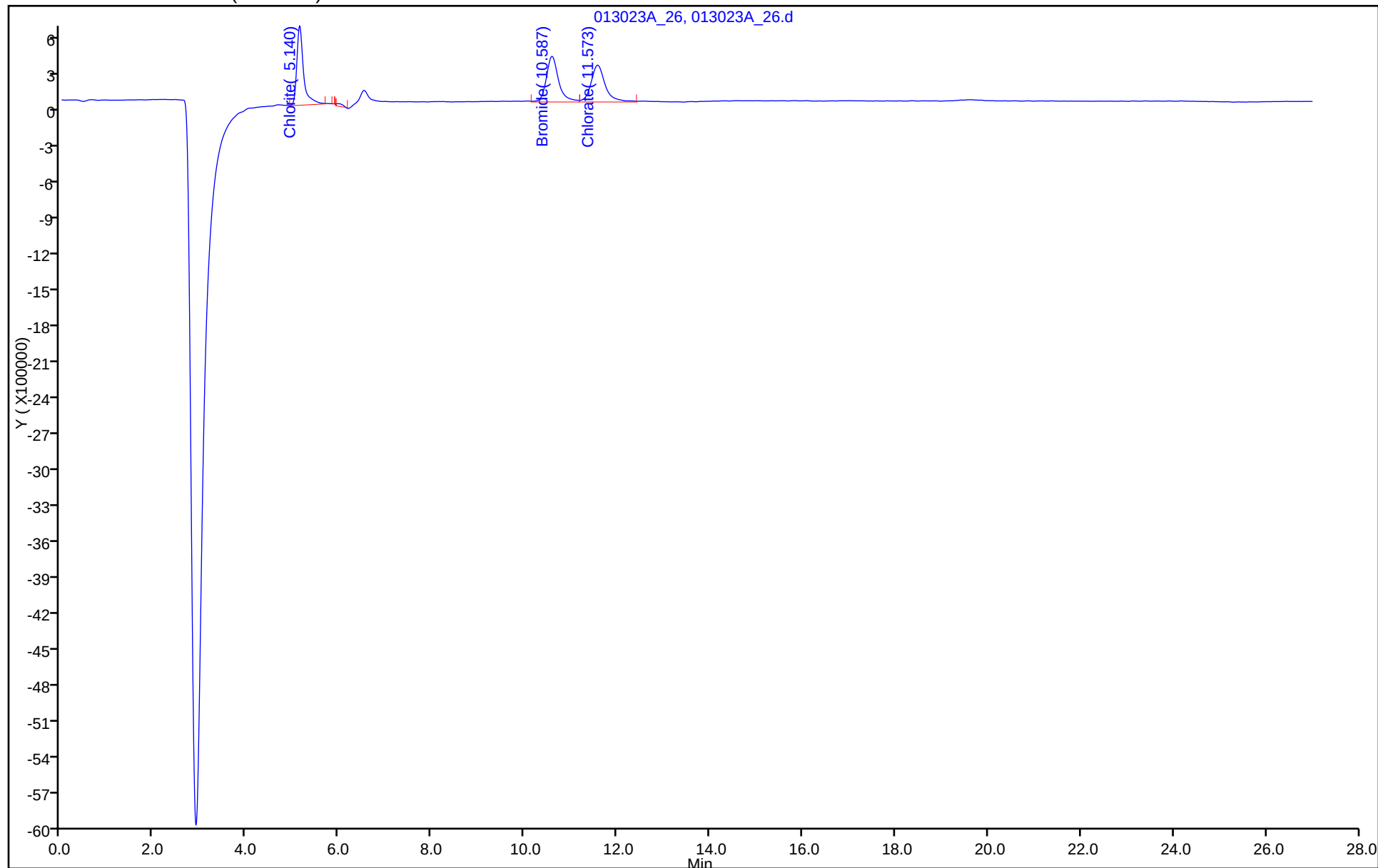
Dil. Factor: 1.0000

ALS Bottle#: 0

Method: 300B_IC_GP

Limit Group: IC - 300 - B

Column: IC IonPac AS-19 (0.00 mm)



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Lab Sample ID: CCV 810-46114/29 Calibration Date: 01/31/2023 04:09
Instrument ID: IC-GP Calib Start Date: 01/19/2023 12:03
GC Column: IonPac AS-19 ID: _____ Calib End Date: 01/19/2023 15:03
Lab File ID: 013023A_36.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
Chlorite	Lin		26118704		239	250	95	90-110
Bromide	Lin		26424112		243	250	97	90-110
Chlorate	Lin		24179856		241	250	96	90-110

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Lab Sample ID: CCV 810-46114/29 Calibration Date: 01/31/2023 04:09
Instrument ID: IC-GP Calib Start Date: 01/19/2023 12:03
GC Column: IonPac AS-19 ID: _____ Calib End Date: 01/19/2023 15:03
Lab File ID: 013023A_36.d

Analyte	RT	RT WINDOW	
		FROM	TO
Chlorite	5.14	4.87	5.39
Bromide	10.59	10.08	11.14
Chlorate	11.58	11.03	12.19

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_36.d
 Lims ID: CCV
 Client ID:
 Sample Type: CCV
 Inject. Date: 31-Jan-2023 04:09:00 ALS Bottle#: 0 Worklist Smp#: 29
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCV
 Misc. Info.: 810-0011430-029
 Operator ID: Instrument ID: IC-GP
 Sublist: chrom-300B_IC_GP*sub2
 Method: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\300B_IC_GP.m
 Limit Group: IC - 300 - B
 Last Update: 06-Feb-2023 13:06:49 Calib Date: 19-Jan-2023 15:03:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1676

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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10 Chlorite

5.140	5.130	0.010	6529676	0.2500	0.2385
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3 Bromide

10.587	10.607	-0.020	6606028	0.2500	0.2432
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2 Chlorate

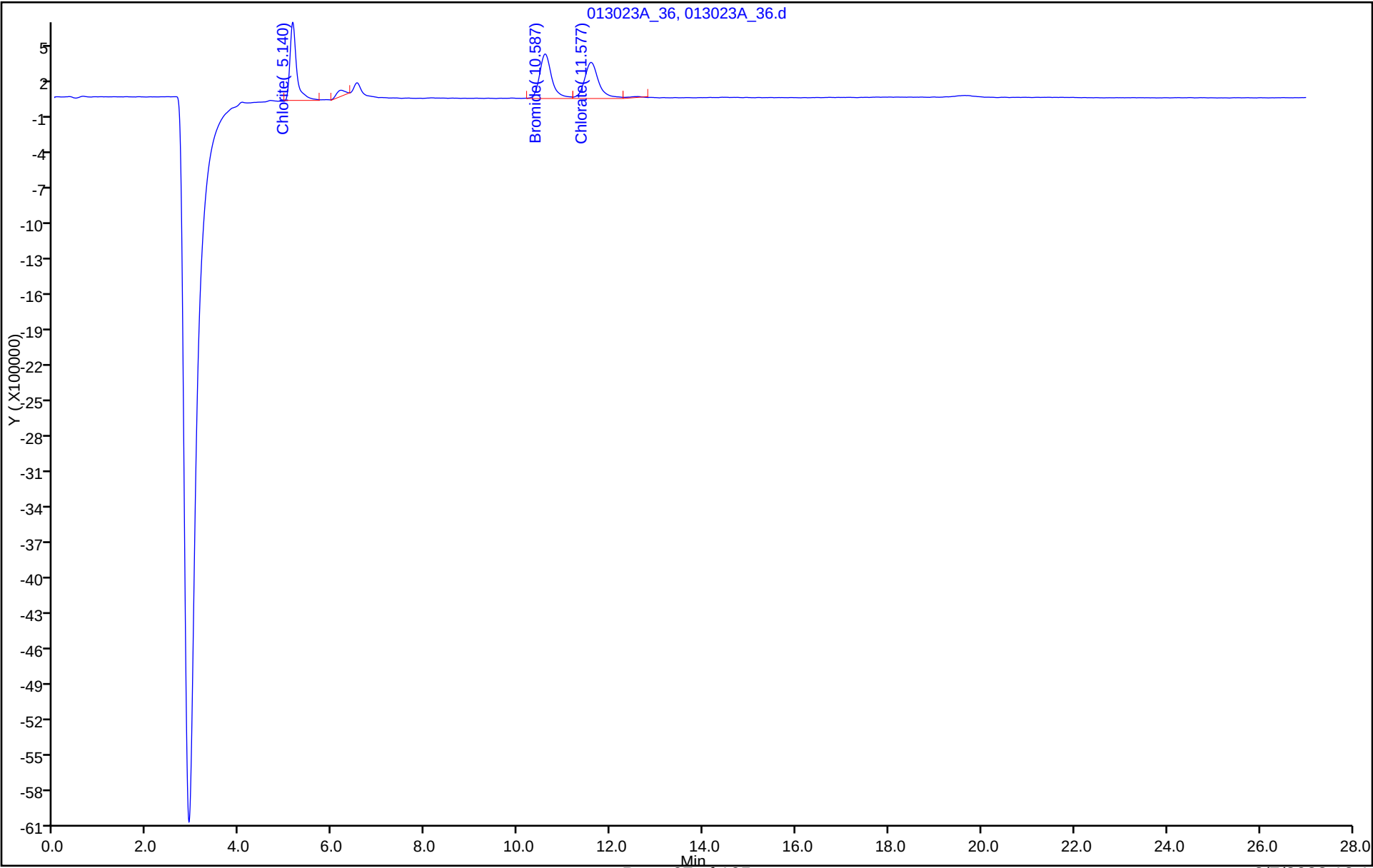
11.577	11.610	-0.033	6044964	0.2500	0.2409
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Reagents:

IC-300B CalSS_00007

Amount Added: 1000.00

Units: uL



FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: MB 810-46114/5
Matrix: Drinking Water Lab File ID: 013023A_12.d
Analysis Method: 300.0 Date Collected: _____
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/30/2023 16:08
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 46114 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD
14866-68-3	Chlorate	<7.9		10	7.9
14998-27-7	Chlorite	<5.9		10	5.9

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_12.d
 Lims ID: MB
 Client ID:
 Sample Type: MB
 Inject. Date: 30-Jan-2023 16:08:00 ALS Bottle#: 0 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: MB
 Misc. Info.: 810-0011430-005
 Operator ID: Instrument ID: IC-GP
 Method: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\300B_IC_GP.m
 Limit Group: IC - 300 - B
 Last Update: 06-Feb-2023 13:06:41 Calib Date: 19-Jan-2023 15:03:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1676

First Level Reviewer: U3JL

Date: 06-Feb-2023 12:36:41

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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3 Bromide						Ma
10.497	10.607	-0.110	69435		0.001474	Ma
2 Chlorate						Ma
11.500	11.610	-0.110	66189		0.000545	Ma

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

a - User Assigned ID

Report Date: 06-Feb-2023 13:06:41

Chrom Revision: 2.3 01-Feb-2023 13:23:06

South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_12.d

Injection Date: 30-Jan-2023 16:08:00

Instrument ID: IC-GP

Operator ID:

Lims ID: MB

Worklist Smp#: 5

Client ID:

Injection Vol: 1.0 ul

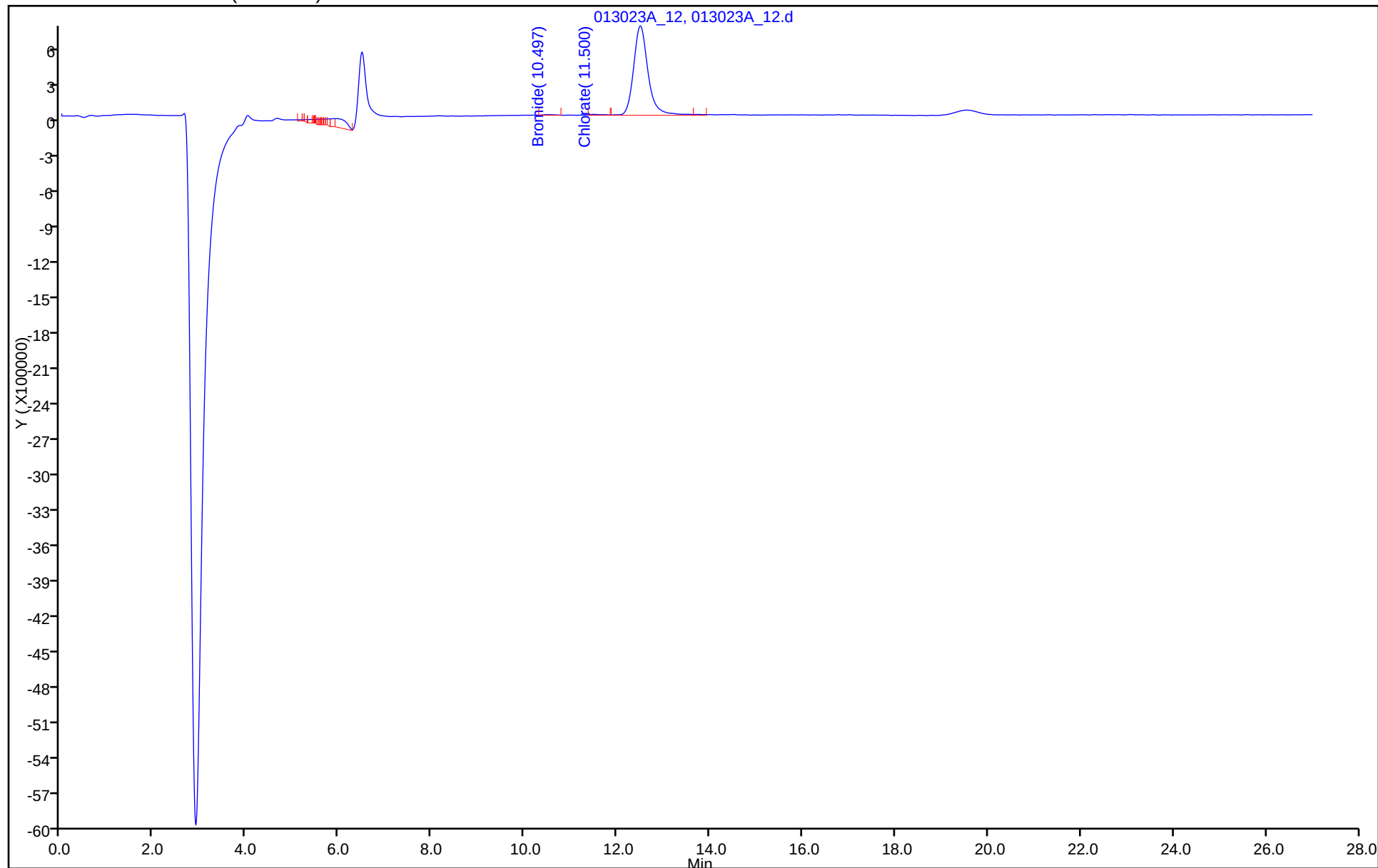
Dil. Factor: 1.0000

ALS Bottle#: 0

Method: 300B_IC_GP

Limit Group: IC - 300 - B

Column: IC IonPac AS-19 (0.00 mm)



South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_12.d
Injection Date: 30-Jan-2023 16:08:00 Instrument ID: IC-GP
Lims ID: MB
Client ID:
Operator ID:
Injection Vol: 1.0 ul
Method: 300B_IC_GP
Column: IC IonPac AS-19 (0.00 mm)

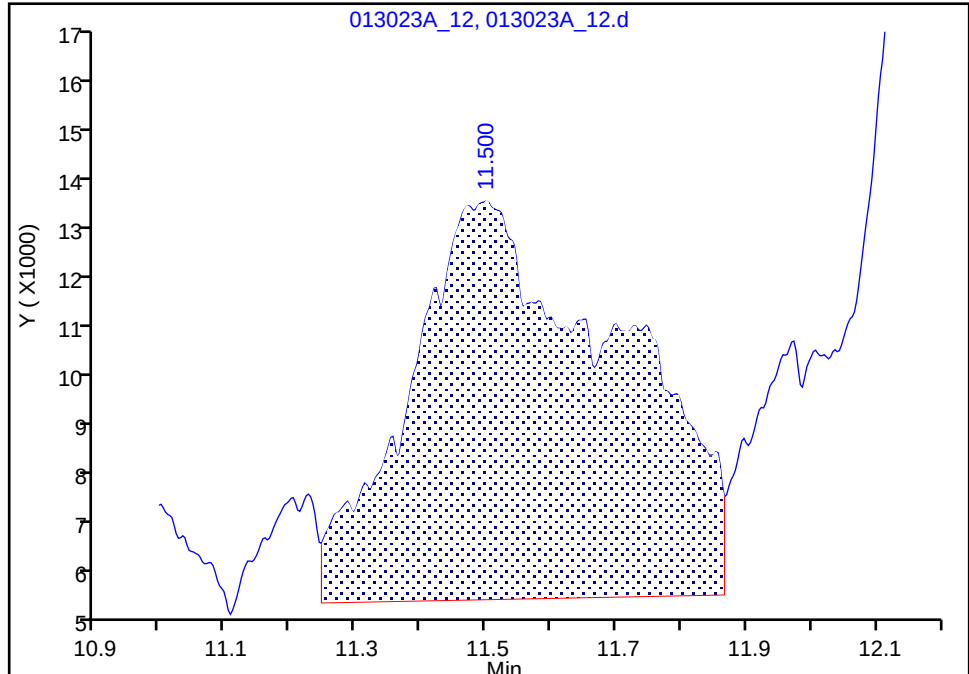
ALS Bottle#: 0 Worklist Smp#: 5
Dil. Factor: 1.0000
Limit Group: IC - 300 - B
Detector 010621A_11

2 Chlorate, CAS: 14866-68-3

Signal: 1

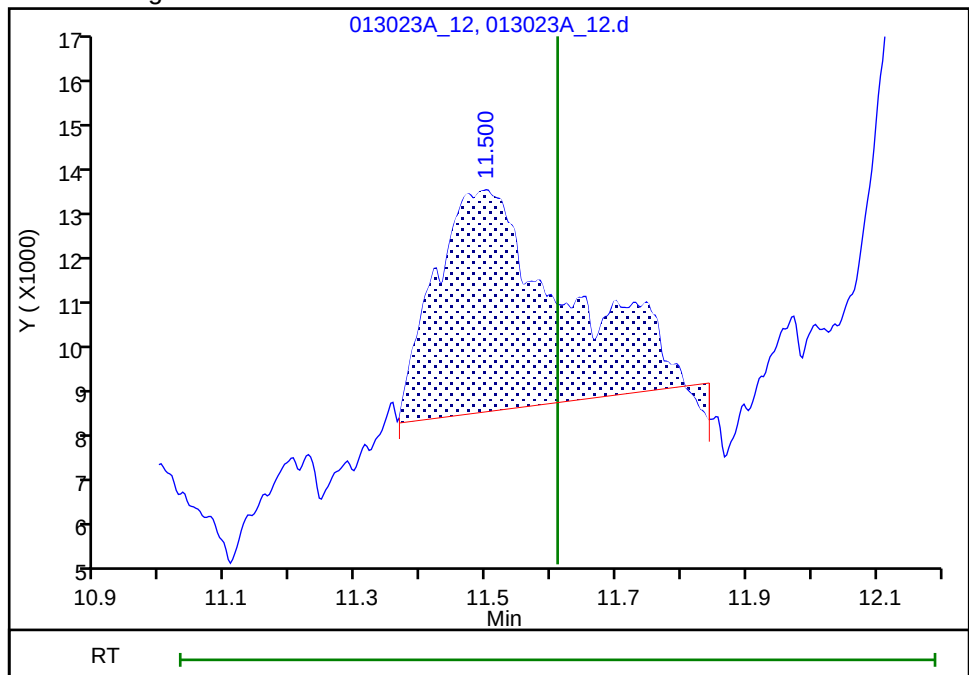
RT: 11.50
Area: 177240
Amount: 0.005011
Amount Units: ug/ml

Processing Integration Results



RT: 11.50
Area: 66189
Amount: 0.000545
Amount Units: ug/ml

Manual Integration Results



Reviewer: U3JL, 06-Feb-2023 12:39:13

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Incomplete Integration

South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_12.d

Injection Date: 30-Jan-2023 16:08:00

Instrument ID: IC-GP

Lims ID: MB

Client ID:

Operator ID:

ALS Bottle#:

0

Worklist Smp#:

5

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 300B_IC_GP

Limit Group: IC - 300 - B

Column: IC IonPac AS-19 (0.00 mm)

Detector

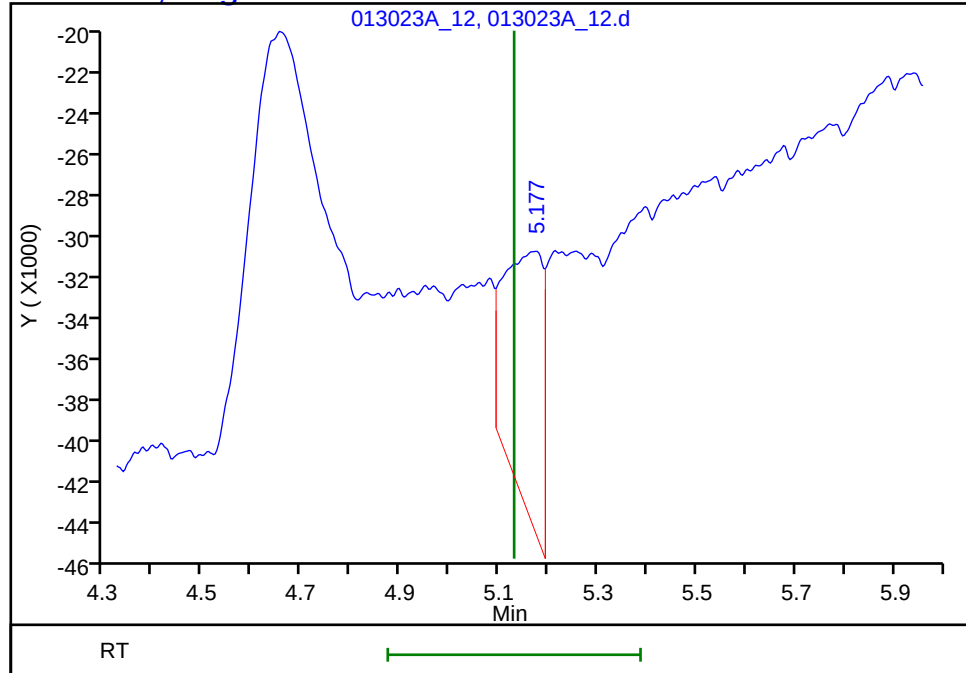
010621A_11

10 Chlorite, CAS: 14998-27-7, Signal: 1

RT: 5.18

Response: 66704

Amount: 0.007177



Reviewer: U3JL, 06-Feb-2023 12:39:18

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: CCB 810-46114/4
Matrix: Drinking Water Lab File ID: 013023A_11.d
Analysis Method: 300.0 Date Collected: _____
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/30/2023 15:38
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 46114 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD
14866-68-3	Chlorate	<7.9		10	7.9
14998-27-7	Chlorite	<5.9		10	5.9

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_11.d
Lims ID: CCB
Client ID:
Sample Type: CCB
Inject. Date: 30-Jan-2023 15:38:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCB
Misc. Info.: 810-0011430-004
Operator ID: Instrument ID: IC-GP
Method: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\300B_IC_GP.m
Limit Group: IC - 300 - B
Last Update: 06-Feb-2023 13:06:41 Calib Date: 19-Jan-2023 15:03:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
Process Host: CTX1676

First Level Reviewer: U3JL

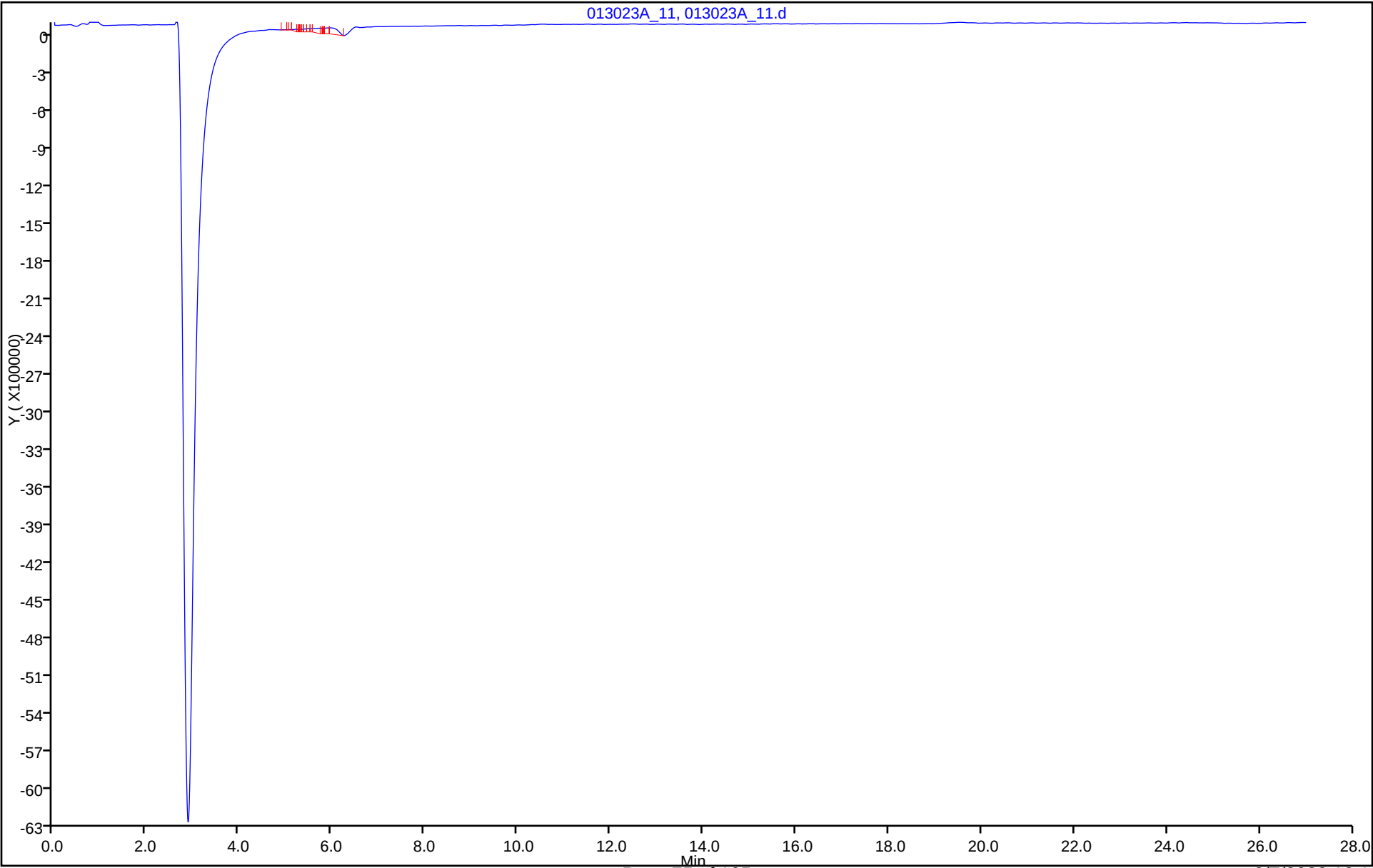
Date: 06-Feb-2023 12:36:21

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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South Bend, IN
Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_11.d
Injection Date: 30-Jan-2023 15:38:00 Instrument ID: IC-GP
Lims ID: CCB
Client ID:
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 300B_IC_GP Limit Group: IC - 300 - B
Column: IC IonPac AS-19 (0.00 mm)

Operator ID:
Worklist Smp#: 4

ALS Bottle#: 0



South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_11.d

Injection Date: 30-Jan-2023 15:38:00

Instrument ID: IC-GP

Lims ID: CCB

Client ID:

Operator ID:

ALS Bottle#:

0

Worklist Smp#:

4

Injection Vol: 1.0 ul

Dil. Factor:

1.0000

Method: 300B_IC_GP

Limit Group:

IC - 300 - B

Column: IC IonPac AS-19 (0.00 mm)

Detector

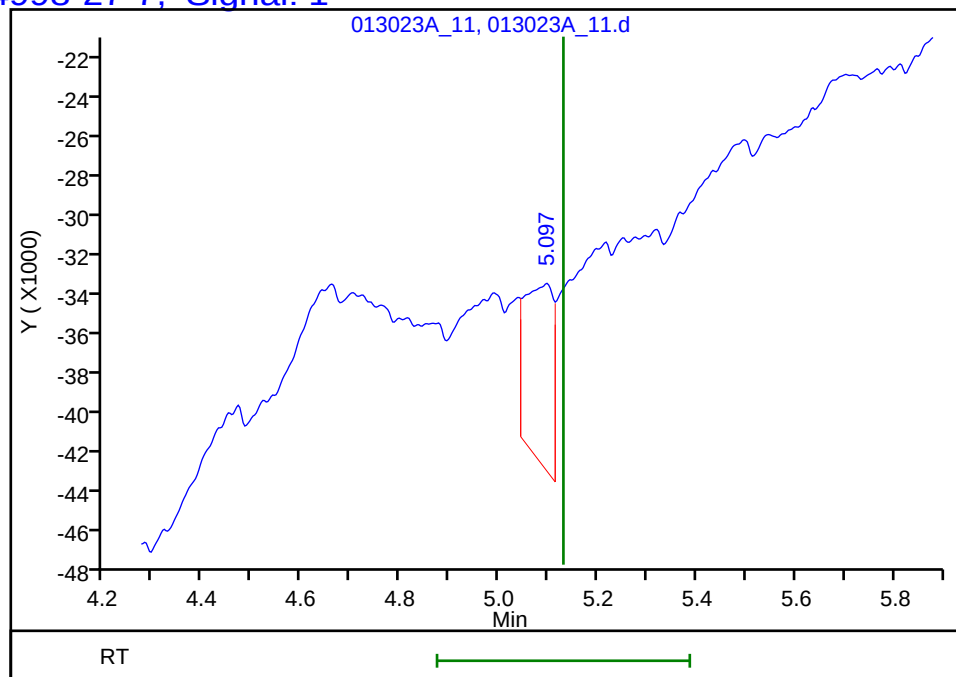
010621A_11

10 Chlorite, CAS: 14998-27-7, Signal: 1

RT: 5.10

Response: 35334

Amount: 0.006055



Reviewer: U3JL, 06-Feb-2023 12:36:21

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: CCB 810-46114/20
Matrix: Drinking Water Lab File ID: 013023A_27.d
Analysis Method: 300.0 Date Collected: _____
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/30/2023 23:39
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 46114 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD
14866-68-3	Chlorate	<7.9		10	7.9
14998-27-7	Chlorite	<5.9		10	5.9

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_27.d
Lims ID: CCB
Client ID:
Sample Type: CCB
Inject. Date: 30-Jan-2023 23:39:00 ALS Bottle#: 0 Worklist Smp#: 20
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCB
Misc. Info.: 810-0011430-020
Operator ID: Instrument ID: IC-GP
Method: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\300B_IC_GP.m
Limit Group: IC - 300 - B
Last Update: 06-Feb-2023 13:06:46 Calib Date: 19-Jan-2023 15:03:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
Process Host: CTX1676

First Level Reviewer: U3JL

Date: 06-Feb-2023 13:05:06

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_27.d

Injection Date: 30-Jan-2023 23:39:00

Instrument ID: IC-GP

Operator ID:

Lims ID: CCB

Worklist Smp#: 20

Client ID:

Injection Vol: 1.0 ul

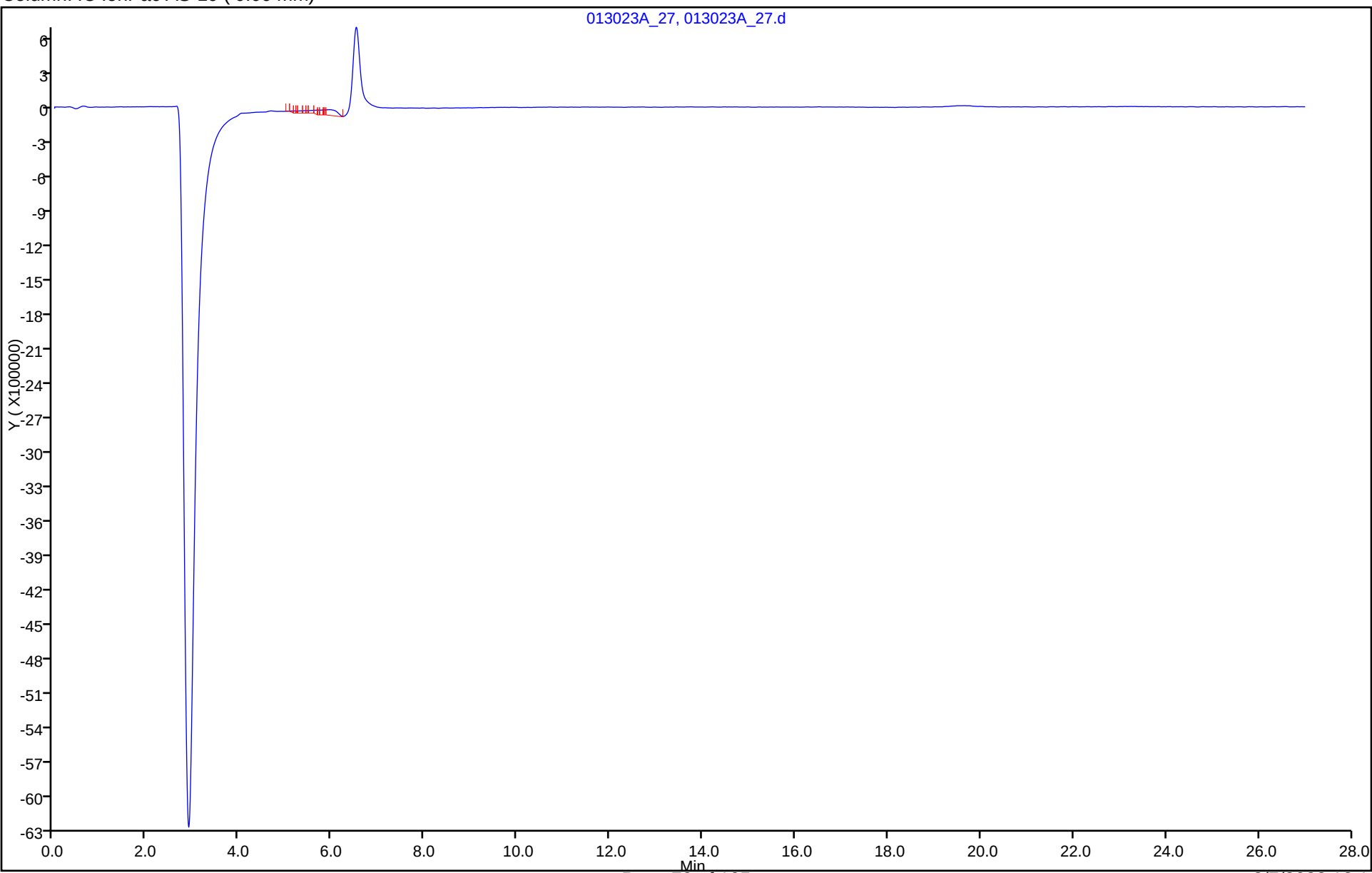
Dil. Factor: 1.0000

ALS Bottle#: 0

Method: 300B_IC_GP

Limit Group: IC - 300 - B

Column: IC IonPac AS-19 (0.00 mm)



South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_27.d

Injection Date: 30-Jan-2023 23:39:00

Instrument ID: IC-GP

Lims ID: CCB

Client ID:

Operator ID:

ALS Bottle#:

0

Worklist Smp#:

20

Injection Vol: 1.0 ul

Dil. Factor:

1.0000

Method: 300B_IC_GP

Limit Group:

IC - 300 - B

Column: IC IonPac AS-19 (0.00 mm)

Detector

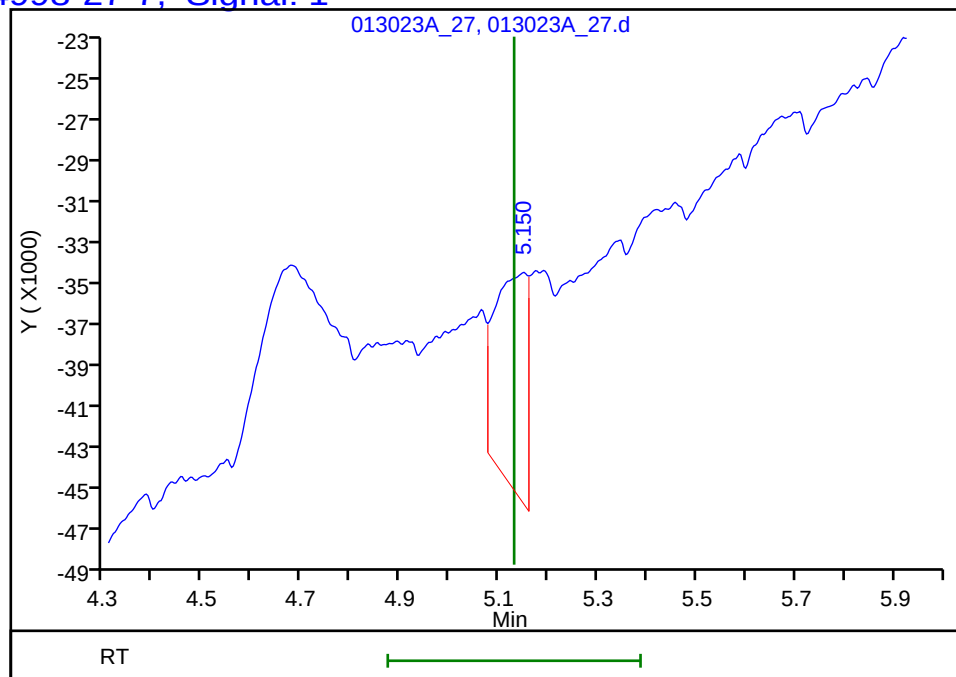
010621A_11

10 Chlorite, CAS: 14998-27-7, Signal: 1

RT: 5.15

Response: 45921

Amount: 0.006433



Reviewer: U3JL, 06-Feb-2023 13:05:06

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: CCB 810-46114/30
Matrix: Drinking Water Lab File ID: 013023A_37.d
Analysis Method: 300.0 Date Collected: _____
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/31/2023 04:39
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 46114 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD
14866-68-3	Chlorate	<7.9		10	7.9
14998-27-7	Chlorite	<5.9		10	5.9

South Bend, IN
Target Compound Quantitation Report

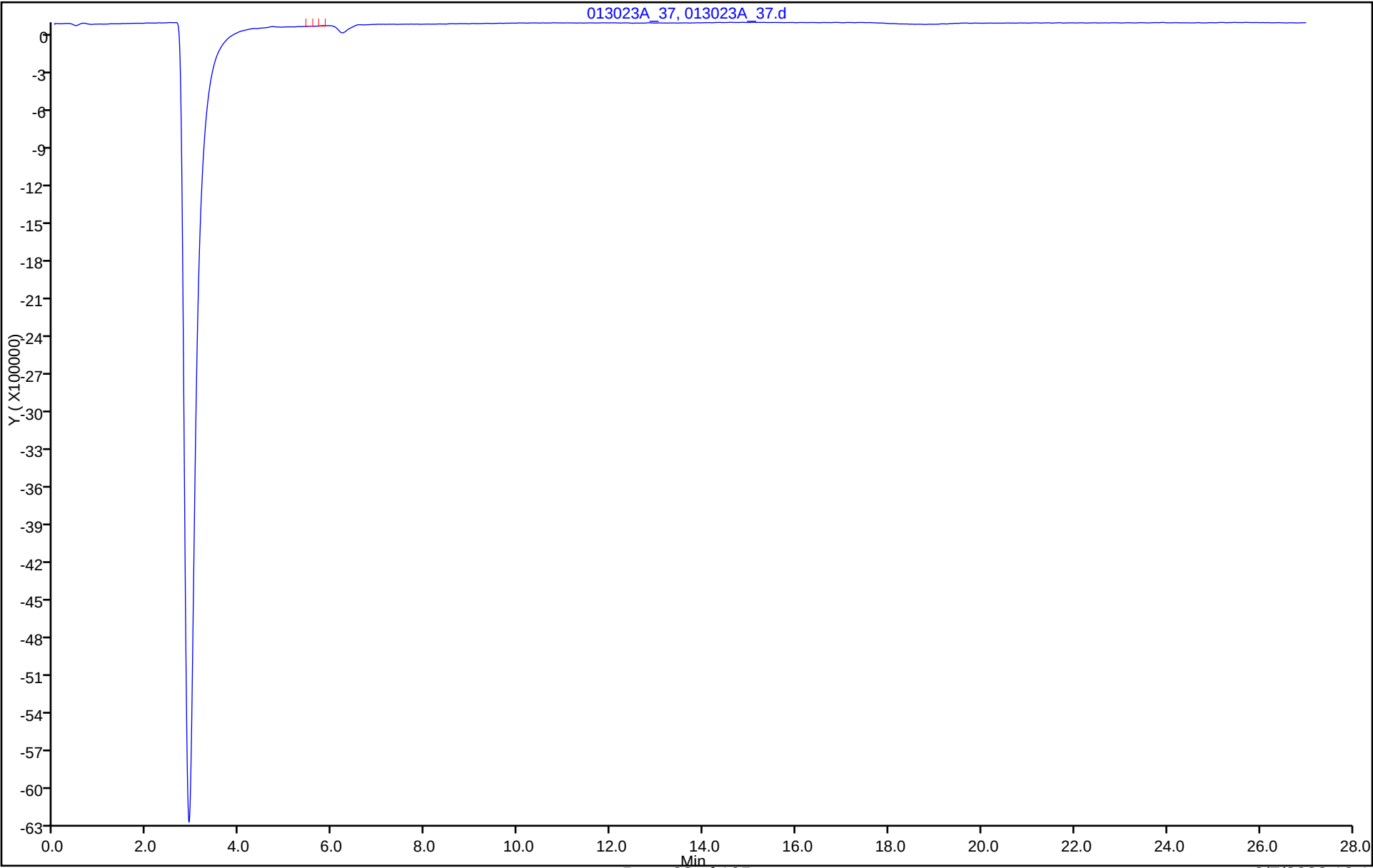
Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_37.d
Lims ID: CCB
Client ID:
Sample Type: CCB
Inject. Date: 31-Jan-2023 04:39:00 ALS Bottle#: 0 Worklist Smp#: 30
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCB
Misc. Info.: 810-0011430-030
Operator ID: Instrument ID: IC-GP
Method: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\300B_IC_GP.m
Limit Group: IC - 300 - B
Last Update: 06-Feb-2023 13:06:49 Calib Date: 19-Jan-2023 15:03:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
Process Host: CTX1676

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_37.d
Injection Date: 31-Jan-2023 04:39:00 Instrument ID: IC-GP
Lims ID: CCB
Client ID:
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 300B_IC_GP Limit Group: IC - 300 - B
Column: IC IonPac AS-19 (0.00 mm)

Operator ID:
Worklist Smp#: 30
ALS Bottle#: 0



FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: LCS 810-46114/6
Matrix: Drinking Water Lab File ID: 013023A_13.d
Analysis Method: 300.0 Date Collected: _____
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/30/2023 16:38
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 46114 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD
14866-68-3	Chlorate	246		10	7.9
14998-27-7	Chlorite	236		10	5.9

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_13.d
 Lims ID: LCS
 Client ID:
 Sample Type: LCS
 Inject. Date: 30-Jan-2023 16:38:00 ALS Bottle#: 0 Worklist Smp#: 6
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: LCS
 Misc. Info.: 810-0011430-006
 Operator ID: Instrument ID: IC-GP
 Method: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\300B_IC_GP.m
 Limit Group: IC - 300 - B
 Last Update: 06-Feb-2023 13:06:41 Calib Date: 19-Jan-2023 15:03:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1676

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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10 Chlorite

5.103	5.130	-0.027	6448452	0.2500	0.2356
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3 Bromide

10.523	10.607	-0.084	6618657	0.2500	0.2436
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2 Chlorate

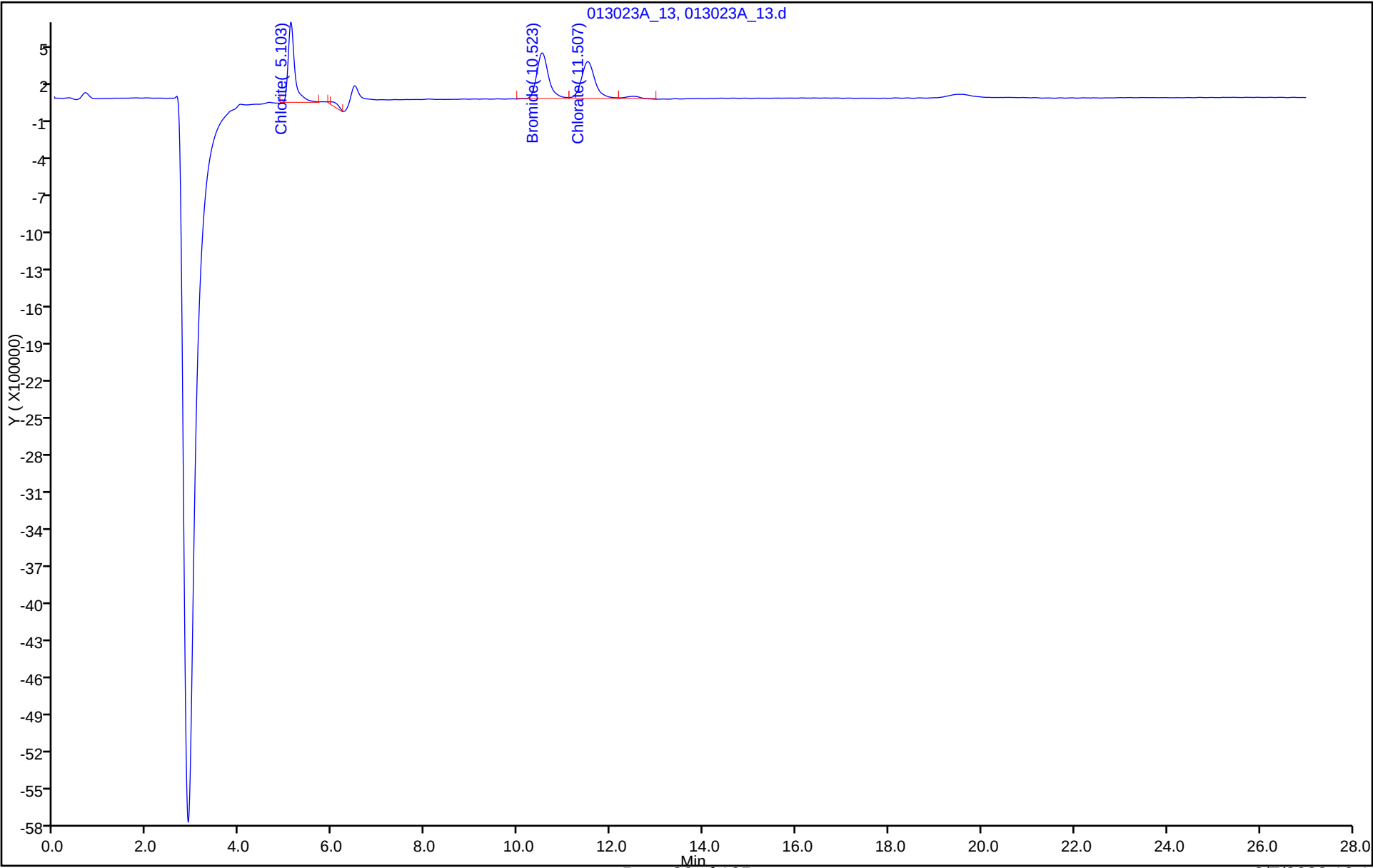
11.507	11.610	-0.103	6162606	0.2500	0.2457
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Reagents:

IC-300B CalSS_00007

Amount Added: 100.00

Units: uL



FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: LLCS 810-46114/2
Matrix: Drinking Water Lab File ID: 013023A_9.d
Analysis Method: 300.0 Date Collected: _____
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/30/2023 14:38
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 46114 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD
14866-68-3	Chlorate	9.82	J	10	7.9
14998-27-7	Chlorite	12.6		10	5.9

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_9.d
 Lims ID: LLCS
 Client ID:
 Sample Type: LLCS
 Inject. Date: 30-Jan-2023 14:38:00 ALS Bottle#: 0 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: LLCS
 Misc. Info.: 810-0011430-002
 Operator ID: Instrument ID: IC-GP
 Method: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\300B_IC_GP.m
 Limit Group: IC - 300 - B
 Last Update: 06-Feb-2023 13:06:19 Calib Date: 19-Jan-2023 15:03:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1676

First Level Reviewer: U3JL

Date: 06-Feb-2023 12:36:14

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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10 Chlorite						M
5.077	5.130	-0.053	219197	0.0100	0.0126	M
3 Bromide						
10.477	10.607	-0.130	274823	0.0100	0.009068	
2 Chlorate						M
11.467	11.610	-0.143	296917	0.0100	0.009823	M

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

IC-300B CalSS_00007

Amount Added: 40.00

Units: uL

Report Date: 06-Feb-2023 13:06:40

Chrom Revision: 2.3 01-Feb-2023 13:23:06

South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_9.d

Injection Date: 30-Jan-2023 14:38:00

Instrument ID: IC-GP

Operator ID:

Lims ID: LLCS

Worklist Smp#: 2

Client ID:

Injection Vol: 1.0 ul

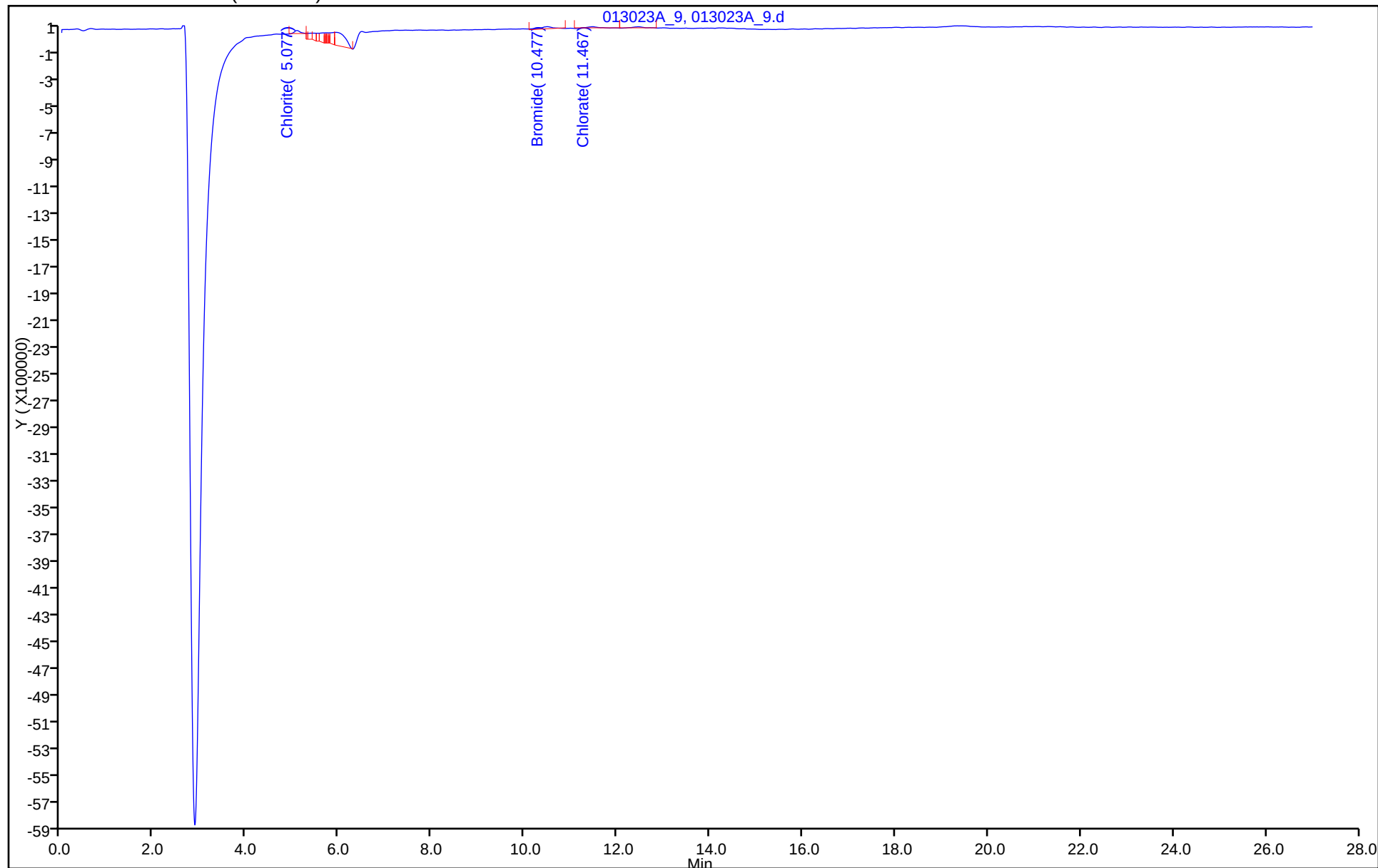
Dil. Factor: 1.0000

ALS Bottle#: 0

Method: 300B_IC_GP

Limit Group: IC - 300 - B

Column: IC IonPac AS-19 (0.00 mm)



South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_9.d
Injection Date: 30-Jan-2023 14:38:00 Instrument ID: IC-GP
Lims ID: LLCS
Client ID:
Operator ID:
Injection Vol: 1.0 ul
Method: 300B_IC_GP
Column: IC IonPac AS-19 (0.00 mm)

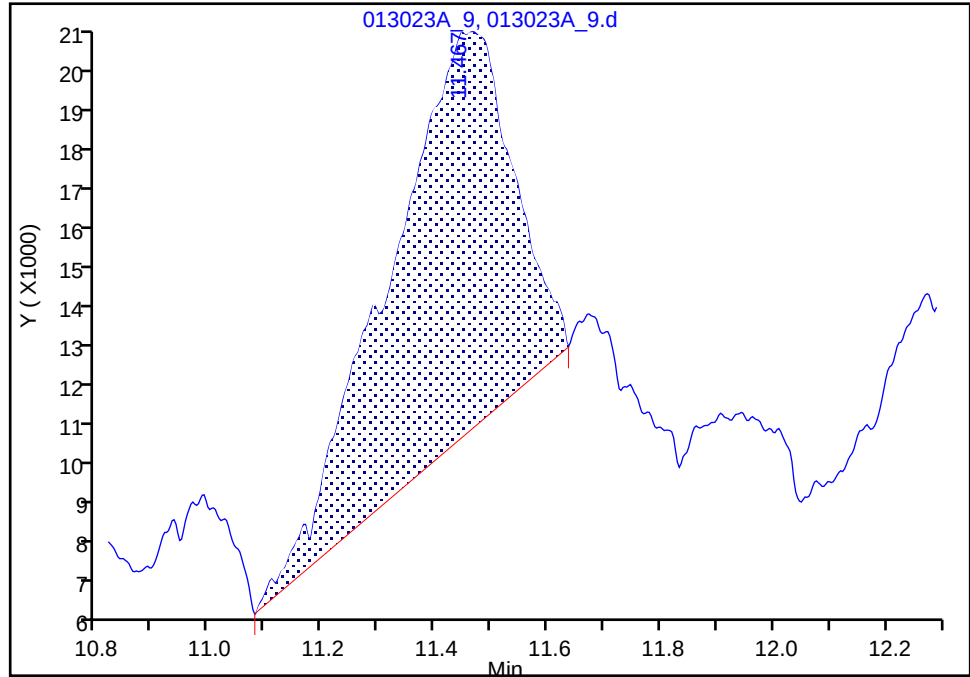
ALS Bottle#: 0 Worklist Smp#: 2
Dil. Factor: 1.0000
Limit Group: IC - 300 - B
Detector 010621A_11

2 Chlorate, CAS: 14866-68-3

Signal: 1

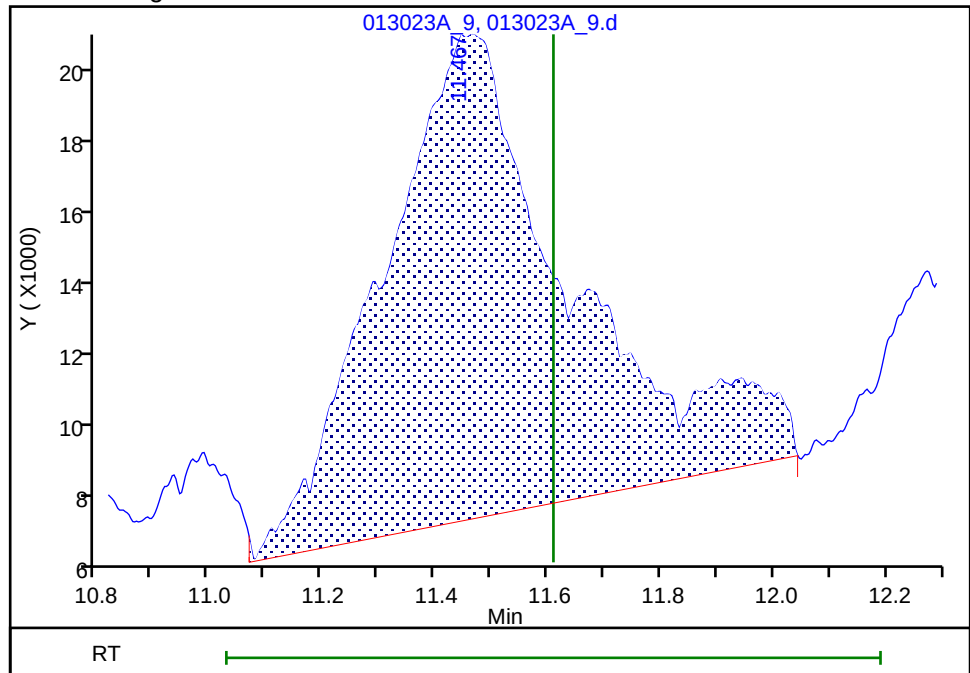
RT: 11.47
Area: 148717
Amount: 0.003864
Amount Units: ug/ml

Processing Integration Results



RT: 11.47
Area: 296917
Amount: 0.009823
Amount Units: ug/ml

Manual Integration Results



Reviewer: U3JL, 06-Feb-2023 12:36:10
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_9.d
Injection Date: 30-Jan-2023 14:38:00 Instrument ID: IC-GP
Lims ID: LLCS
Client ID:
Operator ID:
Injection Vol: 1.0 ul
Method: 300B_IC_GP
Column: IC IonPac AS-19 (0.00 mm)

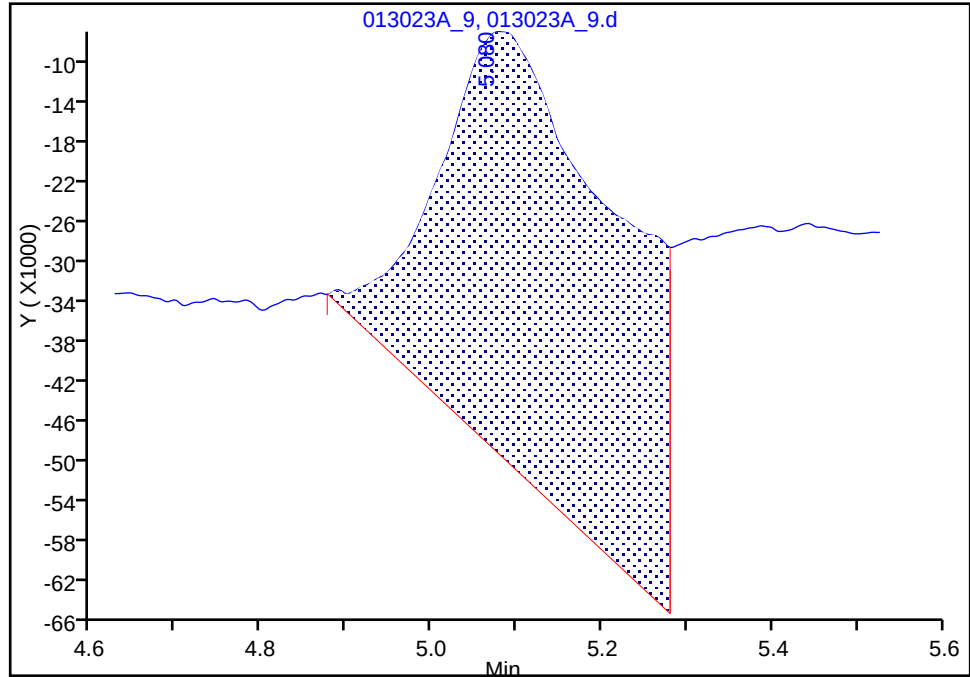
ALS Bottle#: 0 Worklist Smp#: 2
Dil. Factor: 1.0000
Limit Group: IC - 300 - B
Detector 010621A_11

10 Chlorite, CAS: 14998-27-7

Signal: 1

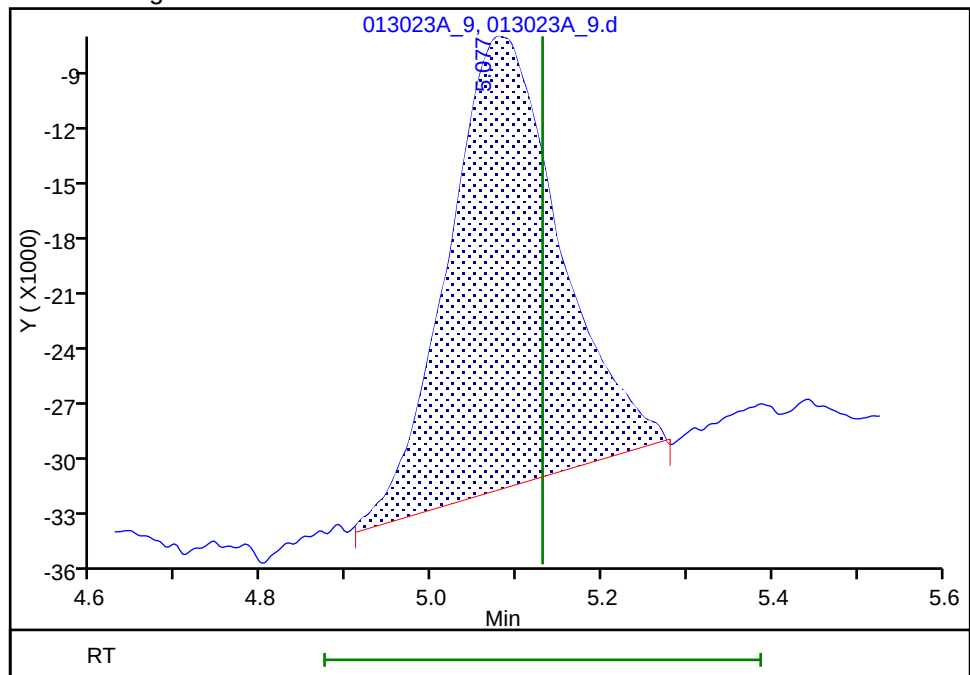
RT: 5.08
Area: 659684
Amount: 0.028401
Amount Units: ug/ml

Processing Integration Results



RT: 5.08
Area: 219197
Amount: 0.012635
Amount Units: ug/ml

Manual Integration Results



Reviewer: U3JL, 06-Feb-2023 12:35:54

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Client Sample ID: 54MW10 MS Lab Sample ID: 810-51679-3 MS
Matrix: Drinking Water Lab File ID: 013023A_29.d
Analysis Method: 300.0 Date Collected: 01/23/2023 15:20
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/31/2023 00:39
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 46114 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD
14866-68-3	Chlorate	226		10	7.9
14998-27-7	Chlorite	212		10	5.9

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_29.d
Lims ID: 810-51679-A-3 MS
Client ID:
Sample Type: MS
Inject. Date: 31-Jan-2023 00:39:00 ALS Bottle#: 0 Worklist Smp#: 22
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 810-51679-A-3 MS
Misc. Info.: 810-0011430-022
Operator ID: Instrument ID: IC-GP
Method: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\300B_IC_GP.m
Limit Group: IC - 300 - B
Last Update: 06-Feb-2023 13:06:46 Calib Date: 19-Jan-2023 15:03:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
Process Host: CTX1676

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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10 Chlorite

5.177 5.130 0.047 5792929 0.2500 0.2121

3 Bromide

10.563 10.607 -0.044 6942145 0.2500 0.2556

2 Chlorate

11.550 11.610 -0.060 5665804 0.2500 0.2257

Reagents:

IC-300B CalSS_00007

Amount Added: 100.00

Units: uL

South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_29.d

Injection Date: 31-Jan-2023 00:39:00

Instrument ID: IC-GP

Operator ID:

Lims ID: 810-51679-A-3 MS

Worklist Smp#: 22

Client ID:

Injection Vol: 1.0 ul

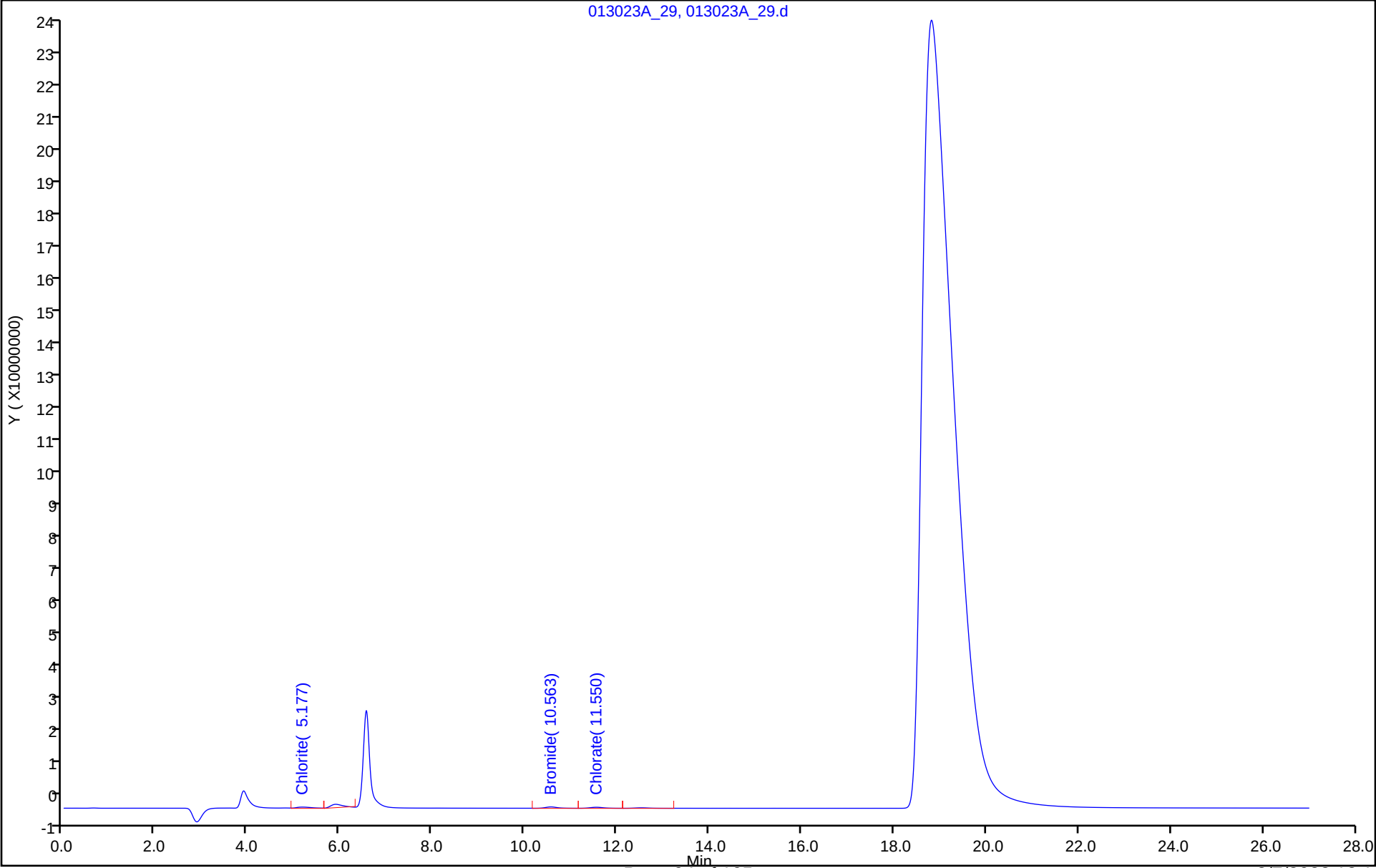
Dil. Factor: 1.0000

ALS Bottle#: 0

Method: 300B_IC_GP

Limit Group: IC - 300 - B

Column: IC IonPac AS-19 (0.00 mm)



FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1
SDG No.: _____
Client Sample ID: 54MW10 MSD Lab Sample ID: 810-51679-3 MSD
Matrix: Drinking Water Lab File ID: 013023A_30.d
Analysis Method: 300.0 Date Collected: 01/23/2023 15:20
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/31/2023 01:09
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 46114 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD
14866-68-3	Chlorate	226		10	7.9
14998-27-7	Chlorite	216		10	5.9

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_30.d
Lims ID: 810-51679-A-3 MSD
Client ID:
Sample Type: MSD
Inject. Date: 31-Jan-2023 01:09:00 ALS Bottle#: 0 Worklist Smp#: 23
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 810-51679-A-3 MSD
Misc. Info.: 810-0011430-023
Operator ID: Instrument ID: IC-GP
Method: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\300B_IC_GP.m
Limit Group: IC - 300 - B
Last Update: 06-Feb-2023 13:06:46 Calib Date: 19-Jan-2023 15:03:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromFS\Southbend\ChromData\IC-GP\20230119-11170.b\011923A_Cal_8.d
Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
Process Host: CTX1676

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
--------------	------------------	------------------	----------	------------------	--------------------	-------

10 Chlorite

5.200	5.130	0.070	5904989	0.2500	0.2161	
-------	-------	-------	---------	--------	--------	--

3 Bromide

10.603	10.607	-0.004	6888555	0.2500	0.2536	
--------	--------	--------	---------	--------	--------	--

2 Chlorate

11.587	11.610	-0.023	5683837	0.2500	0.2264	
--------	--------	--------	---------	--------	--------	--

Reagents:

IC-300B CalSS_00007

Amount Added: 100.00

Units: uL

Report Date: 06-Feb-2023 13:06:47

Chrom Revision: 2.3 01-Feb-2023 13:23:06

South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-GP\20230130-11430.b\013023A_30.d

Injection Date: 31-Jan-2023 01:09:00

Instrument ID: IC-GP

Operator ID:

Lims ID: 810-51679-A-3 MSD

Worklist Smp#: 23

Client ID:

Injection Vol: 1.0 ul

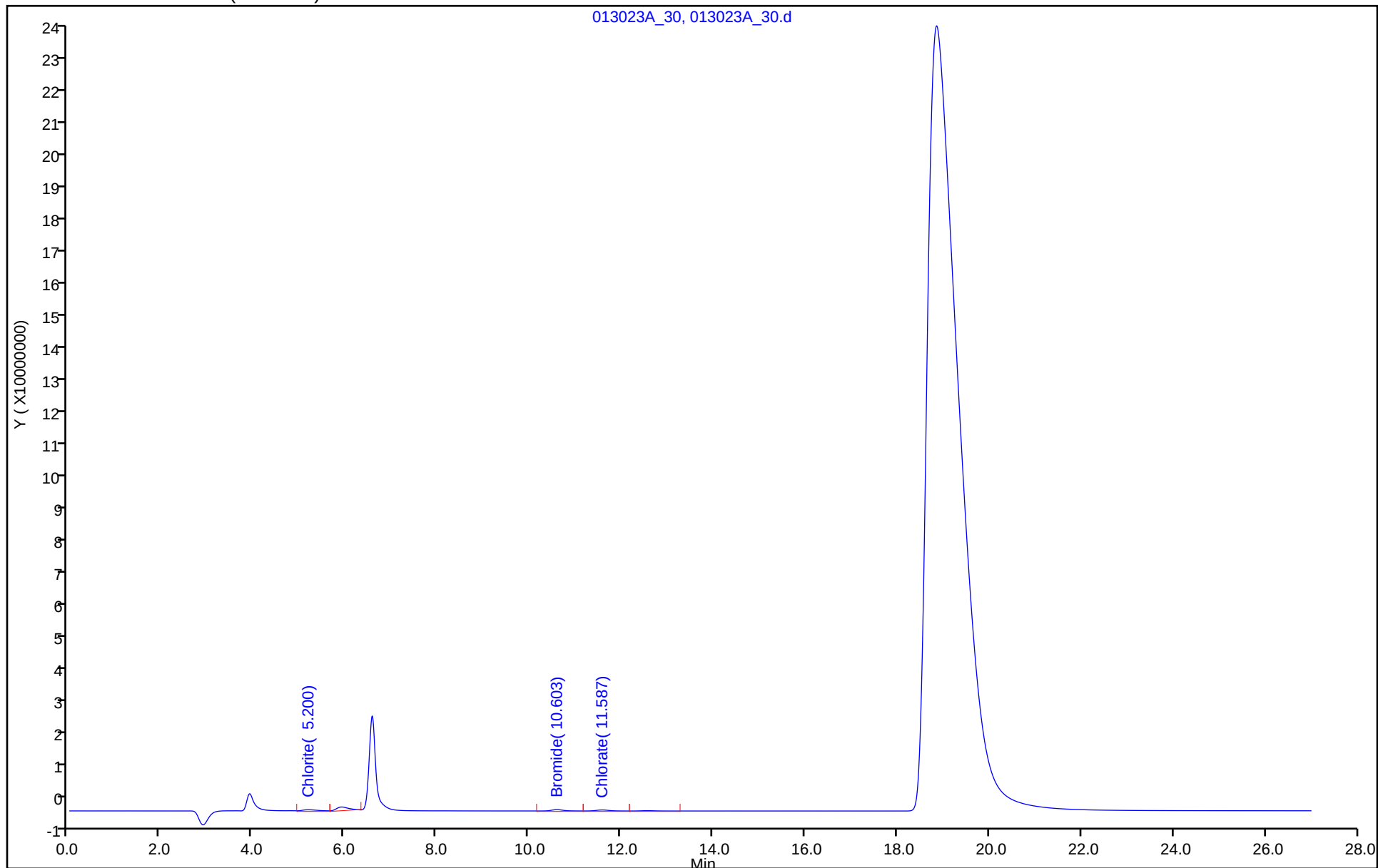
Dil. Factor: 1.0000

ALS Bottle#: 0

Method: 300B_IC_GP

Limit Group: IC - 300 - B

Column: IC IonPac AS-19 (0.00 mm)



HPLC/IC ANALYSIS RUN LOG

Lab Name: Eurofins Eaton South Bend

Job No.: 810-51679-1

SDG No.:

Instrument ID: IC-GP

Start Date: 01/19/2023 12:03

Analysis Batch Number: 44974

End Date: 01/20/2023 07:35

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 810-44974/1		01/19/2023 12:03	1	011923A_Cal_2.d	IonPac AS-19
IC 810-44974/2		01/19/2023 12:33	1	011923A_Cal_3.d	IonPac AS-19
IC 810-44974/3		01/19/2023 13:03	1	011923A_Cal_4.d	IonPac AS-19
IC 810-44974/4		01/19/2023 13:33	1	011923A_Cal_5.d	IonPac AS-19
IC 810-44974/5		01/19/2023 14:03	1	011923A_Cal_6.d	IonPac AS-19
ICRT 810-44974/6		01/19/2023 14:33	1	011923A_Cal_7.d	IonPac AS-19
IC 810-44974/7		01/19/2023 15:03	1	011923A_Cal_8.d	IonPac AS-19
ICV 810-44974/8		01/19/2023 15:33	1		IonPac AS-19
ZZZZZ		01/19/2023 16:03	1		IonPac AS-19
CCV 810-44974/10		01/19/2023 16:34	1		IonPac AS-19
CCB 810-44974/11		01/19/2023 17:04	1		IonPac AS-19
ZZZZZ		01/19/2023 17:34	1		IonPac AS-19
ZZZZZ		01/19/2023 18:04	1		IonPac AS-19
ZZZZZ		01/19/2023 18:34	1		IonPac AS-19
ZZZZZ		01/19/2023 19:04	1		IonPac AS-19
ZZZZZ		01/19/2023 19:34	1		IonPac AS-19
ZZZZZ		01/19/2023 20:04	1		IonPac AS-19
ZZZZZ		01/19/2023 20:34	1		IonPac AS-19
ZZZZZ		01/19/2023 21:04	1		IonPac AS-19
ZZZZZ		01/19/2023 21:34	1		IonPac AS-19
ZZZZZ		01/19/2023 22:04	1		IonPac AS-19
ZZZZZ		01/19/2023 22:34	1		IonPac AS-19
ZZZZZ		01/19/2023 23:04	1		IonPac AS-19
ZZZZZ		01/19/2023 23:34	1		IonPac AS-19
ZZZZZ		01/20/2023 00:04	1		IonPac AS-19
CCV 810-44974/26		01/20/2023 00:34	1		IonPac AS-19
CCB 810-44974/27		01/20/2023 01:04	1		IonPac AS-19
ZZZZZ		01/20/2023 01:34	1		IonPac AS-19
ZZZZZ		01/20/2023 02:04	1		IonPac AS-19
ZZZZZ		01/20/2023 02:34	1		IonPac AS-19
ZZZZZ		01/20/2023 03:04	1		IonPac AS-19
ZZZZZ		01/20/2023 03:35	1		IonPac AS-19
ZZZZZ		01/20/2023 04:05	1		IonPac AS-19
ZZZZZ		01/20/2023 04:35	1		IonPac AS-19
ZZZZZ		01/20/2023 05:05	1		IonPac AS-19
ZZZZZ		01/20/2023 05:35	1		IonPac AS-19
ZZZZZ		01/20/2023 06:05	1		IonPac AS-19
ZZZZZ		01/20/2023 06:35	1		IonPac AS-19
CCV 810-44974/39		01/20/2023 07:05	1		IonPac AS-19
CCB 810-44974/40		01/20/2023 07:35	1		IonPac AS-19

300.0

HPLC/IC ANALYSIS RUN LOG

Lab Name: Eurofins Eaton South Bend

Job No.: 810-51679-1

SDG No.:

Instrument ID: IC-GP

Start Date: 01/30/2023 14:08

Analysis Batch Number: 46114

End Date: 01/31/2023 04:39

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		01/30/2023 14:08	1		IonPac AS-19
LLCS 810-46114/2		01/30/2023 14:38	1	013023A_9.d	IonPac AS-19
CCV 810-46114/3		01/30/2023 15:08	1	013023A_10.d	IonPac AS-19
CCB 810-46114/4		01/30/2023 15:38	1	013023A_11.d	IonPac AS-19
MB 810-46114/5		01/30/2023 16:08	1	013023A_12.d	IonPac AS-19
LCS 810-46114/6		01/30/2023 16:38	1	013023A_13.d	IonPac AS-19
ZZZZZ		01/30/2023 17:08	100		IonPac AS-19
ZZZZZ		01/30/2023 17:38	1		IonPac AS-19
ZZZZZ		01/30/2023 18:08	1		IonPac AS-19
ZZZZZ		01/30/2023 18:38	1		IonPac AS-19
ZZZZZ		01/30/2023 19:08	1		IonPac AS-19
ZZZZZ		01/30/2023 19:38	1		IonPac AS-19
ZZZZZ		01/30/2023 20:08	1		IonPac AS-19
ZZZZZ		01/30/2023 20:38	1		IonPac AS-19
ZZZZZ		01/30/2023 21:09	1		IonPac AS-19
ZZZZZ		01/30/2023 21:39	1		IonPac AS-19
810-51679-1	54MW13	01/30/2023 22:09	1	013023A_24.d	IonPac AS-19
810-51679-2	54TW13	01/30/2023 22:39	1	013023A_25.d	IonPac AS-19
CCV 810-46114/19		01/30/2023 23:09	1	013023A_26.d	IonPac AS-19
CCB 810-46114/20		01/30/2023 23:39	1	013023A_27.d	IonPac AS-19
810-51679-3	54MW10	01/31/2023 00:09	1	013023A_28.d	IonPac AS-19
810-51679-3 MS	54MW10 MS	01/31/2023 00:39	1	013023A_29.d	IonPac AS-19
810-51679-3 MSD	54MW10 MSD	01/31/2023 01:09	1	013023A_30.d	IonPac AS-19
ZZZZZ		01/31/2023 01:39	1		IonPac AS-19
ZZZZZ		01/31/2023 02:09	1		IonPac AS-19
ZZZZZ		01/31/2023 02:39	1		IonPac AS-19
ZZZZZ		01/31/2023 03:09	1		IonPac AS-19
ZZZZZ		01/31/2023 03:39	1		IonPac AS-19
CCV 810-46114/29		01/31/2023 04:09	1	013023A_36.d	IonPac AS-19
CCB 810-46114/30		01/31/2023 04:39	1	013023A_37.d	IonPac AS-19

HPLC/IC BATCH WORKSHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1

SDG No.: _____

Batch Number: 44974 Batch Start Date: 01/19/23 12:03 Batch Analyst: Lovick, JamesBatch Method: 300.0 Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	IC-300B CalSS 00007					
IC 810-44974/2		300.0		40 uL					
IC 810-44974/3		300.0		80 uL					
IC 810-44974/4		300.0		400 uL					
IC 810-44974/5		300.0		1000 uL					
ICRT 810-44974/6		300.0		1000 uL					
IC 810-44974/7		300.0		1000 uL					

Batch Notes	
Filter ID	lot 17383736
Pipette/Syringe/Dispenser ID	PP0010,044,045
Eluent 1 ID	631048

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

300.0

Page 1 of 1

HPLC/IC BATCH WORKSHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51679-1

SDG No.: _____

Batch Number: 46114 Batch Start Date: 01/30/23 14:08 Batch Analyst: Lovick, JamesBatch Method: 300.0 Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	IC-300B CalSS 00007					
LLCS 810-46114/2		300.0		40 uL					
CCV 810-46114/3		300.0		1000 uL					
LCS 810-46114/6		300.0		100 uL					
CCV 810-46114/19		300.0		1000 uL					
810-51679-A-3 MS	54MW10	300.0	T	100 uL					
810-51679-A-3 MSD	54MW10	300.0	T	100 uL					
CCV 810-46114/29		300.0		1000 uL					

Batch Notes	
Filter ID	lot 17383736
Eluent 1 ID	631048

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

300.0

Page 1 of 1

Shipping and Receiving Documents

CT LABORATORIES

delivering more than data from your environmental analyses

1230 Lange Court • Baraboo, WI 53913 • 608-356-2760
www.ctlaboratories.com

Sub-Contract Laboratory Chain-of-Custody and Purchase Order

PURCHASE ORDER #: 175012 EEA-IN

The PO# must appear on all invoice and reports!

Upon Receipt of Samples, please verify that samples were received in acceptable condition then sign this form and fax to (608)356-2766 or email to the project manager. Sample temperature, upon receipt, must be recorded on this document unless thermal preservation is not a method requirement.

Ship to: Eurofins Eaton Analytical - IN
110 South Hill Street
South Bend, IN 46617

Return Invoice and Results to:

bszymanski@ctlaboratories.com

Government UPS Shipping Acct? Y ☐ N ☒

CT Laboratories
Brett M Szymanski
1230 Lange Court
Baraboo WI 53913

Ship by: Speedee ☐ UPS Gmd ☐ UPS 2nd ☐ UPS NDA ☒

Date Due: Standard TAT RUSH TURNAROUND NEEDED? Y ☐ N ☒ (Circle One)

Project Name: RADFORD AAP SWMU 54 Project State: VA

Analytical/QC Criteria: NONE INDICATED STATE DOD QSM ☐ NELAP (Circle one) OTHER

Report results as EDD? N ☐ Y ☒ (Circle one and indicate type: Basic Excel) Data Deliverable Package LEVEL: IV

CT Labs ID#	Sample Date/Time	Matrix	Sample Description	Analyses / Method	Cost
1282988	1/23/2023 13:10	GROUND WATER	54MW13	CHLORATE/CHLORITE	300.1
1282989	1/23/2023 13:10	GROUND WATER	54TW13	CHLORATE/CHLORITE	300.1
1282990	1/23/2023 15:20	GROUND WATER	54MW10	CHLORATE/CHLORITE	300.1

Relinquished by: B. Szymanski Date/Time: 01/26/2023 12:30

Received by: LCR Date/Time: 1-27-23 0845 Receipt Temperature (C) _____

COMMENTS: PLEASE LOG USING THE SAMPLE DESCRIPTIONS.

REPORT ALL SOLIDS ON A DRY WEIGHT BASIS UNLESS OTHERWISE INDICATED

Initial Temp: 2.4
Corrected Temp: 2.2
IR Gun # 18

Form #: FPM1-01
Effective Date: 02/15/14

1. ORDERS AND RECEIPT OF SAMPLES (Sample Acceptance Policy) - not applicable

2. PAYMENT TERMS

2.1 Services performed by CTL will be in accordance with prices quoted and later confirmed in writing or as stated in the Price Schedule. Invoices may be submitted to Client upon completion of any sample delivery group. Payment in advance is required for all Clients except those whose credit has been established with CTL. For Clients with approved credit, payment terms are net 30 days from the date of invoice by CTL. All overdue payments are subject to an additional interest and service charge of one and one-half percent (1.5%) (or the maximum rate permissible by law, whichever is lesser) per month or portion thereof from the due date until the date of payment. All fees are charged or billed directly to the Client. The billing of a third party will not be accepted without a statement, signed by the third party that acknowledges and accepts payment responsibility. CTL may suspend work and withhold delivery of data under this order at any time in the event Client fails to make timely payment of its invoices. Client shall be responsible for all costs and expenses of collection including reasonable attorney's fees. CTL reserves the right to refuse to proceed with work at any time based upon an unfavorable Client credit report.

3. CHANGE ORDERS, TERMINATION

3.1 Changes to the Scope of Work, price, or result delivery date may be initiated by CTL after Simple Acceptance due to any condition which conflicts with analytical, QA or other protocols warranted in these Terms and Conditions. CTL will not proceed with such changes until an agreement with the Client is reached on the amount of any cost, schedule change or technical change to the Scope of Work, and such agreement is documented in writing.

3.2 Changes to the Scope of Work, including but not limited to increasing or decreasing the work, changing test and analysis specification or acceleration in the performance of the work may be initiated by the Client after sample acceptance. Such a change will be documented in writing and may result in a change in cost and turnaround time commitment. CTL's acceptance of such changes is contingent upon technical feasibility and operational capacity.

3.3 Suspension or termination of all or any part of the work may be initiated by the Client. CTL will be compensated consistent with Section 2 of these Terms and Conditions. CTL will complete all work in progress and be paid in full for all work completed.

4. WARRANTIES AND LIABILITY

4.1 Where applicable, CTL will use analytical methodologies which are in substantial conformity with published test methods. CTL has implemented these methods in its Laboratory Quality Manuals and referenced Standard Operating Procedures and where the nature or composition of the sample requires it, CTL reserves the right to deviate from these methodologies as necessary or appropriate, based on the reasonable judgment of CTL, which deviations, if any, will be made on a basis consistent with recognized standards of the industry and/or CTL's Laboratory Quality Manuals. Client may request that CTL perform according to a mutually agreed Quality Assurance Project Plan (QAPP). In the event that samples arrive prior to agreement on a QAPP, CTL will proceed with analyses under its standard Quality Manuals then in effect, and CTL will not be responsible for any resampling or other changes if work must be repeated to comply with a subsequently finalized QAPP.

4.2 CTL shall start preparation and/or analysis within holding times provided that Sample Acceptance occurs within 48 hours of sampling or 1/2 of the holding time for the test, whichever is less. Where resolution of inconsistencies leading to Sample Acceptance does not occur within this period, CTL will use its best efforts to meet holding times and will proceed with the work provided that, in CTL's judgment, the chain-of-custody or definition of the Scope of Work provide sufficient guidance. Reanalysis of samples to comply with CTL's Quality Manuals will be deemed to have met holding times provided the initial analysis was performed within the applicable holding time. Where reanalysis demonstrates that sample matrix interference is the cause of failure to meet any Quality Manual requirements, the warranty will be deemed to have been met.

4.3 CTL warrants that it possesses and maintains all licenses and certifications which are required to perform services under these Terms and Conditions provided that such requirements are specified in writing to CTL prior to Sample Acceptance. CTL will notify the Client in writing of any de-certification or revocation of any license, or notice of either, which affects work in progress.

4.4 The warranty obligations set forth in Sections 4.1, 4.2 and 4.3 are the sole and exclusive warranties given by CTL in connection with any services performed by CTL or any Results generated from such services, and CTL gives and makes NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. No representative of CTL is authorized to give or make any other representation or warranty or modify this warranty in any way.

4.5 Client's sole and exclusive remedy for the breach of warranty in connection with any services performed by CTL, will be limited to repeating any services performed, contingent on the Client's providing, at the request of CTL and at the Client's expense, additional sample(s) if necessary. Any reanalysis requested by the Client generating Results consistent with the original Results will be at the Client's expense. If resampling is necessary, CTL's liability for resampling costs will be limited to actual cost or one hundred or one hundred fifty dollars (\$150) per sample, whichever is less.

4.6 CTL's liability for any and all causes of action arising hereunder, whether based in contract, tort, warranty, negligence or otherwise, shall be limited to the lesser amount of compensation for the services performed or \$100,000. All claims, including those for negligence, shall be deemed waived unless suit thereon is filed within one year after CTL's completion of the services. Under no circumstances, whether arising in contract, tort (including negligence), or otherwise, shall CTL be responsible for loss of use, loss of profits, or for any special, indirect, incidental or consequential damages occasioned by the services performed or by application or use of the reports prepared.

4.7 In no event shall CTL have any responsibility or liability to the Client for any failure or delay in performance by CTL which results, directly or indirectly, in whole or in part, from any cause or circumstance beyond the reasonable control of CTL. Such causes and circumstances shall include, but not be limited to, acts of God, acts of Client, acts or orders of any governmental authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, equipment breakdown, matrix interference or unknown highly contaminated samples that impact instrument operation, unavailability of supplies from usual suppliers, difficulties or delays in transportation, mail or delivery services, or any other cause beyond CTL's reasonable control.

5. RESULTS, WORK PRODUCT - not applicable

6. INSURANCE

6.1 CTL shall maintain in force during the performance of services under these Terms and Conditions, Workers' Compensation and Employer's Liability Insurance in accordance with the laws of the states having jurisdiction over CTL's employees who are engaged in the performance of the work. CTL shall also maintain during such period, Comprehensive (General and Contractual Liability (limit of \$2,000,000 per occurrence/ aggregate), Comprehensive Automobile Liability, owned and hired, (\$1,000,000 combined single limit), and Professional/Pollution Liability Insurance (limit of \$5,000,000 per occurrence/aggregate). A. Any Client required changes to these limits or conditions may result in a change in cost to the Client.

7. AUDIT

7.1 Upon prior notice to CTL, the Client may audit and inspect CTL's records and accounts covering reimbursable costs related to work done for the Client, for a period of one (1) year after completion of the work. The purpose of any such audit shall be only for verification of such costs, and CTL shall not be required to provide access to cost records where prices are expressed as fixed fees or published unit prices.

Login Sample Receipt Checklist

Client: CT Laboratories

Job Number: 810-51679-1

Login Number: 51679

List Source: Eurofins Eaton South Bend

List Number: 1

Creator: DePriest, Kellie

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	



ANALYTICAL REPORT

PREPARED FOR

Attn: Jodi Serstad
CT Laboratories
Environmental & Analytical Services
1230 Lange Court
Baraboo WI 53913

Generated 2/7/2023 12:18 PM

JOB DESCRIPTION

1283772-73 Chlorite, Chlorate

JOB NUMBER

810-51680-1

South Bend, IN

Job Notes

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Eaton Analytical, LLC Project Manager.

Authorization



Generated
2/7/2023 12:18 PM

Authorized for release by
Traci Chlebowski, Project Manager
Traci.Chlebowski@et.eurofinsus.com
574 233-4777

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Definitions/Glossary

Client: CT Laboratories
Project/Site: 1283772-73 Chlorite, Chlorate

Job ID: 810-51680-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job Narrative
810-51680-1

Comments

Report package revised as Level 4 at the request of Brett Szymanski.

Receipt

The samples were received on 1/27/2023 8:45 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.2° C.

HPLC/IC

Method 300.0: The Chlorite matrix spike (MS) recoveries for analytical batch 810-45942 were outside control limits of 90-110% at 86% recovery. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: CT Laboratories
Project/Site: 1283772-73 Chlorite, Chlorate

Job ID: 810-51680-1

Client Sample ID: 54MW12Lab Sample ID: 810-51680-1

No Detections.

Client Sample ID: 54MW1Lab Sample ID: 810-51680-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: CT Laboratories
Project/Site: 1283772-73 Chlorite, Chlorate

Job ID: 810-51680-1

Client Sample ID: 54MW12

Date Collected: 01/25/23 09:15

Date Received: 01/27/23 08:45

Lab Sample ID: 810-51680-1

Matrix: Drinking Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorite	<10	F1	10	ug/L			01/27/23 21:59	1
Chlorate	<10		10	ug/L			01/27/23 21:59	1

Client Sample ID: 54MW1

Date Collected: 01/25/23 11:15

Date Received: 01/27/23 08:45

Lab Sample ID: 810-51680-2

Matrix: Drinking Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorite	<10		10	ug/L			01/27/23 23:24	1
Chlorate	<10		10	ug/L			01/27/23 23:24	1

Action Limit Summary

Client: CT Laboratories
Project/Site: 1283772-73 Chlorite, Chlorate

Job ID: 810-51680-1

Client Sample ID: 54MW12

Lab Sample ID: 810-51680-1

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits have been highlighted for your convenience.

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
Chlorite	<10	F1	ug/L	1000	10	300.0	Total/NA

Client Sample ID: 54MW1

Lab Sample ID: 810-51680-2

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits have been highlighted for your convenience.

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
Chlorite	<10		ug/L	1000	10	300.0	Total/NA

Default Detection Limits

Client: CT Laboratories
Project/Site: 1283772-73 Chlorite, Chlorate

Job ID: 810-51680-1

Method: 300.0 - Anions, Ion Chromatography

Analyte	RL		Units
Chlorate	10	7.9	ug/L
Chlorite	10	5.9	ug/L

QC Sample Results

Client: CT Laboratories
Project/Site: 1283772-73 Chlorite, Chlorate

Job ID: 810-51680-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 810-45942/4
Matrix: Drinking Water
Analysis Batch: 45942

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorite	<10		10	ug/L			01/27/23 13:52	1
Chlorate	<10		10	ug/L			01/27/23 13:52	1

Lab Sample ID: LCS 810-45942/5
Matrix: Drinking Water
Analysis Batch: 45942

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorite	250	261		ug/L		104	90 - 110
Chlorate	250	257		ug/L		103	90 - 110

Lab Sample ID: LLCS 810-45942/1
Matrix: Drinking Water
Analysis Batch: 45942

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorite	10.0	13.4		ug/L		134	50 - 150
Chlorate	10.0	10.7		ug/L		107	50 - 150

Lab Sample ID: 810-51680-1 MS
Matrix: Drinking Water
Analysis Batch: 45942

Client Sample ID: 54MW12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorite	<10	F1	250	214	F1	ug/L		86	90 - 110
Chlorate	<10		250	259		ug/L		103	90 - 110

Lab Sample ID: 810-51680-1 MSD
Matrix: Drinking Water
Analysis Batch: 45942

Client Sample ID: 54MW12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorite	<10	F1	250	240		ug/L		96	90 - 110	11	20
Chlorate	<10		250	258		ug/L		103	90 - 110	0	20

QC Association Summary

Client: CT Laboratories
Project/Site: 1283772-73 Chlorite, Chlorate

Job ID: 810-51680-1

HPLC/IC

Analysis Batch: 45942

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-51680-1	54MW12	Total/NA	Drinking Water	300.0	
810-51680-2	54MW1	Total/NA	Drinking Water	300.0	
MB 810-45942/4	Method Blank	Total/NA	Drinking Water	300.0	
LCS 810-45942/5	Lab Control Sample	Total/NA	Drinking Water	300.0	
LLCS 810-45942/1	Lab Control Sample	Total/NA	Drinking Water	300.0	
810-51680-1 MS	54MW12	Total/NA	Drinking Water	300.0	
810-51680-1 MSD	54MW12	Total/NA	Drinking Water	300.0	

Lab Chronicle

Client: CT Laboratories
Project/Site: 1283772-73 Chlorite, Chlorate

Job ID: 810-51680-1

Client Sample ID: 54MW12

Date Collected: 01/25/23 09:15

Date Received: 01/27/23 08:45

Lab Sample ID: 810-51680-1

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	45942	JL	EA SB	01/27/23 21:59

Client Sample ID: 54MW1

Date Collected: 01/25/23 11:15

Date Received: 01/27/23 08:45

Lab Sample ID: 810-51680-2

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	45942	JL	EA SB	01/27/23 23:24

Laboratory References:

EA SB = Eurofins Eaton South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

Accreditation/Certification Summary

Client: CT Laboratories
Project/Site: 1283772-73 Chlorite, Chlorate

Job ID: 810-51680-1

Laboratory: Eurofins Eaton South Bend

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999766900	08-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
300.0		Drinking Water	Chlorate

Method Summary

Client: CT Laboratories
Project/Site: 1283772-73 Chlorite, Chlorate

Job ID: 810-51680-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EA SB

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EA SB = Eurofins Eaton South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

Sample Summary

Client: CT Laboratories
Project/Site: 1283772-73 Chlorite, Chlorate

Job ID: 810-51680-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
810-51680-1	54MW12	Drinking Water	01/25/23 09:15	01/27/23 08:45
810-51680-2	54MW1	Drinking Water	01/25/23 11:15	01/27/23 08:45

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1

SDG No.: _____

Instrument ID: IC-DT Analysis Batch Number: 45942Lab Sample ID: 810-51680-1 MS Client Sample ID: 54MW12 MSDate Analyzed: 01/27/23 22:27 Lab File ID: 27_Jan_2023 22_27.d GC Column: IonPac AS-19 ID: _____

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Chlorite	6.01	Peak assignment corrected	U3JL	01/30/23 10:46

Lab Sample ID: 810-51680-1 MSD Client Sample ID: 54MW12 MSDDate Analyzed: 01/27/23 22:56 Lab File ID: 27_Jan_2023 22_56.d GC Column: IonPac AS-19 ID: _____

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Chlorite	6.00	Peak assignment corrected	U3JL	01/30/23 10:46

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
IC-300B CalSS_00007	05/30/23	11/30/22	MilliQ Water, Lot 111021	100 mL	IC-BR-CalSt_00003	2500 uL	Bromide	25 mg/L
					IC-CLO2-CalSt_00003	2500 uL	Chlorite	25 mg/L
					IC-CLO3-CalSt_00003	2500 uL	Chlorate	25 mg/L
.IC-BR-CalSt_00003	07/26/23	Inorganic Venture, Lot T2-BR715284			(Purchased Reagent)		Bromide	1000 ug/mL
.IC-CLO2-CalSt_00003	07/26/23	Inorganic Venture, Lot S2-CLOX706256			(Purchased Reagent)		Chlorite	1000 ug/mL
.IC-CLO3-CalSt_00003	07/26/23	Inorganic Venture, Lot S2-CLOX707224			(Purchased Reagent)		Chlorate	1000 ug/mL

Method 300.0

Anions (IC) by Method 300.0

FORM III
HPLC/IC LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Matrix: Drinking Water Level: Low Lab File ID: 012723a_13.d
Lab ID: LCS 810-45942/5 Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
Chlorite	250	261	104	90-110	
Chlorate	250	257	103	90-110	

Column to be used to flag recovery and RPD values

FORM III 300.0

FORM III
HPLC/IC LOW LEVEL CONTROL SAMPLE RECOVERY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Matrix: Drinking Water Level: Low Lab File ID: 012723a_9.d
Lab ID: LLCS 810-45942/1 Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LLCS CONCENTRATION (ug/L)	LLCS % REC	QC LIMITS REC	#
Chlorite	10.0	13.4	134	50-150	
Chlorate	10.0	10.7	107	50-150	

Column to be used to flag recovery and RPD values

FORM III 300.0

FORM III
HPLC/IC MATRIX SPIKE RECOVERY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Matrix: Drinking Water Level: Low Lab File ID: 27_Jan_2023 22_27.d
Lab ID: 810-51680-1 MS Client ID: 54MW12 MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
Chlorite	250	<10	214	86	90-110	F1
Chlorate	250	<10	259	103	90-110	

Column to be used to flag recovery and RPD values

FORM III 300.0

FORM III
HPLC/IC MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Matrix: Drinking Water Level: Low Lab File ID: 27_Jan_2023 22_56.d
Lab ID: 810-51680-1 MSD Client ID: 54MW12 MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Chlorite	250	240	96	11	20	90-110	
Chlorate	250	258	103	0	20	90-110	

Column to be used to flag recovery and RPD values

FORM III 300.0

FORM IV
HPLC/IC METHOD BLANK SUMMARY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
 SDG No.: _____
 Lab File ID: 012723a_12.d Lab Sample ID: MB 810-45942/4
 Matrix: Drinking Water Date Extracted: _____
 Instrument ID: IC-DT Date Analyzed: 01/27/2023 13:52
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LLCS 810-45942/1	012723a_9.d	01/27/2023 12:27
	LCS 810-45942/5	012723a_13.d	01/27/2023 14:21
54MW12	810-51680-1	27_Jan_2023 21_59.d	01/27/2023 21:59
54MW12 MS	810-51680-1 MS	27_Jan_2023 22_27.d	01/27/2023 22:27
54MW12 MSD	810-51680-1 MSD	27_Jan_2023 22_56.d	01/27/2023 22:56
54MW1	810-51680-2	27_Jan_2023 23_24.d	01/27/2023 23:24

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Client Sample ID: 54MW12 Lab Sample ID: 810-51680-1
Matrix: Drinking Water Lab File ID: 27_Jan_2023 21_59.d
Analysis Method: 300.0 Date Collected: 01/25/2023 09:15
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/27/2023 21:59
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 45942 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL
14998-27-7	Chlorite	<10	F1	10
14866-68-3	Chlorate	<10		10

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\27_Jan_2023 21_59.d
Lims ID: 810-51680-A-1
Client ID: 54MW12
Sample Type: Client
Inject. Date: 27-Jan-2023 21:59:00 ALS Bottle#: 0 Worklist Smp#: 20
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 810-51680-A-1
Misc. Info.: 810-0011378-020
Operator ID: Instrument ID: IC-DT
Method: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\300B_IC_DT.m
Limit Group: IC - 300 - B
Last Update: 30-Jan-2023 10:47:18 Calib Date: 19-Jan-2023 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
Process Host: CTX1665

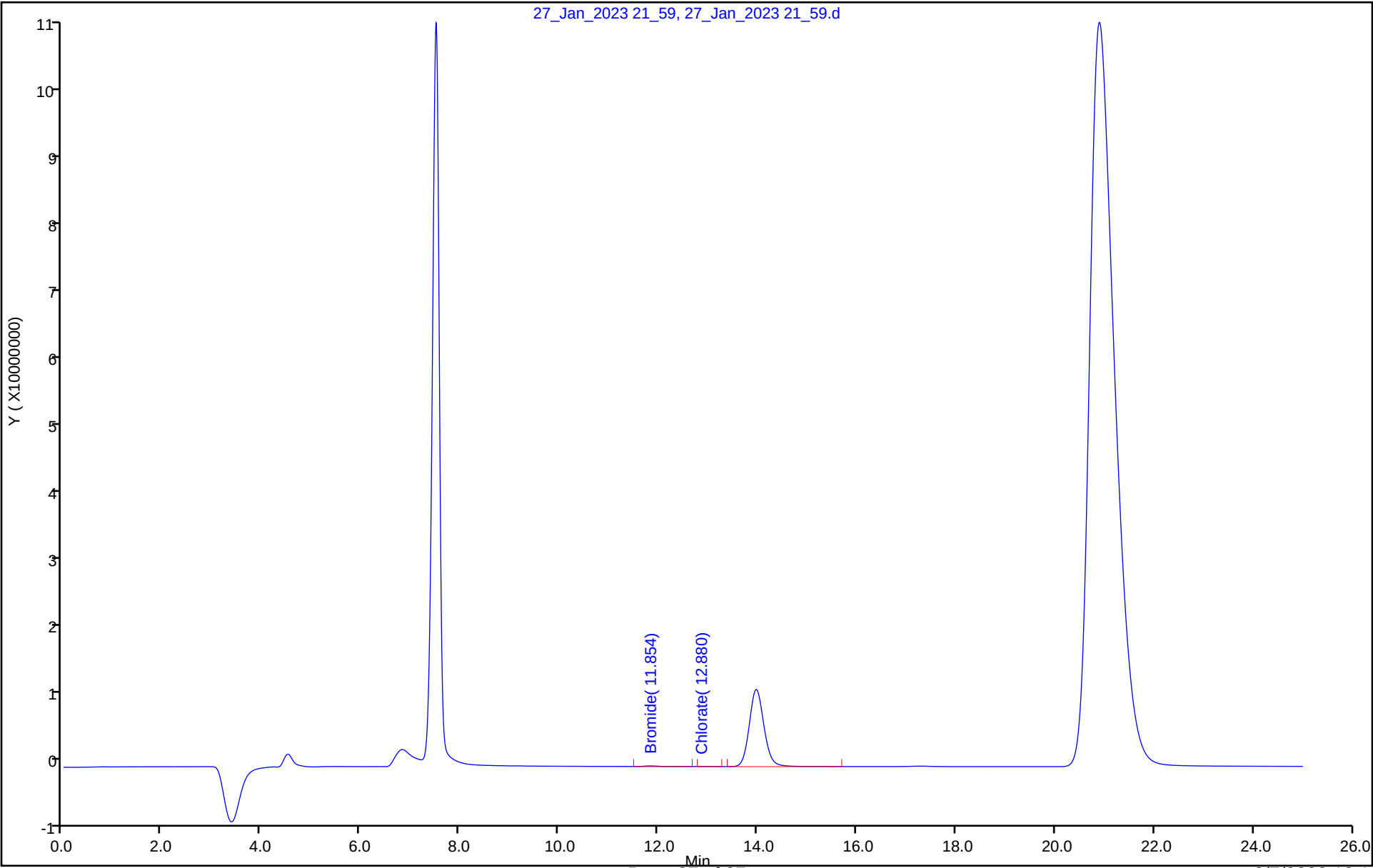
RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
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1 Bromide

11.854 11.881 -0.027 1349548 0.0264

3 Chlorate

12.880 12.991 -0.111 79683 0.002261



FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Client Sample ID: 54MW1 Lab Sample ID: 810-51680-2
Matrix: Drinking Water Lab File ID: 27_Jan_2023 23_24.d
Analysis Method: 300.0 Date Collected: 01/25/2023 11:15
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/27/2023 23:24
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 45942 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL
14998-27-7	Chlorite	<10		10
14866-68-3	Chlorate	<10		10

South Bend, IN
Target Compound Quantitation Report

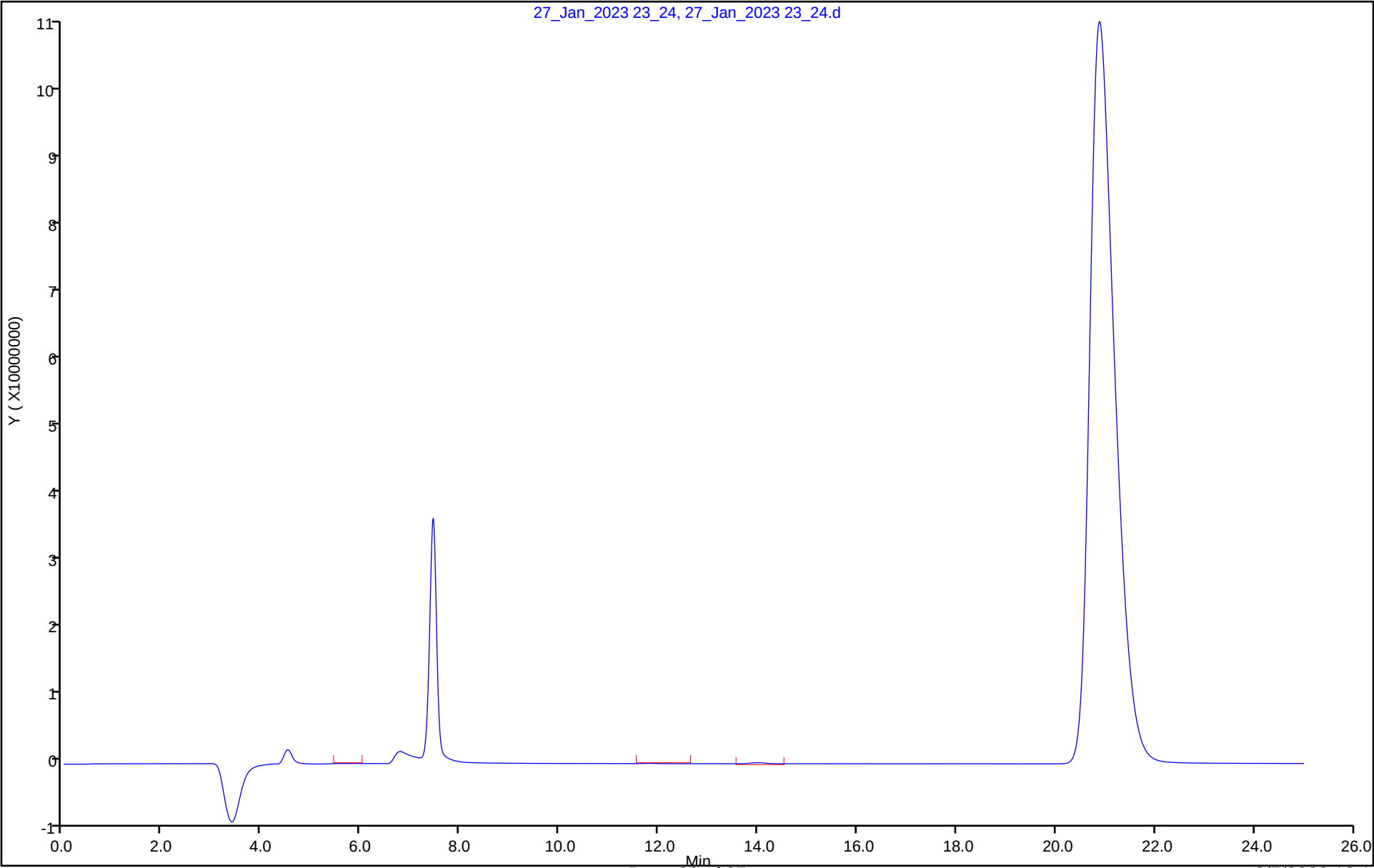
Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\27_Jan_2023 23_24.d
Lims ID: 810-51680-A-2
Client ID: 54MW1
Sample Type: Client
Inject. Date: 27-Jan-2023 23:24:00 ALS Bottle#: 0 Worklist Smp#: 23
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 810-51680-A-2
Misc. Info.: 810-0011378-023
Operator ID: Instrument ID: IC-DT
Method: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\300B_IC_DT.m
Limit Group: IC - 300 - B
Last Update: 30-Jan-2023 10:47:18 Calib Date: 19-Jan-2023 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
Process Host: CTX1665

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
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South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\27_Jan_2023 23_24.d
Injection Date: 27-Jan-2023 23:24:00 Instrument ID: IC-DT
Lims ID: 810-51680-A-2 Lab Sample ID: 810-51680-2
Client ID: 54MW1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 300B_IC_DT Limit Group: IC - 300 - B
Column: IC IonPac AS-19 (0.00 mm)

Operator ID:
Worklist Smp#: 23
ALS Bottle#: 0



FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1 Analy Batch No.: 44972

SDG No.: _____

Instrument ID: IC-DT GC Column: IonPac AS-1 ID: _____ Heated Purge: (Y/N) N

Calibration Start Date: 01/19/2023 12:02 Calibration End Date: 01/19/2023 14:53 Calibration ID: 6306

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 810-44972/1	011923a_Cal_2.d
Level 2	IC 810-44972/2	011923a_Cal_3.d
Level 3	IC 810-44972/3	011923a_Cal_4.d
Level 4	IC 810-44972/4	011923a_Cal_5.d
Level 5	IC 810-44972/5	011923a_Cal_6.d
Level 6	ICRT 810-44972/6	011923a_Cal_7.d
Level 7	IC 810-44972/7	011923a_Cal_8.d

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
Chlorite		5.840	5.844	5.834	5.844	5.837	+++++				5.688 - 5.980	5.840
Bromide		11.897	11.891	11.877	11.887	11.881	11.884				10.393 - 13.362	11.886
Chlorate		12.994	13.001	12.991	12.997	12.991	12.994				12.601 - 13.380	12.995

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1 Analy Batch No.: 44972

SDG No.: _____

Instrument ID: IC-DT GC Column: IonPac AS-1 ID: _____ Heated Purge: (Y/N) N

Calibration Start Date: 01/19/2023 12:02 Calibration End Date: 01/19/2023 14:53 Calibration ID: 6306

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 810-44972/1	011923a_Cal_2.d
Level 2	IC 810-44972/2	011923a_Cal_3.d
Level 3	IC 810-44972/3	011923a_Cal_4.d
Level 4	IC 810-44972/4	011923a_Cal_5.d
Level 5	IC 810-44972/5	011923a_Cal_6.d
Level 6	ICRT 810-44972/6	011923a_Cal_7.d
Level 7	IC 810-44972/7	011923a_Cal_8.d

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD /RSE	#	MAX %RSD /RSE	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
Chlorite	52969320	46185600 54134632	47472550 +++++	50826370	Lin	-149036.4 4	54202055. 2							1.0000		0.9950
Bromide	55556604	39741800 54358894	49079100 54415089	50775550	Lin	-88877.79 6	54554460. 9							1.0000		0.9950
Chlorate	50823656	37326900 49565708	43948300 49280557	46863010	Lin	-32078.47 0	49432133. 1							1.0000		0.9950

Note: The M1 coefficient is the same as Ave CF for an Ave curve type. RSD is calculated for Ave curve types. RSE is used for all other types.

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1 Analy Batch No.: 44972

SDG No.: _____

Instrument ID: IC-DT GC Column: IonPac AS-1 ID: _____ Heated Purge: (Y/N) N

Calibration Start Date: 01/19/2023 12:02 Calibration End Date: 01/19/2023 14:53 Calibration ID: 6306

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 810-44972/1	011923a_Cal_2.d
Level 2	IC 810-44972/2	011923a_Cal_3.d
Level 3	IC 810-44972/3	011923a_Cal_4.d
Level 4	IC 810-44972/4	011923a_Cal_5.d
Level 5	IC 810-44972/5	011923a_Cal_6.d
Level 6	ICRT 810-44972/6	011923a_Cal_7.d
Level 7	IC 810-44972/7	011923a_Cal_8.d

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Chlorite	Lin	27067316	461856 +++++	949451	5082637	13242330	0.000000 0.500	0.0100 +++++	0.0200	0.100	0.250
Bromide	Lin	27179447	397418 54415089	981582	5077555	13889151	0.000000 0.500	0.0100 1.00	0.0200	0.100	0.250
Chlorate	Lin	24782854	373269 49280557	878966	4686301	12705914	0.000000 0.500	0.0100 1.00	0.0200	0.100	0.250

Curve Type Legend

Lin = Linear

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
READBACK PERCENT ERROR

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1 Analy Batch No.: 44972

SDG No.: _____

Instrument ID: IC-DT GC Column: IonPac AS-1 ID: _____ Heated Purge: (Y/N) N

Calibration Start Date: 01/19/2023 12:02 Calibration End Date: 01/19/2023 14:53 Calibration ID: 6306

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 810-44972/1	011923a_Cal_2.d
Level 2	IC 810-44972/2	011923a_Cal_3.d
Level 3	IC 810-44972/3	011923a_Cal_4.d
Level 4	IC 810-44972/4	011923a_Cal_5.d
Level 5	IC 810-44972/5	011923a_Cal_6.d
Level 6	ICRT 810-44972/6	011923a_Cal_7.d
Level 7	IC 810-44972/7	011923a_Cal_8.d

ANALYTE	PERCENT ERROR						PERCENT ERROR LIMIT					
	LVL 1 # LVL 7 #	LVL 2 #	LVL 3 #	LVL 4 #	LVL 5 #	LVL 6 #	LVL 1 LVL 7	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6
Chlorite	+++++	12.7 *	1.3	-3.5	-1.2	0.4	50	10	10	10	10	10
Bromide	-0.1	-10.9 *	-1.9	-5.3	2.5	0.0	50 10	10	10	10	10	10
Chlorate	-0.2	-18.0 *	-7.8	-4.5	3.1	0.4	50 10	10	10	10	10	10

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_2.d
Lims ID: IC L0
Client ID:
Sample Type: IC Calib Level: 0
Inject. Date: 19-Jan-2023 12:02:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: IC L0
Misc. Info.: 810-0011169-001
Operator ID: Instrument ID: IC-DT
Sublist: chrom-300B_IC_DT*sub3
Method: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\300B_IC_DT.m
Limit Group: IC - 300 - B
Last Update: 20-Jan-2023 12:27:30 Calib Date: 19-Jan-2023 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
Process Host: CTX1610

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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Reagents:

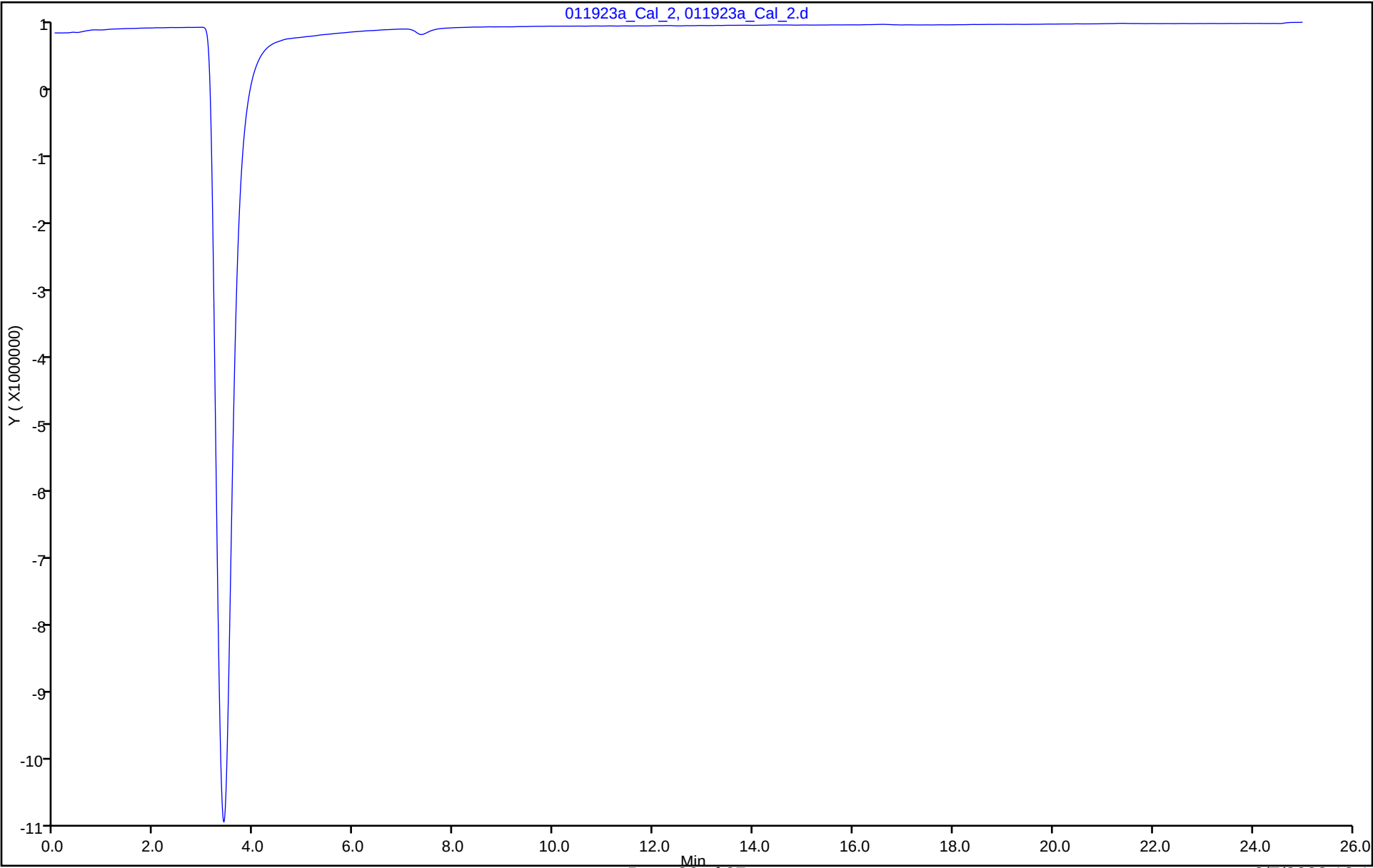
IC-300B CalSS_00007

Amount Added: 0.00

Units: uL

South Bend, IN

Data File:	\\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_2.d		
Injection Date:	19-Jan-2023 12:02:00	Instrument ID:	IC-DT
Lims ID:	IC L0	Operator ID:	1
Client ID:		Worklist Smp#:	
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	300B_IC_DT	Limit Group:	IC - 300 - B
Column:	IC IonPac AS-19 (0.00 mm)		
		ALS Bottle#:	0



South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_3.d
 Lims ID: IC L1
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 19-Jan-2023 12:30:00 ALS Bottle#: 0 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC L1
 Misc. Info.: 810-0011169-002
 Operator ID: Instrument ID: IC-DT
 Sublist: chrom-300B_IC_DT*sub3
 Method: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\300B_IC_DT.m
 Limit Group: IC - 300 - B
 Last Update: 20-Jan-2023 12:27:29 Calib Date: 19-Jan-2023 14:53:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1610

First Level Reviewer: U3JL

Date: 20-Jan-2023 12:27:29

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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2 Chlorite

5.840 5.834 0.006 461856 0.0100 0.0113

1 Bromide

11.897 11.877 0.020 397418 0.0100 0.008914

3 Chlorate

12.994 12.991 0.003 373269 0.0100 0.008200

QC Flag Legend

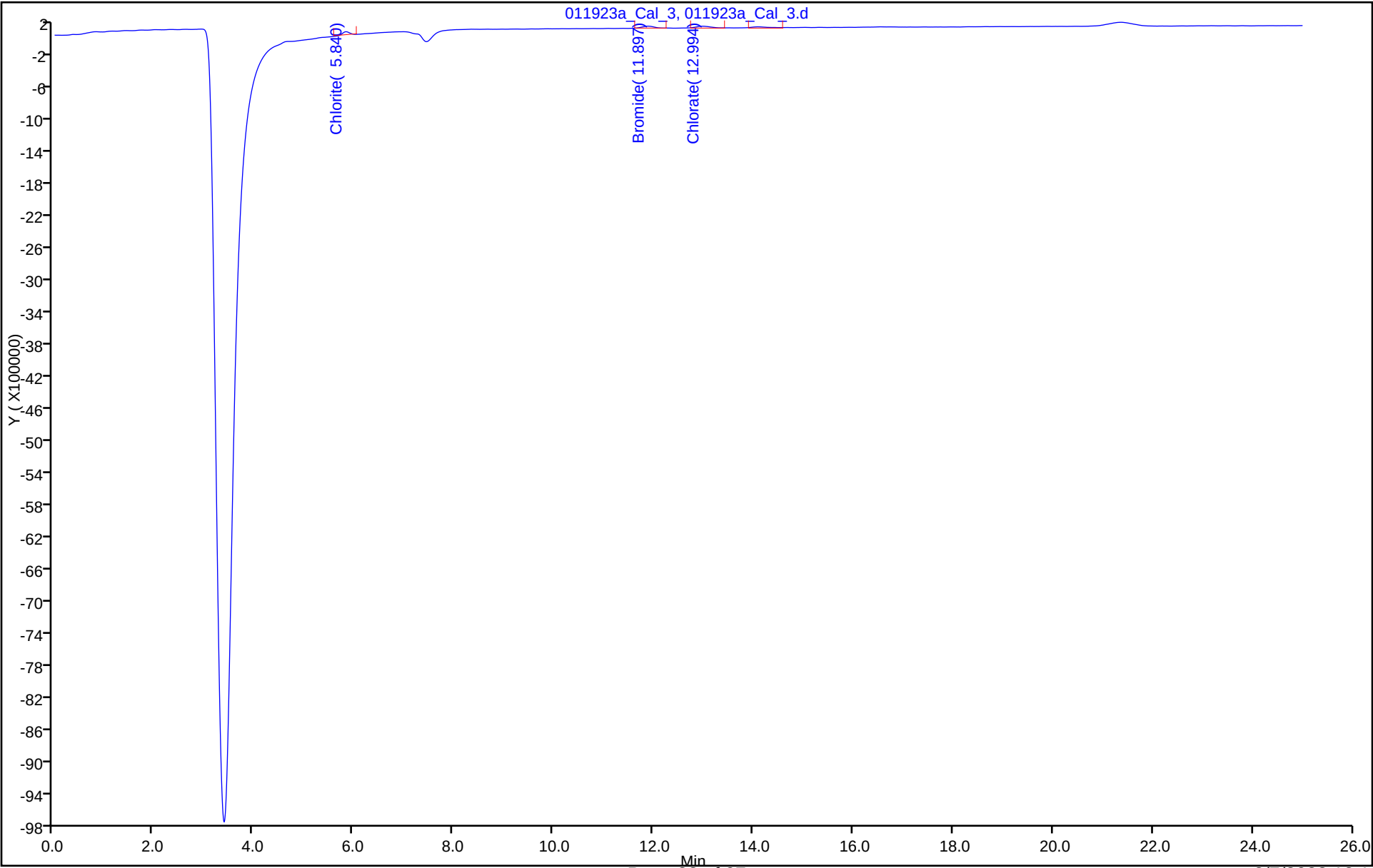
Processing Flags

Reagents:

IC-300B CalSS_00007

Amount Added: 40.00

Units: uL



South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_4.d
 Lims ID: IC L2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 19-Jan-2023 12:59:00 ALS Bottle#: 0 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC L2
 Misc. Info.: 810-0011169-003
 Operator ID: Instrument ID: IC-DT
 Sublist: chrom-300B_IC_DT*sub3
 Method: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\300B_IC_DT.m
 Limit Group: IC - 300 - B
 Last Update: 20-Jan-2023 12:27:30 Calib Date: 19-Jan-2023 14:53:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1610

First Level Reviewer: U3JL

Date: 20-Jan-2023 12:21:17

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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2 Chlorite

5.844 5.834 0.010 949451 0.0200 0.0203

1 Bromide

11.891 11.877 0.014 981582 0.0200 0.0196

3 Chlorate

13.001 12.991 0.010 878966 0.0200 0.0184

QC Flag Legend

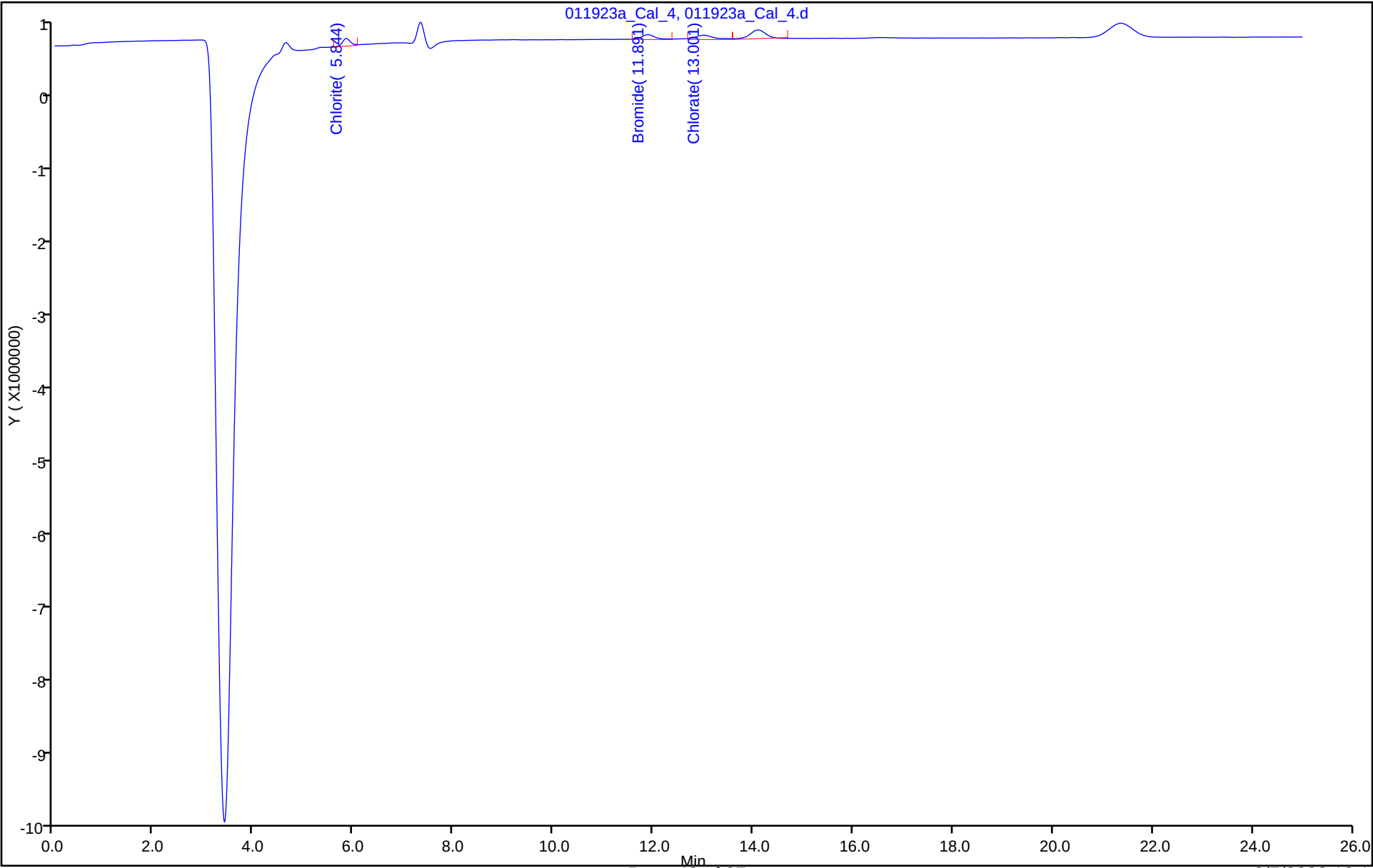
Processing Flags

Reagents:

IC-300B CalSS_00007

Amount Added: 80.00

Units: uL



South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_5.d
 Lims ID: IC L3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 19-Jan-2023 13:27:00 ALS Bottle#: 0 Worklist Smp#: 4
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC L3
 Misc. Info.: 810-0011169-004
 Operator ID: Instrument ID: IC-DT
 Sublist: chrom-300B_IC_DT*sub3
 Method: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\300B_IC_DT.m
 Limit Group: IC - 300 - B
 Last Update: 20-Jan-2023 12:27:31 Calib Date: 19-Jan-2023 14:53:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1610

First Level Reviewer: U3JL

Date: 20-Jan-2023 12:21:02

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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2 Chlorite

5.834 5.834 0.000 5082637 0.1000 0.0965

1 Bromide

11.877 11.877 0.000 5077555 0.1000 0.0947

3 Chlorate

12.991 12.991 0.000 4686301 0.1000 0.0955

QC Flag Legend

Processing Flags

Reagents:

IC-300B CalSS_00007

Amount Added: 400.00

Units: uL

Report Date: 20-Jan-2023 12:27:31

Chrom Revision: 2.3 09-Jan-2023 13:34:20

South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_5.d

Injection Date: 19-Jan-2023 13:27:00

Instrument ID: IC-DT

Operator ID:

Lims ID: IC L3

Worklist Smp#: 4

Client ID:

Injection Vol: 1.0 ul

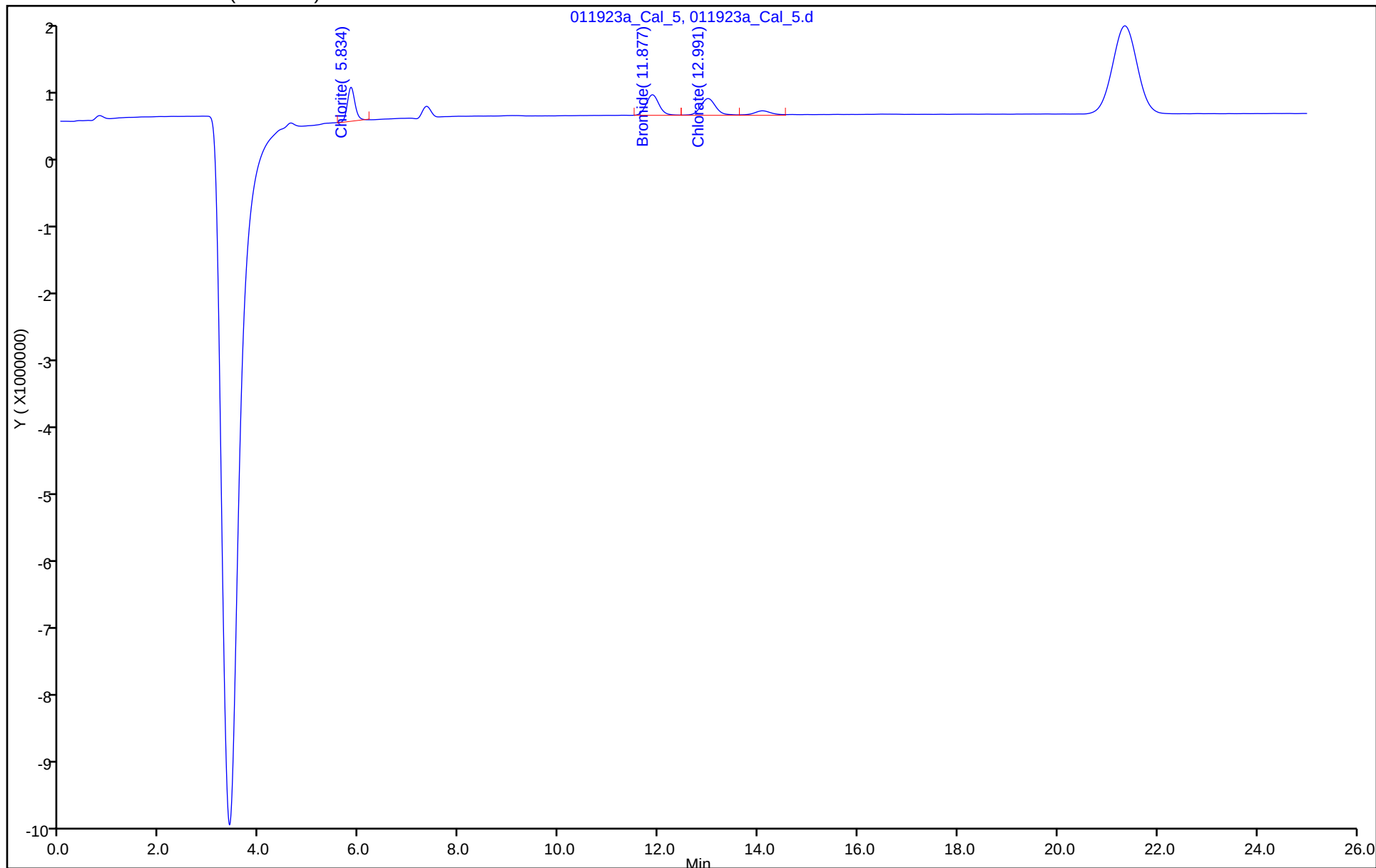
Dil. Factor: 1.0000

ALS Bottle#: 0

Method: 300B_IC_DT

Limit Group: IC - 300 - B

Column: IC IonPac AS-19 (0.00 mm)



South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_6.d
 Lims ID: IC L4
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 19-Jan-2023 13:56:00 ALS Bottle#: 0 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC L4
 Misc. Info.: 810-0011169-005
 Operator ID: Instrument ID: IC-DT
 Sublist: chrom-300B_IC_DT*sub3
 Method: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\300B_IC_DT.m
 Limit Group: IC - 300 - B
 Last Update: 20-Jan-2023 12:27:31 Calib Date: 19-Jan-2023 14:53:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1610

First Level Reviewer: U3JL

Date: 20-Jan-2023 12:20:58

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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2 Chlorite

5.844 5.834 0.010 13242330 0.2500 0.2471

1 Bromide

11.887 11.877 0.010 13889151 0.2500 0.2562

3 Chlorate

12.997 12.991 0.006 12705914 0.2500 0.2577

QC Flag Legend

Processing Flags

Reagents:

IC-300B CalSS_00007

Amount Added: 1000.00

Units: uL

Report Date: 20-Jan-2023 12:27:31

Chrom Revision: 2.3 09-Jan-2023 13:34:20

South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_6.d

Injection Date: 19-Jan-2023 13:56:00

Instrument ID: IC-DT

Operator ID:

Lims ID: IC L4

Worklist Smp#: 5

Client ID:

Injection Vol: 1.0 ul

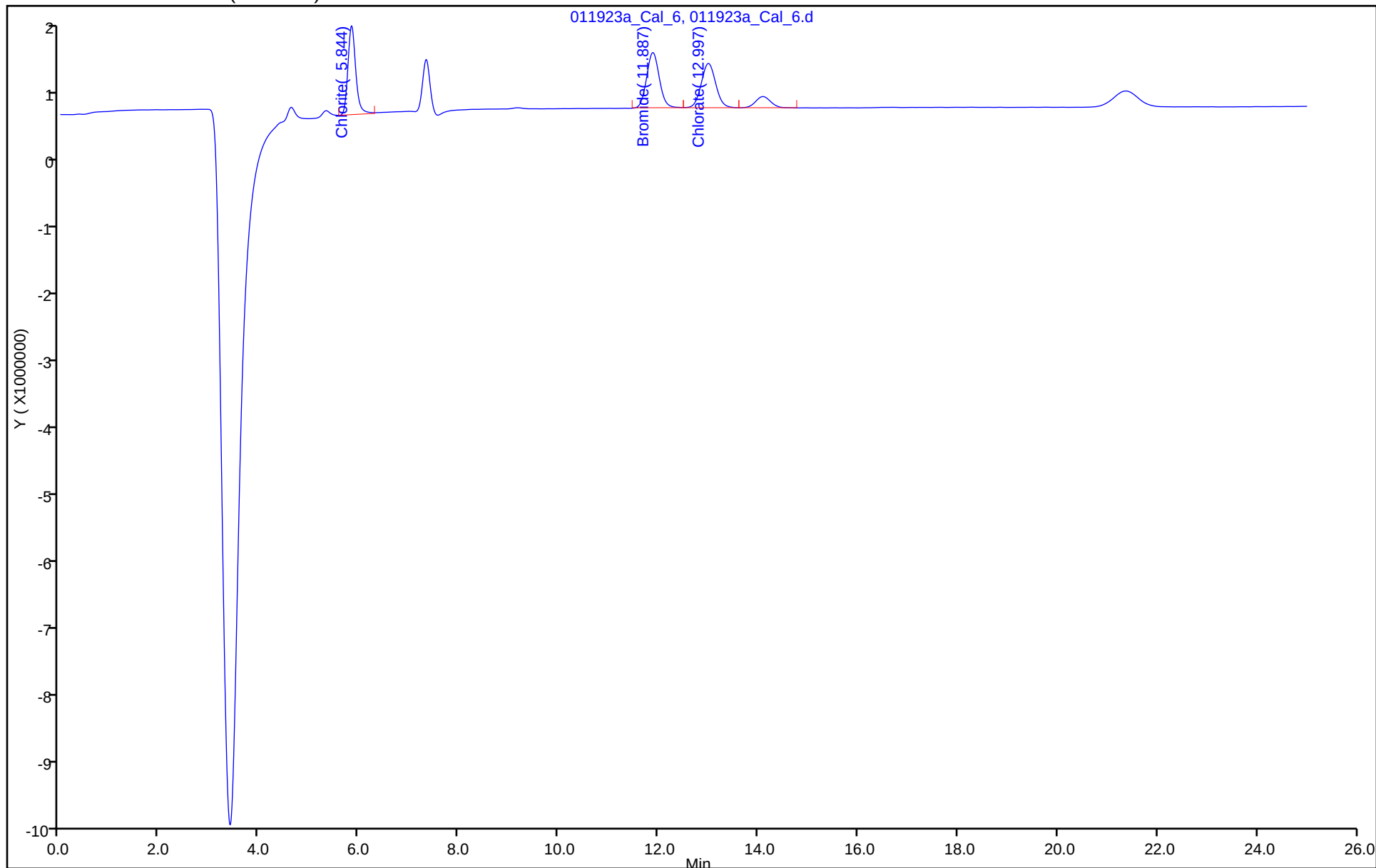
Dil. Factor: 1.0000

ALS Bottle#: 0

Method: 300B_IC_DT

Limit Group: IC - 300 - B

Column: IC IonPac AS-19 (0.00 mm)



South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_7.d
 Lims ID: ICRT L5
 Client ID:
 Sample Type: ICRT Calib Level: 5
 Inject. Date: 19-Jan-2023 14:24:00 ALS Bottle#: 0 Worklist Smp#: 6
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICRT L5
 Misc. Info.: 810-0011169-006
 Operator ID: Instrument ID: IC-DT
 Sublist: chrom-300B_IC_DT*sub3
 Method: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\300B_IC_DT.m
 Limit Group: IC - 300 - B
 Last Update: 20-Jan-2023 12:27:31 Calib Date: 19-Jan-2023 14:53:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1610

First Level Reviewer: U3JL

Date: 20-Jan-2023 12:20:28

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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2 Chlorite

5.837 5.837 0.000 27067316 0.5000 0.5021

1 Bromide

11.881 11.881 0.000 27179447 0.5000 0.4998

3 Chlorate

12.991 12.991 0.000 24782854 0.5000 0.5020

QC Flag Legend

Processing Flags

Reagents:

IC-300B CalSS_00007

Amount Added: 1000.00

Units: uL

Report Date: 20-Jan-2023 12:27:31

Chrom Revision: 2.3 09-Jan-2023 13:34:20

South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_7.d

Injection Date: 19-Jan-2023 14:24:00

Instrument ID: IC-DT

Operator ID:

Lims ID: ICRT L5

Worklist Smp#: 6

Client ID:

Injection Vol: 1.0 ul

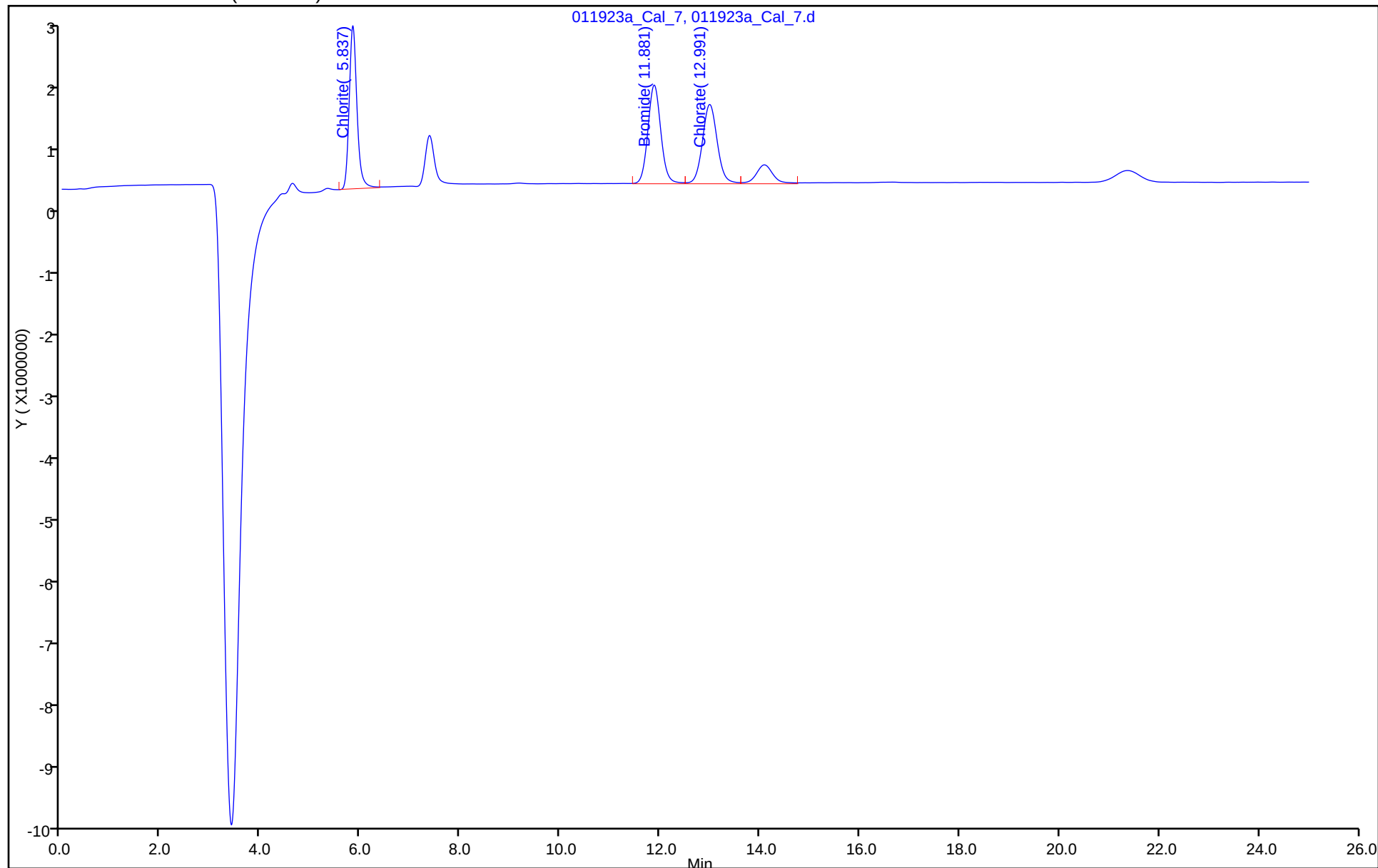
Dil. Factor: 1.0000

ALS Bottle#: 0

Method: 300B_IC_DT

Limit Group: IC - 300 - B

Column: IC IonPac AS-19 (0.00 mm)



South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
 Lims ID: IC L6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 19-Jan-2023 14:53:00 ALS Bottle#: 0 Worklist Smp#: 7
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC L6
 Misc. Info.: 810-0011169-007
 Operator ID: Instrument ID: IC-DT
 Sublist: chrom-300B_IC_DT*sub3
 Method: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\300B_IC_DT.m
 Limit Group: IC - 300 - B
 Last Update: 20-Jan-2023 12:27:32 Calib Date: 19-Jan-2023 14:53:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1610

First Level Reviewer: U3JL

Date: 20-Jan-2023 12:20:51

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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2 Chlorite

5.848 5.837 0.011 56195470 1.00 1.04

1 Bromide

11.884 11.881 0.003 54415089 1.00 1.00

3 Chlorate

12.994 12.991 0.003 49280557 1.00 1.00

QC Flag Legend

Processing Flags

Reagents:

IC-300B CalSS_00007

Amount Added: 1000.00

Units: uL

Report Date: 20-Jan-2023 12:27:32

Chrom Revision: 2.3 09-Jan-2023 13:34:20

South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d

Injection Date: 19-Jan-2023 14:53:00

Instrument ID: IC-DT

Operator ID:

Lims ID: IC L6

Worklist Smp#: 7

Client ID:

Injection Vol: 1.0 ul

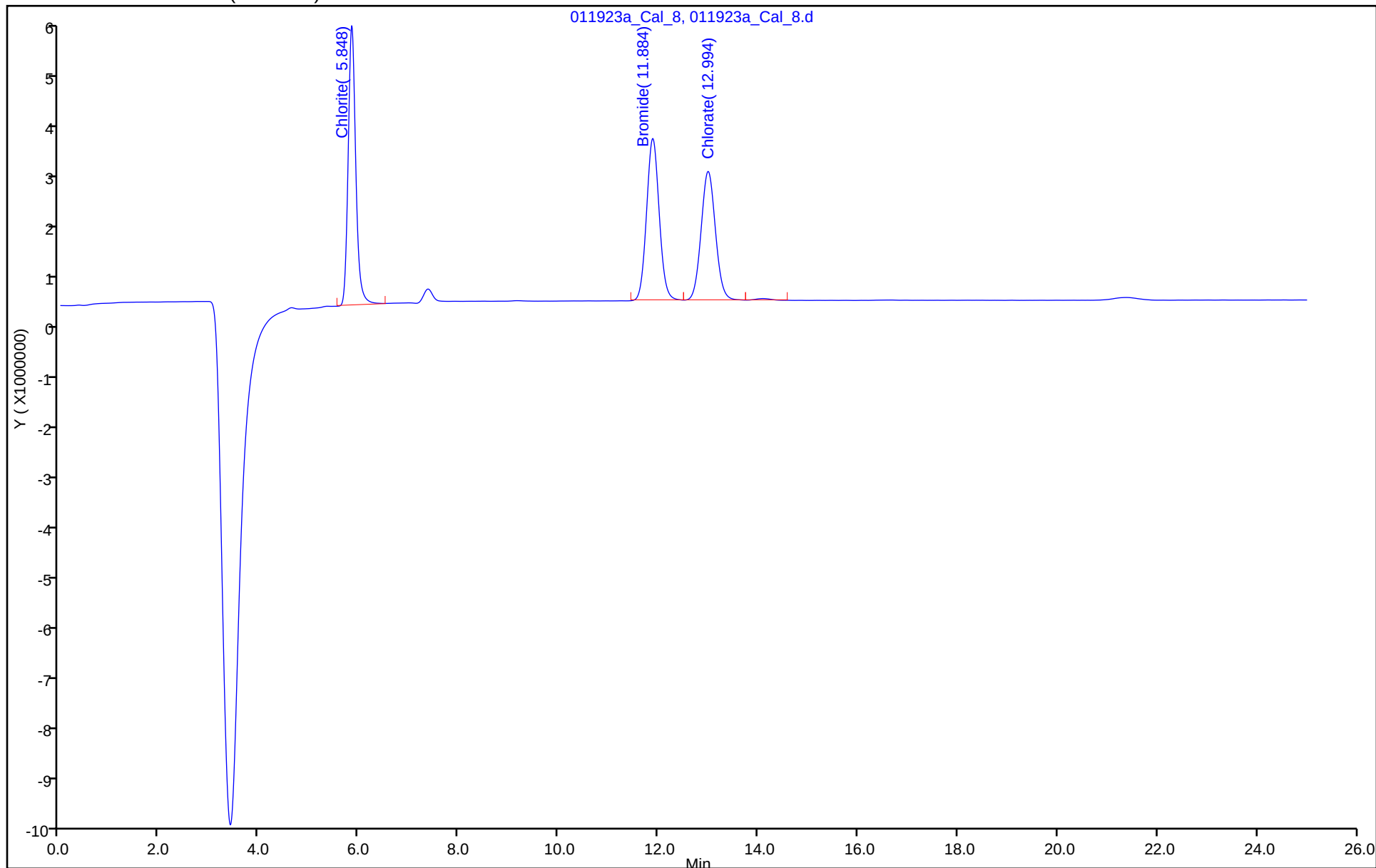
Dil. Factor: 1.0000

ALS Bottle#: 0

Method: 300B_IC_DT

Limit Group: IC - 300 - B

Column: IC IonPac AS-19 (0.00 mm)



Calibration

/ Chlorite

Curve Type: Linear
 Weighting: None
 Origin: None
 Dependency: Response
 Calib Mode: ESTD
 Response Base: AREA
 RF Rounding: 0

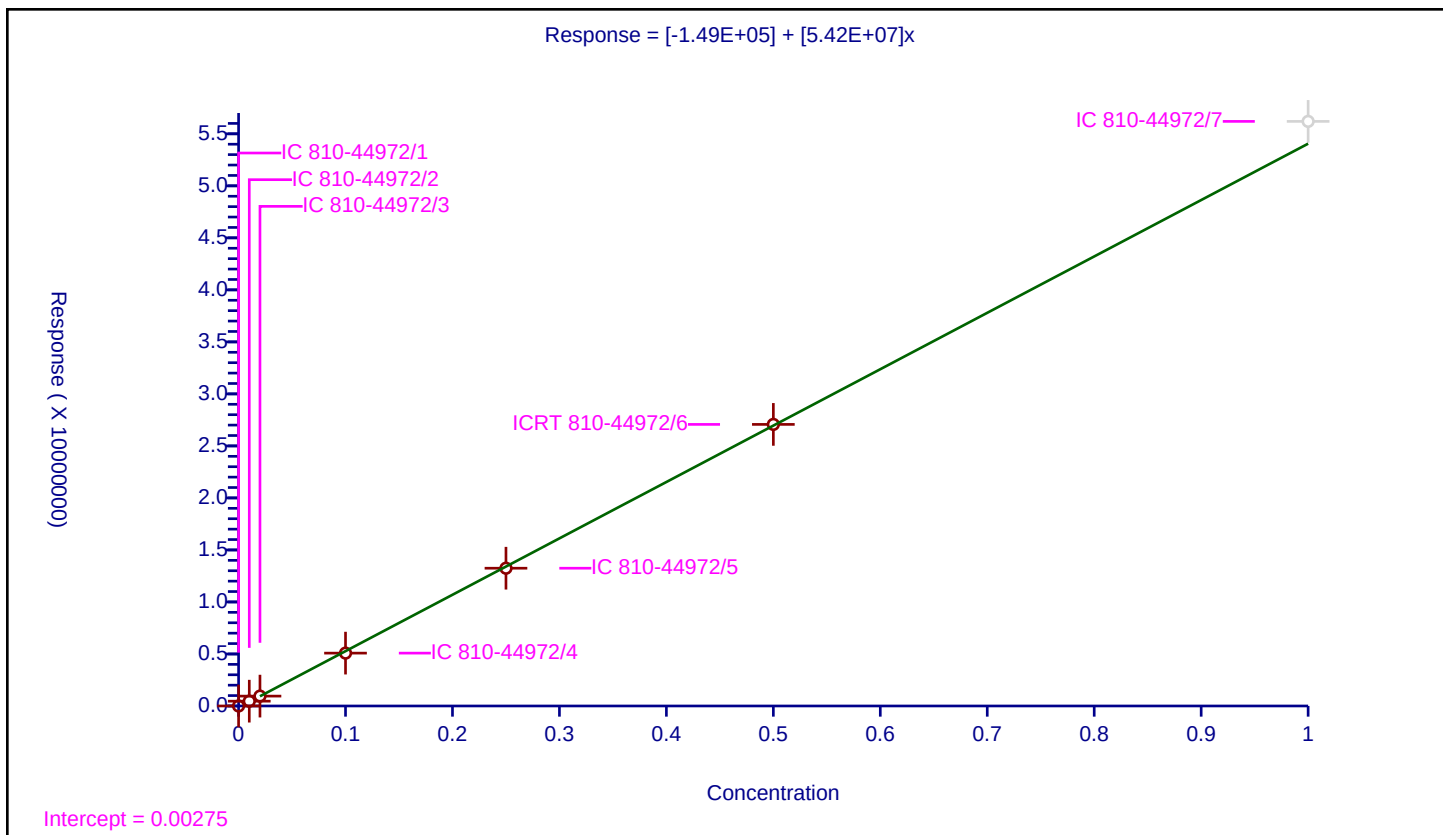
Curve Coefficients

Intercept: -1.49E+05
 Slope: 5.42E+07

Error Coefficients

Standard Error: 159000
 Relative Standard Error: 7.7
 Correlation Coefficient: 1.000
 Coefficient of Determination (Adjusted): 1.000

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	IC 810-44972/1	0.0	0.0			NaN	Y
2	IC 810-44972/2	0.01	461856.0			46185600.0	Y
3	IC 810-44972/3	0.02	949451.0			47472550.0	Y
4	IC 810-44972/4	0.1	5082637.0			50826370.0	Y
5	IC 810-44972/5	0.25	13242330.0			52969320.0	Y
6	ICRT 810-44972/6	0.5	27067316.0			54134632.0	Y
7	IC 810-44972/7	1.0	56195470.0			56195470.0	N



Calibration

/ Bromide

Curve Type: Linear
 Weighting: None
 Origin: None
 Dependency: Response
 Calib Mode: ESTD
 Response Base: AREA
 RF Rounding: 0

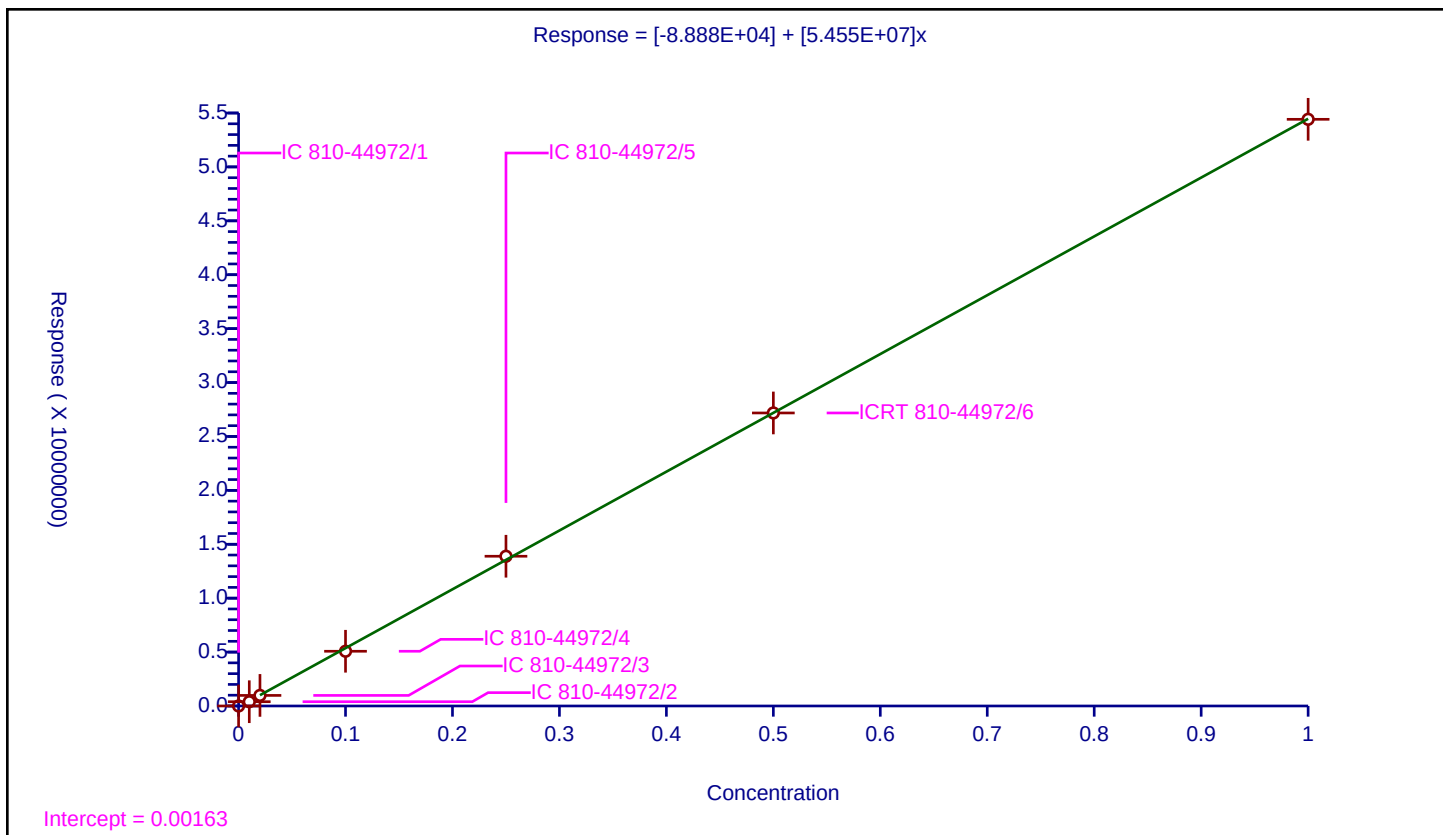
Curve Coefficients

Intercept: -8.888E+04
 Slope: 5.455E+07

Error Coefficients

Standard Error: 206000
 Relative Standard Error: 6.2
 Correlation Coefficient: 1.000
 Coefficient of Determination (Adjusted): 1.000

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	IC 810-44972/1	0.0	0.0			NaN	Y
2	IC 810-44972/2	0.01	397418.0			39741800.0	Y
3	IC 810-44972/3	0.02	981582.0			49079100.0	Y
4	IC 810-44972/4	0.1	5077555.0			50775550.0	Y
5	IC 810-44972/5	0.25	13889151.0			55556604.0	Y
6	ICRT 810-44972/6	0.5	27179447.0			54358894.0	Y
7	IC 810-44972/7	1.0	54415089.0			54415089.0	Y



Calibration

/ Chlorate

Curve Type: Linear
Weighting: None
Origin: None
Dependency: Response
Calib Mode: ESTD
Response Base: AREA
RF Rounding: 0

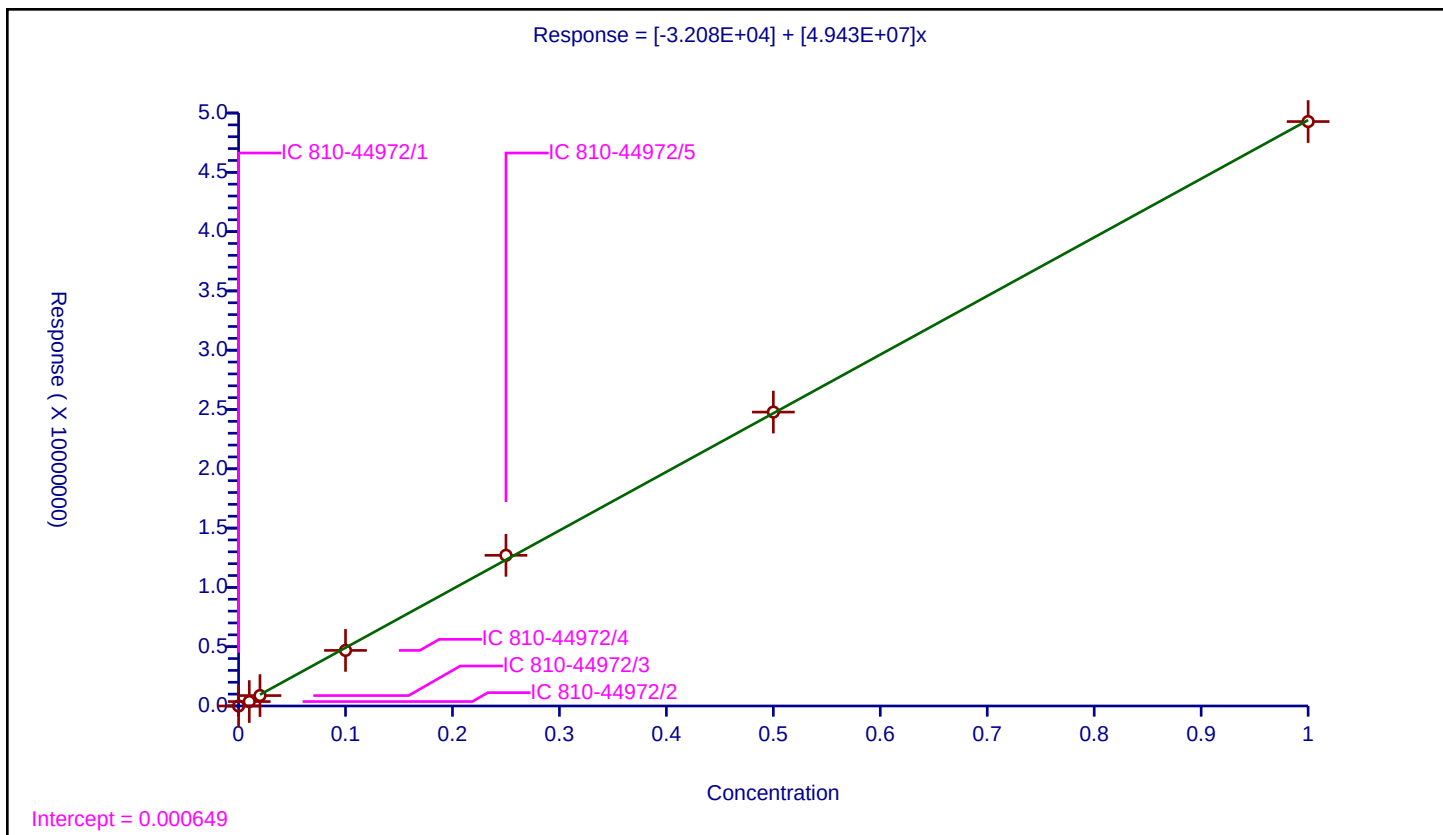
Curve Coefficients

Intercept: -3.208E+04
Slope: 4.943E+07

Error Coefficients

Standard Error: 216000
Relative Standard Error: 10.2
Correlation Coefficient: 1.000
Coefficient of Determination (Adjusted): 1.000

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	IC 810-44972/1	0.0	0.0			NaN	Y
2	IC 810-44972/2	0.01	373269.0			37326900.0	Y
3	IC 810-44972/3	0.02	878966.0			43948300.0	Y
4	IC 810-44972/4	0.1	4686301.0			46863010.0	Y
5	IC 810-44972/5	0.25	12705914.0			50823656.0	Y
6	ICRT 810-44972/6	0.5	24782854.0			49565708.0	Y
7	IC 810-44972/7	1.0	49280557.0			49280557.0	Y



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Lab Sample ID: CCV 810-45942/2 Calibration Date: 01/27/2023 12:55
Instrument ID: IC-DT Calib Start Date: 01/19/2023 12:02
GC Column: IonPac AS-19 ID: _____ Calib End Date: 01/19/2023 14:53
Lab File ID: 012723a_10.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
Chlorite	Lin		56068764		261	250	105	90-110
Bromide	Lin		55641244		257	250	103	90-110
Chlorate	Lin		50230804		255	250	102	90-110

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Lab Sample ID: CCV 810-45942/2 Calibration Date: 01/27/2023 12:55
Instrument ID: IC-DT Calib Start Date: 01/19/2023 12:02
GC Column: IonPac AS-19 ID: _____ Calib End Date: 01/19/2023 14:53
Lab File ID: 012723a_10.d

Analyte	RT	RT WINDOW	
		FROM	TO
Chlorite	5.84	5.69	5.98
Bromide	11.81	10.40	13.37
Chlorate	12.90	12.60	13.38

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\012723a_10.d
 Lims ID: CCV
 Client ID:
 Sample Type: CCV
 Inject. Date: 27-Jan-2023 12:55:00 ALS Bottle#: 0 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCV
 Misc. Info.: 810-0011378-002
 Operator ID: Instrument ID: IC-DT
 Sublist: chrom-300B_IC_DT*sub3
 Method: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\300B_IC_DT.m
 Limit Group: IC - 300 - B
 Last Update: 30-Jan-2023 10:47:13 Calib Date: 19-Jan-2023 14:53:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1665

First Level Reviewer: U3JL

Date: 30-Jan-2023 10:44:17

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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2 Chlorite

5.844 5.837 0.007 14017191 0.2500 0.2614

1 Bromide

11.811 11.881 -0.070 13910311 0.2500 0.2566

3 Chlorate

12.901 12.991 -0.090 12557701 0.2500 0.2547

QC Flag Legend

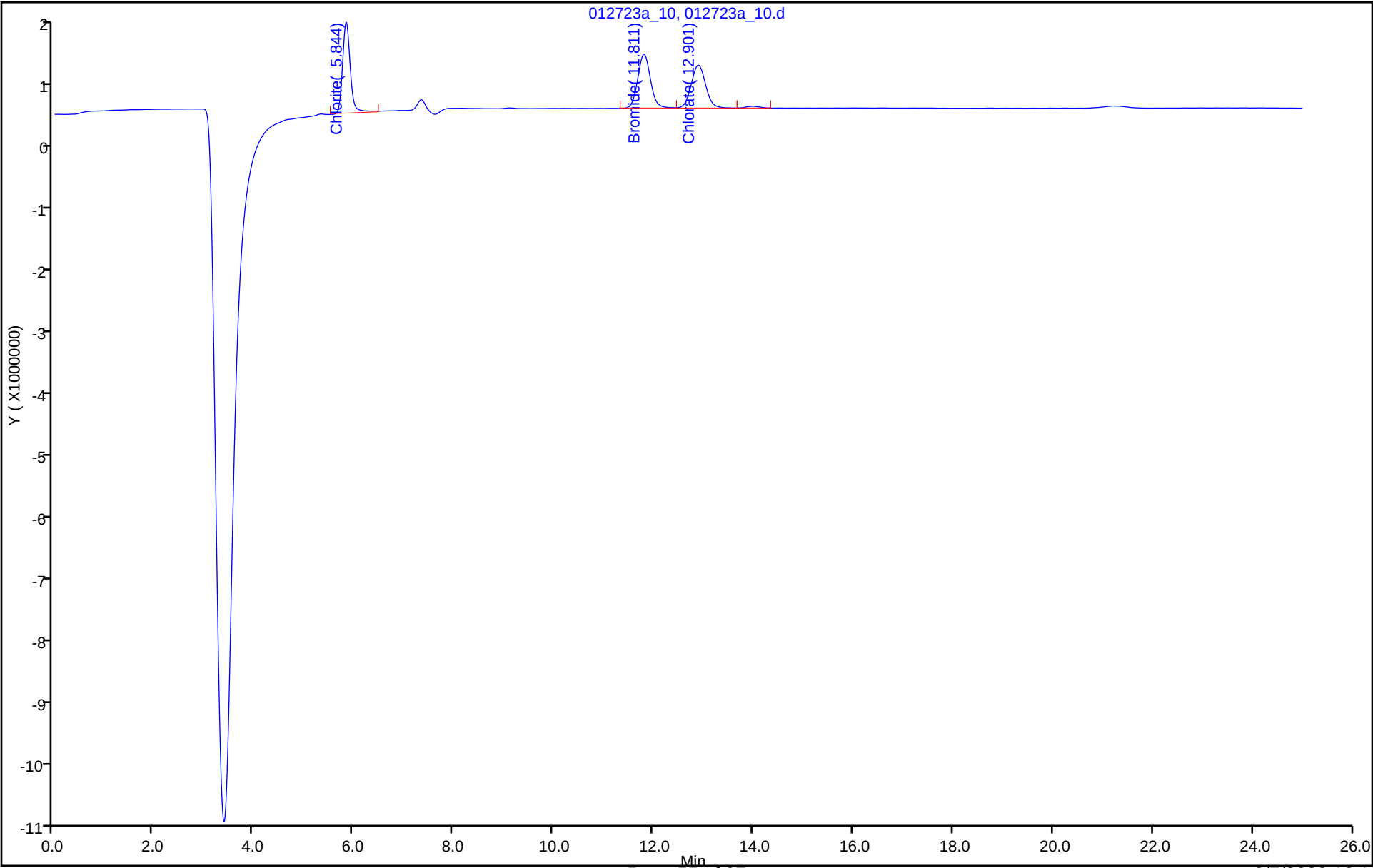
Processing Flags

Reagents:

IC-300B CalSS_00007

Amount Added: 1000.00

Units: uL



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Lab Sample ID: CCV 810-45942/18 Calibration Date: 01/27/2023 21:02
Instrument ID: IC-DT Calib Start Date: 01/19/2023 12:02
GC Column: IonPac AS-19 ID: _____ Calib End Date: 01/19/2023 14:53
Lab File ID: 27_Jan_2023 21_02.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
Chlorite	Lin		55240056		258	250	103	90-110
Bromide	Lin		56448360		260	250	104	90-110
Chlorate	Lin		51885980		263	250	105	90-110

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Lab Sample ID: CCV 810-45942/18 Calibration Date: 01/27/2023 21:02
Instrument ID: IC-DT Calib Start Date: 01/19/2023 12:02
GC Column: IonPac AS-19 ID: _____ Calib End Date: 01/19/2023 14:53
Lab File ID: 27_Jan_2023 21_02.d

Analyte	RT	RT WINDOW	
		FROM	TO
Chlorite	5.84	5.69	5.98
Bromide	11.80	10.40	13.37
Chlorate	12.89	12.60	13.38

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\27_Jan_2023 21_02.d
 Lims ID: CCV
 Client ID:
 Sample Type: CCV
 Inject. Date: 27-Jan-2023 21:02:00 ALS Bottle#: 0 Worklist Smp#: 18
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCV
 Misc. Info.: 810-0011378-018
 Operator ID: Instrument ID: IC-DT
 Sublist: chrom-300B_IC_DT*sub3
 Method: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\300B_IC_DT.m
 Limit Group: IC - 300 - B
 Last Update: 30-Jan-2023 10:47:18 Calib Date: 19-Jan-2023 14:53:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1665

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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2 Chlorite

5.837	5.837	0.000	13810014	0.2500	0.2575
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1 Bromide

11.797	11.881	-0.084	14112090	0.2500	0.2603
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3 Chlorate

12.887	12.991	-0.104	12971495	0.2500	0.2631
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Reagents:

IC-300B CalSS_00007

Amount Added: 1000.00

Units: uL

Report Date: 30-Jan-2023 10:47:18

Chrom Revision: 2.3 28-Jan-2023 14:03:14

South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\27_Jan_2023 21_02.d

Injection Date: 27-Jan-2023 21:02:00

Instrument ID: IC-DT

Operator ID:

Lims ID: CCV

Worklist Smp#: 18

Client ID:

Injection Vol: 1.0 ul

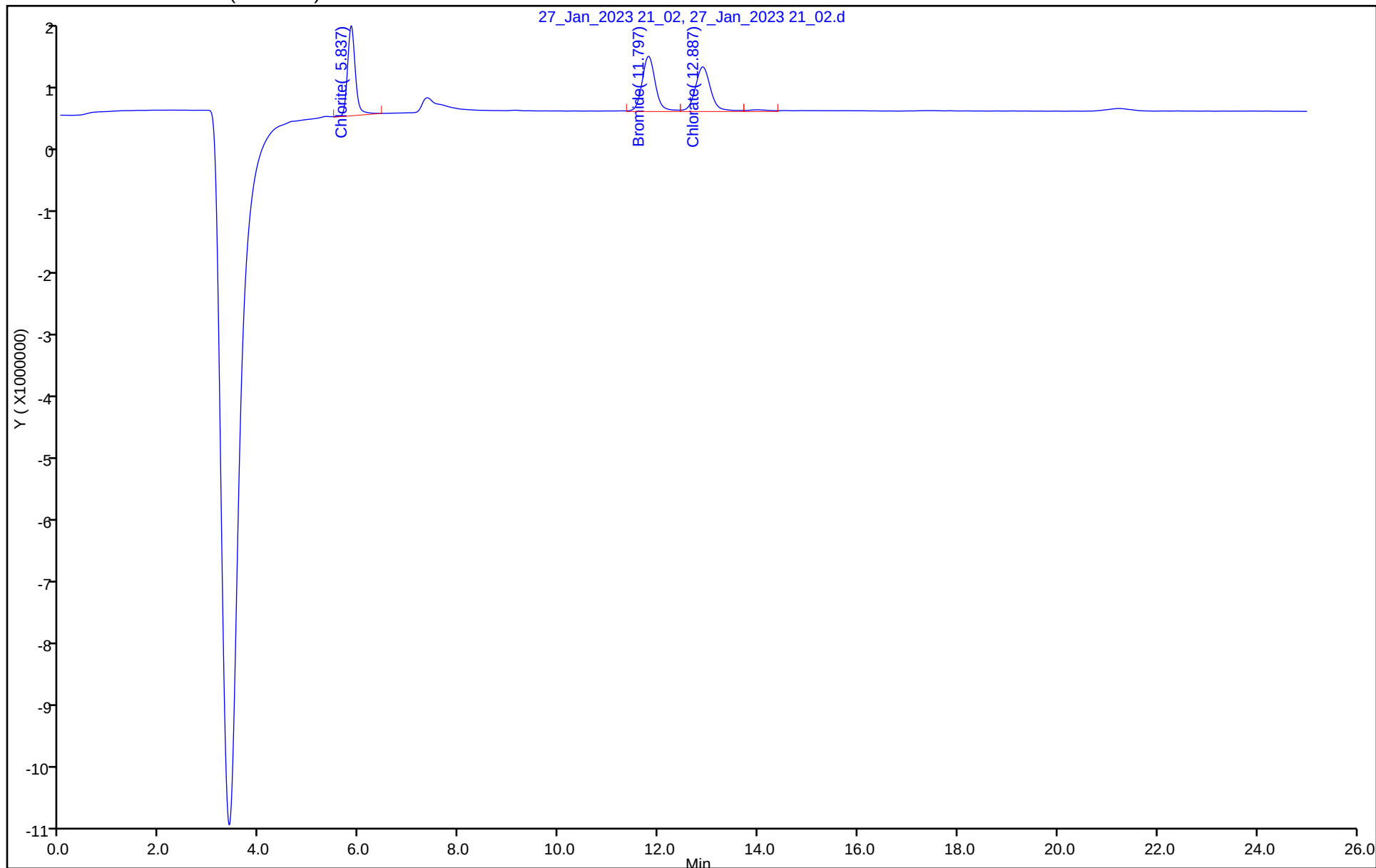
Dil. Factor: 1.0000

ALS Bottle#: 0

Method: 300B_IC_DT

Limit Group: IC - 300 - B

Column: IC IonPac AS-19 (0.00 mm)



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Lab Sample ID: CCV 810-45942/32 Calibration Date: 01/28/2023 03:41
Instrument ID: IC-DT Calib Start Date: 01/19/2023 12:02
GC Column: IonPac AS-19 ID: _____ Calib End Date: 01/19/2023 14:53
Lab File ID: 28_Jan_2023 03_41.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
Chlorite	Lin		55183404		257	250	103	90-110
Bromide	Lin		56032608		258	250	103	90-110
Chlorate	Lin		51121720		259	250	104	90-110

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Lab Sample ID: CCV 810-45942/32 Calibration Date: 01/28/2023 03:41
Instrument ID: IC-DT Calib Start Date: 01/19/2023 12:02
GC Column: IonPac AS-19 ID: _____ Calib End Date: 01/19/2023 14:53
Lab File ID: 28_Jan_2023 03_41.d

Analyte	RT	RT WINDOW	
		FROM	TO
Chlorite	5.83	5.69	5.98
Bromide	11.79	10.40	13.37
Chlorate	12.87	12.60	13.38

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\28_Jan_2023 03_41.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 28-Jan-2023 03:41:00 ALS Bottle#: 0 Worklist Smp#: 32
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV
Misc. Info.: 810-0011378-032
Operator ID: Instrument ID: IC-DT
Sublist: chrom-300B_IC_DT*sub3
Method: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\300B_IC_DT.m
Limit Group: IC - 300 - B
Last Update: 30-Jan-2023 10:47:22 Calib Date: 19-Jan-2023 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
Process Host: CTX1665

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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2 Chlorite

5.834	5.837	-0.003	13795851	0.2500	0.2573	
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1 Bromide

11.791	11.881	-0.090	14008152	0.2500	0.2584	
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3 Chlorate

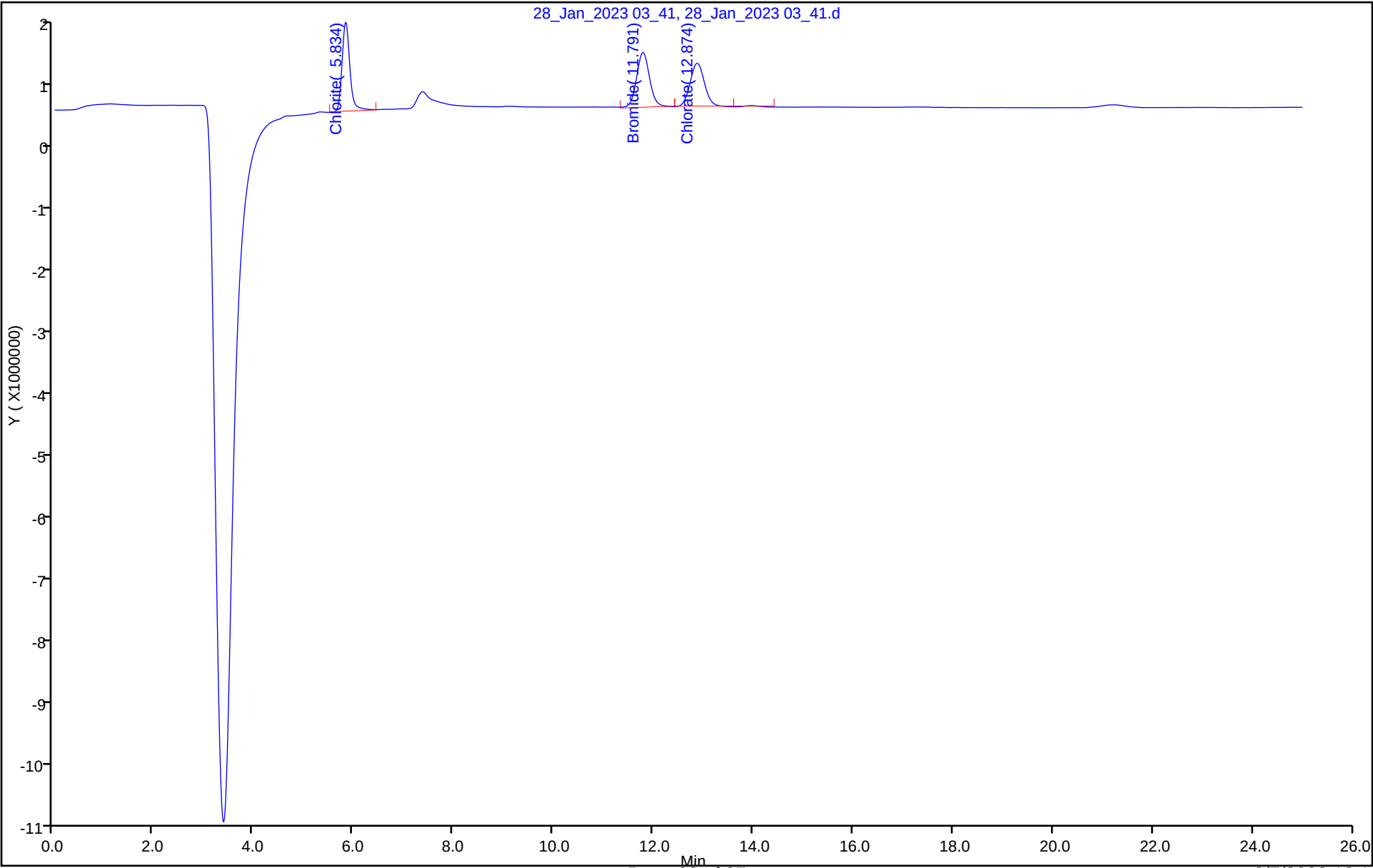
12.874	12.991	-0.117	12780430	0.2500	0.2592	
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Reagents:

IC-300B CalSS_00007

Amount Added: 1000.00

Units: uL



FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

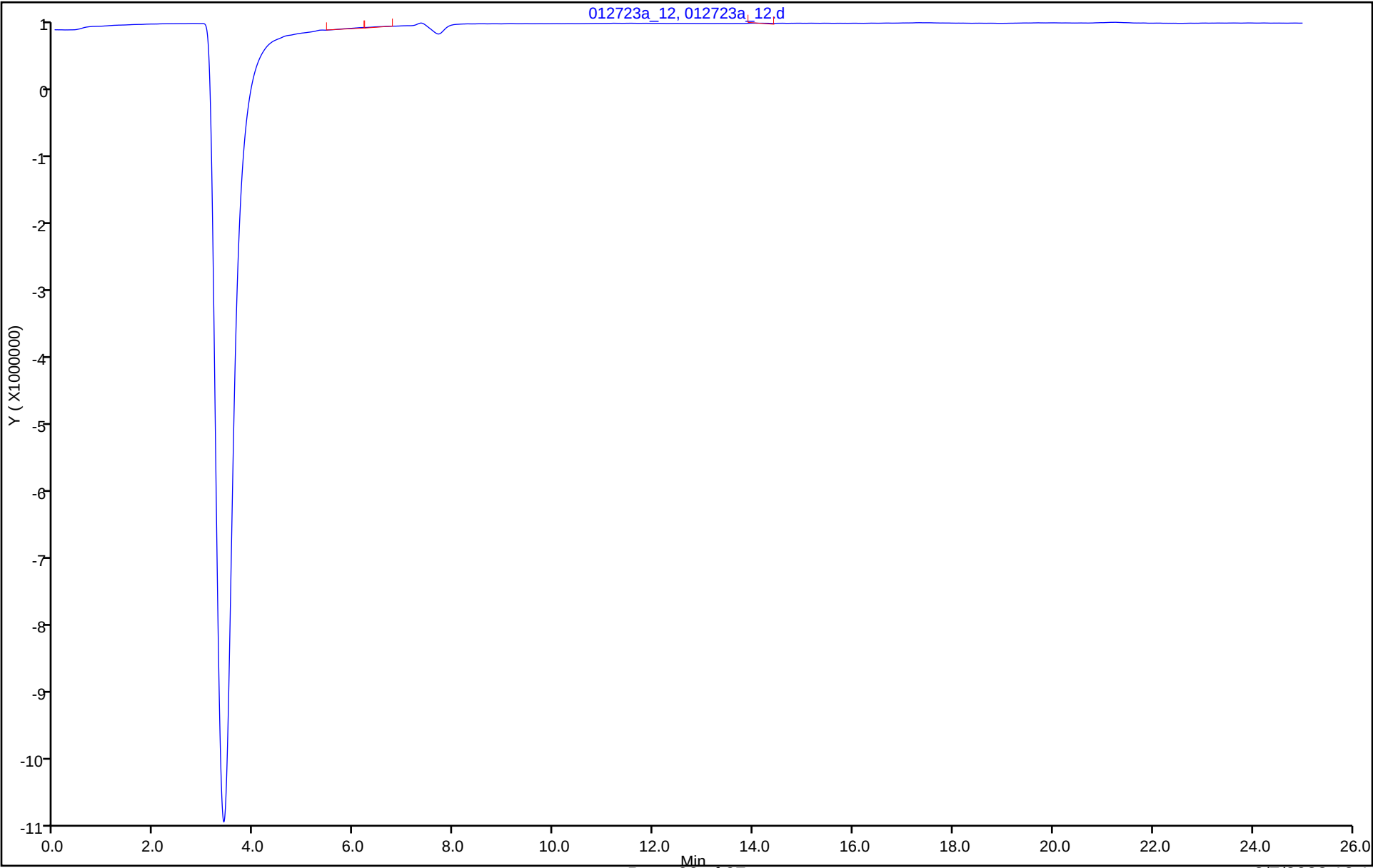
Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: MB 810-45942/4
Matrix: Drinking Water Lab File ID: 012723a_12.d
Analysis Method: 300.0 Date Collected: _____
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/27/2023 13:52
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 45942 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL
14998-27-7	Chlorite	<10		10
14866-68-3	Chlorate	<10		10

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\012723a_12.d
Lims ID: MB
Client ID:
Sample Type: MB
Inject. Date: 27-Jan-2023 13:52:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: MB
Misc. Info.: 810-0011378-004
Operator ID: Instrument ID: IC-DT
Method: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\300B_IC_DT.m
Limit Group: IC - 300 - B
Last Update: 30-Jan-2023 10:47:13 Calib Date: 19-Jan-2023 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
Process Host: CTX1665

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: CCB 810-45942/3
Matrix: Drinking Water Lab File ID: 012723a_11.d
Analysis Method: 300.0 Date Collected: _____
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/27/2023 13:24
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 45942 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL
14998-27-7	Chlorite	<5.9		10
14866-68-3	Chlorate	<7.9		10

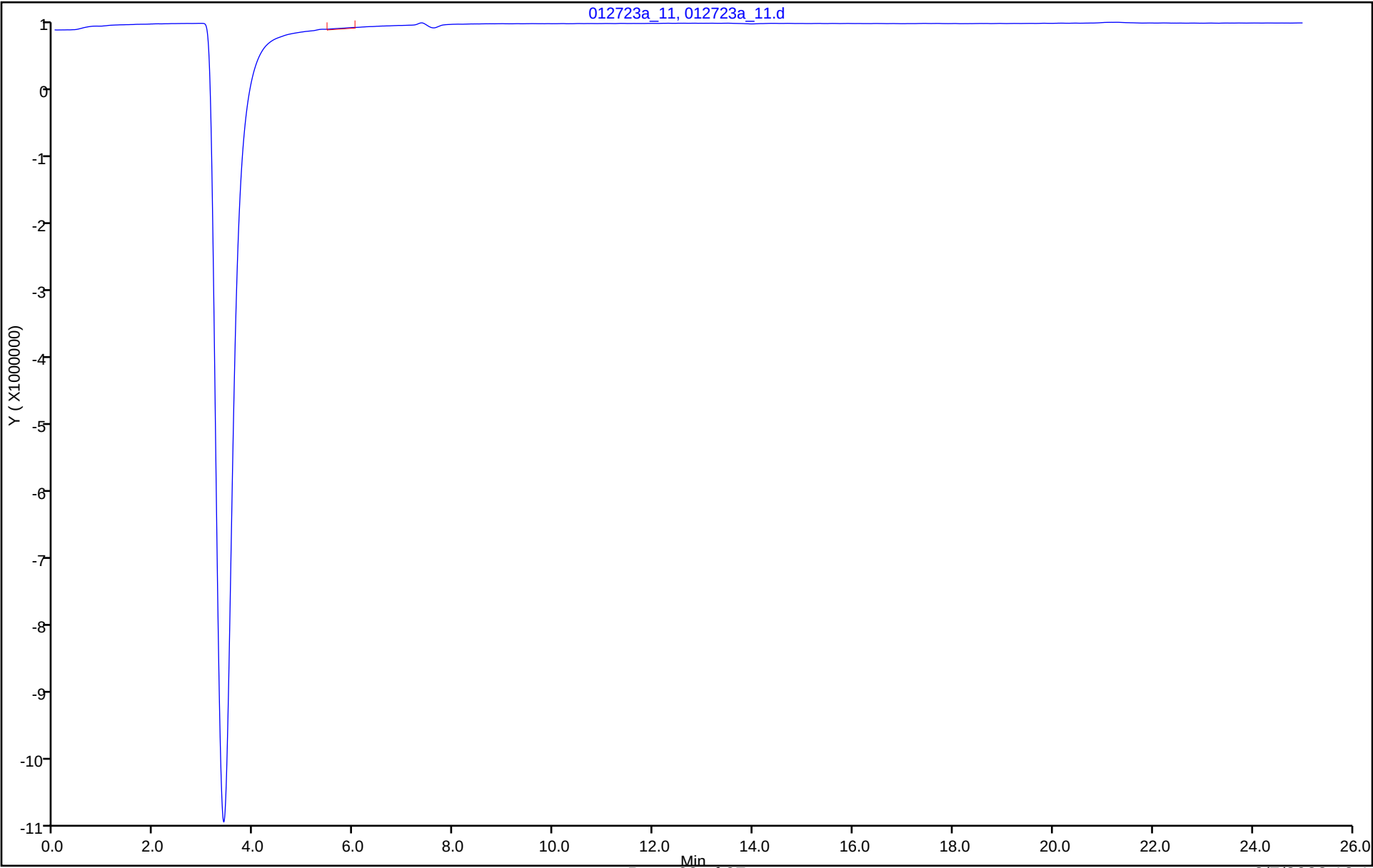
South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\012723a_11.d
Lims ID: CCB
Client ID:
Sample Type: CCB
Inject. Date: 27-Jan-2023 13:24:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCB
Misc. Info.: 810-0011378-003
Operator ID: Instrument ID: IC-DT
Method: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\300B_IC_DT.m
Limit Group: IC - 300 - B
Last Update: 30-Jan-2023 10:47:13 Calib Date: 19-Jan-2023 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
Process Host: CTX1665

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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South Bend, IN
Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\012723a_11.d
Injection Date: 27-Jan-2023 13:24:00 Instrument ID: IC-DT
Lims ID: CCB
Client ID:
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 300B_IC_DT Limit Group: IC - 300 - B
Column: IC IonPac AS-19 (0.00 mm)

Operator ID:
Worklist Smp#: 3
ALS Bottle#: 0



FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

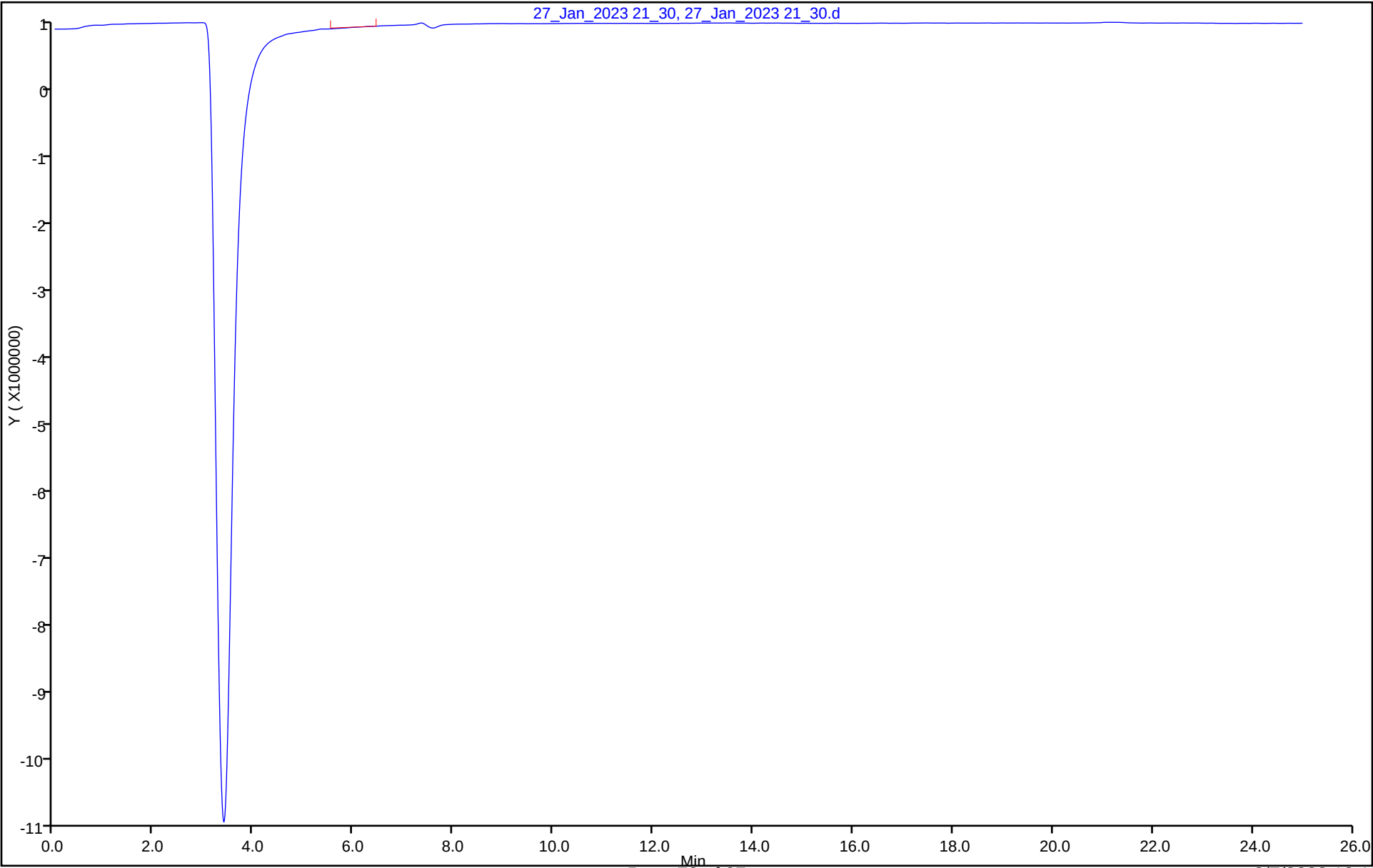
Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: CCB 810-45942/19
Matrix: Drinking Water Lab File ID: 27_Jan_2023 21_30.d
Analysis Method: 300.0 Date Collected: _____
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/27/2023 21:30
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 45942 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL
14998-27-7	Chlorite	<5.9		10
14866-68-3	Chlorate	<7.9		10

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\27_Jan_2023 21_30.d
Lims ID: CCB
Client ID:
Sample Type: CCB
Inject. Date: 27-Jan-2023 21:30:00 ALS Bottle#: 0 Worklist Smp#: 19
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCB
Misc. Info.: 810-0011378-019
Operator ID: Instrument ID: IC-DT
Method: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\300B_IC_DT.m
Limit Group: IC - 300 - B
Last Update: 30-Jan-2023 10:47:18 Calib Date: 19-Jan-2023 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
Process Host: CTX1665

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

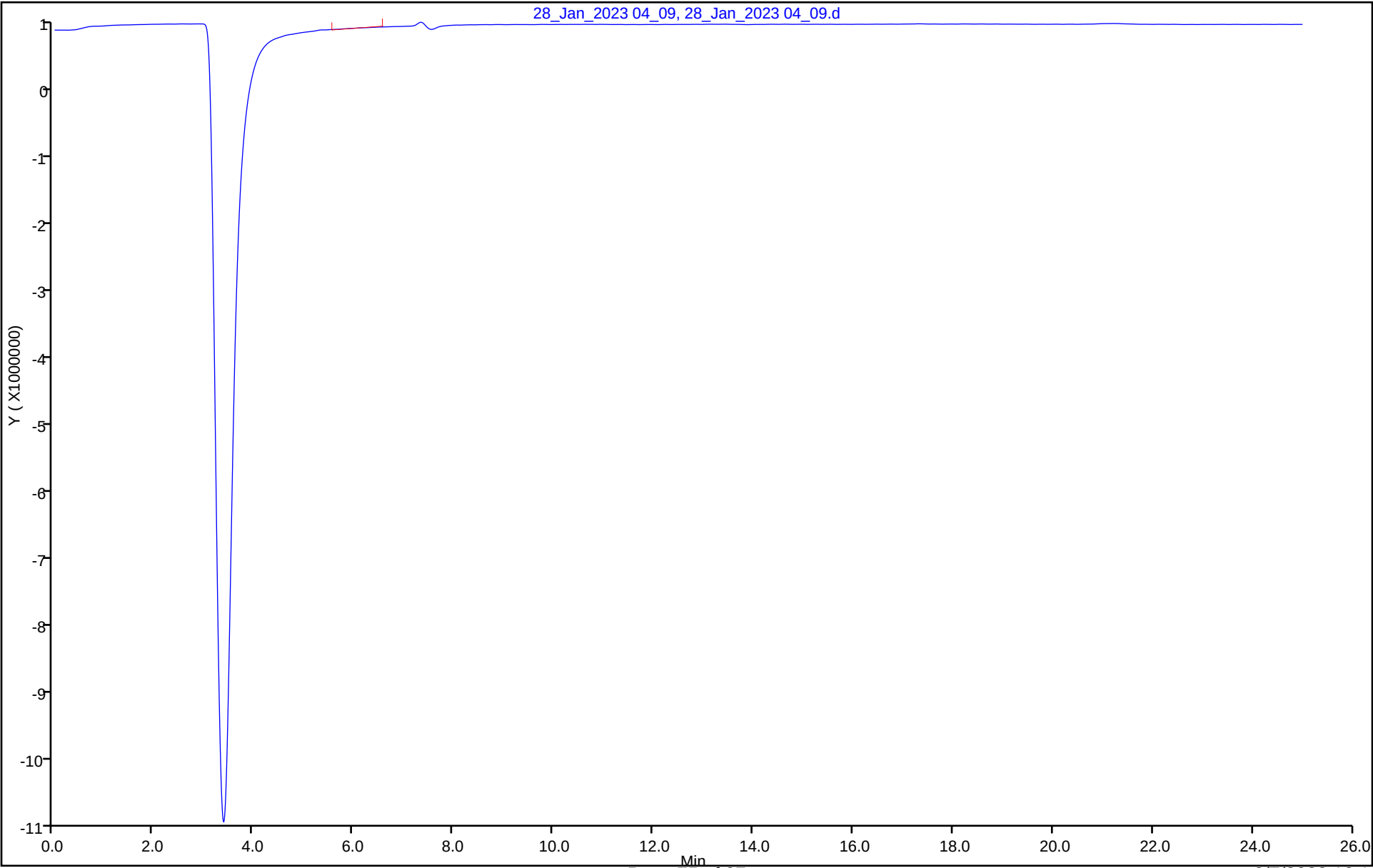
Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: CCB 810-45942/33
Matrix: Drinking Water Lab File ID: 28_Jan_2023 04_09.d
Analysis Method: 300.0 Date Collected: _____
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/28/2023 04:09
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 45942 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL
14998-27-7	Chlorite	<5.9		10
14866-68-3	Chlorate	<7.9		10

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\28_Jan_2023 04_09.d
Lims ID: CCB
Client ID:
Sample Type: CCB
Inject. Date: 28-Jan-2023 04:09:00 ALS Bottle#: 0 Worklist Smp#: 33
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCB
Misc. Info.: 810-0011378-033
Operator ID: Instrument ID: IC-DT
Method: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\300B_IC_DT.m
Limit Group: IC - 300 - B
Last Update: 30-Jan-2023 10:47:22 Calib Date: 19-Jan-2023 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
Process Host: CTX1665

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: LCS 810-45942/5
Matrix: Drinking Water Lab File ID: 012723a_13.d
Analysis Method: 300.0 Date Collected: _____
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/27/2023 14:21
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 45942 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL
14998-27-7	Chlorite	261		10
14866-68-3	Chlorate	257		10

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\012723a_13.d
 Lims ID: LCS
 Client ID:
 Sample Type: LCS
 Inject. Date: 27-Jan-2023 14:21:00 ALS Bottle#: 0 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: LCS
 Misc. Info.: 810-0011378-005
 Operator ID: Instrument ID: IC-DT
 Method: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\300B_IC_DT.m
 Limit Group: IC - 300 - B
 Last Update: 30-Jan-2023 10:47:13 Calib Date: 19-Jan-2023 14:53:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1665

First Level Reviewer: U3JL

Date: 30-Jan-2023 10:42:07

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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2 Chlorite

5.847	5.837	0.010	13972368	0.2500	0.2605
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1 Bromide

11.811	11.881	-0.070	13739016	0.2500	0.2535
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3 Chlorate

12.901	12.991	-0.090	12684955	0.2500	0.2573
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Reagents:

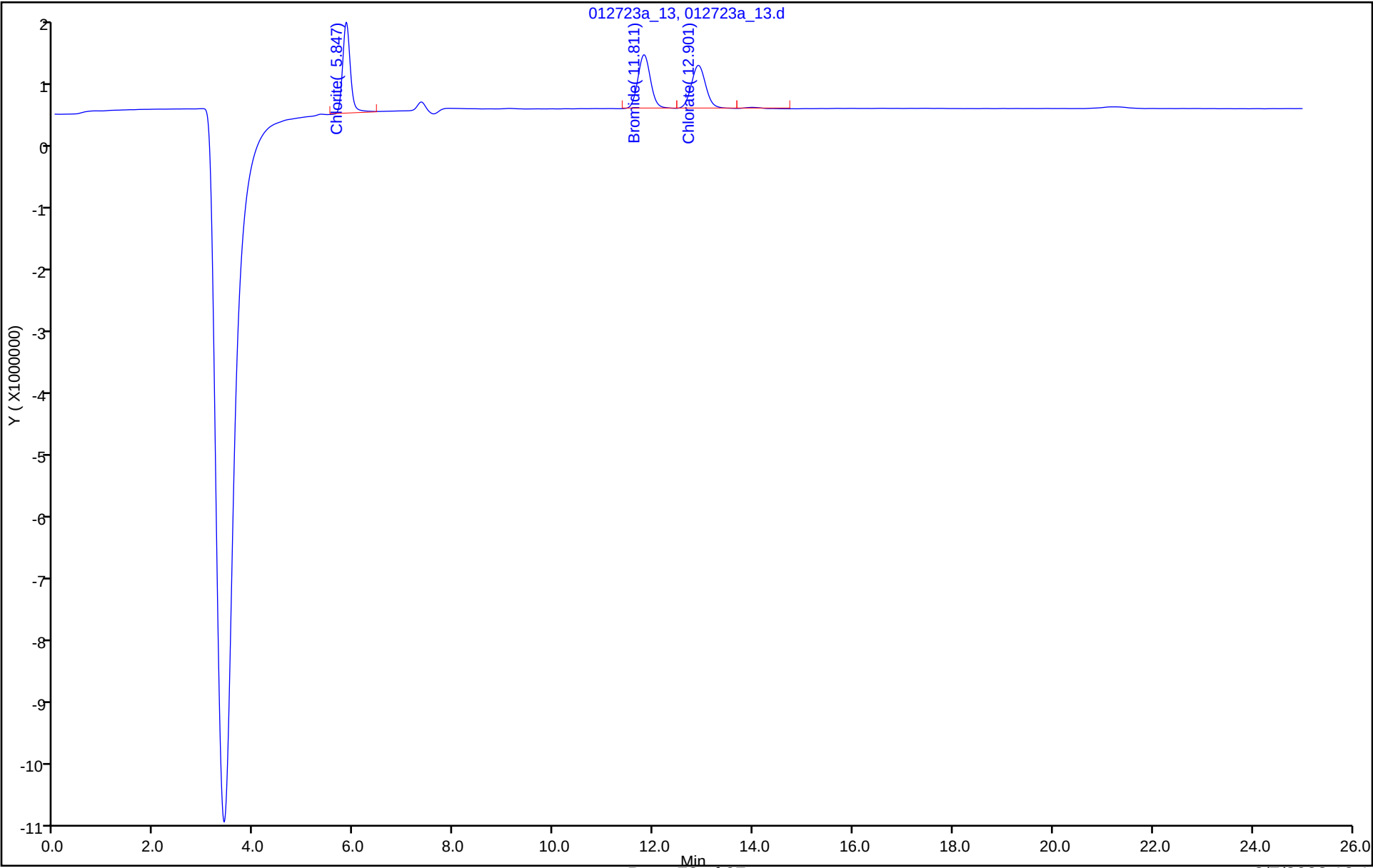
IC-300B CalSS_00007

Amount Added: 100.00

Units: uL

South Bend, IN
Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\012723a_13.d
Injection Date: 27-Jan-2023 14:21:00 Instrument ID: IC-DT
Lims ID: LCS
Client ID:
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 300B_IC_DT Limit Group: IC - 300 - B
Column: IC IonPac AS-19 (0.00 mm)

Operator ID:
Worklist Smp#: 5
ALS Bottle#: 0



FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: LLCS 810-45942/1
Matrix: Drinking Water Lab File ID: 012723a_9.d
Analysis Method: 300.0 Date Collected: _____
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/27/2023 12:27
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 45942 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL
14998-27-7	Chlorite	13.4		10
14866-68-3	Chlorate	10.7		10

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\012723a_9.d
 Lims ID: LLCS
 Client ID:
 Sample Type: LLCS
 Inject. Date: 27-Jan-2023 12:27:00 ALS Bottle#: 0 Worklist Smp#: 1
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: LLCS
 Misc. Info.: 810-0011378-001
 Operator ID: Instrument ID: IC-DT
 Method: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\300B_IC_DT.m
 Limit Group: IC - 300 - B
 Last Update: 30-Jan-2023 10:46:24 Calib Date: 19-Jan-2023 14:53:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1665

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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2 Chlorite

5.841 5.837 0.004 577060 0.0100 0.0134

1 Bromide

11.797 11.881 -0.084 536649 0.0100 0.0115

3 Chlorate

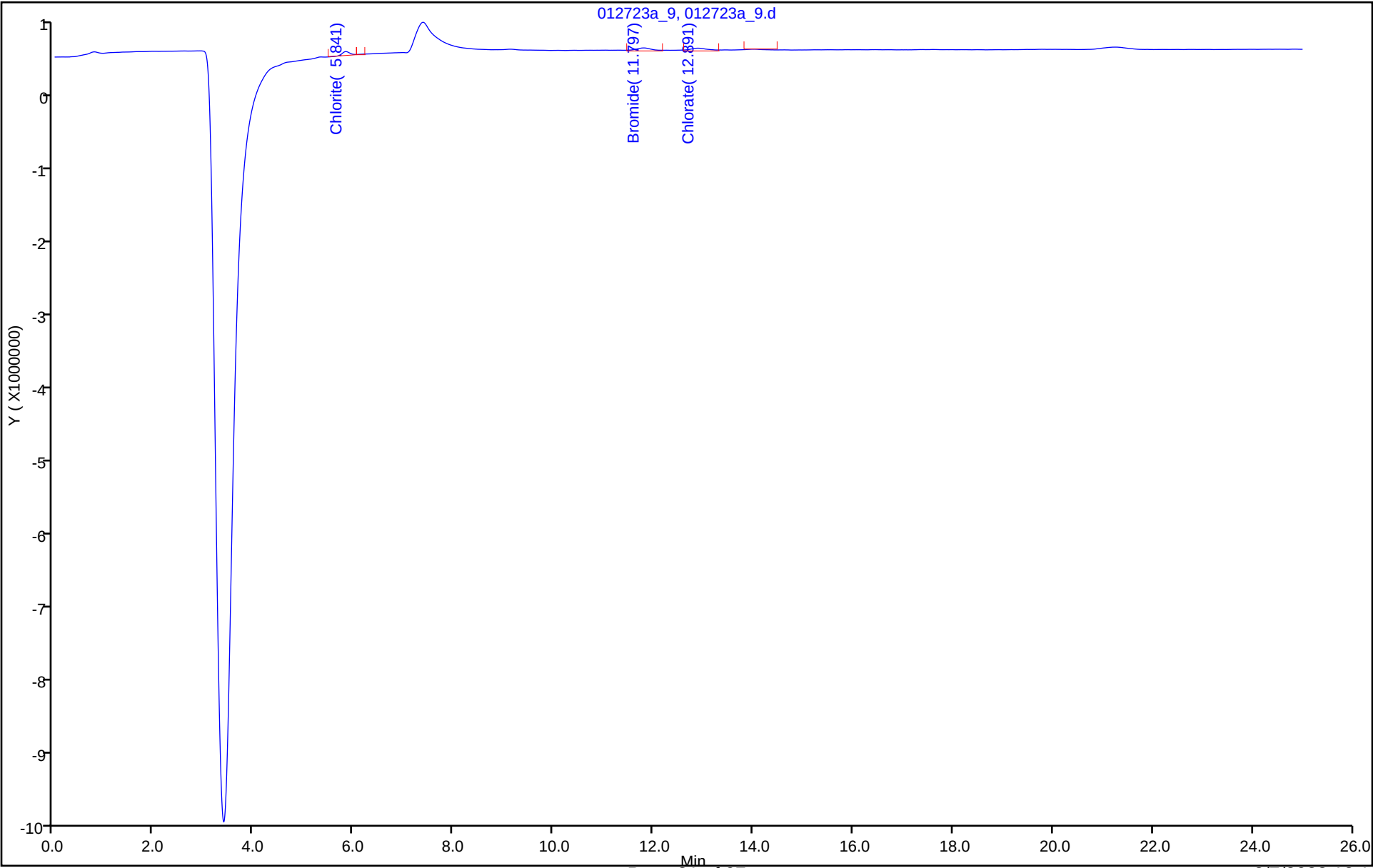
12.891 12.991 -0.100 496059 0.0100 0.0107

Reagents:

IC-300B CalSS_00007

Amount Added: 40.00

Units: uL



FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Client Sample ID: 54MW12 MS Lab Sample ID: 810-51680-1 MS
Matrix: Drinking Water Lab File ID: 27_Jan_2023 22_27.d
Analysis Method: 300.0 Date Collected: 01/25/2023 09:15
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/27/2023 22:27
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 45942 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL
14998-27-7	Chlorite	214		10
14866-68-3	Chlorate	259		10

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\27_Jan_2023 22_27.d
 Lims ID: 810-51680-A-1 MS
 Client ID: 54MW12
 Sample Type: MS
 Inject. Date: 27-Jan-2023 22:27:00 ALS Bottle#: 0 Worklist Smp#: 21
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 810-51680-A-1 MS
 Misc. Info.: 810-0011378-021
 Operator ID: Instrument ID: IC-DT
 Method: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\300B_IC_DT.m
 Limit Group: IC - 300 - B
 Last Update: 30-Jan-2023 10:47:18 Calib Date: 19-Jan-2023 14:53:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1665

First Level Reviewer: U3JL

Date: 30-Jan-2023 10:46:10

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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2 Chlorite						a
6.007	5.837	0.170	11461830	0.2500	0.2142	a
1 Bromide						
11.854	11.881	-0.027	16082676	0.2500	0.2964	
3 Chlorate						
12.934	12.991	-0.057	12755276	0.2500	0.2587	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

IC-300B CalSS_00007

Amount Added: 100.00

Units: uL

Report Date: 30-Jan-2023 10:47:19

Chrom Revision: 2.3 28-Jan-2023 14:03:14

South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\27_Jan_2023 22_27.d

Injection Date: 27-Jan-2023 22:27:00

Instrument ID: IC-DT

Operator ID:

Lims ID: 810-51680-A-1 MS

Worklist Smp#: 21

Client ID: 54MW12

Injection Vol: 1.0 ul

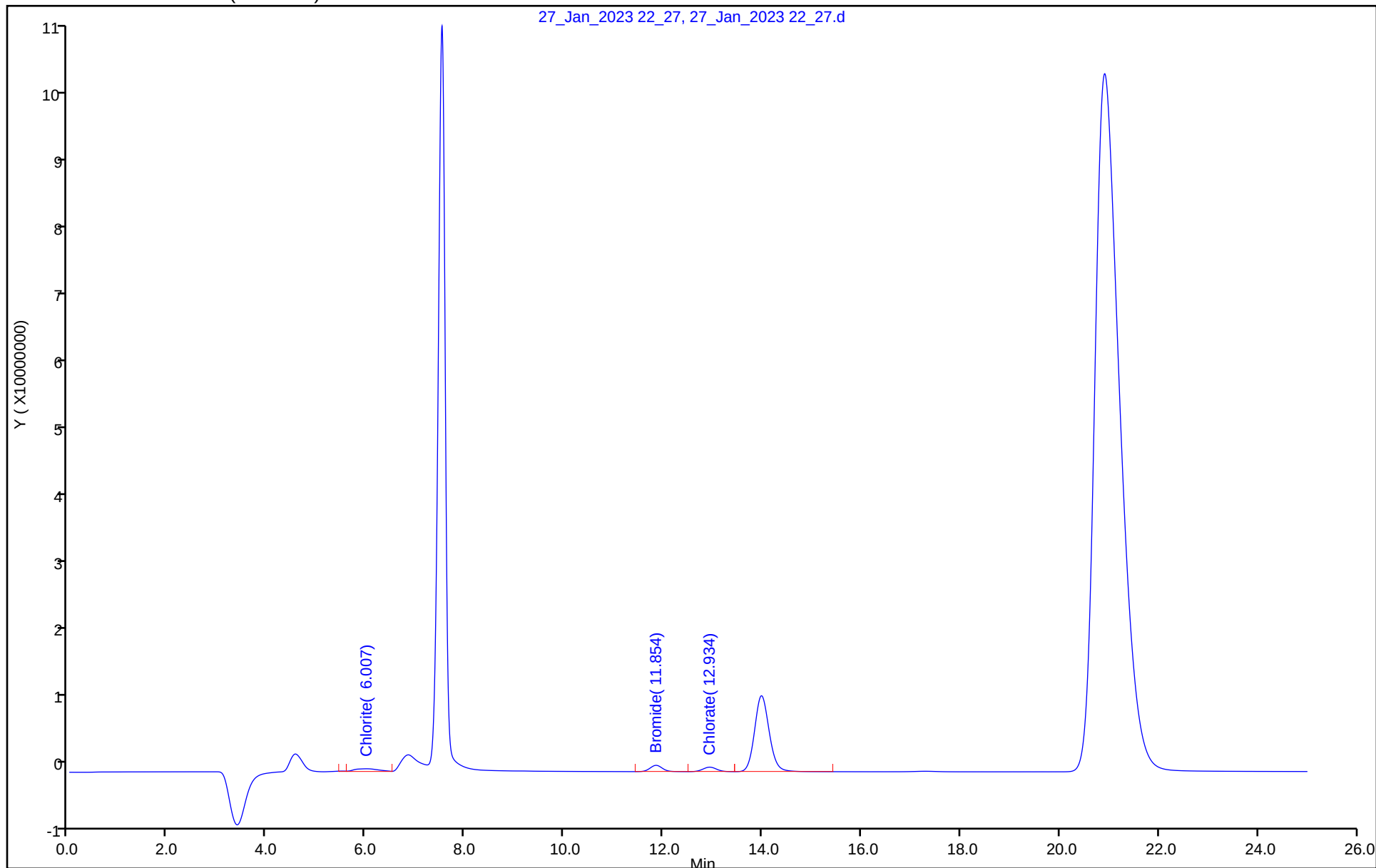
Dil. Factor: 1.0000

ALS Bottle#: 0

Method: 300B_IC_DT

Limit Group: IC - 300 - B

Column: IC IonPac AS-19 (0.00 mm)



South Bend, IN

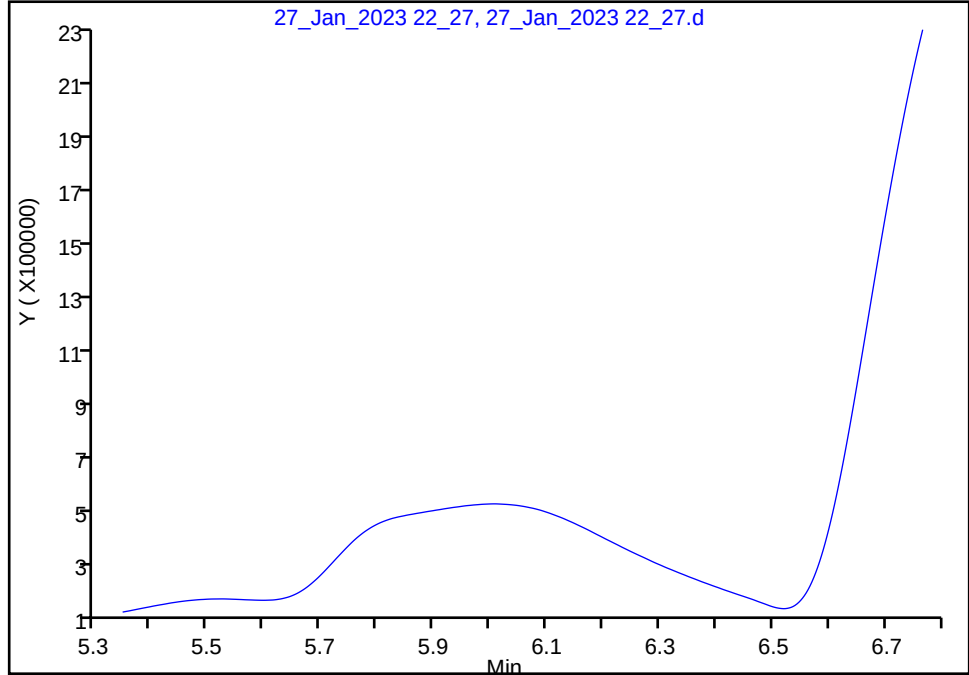
Data File:	\\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\27_Jan_2023 22_27.d		
Injection Date:	27-Jan-2023 22:27:00	Instrument ID:	IC-DT
Lims ID:	810-51680-A-1 MS		
Client ID:	54MW12		
Operator ID:		ALS Bottle#:	0
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	300B_IC_DT	Limit Group:	IC - 300 - B
Column:	IC IonPac AS-19 (0.00 mm)	Detector:	010621A_11
		Worklist Smp#:	21

2 Chlorite, CAS: 14998-27-7

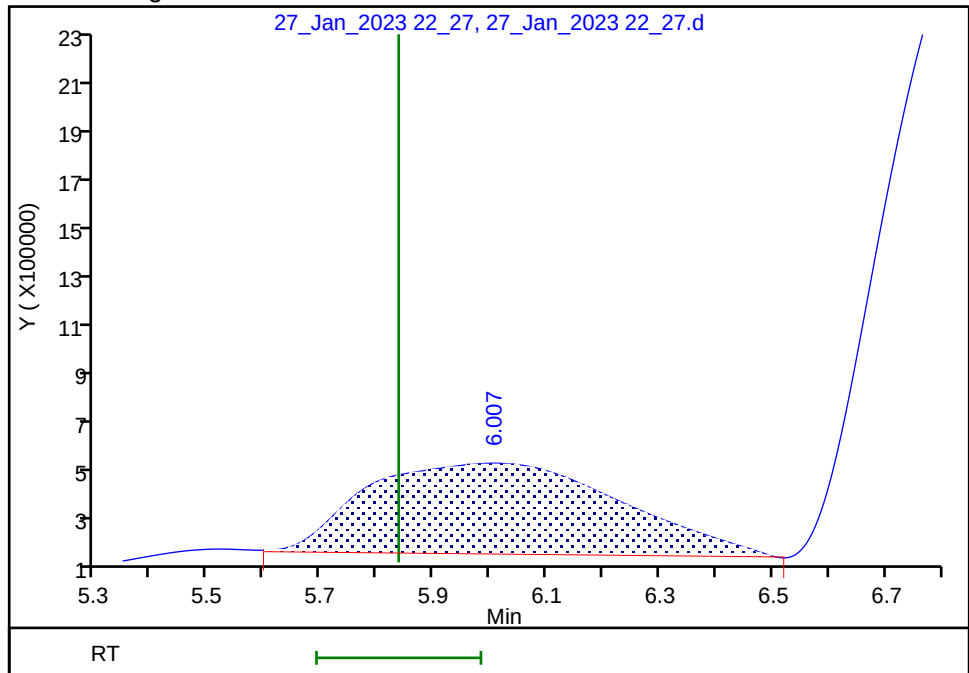
Signal: 1

Not Detected
Expected RT: 5.84

Processing Integration Results

RT: 6.01
Area: 11461830
Amount: 0.214215
Amount Units: ug/ml

Manual Integration Results

Reviewer: U3JL, 30-Jan-2023 10:46:08
Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1
SDG No.: _____
Client Sample ID: 54MW12 MSD Lab Sample ID: 810-51680-1 MSD
Matrix: Drinking Water Lab File ID: 27_Jan_2023 22_56.d
Analysis Method: 300.0 Date Collected: 01/25/2023 09:15
Extraction Method: _____ Date Extracted: _____
Sample wt/vol: 0 (mL) Date Analyzed: 01/27/2023 22:56
Con. Extract Vol.: _____ Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: IonPac AS-19 ID: _____
% Moisture: _____ % Solids: _____ GPC Cleanup: (Y/N) N
Cleanup Factor: _____
Analysis Batch No.: 45942 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL
14998-27-7	Chlorite	240		10
14866-68-3	Chlorate	258		10

South Bend, IN
Target Compound Quantitation Report

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\27_Jan_2023 22_56.d
 Lims ID: 810-51680-A-1 MSD
 Client ID: 54MW12
 Sample Type: MSD
 Inject. Date: 27-Jan-2023 22:56:00 ALS Bottle#: 0 Worklist Smp#: 22
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 810-51680-A-1 MSD
 Misc. Info.: 810-0011378-022
 Operator ID: Instrument ID: IC-DT
 Method: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\300B_IC_DT.m
 Limit Group: IC - 300 - B
 Last Update: 30-Jan-2023 10:47:18 Calib Date: 19-Jan-2023 14:53:00
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromFS\Southbend\ChromData\IC-DT\20230119-11169.b\011923a_Cal_8.d
 Column 1 : IC IonPac AS-19 (0.00 mm) Det: 010621A_11
 Process Host: CTX1665

First Level Reviewer: U3JL

Date: 30-Jan-2023 10:46:24

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
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2 Chlorite						a
6.001	5.837	0.164	12853829	0.2500	0.2399	a
1 Bromide						
11.837	11.881	-0.044	15888481	0.2500	0.2929	
3 Chlorate						
12.921	12.991	-0.070	12703488	0.2500	0.2576	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

IC-300B CalSS_00007

Amount Added: 100.00

Units: uL

Report Date: 30-Jan-2023 10:47:19

Chrom Revision: 2.3 28-Jan-2023 14:03:14

South Bend, IN

Data File: \\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\27_Jan_2023 22_56.d

Injection Date: 27-Jan-2023 22:56:00

Instrument ID: IC-DT

Operator ID:

Lims ID: 810-51680-A-1 MSD

Worklist Smp#: 22

Client ID: 54MW12

Injection Vol: 1.0 ul

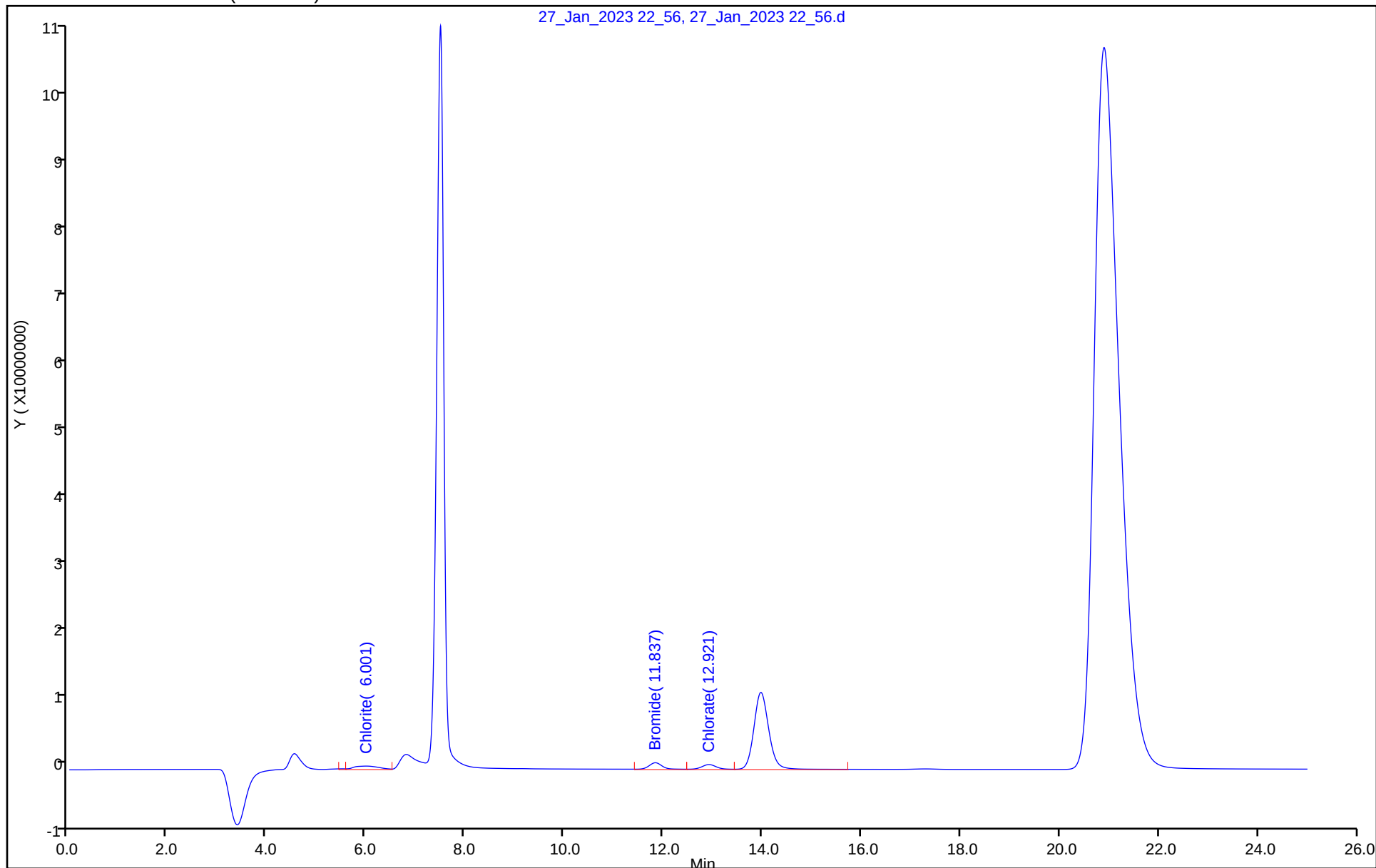
Dil. Factor: 1.0000

ALS Bottle#: 0

Method: 300B_IC_DT

Limit Group: IC - 300 - B

Column: IC IonPac AS-19 (0.00 mm)



South Bend, IN

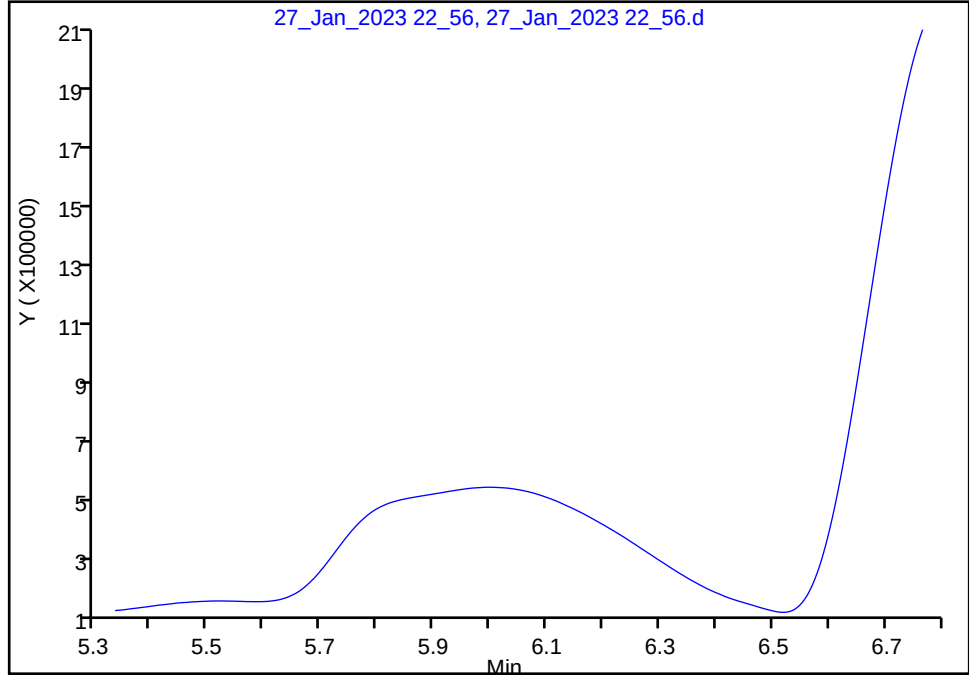
Data File:	\\ChromFS\Southbend\ChromData\IC-DT\20230127-11378.b\27_Jan_2023 22_56.d		
Injection Date:	27-Jan-2023 22:56:00	Instrument ID:	IC-DT
Lims ID:	810-51680-A-1 MSD		
Client ID:	54MW12		
Operator ID:	ALS Bottle#:	0	Worklist Smp#: 22
Injection Vol:	Dil. Factor:	1.0000	
Method:	Limit Group:	IC - 300 - B	
Column:	Detector	010621A_11	

2 Chlorite, CAS: 14998-27-7

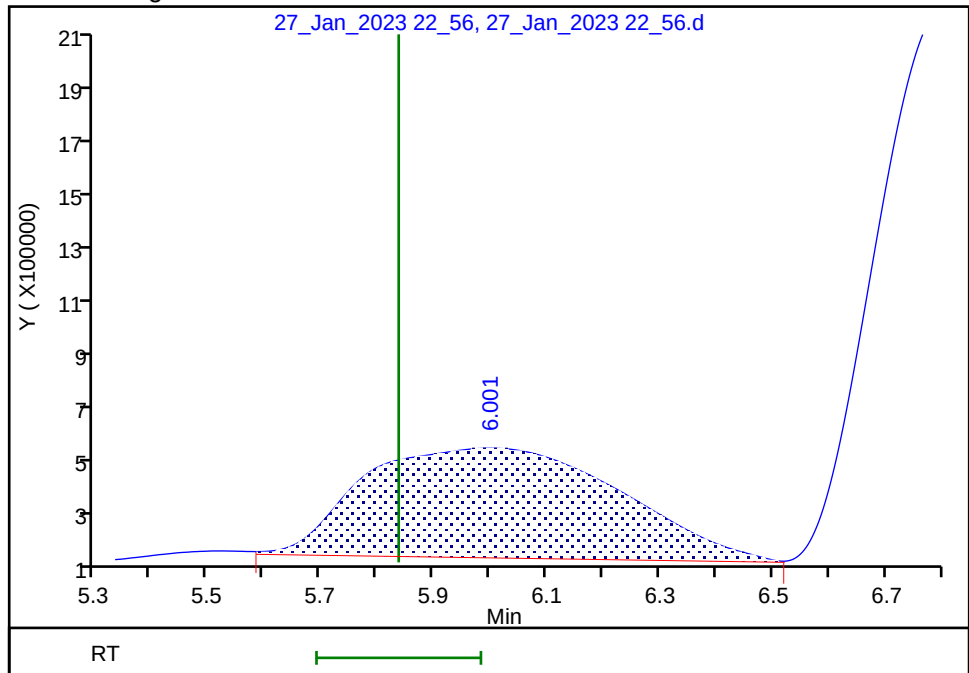
Signal: 1

Not Detected
Expected RT: 5.84

Processing Integration Results



Manual Integration Results

RT: 6.00
Area: 12853829
Amount: 0.239896
Amount Units: ug/mlReviewer: U3JL, 30-Jan-2023 10:46:21
Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

HPLC/IC ANALYSIS RUN LOG

Lab Name: Eurofins Eaton South Bend

Job No.: 810-51680-1

SDG No.:

Instrument ID: IC-DT

Start Date: 01/19/2023 12:02

Analysis Batch Number: 44972

End Date: 01/20/2023 07:01

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 810-44972/1		01/19/2023 12:02	1	011923a_Cal_2.d	IonPac AS-19
IC 810-44972/2		01/19/2023 12:30	1	011923a_Cal_3.d	IonPac AS-19
IC 810-44972/3		01/19/2023 12:59	1	011923a_Cal_4.d	IonPac AS-19
IC 810-44972/4		01/19/2023 13:27	1	011923a_Cal_5.d	IonPac AS-19
IC 810-44972/5		01/19/2023 13:56	1	011923a_Cal_6.d	IonPac AS-19
ICRT 810-44972/6		01/19/2023 14:24	1	011923a_Cal_7.d	IonPac AS-19
IC 810-44972/7		01/19/2023 14:53	1	011923a_Cal_8.d	IonPac AS-19
ICV 810-44972/8		01/19/2023 15:21	1		IonPac AS-19
ZZZZZ		01/19/2023 15:50	1		IonPac AS-19
CCV 810-44972/10		01/19/2023 16:18	1		IonPac AS-19
CCB 810-44972/11		01/19/2023 16:47	1		IonPac AS-19
ZZZZZ		01/19/2023 17:15	1		IonPac AS-19
ZZZZZ		01/19/2023 17:44	1		IonPac AS-19
ZZZZZ		01/19/2023 18:12	100		IonPac AS-19
ZZZZZ		01/19/2023 18:41	100		IonPac AS-19
ZZZZZ		01/19/2023 19:09	1		IonPac AS-19
ZZZZZ		01/19/2023 19:38	1		IonPac AS-19
ZZZZZ		01/19/2023 20:06	1		IonPac AS-19
ZZZZZ		01/19/2023 20:35	1		IonPac AS-19
ZZZZZ		01/19/2023 21:03	1		IonPac AS-19
ZZZZZ		01/19/2023 21:31	1		IonPac AS-19
ZZZZZ		01/19/2023 22:00	1		IonPac AS-19
ZZZZZ		01/19/2023 22:28	1		IonPac AS-19
ZZZZZ		01/19/2023 22:57	1		IonPac AS-19
ZZZZZ		01/19/2023 23:25	1		IonPac AS-19
CCV 810-44972/26		01/19/2023 23:54	1		IonPac AS-19
CCB 810-44972/27		01/20/2023 00:22	1		IonPac AS-19
ZZZZZ		01/20/2023 00:51	1		IonPac AS-19
ZZZZZ		01/20/2023 01:19	1		IonPac AS-19
ZZZZZ		01/20/2023 01:48	1		IonPac AS-19
ZZZZZ		01/20/2023 02:16	1		IonPac AS-19
ZZZZZ		01/20/2023 02:45	1		IonPac AS-19
ZZZZZ		01/20/2023 03:13	1		IonPac AS-19
ZZZZZ		01/20/2023 03:42	1		IonPac AS-19
ZZZZZ		01/20/2023 04:10	1		IonPac AS-19
ZZZZZ		01/20/2023 04:39	1		IonPac AS-19
ZZZZZ		01/20/2023 05:07	1		IonPac AS-19
ZZZZZ		01/20/2023 05:36	1		IonPac AS-19
ZZZZZ		01/20/2023 06:04	1		IonPac AS-19
CCV 810-44972/40		01/20/2023 06:33	1		IonPac AS-19
CCB 810-44972/41		01/20/2023 07:01	1		IonPac AS-19

HPLC/IC ANALYSIS RUN LOG

Lab Name: Eurofins Eaton South Bend

Job No.: 810-51680-1

SDG No.:

Instrument ID: IC-DT

Start Date: 01/27/2023 12:27

Analysis Batch Number: 45942

End Date: 01/28/2023 04:09

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
LLCS 810-45942/1		01/27/2023 12:27	1	012723a_9.d	IonPac AS-19
CCV 810-45942/2		01/27/2023 12:55	1	012723a_10.d	IonPac AS-19
CCB 810-45942/3		01/27/2023 13:24	1	012723a_11.d	IonPac AS-19
MB 810-45942/4		01/27/2023 13:52	1	012723a_12.d	IonPac AS-19
LCS 810-45942/5		01/27/2023 14:21	1	012723a_13.d	IonPac AS-19
ZZZZZ		01/27/2023 15:20	1		IonPac AS-19
ZZZZZ		01/27/2023 15:49	1		IonPac AS-19
ZZZZZ		01/27/2023 16:17	1		IonPac AS-19
ZZZZZ		01/27/2023 16:46	1		IonPac AS-19
ZZZZZ		01/27/2023 17:14	1		IonPac AS-19
ZZZZZ		01/27/2023 17:43	1		IonPac AS-19
ZZZZZ		01/27/2023 18:11	1		IonPac AS-19
ZZZZZ		01/27/2023 18:40	1		IonPac AS-19
ZZZZZ		01/27/2023 19:08	1		IonPac AS-19
ZZZZZ		01/27/2023 19:37	1		IonPac AS-19
ZZZZZ		01/27/2023 20:05	1		IonPac AS-19
ZZZZZ		01/27/2023 20:33	1		IonPac AS-19
CCV 810-45942/18		01/27/2023 21:02	1	27_Jan_2023 21_02.d	IonPac AS-19
CCB 810-45942/19		01/27/2023 21:30	1	27_Jan_2023 21_30.d	IonPac AS-19
810-51680-1	54MW12	01/27/2023 21:59	1	27_Jan_2023 21_59.d	IonPac AS-19
810-51680-1 MS	54MW12 MS	01/27/2023 22:27	1	27_Jan_2023 22_27.d	IonPac AS-19
810-51680-1 MSD	54MW12 MSD	01/27/2023 22:56	1	27_Jan_2023 22_56.d	IonPac AS-19
810-51680-2	54MW1	01/27/2023 23:24	1	27_Jan_2023 23_24.d	IonPac AS-19
ZZZZZ		01/27/2023 23:53	1		IonPac AS-19
ZZZZZ		01/28/2023 00:21	1		IonPac AS-19
ZZZZZ		01/28/2023 00:50	1		IonPac AS-19
ZZZZZ		01/28/2023 01:18	1		IonPac AS-19
ZZZZZ		01/28/2023 01:47	1		IonPac AS-19
ZZZZZ		01/28/2023 02:15	1		IonPac AS-19
ZZZZZ		01/28/2023 02:44	1		IonPac AS-19
ZZZZZ		01/28/2023 03:12	1		IonPac AS-19
CCV 810-45942/32		01/28/2023 03:41	1	28_Jan_2023 03_41.d	IonPac AS-19
CCB 810-45942/33		01/28/2023 04:09	1	28_Jan_2023 04_09.d	IonPac AS-19

HPLC/IC BATCH WORKSHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1

SDG No.: _____

Batch Number: 44972 Batch Start Date: 01/19/23 12:02 Batch Analyst: Lovick, JamesBatch Method: 300.0 Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	IC-300B CalSS 00007					
IC 810-44972/2		300.0		40 uL					
IC 810-44972/3		300.0		80 uL					
IC 810-44972/4		300.0		400 uL					
IC 810-44972/5		300.0		1000 uL					
ICRT 810-44972/6		300.0		1000 uL					
IC 810-44972/7		300.0		1000 uL					

Batch Notes	
Filter ID	lot 17383736
Pipette/Syringe/Dispenser ID	PP0010,044,045
Eluent 1 ID	631048

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

300.0

Page 1 of 1

HPLC/IC BATCH WORKSHEET

Lab Name: Eurofins Eaton South Bend Job No.: 810-51680-1

SDG No.: _____

Batch Number: 45942 Batch Start Date: 01/27/23 12:27 Batch Analyst: Lovick, JamesBatch Method: 300.0 Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	IC-300B CalSS 00007					
LLCS 810-45942/1		300.0		40 uL					
CCV 810-45942/2		300.0		1000 uL					
LCS 810-45942/5		300.0		100 uL					
CCV 810-45942/18		300.0		1000 uL					
810-51680-A-1 MS	54MW12	300.0	T	100 uL					
810-51680-A-1 MSD	54MW12	300.0	T	100 uL					
CCV 810-45942/32		300.0		1000 uL					

Batch Notes	
Filter ID	lot 17383736
Pipette/Syringe/Dispenser ID	PP0010,044,045
Eluent 1 ID	631048

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

300.0

Page 1 of 1

Shipping and Receiving Documents

Sub-Contract Laboratory Chain-of-Custody and Purchase Order

PURCHASE ORDER #: 175069 EEA-IN

The PO# must appear on all invoice and reports!

Ship to: **Eurofins Eaton Analytical - IN**

110 South Hill Street
South Bend, IN 46617

Return Invoice and Results to:

bszymanski@ctlaboratories.com

Upon Receipt of Samples, please verify that samples were received in acceptable condition then sign this form and fax to (608) 356-2766 or email to the project manager. Sample temperature, upon receipt, must be recorded on this document unless thermal preservation is not a method requirement.

Ship by: Speedee ☐ UPS Grnd ☐ UPS 2nd ☐ UPS NDA ☒

Date Due: Standard TAT

RUSH TURNAROUND NEEDED? Y or (N) (Circle One)

Project Name: RADFORD AAP SWMU 54

Project State: VA

Analytical/QC Criteria: NONE INDICATED

(DOD QSM)

NE LAP (Circle one)

OTHER

Report results as EDD? (Y)

(Circle one and indicate type: Basic Excel)

Data Deliverable Package LEVEL: IV

CTLabs ID#

Sample Date/Time

Matrix

Analyses / Method

Cost

1283772	1/25/2023	09:15	GROUND WATER	54MMW12 (Designated MS/MSD)	CHLORATE/CHLORITE	300.1
1283773	1/25/2023	11:15	GROUND WATER	54MMW1	CHLORATE/CHLORITE	300.1

Relinquished by: Brett Szymanski

Date/Time: 01/26/2023 12:30

Received by: KD

Date/Time: 1-21-23 0845

Receipt Temperature (C) _____

COMMENTS: PLEASE LOG USING THE SAMPLE DESCRIPTIONS. 54MMW12 IS A DESIGNATED MS/MSD SAMPLE.

REPORT ALL SOLIDS ON A DRY WEIGHT BASIS UNLESS OTHERWISE INDICATED

Initial Temp: 2.4
Corrected Temp: 2.2
IC Gun # 18

Form #: FPM1-01
Effective Date: 02/15/14



810-51680 Chain of Custody

1. ORDERS AND RECEIPT OF SAMPLES (Sample Acceptance Policy) - not applicable

2. PAYMENT TERMS

2.1 Services performed by CTL will be in accordance with prices quoted and later confirmed in writing or as stated in the Price Schedule. Invoices may be submitted to Client upon completion of any sample delivery group. Payment in advance is required for all Clients except those whose credit has been established with CTL. For Clients with approved credit, payment terms are net 10 days from the date of invoice by CTL. All overdue payments are subject to an additional interest and service charge of one and one-half percent (1.5%) (or the maximum rate permissible by law, whichever is lesser) per month or portion thereof from the due date until the date of payment. All fees are charged or billed directly to the Client. The billing of a third party will not be accepted without a statement, signed by the third party that acknowledges and accepts payment responsibility. CTL may suspend work and withhold delivery of data under this order at any time in the event Client fails to make timely payment of its invoices. Client shall be responsible for all costs and expenses of collection including reasonable attorney's fees. CTL reserves the right to refuse to proceed with work at any time based upon an unfavorable Client credit report.

3. CHANGE ORDERS, TERMINATION

3.1 Changes to the Scope of Work, price, or result delivery date may be initiated by CTL after Sample Acceptance due to any condition which conflicts with analytical, QA or other protocols warranted in these Terms and Conditions. CTL will not proceed with such changes until an agreement with the Client is reached on the amount of any cost, schedule change or technical change to the Scope of Work, and such agreement is documented in writing.

3.2 Changes to the Scope of Work, including but not limited to increasing or decreasing the work, changing test and analysis specification or acceleration in the performance of the work may be initiated by the Client after sample acceptance. Such a change will be documented in writing and may result in a change in cost and turnaround time commitment. CTL's acceptance of such changes is contingent upon technical feasibility and operational capacity.

3.3 Suspension or termination of all or any part of the work may be initiated by the Client. CTL will be compensated consistent with Section 2 of these Terms and Conditions. CTL will complete all work in progress and be paid in full for all work completed.

4. WARRANTIES AND LIABILITY

4.1 Where applicable, CTL will use analytical methodologies which are in substantial conformity with published test methods. CTL has implemented these methods in its Laboratory Quality Manuals and referenced Standard Operating Procedures and where the nature or composition of the sample requires it, CTL reserves the right to deviate from these methodologies as necessary or appropriate, based on the reasonable judgment of CTL, which deviations, if any, will be made on a basis consistent with recognized standards of the industry and/or CTL's Laboratory Quality Manuals. Client may request that CTL perform according to a mutually agreed Quality Assurance Project Plan (QAPP). In the event that samples arrive prior to agreement on a QAPP, CTL will proceed with analyses under its standard Quality Manuals then in effect, and CTL will not be responsible for any resampling or other charges if work must be repeated to comply with a subsequently finalized QAPP.

4.2 CTL shall start preparation and/or analysis within holding times provided that Sample Acceptance occurs within 48 hours of sampling or 1/2 of the holding time for the test, whichever is less. Where resolution of inconsistencies leading to Sample Acceptance does not occur within this period, CTL will use its best efforts to meet holding times and will proceed with the work provided that, in CTL's judgment, the chain-of-custody or definition of the Scope of Work provide sufficient guidance. Reanalysis of samples to comply with CTL's Quality Manuals will be deemed to have met holding times provided the initial analysis was performed within the applicable holding time. Where reanalysis demonstrates that sample matrix interference is the cause of failure to meet any Quality Manual requirements, the warranty will be deemed to have been met.

4.3 CTL warrants that it possesses and maintains all licenses and certifications which are required to perform services under these Terms and Conditions provided that such requirements are specified in writing to CTL prior to Sample Acceptance. CTL will notify the Client in writing of any decertification or revocation of any license, or notice of either, which affects work in progress.

4.4 The warranty obligations set forth in Sections 4.1, 4.2 and 4.3 are the sole and exclusive warranties given by CTL in connection with any services performed by CTL, or any Results generated from such services, and CTL gives and makes NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. No representative of CTL is authorized to give or make any other representation or warranty or modify this warranty in any way.

4.5 Client's sole and exclusive remedy for the breach of warranty in connection with any services performed by CTL, will be limited to repeating any services performed, contingent on the Client's providing, at the request of CTL and at the Client's expense, additional sample(s) if necessary. Any reanalysis requested by the Client generating Results consistent with the original Results will be at the Client's expense. If resampling is necessary, CTL's liability for resampling costs will be limited to actual cost or one hundred or one hundred fifty dollars (\$150) per sample, whichever is less.

4.6 CTL's liability for any and all causes of action arising hereunder, whether based in contract, tort, warranty, negligence or otherwise, shall be limited to the lesser amount of compensation for the services performed or \$100,000. All claims, including those for negligence, shall be deemed waived unless suit thereon is filed within one year after CTL's completion of the services. Under no circumstances, whether arising in contract, tort (including negligence), or otherwise, shall CTL be responsible for loss of use, loss of profits, or for any special, indirect, incidental or consequential damages occasioned by the services performed or by application or use of the reports prepared.

4.7 In no event shall CTL have any responsibility or liability to the Client for any failure or delay in performance by CTL which results, directly or indirectly, in whole or in part, from any cause or circumstance beyond the reasonable control of CTL. Such causes and circumstances shall include, but not be limited to, acts of God, acts of Client, acts or orders of any governmental authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, equipment breakdown, matrix interference or unknown highly contaminated samples that impact instrument operation, unavailability of supplies from usual suppliers, difficulties or delays in transportation, mail or delivery services, or any other cause beyond CTL's reasonable control.

5. RESULTS, WORK PRODUCT - not applicable

6. INSURANCE

6.1 CTL shall maintain in force during the performance of services under these Terms and Conditions, Workers' Compensation and Employer's Liability Insurance in accordance with the laws of the states having jurisdiction over CTL's employees who are engaged in the performance of the work. CTL shall also maintain during such period, Comprehensive General and Contractual Liability (limit of \$2,000,000 per occurrence/ aggregate), Comprehensive Automobile Liability, owned and hired, (\$1,000,000 combined single limit), and Professional Pollution Liability Insurance (limit of \$5,000,000 per occurrence/aggregate). A. Any Client required changes to these limits or conditions may result in a change in cost to the Client.

7. AUDIT

7.1 Upon prior notice to CTL, the Client may audit and inspect CTL's records and accounts covering reimbursable costs related to work done for the Client, for a period of one (1) year after completion of the work. The purpose of any such audit shall be only for verification of such costs, and CTL shall not be required to provide access to cost records where prices are expressed as fixed fees or published unit prices.

Login Sample Receipt Checklist

Client: CT Laboratories

Job Number: 810-51680-1

Login Number: 51680

List Number: 1

Creator: DePriest, Kellie

List Source: Eurofins Eaton South Bend

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	

**CHAIN OF CUSTODY,
PM CONFIRMATION
AND
SAMPLE CONDITION FORMS
DOCUMENTS**

1243? 1019

Cooler Receipt Form

Ice Present YES NO
Observed Temperature 3.6
Actual Temperature _____
IR Gun # 28
Initials ju
Date 1/23/23 Time 1002
Cooler #: 6556

ORIGIN ID: WALA (770) 855-6275
PAUL I. TAYLOR
WESTON SOLUTIONS INC/OU 1203
380 ARBOR DR

CHRISTIANSBURG, VA 24073
UNITED STATES US

SHIP DATE: 23JAN23
ACTWT: 24.55 LB
CAD: 6895155/SSFE2341
DIMS: 24x13x14 IN

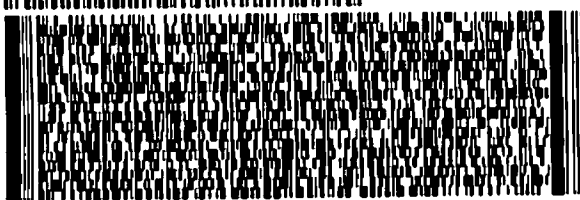
BILL THIRD PARTY

TO CT LAB
CT LAB
1230 LANGE CT

BARABOO WI 53913

(808) 358-2780
JHVI
PO1

REF: 03886.552.500.3410 (SMHU S4)
DEPT:



FedEx
Express

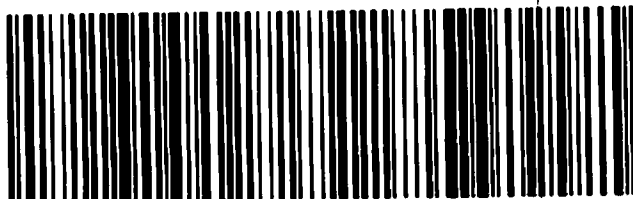


TRK# 3937 7797 5020
0201

XN LNRA

TUE - 24 JAN 10:30A
PRIORITY OVERNIGHT

AHS
53913
WI-US MSN



Part # 188287-2464-AR0382-DXP 07/23

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

CUSTODY SEAL
DATE: 1/23/2023
SIGNATURE: [Signature]

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

CUSTODY SEAL
DATE: 1/23/2023
SIGNATURE: [Signature]

Folder #: 175012

Company: WESTON SOLUTIONS, INC.

Project: RADFORD AAP SWMU 54

Folder #: 175012**PM Login Confirmation**

Contract #: 3313

Company: WESTON SOLUTIONS, INC.

Project: RADFORD AAP SWMU 54

Proj #:

Project Phase: RADFORD, VA

PO Number:

Invoice #:

175693

Project Manager: BMS

Date Received: 01/24/23

Log Date: 01/24/2023

Report To: ANTHONY PACE

CC:

Invoice To :ACCOUNTS PAYABLE

CC:

2 EATON STREET

1400 WESTON WAY, BLDG 5-1

HAMPTON, VA 23669

WEST CHESTER, PA 19380

Phone: 757-819-5310:

Fax:

Phone:

Fax:

Rep. E-Mail anthony.pace@westonsolutions.com

EMail:

Collected By:

Arrival Temperature: 3.6 oC

Collector's Phone: 757-819-5310

SAMPLE #: 1282988 DESCR: 54MW13 PRIMARY / DETAILED MATRIX: AQUEOUS / GROUND WATER SAMPLED: 1/23/2023 Time: 13:10**CLIENT SAMPLE #: DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
-------	------	-------------	---------	------------	----------------------	-----------	--------------	------	--------

759	CARBON, INORG & ORG	(EPA 9060A)				2/6/2023	2/5/2023		Logged
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1227	ANIONS IC QSM 5.0	(EPA 9056A)				1/25/2023	2/5/2023		Logged
------	-------------------	-------------	--	--	--	-----------	----------	--	--------

Chloride

Nitrate Nitrogen

Sulfate

1230	ORGAN CARBON T QSM 5.0	(EPA 9060A)				2/20/2023	2/5/2023		Logged
------	------------------------	-------------	--	--	--	-----------	----------	--	--------

1279	SUB CHLORATE/CHLORITE	(300.1)					2/5/2023		Logged
------	-----------------------	---------	--	--	--	--	----------	--	--------

SAMPLE #: 1282989 DESCR: 54TW13 PRIMARY / DETAILED MATRIX: AQUEOUS / GROUND WATER SAMPLED: 1/23/2023 Time: 13:10**CLIENT SAMPLE #: DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
-------	------	-------------	---------	------------	----------------------	-----------	--------------	------	--------

759	CARBON, INORG & ORG	(EPA 9060A)				2/6/2023	2/5/2023		Logged
-----	---------------------	-------------	--	--	--	----------	----------	--	--------

1227	ANIONS IC QSM 5.0	(EPA 9056A)				1/25/2023	2/5/2023		Logged
------	-------------------	-------------	--	--	--	-----------	----------	--	--------

Folder #: 175012

Company: WESTON SOLUTIONS, INC.

Project: RADFORD AAP SWMU 54

SAMPLE #:		1282989		DESCR:		54TW13		PRIMARY / DETAILED MATRIX:		AQUEOUS / GROUND WATER		SAMPLED:		1/23/2023		Time:		13:10	
CLIENT SAMPLE #:								DETAILED SITE/POINT ID INFORMATION:											
TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS				HOLD DATE	ANALYSIS DUE	RUSH	STATUS							

Chloride

Nitrate Nitrogen

Sulfate

1230	ORGAN CARBON T QSM 5.0	(EPA 9060A)				2/20/2023	2/5/2023		Logged
1279	SUB CHLORATE/CHLORITE	(300.1)					2/5/2023		Logged

SAMPLE #:		1282990		DESCR:		54MW10		PRIMARY / DETAILED MATRIX:		AQUEOUS / GROUND WATER		SAMPLED:		1/23/2023		Time:		15:20	
CLIENT SAMPLE #:								DETAILED SITE/POINT ID INFORMATION:											
TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS				HOLD DATE	ANALYSIS DUE	RUSH	STATUS							

759	CARBON, INORG & ORG	(EPA 9060A)				2/6/2023	2/5/2023		Logged
1227	ANIONS IC QSM 5.0	(EPA 9056A)				1/25/2023	2/5/2023		Logged

Chloride

Nitrate Nitrogen

Sulfate

1230	ORGAN CARBON T QSM 5.0	(EPA 9060A)				2/20/2023	2/5/2023		Logged
1279	SUB CHLORATE/CHLORITE	(300.1)					2/5/2023		Logged

Invoice Number: 175693		Preliminary Invoice Estimate:		\$546.00		
Item	Matrix	Quantity	Price	Expedited TAT Surcharge	Total	
ANIONS IC QSM 5.0 Chloride	GROUND WATER	3	\$12.00	0.00	\$36.00	
ANIONS IC QSM 5.0 Nitrate Nitrogen	GROUND WATER	3	\$12.00	0.00	\$36.00	
ANIONS IC QSM 5.0 Sulfate	GROUND WATER	3	\$12.00	0.00	\$36.00	
CARBON, INORG & ORG	GROUND WATER	3	\$28.00	0.00	\$84.00	
ORGAN CARBON T QSM 5.0	GROUND WATER	3	\$28.00	0.00	\$84.00	
SUB CHLORATE/CHLORITE	GROUND WATER	3	\$90.00	0.00	\$270.00	
Temporary Fuel Surcharge on lab supplies and services (if applicable):					\$0.00	

Folder #: 175012

Company: WESTON SOLUTIONS, INC.

Project: RADFORD AAP SWMU 54

Bottle Information

Container	# Containers	Tests
H2SO4 PL	3	TOC
MISC	3	CHLORATE/CHLORITE
UNPRES PL	3	Anions
VOA	9	

Sample Condition Report

Folder #:	175012	Print Date / Time:	01/24/2023	10:10
Client:	WESTON SOLUTIONS, INC.	Received Date / Time / By:	01/24/2023	10:02 erc
Project Name:	RADFORD AAP SWMU 54	Log-In Date / Time / By:	01/24/2023	10:10 erc
Project Phase:	RADFORD, VA	Project #:		PM: BMS
Coolers:	6556	Temperature:	3.6 C	On Ice: Y
Custody Seals Present :	Y	COC Present:?	Y	Complete? Y
Seal Intact?	Y	Numbers:	DATED AND SIGNED	
Ship Method:	FEDEX EXPRESS	Tracking Number:	3937 7797 5020	
Adequate Packaging:	Y	Temp Blank Enclosed?	Y	

Notes: THE SAMPLES WERE RECEIVED IN GOOD CONDITION ON ICE.

TWO (2) CUSTODY SEALS WERE PRESENT AND INTACT UPON RECEIPT - BOTH WERE DATED 1/23/2023 AND SIGNED.

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
1282988 54MW13	VOA	1	/	
	VOA	1	/	
	VOA	1	/	
	Total # of Containers of Type (VOA) = 3			
1282988 54MW13	UNPRES PL	1	/	Anions
	Total # of Containers of Type (UNPRES PL) = 1			
1282988 54MW13	MISC	1	/	CHLORATE/CHLORITE
	Total # of Containers of Type (MISC) = 1			
1282988 54MW13	H2SO4 PL	1	Y / N	TOC
	Total # of Containers of Type (H2SO4 PL) = 1			
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
1282989 54TW13	VOA	1	/	
	VOA	1	/	
	VOA	1	/	
	Total # of Containers of Type (VOA) = 3			
1282989 54TW13	UNPRES PL	1	/	Anions

Total # of Containers of Type (UNPRES PL) = 1

1282989 54TW13

MISC

1

/

CHLORATE/CHLORITE

Total # of Containers of Type (MISC) = 1

1282989 54TW13

H2SO4 PL

1

Y

/

N

TOC

Total # of Containers of Type (H2SO4 PL) = 1

Sample ID / Description

Container Type

Cond. Code

pH OK?/Filtered?

Tests

1282990 54MW10

VOA

1

/

VOA

1

/

VOA

1

/

Total # of Containers of Type (VOA) = 3

1282990 54MW10

UNPRES PL

1

/

Anions

Total # of Containers of Type (UNPRES PL) = 1

1282990 54MW10

MISC

1

/

CHLORATE/CHLORITE

Total # of Containers of Type (MISC) = 1

1282990 54MW10

H2SO4 PL

1

Y

/

N

TOC

Total # of Containers of Type (H2SO4 PL) = 1

Condition Code Condition Description

1

Sample Received OK

ORIGIN ID:WALA (770) 855-6275
PAUL I TAYLOR
WESTON SOLUTIONS INC/OU 1203
380 ARBOR DR

SHIP DATE: 25JAN23
ACTWGT: 39.25 LB
CAD: 6995155/SSFE2341
DIMS: 24x14x14 IN

BILL THIRD PARTY

CHRISTIANSBURG, VA 24073
UNITED STATES US

TO CT LAB
CT LAB
1230 LANGE CT

BARABOO WI 53913
REF: 0

REF: 03806.552.500.3410. (SHKU 54)

(608) 358-2760
THU
RAI

DEPT:

FedEx
Express



RT 327

1

10:30

26 JAN 10:30A
TV OVERNIGHT

1123
01.26

TRK# 3938 6902 1123
0201

XN LNRA

AHS

53913

101-118 MSN



Part # 15628743-18032-EXP 07/20



Quality Environmental Containers
800-255-3950 • www.qeusa.com

EEC Quality Environmental Containers
800-265-3950 • www.qeusa.com

CUSTODY SEAL

DATE _____

SIGNATURE

CUSTODY SEAL

DATE

SIGNATURE

Folder #: 175069

Company: WESTON SOLUTIONS, INC.

Project: RADFORD AAP SWMU 54

Folder #: 175069**PM Login Confirmation**

Contract #: 3313

Company: WESTON SOLUTIONS, INC.

Project: RADFORD AAP SWMU 54

Proj #:

Project Phase: RADFORD, VA

PO Number:

Invoice #:

175750

Project Manager: BMS

Date Received: 01/26/23

Log Date: 01/26/2023

Report To: ANTHONY PACE

CC:

Invoice To :ACCOUNTS PAYABLE

CC:

2 EATON STREET

1400 WESTON WAY, BLDG 5-1

HAMPTON, VA 23669

WEST CHESTER, PA 19380

Phone: 757-819-5310:

Fax:

Phone:

Fax:

Rep. E-Mail anthony.pace@westonsolutions.com

EMail:

Collected By:

Arrival Temperature: 3.3 oC

Collector's Phone: 757-819-5310

SAMPLE #: 1283772 DESCR: 54MW12 PRIMARY / DETAILED MATRIX: AQUEOUS / GROUND WATER SAMPLED: 1/25/2023 Time: 09:15**CLIENT SAMPLE #: DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
-------	------	-------------	---------	------------	----------------------	-----------	--------------	------	--------

759	CARBON, INORG & ORG	(EPA 9060A)			DESIGNATED MATRIX SPIKE	2/8/2023	2/7/2023		Logged
-----	---------------------	-------------	--	--	-------------------------	----------	----------	--	--------

1227	ANIONS IC QSM 5.0	(EPA 9056A)			DESIGNATED MATRIX SPIKE	1/27/2023	2/7/2023		Logged
------	-------------------	-------------	--	--	-------------------------	-----------	----------	--	--------

Chloride

Nitrate Nitrogen

Sulfate

1230	ORGAN CARBON T QSM 5.0	(EPA 9060A)			DESIGNATED MATRIX SPIKE	2/22/2023	2/7/2023		Logged
------	------------------------	-------------	--	--	-------------------------	-----------	----------	--	--------

1279	SUB CHLORATE/CHLORITE	(300.1)			DESIGNATED MATRIX SPIKE		2/7/2023		Logged
------	-----------------------	---------	--	--	-------------------------	--	----------	--	--------

SAMPLE #: 1283773 DESCR: 54MW1 PRIMARY / DETAILED MATRIX: AQUEOUS / GROUND WATER SAMPLED: 1/25/2023 Time: 11:15**CLIENT SAMPLE #: DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
-------	------	-------------	---------	------------	----------------------	-----------	--------------	------	--------

759	CARBON, INORG & ORG	(EPA 9060A)				2/8/2023	2/7/2023		Logged
-----	---------------------	-------------	--	--	--	----------	----------	--	--------

1227	ANIONS IC QSM 5.0	(EPA 9056A)				1/27/2023	2/7/2023		Logged
------	-------------------	-------------	--	--	--	-----------	----------	--	--------

Folder #: 175069

Company: WESTON SOLUTIONS, INC.

Project: RADFORD AAP SWMU 54

SAMPLE #:		1283773		DESCR:		54MW1		PRIMARY / DETAILED MATRIX:		AQUEOUS / GROUND WATER		SAMPLED:		1/25/2023		Time:		11:15	
CLIENT SAMPLE #:								DETAILED SITE/POINT ID INFORMATION:											
TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS				HOLD DATE	ANALYSIS DUE	RUSH	STATUS							

Chloride

Nitrate Nitrogen

Sulfate

1230 ORGAN CARBON T QSM 5.0 (EPA 9060A)

2/22/2023

2/7/2023

Logged

1279 SUB CHLORATE/CHLORITE (300.1)

2/7/2023

Logged

SAMPLE #:		1283774		DESCR:		54 IDW		PRIMARY / DETAILED MATRIX:		AQUEOUS / GROUND WATER		SAMPLED:		1/25/2023		Time:		14:25	
CLIENT SAMPLE #:				DETAILED SITE/POINT ID INFORMATION:															
TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS					HOLD DATE	ANALYSIS DUE	RUSH	STATUS						

203 PH (EPA 9040C)

2/7/2023

Entered

989 COD QSM (EPA 410.4)

2/22/2023

2/7/2023

NeedPrep

1183 ICP K TOTAL QSM 5.0 (EPA 6010C)

7/24/2023

2/7/2023

Logged

1190 ICP NA TOTAL QSM 5.0 (EPA 6010C)

7/24/2023

2/7/2023

Logged

1200 ICP TOTAL QSM 5.0 (EPA 6010C)

7/24/2023

2/7/2023

Logged

Total Aluminum

Total Antimony

Total Arsenic

Total Barium

Total Beryllium

Total Cadmium

Total Calcium

Total Chromium

Total Cobalt

Total Copper

Total Iron

Total Lead

Total Magnesium

Folder #: 175069

Company: WESTON SOLUTIONS, INC.

Project: RADFORD AAP SWMU 54

SAMPLE #: 1283774 DESCR: 54 IDW

PRIMARY / DETAILED MATRIX: AQUEOUS / GROUND WATER

SAMPLED: 1/25/2023

Time: 14:25

CLIENT SAMPLE #:

DETAILED SITE/POINT ID INFORMATION:

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
-------	------	-------------	---------	------------	----------------------	-----------	--------------	------	--------

Total Manganese

Total Nickel

Total Selenium

Total Silver

Total Thallium

Total Vanadium

Total Zinc

1208 MERCURY TOTAL QSM 5.0 (EPA 7470A)

2/22/2023

2/7/2023

NeedPrep

Folder #: 175069

Company: WESTON SOLUTIONS, INC.

Project: RADFORD AAP SWMU 54

Invoice Number: 175750		Preliminary Invoice Estimate: \$856.00			
Item	Matrix	Quantity	Price	Expedited TAT Surcharge	Total
ANIONS IC QSM 5.0 Chloride	GROUND WATER	4	\$12.00	0.00	\$48.00
ANIONS IC QSM 5.0 Nitrate Nitrogen	GROUND WATER	4	\$12.00	0.00	\$48.00
ANIONS IC QSM 5.0 Sulfate	GROUND WATER	4	\$12.00	0.00	\$48.00
CARBON, INORG & ORG	GROUND WATER	4	\$28.00	0.00	\$112.00
COD QSM	GROUND WATER	1	\$18.00	0.00	\$18.00
ICP K TOTAL QSM 5.0	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP NA TOTAL QSM 5.0	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Aluminum	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Antimony	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Arsenic	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Barium	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Beryllium	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Cadmium	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Calcium	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Chromium	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Cobalt	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Copper	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Iron	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Lead	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Magnesium	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Manganese	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Nickel	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Selenium	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Silver	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Thallium	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Vanadium	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Zinc	GROUND WATER	1	\$3.50	0.00	\$3.50
MERCURY TOTAL QSM 5.0	GROUND WATER	1	\$23.00	0.00	\$23.00
ORGAN CARBON T QSM 5.0	GROUND WATER	4	\$28.00	0.00	\$112.00

Folder #: 175069**Company:** WESTON SOLUTIONS, INC.**Project:** RADFORD AAP SWMU 54

PH	GROUND WATER	1	\$10.00	0.00	\$10.00
SUB CHLORATE/CHLORITE	GROUND WATER	4	\$90.00	0.00	\$360.00
Temporary Fuel Surcharge on lab supplies and services (if applicable):					\$0.00

Bottle Information

Container	# Containers	Tests
H2SO4 PL	5	COD
HNO3	1	HG,ICP,K,NA
MISC	4	CHLORATE/CHLORITE
UNPRES PL	5	pH
VOA	12	

Sample Condition Report

Folder #:	175069	Print Date / Time:	01/26/2023	12:12	
Client:	WESTON SOLUTIONS, INC.	Received Date / Time / By:	01/26/2023	12:02	erc
Project Name:	RADFORD AAP SWMU 54	Log-In Date / Time / By:	01/26/2023	12:12	erc
Project Phase:	RADFORD, VA	Project #:		PM:	BMS
Coolers:	6464	Temperature:	3.3 C	On Ice:	Y
Custody Seals Present :	Y	COC Present:?	Y	Complete?	Y
Seal Intact?	Y	Numbers:	DATED AND SIGNED		
Ship Method:	FEDEX EXPRESS	Tracking Number:	3938 6902 1123		
Adequate Packaging:	Y	Temp Blank Enclosed?	Y		

Notes: THE SAMPLES WERE RECEIVED IN GOOD CONDITION ON ICE.

TWO (2) CUSTODY SEALS WERE PRESENT AND INTACT UPON RECEIPT - BOTH WERE DATED 1/25/2023 AND SIGNED.

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?			Tests
1283772 54MW12	VOA	1	/			
	VOA	1	/			
	VOA	1	/			
	VOA	1	N	/	N	
	VOA	1	N	/	N	
	VOA	1	N	/	N	
	VOA	1	N	/	N	
	VOA	1	N	/	N	
	VOA	1	N	/	N	
	VOA	1	N	/	N	
Total # of Containers of Type (VOA) = 9						
1283772 54MW12	UNPRES PL	1	N	/	N	ANIONS
	UNPRES PL	1	N	/	N	ANIONS
	UNPRES PL	1		/		Anions
	Total # of Containers of Type (UNPRES PL) = 3					
1283772 54MW12	MISC	1	/			CHLORATE/CHLORITE
	Total # of Containers of Type (MISC) = 1					
1283772 54MW12	MISC	1	N	/	N	SUB
	MISC	1	N	/	N	SUB
	Total # of Containers of Type (MISC) = 2					
1283772 54MW12						

		H2SO4 PL	1	Y	/	N	TOC
		H2SO4 PL	1	Y	/	N	TOC
		H2SO4 PL	1	Y	/	N	TOC
Total # of Containers of Type (H2SO4 PL) = 3							
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?			Tests	
1283773 54MW1							
	VOA	1		/			
	VOA	1		/			
	VOA	1		/			
Total # of Containers of Type (VOA) = 3							
1283773 54MW1							
	UNPRES PL	1		/		Anions	
Total # of Containers of Type (UNPRES PL) = 1							
1283773 54MW1							
	MISC	1		/		CHLORATE/CHLORITE	
Total # of Containers of Type (MISC) = 1							
1283773 54MW1							
	H2SO4 PL	1	Y	/	N	TOC	
Total # of Containers of Type (H2SO4 PL) = 1							
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?			Tests	
1283774 54 IDW							
	H2SO4 PL	1	Y	/	N	COD	
Total # of Containers of Type (H2SO4 PL) = 1							
1283774 54 IDW							
	HNO3	1	Y	/	N	HG,ICP,K,NA	
Total # of Containers of Type (HNO3) = 1							
1283774 54 IDW							
	UNPRES PL	1		/		pH	
Total # of Containers of Type (UNPRES PL) = 1							

<u>Condition Code</u>	<u>Condition Description</u>
1	Sample Received OK

ANALYTICAL RESULTS FOR:

**ANTHONY PACE
WESTON SOLUTIONS, INC.
2 EATON STREET
SUITE 603
HAMPTON, VA 23669**

PROJECT SITE: RFAAP SWMU-54; RADFORD, VA

DOD CONTRACT #:

PROJECT #:

SDG: **178887**

PREPARED: August 8, 2023

TOTAL # OF PAGES: 848

The data contained in the following report have been reviewed by the appropriate CT Laboratories' LLC staff members. In addition, CT Laboratories LLC certifies that to the best of our knowledge that the analyses reported herein are true, complete and correct within the limits of the methods employed and that they follow the applicable requirements as specified by the project plan, state-specific, NELAC or DOD QSM requirements. The estimated uncertainty of measurement is only available upon request. The reported results relate only to the tested samples. This report shall not be reproduced, except in full, without written approval of CT Laboratories LLC.

APPROVED BY: *Brett Symonski*
PROJECT MANAGER

Certifications: IL (NELAP 200073), KS (NELAP E-10368), WI (157066030), DOD ELAP (A2LA 3806.01), VA (NELAP 460203), LA (primary NELAP 115843), ISO17025 (A2LA 3806.01)



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Case Narrative

Client: Weston Solutions

Project: RFAAP SWMU-54, Radford, VA

Sample Receipt Date: 07/11/2023

SDG #: 178887

Six water samples were received for a variety of analytical parameters, including: Metals, pH, COD, Anions, Chlorate/Chlorite, TIC, and TOC. The Chlorate/Chlorite analysis was subcontracted to Eurofins Eaton Analytical in South Bend, IN. The assigned sample ID number, date sampled, and date received are indicated in the attached Project Summary. The samples were received intact and at a temperature within method specified acceptance limits. A breakdown of sample receipt information can be found on the Sample Condition Report located in the last section of the data package and any exceptions are noted below. The analyses were performed following DOD QSM 5.4 requirements.

Manual integrations may have been performed on the data provided with this package. If manual integrations were performed, a Reason #(s) was included on the raw data that corresponds to the "Index Key for Manual Integration Rationale." The raw data includes a "Before" and "After" manual integration illustration. The manual integrations were initialed and dated by the analyst, as well as, by the person reviewing the data.

Sample Analysis and Quality Control

Metals Analysis:

The samples were analyzed using US EPA Methods 6010C (ICP) and 7470A (Hg). All samples were analyzed within the holding time. The following summaries of quality control procedures are included:

Initial and Continuing Calibration Verification

Blanks Summary

ICP Interference Check Data

Spike Sample Recovery

Duplicates Data

Laboratory Control Sample Data

Analysis Run Log

All analysis results met the method specified quality control criteria with the following exceptions:

ICP Metals (6010C) Water Analysis

Continuing Calibration Verification (CCV) standards were analyzed at two levels (CCV1 & CCV2) with potentially differing wavelengths. Data associated with CCV's were evaluated based on the concentration of the element in the samples and compared to the appropriate CCV level/wavelength.

Some samples may have been analyzed and/or reanalyzed diluted to obtain results for all target analytes within the calibration range of the instrument.

Analytical Run # 273608

The Duplicate (DUP) for sample # 1346384 was not applicable for antimony, arsenic, beryllium, cadmium, chromium, cobalt, copper, lead, nickel, selenium, silver, thallium, vanadium, and zinc because the results were less than the adjusted Limit of Quantitation (LOQ). A Matrix Spike Duplicate (MSD) was analyzed to demonstrate precision and was acceptable. The parent sample was reported and not qualified.

The DUP for sample # 1346384 was not acceptable for aluminum because the result exceeded the Relative Percent Difference (RPD) limit. The parent sample was reported and qualified with a "Y" flag for the failing element.

The Matrix Spike (MS) and/or MSD for sample # 1346384 had recoveries outside the specified limits for aluminum, iron, and vanadium. A Serial Dilution (L) was analyzed and was not applicable for aluminum, iron, and vanadium because the parent sample raw results were less than 50 times the LOQ. A Post Digestion Spike (PDS) was analyzed and was acceptable. The parent sample was reported and not qualified.

CVAA Mercury (7470A) Water Analysis

Analytical Run # 273833

Mercury was detected in the Method Blank (MB) greater than the Method Detection Limit (MDL). The MB was reanalyzed prior to the samples and was acceptable. The samples were reported and not qualified.

The DUP for sample # 1346384 was not applicable for mercury because the parent sample result was less than the LOQ. An MSD was analyzed to demonstrate precision and was acceptable. The parent sample was reported and not qualified.

Inorganic Analysis:

The samples were analyzed using US EPA Methods 9060A (TIC/TOC), 9040C (pH), 410.4 (COD) and 9056A (Anions). All samples were analyzed within the holding time unless noted below. The following summaries of quality control procedures are included:

Duplicate Analysis Data
Laboratory Control Spike Data
Method Blank Data
Initial Calibration Summary
Calibration Check Summary
Analysis Run Log
Prep Log

All analysis results met the method specified quality control criteria with the following exceptions:

Some samples may have been analyzed and/or reanalyzed diluted to obtain results for all target analytes within the calibration range of the instrument.

Anions (9056A) Water Analysis

Analytical Run # 273539

The MS and the MSD for sample # 1346382 had a low recovery for sulfate. The parent sample result for this analyte was qualified with an "M" flag.

COD (410.4) Water Analysis

Analytical Run # 273727

All analytical results for this run met the method/project specified quality control criteria.

pH (9040C) Water Analysis

Analytical Run # 273548

All analytical results for these runs met the method/project specified quality control criteria.

TIC (9060A) Water Analysis

Analytical Run # 273604

All analytical results for these runs met the method/project specified quality control criteria.

TOC (9060A) Water Analysis

Analytical Run # 273651

All analytical results for these runs met the method/project specified quality control criteria.

Data Qualifiers

Code	Description
A	Analyte averaged calibration criteria within acceptable limits.
B	Analyte detected in associated Method Blank.
C	Toxicity present in BOD sample.
D	Diluted Out.
E	Safe, No Total Coliform detected.
F	Unsafe, Total Coliform detected, no E. Coli detected.
G	Unsafe, Total Coliform detected and E. Coli detected.
H	Holding time exceeded.
J	Estimated value.
L	Significant peaks were detected outside the chromatographic window.
M	Matrix spike and/or Matrix Spike Duplicate recovery outside acceptance limits.
N	Insufficient BOD oxygen depletion.
O	Complete BOD oxygen depletion.
P	Concentration of analyte differs more than 40% between primary and confirmation analysis.
Q	Laboratory Control Sample outside acceptance limits.
R	See Narrative at end of report.
S	Surrogate standard recovery outside acceptance limits due to apparent matrix effects.
T	Sample received with improper preservation or temperature.
U	Analyte concentration was not above the detection level.
V	Raised Quantitation or Reporting Limit due to limited sample amount or dilution for matrix background interference.
W	Sample amount received was below program minimum.
X	Analyte exceeded calibration range.
Y	Replicate/Duplicate precision outside acceptance limits.
Z	Calibration criteria exceeded.

MANUAL INTEGRATION REASON CODES

CTLaboratories has identified four general cases with valid reasons supporting the use of manual integration techniques. These codes are used on chromatograms in this data package to document the reasons for manual integrations per CTLaboratories' SOP SS-10 current revision.

#1: Data system failed to select the correct peak or missed the peak entirely.

In some cases the chromatography system selects and integrates the "wrong peak". In this case the analyst must correct the selection and force the system to integrate the proper peak. In other instances the system may miss the peak completely. In this case the analyst manually integrated the peak

#2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak.

This phenomenon is common at low concentrations where the signal to noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low or high area counts for the target compound.

#3: Improperly Integrated Isomers and/or coeluting compounds.

For when the system fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations may be inaccurate, and they must be corrected by manual integration. Prime examples are compounds that are unresolved and integrated improperly when present at low concentrations in standards or samples.

#4: System Established Incorrect Baseline.

There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and may be corrected via manual procedures.

#5: Miscellaneous.

Some situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the group supervisor. If the form of manual integration is not clearly covered by these four cases, then review and approval by the group supervisor or the QA/QC Supervisor will be required.

Sample Delivery Group
178887

WESTON SOLUTIONS, INC.
 ANTHONY PACE
 2 EATON STREET
 HAMPTON, VA 23669

Project Name: RADFORD AAP SWMU 54
 Project #:

	CT Sample #	Folder #	Client Sample #	Sample Description	Matrix	Date Sampled	Date Received
1	1346379	178887		54MW13	GROUND WATER	07/10/2023	07/11/2023
2	1346380	178887		54TW13	GROUND WATER	07/10/2023	07/11/2023
3	1346381	178887		54MW10	GROUND WATER	07/10/2023	07/11/2023
4	1346382	178887		54MW12	GROUND WATER	07/10/2023	07/11/2023
5	1346383	178887		54MW1	GROUND WATER	07/10/2023	07/11/2023
6	1346384	178887		54IDW	GROUND WATER	07/10/2023	07/11/2023

QC Batch Cross Reference Summary

Page 1 of 2

WESTON SOLUTIONS, INC.
 ANTHONY PACE
 2 EATON STREET
 HAMPTON, VA 23669

Project Name: RADFORD AAP SWMU 54
 Project #:
 Report Date: 08/08/2023
 Date Received: 7/11/2023
 SDG #: 178887

Inorganic Parameters

CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
1346384	pH	EPA 9040C	GROUND WATER		273548
CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
1346379	Carbon , Total Inorganic and Organic	EPA 9060A	GROUND WATER		273604
1346380	Carbon , Total Inorganic and Organic	EPA 9060A	GROUND WATER		273604
1346381	Carbon , Total Inorganic and Organic	EPA 9060A	GROUND WATER		273604
1346382	Carbon , Total Inorganic and Organic	EPA 9060A	GROUND WATER		273604
1346383	Carbon , Total Inorganic and Organic	EPA 9060A	GROUND WATER		273604
CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
1346384	COD QSM	EPA 410.4	GROUND WATER	130553	273727
CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
1346379	Anions QSM 5.0	EPA 9056A	GROUND WATER		273539
1346380	Anions QSM 5.0	EPA 9056A	GROUND WATER		273539
1346381	Anions QSM 5.0	EPA 9056A	GROUND WATER		273539
1346382	Anions QSM 5.0	EPA 9056A	GROUND WATER		273539
1346383	Anions QSM 5.0	EPA 9056A	GROUND WATER		273539
1346381	Anions QSM 5.0	EPA 9056A	GROUND WATER		273539
CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
1346379	Organic Carbon, Total QSM 5.0	EPA 9060A	GROUND WATER		273651
1346380	Organic Carbon, Total QSM 5.0	EPA 9060A	GROUND WATER		273651
1346381	Organic Carbon, Total QSM 5.0	EPA 9060A	GROUND WATER		273651
1346382	Organic Carbon, Total QSM 5.0	EPA 9060A	GROUND WATER		273651
1346383	Organic Carbon, Total QSM 5.0	EPA 9060A	GROUND WATER		273651

Metal Parameters

Project Name: RADFORD AAP SWMU 54

Project #:

SDG #: 178887

CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
1346384	Potassium, Total QSM 5.0	EPA 6010C	GROUND WATER	130497	273608
CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
1346384	Sodium, Total QSM 5.0	EPA 6010C	GROUND WATER	130497	273608
CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
1346384	ICP Metals, Total QSM 5.0	EPA 6010C	GROUND WATER	130497	273608
CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
1346384	Mercury, Total QSM	EPA 7470A	GROUND WATER	130488	273833

Summary of Methods associated with SDG

SDG: 178887

Company: WESTON SOLUTIONS, INC.

Project: RADFORD AAP SWMU 54

Matrix	Analytical Method	Prep Method	Cleanup Method(s) - if applicable
GROUND WATER	EPA 9040C	NONE	
GROUND WATER	EPA 9060A	NONE	
GROUND WATER	EPA 410.4	EPA 414	
GROUND WATER	EPA 6010C	EPA 3010A	
GROUND WATER	EPA 6010C	EPA 3010A	
GROUND WATER	EPA 6010C	EPA 3010A	
GROUND WATER	EPA 7470A	EPA 7470A	
GROUND WATER	EPA 9056A	NONE	
GROUND WATER	EPA 9060A	NONE	

**METALS
CLP FORMS
DOCUMENTS**

INORGANIC ANALYSIS DATA SHEET

Sample Description

54IDW

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346384	
Analytical Method:	EPA 7470A	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273833	Extraction Date/time:		
Analytical Prep Batch #:	130488	Analysis Date/Time:	07/21/2023	10:52
		Prep. Date/Time:	07/18/2023	13:20

Concentration Units: ug/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-97-6	Total Mercury	0.080	U	0.020	0.080	0.12	0.12

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

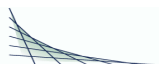
54IDW

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346384	
Analytical Method:	EPA 6010C	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273608	Extraction Date/time:		
Analytical Prep Batch #:	130497	Analysis Date/Time:	07/13/2023	14:53
		Prep. Date/Time:	07/12/2023	14:07

Concentration Units: ug/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7429-90-5	Total Aluminum	739	Y	15	60	120	120
7440-36-0	Total Antimony	10	U	4.4	10	20	20
7440-38-2	Total Arsenic	20	U	7.7	20	40	40
7440-39-3	Total Barium	77.8		0.71	2.0	4.0	4.0
7440-41-7	Total Beryllium	3.0	U	0.75	3.0	8.0	8.0
7440-43-9	Total Cadmium	1.0	U	0.41	1.0	2.0	2.0
7440-70-2	Total Calcium	79700		25	50	100	100
7440-47-3	Total Chromium	4.0	J	1.1	2.5	5.0	5.0
7440-48-4	Total Cobalt	2.5	U	1.0	2.5	5.0	5.0
7440-50-8	Total Copper	20	U	5.2	20	40	40
7439-89-6	Total Iron	1990		14	40	80	80
7439-92-1	Total Lead	3.1	J	1.4	5.0	10	10
7439-95-4	Total Magnesium	33400		10	25	40	40
7439-96-5	Total Manganese	44.0		1.4	3.0	5.0	5.0
7440-02-0	Total Nickel	3.0	U	1.5	3.0	5.0	5.0
7440-09-7	Total Potassium	1590		120	250	500	500
7782-49-2	Total Selenium	20	U	10	20	40	40
7440-22-4	Total Silver	2.5	U	1.1	2.5	5.0	5.0
7440-23-5	Total Sodium	4630		200	500	700	700
7440-28-0	Total Thallium	20	U	6.8	20	40	40
7440-62-2	Total Vanadium	1.9	J	1.3	3.0	5.0	5.0
7440-66-6	Total Zinc	14.6	J	4.5	10	20	20

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



2A-1

INITIAL CALIBRATION VERIFICATION

Sample No.

ICV

Lab Name: CT Laboratories
 SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273833
 ICAL Calibration #: 07212023

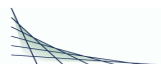
Lab Sample ID: 1351269
 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Mercury	7/21/23	10:20	3.0	3.03	101	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



2A-1

INITIAL CALIBRATION VERIFICATION

Sample No.

ICV

Lab Name: CT Laboratories
 SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273608

Lab Sample ID: 1347971

ICAL Calibration #: _____

Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Aluminum	7/13/23	13:03	12000000	11900000	99	90	110
Antimony	7/13/23	13:03	500000	510000	102	90	110
Arsenic	7/13/23	13:03	2000000	2190000	110	90	110
Barium	7/13/23	13:03	2000000	1920000	96	90	110
Beryllium	7/13/23	13:03	50000	52200	104	90	110
Cadmium	7/13/23	13:03	50000	53700	107	90	110
Calcium	7/13/23	13:03	10000000	10200000	102	90	110
Chromium	7/13/23	13:03	200000	209000	104	90	110
Cobalt	7/13/23	13:03	500000	527000	105	90	110
Copper	7/13/23	13:03	250000	246000	98	90	110
Iron	7/13/23	13:03	5000000	5240000	105	90	110
Lead	7/13/23	13:03	500000	481000	96	90	110
Magnesium	7/13/23	13:03	10000000	9580000	96	90	110
Manganese	7/13/23	13:03	500000	517000	103	90	110
Nickel	7/13/23	13:03	500000	503000	101	90	110
Selenium	7/13/23	13:03	2000000	2150000	108	90	110
Silver	7/13/23	13:03	50000	49700	99	90	110
Thallium	7/13/23	13:03	2000000	1880000	94	90	110
Total Potassium	7/13/23	13:03	100000	103000	103	90	110
Total Sodium	7/13/23	13:03	100000	102000	102	90	110
Vanadium	7/13/23	13:03	500000	503000	101	90	110
Zinc	7/13/23	13:03	500000	522000	104	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



2A-1

LOWER LIMIT OF QUANTITATION CHECK (LLQC)

Sample No.

LLQC

Lab Name: CT Laboratories
 SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273608
 ICAL Calibration #:

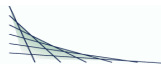
Lab Sample ID: 1347972
 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Aluminum	7/13/23	13:10	1200000	1230000	102	80	120
Antimony	7/13/23	13:10	60000	64200	107	80	120
Arsenic	7/13/23	13:10	60000	63200	105	80	120
Barium	7/13/23	13:10	30000	33500	112	80	120
Beryllium	7/13/23	13:10	12000	12600	105	80	120
Cadmium	7/13/23	13:10	15000	15900	106	80	120
Calcium	7/13/23	13:10	1500000	1610000	107	80	120
Chromium	7/13/23	13:10	30000	31300	104	80	120
Cobalt	7/13/23	13:10	30000	32700	109	80	120
Copper	7/13/23	13:10	30000	31300	104	80	120
Iron	7/13/23	13:10	900000	990000	110	80	120
Lead	7/13/23	13:10	30000	31200	104	80	120
Magnesium	7/13/23	13:10	1500000	1630000	109	80	120
Manganese	7/13/23	13:10	30000	31500	105	80	120
Nickel	7/13/23	13:10	30000	31400	105	80	120
Selenium	7/13/23	13:10	60000	62700	104	80	120
Thallium	7/13/23	13:10	60000	60200	100	80	120
Total Potassium	7/13/23	13:10	3000	3520	117	80	120
Total Sodium	7/13/23	13:10	6000	6310	105	80	120
Vanadium	7/13/23	13:10	30000	30000	100	80	120
Zinc	7/13/23	13:10	30000	32200	107	80	120

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



2A-1

LOWER LIMIT OF QUANTITATION CHECK (LLQC)

Sample No.

LLQC

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273608

Lab Sample ID: 1347976

ICAL Calibration #:

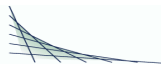
Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Silver	7/13/23	14:02	10000	11100	111	80	120

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273833
 ICAL Calibration #: 07212023

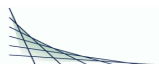
Lab Sample ID: 1351271
 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Mercury	7/21/23	11:01	3.0	2.91	97	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273833
 ICAL Calibration #: 07212023

Lab Sample ID: 1351273
 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Mercury	7/21/23	11:39	3.0	2.80	93	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



Sample No.

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 1 - HIGH RANGE)

**CCV High
Level**

Lab Name: CT Laboratories
 SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273608
 ICAL Calibration #: _____

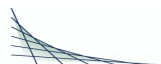
Lab Sample ID: 1347978
 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Aluminum	7/13/23	15:15	5000000	5130000	103	90	110
Antimony	7/13/23	15:15	5000000	5290000	106	90	110
Arsenic	7/13/23	15:15	5000000	5330000	107	90	110
Barium	7/13/23	15:15	5000000	5040000	101	90	110
Beryllium	7/13/23	15:15	500000	519000	104	90	110
Cadmium	7/13/23	15:15	500000	524000	105	90	110
Calcium	7/13/23	15:15	5000000	5240000	105	90	110
Chromium	7/13/23	15:15	5000000	5180000	104	90	110
Cobalt	7/13/23	15:15	5000000	5080000	102	90	110
Copper	7/13/23	15:15	5000000	5110000	102	90	110
Iron	7/13/23	15:15	5000000	5190000	104	90	110
Lead	7/13/23	15:15	5000000	5120000	102	90	110
Magnesium	7/13/23	15:15	5000000	5170000	103	90	110
Manganese	7/13/23	15:15	5000000	5080000	102	90	110
Nickel	7/13/23	15:15	5000000	4970000	99	90	110
Selenium	7/13/23	15:15	5000000	5420000	108	90	110
Thallium	7/13/23	15:15	5000000	4770000	95	90	110
Total Potassium	7/13/23	15:15	50000	52900	106	90	110
Total Sodium	7/13/23	15:15	50000	52900	106	90	110
Vanadium	7/13/23	15:15	5000000	5180000	104	90	110
Zinc	7/13/23	15:15	5000000	5170000	103	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



Sample No.

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 2 - LOW RANGE)

**CCV Low
Level**

Lab Name: CT Laboratories
 SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273608

Lab Sample ID: 1347979

ICAL Calibration #: _____

Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Aluminum	7/13/23	15:22	500000	530000	106	90	110
Antimony	7/13/23	15:22	500000	523000	105	90	110
Arsenic	7/13/23	15:22	500000	523000	105	90	110
Barium	7/13/23	15:22	500000	546000	109	90	110
Beryllium	7/13/23	15:22	50000	51600	103	90	110
Cadmium	7/13/23	15:22	50000	52600	105	90	110
Calcium	7/13/23	15:22	500000	537000	107	90	110
Chromium	7/13/23	15:22	500000	501000	100	90	110
Cobalt	7/13/23	15:22	500000	542000	108	90	110
Copper	7/13/23	15:22	500000	521000	104	90	110
Iron	7/13/23	15:22	500000	530000	106	90	110
Lead	7/13/23	15:22	500000	515000	103	90	110
Magnesium	7/13/23	15:22	500000	540000	108	90	110
Manganese	7/13/23	15:22	500000	524000	105	90	110
Nickel	7/13/23	15:22	500000	516000	103	90	110
Selenium	7/13/23	15:22	500000	534000	107	90	110
Silver	7/13/23	15:22	50000	53100	106	90	110
Thallium	7/13/23	15:22	500000	521000	104	90	110
Total Potassium	7/13/23	15:22	5000	5440	109	90	110
Total Sodium	7/13/23	15:22	5000	5450	109	90	110
Vanadium	7/13/23	15:22	500000	492000	98	90	110
Zinc	7/13/23	15:22	500000	524000	105	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



Sample No.

**CCV High
Level**

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 1 - HIGH RANGE)

Lab Name: CT Laboratories
 SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273608
 ICAL Calibration #: _____

Lab Sample ID: 1347982
 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Aluminum	7/13/23	16:49	5000000	5170000	103	90	110
Antimony	7/13/23	16:49	5000000	5300000	106	90	110
Arsenic	7/13/23	16:49	5000000	5320000	106	90	110
Barium	7/13/23	16:49	5000000	5090000	102	90	110
Beryllium	7/13/23	16:49	500000	522000	104	90	110
Cadmium	7/13/23	16:49	500000	523000	105	90	110
Calcium	7/13/23	16:49	5000000	5250000	105	90	110
Chromium	7/13/23	16:49	5000000	5180000	104	90	110
Cobalt	7/13/23	16:49	5000000	5050000	101	90	110
Copper	7/13/23	16:49	5000000	5100000	102	90	110
Iron	7/13/23	16:49	5000000	5160000	103	90	110
Lead	7/13/23	16:49	5000000	5130000	103	90	110
Magnesium	7/13/23	16:49	5000000	5140000	103	90	110
Manganese	7/13/23	16:49	5000000	5080000	102	90	110
Nickel	7/13/23	16:49	5000000	4970000	99	90	110
Selenium	7/13/23	16:49	5000000	5420000	108	90	110
Thallium	7/13/23	16:49	5000000	4770000	95	90	110
Total Potassium	7/13/23	16:49	50000	52900	106	90	110
Total Sodium	7/13/23	16:49	50000	53200	106	90	110
Vanadium	7/13/23	16:49	5000000	5210000	104	90	110
Zinc	7/13/23	16:49	5000000	5200000	104	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130



Sample No.

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 2 - LOW RANGE)

**CCV Low
Level**

Lab Name: CT Laboratories
 SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273608

Lab Sample ID: 1347983

ICAL Calibration #: _____

Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Aluminum	7/13/23	16:56	500000	531000	106	90	110
Antimony	7/13/23	16:56	500000	530000	106	90	110
Arsenic	7/13/23	16:56	500000	531000	106	90	110
Barium	7/13/23	16:56	500000	548000	110	90	110
Beryllium	7/13/23	16:56	50000	51900	104	90	110
Cadmium	7/13/23	16:56	50000	52800	106	90	110
Calcium	7/13/23	16:56	500000	543000	109	90	110
Chromium	7/13/23	16:56	500000	496000	99	90	110
Cobalt	7/13/23	16:56	500000	547000	109	90	110
Copper	7/13/23	16:56	500000	521000	104	90	110
Iron	7/13/23	16:56	500000	528000	106	90	110
Lead	7/13/23	16:56	500000	517000	103	90	110
Magnesium	7/13/23	16:56	500000	539000	108	90	110
Manganese	7/13/23	16:56	500000	524000	105	90	110
Nickel	7/13/23	16:56	500000	516000	103	90	110
Selenium	7/13/23	16:56	500000	534000	107	90	110
Silver	7/13/23	16:56	50000	52800	106	90	110
Thallium	7/13/23	16:56	500000	518000	104	90	110
Total Potassium	7/13/23	16:56	5000	5510	110	90	110
Total Sodium	7/13/23	16:56	5000	5510	110	90	110
Vanadium	7/13/23	16:56	500000	492000	98	90	110
Zinc	7/13/23	16:56	500000	526000	105	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: 70-130

INITIAL CALIBRATION BLANKS

Sample No.

ICB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273833 Lab Sample ID: 1351270

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: 07212023 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Mercury	07/21/2023 10:26	0	U	0.020	0.080

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

INITIAL CALIBRATION BLANKS

Sample No.

ICB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273608 Lab Sample ID: 1347973

Analytical Prep Batch #: 0 Preparation Date/Time: _____

ICAL Calibration #: _____ Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Aluminum	07/13/2023	13:17	-59.0	U	15	60
Antimony	07/13/2023	13:17	1810		4.4	10000
Arsenic	07/13/2023	13:17	465.0		7.7	20000
Barium	07/13/2023	13:17	-118	U	0.71	2000
Beryllium	07/13/2023	13:17	-54.0	U	0.75	4000
Cadmium	07/13/2023	13:17	100.0		0.41	1000
Calcium	07/13/2023	13:17	4010		25	50000
Chromium	07/13/2023	13:17	-28.0	U	1.1	2500
Cobalt	07/13/2023	13:17	90.00		1.0	2500
Copper	07/13/2023	13:17	113.0		5.2	20000
Iron	07/13/2023	13:17	1420		14	40000
Lead	07/13/2023	13:17	-419	U	1.4	5000
Magnesium	07/13/2023	13:17	2260		10	20000
Manganese	07/13/2023	13:17	37.00		1.4	2500
Nickel	07/13/2023	13:17	-166	U	1.5	2500
Selenium	07/13/2023	13:17	-1560	U	10	20000
Silver	07/13/2023	13:17	512.0		1.1	2500
Thallium	07/13/2023	13:17	214.0		6.8	20000
Total Potassium	07/13/2023	13:17	251.0		120	500
Total Sodium	07/13/2023	13:17	77.00	U	200	700
Vanadium	07/13/2023	13:17	64.00		1.3	2500
Zinc	07/13/2023	13:17	158.0		4.5	1000

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

Sample No.

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
SDG No.: 178887
Analytical Run #: 273833 Lab Sample ID: 1351272
Analytical Prep Batch #: 0 Preparation Date/Time:
ICAL Calibration #: 07212023 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Mercury	07/21/2023 11:07	0	U	0.020	0.080

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

Sample No.

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
SDG No.: 178887
Analytical Run #: 273833 Lab Sample ID: 1351274
Analytical Prep Batch #: 0 Preparation Date/Time:
ICAL Calibration #: 07212023 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Mercury	07/21/2023 11:45	0	U	0.020	0.080

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273608 Lab Sample ID: 1347980

Analytical Prep Batch #: 0 Preparation Date/Time: _____

ICAL Calibration #: _____ Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Aluminum	07/13/2023	15:29	-1010	U	15	60000
Antimony	07/13/2023	15:29	307.0		4.4	10000
Arsenic	07/13/2023	15:29	-1170	U	7.7	20000
Barium	07/13/2023	15:29	75.00		0.71	2000
Beryllium	07/13/2023	15:29	-133	U	0.75	4000
Cadmium	07/13/2023	15:29	73.00		0.41	1000
Calcium	07/13/2023	15:29	76.00		25	50000
Chromium	07/13/2023	15:29	312.0		1.1	2500
Cobalt	07/13/2023	15:29	-56.0	U	1.0	2500
Copper	07/13/2023	15:29	377.0		5.2	20000
Iron	07/13/2023	15:29	509.0		14	40000
Lead	07/13/2023	15:29	1150		1.4	5000
Magnesium	07/13/2023	15:29	412.0		10	20000
Manganese	07/13/2023	15:29	85.00		1.4	2500
Nickel	07/13/2023	15:29	128.0		1.5	2500
Selenium	07/13/2023	15:29	-1480	U	10	20000
Silver	07/13/2023	15:29	361.0		1.1	2500
Thallium	07/13/2023	15:29	759.0		6.8	20000
Total Potassium	07/13/2023	15:29	106.0	U	120	250
Total Sodium	07/13/2023	15:29	17.00	U	200	500
Vanadium	07/13/2023	15:29	17.00		1.3	2500
Zinc	07/13/2023	15:29	170.0		4.5	10000

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273608 Lab Sample ID: 1347984

Analytical Prep Batch #: 0 Preparation Date/Time: _____

ICAL Calibration #: _____ Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Aluminum	07/13/2023	17:03	-1100	U	15	60000
Antimony	07/13/2023	17:03	2780		4.4	10000
Arsenic	07/13/2023	17:03	3230		7.7	20000
Barium	07/13/2023	17:03	328.0		0.71	2000
Beryllium	07/13/2023	17:03	-29.0	U	0.75	4000
Cadmium	07/13/2023	17:03	11.00		0.41	1000
Calcium	07/13/2023	17:03	1080		25	50000
Chromium	07/13/2023	17:03	268.0		1.1	2500
Cobalt	07/13/2023	17:03	48.00		1.0	2500
Copper	07/13/2023	17:03	-246	U	5.2	20000
Iron	07/13/2023	17:03	694.0		14	40000
Lead	07/13/2023	17:03	1370		1.4	5000
Magnesium	07/13/2023	17:03	1010		10	20000
Manganese	07/13/2023	17:03	114.0		1.4	2500
Nickel	07/13/2023	17:03	16.00		1.5	2500
Selenium	07/13/2023	17:03	-2630	U	10	20000
Silver	07/13/2023	17:03	110.0		1.1	2500
Thallium	07/13/2023	17:03	-494	U	6.8	20000
Total Potassium	07/13/2023	17:03	179.0		120	250
Total Sodium	07/13/2023	17:03	43.00	U	200	500
Vanadium	07/13/2023	17:03	-163	U	1.3	2500
Zinc	07/13/2023	17:03	194.0		4.5	10000

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273833 Lab Sample ID: 1346624

Analytical Prep Batch #: 130488 Preparation Date/Time: 07/18/2023 13:20

ICAL Calibration #: 07212023 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Total Mercury	07/21/2023 10:48	0.00200	U	0.020	0.06

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273608 Lab Sample ID: 1346760

Analytical Prep Batch #: 130497 Preparation Date/Time: 07/12/2023 14:07

ICAL Calibration #: Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Total Aluminum	07/13/2023	14:46	1.46	U	15	60
Total Antimony	07/13/2023	14:46	-0.343	U	4.4	10
Total Arsenic	07/13/2023	14:46	-3.49	U	7.7	20
Total Barium	07/13/2023	14:46	0.237	U	0.71	2.0
Total Beryllium	07/13/2023	14:46	0.173	U	0.75	4.0
Total Cadmium	07/13/2023	14:46	0.0820	U	0.41	1.0
Total Calcium	07/13/2023	14:46	16.00	U	25	50
Total Chromium	07/13/2023	14:46	0.207	U	1.1	2.5
Total Cobalt	07/13/2023	14:46	-0.0950	U	1.0	2.5
Total Copper	07/13/2023	14:46	1.03	U	5.2	20
Total Iron	07/13/2023	14:46	5.88	U	14	40
Total Lead	07/13/2023	14:46	0.0370	U	1.4	5.0
Total Magnesium	07/13/2023	14:46	4.81	U	10	20
Total Manganese	07/13/2023	14:46	0.0220	U	1.4	2.5
Total Nickel	07/13/2023	14:46	0.0840	U	1.5	2.5
Total Potassium	07/13/2023	14:46	0.345	U	120	250
Total Selenium	07/13/2023	14:46	-1.93	U	10	20
Total Silver	07/13/2023	14:46	0.834	U	1.1	2.5
Total Sodium	07/13/2023	14:46	0.0990	U	200	350
Total Thallium	07/13/2023	14:46	2.06	U	6.8	20
Total Vanadium	07/13/2023	14:46	-0.0620	U	1.3	2.5
Total Zinc	07/13/2023	14:46	0.474	U	4.5	10

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273608 Lab Sample ID: 1346760

Analytical Prep Batch #: 130497 Preparation Date/Time: 07/12/2023 14:07

ICAL Calibration #: Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Total Aluminum	07/13/2023	14:46	1.46	U	15	60
Total Antimony	07/13/2023	14:46	-0.343	U	4.4	10
Total Arsenic	07/13/2023	14:46	-3.49	U	7.7	20
Total Barium	07/13/2023	14:46	0.237	U	0.71	2.0
Total Beryllium	07/13/2023	14:46	0.173	U	0.75	4.0
Total Cadmium	07/13/2023	14:46	0.0820	U	0.41	1.0
Total Calcium	07/13/2023	14:46	16.00	U	25	50
Total Chromium	07/13/2023	14:46	0.207	U	1.1	2.5
Total Cobalt	07/13/2023	14:46	-0.0950	U	1.0	2.5
Total Copper	07/13/2023	14:46	1.03	U	5.2	20
Total Iron	07/13/2023	14:46	5.88	U	14	40
Total Lead	07/13/2023	14:46	0.0370	U	1.4	5.0
Total Magnesium	07/13/2023	14:46	4.81	U	10	20
Total Manganese	07/13/2023	14:46	0.0220	U	1.4	2.5
Total Nickel	07/13/2023	14:46	0.0840	U	1.5	2.5
Total Potassium	07/13/2023	14:46	0.345	U	120	250
Total Selenium	07/13/2023	14:46	-1.93	U	10	20
Total Silver	07/13/2023	14:46	0.834	U	1.1	2.5
Total Sodium	07/13/2023	14:46	0.0990	U	200	350
Total Thallium	07/13/2023	14:46	2.06	U	6.8	20
Total Vanadium	07/13/2023	14:46	-0.0620	U	1.3	2.5
Total Zinc	07/13/2023	14:46	0.474	U	4.5	10

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273608 Lab Sample ID: 1346760

Analytical Prep Batch #: 130497 Preparation Date/Time: 07/12/2023 14:07

ICAL Calibration #: Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Total Aluminum	07/13/2023	14:46	1.46	U	15	60
Total Antimony	07/13/2023	14:46	-0.343	U	4.4	10
Total Arsenic	07/13/2023	14:46	-3.49	U	7.7	20
Total Barium	07/13/2023	14:46	0.237	U	0.71	2.0
Total Beryllium	07/13/2023	14:46	0.173	U	0.75	4.0
Total Cadmium	07/13/2023	14:46	0.0820	U	0.41	1.0
Total Calcium	07/13/2023	14:46	16.00	U	25	50
Total Chromium	07/13/2023	14:46	0.207	U	1.1	2.5
Total Cobalt	07/13/2023	14:46	-0.0950	U	1.0	2.5
Total Copper	07/13/2023	14:46	1.03	U	5.2	20
Total Iron	07/13/2023	14:46	5.88	U	14	40
Total Lead	07/13/2023	14:46	0.0370	U	1.4	5.0
Total Magnesium	07/13/2023	14:46	4.81	U	10	20
Total Manganese	07/13/2023	14:46	0.0220	U	1.4	2.5
Total Nickel	07/13/2023	14:46	0.0840	U	1.5	2.5
Total Potassium	07/13/2023	14:46	0.345	U	120	250
Total Selenium	07/13/2023	14:46	-1.93	U	10	20
Total Silver	07/13/2023	14:46	0.834	U	1.1	2.5
Total Sodium	07/13/2023	14:46	0.0990	U	200	350
Total Thallium	07/13/2023	14:46	2.06	U	6.8	20
Total Vanadium	07/13/2023	14:46	-0.0620	U	1.3	2.5
Total Zinc	07/13/2023	14:46	0.474	U	4.5	10

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

ICP INTERFERENCE CHECK SAMPLE (SOL. A)

ICSA

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 ICP ID Number: TJA 6000 SDG No.: 178887
 ICS Source: SPEX
 Analytical Run #: 273608 Lab Sample ID: 1347974
 Inorganics MRL Standard Source: SPEX, Ultra, Inorganic Ventures and Mallinkrodt
 ICAL Calibration #: _____ Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Spiked Conc.	Measured Conc.	%R	Lower Limit (1)	Upper Limit (1)
Aluminum	07/13/2023 13:39	500000000	512000000	102	80	120
Antimony	07/13/2023 13:39	0	4010	0	-10000	10000
Arsenic	07/13/2023 13:39	0	-1050	0	-20000	20000
Barium	07/13/2023 13:39	0	369.0	0	-2000	2000
Beryllium	07/13/2023 13:39	0	179.0	0	-4000	4000
Cadmium	07/13/2023 13:39	0	558.0	0	-1000	1000
Calcium	07/13/2023 13:39	500000000	516000000	103	80	120
Chromium	07/13/2023 13:39	0	-1000	0	-1300	1300
Cobalt	07/13/2023 13:39	0	-5.00	0	-2500	2500
Copper	07/13/2023 13:39	0	4.00	0	-20	20
Iron	07/13/2023 13:39	500000000	441000000	88	80	120
Lead	07/13/2023 13:39	0	0	0	-2.0	2.0
Magnesium	07/13/2023 13:39	500000000	511000000	102	80	120
Manganese	07/13/2023 13:39	0	199.0	0	-7300	7300
Nickel	07/13/2023 13:39	0	2150	0	-2500	2500
Selenium	07/13/2023 13:39	0	-9720	0	-20000	20000
Silver	07/13/2023 13:39	0	-465	0	-2500	2500
Thallium	07/13/2023 13:39	0	3140	0	-20000	20000
Total Potassium	07/13/2023 13:39	0	-12.0	0	-500	500
Total Sodium	07/13/2023 13:39	0	47.00	0	-700	700
Vanadium	07/13/2023 13:39	10000000	10600	0	8000	12000
Zinc	07/13/2023 13:39	0	-6260	0	-10000	10000

ICP INTERFERENCE CHECK SAMPLE (SOL. AB)

ICSAB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 ICP ID Number: TJA 6000 SDG No.: 178887
 ICS Source: SPEX, Ultra
 Analytical Run #: 273608 Lab Sample ID: 1347975
 Inorganics MRL Standard Source: SPEX, Ultra, Inorganic Ventures and Mallinkrodt
 ICAL Calibration #: _____ Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Spiked Conc.	Measured Conc.	%R	Lower Limit (1)	Upper Limit (1)
Aluminum	07/13/2023 13:47	500000000	459000000	92	80	120
Antimony	07/13/2023 13:47	500000	498000	100	80	120
Arsenic	07/13/2023 13:47	500000	557000	111	80	120
Barium	07/13/2023 13:47	500000	528000	106	80	120
Beryllium	07/13/2023 13:47	500000	498000	100	80	120
Cadmium	07/13/2023 13:47	500000	515000	103	80	120
Calcium	07/13/2023 13:47	500000000	462000000	92	80	120
Chromium	07/13/2023 13:47	500000	480000	96	80	120
Cobalt	07/13/2023 13:47	500000	490000	98	80	120
Copper	07/13/2023 13:47	500000	595000	119	80	120
Iron	07/13/2023 13:47	500000000	448000000	90	80	120
Lead	07/13/2023 13:47	500000	440000	88	80	120
Magnesium	07/13/2023 13:47	500000000	453000000	91	80	120
Manganese	07/13/2023 13:47	500000	581000	116	80	120
Nickel	07/13/2023 13:47	500000	462000	92	80	120
Selenium	07/13/2023 13:47	500000	490000	98	80	120
Silver	07/13/2023 13:47	500000	578000	116	80	120
Thallium	07/13/2023 13:47	500000	427000	85	80	120
Total Potassium	07/13/2023 13:47	100000	104000	104	80	120
Total Sodium	07/13/2023 13:47	100000	101000	101	80	120
Vanadium	07/13/2023 13:47	500000	502000	100	80	120
Zinc	07/13/2023 13:47	500000	442000	88	80	120

ICP INTERFERENCE CHECK SAMPLE (SOL. AB)

ICSAB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 ICP ID Number: TJA 6000 SDG No.: 178887
 ICS Source: SPEX, Ultra
 Analytical Run #: 273608 Lab Sample ID: 1347975
 Inorganics MRL Standard Source: SPEX, Ultra, Inorganic Ventures and Mallinkrodt
 ICAL Calibration #: _____ Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Spiked Conc.	Measured Conc.	%R	Lower Limit (1)	Upper Limit (1)
Aluminum	07/13/2023 13:47	500000000	459000000	92	80	120
Antimony	07/13/2023 13:47	500000	498000	100	80	120
Arsenic	07/13/2023 13:47	500000	557000	111	80	120
Barium	07/13/2023 13:47	500000	528000	106	80	120
Beryllium	07/13/2023 13:47	500000	498000	100	80	120
Cadmium	07/13/2023 13:47	500000	515000	103	80	120
Calcium	07/13/2023 13:47	500000000	462000000	92	80	120
Chromium	07/13/2023 13:47	500000	480000	96	80	120
Cobalt	07/13/2023 13:47	500000	490000	98	80	120
Copper	07/13/2023 13:47	500000	595000	119	80	120
Iron	07/13/2023 13:47	500000000	448000000	90	80	120
Lead	07/13/2023 13:47	500000	440000	88	80	120
Magnesium	07/13/2023 13:47	500000000	453000000	91	80	120
Manganese	07/13/2023 13:47	500000	581000	116	80	120
Nickel	07/13/2023 13:47	500000	462000	92	80	120
Selenium	07/13/2023 13:47	500000	490000	98	80	120
Silver	07/13/2023 13:47	500000	578000	116	80	120
Thallium	07/13/2023 13:47	500000	427000	85	80	120
Total Potassium	07/13/2023 13:47	100000	104000	104	80	120
Total Sodium	07/13/2023 13:47	100000	101000	101	80	120
Vanadium	07/13/2023 13:47	500000	502000	100	80	120
Zinc	07/13/2023 13:47	500000	442000	88	80	120

5A

Sample Description

SPIKE SAMPLE RECOVERY

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solids for Sample:

Concentration Units: ug/L

Sample No.: 1346627

Parent Sample No.: 1346384

Analytical Prep Batch #: 130488

Analytical Preparation Date/Time: 07/18/2023 13:20

Analytical Run #: 273833

ICAL Calibration #: 07212023

Analysis Type Initial Analysis Analysis Date: ----- 07/21/2023 Analysis Time: ----- 11:26

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Total Mercury	82-119	1.7		BDL	U	2.0	85		CV

BDL = analyte concentration was below detection limit

5A

Sample Description

SPIKE SAMPLE RECOVERY

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solids for Sample:

Concentration Units: ug/L

Sample No.: 1346763

Parent Sample No.: 1346384

Analytical Prep Batch #: 130497

Analytical Preparation Date/Time: 07/12/2023 14:07

Analytical Run #: 273608

ICAL Calibration #:

Analysis Type Initial Analysis Analysis Date: 07/13/2023 Analysis Time: 15:36

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Total Aluminum	86-115	1720		739		800	123		P FAIL
Total Antimony	88-113	213		BDL	U	200	106		P
Total Arsenic	87-113	865		BDL	U	800	108		P
Total Barium	88-113	910		77.8		800	104		P
Total Beryllium	89-112	20.2		BDL	U	20.0	101		P
Total Cadmium	88-113	19.8		BDL	U	20.0	99		P
Total Calcium	87-113	276000		79700		200000	98		P
Total Chromium	90-113	83.5		4.0	J	80.0	99		P
Total Cobalt	89-114	203		BDL	U	200	102		P
Total Copper	86-114	99.1		BDL	U	100	99		P
Total Iron	87-115	2390		1990		400	100		P
Total Lead	86-113	192		3.1	J	200	94		P
Total Magnesium	85-113	126000		33400		100000	93		P
Total Manganese	90-114	241		44.0		200	98		P
Total Nickel	88-113	192		BDL	U	200	96		P
Total Potassium	86-114	98100		1590		100000	97		P
Total Selenium	83-114	813		BDL	U	800	102		P
Total Silver	84-115	19.5		BDL	U	20.0	98		P
Total Sodium	87-115	98300		4630		100000	94		P
Total Thallium	85-114	710		BDL	U	800	89		P
Total Vanadium	90-111	183		1.9	J	200	91		P
Total Zinc	87-115	206		14.6	J	200	96		P

BDL = analyte concentration was below detection limit

5B

Sample Description

POST DIGESTION SPIKE SAMPLE RECOVERY

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solids for Sample:

Concentration Units:

Sample No.: 1348812

Parent Sample No.: 1346384

Analytical Prep Batch #:

Analytical Preparation Date/Time:

Analytical Run #: 273608

ICAL Calibration #:

Analysis Type	Initial Analysis	Analysis Date: -----	07/13/2023	Analysis Time: -----	15:50
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Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Total Potassium	80-120	192000		1590		200000	95		P

BDL = analyte concentration was below detection limit

5B

Sample Description

POST DIGESTION SPIKE SAMPLE RECOVERY

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solids for Sample:

Concentration Units:

Sample No.: 1348813

Parent Sample No.: 1346384

Analytical Prep Batch #:

Analytical Preparation Date/Time:

Analytical Run #: 273608

ICAL Calibration #:

Analysis Type	Initial Analysis	Analysis Date: -----	07/13/2023	Analysis Time: -----	15:50
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Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Total Sodium	80-120	200000		4630		200000	98		P

BDL = analyte concentration was below detection limit

5B

Sample Description

POST DIGESTION SPIKE SAMPLE RECOVERY

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solids for Sample:

Concentration Units: ug/L

Sample No.: 1348814

Parent Sample No.: 1346384

Analytical Prep Batch #:

Analytical Preparation Date/Time:

Analytical Run #: 273608

ICAL Calibration #:

Analysis Type Initial Analysis Analysis Date: 07/13/2023 Analysis Time: 15:50

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Aluminum	80-120	4620		739		4000	97		P
Iron	80-120	3720		1990		2000	86		P
Vanadium	80-120	890		1.9	J	1000	89		P

BDL = analyte concentration was below detection limit

5C

Sample Description

SPIKE DUPLICATE SAMPLE RECOVERY

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solids for Sample:

Concentration Units: ug/L

Sample No.: 1346628

Parent Sample No.: 1346627

Analytical Prep Batch #: 130488

Analytical Preparation Date/Time: 07/18/2023 13:20

Analytical Run #: 273833

ICAL Calibration #: 07212023

Analysis Type	Initial Analysis	Analysis Date: -----	07/21/2023	Analysis Time: -----	11:30
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Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Total Mercury	82-119	1.7		BDL	U	2.0	85		CV

BDL = analyte concentration was below detection limit

5C

Sample Description

SPIKE DUPLICATE SAMPLE RECOVERY

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solids for Sample:

Concentration Units: ug/L

Sample No.: 1346764

Parent Sample No.: 1346763

Analytical Prep Batch #: 130497

Analytical Preparation Date/Time: 07/12/2023 14:07

Analytical Run #: 273608

ICAL Calibration #:

Analysis Type

Initial Analysis

Analysis Date: ----- 07/13/2023

Analysis Time: ----- 15:43

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Total Aluminum	86-115	1680		739		800	118		P FAIL
Total Antimony	88-113	208		BDL	U	200	104		P
Total Arsenic	87-113	859		BDL	U	800	107		P
Total Barium	88-113	903		77.8		800	103		P
Total Beryllium	89-112	20.5		BDL	U	20.0	102		P
Total Cadmium	88-113	19.6		BDL	U	20.0	98		P
Total Calcium	87-113	277000		79700		200000	99		P
Total Chromium	90-113	84.1		4.0	J	80.0	100		P
Total Cobalt	89-114	203		BDL	U	200	102		P
Total Copper	86-114	97.4		BDL	U	100	97		P
Total Iron	87-115	2300		1990		400	78		P FAIL
Total Lead	86-113	191		3.1	J	200	94		P
Total Magnesium	85-113	127000		33400		100000	94		P
Total Manganese	90-114	238		44.0		200	97		P
Total Nickel	88-113	192		BDL	U	200	96		P
Total Potassium	86-114	98900		1590		100000	97		P
Total Selenium	83-114	798		BDL	U	800	100		P
Total Silver	84-115	19.5		BDL	U	20.0	98		P
Total Sodium	87-115	99300		4630		100000	95		P
Total Thallium	85-114	715		BDL	U	800	89		P
Total Vanadium	90-111	180		1.9	J	200	89		P FAIL
Total Zinc	87-115	206		14.6	J	200	96		P

BDL = analyte concentration was below detection limit

6

Sample Description

DUPLICATES

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solid for Sample:

Concentration Units: ug/L

Analytical Prep Batch #: 130488

Analytical Preparation Date/Time: 07/18/2023 13:20

Analytical Run #: 273833

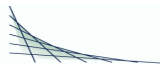
ICAL Calibration #: 07212023

Sample #: 1346626

Parent Sample #: 1346384

Analysis Type Initial Analysis

Analyte	Analysis Date/Time	RPD Limit	Original Parent Conc. (S)	C	Duplicate Conc. (D)	C	RPD	Q	M
Total Mercury	07/21/2023 10:55	20	0.020	U	0.020	U	0		CV



6

Sample Description

DUPLICATES

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solid for Sample:

Concentration Units: ug/L

Analytical Prep Batch #: 130497

Analytical Preparation Date/Time: 07/12/2023 14:07

Analytical Run #: 273608

ICAL Calibration #:

Sample #: 1346762

Parent Sample #: 1346384

Analysis Type Initial Analysis

Analyte	Analysis Date/Time	RPD Limit	Original Parent Conc. (S)	C	Duplicate Conc. (D)	C	RPD	Q	M
Total Aluminum	07/13/2023 15:08	20	739		913		21		P FAIL
Total Antimony	07/13/2023 15:08	20	4.4	U	4.4	U	0		P
Total Arsenic	07/13/2023 15:08	20	7.7	U	7.7	U	0		P
Total Barium	07/13/2023 15:08	20	77.8		79.9		3		P
Total Beryllium	07/13/2023 15:08	20	0.75	U	0.75	U	0		P
Total Cadmium	07/13/2023 15:08	20	0.41	U	0.41	U	0		P
Total Calcium	07/13/2023 15:08	20	79700		80800		1		P
Total Chromium	07/13/2023 15:08	20	4.0	J	4.4	J	10		P
Total Cobalt	07/13/2023 15:08	20	1.0	U	1.0	U	0		P
Total Copper	07/13/2023 15:08	20	5.2	U	5.2	U	0		P
Total Iron	07/13/2023 15:08	20	1990		2230		11		P
Total Lead	07/13/2023 15:08	20	3.1	J	2.9	J	7		P
Total Magnesium	07/13/2023 15:08	20	33400		33800		1		P
Total Manganese	07/13/2023 15:08	20	44.0		45.3		3		P
Total Nickel	07/13/2023 15:08	20	1.5	U	1.5	U	0		P
Total Potassium	07/13/2023 15:08	20	1590		1570		1		P
Total Selenium	07/13/2023 15:08	20	10	U	10	U	0		P
Total Silver	07/13/2023 15:08	20	1.1	U	1.1	U	0		P
Total Sodium	07/13/2023 15:08	20	4630		4660		1		P
Total Thallium	07/13/2023 15:08	20	6.8	U	6.8	U	0		P
Total Vanadium	07/13/2023 15:08	20	1.9	J	2.4	J	23		P FAIL
Total Zinc	07/13/2023 15:08	20	14.6	J	14.9	J	2		P

6A

Sample Description

MATRIX SPIKE DUPLICATES

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solid for Sample:

Concentration Units: ug/L

Analytical Prep Batch #: 130488

Analytical Preparation Date/Time: 07/18/2023 13:20

Analytical Run #: 273833

ICAL Calibration #: 07212023

Sample #: 1346628

Parent Sample #: 1346627

Analysis Type Initial Analysis

Analyte	Analysis Date/Time	RPD Limit	Matrix Spike Parent Conc. (S)	C	Matrix Spike Duplicate Conc. (D)	C	RPD	Q	M
Total Mercury	07/21/2023 11:30	20	1.7		1.7		0		CV

6A
MATRIX SPIKE DUPLICATES

Sample Description

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solid for Sample:

Concentration Units: ug/L

Analytical Prep Batch #: 130497

Analytical Preparation Date/Time: 07/12/2023 14:07

Analytical Run #: 273608

ICAL Calibration #:

Sample #: 1346764

Parent Sample #: 1346763

Analysis Type *Initial Analysis*

Analyte	Analysis Date/Time	RPD Limit	Matrix Spike Parent Conc. (S)	C	Matrix Spike Duplicate Conc. (D)	C	RPD	Q	M
Total Aluminum	07/13/2023 15:43	20	1720		1680		2		P
Total Antimony	07/13/2023 15:43	20	213		208		2		P
Total Arsenic	07/13/2023 15:43	20	865		859		1		P
Total Barium	07/13/2023 15:43	20	910		903		1		P
Total Beryllium	07/13/2023 15:43	20	20.2		20.5		1		P
Total Cadmium	07/13/2023 15:43	20	19.8		19.6		1		P
Total Calcium	07/13/2023 15:43	20	276000		277000		0		P
Total Chromium	07/13/2023 15:43	20	83.5		84.1		1		P
Total Cobalt	07/13/2023 15:43	20	203		203		0		P
Total Copper	07/13/2023 15:43	20	99.1		97.4		2		P
Total Iron	07/13/2023 15:43	20	2390		2300		4		P
Total Lead	07/13/2023 15:43	20	192		191		1		P
Total Magnesium	07/13/2023 15:43	20	126000		127000		1		P
Total Manganese	07/13/2023 15:43	20	241		238		1		P
Total Nickel	07/13/2023 15:43	20	192		192		0		P
Total Potassium	07/13/2023 15:43	20	98100		98900		1		P
Total Selenium	07/13/2023 15:43	20	813		798		2		P
Total Silver	07/13/2023 15:43	20	19.5		19.5		0		P
Total Sodium	07/13/2023 15:43	20	98300		99300		1		P
Total Thallium	07/13/2023 15:43	20	710		715		1		P
Total Vanadium	07/13/2023 15:43	20	183		180		2		P
Total Zinc	07/13/2023 15:43	20	206		206		0		P

7-1

Sample No:

LABORATORY CONTROL SAMPLE - AQUEOUS

LCS

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 LCS Source: SPEX and Ultra SDG No.: 178887
 Concentration Units: ug/L
 Analytical Run #: 273833 Sample No.:# 1346625
 Analytical Prep Batch #: 130488 Preparation Date/Time: 07/18/2023 13:20
 ICAL Calibration #: 07212023

Analysis Type -----

Initial Analysis

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	C	Spike Amount	%R	Q	M
Total Mercury	07/21/2023	10:29	82-119	2.00		2.00	100		CV

7-1

Sample No:

LABORATORY CONTROL SAMPLE - AQUEOUS

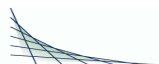
LCS

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 LCS Source: SPEX and Ultra SDG No.: 178887
 Concentration Units: ug/L
 Analytical Run #: 273608 Sample No.:# 1346761
 Analytical Prep Batch #: 130497 Preparation Date/Time: 07/12/2023 14:07
 ICAL Calibration #: _____

Analysis Type -----

Initial Analysis

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	C	Spike Amount	%R	Q	M
Total Aluminum	07/13/2023	14:39	86-115	758.0		800.0	95		P
Total Antimony	07/13/2023	14:39	88-113	207.0		200.0	104		P
Total Arsenic	07/13/2023	14:39	87-113	852.0		800.0	106		P
Total Barium	07/13/2023	14:39	88-113	818.0		800.0	102		P
Total Beryllium	07/13/2023	14:39	89-112	20.0		20.0	100		P
Total Cadmium	07/13/2023	14:39	88-113	19.40		20.0	97		P
Total Calcium	07/13/2023	14:39	87-113	196000		200000	98		P
Total Chromium	07/13/2023	14:39	90-113	80.20		80.0	100		P
Total Cobalt	07/13/2023	14:39	89-114	200.0		200.0	100		P
Total Copper	07/13/2023	14:39	86-114	93.80		100.0	94		P
Total Iron	07/13/2023	14:39	87-115	406.0		400.0	102		P
Total Lead	07/13/2023	14:39	86-113	189.0		200.0	94		P
Total Magnesium	07/13/2023	14:39	85-113	93000		100000	93		P
Total Manganese	07/13/2023	14:39	90-114	196.0		200.0	98		P
Total Nickel	07/13/2023	14:39	88-113	191.0		200.0	96		P
Total Potassium	07/13/2023	14:39	86-114	97.60		100.0	98		P
Total Selenium	07/13/2023	14:39	83-114	805.0		800.0	101		P
Total Silver	07/13/2023	14:39	84-115	19.30		20.0	96		P
Total Sodium	07/13/2023	14:39	87-115	93.40		100.0	93		P
Total Thallium	07/13/2023	14:39	85-114	713.0		800.0	89		P
Total Vanadium	07/13/2023	14:39	90-111	193.0		200.0	96		P
Total Zinc	07/13/2023	14:39	87-115	194.0		200.0	97		P



9

ICP SERIAL DILUTION

Sample Description

541DW

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID SDG No.: 178887

Concentration Units: ug/L

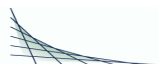
Sample No.: 1348809 Parent Sample No.: 1346384

LIMS Run #: 273608 ICAL Calibration #.:

Analysis Type -----

Initial Analysis

Analyte	Analysis Date/Time		Initial Sample Result (I)	C (I)	Serial Dilution Result (S)	C (S)	% Diff.	Q	M
Total Potassium	07/13/2023	15:00	1.59	U	600	U	100		P
INVALID									



9

ICP SERIAL DILUTION

Sample Description

541DW

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID SDG No.: 178887

Concentration Units: ug/L

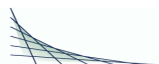
Sample No.: 1348810 Parent Sample No.: 1346384

LIMS Run #: 273608 ICAL Calibration #.:

Analysis Type -----

Initial Analysis

Analyte	Analysis Date/Time		Initial Sample Result (I)	C (I)	Serial Dilution Result (S)	C (S)	% Diff.	Q	M
Total Sodium	07/13/2023	15:00	4.63	U	1000	U	100		P
INVALID									



9

ICP SERIAL DILUTION

Sample Description

54IDW

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID SDG No.: 178887

Concentration Units: ug/L

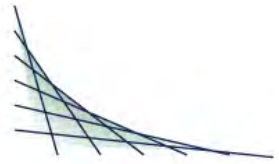
Sample No.: 1348811 Parent Sample No.: 1346384

LIMS Run #: 273608 ICAL Calibration #.:

Analysis Type -----

Initial Analysis

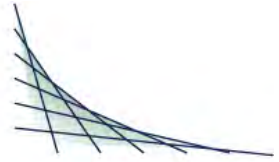
Analyte	Analysis Date/Time		Initial Sample Result (I)	C (I)	Serial Dilution Result (S)	C (S)	% Diff.	Q	M
Aluminum	07/13/2023	15:00	739		520	J	30		P <i>INVALID</i>
Iron	07/13/2023	15:00	1990		2075		4		P <i>INVALID</i>
Vanadium	07/13/2023	15:00	1.88	U	6.5	U	100		P <i>INVALID</i>



ICP INTERELEMENT CORRECTION FACTORS (ANNUAL)

ICP ID NUMBER: TA ICAP6000 / ICAP6500

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Ag 328.068 {103}	☒	2	Fe	0.000006	0.000000	No
			Ce	0.000000	0.000000	No
Ag 338.289 {100}	☒	1	Fe	0.000906	0.000000	No
Al 167.079 {501}	☒	None				
Al 308.215 {109}	☒	None				
Al 396.152 {85}	☒	None				
As 193.759 {474}	☒	1	Al	0.001713	0.000000	No
As 197.262 {471}	☒	1	Al	-0.000113	0.000000	No
Ba 233.527 {445}	☒	3	Fe	-0.000038	0.000000	No
			V	0.000180	0.000000	No
			Al	0.000000	0.000000	No
Ba 455.403 {74}	☒	1	Fe	0.000002	0.000000	No
Ba 493.409 {68}	☒	1	Fe	0.000029	0.000000	No
Be 313.042 {108}	☒	1	Fe	0.000000	0.000000	No
Be 234.861 {144}	☒	1	Fe	-0.000016	0.000000	No
Ca 315.887 {107}	☒	None				
Ca 317.933 {106}	☒	None				
Ca 393.366 {86}	☒	1	Cu	0.000000	0.000000	No
Ca 396.847 {85}	☒	None				
Cd 226.502 {449}	☒	2	Fe	0.000090	0.000000	No
			Al	0.000000	0.000000	No
Cd 228.802 {147}	☒	None				
Co 228.616 {447}	☒	5	Fe	0.000009	0.000000	No
			Ti	0.003000	0.000000	No
			Ba	-0.001300	0.000000	No
			Ni	0.000040	0.000000	No
			Al	0.000001	0.000000	No
Co 238.892 {141}	☒	1	Fe	0.000188	0.000000	No
Cr 205.560 {464}	☒	1	Fe	-0.000004	0.000000	No
Cr 267.716 {126}	☒	1	Fe	-0.000014	0.000000	No
Cu 224.700 {450}	☒	5	Fe	0.000274	0.000000	No
			Mo	0.001320	0.000000	No
			Ni	-0.006000	0.000000	No
			Pb	0.003030	0.000000	No
			Al	0.000000	0.000000	No
Cu 324.754 {104}	☒	1	Fe	-0.000136	0.000000	No
Cu 327.396 {103}	☒	1	Fe	0.000069	0.000000	No
Fe 234.349 {144}	☒	None				
Fe 239.562 {140}	☒	None				
Fe 259.940 {129}	☒	None				
Mg 202.582 {466}	☒	None				
Mg 279.079 {121}	☒	None				
Mg 280.270 {120}	☒	None				
Mn 257.610 {131}	☒	1	Al	-0.000086	0.000000	No



ICP INTERELEMENT CORRECTION FACTORS (ANNUAL)

ICP ID NUMBER: TA ICAP6000 / ICAP6500

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Mn 259.373 {130}	☒	1	Mg	0.001339	0.000000	No
Mo 202.030 {466}	☒	1	Fe	-0.000011	0.000000	No
Mo 203.844 {465}	☒	1	Fe	-0.000020	0.000000	No
Mo 204.598 {464}	☒	1	Fe	0.000036	0.000000	No
Ni 221.647 {452}	☒	1	Ca	0.000021	0.000000	No
Ni 231.604 {445}	☒	3	Fe	0.000012	0.000000	No
			Co	0.000000	0.000000	No
			Mo	0.000000	0.000000	No
Pb 216.999 {455}	☒	2	Al	0.001241	0.000000	No
			Na	0.000000	0.000000	No
Pb 220.353 {453}	☒	3	Si	0.000000	0.000000	No
			Al	0.000001	0.000000	No
			Fe	0.000018	0.000000	No
Pb 220.353 {153}	☒	1	Al	-0.000040	0.000000	No
Sb 206.833 {463}	☒	1	Fe	0.000009	0.000000	No
Sb 217.581 {455}	☒	3	Fe	-0.000069	0.000000	No
			V	0.002070	0.000000	No
			Pb	-0.001040	0.000000	No
Se 196.090 {472}	☒	1	Fe	-0.000360	0.000000	No
Se 206.279 {463}	☒	1	Fe	0.001308	0.000000	No
Tl 190.856 {476}	☒	5	Fe	0.000024	0.000000	No
			Be	-0.000013	0.000000	No
			Ti	0.000050	0.000000	No
			Cr	0.000251	0.000000	No
			V	-0.003800	0.000000	No
Tl 190.856 {477}	☒	1	Fe	-0.000048	0.000000	No
V 290.882 {116}	☒	1	Fe	0.000073	0.000000	No
V 292.402 {115}	☒	3	Fe	0.000020	0.000000	No
			Cr	-0.000400	0.000000	No
			Al	0.000000	0.000000	No
Zn 202.548 {466}	☒	1	Fe	-0.000239	0.000000	No
Zn 206.200 {463}	☒	1	Fe	-0.000003	0.000000	No
Zn 213.856 {457}	☒	2	Fe	0.000167	0.000000	No
			Cu	0.007413	0.000000	No
Y 324.228 {104}*	☒	None				
Y 371.030 {91}*	☒	None				
Y 224.306 {451}*	☒	None				
Na 588.995 {57}	☒	1	Fe	0.000106	0.000000	No
Si 251.611 {134}	☒	2	Fe	-0.000105	0.000000	No
			Mo	0.005400	0.000000	No
Ti 323.452 {104}	☒	1	Fe	0.000036	0.000000	No
Ti 334.941 {101}	☒	1	Fe	0.000052	0.000000	No
Sr 407.771 {83}	☒	1	Fe	0.000014	0.000000	No
Sr 421.552 {80}	☒	1	Fe	0.000014	0.000000	No

ICP INTERELEMENT CORRECTION FACTORS (ANNUAL)

ICP ID NUMBER: TA ICAP6000 / ICAP6500

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Sn 189.989 {477}	☒	1	Fe	0.000013	0.000000	No
B 249.678 {135}	☒	2	Fe	0.000001	0.000000	No
			Co	0.003970	0.000000	No
B 249.773 {135}	☒	1	Fe	0.000357	0.000000	No
Li 670.784 {50}	☒	1	Fe	0.000011	0.000000	No
K 766.490 {44}	☒	1	Fe	0.000216	0.000000	No
P 213.618 {457}	☒	1	Fe	-0.000079	0.000000	No
S 182.034 {485}	☒	1	Mg	0.000100	0.000000	No
Hg 184.950 {482}	☒	1	Fe	0.000001	0.000000	No
Ce 404.076 {83}	☒	1	Fe	0.000227	0.000000	No

ICP LINEAR RANGES (QUARTERLY)

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
ICP ID Number: TA SDG No.: 178887

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	M
Aluminum	15.00	1000000	P
Antimony	15.00	10000	P
Arsenic	15.00	10000	P
Barium	15.00	10000	P
Beryllium	15.00	1000	P
Boron	15.00	1000	P
Cadmium	15.00	1000	P
Calcium	15.00	1000000	P
Chromium	15.00	100000	P
Cobalt	15.00	10000	P
Copper	15.00	100000	P
Iron	15.00	1000000	P
Lead	15.00	100000	P
Lithium	15.00	10000	P
Magnesium	15.00	1000000	P
Manganese	15.00	100000	P
Molybdenum	15.00	10000	P
Nickel	15.00	10000	P
Potassium	15.00	200000	P
Selenium	15.00	10000	P
Silicon	15.00	1000	P
Silver	15.00	100	P
Sodium	15.00	200000	P
Strontium	15.00	10000	P
Thallium	15.00	10000	P
Tin	15.00	10000	P
Titanium	15.00	1000	P
Tungsten	15.00	10000	P
Vanadium	15.00	10000	P
Zinc	15.00	100000	P

PREPARATION LOG

Lab Name: <u>CT Laboratories</u>	Project: <u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>
Method: <u>EPA 7470A</u>	SDG No.: <u>178887</u>
Preparation Batch #: <u>130488</u>	Preparation Date/Time: <u>07/18/2023 / 13:20</u>

Lab Sample #	QC Type	Sample Description	Matrix	Weight (g for solid/soil) or Volume (mL for liquid/aqueous)
1346384	Normal Sample	54IDW	GROUND WATER	
1346624	Method Blank		LIQUID	
1346625	Lab Control Spike		LIQUID	
1346626	Lab Duplicate	54IDW	GROUND WATER	
1346627	Matrix Spike	54IDW	GROUND WATER	
1346628	Matrix Spike Duplicate	54IDW	GROUND WATER	
1348149	Normal Sample	49IDW	GROUND WATER	

PREPARATION LOG

Lab Name: <u>CT Laboratories</u>	Project: <u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>
Method: <u>EPA 3010A</u>	SDG No.: <u>178887</u>
Preparation Batch #: <u>130497</u>	Preparation Date/Time: <u>07/12/2023 / 14:07</u>

Lab Sample #	QC Type	Sample Description	Matrix	Weight (g for solid/soil) or Volume (mL for liquid/aqueous)
1346384	Normal Sample	54IDW	GROUND WATER	
1346760	Method Blank		LIQUID	
1346761	Lab Control Spike		LIQUID	
1346762	Lab Duplicate	54IDW	GROUND WATER	
1346763	Matrix Spike	54IDW	GROUND WATER	
1346764	Matrix Spike Duplicate	54IDW	GROUND WATER	

ANALYSIS RUN LOG

Lab Name: CT Laboratories

Lab Code: CTL

Instrument ID Number: CETAC

Start & End Date: 07/21/2023 to 07/21/2023

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Method Number: CV

Analytical Run #: 273833

Sample Number	Analysis or QC Type	DF	Analysis Date/Time	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Mo	Li	Ni	K	Se	Si	Ag	Na	Sr	Tl	Sn	W	V	Zn
1351269	ICV	1	7/21 10:20																	X													
1351270	ICB	1	7/21 10:26																	X													
1346625	LCSW	1	7/21 10:29																	X													
1346624	MBW	1	7/21 10:48																	X													
1346384	Initial	1	7/21 10:52																	X													
1346626	DUP	1	7/21 10:55																	X													
1348149	Initial	1	7/21 10:58																	X													
1351271	CCV	1	7/21 11:01																	X													
1351272	CCB	1	7/21 11:07																	X													
1346627	MSW	1	7/21 11:26																	X													
1346628	MSDW	1	7/21 11:30																	X													
1351273	CCV	1	7/21 11:39																	X													
1351274	CCB	1	7/21 11:45																	X													

ANALYSIS RUN LOG

Lab Name: CT Laboratories

Lab Code: CTL

Instrument ID Number: TJA

Start & End Date: 07/13/2023 to 07/13/2023

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Method Number: P

Analytical Run #: 273608

Sample Number	Analysis or QC Type	DF	Analysis Date/Time	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Mo	Li	Ni	K	Se	Si	Ag	Na	Sr	Tl	Sn	W	V	Zn
1347971	ICV	1	7/13 13:03	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X	X		X	X		X			X	X
1347972	ICVLL	1	7/13 13:10	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X	X		X	X		X			X	X
1347973	ICB	1	7/13 13:17	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X	X		X	X		X			X	X
1347974	ICSA	1	7/13 13:39	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X	X		X	X		X			X	X
1347975	ICSAB	1	7/13 13:47	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X	X		X	X		X			X	X
1347976	ICVLL	1	7/13 14:02																						X								
1346761	LCSW	1	7/13 14:39	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X	X		X	X		X			X	X
1346760	MBW	1	7/13 14:46	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X	X		X	X		X			X	X
1346384	Initial	1	7/13 14:53	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X	X		X	X		X			X	X
1348809	L	5	7/13 15:00																				X										
1348810	L	5	7/13 15:00																								X						
1348811	L	5	7/13 15:00	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X		X		X			X			X	X
1346762	DUP	1	7/13 15:08	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X	X		X	X		X			X	X
1347978	CCV1	1	7/13 15:15	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X	X			X		X			X	X
1347979	CCV2	1	7/13 15:22	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X	X		X	X		X			X	X
1347980	CCB	1	7/13 15:29	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X	X		X	X		X			X	X
1346763	MSW	1	7/13 15:36	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X	X		X	X		X			X	X
1346764	MSDW	1	7/13 15:43	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X	X		X	X		X			X	X
1348812	PDSW	1	7/13 15:50																				X										
1348813	PDSW	1	7/13 15:50																								X						
1348814	PDSW	1	7/13 15:50	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X		X		X			X			X	X
1347982	CCV1	1	7/13 16:49	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X	X			X		X			X	X
1347983	CCV2	1	7/13 16:56	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X	X		X	X		X			X	X
1347984	CCB	1	7/13 17:03	X	X	X	X	X		X	X	X	X	X	X	X	X	X				X	X	X		X	X		X			X	X

**METALS
RAW DATA
DOCUMENTS**

	Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)	Correlation	Std Error of Est	Predicted MDL	Predicted MQL
	Ag 328.068 {103}	07/14/2023 12:33:52	07/13/2023 11:54:57	Linear	1/Conc	-0.000194	0.000049	0.000000	1.000000	0.996547	0.000002	0.562105	1.873684
	Ag 338.289 {100}	07/14/2023 12:33:52	07/13/2023 12:48:55	Linear	1/Conc	-0.000005	0.000006	0.000000	1.000000	0.999976	0.000000	0.977499	3.258330
	Al 167.079 {501}	07/14/2023 12:33:52	07/13/2023 12:01:30	Linear	1/Var	0.000053	0.000012	0.000000	1.000000	0.999902	0.000055	0.555905	1.853018
	Al 309.271 {109}	07/14/2023 12:33:52	07/13/2023 12:41:16	Linear	1/Var	0.000150	0.000002	0.000000	1.000000	0.999888	0.000138	12.592560	41.975202
	Al 396.152 { 85}	07/14/2023 12:33:52	07/13/2023 12:41:16	Linear	1/Var	-0.000067	0.000006	0.000000	1.000000	0.999599	0.000234	7.664727	25.549089
	As 193.759 {474}	07/14/2023 12:33:52	07/13/2023 12:01:30	Linear	1/Conc	0.000050	0.000004	0.000000	1.000000	0.999941	0.000000	4.881113	16.270378
	As 197.262 {471}	07/14/2023 12:33:52	07/13/2023 12:09:12	Linear	1/Conc	-0.000044	0.000002	0.000000	1.000000	0.999856	0.000000	7.170983	23.903275
	Ba 233.527 {145}	07/14/2023 12:33:52	07/13/2023 12:48:55	Linear	1/Var	0.000005	0.000001	0.000000	1.000000	0.999983	0.000004	3.716095	12.386982
	Ba 233.527 {445}	07/14/2023 12:33:52	07/13/2023 12:09:12	Linear	1/Conc	-0.000003	0.000064	0.000000	1.000000	0.999776	0.000005	0.252415	0.841384
	Ba 455.403 { 74}	07/14/2023 12:33:52	07/13/2023 12:48:55	Linear	1/Conc	0.000275	0.000188	0.000000	1.000000	0.999775	0.000025	0.195340	0.651135
	Ba 493.409 { 68}	07/14/2023 12:33:52	07/13/2023 12:48:55	Linear	None	0.024743	0.000090	0.000000	1.000000	0.999817	0.020162	1.221139	4.070464
	Be 234.861 {144}	07/14/2023 12:33:52	07/13/2023 12:01:30	Linear	1/Conc	-0.000012	0.000021	0.000000	1.000000	0.999961	0.000000	0.273702	0.912340
	Be 313.042 {108}	07/14/2023 12:33:52	07/13/2023 12:01:30	Linear	1/Conc	0.000018	0.000269	0.000000	1.000000	0.999989	0.000001	0.016154	0.053848
	Be 313.107 {108}	07/14/2023 12:33:52	07/13/2023 12:01:30	Linear	1/Conc	0.000021	0.000100	0.000000	1.000000	0.999988	0.000000	0.205783	0.685942
	Ca 184.006 {483}	07/14/2023 12:33:52	07/13/2023 12:24:36	Linear	1/Conc	-0.000301	0.000009	0.000000	1.000000	0.999919	0.000052	1.645893	5.486309
	Ca 315.887 {107}	07/14/2023 12:33:52	07/13/2023 12:41:16	Linear	1/Var	0.000146	0.000002	0.000000	1.000000	0.999489	0.000253	5.429528	18.098427
	Ca 317.933 {106}	07/14/2023 12:33:52	07/13/2023 12:41:16	Linear	1/Var	0.002566	0.000006	0.000000	1.000000	0.999885	0.000372	2.344418	7.814728
	Ca 393.366 { 86}	07/14/2023 12:33:52	07/13/2023 12:01:30	Linear	1/Conc	0.000920	0.000674	0.000000	1.000000	0.988044	0.001127	0.044939	0.149798
	Ca 396.847 { 85}	07/14/2023 12:33:52	07/13/2023 12:09:13	Linear	1/Conc	0.000408	0.000279	0.000000	1.000000	0.999709	0.000317	0.099626	0.332086
	Cd 226.502 {449}	07/14/2023 12:33:52	07/13/2023 12:01:31	Linear	1/Conc	-0.000026	0.000219	0.000000	1.000000	0.999964	0.000002	0.118980	0.396600
	Cd 228.802 {448}	07/14/2023 12:33:52	07/13/2023 12:01:31	Linear	1/Var	0.000012	0.000032	0.000000	1.000000	0.999968	0.000008	0.458895	1.529651
	Co 228.616 {447}	07/14/2023 12:33:52	07/13/2023 12:09:13	Linear	1/Conc	-0.000014	0.000137	0.000000	1.000000	0.999910	0.000007	0.226410	0.754702
	Co 238.892 {141}	07/14/2023 12:33:52	07/13/2023 12:09:13	Linear	1/Conc	0.000010	0.000008	0.000000	1.000000	0.999991	0.000002	0.409133	1.363776
	Cr 205.560 {464}	07/14/2023 12:33:52	07/13/2023 12:17:23	Linear	1/Var	0.000052	0.000095	0.000000	1.000000	0.999724	0.000140	0.208198	0.693992
	Cr 267.716 {126}	07/14/2023 12:33:52	07/13/2023 12:01:31	Linear	1/Conc	0.000000	0.000010	0.000000	1.000000	0.999867	0.000000	0.468306	1.561022
	Cu 223.008 {451}	07/14/2023 12:33:52	07/13/2023 12:09:13	Linear	1/Conc	-0.000000	0.000029	0.000000	1.000000	0.999946	0.000001	1.036274	3.454246
	Cu 324.754 {104}	07/14/2023 12:33:52	07/13/2023 12:17:23	Linear	1/Conc	0.000222	0.000011	0.000000	1.000000	0.999975	0.000010	2.122663	7.075544
	Cu 327.396 {103}	07/14/2023 12:33:52	07/13/2023 12:17:23	Linear	1/Var	-0.000005	0.000006	0.000000	1.000000	0.999865	0.000225	5.625350	18.751168
	Fe 234.349 {144}	07/14/2023 12:33:52	07/13/2023 12:24:37	Linear	1/Conc	0.000012	0.000002	0.000000	1.000000	0.999998	0.000001	0.750985	2.503283
	Fe 239.562 {140}	07/14/2023 12:33:52	07/13/2023 12:41:16	Linear	1/Conc	0.000005	0.000003	0.000000	1.000000	0.999183	0.000175	3.414189	11.380629
	Fe 259.940 {129}	07/14/2023 12:33:52	07/13/2023 12:41:16	Linear	1/Var	0.000048	0.000009	0.000000	1.000000	0.999405	0.000472	1.610338	5.367793
	Mg 202.582 {466}	07/14/2023 12:33:52	07/13/2023 12:41:16	Linear	1/Conc	-0.000144	0.000006	0.000000	1.000000	0.999706	0.000226	3.546908	11.823026
	Mg 279.079 {121}	07/14/2023 12:33:52	07/13/2023 12:41:16	Linear	1/Conc	0.000004	0.000000	0.000000	1.000000	0.999979	0.000003	21.381247	71.270823
	Mg 280.270 {120}	07/14/2023 12:33:52	07/13/2023 12:09:13	Linear	1/Conc	0.000095	0.000175	0.000000	1.000000	0.999745	0.000186	0.014070	0.046901
	Mn 257.610 {131}	07/14/2023 12:33:52	07/13/2023 12:09:13	Linear	1/Conc	-0.000004	0.000059	0.000000	1.000000	0.999981	0.000003	0.039838	0.132794
	Mn 259.373 {130}	07/14/2023 12:33:52	07/13/2023 12:17:23	Linear	1/Conc	0.000004	0.000036	0.000000	1.000000	0.999990	0.000076	0.372775	1.242583
	Mo 202.030 {466}	07/14/2023 12:33:52	07/13/2023 12:09:13	Linear	1/Var	0.000005	0.000050	0.000000	1.000000	0.999966	0.000031	0.369568	1.231894
	Mo 204.598 {464}	07/14/2023 12:33:52	07/13/2023 12:09:13	Linear	1/Conc	-0.000003	0.000024	0.000000	1.000000	0.999929	0.000003	0.764354	2.547846
	Ni 221.647 {452}	07/14/2023 12:33:52	07/13/2023 12:09:13	Linear	1/Conc	0.000029	0.000071	0.000000	1.000000	0.999869	0.000054	0.458743	1.529145
	Ni 231.604 {445}	07/14/2023 12:33:52	07/13/2023 12:09:14	Linear	1/Conc	-0.000067	0.000109	0.000000	1.000000	0.999889	0.000002	0.331396	1.104655
	Pb 216.999 {455}	07/14/2023 12:33:52	07/13/2023 12:17:23	Linear	1/Var	0.000055	0.000006	0.000000	1.000000	0.999321	0.000463	4.530708	15.102358
	Pb 220.353 {153}	07/14/2023 12:33:52	07/13/2023 12:17:23	Linear	1/Conc	0.000001	0.000001	0.000000	1.000000	0.999941	0.000001	3.208462	10.694873
	Pb 220.353 {453}	07/14/2023 12:33:52	07/13/2023 12:01:32	Linear	1/Conc	0.000040	0.000023	0.000000	1.000000	0.999909	0.000001	1.540697	5.135655
	Sb 206.833 {463}	07/14/2023 12:33:52	07/13/2023 12:09:14	Linear	1/Var	-0.000002	0.000007	0.000000	1.000000	0.999829	0.000045	2.478085	8.260283

Element, Wavelength and Order	Status	Reslope		QC Norm	
		Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	OK.	1.000000	0.000000	1	0
Ag 338.289 {100}	OK.	1.000000	0.000000	1	0
Al 167.079 {501}	OK.	1.000000	0.000000	1	0
Al 309.271 {109}	OK.	1.000000	0.000000	1	0
Al 396.152 { 85}	OK.	1.000000	0.000000	1	0
As 193.759 {474}	OK.	1.000000	0.000000	1	0
As 197.262 {471}	OK.	1.000000	0.000000	1	0
Ba 233.527 {145}	OK.	1.000000	0.000000	1	0
Ba 233.527 {445}	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	OK.	1.000000	0.000000	1	0
Ba 493.409 { 68}	OK.	1.000000	0.000000	1	0
Be 234.861 {144}	OK.	1.000000	0.000000	1	0
Be 313.042 {108}	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	OK.	1.000000	0.000000	1	0
Ca 184.006 {483}	OK.	1.000000	0.000000	1	0
Ca 315.887 {107}	OK.	1.000000	0.000000	1	0
Ca 317.933 {106}	OK.	1.000000	0.000000	1	0
Ca 393.366 { 86}	OK.	1.000000	0.000000	1	0
Ca 396.847 { 85}	OK.	1.000000	0.000000	1	0
Cd 226.502 {449}	OK.	1.000000	0.000000	1	0
Cd 228.802 {448}	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	OK.	1.000000	0.000000	1	0
Co 238.892 {141}	OK.	1.000000	0.000000	1	0
Cr 205.560 {464}	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	OK.	1.000000	0.000000	1	0
Cu 223.008 {451}	OK.	1.000000	0.000000	1	0
Cu 324.754 {104}	OK.	1.000000	0.000000	1	0
Cu 327.396 {103}	OK.	1.000000	0.000000	1	0
Fe 234.349 {144}	OK.	1.000000	0.000000	1	0
Fe 239.562 {140}	OK.	1.000000	0.000000	1	0
Fe 259.940 {129}	OK.	1.000000	0.000000	1	0
Mg 202.582 {466}	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	OK.	1.000000	0.000000	1	0
Mg 280.270 {120}	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	OK.	1.000000	0.000000	1	0
Mn 259.373 {130}	OK.	1.000000	0.000000	1	0
Mo 202.030 {466}	OK.	1.000000	0.000000	1	0
Mo 204.598 {464}	OK.	1.000000	0.000000	1	0
Ni 221.647 {452}	OK.	1.000000	0.000000	1	0
Ni 231.604 {445}	OK.	1.000000	0.000000	1	0
Pb 216.999 {455}	OK.	1.000000	0.000000	1	0
Pb 220.353 {153}	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	OK.	1.000000	0.000000	1	0

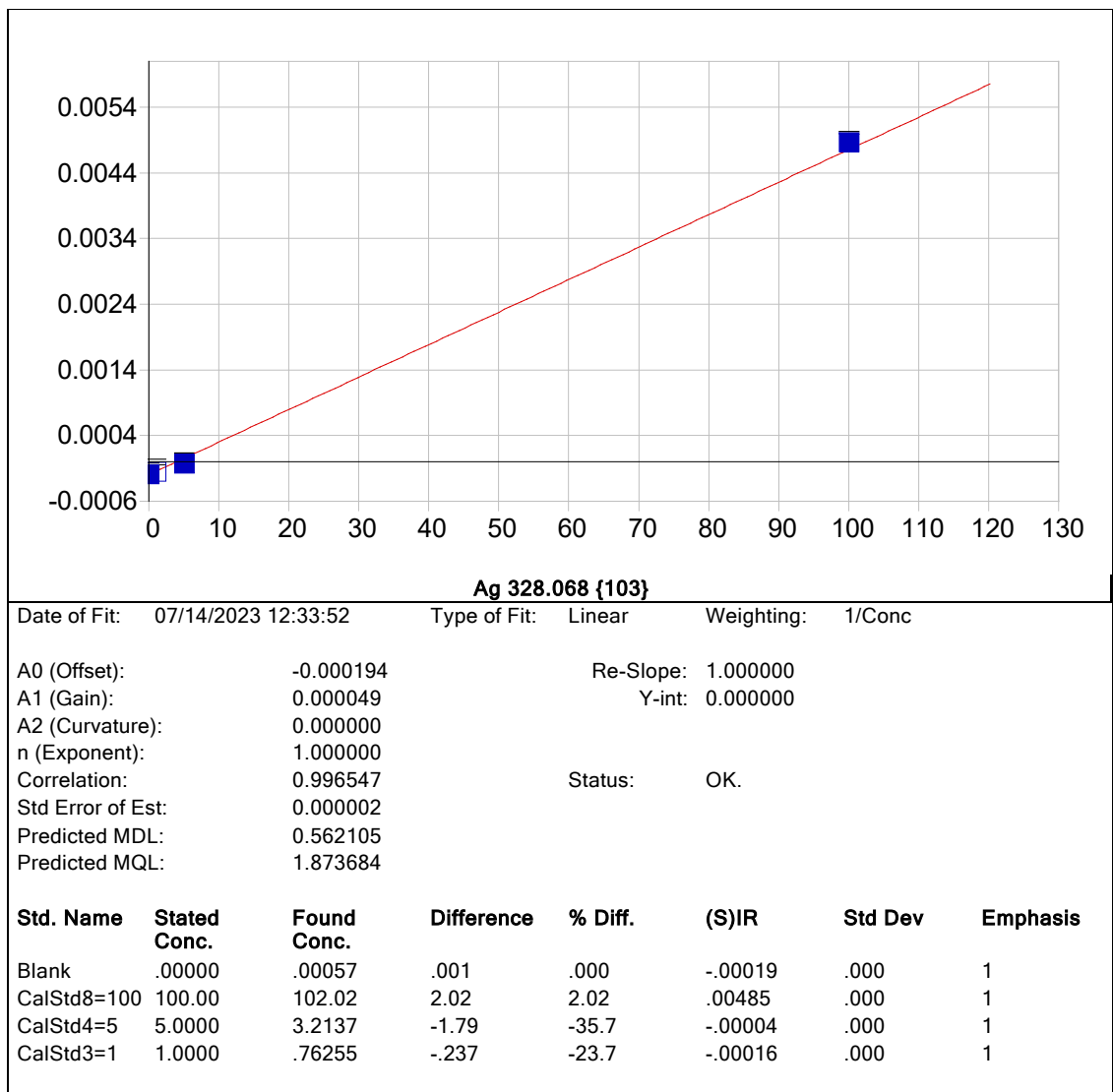
Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)	Correlation	Std Error of Est	Predicted MDL	Predicted MQL
Sb 217.581 {455}	07/14/2023 12:33:52	07/13/2023 12:09:14	Linear	1/Conc	0.000031	0.000007	0.000000	1.000000	0.999734	0.000000	3.373108	11.243693
Se 196.090 {472}	07/14/2023 12:33:52	07/13/2023 12:09:14	Linear	1/Conc	-0.000001	0.000004	0.000000	1.000000	0.999575	0.000001	4.254504	14.181681
Se 206.279 {463}	07/14/2023 12:33:52	07/13/2023 12:09:14	Linear	1/Conc	0.000002	0.000001	0.000000	1.000000	0.999764	0.000001	20.927997	69.759989
Tl 190.856 {476}	07/14/2023 12:33:52	07/13/2023 12:09:14	Linear	1/Conc	-0.000018	0.000011	0.000000	1.000000	0.999988	0.000000	1.751164	5.837215
Tl 190.856 {477}	07/14/2023 12:33:52	07/13/2023 12:09:14	Linear	1/Conc	-0.000007	0.000003	0.000000	1.000000	0.999648	0.000001	3.870130	12.900434
V 290.882 {116}	07/14/2023 12:33:52	07/13/2023 12:09:14	Linear	1/Conc	0.000064	0.000006	0.000000	1.000000	0.999961	0.000002	2.840672	9.468907
V 292.402 {115}	07/14/2023 12:33:52	07/13/2023 12:09:14	Linear	1/Conc	0.000007	0.000024	0.000000	1.000000	0.999898	0.000004	0.336932	1.123105
Zn 206.200 {463}	07/14/2023 12:33:52	07/13/2023 12:17:23	Curvili	1/Var	0.000049	0.000131	-0.000000	1.000000	0.999902	0.000253	0.161502	0.538340
Zn 213.856 {457}	07/14/2023 12:33:52	07/13/2023 12:01:32	Linear	1/Conc	-0.886851	9.238282	0.000000	1.000000	0.999952	0.427809	0.115475	0.384917
Y 224.306 {450}*	07/14/2023 12:33:52	07/13/2023 11:04:05	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	-1.000000	-1.000000
Y 324.228 {104}*	07/14/2023 12:33:52	07/13/2023 11:04:05	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	-1.000000	-1.000000
Y 371.030 {91}*	07/14/2023 12:33:52	07/13/2023 11:04:05	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	-1.000000	-1.000000
Na 330.237 {102}	07/14/2023 12:33:52	07/13/2023 12:41:16	Curvili	1/Var	0.000008	0.000018	-0.000000	1.000000	0.999995	0.000034	1.237586	4.125285
Na 588.995 {57}	07/14/2023 12:33:52	07/13/2023 12:24:37	Linear	1/Var	2527.7625	1924.3460	0.000000	1.000000	0.999954	29.998264	0.006419	0.021398
Na 589.592 {57}	07/14/2023 12:33:52	07/13/2023 12:24:37	Linear	1/Var	5.826988	1155.0273	0.000000	1.000000	0.999994	38.331079	0.007035	0.023448
Si 212.412 {458}	07/14/2023 12:33:52	07/13/2023 12:24:37	Linear	1/Conc	0.000062	0.000019	0.000000	1.000000	0.999684	0.000223	1.309514	4.365046
Si 251.611 {134}	07/14/2023 12:33:52	07/13/2023 12:24:37	Linear	1/Var	0.000038	0.000003	0.000000	1.000000	0.999445	0.000236	4.834606	16.115353
Ti 323.452 {104}	07/14/2023 12:33:52	07/13/2023 12:09:14	Linear	1/Conc	0.000968	0.000036	0.000000	1.000000	0.999924	0.000004	0.822828	2.742759
Ti 334.941 {101}	07/14/2023 12:33:52	07/13/2023 12:09:14	Linear	1/Conc	0.000027	0.000012	0.000000	1.000000	0.999934	0.000001	1.375443	4.584810
Sr 407.771 {83}	07/14/2023 12:33:52	07/13/2023 12:09:14	Linear	1/Conc	0.000184	0.000415	0.000000	1.000000	0.999890	0.000024	0.097656	0.325521
Sr 421.552 {80}	07/14/2023 12:33:52	07/13/2023 12:09:14	Linear	1/Conc	-0.000396	0.000301	0.000000	1.000000	0.999929	0.000014	0.143077	0.476922
Sn 189.989 {477}	07/14/2023 12:33:52	07/13/2023 12:09:14	Linear	1/Conc	0.000016	0.000024	0.000000	1.000000	0.999869	0.000005	0.658735	2.195783
Sn 189.989 {478}	07/14/2023 12:33:52	07/13/2023 12:09:14	Linear	1/Conc	-0.000005	0.000004	0.000000	1.000000	0.999873	0.000001	2.399851	7.999504
B 249.678 {135}	07/14/2023 12:33:52	07/13/2023 12:09:15	Linear	1/Conc	0.000040	0.000006	0.000000	1.000000	0.999891	0.000001	0.853439	2.844796
B 249.773 {135}	07/14/2023 12:33:52	07/13/2023 12:09:15	Linear	1/Conc	0.000018	0.000009	0.000000	1.000000	0.999861	0.000002	0.382109	1.273696
Li 610.353 {55}	07/14/2023 12:33:52	07/13/2023 12:09:15	Linear	1/Var	0.000054	0.000007	0.000000	1.000000	0.999846	0.000314	16.808667	56.028889
Li 670.776 {50}	07/14/2023 12:33:52	07/13/2023 12:09:15	Curvili	1/Conc	-0.000297	0.000055	-0.000000	1.000000	0.999999	0.000001	1.603612	5.345372
K 766.490 {44}	07/14/2023 12:33:52	07/13/2023 12:24:37	Linear	1/Conc	8.616727	283.08734	0.000000	1.000000	0.999975	0.939255	0.027196	0.090652
K 769.896 {44}	07/14/2023 12:33:52	07/13/2023 12:41:16	Linear	1/Var	42.827279	135.22842	0.000000	1.000000	0.999743	31.027193	0.049204	0.164013
P 177.495 {489}	07/14/2023 12:33:52	07/13/2023 12:09:15	Linear	1/Conc	-0.000007	0.000003	0.000000	1.000000	0.999996	0.000001	3.499003	11.663345
S 182.034 {485}	07/14/2023 12:33:52	07/13/2023 12:41:16	Curvili	1/Conc	-0.000006	0.000003	0.000000	1.000000	0.999997	0.000011	4.480346	14.934488
Hg 184.950 {482}	07/14/2023 12:33:52	07/13/2023 12:01:33	Linear	1/Conc	-0.000039	0.000021	0.000000	1.000000	0.999992	0.000000	0.638806	2.129355
Hg 194.227 {473}	07/14/2023 12:33:52	07/13/2023 12:01:33	Linear	1/Conc	-0.000004	0.000019	0.000000	1.000000	0.999970	0.000000	0.815511	2.718369
Ce 404.076 {83}	07/14/2023 12:33:52	07/13/2023 12:01:33	Linear	1/Conc	0.000186	0.000002	0.000000	1.000000	1.000000	0.000000	18.308086	61.026952

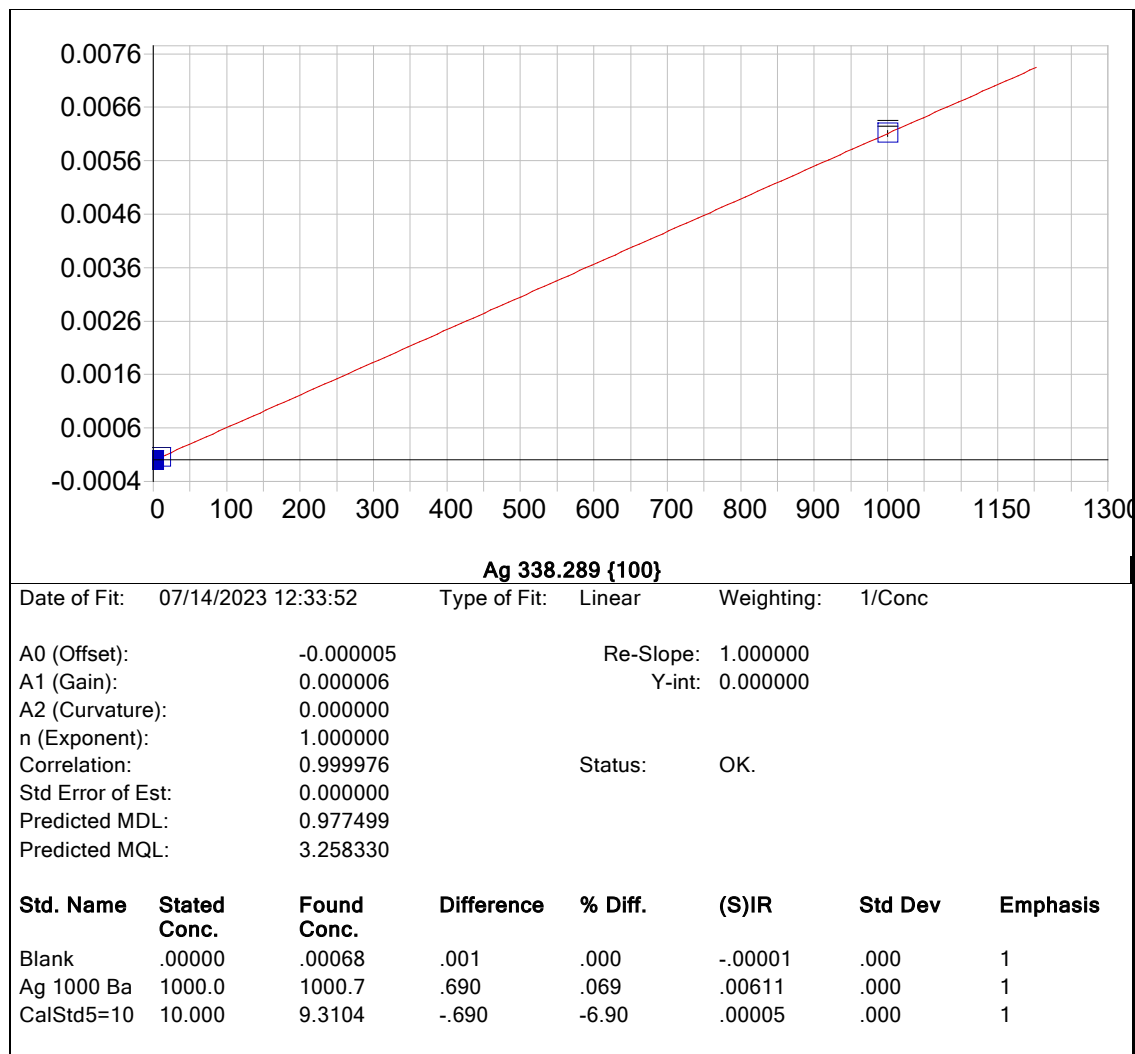
Element, Wavelength and Order	Status	Reslope		QC Norm	
		Slope	Y-int	Slope factor	Offset
Sb 217.581 {455}	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	OK.	1.000000	0.000000	1	0
Se 206.279 {463}	OK.	1.000000	0.000000	1	0
Tl 190.856 {476}	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	OK.	1.000000	0.000000	1	0
V 290.882 {116}	OK.	1.000000	0.000000	1	0
V 292.402 {115}	OK.	1.000000	0.000000	1	0
Zn 206.200 {463}	OK.	1.000000	0.000000	1	0
Zn 213.856 {457}	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	Warnin	1.000000	0.000000	1	0
Y 324.228 {104}*	Warnin	1.000000	0.000000	1	0
Y 371.030 { 91}*	Warnin	1.000000	0.000000	1	0
Na 330.237 {102}	OK.	1.000000	0.000000	1	0
Na 588.995 { 57}	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	OK.	1.000000	0.000000	1	0
Si 212.412 {458}	OK.	1.000000	0.000000	1	0
Si 251.611 {134}	OK.	1.000000	0.000000	1	0
Ti 323.452 {104}	OK.	1.000000	0.000000	1	0
Ti 334.941 {101}	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	OK.	1.000000	0.000000	1	0
Sr 421.552 { 80}	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	OK.	1.000000	0.000000	1	0
Sn 189.989 {478}	OK.	1.000000	0.000000	1	0
B 249.678 {135}	OK.	1.000000	0.000000	1	0
B 249.773 {135}	OK.	1.000000	0.000000	1	0
Li 610.353 { 55}	OK.	1.000000	0.000000	1	0
Li 670.776 { 50}	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	OK.	1.000000	0.000000	1	0
K 769.896 { 44}	OK.	1.000000	0.000000	1	0
P 177.495 {489}	OK.	1.000000	0.000000	1	0
S 182.034 {485}	OK.	1.000000	0.000000	1	0
Hg 184.950 {482}	OK.	1.000000	0.000000	1	0
Hg 194.227 {473}	OK.	1.000000	0.000000	1	0
Ce 404.076 { 83}	OK.	1.000000	0.000000	1	0

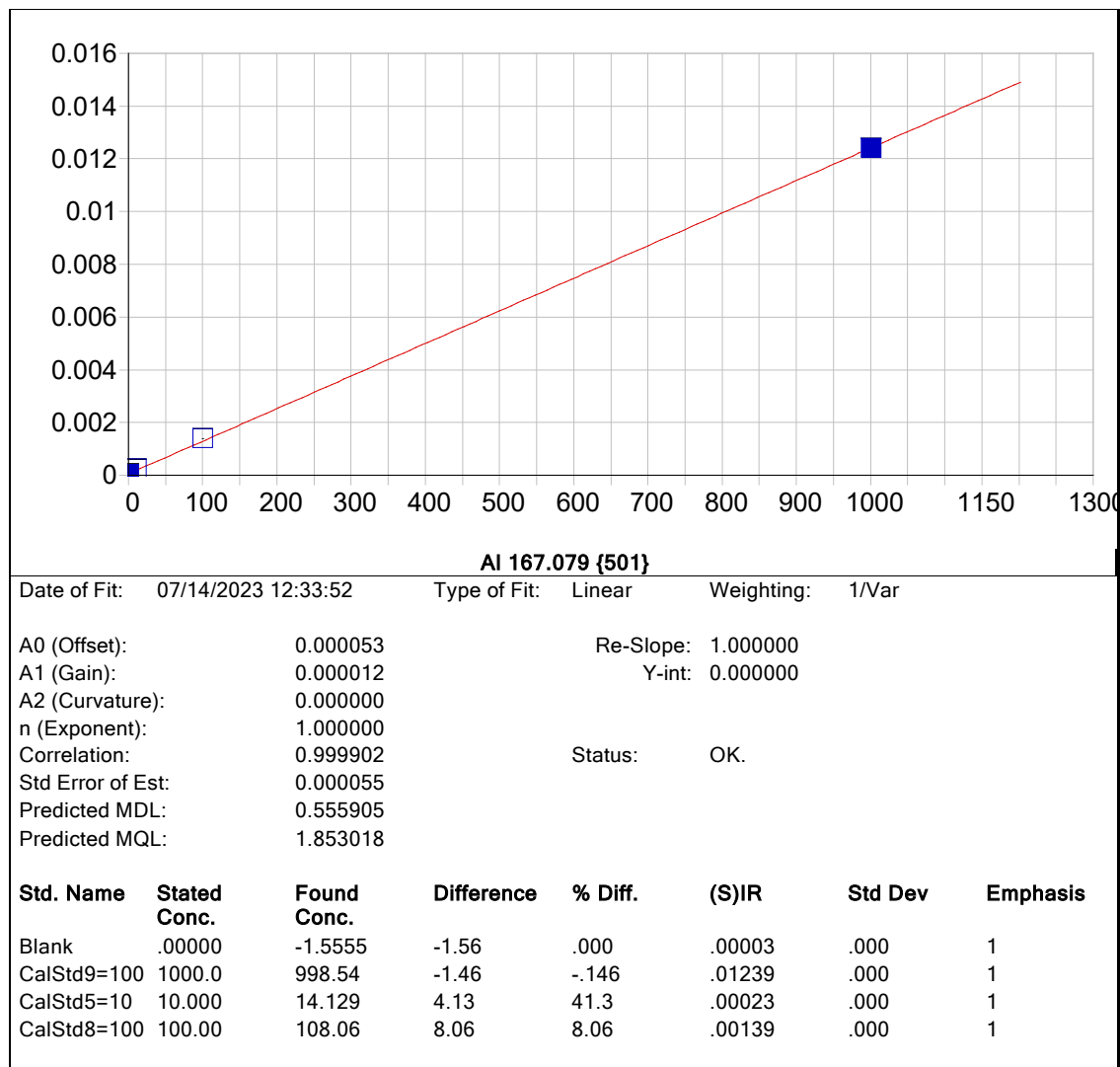
Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Ag 328.068 {103}	☒	2	Ce	-0.004385	0.000000	No
			Ti	0.000000	0.000000	No
Ag 338.289 {100}	☒	1	Fe	0.000095	0.000000	No
Al 167.079 {501}	☒	1	Fe	0.000000	0.000000	No
Al 309.271 {109}	☒	None				
Al 396.152 { 85}	☒	None				
As 193.759 {474}	☒	1	Al	0.001900	0.000000	No
As 197.262 {471}	☒	1	Al	-0.000116	0.000000	No
Ba 233.527 {145}	☒	1	Fe	-0.000003	0.000000	No
Ba 233.527 {445}	☒	2	Fe	-0.000022	0.000000	No
			Cu	0.000181	0.000000	No
Ba 455.403 { 74}	☒	1	Fe	0.000006	0.000000	No
Ba 493.409 { 68}	☒	1	S	0.000000	0.000000	No
Be 234.861 {144}	☒	None				
Be 313.042 {108}	☒	1	Fe	0.000002	0.000000	No
Be 313.107 {108}	☒	1	Fe	0.000010	0.000000	No
Ca 184.006 {483}	☒	None				
Ca 315.887 {107}	☒	1	Fe	0.000000	0.000000	No
Ca 317.933 {106}	☒	None				
Ca 393.366 { 86}	☒	None				
Ca 396.847 { 85}	☒	None				
Cd 226.502 {449}	☒	1	Fe	0.000075	0.000000	No
Cd 228.802 {448}	☒	1	Fe	-0.000007	0.000000	No
Co 228.616 {447}	☒	4	Fe	0.000003	0.000000	No
			Ba	0.000092	0.000000	No
			Ti	0.002165	0.000000	No
			Ni	0.003013	0.000000	No
Co 238.892 {141}	☒	1	Fe	0.000226	0.000000	No
Cr 205.560 {464}	☒	1	Fe	0.000000	0.000000	No
Cr 267.716 {126}	☒	1	Fe	-0.000001	0.000000	No
Cu 223.008 {451}	☒	3	Fe	-0.000020	0.000000	No
			Tl	0.000000	0.000000	No
			Mo	0.009000	0.000000	No
Cu 324.754 {104}	☒	1	Fe	-0.000227	0.000000	No
Cu 327.396 {103}	☒	1	Fe	-0.000007	0.000000	No
Fe 234.349 {144}	☒	None				
Fe 239.562 {140}	☒	None				
Fe 259.940 {129}	☒	None				
Mg 202.582 {466}	☒	None				
Mg 279.079 {121}	☒	None				
Mg 280.270 {120}	☒	None				
Mn 257.610 {131}	☒	1	Mg	0.000003	0.000000	No
Mn 259.373 {130}	☒	1	Mg	0.001068	0.000000	No
Mo 202.030 {466}	☒	1	Fe	0.000000	0.000000	No

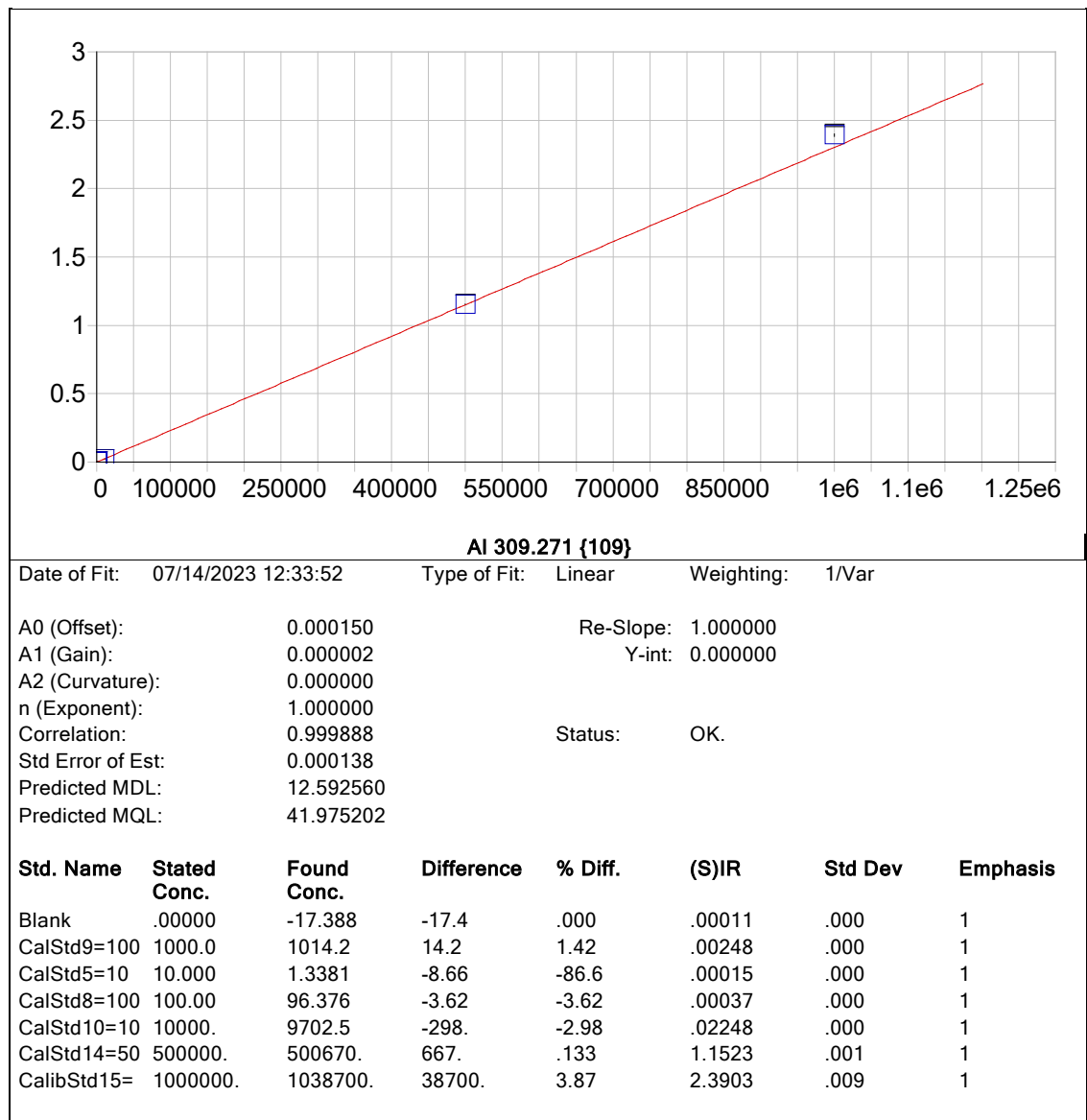
Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Mo 204.598 {464}	☒	1	Fe	0.000028	0.000000	No
Ni 221.647 {452}	☒	1	Ca	-0.000003	0.000000	No
Ni 231.604 {445}	☒	4	Fe	-0.000017	0.000000	No
			Co	-0.000134	0.000000	No
			Mo	0.000840	0.000000	No
			Be	-0.001918	0.000000	No
Pb 216.999 {455}	☒	2	Al	0.007139	0.000000	No
			Na	0.000000	0.000000	No
Pb 220.353 {153}	☒	1	Fe	-0.000210	0.000000	No
Pb 220.353 {453}	☒	2	Si	0.000000	0.000000	No
			Al	-0.000029	0.000000	No
Sb 206.833 {463}	☒	2	Fe	-0.000097	0.000000	No
			Cr	0.000000	0.000000	No
Sb 217.581 {455}	☒	2	Fe	-0.000155	0.000000	No
			Ni	0.000133	0.000000	No
Se 196.090 {472}	☒	1	Fe	0.000009	0.000000	No
Se 206.279 {463}	☒	1	Fe	0.000965	0.000000	No
Tl 190.856 {476}	☒	1	Fe	-0.000027	0.000000	No
Tl 190.856 {477}	☒	1	Fe	-0.000239	0.000000	No
V 290.882 {116}	☒	1	Fe	0.000207	0.000000	No
V 292.402 {115}	☒	5	Fe	-0.000005	0.000000	No
			Cr	-0.000051	0.000000	No
			Ti	0.000420	0.000000	No
			Mo	-0.000481	0.000000	No
			Cu	-0.001538	0.000000	No
Zn 206.200 {463}	☒	1	Fe	0.000015	0.000000	No
Zn 213.856 {457}	☒	1	Fe	0.000120	0.000000	No
Y 224.306 {450}* Y 324.228 {104}* Y 371.030 {91}* Na 330.237 {102}	☒ ☒ ☒ ☒	None None None 2				
			Sr	0.000000	0.000000	No
			Fe	-0.000006	0.000000	No
Na 588.995 {57}	☒	1	Fe	-0.000000	0.000000	No
Na 589.592 {57}	☒	1	Fe	0.000000	0.000000	No
Si 212.412 {458}	☒	1	Fe	0.000004	0.000000	No
Si 251.611 {134}	☒	1	Fe	-0.000053	0.000000	No
Ti 323.452 {104}	☒	1	Fe	0.000003	0.000000	No
Ti 334.941 {101}	☒	1	Fe	0.000040	0.000000	No
Sr 407.771 {83}	☒	1	Fe	0.000018	0.000000	No
Sr 421.552 {80}	☒	1	Ca	0.000013	0.000000	No
Sn 189.989 {477}	☒	1	Fe	0.000013	0.000000	No
Sn 189.989 {478}	☒	1	Fe	-0.000008	0.000000	No
B 249.678 {135}	☒	1	Fe	-0.000015	0.000000	No
B 249.773 {135}	☒	1	Fe	0.000809	0.000000	No

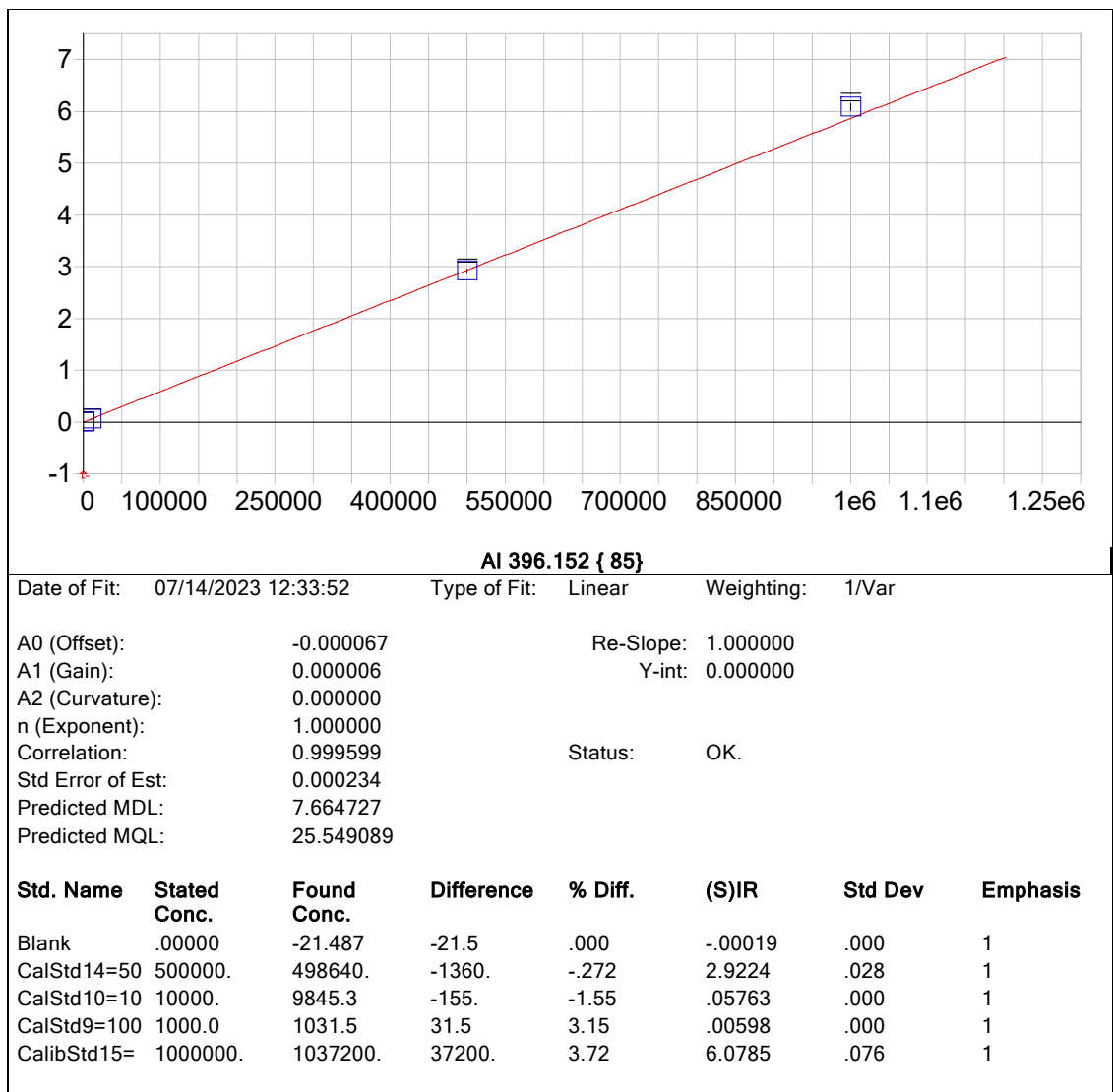
Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Li 610.353 { 55}	☒	1	Fe	0.000227	0.000000	No
Li 670.776 { 50}	☒	1	Fe	0.000020	0.000000	No
K 766.490 { 44}	☒	1	Fe	0.000001	0.000000	No
K 769.896 { 44}	☒	1	Fe	0.000000	0.000000	No
P 177.495 {489}	☒	1	Fe	0.000209	0.000000	No
S 182.034 {485}	☒	2	Mn	0.002145	0.000000	No
			Fe	0.000031	0.000000	No
Hg 184.950 {482}	☒	1	Fe	-0.000010	0.000000	No
Hg 194.227 {473}	☒	1	Fe	0.000007	0.000000	No
Ce 404.076 { 83}	☒	1	Fe	0.000227	0.000000	No

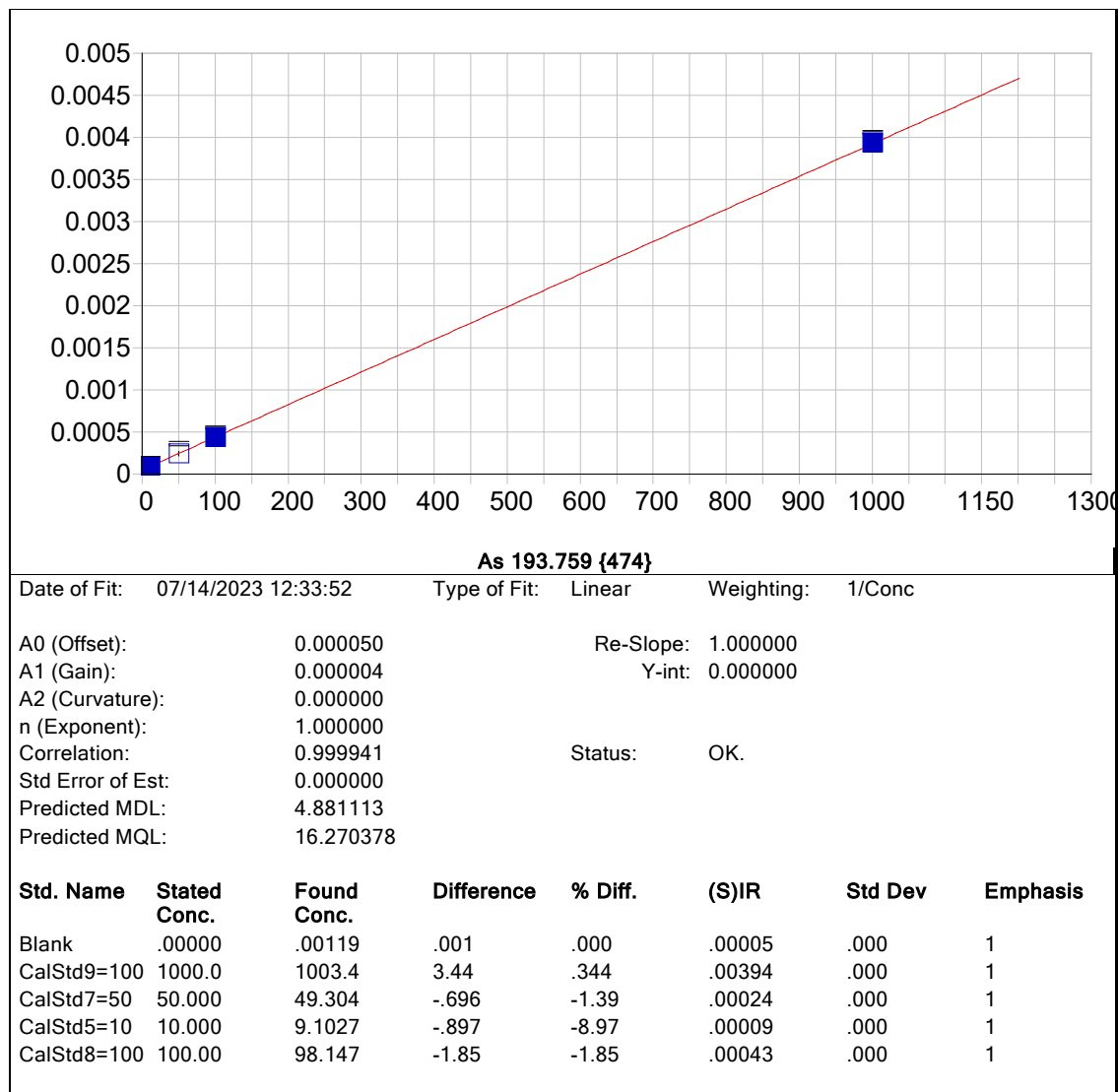


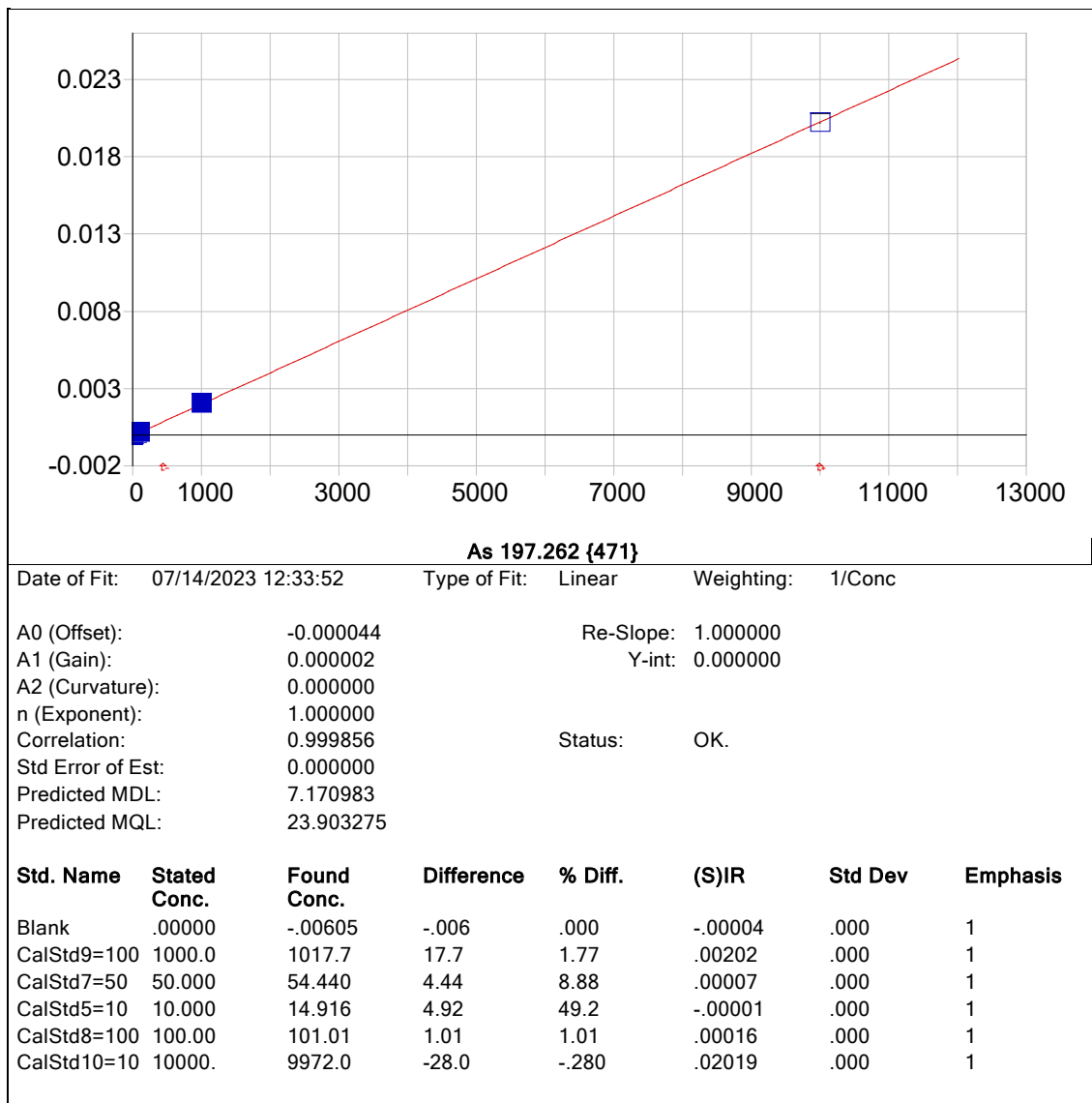


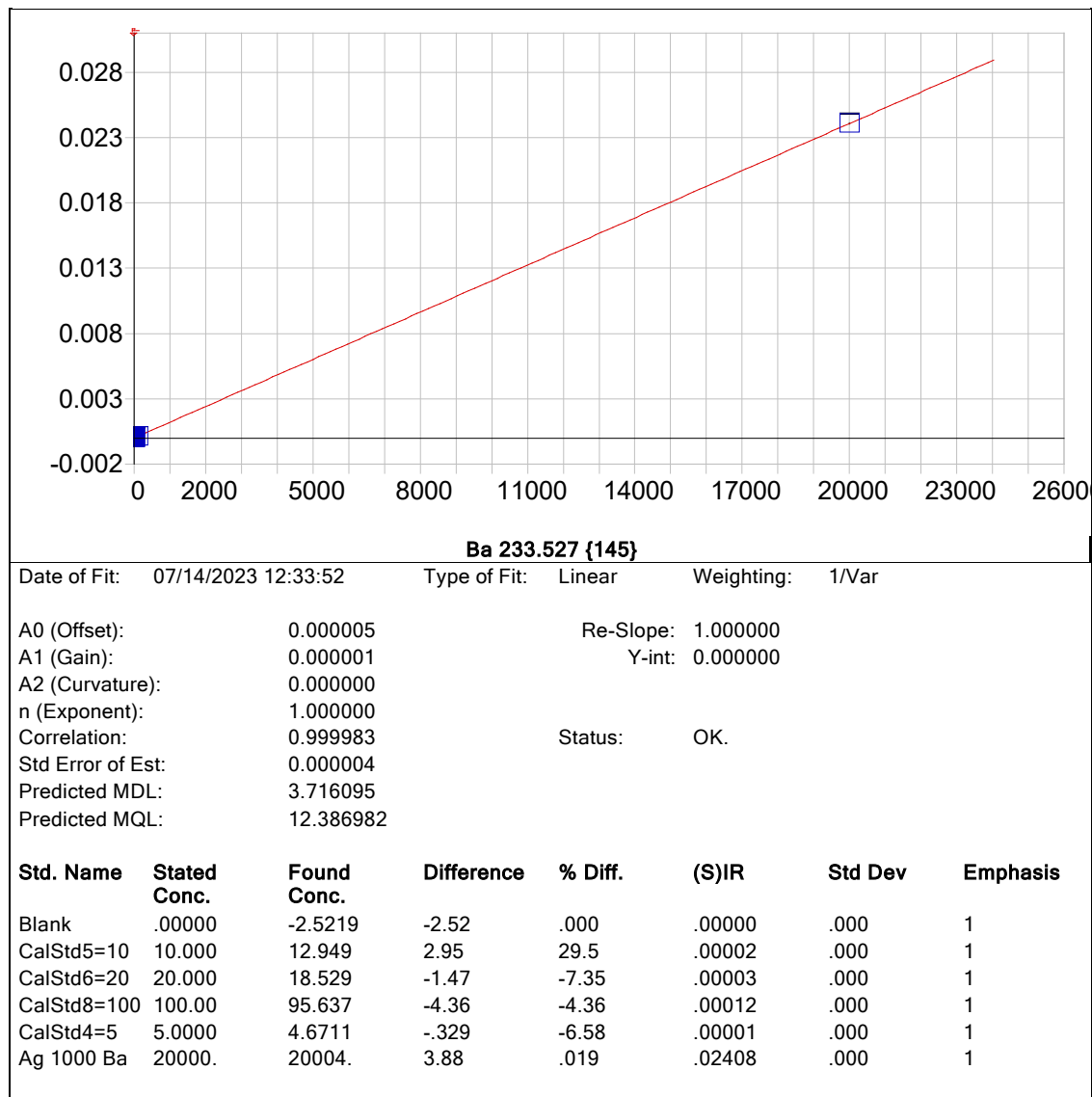


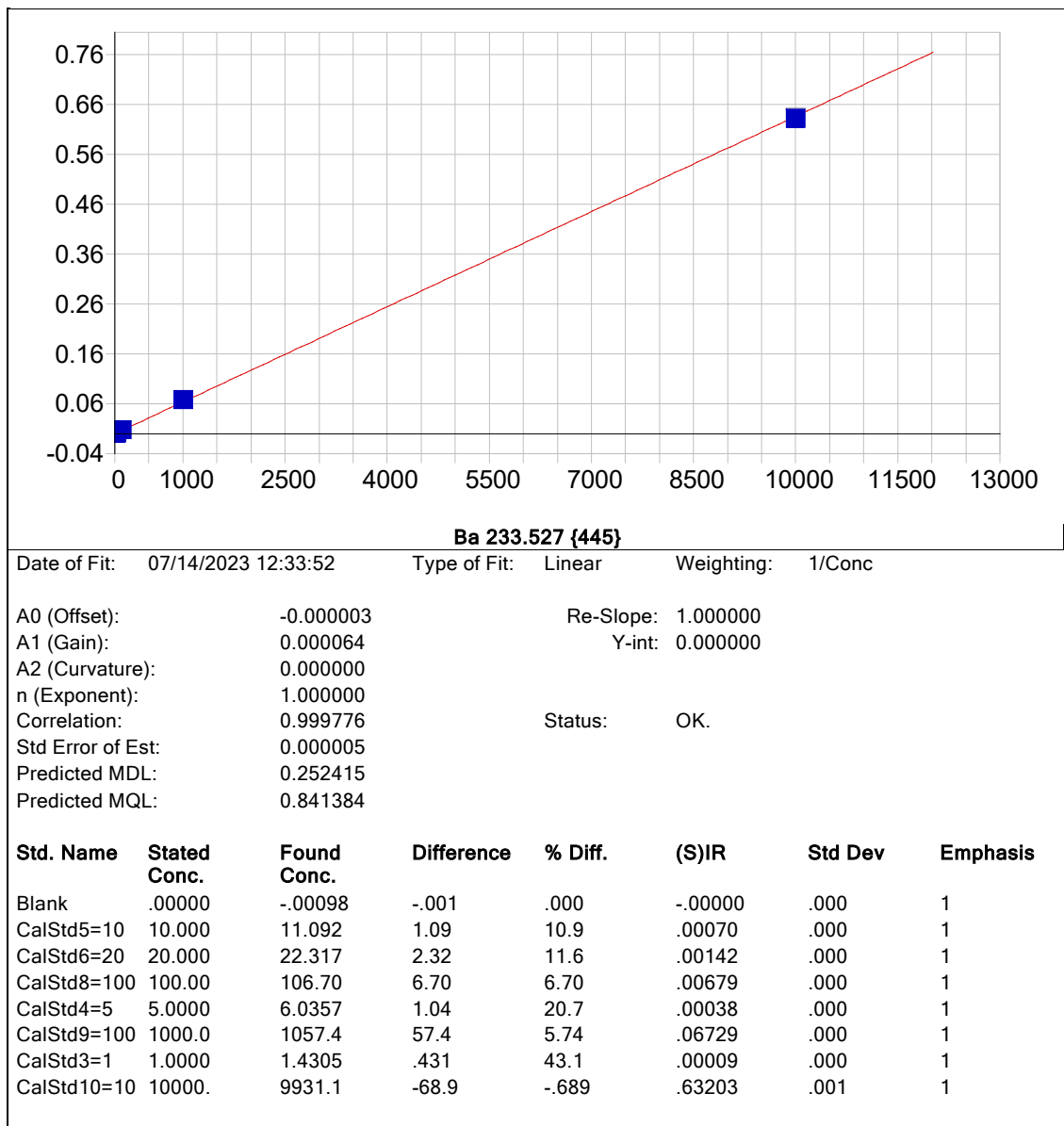


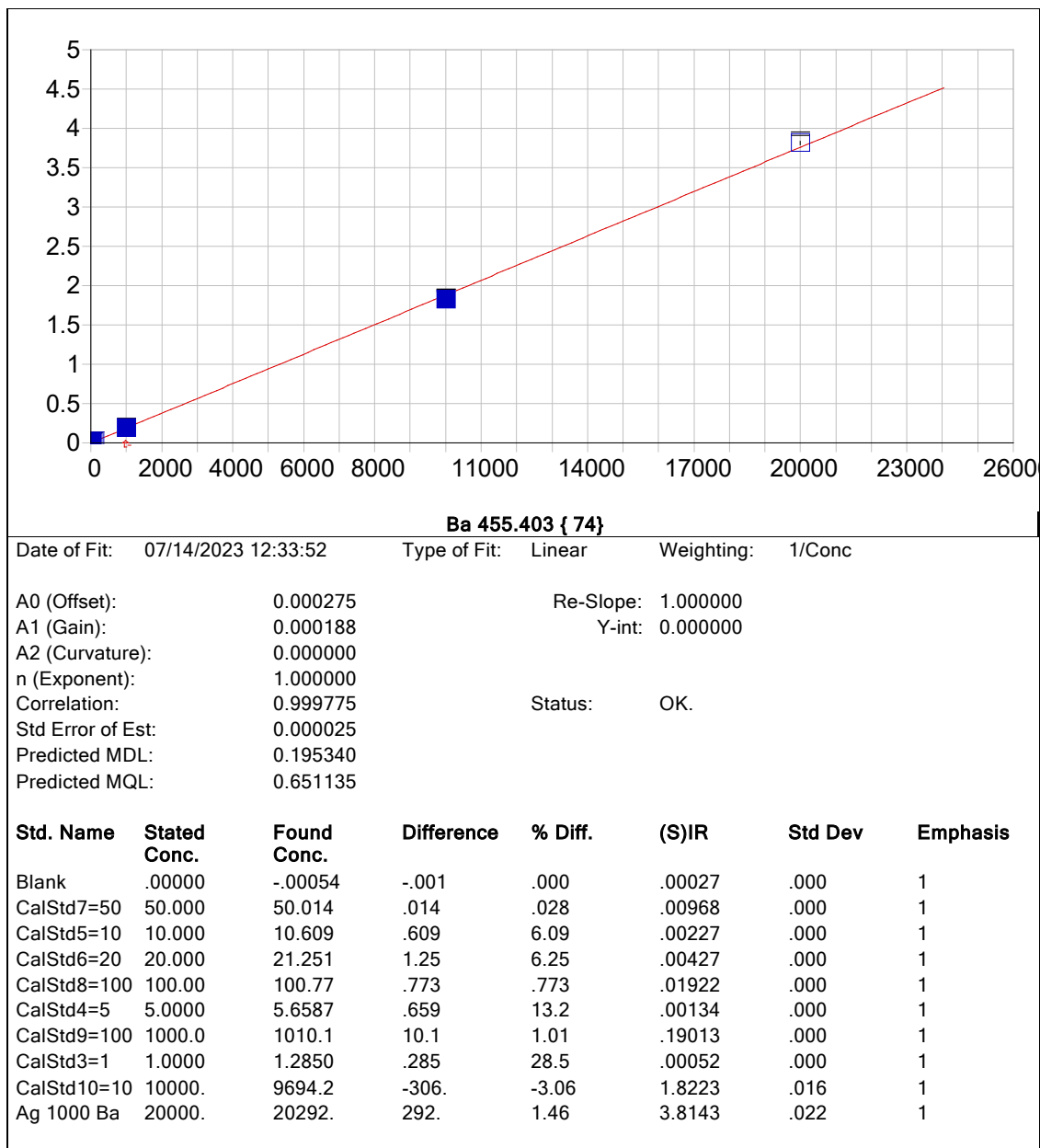


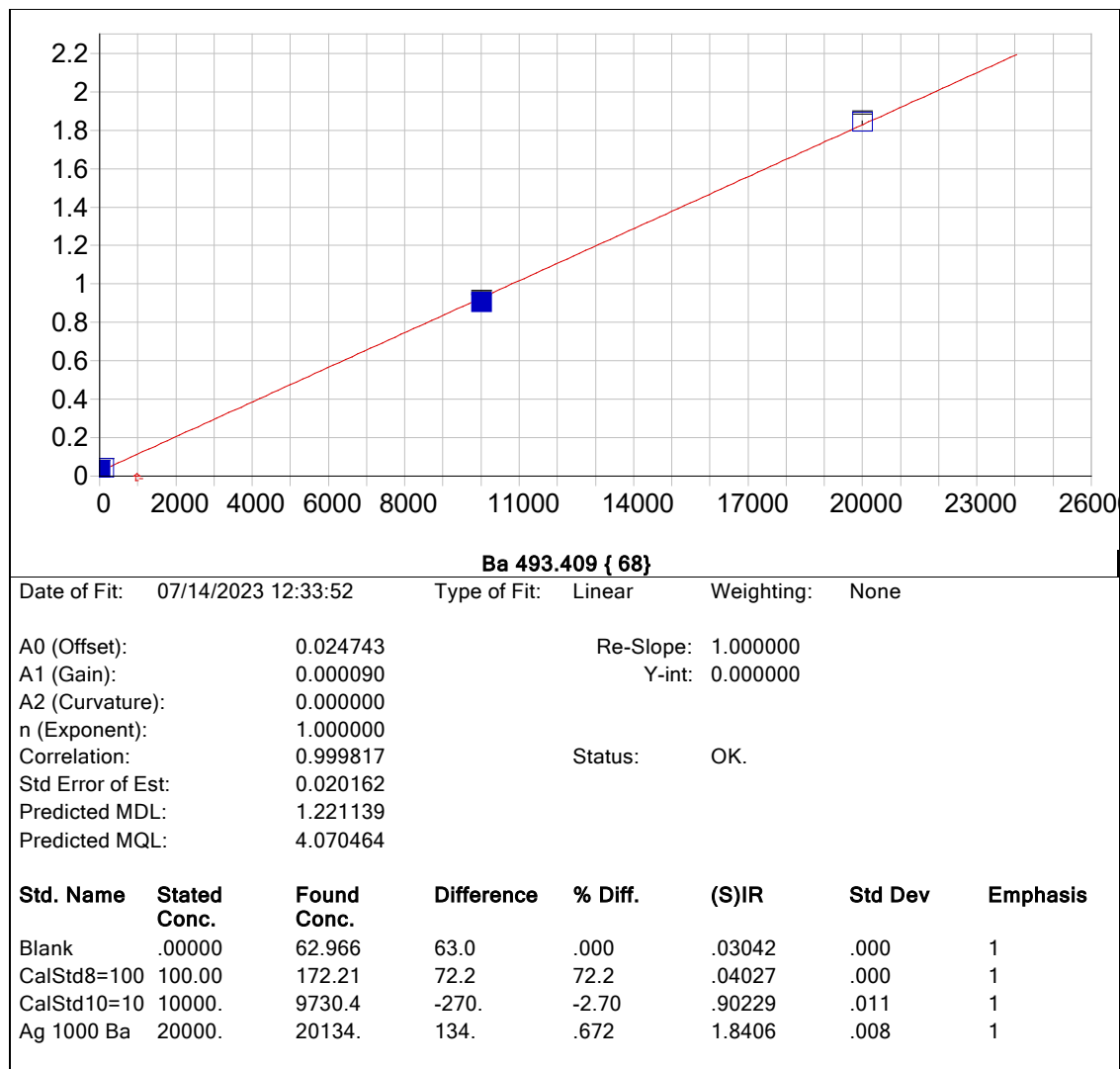


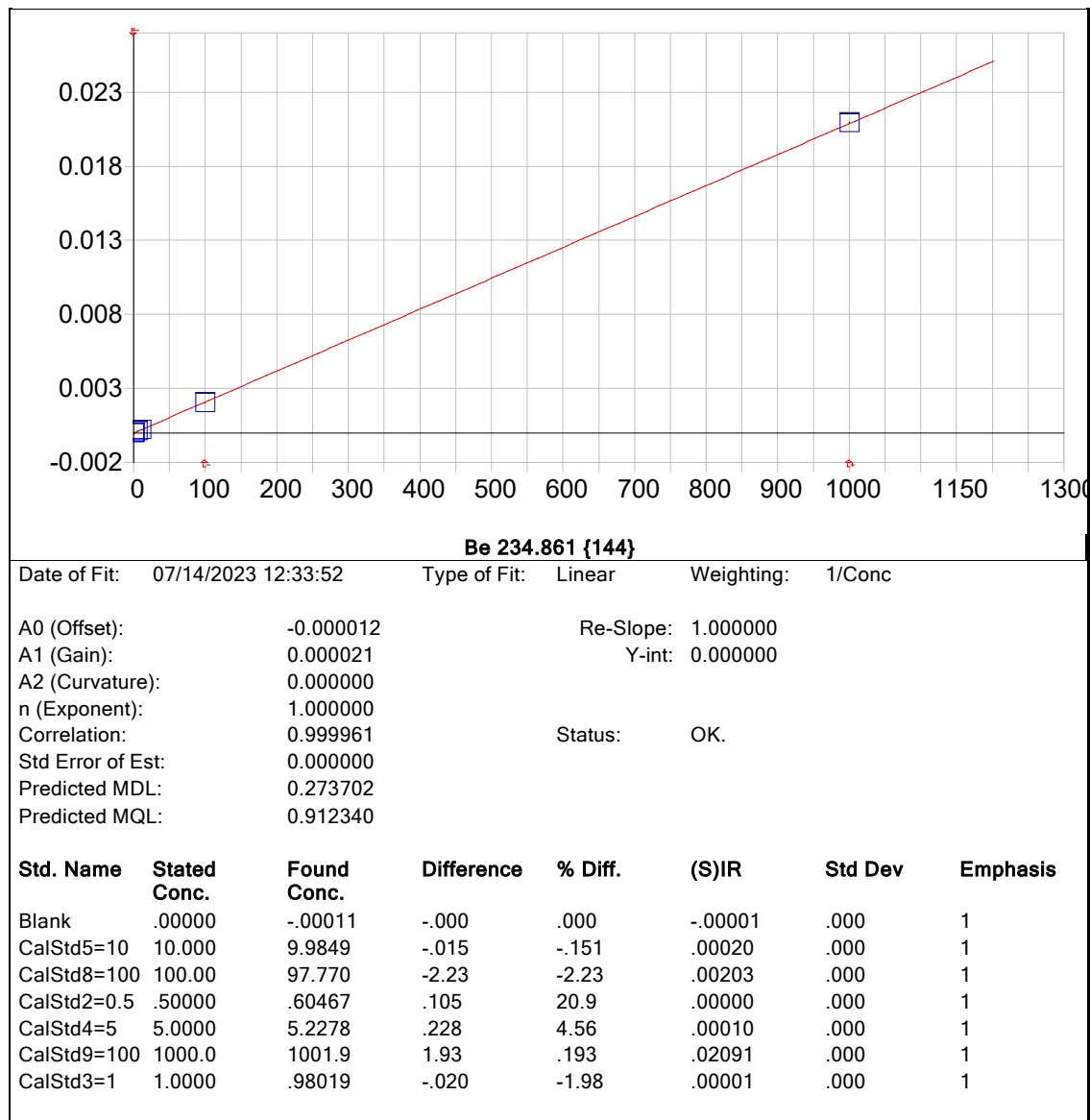


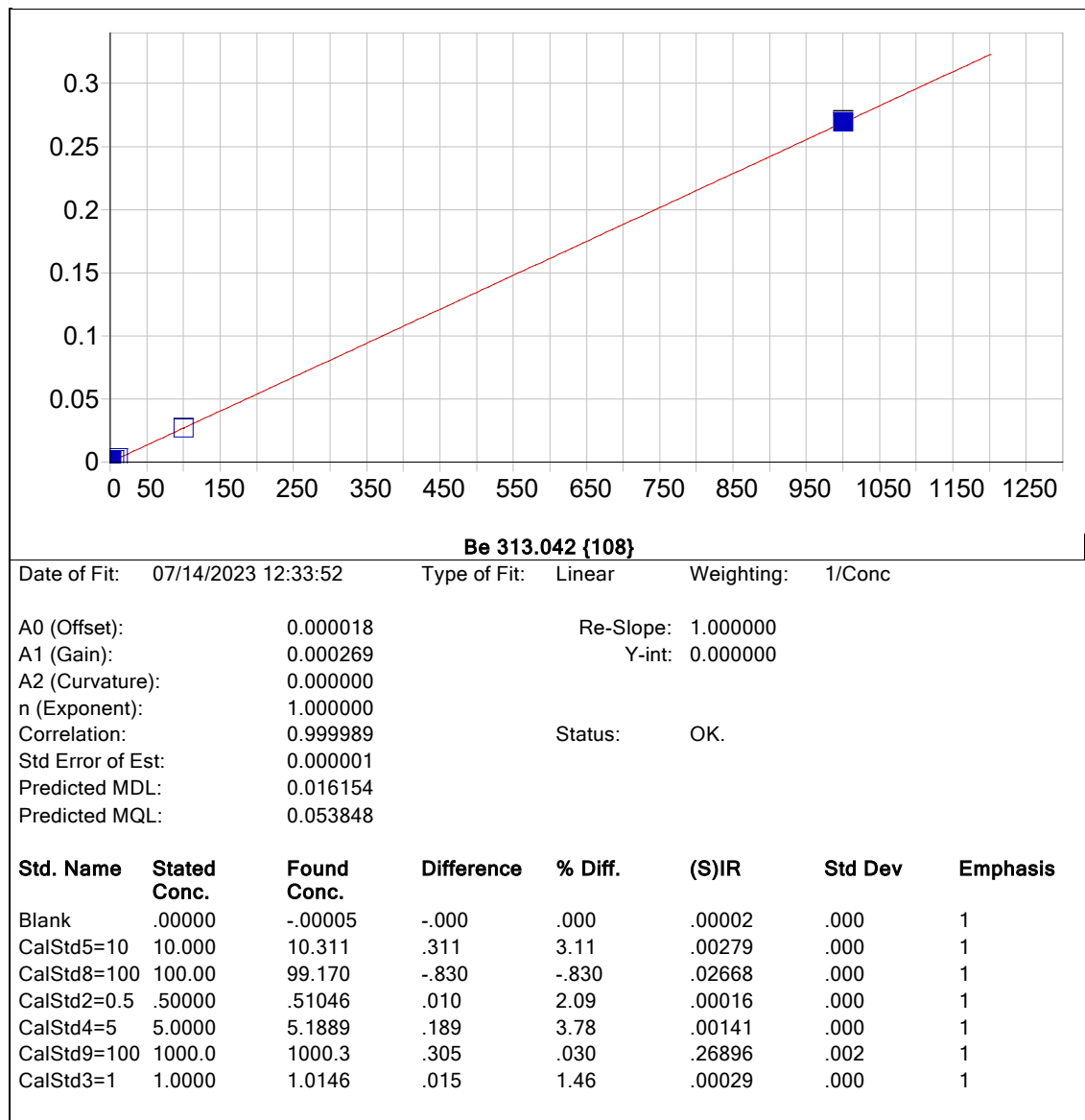


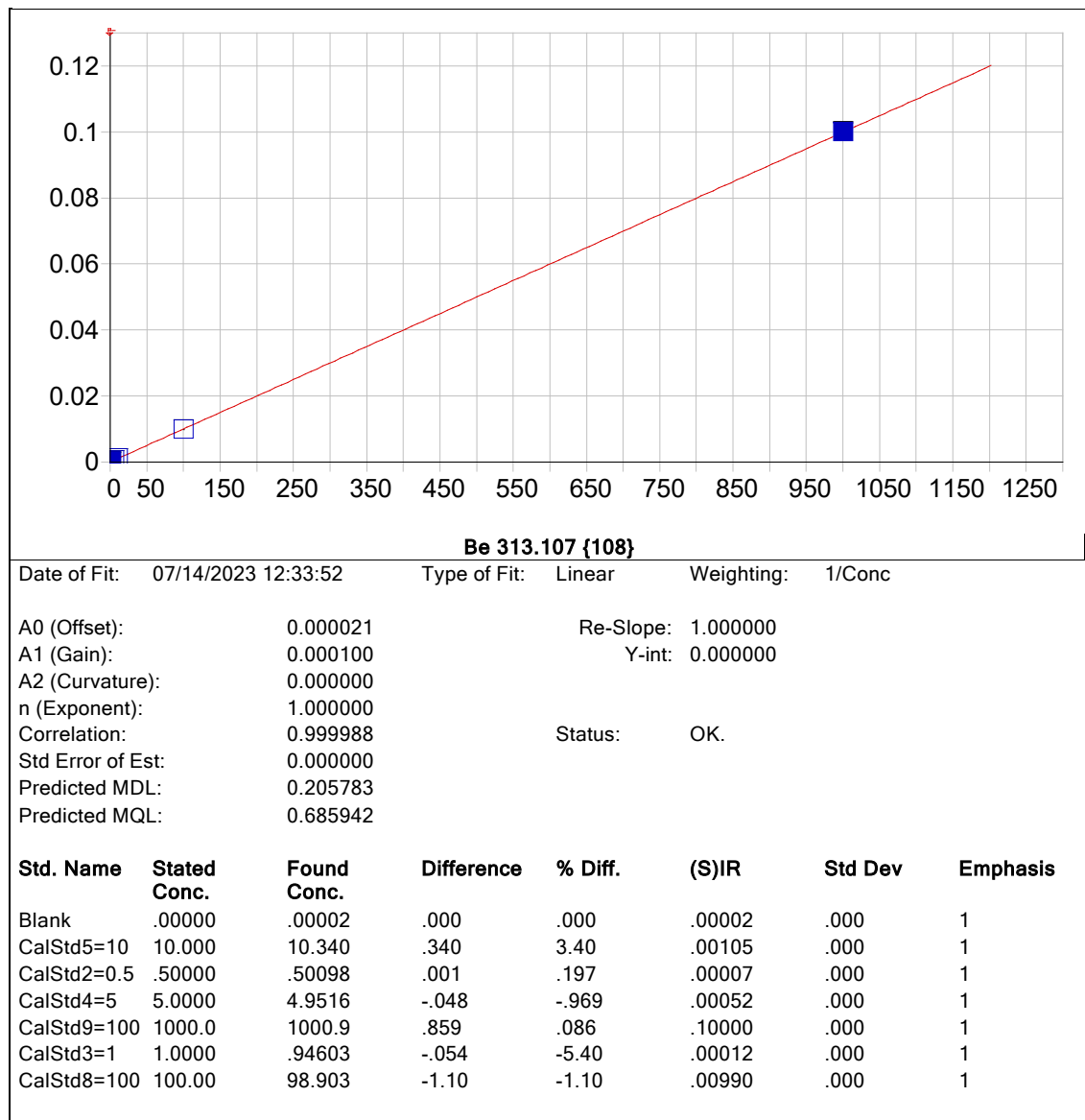


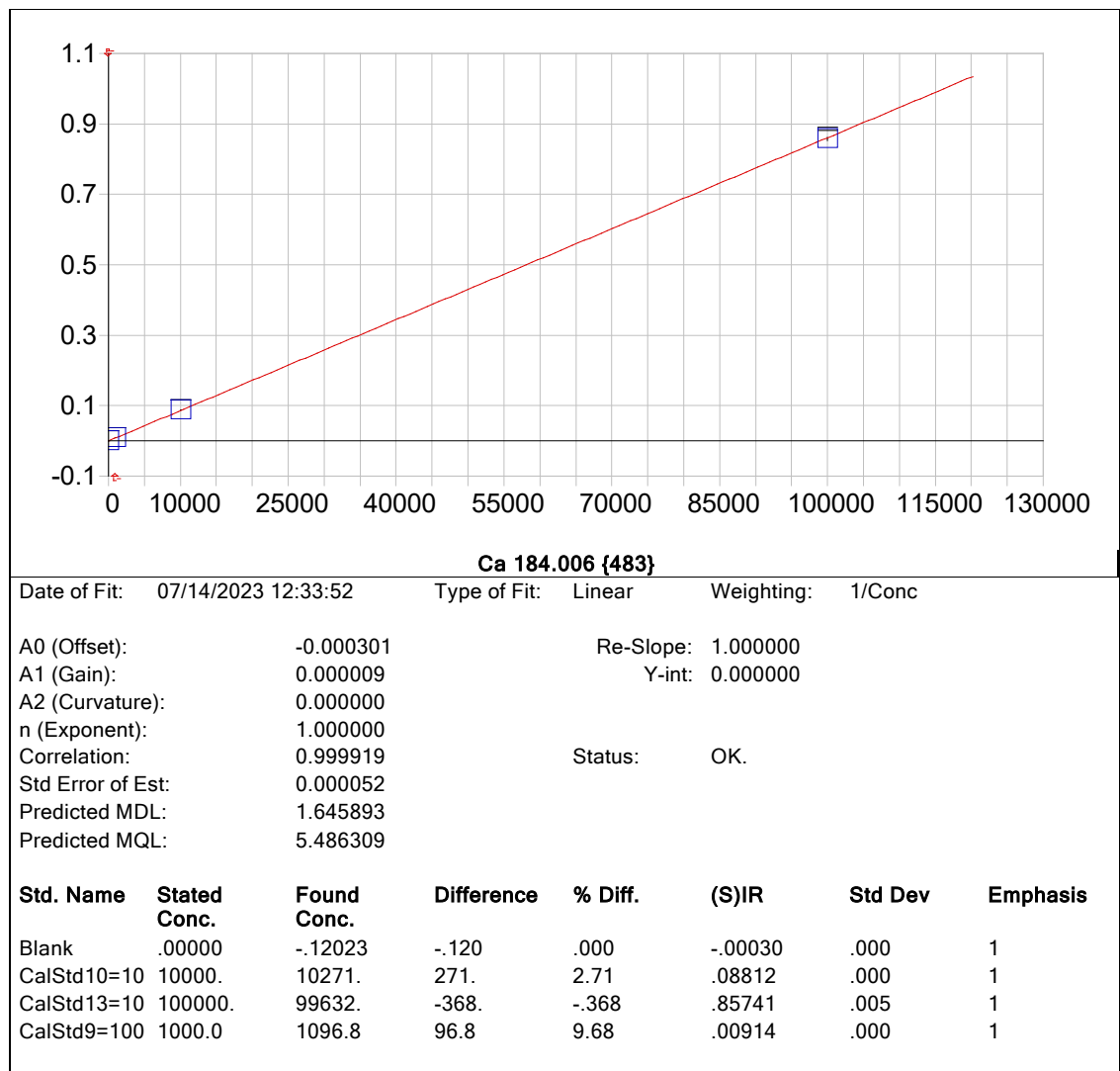


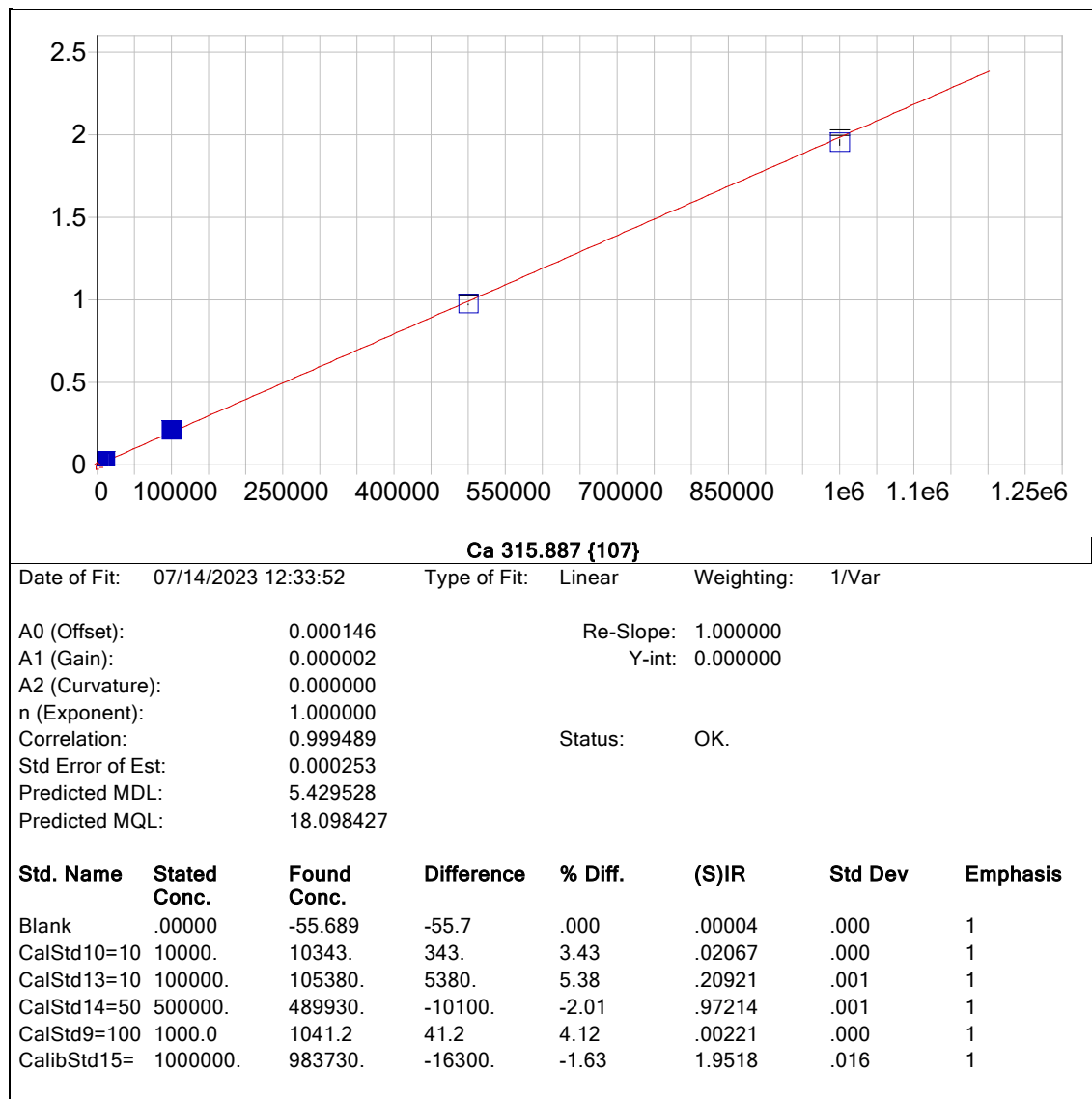


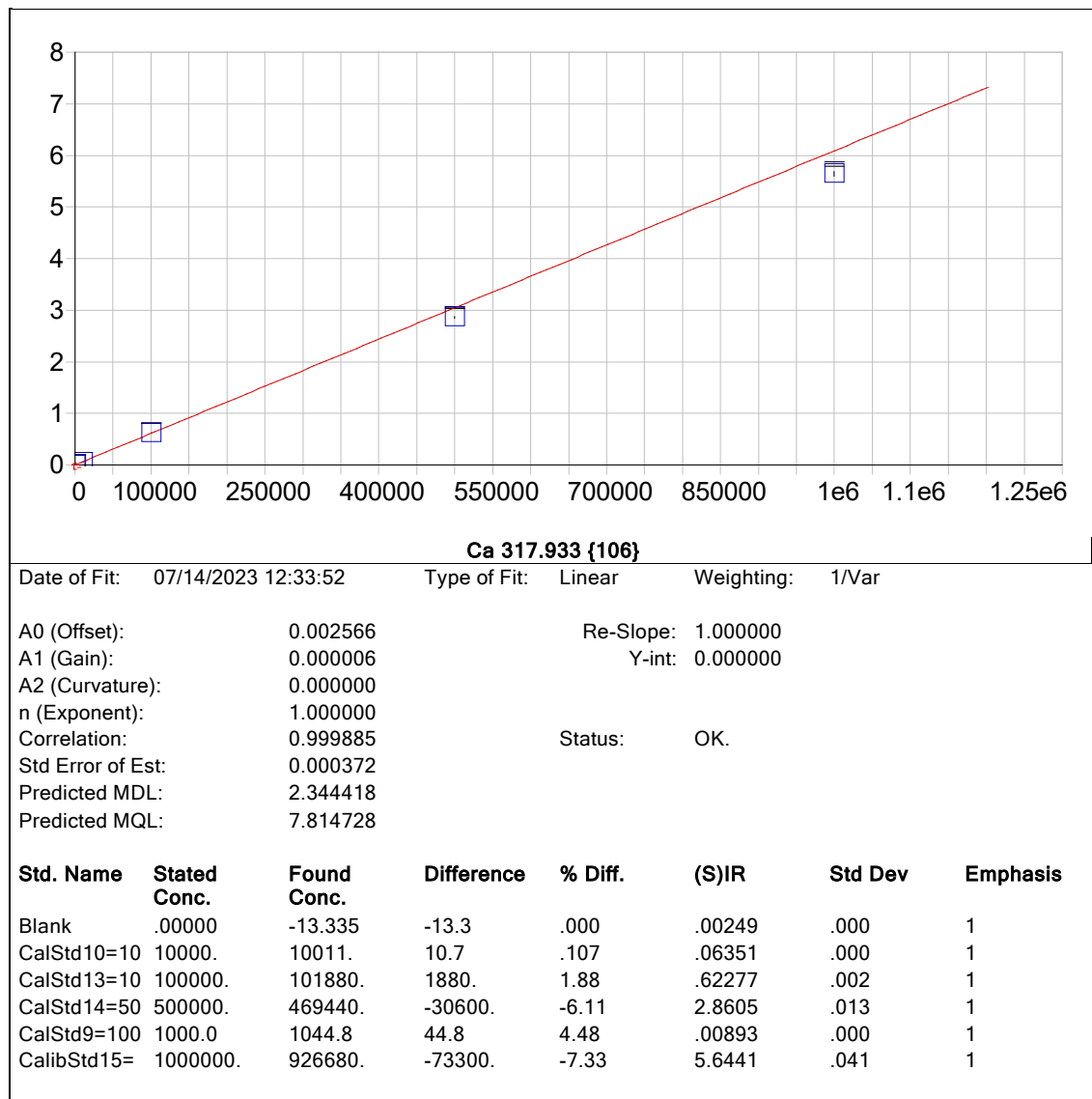


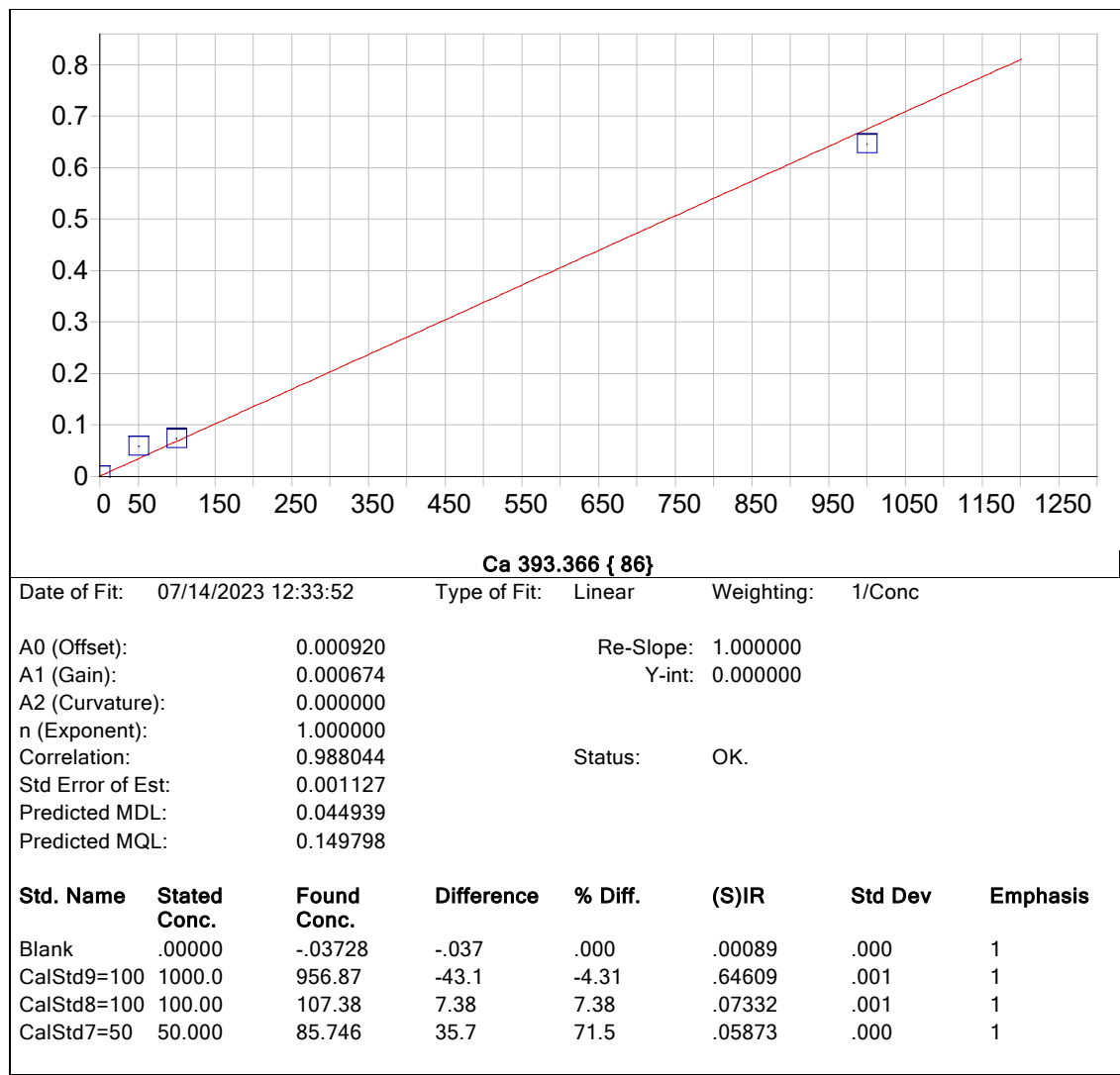


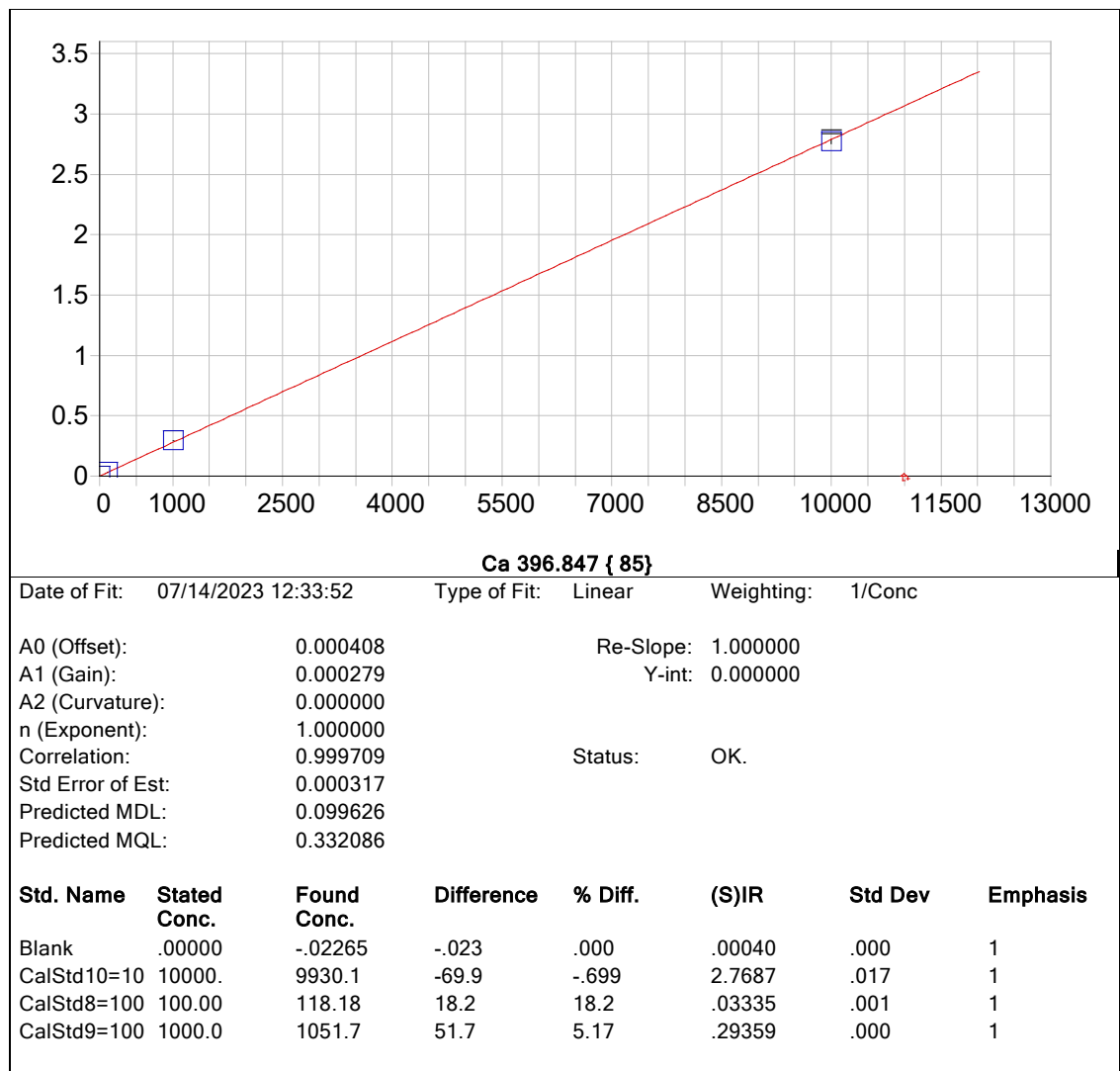


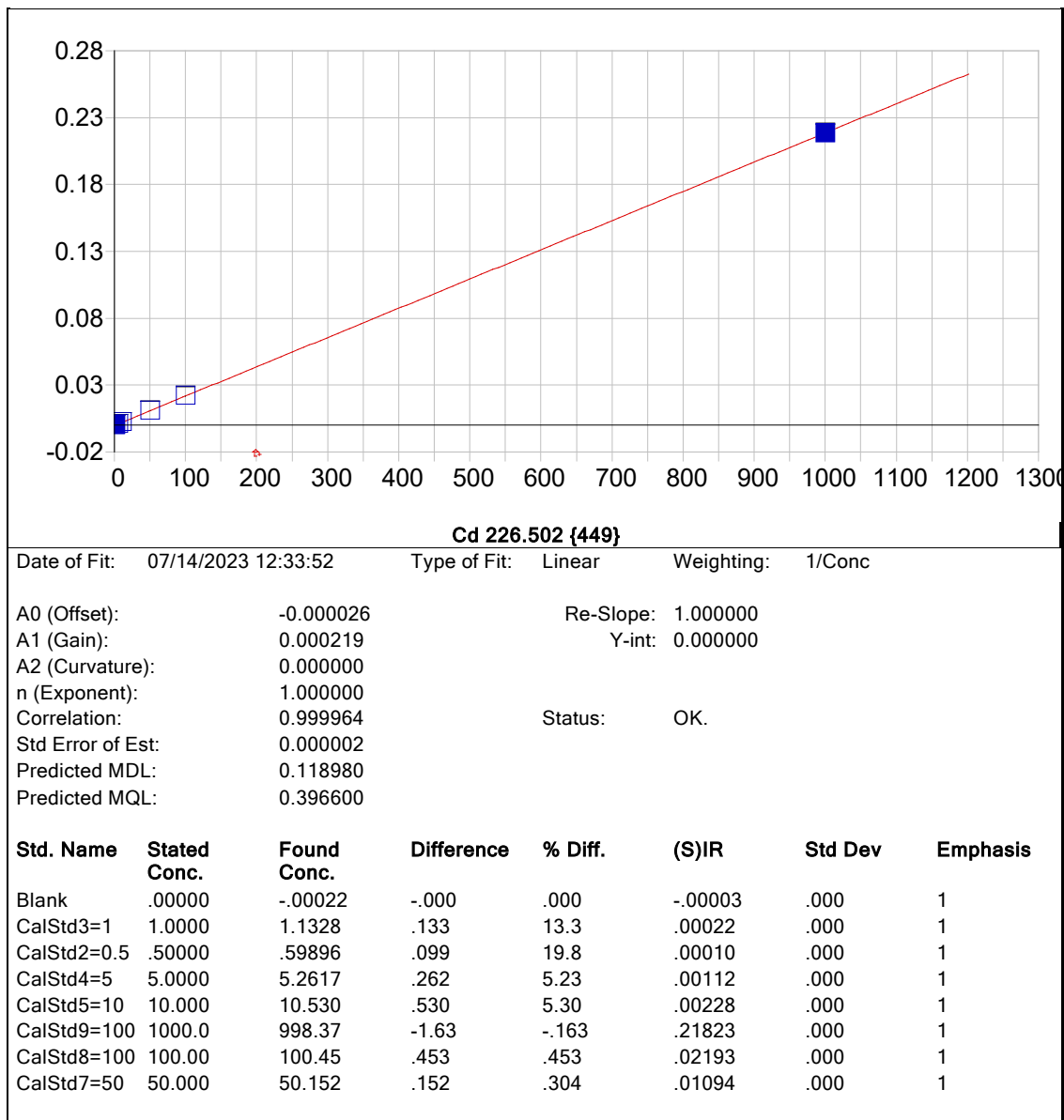


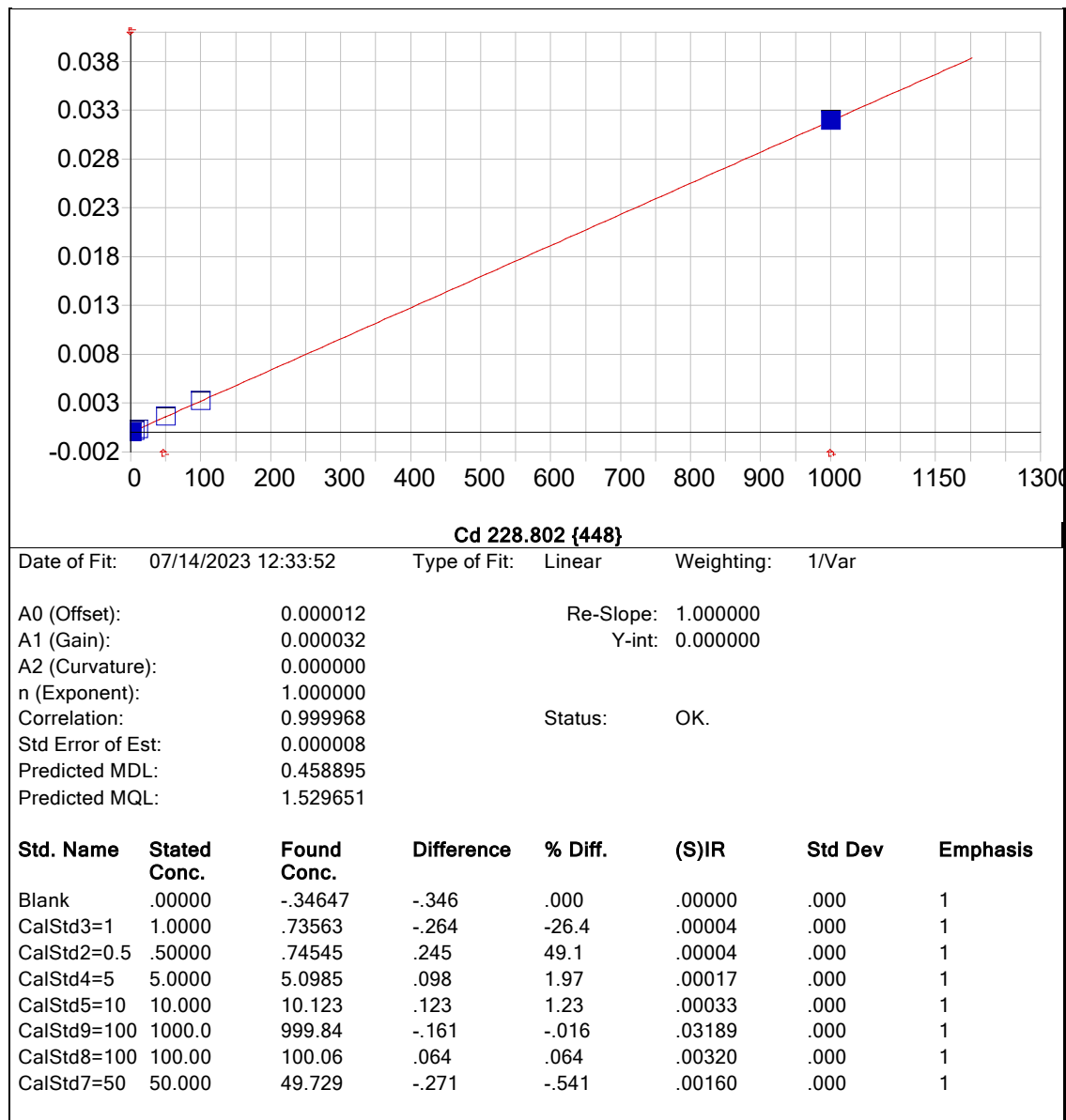


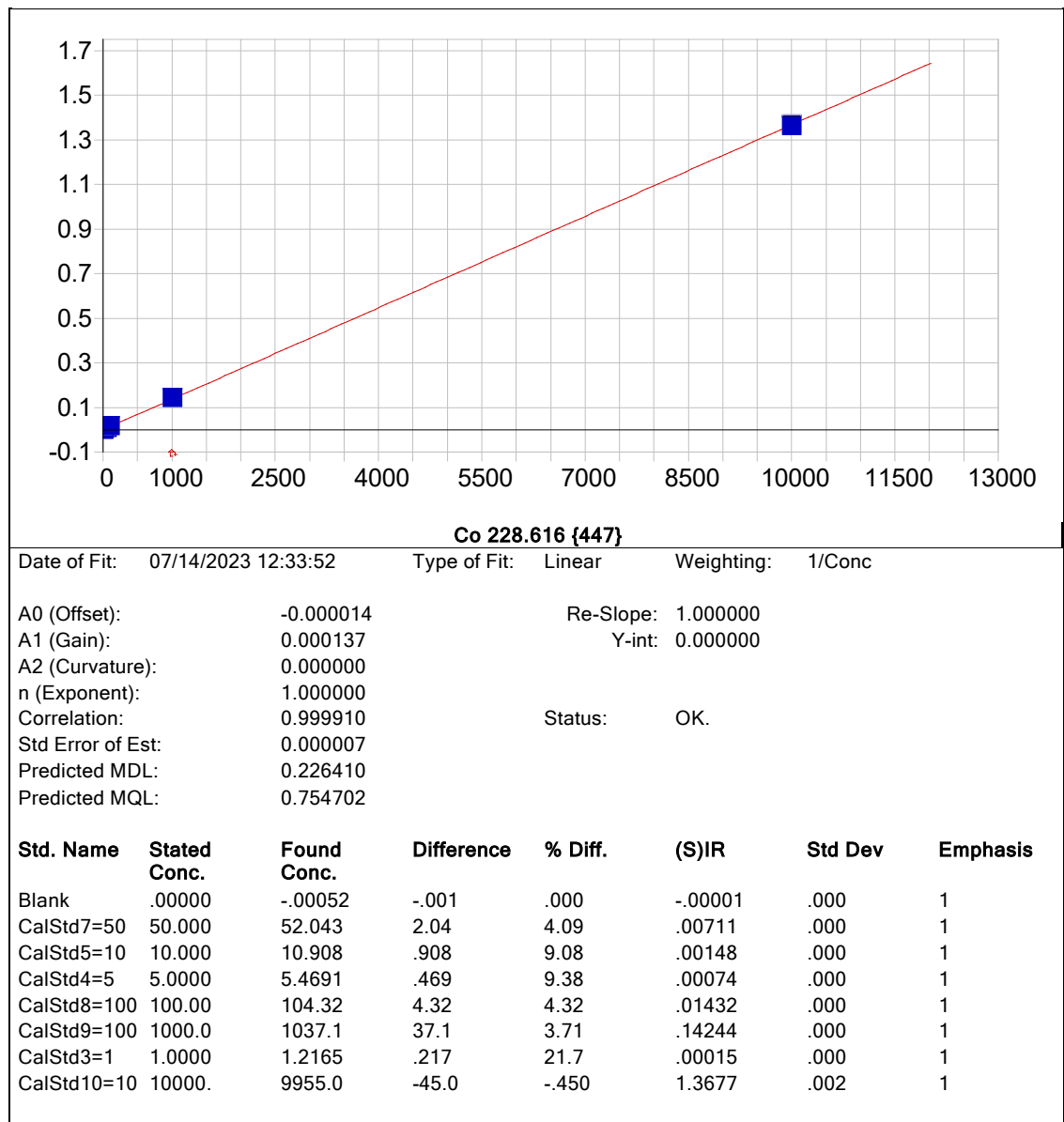


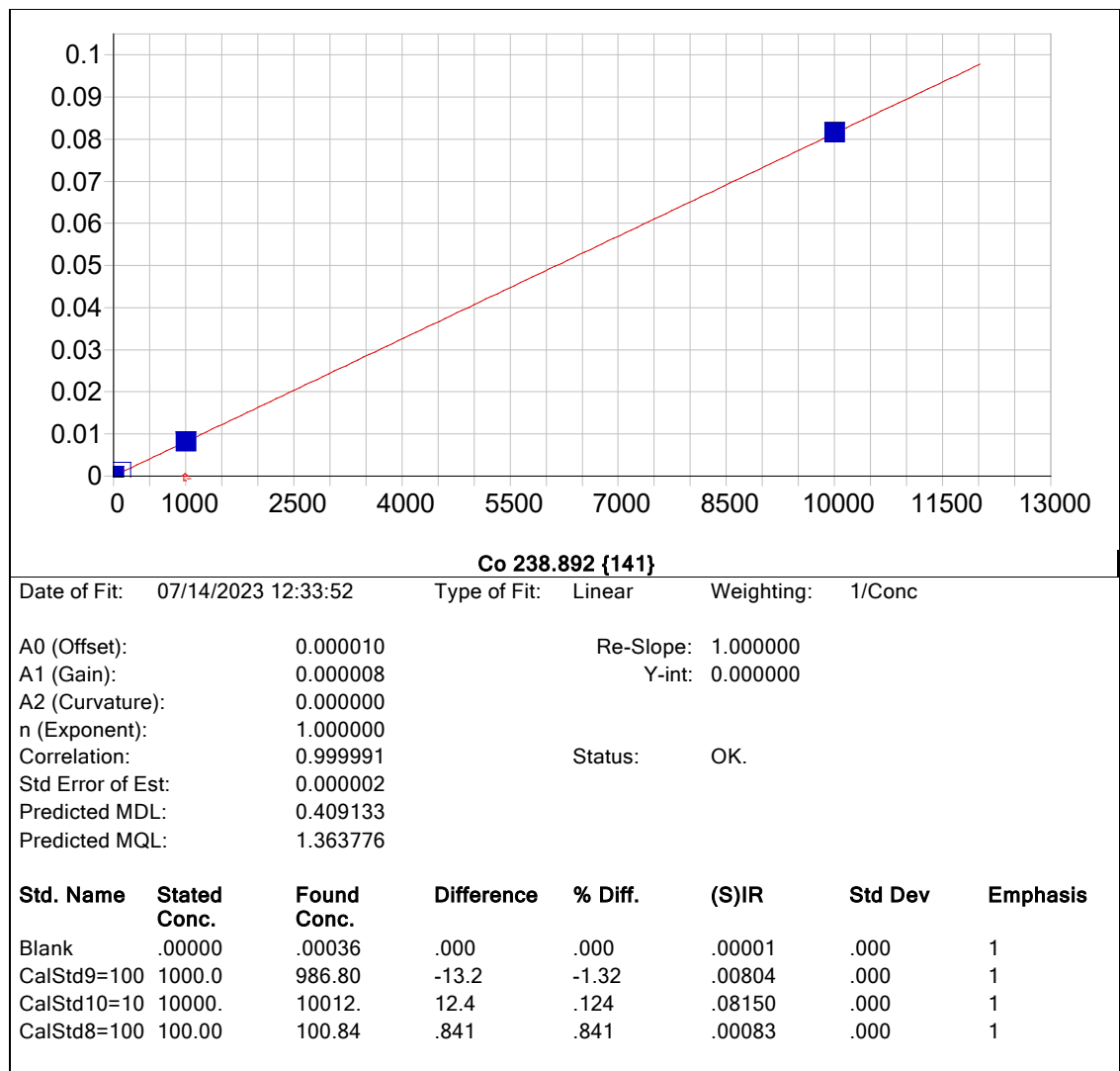


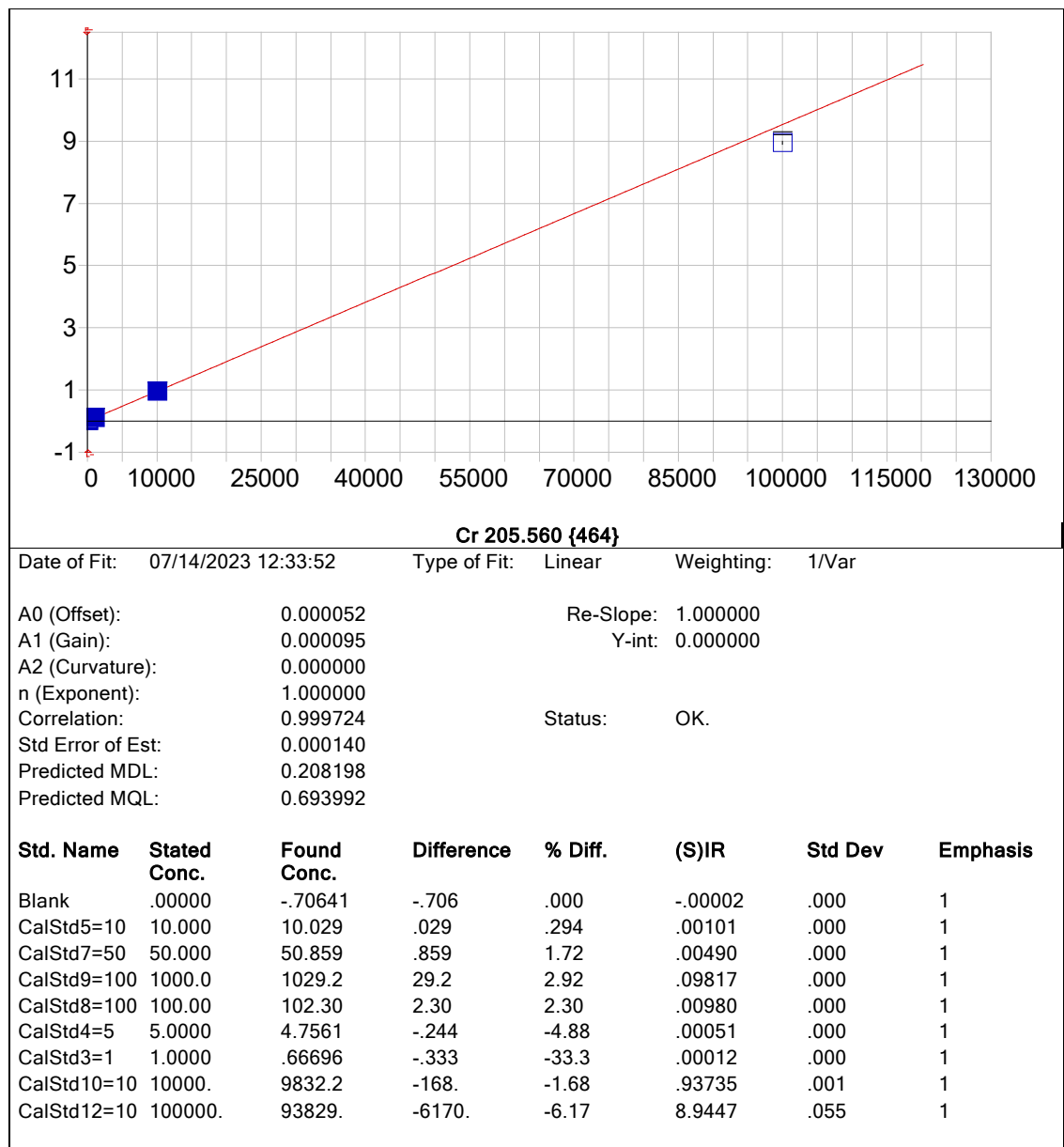


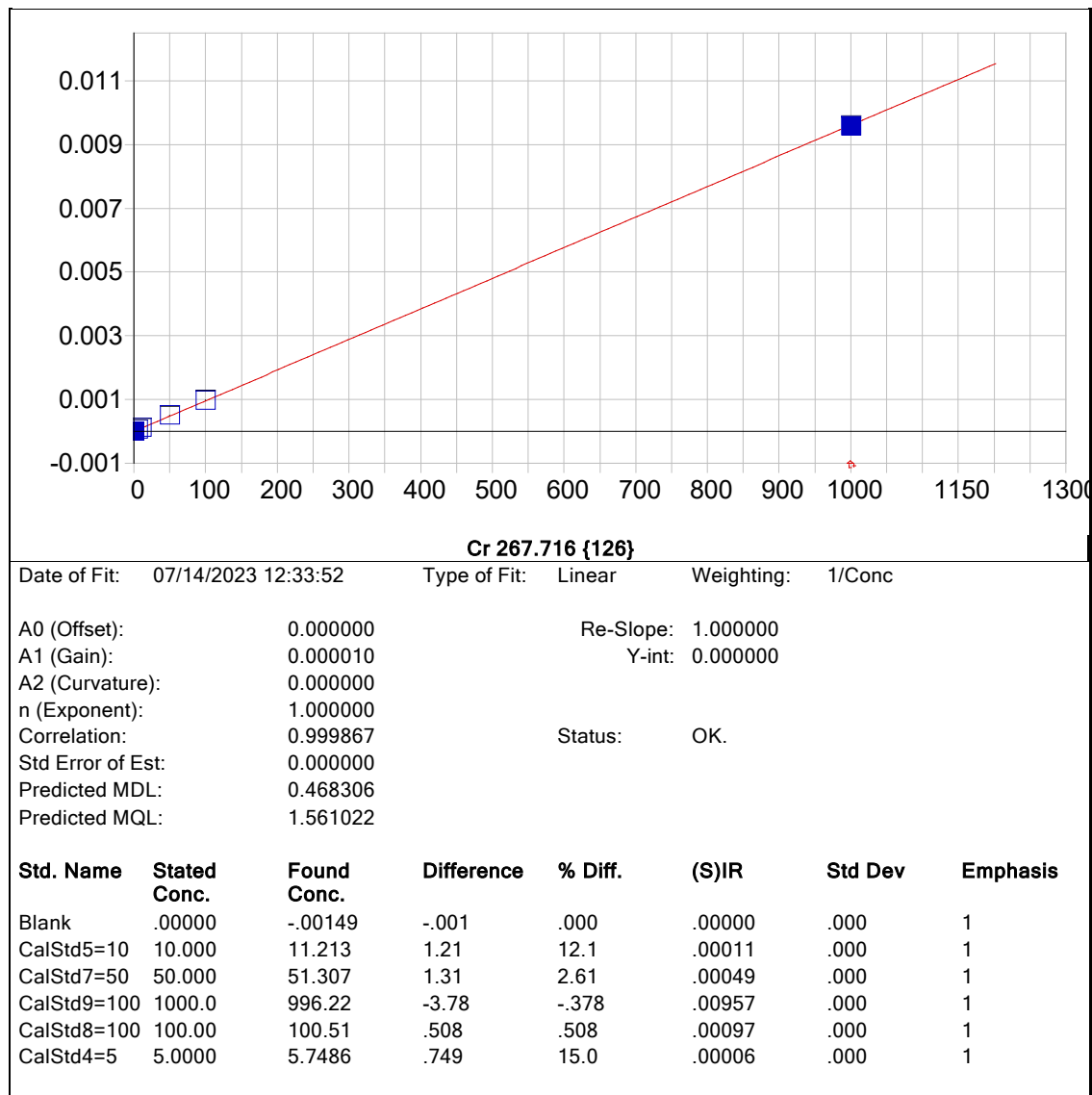


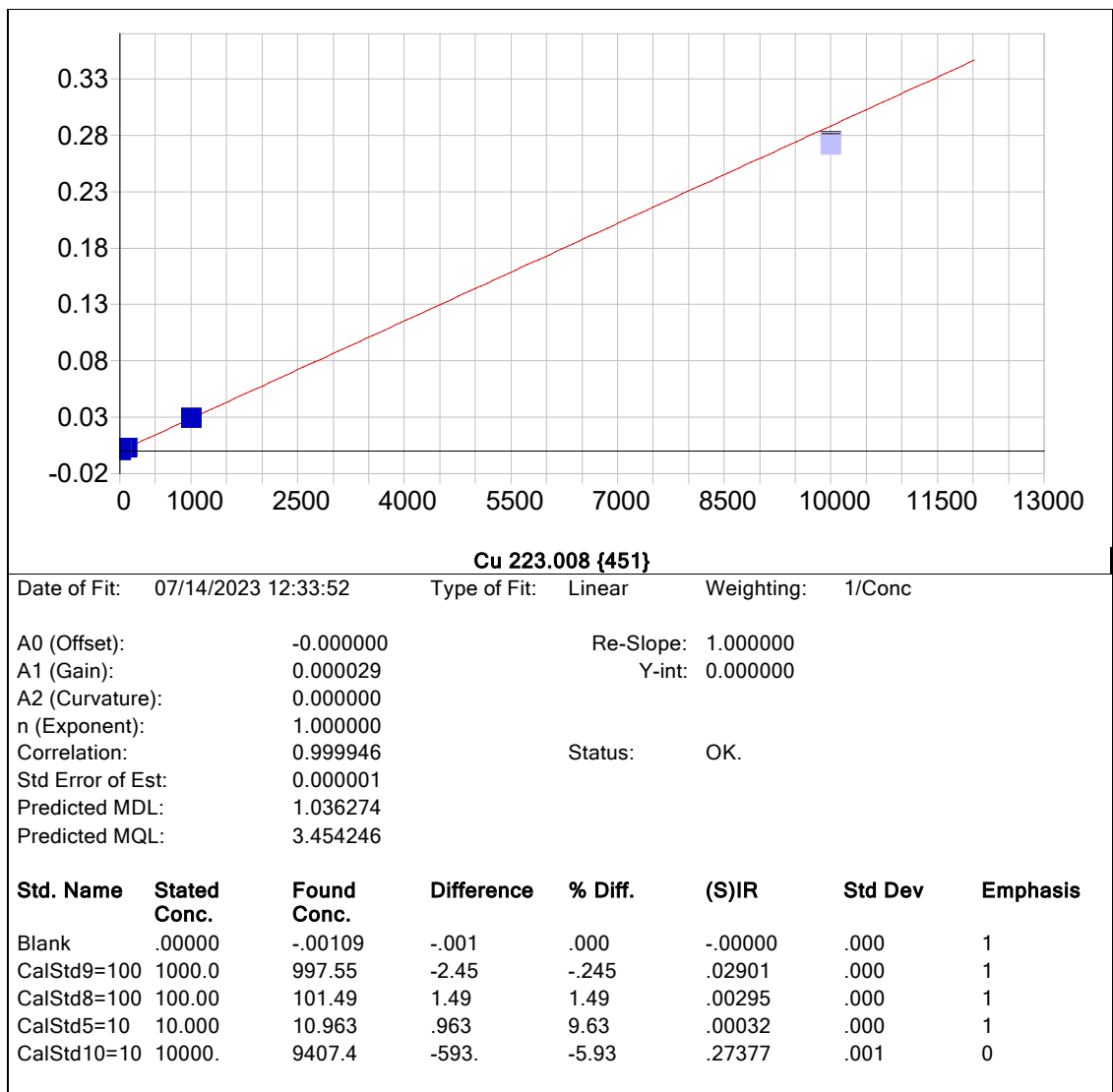


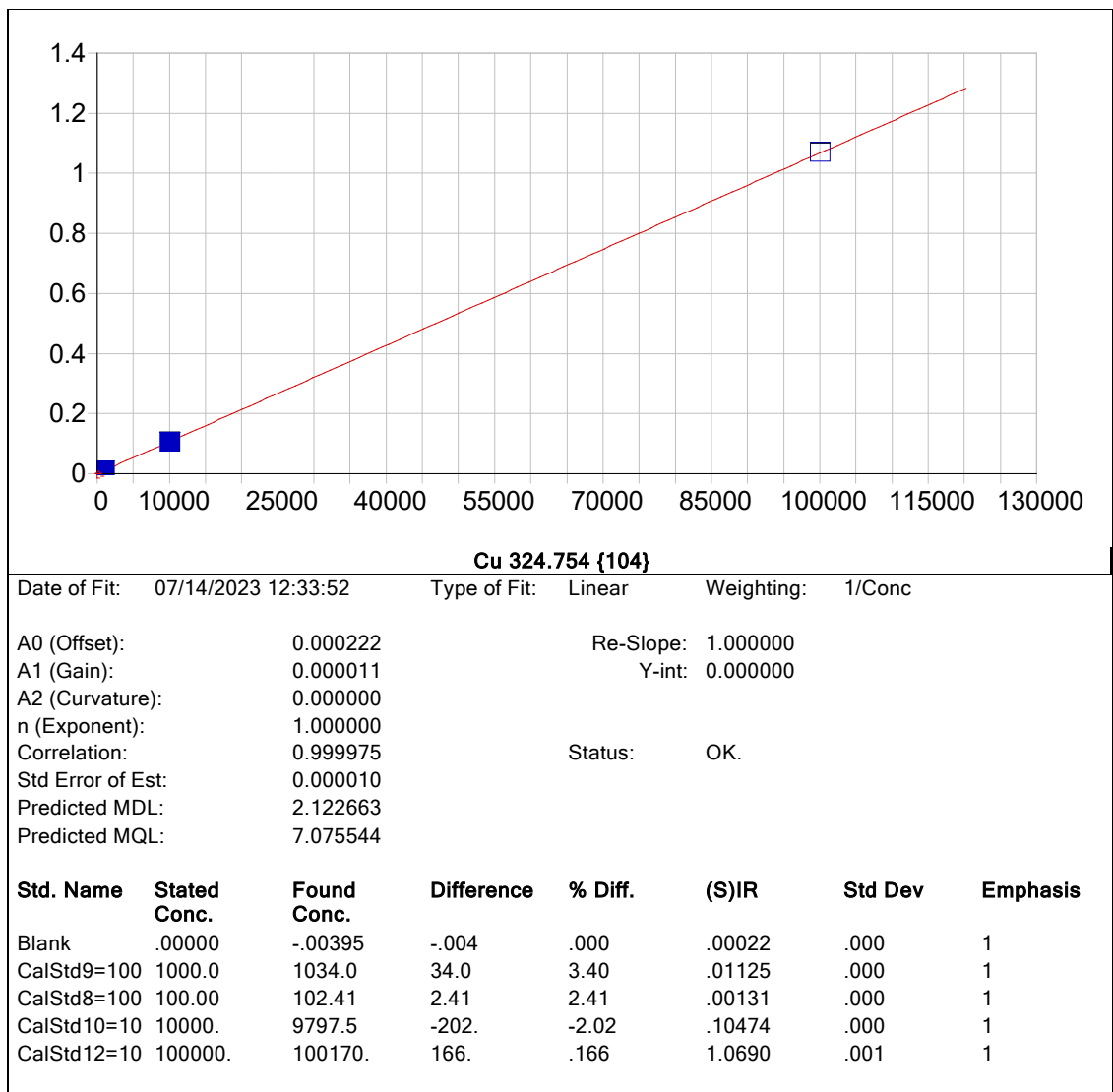


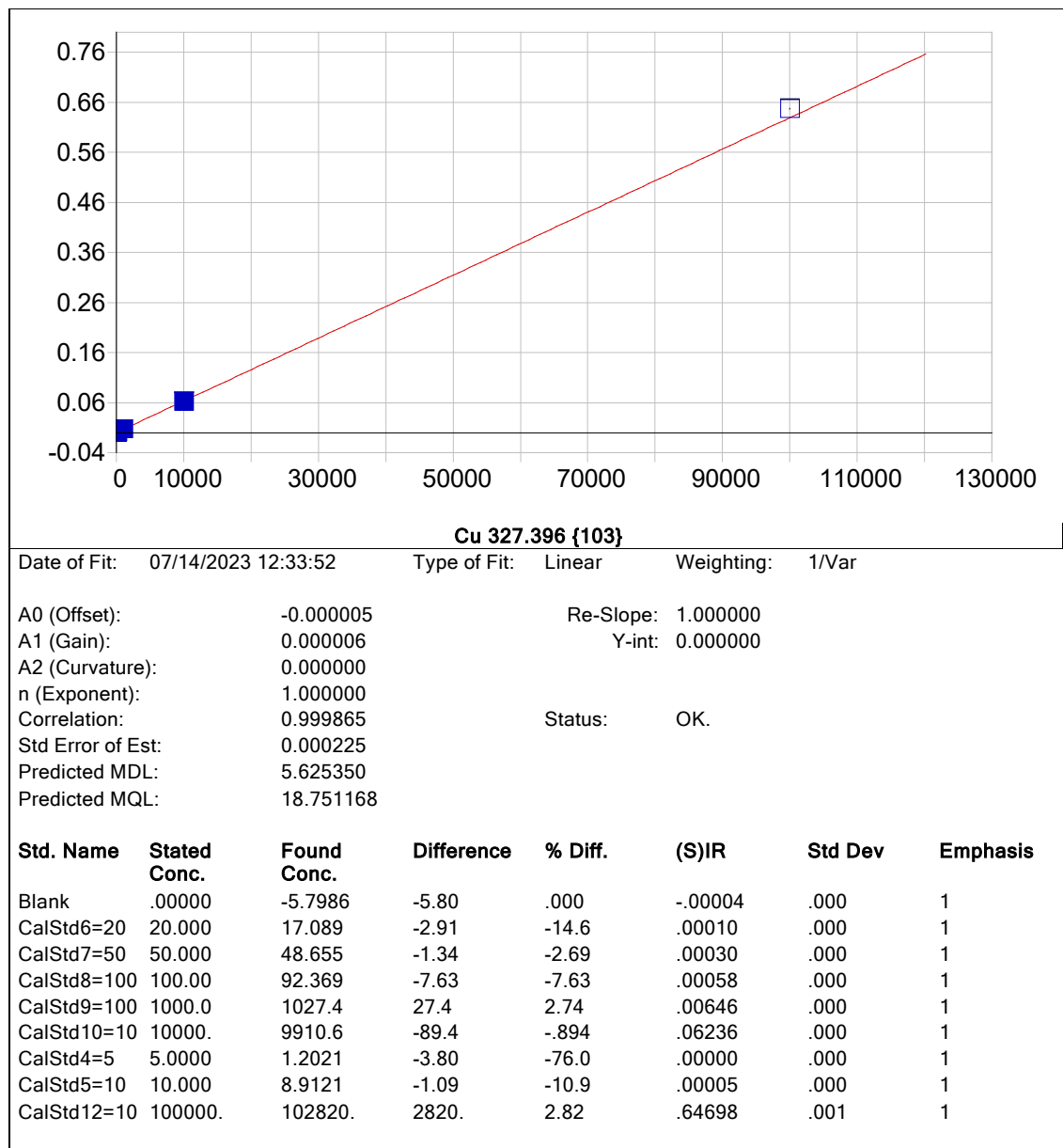


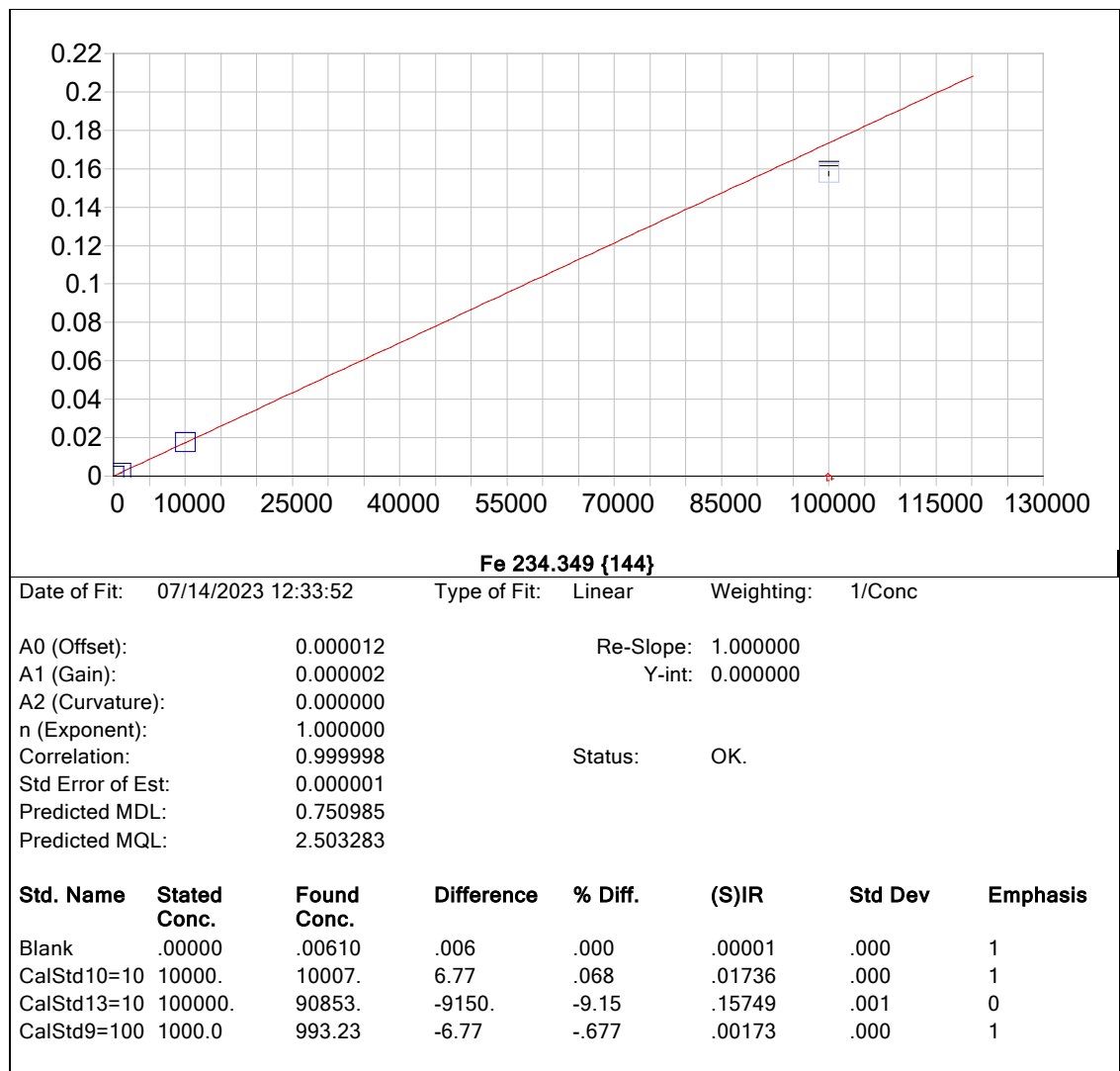


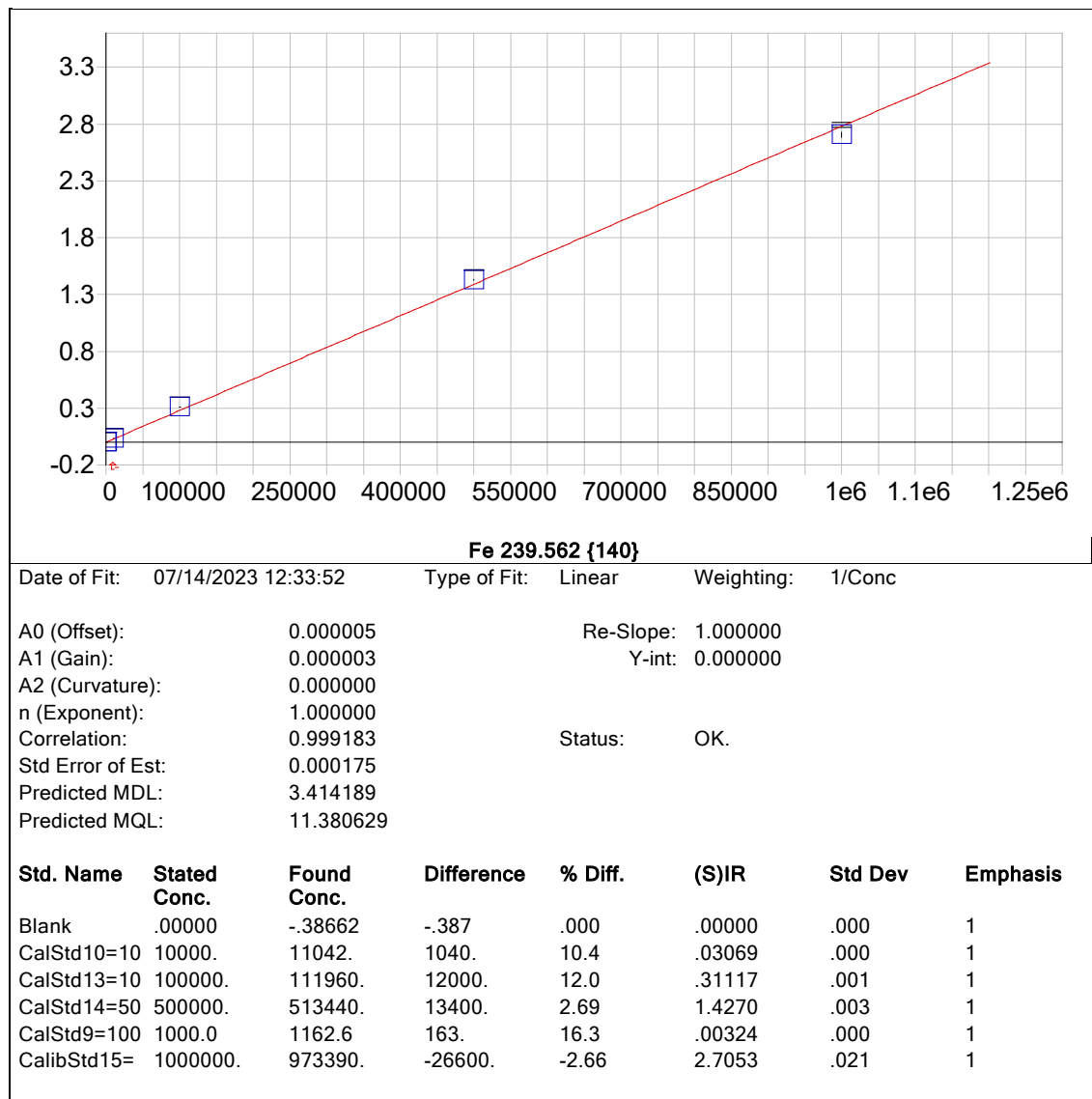


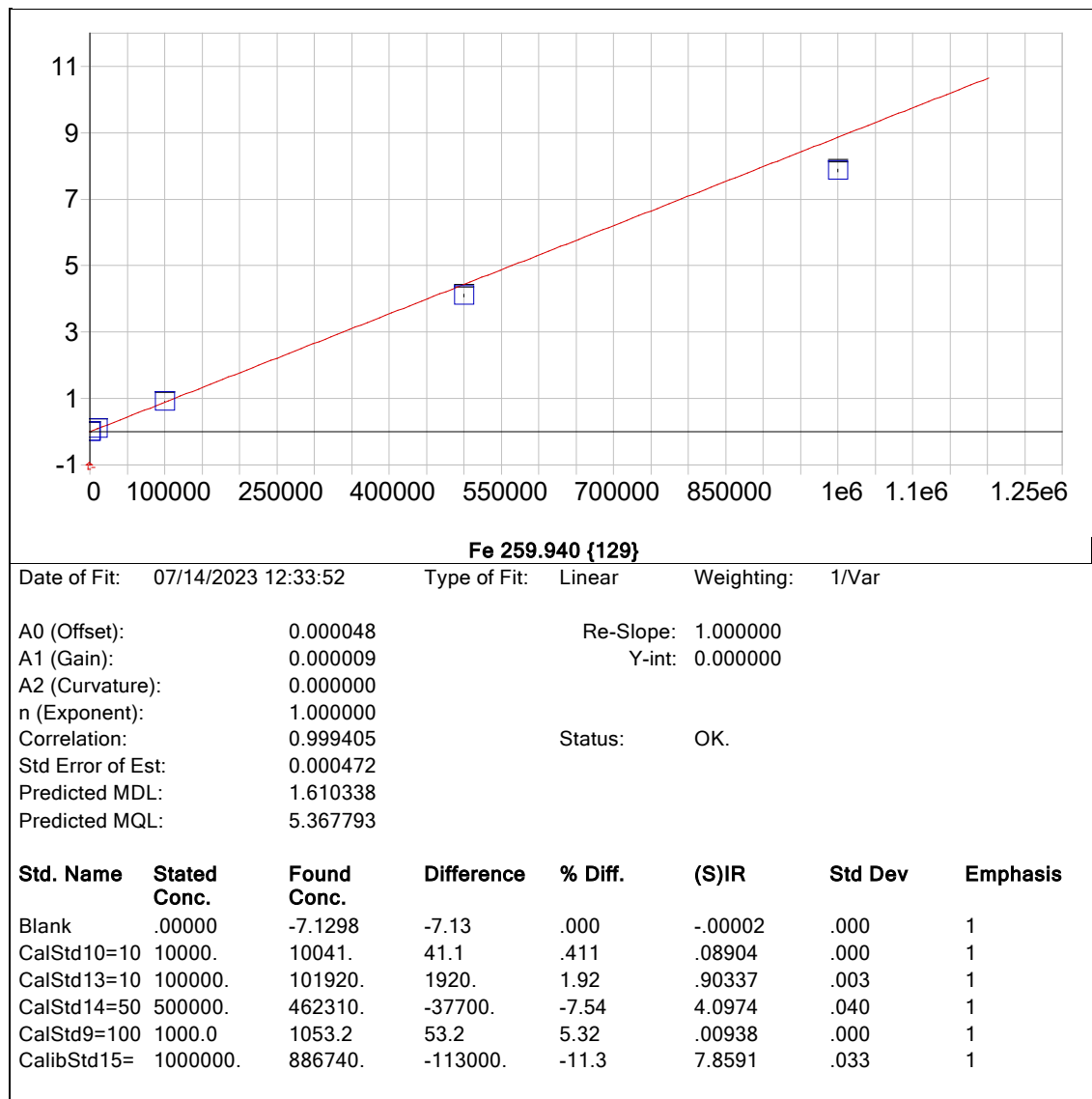


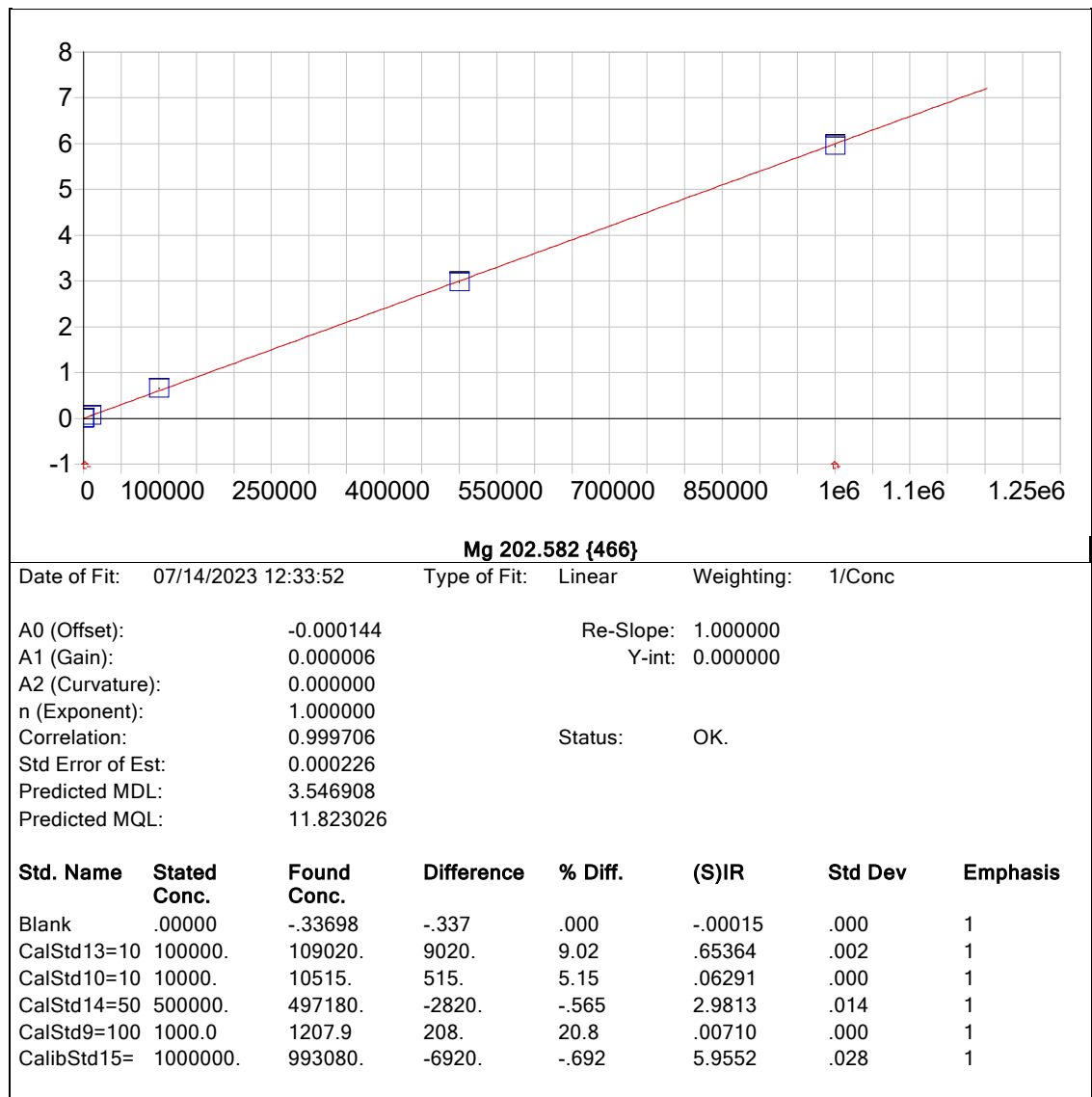


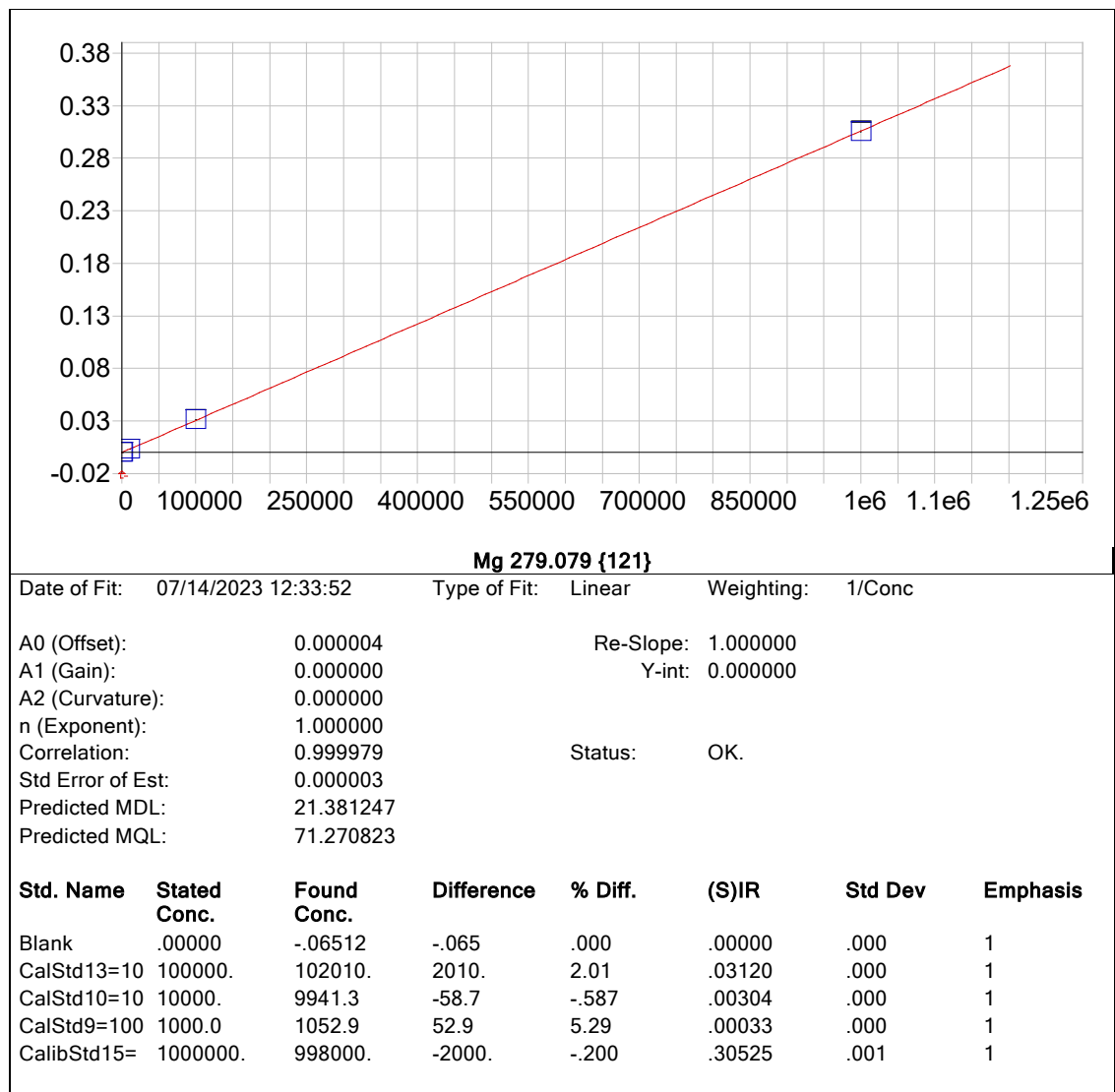


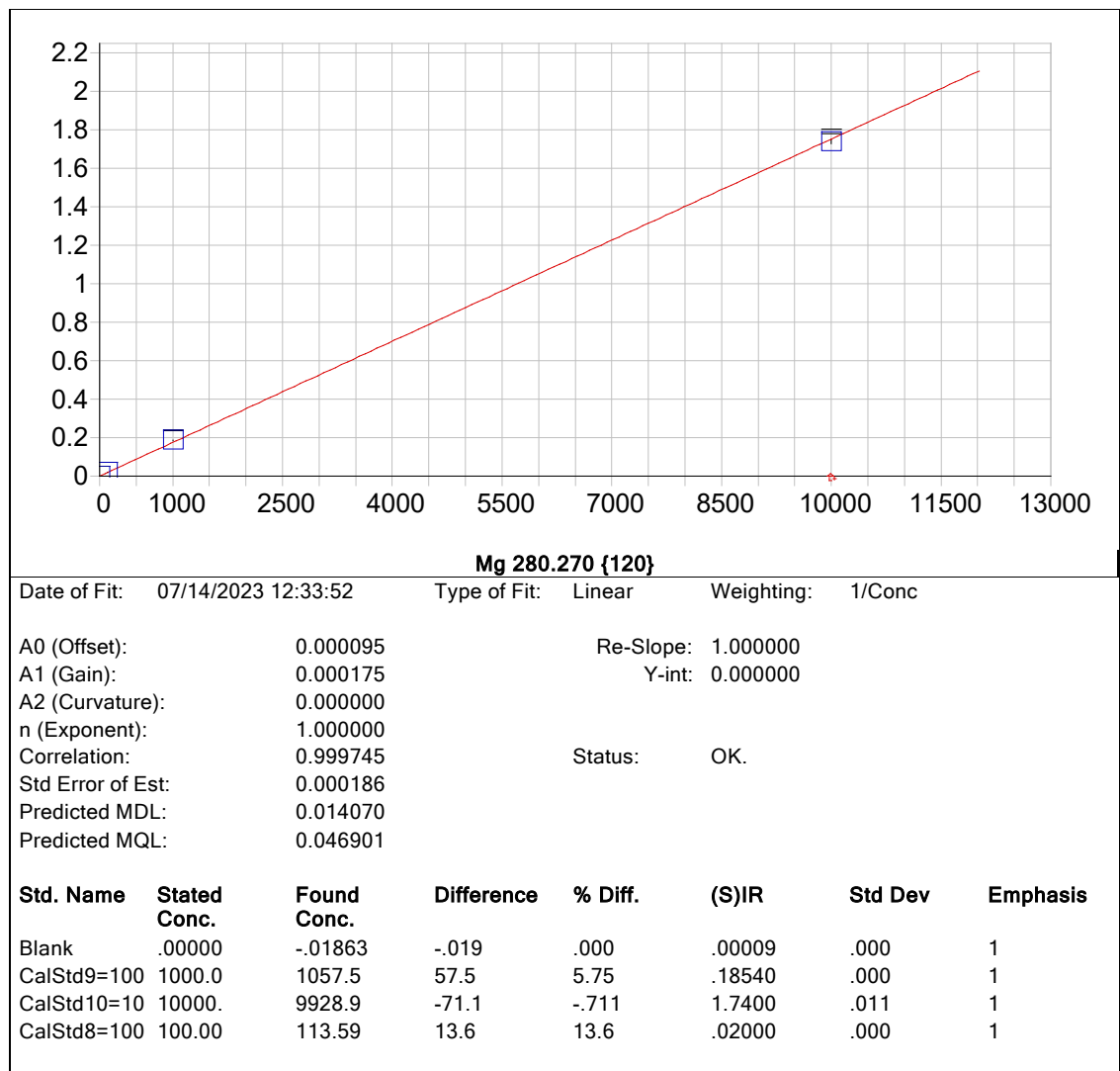


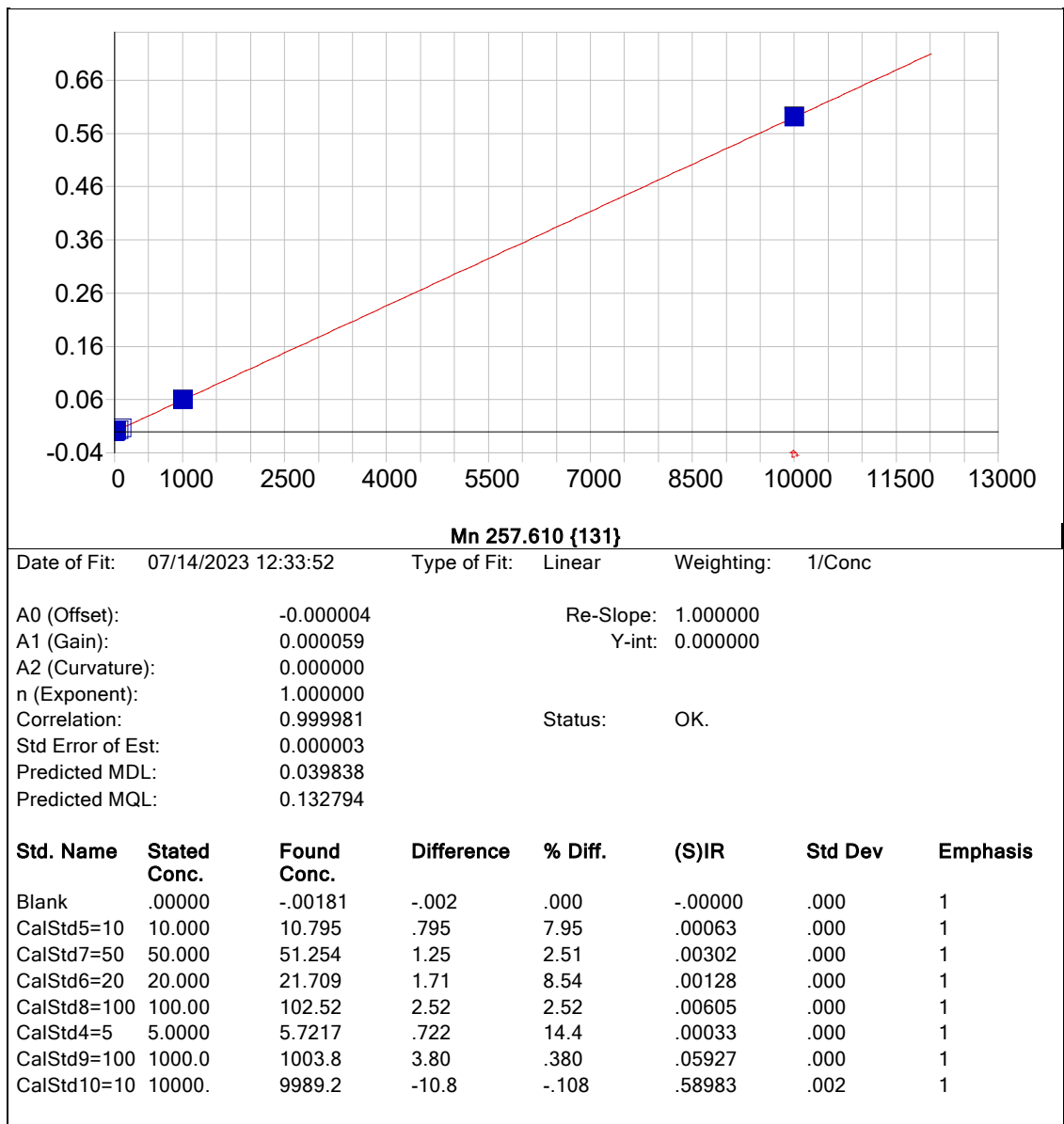


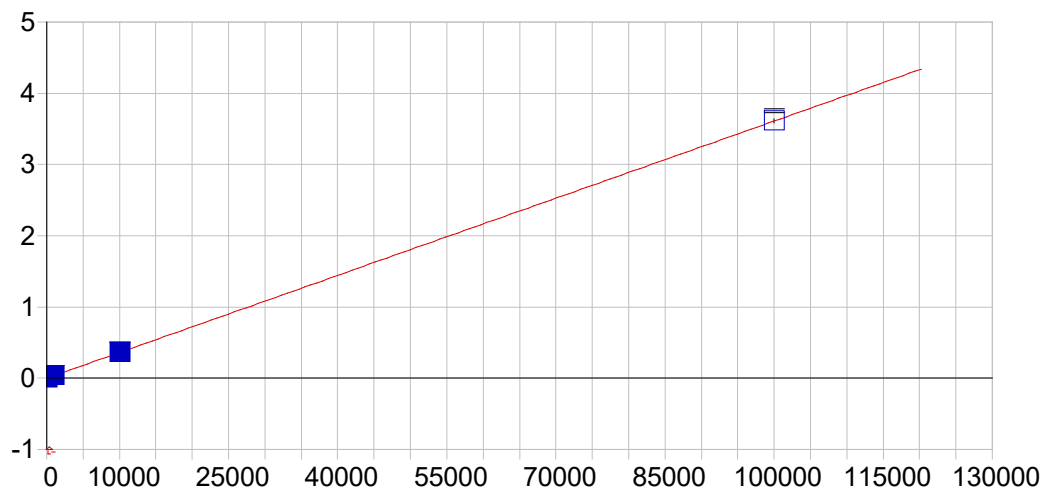










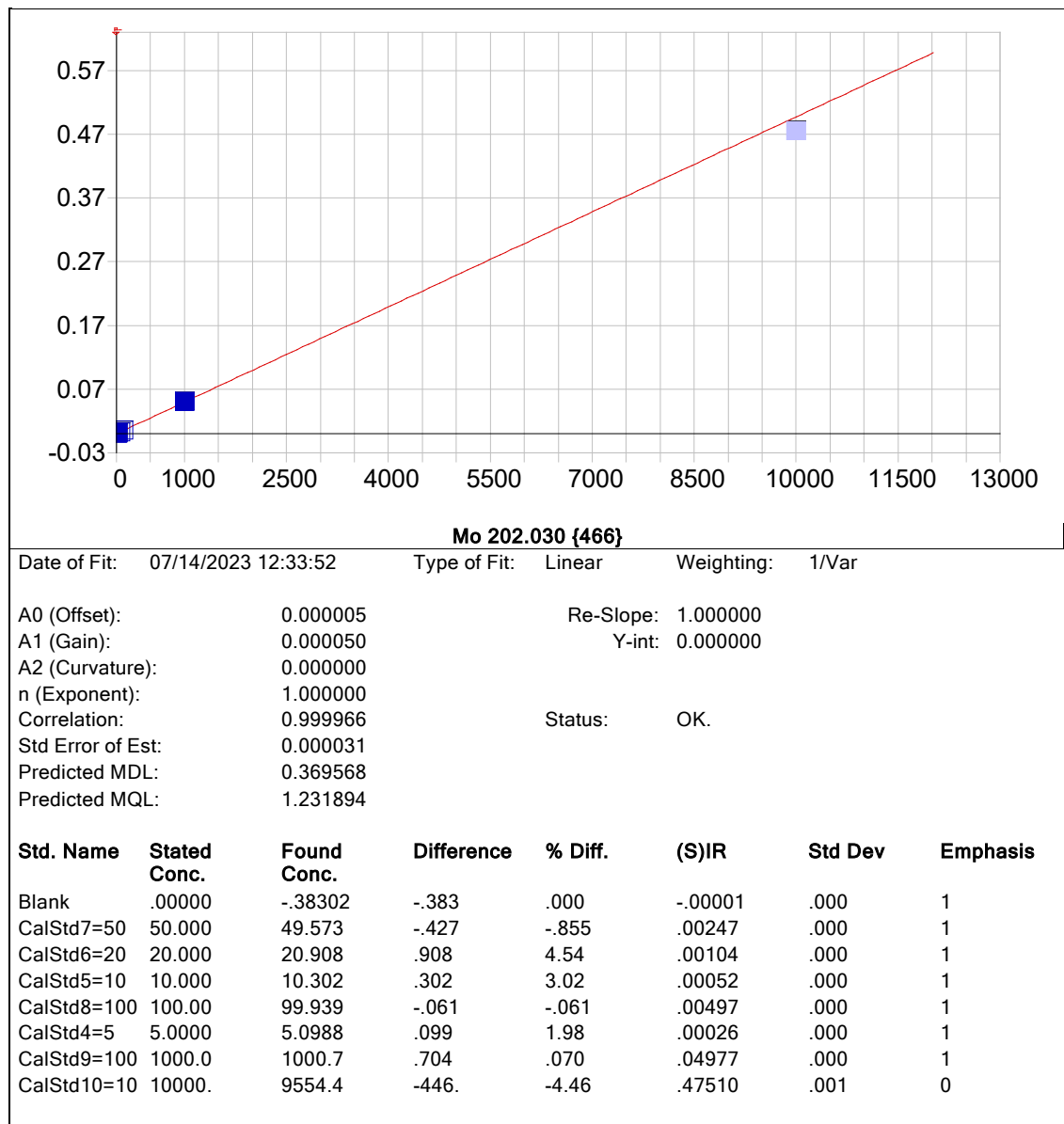


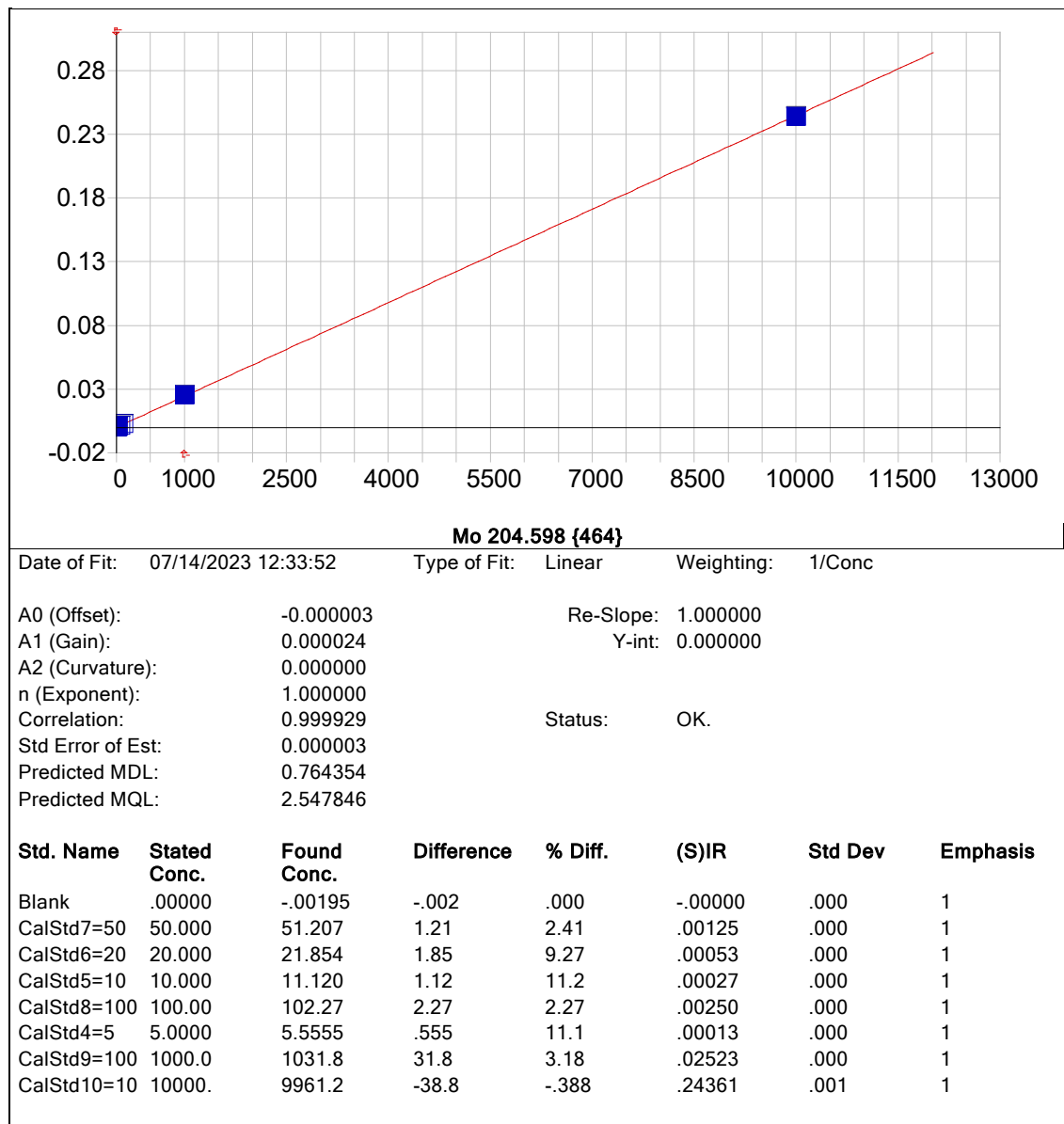
Mn 259.373 {130}

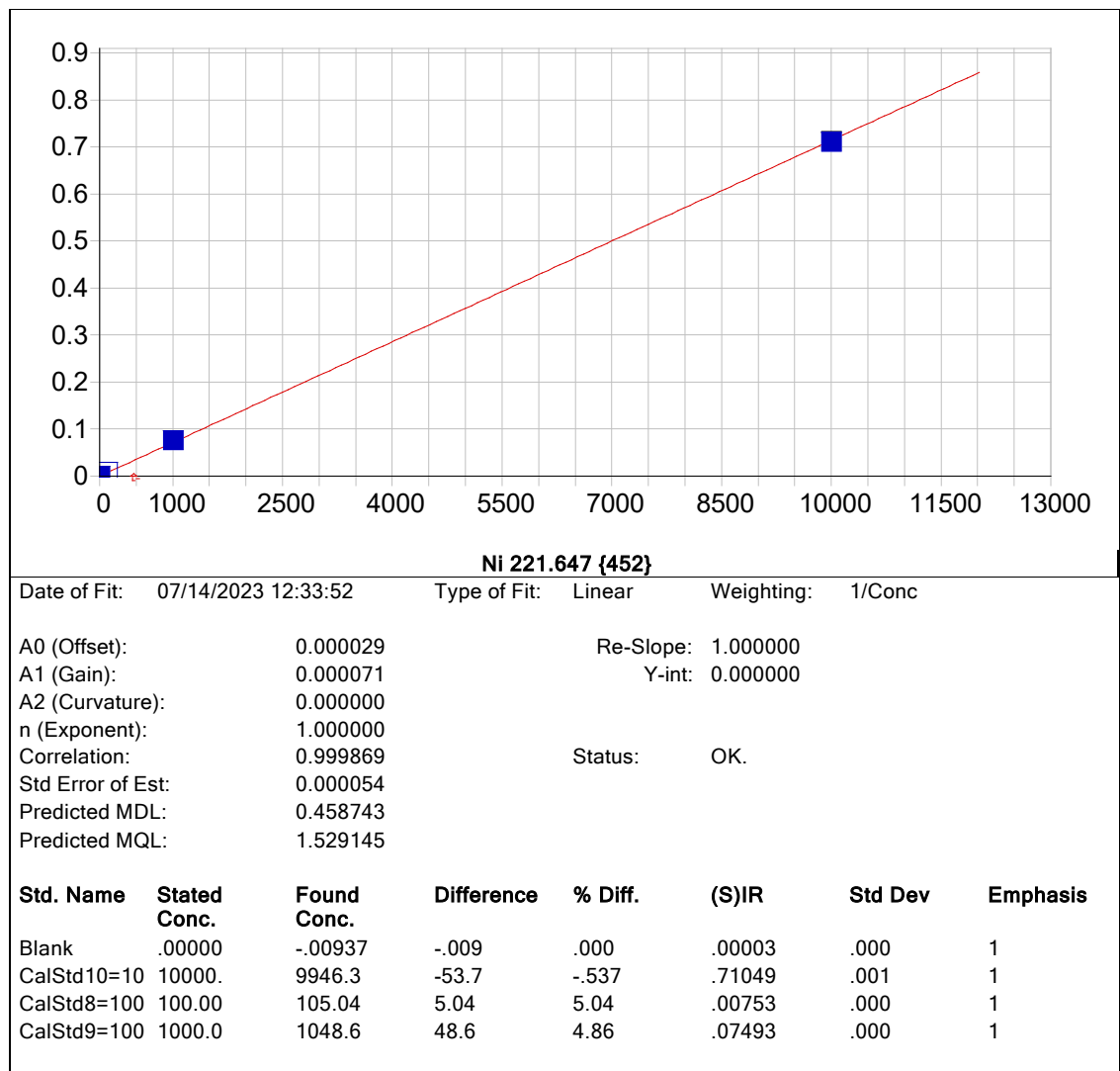
Date of Fit: 07/14/2023 12:33:52 Type of Fit: Linear Weighting: 1/Conc

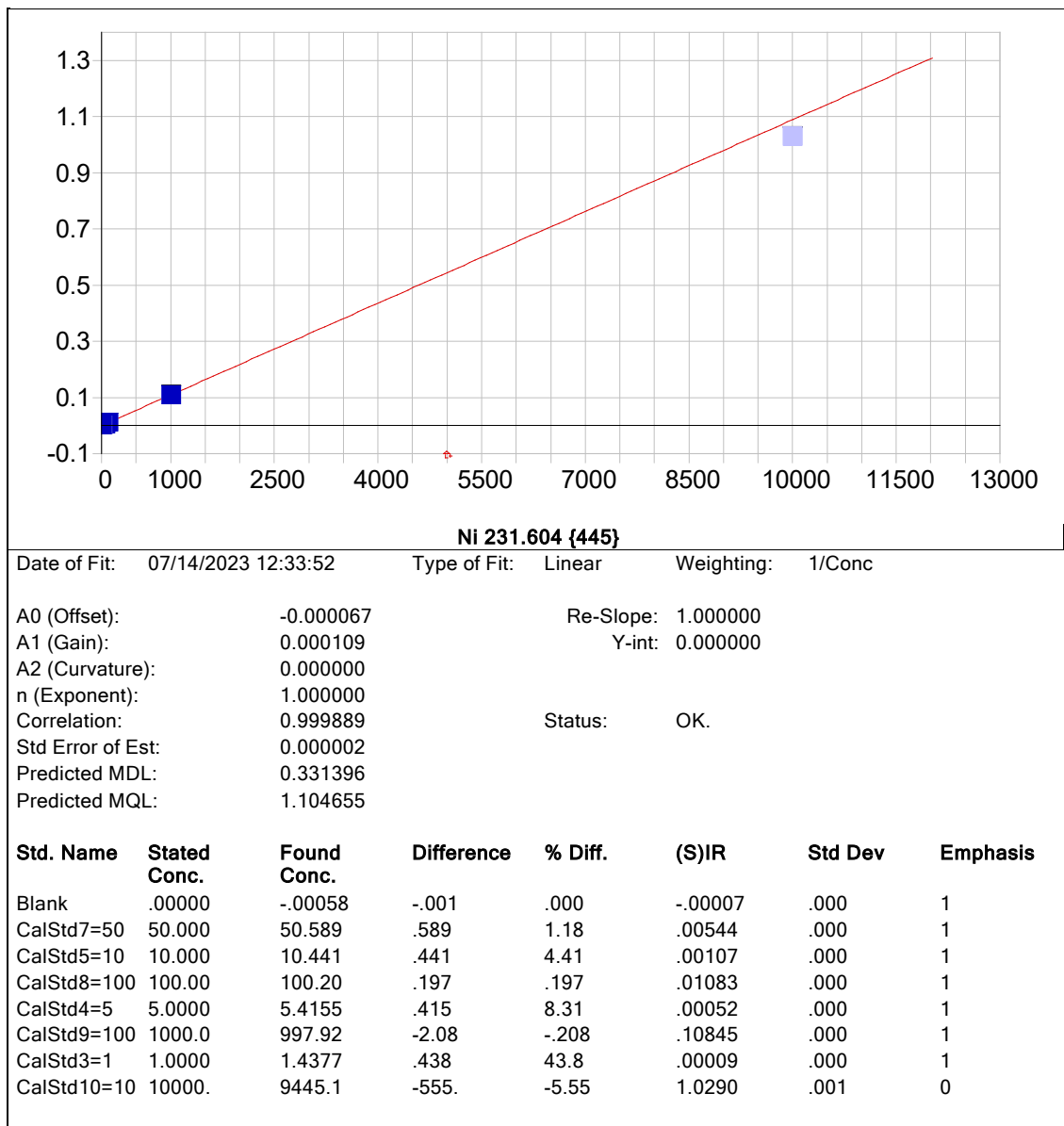
A0 (Offset):	0.000004	Re-Slope:	1.000000
A1 (Gain):	0.000036	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999990	Status:	OK.
Std Error of Est:	0.000076		
Predicted MDL:	0.372775		
Predicted MQL:	1.242583		

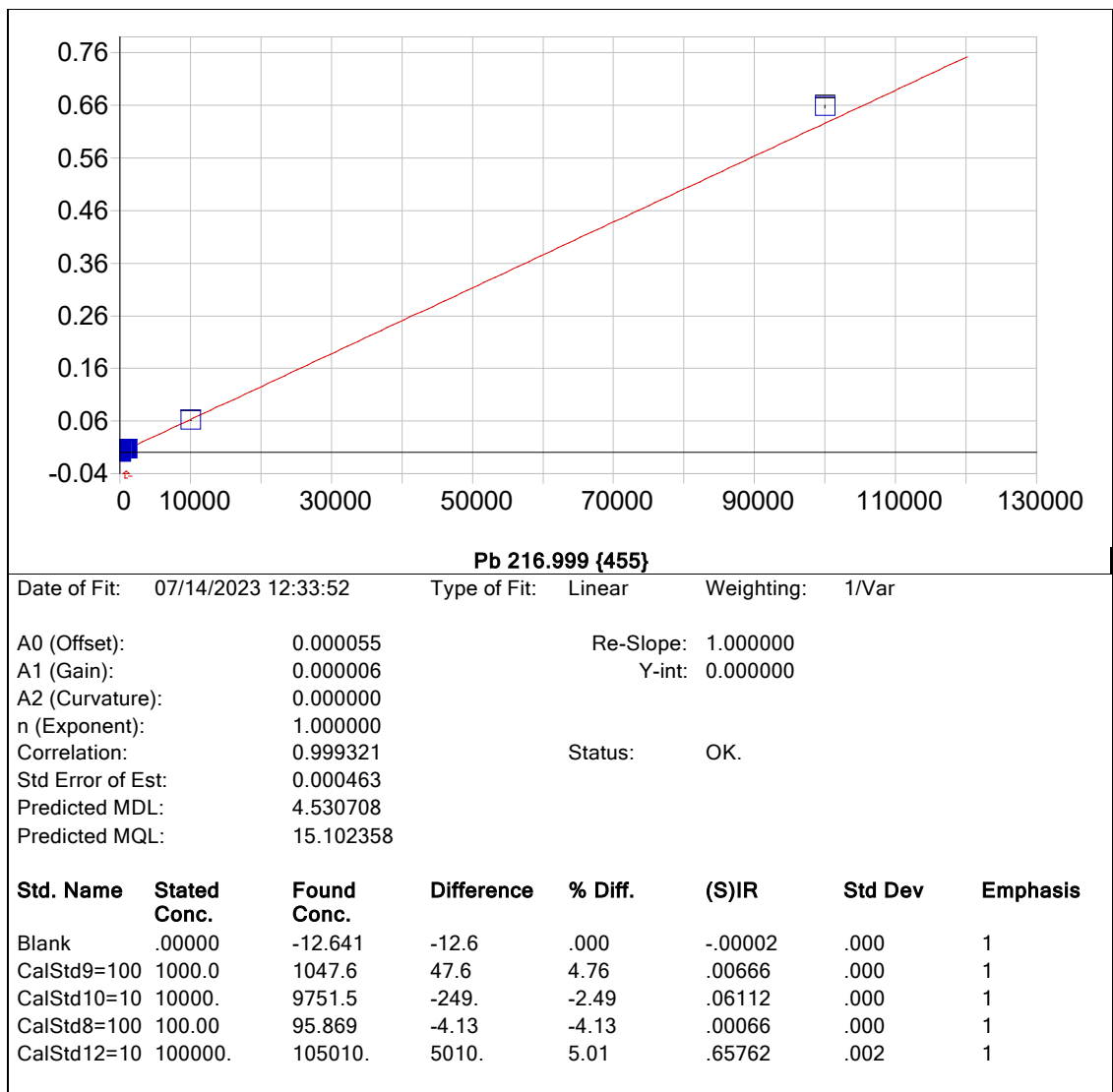
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.02685	-.027	.000	.00000	.000	1
CalStd10=10	10000.	9905.0	-95.0	-.950	.35793	.000	1
CalStd9=100	1000.0	1035.8	35.8	3.58	.03743	.000	1
CalStd12=10	100000.	100060.	59.3	.059	3.6118	.029	1

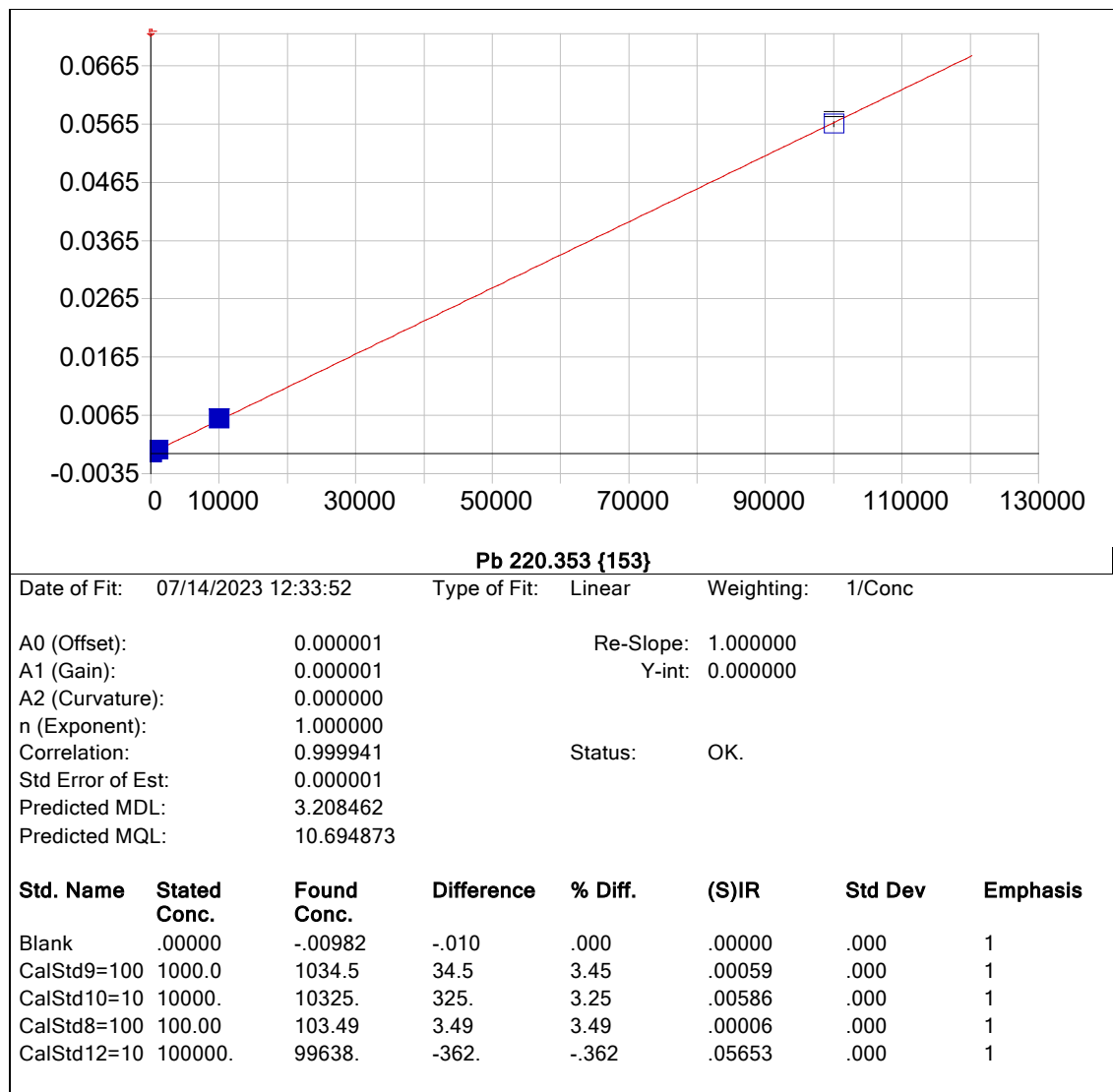


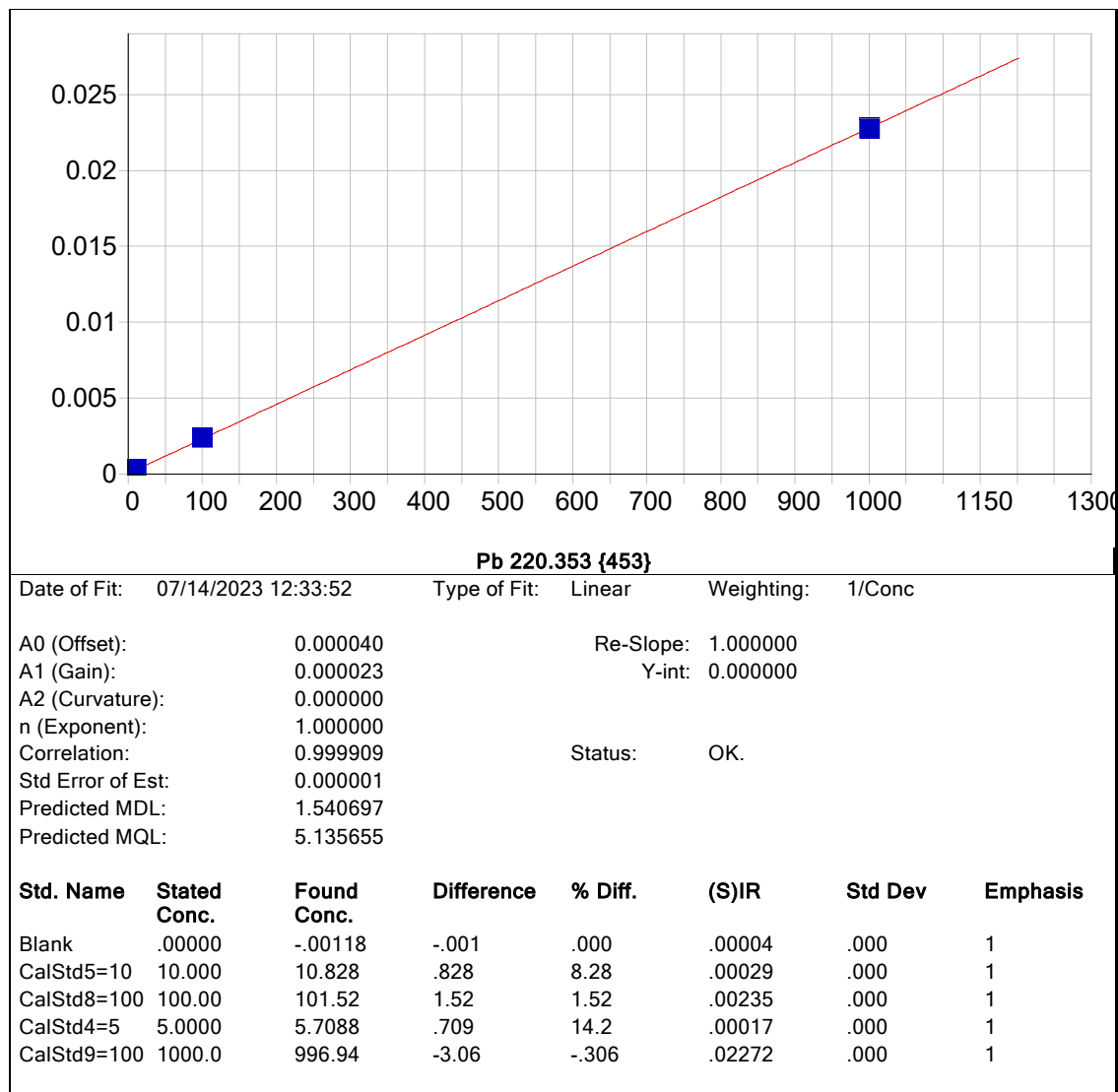


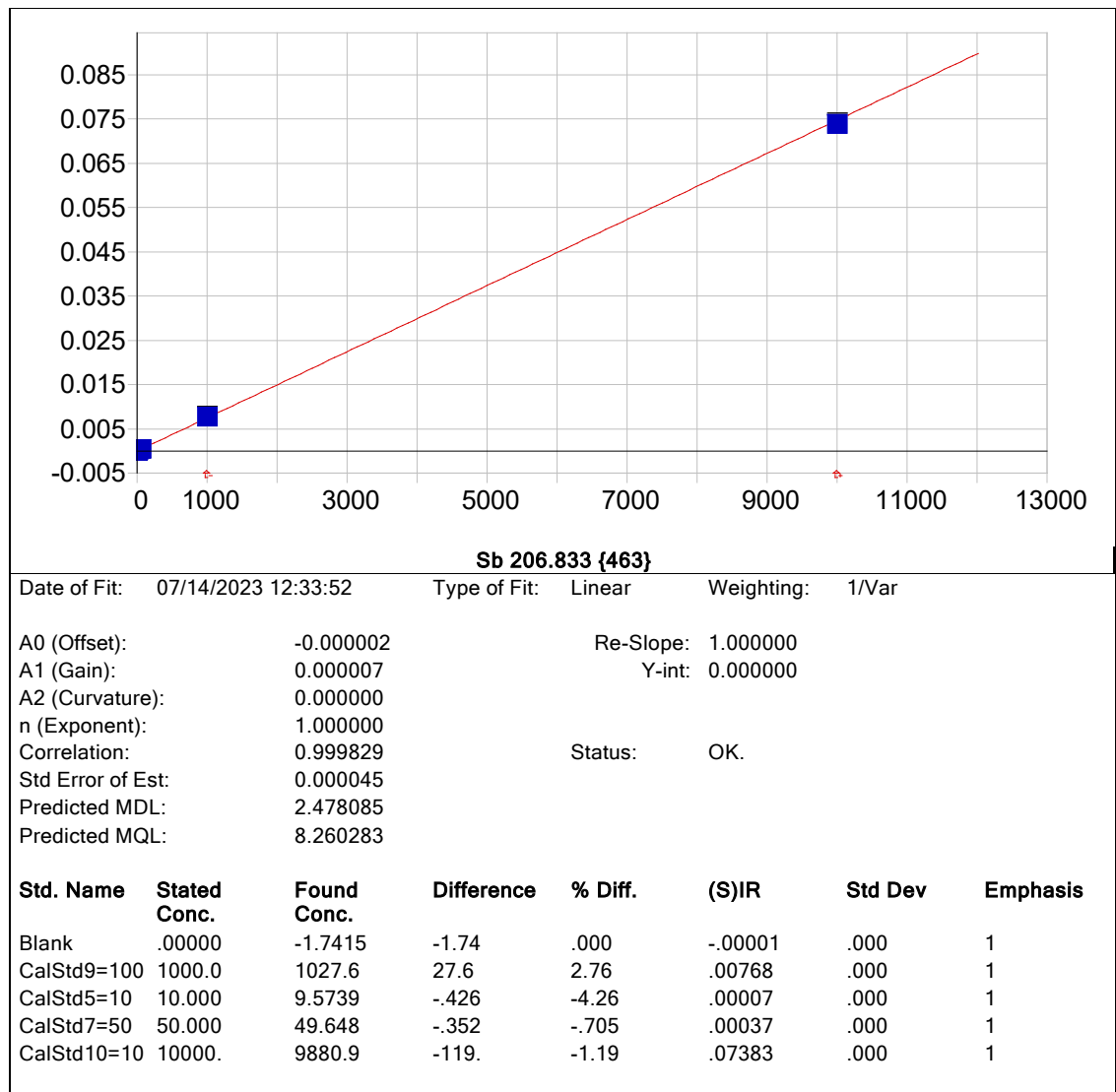


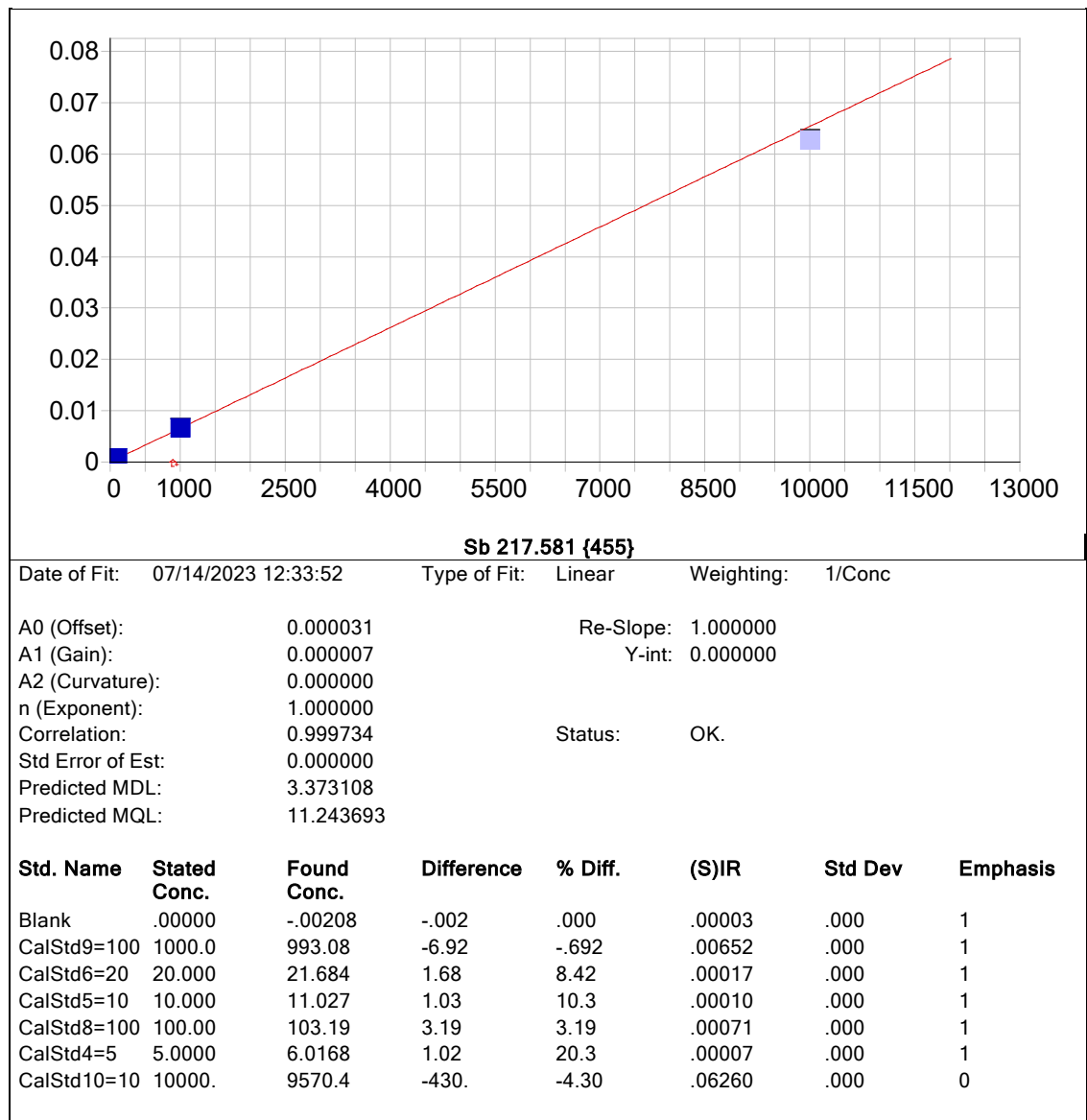


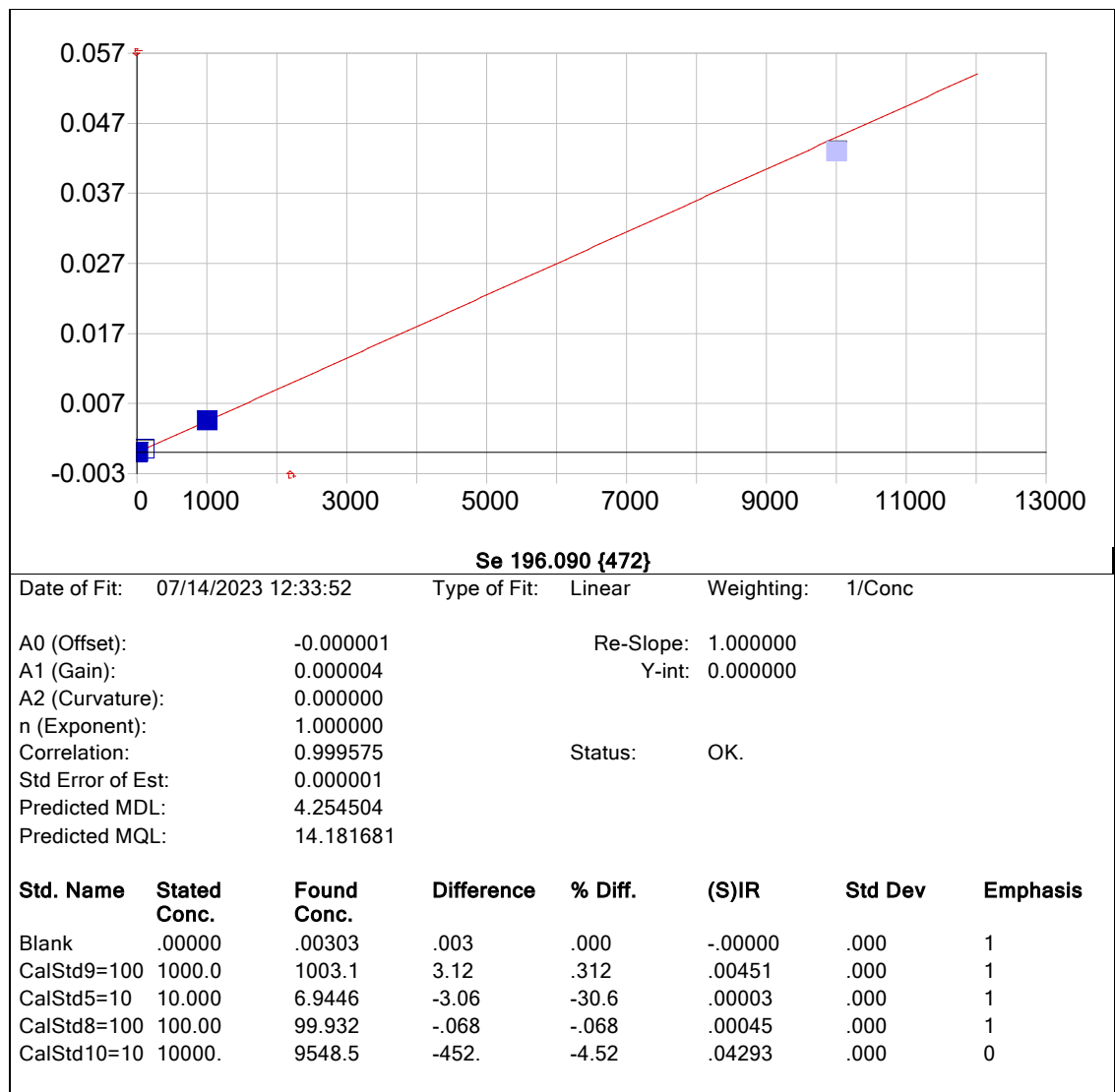


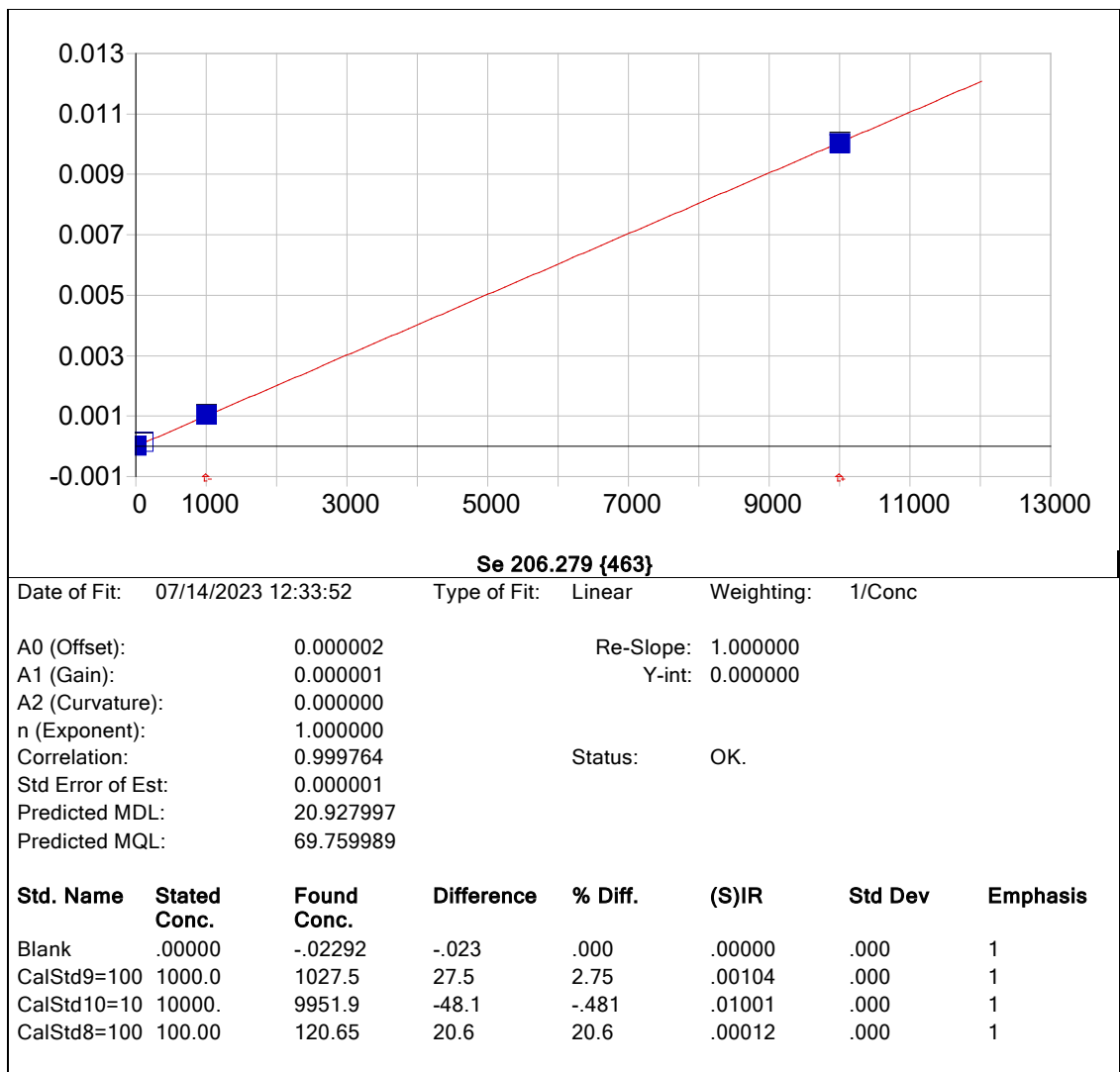


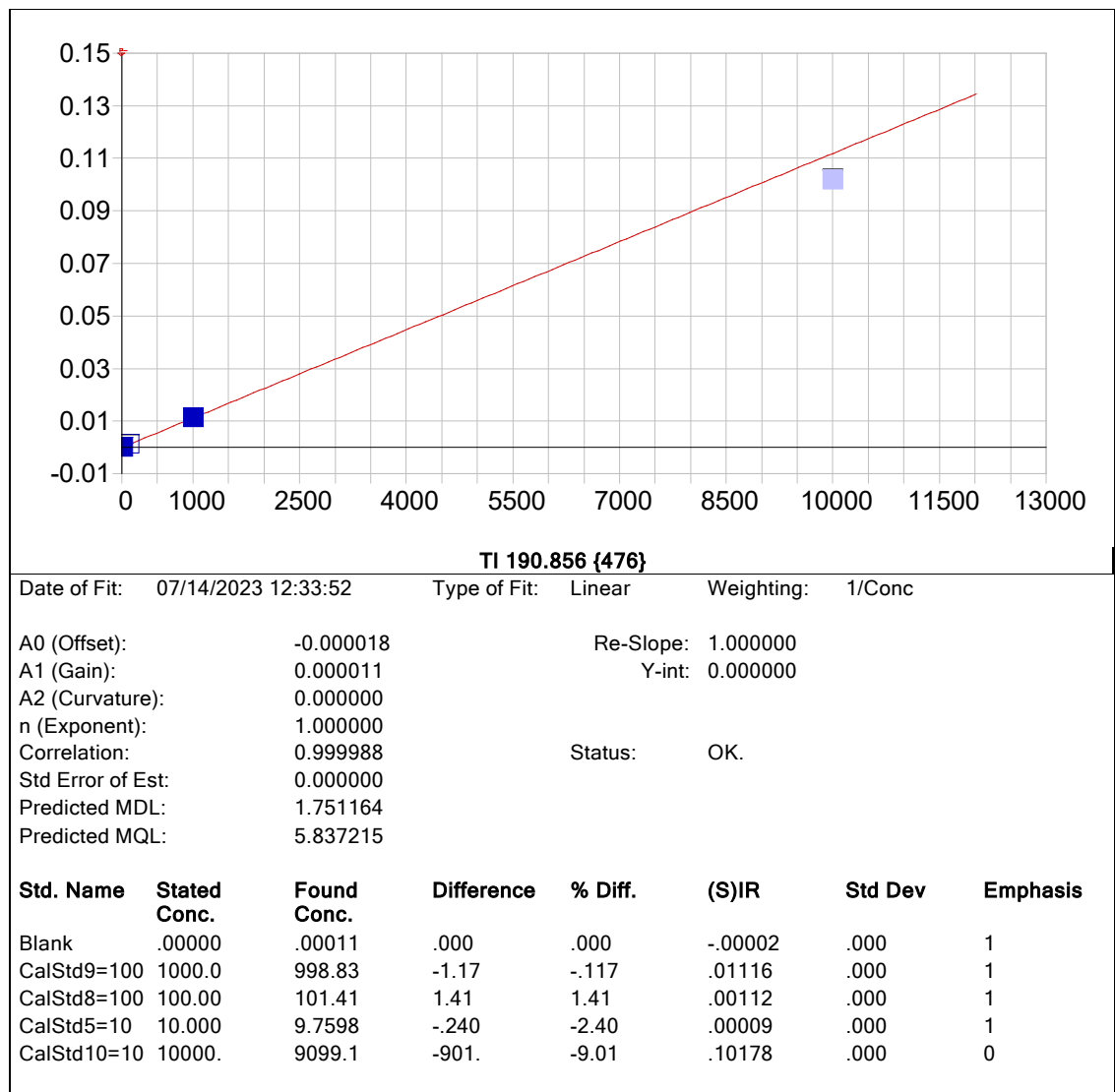


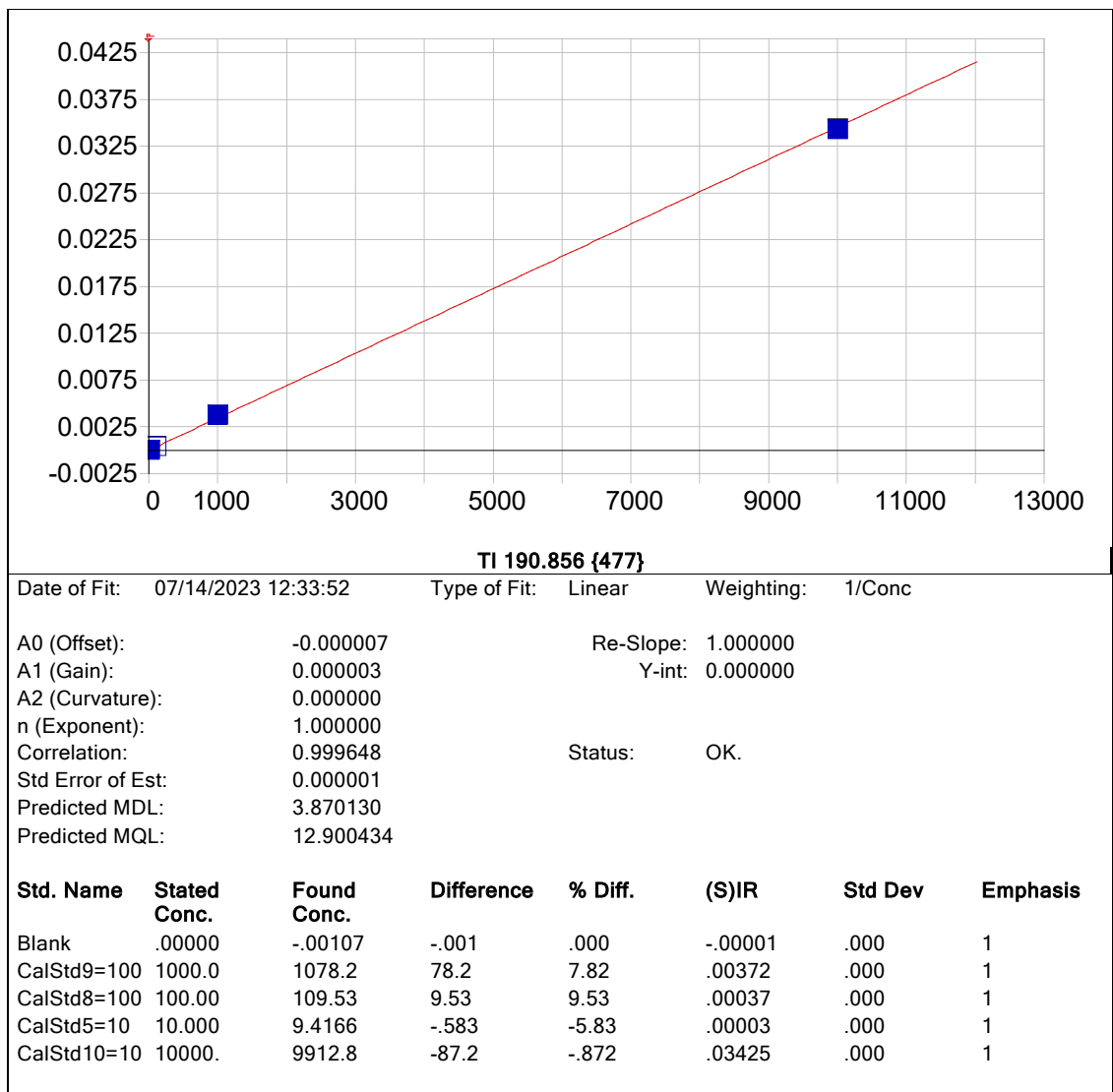


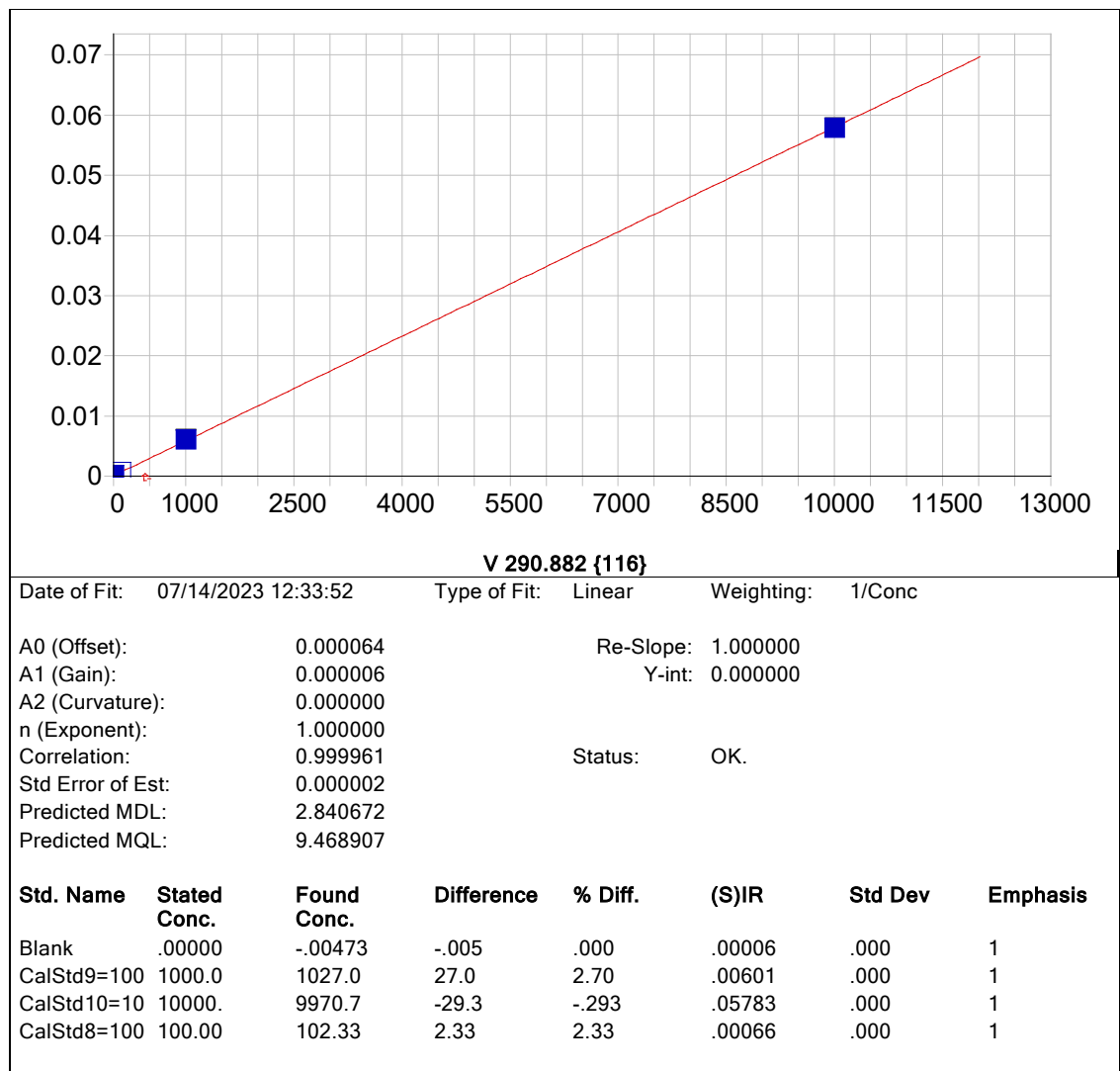


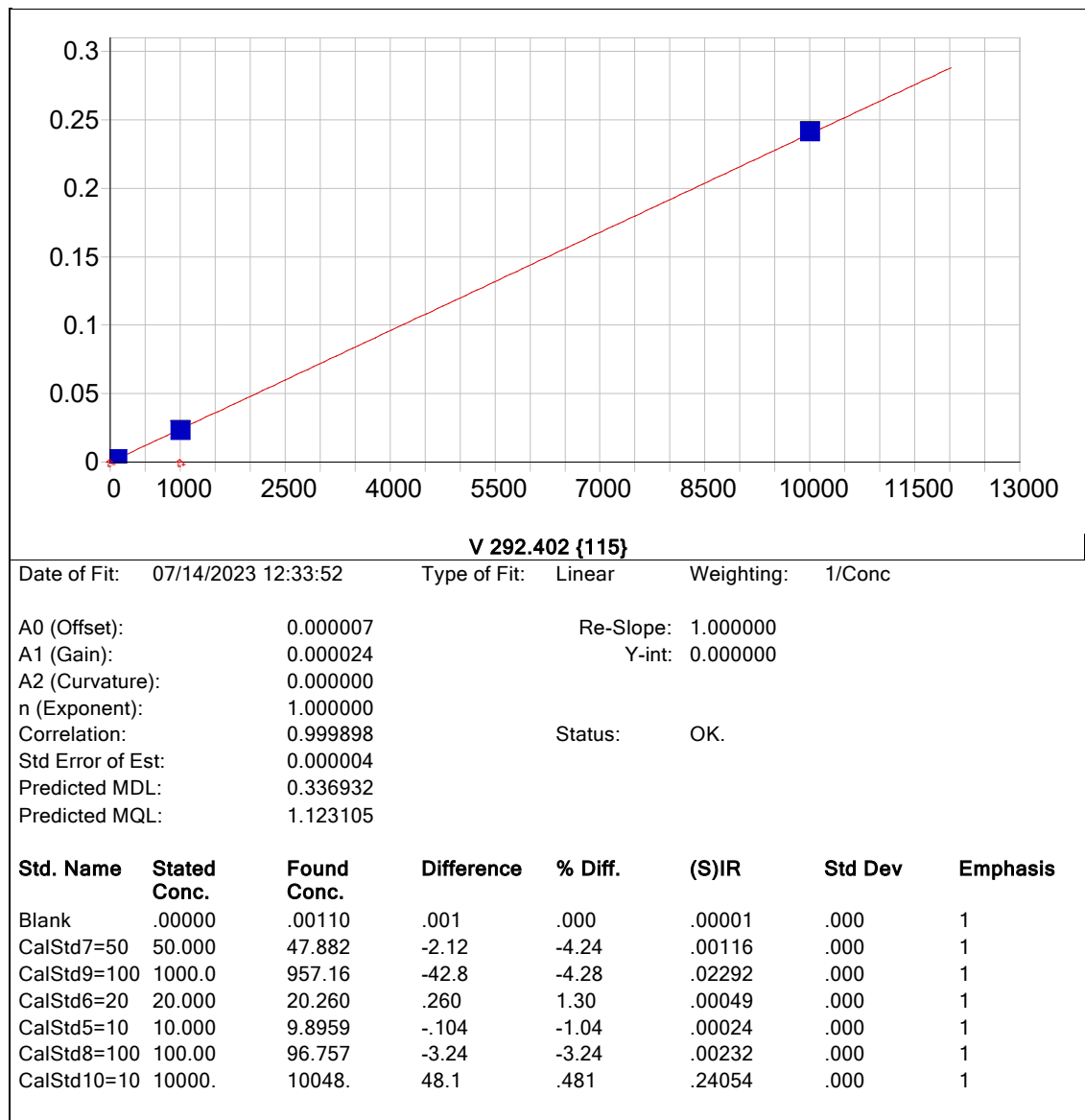


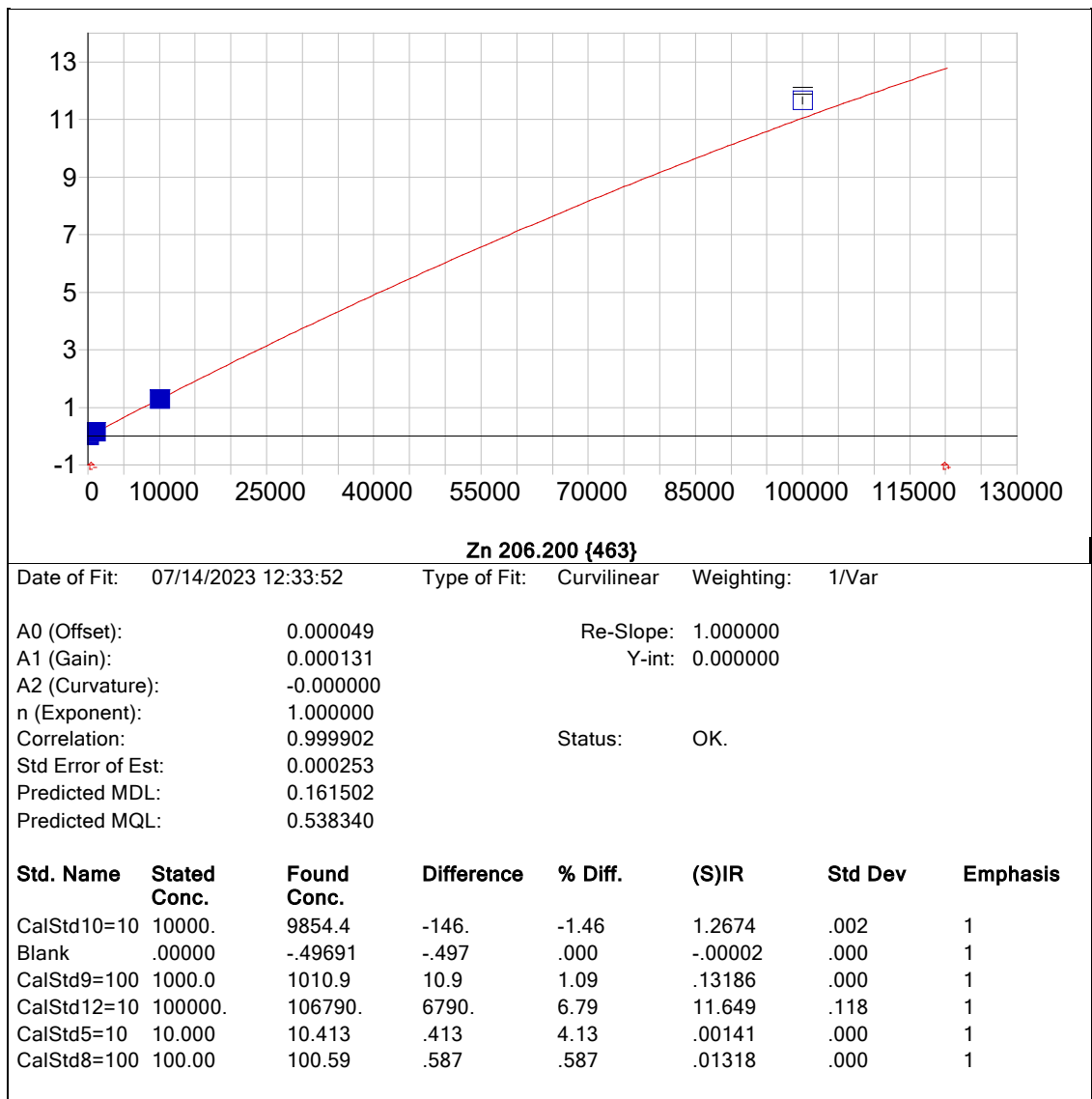


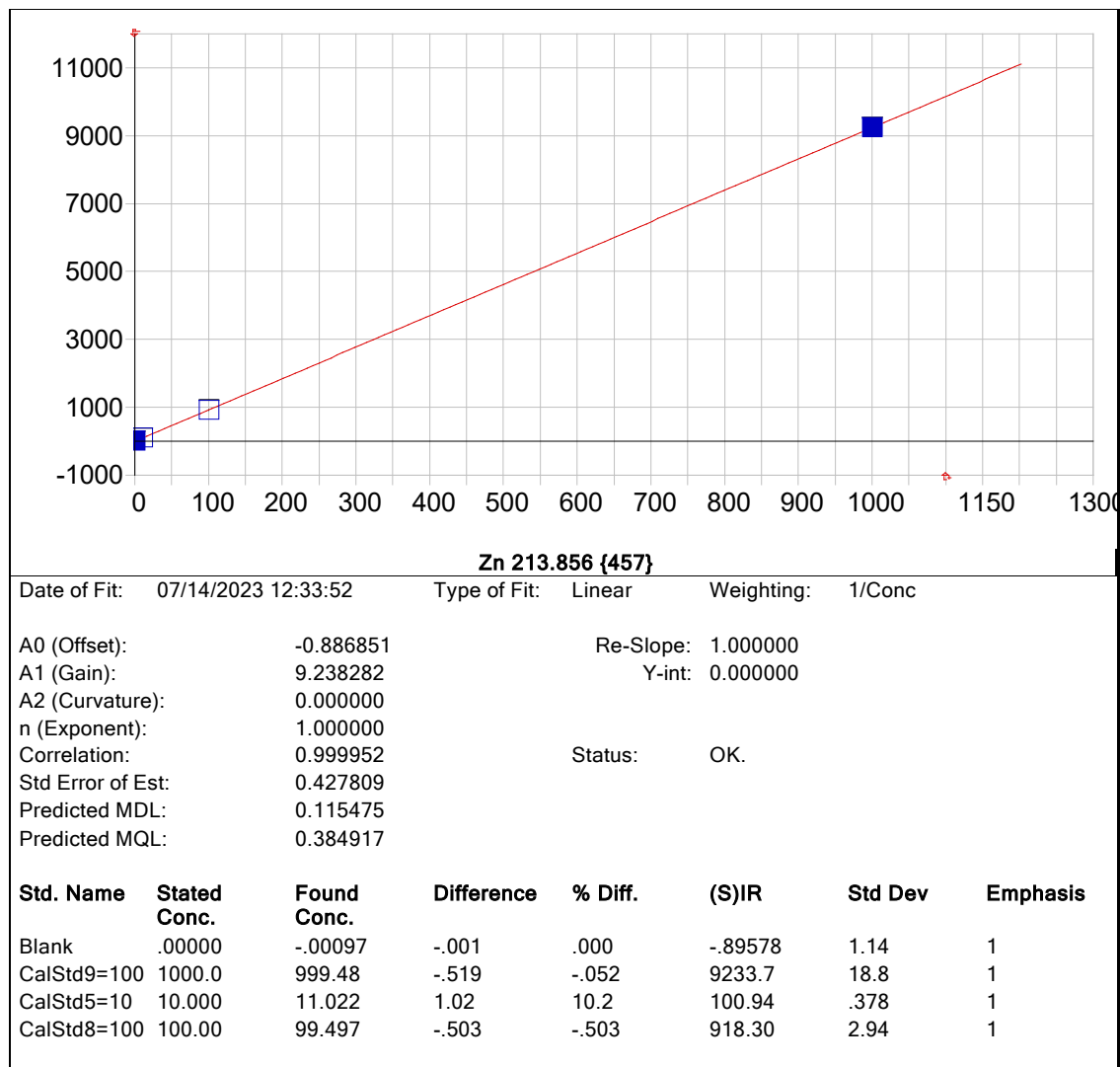


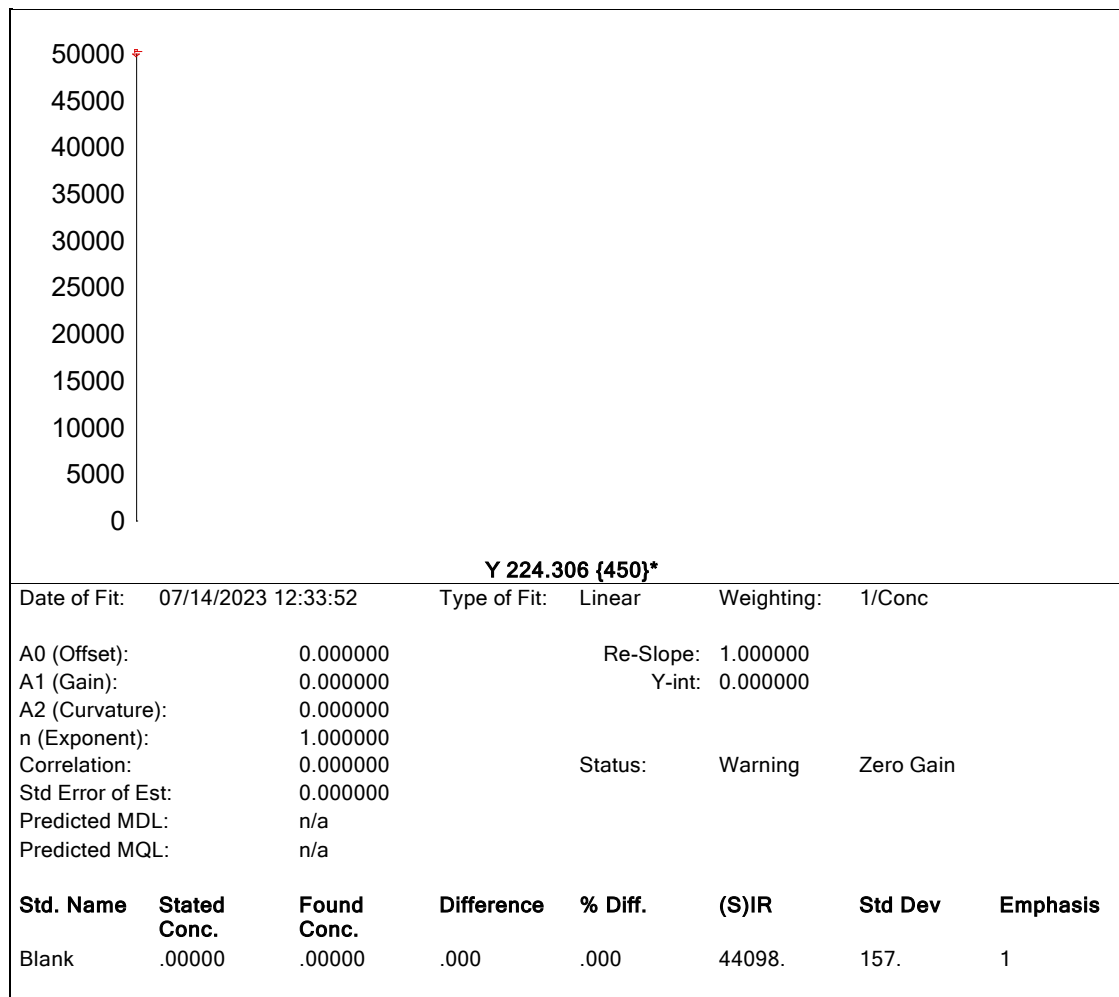


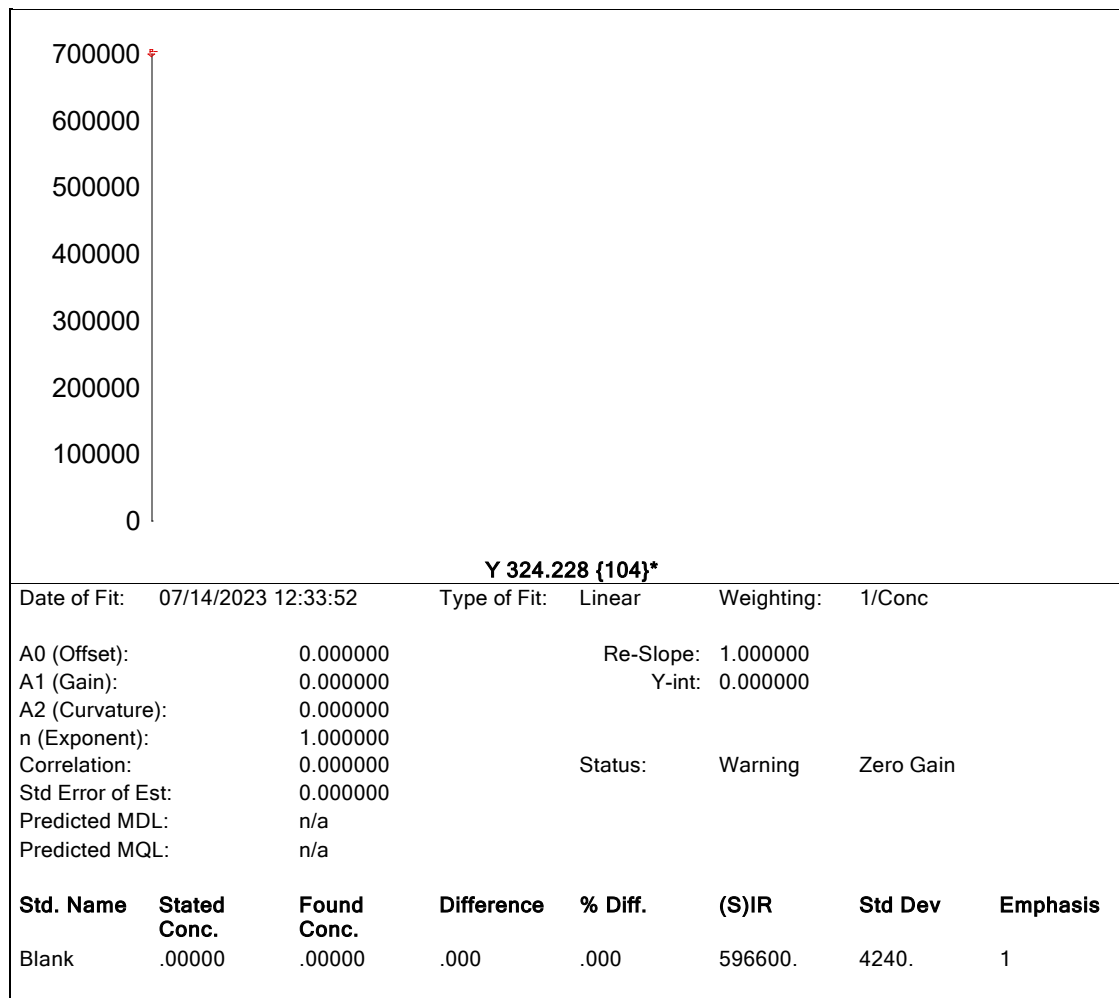


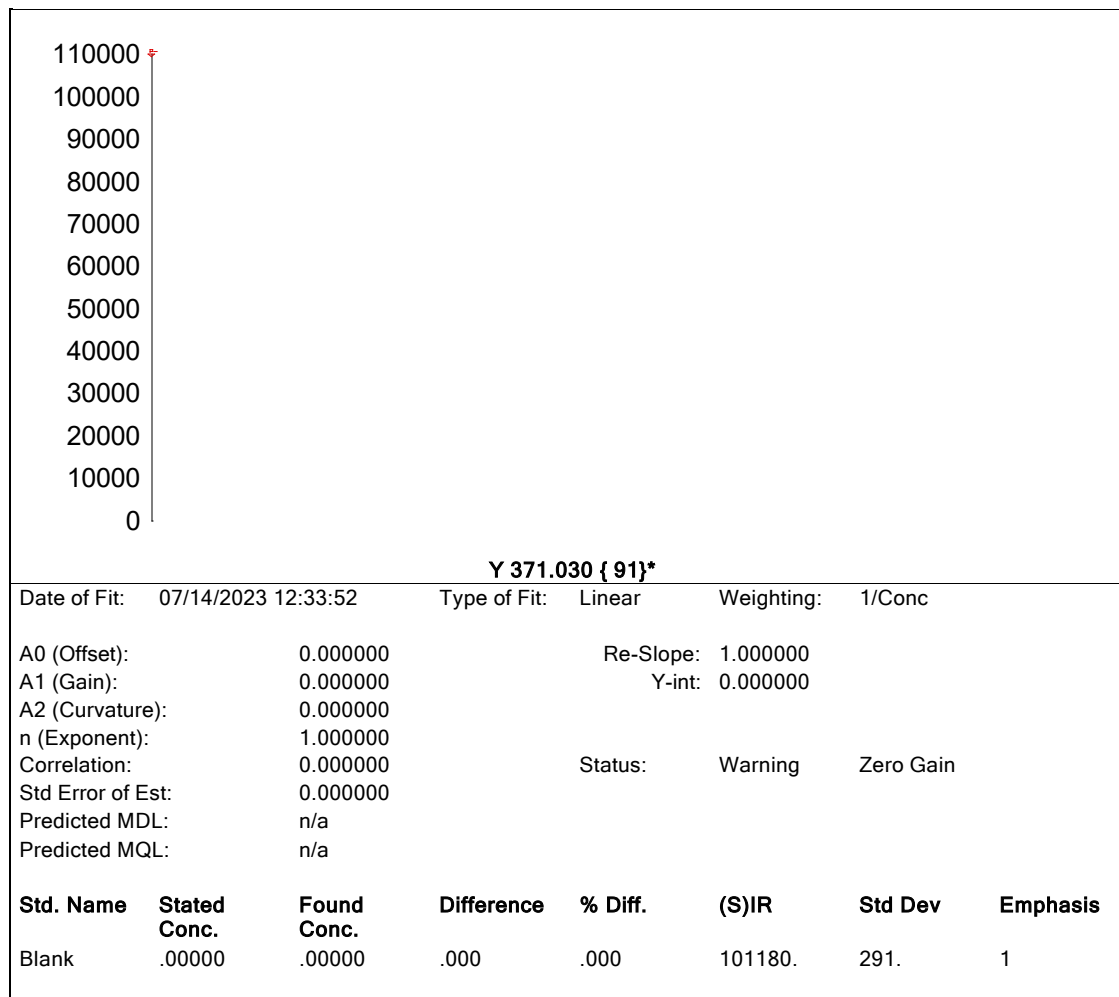


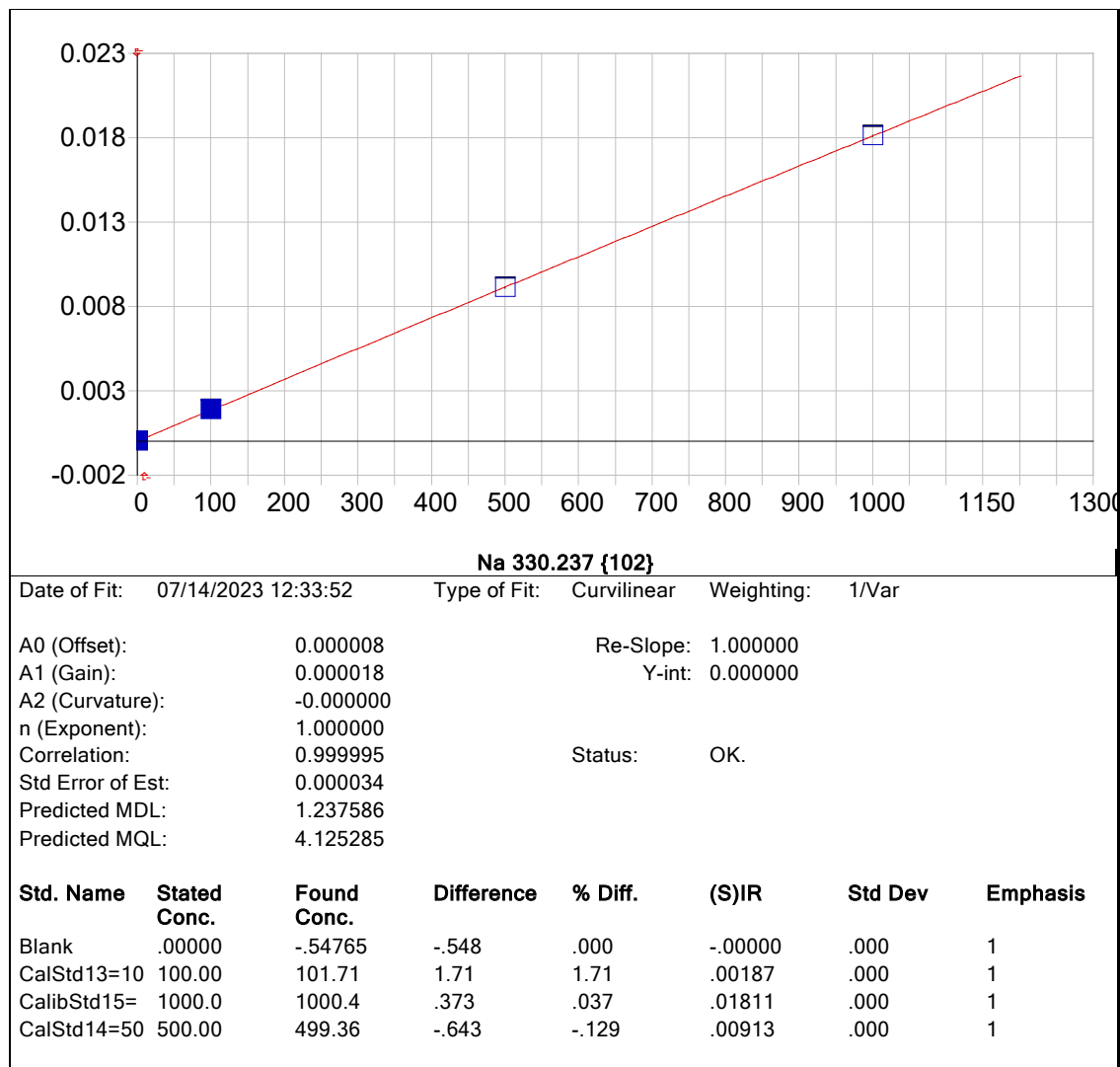


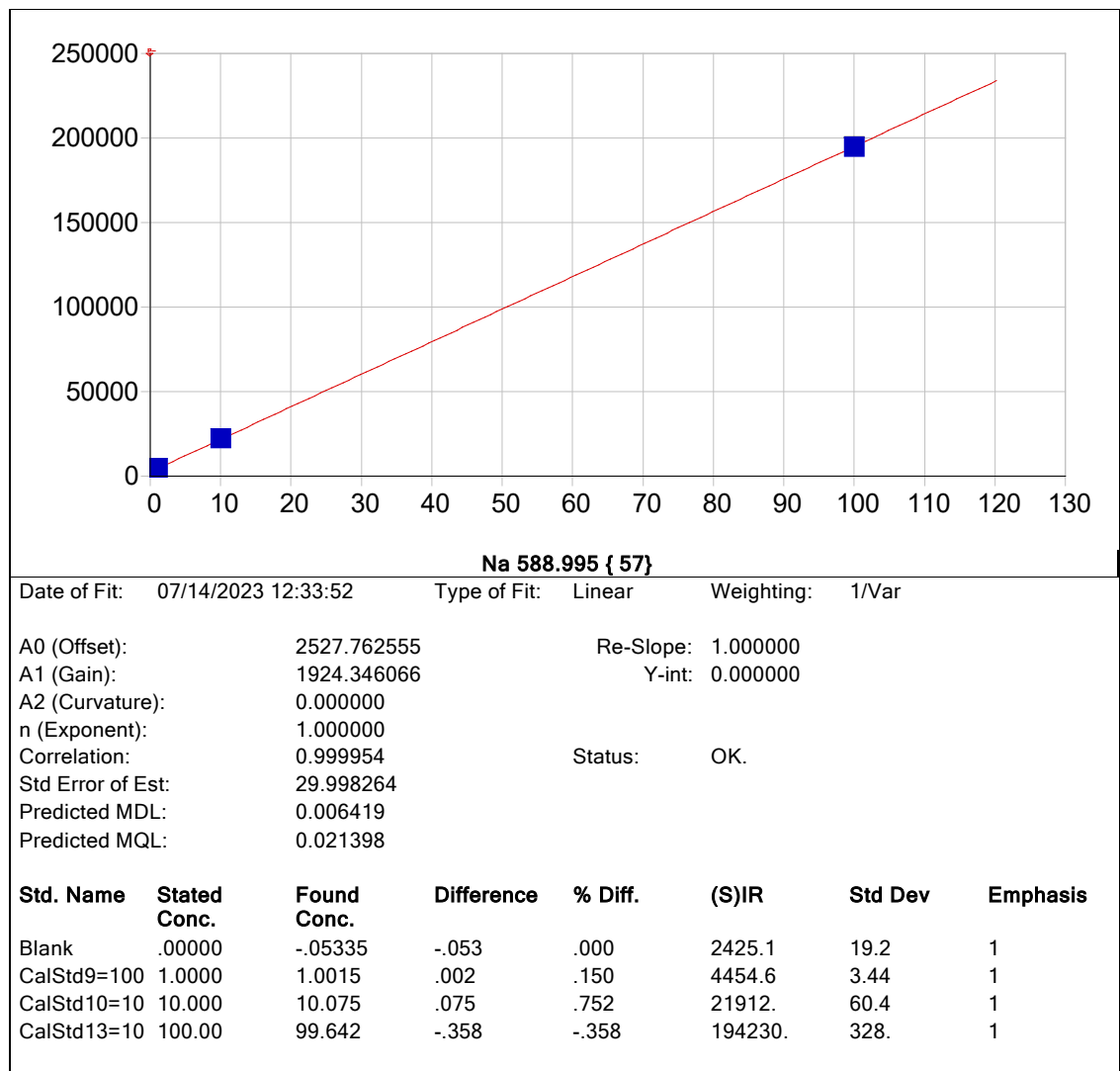


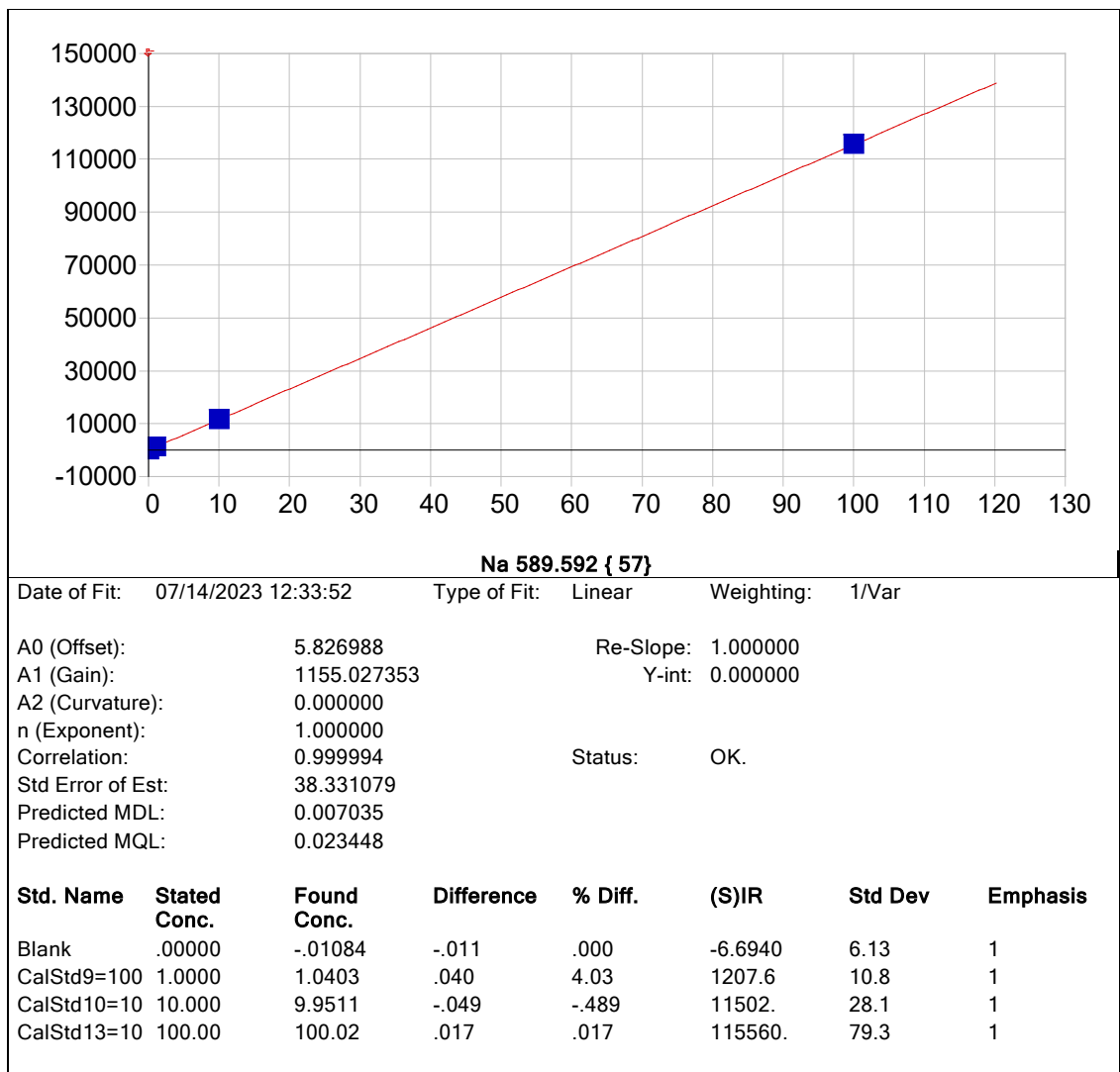


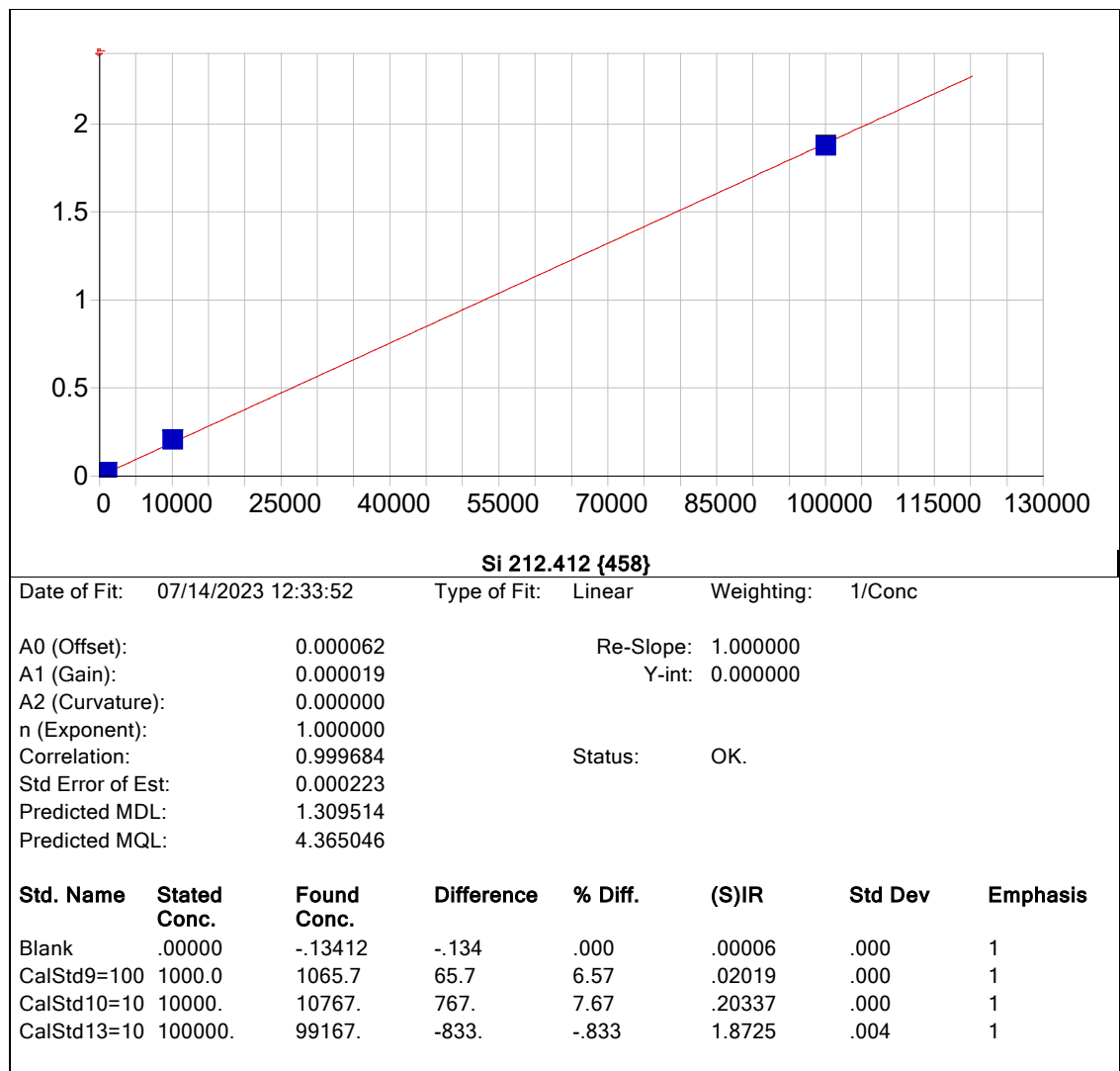


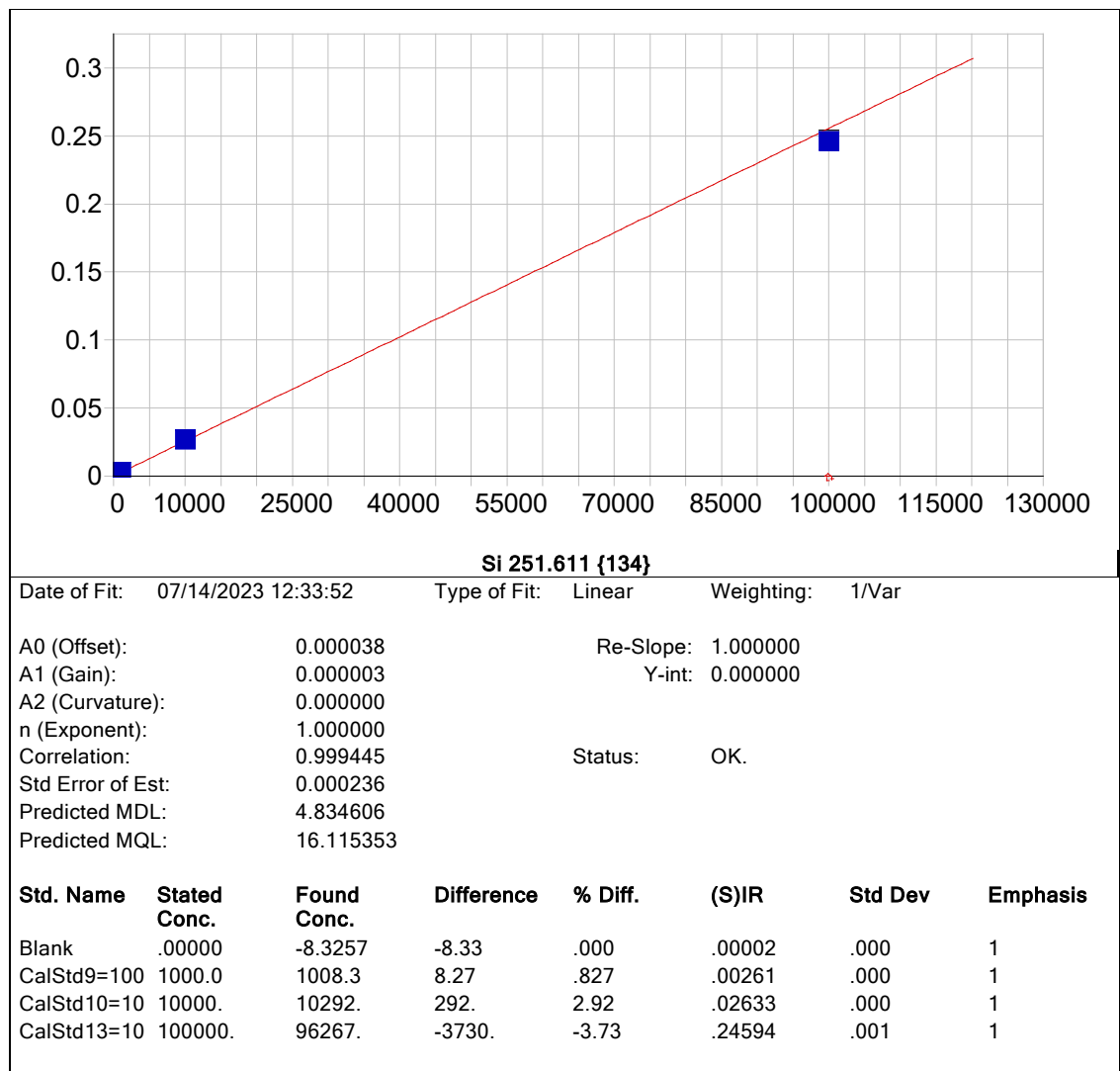


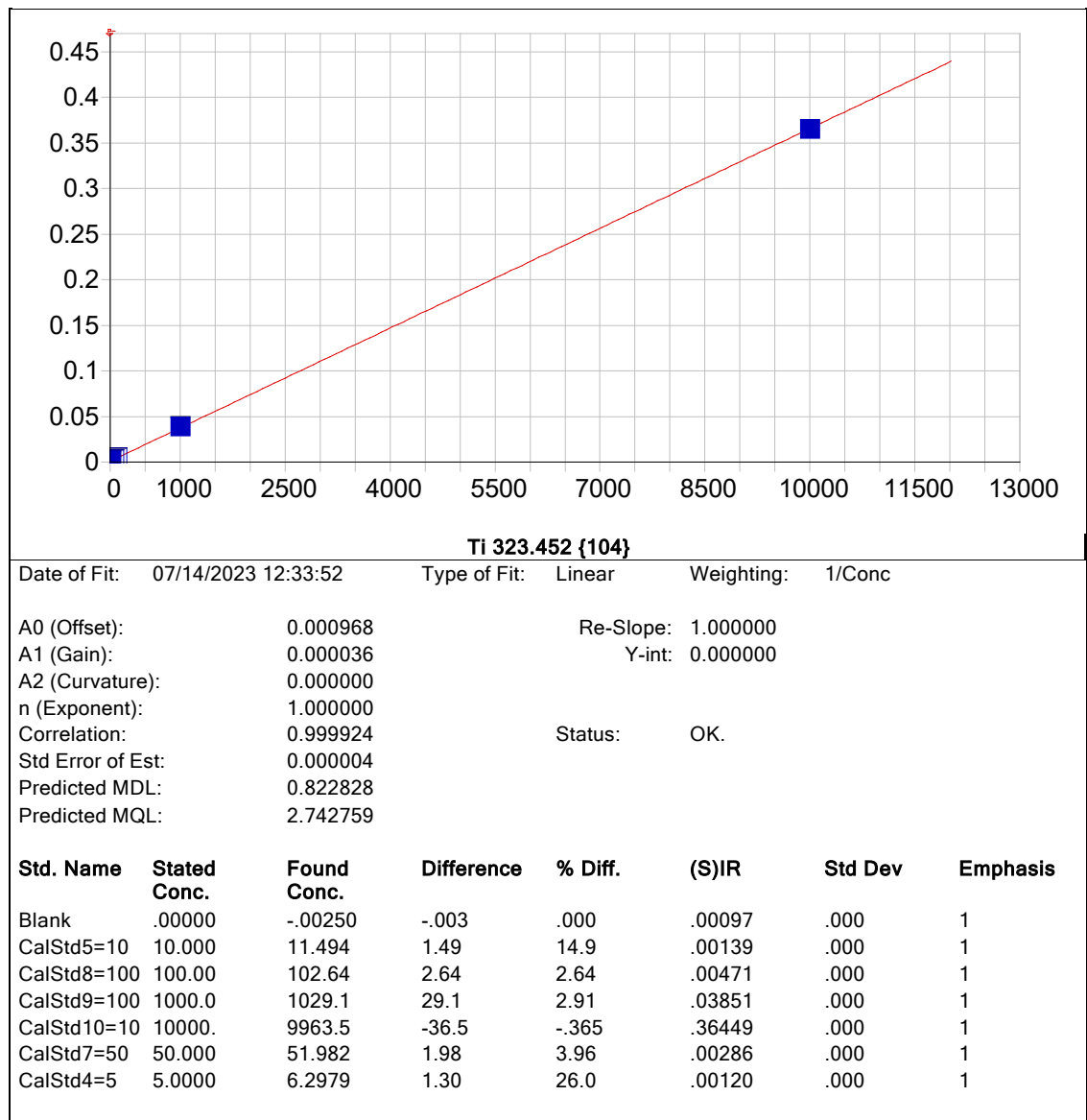


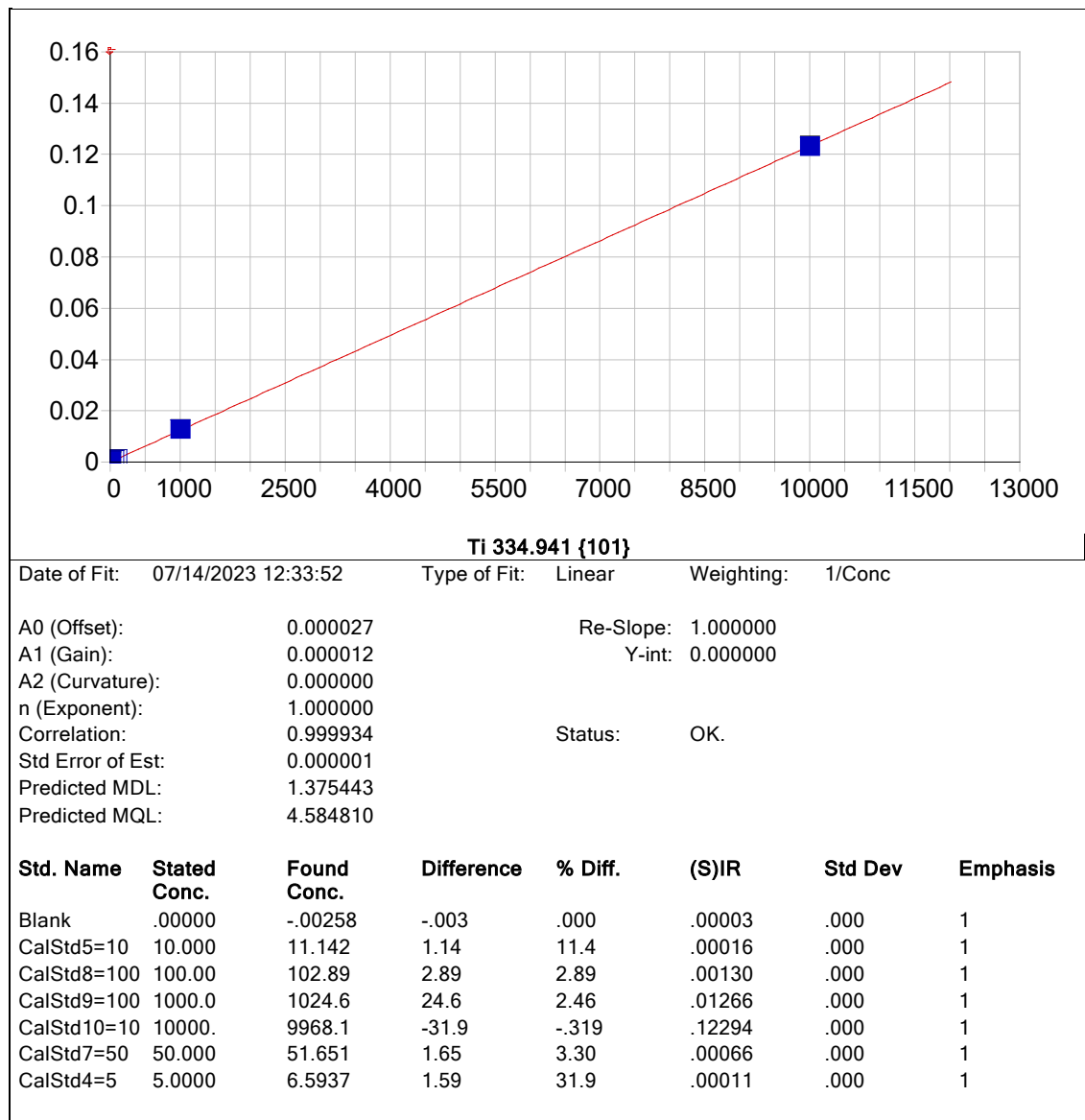


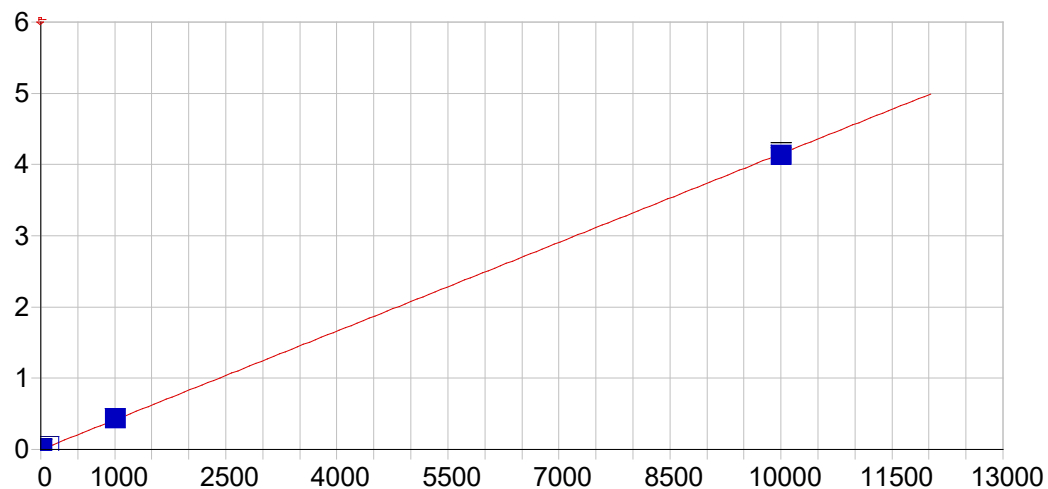










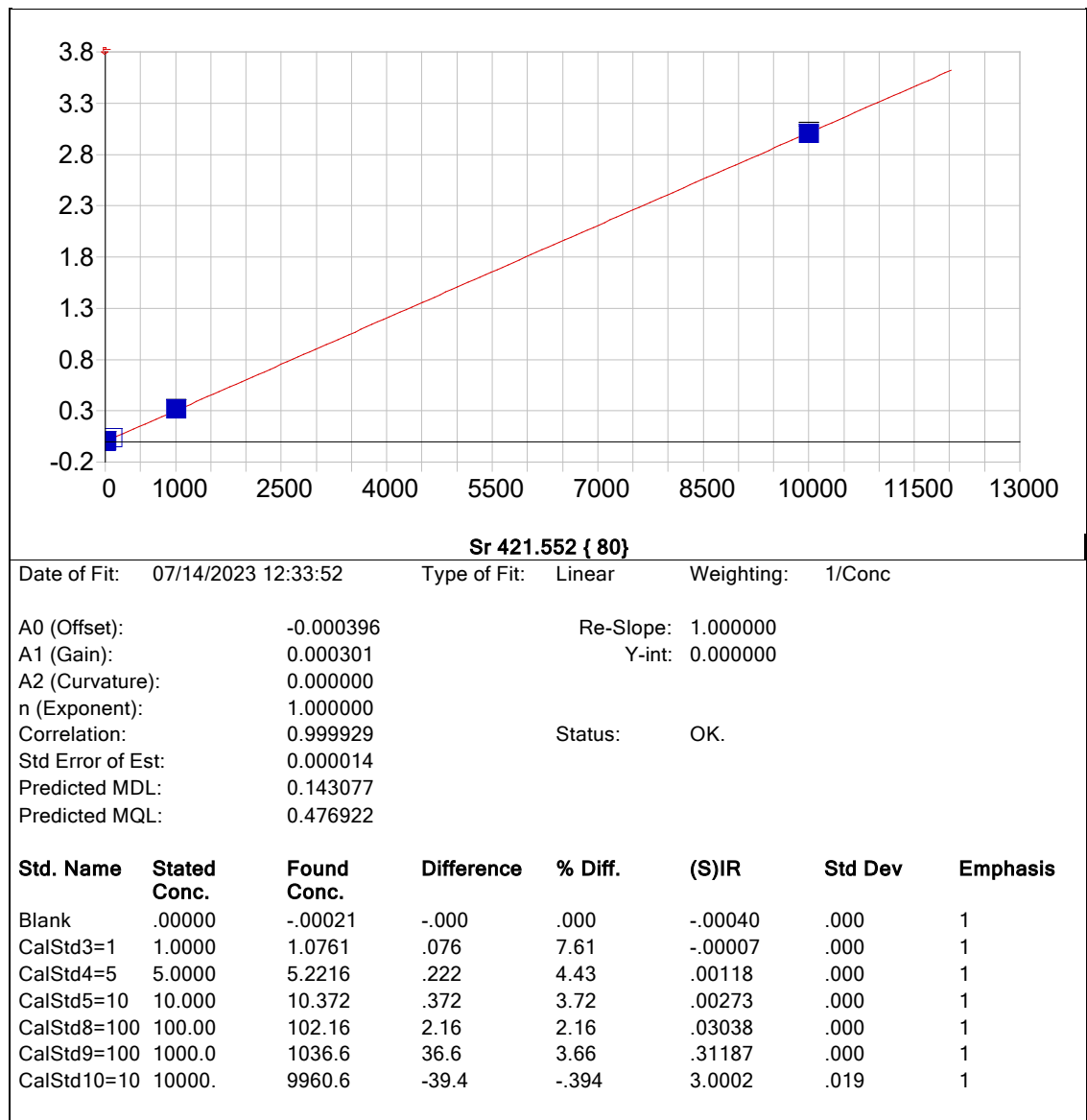


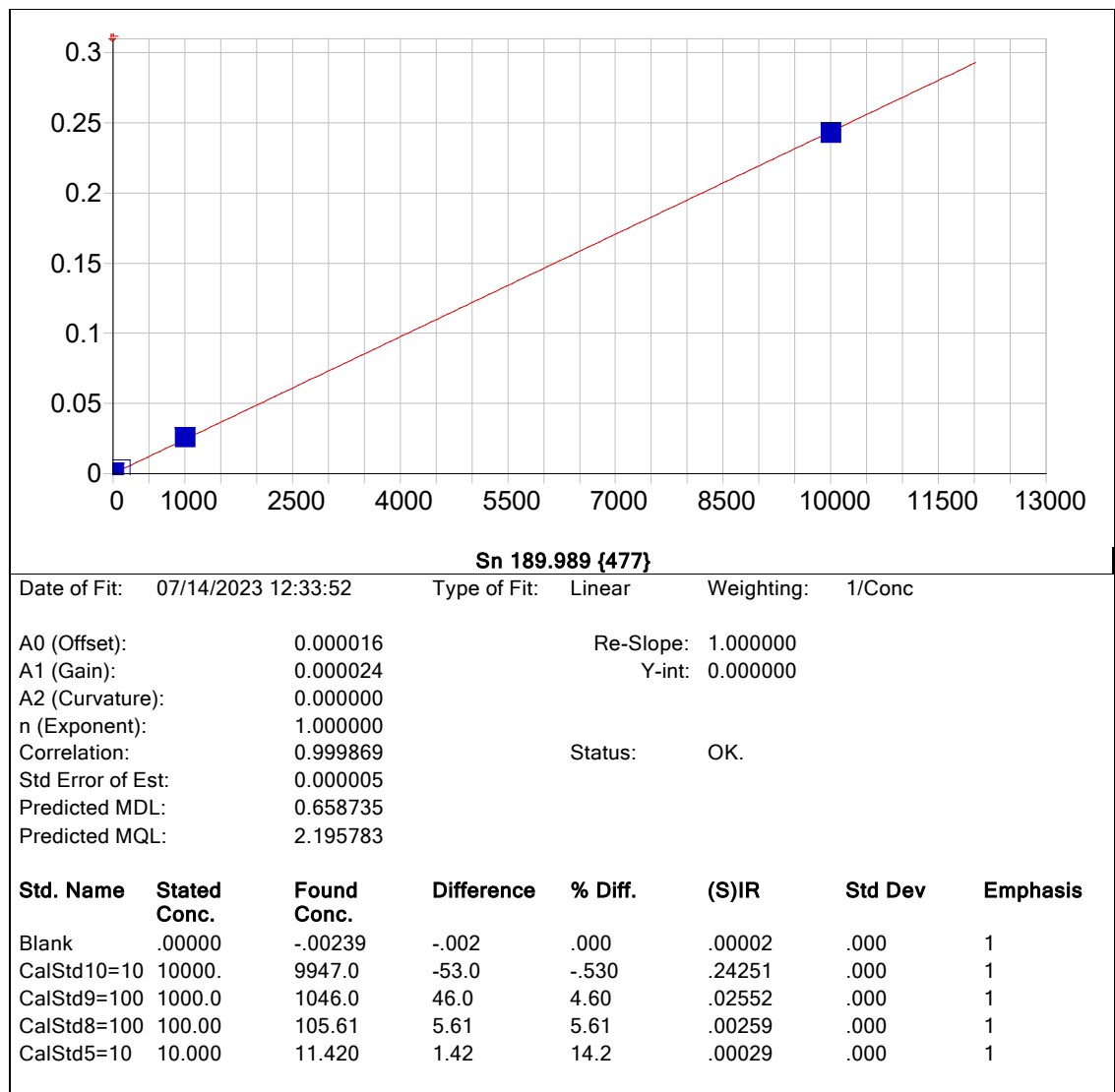
Sr 407.771 { 83}

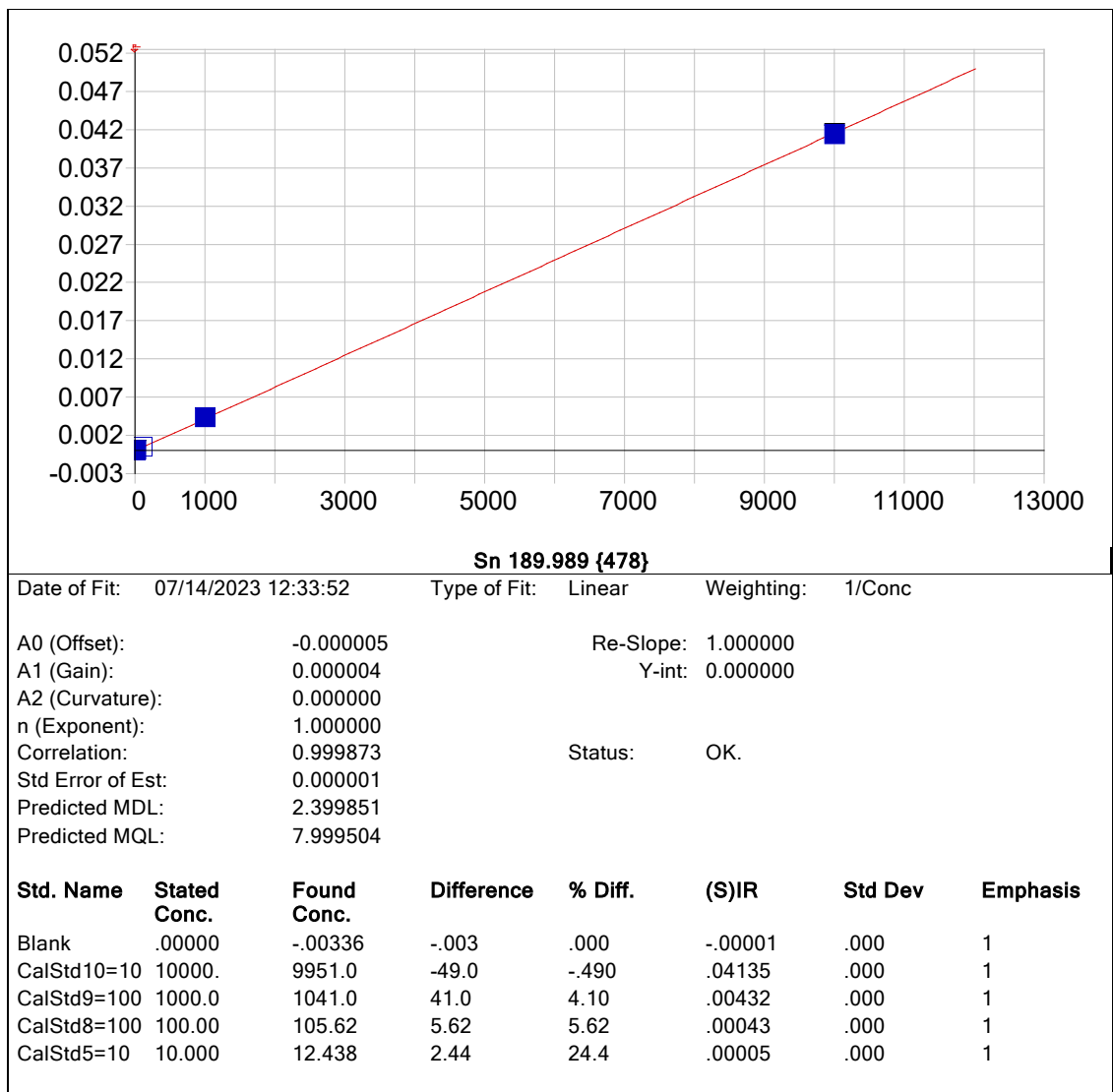
Date of Fit: 07/14/2023 12:33:52 Type of Fit: Linear Weighting: 1/Conc

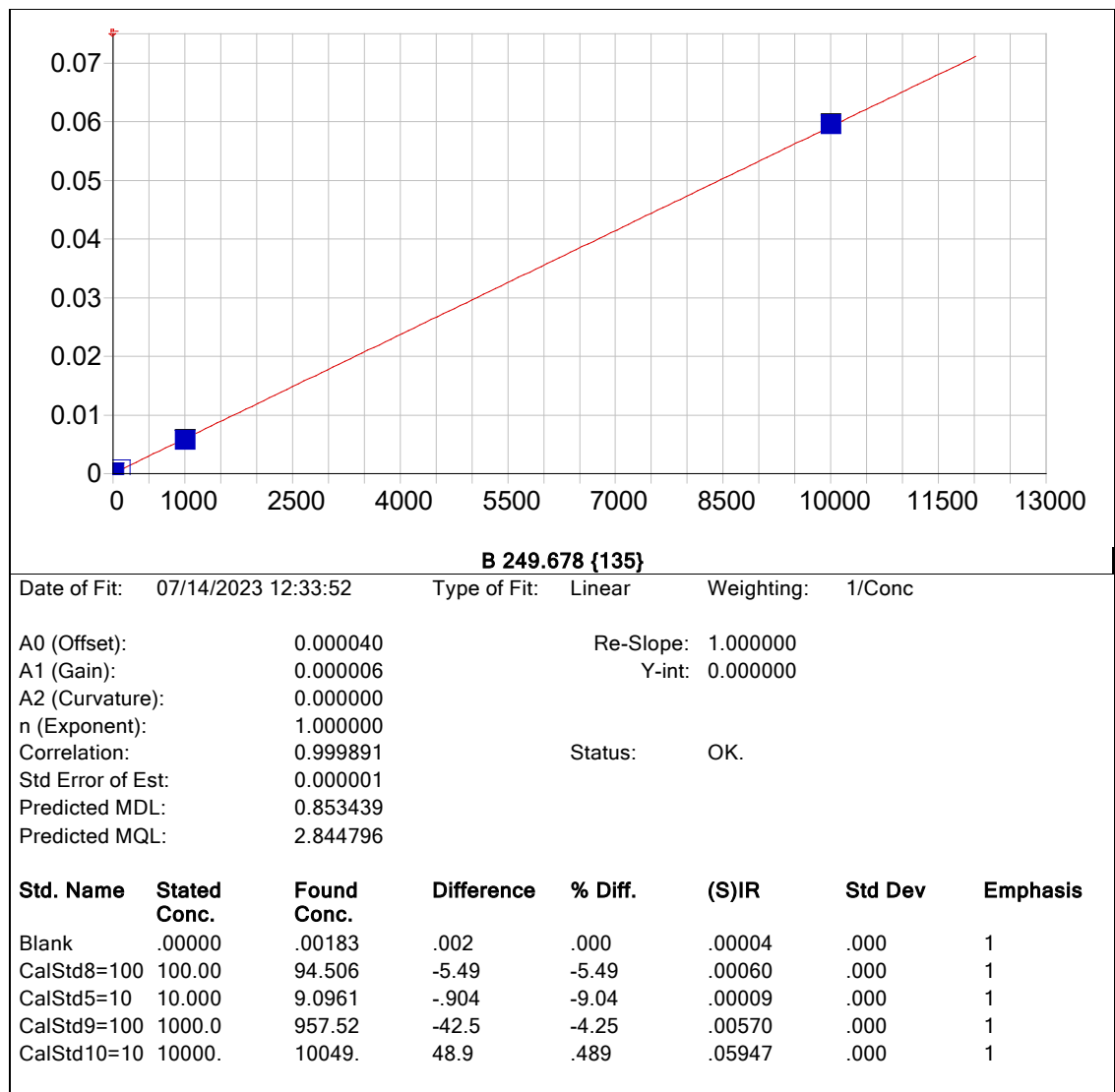
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A1 (Gain):	0.000415	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999890	Status:	OK.
Std Error of Est:	0.000024		
Predicted MDL:	0.097656		
Predicted MQL:	0.325521		

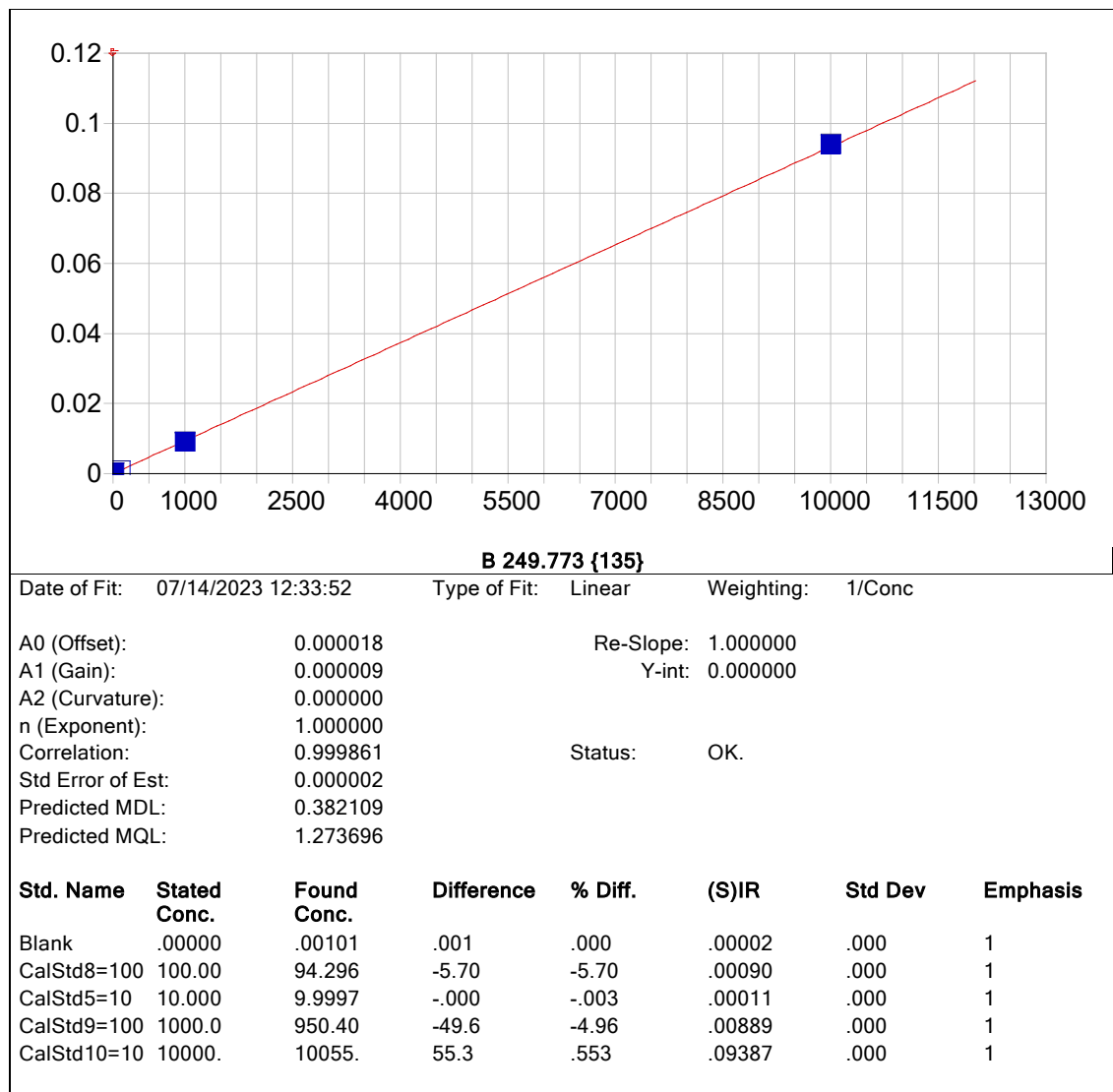
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00059	-.001	.000	.00018	.000	1
CalStd3=1	1.0000	1.3109	.311	31.1	.00073	.000	1
CalStd4=5	5.0000	5.5959	.596	11.9	.00251	.000	1
CalStd5=10	10.000	10.837	.837	8.37	.00468	.000	1
CalStd8=100	100.00	103.62	3.62	3.62	.04320	.000	1
CalStd9=100	1000.0	1043.0	43.0	4.30	.43319	.001	1
CalStd10=10	10000.	9951.6	-48.4	-4.84	4.1317	.037	1

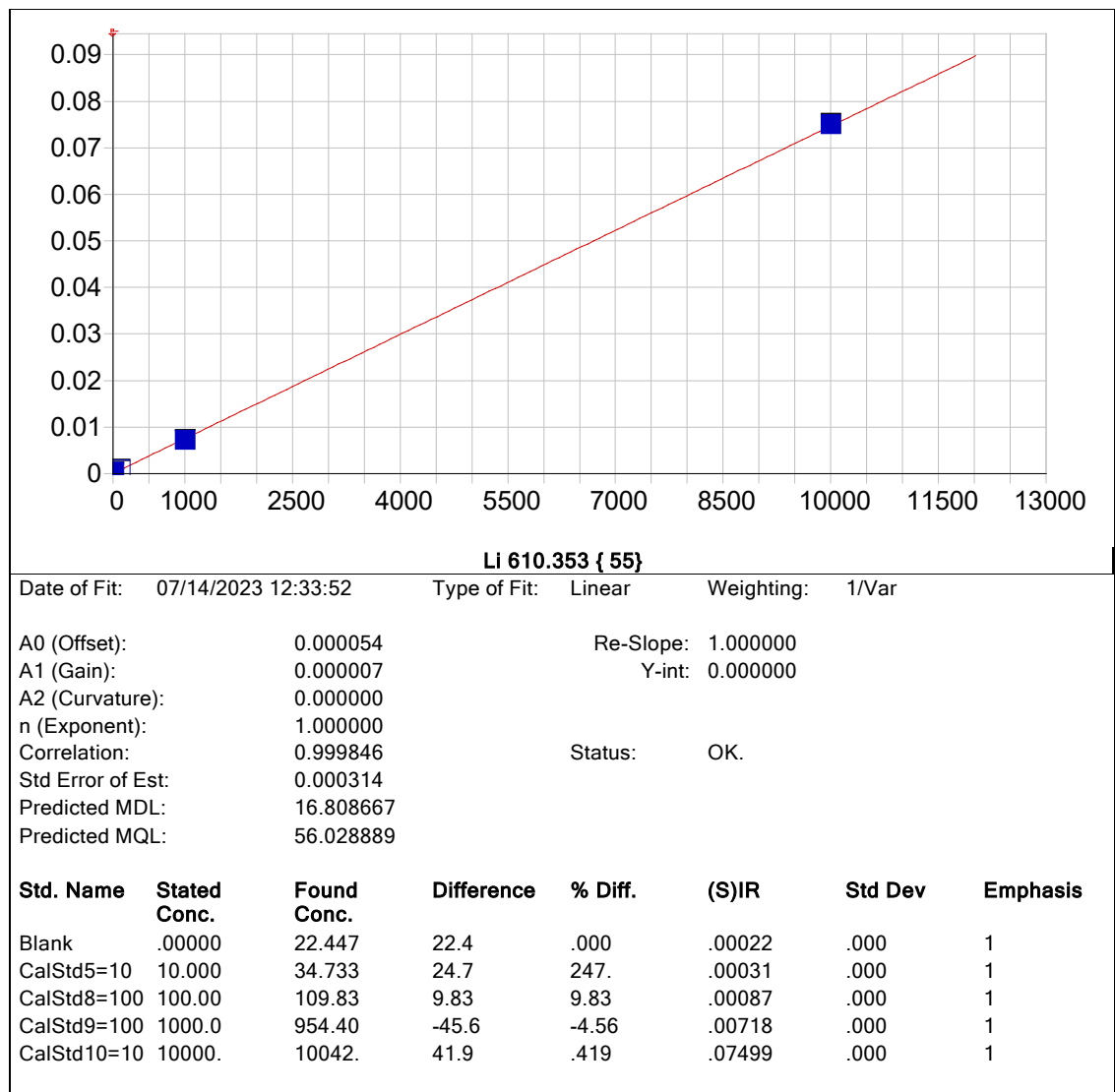


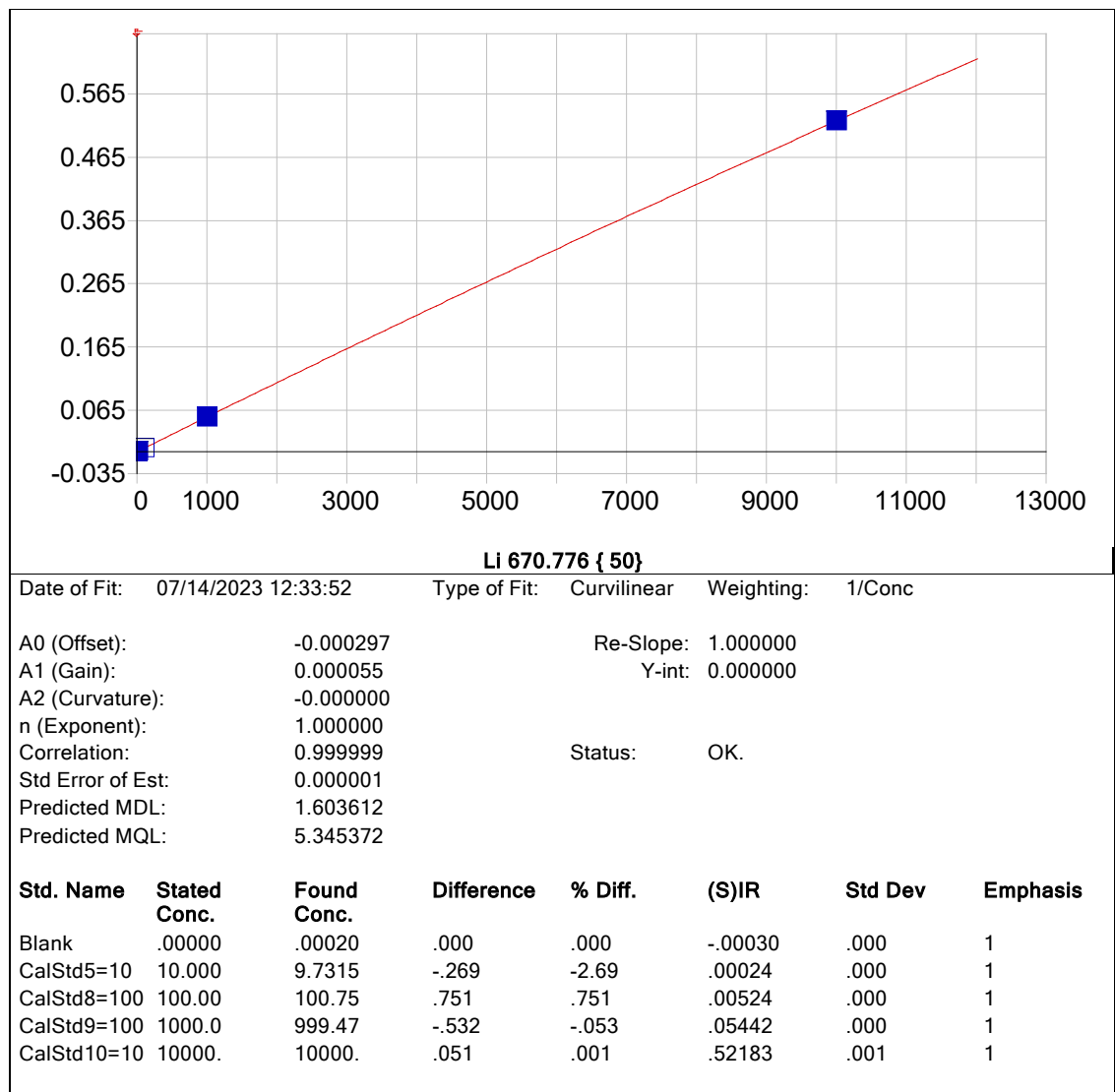


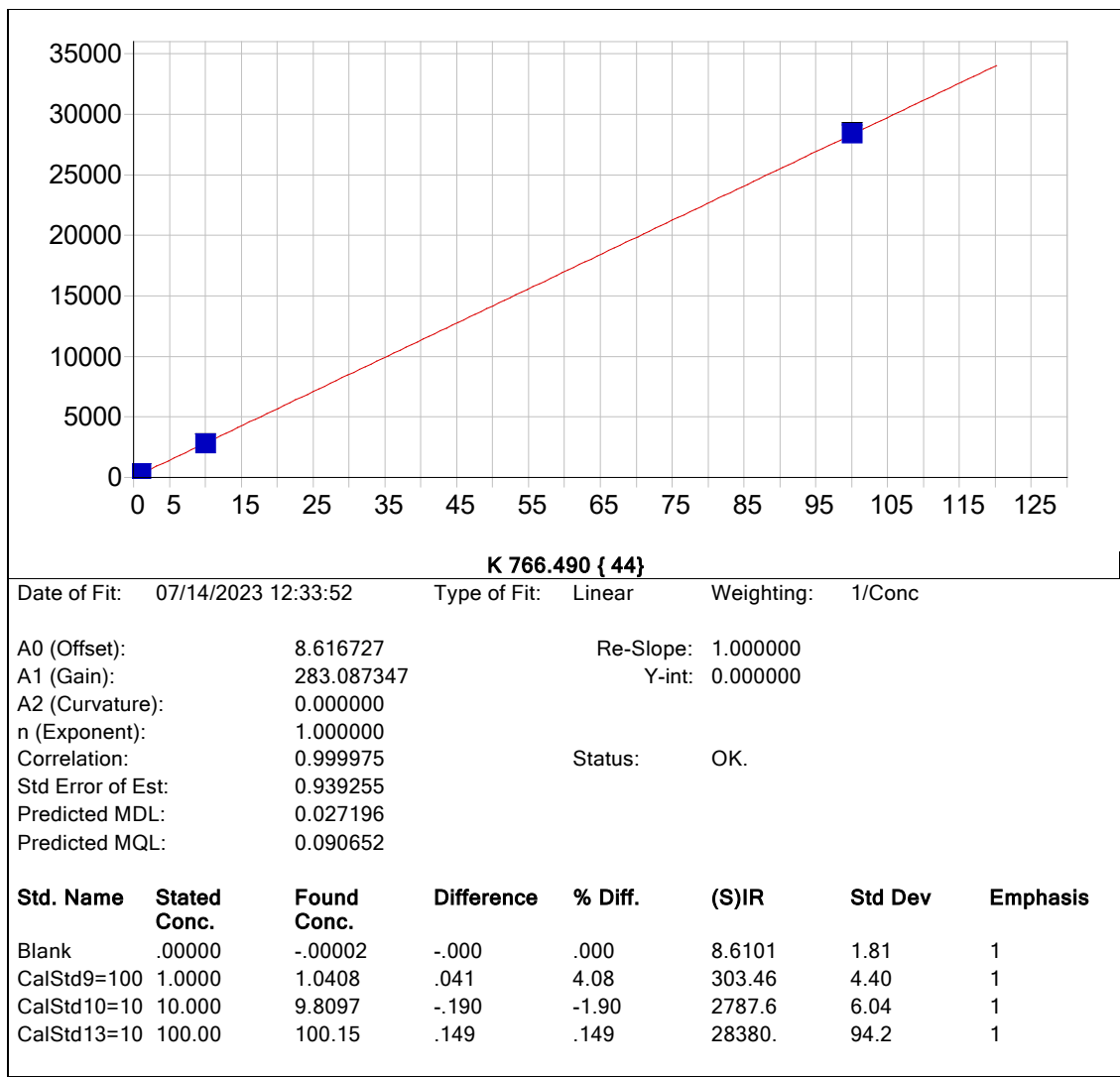


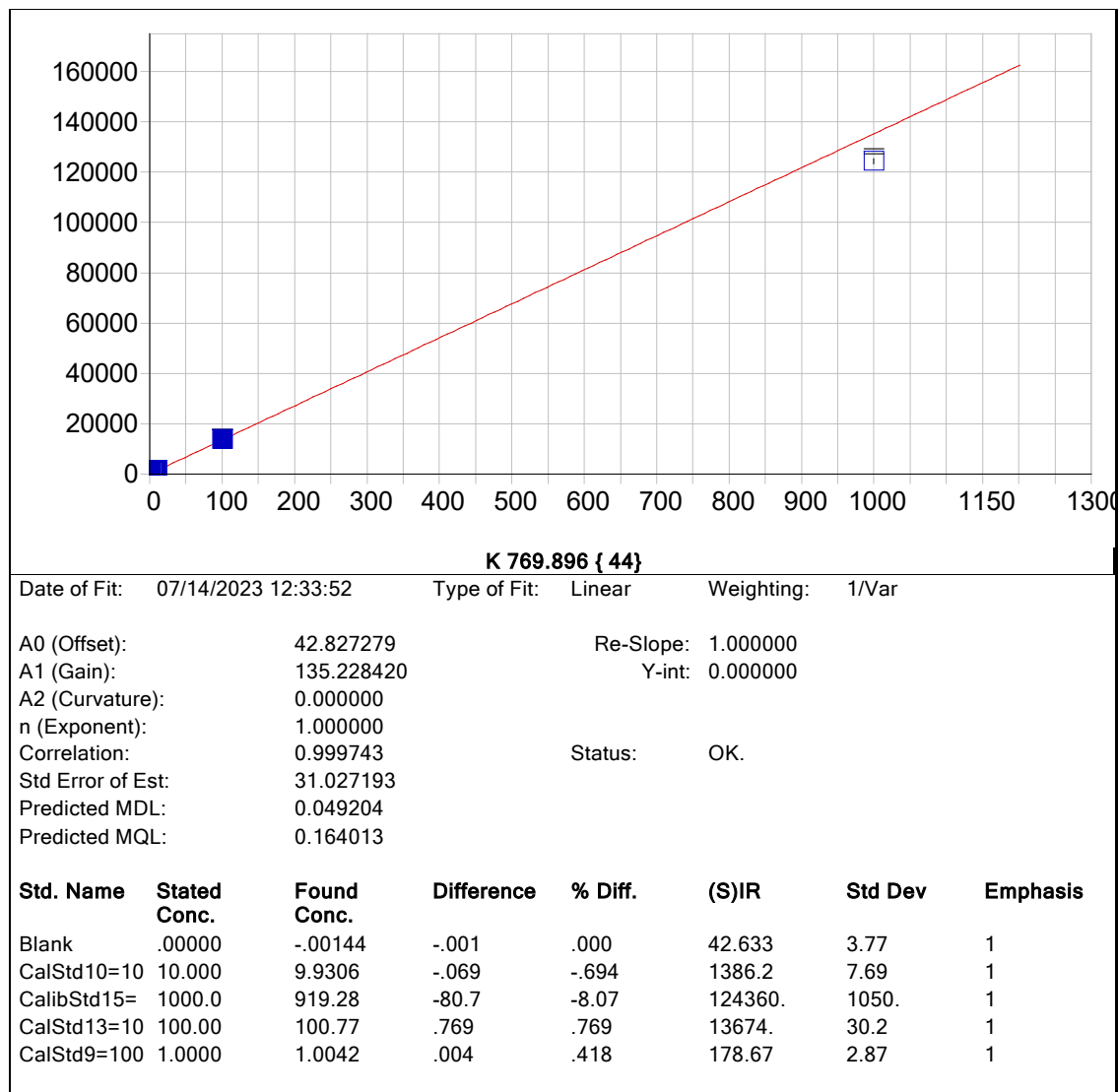


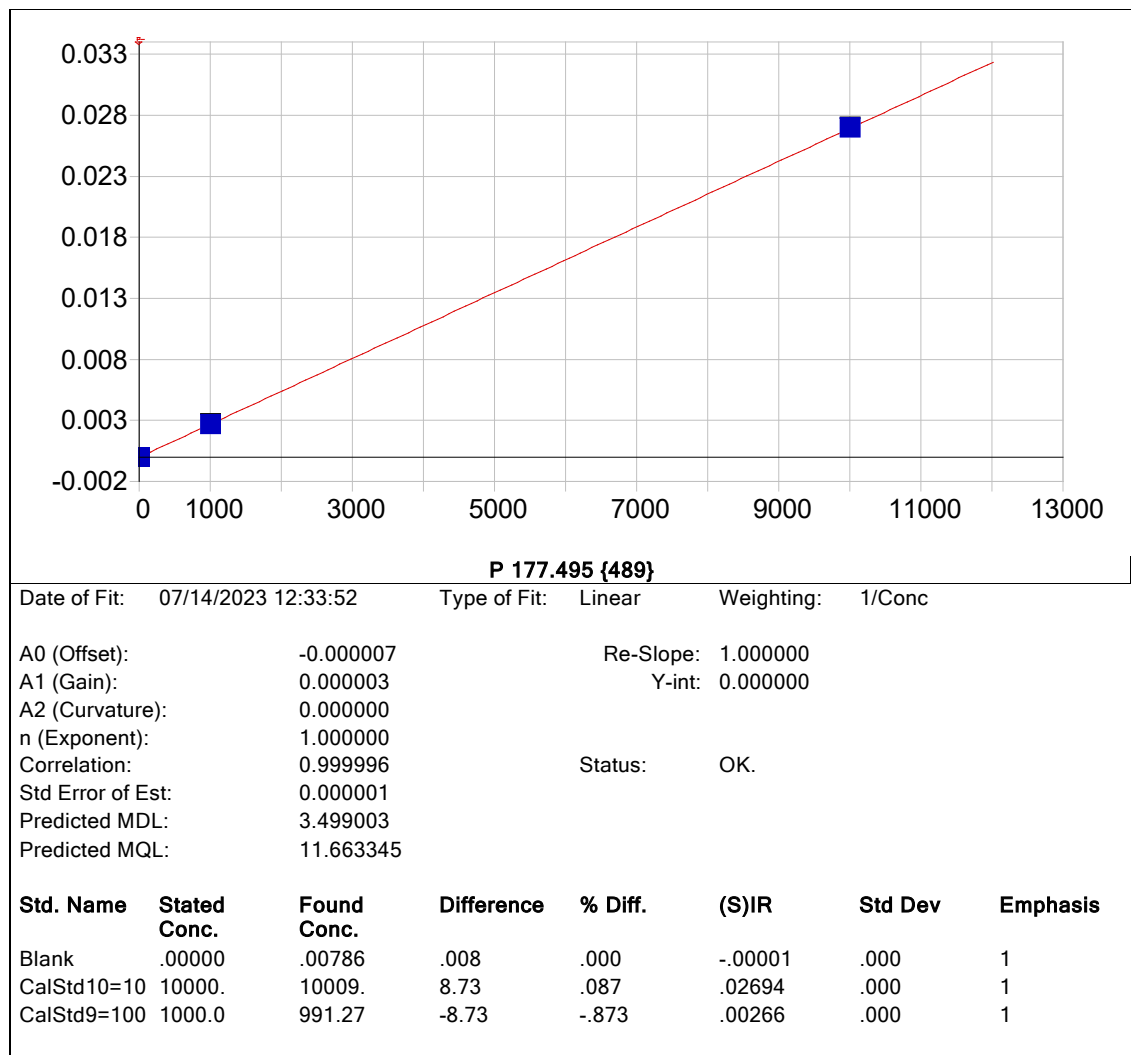


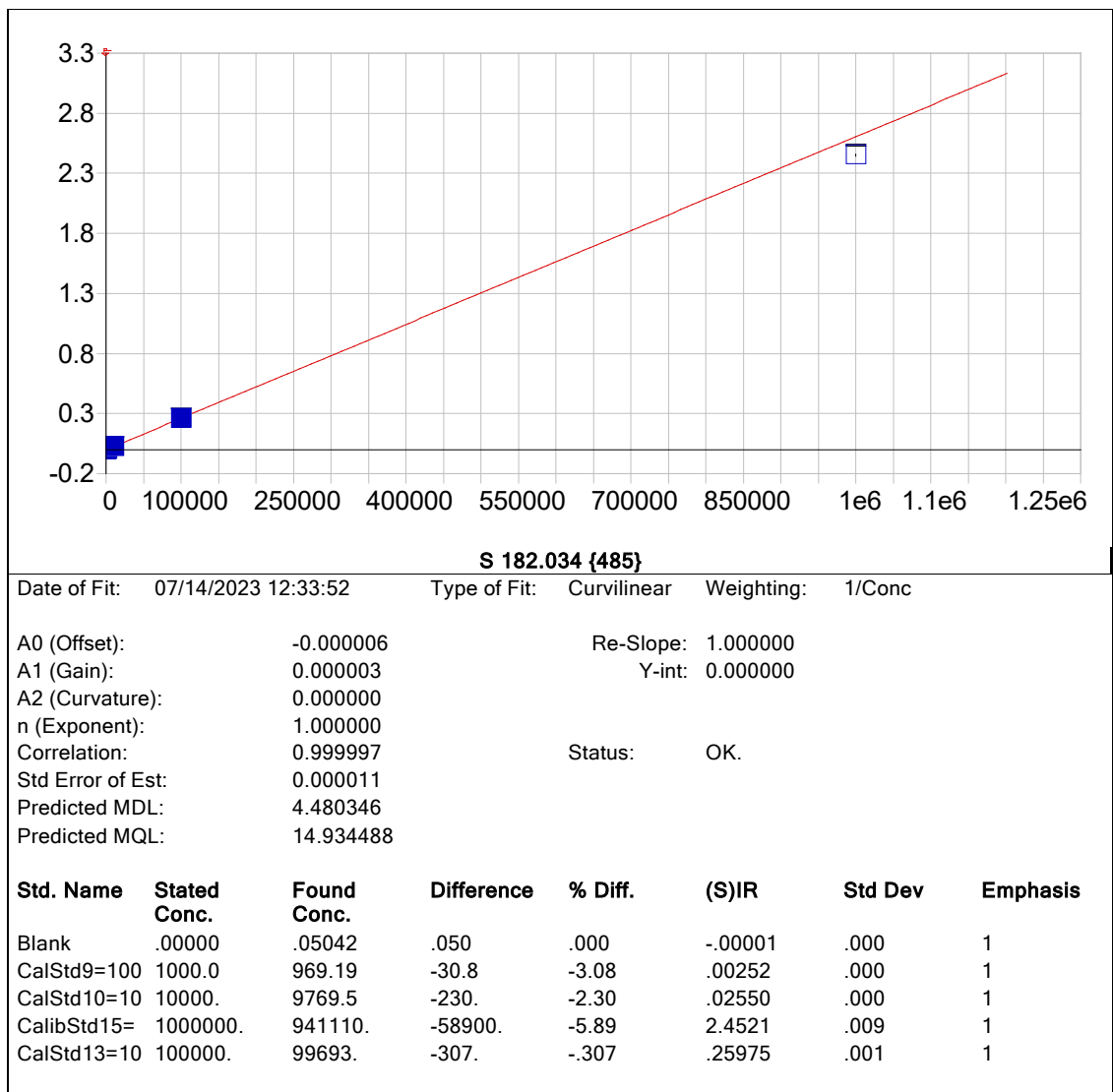


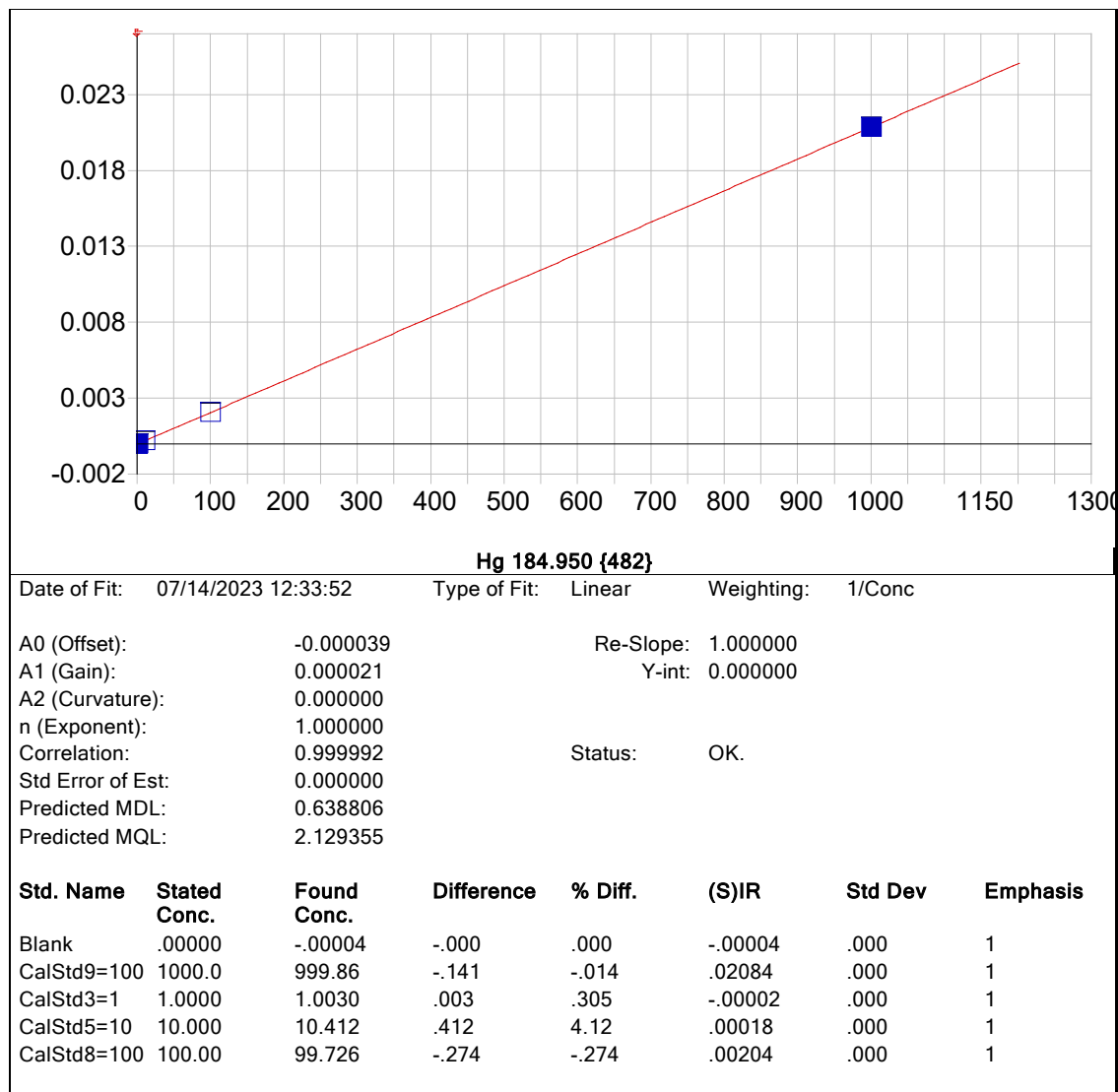


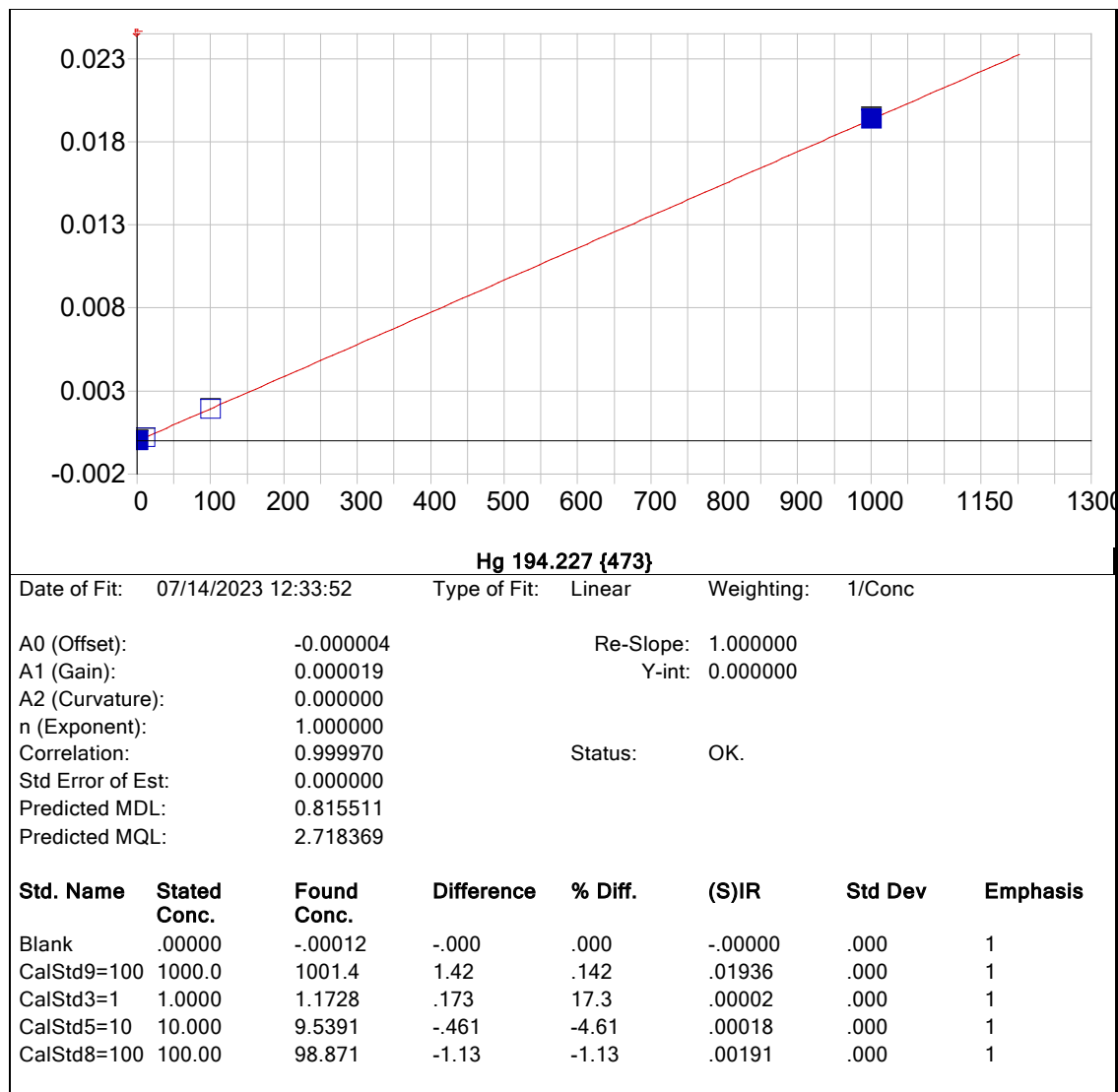


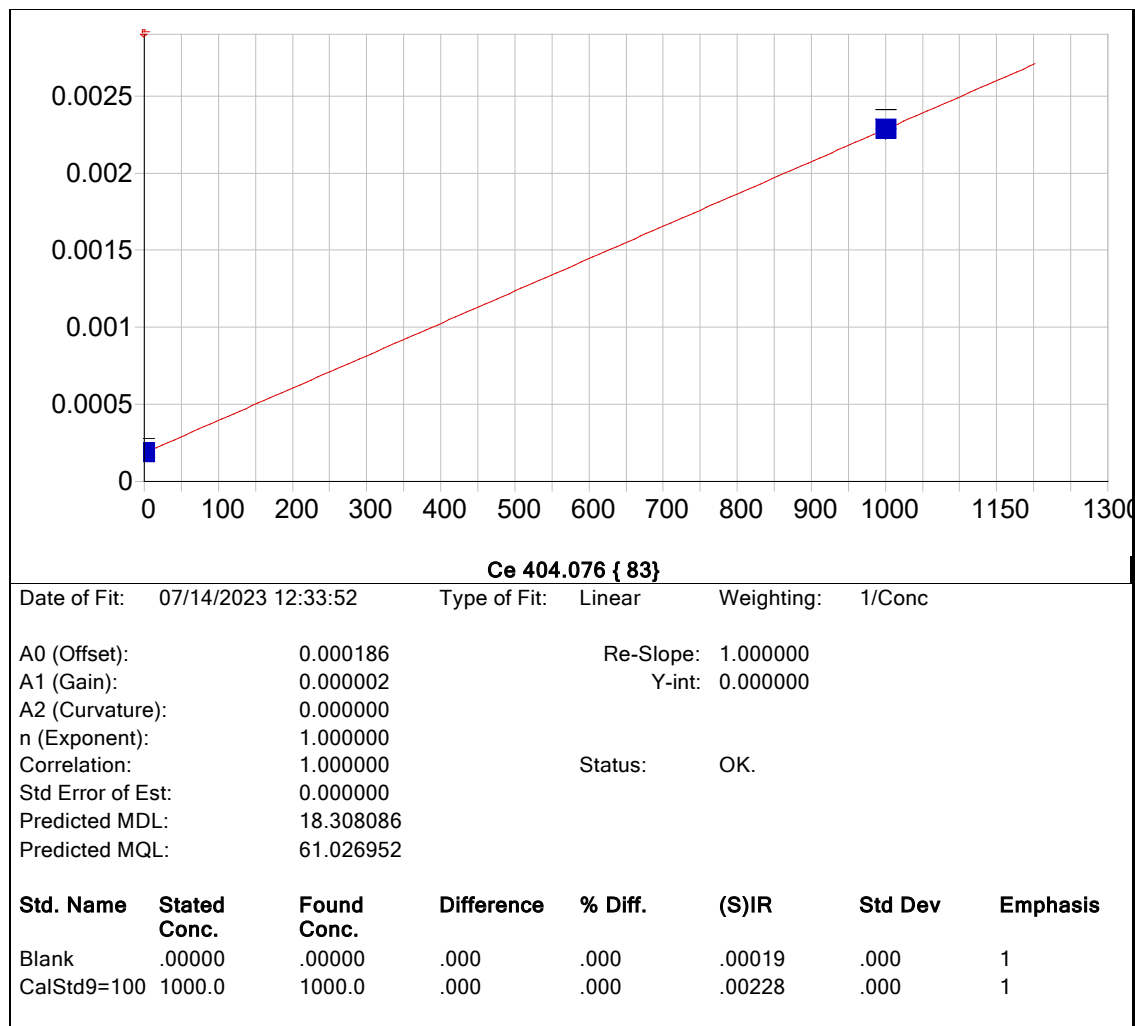












Sample Name: Blank Acquired: 07/13/2023 10:56:46 Type: Cal
Method: DOD Calibration Updated 060614(v5747) Mode: IR Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	Al3961	As1937	As1972	Ba2335	Ba4934	Be3130	Be3131	Ca3158	Ca3968	Cd2265	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-0.000	.000	-0.000	.000	-0.000	-0.000	.030	.000	.000	.000	.000	-0.000	.000
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	14.3	8.37	9.60	53.2	30.9	350.	.395	17.6	86.1	29.3	13.1	106.	984.

Elem	Co2286	Co2388	Cr2055	Cr2677	Cu2230	Cu3247	Fe2343	Fe2395	Fe2599	Mg2790	Mg2802	Mn2576	Mn2593
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-0.000	.000	-0.000	.000	-0.000	.000	.000	.000	-0.000	.000	.000	-0.000	.000
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	237.	32.7	135.	199.	7600.	9.18	9.13	198.	74.2	123.	4.08	16.4	276.

Elem	Mo2020	Mo2045	Ni2216	Ni2316	Pb2169	Pb2203	Sb2068	Sb2175	Se1960	Se2062	Tl1908	V_2908	V_2924
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-0.000	-0.000	.000	-0.000	-0.000	.000	-0.000	.000	-0.000	.000	-0.000	.000	.000
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	66.4	458.	51.3	12.6	104.	40.5	109.	61.2	899.	672.	86.4	14.7	74.6

Elem	Zn2062	Zn2138	Na3302	Na5889	Na5895	Si2516	Ti3234	Sr4077	Sn1899	B_2496	Li6707	K_7664	K_7698
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-0.000	-896	-0.000	2430.	-6.69	.000	.001	.000	.000	.000	-0.000	8.61	42.6
Stddev	.000	1.14	.000	19.	6.13	.000	.000	.000	.000	.000	.000	1.81	3.8
%RSD	113.	127.	953.	.793	91.6	62.3	2.23	11.9	46.2	11.0	18.9	21.1	8.84

Elem	S_1820
Units	Cts/S
Avg	-0.000
Stddev	.000
%RSD	158.

Sample Name: Blank Acquired: 07/13/2023 10:56:46 Type: Cal
Method: DOD Calibration Updated 060614(v5747) Mode: IR Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	44098.	596600.	101180.
Stddev	157.	4244.	291.
%RSD	.35609	.71143	.28786

Sample Name: CalStd2=0.5 Acquired: 07/13/2023 11:04:08 Type: Cal
 Method: DOD Calibration Updated 060614(v5747) Mode: IR Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	Be3130	Be3131	Cd2265	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.000	.000	.000	.000
Stddev	.000	.000	.000	.000
%RSD	4.75	15.7	16.0	15.5

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	42858.	581630.	99303.
Stddev	111.	2766.	288.
%RSD	.25878	.47546	.28982

Sample Name: CalStd3=1 Acquired: 07/13/2023 11:11:29 Type: Cal
 Method: DOD Calibration Updated 060614(v5747) Mode: IR Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	Ag3280	Ba2335	Be3130	Be3131	Cd2265	Cd2288	Co2286	Cr2055	Ni2316	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.000	.000	.000	.000	.000	.000	.000	.000	.000	.001
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	27.2	6.88	.744	17.8	6.03	14.2	6.90	4.70	8.59	7.82

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	43036.	590720.	98596.
Stddev	168.	2223.	181.
%RSD	.38943	.37629	.18343

Sample Name: CalStd4=5 Acquired: 07/13/2023 11:18:49 Type: Cal
Method: DOD Calibration Updated 060614(v5747) Mode: IR Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Ba2335	Be3130	Be3131	Cd2265	Cd2288	Co2286	Cr2055	Cr2677	Mn2576	Mo2020	Mo2045	Ni2316
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.000	.000	.001	.001	.001	.000	.001	.001	.000	.000	.000	.000	.001
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	47.6	2.73	.239	1.30	.323	2.71	2.05	3.95	4.42	1.26	7.33	13.5	8.81

Elem	Pb2203	Sb2175	Ti3234	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.000	.000	.001	.003
Stddev	.000	.000	.000	.000
%RSD	14.3	23.9	2.25	.829

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	42931.	583520.	98519.
Stddev	59.	1451.	252.
%RSD	.13840	.24865	.25625

Sample Name: CalStd5=10 Acquired: 07/13/2023 11:26:10 Type: Cal
Method: DOD Calibration Updated 060614(v5747) Mode: IR Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Al1670	As1937	As1972	Ba2335	Be3130	Be3131	Cd2265	Cd2288	Co2286	Cr2055	Cr2677	Cu2230	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.000	.000	-.000	.001	.003	.001	.002	.000	.001	.001	.000	.000	.001
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	3.07	6.72	48.0	1.59	1.32	1.38	.826	2.29	1.94	1.80	5.36	5.77	1.14

Elem	Mo2020	Mo2045	Ni2316	Pb2203	Sb2068	Sb2175	Se1960	Tl1908	V_2924	Zn2062	Zn2138	Ti3234	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.001	.000	.001	.000	.000	.000	.000	.000	.000	.001	101.	.001	.005
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.	.000	.000
%RSD	2.49	6.83	2.95	7.07	6.21	15.6	62.5	8.45	5.04	1.63	.375	2.28	.356

Elem	Sn1899	B_2496	Li6707
Units	Cts/S	Cts/S	Cts/S
Avg	.000	.000	.000
Stddev	.000	.000	.000
%RSD	1.83	5.10	35.2

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	43289.	588950.	98187.
Stddev	56.	5033.	211.
%RSD	.12994	.85462	.21513

Sample Name: CalStd6=20 Acquired: 07/13/2023 11:33:31 Type: Cal
 Method: DOD Calibration Updated 060614(v5747) Mode: IR Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	Ba2335	Mn2576	Mo2020	Mo2045	Sb2175	V_2924
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.001	.001	.001	.001	.000	.000
Stddev	.000	.000	.000	.000	.000	.000
%RSD	1.42	.635	1.05	2.64	6.69	.835

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	42918.	586780.	98633.
Stddev	83.	3135.	344.
%RSD	.19371	.53427	.34878

Sample Name: CalStd7=50 Acquired: 07/13/2023 11:40:51 Type: Cal
 Method: DOD Calibration Updated 060614(v5747) Mode: IR Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	As1937	As1972	Cd2265	Cd2288	Co2286	Cr2055	Cr2677	Mn2576	Mo2020	Mo2045	Ni2316	Sb2068	V_2924
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.000	.000	.011	.002	.007	.005	.000	.003	.002	.001	.005	.000	.001
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	10.6	9.06	.096	1.14	.363	.198	1.30	.930	.356	1.28	.752	3.92	1.78

Elem	Ti3234
Units	Cts/S
Avg	.003
Stddev	.000
%RSD	.449

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	43153.	589540.	98430.
Stddev	69.	3882.	298.
%RSD	.16076	.65854	.30242

Sample Name: CalStd8=100 Acquired: 07/13/2023 11:48:01 Type: Cal
Method: DOD Calibration Updated 060614(v5747) Mode: IR Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	As1972	Ba2335	Ba4934	Be3130	Be3131	Ca3968	Cd2265	Cd2288	Co2286	Co2388
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.005	.001	.000	.000	.007	.040	.027	.010	.033	.022	.003	.014	.001
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.001	.000	.000	.000	.000
%RSD	.375	.589	3.80	5.18	.344	.229	.285	.164	1.57	.525	.610	.201	.514

Elem	Cr2055	Cr2677	Cu2230	Cu3247	Mg2802	Mn2576	Mo2020	Mo2045	Ni2216	Ni2316	Pb2169	Pb2203	Sb2175
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.010	.001	.003	.001	.020	.006	.005	.002	.008	.011	.001	.002	.001
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	.265	.891	1.34	.785	.251	.318	.650	1.20	.163	.377	5.18	.546	1.76

Elem	Se1960	Se2062	Tl1908	V_2908	V_2924	Zn2062	Zn2138	Ti3234	Sr4077	Sn1899	B_2496	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.000	.000	.001	.001	.002	.013	918.	.005	.043	.003	.001	.005
Stddev	.000	.000	.000	.000	.000	.000	3.	.000	.000	.000	.000	.000
%RSD	3.02	12.4	1.71	.891	.461	.261	.320	.684	.385	.409	.464	2.28

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	42988.	587010.	98747.
Stddev	146.	438.	98.
%RSD	.33944	.07466	.09962

Sample Name: CalStd9=1000 Acquired: 07/13/2023 11:55:03 Type: Cal
Method: DOD Calibration Updated 060614(v5747) Mode: IR Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Al1670	Al3961	As1937	As1972	Ba2335	Be3130	Be3131	Ca3158	Ca3968	Cd2265	Cd2288	Co2286	Co2388
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.012	.006	.004	.002	.067	.269	.100	.002	.294	.218	.032	.142	.008
Stddev	.000	.000	.000	.000	.000	.002	.000	.000	.000	.000	.000	.000	.000
%RSD	.086	.354	.411	.715	.232	.580	.214	.480	.164	.191	.360	.301	.250

Elem	Cr2055	Cr2677	Cu2230	Cu3247	Fe2343	Fe2395	Fe2599	Mg2790	Mg2802	Mn2576	Mn2593	Mo2020	Mo2045
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.098	.010	.029	.011	.002	.003	.009	.000	.185	.059	.037	.050	.025
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	.171	.276	.304	.172	.494	.363	.352	.917	.263	.307	.314	.161	.219

Elem	Ni2216	Ni2316	Pb2169	Pb2203	Sb2068	Sb2175	Se1960	Se2062	Tl1908	V_2908	V_2924	Zn2062	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.075	.108	.007	.023	.008	.007	.005	.001	.011	.006	.023	.132	9230.
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	19.
%RSD	.218	.134	.546	.333	.369	.209	.801	1.03	.311	.324	.374	.153	.203

Elem	Na5889	Na5895	Si2516	Ti3234	Sr4077	Sn1899	B_2496	Li6707	K_7664	K_7698	S_1820
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4450.	1210.	.003	.039	.433	.026	.006	.054	303.	179.	.003
Stddev	3.	11.	.000	.000	.001	.000	.000	.000	4.	3.	.000
%RSD	.077	.891	.925	.280	.203	.334	.462	.119	1.45	1.61	.715

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	43501.	597920.	99174.
Stddev	81.	1480.	170.
%RSD	.18717	.24756	.17189

Sample Name: CalStd10=10000 Acquired: 07/13/2023 12:01:37 Type: Cal
Method: DOD Calibration Updated 060614(v5747) Mode: IR Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Al3961	As1972	Ba2335	Ba4934	Ca3158	Ca3968	Co2286	Co2388	Cr2055	Cu2230	Cu3247
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.058	.020	.632	.902	.021	2.77	1.37	.082	.937	.274	.105
Stddev	.000	.000	.001	.011	.000	.02	.00	.000	.001	.001	.000
%RSD	.248	.141	.172	1.21	.241	.607	.160	.241	.109	.199	.135

Elem	Fe2343	Fe2395	Fe2599	Mg2790	Mg2802	Mn2576	Mn2593	Mo2020	Mo2045	Ni2216	Ni2316
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.017	.031	.089	.003	1.74	.590	.358	.475	.244	.710	1.03
Stddev	.000	.000	.000	.000	.01	.002	.000	.001	.001	.001	.00
%RSD	.211	.112	.108	.225	.610	.284	.101	.131	.209	.147	.137

Elem	Pb2169	Sb2068	Sb2175	Se1960	Se2062	Tl1908	V_2908	V_2924	Zn2062	Na5889	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.061	.074	.063	.043	.010	.102	.058	.241	1.27	2190.	11500.
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.00	60.	28.
%RSD	.219	.253	.333	.163	.446	.138	.148	.202	.156	.276	.244

Elem	Si2516	Ti3234	Sr4077	Sn1899	B_2496	Li6707	K_7664	K_7698	S_1820
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.026	.364	4.13	.243	.059	.522	2790.	1390.	.026
Stddev	.000	.000	.04	.000	.000	.001	6.	8.	.000
%RSD	.247	.051	.892	.141	.170	.109	.217	.555	.088

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	42104.	539330.	98475.
Stddev	55.	1611.	367.
%RSD	.13181	.29878	.37306

Sample Name: CalStd12=100K Acquired: 07/13/2023 12:09:19 Type: Cal
 Method: DOD Calibration Updated 060614(v5747) Mode: IR Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	Cr2055	Cu3247	Mn2593	Pb2169	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8.94	1.07	3.61	.658	11.6
Stddev	.06	.00	.03	.002	.1
%RSD	.610	.076	.801	.336	1.01

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	41735.	587250.	98732.
Stddev	185.	3571.	318.
%RSD	.44258	.60805	.32204

Sample Name: CalStd13=100000 Acquired: 07/13/2023 12:17:27 Type: Cal
 Method: DOD Calibration Updated 060614(v5747) Mode: IR Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	Ca3158	Fe2343	Fe2395	Fe2599	Mg2790	Na3302	Na5889	Na5895	Si2516	K_7664
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.209	.157	.311	.903	.031	.002	194000.	116000.	.246	28400.
Stddev	.001	.001	.001	.003	.000	.000	328.	79.	.001	94.
%RSD	.353	.790	.313	.337	.455	1.48	.169	.069	.296	.332

Elem	K_7698	S_1820
Units	Cts/S	Cts/S
Avg	13700.	.260
Stddev	30.	.001
%RSD	.221	.250

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	40521.	558060.	98494.
Stddev	34.	3781.	317.
%RSD	.08477	.67750	.32183

Sample Name: CalStd14=500000 Acquired: 07/13/2023 12:24:41 Type: Cal
 Method: DOD Calibration Updated 060614(v5747) Mode: IR Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	Al3961	Ca3158	Fe2395	Fe2599	Na3302
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2.92	.972	1.43	4.10	.009
Stddev	.03	.001	.00	.04	.000
%RSD	.962	.141	.239	.973	.309

Int. Std.	Y_2243	Y_3710
Units	Cts/S	Cts/S
Avg	36720.	95433.
Stddev	105.	415.
%RSD	.28502	.43492

Sample Name: CalibStd15=1000k Acquired: 07/13/2023 12:33:00 Type: Cal
 Method: DOD Calibration Updated 060614(v5747) Mode: IR Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	Al3961	Ca3158	Fe2395	Fe2599	Mg2790	Na3302	K_7698	S_1820
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6.08	1.95	2.71	7.86	.305	.018	124000.	2.45
Stddev	.08	.02	.02	.03	.001	.000	1050.	.01
%RSD	1.24	.839	.767	.423	.189	.249	.846	.350
Int. Std.	Y_2243	Y_3710						
Units	Cts/S	Cts/S						
Avg	33745.	92918.						
Stddev	87.	127.						
%RSD	.25669	.13713						

Sample Name: Ag 1000 Ba 20000 Acquired: 07/13/2023 12:41:20 Type: Cal
Method: DOD Calibration Updated 060614(v5747) Mode: IR Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ba4934
Units	Cts/S
Avg	1.84
Stddev	.01
%RSD	.450

Int. Std.	Y_3242
Units	Cts/S
Avg	601600.
Stddev	6119.
%RSD	1.0171

Int. Std.	Y_3710
Units	Cts/S
Avg	102330.
Stddev	235.
%RSD	.23014

Sample Name: icv Acquired: 07/13/2023 13:03:31 Type: QC
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al3961	As1937	As1972	Ba2335	Ba4934	Be3130	Be3131	Ca3158	Ca3968	Cd2265
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	49.7	11900.	2170.	2190.	1960.	1920.	52.4	52.2	10600.	10200.	51.3
Stddev	.3	28.	6.	10.	4.	4.	.1	.3	22.	61.	.2
%RSD	.518	.238	.285	.437	.214	.188	.210	.605	.209	.599	.443

Check ?	None	None	None	None	None	None	None	None	None	None	None
Value											
Range											

Elem	Cd2288	Co2286	Cr2055	Cr2677	Cu2230	Cu3247	Fe2343	Fe2599	Mg2790	Mg2802	Mn2576
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	53.7	527.	210.	209.	236.	246.	4940.	5240.	10100.	9580.	512.
Stddev	.6	1.	1.	1.	1.	1.	17.	12.	34.	74.	2.
%RSD	1.04	.157	.332	.325	.588	.317	.352	.227	.336	.769	.333

Check ?	None	None	None	None	None	None	None	None	None	None	None
Value											
Range											

Elem	Mn2593	Mo2020	Ni2216	Ni2316	Pb2203	Sb2175	Se1960	Se2062	Tl1908	V_2908	V_2924
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	517.	526.	532.	503.	481.	510.	2060.	2150.	1880.	530.	503.
Stddev	2.	1.	1.	1.	4.	6.	11.	5.	3.	3.	2.
%RSD	.459	.104	.173	.178	.775	1.10	.515	.251	.172	.551	.337

Check ?	None	None	None	None	None	None	None	None	None	None	None
Value											
Range											

Sample Name: icv Acquired: 07/13/2023 13:03:31 Type: QC
 Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	Zn2062	Zn2138	Na3302	Na5889	Na5895	Si2516	Ti3234	Sr4077	Sn1899	B_2496	Li6707
Units	ug/L	ug/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	539.	522.	102.	100.	102.	497.	510.	514.	510.	502.	488.
Stddev	1.	1.	1.	1.	.	4.	1.	1.	1.	2.	2.
%RSD	.132	.256	1.41	.834	.384	.813	.101	.118	.158	.371	.438

Check ?	None	None	None	None	None	None	None	None	None	None	None
Value											
Range											

Elem	K_7664	K_7698	S_1820
Units	mg/L	mg/L	ug/L
Avg	102.	103.	102000.
Stddev	.	.	54.
%RSD	.189	.306	.053

Check ?	None	None	None
Value			
Range			

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	42157.	570640.	100770.
Stddev	95.	2402.	236.
%RSD	.22451	.42101	.23450

Sample Name: ICVLL Acquired: 07/13/2023 13:10:38 Type: QC
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	Al3961	As1937	Ba2335	Be3130	Be3131	Ca3158	Ca3968	Cd2265	Co2286	Cr2677	Cu2230
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	F 40.6	1250.	1230.	63.2	33.5	12.8	12.6	1610.	1610.	15.9	32.7	31.3	31.3
Stddev	.4	1.	6.	3.1	.1	.1	.2	9.	4.	.1	.1	.6	.6
%RSD	1.05	.084	.465	4.93	.150	.595	1.35	.530	.230	.865	.439	2.06	1.86

Check ? **Chk Fail** Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value **30.0**
Range **30.0%**

Elem	Fe2343	Fe2599	Mg2790	Mg2802	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	941.	990.	1590.	1630.	31.5	32.6	31.4	31.2	64.2	62.7	60.2	30.0	32.2
Stddev	6.	7.	3.	17.	.2	.2	.4	1.7	1.5	3.7	.7	.3	.2
%RSD	.645	.705	.159	1.03	.650	.644	1.37	5.31	2.28	5.93	1.18	.919	.732

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value
Range

Elem	Na5889	Na5895	Si2516	Ti3234	Sr4077	Sn1899	B_2496	Li6707	K_7664	K_7698	S_1820
Units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L
Avg	6.25	6.31	294.	31.1	32.0	165.	59.8	60.5	3.58	3.52	960.
Stddev	.03	.03	3.	.8	.1	1.	.3	1.5	.06	.03	4.
%RSD	.542	.537	1.01	2.58	.413	.785	.486	2.41	1.78	.797	.434

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value
Range

Sample Name: ICVLL Acquired: 07/13/2023 13:10:38 Type: QC
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	42832.	592550.	100820.
Stddev	42.	4332.	334.
%RSD	.09836	.73102	.33116

Sample Name: icb Acquired: 07/13/2023 13:17:53 Type: QC
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3130	Be3131	Ca3968	Cd2265	Co2286	Cr2677	Cu2230	Fe2343	Mg2802
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	.512	-.059	.465	-.118	.002	-.054	4.01	.100	.090	-.028	.113	1.42	2.26
Stddev	.475	.363	2.31	.149	.011	.149	.63	.102	.152	.448	.100	.65	.06
%RSD	92.8	613.	497.	126.	455.	275.	15.6	102.	169.	1610.	88.9	45.9	2.60

Check ? Value Range	None	None	None	None	None	None	None	None	None	None	None	None	None
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Elem	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Na5889	Na5895	Si2516	Ti3234
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L	ug/L
Avg	.037	.024	-.166	-.419	1.81	-1.56	.214	.064	.158	-.017	.077	-8.74	-1.37
Stddev	.024	.172	.240	1.17	1.18	3.70	.936	.206	.079	.015	.007	3.43	.51
%RSD	63.2	731.	145.	279.	65.1	237.	438.	321.	49.8	89.1	9.58	39.2	36.9

Check ? Value Range	None	None	None	None	None	None	None	None	None	None	None	None	None
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Elem	Sr4077	Sn1899	B_2496	Li6707	K_7664	K_7698	S_1820
Units	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L
Avg	.103	-.138	.277	-.438	.340	.251	30.6
Stddev	.059	.520	.774	.769	.006	.049	5.0
%RSD	56.7	377.	279.	176.	1.77	19.6	16.3

Check ? Value Range	None	None	None	None	None	None	None
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Sample Name: icb Acquired: 07/13/2023 13:17:53 Type: QC
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	44024.	605410.	101900.
Stddev	23.	1783.	106.
%RSD	.05195	.29442	.10358

Sample Name: ICSA Acquired: 07/13/2023 13:39:48 Type: QC
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Be3131	Ca3158	Cd2265	Co2286	Cr2677	Cu2230
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	-465	512000.	-1.05	.369	.468	.179	516000.	.558	-.005	-1.00	.004
Stddev	.475	3380.	10.5	.242	.023	.110	1370.	.245	.193	.92	1.20
%RSD	102.	.660	1000.	65.6	4.89	61.5	.265	43.9	3730.	91.3	29100.

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit											
Low Limit											

Elem	Fe2395	Fe2599	Mg2790	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2908
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	492000.	441000.	511000.	.199	-.412	2.15	-.000	4.01	-9.72	3.14	10600.
Stddev	923.	4240.	1910.	.071	.509	.33	1.06	.52	3.42	3.19	31.
%RSD	.187	.961	.374	36.0	124.	15.5	1220000.	13.0	35.2	102.	.291

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit											
Low Limit											

Elem	Zn2138	Na5889	Na5895	Si2516	Ti3234	Sr4077	Sn1899	B_2496	Li6707	K_7664	K_7698
Units	ug/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L
Avg	-6.26	-.000	.047	-2.21	-1.000	-.073	.372	-.001	6.03	-.000	-.012
Stddev	.46	.013	.002	5.33	.446	.082	1.25	1.31	.56	.015	.030
%RSD	7.37	55000.	5.24	241.	44.7	112.	336.	115000.	9.37	15900.	238.

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit											
Low Limit											

Sample Name: ICSA Acquired: 07/13/2023 13:39:48 Type: QC
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	S_1820
Units	ug/L
Avg	-3.00
Stddev	4.44
%RSD	148.

Check ?	Chk Pass
High Limit	
Low Limit	

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	38050.	528980.	95768.
Stddev	43.	5773.	320.
%RSD	.11312	1.0913	.33411

Sample Name: ICSAB Acquired: 07/13/2023 13:47:44 Type: QC
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al3961	As1937	As1972	Ba2335	Be3130	Be3131	Ca3158	Cd2288	Co2286	Cr2055
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	578.	459000.	536.	557.	528.	513.	498.	462000.	515.	490.	507.
Stddev	4.	4980.	7.	18.	1.	2.	.	1100.	1.	1.	1.
%RSD	.729	1.08	1.30	3.27	.269	.426	.086	.239	.167	.131	.216

Check ? **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass**
Value
Range

Elem	Cr2677	Cu2230	Cu3247	Fe2395	Fe2599	Mg2790	Mn2576	Mn2593	Mo2020	Ni2216	Ni2316
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	480.	504.	595.	496000.	448000.	453000.	490.	581.	497.	494.	462.
Stddev	1.	2.	4.	1030.	1900.	691.	2.	2.	1.	1.	1.
%RSD	.247	.454	.590	.207	.424	.152	.476	.344	.286	.302	.282

Check ? **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass**
Value
Range

Elem	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Na3302	Na5889	Na5895	Si2516	Ti3234
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	ug/L	ug/L
Avg	440.	498.	490.	427.	502.	442.	104.	98.9	101.	10100.	527.
Stddev	5.	4.	5.	6.	2.	.	1.	.5	.	24.	1.
%RSD	1.11	.750	1.06	1.32	.422	.103	.620	.456	.256	.236	.245

Check ? **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass**
Value
Range

Sample Name: ICSAB Acquired: 07/13/2023 13:47:44 Type: QC
 Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	Sr4077	Sn1899	B_2496	Li6707	K_7664	K_7698	S_1820
Units	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L
Avg	535.	486.	488.	533.	103.	104.	101000.
Stddev	1.	.	3.	1.	.	.	96.
%RSD	.109	.079	.516	.211	.394	.187	.096

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value							
Range							

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	38150.	524180.	96367.
Stddev	63.	1827.	323.
%RSD	.16545	.34854	.33500

Sample Name: ICVLL ag Acquired: 07/13/2023 14:02:29 Type: Unk
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3130	Be3131	Ca3968	Cd2265	Co2286	Cr2677	Cu2230	Fe2343	Fe2599
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	11.1	9.44	-2.57	.138	.003	.009	14.8	.071	.041	.751	.895	43.5	115.
Stddev	.5	.65	5.69	.141	.018	.282	.8	.051	.176	.241	.948	8.0	62.
%RSD	4.84	6.86	222.	102.	519.	3100.	5.33	72.1	433.	32.1	106.	18.4	53.8

Elem	Mg2802	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Ti1908	V_2924	Zn2138	Na5889	Na5895	Si2516
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L
Avg	9.98	.148	-.038	-.066	.467	1.94	-1.43	-.080	.289	.348	-.078	.037	-5.36
Stddev	.36	.018	.231	.162	1.04	3.08	1.78	1.33	.085	.060	.009	.004	6.33
%RSD	3.57	12.0	604.	244.	223.	159.	124.	1650.	29.6	17.4	11.7	11.9	118.

Elem	Ti3234	Sr4077	Sn1899	B_2496	Li6707	K_7664	K_7698	S_1820
Units	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L
Avg	-.564	.110	.906	-.242	-.240	.270	.127	23.0
Stddev	.767	.013	.864	1.04	.869	.014	.024	1.8
%RSD	136.	11.9	95.4	431.	362.	5.27	18.8	7.61

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	42895.	593340.	100490.
Stddev	78.	3923.	257.
%RSD	.18262	.66115	.25542

Sample Name: lcsW134097 Acquired: 07/13/2023 14:39:11 Type: Unk
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	As1972	Ba2335	Be3130	Be3131	Ca3158	Cd2265	Co2286	Cr2677
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	19.3	758.	852.	852.	818.	20.6	20.0	196000.	19.4	200.	80.2
Stddev	.4	2.	4.	9.	1.	.1	.2	601.	.1	.	.9
%RSD	1.85	.245	.500	1.04	.099	.644	1.11	.306	.678	.143	1.08

Elem	Cu2230	Fe2343	Fe2599	Mg2790	Mn2576	Mo2020	Mo2045	Ni2316	Pb2203	Sb2175	Se1960
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	93.8	385.	406.	93000.	196.	2100.	2180.	191.	189.	207.	805.
Stddev	.5	2.	2.	208.	1.	.	5.	1.	1.	3.	7.
%RSD	.552	.609	.409	.223	.579	.022	.224	.372	.448	1.55	.831

Elem	Tl1908	V_2908	V_2924	Zn2138	Na3302	Na5889	Na5895	Si2516	Ti3234	Sr4077	Sn1899
Units	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L
Avg	713.	193.	177.	194.	92.7	92.0	93.4	34.6	-429	2.16	.861
Stddev	2.	2.	1.	.	1.6	.2	.3	3.8	.303	.10	.906
%RSD	.224	.935	.762	.061	1.76	.204	.322	10.9	70.6	4.74	105.

Elem	B_2496	Li6707	K_7664	K_7698	S_1820
Units	ug/L	ug/L	mg/L	mg/L	ug/L
Avg	1.37	5.25	96.8	97.6	-17.9
Stddev	.53	.71	.3	.3	2.3
%RSD	38.2	13.5	.274	.307	12.6

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	39961.	548480.	98950.
Stddev	64.	2868.	400.
%RSD	.16047	.52287	.40428

Sample Name: mbw134097 Acquired: 07/13/2023 14:46:18 Type: Unk
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3130	Be3131	Ca3968	Cd2265	Co2286	Cr2677	Cu2230	Fe2343	Mg2802
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	.834	1.46	-3.49	.237	-.001	.173	16.0	.082	-.095	.207	1.03	5.88	4.81
Stddev	.650	.51	2.75	.155	.022	.183	3.0	.036	.170	.531	.63	.57	.44
%RSD	77.9	34.7	78.9	65.2	2490.	106.	18.9	43.9	179.	256.	61.2	9.73	9.08

Elem	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Na5889	Na5895	Si2516	Ti3234
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L	ug/L
Avg	.022	1.94	.084	.037	-.343	-1.93	2.06	-.062	.474	-.018	.099	10.6	-1.26
Stddev	.018	.41	.215	.855	1.96	2.63	2.33	.174	.096	.013	.002	5.5	.84
%RSD	82.1	20.9	255.	2290.	571.	136.	113.	282.	20.3	72.2	2.51	52.0	66.6

Elem	Sr4077	Sn1899	B_2496	Li6707	K_7664	K_7698	S_1820
Units	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L
Avg	.079	.202	.107	-1.21	.449	.345	10.4
Stddev	.094	.352	.898	2.04	.012	.030	3.2
%RSD	118.	174.	841.	169.	2.63	8.64	30.7

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	43438.	596920.	100450.
Stddev	44.	2878.	468.
%RSD	.10236	.48215	.46606

Sample Name: 1346384 Acquired: 07/13/2023 14:53:38 Type: Unk
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3130	Be3131	Ca3158	Cd2265	Co2286	Cr2677	Cu2230	Fe2343
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	.393	739.	.562	77.8	-.028	-.021	79700.	.121	.657	4.04	2.81	1870.
Stddev	.361	3.	4.30	.1	.012	.189	302.	.061	.199	.36	.83	14.
%RSD	91.7	.461	766.	.162	42.3	899.	.378	50.3	30.2	8.83	29.4	.745

Elem	Fe2599	Mg2790	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Na5889
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L
Avg	1990.	33400.	44.0	6.46	.648	3.08	2.23	-3.80	2.16	1.88	14.6	4.57
Stddev	3.	219.	.3	.54	.439	.60	4.36	1.00	1.73	.23	.1	.01
%RSD	.140	.655	.628	8.38	67.8	19.4	195.	26.2	80.0	12.1	.350	.180

Elem	Na5895	Si2516	Ti3234	Sr4077	Sn1899	B_2496	Li6707	K_7664	K_7698	S_1820
Units	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L
Avg	4.63	8820.	22.1	3850.	.404	19.7	13.1	1.59	1.54	25700.
Stddev	.01	15.	2.0	5.	.576	.3	1.3	.02	.05	58.
%RSD	.193	.168	8.94	.140	143.	1.50	10.3	1.47	3.50	.225

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	42037.	582500.	100730.
Stddev	89.	3047.	245.
%RSD	.21216	.52311	.24362

Sample Name: I1346384 Acquired: 07/13/2023 15:00:58 Type: Unk
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3130	Be3131	Ca3158	Cd2265	Co2286	Cr2677	Cu2230	Fe2343
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	.437	104.	-.825	12.4	-.008	-.019	25200.	-.030	.012	.484	1.35	415.
Stddev	.495	14.	4.50	1.5	.003	.155	2260.	.160	.143	.523	.54	49.
%RSD	113.	13.1	546.	11.8	32.9	806.	8.96	528.	1210.	108.	40.2	11.8

Elem	Fe2599	Mg2790	Mg2802	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Ti1908	V_2924	Zn2138
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	621.	10500.	7510.	9.74	.744	.043	1.60	1.22	-2.76	.432	.167	2.52
Stddev	57.	929.	871.	1.15	.348	.129	.83	2.48	3.73	2.57	.284	.15
%RSD	9.13	8.83	11.6	11.8	46.8	303.	52.1	204.	135.	594.	170.	6.08

Elem	Na5889	Na5895	Si2516	Ti3234	Sr4077	Sn1899	B_2496	Li6707	K_7664	K_7698	S_1820
Units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L
Avg	1.40	1.49	2700.	4.73	1210.	-.365	4.10	2.52	.644	.603	4120.
Stddev	.14	.13	247.	1.81	110.	.486	.78	.83	.030	.029	517.
%RSD	9.62	8.59	9.15	38.3	9.08	133.	19.0	32.8	4.73	4.85	12.6

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	43379.	600730.	101130.
Stddev	55.	2450.	365.
%RSD	.12719	.40790	.36123

Sample Name: dup1346384 Acquired: 07/13/2023 15:08:38 Type: Unk
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3130	Be3131	Ca3158	Cd2265	Co2286	Cr2677	Cu2230	Fe2343
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	.524	913.	-.153	79.9	-.034	-.212	80800.	-.040	.774	4.35	2.41	2110.
Stddev	.264	7.	2.52	.2	.017	.182	181.	.086	.068	.23	1.23	15.
%RSD	50.4	.712	1650.	.227	51.9	85.9	.224	214.	8.84	5.32	51.0	.718

Elem	Fe2599	Mg2790	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Na5889
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L
Avg	2230.	33800.	45.3	5.84	.933	2.87	2.84	-1.85	-.160	2.39	14.9	4.54
Stddev	5.	85.	.3	.30	.187	2.02	2.84	4.93	1.28	.29	.1	.02
%RSD	.232	.251	.666	5.22	20.0	70.4	99.7	266.	802.	12.2	.728	.472

Elem	Na5895	Si2516	Ti3234	Sr4077	Sn1899	B_2496	Li6707	K_7664	K_7698	S_1820
Units	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L
Avg	4.66	9210.	30.6	3920.	.816	20.3	16.4	1.59	1.57	26500.
Stddev	.02	26.	5.0	11.	.618	.7	1.9	.03	.06	34.
%RSD	.456	.278	16.3	.290	75.7	3.33	11.6	1.92	3.61	.128

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	41617.	574460.	100330.
Stddev	53.	3919.	326.
%RSD	.12671	.68226	.32482

Sample Name: ccv1 Acquired: 07/13/2023 15:15:55 Type: QC
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al3961	As1972	Ba2335	Ba4934	Be3130	Be3131	Ca3158	Ca3968	Cd2288	Co2388	Cr2055
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	F 375.	5130.	5330.	5210.	5040.	532.	519.	5330.	5240.	524.	5080.	5180.
Stddev	1.	25.	13.	5.	6.	1.	2.	8.	71.	1.	8.	5.
%RSD	.371	.487	.244	.103	.118	.234	.320	.144	1.35	.156	.162	.105

Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	500.											
Range	-10.4%											

Elem	Cu2230	Cu3247	Fe2343	Fe2599	Mg2790	Mg2802	Mn2576	Mn2593	Mo2020	Mo2045	Ni2216	Ni2316
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	5010.	5110.	5080.	5190.	5070.	5170.	5130.	5080.	5070.	5280.	5220.	4970.
Stddev	9.	11.	13.	18.	17.	29.	9.	15.	7.	10.	5.	10.
%RSD	.188	.213	.259	.347	.336	.565	.185	.298	.143	.183	.101	.201

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Pb2169	Sb2068	Se2062	Tl1908	V_2908	Zn2062	Na3302	Na5889	Na5895	Si2516	Ti3234	Sr4077
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L
Avg	5120.	5290.	5420.	4770.	5180.	5170.	45.5	53.0	52.9	5410.	5190.	5210.
Stddev	10.	2.	13.	10.	25.	7.	1.2	.1	.2	23.	15.	47.
%RSD	.201	.042	.244	.209	.485	.134	2.72	.246	.342	.419	.285	.893

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Sample Name: ccv1 Acquired: 07/13/2023 15:15:55 Type: QC
 Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	Sn1899	B_2496	Li6707	K_7664	K_7698	S_1820
Units	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L
Avg	5260.	5190.	5100.	52.4	52.9	53100.
Stddev	7.	37.	20.	.2	.2	71.
%RSD	.142	.713	.387	.395	.416	.133

Check ? **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass**
 Value
 Range

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	41669.	555630.	100000.
Stddev	114.	950.	288.
%RSD	.27447	.17100	.28791

Sample Name: ccv2 Acquired: 07/13/2023 15:22:53 Type: QC
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	As1972	Ba2335	Be3130	Be3131	Ca3968	Cd2265	Cd2288	Co2286	Cr2055	Cr2677
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	53.1	530.	519.	523.	546.	50.4	51.6	537.	52.2	52.6	542.	531.	501.
Stddev	.5	1.	4.	9.	.	.2	.3	1.	.2	.2	.	1.	1.
%RSD	.896	.139	.691	1.74	.087	.405	.573	.243	.298	.407	.077	.172	.284

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value
Range

Elem	Cu2230	Cu3247	Fe2343	Fe2599	Mg2802	Mn2576	Mn2593	Mo2020	Ni2216	Ni2316	Pb2203	Sb2175	Se1960
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	523.	521.	513.	530.	540.	514.	524.	516.	540.	516.	515.	523.	534.
Stddev	2.	4.	3.	2.	1.	2.	2.	.	1.	.	1.	2.	5.
%RSD	.457	.741	.560	.333	.271	.348	.338	.041	.186	.071	.149	.434	.850

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value
Range

Elem	Ti1908	V_2908	V_2924	Zn2062	Zn2138	Na5889	Na5895	Si2516	Ti3234	Sr4077	Sn1899	B_2496	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	521.	525.	492.	527.	524.	5.44	5.45	519.	524.	536.	541.	511.	509.
Stddev	3.	1.	2.	.	1.	.02	.03	6.	.	1.	1.	2.	1.
%RSD	.627	.193	.383	.092	.208	.334	.463	1.12	.086	.147	.246	.412	.253

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value
Range

Sample Name: ccv2 Acquired: 07/13/2023 15:22:53 Type: QC
 Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	K_7664	K_7698	S_1820
Units	mg/L	mg/L	ug/L
Avg	5.46	5.44	5220.
Stddev	.03	.02	15.
%RSD	.487	.414	.283

Check ? **Chk Pass** **Chk Pass** **Chk Pass**
 Value
 Range

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	42981.	596680.	100950.
Stddev	89.	2282.	474.
%RSD	.20620	.38241	.46984

Sample Name: ccb Acquired: 07/13/2023 15:29:35 Type: QC
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3130	Be3131	Ca3968	Cd2265	Co2286	Cr2677	Cu2230	Fe2343	Mg2802
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	.361	-1.01	-1.17	.075	.007	-.133	.076	.073	-.056	.312	.377	.509	.412
Stddev	.240	.38	3.03	.175	.009	.121	.586	.078	.134	.512	.958	.322	.023
%RSD	66.6	38.1	260.	234.	122.	91.6	771.	106.	237.	164.	254.	63.3	5.54

Check ? Value Range	None	None	None	None	None	None	None	None	None	None	None	None	None
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Elem	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Na5889	Na5895	Si2516	Ti3234
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L	ug/L
Avg	.085	.954	.128	1.15	.307	-1.48	.759	.017	.170	-.075	.017	-9.18	-1.76
Stddev	.015	.308	.253	.97	.966	2.69	1.25	.254	.076	.007	.005	1.77	.95
%RSD	17.6	32.3	198.	84.0	314.	181.	165.	1500.	45.0	8.81	29.3	19.3	53.8

Check ? Value Range	None	None	None	None	None	None	None	None	None	None	None	None	None
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Elem	Sr4077	Sn1899	B_2496	Li6707	K_7664	K_7698	S_1820
Units	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L
Avg	.161	.157	1.27	.460	.198	.106	12.2
Stddev	.078	.547	.46	1.54	.027	.050	3.5
%RSD	48.5	349.	36.0	335.	13.6	47.5	28.8

Check ? Value Range	None	None	None	None	None	None	None
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Sample Name: ccb Acquired: 07/13/2023 15:29:35 Type: QC
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	43677.	608100.	101850.
Stddev	150.	3372.	352.
%RSD	.34345	.55444	.34523

Sample Name: msw1346384 Acquired: 07/13/2023 15:36:55 Type: Unk
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	Al3961	As1937	As1972	Ba2335	Be3130	Be3131	Ca3158	Cd2265	Co2286
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	19.5	1720.	1920.	864.	865.	910.	21.0	20.2	276000.	19.8	203.
Stddev	.7	11.	11.	3.	6.	2.	.1	.2	289.	.2	.
%RSD	3.34	.660	.546	.387	.682	.209	.245	1.23	.105	.762	.151
Elem	Cr2677	Cu2230	Fe2343	Fe2599	Mg2790	Mn2576	Mo2020	Mo2045	Ni2316	Pb2203	Sb2175
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	83.5	99.1	2390.	2520.	126000.	241.	2140.	2230.	192.	192.	213.
Stddev	.5	1.0	3.	7.	157.	.	4.	8.	1.	1.	2.
%RSD	.562	1.05	.117	.285	.124	.064	.203	.348	.362	.284	.776
Elem	Se1960	Tl1908	V_2924	Zn2138	Na3302	Na5889	Na5895	Si2516	Ti3234	Sr4077	Sn1899
Units	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L
Avg	813.	710.	183.	206.	98.6	97.3	98.3	9430.	29.0	3860.	.771
Stddev	8.	2.	1.	.	1.7	.5	.3	25.	4.4	6.	.355
%RSD	1.00	.297	.374	.210	1.68	.487	.283	.268	15.2	.152	46.1
Elem	B_2496	Li6707	K_7664	K_7698	S_1820						
Units	ug/L	ug/L	mg/L	mg/L	ug/L						
Avg	21.8	20.5	97.4	98.1	27000.						
Stddev	.6	1.7	.2	.2	105.						
%RSD	2.65	8.06	.245	.184	.387						
Int. Std.	Y_2243	Y_3242	Y_3710								
Units	Cts/S	Cts/S	Cts/S								
Avg	39071.	540210.	97770.								
Stddev	77.	933.	166.								
%RSD	.19726	.17270	.16935								

Sample Name: msdw1346384 Acquired: 07/13/2023 15:43:53 Type: Unk
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	Al3961	As1937	As1972	Ba2335	Be3130	Be3131	Ca3158	Cd2265	Co2286
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	19.5	1680.	1920.	862.	859.	903.	20.8	20.5	277000.	19.6	203.
Stddev	.4	5.	12.	7.	4.	1.	.1	.2	1030.	.1	1.
%RSD	2.29	.324	.608	.843	.449	.071	.574	.854	.372	.445	.469

Elem	Cr2677	Cu2230	Fe2343	Fe2599	Mg2790	Mn2576	Mo2020	Mo2045	Ni2316	Pb2203	Sb2175
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	84.1	97.4	2300.	2470.	127000.	238.	2150.	2230.	192.	191.	208.
Stddev	.6	.1	17.	7.	438.	1.	4.	7.	.	1.	3.
%RSD	.758	.154	.747	.298	.346	.601	.169	.301	.174	.666	1.65

Elem	Se1960	Tl1908	V_2924	Zn2138	Na3302	Na5889	Na5895	Si2516	Ti3234	Sr4077	Sn1899
Units	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L
Avg	798.	715.	180.	206.	101.	98.5	99.3	9490.	31.2	3910.	.868
Stddev	3.	3.	1.	.	1.	.3	.3	29.	4.3	9.	1.10
%RSD	.362	.383	.417	.156	1.20	.256	.259	.307	13.8	.232	127.

Elem	B_2496	Li6707	K_7664	K_7698	S_1820
Units	ug/L	ug/L	mg/L	mg/L	ug/L
Avg	22.3	18.1	98.7	98.9	26800.
Stddev	1.4	1.0	.3	.2	56.
%RSD	6.06	5.70	.343	.164	.211

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	39387.	548510.	97460.
Stddev	149.	3900.	374.
%RSD	.37734	.71094	.38388

Sample Name: pdsw1346384 Acquired: 07/13/2023 15:50:50 Type: Unk
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al3961	As1972	Ba2335	Ba4934	Be3130	Be3131	Ca3158	Cd2265	Cd2288	Co2286
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	88.8	4620.	4040.	3830.	3890.	94.9	96.8	466000.	89.3	101.	921.
Stddev	.6	51.	18.	4.	28.	.5	.7	3090.	.3	1.	2.
%RSD	.622	1.11	.451	.094	.730	.560	.718	.663	.364	.922	.245
Elem	Cr2055	Cr2677	Cu2230	Cu3247	Fe2343	Fe2599	Mg2790	Mn2576	Mn2593	Mo2020	Mo2045
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	383.	369.	432.	459.	3390.	3720.	220000.	932.	755.	1950.	2020.
Stddev	1.	4.	1.	5.	13.	17.	1510.	5.	8.	9.	4.
%RSD	.195	1.07	.188	1.19	.377	.459	.687	.568	1.11	.442	.206
Elem	Ni2216	Ni2316	Pb2203	Sb2068	Se2062	Tl1908	V_2908	V_2924	Zn2062	Zn2138	Na3302
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L
Avg	923.	872.	852.	981.	3840.	3170.	987.	890.	932.	870.	200.
Stddev	2.	2.	3.	3.	21.	12.	12.	5.	2.	3.	2.
%RSD	.209	.235	.349	.314	.554	.367	1.21	.559	.253	.387	1.09
Elem	Na5889	Na5895	Si2516	Ti3234	Sr4077	Sn1899	B_2496	Li6707	K_7664	K_7698	S_1820
Units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L
Avg	181.	187.	8340.	19.7	3590.	1.05	1840.	22.3	189.	192.	44400.
Stddev	2.	1.	43.	1.4	10.	.66	8.	1.6	2.	1.	114.
%RSD	.877	.766	.512	7.15	.267	62.3	.449	7.16	.958	.495	.258
Int. Std.	Y_2243	Y_3242	Y_3710								
Units	Cts/S	Cts/S	Cts/S								
Avg	38099.	531990.	96194.								
Stddev	140.	1260.	330.								
%RSD	.36793	.23679	.34351								

Sample Name: ccv1 Acquired: 07/13/2023 16:49:22 Type: QC
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al3961	As1972	Ba2335	Ba4934	Be3130	Be3131	Ca3158	Ca3968	Cd2288	Co2388	Cr2055
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	F 375.	5170.	5320.	5220.	5090.	531.	522.	5310.	5250.	523.	5050.	5180.
Stddev	1.	10.	11.	5.	15.	3.	1.	18.	62.	1.	23.	3.
%RSD	.136	.186	.204	.091	.299	.508	.125	.336	1.19	.263	.463	.056

Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	500.											
Range	-10.4%											

Elem	Cu2230	Cu3247	Fe2343	Fe2599	Mg2790	Mg2802	Mn2576	Mn2593	Mo2020	Mo2045	Ni2216	Ni2316
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	5040.	5100.	5050.	5160.	5020.	5140.	5090.	5080.	5070.	5290.	5220.	4970.
Stddev	15.	11.	29.	13.	19.	24.	24.	6.	5.	9.	5.	4.
%RSD	.290	.219	.568	.251	.378	.466	.467	.126	.095	.176	.097	.083

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Pb2169	Sb2068	Se2062	Tl1908	V_2908	Zn2062	Na3302	Na5889	Na5895	Si2516	Ti3234	Sr4077
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L
Avg	5130.	5300.	5420.	4770.	5210.	5200.	46.3	53.1	53.2	5360.	5180.	5310.
Stddev	19.	17.	25.	7.	8.	8.	1.1	.1	.1	17.	5.	17.
%RSD	.376	.311	.461	.151	.159	.157	2.30	.177	.183	.319	.101	.315

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Sample Name: ccv1 Acquired: 07/13/2023 16:49:22 Type: QC
 Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
 User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
 Comment:

Elem	Sn1899	B_2496	Li6707	K_7664	K_7698	S_1820
Units	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L
Avg	5280.	5220.	5090.	52.7	52.9	53300.
Stddev	4.	30.	9.	.1	.1	69.
%RSD	.076	.573	.176	.201	.110	.130

Check ? **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass** **Chk Pass**
 Value
 Range

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	41794.	560230.	100300.
Stddev	100.	3027.	102.
%RSD	.24008	.54039	.10151

Sample Name: ccv2 Acquired: 07/13/2023 16:56:22 Type: QC
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	As1972	Ba2335	Be3130	Be3131	Ca3968	Cd2265	Cd2288	Co2286	Cr2055	Cr2677
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	52.8	531.	517.	531.	548.	50.5	51.9	543.	52.4	52.8	547.	532.	496.
Stddev	.8	2.	4.	8.	1.	.2	.2	1.	.1	.3	1.	1.	2.
%RSD	1.42	.381	.726	1.56	.153	.416	.440	.105	.228	.476	.150	.191	.372

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value
Range

Elem	Cu2230	Cu3247	Fe2343	Fe2599	Mg2802	Mn2576	Mn2593	Mo2020	Ni2216	Ni2316	Pb2203	Sb2175	Se1960
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	530.	521.	512.	528.	539.	512.	524.	516.	540.	516.	517.	530.	534.
Stddev	2.	2.	2.	1.	2.	2.	1.	2.	1.	.	1.	2.	3.
%RSD	.378	.455	.467	.263	.317	.329	.189	.329	.145	.060	.130	.361	.619

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value
Range

Elem	Ti1908	V_2908	V_2924	Zn2062	Zn2138	Na5889	Na5895	Si2516	Ti3234	Sr4077	Sn1899	B_2496	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	518.	527.	492.	530.	526.	5.50	5.51	517.	524.	541.	546.	515.	507.
Stddev	2.	2.	2.	1.	1.	.02	.02	2.	1.	1.	1.	2.	1.
%RSD	.293	.377	.342	.131	.146	.317	.382	.348	.229	.214	.219	.378	.265

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
Value
Range

Sample Name: ccv2 Acquired: 07/13/2023 16:56:22 Type: QC
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	K_7698	S_1820
Units	mg/L	ug/L
Avg	5.51	5240.
Stddev	.06	11.
%RSD	1.11	.209

Check ? **Chk Pass** **Chk Pass**
Value
Range

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	42961.	599710.	100800.
Stddev	109.	2212.	213.
%RSD	.25391	.36889	.21166

Sample Name: ccb Acquired: 07/13/2023 17:03:02 Type: QC
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Elem	Ag3280	Al1670	As1937	Ba2335	Be3130	Be3131	Ca3968	Cd2265	Co2286	Cr2677	Cu2230	Fe2343	Mg2802
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	.110	-1.10	3.23	.328	.009	-.029	1.08	.011	.048	.268	-.246	.694	1.01
Stddev	.342	.75	3.96	.252	.010	.060	.23	.063	.234	.228	.463	.394	.02
%RSD	311.	68.0	123.	76.8	123.	208.	21.5	566.	484.	84.9	189.	56.8	2.35

Check ? Value Range	None	None	None	None	None	None	None	None	None	None	None	None	None
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Elem	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Na5889	Na5895	Si2516	Ti3234
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L	ug/L
Avg	.114	1.20	.016	1.37	2.78	-2.63	-.494	-.163	.194	-.034	.043	-6.46	-1.55
Stddev	.015	.30	.115	1.60	3.06	2.10	1.33	.273	.029	.016	.001	5.60	.49
%RSD	13.5	25.0	705.	117.	110.	79.8	269.	167.	14.8	48.0	2.35	86.7	31.3

Check ? Value Range	None	None	None	None	None	None	None	None	None	None	None	None	None
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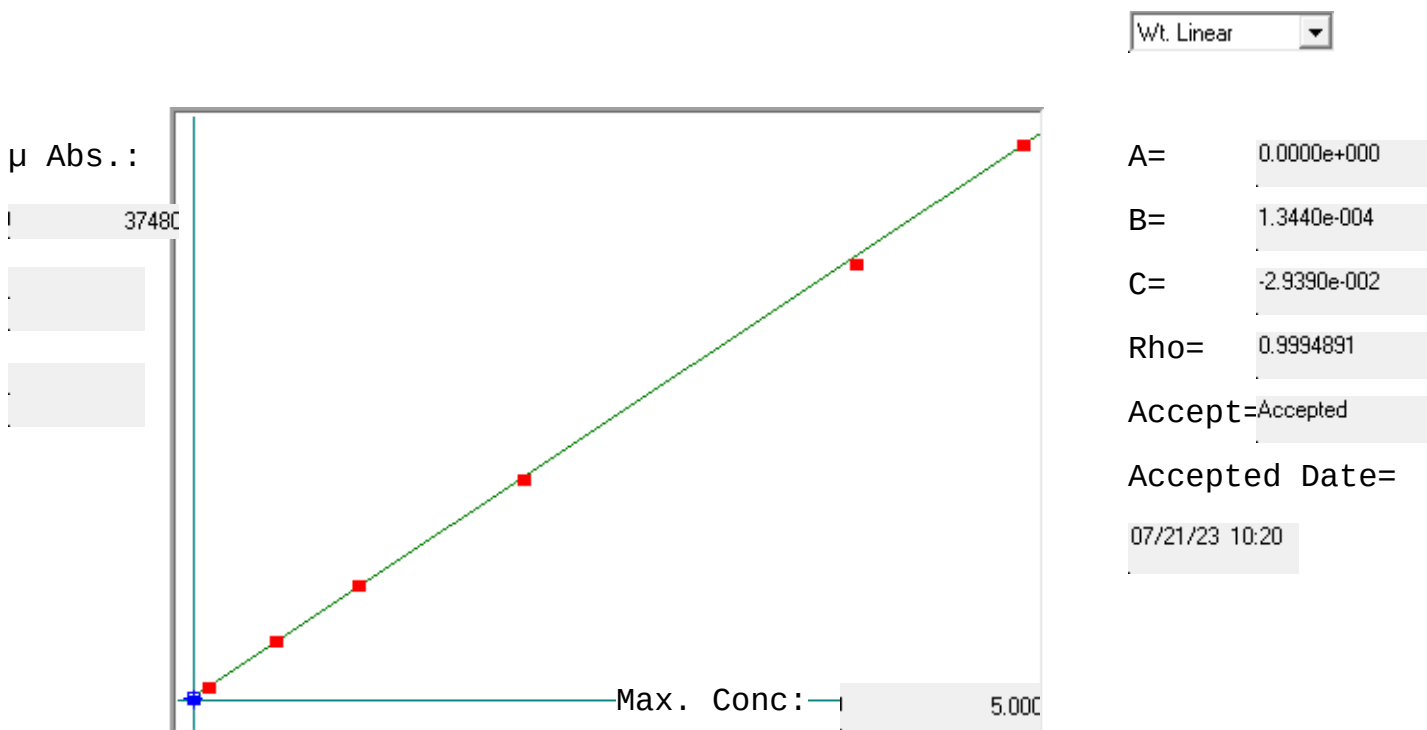
Elem	Sr4077	Sn1899	B_2496	Li6707	K_7664	K_7698	S_1820
Units	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L
Avg	.174	-.526	1.57	-2.54	.280	.179	17.1
Stddev	.060	.313	1.12	.84	.016	.035	3.5
%RSD	34.6	59.5	71.2	33.3	5.80	19.5	20.2

Check ? Value Range	None	None	None	None	None	None	None
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Sample Name: ccb Acquired: 07/13/2023 17:03:02 Type: QC
Method: DOD Calibration Updated 060614(v5747) Mode: CONC Corr. Factor: 1.000000
User: NAH ICP6500: Prep Batch: Post Digestion Dilution:
Comment:

Int. Std.	Y_2243	Y_3242	Y_3710
Units	Cts/S	Cts/S	Cts/S
Avg	43396.	610400.	101050.
Stddev	222.	2331.	440.
%RSD	.51224	.38195	.43551

Hg LIQUIDS



Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
CALIBRATION BLANK	0.000	0.000	0.000	220	6.339	210	220	225	226	
0.1	0.100	0.093	-0.007	913	3.4 %	866	907	932	948	
0.5	0.500	0.523	0.023	4108	3.2 %	3945	4038	4155	4297	
1.0	1.000	1.030	0.030	7881	3.1 %	7558	7771	7988	8209	
2.0	2.000	1.988	-0.012	15009	3.7 %	14270	14743	15284	15741	
4.0	4.000	3.928	-0.072	29441	2.8 %	28266	29130	29924	30447	
5.0	5.000	5.008	0.008	37479	2.9 %	35988	37017	38028	38886	

Sample ID	Date	Element	Units	Extended ID	Mean
CALIBRATION BLANK	21 Jul 2023	09:58:10Hg			220
0.1	21 Jul 2023	10:01:19Hg			913
0.5	21 Jul 2023	10:04:31Hg			4109
1.0	21 Jul 2023	10:07:42Hg			7882
2.0	21 Jul 2023	10:10:53Hg			15010
4.0	21 Jul 2023	10:14:04Hg			29442
5.0	21 Jul 2023	10:17:14Hg			37480
ICV	21 Jul 2023	10:20:24Hg			100.9% 3.028
ICB	21 Jul 2023	10:26:44Hg			-0.018
LCSW	21 Jul 2023	10:29:53Hg			2.000
MBW	21 Jul 2023	10:36:12Hg			0.028
1347297	21 Jul 2023	10:39:22Hg			0.002
1347300	21 Jul 2023	10:42:32Hg			0.020
MBW	21 Jul 2023	10:48:51Hg			0.002
1346384	21 Jul 2023	10:52:00Hg			-0.017
DUP1346384	21 Jul 2023	10:55:10Hg			-0.015
1348149	21 Jul 2023	10:58:21Hg			-0.012
CCV	21 Jul 2023	11:01:31Hg			96.8% 2.905
CCB	21 Jul 2023	11:07:51Hg			-0.013
1347738	21 Jul 2023	11:11:00Hg			0.119
1346696	21 Jul 2023	11:14:11Hg			0.019
1347297	21 Jul 2023	11:17:23Hg			0.003
1347300	21 Jul 2023	11:20:32Hg			0.014
DUP1347300	21 Jul 2023	11:23:41Hg			0.023
MSW1346384	21 Jul 2023	11:26:52Hg			1.677
MSDW1346384	21 Jul 2023	11:30:03Hg			1.672
MSW1347300	21 Jul 2023	11:33:12Hg			1.894
MSDW1347300	21 Jul 2023	11:36:22Hg			1.837
CCV	21 Jul 2023	11:39:31Hg			93.2% 2.795
CCB	21 Jul 2023	11:45:51Hg			-0.015

072123W DETAILED

Method: Hg LIQUIDS

Operator: Admin

Date of Analysis: 21 Jul 2023 08:56:36

Sample ID	Date	Element	Units	Extended ID	μ Abs.	Conc.
CALIBRATION BLANK - 1	21 Jul 2023	09:58:10Hg			210	-
CALIBRATION BLANK - 2	21 Jul 2023	09:58:10Hg			220	-
CALIBRATION BLANK - 3	21 Jul 2023	09:58:10Hg			225	-
CALIBRATION BLANK - 4	21 Jul 2023	09:58:10Hg			226	-
0.1 - 1	21 Jul 2023	10:01:19Hg			866	-
0.1 - 2	21 Jul 2023	10:01:19Hg			907	-
0.1 - 3	21 Jul 2023	10:01:19Hg			932	-
0.1 - 4	21 Jul 2023	10:01:19Hg			948	-
0.5 - 1	21 Jul 2023	10:04:31Hg			3945	-
0.5 - 2	21 Jul 2023	10:04:31Hg			4038	-
0.5 - 3	21 Jul 2023	10:04:31Hg			4155	-
0.5 - 4	21 Jul 2023	10:04:31Hg			4297	-
1.0 - 1	21 Jul 2023	10:07:42Hg			7558	-
1.0 - 2	21 Jul 2023	10:07:42Hg			7771	-
1.0 - 3	21 Jul 2023	10:07:42Hg			7988	-
1.0 - 4	21 Jul 2023	10:07:42Hg			8209	-
2.0 - 1	21 Jul 2023	10:10:53Hg			14270	-
2.0 - 2	21 Jul 2023	10:10:53Hg			14743	-
2.0 - 3	21 Jul 2023	10:10:53Hg			15284	-
2.0 - 4	21 Jul 2023	10:10:53Hg			15741	-
4.0 - 1	21 Jul 2023	10:14:04Hg			28266	-
4.0 - 2	21 Jul 2023	10:14:04Hg			29130	-
4.0 - 3	21 Jul 2023	10:14:04Hg			29924	-
4.0 - 4	21 Jul 2023	10:14:04Hg			30447	-
5.0 - 1	21 Jul 2023	10:17:14Hg			35988	-
5.0 - 2	21 Jul 2023	10:17:14Hg			37017	-
5.0 - 3	21 Jul 2023	10:17:14Hg			38028	-
5.0 - 4	21 Jul 2023	10:17:14Hg			38886	-
ICV - 1	21 Jul 2023	10:20:24Hg			21873	97.0% 2.910
ICV - 2	21 Jul 2023	10:20:24Hg			22535	100.0% 2.999
ICV - 3	21 Jul 2023	10:20:24Hg			23084	102.4% 3.073
ICV - 4	21 Jul 2023	10:20:24Hg			23492	104.3% 3.128
ICB - 1	21 Jul 2023	10:26:44Hg			91	-0.017
ICB - 2	21 Jul 2023	10:26:44Hg			90	-0.017
ICB - 3	21 Jul 2023	10:26:44Hg			78	-0.019
ICB - 4	21 Jul 2023	10:26:44Hg			86	-0.018
LCSW - 1	21 Jul 2023	10:29:53Hg			14463	1.914
LCSW - 2	21 Jul 2023	10:29:53Hg			14909	1.974
LCSW - 3	21 Jul 2023	10:29:53Hg			15357	2.035
LCSW - 4	21 Jul 2023	10:29:53Hg			15664	2.076
MBW - 1	21 Jul 2023	10:36:12Hg			416	0.027
MBW - 2	21 Jul 2023	10:36:12Hg			407	0.025
MBW - 3	21 Jul 2023	10:36:12Hg			433	0.029
MBW - 4	21 Jul 2023	10:36:12Hg			444	0.030
1347297 - 1	21 Jul 2023	10:39:22Hg			227	0.001
1347297 - 2	21 Jul 2023	10:39:22Hg			223	0.001
1347297 - 3	21 Jul 2023	10:39:22Hg			243	0.003
1347297 - 4	21 Jul 2023	10:39:22Hg			245	0.004
1347300 - 1	21 Jul 2023	10:42:32Hg			348	0.017
1347300 - 2	21 Jul 2023	10:42:32Hg			371	0.020
1347300 - 3	21 Jul 2023	10:42:32Hg			369	0.020
1347300 - 4	21 Jul 2023	10:42:32Hg			377	0.021
MBW - 1	21 Jul 2023	10:48:51Hg			231	0.002
MBW - 2	21 Jul 2023	10:48:51Hg			237	0.002
MBW - 3	21 Jul 2023	10:48:51Hg			238	0.003
MBW - 4	21 Jul 2023	10:48:51Hg			238	0.003
1346384 - 1	21 Jul 2023	10:52:00Hg			75	-0.019
1346384 - 2	21 Jul 2023	10:52:00Hg			83	-0.018
1346384 - 3	21 Jul 2023	10:52:00Hg			96	-0.016
1346384 - 4	21 Jul 2023	10:52:00Hg			108	-0.015
DUP1346384 - 1	21 Jul 2023	10:55:10Hg			90	-0.017
DUP1346384 - 2	21 Jul 2023	10:55:10Hg			114	-0.014
DUP1346384 - 3	21 Jul 2023	10:55:10Hg			114	-0.014
DUP1346384 - 4	21 Jul 2023	10:55:10Hg			119	-0.013
1348149 - 1	21 Jul 2023	10:58:21Hg			131	-0.012
1348149 - 2	21 Jul 2023	10:58:21Hg			128	-0.012
1348149 - 3	21 Jul 2023	10:58:21Hg			122	-0.013
1348149 - 4	21 Jul 2023	10:58:21Hg			131	-0.012
CCV - 1	21 Jul 2023	11:01:31Hg			20897	92.6% 2.779
CCV - 2	21 Jul 2023	11:01:31Hg			21567	95.6% 2.869
CCV - 3	21 Jul 2023	11:01:31Hg			22177	98.4% 2.951
CCV - 4	21 Jul 2023	11:01:31Hg			22681	100.6% 3.019
CCB - 1	21 Jul 2023	11:07:51Hg			120	-0.013
CCB - 2	21 Jul 2023	11:07:51Hg			102	-0.016
CCB - 3	21 Jul 2023	11:07:51Hg			132	-0.012
CCB - 4	21 Jul 2023	11:07:51Hg			131	-0.012
1347738 - 1	21 Jul 2023	11:11:00Hg			1062	0.113
1347738 - 2	21 Jul 2023	11:11:00Hg			1087	0.117
1347738 - 3	21 Jul 2023	11:11:00Hg			1119	0.121

072123W DETAILED

Method: Hg LIQUIDS

Operator: Admin

Date of Analysis: 21 Jul 2023 08:56:36

Sample ID	Date	Element	Units	Extended ID	μ Abs.	Conc.
1347738 - 4	21 Jul 2023 11:11:00	Hg			1135	0.123
1346696 - 1	21 Jul 2023 11:14:11	Hg			347	0.017
1346696 - 2	21 Jul 2023 11:14:11	Hg			359	0.019
1346696 - 3	21 Jul 2023 11:14:11	Hg			364	0.020
1346696 - 4	21 Jul 2023 11:14:11	Hg			368	0.020
1347297 - 1	21 Jul 2023 11:17:23	Hg			242	0.003
1347297 - 2	21 Jul 2023 11:17:23	Hg			236	0.002
1347297 - 3	21 Jul 2023 11:17:23	Hg			241	0.003
1347297 - 4	21 Jul 2023 11:17:23	Hg			257	0.005
1347300 - 1	21 Jul 2023 11:20:32	Hg			306	0.012
1347300 - 2	21 Jul 2023 11:20:32	Hg			322	0.014
1347300 - 3	21 Jul 2023 11:20:32	Hg			327	0.015
1347300 - 4	21 Jul 2023 11:20:32	Hg			337	0.016
DUP1347300 - 1	21 Jul 2023 11:23:41	Hg			377	0.021
DUP1347300 - 2	21 Jul 2023 11:23:41	Hg			386	0.022
DUP1347300 - 3	21 Jul 2023 11:23:41	Hg			385	0.022
DUP1347300 - 4	21 Jul 2023 11:23:41	Hg			398	0.024
MSW1346384 - 1	21 Jul 2023 11:26:52	Hg			12120	1.600
MSW1346384 - 2	21 Jul 2023 11:26:52	Hg			12594	1.663
MSW1346384 - 3	21 Jul 2023 11:26:52	Hg			12930	1.708
MSW1346384 - 4	21 Jul 2023 11:26:52	Hg			13155	1.739
MSDW1346384 - 1	21 Jul 2023 11:30:03	Hg			12088	1.595
MSDW1346384 - 2	21 Jul 2023 11:30:03	Hg			12447	1.643
MSDW1346384 - 3	21 Jul 2023 11:30:03	Hg			12868	1.700
MSDW1346384 - 4	21 Jul 2023 11:30:03	Hg			13225	1.748
MSW1347300 - 1	21 Jul 2023 11:33:12	Hg			13651	1.805
MSW1347300 - 2	21 Jul 2023 11:33:12	Hg			14158	1.873
MSW1347300 - 3	21 Jul 2023 11:33:12	Hg			14573	1.929
MSW1347300 - 4	21 Jul 2023 11:33:12	Hg			14857	1.967
MSDW1347300 - 1	21 Jul 2023 11:36:22	Hg			13240	1.750
MSDW1347300 - 2	21 Jul 2023 11:36:22	Hg			13733	1.816
MSDW1347300 - 3	21 Jul 2023 11:36:22	Hg			14138	1.871
MSDW1347300 - 4	21 Jul 2023 11:36:22	Hg			14436	1.911
CCV - 1	21 Jul 2023 11:39:31	Hg			20220	(L)89.6% 2.688
CCV - 2	21 Jul 2023 11:39:31	Hg			20784	92.1% 2.764
CCV - 3	21 Jul 2023 11:39:31	Hg			21290	94.4% 2.832
CCV - 4	21 Jul 2023 11:39:31	Hg			21770	96.5% 2.896
CCB - 1	21 Jul 2023 11:45:51	Hg			104	-0.015
CCB - 2	21 Jul 2023 11:45:51	Hg			100	-0.016
CCB - 3	21 Jul 2023 11:45:51	Hg			108	-0.015
CCB - 4	21 Jul 2023 11:45:51	Hg			106	-0.015

**METALS
LOGBOOK
DOCUMENTS**

MICP WATER QSM Analytical Run
273608 on 7/17/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	SAMPLE DESCRIPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1348809			L	1346384		ICP K TOTAL QSM 5.0				
	1348810			L	1346384		ICP NA TOTAL QSM 5.0				
	1348811			L	1346384		ICP TOTAL QSM 5.0				
	1348812			PDSW	1346384		ICP K TOTAL QSM 5.0				
	1348813			PDSW	1346384		ICP NA TOTAL QSM 5.0				
	1348814			PDSW	1346384		ICP TOTAL QSM 5.0				
	1347971			ICV			MICP WATER QSM	0			
	1347972			ICVLL			MICP WATER QSM	0			
	1347973			ICB			MICP WATER QSM	0			
	1347974			ICSA			MICP WATER QSM	0			
	1347975			ICSAB			MICP WATER QSM	0			
	1347976			ICVLL			MICP WATER QSM	0			
	1346761			LCSW			ICP K TOTAL QSM 5.0	130497			
	1346761			LCSW			ICP NA TOTAL QSM 5.0	130497			
	1346761			LCSW			ICP TOTAL QSM 5.0	130497			
	1346760			MBW			ICP K TOTAL QSM 5.0	130497			
	1346760			MBW			ICP NA TOTAL QSM 5.0	130497			
	1346760			MBW			ICP TOTAL QSM 5.0	130497			

Matrix: S-Soil Sig-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

Distribution:

C:\Windows\ServiceProfiles\LocalService\AppData\Local\Temp\Tmp206C.tmp

MICP WATER QSM Analytical Run
273608 on 7/17/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	SAMPLE DESCRIPTION	SAMPLE DATE/TIME	QC TYPE (Parent Sample)		CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
178887	1346384		7/10/2023 16:05			WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ICP K TOTAL QSM 5.0		GW	4	
		54IDW							130497			
178887	1346384		7/10/2023 16:05			WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ICP NA TOTAL QSM 5.0		GW	4	
		54IDW							130497			
178887	1346384		7/10/2023 16:05			WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ICP TOTAL QSM 5.0		GW	4	
		54IDW							130497			
	1346762		7/10/2023 16:05					ICP K TOTAL QSM 5.0				
		54IDW		DUP	1346384				130497			
	1346762		7/10/2023 16:05					ICP NA TOTAL QSM 5.0				
		54IDW		DUP	1346384				130497			
	1346762		7/10/2023 16:05					ICP TOTAL QSM 5.0				
		54IDW		DUP	1346384				130497			
	1347978							MICP WATER QSM				
				CCV1					0			
	1347979							MICP WATER QSM				
				CCV2					0			
	1347980							MICP WATER QSM				
				CCB					0			
	1346763		7/10/2023 16:05					ICP K TOTAL QSM 5.0				
		54IDW		MSW	1346384				130497			
	1346763		7/10/2023 16:05					ICP NA TOTAL QSM 5.0				
		54IDW		MSW	1346384				130497			
	1346763		7/10/2023 16:05					ICP TOTAL QSM 5.0				
		54IDW		MSW	1346384				130497			
	1346764		7/10/2023 16:05					ICP K TOTAL QSM 5.0				
		54IDW		MSDW	1346763				130497			
	1346764		7/10/2023 16:05					ICP NA TOTAL QSM 5.0				
		54IDW		MSDW	1346763				130497			
	1346764		7/10/2023 16:05					ICP TOTAL QSM 5.0				
		54IDW		MSDW	1346763				130497			
	1347982							MICP WATER QSM				
				CCV1					0			
	1347983							MICP WATER QSM				
				CCV2					0			
	1347984							MICP WATER QSM				
				CCB					0			

36 SAMPLE COUNT ON RUN, INCLUDING METHOD AND INSTRUMENT QC

Matrix: S-Soil Sig-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

Distribution:

C:\Windows\ServiceProfiles\LocalService\AppData\Local\Temp\Tmp286C.tmp

Page 1 of 1

MERCURY QSM 5.0 Analytical Run
273833 on 7/21/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	SAMPLE DESCRIPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)		CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1351269							MERCURY QSM 5.0				
				ICV					0			
	1351270			ICB				MERCURY QSM 5.0				
	1346625			LCSW				MERCURY TOTAL QSM 5.0	130488			
	1346624			MBW				MERCURY TOTAL QSM 5.0	130488			
178887	1346384		7/10/2023	16:05		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	MERCURY TOTAL QSM 5.0		GW	4	
		54IDW							130488			
	1346626		7/10/2023	16:05				MERCURY TOTAL QSM 5.0				
179047	1348149	54IDW	7/14/2023	12:55	DUP	1346384	WESTON SOLUTIONS, INC.	MERCURY TOTAL QSM 5.0	130488	GW	4	
		49IDW							130488			
	1351271							MERCURY QSM 5.0				
	1351272				CCV			MERCURY QSM 5.0	0			
					CCB				0			
	1346627		7/10/2023	16:05				MERCURY TOTAL QSM 5.0				
		54IDW			MSW	1346384			130488			
	1346628		7/10/2023	16:05				MERCURY TOTAL QSM 5.0				
		54IDW			MSDW	1346627			130488			
	1351273							MERCURY QSM 5.0				
					CCV				0			
	1351274							MERCURY QSM 5.0				
					CCB				0			
13	SAMPLE COUNT ON RUN, INCLUDING METHOD AND INSTRUMENT QC											

Matrix: S-Soil Sig-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

Distribution:

C:\Windows\ServiceProfiles\LocalService\AppData\Local\Temp\tmp9FE1.tmp

Page 1 of 1

PrepWrkSht2
on 7/17/2023

Prep Batch: 130497

Prepped By: _____

Date Prepped: _____

Date Entered: _____

Folder #	Order	QC Type	Link	Test	Client Company Name	Client Sample Description	Matrix	Sample Date / Time	Due Date	SDG Level
	1346760	MBW	0	ICP TOTAL QSM 5.0			LIQUID			
	1346760	MBW	0	ICP NA TOTAL QSM 5.0			LIQUID			
	1346760	MBW	0	ICP K TOTAL QSM 5.0			LIQUID			
	1346761	LCSW	0	ICP K TOTAL QSM 5.0			LIQUID			
	1346761	LCSW	0	ICP NA TOTAL QSM 5.0			LIQUID			
	1346761	LCSW	0	ICP TOTAL QSM 5.0			LIQUID			
178887	1346384			ICP K TOTAL QSM 5.0	WESTON SOLUTIONS, INC.	54IDW	GROUND WATER	7/10/23 16:05	7/23/23	4
	1346384			ICP NA TOTAL QSM 5.0	WESTON SOLUTIONS, INC.	54IDW	GROUND WATER	7/10/23 16:05	7/23/23	4
	1346384			ICP TOTAL QSM 5.0	WESTON SOLUTIONS, INC.	54IDW	GROUND WATER	7/10/23 16:05	7/23/23	4
	1346762	DUP	1346384	ICP K TOTAL QSM 5.0		54IDW	GROUND WATER	7/10/23 16:05		
	1346762	DUP	1346384	ICP NA TOTAL QSM 5.0		54IDW	GROUND WATER	7/10/23 16:05		
	1346762	DUP	1346384	ICP TOTAL QSM 5.0		54IDW	GROUND WATER	7/10/23 16:05		
	1346763	MSW	1346384	ICP K TOTAL QSM 5.0		54IDW	GROUND WATER	7/10/23 16:05		
	1346763	MSW	1346384	ICP NA TOTAL QSM 5.0		54IDW	GROUND WATER	7/10/23 16:05		
	1346763	MSW	1346384	ICP TOTAL QSM 5.0		54IDW	GROUND WATER	7/10/23 16:05		
	1346764	MSDW	1346763	ICP K TOTAL QSM 5.0		54IDW	GROUND WATER	7/10/23 16:05		
	1346764	MSDW	1346763	ICP NA TOTAL QSM 5.0		54IDW	GROUND WATER	7/10/23 16:05		

PrepWrkSht2
on 7/17/2023

Folder #	Order	QC Type	Link	Test	Client Company Name	Client Sample Description	Matrix	Sample Date / Time	Due Date	SDG Level
	1346764	MSDW	1346763	ICP TOTAL QSM 5.0		54IDW	GROUND WATER	7/10/23 16:05		

Control Spike/Control Spike Dup Reference Number: _____ Methanol Supplier/Lot #: _____

Notes: _____

PrepWrkSht2
on 7/26/2023

Prep Batch: 130488

Prepped By: _____

Date Prepped: _____

Date Entered: _____

Folder #	Order	QC Type	Link	Test	Client Company Name	Client Sample Description	Matrix	Sample Date / Time		Due Date	SDG Level
	1346624	MBW		MERCURY TOTAL QSM 5.0			LIQUID				
	1346625	LCSW		MERCURY TOTAL QSM 5.0			LIQUID				
178887	1346384			MERCURY TOTAL QSM 5.0	WESTON SOLUTIONS, INC.	54IDW	GROUND WATER	7/10/23	16:05	7/23/23	4
179047	1348149			MERCURY TOTAL QSM 5.0	WESTON SOLUTIONS, INC.	49IDW	GROUND WATER	7/14/23	12:55	7/29/23	4
	1346626	DUP	1346384	MERCURY TOTAL QSM 5.0		54IDW	GROUND WATER	7/10/23	16:05		
	1346627	MSW	1346384	MERCURY TOTAL QSM 5.0		54IDW	GROUND WATER	7/10/23	16:05		
	1346628	MSDW	1346627	MERCURY TOTAL QSM 5.0		54IDW	GROUND WATER	7/10/23	16:05		

Control Spike/Control Spike Dup Reference Number: _____ Methanol Supplier/Lot #: _____

Notes: _____

Metals Digestion Bench Sheet

Prep Methods:

200.2= ICP/GFAA Liquids

3010= ICP Liquids

3020= GFAA Liquids

3005= Sb Liquids

3050= ICP/GFAA Solids

7060/7740= GFAA As & Se Liquids

Prep Batch #:	130497
Prep Method:	200.2
Analyst:	NAH
Date:	07/12/2023
Start Time:	14:02

Reagent:	Ref. #
----------	--------

Nitric Acid: AB.723

Hydrochloric Acid: AB.722

Hydrogen Peroxide: _____

Program: QSM

*Matrix: GW

Prep Analyst: BMM

Balance ID: _____

End Date: 07/13/2023

End Time: 02:47

Digestion Tube Lot #: 3574

Block Used:	D2
-------------	----

Cell Position for Temp. Check:	60
--------------------------------	----

Initial-DigestionTemp (°C,corrected): 90

Final-Digestion Temp (°C,corrected): 90

Unless otherwise noted, Hot Block A uses Thermometer WCT33 and Hot Block B uses Thermometer WCT24.

[illegible]

Leave >>
blank
if N/A

MB=Method Blank, LCS=Laboratory Control Sample, DUP=Duplicate, MS=Matrix Spike & MSD=Matrix Spike Duplicate

*Matrix: Soil, Sludge, Waste, GW=Groundwater, WW=Wastewater, Tissue, TLCP, SPLP, ASTM or other.

MS/MSD	Spike Amount (ml)	Spike Ref. #
	0.1	M15785
	0.2	M15986
	0.5	M15865
	0.5	M15895

LCS	Spike Amount (ml)	Spike Ref. #
	0.1	M15785
	0.2	M15986
	0.5	M15865
	0.5	M15895

Reviewed x

(Prep Methods 7470A & 7471A)

Balance ID:

7471A= Hg Solids

End Time: 15:20

Reagent:	Ref. #
----------	--------

Block Used: A

HNO3: AB.722

Cell Position for Temp. Check: F-3

H2SO4: AB.724

Initial-DigestionTemp (°C,corrected): 91.1

NaCl/Hydrox.SO4: M16069

Final-Digestion Temp (°C,corrected): 91.8

KMnO4: M16066

Additional KMnO_4 added (ml): _____

K2S2O8: M16067

Aqua Regia added (ml)

Aqua-Regia:

Calibration Stds: M16063

Unless noted otherwise, Hot Block A uses Thermometer WCT33 and Hot Block B uses Thermometer WCT24.

if N/A

MB=Method Blank, LCS=Laboratory Control Sample, DUP=Duplicate, MS=Matrix Spike & MSD=Matrix Spike Duplicate

*Matrix: Soil, Sludge, Waste, GW=Groundwater, WW=Wastewater, Tissue, TLCP, SPLP, ASTM or other.

B: Spike Amount (ml)	Spike Conc. (ug/L)	Spike Ref. #

Reviewed By/Date: X

ICAP 6000 / 6500 Data Review Checklist		Analysis Date: <u>7-13-23</u>		Data File: <u>DOOR000008</u>		Date of review: <u>7/18/23</u>	
Cal Std ID: <u>MTS901</u> / LIMS #: <u>27360X</u>		Analyst: <u>SA</u>		Reviewer: <u>MOS</u>		Approved? <u>Yes</u> ☒ No ☐	
Is Audit Trail turned on or Manual Manipulations addressed? <u>Yes</u> / No (If no, any manual manipulations must be initiated, dated, and reason(s) stated for change)							
Prep Batch Check <u> </u>							
QC Parameters : 6010 / 200.77 GSM / Other	YES	NO	YES	NO	Comments:		
1) Calibration linearity: <u>< 0.995 / r > 0.998</u>	☒		☒				
2) ICV: <u>90-110% / 95-105%</u>	☒		☒				
2) ICVLL: <u>70-130% / 80-120%</u>	☒		☒				
3) ICB: <u>< 3X IDL / < LOD / < LOQ</u>	☒		☒				
4) ICSA: <u>< ABS LOD</u>	☒		☒				
5) ICSAB: <u>80-120%</u>	☒		☒				
6) MRL: <u>70-130% / 80-120%</u>							
7) MDL Check: <u>> LOD</u>							
8) CCV1/CCB1 (CCV: <u>90-110%</u>)	☒		☒				
9) CCV2/CCB2 (CCB: <u>< 3X IDL / < LOD / < LOQ</u>)	☒		☒				
10) CCV3/CCB3							
11) CCV4/CCB4							
12) CCV5/CCB5							
Preparation Batch Parameters	YES	NO	YES	NO			
Prep Batch ID#: <u>B0497</u> Dig. Meth. <u>2002</u>	☒		☒				
LCS - generated limits or project specific limits	☒		☒				
MB - <u>< LOD or ≤ ½ RL</u>	☒		☒				
Spiked samples in batch:							
a) <u>1346584</u> matrix = <u>SW</u>	☒		☒	☒	<u>Al, Fe, V MS, MSD</u> <u>PDS pass no flag.</u>		
b) matrix =							
c) matrix =							
PDS: <u>±15% / 20% / 25%</u> Sample#:							
Prep Batch ID#: Dig. Meth.							
LCS - generated limits or project specific limits							
MB - <u>< LOD or ≤ ½ RL</u>							
Spiked samples in batch:							
a) matrix =							
b) matrix =							
c) matrix =							
PDS: <u>±15% / 20% / 25%</u> Sample#:							
Prep Batch ID#: Dig. Meth.							
LCS - generated limits or project specific limits							
MB - <u>< LOD or ≤ ½ RL</u>							
Spiked samples in batch:							
a) matrix =							
b) matrix =							
c) matrix =							
PDS: <u>±15% / 20% / 25%</u> Sample#:							
Prep Batch ID#: Dig. Meth.							
LCS - generated limits or project specific limits							
MB - <u>< LOD or ≤ ½ RL</u>							
Spiked samples in batch:							
a) matrix =							
b) matrix =							
c) matrix =							
PDS: <u>±15% / 20% / 25%</u> Sample#:							

GFAA / FLAA / CVAA Data Review checklist		Method: 200.9	7000 series AA	245.1 & 245.2	245.7	7470a / 7471a
Instrumentation:		THERMO M SERIES AA				
Analysis Date: 7/21/23		Data File: 072123W	Date Review: 7-21-23	Hydra II Hg ANALYZER		
Cal Std ID: M10063		LIMS #: 273833	Analyst: mps	Reviewer: [Signature]	Approved? Yes	No
Prep Batch Check ☒						

Is Audit Trail turned on or Manual Manipulations addressed? ☒ Yes ☐ No (If no, any manual manipulations must be initialed, dated, and reason(s) stated for change)

Calibration Parameters -	YES	NO	YES	NO	Comments:
1) Calibration linearity - $r > 0.995$	☒		☒		
2) ICV: 90-110% 95-105%	☒		☒		
2) ICVLL: 70-130% 80-120%					
3) ICB: $<IDL / <LOD / <LOQ / <1/2 RL$	☒		☒		
6) MRL: 70-130%					
7) CCV1/CCB1- (CCV: 90-110% / 80-120%)	☒		☒		
8) CCV2/CCB2 (CCB: $<IDL / <LOD / <LOQ / <1/2 RL$)			☒		
9) CCV3/CCB3					
10) CCV4/CCB4					
11) CCV5/CCB5					
Preparation Batch Parameters	YES	NO	YES	NO	
Prep Batch ID#: 130488 Dig. Meth. 7470a	☒		☒		
LCS - generated limits or project specific limits	☒		☒		
MB - $<LOD / <2.2X LOD / \leq 1/2 RL$	☒	☒	☒	☒	Hg > MRL. MB reanalyzed prior to samples and was acceptable
Spiked samples in batch:					
a) 1346384 matrix = low	☒	☒	☒	☒	Dup invalid
b) matrix =					
c) matrix =					
d) matrix =					
e) matrix =					
PDS: $\pm 15\% / 20\% / 25\%$ Sample#					
MSA Performed? Yes No					
Prep Batch ID#: Dig. Meth.					
LCS - generated limits or project specific limits					
MB - $<LOD / <2.2X LOD / \leq 1/2 RL$					
Spiked samples in batch:					
a) matrix =					
b) matrix =					
c) matrix =					
d) matrix =					
e) matrix =					
PDS: $\pm 15\% / 20\% / 25\%$ Sample#					
MSA Performed? Yes No					
Prep Batch ID#: Dig. Meth.					
LCS - generated limits or project specific limits					
MB - $<LOD / <2.2X LOD / \leq 1/2 RL$					
Spiked samples in batch:					
a) matrix =					
b) matrix =					
c) matrix =					
d) matrix =					
e) matrix =					
PDS: $\pm 15\% / 20\% / 25\%$ Sample#					

ICP-6500 Instrument Run Logbook

Effective: 03/03/2023

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Date	Time: Start / End	Analyst	Analytes / Sequence I.D.	Method	LIMS # or Sample Description	Nebulizer Pressure (kpa)	Calib. Std ID	Version	Comments
7/7/23	1058 / 0240	JD	070723	DOOCAL u	273476 273466 273410 273467 273430 273411 273468 273412 273450	240	M15901 M15902 M15903	V5746 V5739 V5732	M15900,914 M15800,801 M15250
7/10/23	0849 / 1741	JD	071023	DOOCAL u	273457 273453 273507 273492,918 273491 273495	240	M15901 M15902 M15903	V5733 V5736 V5735	M15900,914 M15800,801 M15250
7/11/23	1352 / 1726	JD	071123	DOOCAL u	273532	240	M15901 M15902 M15903	V5738	M15900,914 M15800,801 M15250
7/12/23	0949 / 2322	JD	071223	DOOCAL u	273544 273560 273595 273589 273524,35 273633 273538	240	M15901 M15902 M15903	V5747	M15900,914 M15800,801 M15250
7/13/23	1056 / 1920	JD	071323	DOOCAL u	273612 273608 273606,610,607	240	M15901 M15902 M15903	V5747 V5744	M15900,914 M15800,801 M15250
7/14/23	1115 / 0702	JD	071423	DOOCAL u	273660 273635 273677,78 273673 273631 273629 273636,30 273629	240	M15901 M15902 M15903	V5749 V5748	M15900,914 M15800,801 M15250
7-17-23	0945 / 2035	JD	071723	DOOCAL u	273674 273675 273673 79	250	M15901 M15903 M15902	V5750	M15900,914 M15800,801 M15250
7-18-23	0823 / 1708	JD	071823	DOOCAL u	273753 273736 273700 273606	250	M15901 M15903 M15902	V5751	M15900,914 M15800,801 M15250
7-19-23	0711 / 1443	JD	071923	DOOCAL u	273760 273757,58,59	250	M15901 M15903 M15902	V5754	M15900,914 M15800,801 M15250
7-20-23	0915 / 0525	JD	072023	DOOCAL u	273803,864 273821,72,73 273844 273886 273882 273882,883,884	250	M15901 M15903 M15902	V5763 V5756	M15900,914 M15800,801 M15250
07/21/23	1059 / 0111	JD	072423	DOOCAL u	273930 273929 273929 273931,44	250	M15901 M15903 M15902	V5764	M15900,914 M15800,801 M15250
07/25/23		JD							

Comments:

Checked By / Date:

Type	Date/Time	Message	User name	Application	Sequence Name
	07/12/2023 19:57:02	Running 1346806 (47)	NAH	Analyst	S_DOD Calibration
	07/12/2023 20:04:41	Running 1346807 (48)	NAH	Analyst	S_DOD Calibration
	07/12/2023 20:12:20	Running 1346811 (49)	NAH	Analyst	S_DOD Calibration
	07/12/2023 20:20:09	Running 1346812 (50)	NAH	Analyst	S_DOD Calibration
	07/12/2023 20:27:43	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	07/12/2023 20:34:31	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	07/12/2023 20:41:12	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	07/12/2023 20:48:32	Running 1346813 (51)	NAH	Analyst	S_DOD Calibration
	07/12/2023 20:56:08	Running 1346814 (52)	NAH	Analyst	S_DOD Calibration
	07/12/2023 21:03:49	Running 1346815 (53)	NAH	Analyst	S_DOD Calibration
	07/12/2023 21:11:40	Running 1346816 (54)	NAH	Analyst	S_DOD Calibration
	07/12/2023 21:19:16	Running 1346817 (55)	NAH	Analyst	S_DOD Calibration
	07/12/2023 21:27:09	Running 1346818 (56)	NAH	Analyst	S_DOD Calibration
	07/12/2023 21:34:29	Running mbw130446 (57)	NAH	Analyst	S_DOD Calibration
	07/12/2023 21:41:49	Running 1344944 (58)	NAH	Analyst	S_DOD Calibration
	07/12/2023 21:49:09	Running 1344945 (59)	NAH	Analyst	S_DOD Calibration
	07/12/2023 21:56:45	Running 1347011 (60)	NAH	Analyst	S_DOD Calibration
	07/12/2023 22:04:21	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	07/12/2023 22:11:13	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	07/12/2023 22:17:53	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	07/12/2023 22:25:13	Running 1347012 (61)	NAH	Analyst	S_DOD Calibration
	07/12/2023 22:32:49	Running 1347013 (62)	NAH	Analyst	S_DOD Calibration
	07/12/2023 22:40:23	Running 1347014 (63)	NAH	Analyst	S_DOD Calibration
	07/12/2023 22:47:53	Running msw1347014 (64)	NAH	Analyst	S_DOD Calibration
	07/12/2023 22:54:52	Running msdw1347014 (65)	NAH	Analyst	S_DOD Calibration
	07/12/2023 23:01:51	Running MRL/LLOQ (25)	NAH	Analyst	S_DOD Calibration
	07/12/2023 23:09:07	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	07/12/2023 23:15:47	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	07/12/2023 23:22:27	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	07/12/2023 23:29:47	Plasma extinguished successfully	NAH	Analyst	
	07/12/2023 23:29:48	Plasma off	NAH	iTEVA Control Center	
	07/12/2023 23:29:50	Autosampler Run Completed	NAH	Analyst	S_DOD Calibration
	07/13/2023 06:54:02	Plasma On	NAH	iTEVA Control Center	
	07/13/2023 06:54:07	Plasma ignition successful	NAH	Analyst	
	07/13/2023 06:54:54	D33534 - Debug:Wavelength check : x = -0.697, y = -0.202	NAH	Analyst	
	07/13/2023 08:09:08	iTEVA loaded	NAH	iTEVA Control Center	
	07/13/2023 08:09:26	Connected to instrument 20082101	NAH	iTEVA Control Center	
	07/13/2023 08:10:06	Plasma On	NAH	iTEVA Control Center	
	07/13/2023 10:56:25	Autosampler Run Started	NAH	Analyst	
	07/13/2023 10:56:25	Sequence Started	NAH	Analyst	S_DOD Calibration
	07/13/2023 10:56:46	Running Blank (1)	NAH	Analyst	S_DOD Calibration
	07/13/2023 11:04:08	Running CalStd2=0.5 (2)	NAH	Analyst	S_DOD Calibration
	07/13/2023 11:11:29	Running CalStd3=1 (3)	NAH	Analyst	S_DOD Calibration
	07/13/2023 11:18:49	Running CalStd4=5 (4)	NAH	Analyst	S_DOD Calibration
	07/13/2023 11:26:10	Running CalStd5=10 (5)	NAH	Analyst	S_DOD Calibration
	07/13/2023 11:33:31	Running CalStd6=20 (6)	NAH	Analyst	S_DOD Calibration
	07/13/2023 11:40:51	Running CalStd7=50 (7)	NAH	Analyst	S_DOD Calibration
	07/13/2023 11:48:01	Running CalStd8=100 (8)	NAH	Analyst	S_DOD Calibration
	07/13/2023 11:55:03	Running CalStd9=1000 (9)	NAH	Analyst	S_DOD Calibration
	07/13/2023 12:01:37	Running CalStd10=10000 (10)	NAH	Analyst	S_DOD Calibration
	07/13/2023 12:09:19	Running CalStd12=100K (11)	NAH	Analyst	S_DOD Calibration
	07/13/2023 12:17:27	Running CalStd13=100000 (12)	NAH	Analyst	S_DOD Calibration

Type	Date/Time	Message	User name	Application	Sequence Name
	07/13/2023 12:24:41	Running CalStd14=500000 (13)	NAH	Analyst	S_DOD Calibration
	07/13/2023 12:33:00	Running CalibStd15=1000k (14)	NAH	Analyst	S_DOD Calibration
	07/13/2023 12:41:20	Running Ag 1000 Ba 20000 (15)	NAH	Analyst	S_DOD Calibration
	07/13/2023 12:48:59	Running blkrinse (22)	NAH	Analyst	S_DOD Calibration
	07/13/2023 12:56:26	Running icv (16)	NAH	Analyst	S_DOD Calibration
	07/13/2023 13:03:31	Running icv (16)	NAH	Analyst	S_DOD Calibration
	07/13/2023 13:05:51	The standard CalStd6=20 will be permanently removed from the standar	NAH	Analyst	
	07/13/2023 13:10:38	Running ICVLL (24)	NAH	Analyst	S_DOD Calibration
	07/13/2023 13:17:53	Running icb (17)	NAH	Analyst	S_DOD Calibration
	07/13/2023 13:21:03	Closing will close the method and all associated samples.	NAH	Analyst	
	07/13/2023 13:25:12	Running icb (17)	NAH	Analyst	S_DOD Calibration
	07/13/2023 13:32:32	Running MRL/LLOQ (25)	NAH	Analyst	S_DOD Calibration
	07/13/2023 13:39:48	Running ICSA (20)	NAH	Analyst	S_DOD Calibration
	07/13/2023 13:47:44	Running ICSAB (21)	NAH	Analyst	S_DOD Calibration
	07/13/2023 13:51:13	Closing will close the method and all associated samples.	NAH	Analyst	
	07/13/2023 13:55:10	Running blkrinse (22)	NAH	Analyst	S_DOD Calibration
	07/13/2023 14:02:29	Running ICVLL ag (1)	NAH	Analyst	S_DOD Calibration
	07/13/2023 14:08:54	Closing will close the method and all associated samples.	NAH	Analyst	
	07/13/2023 14:09:49	Running 1347137 (2)	NAH	Analyst	S_DOD Calibration
	07/13/2023 14:17:12	Running msw1347137 (3)	NAH	Analyst	S_DOD Calibration
	07/13/2023 14:19:10	Closing will close the method and all associated samples.	NAH	Analyst	
	07/13/2023 14:24:22	Running msdw1347137 (4)	NAH	Analyst	S_DOD Calibration
	07/13/2023 14:31:32	Running 1347140 (5)	NAH	Analyst	S_DOD Calibration
	07/13/2023 14:39:11	Running lcsw134097 (6)	NAH	Analyst	S_DOD Calibration
	07/13/2023 14:46:18	Running mbw134097 (7)	NAH	Analyst	S_DOD Calibration
	07/13/2023 14:53:38	Running 1346384 (8)	NAH	Analyst	S_DOD Calibration
	07/13/2023 15:00:58	Running l1346384 (9)	NAH	Analyst	S_DOD Calibration
	07/13/2023 15:08:38	Running dup1346384 (10)	NAH	Analyst	S_DOD Calibration
	07/13/2023 15:15:55	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	07/13/2023 15:22:53	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	07/13/2023 15:29:35	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	07/13/2023 15:36:55	Running msw1346384 (11)	NAH	Analyst	S_DOD Calibration
	07/13/2023 15:43:53	Running msdw1346384 (12)	NAH	Analyst	S_DOD Calibration
	07/13/2023 15:50:50	Running pdsw1346384 (13)	NAH	Analyst	S_DOD Calibration
	07/13/2023 15:57:49	Running lcsw130498 (14)	NAH	Analyst	S_DOD Calibration
	07/13/2023 16:04:46	Running mbw130498 (15)	NAH	Analyst	S_DOD Calibration
	07/13/2023 16:12:06	Running 1346311 (16)	NAH	Analyst	S_DOD Calibration
	07/13/2023 16:19:50	Running msw1346311 (17)	NAH	Analyst	S_DOD Calibration
	07/13/2023 16:27:09	Running msdw1346311 (18)	NAH	Analyst	S_DOD Calibration
	07/13/2023 16:34:29	Running pdsw1346311 (19)	NAH	Analyst	S_DOD Calibration
	07/13/2023 16:41:40	Running 1346312 (20)	NAH	Analyst	S_DOD Calibration
	07/13/2023 16:49:22	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	07/13/2023 16:56:22	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	07/13/2023 17:03:02	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	07/13/2023 17:10:22	Running 1346696 (21)	NAH	Analyst	S_DOD Calibration
	07/13/2023 17:17:48	Running 1346793 (22)	NAH	Analyst	S_DOD Calibration
	07/13/2023 17:25:31	Running 1346794 (23)	NAH	Analyst	S_DOD Calibration
	07/13/2023 17:33:21	Running 1346804 (24)	NAH	Analyst	S_DOD Calibration
	07/13/2023 17:40:51	Running 1346805 (25)	NAH	Analyst	S_DOD Calibration
	07/13/2023 17:48:12	Running 1346358 (26)	NAH	Analyst	S_DOD Calibration
	07/13/2023 17:55:30	Running 1346362 (27)	NAH	Analyst	S_DOD Calibration
	07/13/2023 18:02:49	Running 1346363 (28)	NAH	Analyst	S_DOD Calibration

Standard ID#:	M16085	Vendor:	SPEX CERTIPREP
Analyst:	BMM	Chemical:	CUSTOM ASSURANCE STANDARD
Date Received:	07/25/2023	Lot #:	1-048NA
Expiration Date (if any):	07/30/2024	Catalog #:	XSPIKE-1-250

Standard ID#:	M16086	Vendor:	SPEX CERTIPREP
Analyst:	BMM	Chemical:	CUSTOM ASSURANCE STANDARD
Date Received:	07/25/2023	Lot #:	1-049NA
Expiration Date (if any):	07/30/2024	Catalog #:	XCTWI-1-500

		Instrument:	GFAA
Standard Log #:	M16082	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	07/24/2023	Expiration Date:	03/28/2024
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15904 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M16083	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	07/24/2023	Expiration Date:	03/28/2024
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15904 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M16084	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	07/24/2023	Expiration Date:	03/28/2023
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M15905 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M16081	Instrument:	GFAA																																			
Analyst:	MDS	Standard:	MDL Spiking Solution																																			
Prep Date:	07/21/2023	Expiration Date:	07/2024																																			
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (2% HNO₃) <table border="1"> <thead> <tr> <th>Analyte</th> <th>Final MDL Conc. (ug/L)</th> <th>Std. ID #</th> <th>Std. Conc. (mg/L)</th> <th>Volume (mL) pipetted</th> </tr> </thead> <tbody> <tr> <td>Ag</td> <td>0.2</td> <td>N/A</td> <td>1000</td> <td>0.01</td> </tr> <tr> <td>As</td> <td>2</td> <td>M15825</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Pb</td> <td>2</td> <td>M15827</td> <td>10000</td> <td>0.01</td> </tr> <tr> <td>Sb</td> <td>2</td> <td>M15828</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Se</td> <td>2</td> <td>M15824</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Tl</td> <td>2</td> <td>M15782</td> <td>1000</td> <td>0.1</td> </tr> </tbody> </table> Of this base standard, pipetted 1 mL into a 50 mL digestion tube for a digested working standard.			Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted	Ag	0.2	N/A	1000	0.01	As	2	M15825	1000	0.1	Pb	2	M15827	10000	0.01	Sb	2	M15828	1000	0.1	Se	2	M15824	1000	0.1	Tl	2	M15782	1000	0.1
Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted																																		
Ag	0.2	N/A	1000	0.01																																		
As	2	M15825	1000	0.1																																		
Pb	2	M15827	10000	0.01																																		
Sb	2	M15828	1000	0.1																																		
Se	2	M15824	1000	0.1																																		
Tl	2	M15782	1000	0.1																																		

Standard ID#:	M16077	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	IRON 250mL
Date Received:	07/21/2023	Lot #:	1240670-23
Expiration Date (if any):	01/18/2025	Catalog #:	4400-10M261

Standard ID#:	M16078	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	MAGNESIUM 250mL
Date Received:	07/21/2023	Lot #:	1303817-13
Expiration Date (if any):	01/18/2025	Catalog #:	4400-10M311

Standard ID#:	M16079	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	POTASSIUM 250mL
Date Received:	07/21/2023	Lot #:	1301246-11
Expiration Date (if any):	01/18/2025	Catalog #:	4400-10M411

Standard ID#:	M16080	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	POTASSIUM 500mL
Date Received:	07/21/2023	Lot #:	1386899
Expiration Date (if any):	01/02/2026	Catalog #:	4400-10M411-500

Standard ID#:	M16071	Vendor:	LabChem
Analyst:	NAH	Chemical:	Turbidity Standard (Formazin)
Date Received:	07/20/2023	Lot #:	43060283
Expiration Date (if any):	06/29/2024	Catalog #:	LC262901

Standard ID#:	M16072	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	SILICON 100mL
Date Received:	07/21/2023	Lot #:	1380434
Expiration Date (if any):	10/05/2025	Catalog #:	S4400-1000504F

Standard ID#:	M16073	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	SULFUR 250mL
Date Received:	07/21/2023	Lot #:	1205121.25
Expiration Date (if any):	01/18/2025	Catalog #:	4400-10M544

Standard ID#:	M16074	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	SILICON 100mL
Date Received:	07/21/2023	Lot #:	1380434
Expiration Date (if any):	10/05/2025	Catalog #:	S4400-1000504F

Standard ID#:	M16075	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	SODIUM 250mL
Date Received:	07/21/2023	Lot #:	1339275-12
Expiration Date (if any):	01/18/2025	Catalog #:	4400-10M521

Standard ID#:	M16076	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	CALCIUM 250mL
Date Received:	07/21/2023	Lot #:	1340158-7
Expiration Date (if any):	01/18/2025	Catalog #:	4400-10M91

Standard Log #:	M16066	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/18/2023	Expiration Date:	08/18/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M16067	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	07/18/2023	Expiration Date:	08/18/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M16068	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/18/2023	Expiration Date:	07/19/2023
Prep:	Carefully mixed 3 parts HCl AB.723 with 1 part HNO ₃ AB.722 in a hood.		

Standard Log #:	M16069	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/19/2023	Expiration Date:	08/19/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15854 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M16070	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/19/2023	Expiration Date:	08/19/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.723 and dissolved 100 g Stannous chloride M16007 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M16063	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	07/18/2023	Expiration Date:	10/30/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M16064	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	07/18/2023	Expiration Date:	10/30/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M16065	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	07/18/2023	Expiration Date:	04/2024
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M16059	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/11/2023	Expiration Date:	08/11/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M16060	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	07/11/2023	Expiration Date:	08/11/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

Standard Log #:	M16061	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/12/2023	Expiration Date:	08/12/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15854 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M16062	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/12/2023	Expiration Date:	08/12/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.723 and dissolved 100 g Stannous chloride M16007 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M16056	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	07/11/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M16057	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	07/11/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M16058	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	07/11/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M16051	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/05/2023	Expiration Date:	08/05/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M16052	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	07/05/2023	Expiration Date:	08/05/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M16053	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/05/2023	Expiration Date:	07/06/2023
Prep:	Carefully mixed 3 parts HCl AB.723 with 1 part HNO ₃ AB.722 in a hood.		

Standard Log #:	M16054	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/06/2023	Expiration Date:	08/06/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15854 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M16055	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/06/2023	Expiration Date:	08/06/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.723 and dissolved 100 g Stannous chloride M16007 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M16048	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	07/05/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M16049	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	07/05/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M16050	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	07/05/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M16046	Standard:	GFAA Instrument Check
Analyst:	MDS	Final Concentration:	10 µg/L As 6 µg/L Pb 10 µg/L Sb 20 µg/L Se 10 µg/L Tl 0.6 µg/L Ag
Prep Date:	06/30/2023	Expiration Date:	07/2024

Into six, 100 mL volumetric flasks, add the following and bring up to volume with milli-Q H₂O.

Element	Volume Pipetted (mL)	Standard Conc. (µg/mL)	Standard ID	New Conc. (µg/L)
As	1	1000	M15825	10,000
Pb	1	1000	M15827	10,000
Tl	1	1000	M15782	10,000
Se	1	1000	M15824	10,000
Sb	1	1000	M15828	10,000
Ag	0.1	1000	N/A	1000

Into a 1 L volumetric flask, add the following and bring up to volume with Milli-Q H₂O. (1% HNO₃)

Element	Volume Pipetted (mL)	Standard Conc. (µg/L)	New Conc. (µg/L)
As	1.0	10,000	10
Pb	0.6	10,000	6
Tl	1.0	10,000	10
Se	2.0	10,000	20
Sb	1.0	10,000	10
Ag	0.6	1000	0.6

Standard ID#:	M16047	Vendor:	ThermoFisher
Analyst:	MDS	Chemical:	Nickel Nitrate Matrix Mod
Date Received:	06/30/2023	Lot #:	1359911
Expiration Date (if any):	10/31/2024	Catalog #:	039043

Standard Log #:	M16041	Reagent:	10N NaOH
Analyst:	BMM		
Prep Date:	06/28/2023	Expiration Date:	11/28/2023
Prep:	Into a 1 L volumetric flask, added 400 g NaOH WC541 and brought up to volume.		

Standard Log #:	M16042	Reagent:	TCLP 1 N HCL
Analyst:	BMM		
Prep Date:	06/28/2023	Expiration Date:	11/28/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, added 83 mL HCL AB.723 and brought up to volume.		

Standard Log #:	M16043	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	06/28/2023	Expiration Date:	06/28/2024
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M16041. Dilute to 20 L and mix.		

Standard Log #:	M16044	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	06/28/2023	Expiration Date:	06/28/2024
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M16041. Dilute to 20 L and mix.		

Standard Log #:	M16045	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	06/28/2023	Expiration Date:	06/28/2024
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M16041. Dilute to 20 L and mix.		

Standard Log #:	M16036	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/27/2023	Expiration Date:	07/27/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M16037	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/27/2023	Expiration Date:	07/27/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M16038	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/27/2023	Expiration Date:	06/28/2023
Prep:	Carefully mixed 3 parts HCl AB.723 with 1 part HNO ₃ AB.722 in a hood.		

Standard Log #:	M16039	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/28/2023	Expiration Date:	07/28/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15854 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M16040	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/28/2023	Expiration Date:	07/28/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.723 and dissolved 100 g Stannous chloride M15863 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M16033	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/27/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M16034	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/27/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M16035	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/27/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M16028	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/20/2023	Expiration Date:	07/20/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M16029	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/20/2023	Expiration Date:	07/20/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M16030	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/20/2023	Expiration Date:	06/21/2023
Prep:	Carefully mixed 3 parts HCl AB.723 with 1 part HNO ₃ AB.722 in a hood.		

Standard Log #:	M16031	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/21/2023	Expiration Date:	07/21/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15854 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M16032	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/21/2023	Expiration Date:	07/21/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.723 and dissolved 100 g Stannous chloride M15863 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M16025	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/20/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M16026	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/20/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M16027	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/20/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M16020	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/13/2023	Expiration Date:	07/13/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M16021	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/13/2023	Expiration Date:	07/13/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M16022	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/13/2023	Expiration Date:	06/14/2023
Prep:	Carefully mixed 3 parts HCl AB.723 with 1 part HNO ₃ AB.722 in a hood.		

Standard Log #:	M16023	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/14/2023	Expiration Date:	07/14/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15854 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M16024	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/14/2023	Expiration Date:	07/14/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.723 and dissolved 100 g Stannous chloride M15863 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M16017	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/13/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M16018	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/13/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M16019	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/13/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M16012	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/06/2023	Expiration Date:	07/06/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M16013	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/06/2023	Expiration Date:	07/06/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M16014	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/06/2023	Expiration Date:	06/07/2023
Prep:	Carefully mixed 3 parts HCl AB.723 with 1 part HNO ₃ AB.722 in a hood.		

Standard Log #:	M16015	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/07/2023	Expiration Date:	07/07/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15854 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M16016	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/07/2023	Expiration Date:	07/07/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.723 and dissolved 100 g Stannous chloride M15863 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M16009	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/06/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M16010	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/06/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M16011	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/06/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M16007	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	06/02/2023	Lot #:	43041540
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M16008	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	06/02/2023	Lot #:	43041540
Expiration Date (if any):		Catalog #:	LC251701

Standard Log #:	M16002	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	05/31/2023	Expiration Date:	06/30/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M16003	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	05/31/2023	Expiration Date:	06/30/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M16004	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	05/31/2023	Expiration Date:	06/01/2023
Prep:	Carefully mixed 3 parts HCl AB.723 with 1 part HNO ₃ AB.722 in a hood.		

Standard Log #:	M16005	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/01/2023	Expiration Date:	07/01/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15854 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M16006	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/01/2023	Expiration Date:	07/01/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.723 and dissolved 100 g Stannous chloride M15863 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15999	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/31/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M16000	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	05/31/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M16001	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/31/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15994	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	05/23/2023	Expiration Date:	06/23/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15995	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	05/23/2023	Expiration Date:	06/23/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15996	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	05/23/2023	Expiration Date:	05/24/2023
Prep:	Carefully mixed 3 parts HCl AB.723 with 1 part HNO ₃ AB.722 in a hood.		

Standard Log #:	M15997	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	05/24/2023	Expiration Date:	06/24/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15854 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15998	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	05/24/2023	Expiration Date:	06/24/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.723 and dissolved 100 g Stannous chloride M15863 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15991	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/23/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15992	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	05/23/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15993	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/23/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	GFAA
Standard Log #:	M15988	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	05/22/2023	Expiration Date:	03/28/2024
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15904 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15989	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	05/22/2023	Expiration Date:	03/28/2024
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15904 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15990	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	05/22/2023	Expiration Date:	03/28/2023
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M15905 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard ID#:	M15986	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	05/18/2023	Lot #:	60-052CR
Expiration Date (if any):	05/30/2024	Catalog #:	XSPIKE-1-250

Standard ID#:	M15987	Vendor:	SpexCertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	05/18/2023	Lot #:	10-114-AJ
Expiration Date (if any):	05/30/2024	Catalog #:	XCTWI-5-500

Standard Log #:	M15981	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	05/17/2023	Expiration Date:	06/17/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15982	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	05/17/2023	Expiration Date:	06/17/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15983	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	05/17/2023	Expiration Date:	05/18/2023
Prep:	Carefully mixed 3 parts HCl AB.723 with 1 part HNO ₃ AB.722 in a hood.		

Standard Log #:	M15984	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	05/18/2023	Expiration Date:	06/18/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15854 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15985	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	05/18/2023	Expiration Date:	06/18/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.723 and dissolved 100 g Stannous chloride M15862 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15978	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/17/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15979	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	05/17/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15980	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/17/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15977	Vendor:	Thermo Scientific
Analyst:	NAH	Chemical:	Glycine 99%
Date Received:	05/12/2023	Lot #:	Z051001
Expiration Date (if any):	12/05/2025	Catalog #:	036435

Standard Log #:	M15972	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	05/08/2023	Expiration Date:	06/08/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15973	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	05/08/2023	Expiration Date:	06/08/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15974	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	05/09/2023	Expiration Date:	05/10/2023
Prep:	Carefully mixed 3 parts HCl AB.723 with 1 part HNO ₃ AB.722 in a hood.		

Standard Log #:	M15975	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	05/09/2023	Expiration Date:	06/09/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15854 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15976	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	05/09/2023	Expiration Date:	06/09/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.723 and dissolved 100 g Stannous chloride M15862 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15969	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/08/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15970	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	05/08/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15971	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/08/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15964	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	05/02/2023	Expiration Date:	06/02/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15965	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	05/02/2023	Expiration Date:	06/02/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15966	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	05/02/2023	Expiration Date:	05/03/2023
Prep:	Carefully mixed 3 parts HCl AB.723 with 1 part HNO ₃ AB.722 in a hood.		

Standard Log #:	M15967	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	05/03/2023	Expiration Date:	06/03/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15854 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15968	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	05/03/2023	Expiration Date:	06/03/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.723 and dissolved 100 g Stannous chloride M15862 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15961	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/02/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15962	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	05/02/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15963	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/02/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15957	Vendor:	CPI
Analyst:	NAH	Chemical:	Si 1000 mg/L
Date Received:	04/27/2023	Lot #:	1285486-20
Expiration Date (if any):	10/2024	Catalog #:	S4400-1000504F

Standard ID#:	M15958	Vendor:	CPI
Analyst:	NAH	Chemical:	Al 10000 mg/L
Date Received:	04/27/2023	Lot #:	1324964-12
Expiration Date (if any):	10/2024	Catalog #:	4400-10M11

Standard ID#:	M15959	Vendor:	CPI
Analyst:	NAH	Chemical:	Na 10000 mg/L
Date Received:	04/27/2023	Lot #:	1263195-12
Expiration Date (if any):	10/2024	Catalog #:	4400-10M521

Standard ID#:	M15960	Vendor:	CPI
Analyst:	NAH	Chemical:	S 10000 mg/L
Date Received:	04/27/2023	Lot #:	1205121-25
Expiration Date (if any):	10/2024	Catalog #:	4400-10M544

Standard Log #:	M15952	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/25/2023	Expiration Date:	05/25/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15953	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/25/2023	Expiration Date:	05/25/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15954	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/25/2023	Expiration Date:	04/26/2023
Prep:	Carefully mixed 3 parts HCl AB.723 with 1 part HNO ₃ AB.722 in a hood.		

Standard Log #:	M15955	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/26/2023	Expiration Date:	05/26/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15854 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15956	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/26/2023	Expiration Date:	05/26/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.723 and dissolved 100 g Stannous chloride M15862 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15949	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/25/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15950	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/25/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15951	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/25/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15944	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/18/2023	Expiration Date:	05/18/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15945	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/18/2023	Expiration Date:	05/18/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15946	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/18/2023	Expiration Date:	04/19/2023
Prep:	Carefully mixed 3 parts HCl AB.723 with 1 part HNO ₃ AB.722 in a hood.		

Standard Log #:	M15947	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/19/2023	Expiration Date:	05/19/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15854 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15948	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/19/2023	Expiration Date:	05/19/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.723 and dissolved 100 g Stannous chloride M15862 and brought up to volume.		

Standard ID#:	M15940	Vendor:	Mettler Toledo
Analyst:	NAH	Chemical:	Friscolyt-B Electrolyte Solution
Date Received:	04/18/2023	Lot #:	1H332H
Expiration Date (if any):	11/2025	Catalog #:	51340053

		Instrument:	HydraII
Standard Log #:	M15941	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/18/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15942	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/18/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15943	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/18/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15937	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	04/14/2023	Expiration Date:	04/14/2024
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15551. Dilute to 20 L and mix.		

Standard Log #:	M15938	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	04/14/2023	Expiration Date:	04/14/2024
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15551. Dilute to 20 L and mix.		

Standard Log #:	M15939	Reagent:	TCLP EXTRACTION FLUID #2
Analyst:	BMM	pH:	2.88 ± 0.05
Prep Date:	04/14/2023	Expiration Date:	04/14/2024
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703. Dilute to 20 L and mix.		

Standard ID#:	M15936	Vendor:	ThermoFisher Scientific
Analyst:	MDS	Chemical:	Nickel Nitrate Matrix Mod.
Date Received:	04/11/2023	Lot #:	1359913
Expiration Date (if any):	09/30/2024	Catalog #:	039043

Standard Log #:	M15931	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/10/2023	Expiration Date:	05/10/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15932	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/10/2023	Expiration Date:	05/10/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15933	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/10/2023	Expiration Date:	04/11/2023
Prep:	Carefully mixed 3 parts HCl AB.723 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15934	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/11/2023	Expiration Date:	05/11/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15854 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15935	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/11/2023	Expiration Date:	05/11/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.723 and dissolved 100 g Stannous chloride M15862 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15928	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/10/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15929	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/10/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15930	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/10/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	GFAA
Standard Log #:	M15925	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	04/07/2023	Expiration Date:	03/28/2024
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15904 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15926	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	04/07/2023	Expiration Date:	03/28/2024
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15904 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15927	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	04/07/2023	Expiration Date:	03/28/2024
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M15905 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M15920	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/04/2023	Expiration Date:	05/04/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15921	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/04/2023	Expiration Date:	05/04/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15922	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/04/2023	Expiration Date:	04/05/2023
Prep:	Carefully mixed 3 parts HCl AB.723 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15923	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/05/2023	Expiration Date:	05/05/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15924	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/05/2023	Expiration Date:	05/05/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.723 and dissolved 100 g Stannous chloride M15708 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15917	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/04/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15918	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/04/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15919	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/04/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15916	Instrument:	ICP 6500
Analyst:	NAH	Standard:	MDL/LOD/LOQ solid
Prep Date:	04/04/2023	Expiration Date:	01/2024

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	40	M15826	1000	2
Al	800	M15787	10000	4
As	40	M15825	1000	2
Ba	40	M15540	1000	2
Be	8	M15767	1000	0.4
Ca	1000	M15783	10000	5
Cd	10	M15766	1000	3
Co	20	M15788	1000	1
Cr	20	M15791	10000	0.1
Cu	20	M15780	10000	0.1
Fe	600	M15896	10000	3
Mg	1000	M15790	10000	5
Mn	20	M15789	10000	0.1
Mo	20	M15663	1000	1
Ni	20	M15823	1000	1
Pb	20	M15827	10000	0.1
Sb	40	M15828	1000	2
Se	40	M15824	1000	2
Tl	40	M15781	1000	2
V	20	M15781	1000	1
Zn	20	M15829	10000	0.1
Na	10000	M15664	10000	50
K	10000	M15765	10000	50
B	40	M15523	1000	2
Si	xxxxx	Mxxxx	1000	xxxxx
Li	xxxxx	Mxxxxx	1000	xxxxx
Sr	20	M15526	1000	1
Sn	40	M15502	1000	2
Ti	40	M15893	1000	2
S	xxxxxx	Mxxxxx	10000	xxxxxx

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M15915	Instrument:	ICP 6500																																																																																																																																																											
Analyst:	NAH	Standard:	MDL/LOD/LOQ liquid																																																																																																																																																											
Prep Date:	04/04/2023	Expiration Date:	01/2024																																																																																																																																																											
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl) <table border="1"> <thead> <tr> <th>Analyte</th> <th>Conc. (ug/L)</th> <th>Std. ID #</th> <th>Std Conc</th> <th>Volume (mL) pipetted into 1 L</th> </tr> </thead> <tbody> <tr><td>Ag</td><td>5</td><td>M15826</td><td>1000</td><td>0.25</td></tr> <tr><td>Al</td><td>120</td><td>M15787</td><td>10000</td><td>0.6</td></tr> <tr><td>As</td><td>40</td><td>M15825</td><td>1000</td><td>2.0</td></tr> <tr><td>Ba</td><td>4</td><td>M15540</td><td>1000</td><td>0.2</td></tr> <tr><td>Be</td><td>8</td><td>M15767</td><td>1000</td><td>0.4</td></tr> <tr><td>Ca</td><td>100</td><td>M15783</td><td>10000</td><td>0.5</td></tr> <tr><td>Cd</td><td>2</td><td>M15766</td><td>1000</td><td>0.1</td></tr> <tr><td>Co</td><td>5</td><td>M15788</td><td>1000</td><td>0.25</td></tr> <tr><td>Cr</td><td>5</td><td>M15791</td><td>10000</td><td>.025</td></tr> <tr><td>Cu</td><td>40</td><td>M15780</td><td>10000</td><td>0.2</td></tr> <tr><td>Fe</td><td>80</td><td>M15896</td><td>10000</td><td>0.4</td></tr> <tr><td>Mg</td><td>40</td><td>M15790</td><td>10000</td><td>0.2</td></tr> <tr><td>Mn</td><td>5</td><td>M15789</td><td>10000</td><td>.025</td></tr> <tr><td>Mo</td><td>5</td><td>M15603</td><td>1000</td><td>0.25</td></tr> <tr><td>Ni</td><td>5</td><td>M15823</td><td>1000</td><td>0.25</td></tr> <tr><td>Pb</td><td>10</td><td>M15827</td><td>10000</td><td>.05</td></tr> <tr><td>Sb</td><td>20</td><td>M15828</td><td>1000</td><td>1</td></tr> <tr><td>Se</td><td>40</td><td>M15824</td><td>1000</td><td>2</td></tr> <tr><td>Tl</td><td>40</td><td>M15782</td><td>1000</td><td>2</td></tr> <tr><td>V</td><td>5</td><td>M15781</td><td>1000</td><td>0.25</td></tr> <tr><td>Zn</td><td>20</td><td>M15829</td><td>10000</td><td>0.1</td></tr> <tr><td>Na</td><td>700</td><td>M15664</td><td>10000</td><td>3.5</td></tr> <tr><td>K</td><td>500</td><td>M15765</td><td>10000</td><td>2.5</td></tr> <tr><td>B</td><td>40</td><td>M15523</td><td>1000</td><td>2</td></tr> <tr><td>Si</td><td>200</td><td>M15792</td><td>1000</td><td>10</td></tr> <tr><td>Li</td><td>20</td><td>M15504</td><td>1000</td><td>1</td></tr> <tr><td>Sr</td><td>20</td><td>M15526</td><td>1000</td><td>1</td></tr> <tr><td>Sn</td><td>40</td><td>M15502</td><td>1000</td><td>2</td></tr> <tr><td>Ti</td><td>20</td><td>M15893</td><td>1000</td><td>1</td></tr> <tr><td>S</td><td>800</td><td>M15786</td><td>10000</td><td>4</td></tr> </tbody> </table> Of this Base standard, pipet 10 mL into a 500 mL volumetric flask to create a working std or 1 mL into a 50 mL digestion tube for a digested working standard.			Analyte	Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L	Ag	5	M15826	1000	0.25	Al	120	M15787	10000	0.6	As	40	M15825	1000	2.0	Ba	4	M15540	1000	0.2	Be	8	M15767	1000	0.4	Ca	100	M15783	10000	0.5	Cd	2	M15766	1000	0.1	Co	5	M15788	1000	0.25	Cr	5	M15791	10000	.025	Cu	40	M15780	10000	0.2	Fe	80	M15896	10000	0.4	Mg	40	M15790	10000	0.2	Mn	5	M15789	10000	.025	Mo	5	M15603	1000	0.25	Ni	5	M15823	1000	0.25	Pb	10	M15827	10000	.05	Sb	20	M15828	1000	1	Se	40	M15824	1000	2	Tl	40	M15782	1000	2	V	5	M15781	1000	0.25	Zn	20	M15829	10000	0.1	Na	700	M15664	10000	3.5	K	500	M15765	10000	2.5	B	40	M15523	1000	2	Si	200	M15792	1000	10	Li	20	M15504	1000	1	Sr	20	M15526	1000	1	Sn	40	M15502	1000	2	Ti	20	M15893	1000	1	S	800	M15786	10000	4
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	Ti	20	M15893	1000	1																																																																																																																																																									
	S	800	M15786	10000	4																																																																																																																																																									

MRL BASE STD	M15914	Analyst	NAH
		Prep Date	04/04/2023

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	(ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L	Expiration Date
Ag	20	M15826	1000	1	01/24
Al	400	M15787	10000	2	x
Ba	10	M15540	1000	0.5	x
Be	4	M15767	1000	0.2	x
Cd	5	M15766	1000	0.25	x
Co	10	M15788	1000	0.5	x
Cr	10	M15791	10000	0.05	x
Cu	10	M15780	10000	0.05	x
Mg	500	M15790	10000	2.5	x
Mn	10	M15789	10000	0.05	x
Mo	10	M15663	1000	0.5	x
Ni	10	M15823	1000	0.5	x
Pb	10	M15827	10000	0.05	x
Sb	20	M15828	1000	1	x
V	10	M15781	1000	0.5	x
Zn	10	M15829	10000	0.05	x
K	1000	M15765	10000	5	x
Na	1000	M15664	10000	5	x
As	20	M15825	1000	1	x
Ca	500	M15783	10000	2.5	x
Fe	300	M15896	10000	1.5	x
Se	20	M15824	1000	1	x
Tl	20	M15782	1000	1	x
Si	100	M15792	1000	5	x
B	20	M15523	1000	1	x
Li	20	M15504	1000	1	x
W	50	xxxxxxxxx	1000	2.5	x
Ti	10	M15893	1000	0.5	x
Sr	10	M15526	1000	0.5	x
Sn	50	M15502	1000	2.5	x
S	300	M15786	10000	1.5	x

Of this Base standard, pipet 10 mls into 500 ml volumetric to create a working std or 1 ml into 50 ml digestion tube for a digested working standard.

Standard Log #:	M15909	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/28/2023	Expiration Date:	04/28/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15910	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/28/2023	Expiration Date:	04/28/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15911	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/28/2023	Expiration Date:	03/29/2023
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15912	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/29/2023	Expiration Date:	04/29/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15913	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/29/2023	Expiration Date:	04/29/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15708 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15906	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/28/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15907	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/28/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15908	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/28/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	ICP 6500
Standard Log #:	M15902	Standard:	CCV1
Analyst:	NAH	Concentrations:	500 ug/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn, Si. 10,000 ug/L K, Na, S 50 ug/L Ag, Be, Cd
Prep Date:	03/28/2023	Expiration Date:	01/2024
Prep:	Into a 1 L volumetric flask, pipetted 50 mL Custom Assurance Standard #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15873 and 50 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M15779 and 5 mL M15542 Si and 5 mL 10,000 mg/L M15632 K, M15764 Na, M15786 S and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15903	Standard:	CCV2
Analyst:	NAH	Concentrations:	500 ug/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn, Si. 10,000 ug/L K, Na, S 50 ug/L Ag, Be, Cd
Prep Date:	03/28/2023	Expiration Date:	01/2024
Prep:	Into a 1 L volumetric flask, pipetted 5 mL Custom Assurance Standard #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15873 and 0.5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M15779 and .5 mL M15542 Si and 1 mL 10,000 mg/L M15632 K, M15764 Na, M15786 S and brought up to volume with milli-Q H ₂ O.		

Standard ID#:	M15904	Vendor:	Inorganic Ventures
Analyst:	MDS	Chemical:	GFAA ICAL/CCV
Date Received:	03/28/2023	Lot #:	U2-MEB731128
Expiration Date (if any):	03/28/2024	Catalog #:	CTI-SPK-1

Standard ID#:	M15905	Vendor:	Inorganic Ventures
Analyst:	MDS	Chemical:	GFAA ICV/SPIKE
Date Received:	03/28/2023	Lot #:	U2-MEB731127
Expiration Date (if any):	03/28/2024	Catalog #:	CTI-GFCAL-1

		Instrument:	ICP 6500
Standard Log #:	M15901	Standard:	ICAL
Analyst:	NAH	Concentrations:	0.25, 0.5, 1, 5, 10, 20, 50, 100, 1000, 10,000, 100k, 100,000, 500,000 and 1000k (ug/L)
Prep Date:	03/28/2023	Expiration Date:	01/30/2024
Prep:	Using 1 L volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (5% HNO₃, 5% HCl) 1000 ug/L Std. - 10 mL of Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15873, 10 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M15779 and 1 mL of Si (1000 mg/L) M15542 and 1 mL M15499 Ce and 1 ml M15629 Hg and 0.1 ml of 10,000 mg/L M15632 K and M15764 Na and M15786 S and M15662 P. 0.25 ug/L Std. - 0.25 mL of the 1000 ug/L Std. 0.5 ug/L Std. - 0.5 mL of the 1000 ug/L Std. 1 ug/L Std. - 1 mL of the 1000 ug/L Std. 5 ug/L Std. - 5 mL of the 1000 ug/L Std. 10 ug/L Std. - 10 mL of the 1000 ug/L Std. 20 ug/L Std. - 20 mL of the 1000 ug/L Std. 50 ug/L Std. - 50 mL of the 1000 ug/L Std. 100 ug/L Std. - 1 mL of Custom Assurance Std. (CAS) #23 and 1 mL of CAS #3 10,000 ug/L Std. - 100 mL CAS #23, 100 mL CAS #3. 100k ug/L Std. - 10 mL of Cu (10,000 mg/L) M15780, 10 mL of Mn (10,000 mg/L) M15789, 10 mL of Cr (10,000 mg/L) M15791, 10 mL Pb (10,000 mg/L) M15827, 10 mL of Zn (10,000 mg/L) M15829. 100,000 ug/L Std. - 10 mL of Mg (10,000 mg/L) M15790, 10 mL of Fe (10,000 mg/L) M15896, 10 mL of Ca (10,000 mg/L) M15783 and 10 mL Al (10,000 mg/L) M15787, 10 mL of Na (10,000) M15764, 10 mL K (10,000) M15632, 10 mL S (10,000) M15786, 10 mL P (10,000), M15662 10 mL Si (1000) M15542. 500,000 ug/L Std. - 50 mL of Mg (10,000 mg/L), 50 mL of Fe (10,000 mg/L), 50 mL of Ca (10,000 mg/L), 50 mL of Al (10,000 mg/L), 50 mL of Na (10,000), 50 mL of K (10,000). 1000k ug/L Std. - 100 mL of Mg (10,000 mg/L), 100 mL of Fe (10,000 mg/L), 100 mL of Ca (10,000 mg/L) 100 mL of Al (10,000 mg/L), 100 mL of Na (10,000 mg/L) 100 mL of K (10,000 mg/L) 100 mL S (10,000 mg/L) 100 ml of P (10,000 mg/L).		

		Instrument:	ICP 6500
Standard Log #:	M15900	Standard:	ICV Std. all
Analyst:	NAH	Concentrations:	12,000 ug/L Al 10,000 ug/L Ca, Mg 5000 ug/L Fe 2000 ug/L As, Ba, Se, Tl 500 ug/L B, Co, Li, Mn, Mo, Ni, Pb, Sb, Sn, Sr, Ti, V, Zn 250 ug/L Cu 200 ug/L Cr 50 ug/L Ag, Be, Cd 100 mg/L Na,K,S 500 ug/L Si
Prep Date:	03/28/2023	Expiration Date:	01/2024
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with milli-Q H₂O. 10 mL Custom Assurance Standard #18 ((200 mg/L Al, As, Ba, Se, Tl) (100 mg/L Fe) (50 mg/L Co, Mn, Ni, Pb, Sb, V, Zn) (25 mg/L Cu) (20 mg/L Cr) (5 mg/L Ag, Be, Cd)) M15864, 2 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe) M15865, 0.5 mL Mo (1000 mg/L) M15785, 0.5 mL B (1000 mg/L) M15523, 0.5 mL Sr (1000 mg/L) M15526, 0.5 mL Li (1000 mg/L) M15504, 0.5 mL Sn (1000 mg/L) M15502, 0.5 mL Ti (1000 mg/L) M15893, 0.5 mL Si (1000 mg/L) M15792, 10 mL S (10000 mg/L) M15894, 10 mL k 10000 mg/L) M15765, 10 mL Na (10000 mg/L) M15664		

Standard Log #:	M15898	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	03/24/2023	Expiration Date:	03/24/2024
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15683. Dilute to 20 L and mix.		

Standard Log #:	M15899	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	03/24/2023	Expiration Date:	03/24/2024
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15683. Dilute to 20 L and mix.		

Standard ID#:	M15893	Vendor:	CPI
Analyst:	NAH	Chemical:	Ti 1000 mg/L
Date Received:	03/24/2023	Lot #:	1195496-37
Expiration Date (if any):	09/2024	Catalog #:	S4400-1000623

Standard ID#:	M15894	Vendor:	CPI
Analyst:	NAH	Chemical:	S 10000 mg/L
Date Received:	03/24/2023	Lot #:	1205121-25
Expiration Date (if any):	09/2024	Catalog #:	4400-10M544

Standard ID#:	M15895	Vendor:	CPI
Analyst:	NAH	Chemical:	K 10000 mg/L
Date Received:	03/24/2024	Lot #:	1137797-65
Expiration Date (if any):	09/2024	Catalog #:	4400-10M411-500

Standard ID#:	M15896	Vendor:	CPI
Analyst:	NAH	Chemical:	Fe 10000 mg/L
Date Received:	03/24/2024	Lot #:	12404670-23
Expiration Date (if any):	09/2024	Catalog #:	4400-10M261

Standard ID#:	M15897	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Interference-A
Date Received:	03/24/2024	Lot #:	3-156AJX
Expiration Date (if any):	09/2024	Catalog #:	INT-A1

Standard Log #:	M15888	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/21/2023	Expiration Date:	04/21/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15889	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/21/2023	Expiration Date:	04/21/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15890	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/21/2023	Expiration Date:	03/22/2023
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15891	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/22/2023	Expiration Date:	04/22/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15892	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/22/2023	Expiration Date:	04/22/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15708 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15885	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/21/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15886	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/21/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15887	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/21/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15880	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/14/2023	Expiration Date:	04/14/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15881	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/14/2023	Expiration Date:	04/14/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15882	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/14/2023	Expiration Date:	03/15/2023
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15883	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/15/2023	Expiration Date:	04/15/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15884	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/15/2023	Expiration Date:	04/15/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15708 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15877	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/14/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15878	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/14/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15879	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/14/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	GFAA
Standard Log #:	M15874	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	03/14/2023	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15875	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	03/14/2023	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15876	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	03/14/2023	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M15317 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard ID#:	M15873	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Std.
Date Received:	03/08/2023	Lot #:	9-002AJ
Expiration Date (if any):	03/30/2024	Catalog #:	XCTWI-5-500

Standard Log #:	M15869	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/07/2023	Expiration Date:	04/07/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15870	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/07/2023	Expiration Date:	04/07/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15768 and brought up to volume.		

Standard Log #:	M15871	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/08/2023	Expiration Date:	04/08/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15872	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/08/2023	Expiration Date:	04/08/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15708 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15866	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/07/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15867	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/07/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15868	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/07/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15864	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	03/06/2023	Lot #:	7-155AJ
Expiration Date (if any):	03/30/2024	Catalog #:	XSPIKE-1-500

Standard ID#:	M15865	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	03/06/2023	Lot #:	7-154AJ
Expiration Date (if any):	03/30/2024	Catalog #:	XCTWI-1

Standard ID#:	M15862	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	03/03/2023	Lot #:	43020072
Expiration Date (if any):	N/A	Catalog #:	LC251701

Standard ID#:	M15863	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	03/03/2023	Lot #:	43020072
Expiration Date (if any):	N/A	Catalog #:	LC251701

Standard Log #:	M15858	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/01/2023	Expiration Date:	04/01/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15859	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/01/2023	Expiration Date:	04/01/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

Standard Log #:	M15860	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/02/2023	Expiration Date:	04/02/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15861	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/02/2023	Expiration Date:	04/02/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15708 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15855	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/01/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15856	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/01/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15857	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/01/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15853	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	02/23/2023	Expiration Date:	03/23/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

Standard ID#:	M15854	Vendor:	Thermo Scientific
Analyst:	MDS	Chemical:	Hydroxylamine Sulfate
Date Received:	02/24/2023	Lot #:	A0442491
Expiration Date (if any):	N/A	Catalog #:	198530010

Standard Log #:	M15848	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	02/21/2023	Expiration Date:	03/21/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15849	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	02/21/2023	Expiration Date:	02/22/2023
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15850	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	02/22/2023	Expiration Date:	03/22/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15851	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	02/22/2023	Expiration Date:	03/22/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15707 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15852	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	02/22/2023	Expiration Date:	02/23/2023
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

		Instrument:	HydraII
Standard Log #:	M15845	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	02/21/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15846	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	02/21/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15847	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	02/21/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	CETAC
Standard Log #:	M15841	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	02/15/2023	Expiration Date:	02/16/2023
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15842	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	02/15/2023	Expiration Date:	03/15/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15843	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	02/16/2023	Expiration Date:	03/16/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15844	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	02/16/2023	Expiration Date:	02/17/2023
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15836	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	02/14/2023	Expiration Date:	03/14/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15837	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	02/14/2023	Expiration Date:	03/14/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15838	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	02/14/2023	Expiration Date:	02/15/2023
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15839	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	02/15/2023	Expiration Date:	03/15/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15840	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	02/15/2023	Expiration Date:	03/15/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15707 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15833	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	02/14/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15834	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	02/14/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15835	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	02/14/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15830	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	02/13/2023	Expiration Date:	02/13/2024
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15683. Dilute to 20 L and mix.		

Standard Log #:	M15831	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	02/13/2023	Expiration Date:	02/13/2024
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15683. Dilute to 20 L and mix.		

Standard Log #:	M15832	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	02/13/2023	Expiration Date:	02/13/2024
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15683. Dilute to 20 L and mix.		

Standard ID#:	M15823	Vendor:	CPI
Analyst:	NAH	Chemical:	1000 mg/L
Date Received:	02/13/2023	Lot #:	1240660-28
Expiration Date (if any):	08/2024	Catalog #:	S4400-1000361

Standard ID#:	M15824	Vendor:	CPI
Analyst:	NAH	Chemical:	Se 1000 mg/L
Date Received:	02/13/2023	Lot #:	1242587-13
Expiration Date (if any):	08/2024	Catalog #:	S4400-1000491

Standard ID#:	M15825	Vendor:	CPI
Analyst:	NAH	Chemical:	As 1000 mg/L
Date Received:	02/13/2023	Lot #:	1218353-50
Expiration Date (if any):	08/2024	Catalog #:	S4400-100031

Standard ID#:	M15826	Vendor:	CPI
Analyst:	NAH	Chemical:	Ag 1000 mg/L
Date Received:	02/13/2023	Lot #:	1211972-52
Expiration Date (if any):	08/2024	Catalog #:	S4400-1000511

Standard ID#:	M15827	Vendor:	CPI
Analyst:	NAH	Chemical:	Pb 10000 mg/L
Date Received:	02/13/2023	Lot #:	1035677-41
Expiration Date (if any):	08/2024	Catalog #:	S4400-10M281

Standard ID#:	M15828	Vendor:	CPI
Analyst:	NAH	Chemical:	Sb 1000 mg/L
Date Received:	02/13/2023	Lot #:	1225595-4
Expiration Date (if any):	08/2024	Catalog #:	S4400-100023

Standard ID#:	M15829	Vendor:	CPI
Analyst:	NAH	Chemical:	Zn 10000 mg/L
Date Received:	02/13/2023	Lot #:	1259561-9
Expiration Date (if any):	08/2024	Catalog #:	S4400-10M681

Standard Log #:	M15822	Instrument:	GFAA																																			
Analyst:	MDS	Standard:	MDL Spiking Solution																																			
Prep Date:	02/08/2023	Expiration Date:	06/2023																																			
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (2% HNO₃) <table border="1"> <thead> <tr> <th>Analyte</th> <th>Final MDL Conc. (ug/L)</th> <th>Std. ID #</th> <th>Std. Conc. (mg/L)</th> <th>Volume (mL) pipetted</th> </tr> </thead> <tbody> <tr> <td>Ag</td> <td>0.2</td> <td>M15222</td> <td>1000</td> <td>0.01</td> </tr> <tr> <td>As</td> <td>2</td> <td>M15223</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Pb</td> <td>2</td> <td>M15289 (0.1)</td> <td>10000</td> <td>0.01</td> </tr> <tr> <td>Sb</td> <td>2</td> <td>M15220</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Se</td> <td>2</td> <td>M15217</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Tl</td> <td>2</td> <td>M15782</td> <td>1000</td> <td>0.1</td> </tr> </tbody> </table> Of this base standard, pipetted 1 mL into a 50 mL digestion tube for a digested working standard.			Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted	Ag	0.2	M15222	1000	0.01	As	2	M15223	1000	0.1	Pb	2	M15289 (0.1)	10000	0.01	Sb	2	M15220	1000	0.1	Se	2	M15217	1000	0.1	Tl	2	M15782	1000	0.1
Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted																																		
Ag	0.2	M15222	1000	0.01																																		
As	2	M15223	1000	0.1																																		
Pb	2	M15289 (0.1)	10000	0.01																																		
Sb	2	M15220	1000	0.1																																		
Se	2	M15217	1000	0.1																																		
Tl	2	M15782	1000	0.1																																		

Standard Log #:	M15817	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	02/07/2023	Expiration Date:	03/07/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15818	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	02/07/2023	Expiration Date:	03/07/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15819	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	02/07/2023	Expiration Date:	02/08/2023
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15820	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	02/08/2023	Expiration Date:	03/08/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15821	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	02/08/2023	Expiration Date:	03/08/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15707 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15814	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	02/07/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15815	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	02/07/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15816	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	02/07/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15813	Standard:	GFAA Instrument Check
Analyst:	MDS	Final Concentration:	10 µg/L As 6 µg/L Pb 10 µg/L Sb 20 µg/L Se 10 µg/L Tl 0.6 µg/L Ag
Prep Date:	02/06/2023	Expiration Date:	06/2023

Into six, 100 mL volumetric flasks, add the following and bring up to volume with milli-Q H₂O.

Element	Volume Pipetted (mL)	Standard Conc. (µg/mL)	Standard ID	New Conc. (µg/L)
As	1	1000	M15223	10,000
Pb	1	1000	M15289	10,000
Tl	1	1000	M15782	10,000
Se	1	1000	M15217	10,000
Sb	1	1000	M15220	10,000
Ag	0.1	1000	M15222	1000

Into a 1 L volumetric flask, add the following and bring up to volume with Milli-Q H₂O. (1% HNO₃)

Element	Volume Pipetted (mL)	Standard Conc. (µg/L)	New Conc. (µg/L)
As	1.0	10,000	10
Pb	0.6	10,000	6
Tl	1.0	10,000	10
Se	2.0	10,000	20
Sb	1.0	10,000	10
Ag	0.6	1000	0.6

		Instrument:	CETAC
Standard Log #:	M15810	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	01/31/2023	Expiration Date:	02/01/2023
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15811	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	02/01/2023	Expiration Date:	03/01/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15812	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	02/01/2023	Expiration Date:	03/01/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15707 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15807	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/31/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15808	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/31/2023	Expiration Date:	02/28/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15809	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/31/2023	Expiration Date:	02/28/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15805	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/31/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15806	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/31/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

Standard Log #:	M15804	Instrument:	ICP 6500
Analyst:	NAH	Standard:	MDL LOQ SOLID
Prep Date:	02/01/2023	Expiration Date:	03/2023

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	40	M15222	1000	2
Al	800	M15787	10000	4
As	40	M15223	1000	2
Ba	40	M15540	1000	2
Be	8	M15767	1000	0.4
Ca	1000	M15783	10000	5
Cd	10	M15766	1000	0.5
Co	20	M15788	1000	1
Cr	20	M15791	10000	0.1
Cu	20	M15780	10000	0.1
Fe	600	M15522	10000	3
Mg	1000	M15790	10000	5
Mn	20	M15789	10000	0.1
Mo	20	M15785	1000	1
Ni	20	M15095	1000	1
Pb	20	M15045	10000	0.1
Sb	40	M15220	1000	2
Se	40	M15217	1000	2
Tl	40	M15782	1000	2
V	20	M15781	1000	1.0
Zn	20	M15114	10000	0.1
Na	10000	M15764	10000	50
K	10000	M15631	10000	50
B	40	M15523	1000	2
Si	xxxxxxxx	xxxxxxx	1000	xxxxxx
Li	xxxxxxxx	xxxxxxx	1000	xxxxxx
Sr	20	M15526	1000	1
Sn	40	M15502	1000	2
Ti	xxxxxxx	xxxxxxxxxx	1000	xxxxxx
S	xxxxxxxx	xxxxxxxxxx	10000	xxxxxx

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M15803	Instrument:	ICP 6500
Analyst:	NAH	Standard:	MDL LOQ LIQUID
Prep Date:	02/01/2023	Expiration Date:	03/2023

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	5	M15222	1000	0.25
Al	120	M15787	10000	0.6
As	40	M15223	1000	0.2
Ba	4	M15540	1000	0.2
Be	8	M15767	1000	0.4
Ca	100	M15783	10000	0.5
Cd	2	M15766	1000	0.1
Co	5	M15788	1000	0.25
Cr	5	M15791	10000	0.025
Cu	40	M15780	10000	0.2
Fe	80	M15522	10000	0.4
Mg	40	M15790	10000	0.2
Mn	5	M15789	10000	.025
Mo	5	M15785	1000	0.25
Ni	5	M15095	1000	0.25
Pb	10	M15045	10000	0.05
Sb	20	M15220	1000	1.0
Se	40	M15217	1000	2.0
Tl	40	M15782	1000	2.0
V	5	M15781	1000	0.25
Zn	20	M15114	10000	0.1
Na	700	M15764	10000	3.5
K	500	M15631	10000	2.5
B	40	M15523	1000	2.0
Si	200	M15792	1000	10
Li	20	M15504	1000	1.0
Sr	20	M15526	1000	1.0
Sn	40	M15502	1000	2.0
Ti	xxxxx	xxxxxxxxx	1000	xxxxxx
S	800	M15786	10000	4

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

		Instrument:	ICP 6500
Standard Log #:	M15802	Standard:	ICV Std. all
Analyst:	NAH	Concentrations:	12,000 ug/L Al 10,000 ug/L Ca, Mg 5000 ug/L Fe 2000 ug/L As, Ba, Se, Tl 500 ug/L B, Co, Li, Mn, Mo, Ni, Pb, Sb, Sn, Sr, Ti, V, Zn 250 ug/L Cu 200 ug/L Cr 50 ug/L Ag, Be, Cd 100 mg/L Na,K,S 500 ug/L Si
Prep Date:	02/01/2023	Expiration Date:	06/2023
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with milli-Q H₂O. 10 mL Custom Assurance Standard #18 ((200 mg/L Al, As, Ba, Se, Tl) (100 mg/L Fe) (50 mg/L Co, Mn, Ni, Pb, Sb, V, Zn) (25 mg/L Cu) (20 mg/L Cr) (5 mg/L Ag, Be, Cd)) M15729, 2 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe) M15717, 0.5 mL Mo (1000 mg/L) M15785, 0.5 mL B (1000 mg/L) M15523, 0.5 mL Sr (1000 mg/L) M15526, 0.5 mL Li (1000 mg/L) M15504, 0.5 mL Sn (1000 mg/L) M15502, 0.5 mL Ti (1000 mg/L) xxxxxxxxxxxx, xxxxxxxxxxxx, 0.5 mL Si (1000 mg/L) M15542, 10 mL S (10000 mg/L) M15786, 10 mL k 10000 mg/L) M15632, 10 mL Na (10000 /L) M15664		

		Instrument:	ICP 6500
Standard Log #:	M15800	Standard:	ICSA
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 10,000 V, Ce
Prep Date:	02/01/2023	Expiration Date:	06/2023
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interference A std M15505 and 15 mL 10000 mg/L Fe M15660 5.0 mL 1000 mg/L V M15781 5.0 mL 1000 mg/L Ce M15499 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15801	Standard:	ICSAB
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 500 ug/L Ag, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn, K, Na, S, 50000 ug/L Si 1000 ug/L.
Prep Date:	02/01/2023	Expiration Date:	06/2023
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M15505, 15 mL Fe (10,000 mg/L) M15660, 2.5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M15779, 2.5 mL Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn), M15630, 2.5 mLs Na 10,000 ug/mL M15764, 2.5 mLs k 10,000 ug/mL M15765 2.5 mLs S 10,000 ug/mL M15501, 0.5 mls Si 1000 ug/mL M15792 and brought up to volume with milli-Q .		

MRL BASE STD	M15799	Analyst	NAH
		Prep Date	02/01/2023

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	(ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L	Expiration Date
Ag	20	M15222	1000	1	03/2023
Al	400	M15787	10000	2	x
Ba	10	M15540	1000	0.5	x
Be	4	M15767	1000	0.2	x
Cd	5	M15766	1000	0.25	x
Co	10	M15788	1000	0.5	x
Cr	10	M15791	10000	0.05	x
Cu	10	M15780	10000	0.05	x
Mg	500	M15790	10000	2.5	x
Mn	10	M15789	10000	0.05	x
Mo	10	M15785	1000	0.5	x
Ni	10	M15095	1000	0.5	x
Pb	10	M15045	10000	0.05	x
Sb	20	M15220	1000	1	x
V	10	M15781	1000	0.5	x
Zn	10	M15114	10000	0.05	x
K	1000	M15631	10000	5	x
Na	1000	M15764	10000	5	2000 ug/L 10 mls of stanard
As	20	M15223	1000	1	x
Ca	500	M15783	10000	2.5	x
Fe	300	M15522	10000	1.5	x
Se	20	M15217	1000	1	x
Tl	20	M15782	1000	1	x
Si	100	M15792	1000	5	x
B	20	M15523	1000	1	x
Li	20	M15504	1000	1	x
W	50	xxxxxxxxx	1000	2.5	x
Ti	10	M15503	1000	0.5	x
Sr	10	M15526	1000	0.5	x
Sn	50	M15502	1000	2.5	x
S	300	M15786	10000	1.5	03/2023

Of this Base standard, pipet 10 mls into 500 ml volumetric to create a working std or 1 ml into 50 ml digestion tube for a digested working standard.

		Instrument:	ICP 6500
Standard Log #:	M15797	Standard:	CCV1
Analyst:	NAH	Concentrations:	500 ug/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn, Si. 10,000 ug/L K, Na, S 50 ug/L Ag, Be, Cd
Prep Date:	02/01/2023	Expiration Date:	09/2023
Prep:	Into a 1 L volumetric flask, pipetted 50 mL Custom Assurance Standard #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15630 and 5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M15779 and 5 ml M15793 Si and 5 ml 10,000 mg/L M15765 K, M15764 Na, M15501 S and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15798	Standard:	CCV2
Analyst:	NAH	Concentrations:	500 ug/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn, Si. 10,000 ug/L K, Na, S 50 ug/L Ag, Be, Cd
Prep Date:	02/01/2023	Expiration Date:	09/2023
Prep:	Into a 1 L volumetric flask, pipetted 5 mL Custom Assurance Standard #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15630 and 0.5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M15779 and .5 ml M15793 Si and 1 ml 10,000 mg/L M15765 K, M15764 Na, M15501 S and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15796	Standard:	ICAL
Analyst:	NAH	Concentrations:	0.25, 0.5, 1, 5, 10, 20, 50, 100, 1000, 10,000, 100k, 100,000, 500,000 and 1000k (ug/L)
Prep Date:	02/01/2023	Expiration Date:	03/2023
Prep:	Using 1 L volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (5% HNO₃, 5% HCl) 1000 ug/L Std. - 10 mL of Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15630, 10 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M15779 and 1 mL of Si (1000 mg/L) M15792 and 1 mL M15499 Ce and 1 ml M15643 Hg and 0.1 ml of 10,000 mg/L M15631 K and M15664 Na and M15786 S and M15784 P. 0.25 ug/L Std. - 0.25 mL of the 1000 ug/L Std. 0.5 ug/L Std. - 0.5 mL of the 1000 ug/L Std. 1 ug/L Std. - 1 mL of the 1000 ug/L Std. 5 ug/L Std. - 5 mL of the 1000 ug/L Std. 10 ug/L Std. - 10 mL of the 1000 ug/L Std. 20 ug/L Std. - 20 mL of the 1000 ug/L Std. 50 ug/L Std. - 50 mL of the 1000 ug/L Std. 100 ug/L Std. - 1 mL of Custom Assurance Std. (CAS) #23 and 1 mL of CAS #3 10,000 ug/L Std. - 100 mL CAS #23, 100 mL CAS #3. 100k ug/L Std. - 10 mL of Cu (10,000 mg/L) M15780, 10 mL of Mn (10,000 mg/L) M15789, 10 mL of Cr (10,000 mg/L) M15791, 10 mL Pb (10,000 mg/L) M15045, 10 mL of Zn (10,000 mg/L) M15114. 100,000 ug/L Std. - 10 mL of Mg (10,000 mg/L) M15790, 10 mL of Fe (10,000 mg/L) M15660, 10 mL of Ca (10,000 mg/L) M15783 and 10 mL Al (10,000 mg/L) M15787, 10 mL of Na (10,000) M15764, 10 mL K (10,000) M15765, 10 mL S (10,000) M15501, 10 mL P (10,1000), M15784 10 mL Si (1000) M15792. 500,000 ug/L Std. - 50 mL of Mg (10,000 mg/L), 50 mL of Fe (10,000 mg/L), 50 mL of Ca (10,000 mg/L), 50 mL of Al (10,000 mg/L), 50 mL of Na (10,000), 50 mL of K (10,000). 1000k ug/L Std. - 100 mL of Mg (10,000 mg/L), 100 mL of Fe (10,000 mg/L), 100 mL of Ca (10,000 mg/L) 100 mL of Al (10,000 mg/L), 100 mL of Na (10,000 mg/L) 100 mL of K (10,000 mg/L) 100 mL S (10,000 mg/L) 100 ml of P (10,000 mg/L).		

		Instrument:	GFAA
Standard Log #:	M15793	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	01/27/2023	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15794	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	01/27/2023	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15795	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	01/27/2023	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M15317 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard ID#:	M15789	Vendor:	CPI
Analyst:	NAH	Chemical:	Mn 10000 ug/mL
Date Received:	01/26/2023	Lot #:	1283873-5
Expiration Date (if any):	07/2024	Catalog #:	S4400-10M321

Standard ID#:	M15790	Vendor:	CPI
Analyst:	NAH	Chemical:	Mg 10000 ug/mL
Date Received:	01/26/2023	Lot #:	1194653-34
Expiration Date (if any):	07/2024	Catalog #:	4400-10M311

Standard ID#:	M15791	Vendor:	CPI
Analyst:	NAH	Chemical:	Cr 10000 ug/mL
Date Received:	01/26/2023	Lot #:	1242583-7
Expiration Date (if any):	07/2024	Catalog #:	S4400-10M121

Standard ID#:	M15792	Vendor:	CPI
Analyst:	NAH	Chemical:	Si 1000 ug/mL
Date Received:	01/26/2023	Lot #:	1285486-10
Expiration Date (if any):	07/2024	Catalog #:	S4400-1000504F

Standard ID#:	M15784	Vendor:	CPI
Analyst:	NAH	Chemical:	P 10000 ug/mL
Date Received:	01/26/2023	Lot #:	1257053
Expiration Date (if any):	07/2024	Catalog #:	S4400-10M391

Standard ID#:	M15785	Vendor:	CPI
Analyst:	NAH	Chemical:	Mo 1000 ug/mL
Date Received:	01/26/2023	Lot #:	1228777-28
Expiration Date (if any):	07/2024	Catalog #:	S4400-1000343

Standard ID#:	M15786	Vendor:	CPI
Analyst:	NAH	Chemical:	S 10000 ug/mL
Date Received:	01/26/2023	Lot #:	1205121-25
Expiration Date (if any):	07/2024	Catalog #:	4400-10M544

Standard ID#:	M15787	Vendor:	CPI
Analyst:	NAH	Chemical:	Al 10000 ug/mL
Date Received:	01/26/2023	Lot #:	1257043-3
Expiration Date (if any):	07/2024	Catalog #:	4400-10M11

Standard ID#:	M15788	Vendor:	CPI
Analyst:	NAH	Chemical:	Co 1000 ug/mL
Date Received:	01/26/2023	Lot #:	1222807-35
Expiration Date (if any):	07/2024	Catalog #:	S4400-1000131

Standard ID#:	M15779	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	01/26/2023	Lot #:	7-008AJ
Expiration Date (if any):	01/30/2024	Catalog #:	XCTWI-4-500

Standard ID#:	M15780	Vendor:	CPI
Analyst:	NAH	Chemical:	10000 ug/mL
Date Received:	01/26/2023	Lot #:	1207839-25
Expiration Date (if any):	07/2024	Catalog #:	S4400-10M141

Standard ID#:	M15781	Vendor:	CPI
Analyst:	NAH	Chemical:	V 10000 ug/mL
Date Received:	01/26/2023	Lot #:	1220562-41
Expiration Date (if any):	07/2024	Catalog #:	S4400-1000651

Standard ID#:	M15782	Vendor:	CPI
Analyst:	NAH	Chemical:	TL 1000 UG/ML
Date Received:	01/26/2023	Lot #:	1239312-22
Expiration Date (if any):	07/2024	Catalog #:	S4400-1000581

Standard ID#:	M15783	Vendor:	CPI
Analyst:	NAH	Chemical:	Ca 10000 ug/mL
Date Received:	01/26/2023	Lot #:	1268108-9
Expiration Date (if any):	07/2024	Catalog #:	4400-10M91

Standard Log #:	M15774	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/24/2023	Expiration Date:	02/24/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15775	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/24/2023	Expiration Date:	02/24/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15776	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	01/24/2023	Expiration Date:	01/25/2023
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15777	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/25/2023	Expiration Date:	02/25/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15778	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/25/2023	Expiration Date:	02/25/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15707 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15771	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/24/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15772	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/24/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15773	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/24/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15768	Vendor:	Thermo Scientific
Analyst:	MDS	Chemical:	Potassium Persulfate
Date Received:	01/23/2023	Lot #:	A0442803
Expiration Date (if any):		Catalog #:	424185000

Standard Log #:	M15769	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	01/23/2023	Expiration Date:	01/23/2024
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15683. Dilute to 20 L and mix.		

Standard Log #:	M15770	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	01/23/2023	Expiration Date:	01/23/2024
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15683. Dilute to 20 L and mix.		

Standard ID#:	M15764	Vendor:	CPI International
Analyst:	NAH	Chemical:	Sodium 10000 mg/L
Date Received:	01/19/2023	Lot #:	4400-10M521
Expiration Date (if any):	02/2024	Catalog #:	1122472-51

Standard ID#:	M15765	Vendor:	CPI International
Analyst:	NAH	Chemical:	Potassium 10000 mg/L
Date Received:	01/19/2023	Lot #:	4400-10M411
Expiration Date (if any):	02/2024	Catalog #:	1137797-61

Standard ID#:	M15766	Vendor:	CPI International
Analyst:	NAH	Chemical:	Cadmium 1000 mg/L
Date Received:	01/19/2023	Lot #:	1144943-25
Expiration Date (if any):	02/2024	Catalog #:	S4400-100081

Standard ID#:	M15767	Vendor:	CPI International
Analyst:	NAH	Chemical:	Be 1000 mg/L
Date Received:	01/19/2023	Lot #:	1143802-45
Expiration Date (if any):	02/2024	Catalog #:	S4400-100051

Standard Log #:	M15759	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/17/2023	Expiration Date:	02/17/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15760	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/17/2023	Expiration Date:	02/17/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15761	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	01/17/2023	Expiration Date:	01/18/2023
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15762	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/18/2023	Expiration Date:	02/18/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15763	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/18/2023	Expiration Date:	02/18/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15707 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15756	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/17/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15757	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/17/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15758	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/17/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15751	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/09/2023	Expiration Date:	02/09/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15752	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/09/2023	Expiration Date:	02/09/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15753	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	01/09/2023	Expiration Date:	01/10/2023
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15754	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/10/2023	Expiration Date:	02/10/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15755	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/10/2023	Expiration Date:	02/10/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15748	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/09/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15749	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/09/2023	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15750	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/09/2023	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15745	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	12/28/2022	Expiration Date:	12/28/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15683. Dilute to 20 L and mix.		

Standard Log #:	M15746	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	12/28/2022	Expiration Date:	12/28/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15683. Dilute to 20 L and mix.		

Standard Log #:	M15747	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	12/28/2022	Expiration Date:	12/28/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15683. Dilute to 20 L and mix.		

Standard Log #:	M15740	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	12/27/2022	Expiration Date:	01/27/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15741	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	12/27/2022	Expiration Date:	01/27/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15742	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	12/27/2022	Expiration Date:	12/28/2022
Prep:	Carefully mixed 3 parts HCl AB.720 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15743	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	12/28/2022	Expiration Date:	01/28/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15744	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	12/28/2022	Expiration Date:	01/28/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15737	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	12/27/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15738	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	12/27/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15739	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	12/27/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15733	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	12/19/2022	Expiration Date:	01/19/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15734	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	12/19/2022	Expiration Date:	01/19/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

Standard Log #:	M15735	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	12/20/2022	Expiration Date:	01/20/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M15584 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15736	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	12/20/2022	Expiration Date:	01/20/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.720 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15730	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	12/19/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15731	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	12/19/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15732	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	12/19/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15729	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	12/19/2022	Lot #:	59-138CR
Expiration Date (if any):	12/30/2023	Catalog #:	XSPIKE-1-250

		Instrument:	CETAC
Standard Log #:	M15728	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	12/15/2022	Expiration Date:	12/16/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15723	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	12/12/2022	Expiration Date:	01/12/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15724	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	12/12/2022	Expiration Date:	01/12/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15725	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	12/13/2022	Expiration Date:	12/14/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15726	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	12/13/2022	Expiration Date:	01/13/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15727	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	12/13/2022	Expiration Date:	01/13/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.717 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15720	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	12/12/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15721	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	12/12/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15722	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	12/12/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15717	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	12/07/2022	Lot #:	5-109AJ
Expiration Date (if any):	12/30/2023	Catalog #:	XCTWI-1-500

Standard Log #:	M15718	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	12/08/2022	Expiration Date:	12/08/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15683. Dilute to 20 L and mix.		

Standard Log #:	M15719	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	12/08/2022	Expiration Date:	12/08/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15683. Dilute to 20 L and mix.		

Standard Log #:	M15712	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	12/06/2022	Expiration Date:	01/06/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15713	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	12/06/2022	Expiration Date:	01/06/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15714	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	12/06/2022	Expiration Date:	12/07/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15715	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	12/07/2022	Expiration Date:	01/07/2023
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15716	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	12/07/2022	Expiration Date:	01/07/2023
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.717 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15709	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	12/06/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15710	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	12/06/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15711	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	12/06/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15707	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	12/02/2022	Lot #:	M227-04
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M15708	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	12/02/2022	Lot #:	M227-04
Expiration Date (if any):		Catalog #:	LC251701

		Instrument:	GFAA
Standard Log #:	M15704	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	12/02/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15705	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	12/02/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15706	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	12/02/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M15317 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M15699	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	11/28/2022	Expiration Date:	12/28/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15700	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	11/28/2022	Expiration Date:	12/28/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15701	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	11/28/2022	Expiration Date:	11/29/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15702	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	11/29/2022	Expiration Date:	12/29/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15703	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	11/29/2022	Expiration Date:	12/29/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.717 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15696	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	11/28/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15697	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	11/28/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15698	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	11/28/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15695	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	11/22/2022	Lot #:	59-114CR
Expiration Date (if any):	11/30/2023	Catalog #:	XSPIKE-1-250

Standard ID#:	M15693	Vendor:	SSI PRODUCTS LLC
Analyst:	BMM	Chemical:	TCLP AWR FILTERS 110mm
Date Received:	11/02/2022	Lot #:	400027
Expiration Date (if any):		Catalog #:	

Standard ID#:	M15694	Vendor:	SSI PRODUCTS LLC
Analyst:	BMM	Chemical:	TCLP AWR FILTERS 150mm
Date Received:	11/02/2022	Lot #:	400194
Expiration Date (if any):		Catalog #:	

Standard Log #:	M15688	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	11/15/2022	Expiration Date:	12/15/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15689	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	11/15/2022	Expiration Date:	12/15/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15690	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	11/15/2022	Expiration Date:	11/16/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15691	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	11/16/2022	Expiration Date:	12/16/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15692	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	11/16/2022	Expiration Date:	12/16/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.717 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15685	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	11/15/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15686	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	11/15/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15687	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	11/15/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15681	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	11/07/2022	Expiration Date:	11/07/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15551. Dilute to 20 L and mix.		

Standard Log #:	M15682	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	11/07/2022	Expiration Date:	11/07/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15551. Dilute to 20 L and mix.		

Standard Log #:	M15683	Reagent:	10N NaOH
Analyst:	BMM		
Prep Date:	11/07/2022	Expiration Date:	04/07/2023
Prep:	Into a 1 L volumetric flask, added 400 g NaOH WC438 and brought up to volume.		

Standard Log #:	M15684	Reagent:	TCLP 1 N HCL
Analyst:	BMM		
Prep Date:	11/07/2022	Expiration Date:	04/07/2023
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, added 83 mL HCL AB.716 and brought up to volume.		

Standard Log #:	M15676	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	11/07/2022	Expiration Date:	12/07/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15677	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	11/07/2022	Expiration Date:	12/07/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15678	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	11/07/2022	Expiration Date:	11/08/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15679	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	11/08/2022	Expiration Date:	12/08/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15680	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	11/08/2022	Expiration Date:	12/08/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.717 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15673	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	11/07/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15674	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	11/07/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15675	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	11/07/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15668	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	10/31/2022	Expiration Date:	11/31/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15669	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	10/31/2022	Expiration Date:	11/31/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15670	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	10/31/2022	Expiration Date:	11/01/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15671	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	11/2/2022	Expiration Date:	12/2/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15672	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	11/2/2022	Expiration Date:	12/2/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.717 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15665	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	10/31/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15666	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	10/31/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15667	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	10/31/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15660	Vendor:	CPI
Analyst:	NAH	Chemical:	Iron 10000 ug/mL
Date Received:	10/31/2022	Lot #:	1240670-1
Expiration Date (if any):	02/2024	Catalog #:	4400-10M261

Standard ID#:	M15661	Vendor:	CPI
Analyst:	NAH	Chemical:	Magnesium 10000 ug/mL
Date Received:	10/31/2022	Lot #:	1194653.23
Expiration Date (if any):	02/2024	Catalog #:	4400-10M311

Standard ID#:	M15662	Vendor:	CPI
Analyst:	NAH	Chemical:	Phosphorus 10000 ug/mL
Date Received:	10/31/2022	Lot #:	1257053-2
Expiration Date (if any):	04/2024	Catalog #:	S4400-10M391

Standard ID#:	M15663	Vendor:	CPI
Analyst:	NAH	Chemical:	Mollybdenum 1000 ug/mL
Date Received:	10/31/2022	Lot #:	1228777-7
Expiration Date (if any):	04/2024	Catalog #:	S4400-1000343

Standard ID#:	M15664	Vendor:	CPI
Analyst:	NAH	Chemical:	Sodium 10000 ug/mL
Date Received:	10/31/2022	Lot #:	1122472-51
Expiration Date (if any):	04/2024	Catalog #:	4400-10M521

		Instrument:	CETAC
Standard Log #:	M15659	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	10/26/2022	Expiration Date:	10/27/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.719 in a hood.		

Standard Log #:	M15655	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	10/25/2022	Expiration Date:	11/25/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15485 and brought up to volume.		

Standard Log #:	M15656	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	10/25/2022	Expiration Date:	11/25/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

Standard Log #:	M15657	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	10/26/2022	Expiration Date:	11/26/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15658	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	10/26/2022	Expiration Date:	11/26/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.717 and dissolved 100 g Stannous chloride M15616 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15652	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	10/25/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15653	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	10/25/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15654	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	10/25/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15647	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	10/18/2022	Expiration Date:	11/18/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15648	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	10/18/2022	Expiration Date:	11/18/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15649	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	10/18/2022	Expiration Date:	10/19/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15650	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	10/19/2022	Expiration Date:	11/19/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15651	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	10/19/2022	Expiration Date:	11/19/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.717 and dissolved 100 g Stannous chloride M15468 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15644	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	10/18/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15645	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	10/18/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15646	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	10/18/2022	Expiration Date:	10/30/2023
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15643 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15643	Vendor:	SPEX CertiPrep
Analyst:	MDS	Chemical:	Mercury 1000µg/mL
Date Received:	10/18/2022	Lot #:	CL13-88HGY
Expiration Date (if any):	10/30/2023	Catalog #:	CLHG4-2Y

Standard Log #:	M15638	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	10/11/2022	Expiration Date:	11/11/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15639	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	10/11/2022	Expiration Date:	11/11/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15640	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	10/11/2022	Expiration Date:	10/12/2022
Prep:	Carefully mixed 3 parts HCl AB.717 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15641	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	10/12/2022	Expiration Date:	11/12/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15642	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	10/12/2022	Expiration Date:	11/12/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.717 and dissolved 100 g Stannous chloride M15468 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15635	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	10/11/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15636	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	10/11/2022	Expiration Date:	04/2024
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15629 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15637	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	10/11/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15634	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance std
Date Received:	10/11/2022	Lot #:	59-092CR
Expiration Date (if any):	10/30/2023	Catalog #:	XSPIKE-1-500

Standard ID#:	M15629	Vendor:	CPI International
Analyst:	NAH	Chemical:	Hg 1000 ug/mL
Date Received:	10/05/2022	Lot #:	1141387-57
Expiration Date (if any):	04/2024	Catalog #:	S4400-1000331

Standard ID#:	M15630	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance std
Date Received:	10/05/2022	Lot #:	3-134EL
Expiration Date (if any):	09/30/2023	Catalog #:	XCTWI-5-500

Standard ID#:	M15631	Vendor:	CPI International
Analyst:	NAH	Chemical:	K 10000 ug/mL
Date Received:	10/05/2022	Lot #:	1137797-61
Expiration Date (if any):	04/2024	Catalog #:	4400-10M411

Standard ID#:	M15632	Vendor:	CPI
Analyst:	NAH	Chemical:	K 10000 ug/MI
Date Received:	10/05/2022	Lot #:	1137797-60
Expiration Date (if any):	04/2024	Catalog #:	4400-10M411-500

Standard ID#:	M15633	Vendor:	GFS Chemicals
Analyst:	NAH	Chemical:	Amco Clear turb std
Date Received:	10/05/2022	Lot #:	22160094
Expiration Date (if any):	10/2023	Catalog #:	8008

		Instrument:	CETAC
Standard Log #:	M15628	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	10/04/2022	Expiration Date:	10/05/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15624	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	10/03/2022	Expiration Date:	11/03/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15625	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	10/03/2022	Expiration Date:	11/03/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

Standard Log #:	M15626	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	10/04/2022	Expiration Date:	11/04/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15627	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	10/04/2022	Expiration Date:	11/04/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15468 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15621	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	10/03/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15622	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	10/03/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15623	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	10/03/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	GFAA
Standard Log #:	M15617	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	10/03/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15618	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	10/03/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15619	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	10/03/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M15317 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard ID#:	M15620	Vendor:	ThermoFisher
Analyst:	MDS	Chemical:	Nickel Nitrate Matrix Modifier
Date Received:	10/03/2022	Lot #:	276713
Expiration Date (if any):	07/31/2023	Catalog #:	39043

Standard ID#:	M15615	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	09/15/2022	Lot #:	M138-15
Expiration Date (if any):		Catalog #:	LC25170

Standard ID#:	M15616	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	09/15/2022	Lot #:	M138-15
Expiration Date (if any):		Catalog #:	LC25170

Standard Log #:	M15610	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	09/26/2022	Expiration Date:	10/26/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15611	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	09/26/2022	Expiration Date:	10/26/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15612	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	09/26/2022	Expiration Date:	09/27/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15613	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	09/27/2022	Expiration Date:	10/27/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15614	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	09/27/2022	Expiration Date:	10/27/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15468 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15607	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	09/26/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15608	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	09/26/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15609	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	09/26/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15604	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	09/27/2022	Expiration Date:	09/27/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15551. Dilute to 20 L and mix.		

Standard Log #:	M15605	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	09/27/2022	Expiration Date:	09/27/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15551. Dilute to 20 L and mix.		

Standard Log #:	M15606	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	09/27/2022	Expiration Date:	09/27/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15551. Dilute to 20 L and mix.		

Standard ID#:	M15603	Vendor:	Supelco
Analyst:	NAH	Chemical:	100 NTU formazin
Date Received:	09/23/2022	Lot #:	LRAD2638
Expiration Date (if any):	05/2024	Catalog #:	TURB100-100ML

Standard ID#:	M15601	Vendor:	Spec Certiprep
Analyst:	NAH	Chemical:	Custom Assurance std
Date Received:	09-19-2022	Lot #:	3-097EL
Expiration Date (if any):	09-30-2023	Catalog #:	XCTWI-1-500

Standard ID#:	M15602	Vendor:	Lab Chem
Analyst:	NAH	Chemical:	4000 NTU
Date Received:	09-15-2022	Lot #:	M201-23
Expiration Date (if any):	07/28/2023	Catalog #:	LC262901

Standard Log #:	M15596	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	09/13/2022	Expiration Date:	10/13/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15597	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	09/13/2022	Expiration Date:	10/13/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15598	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	09/13/2022	Expiration Date:	09/14/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15599	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	09/14/2022	Expiration Date:	10/14/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15600	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	09/14/2022	Expiration Date:	10/14/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15468 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15593	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	09/13/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15594	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	09/13/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15595	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	09/13/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15588	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	09/07/2022	Expiration Date:	10/07/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15589	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	09/07/2022	Expiration Date:	10/07/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15590	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	09/07/2022	Expiration Date:	09/08/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15591	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	09/08/2022	Expiration Date:	10/08/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15592	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	09/08/2022	Expiration Date:	10/08/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15467 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15585	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	09/07/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15586	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	09/07/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15587	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	09/07/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15584	Vendor:	ThermoFisher
Analyst:	MDS	Chemical:	Sodium Chloride
Date Received:	09/06/2022	Lot #:	218977
Expiration Date (if any):		Catalog #:	S271

Standard Log #:	M15582	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	08/31/2022	Expiration Date:	09/31/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15583	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	08/31/2022	Expiration Date:	09/31/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15467 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15578	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	08/30/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15579	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	08/30/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15580	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/30/2022	Expiration Date:	09/30/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15581	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	08/30/2022	Expiration Date:	09/30/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	ICP 6500
Standard Log #:	M15575	Standard:	ICSA
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 10,000 V, Ce
Prep Date:	08/31/2022	Expiration Date:	02/2023
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interference A std M15505 and 15 mL 10000 mg/L Fe M15522 5.0 mL 1000 mg/L V M15020 5.0 mL 1000 mg/L Ce M15499 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15576	Standard:	ICSAB
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 500 ug/L Ag, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn, K, Na, S, 50000 ug/L Si 1000 ug/L.
Prep Date:	08/31/2022	Expiration Date:	02/2023
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M15505, 15 mL Fe (10,000 mg/L) M15522, 2.5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M15259, 2.5 mL Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn), M15455, 2.5 mLs Na 10,000 ug/mL M15528, 2.5 mLs k 10,000 ug/mL M15477 2.5 mLs S 10,000 ug/mL M15395, 0.5 mLs Si 1000 ug/mL M15088 and brought up to volume with milli-Q.		

		Instrument:	HydraII
Standard Log #:	M15577	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	08/30/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

MRL BASE STD	M15574	Analyst	NAH
		Prep Date	08/31/2022

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	(ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L	Expiration Date
Ag	20	M15222	1000	1	01/2023
Al	400	M15397	10000	2	--
Ba	10	M15540	1000	0.5	--
Be	4	M15091	1000	0.2	
Cd	5	M15098	1000	0.25	
Co	10	M15019	1000	0.5	
Cr	10	M15027	10000	0.05	
Cu	10	M15021	10000	0.05	
Mg	500	M15174	10000	2.5	
Mn	10	M15023	10000	0.05	
Mo	10	M15170	1000	0.5	
Ni	10	M15095	1000	0.5	
Pb	10	M15045	10000	0.05	
Sb	20	M15045	1000	1	
V	10	M15020	1000	0.5	
Zn	10	M15114	10000	0.05	
K	1000	M15477	10000	5	
Na	1000	M15528	10000	5	
As	20	M15223	1000	1	
Ca	500	M15026	10000	2.5	
Fe	300	M15169	10000	1.5	
Se	20	M15217	1000	1	
Tl	20	M15221	1000	1	
Si	100	M15171	1000	5	
B	20	M15523	1000	1	
Li	20	M15504	1000	1	
W	50	XXXXXX	1000	2.5	
Ti	10	M15221	1000	0.5	
Sr	10	M15526	1000	0.5	
Sn	50	M15502	1000	2.5	
S	300	M15501	10000	1.5	

Of this Base standard, pipet 10 mls into 500 ml volumetric to create a working std or 1 ml into 50 ml digestion tube for a digested working standard.

Standard Log #:	M15569	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/23/2022	Expiration Date:	09/23/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15570	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	08/23/2022	Expiration Date:	09/23/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15571	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	08/23/2022	Expiration Date:	09/23/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15572	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	08/24/2022	Expiration Date:	09/24/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15433 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15573	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	08/24/2022	Expiration Date:	09/24/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15467 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15566	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	08/23/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15567	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	08/23/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15568	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	08/23/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15564	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/15/2022	Expiration Date:	09/15/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15565	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	08/16/2022	Expiration Date:	09/16/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15467 and brought up to volume.		

Standard ID#:	M15563	Vendor:	SCP Science
Analyst:	MDS	Chemical:	Palladium/Magnesium Matrix Modifier
Date Received:	08/15/2022	Lot #:	S220707011
Expiration Date (if any):	07/2024	Catalog #:	140-003-192

Standard Log #:	M15562	Instrument:	ICP 6500
Analyst:	NAH	Standard:	MDL spiking soln
Prep Date:	08/12/2022	Expiration Date:	01/2023

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	40	M15222	1000	2
Al	800	M15397	10000	4
As	40	M15223	1000	2
Ba	20	M15540	1000	1
Be	8	M15091	1000	0.4
Ca	1000	M15026	10000	5
Cd	10	M15098	1000	0.5
Co	20	M15019	1000	1
Cr	20	M15027	10000	0.1
Cu	20	M15021	10000	0.1
Fe	600	M15169	10000	3
Mg	1000	M15174	10000	5
Mn	20	M15023	10000	0.1
Mo	20	M15170	1000	1
Ni	20	M15095	1000	1
Pb	20	M15045	10000	0.1
Sb	40	M15220	1000	2
Se	40	M15217	1000	2
Tl	40	M15221	1000	2
V	20	M15020	1000	1
Zn	20	M15114	10000	0.1
Na	10000	M15528	10000	50
K	10000	M15477	10000	50
B	40	M15523	1000	2
Si	200	M15171	1000	10
Li	20	M15504	1000	1
Sr	20	M15526	1000	1
Sn	40	M15502	1000	2
Ti	20	M15503	1000	1
S	400	M15501	10000	20

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M15561	Instrument:	ICP 6500
Analyst:	NAH	Standard:	LOQ solid QSM
Prep Date:	08/12/2022	Expiration Date:	01/2023

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	40	M15222	1000	2
Al	800	M15397	10000	4
As	40	M15223	1000	2
Ba	40	M15540	1000	2
Be	8	M15091	1000	0.4
Ca	1000	M15026	10000	5
Cd	10	M15098	1000	0.5
Co	20	M15019	1000	1
Cr	20	M15027	10000	0.1
Cu	20	M15021	10000	0.1
Fe	600	M15169	10000	3
Mg	1000	M15174	10000	5
Mn	20	M15023	10000	0.1
Mo	20	M15170	1000	1
Ni	20	M15095	1000	1
Pb	20	M15045	10000	0.1
Sb	40	M15220	1000	2
Se	40	M15217	1000	2
Tl	40	M15221	1000	2
V	20	M15020	1000	1
Zn	20	M15114	10000	0.1
Na	10000	M15528	10000	50
K	10000	M15477	10000	50
B	40	M15523	1000	2
Si	200	M15171	1000	10
Li	20	M15504	1000	1
Sr	20	M15526	1000	1
Sn	40	M15502	1000	2
Ti	200	M15221	1000	1
S	400	M15501	10000	20

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M15560	Instrument:	ICP 6500
Analyst:	NAH	Standard:	LOQ water QSM
Prep Date:	08/12/2022	Expiration Date:	01/2023

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	5	M15222	1000	0.25
Al	120	M15397	10000	0.6
As	40	M15223	1000	0.2
Ba	4	M15540	1000	0.2
Be	8	M15091	1000	0.4
Ca	100	M15026	10000	0.5
Cd	2	M15098	1000	0.1
Co	5	M15019	1000	0.25
Cr	5	M15027	10000	0.025
Cu	40	M15021	10000	0.2
Fe	80	M15169	10000	0.40
Mg	40	M15174	10000	0.20
Mn	5	M15023	10000	0.025
Mo	5	M15170	1000	0.25
Ni	5	M15095	1000	0.25
Pb	20	M15045	10000	0.10
Sb	20	M15220	1000	1
Se	20	M15217	1000	1
Tl	40	M15221	1000	2
V	5	M15020	1000	0.25
Zn	20	M15114	10000	0.10
Na	700	M15528	10000	3.5
K	500	M15477	10000	2.5
B	40	M15523	1000	2
Si	200	M15171	1000	10
Li	20	M15504	1000	1
Sr	20	M15526	1000	1
Sn	40	M15502	1000	2
Ti	20	M15503	1000	1
S	400	M15501	10000	2

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

		Instrument:	GFAA
Standard Log #:	M15559	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	08/10/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M15317 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M15555	Reagent:	SPLP ACID MIX
Analyst:	NAH		60/40 H ₂ SO ₄ - HNO ₃
Prep Date:	08/11/2022	Expiration Date:	08/11/2023
Prep:	Into a 200 mL volumetric flask, partially filled with DI H ₂ O, add 12 g H ₂ SO ₄ AB.713 and 8 g HNO ₃ AB.715 and bring up to volume using DI H ₂ O.		

Standard Log #:	M15556	Reagent:	SPLP EXTRACTION FLUID EAST #
Analyst:	NAH	pH:	4.20 ± 0.05
Prep Date:	08/11/2022 pH=4.21	Expiration Date:	08/11/2023
Prep:	Into a 20 L carboy filled with DI H ₂ O, adjust pH to 4.20 ± 0.05 using 60/40 HNO ₃ - H ₂ SO ₄ M15555.		

		Instrument:	GFAA
Standard Log #:	M15557	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	08/10/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15558	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	08/10/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M15551	Reagent:	10N NaOH
Analyst:	BMM		
Prep Date:	08/11/2022	Expiration Date:	08/11/2023
Prep:	Into a 1 L volumetric flask, added 400 g NaOH WC438 and brought up to volume.		

Standard Log #:	M15552	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	08/11/2022	Expiration Date:	08/11/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15551. Dilute to 20 L and mix.		

Standard Log #:	M15553	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	08/11/2022	Expiration Date:	08/11/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15551. Dilute to 20 L and mix.		

Standard Log #:	M15554	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	08/11/2022	Expiration Date:	08/11/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15551. Dilute to 20 L and mix.		

Standard Log #:	M15546	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/10/2022	Expiration Date:	09/10/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15547	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	08/10/2022	Expiration Date:	09/10/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15548	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	08/10/2022	Expiration Date:	08/11/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15549	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	08/11/2022	Expiration Date:	09/11/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15550	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	08/11/2022	Expiration Date:	09/11/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15467 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15543	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	08/10/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15544	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	08/10/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15545	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	08/10/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15540	Vendor:	CPI
Analyst:	NAH	Chemical:	Ba 1000 mg/L
Date Received:	08/09/2022	Lot #:	1232359-4
Expiration Date (if any):	01/2024	Catalog #:	S4400-100041

Standard ID#:	M15541	Vendor:	CPI
Analyst:	NAH	Chemical:	K 10000 mg/L
Date Received:	08/09/2022	Lot #:	1137797-46
Expiration Date (if any):	01/2024	Catalog #:	4400-10M411

Standard ID#:	M15542	Vendor:	CPI
Analyst:	NAH	Chemical:	Si 1000 mg/L
Date Received:	08/09/2022	Lot #:	1000504F
Expiration Date (if any):	01/2024	Catalog #:	1197533-32

		Instrument:	CETAC
Standard Log #:	M15539	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	08/05/2022	Expiration Date:	08/06/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15537	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	08/04/2022	Expiration Date:	09/04/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15538	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	08/04/2022	Expiration Date:	09/04/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15467 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15533	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	08/03/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15534	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/03/2022	Expiration Date:	09/03/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15535	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	08/03/2022	Expiration Date:	09/03/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15536	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	08/03/2022	Expiration Date:	08/04/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard ID#:	M15530	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	08/03/2022	Lot #:	59-034CR
Expiration Date (if any):	07/30/2023	Catalog #:	XSPIKE-1-250

		Instrument:	HydraII
Standard Log #:	M15531	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	08/03/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15532	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	08/03/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

Standard Log #:	M15529	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/01/2022	Expiration Date:	09/01/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard ID#:	M15522	Vendor:	CPI
Analyst:	NAH	Chemical:	Fe 10,000 mg/L
Date Received:	07/29/2022	Lot #:	1240670-1
Expiration Date (if any):	01/2024	Catalog #:	4400-10M261

Standard ID#:	M15523	Vendor:	CPI
Analyst:	NAH	Chemical:	B 1000 mg/L
Date Received:	07/29/2022	Lot #:	1209884-23
Expiration Date (if any):	01//2024	Catalog #:	S4400-100074

Standard ID#:	M15524	Vendor:	CPI
Analyst:	NAH	Chemical:	Mo 1000 mg/L
Date Received:	07/29/2022	Lot #:	1228777-7
Expiration Date (if any):	01/2024	Catalog #:	S4400-1000343

Standard ID#:	M15525	Vendor:	CPI
Analyst:	NAH	Chemical:	Ca 10,000 mg/L
Date Received:	07/29/2022	Lot #:	1112960-75
Expiration Date (if any):	01/2024	Catalog #:	4400-10M91

Standard ID#:	M15526	Vendor:	CPI
Analyst:	NAH	Chemical:	Sr 1000 mg/L
Date Received:	07/29/2022	Lot #:	1194650-12
Expiration Date (if any):	01/2024	Catalog #:	S4400-1000531

Standard ID#:	M15527	Vendor:	CPI
Analyst:	NAH	Chemical:	Al 10,000 mg/L
Date Received:	07/29/2022	Lot #:	1144484-33
Expiration Date (if any):	01/2024	Catalog #:	4400-10M11

Standard ID#:	M15528	Vendor:	CPI
Analyst:	NAH	Chemical:	Na 10,000 mg/L
Date Received:	07/29/2022	Lot #:	1122472-51
Expiration Date (if any):	01/2024	Catalog #:	4400-10M521

Standard Log #:	M15517	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/27/2022	Expiration Date:	08/27/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15518	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	07/27/2022	Expiration Date:	08/27/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15519	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/27/2022	Expiration Date:	07/28/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15520	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/28/2022	Expiration Date:	08/28/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15521	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/28/2022	Expiration Date:	08/28/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15467 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15514	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	07/27/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15515	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	07/27/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15516	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	07/27/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15509	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/20/2022	Expiration Date:	08/20/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15510	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	07/20/2022	Expiration Date:	08/20/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15511	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/20/2022	Expiration Date:	07/21/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15512	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/21/2022	Expiration Date:	08/21/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15513	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/21/2022	Expiration Date:	08/21/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15306 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15506	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	07/20/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15507	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	07/20/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15508	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	07/20/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15505	Vendor:	SpexCertiPrep
Analyst:	NAH	Chemical:	Interference-A
Date Received:	07/19/2022	Lot #:	3-137SGX
Expiration Date (if any):	07/30/2023	Catalog #:	INT_A1

Standard ID#:	M15499	Vendor:	CPI
Analyst:	NAH	Chemical:	Ce 1000 mg/L
Date Received:	07/14/2022	Lot #:	1237797-6
Expiration Date (if any):	01/2024	Catalog #:	S4400-1000101

Standard ID#:	M15500	Vendor:	CPI
Analyst:	NAH	Chemical:	Fe 10,000 mg/L
Date Received:	07/14/2022	Lot #:	12240670-1
Expiration Date (if any):	01/2024	Catalog #:	4400-10M261

Standard ID#:	M15501	Vendor:	CPI
Analyst:	NAH	Chemical:	S 10,000 mg/L
Date Received:	07/14/2022	Lot #:	1205121-18
Expiration Date (if any):	01/2024	Catalog #:	4400-10M544

Standard ID#:	M15502	Vendor:	CPI
Analyst:	NAH	Chemical:	Sn 1000 mg/L
Date Received:	07/14/2022	Lot #:	1128650-39
Expiration Date (if any):	01/2024	Catalog #:	S4400-1000613

Standard ID#:	M15503	Vendor:	CPI
Analyst:	NAH	Chemical:	Ti 1000 mg/L
Date Received:	07/14/2022	Lot #:	1195496-15
Expiration Date (if any):	01/2024	Catalog #:	S4400-1000623

Standard ID#:	M15504	Vendor:	CPI
Analyst:	NAH	Chemical:	Li 1000 mg/L
Date Received:	07/14/2022	Lot #:	1186016-18
Expiration Date (if any):	01/2024	Catalog #:	S4400-1000291

Standard Log #:	M15495	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/12/2022	Expiration Date:	08/12/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15496	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/12/2022	Expiration Date:	07/13/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15497	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/13/2022	Expiration Date:	08/13/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15498	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/13/2022	Expiration Date:	08/13/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15306 and brought up to volume.		

Standard Log #:	M15494	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/07/2022	Expiration Date:	08/07/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15489	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/06/2022	Expiration Date:	08/06/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15490	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/06/2022	Expiration Date:	07/07/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15491	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	07/07/2022	Expiration Date:	08/07/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

Standard Log #:	M15492	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/07/2022	Expiration Date:	08/07/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15493	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/07/2022	Expiration Date:	08/07/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15306 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15486	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	07/06/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15487	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	07/06/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15488	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	07/06/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	ICP 6500
Standard Log #:	M15483	Standard:	ICV Std.
Analyst:	NAH	Concentrations:	12,000 mg/L Al 10,000 mg/L Ca, Mg 5000 mg/L Fe 2000 mg/L As, Ba, Se, Tl 500 mg/L B, Co, Li, Mn, Mo, Ni, Pb, Sb, Sn, Sr, Ti, V, Zn 250 mg/L Cu 200 mg/L Cr 50 mg/L Ag, Be, Cd
Prep Date:	07/05/2022	Expiration Date:	02/2023
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with milli-Q H₂O. 10 mL Custom Assurance Standard #18 ((200 mg/L Al, As, Ba, Se, Tl) (100 mg/L Fe) (50 mg/L Co, Mn, Ni, Pb, Sb, V, Zn) (25 mg/L Cu) (20 mg/L Cr) (5 mg/L Ag, Be, Cd)) <15434, 2 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M15069, 0.5 mL Mo (1000 mg/L) M15022, 0.5 mL B (1000 mg/L) M14966, 0.5 mL Sr (1000 mg/L) M14775, 0.5 mL Li (1000 mg/L) M14681, 0.5 mL Sn (1000 mg/L) M14774, 0.5 mL Ti (1000 mg/L) M14674, 0.5 mL W (1000 mg/L) xxxxxxxx, 0.5 mL Si (1000 mg/L) M15168, 0.5 mL S (10000 mg/L) M14677, 0.5 mL K (10000 mg/L) M15479, and 0.5 mL Na (10000 mg/L) M15287		

		Instrument:	ICP 6500
Standard Log #:	M15484	Standard:	ICSA
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 10,000 V, Ce
Prep Date:	07/05/2022	Expiration Date:	09/2022
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interference A std M15068 and 15 mL 10000 mg/L Fe M15169 5.0 mL 1000 mg/L V M15020 5.0 mL 1000 mg/L Ce M14682 and brought up to volume with milli-Q H₂O.		

Standard ID#:	M15485	Vendor:	Fisher Chemical
Analyst:	MDS	Chemical:	Potassium Permanganate
Date Received:	06/30/2022	Lot #:	217686
Expiration Date (if any):		Catalog #:	P279-212

		Instrument:	ICP 6500
Standard Log #:	M15481	Standard:	CCV1
Analyst:	NAH	Concentrations:	5000 µg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn, Si. 100,000 µg/L K, Na, S. 500 µg/L Ag, Be, Cd
Prep Date:	07/05/2022	Expiration Date:	02/2023
Prep:	Into a 1 L volumetric flask, pipetted 50 mL Custom Assurance Standard #23 XCTWI-5-500 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15274 and 5.0 mL of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) M15259 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15482	Standard:	CCV2
Analyst:	NAH	Concentrations:	500 µg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn 50 µg/L Ag, Be, Cd
Prep Date:	07/05/2022	Expiration Date:	02/2023
Prep:	Into a 1 L volumetric flask, pipetted 5 mL Custom Assurance Standard #23 XCTWI-5-500 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15274 and 0.5 mL of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) M15259 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15480	Standard:	ICAL
Analyst:	NAH	Concentrations:	0.25, 0.5, 1, 5, 10, 20, 50, 100, 1000, 10,000, 100k, 100,000, 500,000 and 1000k (ug/L)
Prep Date:	07/05/2022	Expiration Date:	02/28/2023
Prep:	Using 1 L volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (5% HNO₃, 5% HCl) 1000 ug/L Std. - 10 mL of Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15274, 10 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M15259 and 1 mL of Si (1000 mg/L) M15398 and 1 mL M14682 Ce and 1 ml M15108 Hg and 0.1 ml of 10,000 mg/L M15477 K and M15287 Na and M15395 S and M15166 P. 0.25 ug/L Std. - 0.25 mL of the 1000 ug/L Std. 0.5 ug/L Std. - 0.5 mL of the 1000 ug/L Std. 1 ug/L Std. - 1 mL of the 1000 ug/L Std. 5 ug/L Std. - 5 mL of the 1000 ug/L Std. 10 ug/L Std. - 10 mL of the 1000 ug/L Std. 20 ug/L Std. - 20 mL of the 1000 ug/L Std. 50 ug/L Std. - 50 mL of the 1000 ug/L Std. 100 ug/L Std. - 1 mL of Custom Assurance Std. (CAS) #23 and 1 mL of CAS #3 10,000 ug/L Std. - 100 mL CAS #23, 100 mL CAS #3. 100k ug/L Std. - 10 mL of Cu (10,000 mg/L) M15021, 10 mL of Mn (10,000 mg/L) M15023, 10 mL of Cr (10,000 mg/L) M15027, 10 mL Pb (10,000 mg/L) M15114, 10 mL of Zn (10,000 mg/L) M15045. 100,000 ug/L Std. - 10 mL of Mg (10,000 mg/L) M15396, 10 mL of Fe (10,000 mg/L) M15169, 10 mL of Ca (10,000 mg/L) M15399 and 10 mL Al (10,000 mg/L) M15397, 10 mL of Na (10,000) M15287, 10 mL K (10,000) M15477, 10 mL S (10,000) M15395, 10 mL P (10,1000), M15166 10 mL Si (1000) M15398. 500,000 ug/L Std. - 50 mL of Mg (10,000 mg/L), 50 mL of Fe (10,000 mg/L), 50 mL of Ca (10,000 mg/L), 50 mL of Al (10,000 mg/L), 50 mL of Na (10,000), 50 mL of K (10,000). 1000k ug/L Std. - 100 mL of Mg (10,000 mg/L), 100 mL of Fe (10,000 mg/L), 100 mL of Ca (10,000 mg/L) 100 mL of Al (10,000 mg/L), 100 mL of Na (10,000 mg/L) 100 mL of K (10,000 mg/L) 100 mL S (10,000 mg/L) 100 ml of P (10,000 mg/L).		

Standard ID#:	M15477	Vendor:	CPI
Analyst:	NAH	Chemical:	K 10,000 mg/L
Date Received:	06/28/2022	Lot #:	11337797-46
Expiration Date (if any):	12/2023	Catalog #:	4400-10M411

Standard ID#:	M15478	Vendor:	CPI
Analyst:	NAH	Chemical:	Y 10,000 mg/L
Date Received:	06/28/2022	Lot #:	1157358-27
Expiration Date (if any):	12/2023	Catalog #:	4400-10M671

Standard ID#:	M15479	Vendor:	CPI
Analyst:	NAH	Chemical:	K 10,000 mg/L
Date Received:	06/28/2022	Lot #:	4400-10M411-500
Expiration Date (if any):	12/2023	Catalog #:	1137797-52

Standard Log #:	M15472	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/28/2022	Expiration Date:	07/28/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15473	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/28/2022	Expiration Date:	07/28/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15474	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/28/2022	Expiration Date:	06/29/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15475	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/29/2022	Expiration Date:	07/29/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15476	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/29/2022	Expiration Date:	07/29/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15306 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15469	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/28/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15470	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/28/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15471	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/28/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15467	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	06/23/2022	Lot #:	M151-22
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M15468	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	06/23/2022	Lot #:	M151-22
Expiration Date (if any):		Catalog #:	LC251701

Standard Log #:	M15464	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	06/22/2022	Expiration Date:	06/22/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15384. Dilute to 20 L and mix.		

Standard Log #:	M15465	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	06/22/2022	Expiration Date:	06/22/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15384. Dilute to 20 L and mix.		

Standard Log #:	M15466	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	06/22/2022	Expiration Date:	06/22/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15384. Dilute to 20 L and mix.		

Standard Log #:	M15459	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/21/2022	Expiration Date:	07/21/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15460	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/21/2022	Expiration Date:	07/21/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15461	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/21/2022	Expiration Date:	06/22/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15462	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/22/2022	Expiration Date:	07/22/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15463	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/22/2022	Expiration Date:	07/22/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15306 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15456	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/21/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15457	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/21/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15458	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/21/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	CETAC
Standard Log #:	M15454	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/15/2022	Expiration Date:	06/16/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard ID#:	M15455	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Std
Date Received:	06/15/2022	Lot #:	3-020AJ
Expiration Date (if any):	06/30/2023	Catalog #:	XCTIWI-5-500

Standard Log #:	M15449	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/14/2022	Expiration Date:	07/14/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15450	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/14/2022	Expiration Date:	07/14/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15451	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/14/2022	Expiration Date:	06/15/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15452	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/15/2022	Expiration Date:	07/15/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15453	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/15/2022	Expiration Date:	07/15/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15306 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15446	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/14/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15447	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/14/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15448	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/14/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15441	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/08/2022	Expiration Date:	07/08/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15442	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/08/2022	Expiration Date:	07/08/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15443	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/08/2022	Expiration Date:	06/09/2022
Prep:	Carefully mixed 3 parts HCl AB.712 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15444	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/09/2022	Expiration Date:	07/09/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15445	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/09/2022	Expiration Date:	07/09/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.712 and dissolved 100 g Stannous chloride M15306 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15438	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/08/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15439	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/08/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15440	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/08/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	GFAA
Standard Log #:	M15435	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	06/06/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15436	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	06/06/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15437	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	06/06/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M15317 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard ID#:	M15433	Vendor:	Acros Organics
Analyst:	MDS	Chemical:	Hydroxylamine Sulfate
Date Received:	06/02/2022	Lot #:	A0432704
Expiration Date (if any):		Catalog #:	198530010

Standard ID#:	M15434	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	06/02/2022	Lot #:	58-230CR
Expiration Date (if any):	May 30, 2023	Catalog #:	XSPIKE-1-500

Standard Log #:	M15428	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/01/2022	Expiration Date:	07/01/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15429	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/01/2022	Expiration Date:	07/01/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15430	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/01/2022	Expiration Date:	06/02/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15431	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/02/2022	Expiration Date:	07/02/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15432	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/02/2022	Expiration Date:	07/02/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15306 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15425	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/01/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15426	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/01/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15427	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/01/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15424	Vendor:	HPS Environmental Express
Analyst:	NAH	Chemical:	Yttrium 10,000 mg/L
Date Received:	05/31/2022	Lot #:	2123812-500
Expiration Date (if any):	11/30/2023	Catalog #:	HP10M67-1-500

Standard Log #:	M15419	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	05/23/2022	Expiration Date:	06/23/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15420	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	05/24/2022	Expiration Date:	06/24/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15421	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	05/23/2022	Expiration Date:	05/24/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15422	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	05/24/2022	Expiration Date:	06/24/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15423	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	05/24/2022	Expiration Date:	06/24/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15416	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/23/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15417	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	05/23/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15418	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/23/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15411	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	05/17/2022	Expiration Date:	06/17/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15412	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	05/17/2022	Expiration Date:	06/17/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15413	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	05/17/2022	Expiration Date:	05/18/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.715 in a hood.		

Standard Log #:	M15414	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	05/18/2022	Expiration Date:	06/18/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15415	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	05/18/2022	Expiration Date:	06/18/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15408	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/17/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15409	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	05/17/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15410	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/17/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15404	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	05/10/2022	Expiration Date:	06/10/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15405	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	05/10/2022	Expiration Date:	06/10/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

Standard Log #:	M15406	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	05/11/2022	Expiration Date:	06/11/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15407	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	05/11/2022	Expiration Date:	06/11/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15401	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/10/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15402	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	05/10/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15403	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/10/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15395	Vendor:	CPI
Analyst:	NAH	Chemical:	Sulfur 10,000 ug/mL
Date Received:	05/03/2022	Lot #:	1154439-14
Expiration Date (if any):	10/2023	Catalog #:	4400-10M544

Standard ID#:	M15396	Vendor:	CPI
Analyst:	NAH	Chemical:	Mg 10,000 ug/mL
Date Received:	05/03/2022	Lot #:	1191653-5
Expiration Date (if any):	10/2023	Catalog #:	4400-10M311

Standard ID#:	M15397	Vendor:	CPI
Analyst:	NAH	Chemical:	Al 10,000 ug/mL
Date Received:	05/03/2022	Lot #:	1144484-28
Expiration Date (if any):	10/2023	Catalog #:	4400-10M11

Standard ID#:	M15398	Vendor:	CPI
Analyst:	NAH	Chemical:	Si 1000 ug/mL
Date Received:	05/03/2022	Lot #:	1197533-32
Expiration Date (if any):	10/2023	Catalog #:	S4400-1000504F

Standard ID#:	M15399	Vendor:	CPI
Analyst:	NAH	Chemical:	Ca 10,000 ug/mL
Date Received:	05/03/2022	Lot #:	1112960-63
Expiration Date (if any):	10/2023	Catalog #:	4400-10M91

Standard ID#:	M15400	Vendor:	ThermoFisher
Analyst:	MDS	Chemical:	Nickel Nitrate Matrix Mod.
Date Received:	05/04/2022	Lot #:	276712
Expiration Date (if any):	07/31/2023	Catalog #:	39043

Standard Log #:	M15390	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	05/03/2022	Expiration Date:	06/03/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15391	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	05/03/2022	Expiration Date:	06/03/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15392	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	05/03/2022	Expiration Date:	05/04/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.711 in a hood.		

Standard Log #:	M15393	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	05/04/2022	Expiration Date:	06/04/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15394	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	05/04/2022	Expiration Date:	06/04/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15387	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/03/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15388	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	05/03/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15389	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/03/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15385	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	05/02/2022	Expiration Date:	05/02/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15384. Dilute to 20 L and mix.		

Standard Log #:	M15386	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	05/02/2022	Expiration Date:	05/02/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15384. Dilute to 20 L and mix.		

Standard Log #:	M15382	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/27/2022	Expiration Date:	05/27/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15383	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/27/2022	Expiration Date:	05/27/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

Standard Log #:	M15384	Reagent:	10N NaOH
Analyst:	BMM		
Prep Date:	04/27/2022	Expiration Date:	09/27/2022
Prep:	Into a 1 L volumetric flask, added 400 g NaOH WC310 and brought up to volume.		

Standard Log #:	M15379	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/26/2022	Expiration Date:	05/26/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15380	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/26/2022	Expiration Date:	05/26/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15381	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/26/2022	Expiration Date:	04/27/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.711 in a hood.		

		Instrument:	HydraII
Standard Log #:	M15376	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/26/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15377	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/26/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15378	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/26/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15374	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/21/2022	Expiration Date:	05/21/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15375	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/21/2022	Expiration Date:	05/21/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.711 in a hood.		

Standard Log #:	M15372	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/20/2022	Expiration Date:	05/20/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15373	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/20/2022	Expiration Date:	05/20/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15307 and brought up to volume.		

Standard Log #:	M15370	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/19/2022	Expiration Date:	05/19/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15371	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/19/2022	Expiration Date:	05/19/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M15305 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15367	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/19/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15368	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/19/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15369	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/19/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15366	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	04/18/2022	Expiration Date:	04/18/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15153. Dilute to 20 L and mix.		

Standard Log #:	M15365	Instrument:	GFAA
Analyst:	MDS	Reagent:	Pd/Mg Matrix Modifier
Prep Date:	04/15/2022	Expiration Date:	08/31/2022
Prep:	Into a 50 mL volumetric flask, partially filled with milli-Q H ₂ O, pipetted 15 mL Pd Modifier M15008 and 10 mL Mg (10,000 mg/L) M15174 and brought up to volume.		

		Instrument:	GFAA
Standard Log #:	M15362	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	04/13/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15363	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	04/13/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M15316 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15364	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	04/13/2022	Expiration Date:	04/13/2023
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M15317 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M15357	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/12/2022	Expiration Date:	05/12/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15358	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/12/2022	Expiration Date:	05/12/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15359	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/12/2022	Expiration Date:	04/13/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.711 in a hood.		

Standard Log #:	M15360	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/13/2022	Expiration Date:	05/13/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15361	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/13/2022	Expiration Date:	05/13/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15354	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/12/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15355	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/12/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15356	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/12/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15352	Reagent:	1:3 HNO ₃
Analyst:	MDS		
Prep Date:	04/06/2022	Expiration Date:	04/06/2023
Prep:	Carefully mixed 3 parts DI with 1 part HNO ₃ AB.711 in a hood.		

Standard ID#:	M15353	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	04/06/2022	Lot #:	1-129AJ
Expiration Date (if any):	04/30/2022	Catalog #:	XCTWI-1-500

Standard Log #:	M15347	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/04/2022	Expiration Date:	05/04/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15348	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/04/2022	Expiration Date:	05/04/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15349	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/04/2022	Expiration Date:	04/05/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.711 in a hood.		

Standard Log #:	M15350	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/05/2022	Expiration Date:	05/05/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15351	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/05/2022	Expiration Date:	05/05/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15344	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/04/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15345	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/04/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15346	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/04/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	ICP 6500
Standard Log #:	M15342	Standard:	ICSA3_Cr_Cu_Co_Mo
Analyst:	NAH	Concentrations:	10,000 ug/L Cr, Cu, Co and Mo
Prep Date:	03/29/2022	Expiration Date:	02/2023
Prep:	Into a 500 mL volumetric flask, pipetted 0.5 mL 10000 mg/L Cr M152027 0.5 mL 10000 mg/L Cu M15021 5.0 mL 1000 mg/L Co M15019 5.0 mL 1000 mg/L Mo M15170 brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15343	Standard:	ICSA4_Ni_Ti
Analyst:	NAH	Concentrations:	10,000 ug/L Ni and Ti
Prep Date:	03/29/2022	Expiration Date:	07/2022
Prep:	Into a 500 mL volumetric flask, pipetted 5.0 mL 1000 mg/L Ni M15095 5.0 mL 10000 mg/L Ti M14674 brought up to volume with milli-Q H ₂ O.		

Standard Log #:	M15338	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/29/2022	Expiration Date:	04/29/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15339	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	03/29/2022	Expiration Date:	03/29/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15153. Dilute to 20 L and mix.		

	Instrument:	ICP 6500	
Standard Log #:	M15340	Standard:	ICSA1_Mn
Analyst:	NAH	Concentrations:	10,000 ug/L Mn
Prep Date:	03/29/2022	Expiration Date:	02/2023
Prep:	Into a 500 mL volumetric flask, pipetted 0.5 mL 10000 mg/L mn M15023 brought up to volume with milli-Q H ₂ O.		

	Instrument:	ICP 6500	
Standard Log #:	M15341	Standard:	ICSA2_Ba_Be_Sn
Analyst:	NAH	Concentrations:	10,000 ug/L Mn
Prep Date:	03/29/2022	Expiration Date:	09/2022
Prep:	Into a 500 mL volumetric flask, pipetted 5.0 mL 1000 mg/L Ba M14772 5.0 mL 1000 mg/L Be M15091 5.0 mL 1000 mg/L Sn M14774 brought up to volume with milli-Q H ₂ O.		

Standard Log #:	M15333	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/28/2022	Expiration Date:	04/28/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15334	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/28/2022	Expiration Date:	04/28/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15335	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/28/2022	Expiration Date:	03/29/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.711 in a hood.		

Standard Log #:	M15336	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/29/2022	Expiration Date:	04/29/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15337	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/29/2022	Expiration Date:	04/29/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15330	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/28/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15331	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/28/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15332	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/28/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	ICP
Standard Log #:	M15329	Standard:	Pb ICV
Analyst:	NAH	Concentrations:	500 ug/L (Pb)
Prep Date:	03/21/2022	Expiration Date:	06/23
Prep:	Into a 1 L volumetric flask, pipetted 0.5 mL Pb (1000 mg/L) M15289 and brought to volume with Milli-Q H ₂ O. (2% HNO ₃ , 2% HCl)		

		Instrument:	ICP 6500
Standard Log #:	M15326	Standard:	Pb ICAL
Analyst:	NAH	Concentrations:	10,100, 1000, and 10,000, 100,000 µg/L (Pb)
Prep Date:	03/21/2022	Expiration Date:	03/2023
Prep:	Into four, 1 L volumetric flasks, pipetted the following from Pb (10000 µg/mL) M15045 and brought up to volume using milli-Q H ₂ O. (0.5% HNO ₃ , 0.5% HCl) 10 µg/L std. - 0.001mL 100 µg/L std. - 0.01mL 1000 µg/L std - 0.10 mL 10,000 µg/L std. - 1.0 mL 100,000 µg/L std - 10.0 mL		

		Instrument:	ICP 6500
Standard Log #:	M15327	Standard:	CCV1
Analyst:	NAH	Concentrations:	5000 µg/L Pb
Prep Date:	03/21/2022	Expiration Date:	03/23
Prep:	Into a 1 L volumetric flask, pipetted 0.5 mL 10,000 mg/L M15045 Pb and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15328	Standard:	CCV2
Analyst:	NAH	Concentrations:	500 µg/L Pb,
Prep Date:	03/21/2022	Expiration Date:	03/23
Prep:	Into a 1 L volumetric flask, pipetted .05 mL ml 10,000 mg/L M15045 Pb and brought up to volume with milli-Q H ₂ O.		

Standard Log #:	M15321	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/22/2022	Expiration Date:	04/22/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15322	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/22/2022	Expiration Date:	04/22/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15323	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/22/2022	Expiration Date:	03/23/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.711 in a hood.		

Standard Log #:	M15324	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/23/2022	Expiration Date:	04/23/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15325	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/23/2022	Expiration Date:	04/23/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15318	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/22/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15319	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/22/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15320	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/22/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15316	Vendor:	Inorganic Ventures
Analyst:	MDS	Chemical:	GFAA ICAL/CCV
Date Received:	03/18/2022	Lot #:	T2-MEB716384
Expiration Date (if any):		Catalog #:	CTI-SPK-1

Standard ID#:	M15317	Vendor:	Inorganic Ventures
Analyst:	MDS	Chemical:	GFAA ICV/Spike
Date Received:	03/18/2022	Lot #:	T2-MEB716383
Expiration Date (if any):		Catalog #:	CTI-GFCAL-1

Standard Log #:	M15311	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/15/2022	Expiration Date:	04/15/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15312	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/15/2022	Expiration Date:	04/15/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15313	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/15/2022	Expiration Date:	03/16/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15314	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/16/2022	Expiration Date:	04/16/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15315	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/16/2022	Expiration Date:	04/16/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15308	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/15/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15309	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/15/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15310	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/15/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15305	Vendor:	Acros Organics
Analyst:	MDS	Chemical:	Potassium Persulfate 99%
Date Received:	03/10/2022	Lot #:	A0426185
Expiration Date (if any):		Catalog #:	424185000

Standard ID#:	M15306	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	03/10/2022	Lot #:	M012-04
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M15307	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	03/10/2022	Lot #:	M012-04
Expiration Date (if any):		Catalog #:	LC251701

Standard Log #:	M15300	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/08/2022	Expiration Date:	04/08/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15301	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/08/2022	Expiration Date:	04/08/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15302	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/08/2022	Expiration Date:	03/09/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15303	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/09/2022	Expiration Date:	04/09/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15304	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/09/2022	Expiration Date:	04/09/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15165 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15297	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/08/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15298	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/08/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15299	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/08/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15296	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	03/07/2022	Expiration Date:	03/07/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15153. Dilute to 20 L and mix.		

		Instrument:	GFAA
Standard Log #:	M15292	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	03/07/2022	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15293	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	03/07/2022	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15294	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	03/07/2022	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M14798 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M15295	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	03/07/2022	Expiration Date:	03/07/2023
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15153. Dilute to 20 L and mix.		

Standard Log #:	M15291	Instrument:	GFAA																																			
Analyst:	MDS	Standard:	MDL Spiking Solution																																			
Prep Date:	03/04/2022	Expiration Date:	01/2023																																			
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (2% HNO₃) <table border="1"> <thead> <tr> <th>Analyte</th> <th>Final MDL Conc. (ug/L)</th> <th>Std. ID #</th> <th>Std. Conc. (mg/L)</th> <th>Volume (mL) pipetted</th> </tr> </thead> <tbody> <tr> <td>Ag</td> <td>0.2</td> <td>M15222</td> <td>1000</td> <td>0.01</td> </tr> <tr> <td>As</td> <td>2</td> <td>M15223</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Pb</td> <td>2</td> <td>M15045</td> <td>10000</td> <td>0.01</td> </tr> <tr> <td>Sb</td> <td>2</td> <td>M15220</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Se</td> <td>2</td> <td>M15217</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Tl</td> <td>2</td> <td>M15221</td> <td>1000</td> <td>0.1</td> </tr> </tbody> </table> Of this base standard, pipetted 1 mL into a 50 mL digestion tube for a digested working standard.			Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted	Ag	0.2	M15222	1000	0.01	As	2	M15223	1000	0.1	Pb	2	M15045	10000	0.01	Sb	2	M15220	1000	0.1	Se	2	M15217	1000	0.1	Tl	2	M15221	1000	0.1
Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted																																		
Ag	0.2	M15222	1000	0.01																																		
As	2	M15223	1000	0.1																																		
Pb	2	M15045	10000	0.01																																		
Sb	2	M15220	1000	0.1																																		
Se	2	M15217	1000	0.1																																		
Tl	2	M15221	1000	0.1																																		

Standard Log #:	M15290	Standard:	GFAA Instrument Check
Analyst:	MDS	Final Concentration:	10 µg/L As 6 µg/L Pb 10 µg/L Sb 20 µg/L Se 10 µg/L Tl 0.6 µg/L Ag
Prep Date:	03/04/2022	Expiration Date:	01/2023

Into six, 100 mL volumetric flasks, add the following and bring up to volume with milli-Q H₂O.

Element	Volume Pipetted (mL)	Standard Conc. (µg/mL)	Standard ID	New Conc. (µg/L)
As	1	1000	M15223	10,000
Pb	0.1	10,000	M15045	10,000
Tl	1	1000	M15221	10,000
Se	1	1000	M15217	10,000
Sb	1	1000	M15220	10,000
Ag	0.1	1000	M15222	1000

Into a 1 L volumetric flask, add the following and bring up to volume with Milli-Q H₂O. (1% HNO₃)

Element	Volume Pipetted (mL)	Standard Conc. (µg/L)	New Conc. (µg/L)
As	1.0	10,000	10
Pb	0.6	10,000	6
Tl	1.0	10,000	10
Se	2.0	10,000	20
Sb	1.0	10,000	10
Ag	0.6	1000	0.6

Standard ID#:	M15286	Vendor:	CPI
Analyst:	NAH	Chemical:	Si 1000 ug/mL
Date Received:	03/02/2022	Lot #:	211029
Expiration Date (if any):	04/30/2023	Catalog #:	S4400-1000504F

Standard ID#:	M15287	Vendor:	CPI
Analyst:	NAH	Chemical:	Na 10000 ug/mL
Date Received:	03/02/2022	Lot #:	1055526-35
Expiration Date (if any):	01/2023	Catalog #:	4400-10M521

Standard ID#:	M15288	Vendor:	CPI
Analyst:	NAH	Chemical:	K 10000 ug/mL
Date Received:	03/02/2022	Lot #:	1137797-18
Expiration Date (if any):	06/2023	Catalog #:	4400-10M411

Standard ID#:	M15289	Vendor:	CPI
Analyst:	NAH	Chemical:	Pb 1000 ug/mL
Date Received:	03/02/2022	Lot #:	1046594-72
Expiration Date (if any):	06/2023	Catalog #:	S4400-1000281

Standard Log #:	M15281	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/01/2022	Expiration Date:	04/01/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15282	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/01/2022	Expiration Date:	03/02/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15283	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/02/2022	Expiration Date:	04/02/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

Standard Log #:	M15284	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/02/2022	Expiration Date:	04/02/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15285	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/02/2022	Expiration Date:	04/02/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15164 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15278	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/01/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15279	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/01/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15280	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/01/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15277	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	02/28/2022	Lot #:	58-137CR
Expiration Date (if any):	02/28/2023	Catalog #:	XSPIKE-1-250

Standard Log #:	M15275	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	02/23/2022	Expiration Date:	03/23/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15276	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	02/23/2022	Expiration Date:	03/23/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

Standard Log #:	M15270	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	02/21/2022	Expiration Date:	03/21/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15271	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	02/21/2022	Expiration Date:	02/22/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15272	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	02/22/2022	Expiration Date:	03/22/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15273	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	02/22/2022	Expiration Date:	03/22/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15164 and brought up to volume.		

Standard ID#:	M15274	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	02/23/2022	Lot #:	1-021JA
Expiration Date (if any):	02/28/2023	Catalog #:	XCTWI-5-500

		Instrument:	HydraII
Standard Log #:	M15267	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	02/21/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15268	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	02/21/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15269	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	02/21/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15263	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	02/15/2022	Expiration Date:	03/15/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M15264 and brought up to volume.		

Standard Log #:	M15264	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	02/15/2022	Expiration Date:	03/15/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

Standard Log #:	M15265	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	02/16/2022	Expiration Date:	03/16/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15266	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	02/16/2022	Expiration Date:	03/16/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15164 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15260	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	02/15/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15261	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	02/15/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15262	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	02/15/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15259	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	100 mg/mL Custom Standard
Date Received:	02/11/2022	Lot #:	58-054CR
Expiration Date (if any):	02/28/2023	Catalog #:	XCTWI-4-500

Standard Log #:	M15254	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	02/09/2022	Expiration Date:	03/09/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15255	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	02/09/2022	Expiration Date:	03/09/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15256	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	02/09/2022	Expiration Date:	02/10/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15257	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	02/10/2022	Expiration Date:	03/10/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15258	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	02/10/2022	Expiration Date:	03/10/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15164 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15251	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	02/09/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15252	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	02/09/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15253	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	02/09/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15250	Vendor:	CPI
Analyst:	NAH	Chemical:	Ag 10 ICVLL
Date Received:	02/08/2022	Lot #:	.01 mls m15222 into 1000 ml vol.
Expiration Date (if any):	06/2023	Catalog #:	

MRL BASE STD	M15249	Analyst	NAH
		Prep Date	02/08/2022

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	(ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L	Expiration Date
Ag	20	M15222	1000	1	07/2022
Al	400	M15112	10000	2	xx
Ba	10	M14772	1000	0.5	xx
Be	4	M15091	1000	0.2	xx
Cd	5	M15098	1000	0.25	xx
Co	10	M15019	1000	0.5	xx
Cr	10	M15027	10000	0.05	xx
Cu	10	M15021	10000	0.05	xx
Mg	500	M15174	10000	2.5	xx
Mn	10	M15023	10000	0.05	xx
Mo	10	M15170	1000	0.5	xx
Ni	10	M15095	1000	0.5	xx
Pb	10	M15045	10000	0.05	xx
Sb	20	M15229	1000	1	xx
V	10	M15020	1000	0.5	xx
Zn	10	M15114	10000	0.05	xx
K	1000	M15173	10000	5	xx
Na	1000	M15172	10000	5	xx
As	20	M15223	1000	1	xx
Ca	500	M15026	10000	2.5	xx
Fe	300	M15169	10000	1.5	xx
Se	20	M15217	1000	1	xx
Tl	20	M15221	1000	1	xx
Si	100	M15171	1000	5	xx
B	20	M14966	1000	1	xx
Li	20	M14681	1000	1	xx
W	50	Mxxxxxxx	1000	2.5	xx
Ti	10	M14674	1000	0.5	xx
Sr	10	M14775	1000	0.5	xx
Sn	50	M14774	1000	2.5	xx
S	300	M15025	10000	1.5	xx

Of this Base standard, pipet 10 mls into 500 ml volumetric to create a working std or 1 ml into 50 ml digestion tube for a digested working standard.

		Instrument:	ICP 6500
Standard Log #:	M15248	Standard:	ICSA
Analyst:	NAH	Concentrations:	500,000 µg/L Al, Ca, Fe, Mg 10,000 V, Ce
Prep Date:	02/08/2022	Expiration Date:	07/2022
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interference A std M15068 and 15 mL 10000 mg/L Fe M15169 5.0 mL 1000 mg/L V M15020 5.0 mL 1000 mg/L Ce M14682 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15246	Standard:	ICV Std.
Analyst:	NAH	Concentrations:	12,000 mg/L Al 10,000 mg/L Ca, Mg 5000 mg/L Fe 2000 mg/L As, Ba, Se, Tl 500 mg/L B, Co, Li, Mn, Mo, Ni, Pb, Sb, Sn, Sr, Ti, V, Zn 250 mg/L Cu 200 mg/L Cr 50 mg/L Ag, Be, Cd
Prep Date:	02/0/2022	Expiration Date:	07/2022
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with milli-Q H ₂ O. 10 mL Custom Assurance Standard #18 ((200 mg/L Al, As, Ba, Se, Tl) (100 mg/L Fe) (50 mg/L Co, Mn, Ni, Pb, Sb, V, Zn) (25 mg/L Cu) (20 mg/L Cr) (5 mg/L Ag, Be, Cd)) M15167, 2 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M15068, 0.5 mL Mo (1000 mg/L) M15022, 0.5 mL B (1000 mg/L) M14966, 0.5 mL Sr (1000 mg/L) M14775, 0.5 mL Li (1000 mg/L) M14681, 0.5 mL Sn (1000 mg/L) M14774, 0.5 mL Ti (1000 mg/L) M14674, 0.5 mL W (1000 mg/L) Mxxxxxxx, 0.5 mL Si (1000 mg/L) M15219, 0.5 mL S (10000 mg/L) M14677, 0.5 mL K (10000 mg/L) M15116, and 0.5 mL K (10000 mg/L) Na M15097		

		Instrument:	ICP 6500
Standard Log #:	M15247	Standard:	ICSAB
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 500 ug/L Ag, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn, K, Na, S, 50000 ug/L Si 1000 ug/L .
Prep Date:	02/08/2022	Expiration Date:	11/2022
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M15068, 15 mL Fe (10,000 mg/L) M15169, 2.5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M14685, 2.5 mL Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn), M15134, 2.5 mLs Na 10,000 ug/mL M15172, 2.5 mLs k 10,000 ug/mL M15173, 2.5 mLs S 10,000 ug/mL M15025, 0.5 mls Si 1000 ug/mL M15088 and brought up to volume with milli-Q .		

		Instrument:	ICP 6500
Standard Log #:	M15244	Standard:	CCV1
Analyst:	NAH	Concentrations:	5000 µg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn, Si. 100,000 µg/L K, Na, S. 500 µg/L Ag, Be, Cd
Prep Date:	02/08/2022	Expiration Date:	07/2022
Prep:	Into a 1 L volumetric flask, pipetted 50 mL Custom Assurance Standard #23 XCTWI-5-500 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn Si) M15134, M15 and 5.0 mL of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) 0.5 ml M15C 10 mls of 10,000 mg/L M15173 K, M15172 Na, M15025 S and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15245	Standard:	CCV2
Analyst:	NAH	Concentrations:	500 µg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn, Si. 10,000 µg/L K, Na, S 50 µg/L Ag, Be, Cd
Prep Date:	02/08/2022	Expiration Date:	07/2022
Prep:	Into a 1 L volumetric flask, pipetted 5 mL Custom Assurance Standard #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15134 and 0.5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) .05 ml M152 and .5 ml M15171 Si and 1 ml 10,000 mg/L M15173 K, M15172 Na, M15025 S and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15243	Standard:	ICAL
Analyst:	NAH	Concentrations:	0.25, 0.5, 1, 5, 10, 20, 50, 100, 1000, 10,000, 100k, 100,000, 500,000 and 1000k (ug/L)
Prep Date:	02/08/2022	Expiration Date:	11/2022
Prep:	Using 1 L volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (5% HNO₃, 5% HCl) 1000 ug/L Std. - 10 mL of Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15134, 10 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M15098, M15098, and 1 mL of Si (1000 mg/L) M15171 and 1 mL M14682 Ce and 1 ml M15108 Hg and 0.1 ml of 10,000 mg/L M15173 K and M15172 Na and M15025 S and M15166 P. 0.25 ug/L Std. - 0.25 mL of the 1000 ug/L Std. 0.5 ug/L Std. - 0.5 mL of the 1000 ug/L Std. 1 ug/L Std. - 1 mL of the 1000 ug/L Std. 5 ug/L Std. - 5 mL of the 1000 ug/L Std. 10 ug/L Std. - 10 mL of the 1000 ug/L Std. 20 ug/L Std. - 20 mL of the 1000 ug/L Std. 50 ug/L Std. - 50 mL of the 1000 ug/L Std. 100 ug/L Std. - 1 mL of Custom Assurance Std. (CAS) #23 and 1 mL of CAS #3 10,000 ug/L Std. - 100 mL CAS #23, 100 mL CAS #3. 100k ug/L Std. - 10 mL of Cu (10,000 mg/L) M15021, 10 mL of Mn (10,000 mg/L) M15023, 10 mL of Cr (10,000 mg/L) M15027, 10 mL Pb (10,000 mg/L) M15045, 10 mL of Zn (10,000 mg/L) M15114. 100,000 ug/L Std. - 10 mL of Mg (10,000 mg/L) M15174, 10 mL of Fe (10,000 mg/L) M15169, 10 mL of Ca (10,000 mg/L) M15026 and 10 mL Al (10,000 mg/L) M15112, 10 mL of Na (10,000) M15172, 10 mL K (10,000) M15173, 10 mL S (10,000) M15025, 10 mL P (10,000), M15166 10 mL Si (1000) M15171. 500,000 ug/L Std. - 50 mL of Mg (10,000 mg/L), 50 mL of Fe (10,000 mg/L), 50 mL of Ca (10,000 mg/L), 50 mL of Al (10,000 mg/L), 50 mL of Na (10,000), 50 mL of K (10,000). 1000k ug/L Std. - 100 mL of Mg (10,000 mg/L), 100 mL of Fe (10,000 mg/L), 100 mL of Ca (10,000 mg/L) 100 mL of Al (10,000 mg/L), 100 mL of Na (10,000 mg/L) 100 mL of K (10,000 mg/L) 100 mL S (10,000 mg/L) 100 ml of P (10,000 mg/L).		

Standard Log #:	M15242	Instrument:	ICP 6500
Analyst:	NAH	Standard:	MDL Spike Soln
Prep Date:	02/08/2022	Expiration Date:	07/2022

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	40	M15222	1000	2
Al	800	M15112	10000	4
As	40	M15223	1000	2
Ba	20	M14772	1000	1
Be	8	M15091	1000	0.4
Ca	1000	M15026	10000	5
Cd	10	M15098	1000	0.5
Co	20	M15019	1000	1
Cr	20	M15027	10000	0.1
Cu	20	M15021	10000	0.1
Fe	600	M15169	10000	3
Mg	1000	M15174	10000	5
Mn	20	M15023	10000	0.1
Mo	20	M15170	1000	1
Ni	20	M15095	1000	1
Pb	20	M15045	10000	0.1
Sb	40	M15220	1000	2
Se	40	M15217	1000	2
Tl	40	M15221	1000	2
V	20	M15020	1000	1
Zn	20	M15114	10000	0.1
Na	10000	M15172	10000	50
K	10000	M15173	10000	50
B	40	M14966	1000	2
Si	200	M15171	1000	10
Li	20	M14681	1000	1
Sr	20	M14775	1000	1
Sn	40	M14774	1000	2
Ti	20	M14674	1000	1
S	400	M15025	10000	20

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M15241	Instrument:	ICP 6500
Analyst:	NAH	Standard:	LOQ solid QSM
Prep Date:	02/08/2022	Expiration Date:	07/2022

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	40	M15222	1000	2
Al	800	M15112	10000	4
As	40	M15223	1000	2
Ba	40	M14772	1000	2
Be	8	M15091	1000	0.4
Ca	1000	M15026	10000	5
Cd	10	M15098	1000	0.5
Co	20	M15019	1000	1
Cr	20	M15027	10000	0.1
Cu	20	M15021	10000	0.1
Fe	600	M15169	10000	3
Mg	1000	M15174	10000	5
Mn	20	M15023	10000	0.1
Mo	20	M15170	1000	1
Ni	20	M15095	1000	1
Pb	20	M15045	10000	0.1
Sb	40	M15220	1000	2
Se	40	M15217	1000	2
Tl	40	M15221	1000	2
V	20	M15020	1000	1
Zn	20	M15114	10000	0.1
Na	10000	M15172	10000	50
K	10000	M15173	10000	50
B	40	M14966	1000	2
Si	200	M15171	1000	10
Li	20	M14681	1000	1
Sr	20	M14775	1000	1
Sn	40	M14774	1000	2
Ti	20	M14674	1000	1
S	400	M15025	10000	20

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M15240	Instrument:	ICP 6500		
Analyst:	NAH	Standard:	LOQ water QSM		
Prep Date:	02/08/2022	Expiration Date:	07/2022		
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H ₂ O. (5% HNO ₃ , 5% HCl)				
	Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
	Ag	5	M15222	1000	0.25
	Al	120	M15112	10000	0.6
	As	40	M15223	1000	2
	Ba	4	M14772	1000	0.2
	Be	8	M15091	1000	0.4
	Ca	100	M15026	10000	0.5
	Cd	2	M15098	1000	0.1
	Co	5	M15019	1000	0.25
	Cr	5	M15027	10000	0.025
	Cu	40	M15021	10000	0.2
	Fe	80	M15169	10000	0.4
	Mg	40	M15174	10000	0.2
	Mn	5	M15023	10000	0.025
	Mo	5	M15170	1000	0.25
	Ni	5	M15095	1000	0.25
	Pb	20	M15045	10000	0.1
	Sb	20	M15220	1000	1.0
	Se	20	M15217	1000	2
	Tl	40	M15221	1000	2
	V	5	M15020	1000	0.25
	Zn	20	M15114	10000	0.1
	Na	700	M15172	10000	3.5
	K	500	M15173	10000	2.5
	B	40	M14966	1000	2
	Si	200	M15171	1000	10
	Li	20	M14681	1000	1
	Sr	20	M14775	1000	1
	Sn	40	M14774	1000	2
	Ti	20	M14674	1000	1
	S	400	M15025	10000	20
	Of this Base standard, pipet 10 mL into a 500 mL volumetric flask to create a working std or 1 mL into a 50 mL digestion tube for a digested working standard.				

Standard Log #:	M15236	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/25/2022	Expiration Date:	02/25/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15237	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/25/2022	Expiration Date:	02/25/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

Standard Log #:	M15238	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/26/2022	Expiration Date:	02/26/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15239	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/26/2022	Expiration Date:	02/26/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15164 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15233	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/25/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15234	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/25/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15235	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/25/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15232	Vendor:	Alfa Aesar Specpure
Analyst:	MDS	Chemical:	Nickel Nitrate Matrix Mod
Date Received:	01/18/2022	Lot #:	276713
Expiration Date (if any):	07/31/2023	Catalog #:	39043

Standard Log #:	M15227	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/18/2022	Expiration Date:	02/18/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15228	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/18/2022	Expiration Date:	02/18/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15229	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	01/18/2022	Expiration Date:	01/19/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15230	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/19/2022	Expiration Date:	02/19/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15231	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/19/2022	Expiration Date:	02/19/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15164 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15224	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/18/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15225	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/18/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15226	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/18/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15217	Vendor:	CPI
Analyst:	NAH	Chemical:	Se 1000 mg/L
Date Received:	01/13/2022	Lot #:	1135995-21
Expiration Date (if any):	06/2023	Catalog #:	S4400-1000491

Standard ID#:	M15218	Vendor:	CPI
Analyst:	NAH	Chemical:	Y 10000 mg/L
Date Received:	01/13/2022	Lot #:	1157358-14
Expiration Date (if any):	06/2023	Catalog #:	4400-10M671

Standard ID#:	M15219	Vendor:	CPI
Analyst:	NAH	Chemical:	Si 1000 mg/L
Date Received:	01/13/2022	Lot #:	211029
Expiration Date (if any):	04/30/2022	Catalog #:	S4400-1000504F

Standard ID#:	M15220	Vendor:	CPI
Analyst:	NAH	Chemical:	Sb 1000 mg/L
Date Received:	1/13/2022	Lot #:	1129139-6
Expiration Date (if any):	06/2023	Catalog #:	S4400-100023

Standard ID#:	M15221	Vendor:	CPI
Analyst:	NAH	Chemical:	Tl 1000 mg/L
Date Received:	01/13/2022	Lot #:	1025512-61
Expiration Date (if any):	01/2023	Catalog #:	S4400-1000581

Standard ID#:	M15222	Vendor:	CPI
Analyst:	NAH	Chemical:	Ag 1000 mg/L
Date Received:	01/13/2022	Lot #:	1106123-69
Expiration Date (if any):	06/2023	Catalog #:	S4400-1000511

Standard ID#:	M15223	Vendor:	CPI
Analyst:	NAH	Chemical:	As 1000 mg/L
Date Received:	01/13/2022	Lot #:	1103713-64
Expiration Date (if any):	06/2023	Catalog #:	S4400-100031

Standard Log #:	M15213	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/11/2022	Expiration Date:	02/11/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15214	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/11/2022	Expiration Date:	02/11/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

Standard Log #:	M15215	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/12/2022	Expiration Date:	02/12/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15216	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/12/2022	Expiration Date:	02/12/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15057 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15210	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/11/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15211	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/11/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15212	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/11/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15205	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/04/2022	Expiration Date:	02/04/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15206	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/04/2022	Expiration Date:	02/04/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15207	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	01/04/2022	Expiration Date:	01/05/2022
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15208	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/05/2022	Expiration Date:	02/05/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15209	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/05/2022	Expiration Date:	02/05/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15057 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15202	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/04/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15203	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/04/2022	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15204	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/04/2022	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	GFAA
Standard Log #:	M15199	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	01/03/2022	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15200	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	01/03/2022	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15201	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	01/03/2022	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M14798 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M15194	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	12/28/2021	Expiration Date:	01/28/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15195	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	12/28/2021	Expiration Date:	01/28/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15196	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	12/28/2021	Expiration Date:	12/29/2021
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15197	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	12/29/2021	Expiration Date:	01/29/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15198	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	12/29/2021	Expiration Date:	01/29/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15057 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15191	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	12/28/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15192	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	12/28/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15193	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	12/28/2021	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15186	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	12/20/2021	Expiration Date:	01/20/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15187	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	12/20/2021	Expiration Date:	01/20/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15188	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	12/20/2021	Expiration Date:	12/21/2021
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15189	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	12/21/2021	Expiration Date:	01/21/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15190	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	12/21/2021	Expiration Date:	01/21/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15057 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15183	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	12/20/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15184	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	12/20/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15185	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	12/20/2021	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15180	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	12/15/2021	Expiration Date:	01/15/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15144 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15181	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	12/15/2021	Expiration Date:	01/15/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15057 and brought up to volume.		

Standard Log #:	M15182	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	MRZ	pH:	4.93 ± 0.05
Prep Date:	12/20/2021	Expiration Date:	12/20/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M15153. Dilute to 20 L and mix.		

Standard Log #:	M15178	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	12/14/2021	Expiration Date:	01/14/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15179	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	12/14/2021	Expiration Date:	01/14/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15175	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	12/14/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15176	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	12/14/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15177	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	12/14/2021	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15169	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	10,000 ug/mL Iron
Date Received:	12/13/2021	Lot #:	1034257-77
Expiration Date (if any):	06/13/2023	Catalog #:	4400-10M261

Standard ID#:	M15170	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	1,000 ug/mL Molybdenum
Date Received:	12/13/2021	Lot #:	1138256-5
Expiration Date (if any):	06/13/2023	Catalog #:	S4400-1000343

Standard ID#:	M15171	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	1,000 ug/mL Silicon
Date Received:	12/13/2021	Lot #:	1198119-3
Expiration Date (if any):	06/13/2023	Catalog #:	S4400-1000504F

Standard ID#:	M15172	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	10,000 ug/mL Sodium
Date Received:	12/13/2021	Lot #:	1122472-6
Expiration Date (if any):	06/13/2023	Catalog #:	4400-10M521

Standard ID#:	M15173	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	10,000 ug/mL Potassium
Date Received:	12/13/2021	Lot #:	1137797-18
Expiration Date (if any):	06/13/2023	Catalog #:	4400-10M411

Standard ID#:	M15174	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	10,000 ug/mL Magnesium
Date Received:	12/13/2021	Lot #:	1075232-54
Expiration Date (if any):	06/13/2023	Catalog #:	4400-10M311

Standard ID#:	M15164	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	12/10/2021	Lot #:	L259-10
Expiration Date (if any):	N/A	Catalog #:	LC251701

Standard ID#:	M15165	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	12/10/2021	Lot #:	L259-10
Expiration Date (if any):	N/A	Catalog #:	LC251701

Standard ID#:	M15166	Vendor:	SPEX CERTIPREP
Analyst:	BMM	Chemical:	10,000 ug/mL Phosphorus
Date Received:	12/13/2021	Lot #:	AR18-111PY
Expiration Date (if any):	12/30/2022	Catalog #:	PLP9-3Y

Standard ID#:	M15167	Vendor:	SPEX CERTIPREP
Analyst:	BMM	Chemical:	CUSTOM ASSURANCE STANDARD
Date Received:	12/13/2021	Lot #:	57-204CR
Expiration Date (if any):	12/30/2022	Catalog #:	XSPIKE-1-250

Standard ID#:	M15168	Vendor:	CPI INTERNATIONAL
Analyst:	BMM	Chemical:	1,000 ug/mL Silicon
Date Received:	12/13/2021	Lot #:	1198119-3
Expiration Date (if any):	06/13/2023	Catalog #:	S4400-1000504F

Standard ID#:	M15163	Vendor:	Decon Labs
Analyst:	NAH	Chemical:	Dri-Clean lab detergent
Date Received:	12/08/2021	Lot #:	1J519
Expiration Date (if any):	-----	Catalog #:	2502

Standard Log #:	M15158	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	12/07/2021	Expiration Date:	01/07/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15159	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	12/07/2021	Expiration Date:	01/07/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15160	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	12/07/2021	Expiration Date:	12/08/2021
Prep:	Carefully mixed 3 parts HCl AB.706 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15161	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	12/08/2021	Expiration Date:	01/08/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15056 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15162	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	12/08/2021	Expiration Date:	01/08/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.706 and dissolved 100 g Stannous chloride M15057 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15155	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	12/07/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15156	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	12/07/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15157	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	12/07/2021	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15153	Reagent:	10N NaOH
Analyst:	BMM		
Prep Date:	12/01/2021	Expiration Date:	05/01/2022
Prep:	Into a 1 L volumetric flask, added 400 g NaOH WC310 and brought up to volume.		

Standard Log #:	M15154	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	MRZ	pH:	4.93 ± 0.05
Prep Date:	12/01/2021	Expiration Date:	12/01/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14946. Dilute to 20 L and mix.		

Standard Log #:	M15148	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	11/30/2021	Expiration Date:	12/30/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15149	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	11/30/2021	Expiration Date:	12/30/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15150	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	11/30/2021	Expiration Date:	12/01/2021
Prep:	Carefully mixed 3 parts HCl AB.707 with 1 part HNO ₃ AB.708 in a hood.		

Standard Log #:	M15151	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	12/01/2021	Expiration Date:	01/01/2022
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15056 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15152	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	12/01/2021	Expiration Date:	01/01/2022
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.707 and dissolved 100 g Stannous chloride M15057 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15145	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	11/30/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15146	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	11/30/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15147	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	11/30/2021	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15144	Vendor:	Acros Organics
Analyst:	MDS	Chemical:	Hydroxylamine Sulfate
Date Received:	11/29/2021	Lot #:	A0431536
Expiration Date (if any):		Catalog #:	198530010

Standard ID#:	M15143	Vendor:	Environmental Express
Analyst:	NAH	Chemical:	Yttrium 10,000 mg/L
Date Received:	11/22/2021	Lot #:	2123812-500
Expiration Date (if any):	05/31/2023	Catalog #:	HP10M67-1-500

Standard Log #:	M15138	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	11/16/2021	Expiration Date:	12/16/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15139	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	11/16/2021	Expiration Date:	12/16/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15140	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	11/16/2021	Expiration Date:	11/17/2021
Prep:	Carefully mixed 3 parts HCl AB.707 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M15141	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	11/17/2021	Expiration Date:	12/17/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M15056 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15142	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	11/17/2021	Expiration Date:	12/17/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.707 and dissolved 100 g Stannous chloride M15058 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15135	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	11/16/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15136	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	11/16/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15137	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	11/16/2021	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15134	Vendor:	SpexCertiprep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	11/11/2021	Lot #:	1-040EL
Expiration Date (if any):	11/20/2022	Catalog #:	XCTWI-5-500

Standard Log #:	M15129	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	11/10/2021	Expiration Date:	12/10/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15130	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	11/10/2021	Expiration Date:	12/10/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15131	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	11/10/2021	Expiration Date:	11/11/2021
Prep:	Carefully mixed 3 parts HCl AB.707 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M15132	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	11/11/2021	Expiration Date:	12/11/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15133	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	11/11/2021	Expiration Date:	12/11/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.707 and dissolved 100 g Stannous chloride M15058 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15126	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	11/10/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15127	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	11/10/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15128	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	11/10/2021	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15124	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	11/04/2021	Expiration Date:	12/04/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15125	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	11/05/2021	Expiration Date:	12/05/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.707 and dissolved 100 g Stannous chloride M15057 and brought up to volume.		

Standard Log #:	M15121	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	11/03/2021	Expiration Date:	12/03/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15122	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	11/03/2021	Expiration Date:	12/03/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15123	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	11/03/2021	Expiration Date:	11/04/2021
Prep:	Carefully mixed 3 parts HCl AB.707 with 1 part HNO ₃ AB.705 in a hood.		

Standard ID#:	M15117	Vendor:	SPEX CertiPrep
Analyst:	MDS	Chemical:	Mercury 1000 µg/mL
Date Received:	11/03/2021	Lot #:	CL12-145HGY
Expiration Date (if any):	10/30/2022	Catalog #:	CLHG4-2Y

		Instrument:	HydraII
Standard Log #:	M15118	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	11/03/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15119	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	11/03/2021	Expiration Date:	01/22/2023
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M15108 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15120	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	11/03/2021	Expiration Date:	10/30/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M15117 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15112	Vendor:	CPI
Analyst:	NAH	Chemical:	Al 10,000 mg/L
Date Received:	10/25/2021	Lot #:	1144484-5
Expiration Date (if any):	04/2023	Catalog #:	4400-10M11

Standard ID#:	M15113	Vendor:	CPI
Analyst:	NAH	Chemical:	K 10,000 mg/L
Date Received:	10/25/2021	Lot #:	KD37797-20
Expiration Date (if any):	04/2023	Catalog #:	4400-10M411-500

Standard ID#:	M15114	Vendor:	CPI
Analyst:	NAH	Chemical:	ZN 10,000 mg/L
Date Received:	10/25/2021	Lot #:	1149838-4
Expiration Date (if any):	04/2023	Catalog #:	S4400-10M681

Standard ID#:	M15115	Vendor:	CPI
Analyst:	NAH	Chemical:	Y 10,000 mg/L
Date Received:	10/25/2021	Lot #:	1157358-4
Expiration Date (if any):	04/2023	Catalog #:	4400-10M671

Standard ID#:	M15116	Vendor:	CPI
Analyst:	NAH	Chemical:	K 10,000 mg/L
Date Received:	10/25/2021	Lot #:	1137797-18
Expiration Date (if any):	04/2023	Catalog #:	4400-10M411

		Instrument:	GFAA
Standard Log #:	M15109	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	10/25/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15110	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	10/25/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M15111	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	10/25/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M14798 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard ID#:	M15108	Vendor:	CPI International
Analyst:	MDS	Chemical:	Mercury 1000 µg/mL
Date Received:	10/21/2021	Lot #:	1084154-49
Expiration Date (if any):	01/22/2023	Catalog #:	S4400-1000331

Standard Log #:	M15103	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	10/19/2021	Expiration Date:	11/19/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15104	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	10/19/2021	Expiration Date:	11/19/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15105	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	10/19/2021	Expiration Date:	10/20/2021
Prep:	Carefully mixed 3 parts HCl AB.707 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M15106	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	10/20/2021	Expiration Date:	11/20/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15107	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	10/20/2021	Expiration Date:	11/20/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.707 and dissolved 100 g Stannous chloride M15058 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15100	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	10/19/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15101	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	10/19/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15102	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	10/19/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15099	Instrument:	GFAA																																			
Analyst:	MDS	Standard:	MDL Spiking Solution																																			
Prep Date:	10/15/2021	Expiration Date:	02/2022																																			
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (2% HNO₃) <table border="1"> <thead> <tr> <th>Analyte</th> <th>Final MDL Conc. (ug/L)</th> <th>Std. ID #</th> <th>Std. Conc. (mg/L)</th> <th>Volume (mL) pipetted</th> </tr> </thead> <tbody> <tr> <td>Ag</td> <td>0.2</td> <td>M14623</td> <td>1000</td> <td>0.01</td> </tr> <tr> <td>As</td> <td>2</td> <td>M14621</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Pb</td> <td>2</td> <td>M15045</td> <td>10000</td> <td>0.01</td> </tr> <tr> <td>Sb</td> <td>2</td> <td>M14622</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Se</td> <td>2</td> <td>M14624</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Tl</td> <td>2</td> <td>M14626</td> <td>1000</td> <td>0.1</td> </tr> </tbody> </table> Of this base standard, pipetted 1 mL into a 50 mL digestion tube for a digested working standard.			Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted	Ag	0.2	M14623	1000	0.01	As	2	M14621	1000	0.1	Pb	2	M15045	10000	0.01	Sb	2	M14622	1000	0.1	Se	2	M14624	1000	0.1	Tl	2	M14626	1000	0.1
Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted																																		
Ag	0.2	M14623	1000	0.01																																		
As	2	M14621	1000	0.1																																		
Pb	2	M15045	10000	0.01																																		
Sb	2	M14622	1000	0.1																																		
Se	2	M14624	1000	0.1																																		
Tl	2	M14626	1000	0.1																																		

Standard ID#:	M15094	Vendor:	CPI
Analyst:	NAH	Chemical:	MG 10,000 mg/L
Date Received:	10/14/2021	Lot #:	1075232-5
Expiration Date (if any):	09/2022	Catalog #:	4400-10M311

Standard ID#:	M15095	Vendor:	CPI
Analyst:	NAH	Chemical:	Ni 1000 mg/L
Date Received:	10/14/2021	Lot #:	1049780-73
Expiration Date (if any):	03/2023	Catalog #:	S4400-1000361

Standard ID#:	M15096	Vendor:	CPI
Analyst:	NAH	Chemical:	Si 1000 mg/L
Date Received:	10/14/2021	Lot #:	1047570-102
Expiration Date (if any):	03/2023	Catalog #:	S4400-1000504F

Standard ID#:	M15097	Vendor:	CPI
Analyst:	NAH	Chemical:	Na 10,000 mg/L
Date Received:	10/14/2021	Lot #:	1055526-35
Expiration Date (if any):	11/2022	Catalog #:	4400-10M521

Standard ID#:	M15098	Vendor:	CPI
Analyst:	NAH	Chemical:	Cd 1000 mg/L
Date Received:	10/14/2021	Lot #:	1080470-23
Expiration Date (if any):	01/2023	Catalog #:	S4400-100081

Standard ID#:	M15090	Vendor:	CPI
Analyst:	NAH	Chemical:	P 10,000 mg/L
Date Received:	10/14/2021	Lot #:	1079898-11
Expiration Date (if any):	01/2023	Catalog #:	S4400-10M391

Standard ID#:	M15091	Vendor:	CPI
Analyst:	NAH	Chemical:	Be 1000 mg/L
Date Received:	10/14/2021	Lot #:	1072683-57
Expiration Date (if any):	01/2023	Catalog #:	S4400-100051

Standard ID#:	M15092	Vendor:	CPI
Analyst:	NAH	Chemical:	Ca 10,000 mg/L
Date Received:	10/14/2021	Lot #:	1072921-23
Expiration Date (if any):	01/2023	Catalog #:	4400-10M91

Standard ID#:	M15093	Vendor:	CPI
Analyst:	NAH	Chemical:	Fe 10,000 mg/L
Date Received:	10/14/2021	Lot #:	1034257-71
Expiration Date (if any):	03/2023	Catalog #:	4400-10M261

Standard Log #:	M15086	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	10/13/2021	Expiration Date:	11/13/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15087	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	10/13/2021	Expiration Date:	11/13/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.707 and dissolved 100 g Stannous chloride M14949 and brought up to volume.		

Standard ID#:	M15088	Vendor:	CPI
Analyst:	NAH	Chemical:	Silicon 1000 ug/L
Date Received:	10/13/2021	Lot #:	1047570-102
Expiration Date (if any):	03/2023	Catalog #:	S4400-1000504F

Standard ID#:	M15089	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	10/13/2021	Lot #:	57-130CR
Expiration Date (if any):	10/30/2022	Catalog #:	XSPIKE-1-250

Standard Log #:	M15083	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	10/12/2021	Expiration Date:	11/12/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15084	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	10/12/2021	Expiration Date:	11/12/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15085	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	10/12/2021	Expiration Date:	10/13/2021
Prep:	Carefully mixed 3 parts HCl AB.707 with 1 part HNO ₃ AB.705 in a hood.		

		Instrument:	HydraII
Standard Log #:	M15080	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	10/12/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15081	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	10/12/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15082	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	10/12/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15079	Standard:	GFAA Instrument Check
Analyst:	MDS	Final Concentration:	8 µg/L As 10 µg/L Pb 8 µg/L Sb 16 µg/L Se 10 µg/L Tl 0.6 µg/L Ag
Prep Date:	10/11/2021	Expiration Date:	02/2022

Into six, 100 mL volumetric flasks, add the following and bring up to volume with milli-Q H₂O.

Element	Volume Pipetted (mL)	Standard Conc. (µg/mL)	Standard ID	New Conc. (µg/L)
As	1	1000	M14621	10,000
Pb	0.1	10,000	M15045	10,000
Tl	1	1000	M14626	10,000
Se	1	1000	M14624	10,000
Sb	1	1000	M14622	10,000
Ag	0.1	1000	M14623	1000

Into a 1 L volumetric flask, add the following and bring up to volume with Milli-Q H₂O. (1% HNO₃)

Element	Volume Pipetted (mL)	Standard Conc. (µg/L)	New Conc. (µg/L)
As	0.8	10,000	8
Pb	1.0	10,000	10
Tl	1.0	10,000	10
Se	1.6	10,000	16
Sb	0.8	10,000	8
Ag	0.6	1000	0.6

Standard Log #:	M15074	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	10/05/2021	Expiration Date:	11/05/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15075	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	10/05/2021	Expiration Date:	11/05/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15076	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	10/05/2021	Expiration Date:	10/06/2021
Prep:	Carefully mixed 3 parts HCl AB.707 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M15077	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	10/06/2021	Expiration Date:	11/06/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15078	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	10/06/2021	Expiration Date:	11/06/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.707 and dissolved 100 g Stannous chloride M14939 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15071	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	10/05/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15072	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	10/05/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15073	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	10/05/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15067	Instrument:	GFAA
Analyst:	MDS	Reagent:	Pd/Mg Matrix Modifier
Prep Date:	10/04/2021	Expiration Date:	08/20/2022
Prep:	Into a 50 mL volumetric flask, partially filled with milli-Q H ₂ O, pipetted 15 mL Pd Modifier M15008 and 10 mL Mg (10,000 mg/L) M14739 and brought up to volume.		

Standard ID#:	M15068	Vendor:	Spex Certi Prep
Analyst:	NAH	Chemical:	Interference A
Date Received:	10/4/2021	Lot #:	18-102WLX
Expiration Date (if any):	09/22	Catalog #:	INT-A1

Standard ID#:	M15069	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	10/04/2021	Lot #:	1-181-PC
Expiration Date (if any):	09/30/2022	Catalog #:	XCTWI-1-500

MRL BASE STD	M15066	Analyst	NAH
		Prep Date	10/04/2021

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	(ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L	Expiration Date
Ag	20	M14623	1000	1	02/22
Al	400	M15098	10000	2	02/23
Ba	10	M14772	1000	0.5	09/22
Be	4	M15203	1000	0.2	09/22
Cd	5	M14201	1000	0.25	09/22
Co	10	M15019	1000	0.5	02/23
Cr	10	M15027	10000	0.05	02/23
Cu	10	M15021	10000	0.05	02/23
Mg	500	M14739	10000	2.5	08/22
Mn	10	M15023	10000	0.05	02/23
Mo	10	M15022	1000	0.5	02/23
Ni	10	M14196	1000	0.5	xx
Pb	10	M15045	10000	0.05	03/23
Sb	20	M14622	1000	1	02/22
V	10	M15020	1000	0.5	02/23
Zn	10	M14197	10000	0.05	xx
K	1000	M14887	10000	5	11/22
Na	1000	M14969	10000	5	01/23
As	20	M14621	1000	1	02/22
Ca	500	M15026	10000	2.5	02/23
Fe	300	M15024	10000	1.5	02/23
Se	20	M14624	1000	1	02/22
Tl	20	M14626	1000	1	02/22
Si	100	M14968	1000	5	01/23
B	20	M14966	1000	1	01/23
Li	20	M14681	1000	1	07/22
W	50	xxxxx	1000	2.5	xxxxx
Ti	10	M14674	1000	0.5	07/22
Sr	10	M14683	1000	0.5	07/22
Sn	50	M14774	1000	2.5	09/22
S	300	M14773	10000	1.5	09/22

Of this Base standard, pipet 10 mls into 500 ml volumetric to create a working std or 1 ml into 50 ml digestion tube for a digested working standard.

		Instrument:	ICP 6500
Standard Log #:	M15064	Standard:	ICSAB
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 500 ug/L Ag, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn
Prep Date:	10/04/2021	Expiration Date:	01/30/2022
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M14833, 15 mL Fe (10,000 mg/L) M15204, 2.5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M14685 and 2.5 mL Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15028 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15065	Standard:	ICSA
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg
Prep Date:	10/04/2021	Expiration Date:	01/30/2022
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M14833 and 15 mL Fe (10000 mg/L) M15024 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15061	Standard:	CCV1
Analyst:	NAH	Concentrations:	5000 µg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn 500 µg/L Ag, Be, Cd
Prep Date:	10/04/2021	Expiration Date:	01/30/2022
Prep:	Into a 1 L volumetric flask, pipetted 50 mL Custom Assurance Standard #23 XCTWI-5-500 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15028 and 5.0 mL of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) M14685 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15062	Standard:	CCV2
Analyst:	NAH	Concentrations:	500 µg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn 50 µg/L Ag, Be, Cd
Prep Date:	10/04/2021	Expiration Date:	01/30/2022
Prep:	Into a 1 L volumetric flask, pipetted 5 mL Custom Assurance Standard #23 XCTWI-5-500 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15028 and 0.5 mL of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) M14685 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M15063	Standard:	ICV Std.
Analyst:	NAH	Concentrations:	12,000 mg/L Al 10,000 mg/L Ca, Mg 5000 mg/L Fe 2000 mg/L As, Ba, Se, Ti 500 mg/L B, Co, Li, Mn, Mo, Ni, Pb, Sb, Sn, Sr, Ti, V, Zn 250 mg/L Cu 200 mg/L Cr 50 mg/L Ag, Be, Cd
Prep Date:	10/04/2021	Expiration Date:	01/30/2022
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with milli-Q H ₂ O. 10 mL Custom Assurance Standard #18 ((200 mg/L Al, As, Ba, Se, Ti) (100 mg/L Fe) (50 mg/L Co, Mn, Ni, Pb, Sb, V, Zn) (25 mg/L Cu) (20 mg/L Cr) (5 mg/L Ag, Be, Cd)) M14988, 2 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M14833, 0.5 mL Mo (1000 mg/L) M15022, 0.5 mL B (1000 mg/L) M14966, 0.5 mL Sr (1000 mg/L) M14683, 0.5 mL Li (1000 mg/L) M14681, 0.5 mL Sn (1000 mg/L) M14774 and 0.5 mL Ti (1000 mg/L) M14674.		

		Instrument:	ICP 6500
Standard Log #:	M15060	Standard:	ICAL
Analyst:	NAH	Concentrations:	0.25, 0.5, 1, 5, 10, 20, 50, 100, 1000, 10,000, 100k, 100,000, 500,000 and 1000k (ug/L)
Prep Date:	10/14/2021	Expiration Date:	01/30/2022
Prep:	Using 1 L volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (5% HNO₃, 5% HCl) 1000 ug/L Std. - 10 mL of Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M15828, 10 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M14685 and 1 mL of Si (1000 mg/L) M14968 and 1 mL M14682 Ce 0.25 ug/L Std. - 0.25 mL of the 1000 ug/L Std. 0.5 ug/L Std. - 0.5 mL of the 1000 ug/L Std. 1 ug/L Std. - 1 mL of the 1000 ug/L Std. 5 ug/L Std. - 5 mL of the 1000 ug/L Std. 10 ug/L Std. - 10 mL of the 1000 ug/L Std. 20 ug/L Std. - 20 mL of the 1000 ug/L Std. 50 ug/L Std. - 50 mL of the 1000 ug/L Std. 100 ug/L Std. - 1 mL of Custom Assurance Std. (CAS) #23 and 1 mL of CAS #3 10,000 ug/L Std. - 100 mL CAS #23, 100 mL CAS #3 and 1 mL of K (10,000 mg/L) M15046. 100k ug/L Std. - 10 mL of Cu (10,000 mg/L) M15021, 10 mL of Mn (10,000 mg/L) M15023, 10 mL of Cr (10,000 mg/L) M15027, 10 mL Pb (10,000 mg/L) M15045, 10 mL of Zn (10,000 mg/L) M14197 and 10 mL of Na (10,000 mg/L) M14969. 100,000 ug/L Std. - 10 mL of Mg (10,000 mg/L) M14739, 10 mL of Fe (10,000 mg/L) M15024, 10 mL of Ca (10,000 mg/L) M14740 and 10 mL Al (10,000 mg/L) M14737. 500,000 ug/L Std. - 50 mL of Mg (10,000 mg/L), 50 mL of Fe (10,000 mg/L), 50 mL of Ca (10,000 mg/L) and 50 mL of Al (10,000 mg/L) 1000k ug/L Std. - 100 mL of Mg (10,000 mg/L), 100 mL of Fe (10,000 mg/L), 100 mL of Ca (10,000 mg/L) and 100 mL of Al (10,000 mg/L)		

Standard Log #:	M15059	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	MRZ	pH:	4.93 ± 0.05
Prep Date:	09/29/2021	Expiration Date:	10/29/2021
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14946. Dilute to 20 L and mix.		

Standard ID#:	M15057	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	09/23/2021	Lot #:	L069-02
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M15058	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	09/23/2021	Lot #:	L069-02
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M15056	Vendor:	Acros Organics
Analyst:	MDS	Chemical:	Hydroxylamine Sulfate
Date Received:	09/22/2021	Lot #:	A0428169
Expiration Date (if any):		Catalog #:	198531000

Standard Log #:	M15051	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	09/20/2021	Expiration Date:	10/20/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15052	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	09/20/2021	Expiration Date:	10/20/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15053	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	09/20/2021	Expiration Date:	09/21/2021
Prep:	Carefully mixed 3 parts HCl AB.707 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M15054	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	09/21/2021	Expiration Date:	10/21/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15055	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	09/21/2021	Expiration Date:	10/21/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.707 and dissolved 100 g Stannous chloride M14939 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15048	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	09/20/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15049	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	09/20/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15050	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	09/20/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15047	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	MRZ	pH:	4.93 ± 0.05
Prep Date:	09/09/2021	Expiration Date:	09/09/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14964. Dilute to 20 L and mix.		

Standard ID#:	M15045	Vendor:	CPI
Analyst:	NAH	Chemical:	Pb 10,000 mg/L
Date Received:	09/15/2021	Lot #:	1035677-18
Expiration Date (if any):	03/2023	Catalog #:	4400-10M281

Standard ID#:	M15046	Vendor:	CPI
Analyst:	NAH	Chemical:	K 10,1000 mg/L
Date Received:	09/15/2021	Lot #:	1137797-13
Expiration Date (if any):	03/2023	Catalog #:	4400-10M411-500

Standard Log #:	M15040	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	09/14/2021	Expiration Date:	10/14/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15041	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	09/14/2021	Expiration Date:	10/14/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15042	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	09/14/2021	Expiration Date:	09/15/2021
Prep:	Carefully mixed 3 parts HCl AB.707 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M15043	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	09/15/2021	Expiration Date:	10/15/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15044	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	09/15/2021	Expiration Date:	10/15/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.707 and dissolved 100 g Stannous chloride M14939 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15037	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	09/14/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15038	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	09/14/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15039	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	09/14/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M15032	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	09/01/2021	Expiration Date:	10/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15033	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	09/01/2021	Expiration Date:	10/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15034	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	09/01/2021	Expiration Date:	09/02/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M15035	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	09/02/2021	Expiration Date:	10/02/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15036	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	09/02/2021	Expiration Date:	10/02/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14940 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15029	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	09/01/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15030	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	09/01/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15031	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	09/01/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15023	Vendor:	CPI
Analyst:	NAH	Chemical:	Mn 10,000 mg/L
Date Received:	08/30/2021	Lot #:	985851-80
Expiration Date (if any):	02/2023	Catalog #:	S4400-10M321

Standard ID#:	M15024	Vendor:	CPI
Analyst:	NAH	Chemical:	Fe 10,000 mg/L
Date Received:	08/30/2021	Lot #:	1034257-71
Expiration Date (if any):	02/2023	Catalog #:	4400-10M261

Standard ID#:	M15025	Vendor:	CPI
Analyst:	NAH	Chemical:	S 10,000 mg/L
Date Received:	08/30/2021	Lot #:	1050965-59
Expiration Date (if any):	02/2023	Catalog #:	4400-10M544

Standard ID#:	M15026	Vendor:	CPI
Analyst:	NAH	Chemical:	Ca 10,000 mg/L
Date Received:	08/30/2021	Lot #:	1072921-23
Expiration Date (if any):	02/2023	Catalog #:	4400-10M91

Standard ID#:	M15027	Vendor:	CPI
Analyst:	NAH	Chemical:	Cr 10,000 mg/L
Date Received:	08/30/2021	Lot #:	1076194-26
Expiration Date (if any):	02/2023	Catalog #:	S4400-10M121

Standard ID#:	M15028	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	NAH	Lot #:	17-023AB
Expiration Date (if any):	AUG 30,2022	Catalog #:	XCTWI-5-500

Standard ID#:	M15018	Vendor:	CPI
Analyst:	NAH	Chemical:	Al 10,000 mg/L
Date Received:	08/30/2021	Lot #:	1077245-48
Expiration Date (if any):	02/2023	Catalog #:	4400-10M11

Standard ID#:	M15019	Vendor:	CPI
Analyst:	NAH	Chemical:	Co 1000 mg/L
Date Received:	08/30/2021	Lot #:	1107088-1
Expiration Date (if any):	02/2023	Catalog #:	S4400-1000131

Standard ID#:	M15020	Vendor:	CPI
Analyst:	NAH	Chemical:	V 1000 mg/L
Date Received:	08/30/2021	Lot #:	1055682-88
Expiration Date (if any):	02/2023	Catalog #:	S4400-1000651

Standard ID#:	M15021	Vendor:	CPI
Analyst:	NAH	Chemical:	Cu 10,000 mg/L
Date Received:	08/30/2021	Lot #:	1063159-57
Expiration Date (if any):	02/2023	Catalog #:	S4400-10M141

Standard ID#:	M15022	Vendor:	CPI
Analyst:	NAH	Chemical:	Mo 1000 mg/L
Date Received:	08/30/2021	Lot #:	1075718-15
Expiration Date (if any):	02/2023	Catalog #:	S4400-1000343

Standard Log #:	M15013	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/24/2021	Expiration Date:	09/24/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15014	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	08/24/2021	Expiration Date:	09/24/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15015	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	08/24/2021	Expiration Date:	08/25/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M15016	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	08/25/2021	Expiration Date:	09/25/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15017	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	08/25/2021	Expiration Date:	09/25/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14939 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15010	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	08/24/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15011	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	08/24/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15012	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	08/24/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M15009	Vendor:	ThermoFisher Scientific
Analyst:	MDS	Chemical:	Nickel Nitrate Matrix Modifier
Date Received:	08/23/2021	Lot #:	225022
Expiration Date (if any):	03/31/2022	Catalog #:	39043

Standard ID#:	M15008	Vendor:	Environmental Express
Analyst:	MDS	Chemical:	Palladium Matrix Modifier
Date Received:	08/19/2021	Lot #:	2113302-100
Expiration Date (if any):	08/31/2022	Catalog #:	HP1900-100

Standard Log #:	M15003	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/18/2021	Expiration Date:	09/18/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M15004	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	08/18/2021	Expiration Date:	09/18/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15005	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	08/18/2021	Expiration Date:	08/19/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M15006	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	08/18/2021	Expiration Date:	09/18/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M15007	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	08/18/2021	Expiration Date:	09/18/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14939 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M15000	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	08/18/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15001	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	08/18/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M15002	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	08/18/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	GFAA
Standard Log #:	M14997	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	08/13/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14998	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	08/13/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14999	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	08/13/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M14798 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M14992	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/10/2021	Expiration Date:	09/10/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14993	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	08/10/2021	Expiration Date:	09/10/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14994	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	08/10/2021	Expiration Date:	08/11/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14995	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	08/11/2021	Expiration Date:	09/11/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14996	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	08/11/2021	Expiration Date:	09/11/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14844 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14989	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	08/10/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14990	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	08/10/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14991	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	08/10/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14987	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance Std
Date Received:	08/09/2021	Lot #:	5-190MF
Expiration Date (if any):	08/30/2022	Catalog #:	XCTWI-1-500

Standard ID#:	M14988	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance Std
Date Received:	08/09/2021	Lot #:	5-189MF
Expiration Date (if any):	08/30/2021	Catalog #:	XSPIKE-1-250

Standard Log #:	M14982	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	08/03/2021	Expiration Date:	09/03/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14983	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	08/03/2021	Expiration Date:	09/03/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14984	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	08/03/2021	Expiration Date:	08/04/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14985	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	08/04/2021	Expiration Date:	09/04/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14986	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	08/04/2021	Expiration Date:	09/04/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14844 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14979	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	08/03/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14980	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	08/03/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14981	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	08/03/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14978	Vendor:	Enviromental Express
Analyst:	BMM	Chemical:	Acid Washed TCLP Filters
Date Received:	05/20/2021	Lot #:	400175-1116-T
Expiration Date (if any):		Catalog #:	FG77150MM

Standard Log #:	M14973	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/27/2021	Expiration Date:	08/27/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14974	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	07/27/2021	Expiration Date:	08/27/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14975	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/27/2021	Expiration Date:	07/28/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14976	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/29/2021	Expiration Date:	08/29/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14977	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/29/2021	Expiration Date:	08/29/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14844 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14970	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	07/27/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14971	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	07/27/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14972	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	07/27/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14966	Vendor:	CPI
Analyst:	NAH	Chemical:	Boron 10,000 mg/L
Date Received:	07/27/2021	Lot #:	1101946-16
Expiration Date (if any):	01/2023	Catalog #:	S4400-100074

Standard ID#:	M14967	Vendor:	CPI
Analyst:	NAH	Chemical:	Yttrium 10000 mk/L
Date Received:	07/27/2021	Lot #:	1109477-26
Expiration Date (if any):	01/2023	Catalog #:	4400-10M671

Standard ID#:	M14968	Vendor:	CPI
Analyst:	NAH	Chemical:	Si 1000 mg/L
Date Received:	07/27/2021	Lot #:	1047570-64
Expiration Date (if any):	01/2023	Catalog #:	S4400-1000504F

Standard ID#:	M14969	Vendor:	CPI
Analyst:	NAH	Chemical:	Na 10000
Date Received:	07/27/2021	Lot #:	1055526-35
Expiration Date (if any):	01/2023	Catalog #:	4400-10M521

		Instrument:	CETAC
Standard Log #:	M14963	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/21/2021	Expiration Date:	08/21/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14844 and brought up to volume.		

Standard Log #:	M14964	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	07/22/2021	Expiration Date:	07/22/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14964. Dilute to 20 L and mix.		

Standard Log #:	M14965	Reagent:	TCLP 1 N HCL
Analyst:	BMM		
Prep Date:	07/23/2021	Expiration Date:	07/23/2022
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, added 83 mL HCL AB.704 and brought up to volume.		

Standard Log #:	M14959	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/20/2021	Expiration Date:	08/20/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14960	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	07/20/2021	Expiration Date:	08/20/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14961	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/20/2021	Expiration Date:	07/21/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14962	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/21/2021	Expiration Date:	08/21/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14956	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	07/20/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14957	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	07/20/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14958	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	07/20/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14955	Vendor:	GFS Chemicals
Analyst:	NAH	Chemical:	AMCO Clear 2.0 NTU
Date Received:	07/16/2021	Lot #:	21150075
Expiration Date (if any):	07/22/2022	Catalog #:	8008

Standard Log #:	M14950	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/14/2021	Expiration Date:	08/14/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14951	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	07/14/2021	Expiration Date:	08/14/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14952	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/14/2021	Expiration Date:	07/15/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14953	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/15/2021	Expiration Date:	08/15/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14954	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/15/2021	Expiration Date:	08/15/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14844 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14947	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	07/14/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14948	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	07/14/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14949	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	07/14/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	ICP 6500
Standard Log #:	M14944	Standard:	ICV Std.
Analyst:	nah	Concentrations:	12,000 mg/L Al 10,000 mg/L Ca, Mg 5000 mg/L Fe 2000 mg/L As, Ba, Se, Tl 500 mg/L B, Co, Li, Mn, Mo, Ni, Pb, Sb, Sn, Sr, Ti, V, Zn 250 mg/L Cu 200 mg/L Cr 50 mg/L Ag, Be, Cd
Prep Date:	07/09/2021	Expiration Date:	08/2022
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with milli-Q H₂O. 10 mL Custom Assurance Standard #18 ((200 mg/L Al, As, Ba, Se, Tl) (100 mg/L Fe) (50 mg/L Co, Mn, Ni, Pb, Sb, V, Zn) (25 mg/L Cu) (20 mg/L Cr) (5 mg/L Ag, Be, Cd)) M14874, 2 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M14833, 0.5 mL Mo (1000 mg/L) M14888, 0.5 mL B (1000 mg/L) M14675, 0.5 mL Sr (1000 mg/L) M14683, 0.5 mL Li (1000 mg/L) M14681, 0.5 mL Sn (1000 mg/L) M14774, 0.5 mL Ti (1000 mg/L) M14674, 0.5 mL W (1000 mg/L) XXXXXXX, 0.5 mL Si (1000 mg/L) M14680, 0.5 mL S (10000 mg/L) M14570, 0.5 mL K (10000 mg/L) M14887, and 0.5 mL Na (10000 mg/L) M14736		

Standard Log #:	M14945	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	07/12/2021	Expiration Date:	07/12/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H₂O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14785. Dilute to 20 L and mix.		

Standard Log #:	M14946	Reagent:	10N NaOH
Analyst:	BMM		
Prep Date:	07/14/2021	Expiration Date:	12/14/2021
Prep:	Into a 1 L volumetric flask, added 400 g NaOH WC272 and brought up to volume.		

Standard ID#:	M14939	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	07/09/2021	Lot #:	L069-02
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M14940	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	07/09/2021	Lot #:	L069-02
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M14941	Vendor:	GFS
Analyst:	NAH	Chemical:	AMCO Clear 0.1 ntu
Date Received:	07/12/2021	Lot #:	Returned to manufacturer
Expiration Date (if any):	not used	Catalog #:	not used

		Instrument:	ICP 6500
Standard Log #:	M14942	Standard:	ICSA
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 10,000 V, Ce
Prep Date:	07/09/2021	Expiration Date:	09/2021
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interference A std M14833 and 15 mL 10000 mg/L Fe M14676 5.0 mL 1000 mg/L V M14198 5.0 mL 1000 mg/L Ce M14682 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M14943	Standard:	ICSAB
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 500 ug/L Ag, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn, K, Na, S, 50000 ug/L Si 1000 ug/L.
Prep Date:	07/09/2021	Expiration Date:	12/2021
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe) M14833, 15 mL Fe (10,000 mg/L) M14676, 2.5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M14685, 2.5 mL Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn), M14788, 2.5 mLs Na 10,000 ug/mL M14736, 2.5 mLs k 10,000 ug/mL M14370 2.5 mLs S 10,000 ug/mL M14677, 0.5 mls Si 1000 ug/mL M14735 and brought up to volume with milli-Q .		

Standard Log #:	M14938	Reagent:	TCLP EXTRACTION FLUID #2
Analyst:	BMM	pH:	2.88 ± 0.05
Prep Date:	07/08/2021	Expiration Date:	07/08/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703. Dilute to 20 L and mix.		

Standard Log #:	M14933	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/07/2021	Expiration Date:	08/07/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14934	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	07/07/2021	Expiration Date:	08/07/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14935	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/07/2021	Expiration Date:	07/08/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14936	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/08/2021	Expiration Date:	08/08/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14937	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/08/2021	Expiration Date:	08/08/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14844 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14930	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	07/07/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14931	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	07/07/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14932	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	07/07/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M14925	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	07/01/2021	Expiration Date:	08/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14926	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	07/01/2021	Expiration Date:	08/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14799 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14927	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	07/01/2021	Expiration Date:	07/02/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14928	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	07/01/2021	Expiration Date:	08/01/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14929	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	07/01/2021	Expiration Date:	08/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14845 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14922	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/30/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14923	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/30/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14924	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/30/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14921	Vendor:	LabChem
Analyst:	NAH	Chemical:	Turbidity Standard(Formazin) 4000NT
Date Received:	06/25/2021	Lot #:	L147-07
Expiration Date (if any):	06/08/2022	Catalog #:	LC26290

		Instrument:	ICP 6500
Standard Log #:	M14919	Standard:	ICSA3_Cr_Cu_Co_Mo
Analyst:	NAH	Concentrations:	10,000 ug/L Cr, Cu, Co and Mo
Prep Date:	06/24/2021	Expiration Date:	09/2021
Prep:	Into a 500 mL volumetric flask, pipetted 0.5 mL 10000 mg/L Cr M14205 0.5 mL 10000 mg/L Cu M14199 5.0 mL 1000 mg/L Co M14204 5.0 mL 1000 mg/L Mo M14888 brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M14920	Standard:	ICSA4_Ni_Ti
Analyst:	NAH	Concentrations:	10,000 ug/L Ni and Ti
Prep Date:	06/24/2021	Expiration Date:	09/2021
Prep:	Into a 500 mL volumetric flask, pipetted 5.0 mL 1000 mg/L Ni M14196 5.0 mL 10000 mg/L Ti M14674 brought up to volume with milli-Q H ₂ O.		

		Instrument:	CETAC
Standard Log #:	M14916	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/23/2021	Expiration Date:	07/23/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14845 and brought up to volume.		

		Instrument:	ICP 6500
Standard Log #:	M14917	Standard:	ICSA1_Mn
Analyst:	NAH	Concentrations:	10,000 ug/L Mn
Prep Date:	06/24/2021	Expiration Date:	09/2021
Prep:	Into a 500 mL volumetric flask, pipetted 0.5 mL 10000 mg/L mn M14200 brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M14918	Standard:	ICSA2_Ba_Be_Sn
Analyst:	NAH	Concentrations:	10,000 ug/L Ba, Be, and Sn
Prep Date:	06/24/2021	Expiration Date:	09/2021
Prep:	Into a 500 mL volumetric flask, pipetted 5.0 mL 1000 mg/L Ba M14772 5.0 mL 10000 mg/L Be M14203 5.0 mL 10000 mg/L Sn M14774 brought up to volume with milli-Q H ₂ O.		

Standard Log #:	M14912	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/22/2021	Expiration Date:	07/22/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14913	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/22/2021	Expiration Date:	07/22/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14914	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/22/2021	Expiration Date:	06/23/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14915	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/23/2021	Expiration Date:	07/23/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14909	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/22/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14910	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/22/2021	Expiration Date:	11/30/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14911	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/22/2021	Expiration Date:	05/02/2022
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M14904	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/16/2021	Expiration Date:	07/16/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14905	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/16/2021	Expiration Date:	07/16/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14906	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/16/2021	Expiration Date:	06/17/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14907	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/17/2021	Expiration Date:	07/17/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14908	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/17/2021	Expiration Date:	07/17/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14845 and brought up to volume.		

Standard Log #:	M14903	Instrument:	ICP 6500
Analyst:	NAH	Standard:	Dissolved MDL Verificaion
Prep Date:	06/16/2021	Expiration Date:	09/2021

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	2.7	M14623	1000	0.135
Al	10	M14736	10000	.05
As	20	M14621	1000	1
Ba	2	M14772	1000	0.1
Be	1	M14203	1000	0.05
Ca	50	M14740	10000	0.25
Cd	0.5	M14201	1000	.025
Co	2.5	M14204	1000	0.125
Cr	5	M14205	10000	.025
Cu	10	M14199	10000	.05
Fe	40	M14738	10000	0.2
Mg	25	M14676	10000	0.125
Mn	3	M14200	10000	.015
Mo	2.5	M14888	1000	0.125
Ni	3	M14196	1000	0.15
Pb	20	M14202	10000	0.1
Sb	10	M14622	1000	0.5
Se	20	M14624	1000	1
Tl	20	M14626	1000	1
V	3	M14198	1000	0.15
Zn	5	M14197	10000	0.025
Na	150	M14736	10000	0.75
K	150	M14741	10000	0.75
B	20	M14675	1000	1
Si	200	M14735	1000	10
Li	10	M14681	1000	0.5
Sr	20	M14775	1000	1
Sn	20	M14774	1000	1
Ti	5	M14674	1000	0.25
S	200	M14773	10000	10

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M14902	Instrument:	ICP 6500
Analyst:	NAH	Standard:	MDL spike Soln.
Prep Date:	06/16/2021	Expiration Date:	09//2021

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	40	M14623	1000	2
Al	800	M14736	10000	4
As	40	M14621	1000	2
Ba	20	M14772	1000	1
Be	8	M14203	1000	0.4
Ca	1000	M14740	10000	5
Cd	10	M14201	1000	0.5
Co	20	M14204	1000	1
Cr	20	M14205	10000	0.1
Cu	20	M14199	10000	0.1
Fe	600	M14738	10000	3
Mg	1000	M14676	10000	5
Mn	20	M14200	10000	0.1
Mo	20	M14888	1000	1
Ni	20	M14196	1000	1
Pb	20	M14202	10000	0.1
Sb	40	M14622	1000	2
Se	40	M14624	1000	2
Tl	40	M14626	1000	2
V	20	M14198	1000	1
Zn	20	M14197	10000	0.1
Na	10000	M14736	10000	50
K	10000	M14741	10000	50
B	40	M14675	1000	2
Si	200	M14735	1000	10
Li	20	M14681	1000	1
Sr	20	M14775	1000	1
Sn	40	M14774	1000	2
Ti	20	M14674	1000	1
S	400	M14773	10000	20

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M14901	Instrument:	ICP 6500
Analyst:	NAH	Standard:	LOQ Solid QSM
Prep Date:	06/16/2021	Expiration Date:	09/2021

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (5% HNO₃, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	40	M14623	1000	2
Al	800	M14736	10000	4
As	40	M14621	1000	2
Ba	40	M14772	1000	2
Be	8	M14203	1000	0.4
Ca	1000	M14740	10000	5
Cd	10	M14201	1000	0.5
Co	20	M14204	1000	1
Cr	20	M14205	10000	0.1
Cu	20	M14199	10000	0.1
Fe	600	M14738	10000	3
Mg	1000	M14676	10000	5
Mn	20	M14200	10000	0.1
Mo	20	M14888	1000	1
Ni	20	M14196	1000	1
Pb	20	M14202	10000	0.1
Sb	40	M14622	1000	2
Se	40	M14624	1000	2
Tl	40	M14626	1000	2
V	20	M14198	1000	1
Zn	20	M14197	10000	0.1
Na	10000	M14736	10000	50
K	10000	M14741	10000	50
B	40	M14675	1000	2
Si	200	M14735	1000	10
Li	20	M14681	1000	1
Sr	20	M14775	1000	1
Sn	40	M14774	1000	2
Ti	20	M14674	1000	1
S	400	M14773	10000	20

Of this Base standard, pipet **10 mL** into a 500 mL volumetric flask to create a working std or **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M14900	Instrument:	ICP 6500		
Analyst:	NAH	Standard:	LOQ water QSM		
Prep Date:	06/16/2021	Expiration Date:	09/2021		
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H ₂ O. (5% HNO ₃ , 5% HCl)				
	Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
	Ag	5	M14623	1000	0.25
	Al	120	M14737	10000	0.6
	As	40	M14621	1000	2
	Ba	4	M14772	1000	0.2
	Be	8	M14203	1000	0.4
	Ca	100	M14740	10000	0.5
	Cd	2	M14201	1000	0.1
	Co	5	M14204	1000	0.25
	Cr	5	M14205	10000	0.025
	Cu	40	M14199	10000	0.2
	Fe	80	M14738	10000	0.4
	Mg	40	M14676	10000	0.2
	Mn	5	M14200	10000	0.025
	Mo	5	M14888	1000	0.25
	Ni	5	M14196	1000	0.25
	Pb	20	M14202	10000	0.1
	Sb	20	M14622	1000	1.0
	Se	40	M14624	1000	2
	Tl	40	M14626	1000	2
	V	5	M14198	1000	0.25
	Zn	20	M14197	10000	0.1
	Na	700	M14736	10000	3.5
	K	500	M14741	10000	2.5
	B	40	M14675	1000	2
	Si	200	M14735	1000	10
	Li	20	M14681	1000	1
	Sr	20	M14775	1000	1
	Sn	40	M14774	1000	2
	Ti	20	M14674	1000	1
	S	400	M14773	10000	20
	Of this Base standard, pipet 10 mL into a 500 mL volumetric flask to create a working std or 1 mL into a 50 mL digestion tube for a digested working standard.				

		Instrument:	GFAA
Standard Log #:	M14897	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	06/14/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14898	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	06/14/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14899	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	06/14/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M14798 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M14892	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/08/2021	Expiration Date:	07/08/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14893	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/08/2021	Expiration Date:	07/08/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14894	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/08/2021	Expiration Date:	06/09/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.705 in a hood.		

Standard Log #:	M14895	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/09/2021	Expiration Date:	07/09/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14886 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14896	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/09/2021	Expiration Date:	07/09/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14845 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14889	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/08/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14890	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/08/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14891	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/08/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14886	Vendor:	ThermoFisher Scientific
Analyst:	MDS	Chemical:	Hydroxylamine Sulfate
Date Received:	06/04/2021	Lot #:	Y20F051
Expiration Date (if any):		Catalog #:	88944

Standard ID#:	M14887	Vendor:	CPI
Analyst:	NAH	Chemical:	Potassium 10,000 mg/L
Date Received:	06/04/2021	Lot #:	1053109-69
Expiration Date (if any):	11/2022	Catalog #:	4400-10M411500

Standard ID#:	M14888	Vendor:	CPI
Analyst:	NAH	Chemical:	Mo 1000 mg/L
Date Received:	06/04/2021	Lot #:	1075718-15
Expiration Date (if any):	11/2022	Catalog #:	S4400-1000343

Standard Log #:	M14885	Reagent:	1:3 HNO ₃
Analyst:	MDS		
Prep Date:	06/03/2021	Expiration Date:	06/03/2022
Prep:	Carefully mixed 3 parts DI with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14883	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	06/03/2021	Expiration Date:	06/03/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14785. Dilute to 20 L and mix.		

Standard Log #:	M14884	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	06/03/2021	Expiration Date:	06/03/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14785. Dilute to 20 L and mix.		

Standard Log #:	M14878	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	06/01/2021	Expiration Date:	07/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14879	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	06/01/2021	Expiration Date:	07/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14880	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	06/01/2021	Expiration Date:	06/02/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14881	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	06/02/2021	Expiration Date:	07/02/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14882	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	06/02/2021	Expiration Date:	07/02/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14845 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14875	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/01/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14876	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	06/01/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14877	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/01/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14874	Vendor:	Spex Certi Prep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	05/24/2021	Lot #:	16-115AB
Expiration Date (if any):	05/30/2022	Catalog #:	XSPIKE-1-250

Standard Log #:	M14869	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	05/18/2021	Expiration Date:	06/18/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14870	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	05/18/2021	Expiration Date:	06/18/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14871	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	05/18/2021	Expiration Date:	05/19/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14872	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	05/19/2021	Expiration Date:	06/19/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14873	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	05/19/2021	Expiration Date:	06/19/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14713 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14866	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/18/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14867	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	05/18/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14868	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/18/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M14865	Instrument:	GFAA
Analyst:	MDS	Reagent:	Pd/Mg Matrix Modifier
Prep Date:	05/12/2021	Expiration Date:	09/30/2021
Prep:	Into a 50 mL volumetric flask, partially filled with milli-Q H ₂ O, pipetted 15 mL Pd Modifier M14508 and 10 mL Mg (10,000 mg/L) M14676 and brought up to volume.		

Standard Log #:	M14860	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	05/11/2021	Expiration Date:	06/11/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M14724 and brought up to volume.		

Standard Log #:	M14861	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	05/11/2021	Expiration Date:	06/11/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14862	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	05/11/2021	Expiration Date:	05/12/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14863	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	05/12/2021	Expiration Date:	06/12/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14864	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	05/12/2021	Expiration Date:	06/12/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14713 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14857	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/11/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14858	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	05/11/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14859	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/11/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	CETAC
Standard Log #:	M14854	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	05/05/2021	Expiration Date:	06/05/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14713 and brought up to volume.		

Standard Log #:	M14855	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	05/05/2021	Expiration Date:	05/05/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14785. Dilute to 20 L and mix.		

Standard Log #:	M14856	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	05/05/2021	Expiration Date:	05/05/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14785. Dilute to 20 L and mix.		

Standard Log #:	M14850	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	05/04/2021	Expiration Date:	06/04/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14851	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	05/04/2021	Expiration Date:	06/04/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14852	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	05/04/2021	Expiration Date:	05/05/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14853	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	05/05/2021	Expiration Date:	06/05/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14847	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/04/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14848	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	05/04/2021	Expiration Date:	05/02/2021
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14849	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/04/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14846	Vendor:	ENVIROMENTAL EXPRESS
Analyst:	BMM	Chemical:	ACID WASHED TCLP FILTERS
Date Received:	04/29/2021	Lot #:	400175-1081-AG
Expiration Date (if any):	N/A	Catalog #:	FG77150MM

		Instrument:	CETAC
Standard Log #:	M14842	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/28/2021	Expiration Date:	05/28/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14713 and brought up to volume.		

Standard Log #:	M14843	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	04/19/2021	Expiration Date:	04/19/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14785. Dilute to 20 L and mix.		

Standard ID#:	M14844	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	04/28/2021	Lot #:	L060-06
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M14845	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	04/28/2021	Lot #:	L060-06
Expiration Date (if any):		Catalog #:	LC251701

Standard Log #:	M14838	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/27/2021	Expiration Date:	05/27/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14839	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/27/2021	Expiration Date:	05/27/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14840	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/27/2021	Expiration Date:	04/28/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14841	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/28/2021	Expiration Date:	05/28/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14835	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/27/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14836	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/27/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14837	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/27/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	CETAC
Standard Log #:	M14832	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/21/2021	Expiration Date:	05/21/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14713 and brought up to volume.		

Standard ID#:	M14833	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Interference A
Date Received:	04/21/2021	Lot #:	18-102WLX
Expiration Date (if any):	04/30/2022	Catalog #:	INT-A1

Standard ID#:	M14834	Vendor:	Custom Assurance Std
Analyst:	NAH	Chemical:	Ca 20000 Mg,Na 10000: THardness
Date Received:	04/21/2021	Lot #:	16-022AB
Expiration Date (if any):	04/30/2022	Catalog #:	XCTIWI-1-500

Standard Log #:	M14828	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/20/2021	Expiration Date:	05/20/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14829	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/20/2021	Expiration Date:	05/20/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14830	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/20/2021	Expiration Date:	04/21/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14831	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/21/2021	Expiration Date:	05/21/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14825	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/20/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14826	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/20/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14827	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/20/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	ICP 6500
Standard Log #:	M14824	Standard:	CCV2
Analyst:	NAH	Concentrations:	500 µg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn 50 µg/L Ag, Be, Cd
Prep Date:	04/15/2021	Expiration Date:	09/21
Prep:	Into a 1 L volumetric flask, pipetted 5 mL Custom Assurance Standard #23 XCTWI-5-500 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M14788 and 0.5 mL of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) M14685 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M14821	Standard:	ICSAB
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 500 ug/L Ag, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn, K, Na, S, 50000 ug/L Si 1000 ug/L.
Prep Date:	04/15/2021	Expiration Date:	06/21
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M14395, 15 mL Fe (10,000 mg/L) M14738, 2.5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M14685, 2.5 mL Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn), M14788, 2.5 mLs Na 10,000 ug/mL M14736, 2.5 mLs k 10,000 ug/mL 14625 2.5 mLs S 10,000 ug/mL M14570, 0.5 mls Si 1000 ug/mL M14477 and brought up to volume with milli-Q .		

		Instrument:	ICP 6500
Standard Log #:	M14822	Standard:	ICSA
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 10,000 V, Ce
Prep Date:	04/15/2021	Expiration Date:	06/21
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interference A std M14395 and 15 mL 10000 mg/L Fe M14738 5.0 mL 1000 mg/L V M14198 5.0 mL 1000 mg/L Ce M14682 and brought up to volume with milli-Q H ₂ O.		

		Instrument:	ICP 6500
Standard Log #:	M14823	Standard:	CCV1
Analyst:	NAH	Concentrations:	5000 ug/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn 500 ug/L Ag, Be, Cd
Prep Date:	04/15/2021	Expiration Date:	09/21
Prep:	Into a 1 L volumetric flask, pipetted 50 mL Custom Assurance Standard #23 XCTWI-5-500 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M14788 and 5.0 mL of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) M14685 and brought up to volume with milli- Q H ₂ O.		

MRL BASE STD	M14820	Analyst	NAH
		Prep Date	04/15/2021

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	(ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L	Expiration Date
Ag	20	M14623	1000	1	XX
Al	400	M14737	10000	2	XX
Ba	10	M14772	1000	0.5	XX
Be	4	M14203	1000	0.2	09/21
Cd	5	M14740	1000	0.25	09/21
Co	10	M14204	1000	0.5	09/21
Cr	10	M14205	10000	0.05	09/21
Cu	10	M14199	10000	0.05	09/21
Mg	500	M14676	10000	2.5	XX
Mn	10	M14200	10000	0.05	09/21
Mo	10	M14684	1000	0.5	XX
Ni	10	M14196	1000	0.5	09/21
Pb	10	M14202	10000	0.05	09/21
Sb	20	M14622	1000	1	XX
V	10	M14198	1000	0.5	09/21
Zn	10	M14197	10000	0.05	09/21
K	1000	M14741	10000	5	XX
Na	1000	M14736	10000	5	XX
As	20	M14621	1000	1	XX
Ca	500	M14740	10000	2.5	XX
Fe	300	M14738	10000	1.5	XX
Se	20	M14624	1000	1	XX
Tl	20	M14674	1000	1	XX
Si	100	M14735	1000	5	XX
B	20	M14675	1000	1	09/21
Li	20	M14681	1000	1	XX
W	50	MXXX	1000	2.5	XXXXXX
Ti	10	M14674	1000	0.5	XX
Sr	10	M14775	1000	0.5	XX
Sn	50	M14774	1000	2.5	XX
S	300	M14773	10000	1.5	XX

Of this Base standard, pipet 10 mls into 500 ml volumetric to create a working std or 1 ml into 50 ml digestion tube for a digested working standard.

Standard Log #:	M14815	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/14/2021	Expiration Date:	05/14/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14816	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/14/2021	Expiration Date:	05/14/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14817	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/14/2021	Expiration Date:	04/15/2021
Prep:	Carefully mixed 3 parts HCl AB.704 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14818	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/15/2021	Expiration Date:	05/15/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14819	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/15/2021	Expiration Date:	05/15/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.704 and dissolved 100 g Stannous chloride M14714 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14812	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/14/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14813	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/14/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14814	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/14/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	ICP 6500
Standard Log #:	M14811	Standard:	ICAL
Analyst:	NAH	Concentrations:	0.25, 0.5, 1, 5, 10, 20, 50, 100, 1000, 10,000, 100k, 100,000, 500,000 and 1000k (ug/L)
Prep Date:	04/13/2021	Expiration Date:	09/2021
Prep:	Using 1 L volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (5% HNO₃, 5% HCl) 1000 ug/L Std. - 10 mL of Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M14788, 10 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M14685 and 1 mL of Si (1000 mg/L) M14477. 0.25 ug/L Std. - 0.25 mL of the 1000 ug/L Std. 0.5 ug/L Std. - 0.5 mL of the 1000 ug/L Std. 1 ug/L Std. - 1 mL of the 1000 ug/L Std. 5 ug/L Std. - 5 mL of the 1000 ug/L Std. 10 ug/L Std. - 10 mL of the 1000 ug/L Std. 20 ug/L Std. - 20 mL of the 1000 ug/L Std. 50 ug/L Std. - 50 mL of the 1000 ug/L Std. 100 ug/L Std. - 1 mL of Custom Assurance Std. (CAS) #23 and 1 mL of CAS #3 10,000 ug/L Std. - 100 mL CAS #23, 100 mL CAS #3 and 1 mL of K (10,000 mg/L) M14625. 100k ug/L Std. - 10 mL of Cu (10,000 mg/L) M14199, 10 mL of Mn (10,000 mg/L) M14200, 10 mL of Cr (10,000 mg/L) M14205, 10 mL Pb (10,000 mg/L) M14202, 10 mL of Zn (10,000 mg/L) M14197 and 10 mL of Na (10,000 mg/L) M14736. 100,000 ug/L Std. - 10 mL of Mg (10,000 mg/L) M14676, 10 mL of Fe (10,000 mg/L) M14676, 10 mL of Ca (10,000 mg/L) M14740 and 10 mL Al (10,000 mg/L) M14478. 500,000 ug/L Std. - 50 mL of Mg (10,000 mg/L), 50 mL of Fe (10,000 mg/L), 50 mL of Ca (10,000 mg/L) and 50 mL of Al (10,000 mg/L) 1000k ug/L Std. - 100 mL of Mg (10,000 mg/L), 100 mL of Fe (10,000 mg/L), 100 mL of Ca (10,000 mg/L) and 100 mL of Al (10,000 mg/L)		

		Instrument:	GFAA
Standard Log #:	M14808	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	04/12/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14809	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	04/12/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14797 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14810	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	04/12/2021	Expiration Date:	04/12/2022
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M14798 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M14803	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	04/06/2021	Expiration Date:	05/06/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14804	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	04/06/2021	Expiration Date:	05/06/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14805	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	04/06/2021	Expiration Date:	04/07/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14806	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	04/07/2021	Expiration Date:	05/07/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14807	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	04/07/2021	Expiration Date:	05/07/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14714 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14800	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/06/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14801	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	04/06/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14802	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/06/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14799	Vendor:	Acros Organics
Analyst:	MDS	Chemical:	Potassium Persulfate
Date Received:	04/06/2021	Lot #:	A0417285
Expiration Date (if any):		Catalog #:	424185000

Standard ID#:	M14797	Vendor:	Inorganic Ventures
Analyst:	MDS	Chemical:	GFAA ICAL/CCV
Date Received:	04/05/2021	Lot #:	S2-MEB703691
Expiration Date (if any):	04/12/2021	Catalog #:	CTI-SPK-1

Standard ID#:	M14798	Vendor:	Inorganic Ventures
Analyst:	MDS	Chemical:	GFAA ICV/SPIKE
Date Received:	04/05/2021	Lot #:	S2-MEB703690
Expiration Date (if any):	04/12/2021	Catalog #:	CTI-GFCAL-1

Standard Log #:	M14792	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/30/2021	Expiration Date:	04/30/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14793	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/30/2021	Expiration Date:	03/31/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14794	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/31/2021	Expiration Date:	05/01/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

Standard Log #:	M14795	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/31/2021	Expiration Date:	05/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14796	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/31/2021	Expiration Date:	05/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14714 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14789	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/30/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14790	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/30/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14791	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/30/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14787	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Phosphorus 10,000 mg/L
Date Received:	03/29/2021	Lot #:	AR18-111PY
Expiration Date (if any):	3/29/2022	Catalog #:	PLP9-3Y

Standard ID#:	M14788	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	03/29/2021	Lot #:	4-070MF
Expiration Date (if any):	03/29/2021	Catalog #:	XCTWI-5-500

Standard Log #:	M14786	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	03/25/2021	Expiration Date:	03/25/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14785. Dilute to 20 L and mix.		

Standard Log #:	M14785	Reagent:	10N NaOH
Analyst:	BMM		
Prep Date:	03/24/2021	Expiration Date:	08/24/2021
Prep:	Into a 1 L volumetric flask, added 400 g NaOH WC208 and brought up to volume.		

Standard Log #:	M14780	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/23/2021	Expiration Date:	04/23/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14781	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/23/2021	Expiration Date:	04/23/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14782	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/23/2021	Expiration Date:	03/24/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14783	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/24/2021	Expiration Date:	04/24/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14611 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14784	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/24/2021	Expiration Date:	04/24/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14714 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14777	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/23/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14778	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/23/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14779	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/23/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14772	Vendor:	CPI
Analyst:	NAH	Chemical:	Ba 1000 mg/mL
Date Received:	03/22/2021	Lot #:	994634-134
Expiration Date (if any):	09/2022	Catalog #:	S4400-100041

Standard ID#:	M14773	Vendor:	CPI
Analyst:	NAH	Chemical:	S 10000 mg/mL
Date Received:	03/22/2021	Lot #:	1050965-34
Expiration Date (if any):	09/2022	Catalog #:	4400-10M544

Standard ID#:	M14774	Vendor:	CPI
Analyst:	NAH	Chemical:	Sn 1000 mg/mL
Date Received:	03/22/2021	Lot #:	1066479-21
Expiration Date (if any):	09/2022	Catalog #:	S4400-1000613

Standard ID#:	M14775	Vendor:	CPI
Analyst:	NAH	Chemical:	Sr 1000 mg/mL
Date Received:	03/22/2021	Lot #:	1096004-1
Expiration Date (if any):	09/2022	Catalog #:	S4400-1000531

Standard ID#:	M14776	Vendor:	Spex Certi Prep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	03/23/2021	Lot #:	56-049CR
Expiration Date (if any):	03/30/2022	Catalog #:	XSPIKE-1-250

Standard Log #:	M14767	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/16/2021	Expiration Date:	04/16/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14768	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/16/2021	Expiration Date:	03/17/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14769	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/16/2021	Expiration Date:	04/16/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

Standard Log #:	M14770	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/17/2021	Expiration Date:	04/17/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14771	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/17/2021	Expiration Date:	04/17/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14714 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14764	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/16/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14765	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/16/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14766	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/16/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14763	Vendor:	ENVIROMENTAL EXPRESS
Analyst:	BMM	Chemical:	TCLP Acid Washed Filters
Date Received:	01/05/21	Lot #:	400182-0364-T
Expiration Date (if any):	N/A	Catalog #:	FG77150MM

Standard Log #:	M14758	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/09/2021	Expiration Date:	04/09/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14759	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/09/2021	Expiration Date:	03/10/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14760	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/10/2021	Expiration Date:	04/10/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

Standard Log #:	M14761	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/10/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14762	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/10/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14598 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14755	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/09/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14756	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/09/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14757	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/09/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H₂O. (0.2% HNO₃, 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14754	Vendor:	ThermoFisher Scientific
Analyst:	MDS	Chemical:	Nickel Nitrate Matrix Mod.
Date Received:	03/04/2021	Lot #:	225022
Expiration Date (if any):	03/31/2022	Catalog #:	39043

		Instrument:	GFAA
Standard Log #:	M14751	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	03/03/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14227 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14752	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	03/03/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14227 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14753	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	03/03/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M14228 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M14748	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	03/02/2021	Expiration Date:	04/02/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14749	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	03/02/2021	Expiration Date:	04/02/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14598 and brought up to volume.		

Standard Log #:	M14750	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	03/02/2021	Expiration Date:	03/02/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14545. Dilute to 20 L and mix.		

Standard Log #:	M14745	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	03/01/2021	Expiration Date:	04/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14746	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	03/01/2021	Expiration Date:	04/01/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14747	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	03/01/2021	Expiration Date:	03/02/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

		Instrument:	HydraII
Standard Log #:	M14742	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	03/01/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14743	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	03/01/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14744	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	03/01/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14740	Vendor:	CPI INTERNATIONAL
Analyst:	MDS	Chemical:	Calcium 10,000 µg/mL
Date Received:	02/25/2021	Lot #:	1072921-23
Expiration Date (if any):	08/20/2022	Catalog #:	4400-10M91

Standard ID#:	M14741	Vendor:	CPI INTERNATIONAL
Analyst:	MDS	Chemical:	Potassium 10,000 µg/mL
Date Received:	02/25/2021	Lot #:	1053109-37
Expiration Date (if any):	08/20/2022	Catalog #:	4400-10M411

Standard ID#:	M14735	Vendor:	CPI INTERNATIONAL
Analyst:	MDS	Chemical:	Silicon 1000 µg/mL
Date Received:	02/25/2021	Lot #:	1047570-64
Expiration Date (if any):	08/20/2021	Catalog #:	S4400-1000504F

Standard ID#:	M14736	Vendor:	CPI INTERNATIONAL
Analyst:	MDS	Chemical:	Sodium 10,000 µg/mL
Date Received:	02/25/2021	Lot #:	1055526-35
Expiration Date (if any):	08/20/2022	Catalog #:	4400-10M521

Standard ID#:	M14737	Vendor:	CPI INTERNATIONAL
Analyst:	MDS	Chemical:	Aluminum 10,000 µg/mL
Date Received:	02/25/2021	Lot #:	1077245-17
Expiration Date (if any):	08/20/2022	Catalog #:	4400-10M11

Standard ID#:	M14738	Vendor:	CPI INTERNATIONAL
Analyst:	MDS	Chemical:	Iron 10,000 µg/mL
Date Received:	02/25/2021	Lot #:	1034257-40
Expiration Date (if any):	08/20/2022	Catalog #:	4400-10M261

Standard ID#:	M14739	Vendor:	CPI INTERNATIONAL
Analyst:	MDS	Chemical:	Magnesium 10,000 µg/mL
Date Received:	02/25/2021	Lot #:	1075232-5
Expiration Date (if any):	08/20/2022	Catalog #:	4400-10M311

Standard Log #:	M14731	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	02/16/2021	Expiration Date:	03/16/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14732	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	02/16/2021	Expiration Date:	03/16/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

Standard Log #:	M14733	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	02/17/2021	Expiration Date:	03/17/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14734	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	02/17/2021	Expiration Date:	03/17/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14598 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14728	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	02/16/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14729	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	02/16/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14730	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	02/16/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	GFAA
Standard Log #:	M14725	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	02/15/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14227 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14726	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	02/15/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14227 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14727	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	02/15/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M14228 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

Standard Log #:	M14720	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	02/09/2021	Expiration Date:	03/09/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14721	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	02/09/2021	Expiration Date:	03/09/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

Standard Log #:	M14722	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	02/10/2021	Expiration Date:	03/10/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14723	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	02/10/2021	Expiration Date:	03/10/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14598 and brought up to volume.		

Standard ID#:	M14724	Vendor:	ThermoFisher Scientific
Analyst:	MDS	Chemical:	Potassium Permanganate
Date Received:	02/08/2021	Lot #:	201466
Expiration Date (if any):	Suggested Retest 04/2022	Catalog #:	P279

		Instrument:	HydraII
Standard Log #:	M14717	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	02/09/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14718	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	02/09/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14719	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	02/09/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14713	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	02/05/2021	Lot #:	L022-06
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M14714	Vendor:	LabChem
Analyst:	MDS	Chemical:	Stannous Chloride
Date Received:	02/05/2021	Lot #:	L022-06
Expiration Date (if any):		Catalog #:	LC251701

Standard ID#:	M14715 (1) & (2)	Vendor:	Environmental Express
Analyst:	NAH	Chemical:	Yttrium 10000 mg/L
Date Received:	02/3/2021	Lot #:	2023715-500
Expiration Date (if any):	08/31/2022	Catalog #:	10M67-1-500

Standard ID#:	M14716	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Phosphorus 10000 mg/L
Date Received:	02/08/2021	Lot #:	AR18-111PY
Expiration Date (if any):	02/28/2022	Catalog #:	PLP9--3Y

Standard Log #:	M14708	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	02/02/2021	Expiration Date:	03/02/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14709	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	02/02/2021	Expiration Date:	03/02/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14710	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	02/02/2021	Expiration Date:	02/03/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14711	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	02/03/2021	Expiration Date:	03/03/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14712	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	02/03/2021	Expiration Date:	03/03/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14598 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14705	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	02/02/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14706	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	02/02/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14707	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	02/02/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M14702	Reagent:	1:3 HNO ₃
Analyst:	MDS		
Prep Date:	01/27/2021	Expiration Date:	01/27/2022
Prep:	Carefully mixed 3 parts DI with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14703	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/28/2021	Expiration Date:	02/28/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14704	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/28/2021	Expiration Date:	02/28/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14598 and brought up to volume.		

Standard Log #:	M14699	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/27/2021	Expiration Date:	02/27/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14700	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/27/2021	Expiration Date:	02/27/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14701	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	01/27/2021	Expiration Date:	01/28/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

		Instrument:	HydraII
Standard Log #:	M14696	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/27/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14697	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/27/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14698	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/27/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

		Instrument:	GFAA
Standard Log #:	M14694	Standard:	LODS/LOQS Spiking Sol'n
Analyst:	MDS	Concentrations:	60 ug/L (Sb) 160 ug/L (As,Se) 40 ug/L (Pb) 50 ug/L (Tl)
Prep Date:	01/26/2021	Expiration Date:	09/2021
Prep:	Into a 200 mL volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. 1.2 mL of Sb (1000 mg/L) N/A 3.2 mL of As (1000 mg/L) M14621 3.2 mL of Se (1000 mg/L) M14624 0.08 mL of Pb (10,000 mg/L) M14202 1.0 mL of Tl (1000 mg/L) M14626 From this diluted standard solution, pipetted 10 mL into a 1 L volumetric flask and brought up to volume with Milli-Q H₂O to make the spiking solution. (1% HNO₃) *Pipette 1 mL spiking solution into 50 mL H₂O for LOD (1.2 ug/L Sb, 3.2 ug/L As, 3.2 ug/L Se, 0.8 ug/L Pb, 1 ug/L Tl) and 2 mL spiking solution for LOQ (2.4 ug/L Sb, 6.4 ug/L As, 6.4 ug/L Se, 1.6 ug/L Pb, 2 ug/L Tl)		

		Instrument:	GFAA
Standard Log #:	M14695	Standard:	LODW/LOQW Spiking Sol'n
Analyst:	MDS	Concentrations:	150 ug/L (Sb) 100 ug/L (As) 200 ug/L (Se) 45 ug/L (Pb) 40 ug/L (Tl)
Prep Date:	01/26/2021	Expiration Date:	09/2021
Prep:	Into a 100 mL volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. 1.5 mL of Sb (1000 mg/L) M14622 1.0 mL of As (1000 mg/L) M14621 2.0 mL of Se (1000 mg/L) M14624 0.045 mL of Pb (10,000 mg/L) M14202 0.4 mL of Tl (1000 mg/L) M14626 From this diluted standard solution, pipetted 10 mL into a 1 L volumetric flask and brought up to volume with Milli-Q H₂O to make the spiking solution. (1% HNO₃) *Pipette 1 mL spiking solution into 50 mL H₂O for LOD (3 ug/L Sb, 2 ug/L As, 4 ug/L Se, 0.9 ug/L Pb, 0.8 ug/L Tl) and 2 mL spiking solution for LOQ (6 ug/L Sb, 4 ug/L As, 8 ug/L Se, 1.8 ug/L Pb, 1.6 ug/L Tl)		

Standard Log #:	M14689	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/19/2021	Expiration Date:	02/19/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14690	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/19/2021	Expiration Date:	02/19/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14691	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	01/19/2021	Expiration Date:	01/20/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

Standard Log #:	M14692	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/20/2021	Expiration Date:	02/20/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14693	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/20/2021	Expiration Date:	02/20/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14598 and brought up to volume.		

		Instrument:	HydraII
Standard Log #:	M14686	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/19/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14687	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/19/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14688	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/19/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard ID#:	M14680	Vendor:	CPI
Analyst:	NAH	Chemical:	Si 1000 mg/L
Date Received:	01/15/2021	Lot #:	1047870-29
Expiration Date (if any):	07/2022	Catalog #:	S4400-1000504F

Standard ID#:	M14681	Vendor:	CPI
Analyst:	NAH	Chemical:	Li 1000 mg/L
Date Received:	01/15/2021	Lot #:	104768-6
Expiration Date (if any):	07/2022	Catalog #:	S4400-1000291

Standard ID#:	M14682	Vendor:	CPI
Analyst:	NAH	Chemical:	Ce 1000 mg/L
Date Received:	01/15/2021	Lot #:	S4400-1000101
Expiration Date (if any):	07/2022	Catalog #:	S4400-1000101

Standard ID#:	M14683	Vendor:	CPI
Analyst:	NAH	Chemical:	Sr 1000 mg/L
Date Received:	01/15/2021	Lot #:	1096004-1
Expiration Date (if any):	07/2022	Catalog #:	S4400-1000531

Standard ID#:	M14684	Vendor:	CPI
Analyst:	NAH	Chemical:	Mo 1000 mg/L
Date Received:	01/15/2021	Lot #:	1075718-2
Expiration Date (if any):	07/2022	Catalog #:	S4400-1000343

Standard ID#:	M14685	Vendor:	SpexCertiPrep
Analyst:	NAH	Chemical:	Custom Assurance standard
Date Received:	01/18/2021	Lot #:	XCTWI-4-500
Expiration Date (if any):	01/30/2022	Catalog #:	14-242AB

Standard ID#:	M14674	Vendor:	CPI
Analyst:	NAH	Chemical:	Ti 1000 mg/L
Date Received:	01/15/2021	Lot #:	1038255-27
Expiration Date (if any):	07/2022	Catalog #:	S4400-1000623

Standard ID#:	M14675	Vendor:	CPI
Analyst:	NAH	Chemical:	B 1000 mg/L
Date Received:	01/15/2021	Lot #:	1024903-65
Expiration Date (if any):	07/2022	Catalog #:	S4400-100074

Standard ID#:	M14676	Vendor:	CPI
Analyst:	NAH	Chemical:	M 10000 mg/L
Date Received:	01/15/2021	Lot #:	1013353
Expiration Date (if any):	07/2022	Catalog #:	4400-10M311

Standard ID#:	M14677	Vendor:	CPI
Analyst:	NAH	Chemical:	S 10000 mg/L
Date Received:	01/15/2021	Lot #:	1050965-25
Expiration Date (if any):	07/2022	Catalog #:	4400-10M544

Standard ID#:	M14678	Vendor:	CPI
Analyst:	NAH	Chemical:	P 10000 mg/L
Date Received:	01/15/2021	Lot #:	1079898-6
Expiration Date (if any):	07/2022	Catalog #:	S4400-10M391

Standard ID#:	M14679	Vendor:	CPI
Analyst:	NAH	Chemical:	Fe 10000 mg/L
Date Received:	01/15/2021	Lot #:	1034527-40
Expiration Date (if any):	07/2022	Catalog #:	4400-10M261

Standard Log #:	M14673	Instrument:	GFAA																																			
Analyst:	MDS	Standard:	MDL Spiking Solution																																			
Prep Date:	01/13/2021	Expiration Date:	09/2021																																			
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H₂O. (2% HNO₃) <table border="1"> <thead> <tr> <th>Analyte</th> <th>Final MDL Conc. (ug/L)</th> <th>Std. ID #</th> <th>Std. Conc. (mg/L)</th> <th>Volume (mL) pipetted</th> </tr> </thead> <tbody> <tr> <td>Ag</td> <td>0.2</td> <td>M14623</td> <td>1000</td> <td>0.01</td> </tr> <tr> <td>As</td> <td>2</td> <td>M14621</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Pb</td> <td>2</td> <td>M14202</td> <td>10000</td> <td>0.01</td> </tr> <tr> <td>Sb</td> <td>2</td> <td>M14622</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Se</td> <td>2</td> <td>M14624</td> <td>1000</td> <td>0.1</td> </tr> <tr> <td>Tl</td> <td>2</td> <td>M14626</td> <td>1000</td> <td>0.1</td> </tr> </tbody> </table> Of this base standard, pipetted 1 mL into a 50 mL digestion tube for a digested working standard.			Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted	Ag	0.2	M14623	1000	0.01	As	2	M14621	1000	0.1	Pb	2	M14202	10000	0.01	Sb	2	M14622	1000	0.1	Se	2	M14624	1000	0.1	Tl	2	M14626	1000	0.1
Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted																																		
Ag	0.2	M14623	1000	0.01																																		
As	2	M14621	1000	0.1																																		
Pb	2	M14202	10000	0.01																																		
Sb	2	M14622	1000	0.1																																		
Se	2	M14624	1000	0.1																																		
Tl	2	M14626	1000	0.1																																		

Standard Log #:	M14670	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	MDS		
Prep Date:	01/12/2021	Expiration Date:	02/12/2021
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H ₂ O, dissolved 60 g NaCl M14544 and 60 g hydroxylamine sulfate M14507 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14671	Reagent:	Stannous Chloride Solution
Analyst:	MDS		
Prep Date:	01/12/2021	Expiration Date:	02/12/2021
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H ₂ O, added 70 mL hydrochloric acid AB.698 and dissolved 100 g Stannous chloride M14597 and brought up to volume.		

Standard Log #:	M14672	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	BMM	pH:	4.93 ± 0.05
Prep Date:	01/12/2021	Expiration Date:	01/12/2022
Prep:	Into a 20 L carboy filled with 19 L of DI H ₂ O, add 114 mL Glacial acetic acid AB.703 and 128.6 mL 10N NaOH M14545. Dilute to 20 L and mix.		

Standard Log #:	M14667	Reagent:	Potassium Permanganate Solution
Analyst:	MDS		
Prep Date:	01/11/2021	Expiration Date:	02/11/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium permanganate M13080 and brought up to volume.		

Standard Log #:	M14668	Reagent:	Potassium Persulfate Solution
Analyst:	MDS		
Prep Date:	01/11/2021	Expiration Date:	02/11/2021
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H ₂ O, dissolved 50 g potassium persulfate M14600 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M14669	Reagent:	Hg Aqua Regia
Analyst:	MDS		
Prep Date:	01/11/2021	Expiration Date:	01/12/2021
Prep:	Carefully mixed 3 parts HCl AB.698 with 1 part HNO ₃ AB.700 in a hood.		

		Instrument:	HydraII
Standard Log #:	M14664	Standard:	Hg ICAL
Analyst:	MDS	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/11/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 0.5 ug/L Std. - 0.5 mL Hg (100 ug/L) 1 ug/L Std. - 1 mL Hg (100 ug/L) 2 ug/L Std. - 2 mL Hg (100 ug/L) 4 ug/L Std. - 4 mL Hg (100 ug/L) 5 ug/L Std. - 5 mL Hg (100 ug/L) 10 ug/L Std. - 10 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14665	Standard:	Hg CCV
Analyst:	MDS	Concentration:	3.0 ug/L Hg
Prep Date:	01/11/2021	Expiration Date:	05/02/2022
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL Hg (1000 mg/L) M14571 100 ug/L Std. - 1 mL Hg (10,000 ug/L) 3.0 ug/L Std. (CCV) - 3.0 mL Hg (100 ug/L)		

		Instrument:	HydraII
Standard Log #:	M14666	Standard:	Alt. Source Working Std.
Analyst:	MDS	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/11/2021	Expiration Date:	11/30/2021
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H ₂ O. (0.2% HNO ₃ , 0.2% HCl) 10,000 ug/L Std. - 1 mL of Hg (1000 mg/L) M14572 100 ug/L Std. - 1 mL of Hg (10,000 ug/L working Std.)		

Standard Log #:	M14663	Standard:	GFAA Instrument Check
Analyst:	MDS	Final Concentration:	8 µg/L As 10 µg/L Pb 8 µg/L Sb 16 µg/L Se 10 µg/L Tl 0.6 µg/L Ag
Prep Date:	01/06/2021	Expiration Date:	09/2021

Into six, 100 mL volumetric flasks, add the following and bring up to volume with milli-Q H₂O.

Element	Volume Pipetted (mL)	Standard Conc. (µg/mL)	Standard ID	New Conc. (µg/L)
As	1	1000	M14621	10,000
Pb	0.1	10,000	M14202	10,000
Tl	1	1000	M14626	10,000
Se	1	1000	M14624	10,000
Sb	1	1000	M14622	10,000
Ag	0.1	1000	M14623	1000

Into a 1 L volumetric flask, add the following and bring up to volume with Milli-Q H₂O. (1% HNO₃)

Element	Volume Pipetted (mL)	Standard Conc. (µg/L)	New Conc. (µg/L)
As	0.8	10,000	8
Pb	1.0	10,000	10
Tl	1.0	10,000	10
Se	1.6	10,000	16
Sb	0.8	10,000	8
Ag	0.6	1000	0.6

		Instrument:	GFAA
Standard Log #:	M14660	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	01/04/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, pipetted 0.25 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14227 and brought to volume with Milli-Q H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14661	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	01/04/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, pipetted 0.1 mL of GFAA Custom Stock Std. ((100 ug/mL As, Pb, Sb, Se, Tl) (15 ug/mL Ag)) M14227 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

		Instrument:	GFAA
Standard Log #:	M14662	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	01/04/2021	Expiration Date:	04/10/2021
Prep:	Into a 1 L volumetric flask, pipetted 1.0 mL of GFAA Custom Stock Std. ((10 ug/mL As, Pb, Sb, Se, Tl) (1.0 ug/mL Ag)) M14228 and brought to volume with Milli-Q DI H ₂ O. (1% HNO ₃)		

MRL BASE STD	M14659	Analyst	NAH
		Prep Date	01/04/2021

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	(ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L	Expiration Date
Ag	20	M14623	1000	1	02/22
Al	400	M14478	10000	2	02/22
Ba	10	M14568	1000	0.5	05/22
Be	4	M14203	1000	0.2	09/21
Cd	5	M14201	1000	0.25	09/21
Co	10	M14204	1000	0.5	09/21
Cr	10	M14205	10000	0.05	09/21
Cu	10	M14199	10000	0.05	09/21
Mg	500	M14472	10000	2.5	02/22
Mn	10	M14200	10000	0.05	09/21
Mo	10	M14569	1000	0.5	05/22
Ni	10	M14196	1000	0.5	09/21
Pb	10	M14202	10000	0.05	09/21
Sb	20	M14622	1000	1	02/22
V	10	M14198	1000	0.5	09/21
Zn	10	M14197	10000	0.05	09/21
K	1000	M14436	10000	5	02/22
Na	1000	M14559	10000	5	02/22
As	20	M14621	1000	1	02/22
Ca	500	M14476	10000	2.5	02/22
Fe	300	M14470	10000	1.5	02/22
Se	20	M14624	1000	1	02/22
Tl	20	M14626	1000	1	02/22
Si	100	M14435	1000	5	02/22
B	20	M14131	1000	1	07/21
Li	20	M14127	1000	1	07/21
W	50	xxxxxxx	1000	2.5	xxxxxx
Ti	10	M14009	1000	0.5	04/21
Sr	10	M14007	1000	0.5	04/21
Sn	50	M14008	1000	2.5	04/21
S	300	M14570	10000	1.5	05/22

Of this Base standard, pipet 10 mls into 500 ml volumetric to create a working std or 1 ml into 50 ml digestion tube for a digested working standard.

		Instrument:	ICP 6500
Standard Log #:	M14658	Standard:	ICSAB
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 500 ug/L Ag, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Ti, V, Zn, K, Na, S, 50000 ug/L Si 1000 ug/L.
Prep Date:	1/04/2021	Expiration Date:	03/30/2021
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M14359, 15 mL Fe (10,000 mg/L) M14470, 2.5 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M14195, 2.5 mL Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn), M14628, 2.5 mLs Na 10,000 ug/mL M14473, 2.5 mLs k 10,000 ug/mL M14436 2.5 mLs S 10,000 ug/mL M14570, 0.5 mls Si 1000 ug/mL M14477 and brought up to volume with milli-Q .		

		Instrument:	ICP 6500
Standard Log #:	M14656	Standard:	ICV Std.
Analyst:	NAH	Concentrations:	12,000 mg/L Al 10,000 mg/L Ca, Mg 5000 mg/L Fe 2000 mg/L As, Ba, Se, Tl 500 mg/L B, Co, Li, Mn, Mo, Ni, Pb, Sb, Sn, Sr, Ti, V, Zn 250 mg/L Cu 200 mg/L Cr 50 mg/L Ag, Be, Cd
Prep Date:	01/04/2021	Expiration Date:	06/30/2021
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with milli-Q H₂O. 10 mL Custom Assurance Standard #18 ((200 mg/L Al, As, Ba, Se, Tl) (100 mg/L Fe) (50 mg/L Co, Mn, Ni, Pb, Sb, V, Zn) (25 mg/L Cu) (20 mg/L Cr) (5 mg/L Ag, Be, Cd)) M14639, 2 mL Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M14359, 0.5 mL Mo (1000 mg/L) M14569, 0.5 mL B (1000 mg/L) M14131, 0.5 mL Sr (1000 mg/L) M14007, 0.5 mL Li (1000 mg/L) M14127, 0.5 mL Sn (1000 mg/L) M14008, 0.5 mL Ti (1000 mg/L) M14009, 0.5 mL W (1000 mg/L) xxxxxx, 0.5 mL Si (1000 mg/L) M14567, 0.5 mL S (10000 mg/L) M14372, 0.5 mL K (10000 mg/L) M14436, and 0.5 mL Na (10000 mg/L) M14559		

		Instrument:	ICP 6500
Standard Log #:	M14657	Standard:	ICSA
Analyst:	NAH	Concentrations:	500,000 ug/L Al, Ca, Fe, Mg 10,000 V, Ce
Prep Date:	01/04/2021	Expiration Date:	06/30/2021
Prep:	Into a 500 mL volumetric flask, pipetted 50 mL Interference A std M14359 and 15 mL 10000 mg/L Fe M14470 5.0 mL 1000 mg/L V M14198 5.0 mL 1000 mg/L Ce M1359 and brought up to volume with milli-Q H₂O.		

		Instrument:	ICP 6500
Standard Log #:	M14655	Standard:	ICAL
Analyst:	NAH	Concentrations:	0.25, 0.5, 1, 5, 10, 20, 50, 100, 1000, 10,000, 100k, 100,000, 500,000 and 1000k (ug/L)
Prep Date:	01/04/2021	Expiration Date:	03/30/2021
Prep:	Using 1 L volumetric flasks, pipetted the following and brought up to volume using milli-Q H₂O. (5% HNO₃, 5% HCl) 1000 ug/L Std. - 10 mL of Custom Assurance Std. #23 (100 mg/L Al, As, B, Ba, Ca, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, Zn) M14628, 10 mL of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M14195 and 1 mL of Si (1000 mg/L) M14435 and 1 mL M13859 Ce 0.25 ug/L Std. - 0.25 mL of the 1000 ug/L Std. 0.5 ug/L Std. - 0.5 mL of the 1000 ug/L Std. 1 ug/L Std. - 1 mL of the 1000 ug/L Std. 5 ug/L Std. - 5 mL of the 1000 ug/L Std. 10 ug/L Std. - 10 mL of the 1000 ug/L Std. 20 ug/L Std. - 20 mL of the 1000 ug/L Std. 50 ug/L Std. - 50 mL of the 1000 ug/L Std. 100 ug/L Std. - 1 mL of Custom Assurance Std. (CAS) #23 and 1 mL of CAS #3 10,000 ug/L Std. - 100 mL CAS #23, 100 mL CAS #3 and 1 mL of K (10,000 mg/L) M14625. 100k ug/L Std. - 10 mL of Cu (10,000 mg/L) M14199, 10 mL of Mn (10,000 mg/L) M14200, 10 mL of Cr (10,000 mg/L) M14205, 10 mL Pb (10,000 mg/L) M14202, 10 mL of Zn (10,000 mg/L) M14197 and 10 mL of Na (10,000 mg/L) M14559. 100,000 ug/L Std. - 10 mL of Mg (10,000 mg/L) M14472, 10 mL of Fe (10,000 mg/L) M14470, 10 mL of Ca (10,000 mg/L) M14476 and 10 mL Al (10,000 mg/L) M14478. 500,000 ug/L Std. - 50 mL of Mg (10,000 mg/L), 50 mL of Fe (10,000 mg/L), 50 mL of Ca (10,000 mg/L) and 50 mL of Al (10,000 mg/L) 1000k ug/L Std. - 100 mL of Mg (10,000 mg/L), 100 mL of Fe (10,000 mg/L), 100 mL of Ca (10,000 mg/L) and 100 mL of Al (10,000 mg/L)		

**INORGANIC
CLP FORMS
DOCUMENTS**

INORGANIC ANALYSIS DATA SHEET

Sample Description

54IDW

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178887</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1346384</u>	
Analytical Method:	<u>EPA 410.4</u>	Date Received:	<u>07/11/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>273727</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u>130553</u>	Analysis Date/Time:	<u>07/19/2023</u>	<u>11:20</u>
		Prep. Date/Time:	<u>07/18/2023</u>	<u>08:45</u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
COD	COD	50	U	18	50	75	75

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1

INORGANIC ANALYSIS DATA SHEET

Sample Description

54IDW

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346384	
Analytical Method:	EPA 9040C	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273548	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/11/2023	14:15
		Prep. Date/Time:		

Concentration Units: S.U.

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
PH	pH	7.62		0.1	0.1	0.1	0.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW1

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178887</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1346383</u>	
Analytical Method:	<u>EPA 9060A</u>	Date Received:	<u>07/11/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>273604</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>07/13/2023</u>	<u>11:15</u>
		Prep. Date/Time:	<u></u>	

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	66		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW1

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346383	
Analytical Method:	EPA 9060A	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273651	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/14/2023	16:51
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW1

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178887</u>
% Solids:	<u></u>	Lab Sample ID:	<u>1346383</u>
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>07/11/2023</u>
Dilution Factor:	<u>1.0000</u>	TCLP (1311) /SPLP(1312)	<u></u>
Analytical Run #:	<u>273539</u>	Extraction Date/time:	<u></u>
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>07/11/2023 20:42</u>
		Prep. Date/Time:	<u></u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	2.3	J	1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.20	U	0.12	0.20	0.40	0.40
14808-79-8	Sulfate	29		0.80	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW10

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346381	
Analytical Method:	EPA 9056A	Date Received:	07/11/2023	
Dilution Factor:	5	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273539	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/15/2023	03:35
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
14808-79-8	Sulfate	170		4.0	7.5	15	15

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW10

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346381	
Analytical Method:	EPA 9060A	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273604	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/13/2023	10:49
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	84		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW10

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178887</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1346381</u>	
Analytical Method:	<u>EPA 9060A</u>	Date Received:	<u>07/11/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>273651</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>07/14/2023</u>	<u>15:13</u>
		Prep. Date/Time:	<u></u>	

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW10

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346381	
Analytical Method:	EPA 9056A	Date Received:	07/11/2023	
Dilution Factor:	1.0000	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273539	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/11/2023	20:00
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	3.9		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.20	U	0.12	0.20	0.40	0.40

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW12

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346382	
Analytical Method:	EPA 9060A	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273604	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/13/2023	11:02
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	86		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW12

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346382	
Analytical Method:	EPA 9060A	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273651	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/14/2023	15:25
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW12

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346382	
Analytical Method:	EPA 9056A	Date Received:	07/11/2023	
Dilution Factor:	1.0000	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273539	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/11/2023	20:21
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	6.2		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.71		0.12	0.20	0.40	0.40
14808-79-8	Sulfate	25	M	0.80	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW13

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346379	
Analytical Method:	EPA 9060A	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273604	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/13/2023	10:23
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	85		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW13

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178887</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1346379</u>	
Analytical Method:	<u>EPA 9060A</u>	Date Received:	<u>07/11/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>273651</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>07/14/2023</u>	<u>14:50</u>
		Prep. Date/Time:	<u></u>	

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW13

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346379	
Analytical Method:	EPA 9056A	Date Received:	07/11/2023	
Dilution Factor:	1.0000	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273539	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/11/2023	19:19
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	6.3		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.56		0.12	0.20	0.40	0.40
14808-79-8	Sulfate	31		0.80	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54TW13

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346380	
Analytical Method:	EPA 9060A	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273604	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/13/2023	10:36
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	85		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54TW13

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346380	
Analytical Method:	EPA 9060A	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273651	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/14/2023	15:02
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

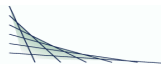
54TW13

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178887</u>
% Solids:	<u></u>	Lab Sample ID:	<u>1346380</u>
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>07/11/2023</u>
Dilution Factor:	<u>1.0000</u>	TCLP (1311) /SPLP(1312)	<u></u>
Analytical Run #:	<u>273539</u>	Extraction Date/time:	<u></u>
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>07/11/2023 19:40</u>
		Prep. Date/Time:	<u></u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	6.2		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.57		0.12	0.20	0.40	0.40
14808-79-8	Sulfate	30		0.80	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



2A-1

INITIAL CALIBRATION VERIFICATION

Sample No.

ICV

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273539

Lab Sample ID: 1347677

ICAL Calibration #: _____

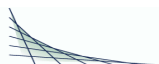
Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Chloride	6/7/23	19:13	15.00	13.80	92	90	110
Nitrate Nitrogen	6/7/23	19:13	3.50	3.266	93	90	110
Sulfate	6/7/23	19:13	25.00	23.03	92	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-1

INITIAL CALIBRATION VERIFICATION

Sample No.

ICV

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273727

Lab Sample ID: 1349920

ICAL Calibration #:

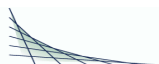
Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
COD	7/19/23	11:20	400.0	417.6	104	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-1

INITIAL CALIBRATION VERIFICATION

Sample No.

ICV

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273651

Lab Sample ID: 1349153

ICAL Calibration #:

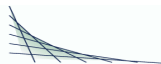
Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Total Organic Carbon	12/29/22	13:28	50.0	50.40	101	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273539
 ICAL Calibration #:

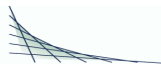
Lab Sample ID: 1346951
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Chloride	7/11/23	12:21	15.00	14.86	99	90	110
Nitrate Nitrogen	7/11/23	12:21	3.500	3.618	103	90	110
Sulfate	7/11/23	12:21	25.00	24.66	99	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273539
 ICAL Calibration #: _____

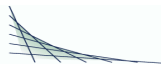
Lab Sample ID: 1346954
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Chloride	7/11/23	16:53	15.00	14.81	99	90	110
Nitrate Nitrogen	7/11/23	16:53	3.500	3.600	103	90	110
Sulfate	7/11/23	16:53	25.00	24.48	98	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273539
 ICAL Calibration #: _____

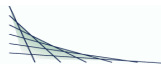
Lab Sample ID: 1346956
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Chloride	7/11/23	21:03	15.00	14.90	99	90	110
Nitrate Nitrogen	7/11/23	21:03	3.500	3.619	103	90	110
Sulfate	7/11/23	21:03	25.00	24.64	99	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273539

Lab Sample ID: 1346961

ICAL Calibration #:

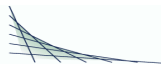
Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Chloride	7/12/23	00:11	15.00	14.89	99	90	110
Nitrate Nitrogen	7/12/23	00:11	3.500	3.620	103	90	110
Sulfate	7/12/23	00:11	25.00	24.64	99	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273539
ICAL Calibration #:

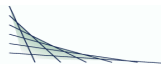
Lab Sample ID: 1349262
Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Sulfate	7/15/23	02:04	25.00	24.63	99	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273539
 ICAL Calibration #:

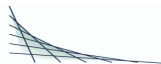
Lab Sample ID: 1349264
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Sulfate	7/15/23	03:58	25.00	24.59	98	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273727

Lab Sample ID: 1349922

ICAL Calibration #:

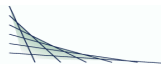
Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
COD	7/19/23	11:20	400.0	400.2	100	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273727

Lab Sample ID: 1349925

ICAL Calibration #:

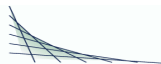
Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
COD	7/19/23	11:20	400.0	402.7	101	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273604
 ICAL Calibration #: ICAL0637

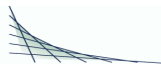
Lab Sample ID: 1348107
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Total Inorganic Carbon	7/13/23	09:43	50.0	53.33	107	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273604
 ICAL Calibration #: ICAL0637

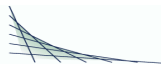
Lab Sample ID: 1348110
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Total Inorganic Carbon	7/13/23	11:28	50.0	53.51	107	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273651
 ICAL Calibration #: ICAL0637

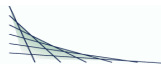
Lab Sample ID: 1348115
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Total Organic Carbon	7/14/23	13:51	50.0	52.95	106	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273651
 ICAL Calibration #: ICAL0637

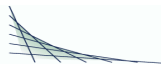
Lab Sample ID: 1348120
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Total Organic Carbon	7/14/23	16:12	50.0	52.77	106	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273651
 ICAL Calibration #: ICAL0637

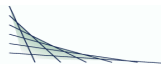
Lab Sample ID: 1348126
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Total Organic Carbon	7/14/23	18:46	50.0	52.24	104	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115



2A-2

CONTINUING CALIBRATION VERIFICATION

Sample No.

CCV

Lab Name: CT Laboratories
 SDG No.: 178887

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Analytical Run #: 273651
 ICAL Calibration #: ICAL0637

Lab Sample ID: 1348128
 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Total Organic Carbon	7/14/23	19:54	50.0	52.84	106	90	110

Default Limits (not applicable to MDL Check) **No percent recovery is calculated for MDL checks. The check is simply whether the analyte is detected.

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

INITIAL CALIBRATION BLANKS

Sample No.

ICB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
SDG No.: 178887
Analytical Run #: 273651 Lab Sample ID: 1349154
Analytical Prep Batch #: Preparation Date/Time:
ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Total Organic Carbon	12/29/2022 13:42	0	U	0.40	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

INITIAL CALIBRATION BLANKS

Sample No.

ICB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
SDG No.: 178887
Analytical Run #: 273727 Lab Sample ID: 1349921
Analytical Prep Batch #: Preparation Date/Time:
ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
COD	07/19/2023 11:20	0			37

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

INITIAL CALIBRATION BLANKS

Sample No.

ICB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273539 Lab Sample ID: 1347678

Analytical Prep Batch #: Preparation Date/Time:

ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Chloride	06/07/2023 19:58	0.3854	U	1.0	1.5
Nitrate Nitrogen	06/07/2023 19:58	0	U	0.12	0.20
Sulfate	06/07/2023 19:58	0	U	0.8	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

Sample No.

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273539 Lab Sample ID: 1346955

Analytical Prep Batch #: 0 Preparation Date/Time: _____

ICAL Calibration #: _____ Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Chloride	07/11/2023	17:13	0.3792	U	1.0	1.5
Nitrate Nitrogen	07/11/2023	17:13	0	U	0.12	0.20
Sulfate	07/11/2023	17:13	0	U	0.8	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

Sample No.

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273539 Lab Sample ID: 1346957

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Chloride	07/11/2023	21:24	0.3882	U	1.0	1.5
Nitrate Nitrogen	07/11/2023	21:24	0	U	0.12	0.20
Sulfate	07/11/2023	21:24	0	U	0.8	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

Sample No.

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273539 Lab Sample ID: 1346962

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Chloride	07/12/2023 00:32	0.3801	U	1.0	1.5
Nitrate Nitrogen	07/12/2023 00:32	0	U	0.12	0.20
Sulfate	07/12/2023 00:32	0	U	0.8	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
SDG No.: 178887
Analytical Run #: 273604 Lab Sample ID: 1348111
Analytical Prep Batch #: 0 Preparation Date/Time:
ICAL Calibration #: ICAL0637 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Total Inorganic Carbon	07/13/2023 11:42	0.48	U	0.5	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273651 Lab Sample ID: 1348116

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: ICAL0637 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Total Organic Carbon	07/14/2023 14:05	0	U	0.40	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

Sample No.

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
SDG No.: 178887
Analytical Run #: 273651 Lab Sample ID: 1348127
Analytical Prep Batch #: 0 Preparation Date/Time:
ICAL Calibration #: ICAL0637 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Total Organic Carbon	07/14/2023 19:00	0	U	0.40	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
SDG No.: 178887
Analytical Run #: 273651 Lab Sample ID: 1348129
Analytical Prep Batch #: 0 Preparation Date/Time:
ICAL Calibration #: ICAL0637 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Total Organic Carbon	07/14/2023 20:07	0	U	0.40	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273727 Lab Sample ID: 1349923

Analytical Prep Batch #: Preparation Date/Time:

ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
COD	07/19/2023 11:20	0			37

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
SDG No.: 178887
Analytical Run #: 273727 Lab Sample ID: 1349926
Analytical Prep Batch #: Preparation Date/Time:
ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
COD	07/19/2023 11:20	0			37

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

Sample No.

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273539 Lab Sample ID: 1349263

Analytical Prep Batch #: Preparation Date/Time:

ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Sulfate	07/15/2023 02:27	0	U	0.8	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

CONTINUING CALIBRATION BLANKS

Sample No.

CCB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
SDG No.: 178887
Analytical Run #: 273539 Lab Sample ID: 1349265
Analytical Prep Batch #: Preparation Date/Time:
ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Sulfate	07/15/2023 04:21	0	U	0.8	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273539 Lab Sample ID: 1346953

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Measured Concentration	C***	Detection Limit**	Control Limit
Chloride	07/11/2023	13:03	0.3795	U	1.0	1.5
Nitrate Nitrogen	07/11/2023	13:03	0	U	0.12	0.20
Sulfate	07/11/2023	13:03	0	U	0.8	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273604 Lab Sample ID: 1348109

Analytical Prep Batch #: 0 Preparation Date/Time:

ICAL Calibration #: ICAL0637 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Total Inorganic Carbon	07/13/2023 10:10	0	U	0.5	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273651 Lab Sample ID: 1348122

Analytical Prep Batch #: 0 Preparation Date/Time: _____

ICAL Calibration #: ICAL0637 Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Total Organic Carbon	07/14/2023 16:39	0	U	0.40	1.5

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

SDG No.: 178887

Analytical Run #: 273727 Lab Sample ID: 1348839

Analytical Prep Batch #: 130553 Preparation Date/Time: 07/18/2023 08:45

ICAL Calibration #: Concentration Units: mg/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Total COD	07/19/2023 11:20	0	U	18	37

** Detection Limit only reported if value was less than the control limit.

***A "U" indicates the analyte was not detected in the method blank at the detection limit or the Control Limit whichever was less.

A "FAIL" qualifier only indicates the analyte concentration was above the Detection Limit.

5A

Sample Description

SPIKE SAMPLE RECOVERY

54MW12

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solids for Sample:

Concentration Units: mg/L

Sample No.: 1346959

Parent Sample No.: 1346382

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 273539

ICAL Calibration #:

Analysis Type Initial Analysis Analysis Date: 07/11/2023 Analysis Time: 23:29

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Chloride	87-111	13.8		6.2		8.00	95		
Nitrate Nitrogen	88-111	2.69		0.71		2.00	99		
Sulfate	87-112	31.5		25		8.00	81		FAIL

BDL = analyte concentration was below detection limit

5A

Sample Description

SPIKE SAMPLE RECOVERY

54MW12

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solids for Sample:

Concentration Units: mg/L

Sample No.: 1348118

Parent Sample No.: 1346382

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 273651

ICAL Calibration #: ICAL0637

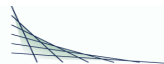
Analysis Type Initial Analysis

Analysis Date: ----- 07/14/2023

Analysis Time: ----- 15:48

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Total Organic Carbon	85-111	53.4		BDL	U	50.0	107		TOC

BDL = analyte concentration was below detection limit



5A

Sample Description

SPIKE SAMPLE RECOVERY

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solids for Sample:

Concentration Units: mg/L

Sample No.: 1348841

Parent Sample No.: 1346384

Analytical Prep Batch #: 130553

Analytical Preparation Date/Time: 07/18/2023 08:45

Analytical Run #: 273727

ICAL Calibration #:

Analysis Type	Initial Analysis	Analysis Date: -----	07/19/2023	Analysis Time: -----	11:20
---------------	------------------	----------------------	------------	----------------------	-------

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
COD	90-110	157		BDL	U	148	106		SP

BDL = analyte concentration was below detection limit

5C

Sample Description

SPIKE DUPLICATE SAMPLE RECOVERY

54MW12

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solids for Sample:

Concentration Units: mg/L

Sample No.: 1346960

Parent Sample No.: 1346959

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 273539

ICAL Calibration #:

Analysis Type Initial Analysis

Analysis Date: ----- 07/11/2023

Analysis Time: ----- 23:50

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Chloride	87-111	13.8		6.2		8.00	95		
Nitrate Nitrogen	88-111	2.73		0.71		2.00	101		
Sulfate	87-112	31.7		25		8.00	84		FAIL

BDL = analyte concentration was below detection limit

5C

Sample Description

SPIKE DUPLICATE SAMPLE RECOVERY

54MW12

Lab Name: CT Laboratories
Matrix: LIQUID
% Solids for Sample:
Sample No.: 1348119
Analytical Prep Batch #: 0
Analytical Run #: 273651

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
SDG No.: 178887
Concentration Units: mg/L
Parent Sample No.: 1348118
Analytical Preparation Date/Time:
ICAL Calibration #: ICAL0637

Analysis Type	Initial Analysis	Analysis Date: -----	07/14/2023	Analysis Time: -----	16:00
---------------	------------------	----------------------	------------	----------------------	-------

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Total Organic Carbon	85-111	52.6		BDL	U	50.0	105		TOC

BDL = analyte concentration was below detection limit

5C

Sample Description

SPIKE DUPLICATE SAMPLE RECOVERY

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solids for Sample:

Concentration Units: mg/L

Sample No.: 1348842

Parent Sample No.: 1348841

Analytical Prep Batch #: 130553

Analytical Preparation Date/Time: 07/18/2023 08:45

Analytical Run #: 273727

ICAL Calibration #:

Analysis Type Initial Analysis

Analysis Date: ----- 07/19/2023

Analysis Time: ----- 11:20

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
COD	90-110	159		BDL	U	148	107		SP

BDL = analyte concentration was below detection limit

6

Sample Description

DUPLICATES

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solid for Sample:

Concentration Units: S.U.

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 273548

ICAL Calibration #:

Sample #: 1346755

Parent Sample #: 1346384

Analysis Type Initial Analysis

Analyte	Analysis Date/Time	RPD Limit	Original Parent Conc. (S)	C	Duplicate Conc. (D)	C	RPD	Q	M
pH	07/11/2023 14:15	1	7.62		7.65		0		ECTRC

6

Sample Description

DUPLICATES

54MW12

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solid for Sample:

Concentration Units: mg/L

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 273539

ICAL Calibration #:

Sample #: 1346958

Parent Sample #: 1346382

Analysis Type Initial Analysis

Analyte	Analysis Date/Time	RPD Limit	Original Parent Conc. (S)	C	Duplicate Conc. (D)	C	RPD	Q	M
Chloride	07/11/2023 23:08	10	6.2		6.16		1		
Nitrate Nitrogen	07/11/2023 23:08	10	0.71		0.710		0		
Sulfate	07/11/2023 23:08	10	25		24.8		1		

6

Sample Description

DUPLICATES

54MW12

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solid for Sample: _____

Concentration Units: mg/L

Analytical Prep Batch #: 0

Analytical Preparation Date/Time: _____

Analytical Run #: 273651

ICAL Calibration #: ICAL0637

Sample #: 1348117

Parent Sample #: 1346382

Analysis Type *Initial Analysis*

Analyte	Analysis Date/Time	RPD Limit	Original Parent Conc. (S)	C	Duplicate Conc. (D)	C	RPD	Q	M
Total Organic Carbon	07/14/2023 15:36	20	0.4	U	0.4	U	0		TOC

6

Sample Description

DUPLICATES

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solid for Sample:

Concentration Units: mg/L

Analytical Prep Batch #: 130553

Analytical Preparation Date/Time: 07/18/2023 08:45

Analytical Run #: 273727

ICAL Calibration #:

Sample #: 1348843

Parent Sample #: 1346384

Analysis Type Initial Analysis

Analyte	Analysis Date/Time	RPD Limit	Original Parent Conc. (S)	C	Duplicate Conc. (D)	C	RPD	Q	M
COD	07/19/2023 11:20	20	18	U	18	U	0		SP

6A

Sample Description

MATRIX SPIKE DUPLICATES

54MW12

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solid for Sample:

Concentration Units: mg/L

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 273539

ICAL Calibration #:

Sample #: 1346960

Parent Sample #: 1346959

Analysis Type Initial Analysis

Analyte	Analysis Date/Time	RPD Limit	Matrix Spike Parent Conc. (S)	C	Matrix Spike Duplicate Conc. (D)	C	RPD	Q	M
Chloride	07/11/2023 23:50	15	13.8		13.8		0		
Nitrate Nitrogen	07/11/2023 23:50	15	2.69		2.73		2		
Sulfate	07/11/2023 23:50	15	31.5		31.7		1		

6A

Sample Description

MATRIX SPIKE DUPLICATES

54MW12

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solid for Sample:

Concentration Units: mg/L

Analytical Prep Batch #: 0

Analytical Preparation Date/Time:

Analytical Run #: 273651

ICAL Calibration #: ICAL0637

Sample #: 1348119

Parent Sample #: 1348118

Analysis Type *Initial Analysis*

Analyte	Analysis Date/Time	RPD Limit	Matrix Spike Parent Conc. (S)	C	Matrix Spike Duplicate Conc. (D)	C	RPD	Q	M
Total Organic Carbon	07/14/2023 16:00	20	53.4		52.6		2		TOC

6A

Sample Description

MATRIX SPIKE DUPLICATES

54IDW

Lab Name: CT Laboratories

Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54

Matrix: LIQUID

SDG No.: 178887

% Solid for Sample:

Concentration Units: mg/L

Analytical Prep Batch #: 130553

Analytical Preparation Date/Time: 07/18/2023 08:45

Analytical Run #: 273727

ICAL Calibration #:

Sample #: 1348842

Parent Sample #: 1348841

Analysis Type Initial Analysis

Analyte	Analysis Date/Time	RPD Limit	Matrix Spike Parent Conc. (S)	C	Matrix Spike Duplicate Conc. (D)	C	RPD	Q	M
COD	07/19/2023 11:20	20	157		159		2		SP

7-1

Sample No:

LABORATORY CONTROL SAMPLE - AQUEOUS

LCS

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 LCS Source: SPEX and Ultra SDG No.: 178887
 Concentration Units: mg/L
 Analytical Run #: 273539 Sample No.:# 1346952
 Analytical Prep Batch #: 0 Preparation Date/Time: _____
 ICAL Calibration #: _____

Analysis Type -----

Initial Analysis

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	C	Spike Amount	%R	Q	M
Chloride	07/11/2023	12:42	87-111	15.00		15.00	100		
Nitrate Nitrogen	07/11/2023	12:42	88-111	3.522		3.500	101		
Sulfate	07/11/2023	12:42	87-112	24.92		25.00	100		

7-1

Sample No:

LABORATORY CONTROL SAMPLE - AQUEOUS

LCS

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 LCS Source: SPEX and Ultra SDG No.: 178887
 Concentration Units: mg/L
 Analytical Run #: 273604 Sample No.:# 1348108
 Analytical Prep Batch #: 0 Preparation Date/Time: _____
 ICAL Calibration #: ICAL0637

Analysis Type -----

Initial Analysis

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	C	Spike Amount	%R	Q	M
Total Inorganic Carbon	07/13/2023	09:57	85-111	47.83		50.0	96		TOC

7-1

Sample No:

LABORATORY CONTROL SAMPLE - AQUEOUS

LCS

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 LCS Source: SPEX and Ultra SDG No.: 178887
 Concentration Units: mg/L
 Analytical Run #: 273651 Sample No.:# 1348121
 Analytical Prep Batch #: 0 Preparation Date/Time: _____
 ICAL Calibration #: ICAL0637

Analysis Type -----

Initial Analysis

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	C	Spike Amount	%R	Q	M
Total Organic Carbon	07/14/2023	16:26	85-111	52.52		50.0	105		TOC

7-1

Sample No:

LABORATORY CONTROL SAMPLE - AQUEOUS

LCS

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54
 LCS Source: SPEX and Ultra SDG No.: 178887
 Concentration Units: mg/L
 Analytical Run #: 273727 Sample No.:# 1348840
 Analytical Prep Batch #: 130553 Preparation Date/Time: 07/18/2023 08:45
 ICAL Calibration #: _____

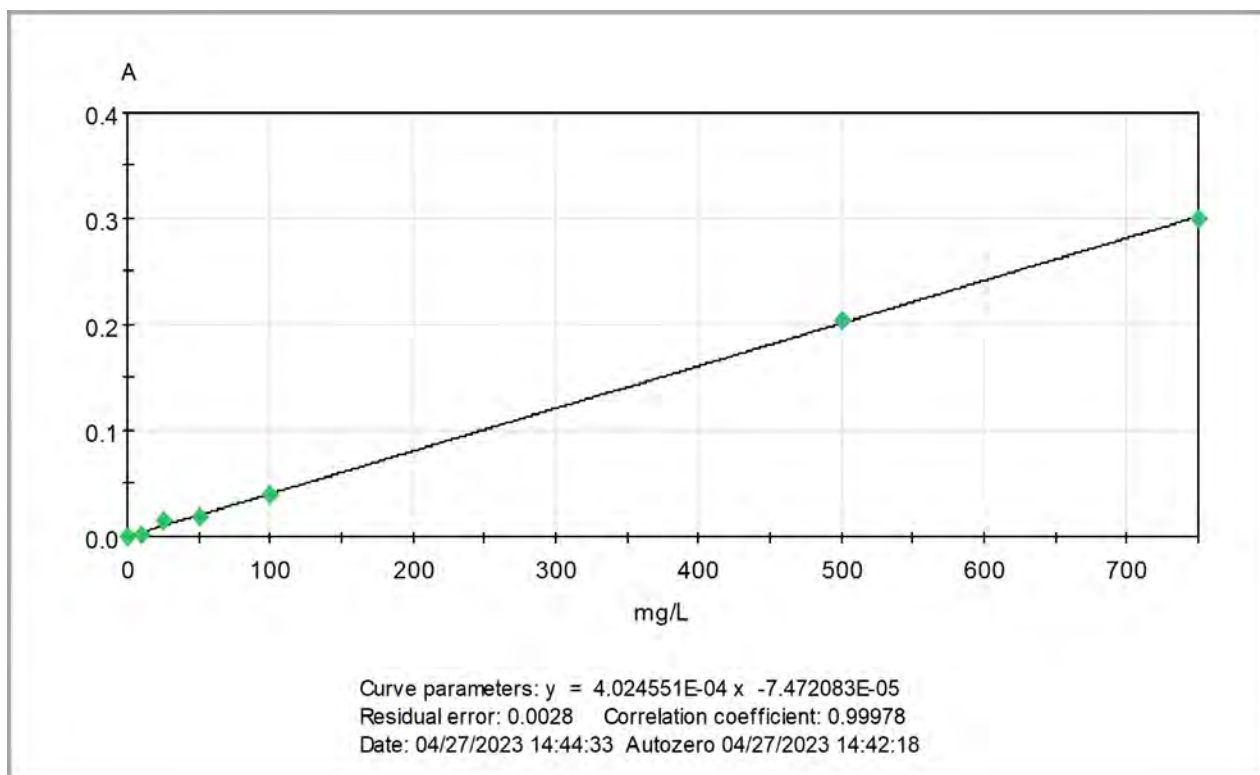
Analysis Type -----

Initial Analysis

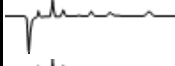
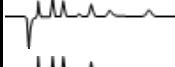
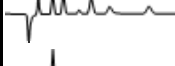
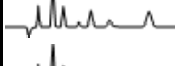
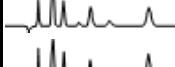
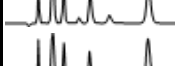
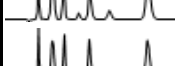
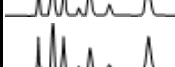
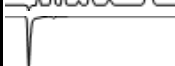
Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	C	Spike Amount	%R	Q	M
COD	07/19/2023	11:20	90-110	415.1		400.0	104		SP

**INORGANICS
RAW DATA
DOCUMENTS**

Method: W54537.mqa (600 nm)
 Last modified: 04/27/2023 14:45:07 by CTLABORATORIES\SPEC
 Spectrophotometer: GENESYS 30
 Serial number: 9A1W117104
 Firmware: 104
 Autozero: 07/19/2023 11:00:09
 Measured: 07/19/2023 11:20:08 by CTLABORATORIES\SPEC
 Result filename: 273727 DATA.rqa



Sample	Dilution Factor	Ordinate [A]	Concentration [mg/L]
ICV	1	0.168	417.6
ICB	1	-0.001	-2.3
CCV	1	0.161	400.2
CCB	1	-0.002	-4.8
1348840	1	0.167	415.1
1348839	1	-0.001	-2.3
1346384	1	-0.001	-2.3
MSW1346384	1	0.063	156.7
MSDW1346384	1	0.064	159.2
DUP1346384	1	-0.001	-2.3
1348149	1	0.018	44.9
CCV	1	0.162	402.7
CCB	1	-0.002	-4.8

ECD_1	Name	Dilution	Type	Level	Position	Volume	Instrument Method	Processing Method	Status
	 STD1	1.0000	Calibration Standard	1	21	5000	Anions 1.0	IC4750A	Finished
	 STD2	1.0000	Calibration Standard	2	22	5000	Anions 1.0	IC4750A	Finished
	 STD3	1.0000	Calibration Standard	3	23	5000	Anions 1.0	IC4750A	Finished
	 STD4	1.0000	Calibration Standard	4	24	5000	Anions 1.0	IC4750A	Finished
	 STD5	1.0000	Calibration Standard	5	25	5000	Anions 1.0	IC4750A	Finished
	 STD6	1.0000	Calibration Standard	6	26	5000	Anions 1.0	IC4750A	Finished
	 STD7	1.0000	Calibration Standard	7	27	5000	Anions 1.0	IC4750A	Finished
	 STD8	1.0000	Calibration Standard	8	28	5000	Anions 1.0	IC4750A	Finished
	 STD9	1.0000	Calibration Standard	9	29	5000	Anions 1.0	IC4750A	Finished
	 ICV	1.0000	Unknown		31	5000	Anions 1.0	IC4750A	Finished
	 ICB	1.0000	Unknown		33	5000	Anions 1.0	IC4750A	Finished

Calibration Concentrations

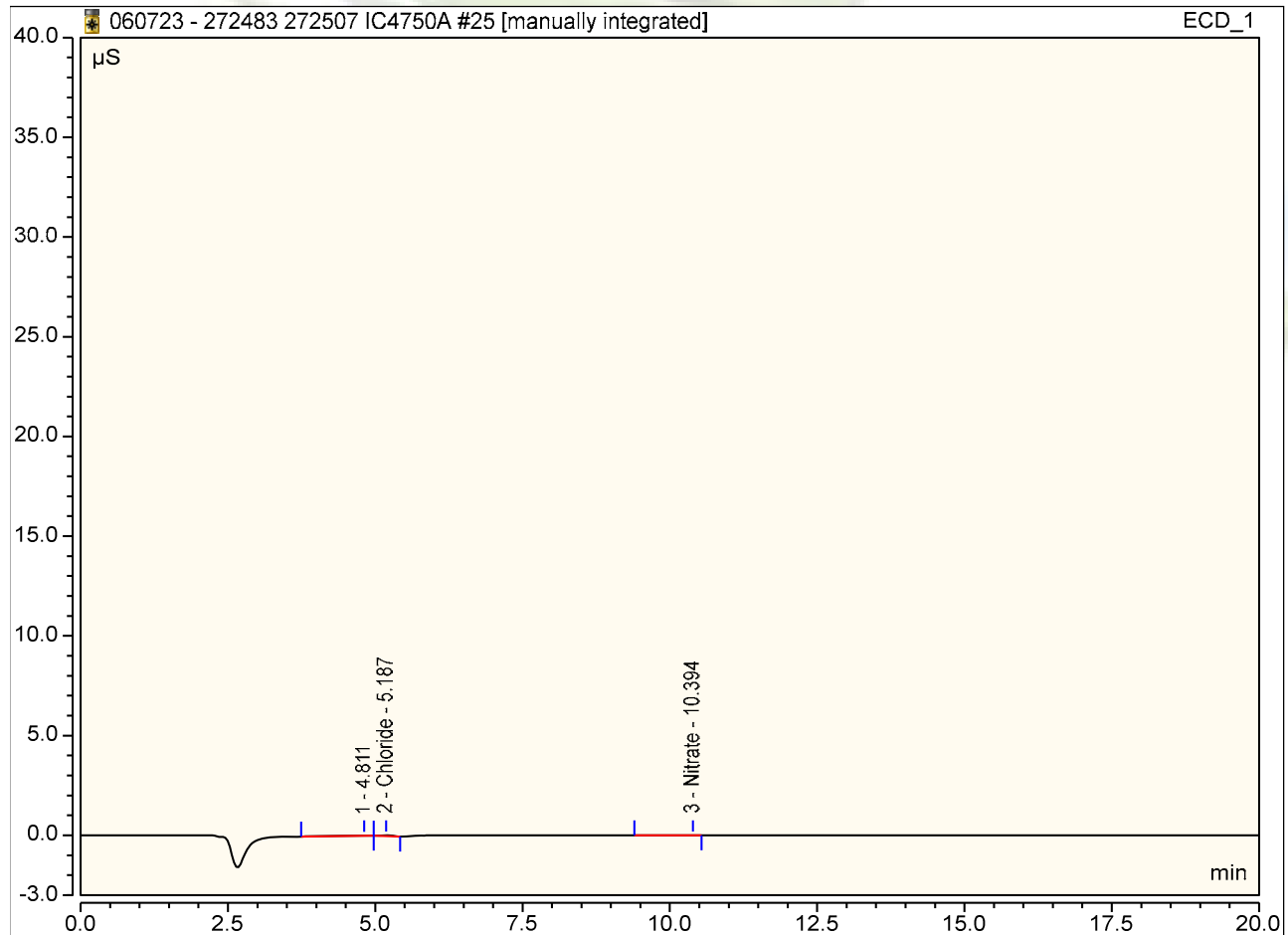
Instrument: AQUION 4		Cal. File: IC4750A		ICV		IC4744 IC4752		Analyst/Date: TMG 06/07/2023		
Analyte	Cal Level 1 (mg/L)	Cal Level 2 (mg/L)	Cal Level 3 (mg/L)	Cal Level 4 (mg/L)	Cal Level 5 (mg/L)	Cal Level 6 (mg/L)	Cal Level 7 (mg/L)	Cal Level 8 (mg/L)	Cal Level 9 (mg/L)	ICV (mg/L)
Fluoride	0.0	0.1	0.30	0.5	1.0	2.0	5.0			3.5
Chloride	0.0	0.5	0.75	1.0	5.0	10.0	20.0	30.0	40.0	15.0
Bromide	0.0	0.1	0.30	0.5	1.0	2.0	5.0			3.5
Nitrite	0.0	0.1	0.30	0.5	1.0	2.0	5.0			3.5
Nitrate	0.0	0.1	0.30	0.5	1.0	2.0	5.0	7.0		3.5
O-Phosphorous	0.0	0.1	0.30	0.5	1.0	2.0	5.0			3.5
Sulfate	0.0	0.5	0.75	1.0	5.0	10.0	30.0	50.0	70.0	25.0

TMG 06/16/2023

Peak Integration Report

Sample Name:	STD1	Sequence Date:	05/04/2018
Injection Type:	Calibration Standard	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	07-Jun-2023 / 15:29	Run Time:	20.00

No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	5.19	Chloride	0.010	0.044	0.3861
3	10.39	Nitrate	0.000	0.001	0.0504



RD 06/16/2023

REASON #4

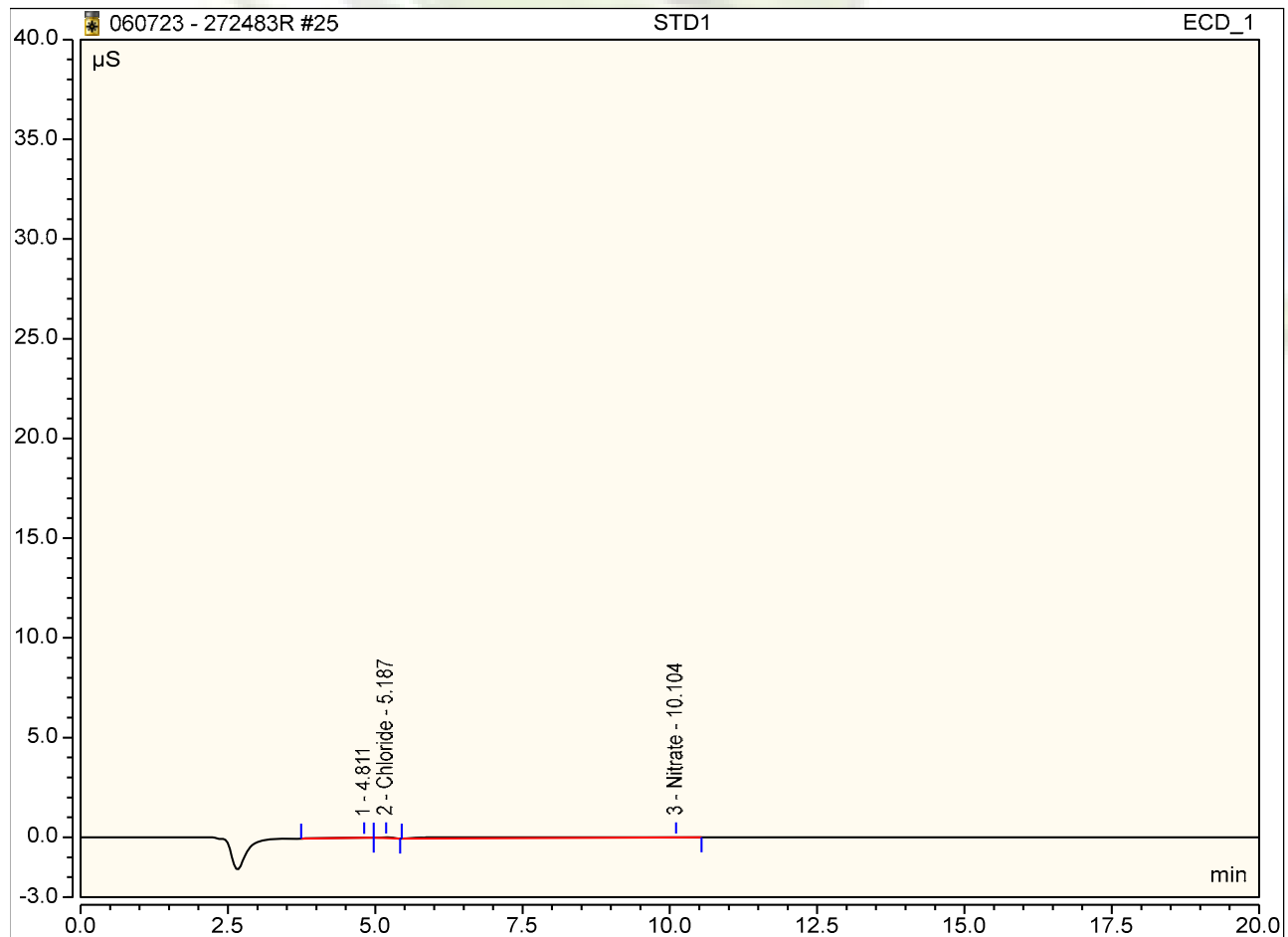
Peak Integration Report

TMG

06/16/2023

Sample Name:	STD1	Sequence Date:	05/04/2018
Injection Type:	Calibration Standard	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	07-Jun-2023 / 15:29	Run Time:	20.00

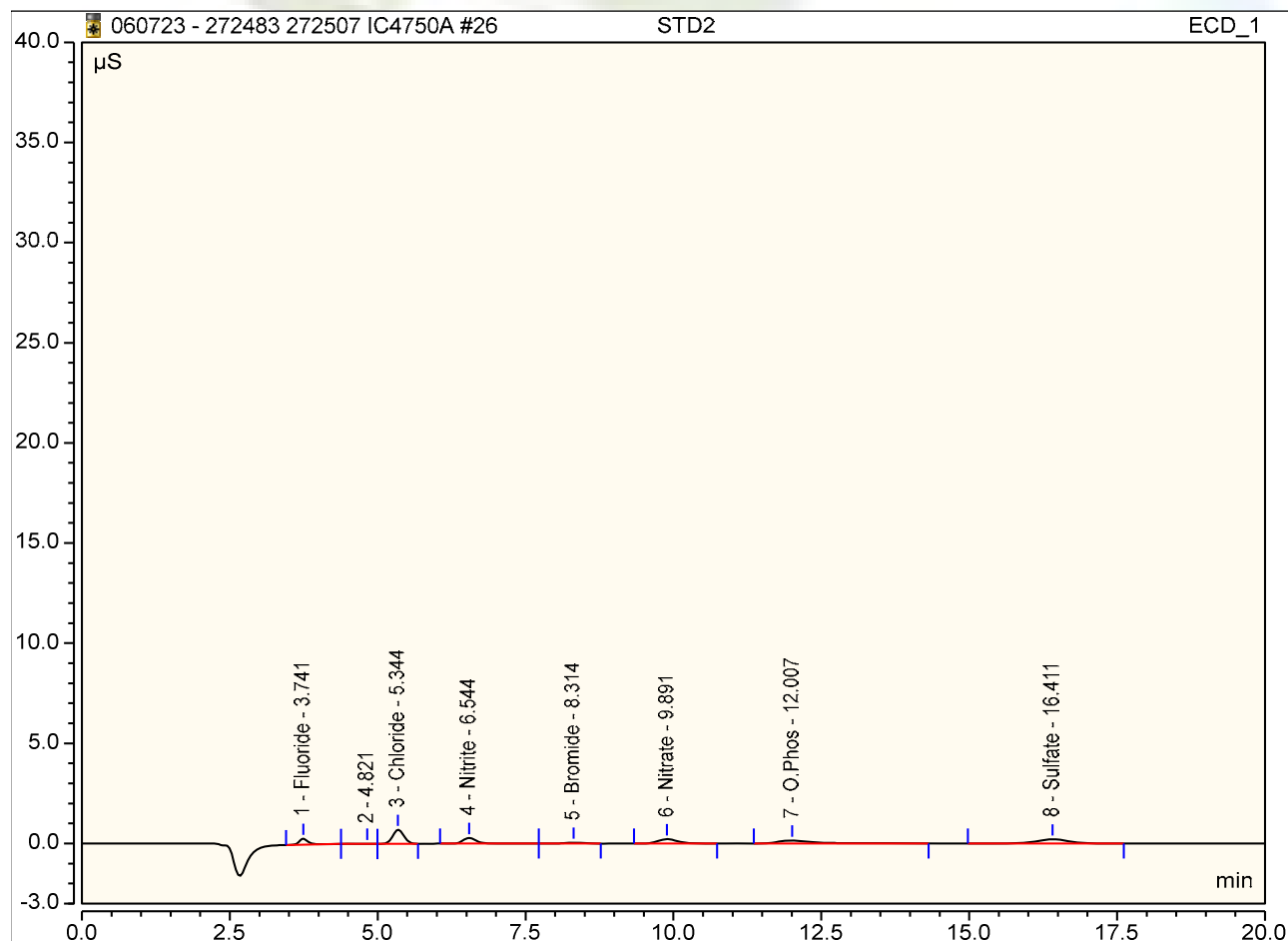
No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	5.19	Chloride	0.010	0.044	0.3861
3	10.10	Nitrate	0.151	0.008	0.1790



Peak Integration Report

Sample Name:	STD2	Sequence Date:	05/04/2018
Injection Type:	Calibration Standard	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	07-Jun-2023 / 15:51	Run Time:	20.00

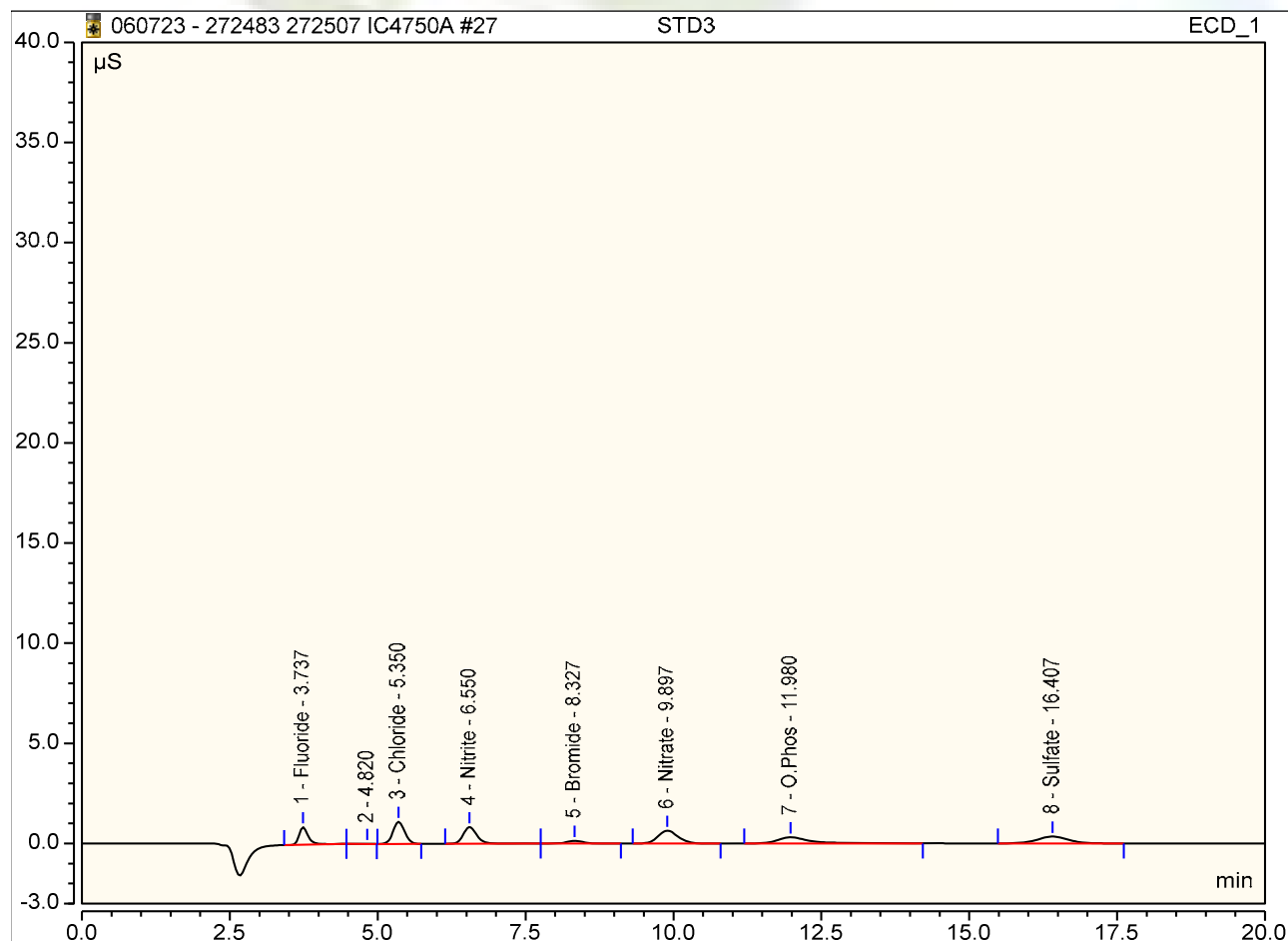
No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.74	Fluoride	0.053	0.294	0.1225
3	5.34	Chloride	0.159	0.712	0.7517
4	6.54	Nitrite	0.076	0.287	0.1291
5	8.31	Bromide	0.015	0.048	0.0964
6	9.89	Nitrate	0.086	0.221	0.1412
7	12.01	O.Phos	0.106	0.155	0.0064
8	16.41	Sulfate	0.129	0.210	1.0241



Peak Integration Report

Sample Name:	STD3	Sequence Date:	05/04/2018
Injection Type:	Calibration Standard	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	07-Jun-2023 / 16:14	Run Time:	20.00

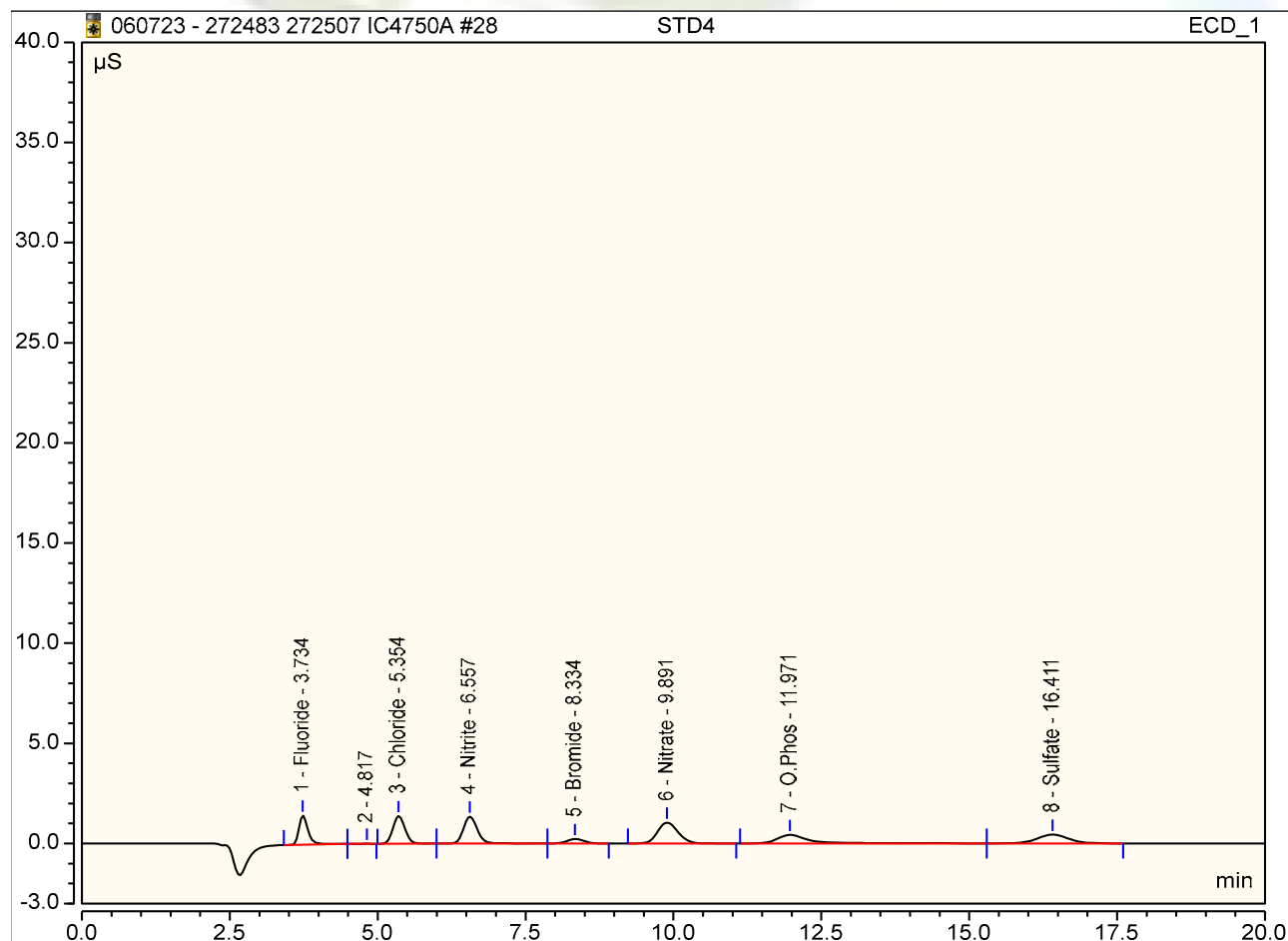
No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.74	Fluoride	0.159	0.873	0.3102
3	5.35	Chloride	0.254	1.100	0.9852
4	6.55	Nitrite	0.221	0.823	0.3102
5	8.33	Bromide	0.045	0.138	0.2938
6	9.90	Nitrate	0.253	0.636	0.3191
7	11.98	O.Phos	0.200	0.312	0.3017
8	16.41	Sulfate	0.209	0.341	1.2960



Peak Integration Report

Sample Name:	STD4	Sequence Date:	05/04/2018
Injection Type:	Calibration Standard	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	07-Jun-2023 / 16:36	Run Time:	20.00

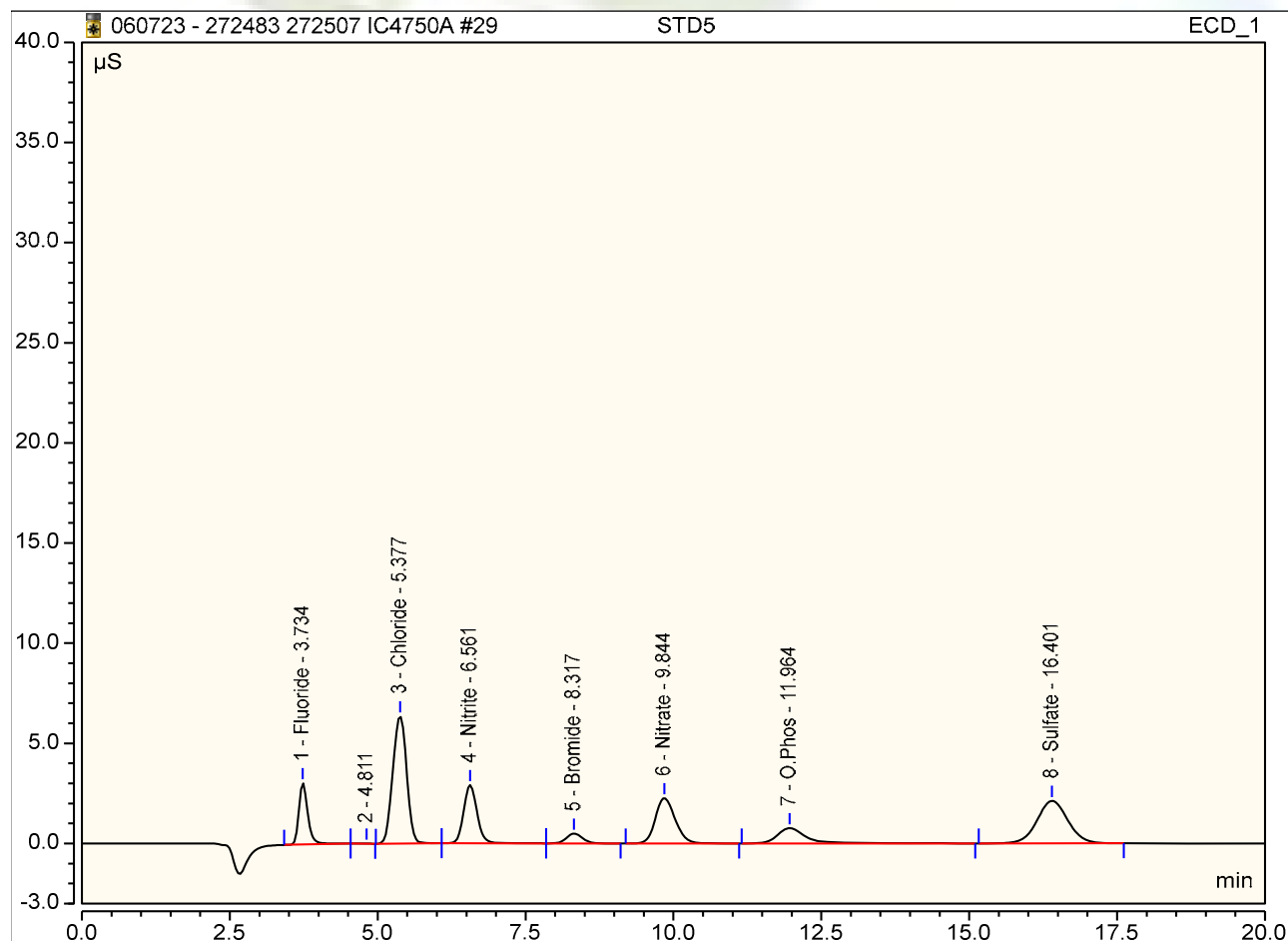
No.	Time min	Peak Name	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	3.73	Fluoride	0.262	1.457	0.4930
3	5.35	Chloride	0.332	1.392	1.1742
4	6.56	Nitrite	0.369	1.355	0.4962
5	8.33	Bromide	0.075	0.227	0.4939
6	9.89	Nitrate	0.421	1.043	0.4974
7	11.97	O.Phos	0.274	0.431	0.5353
8	16.41	Sulfate	0.268	0.436	1.4963



Peak Integration Report

Sample Name:	STD5	Sequence Date:	05/04/2018
Injection Type:	Calibration Standard	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	07-Jun-2023 / 16:59	Run Time:	20.00

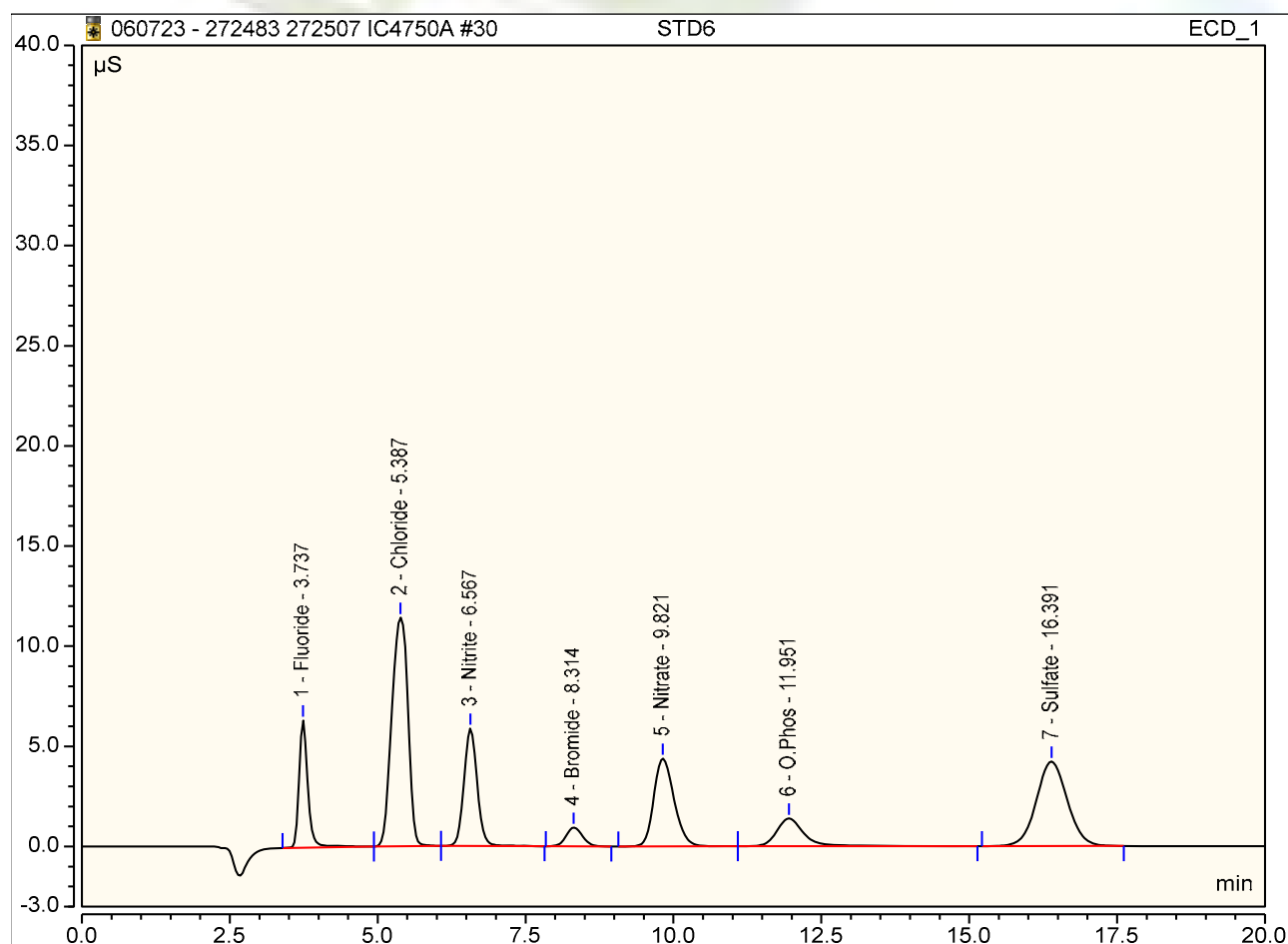
No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.73	Fluoride	0.543	3.071	0.9874
3	5.38	Chloride	1.739	6.364	4.6220
4	6.56	Nitrite	0.766	2.909	0.9930
5	8.32	Bromide	0.153	0.486	1.0165
6	9.84	Nitrate	0.882	2.268	0.9876
7	11.96	O.Phos	0.439	0.765	1.0526
8	16.40	Sulfate	1.285	2.124	4.9415



Peak Integration Report

Sample Name:	STD6	Sequence Date:	05/04/2018
Injection Type:	Calibration Standard	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	07-Jun-2023 / 17:21	Run Time:	20.00

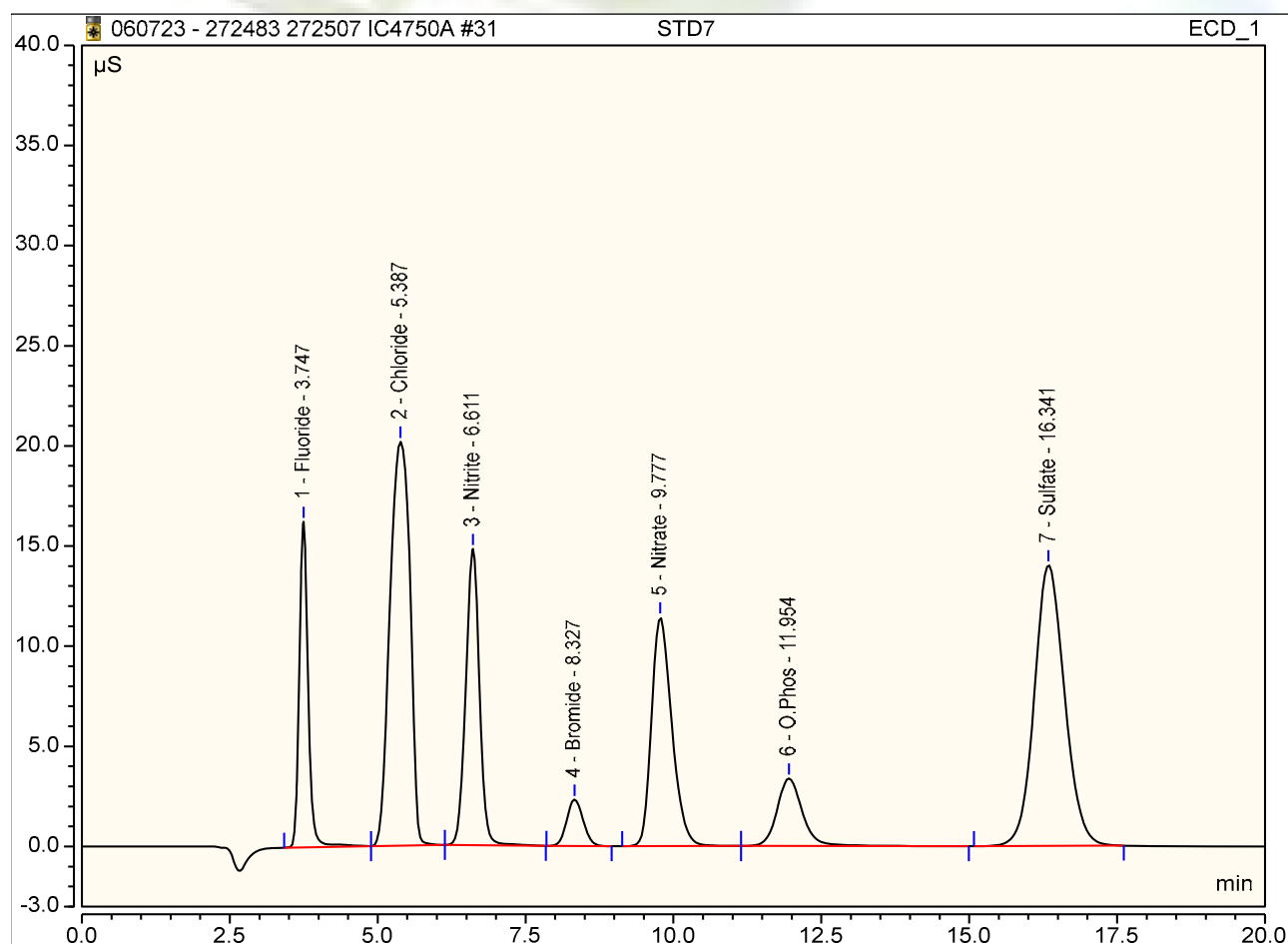
No.	Time min	Peak Name	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	3.74	Fluoride	1.102	6.357	1.9747
2	5.39	Chloride	3.627	11.411	9.2452
3	6.57	Nitrite	1.532	5.865	1.9515
4	8.31	Bromide	0.300	0.941	2.0027
5	9.82	Nitrate	1.745	4.388	1.9057
6	11.95	O.Phos	0.748	1.387	2.0272
7	16.39	Sulfate	2.562	4.220	9.2697



Peak Integration Report

Sample Name:	STD7	Sequence Date:	05/04/2018
Injection Type:	Calibration Standard	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	07-Jun-2023 / 17:43	Run Time:	20.00

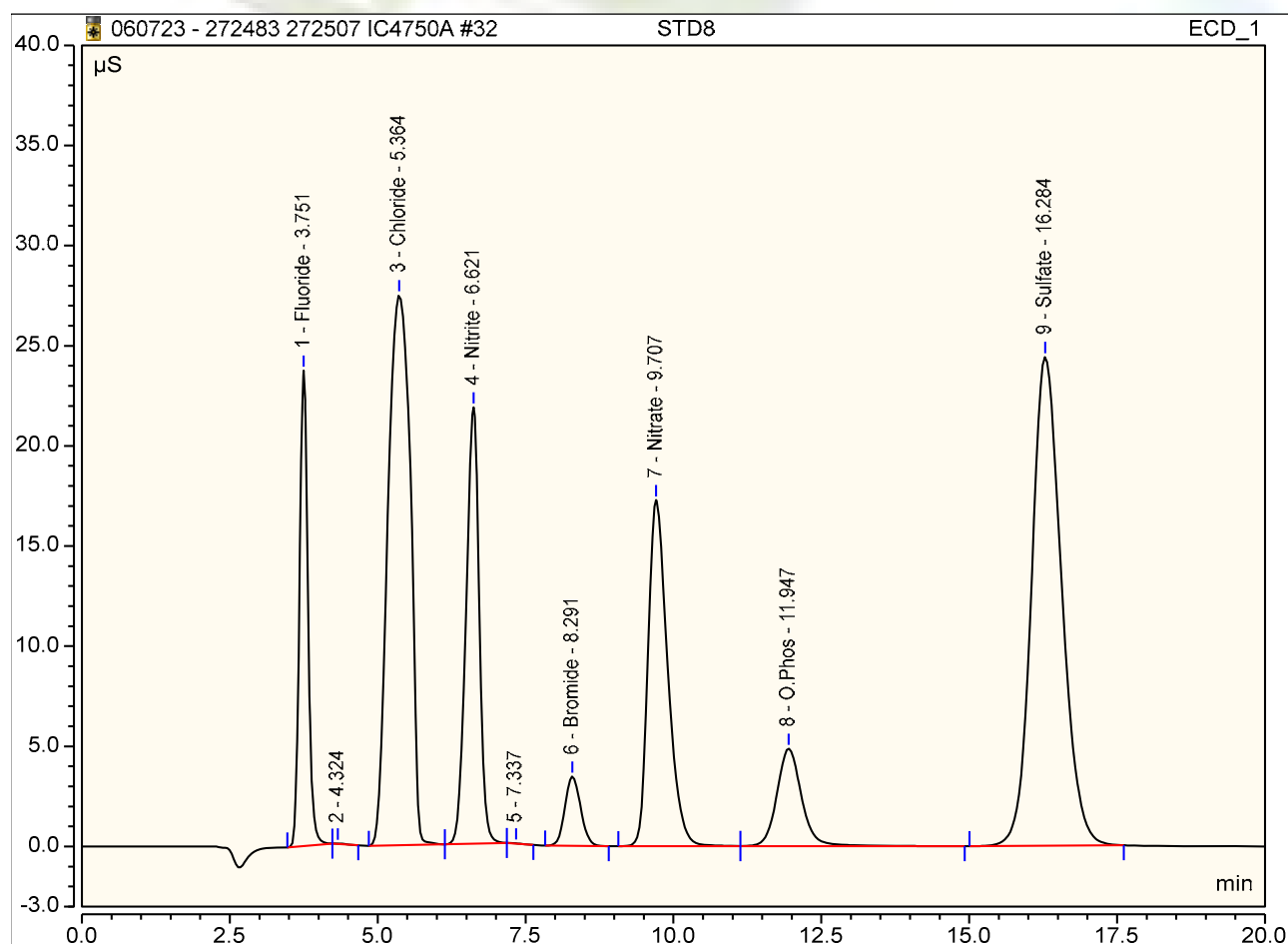
No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.75	Fluoride	2.822	16.258	5.0123
2	5.39	Chloride	7.936	20.173	19.7996
3	6.61	Nitrite	3.984	14.795	5.0200
4	8.33	Bromide	0.748	2.313	4.9967
5	9.78	Nitrate	4.560	11.421	4.8987
6	11.95	O.Phos	1.686	3.374	4.9769
7	16.34	Sulfate	8.334	14.019	28.8248



Peak Integration Report

Sample Name:	STD8	Sequence Date:	05/04/2018
Injection Type:	Calibration Standard	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	07-Jun-2023 / 18:06	Run Time:	20.00

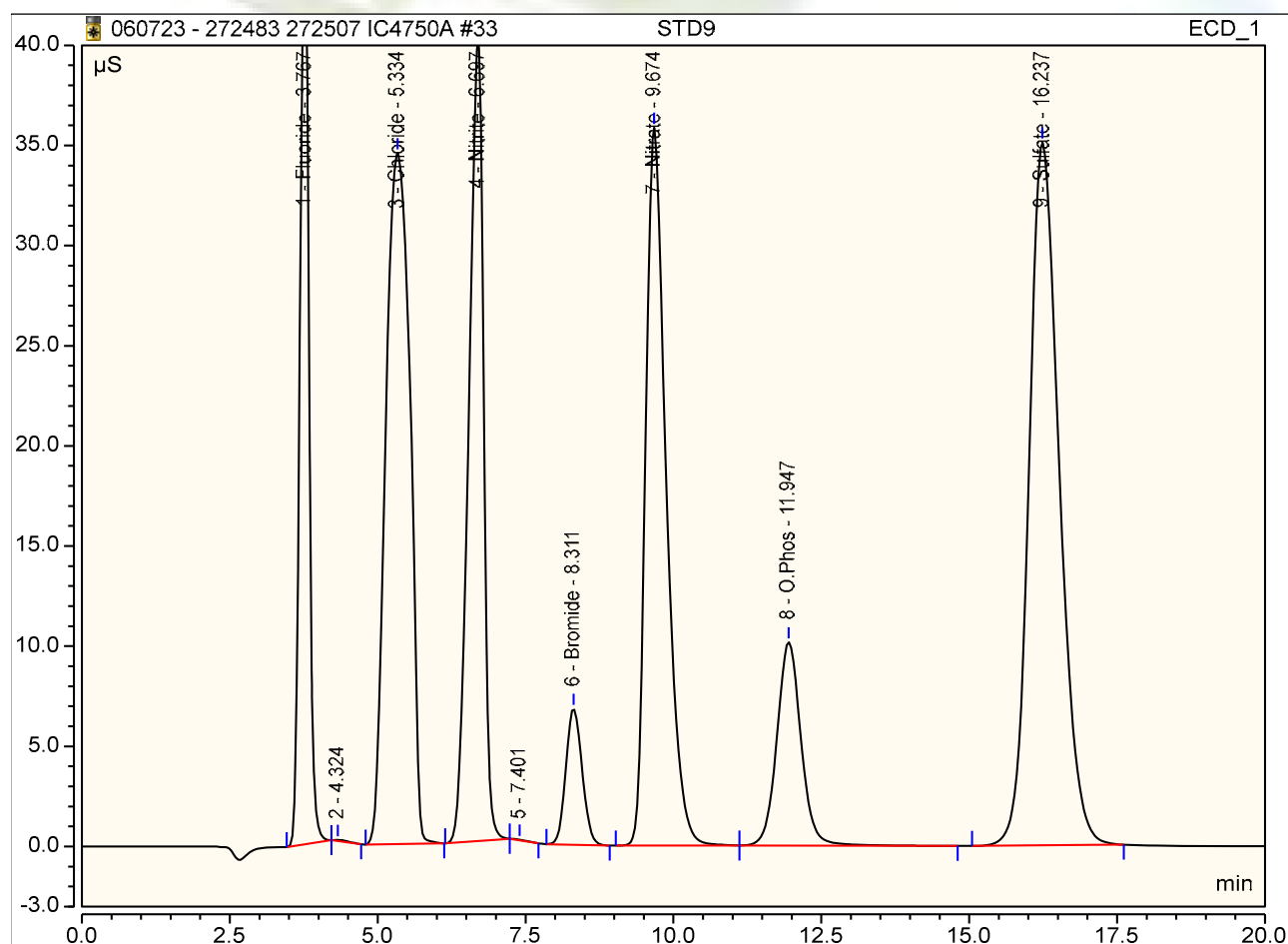
No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.75	Fluoride	3.929	23.740	6.9652
3	5.36	Chloride	12.039	27.461	29.8468
4	6.62	Nitrite	5.618	21.780	7.0646
6	8.29	Bromide	1.061	3.462	7.0882
7	9.71	Nitrate	6.630	17.272	7.0998
8	11.95	O.Phos	2.354	4.862	7.0768
9	16.28	Sulfate	14.380	24.406	49.3075



Peak Integration Report

Sample Name:	STD9	Sequence Date:	05/04/2018
Injection Type:	Calibration Standard	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	07-Jun-2023 / 18:28	Run Time:	20.00

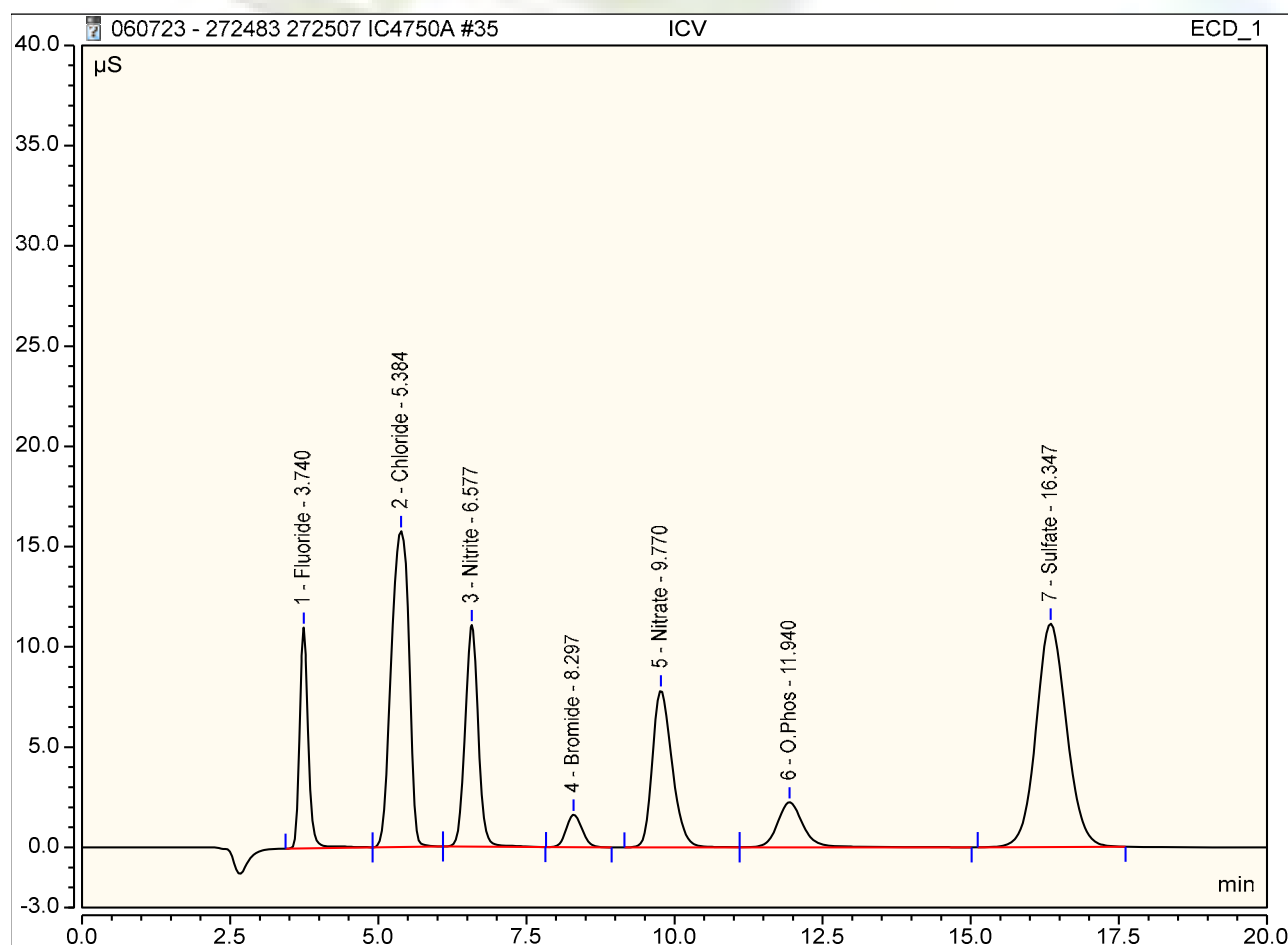
No.	Time min	Peak Name	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	3.77	Fluoride	8.101	46.301	14.3302
3	5.33	Chloride	16.363	34.498	40.4391
4	6.70	Nitrite	11.597	40.047	14.5477
6	8.31	Bromide	2.172	6.789	14.5136
7	9.67	Nitrate	14.353	35.837	15.3105
8	11.95	O.Phos	4.795	10.157	14.7553
9	16.24	Sulfate	20.809	35.107	71.0902



Peak Integration Report

Sample Name:	ICV	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	07-Jun-2023 / 19:13	Run Time:	20.00

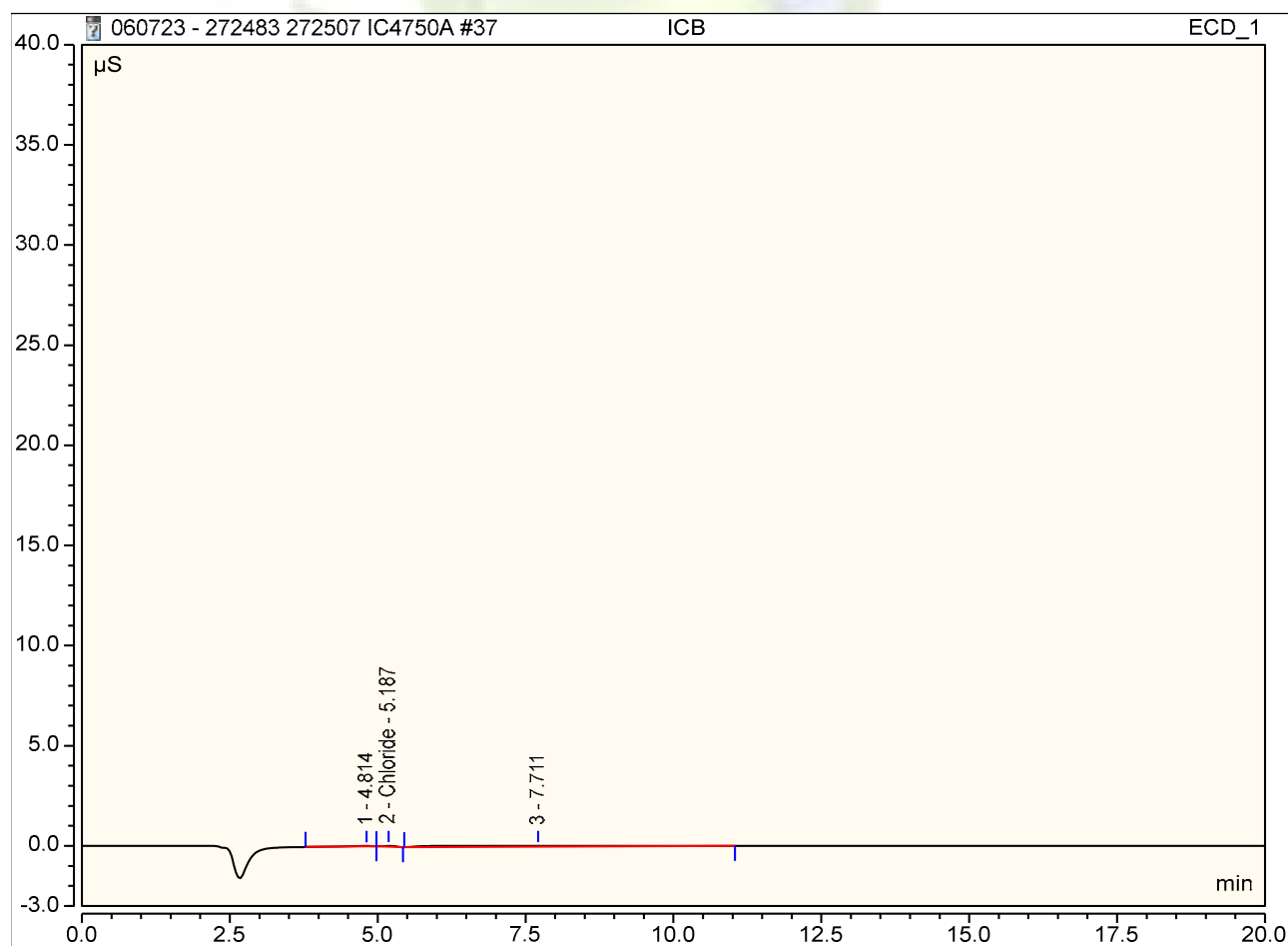
No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.74	Fluoride	1.848	11.011	3.2926
2	5.38	Chloride	5.488	15.757	13.8039
3	6.58	Nitrite	2.847	11.055	3.5964
4	8.30	Bromide	0.503	1.628	3.3582
5	9.77	Nitrate	3.024	7.834	3.2655
6	11.94	O.Phos	1.125	2.243	3.2124
7	16.35	Sulfate	6.624	11.143	23.0317



Peak Integration Report

Sample Name:	ICB	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	07-Jun-2023 / 19:58	Run Time:	20.00

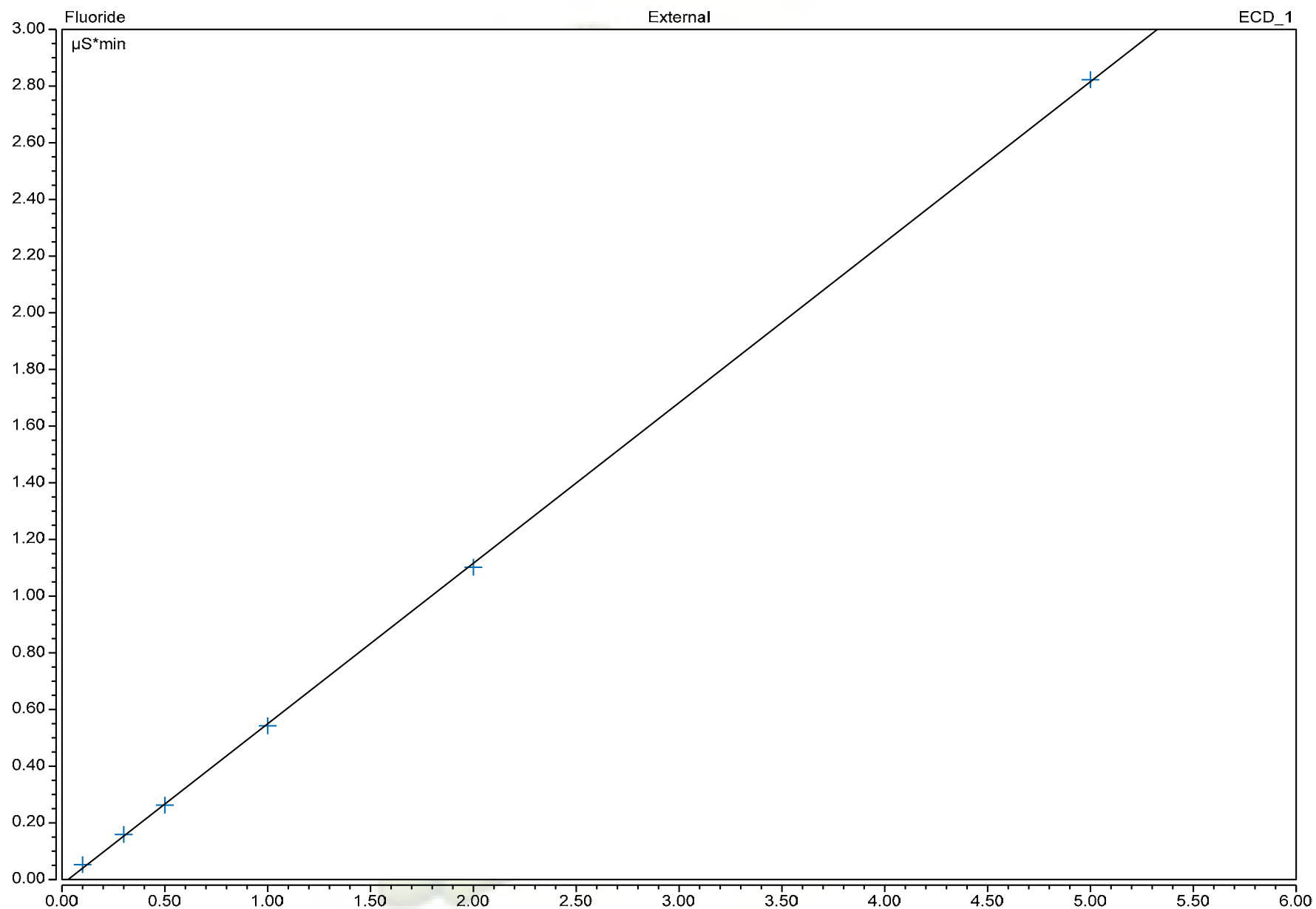
No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	5.19	Chloride	0.009	0.043	0.3854

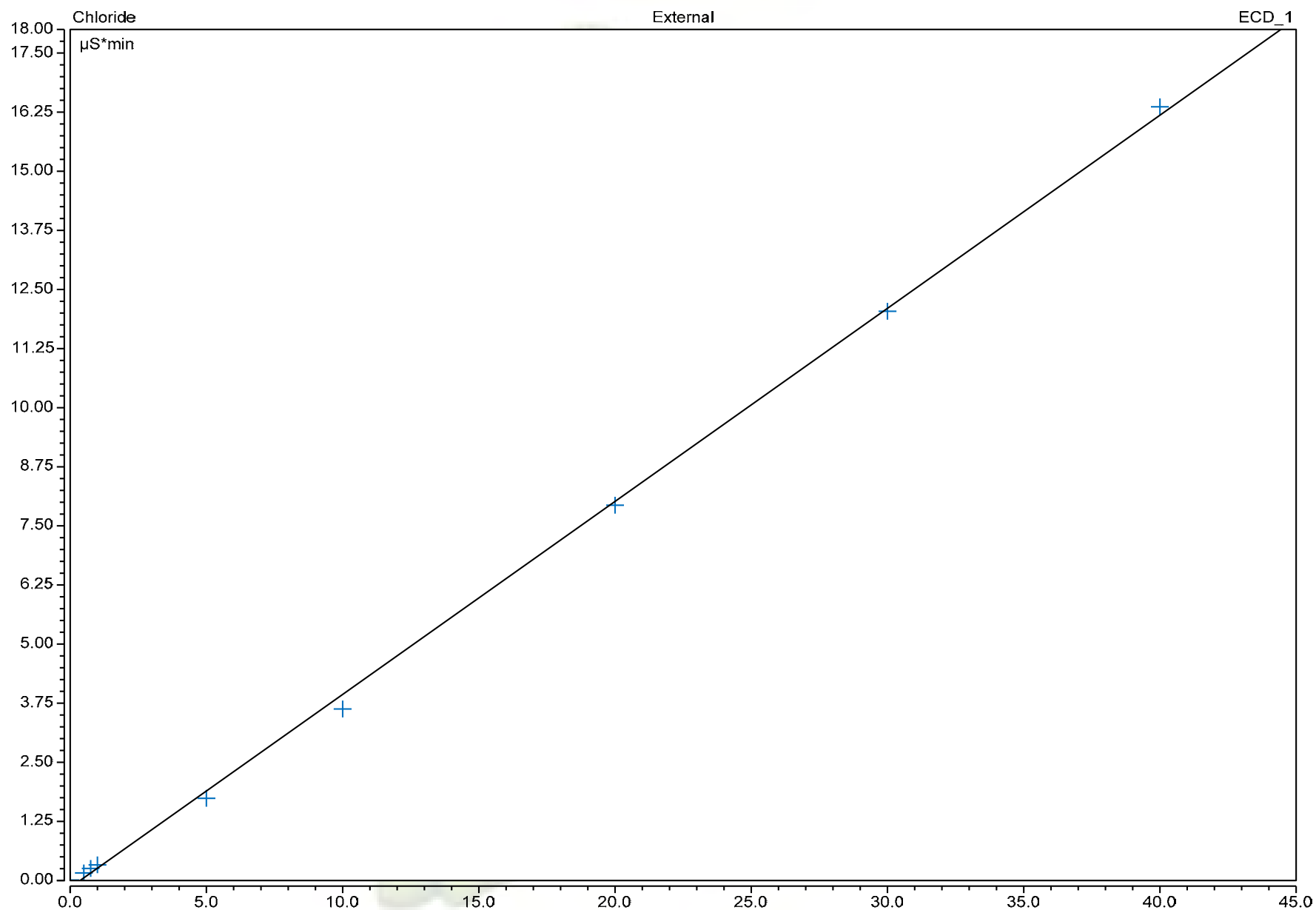


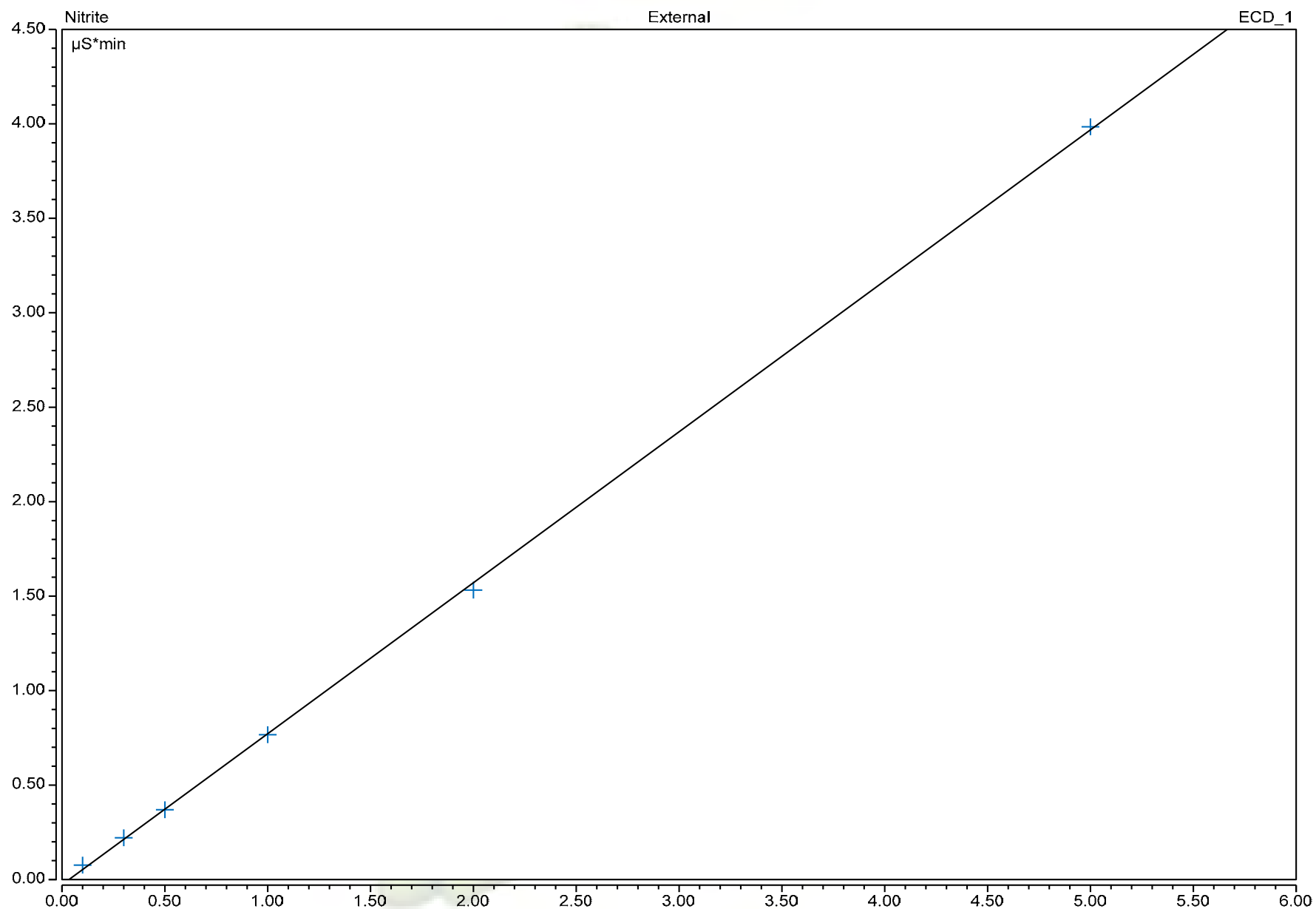
Peak No.	Peak Name	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
1	Fluoride	Lin, WithOffset	Area	6	1.3791	0.99991	-0.0168	0.5665	0.0000
2	Chloride	Lin, WithOffset	Area	9	3.6822	0.99928	-0.1479	0.4083	0.0000
3	Nitrite	Lin, WithOffset	Area	6	2.1166	0.99978	-0.0271	0.7990	0.0000
4	Bromide	Lin, WithOffset	Area	6	0.6541	0.99998	0.0009	0.1496	0.0000
5	Nitrate	Lin, WithOffset	Area	8	3.8790	0.99929	-0.0473	0.9405	0.0000
6	O.Phos	Lin, WithOffset	Area	6	3.2738	0.99918	0.1040	0.3179	0.0000
7	Sulfate	Lin, WithOffset	Area	8	4.2171	0.99911	-0.1736	0.2952	0.0000
Maximum					4.2171	0.99998			
Minimum					0.6541	0.99911			

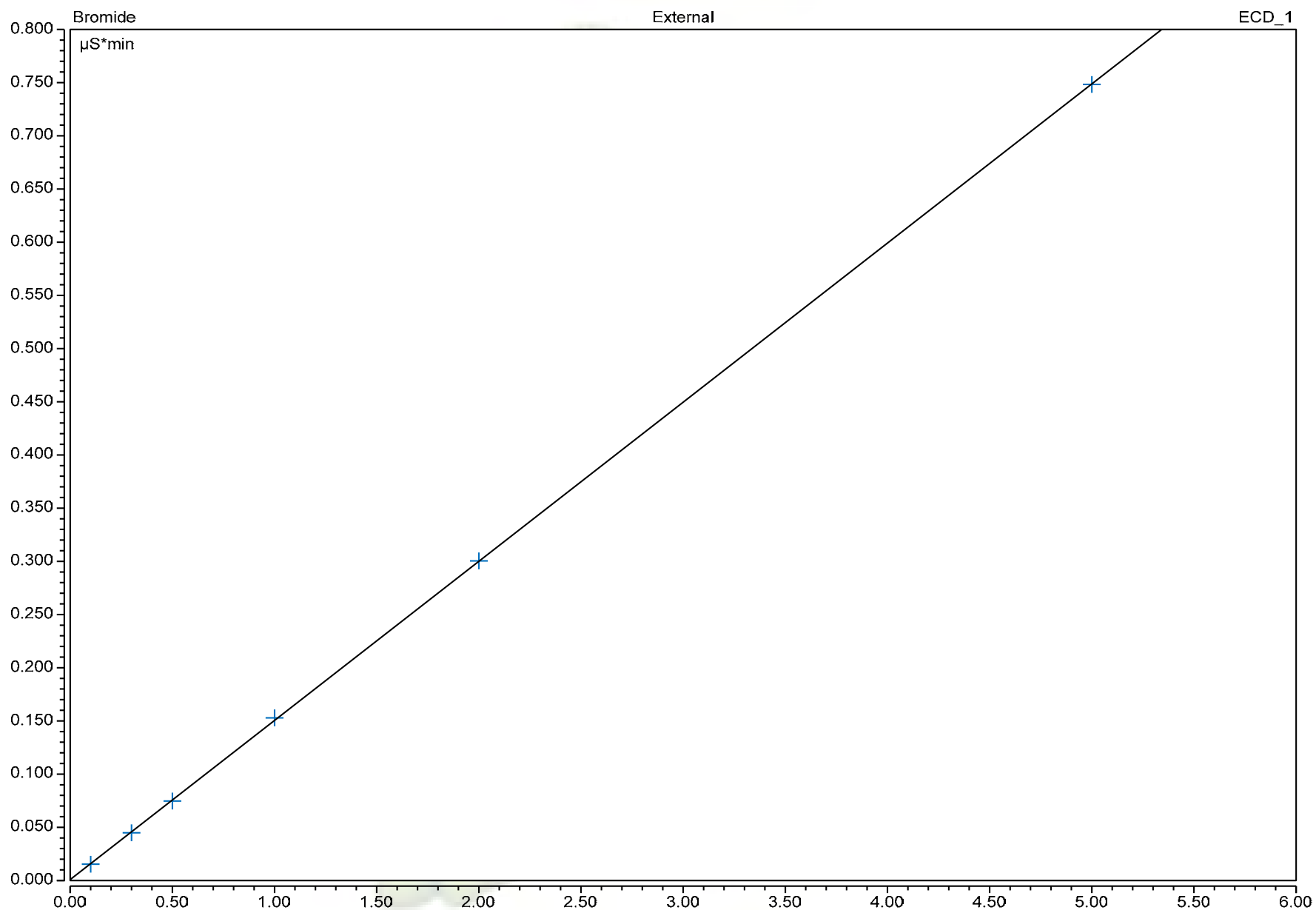


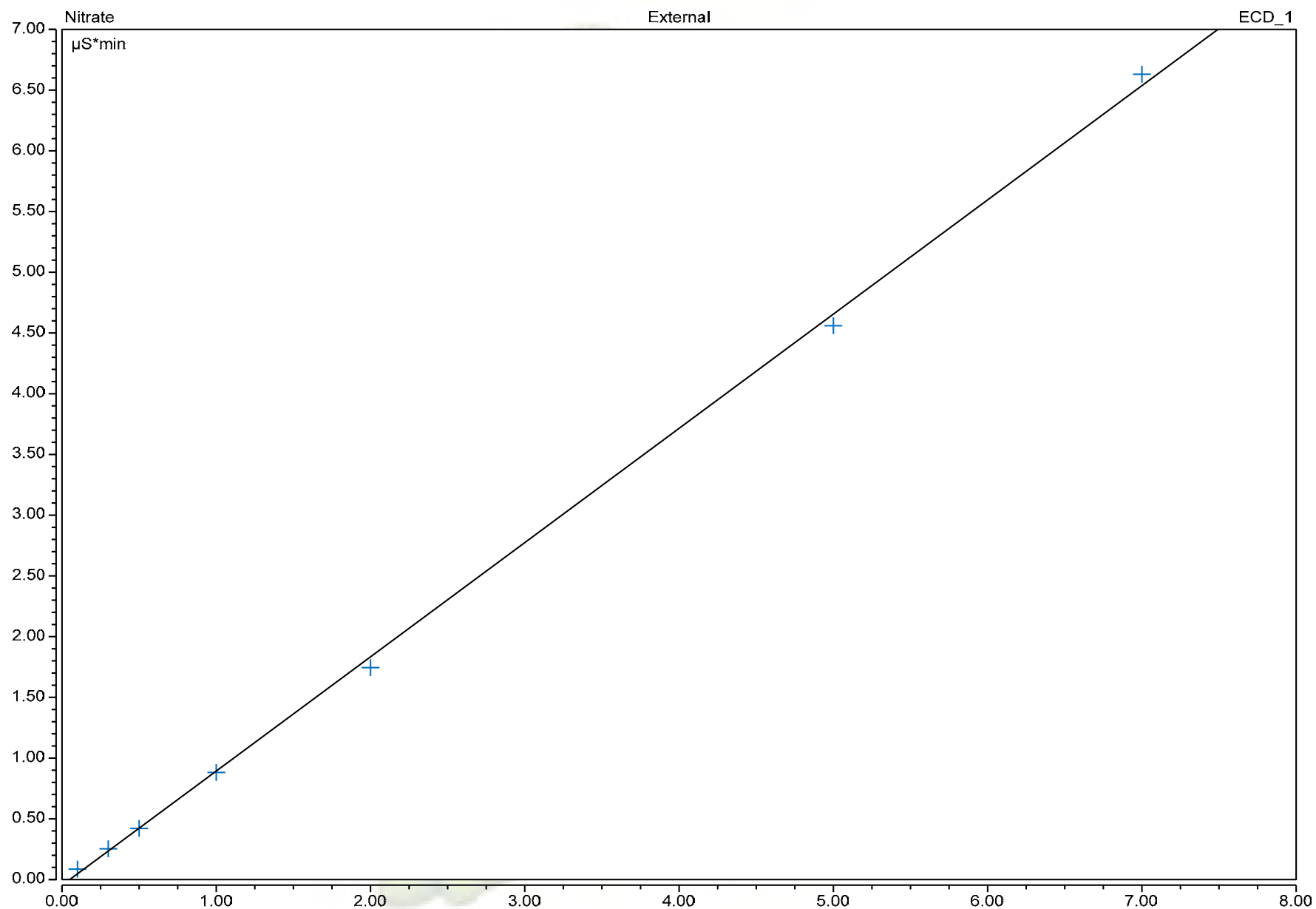
RD 06/16/2023

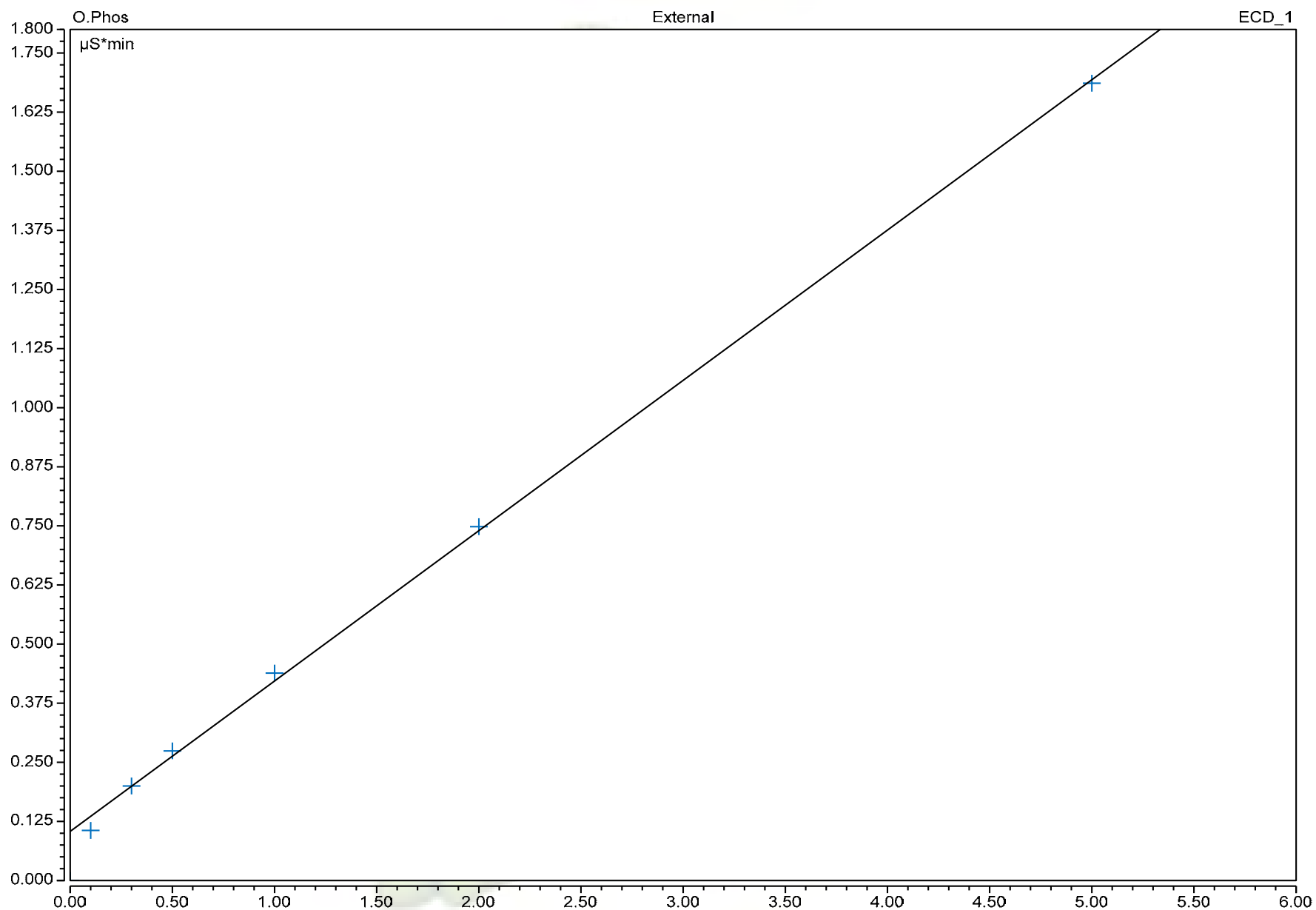


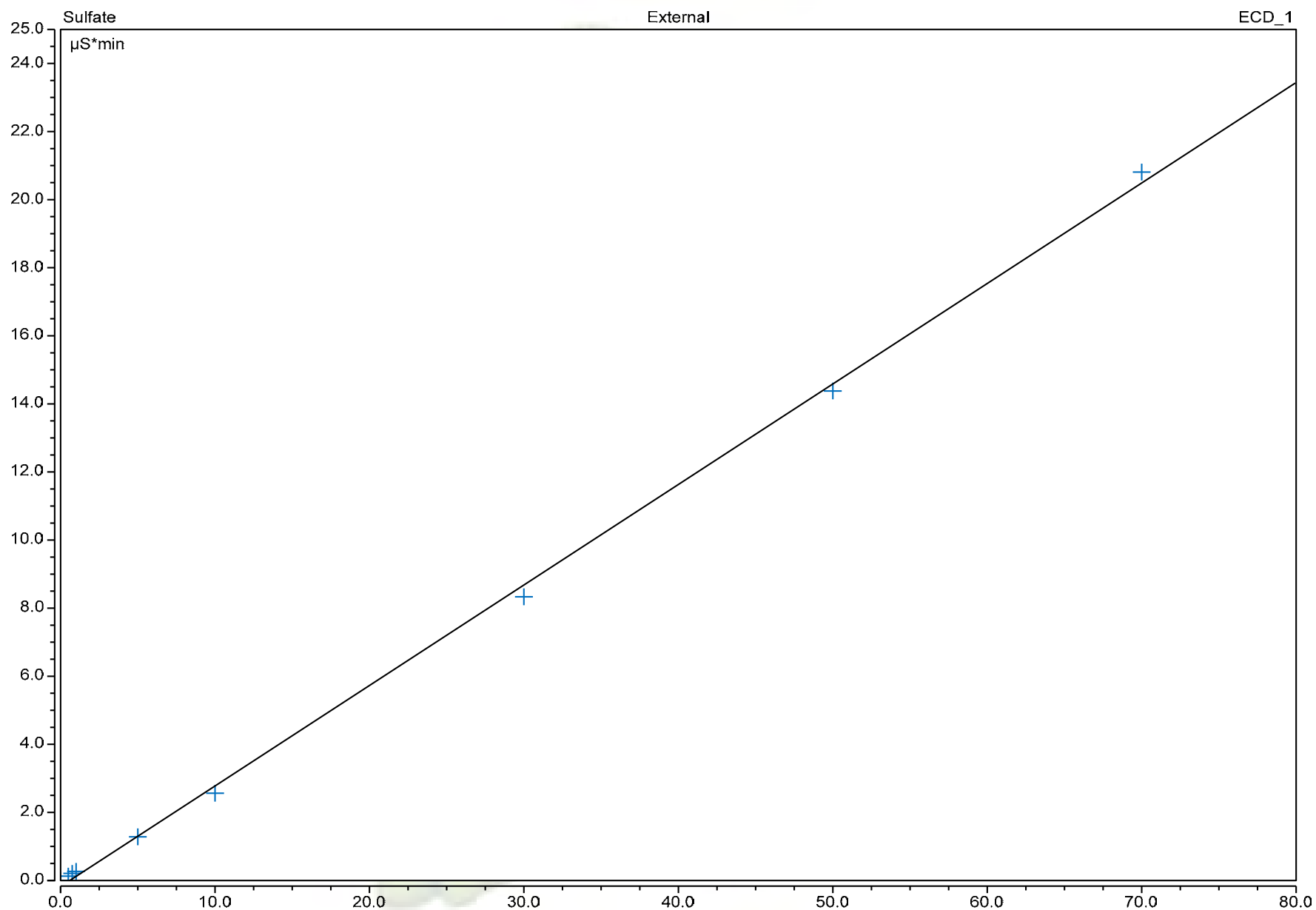










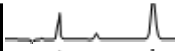
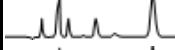
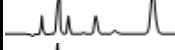
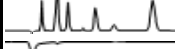
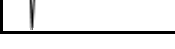


ECD_1	Name	Dilution	Type	Level	Position	Volume	Instrument Method	Processing Method	Status
	 CCV	1.0000	Unknown		2	5000	Anions	IC4750A	Finished
	 LCSW	1.0000	Unknown		3	5000	Anions	IC4750A	Finished
	 MBW	1.0000	Unknown		4	5000	Anions	IC4750A	Finished

	 CCV	1.0000	Unknown		15	5000	Anions	IC4750A	Finished
	 CCB	1.0000	Unknown		16	5000	Anions	IC4750A	Finished

	 1346379	1.0000	Unknown		22	5000	Anions	IC4750A	Finished
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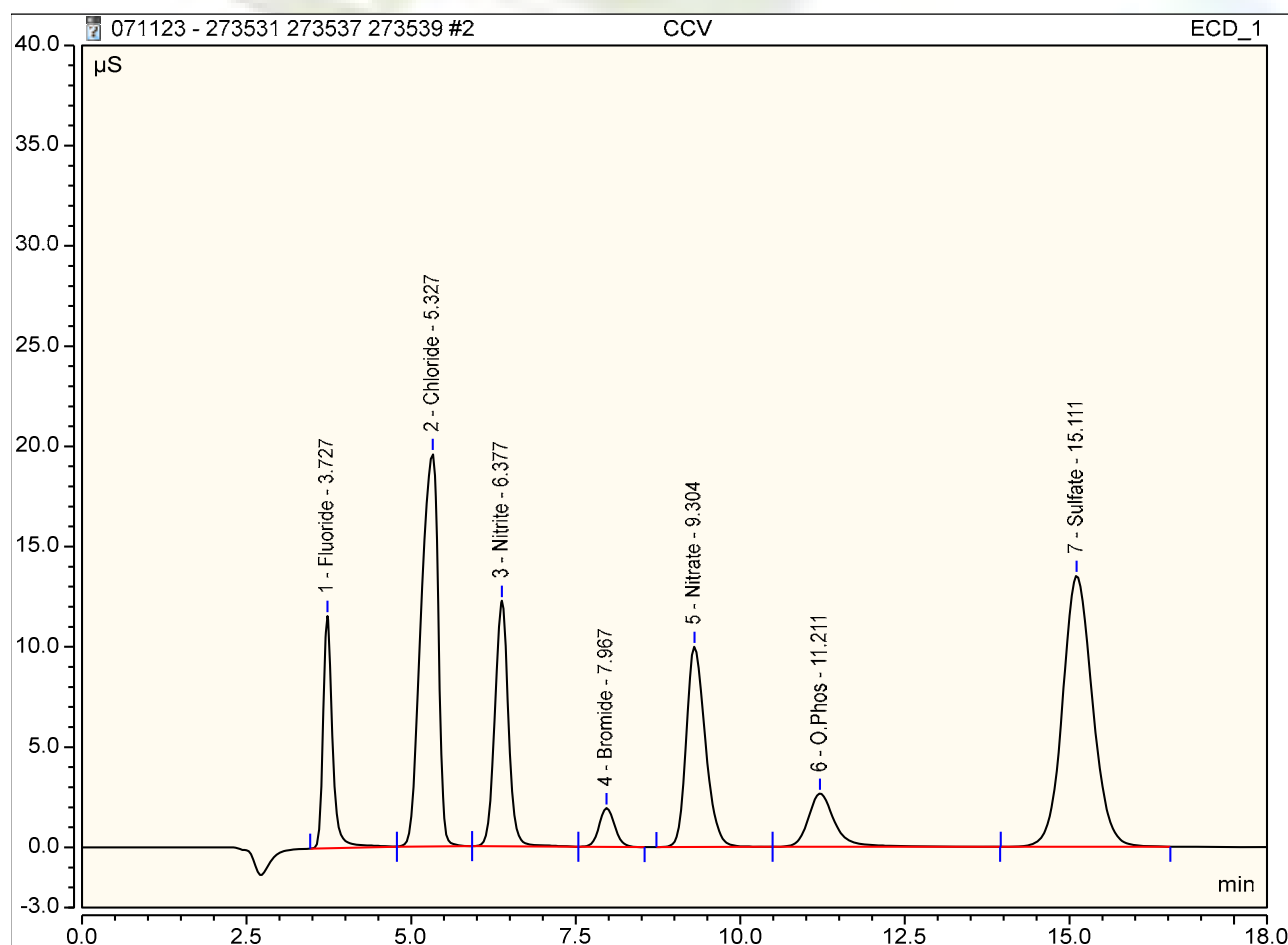
	 1346380	1.0000	Unknown		23	5000	Anions	IC4750A	Finished
ECD_1	Name	Dilution	Type	Level	Position	Volume	Instrument Method	Processing Method	Status
	 1346381	1.0000	Unknown		24	5000	Anions	IC4750A	Finished
	 1346382	1.0000	Unknown		25	5000	Anions	IC4750A	Finished
	 1346383	1.0000	Unknown		26	5000	Anions	IC4750A	Finished
	 CCV	1.0000	Unknown		27	5000	Anions	IC4750A	Finished
	 CCB	1.0000	Unknown		28	5000	Anions	IC4750A	Finished

	 DUP1346382	1.0000	Unknown		33	5000	Anions	IC4750A	Finished
	 MSW1346382	1.0000	Unknown		34	5000	Anions	IC4750A	Finished
	 MSW1346382	1.0000	Unknown		35	5000	Anions	IC4750A	Finished
	 CCV	1.0000	Unknown		36	5000	Anions	IC4750A	Finished
	 CCB	1.0000	Unknown		37	5000	Anions	IC4750A	Finished

Peak Integration Report

Sample Name:	CCV	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 12:21	Run Time:	18.00

No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.73	Fluoride	1.911	11.590	3.4032
2	5.33	Chloride	5.920	19.583	14.8614
3	6.38	Nitrite	2.921	12.246	3.6896
4	7.97	Bromide	0.528	1.926	3.5227
5	9.30	Nitrate	3.355	9.983	3.6178
6	11.21	O.Phos	1.248	2.659	3.5984
7	15.11	Sulfate	7.106	13.513	24.6632

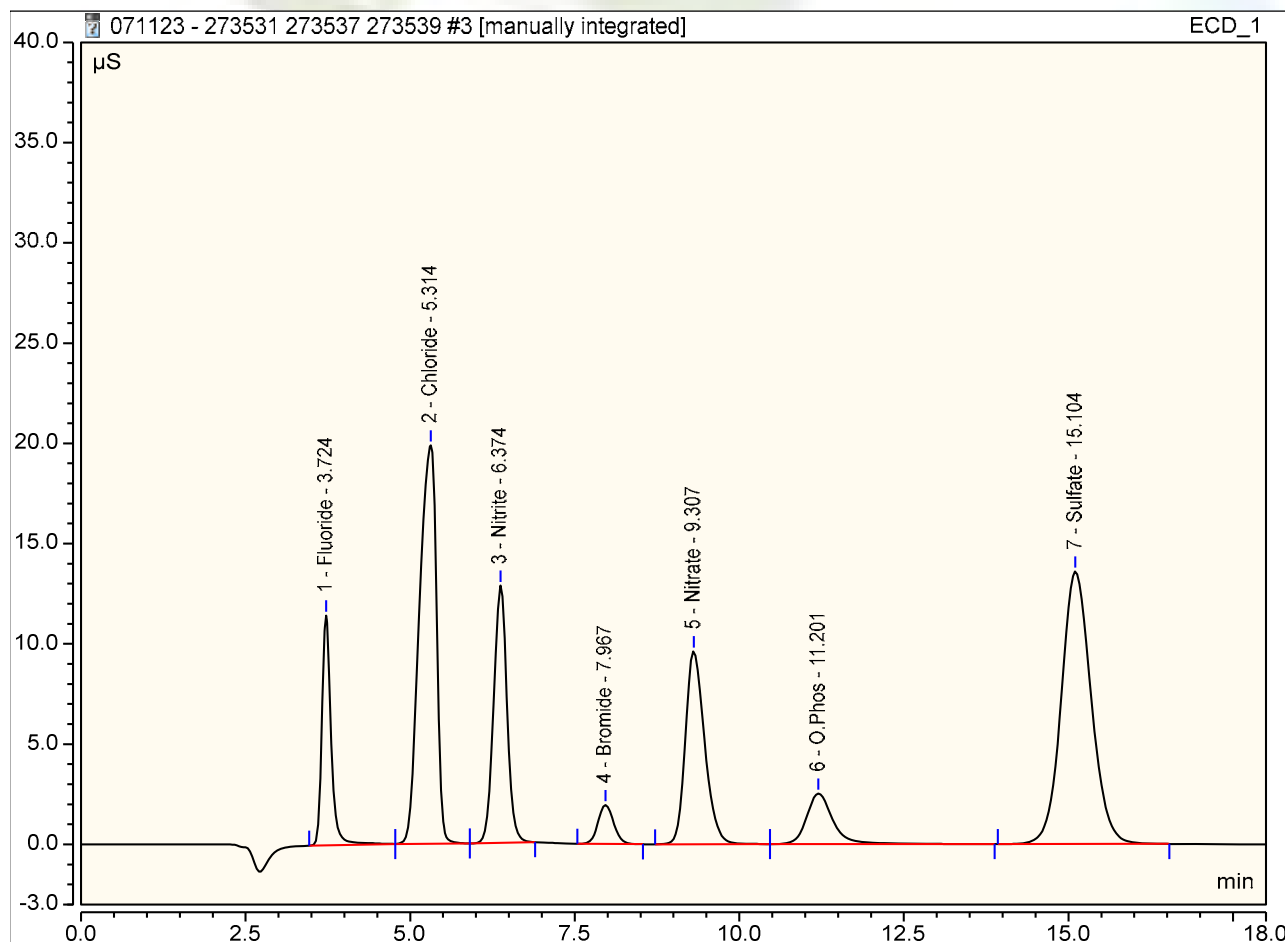


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Peak Integration Report

Sample Name:	LCSW	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 12:42	Run Time:	18.00

No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.72	Fluoride	1.847	11.470	3.2901
2	5.31	Chloride	5.975	19.871	14.9951
3	6.37	Nitrite	3.024	12.831	3.8189
4	7.97	Bromide	0.538	1.946	3.5881
5	9.31	Nitrate	3.265	9.620	3.5222
6	11.20	O.Phos	1.170	2.519	3.3529
7	15.10	Sulfate	7.180	13.602	24.9155



RD 07/18/2023

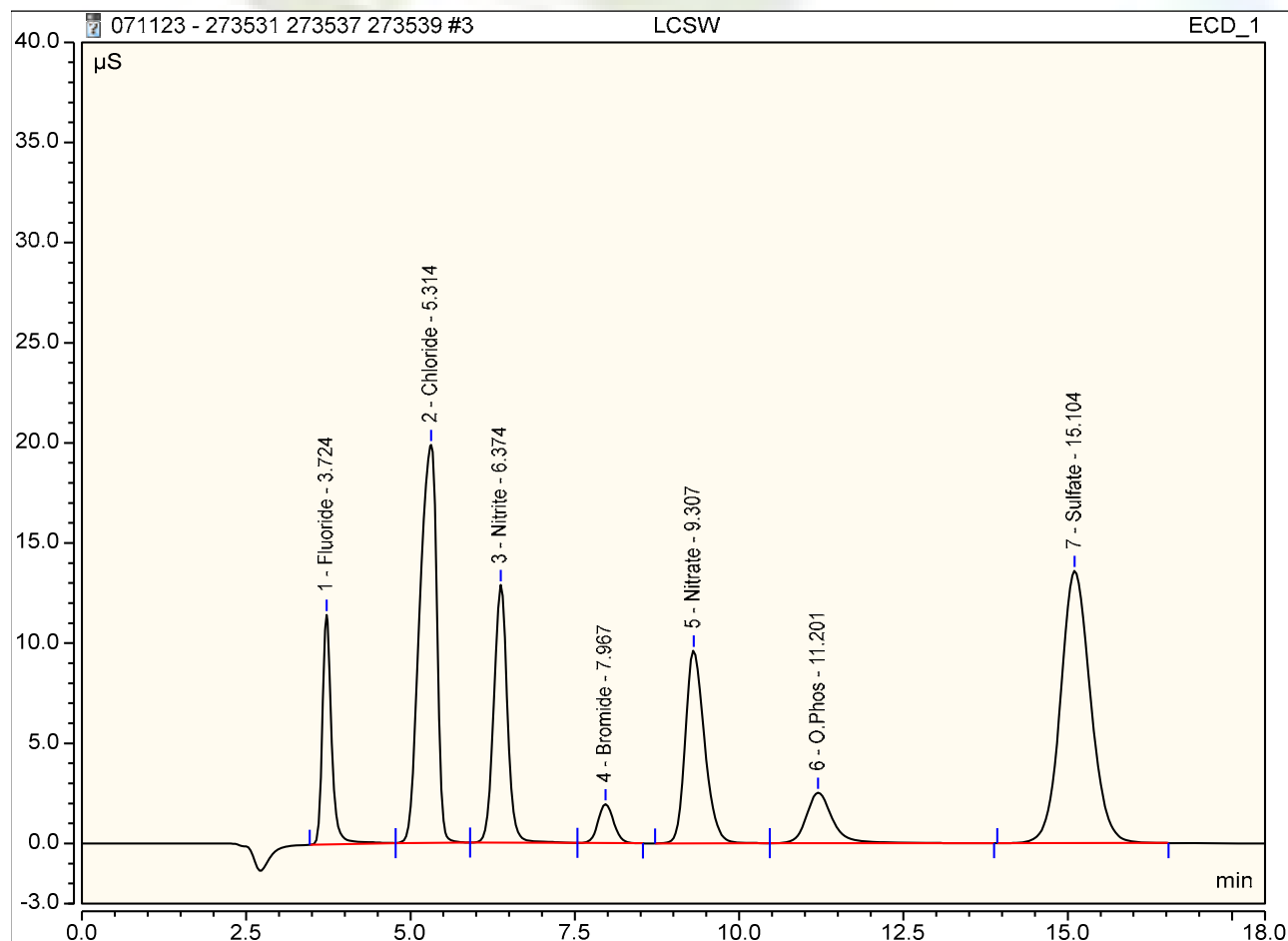
Peak Integration Report

TMG

07/14/2023

Sample Name:	LCSW	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 12:42	Run Time:	18.00

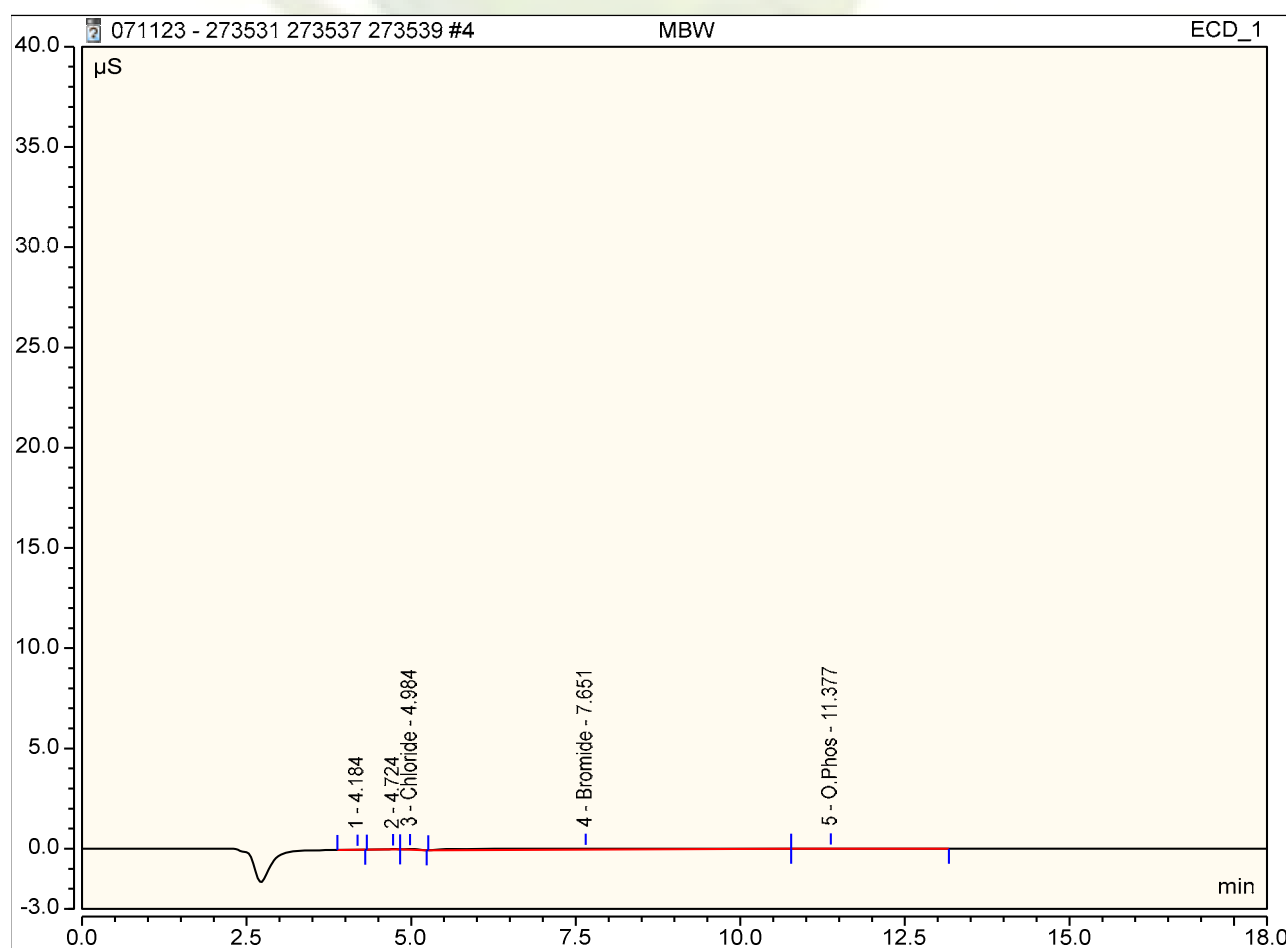
No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.72	Fluoride	1.847	11.470	3.2901
2	5.31	Chloride	5.975	19.871	14.9951
3	6.37	Nitrite	3.080	12.864	3.8880
4	7.97	Bromide	0.538	1.946	3.5881
5	9.31	Nitrate	3.265	9.620	3.5222
6	11.20	O.Phos	1.170	2.519	3.3529
7	15.10	Sulfate	7.180	13.602	24.9155



Peak Integration Report

Sample Name:	MBW	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 13:03	Run Time:	18.00

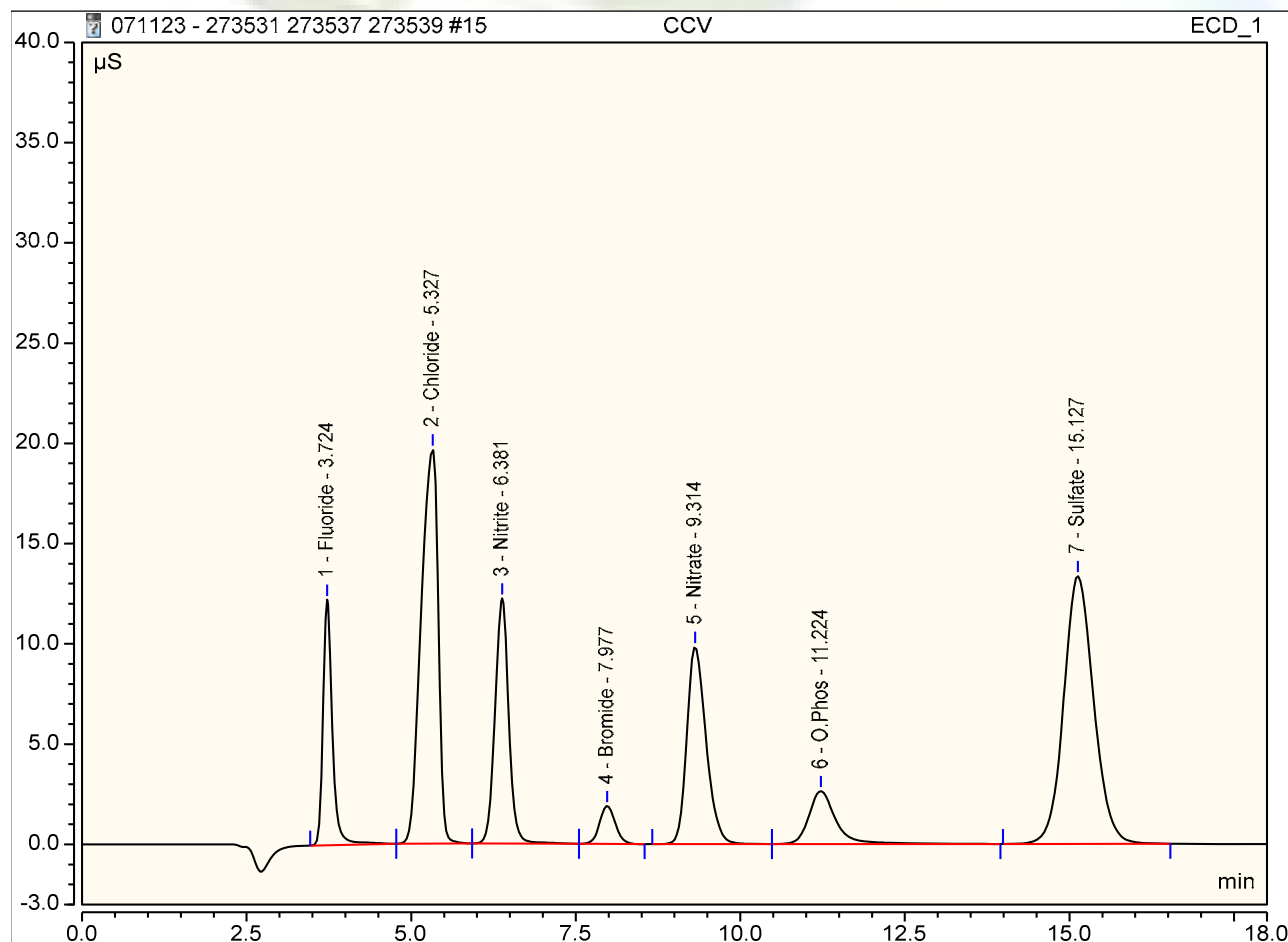
No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
3	4.98	Chloride	0.007	0.030	0.3795
4	7.65	Bromide	0.196	0.046	1.3049
5	11.38	O.Phos	0.019	0.021	n.a.



Peak Integration Report

Sample Name:	CCV	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 16:53	Run Time:	18.00

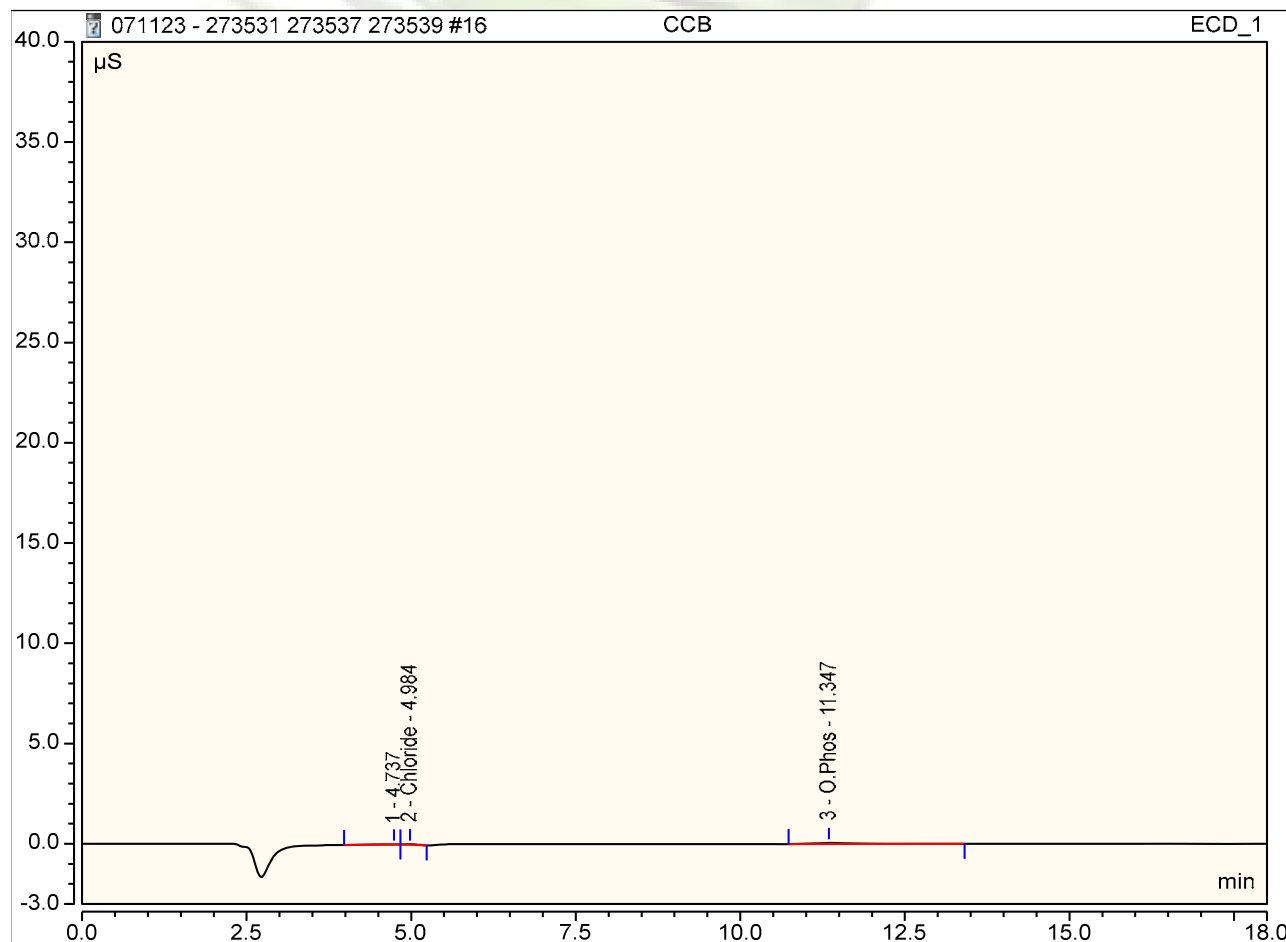
No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.72	Fluoride	2.002	12.244	3.5645
2	5.33	Chloride	5.900	19.664	14.8124
3	6.38	Nitrite	2.949	12.230	3.7240
4	7.98	Bromide	0.527	1.895	3.5145
5	9.31	Nitrate	3.339	9.842	3.6002
6	11.22	O.Phos	1.256	2.642	3.6238
7	15.13	Sulfate	7.051	13.358	24.4775



Peak Integration Report

Sample Name:	CCB	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 17:13	Run Time:	18.00

No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	4.98	Chloride	0.007	0.029	0.3792
3	11.35	O.Phos	0.041	0.050	n.a.

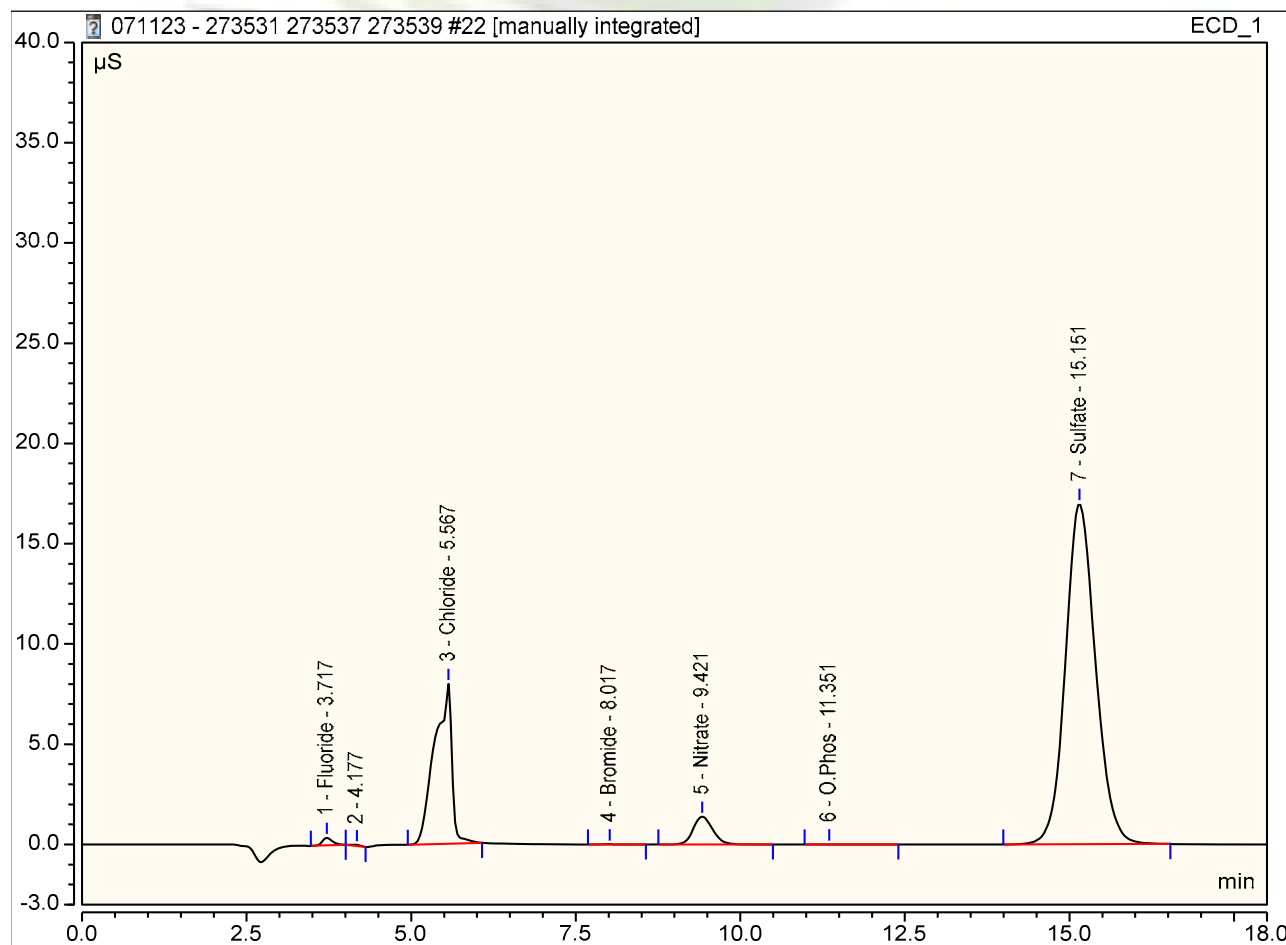


TMG 07/14/2023

Peak Integration Report

Sample Name:	1346379	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 19:19	Run Time:	18.00

No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.72	Fluoride	0.066	0.382	0.1464
3	5.57	Chloride	2.444	7.974	6.3486
4	8.02	Bromide	0.003	0.011	0.0165
5	9.42	Nitrate	0.477	1.387	0.5578
6	11.35	O.Phos	0.005	0.008	n.a.
7	15.15	Sulfate	9.007	16.981	31.1036



RO 07/18/2023

Logged on User: Administrator
Instrument: AQUION_4
Sequence: 071123 - 273531 273537 273539

REASON #4

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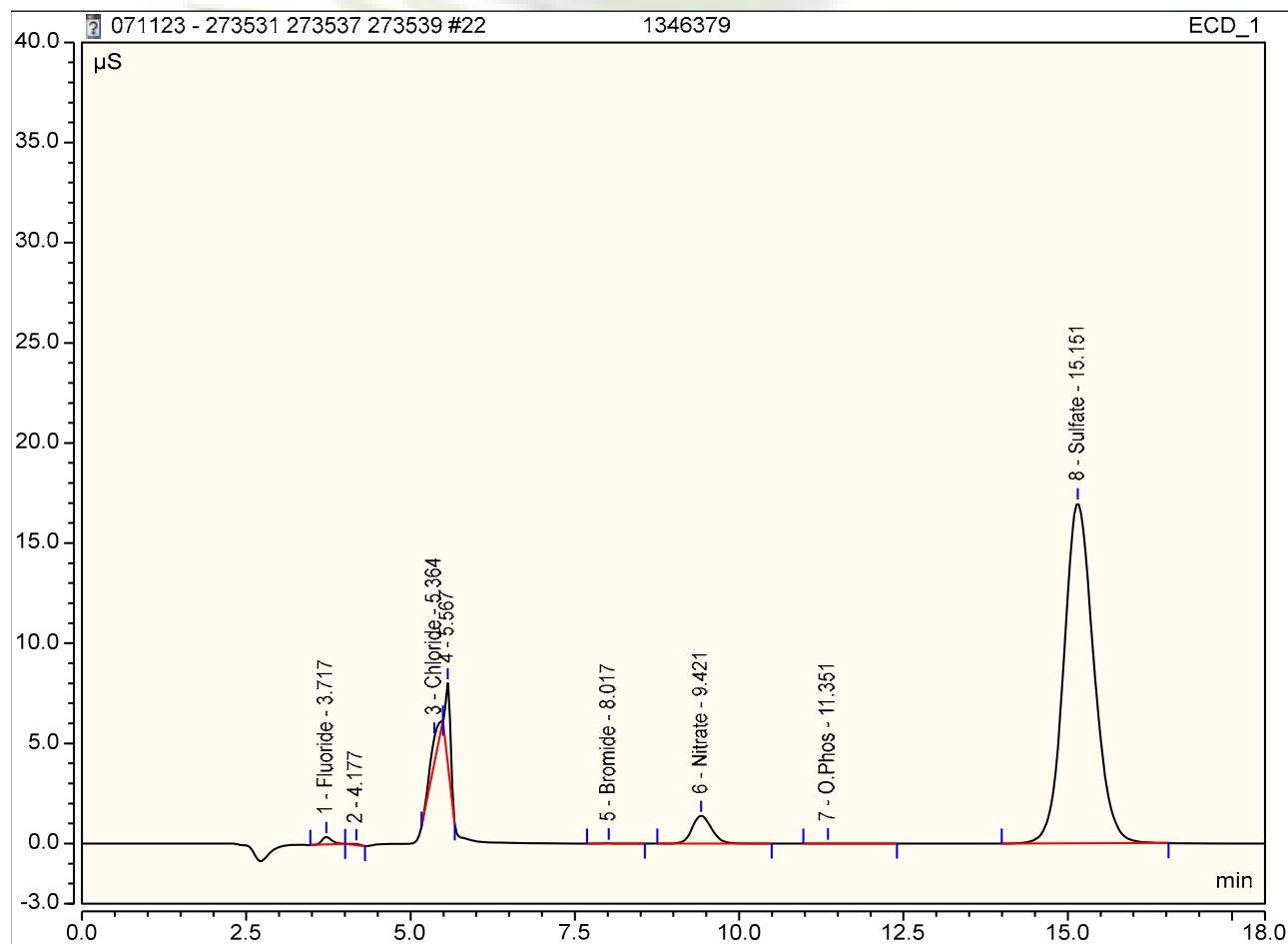
TMG

07/14/2023

Peak Integration Report

Sample Name:	1346379	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 19:19	Run Time:	18.00

No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.72	Fluoride	0.066	0.382	0.1464
3	5.36	Chloride	0.220	1.235	0.9019
5	8.02	Bromide	0.003	0.011	0.0165
6	9.42	Nitrate	0.477	1.387	0.5578
7	11.35	O.Phos	0.005	0.008	n.a.
8	15.15	Sulfate	9.007	16.981	31.1036



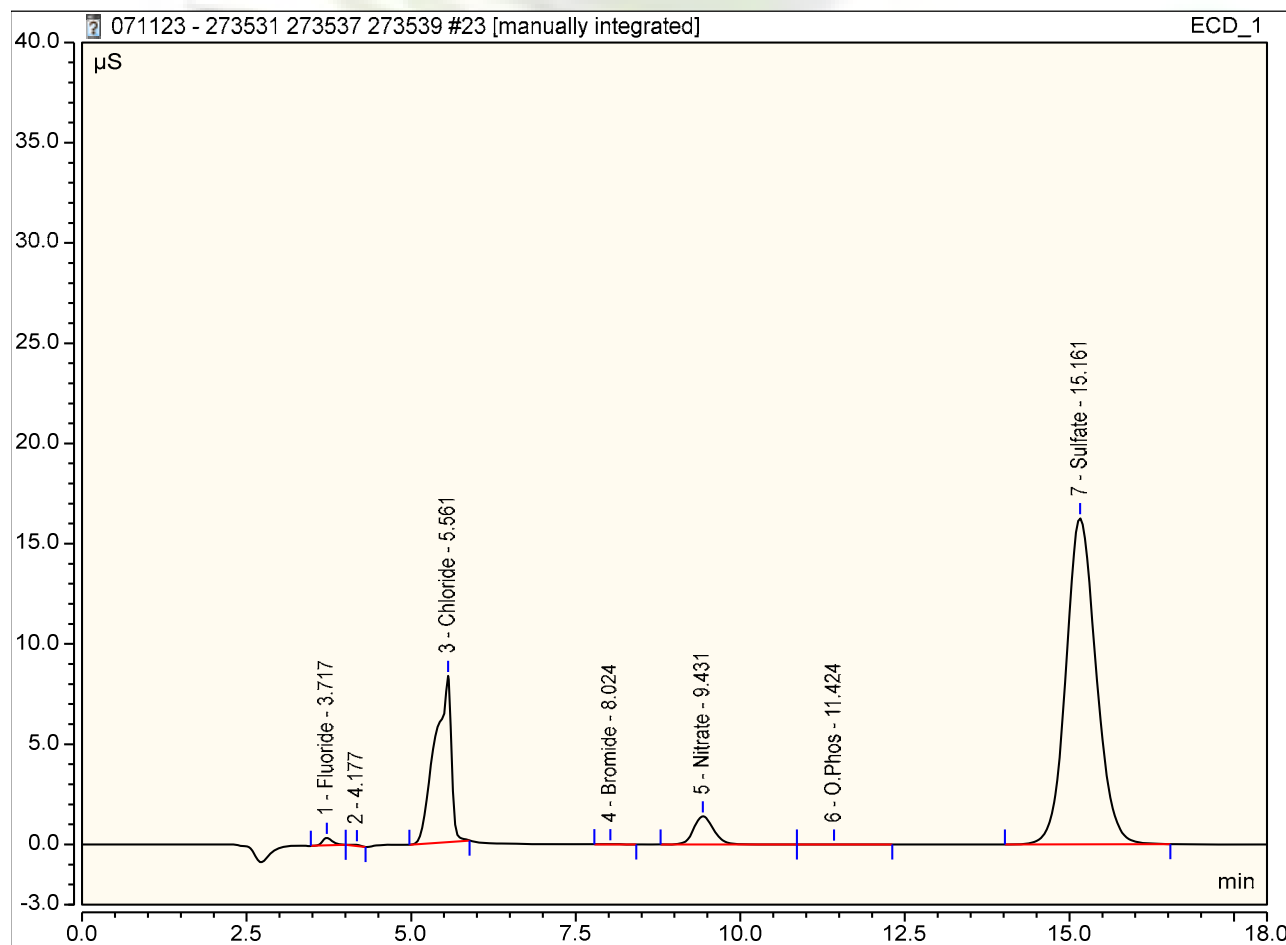
TMG

07/14/2023

Peak Integration Report

Sample Name:	1346380	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 19:40	Run Time:	18.00

No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.72	Fluoride	0.066	0.379	0.1455
3	5.56	Chloride	2.398	8.289	6.2364
4	8.02	Bromide	0.002	0.009	0.0097
5	9.43	Nitrate	0.490	1.404	0.5709
6	11.42	O.Phos	0.004	0.007	n.a.
7	15.16	Sulfate	8.649	16.272	29.8910



RD 07/18/2023

Logged on User: Administrator
Instrument: AQUION_4
Sequence: 071123 - 273531 273537 273539

REASON #4

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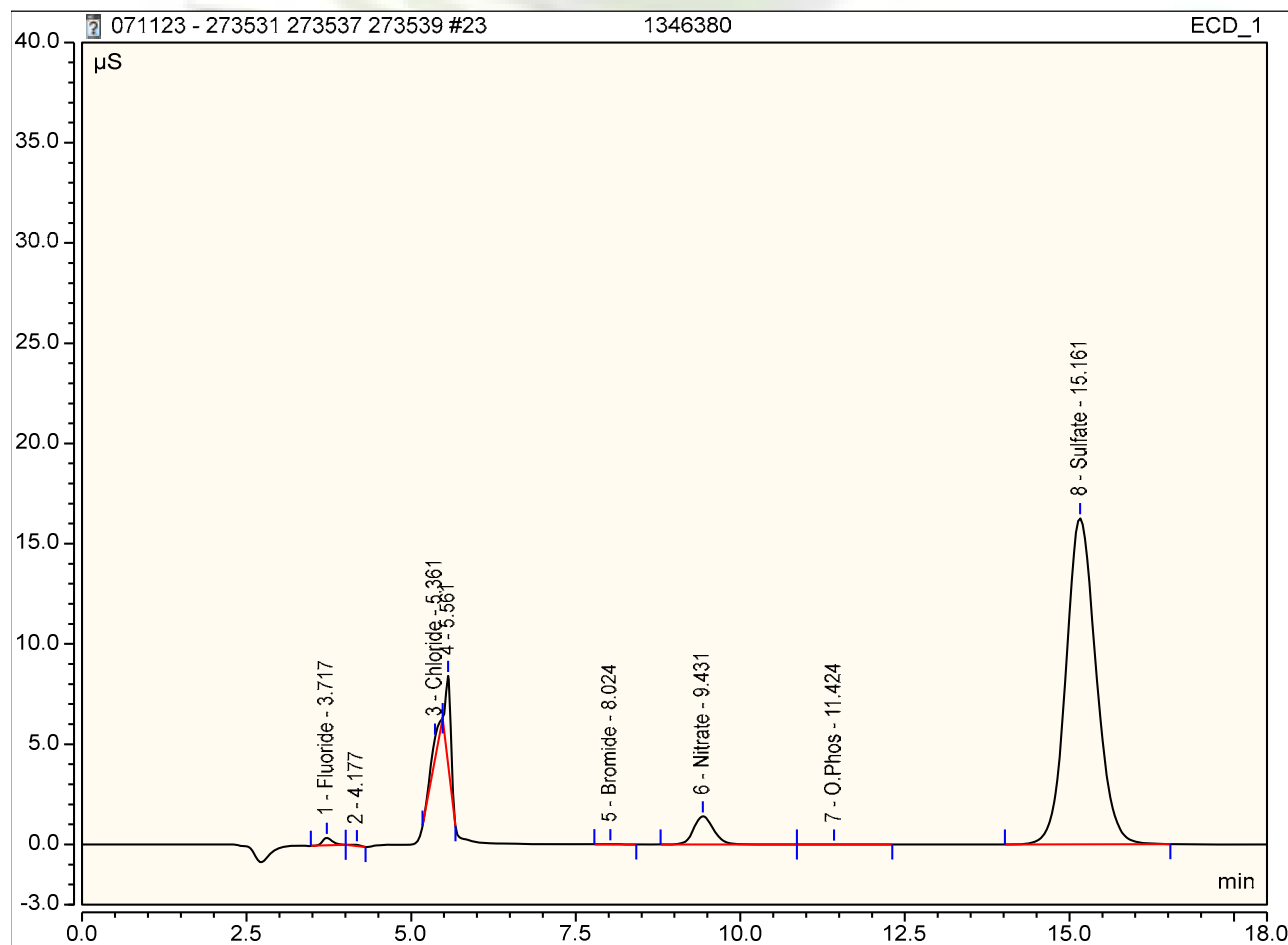
Peak Integration Report

TMG

07/14/2023

Sample Name:	1346380	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 19:40	Run Time:	18.00

No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.72	Fluoride	0.066	0.379	0.1455
3	5.36	Chloride	0.174	1.042	0.7884
5	8.02	Bromide	0.002	0.009	0.0097
6	9.43	Nitrate	0.490	1.404	0.5709
7	11.42	O.Phos	0.004	0.007	n.a.
8	15.16	Sulfate	8.649	16.272	29.8910

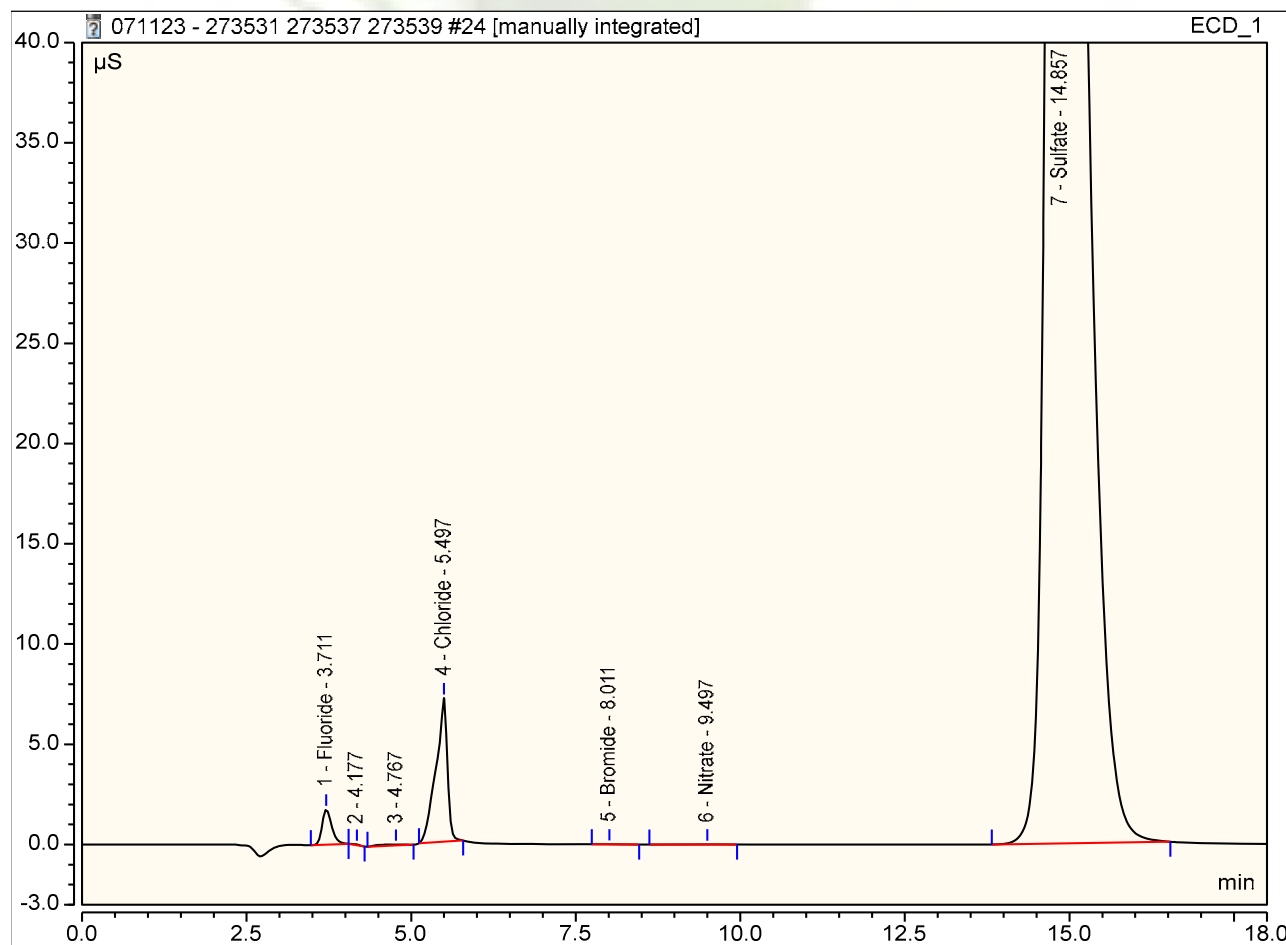


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Peak Integration Report

Sample Name:	1346381	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 20:00	Run Time:	18.00

No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.71	Fluoride	0.299	1.754	0.5571
4	5.50	Chloride	1.461	7.162	3.9416
5	8.01	Bromide	0.003	0.009	0.0130
6	9.50	Nitrate	0.004	0.007	0.0542
7	14.86	Sulfate	64.244	111.413	218.2464



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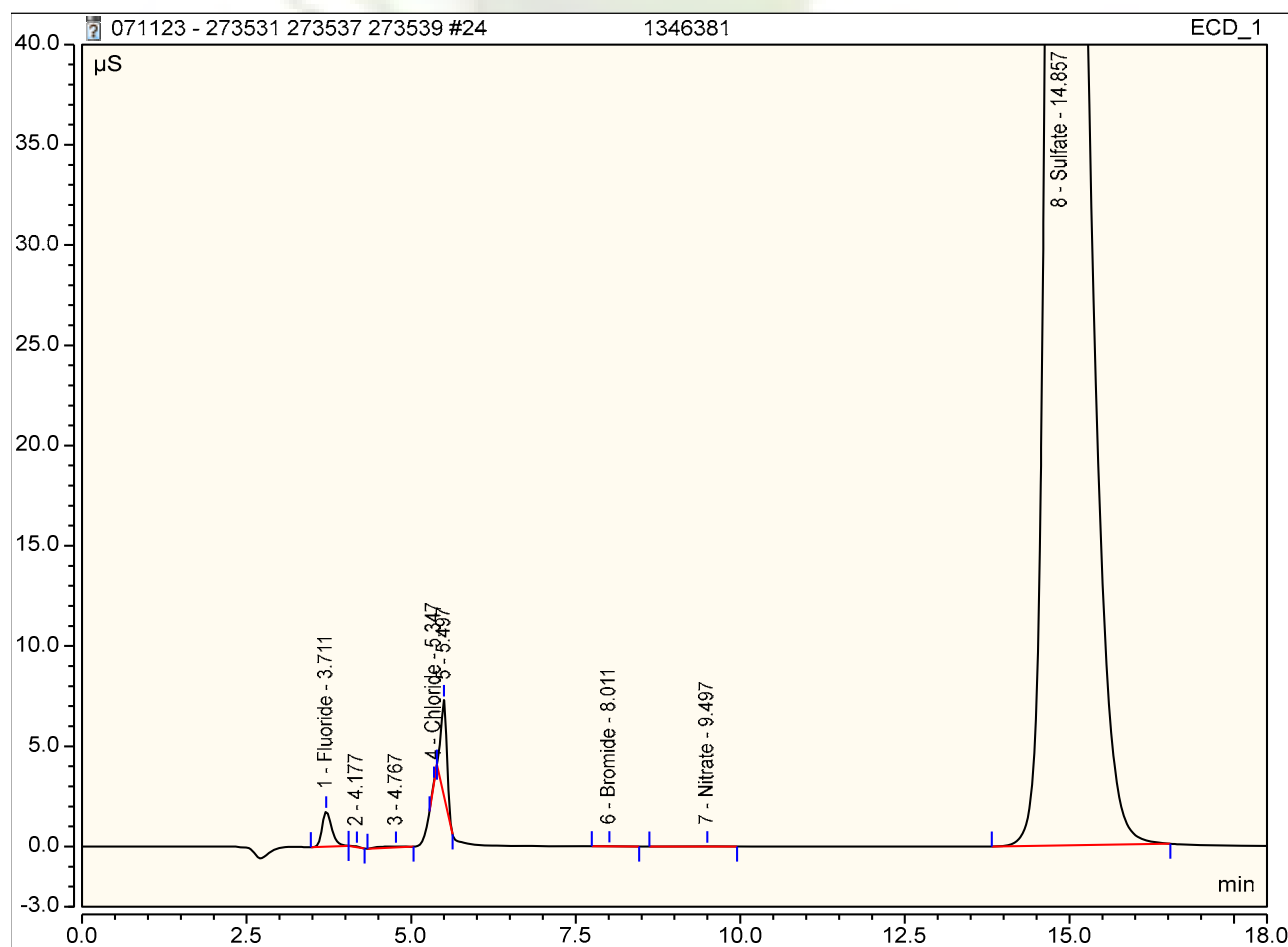
TMG

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Peak Integration Report

Sample Name:	1346381	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 20:00	Run Time:	18.00

No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.71	Fluoride	0.299	1.754	0.5571
4	5.35	Chloride	0.003	0.044	0.3689
6	8.01	Bromide	0.003	0.009	0.0130
7	9.50	Nitrate	0.004	0.007	0.0542
8	14.86	Sulfate	64.244	111.413	218.2464

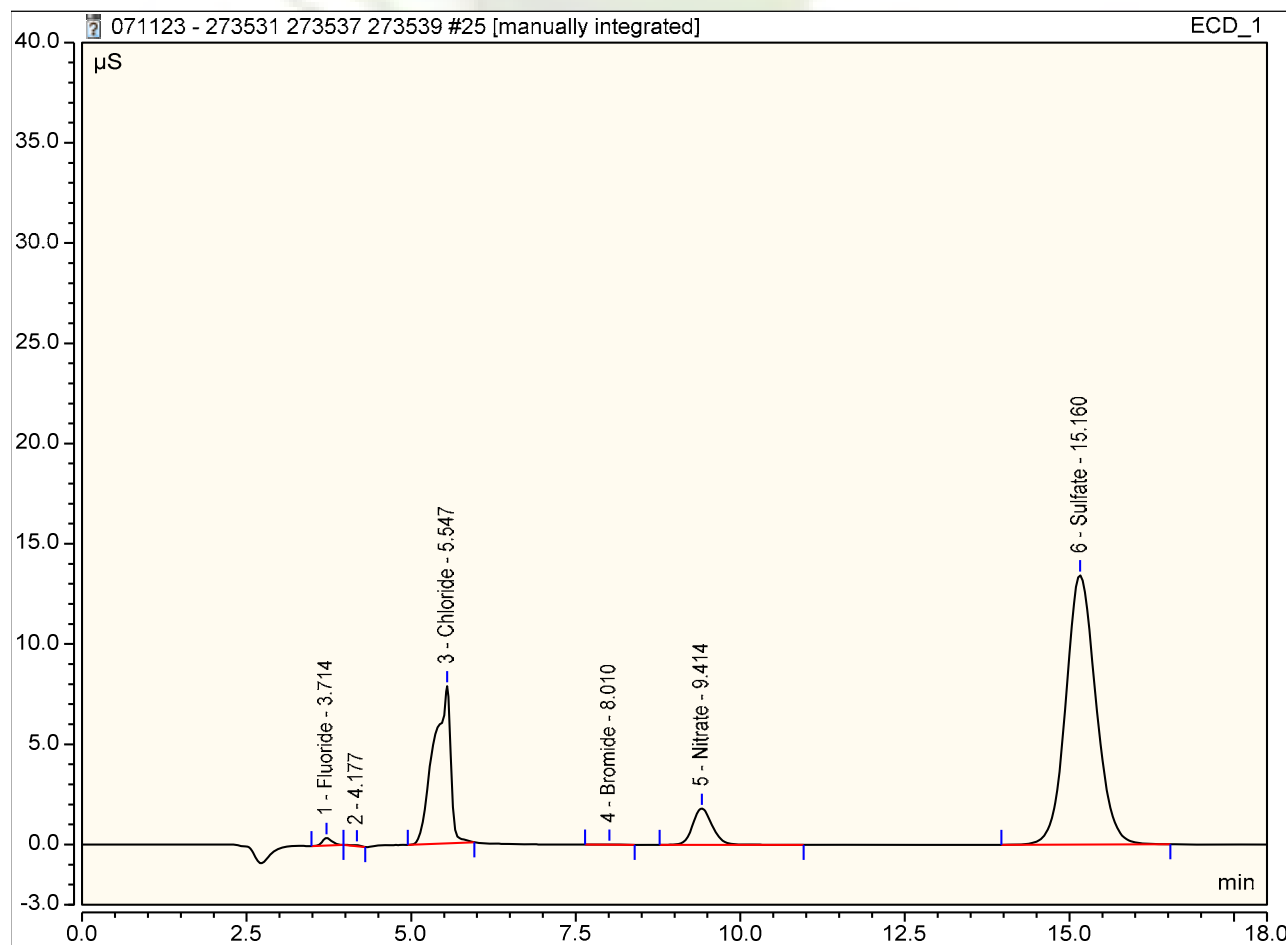


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Peak Integration Report

Sample Name:	1346382	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 20:21	Run Time:	18.00

No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.71	Fluoride	0.062	0.375	0.1387
3	5.55	Chloride	2.370	7.837	6.1673
4	8.01	Bromide	0.003	0.012	0.0160
5	9.41	Nitrate	0.619	1.803	0.7080
6	15.16	Sulfate	7.126	13.433	24.7321



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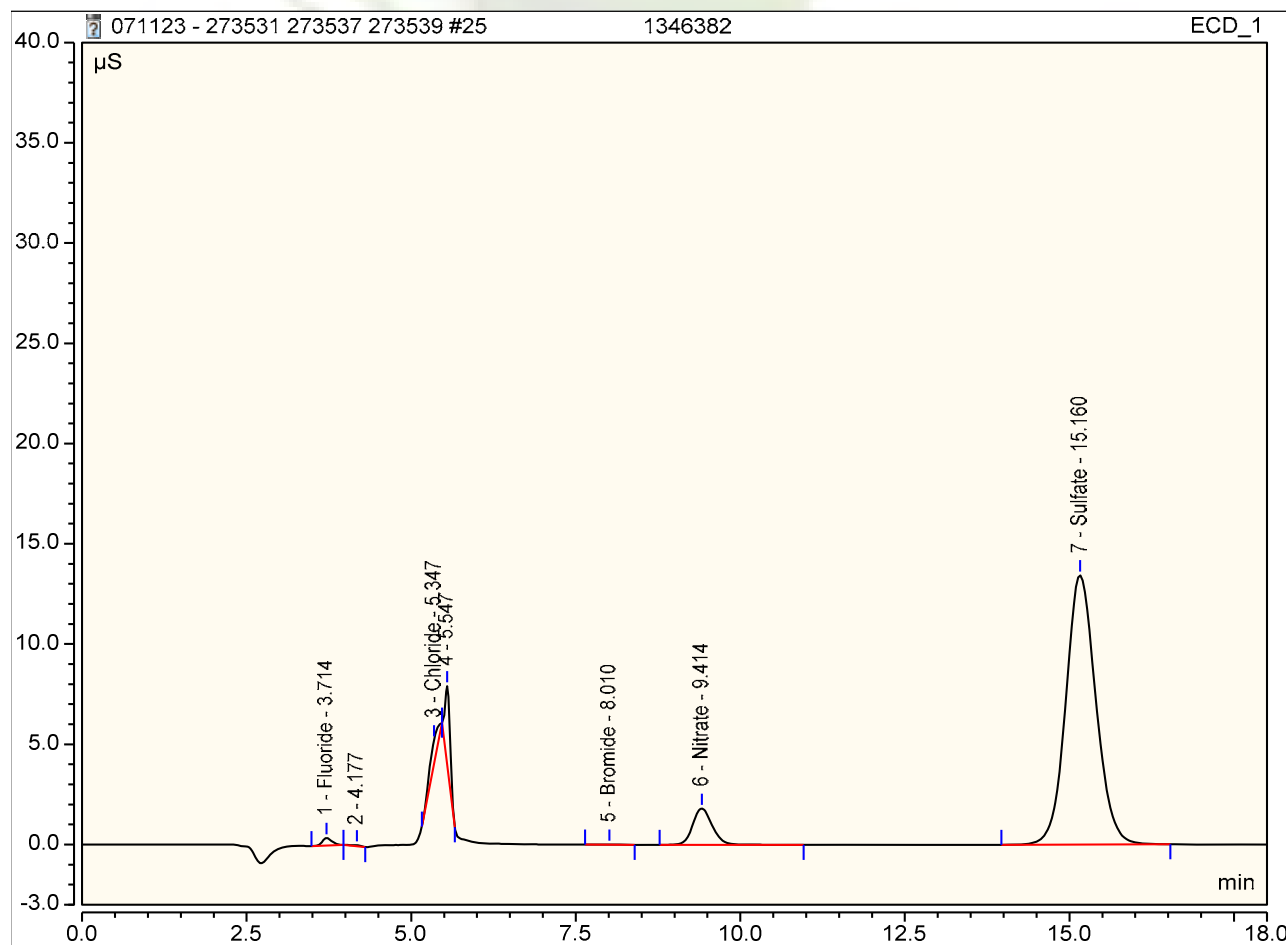
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Peak Integration Report

Sample Name:	1346382	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 20:21	Run Time:	18.00

No.	Time min	Peak Name	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	3.71	Fluoride	0.062	0.375	0.1387
3	5.35	Chloride	0.206	1.187	0.8656
5	8.01	Bromide	0.003	0.012	0.0160
6	9.41	Nitrate	0.619	1.803	0.7080
7	15.16	Sulfate	7.126	13.433	24.7321

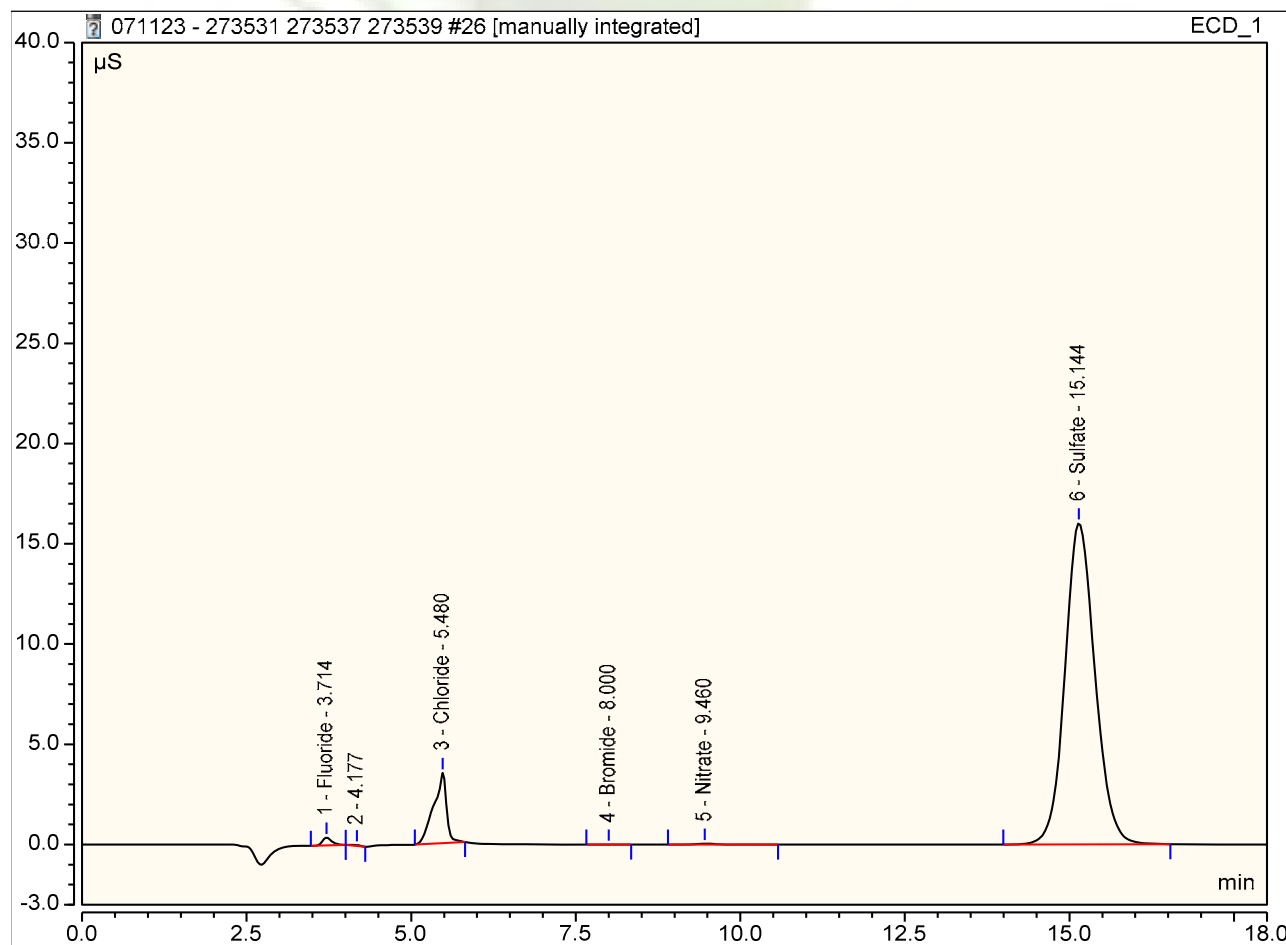


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Peak Integration Report

Sample Name:	1346383	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 20:42	Run Time:	18.00

No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.71	Fluoride	0.065	0.388	0.1446
3	5.48	Chloride	0.798	3.500	2.3158
4	8.00	Bromide	0.002	0.008	0.0093
5	9.46	Nitrate	0.017	0.045	0.0686
6	15.14	Sulfate	8.486	16.018	29.3379



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Logged on User: Administrator
Instrument: AQUION_4
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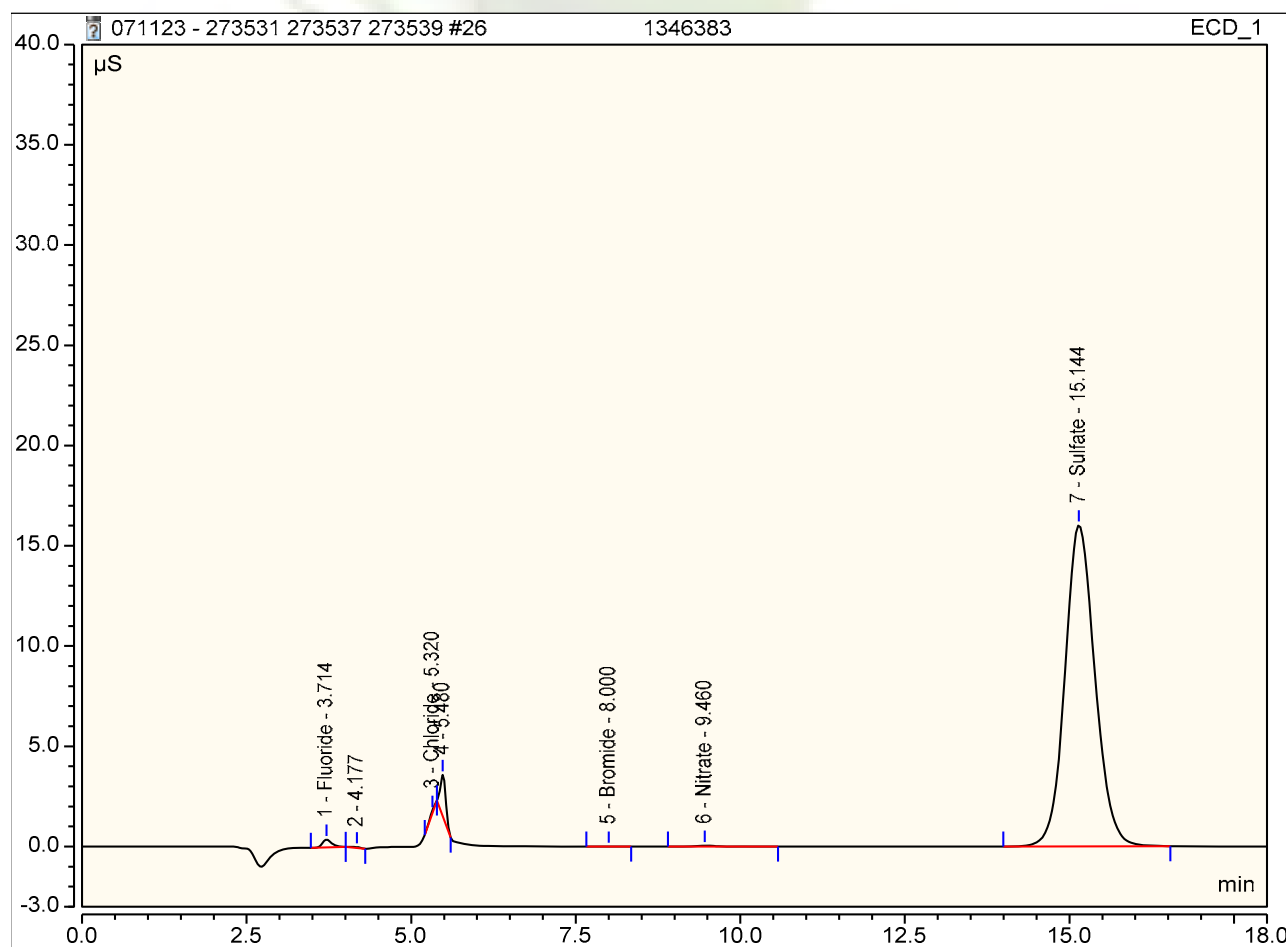
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Peak Integration Report

Sample Name:	1346383	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 20:42	Run Time:	18.00

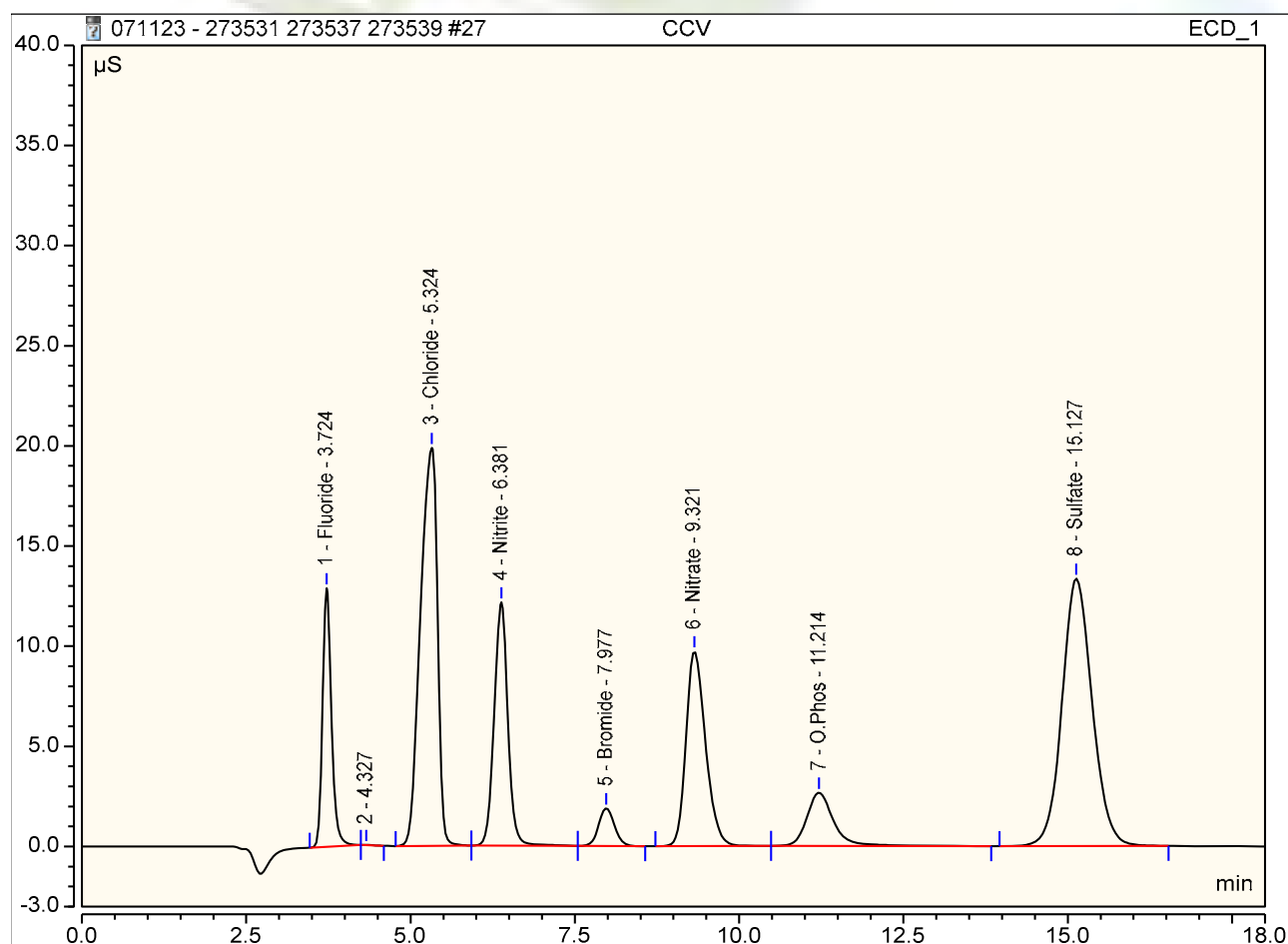
No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.71	Fluoride	0.065	0.388	0.1446
3	5.32	Chloride	0.013	0.129	0.3946
5	8.00	Bromide	0.002	0.008	0.0093
6	9.46	Nitrate	0.017	0.045	0.0686
7	15.14	Sulfate	8.486	16.018	29.3379



Peak Integration Report

Sample Name:	CCV	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 21:03	Run Time:	18.00

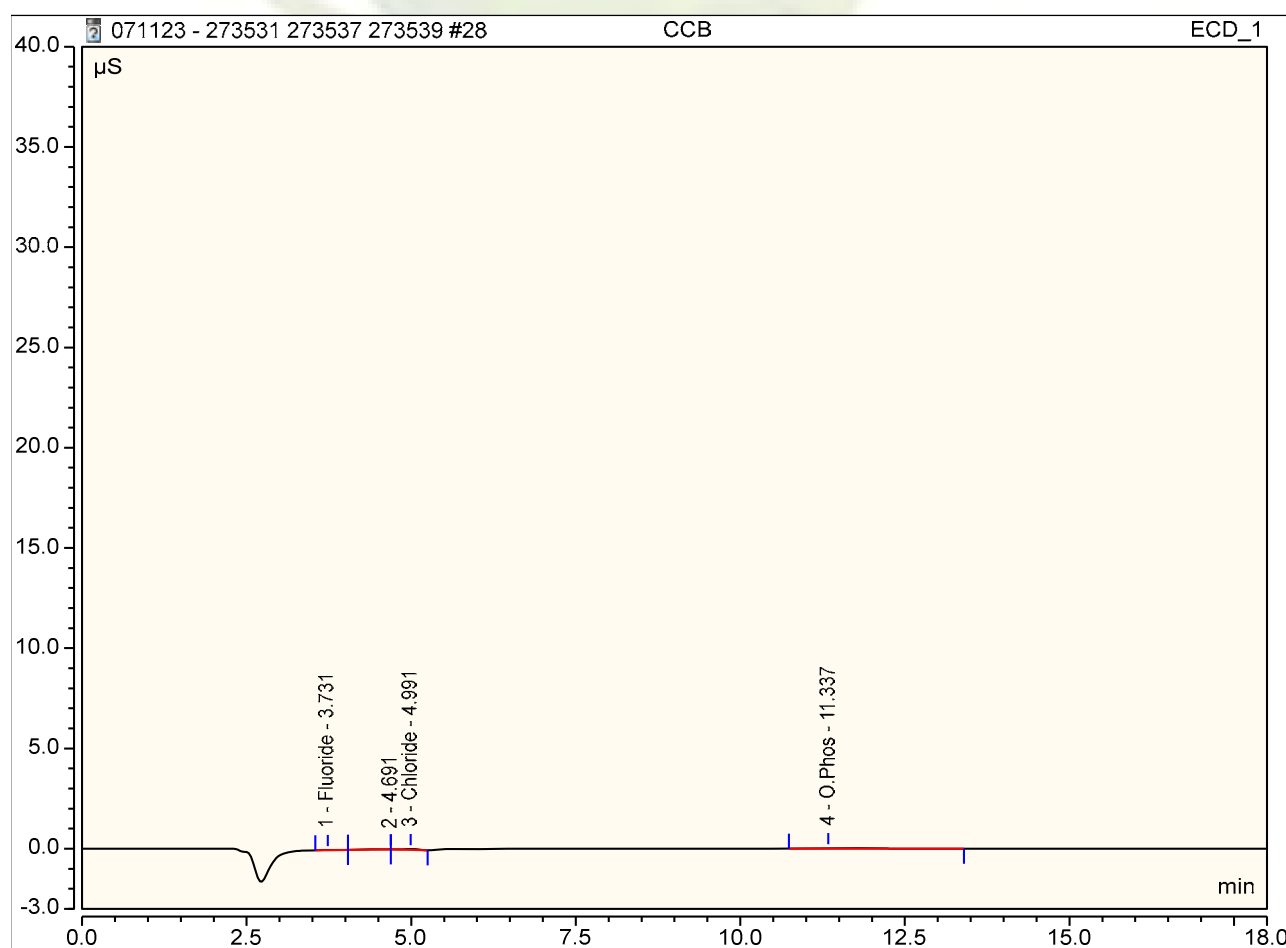
No.	Time min	Peak Name	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	3.72	Fluoride	2.015	12.919	3.5869
3	5.32	Chloride	5.936	19.874	14.9013
4	6.38	Nitrite	2.931	12.145	3.7016
5	7.98	Bromide	0.529	1.885	3.5278
6	9.32	Nitrate	3.356	9.735	3.6189
7	11.21	O.Phos	1.258	2.663	3.6297
8	15.13	Sulfate	7.099	13.348	24.6390



Peak Integration Report

Sample Name:	CCB	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 21:24	Run Time:	18.00

No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.73	Fluoride	0.002	0.008	0.0325
3	4.99	Chloride	0.011	0.038	0.3882
4	11.34	O.Phos	0.034	0.041	n.a.

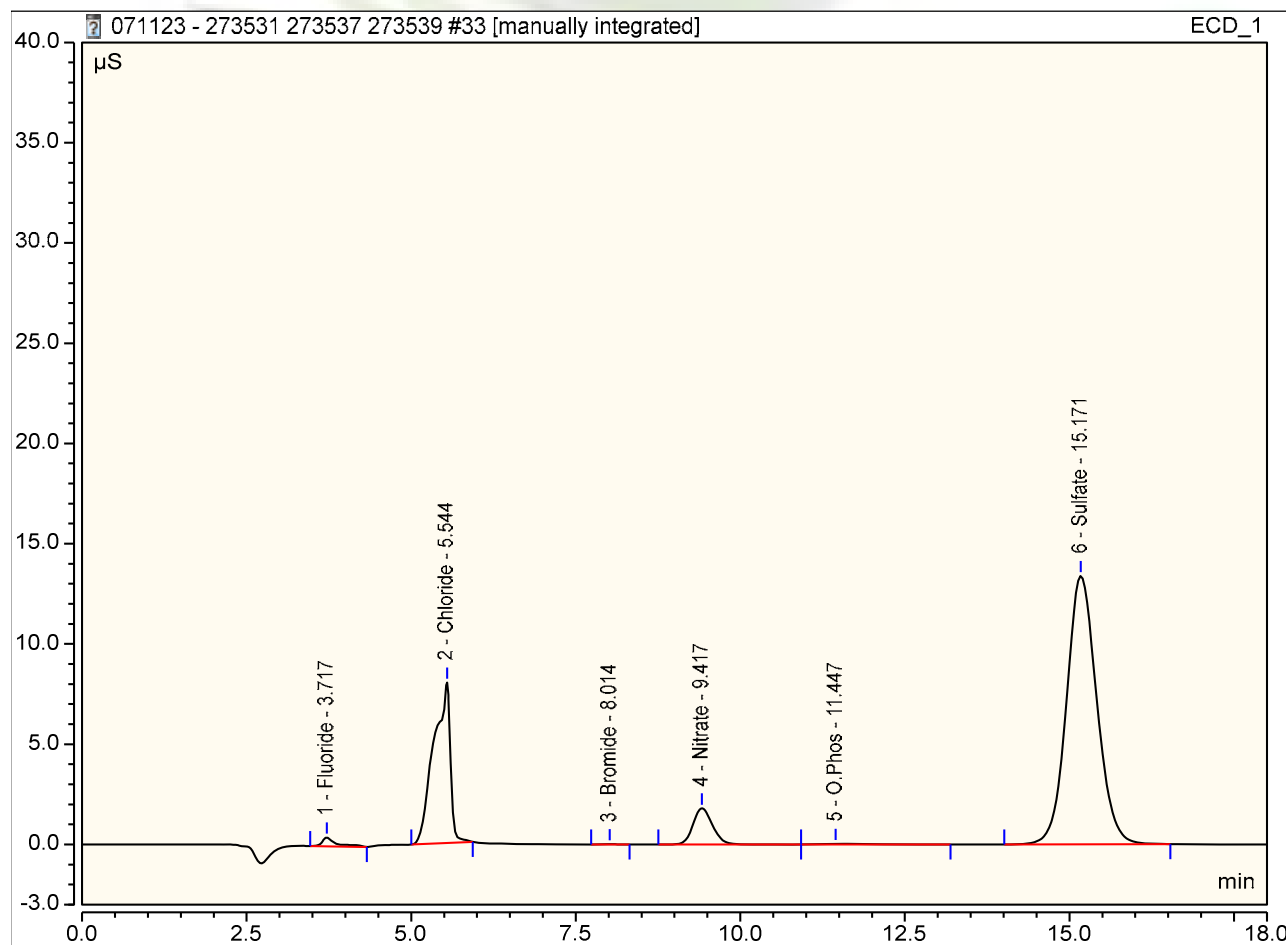


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Peak Integration Report

Sample Name:	DUP1346382	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 23:08	Run Time:	18.00

No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.72	Fluoride	0.110	0.439	0.2233
2	5.54	Chloride	2.366	8.007	6.1581
3	8.01	Bromide	0.003	0.013	0.0171
4	9.42	Nitrate	0.620	1.799	0.7098
5	11.45	O.Phos	0.026	0.031	n.a.
6	15.17	Sulfate	7.138	13.382	24.7727



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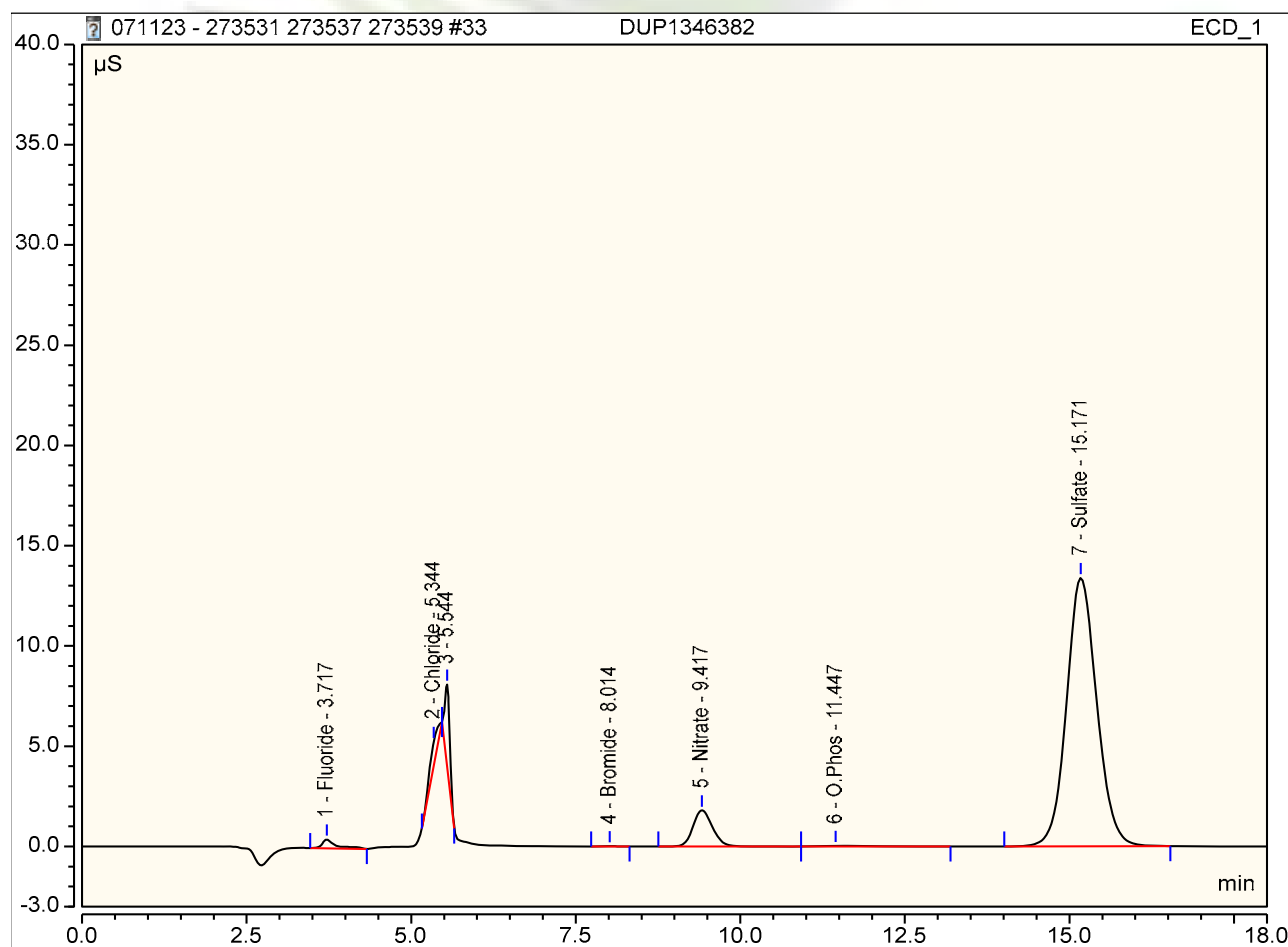
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Peak Integration Report

Sample Name:	DUP1346382	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 23:08	Run Time:	18.00

No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.72	Fluoride	0.110	0.439	0.2233
2	5.34	Chloride	0.196	1.154	0.8429
4	8.01	Bromide	0.003	0.013	0.0171
5	9.42	Nitrate	0.620	1.799	0.7098
6	11.45	O.Phos	0.026	0.031	n.a.
7	15.17	Sulfate	7.138	13.382	24.7727

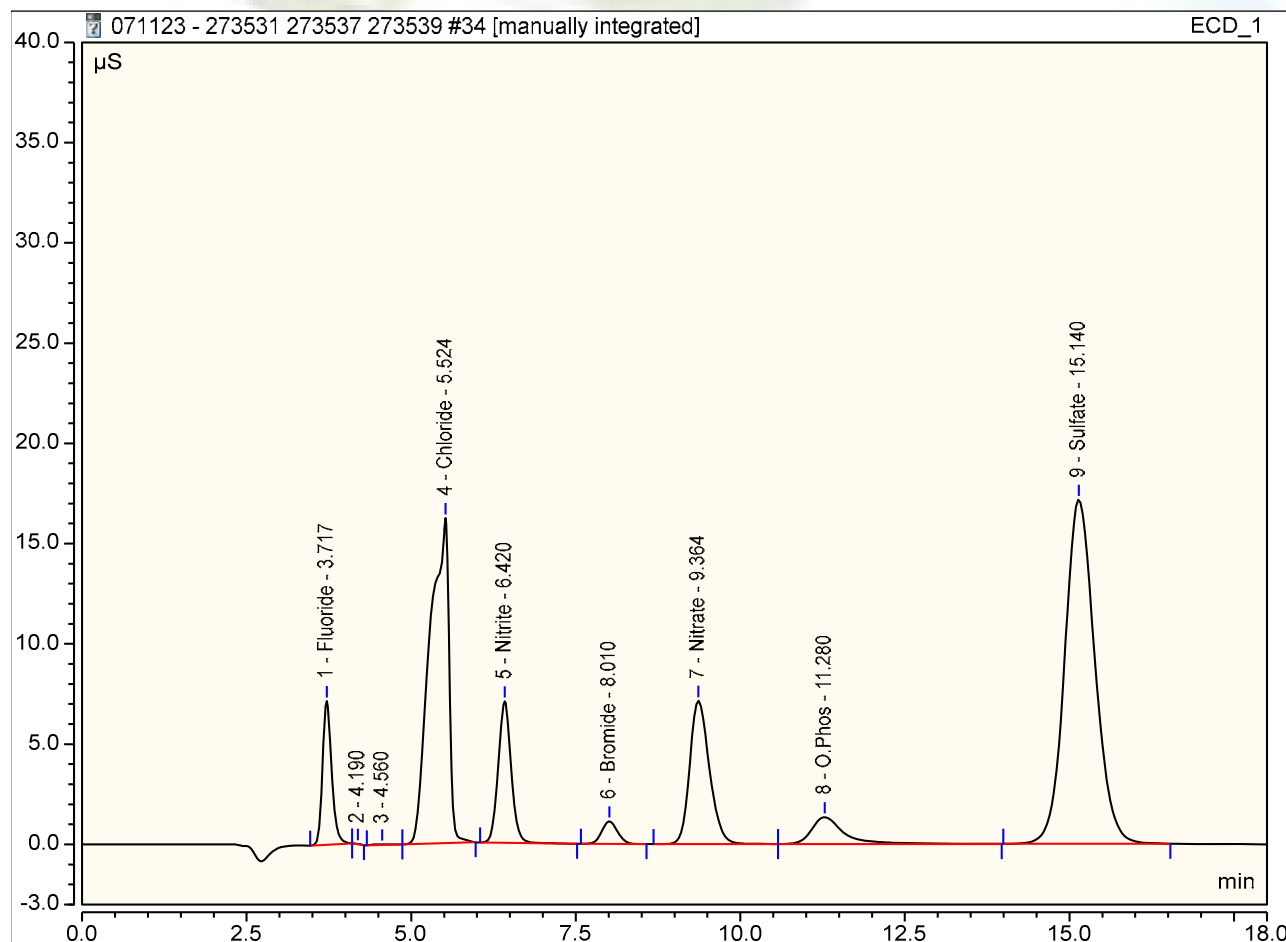


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Peak Integration Report

Sample Name:	MSW1346382	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 23:29	Run Time:	18.00

No.	Time min	Peak Name	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	3.72	Fluoride	1.152	7.160	2.0631
4	5.52	Chloride	5.481	16.206	13.7866
5	6.42	Nitrite	1.612	7.061	2.0516
6	8.01	Bromide	0.318	1.131	2.1172
7	9.36	Nitrate	2.482	7.147	2.6889
8	11.28	O.Phos	0.762	1.339	2.0701
9	15.14	Sulfate	9.131	17.164	31.5248



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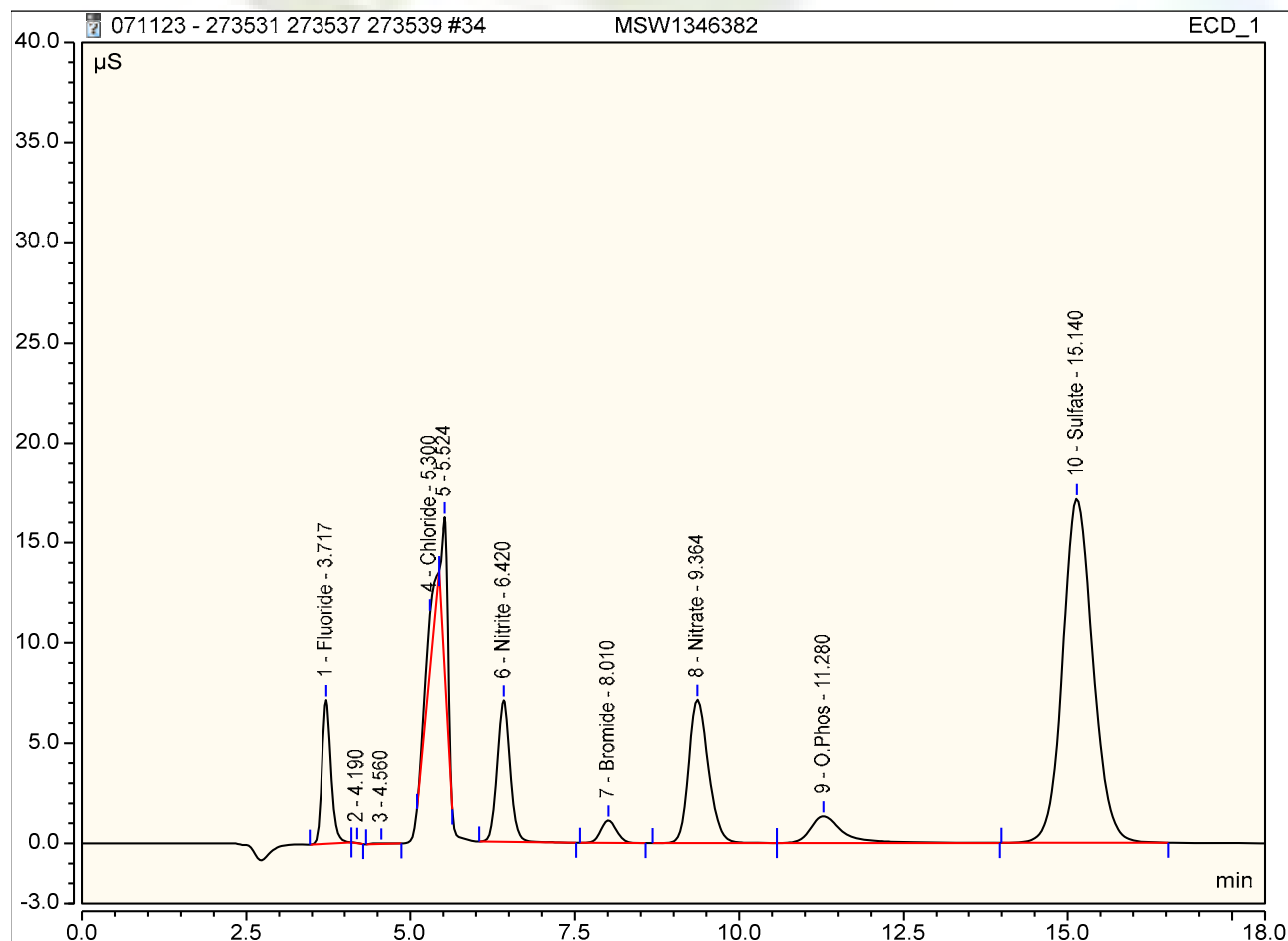
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Peak Integration Report

Sample Name:	MSW1346382	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 23:29	Run Time:	18.00

No.	Time min	Peak Name	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	3.72	Fluoride	1.152	7.160	2.0631
4	5.30	Chloride	0.518	2.769	1.6317
6	6.42	Nitrite	1.612	7.061	2.0516
7	8.01	Bromide	0.318	1.131	2.1172
8	9.36	Nitrate	2.482	7.147	2.6889
9	11.28	O.Phos	0.762	1.339	2.0701
10	15.14	Sulfate	9.131	17.164	31.5248

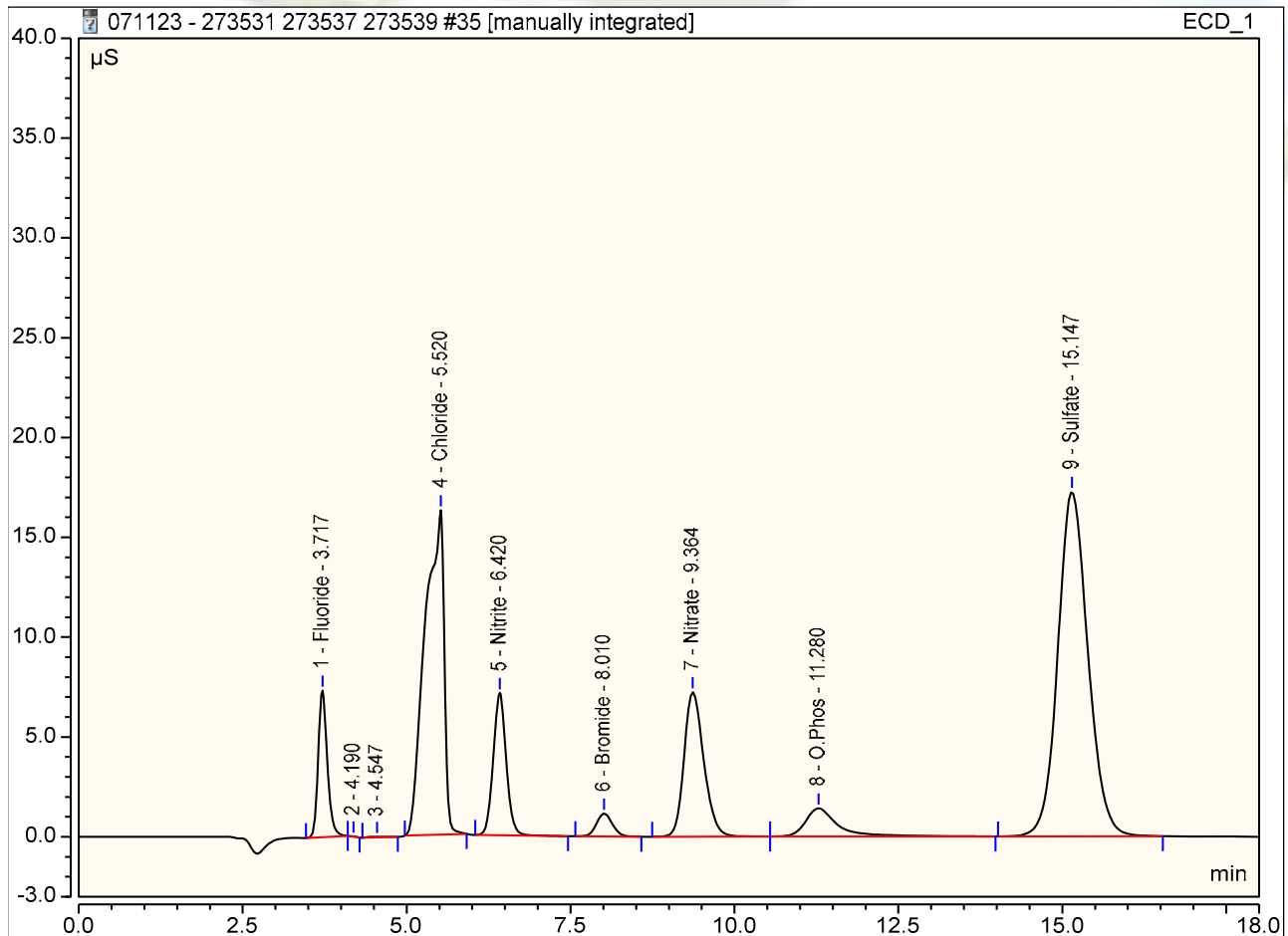


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Peak Integration Report

Sample Name:	MSDW1346382	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 23:50	Run Time:	18.00

No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.72	Fluoride	1.181	7.342	2.1141
4	5.52	Chloride	5.487	16.245	13.8009
5	6.42	Nitrite	1.637	7.129	2.0824
6	8.01	Bromide	0.324	1.147	2.1636
7	9.36	Nitrate	2.522	7.237	2.7320
8	11.28	O.Phos	0.806	1.403	2.2087
9	15.15	Sulfate	9.179	17.260	31.6863



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 Instrument: AQUION_4
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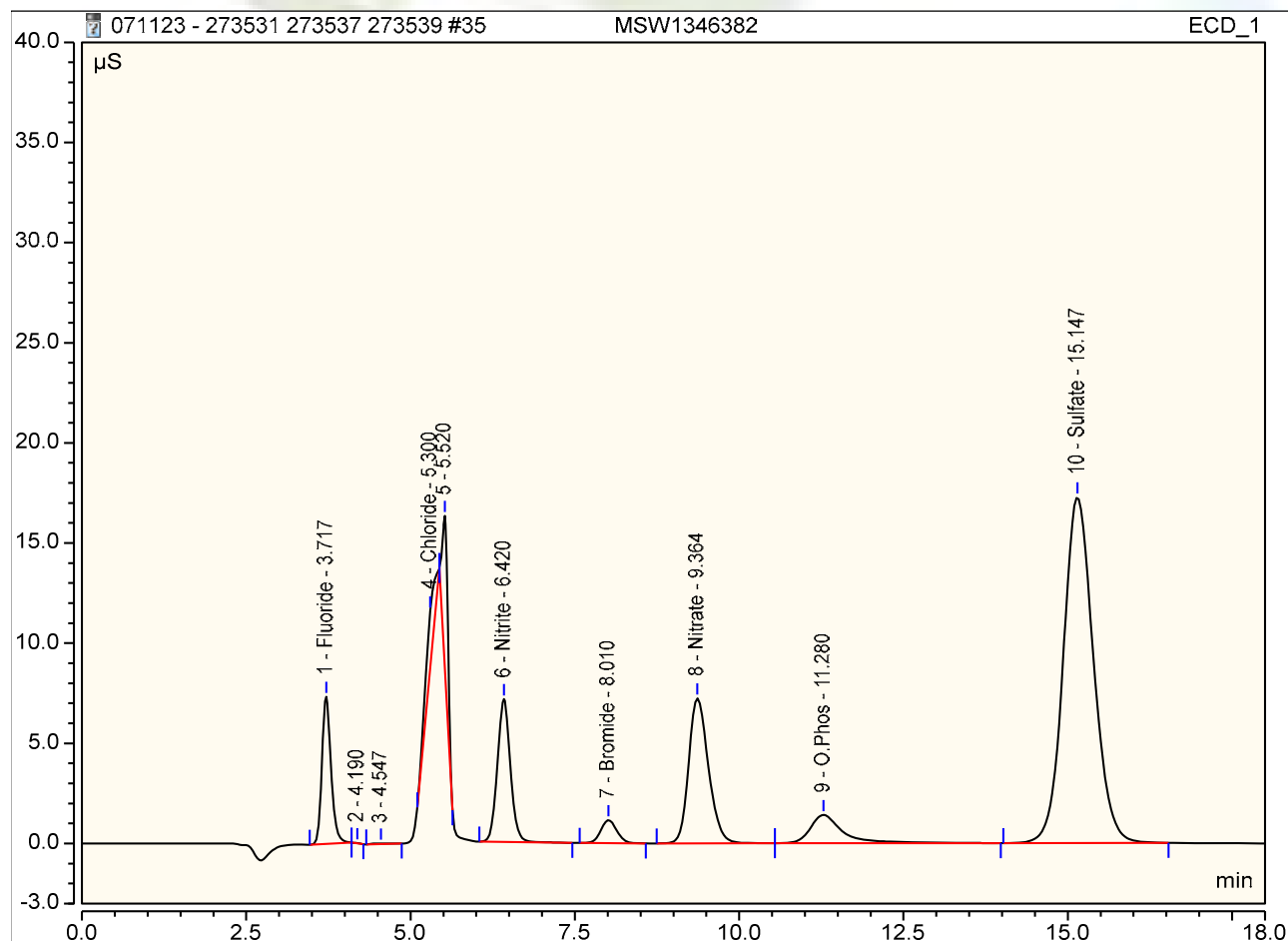
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Peak Integration Report

Sample Name:	MSDW1346382	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	11-Jul-2023 / 23:50	Run Time:	18.00

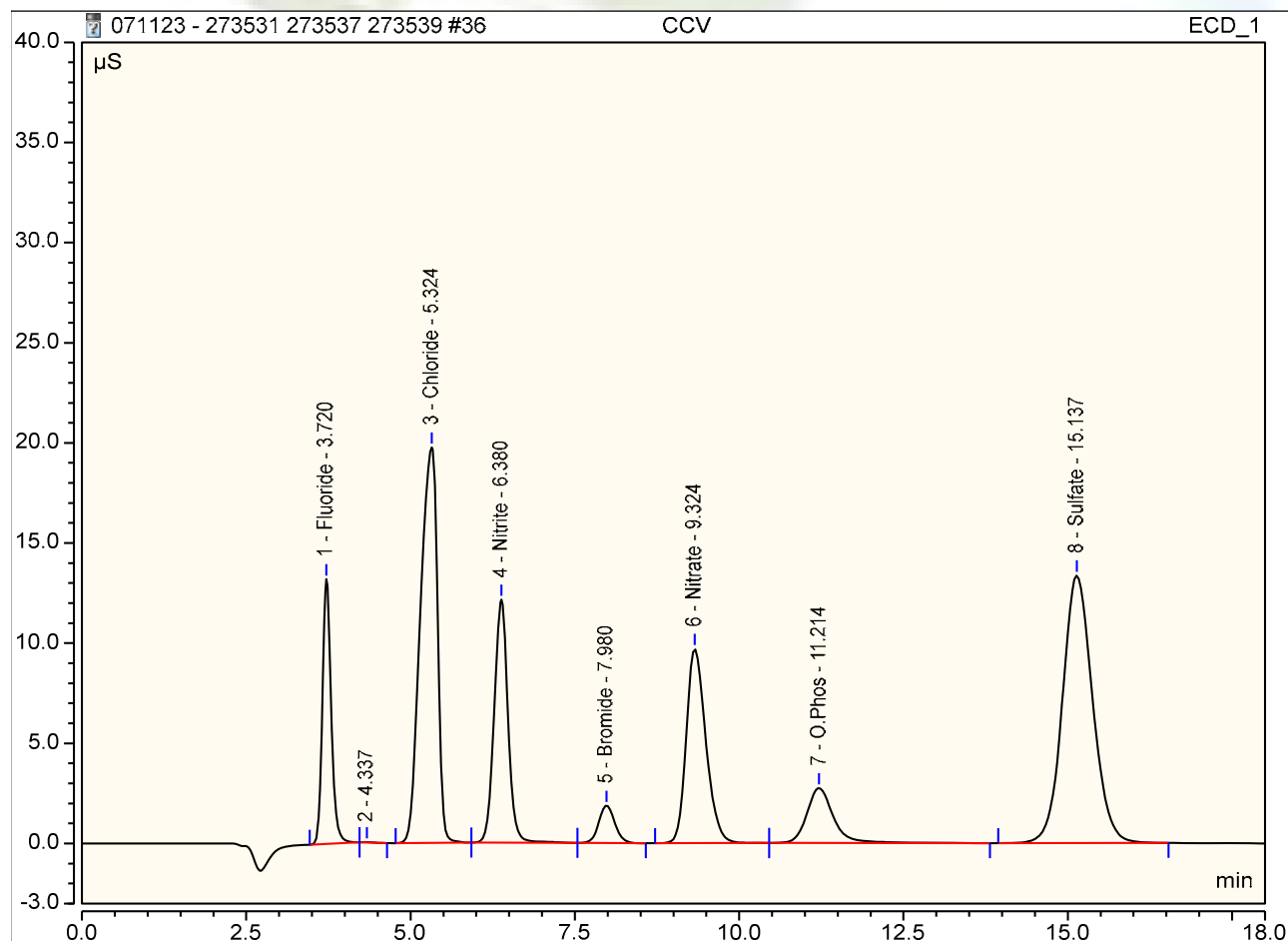
No.	Time min	Peak Name	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	3.72	Fluoride	1.181	7.342	2.1141
4	5.30	Chloride	0.526	2.800	1.6509
6	6.42	Nitrite	1.637	7.129	2.0824
7	8.01	Bromide	0.324	1.147	2.1636
8	9.36	Nitrate	2.522	7.237	2.7320
9	11.28	O.Phos	0.806	1.403	2.2087
10	15.15	Sulfate	9.179	17.260	31.6863



Peak Integration Report

Sample Name:	CCV	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	12-Jul-2023 / 00:11	Run Time:	18.00

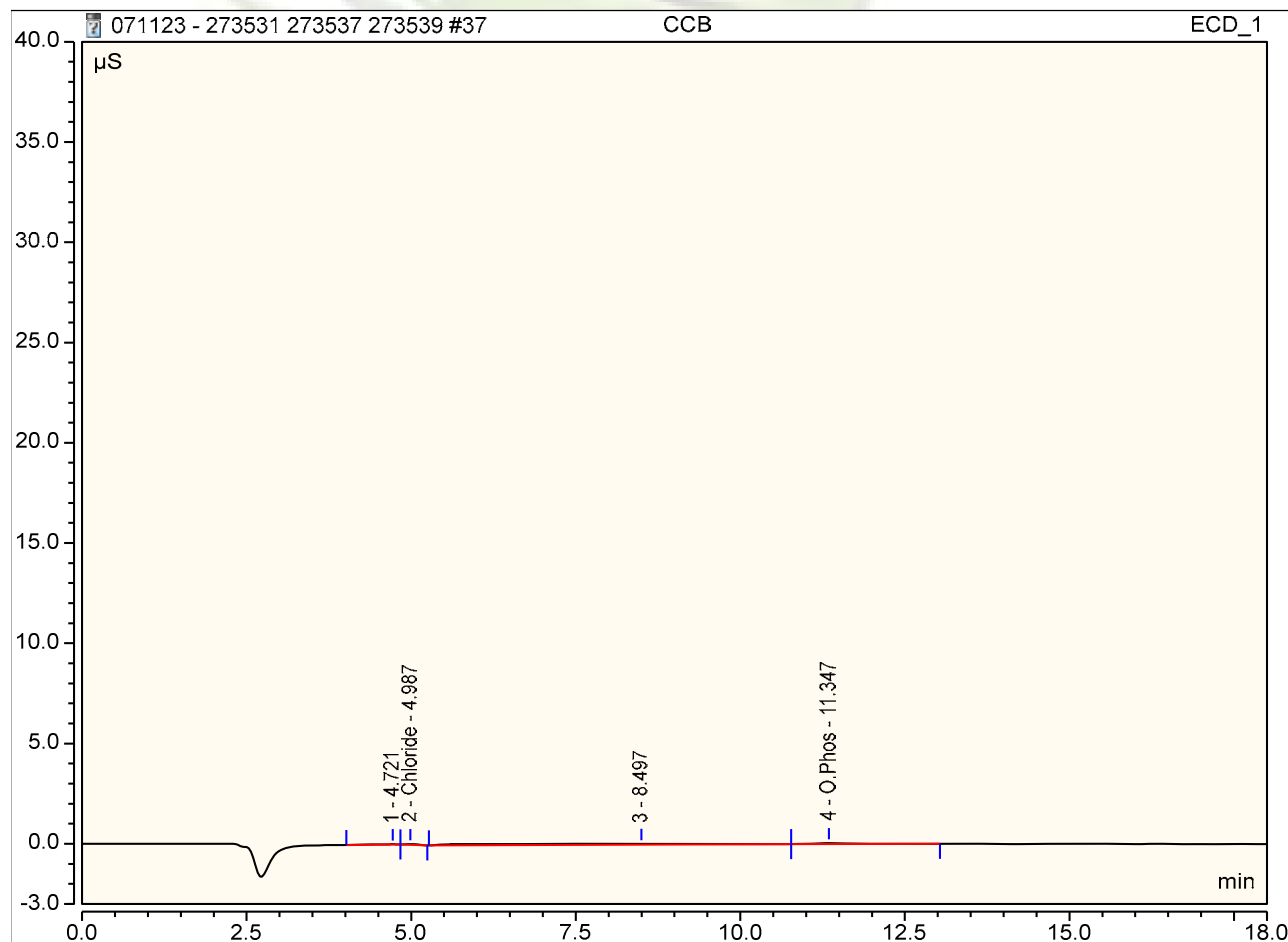
No.	Time min	Peak Name	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	3.72	Fluoride	2.049	13.215	3.6469
3	5.32	Chloride	5.933	19.746	14.8935
4	6.38	Nitrite	2.951	12.138	3.7270
5	7.98	Bromide	0.528	1.867	3.5273
6	9.32	Nitrate	3.357	9.702	3.6197
7	11.21	O.Phos	1.294	2.744	3.7447
8	15.14	Sulfate	7.099	13.356	24.6402

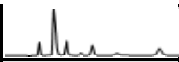
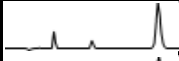
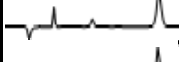
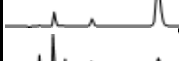
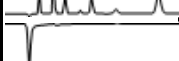
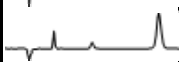
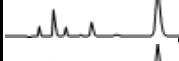
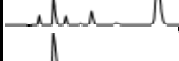
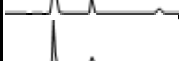
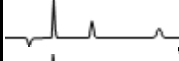
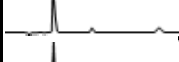
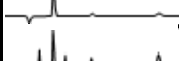
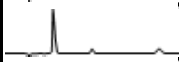
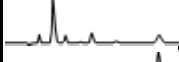
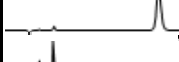
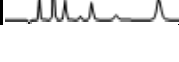
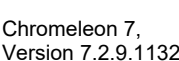


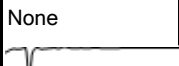
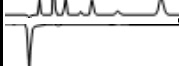
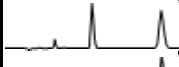
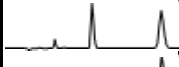
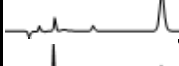
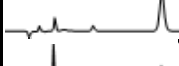
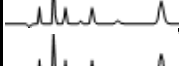
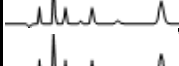
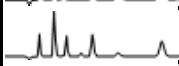
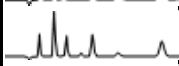
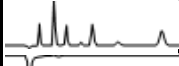
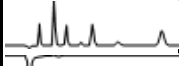
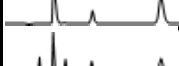
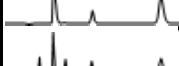
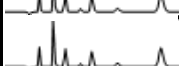
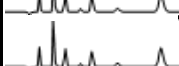
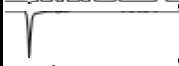
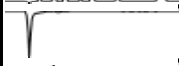
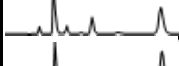
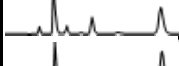
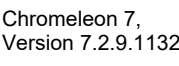
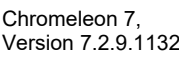
Peak Integration Report

Sample Name:	CCB	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	12-Jul-2023 / 00:32	Run Time:	18.00

No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
2	4.99	Chloride	0.007	0.030	0.3801
4	11.35	O.Phos	0.029	0.037	n.a.



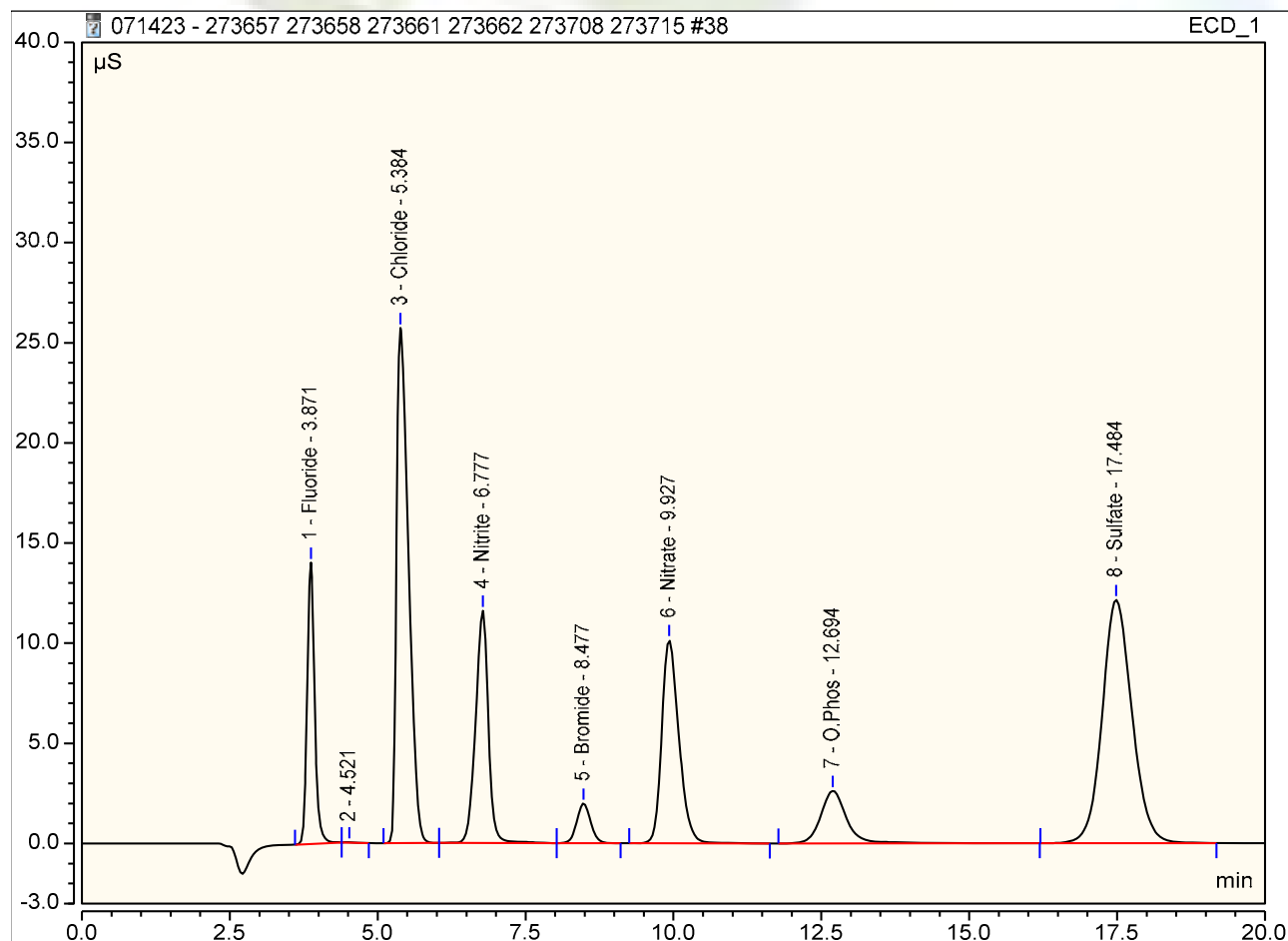
	 MSDW1347732	1.0000	Unknown		22	5000	Anions	IC4750A	Finished
ECD_1	Name	Dilution	Type	Level	Position	Volume	Instrument Method	Processing Method	Status
	 1347758	1.0000	Unknown		23	5000	Anions	IC4750A	Finished
	 1347758X5	1.0000	Unknown		24	5000	Anions	IC4750A	Finished
	 1347759	1.0000	Unknown		25	5000	Anions	IC4750A	Finished
	 CCV	1.0000	Unknown		26	5000	Anions	IC4750A	Finished
	 CCB	1.0000	Unknown		27	5000	Anions	IC4750A	Finished
	 1347759X5	1.0000	Unknown		28	5000	Anions	IC4750A	Finished
	 DUP1347759	1.0000	Unknown		29	5000	Anions	IC4750A	Finished
	 MSW1347759	1.0000	Unknown		30	5000	Anions	IC4750A	Finished
	 MSDW1347759	1.0000	Unknown		31	5000	Anions	IC4750A	Finished
	 1347596	1.0000	Unknown		32	5000	Anions	IC4750A	Finished
	 1347596X5	1.0000	Unknown		33	5000	Anions	IC4750A	Finished
	 1347623	1.0000	Unknown		34	5000	Anions	IC4750A	Finished
	 1347623X5	1.0000	Unknown		35	5000	Anions	IC4750A	Finished
	 1347666	1.0000	Unknown		36	5000	Anions	IC4750A	Finished
	 1347666X5	1.0000	Unknown		37	5000	Anions	IC4750A	Finished
	 CCV	1.0000	Unknown		38	5000	Anions	IC4750A	Finished
	 CCB	1.0000	Unknown		39	5000	Anions	IC4750A	Finished
	 DUP1347666	1.0000	Unknown		40	5000	Anions	IC4750A	Finished
	 MSW1347666	1.0000	Unknown		41	5000	Anions	IC4750A	Finished
	 1346381X5	1.0000	Unknown		42	5000	Anions	IC4750A	Finished
	 CCV	1.0000	Unknown		43	5000	Anions	IC4750A	Finished

ECD_1	Name	Dilution	Type	Level	Position	Volume	Instrument Method	Processing Method	Status
None	 CCB	1.0000	Unknown		44	5000	Anions	IC4750A	Finished
	 IB	1.0000	Unknown		45	5000	WEEKEND OFF	IC4750A	Interrupted
	 IB	1.0000	Unknown		1	5000	Anions	IC4750A	Finished
	 CCV	1.0000	Unknown		2	5000	Anions	IC4750A	Finished
	 CCB	1.0000	Unknown		3	5000	Anions	IC4750A	Finished
	 1348146	1.0000	Unknown		4	5000	Anions	IC4750A	Finished
	 1348147	1.0000	Unknown		5	5000	Anions	IC4750A	Finished
	 1348148	1.0000	Unknown		6	5000	Anions	IC4750A	Finished
	 MSW1347759X5	1.0000	Unknown		7	5000	Anions	IC4750A	Finished
	 MSDW1347759X5	1.0000	Unknown		8	5000	Anions	IC4750A	Finished
	 DUP1348146	1.0000	Unknown		9	5000	Anions	IC4750A	Finished
	 MSW1348146	1.0000	Unknown		10	5000	Anions	IC4750A	Finished
	 MSDW1348146	1.0000	Unknown		11	5000	Anions	IC4750A	Finished
	 1346666	1.0000	Unknown		12	5000	Anions	IC4750A	Finished
	 1346667	1.0000	Unknown		13	5000	Anions	IC4750A	Finished
	 CCV	1.0000	Unknown		14	5000	Anions	IC4750A	Finished
	 LCSW	1.0000	Unknown		15	5000	Anions	IC4750A	Finished
	 MBW-CCB	1.0000	Unknown		16	5000	Anions	IC4750A	Finished
	 DUP1346667	1.0000	Unknown		17	5000	Anions	IC4750A	Finished
	 MSW1346667	1.0000	Unknown		18	5000	Anions	IC4750A	Finished
	 1346668	1.0000	Unknown		19	5000	Anions	IC4750A	Finished
	 1346669	1.0000	Unknown		20	5000	Anions	IC4750A	Finished

Peak Integration Report

Sample Name:	CCV	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	15-Jul-2023 / 02:04	Run Time:	20.00

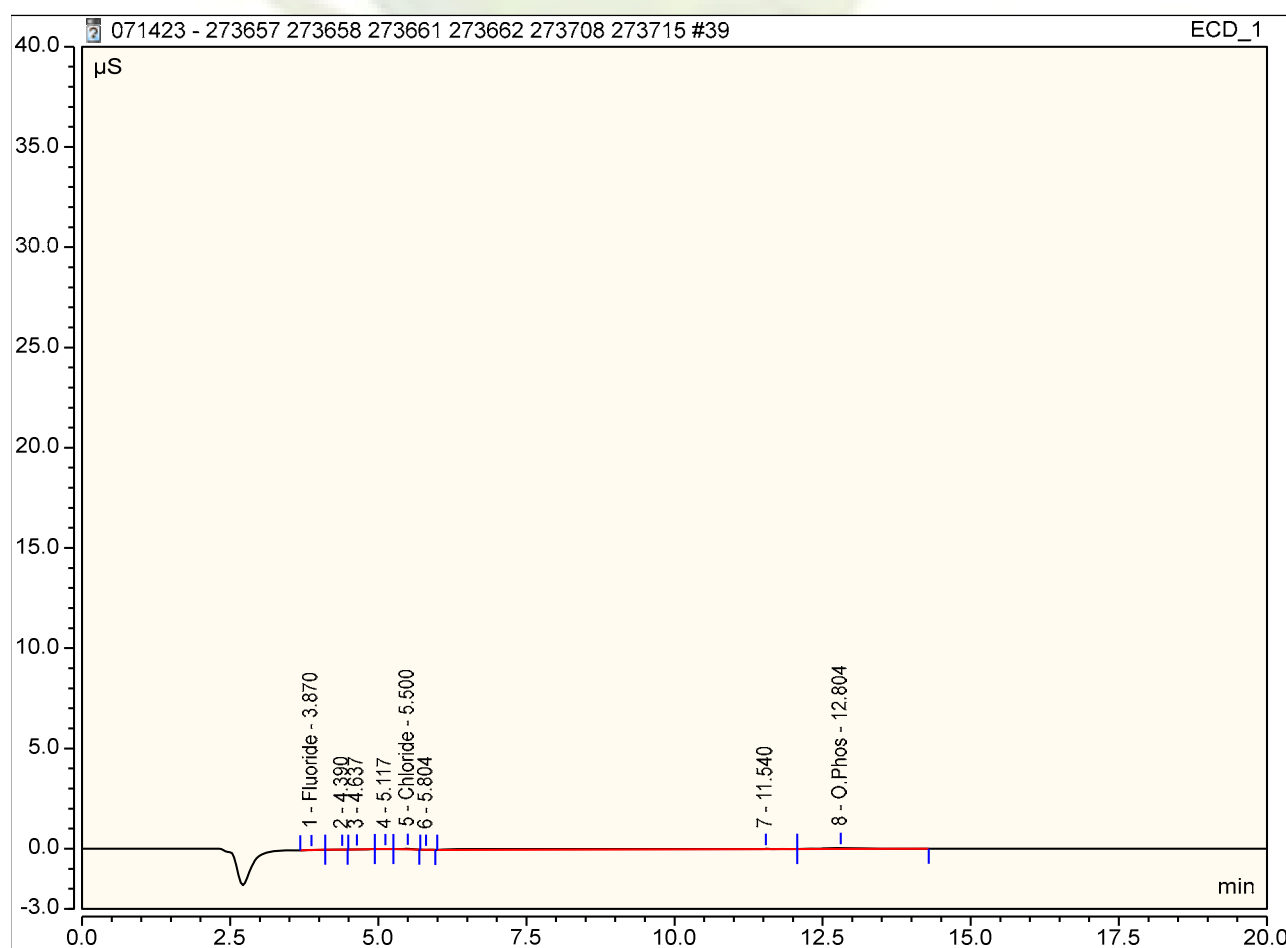
No.	Time min	Peak Name	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	3.87	Fluoride	2.037	14.045	3.6264
3	5.38	Chloride	6.097	25.720	15.2946
4	6.78	Nitrite	2.902	11.599	3.6656
5	8.48	Bromide	0.540	1.984	3.6067
6	9.93	Nitrate	3.404	10.155	3.6694
7	12.69	O.Phos	1.341	2.622	3.8914
8	17.48	Sulfate	7.096	12.144	24.6301



Peak Integration Report

Sample Name:	CCB	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	15-Jul-2023 / 02:27	Run Time:	20.00

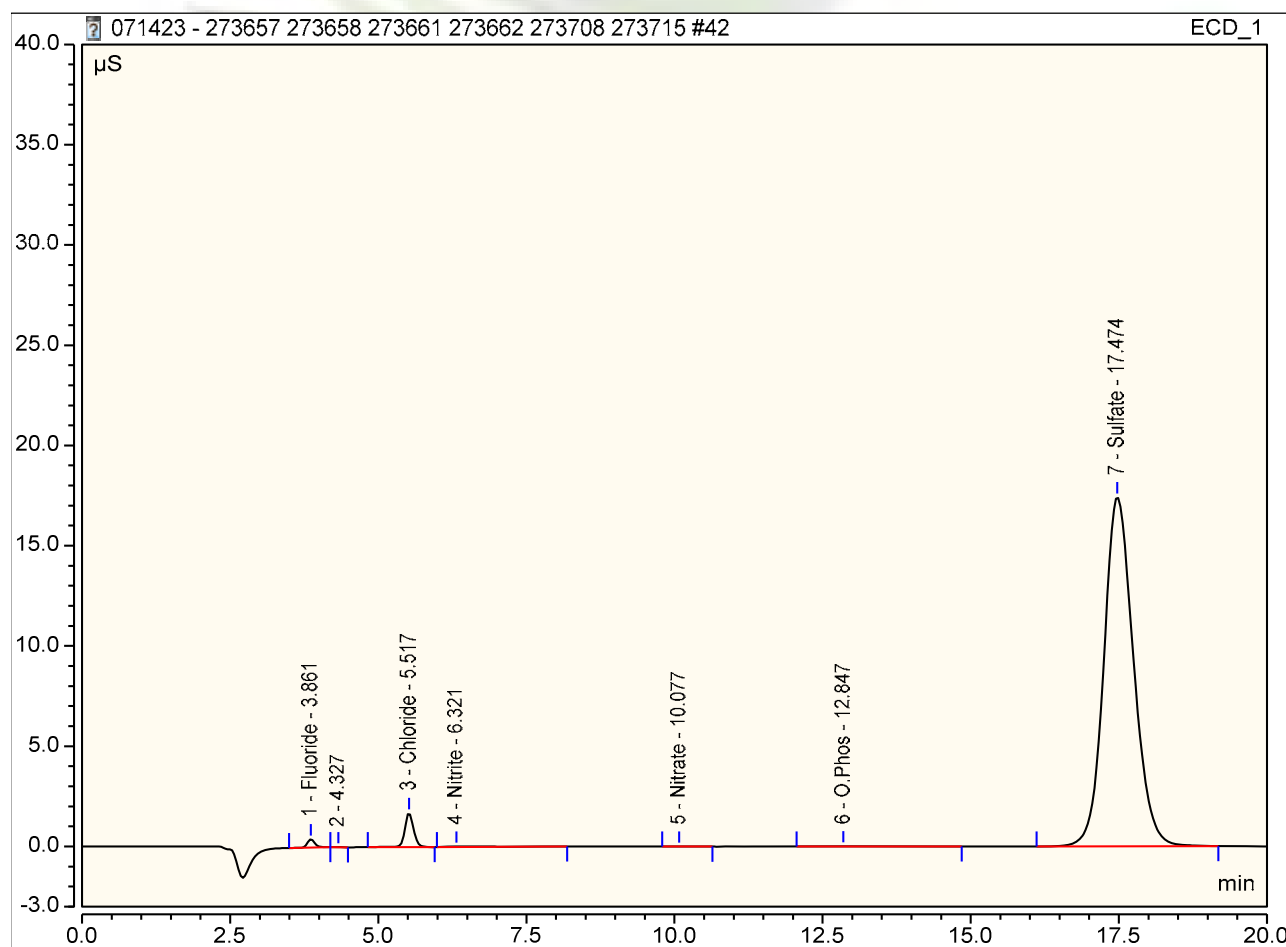
No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.87	Fluoride	0.001	0.004	0.0311
5	5.50	Chloride	0.007	0.041	0.3804
8	12.80	O.Phos	0.032	0.046	n.a.



Peak Integration Report

Sample Name:	1346381X5	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	15-Jul-2023 / 03:35	Run Time:	20.00

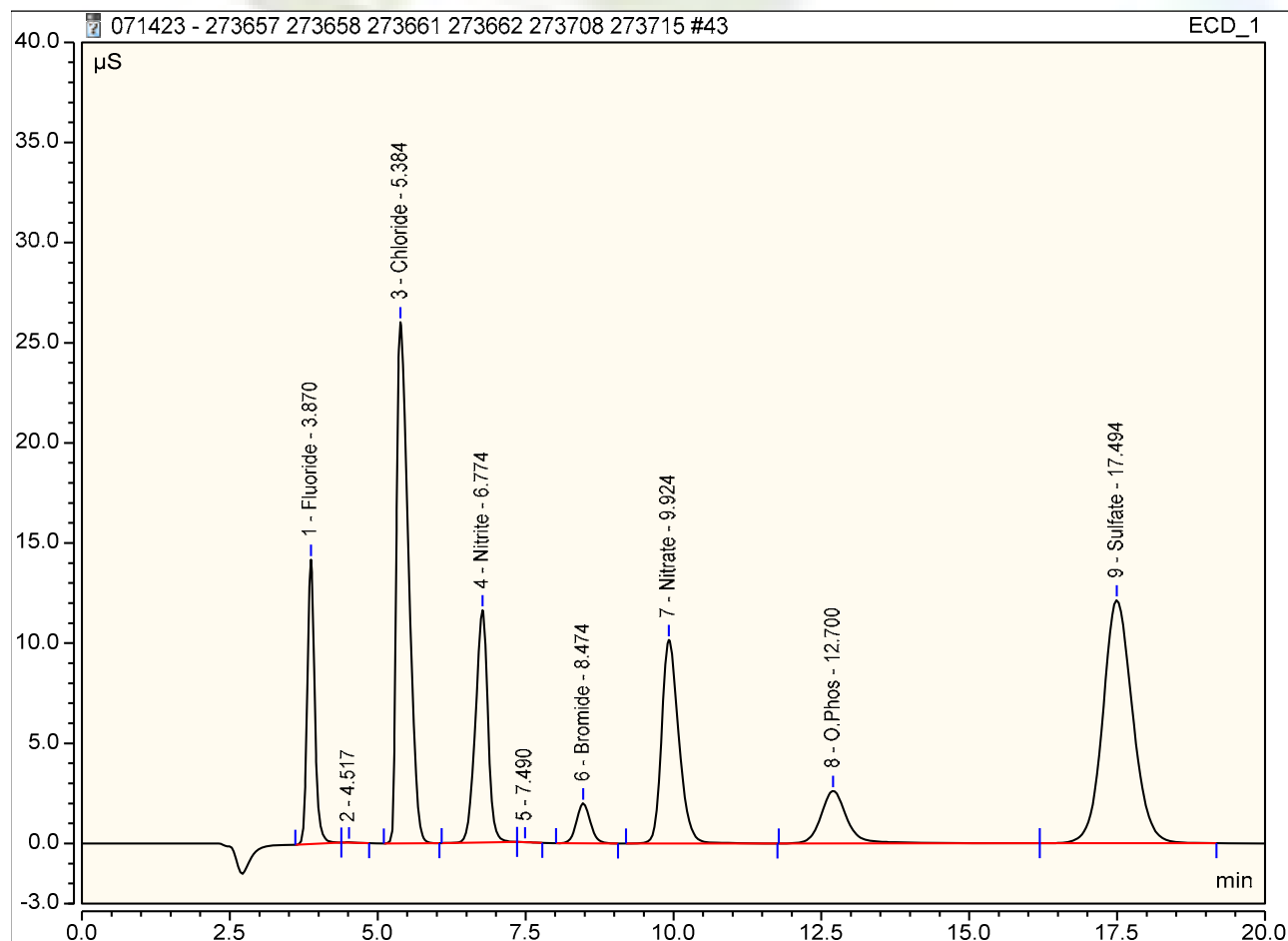
No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	3.86	Fluoride	0.061	0.419	0.1376
3	5.52	Chloride	0.287	1.695	1.0645
4	6.32	Nitrite	0.023	0.030	0.0630
5	10.08	Nitrate	0.002	0.005	0.0520
6	12.85	O.Phos	0.017	0.020	n.a.
7	17.47	Sulfate	10.118	17.413	34.8693



Peak Integration Report

Sample Name:	CCV	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	15-Jul-2023 / 03:58	Run Time:	20.00

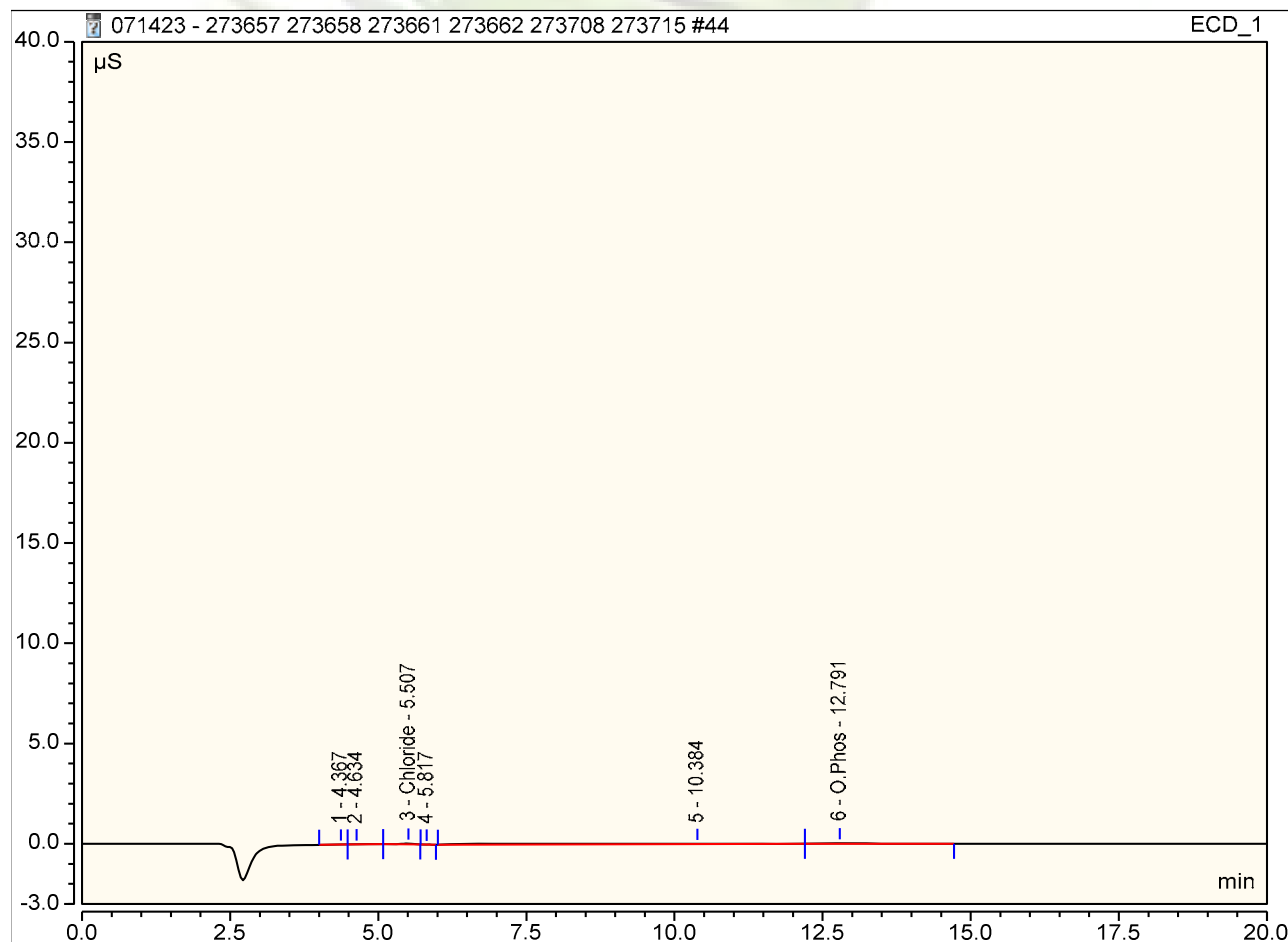
No.	Time min	Peak Name	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	3.87	Fluoride	2.042	14.191	3.6347
3	5.38	Chloride	6.103	26.026	15.3099
4	6.77	Nitrite	2.832	11.598	3.5782
6	8.47	Bromide	0.541	1.992	3.6104
7	9.92	Nitrate	3.403	10.156	3.6684
8	12.70	O.Phos	1.351	2.624	3.9215
9	17.49	Sulfate	7.085	12.136	24.5916



Peak Integration Report

Sample Name:	CCB	Sequence Date:	05/04/2018
Injection Type:	Unknown	Dilution Factor:	1.0000
Processing Method:	IC4750A	Operator:	Administrator
Inj. Date / Time:	15-Jul-2023 / 04:21	Run Time:	20.00

No.	Time min	Peak Name	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
3	5.51	Chloride	0.010	0.045	0.3862
6	12.79	O.Phos	0.031	0.039	n.a.



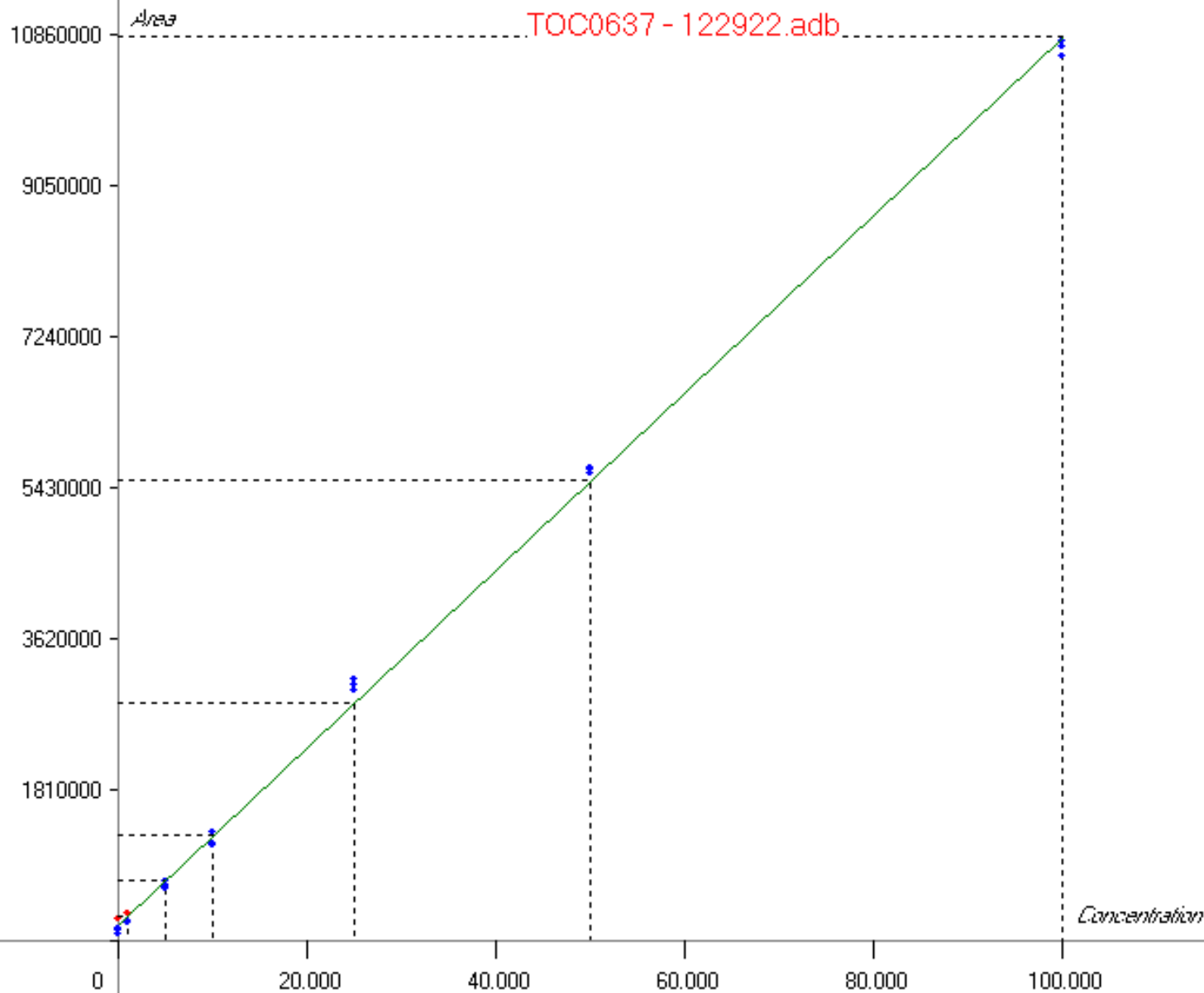
pH - Mettler Toledo Seven Easy							
(Methods: pH EPA 150.1, SM4500H+B, EPA 9040C, EPA 9045D)							
Date:	07/11/2023	Analyst:	BRB	Lims #:	273548	Slope (%)	97%
GRP	Sample ID#	Matrix	DF		Corrected Temp (°C)*	Result	
1	BUFFER 7	QC	1		23.6	6.99	
2	1346310	WW	1		14.5	7.01	
3	1346312	WW	1		14.4	7.54	
4	1346553	WW	1		14.9	7.75	
5			1				
6			1				
7			1				
8			1				
9			1				
10			1				
11	1346554	WW	1		16.1	8.41	
dup 11	1346554	WW	1		16.1	8.42	
12	BUFFER 7	QC	1		22.4	7.03	
13			1				
14			1				
15			1				
16			1				
17			1				
18			1				
19			1				
20			1				
21			1				
23	1346384	GW	1		14.8	7.62	
dup 23	1346384	GW	1		14.9	7.65	
24	BUFFER 7		1				
25			1				
dup 25			1				
26			1				
dup 26			1				

To datacapture: Save CSV file under the TSS datacapture folder.

*Temperature of samples should be room temperature around 25°C

Buffer Standard IDs:

pH 4: WC507 pH 7: WC550 pH 10: WC453



Cursor Position

Concentration	Area
118.600 mg/l	-927625

A2	0
A1	106312
A0	206398

Correlation	0.99940
Order	1
Volume	100 µl

Conc.	100.00
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Area	10802278
------	----------

☐ Confidence Intervals	95% ▼
☐ Detection/Determination	95% ▼

Conc.	Area	Sel.
0	280218	☐
0	112417	☒
0	175091	☒
0	147500	☒
0	139848	☒
1	360261	☐
1	236474	☒
1	251607	☒

• Used Value
• Ignored Value

CurveNo:1

CurveType:TC

<--

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Print...

Exit

Rd 01/10/2023

Analysis Name TOC0637 - 122922.adb

Template Name CURVE TEMP.tdb

Method Name N / A

Operator TMG

Date Thursday, December 29, 2022
Time 11:31

Start Oven Temp. 776 °C
Start Cooler Temp. 2 °C

Version 2.55 Release
Info ICAL0637 INSTRUMENT:TOCW

Element Carbon
Integration Time 60 s
Samples 4
Extra Samples 1
Max. CV 10 %

SampleTime 240 s

No	Type	FileName	Date/Time	Max. Area	Max Conc.	Order	Correlation	Volume	Sel.
1	TC	This Analysis	Dec 29 2022, 11:31	10802278	100	1	0.99940	100 µl	Yes
		A2: 0	A1: 106312.019182245		A0: 206397.869455896				

Inj. Order	Position	Type	Identification	Dilution Factor
1	1	Unknown	BLANK	1 x

	Injection Type	Conc.	Area	CV	Inj. Volume			
	TC	ZERO !	265559	25.80	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	12/29/2022 11:41:57	7.88	1044475	1	773	2	-	-
2	12/29/2022 11:46:13	1.26	340135	1	770	2	-	Yes
3	12/29/2022 11:48:58	0.57	266778	1	769	2	-	Yes
4	12/29/2022 11:51:24	ZERO !	174545	1	768	2	-	Yes
5	12/29/2022 11:53:45	0.70	280780	1	767	2	-	Yes

2	S1	Standard	TC Std	0.00 mg/l	1 x
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	TC	Conc.	Area	CV	Inj. Volume			
	ZERO !	143714	17.94	100 µl				
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	12/29/2022 11:57:01	0.69	280218	1	767	2	-	-
2	12/29/2022 12:00:03	ZERO !	112417	1	765	2	-	Yes
3	12/29/2022 12:02:13	ZERO !	175091	1	765	2	-	Yes
4	12/29/2022 12:04:38	ZERO !	147500	1	764	2	-	Yes
5	12/29/2022 12:06:52	ZERO !	139848	1	764	2	-	Yes

3	S2	Standard	TC Std	1.00 mg/l	1 x
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	TC	Conc.	Area	CV	Inj. Volume			
	0.36	244615	5.54	100 µl				
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	12/29/2022 12:10:02	1.45	360261	1	763	2	-	-
2	12/29/2022 12:13:05	0.28	236474	1	762	2	-	Yes
3	12/29/2022 12:15:23	0.43	251607	1	762	2	-	Yes
4	12/29/2022 12:17:46	0.50	259944	1	761	2	-	Yes
5	12/29/2022 12:20:07	0.23	230437	1	761	2	-	Yes

4	S3	Standard	TC Std.	5.00 mg/l	1 x
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	TC	Conc.	Area	CV	Inj. Volume			
	4.51	685718	6.25	100 µl				
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	12/29/2022 12:23:27	5.08	746046	1	761	2	-	Yes
2	12/29/2022 12:26:42	4.50	685043	1	760	2	-	Yes
3	12/29/2022 12:29:15	4.29	662545	1	759	2	-	Yes
4	12/29/2022 12:31:52	4.17	649239	1	759	2	-	Yes

5	S4	Standard	TC Std	10.00 mg/l	1 x
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		TC	9.47	1212740	5.77	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	12/29/2022 12:35:15	10.45	1317077	1	759	2	-	Yes
	2	12/29/2022 12:38:46	9.04	1167894	1	757	2	-	Yes
	3	12/29/2022 12:41:25	9.16	1179909	1	756	2	-	Yes
	4	12/29/2022 12:44:03	9.22	1186081	1	757	2	-	Yes
6	S5	Standard	TC Std.	25.00 mg/l			1 x		
		TC	26.96	3072340	2.13	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	12/29/2022 12:47:33	27.81	3162769	1	757	2	-	Yes
	2	12/29/2022 12:51:10	26.45	3018461	1	756	2	-	Yes
	3	12/29/2022 12:54:04	27.01	3077512	1	756	2	-	Yes
	4	12/29/2022 12:56:52	26.57	3030620	1	755	2	-	Yes
7	S6	Standard	TC Std.	50.00 mg/l			1 x		
		TC	51.40	5671435	0.53	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	12/29/2022 13:00:30	51.56	5687946	1	756	2	-	Yes
	2	12/29/2022 13:04:06	51.41	5671882	1	755	2	-	Yes
	3	12/29/2022 13:07:04	51.64	5696586	1	754	2	-	Yes
	4	12/29/2022 13:10:03	51.01	5629329	1	755	2	-	Yes
8	S7	Standard	TC Std.	100.00 mg/l			1 x		
		TC	98.89	10719816	0.74	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	12/29/2022 13:13:51	99.02	10733481	1	754	2	-	Yes
	2	12/29/2022 13:17:59	97.88	10612159	1	754	2	-	Yes
	3	12/29/2022 13:21:10	99.00	10731348	1	754	2	-	Yes
	4	12/29/2022 13:24:24	99.67	10802278	1	753	2	-	Yes
9	S8	Unknown	ICV - 50.00 mg/L				1 x		
		TC	50.40	5565004	0.81	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	12/29/2022 13:28:39	50.99	5627548	1	754	2	-	Yes
	2	12/29/2022 13:32:35	50.18	5541665	1	753	2	-	Yes
	3	12/29/2022 13:35:45	50.02	5524022	1	753	2	-	Yes
	4	12/29/2022 13:38:47	50.42	5566784	1	753	2	-	Yes
10	2	Unknown	ICB				1 x		
		TC	ZERO !	145252	36.72	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	12/29/2022 13:42:51	0.17	224842	1	753	2	-	Yes
	2	12/29/2022 13:46:06	ZERO !	111801	1	752	2	-	Yes
	3	12/29/2022 13:48:20	ZERO !	125150	1	752	2	-	Yes
	4	12/29/2022 13:50:38	ZERO !	119217	1	752	2	-	Yes
	5	12/29/2022 13:52:50	0	0	0	752	2	-	-

Analysis Name 071423 - 273651 273652.adb

Template Name 071423 - 273651 273652.tdb

Method Name N / A

Operator TMG

Date Friday, July 14, 2023
Time 10:51

Start Oven Temp. 755 °C
Start Cooler Temp. 2 °C

Version 2.55 Release
Info ICAL0637 INSTRUMENT:TOCW
CCV0678 LCS0679 SPIKE0623

Element	Integration Time	Samples	Extra Samples	Max. CV
Carbon	60 s	4	1	10 %

SampleTime 240 s

No	Type	FileName	Date/Time	Max. Area	Max Conc.	Order	Correlation	Volume	Sel.
1	TC	TOC0637 - 122922	Dec 29 2022, 11:31	10802278	100	1	0.99940	100 µl	Yes
	A2: 0		A1: 106312.019182245		A0: 206397.869455896				

Inj. Order	Position	Type	Identification	Dilution Factor
1	1	Unknown	IB	1 x

	Injection Type	Conc.	Area	CV	Inj. Volume			
	TC	ZERO !	114213	32.51	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	7 14 2023 11:01:55	16.77	1989022	1	754	2	-	-
2	7 14 2023 11:06:32	ZERO !	151984	1	753	2	-	Yes
3	7 14 2023 11:08:46	ZERO !	139795	1	753	2	-	Yes
4	7 14 2023 11:11:03	ZERO !	87498	1	752	2	-	Yes
5	7 14 2023 11:13:14	ZERO !	77575	1	752	2	-	Yes

2	S1	Unknown	CCV	1 x
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	TC	52.57	5795639	1.76	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	7 14 2023 11:16:13	53.51	5895356	1	752	2	-	Yes
2	7 14 2023 11:19:55	51.67	5699098	1	752	2	-	Yes
3	7 14 2023 11:22:56	51.84	5717092	1	752	2	-	Yes
4	7 14 2023 11:25:45	53.28	5871012	1	752	2	-	Yes

3	S5	Unknown	LCSW	1 x
---	----	---------	------	-----

	TC	51.73	5706048	1.03	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	7 14 2023 11:29:44	51.92	5726641	1	753	2	-	Yes
2	7 14 2023 11:33:35	51.93	5726833	1	753	2	-	Yes
3	7 14 2023 11:36:44	52.16	5751378	1	753	2	-	Yes
4	7 14 2023 11:39:53	50.92	5619343	1	753	2	-	Yes

4	2	Unknown	MBW	1 x
---	---	---------	-----	-----

	TC	ZERO !	103902	15.53	100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
1	7 14 2023 11:43:40	ZERO !	165338	1	753	2	-	-
2	7 14 2023 11:46:38	ZERO !	104973	1	752	2	-	Yes
3	7 14 2023 11:48:46	ZERO !	124028	1	752	2	-	Yes
4	7 14 2023 11:51:00	ZERO !	101963	1	752	2	-	Yes
5	7 14 2023 11:53:12	ZERO !	84644	1	752	2	-	Yes

		TC	60.95	6686106	1.25	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	7 14 2023 13:28:29	61.46	6740461	1	751	2	-	Yes
	2	7 14 2023 13:31:51	60.91	6681420	1	751	2	-	Yes
	3	7 14 2023 13:34:31	59.86	6570015	1	751	2	-	Yes
	4	7 14 2023 13:37:08	61.57	6752530	1	751	2	-	Yes
14	12	Unknown	1346449				1 x		
		TC	3.35	562951	3.04	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	7 14 2023 13:40:43	3.52	580203	1	751	2	-	Yes
	2	7 14 2023 13:43:42	3.46	573962	1	751	2	-	Yes
	3	7 14 2023 13:45:58	3.17	543258	1	750	2	-	Yes
	4	7 14 2023 13:48:14	3.27	554382	1	751	2	-	Yes
15	S1	Unknown	CCV				1 x		
		TC	52.95	5835683	0.49	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	7 14 2023 13:51:52	52.95	5835676	1	752	2	-	Yes
	2	7 14 2023 13:55:28	53.25	5867199	1	751	2	-	Yes
	3	7 14 2023 13:58:25	52.59	5797454	1	751	2	-	Yes
	4	7 14 2023 14:01:21	53.01	5842403	1	751	2	-	Yes
16	13	Unknown	CCB				1 x		
		TC	ZERO !	77824	12.70	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	7 14 2023 14:05:13	ZERO !	82540	1	751	2	-	Yes
	2	7 14 2023 14:07:58	ZERO !	74702	1	751	2	-	Yes
	3	7 14 2023 14:10:02	ZERO !	65626	1	751	2	-	Yes
	4	7 14 2023 14:12:04	ZERO !	56243	1	750	2	-	-
	5	7 14 2023 14:14:09	ZERO !	88430	1	751	2	-	Yes
17	14	Unknown	1346450				1 x		
		TC	5.60	801817	3.31	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	7 14 2023 14:17:05	5.88	831957	1	751	2	-	Yes
	2	7 14 2023 14:20:10	5.38	778632	1	751	2	-	Yes
	3	7 14 2023 14:22:32	5.40	780396	1	751	2	-	Yes
	4	7 14 2023 14:24:54	5.74	816283	1	751	2	-	Yes
18	15	Unknown	1346451				1 x		
		TC	12.98	1586206	2.21	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	7 14 2023 14:28:13	13.47	1638587	1	752	2	-	Yes
	2	7 14 2023 14:31:24	12.84	1571316	1	752	2	-	Yes
	3	7 14 2023 14:33:53	12.79	1566288	1	751	2	-	Yes
	4	7 14 2023 14:36:22	12.81	1568634	1	751	2	-	Yes
19	16	Unknown	1346452				1 x		
		TC	3.53	581812	3.87	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	7 14 2023 14:39:40	3.80	610317	1	752	2	-	Yes
	2	7 14 2023 14:42:36	3.48	576864	1	752	2	-	Yes
	3	7 14 2023 14:44:52	3.55	584290	1	752	2	-	Yes
	4	7 14 2023 14:47:08	3.29	555779	1	751	2	-	Yes
20	17	Unknown	1346379				1 x		
		TC	ZERO !	161569	10.76	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	7 14 2023 14:50:47	ZERO !	186586	1	752	2	-	Yes
	2	7 14 2023 14:53:34	ZERO !	160132	1	752	2	-	Yes
	3	7 14 2023 14:55:39	ZERO !	148941	1	752	2	-	Yes
	4	7 14 2023 14:57:43	ZERO !	150618	1	751	2	-	Yes
	5	7 14 2023 14:59:45	ZERO !	93147	1	751	2	-	-

21	18	Unknown	1346380	1 x				
	TC	ZERO !	164153	9.39		100 µl		
	Sample Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1 7 14 2023 15:02:36	ZERO !	183959	1	751	2	-	Yes
	2 7 14 2023 15:05:22	ZERO !	168754	1	752	2	-	Yes
	3 7 14 2023 15:07:24	ZERO !	151226	1	751	2	-	Yes
	4 7 14 2023 15:09:25	ZERO !	152675	1	751	2	-	Yes

22	19	Unknown	1346381	1 x					
	TC		ZERO !	153137	10.03		100 µl		
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	7 14 2023 15:13:45	ZERO !	159936	1	753	2	-	Yes
	2	7 14 2023 15:16:29	ZERO !	170329	1	752	2	-	Yes
	3	7 14 2023 15:18:33	ZERO !	147373	1	752	2	-	Yes
	4	7 14 2023 15:20:37	ZERO !	134912	1	752	2	-	Yes
	5	7 14 2023 15:22:39	ZERO !	116250	1	751	2	-	-

23	20	Unknown	1346382	1 x					
	TC	ZERO !	163300	2.68		100 µl			
Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.	
1	7 14 2023 15:25:31	ZERO !	168235	1	752	2	-	Yes	
2	7 14 2023 15:28:16	ZERO !	159342	1	752	2	-	Yes	
3	7 14 2023 15:30:20	ZERO !	159915	1	751	2	-	Yes	
4	7 14 2023 15:32:22	ZERO !	165708	1	751	2	-	Yes	

24	21	Unknown	DUP1346382				1 x		
	TC		ZERO !	134884	13.57		100 µl		
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	7 14 2023 15:36:40	ZERO !	186365	1	753	2	-	-
	2	7 14 2023 15:39:24	ZERO !	143267	1	752	2	-	Yes
	3	7 14 2023 15:41:24	ZERO !	138358	1	752	2	-	Yes
	4	7 14 2023 15:43:24	ZERO !	149593	1	752	2	-	Yes
	5	7 14 2023 15:45:26	ZERO !	108319	1	751	2	-	Yes

25	22	Unknown	MSW1346382				1 x		
	TC		53.38	5881883	0.71		100 µl		
	Sample Inj. Time		Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1 7 14 2023 15:48:20		53.84	5930443	1	752	2	-	Yes
	2 7 14 2023 15:51:44		52.89	5829094	1	752	2	-	Yes
	3 7 14 2023 15:54:23		53.36	5879104	1	752	2	-	Yes
	4 7 14 2023 15:57:04		53.45	5888894	1	752	2	-	Yes

26	23	Unknown	MSDW1346382				1 x		
		TC	52.57	5795095	1.13		100 µl		
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	7 14 2023 16:00:42	53.38	5881307	1	752	2	-	Yes
	2	7 14 2023 16:04:02	51.89	5723334	1	752	2	-	Yes
	3	7 14 2023 16:06:40	52.39	5776392	1	752	2	-	Yes
	4	7 14 2023 16:09:18	52.61	5799349	1	752	2	-	Yes

27	S1	Unknown	CCV	1 x				
	TC	52.77	5817118	0.43	100 µl			
	Sample Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1 7 14 2023 16:12:48	52.77	5816225	1	752	2	-	Yes
	2 7 14 2023 16:16:30	52.62	5801024	1	752	2	-	Yes
	3 7 14 2023 16:19:25	53.11	5853026	1	752	2	-	Yes
	4 7 14 2023 16:22:18	52.60	5798200	1	752	2	-	Yes

28	S5	Unknown	LCSW				1 x		
		TC	52.52	5789423	0.61	100 µl			
	Sample	Inj. Time	Conc.	Area	Curve	Oven	Cooler	Edited	Sel.
	1	7 14 2023 16:26:09	52.96	5836699	1	752	2	-	Yes

2	7 14 2023 16:29:53	52.17	5752714	1	753	2	-	Yes
3	7 14 2023 16:32:55	52.42	5778831	1	753	2	-	Yes
4	7 14 2023 16:35:48	52.52	5789449	1	752	2	-	Yes

29	24	Unknown	MBW-CCB	1 x				
		TC	ZERO !	94730	13.56	100 µl		
	Sample	Inj. Time	Conc.	Area	Curve Oven	Cooler	Edited	Sel.
	1	7 14 2023 16:39:35	ZERO !	108172	1 752	2	-	Yes
	2	7 14 2023 16:42:26	ZERO !	80787	1 752	2	-	Yes
	3	7 14 2023 16:44:34	ZERO !	87250	1 752	2	-	Yes
	4	7 14 2023 16:46:40	ZERO !	102712	1 752	2	-	Yes
	5	7 14 2023 16:48:45	ZERO !	71919	1 751	2	-	-

30	25	Unknown	1346383	1 x				
		TC	ZERO !	152634	8.68	100 µl		
	Sample	Inj. Time	Conc.	Area	Curve Oven	Cooler	Edited	Sel.
	1	7 14 2023 16:51:44	ZERO !	165617	1 751	2	-	Yes
	2	7 14 2023 16:54:33	ZERO !	136481	1 752	2	-	Yes
	3	7 14 2023 16:56:40	ZERO !	131179	1 751	2	-	-
	4	7 14 2023 16:58:50	ZERO !	161002	1 751	2	-	Yes
	5	7 14 2023 17:00:59	ZERO !	147438	1 751	2	-	Yes

36	31	Unknown	1346823			1 x		
		TC	0.28	235616	8.03	100 µl		
	Sample	Inj. Time	Conc.	Area	Curve Oven	Cooler	Edited	Sel.
	1	7 14 2023 18:02:19	0.39	247505	1 752	2	-	Yes
	2	7 14 2023 18:05:06	0.43	252009	1 753	2	-	Yes
	3	7 14 2023 18:07:12	0.03	209985	1 753	2	-	Yes
	4	7 14 2023 18:09:16	0.25	232967	1 752	2	-	Yes

37	32	Unknown	1346824			1 x		
		TC	ZERO !	168565	1.52	100 µl		
	Sample	Inj. Time	Conc.	Area	Curve Oven	Cooler	Edited	Sel.
	1	7 14 2023 18:13:27	ZERO !	171811	1 753	2	-	Yes
	2	7 14 2023 18:16:11	ZERO !	165973	1 753	2	-	Yes
	3	7 14 2023 18:18:14	ZERO !	169292	1 753	2	-	Yes
	4	7 14 2023 18:20:16	ZERO !	167185	1 753	2	-	Yes

38	33	Unknown	1346825			1 x		
		TC	ZERO !	151258	5.07	100 µl		
	Sample	Inj. Time	Conc.	Area	Curve Oven	Cooler	Edited	Sel.
	1	7 14 2023 18:24:36	ZERO !	159393	1 753	2	-	Yes
	2	7 14 2023 18:27:21	ZERO !	144214	1 753	2	-	Yes
	3	7 14 2023 18:29:22	ZERO !	156199	1 752	2	-	Yes
	4	7 14 2023 18:31:26	ZERO !	145228	1 752	2	-	Yes

39	34	Unknown	1347302			1 x		
		TC	0.76	287422	3.60	100 µl		
	Sample	Inj. Time	Conc.	Area	Curve Oven	Cooler	Edited	Sel.
	1	7 14 2023 18:35:45	0.80	291957	1 753	2	-	Yes
	2	7 14 2023 18:38:32	0.84	295781	1 753	2	-	Yes
	3	7 14 2023 18:40:39	0.62	272371	1 752	2	-	Yes
	4	7 14 2023 18:42:44	0.78	289580	1 752	2	-	Yes

40	S2	Unknown	CCV			1 x		
		TC	52.24	5760596	0.88	100 µl		
	Sample	Inj. Time	Conc.	Area	Curve Oven	Cooler	Edited	Sel.
	1	7 14 2023 18:46:55	52.71	5809757	1 753	2	-	Yes
	2	7 14 2023 18:50:35	51.89	5722985	1 753	2	-	Yes
	3	7 14 2023 18:53:27	51.78	5711668	1 752	2	-	Yes
	4	7 14 2023 18:56:18	52.60	5797977	1 753	2	-	Yes

41	35	Unknown	CCB			1 x		
		TC	ZERO !	51622	68.54	100 µl		
	Sample	Inj. Time	Conc.	Area	Curve Oven	Cooler	Edited	Sel.
	1	7 14 2023 19:00:01	ZERO !	75547	1 753	2	-	Yes
	2	7 14 2023 19:02:51	ZERO !	57250	1 753	2	-	Yes
	3	7 14 2023 19:04:54	ZERO !	73691	1 752	2	-	Yes
	4	7 14 2023 19:06:58	0	0	0 752	2	-	Yes
	5	7 14 2023 19:10:59	0	0	0 753	2	-	-

**INORGANICS
LOGBOOK
DOCUMENTS**

WCOD QSM Analytical Run
273727 on 7/21/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	SAMPLE DECRPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)		CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
178887	1346384		7/10/2023	16:05		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	COD QSM		GW	4	
		54IDW							130553			
	1348149		7/14/2023	12:55						GW	4	
		49IDW							130553			
	1348839							COD QSM				
					MBW				130553			
	1348840							COD QSM				
					LCSW				130553			
	1348841		7/10/2023	16:05				COD QSM				
		54IDW			MSW	1346384			130553			
	1348842		7/10/2023	16:05				COD QSM				
		54IDW			MSDW	1348841			130553			
	1348843		7/10/2023	16:05				COD QSM				
		54IDW			DUP	1346384			130553			
	1349920							WCOD QSM				
					ICV							
	1349921							WCOD QSM				
					ICB							
	1349922							WCOD QSM				
					CCV							
	1349923							WCOD QSM				
					CCB							
	1349925							WCOD QSM				
					CCV							
	1349926							WCOD QSM				
					CCB							
13	SAMPLE COUNT ON RUN, INCLUDING METHOD AND INSTRUMENT QC											

Matrix: S-Soil Slg-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

Distribution:

C:\Windows\ServiceProfiles\LocalService\AppData\Local\Temp\tmp342B.tmp

Page 1 of 1

273727

PrepWrkSht2
on 7/17/2023

Prep Batch: 130553

Prepped By: RLBDate Prepped: 7/18/23

Date Entered: _____

CCV 1

Folder #	Order	QC Type	Link	Test	Client Company Name	Client Sample Description	Matrix	Sample Date / Time		Due Date	SDG Level
	1348839	MBW	3	0			LIQUID				
	1348840	LCSW	2	0			LIQUID				
178887 m	1346384	4, 5, 6, 7		COD QSM	WESTON SOLUTIONS, INC.	54IDW	GROUND WATER	7/10/23	16:05	7/23/23	4
	1348149	8		COD QSM	WESTON SOLUTIONS, INC.	49IDW	GROUND WATER	7/14/23	12:55	7/29/23	4
	1348841	MSW	1346384	COD QSM		54IDW	GROUND WATER	7/10/23	16:05		
	1348842	MSDW	1348841	COD QSM		54IDW	GROUND WATER	7/10/23	16:05		
	1348843	DUP	1346384	COD QSM		54IDW	GROUND WATER	7/10/23	16:05		

Control Spike/Control Spike Dup Reference Number: _____

Methanol Supplier/Lot #: _____

Notes: _____

COD Data Validation Checklist

		Method: Chemical Oxygen Demand EPA 410.4			
LIMS Run #(s)	Analysis Date	Analyst / Data Interpreter	Independent Reviewer	Date of Review	Approved? (Yes or No)
273727	07/19/2023	RLB	HLB	07/20/2023	Yes

Instructions: Complete one checklist per *analytical run*. Enter the appropriate response for each question.

Each "No" response requires an explanation in the Comments section, and may require the initiation of a Nonconformance Report.

Requirement:	Acceptance Criteria	Analyst Review		Independent Review		Comments:
		Yes	No	Yes	No	(indicate reference to an attachment if necessary)
1. Does a digestion sheet accompany the data package?	---	Yes		Yes		
2. Does the digestion sheet include all reagent and standard prep log numbers?	---	Yes		Yes		
3. Was a passing calibration test applied to sample analysis?	≥0.995	Yes		Yes		
4. Was a passing ICV analyzed immediately after the calibration?	90-110%	Yes		Yes		
5. Was a passing ICB analyzed immediately after the ICV?	< LOD or client/project specific	Yes		Yes		
6. Were CCVs and CCB analyzed at the required frequency?	1 per 10 samples	Yes		Yes		
7. Did analyzed CCVs meet the required acceptance criteria?	90-110%	Yes		Yes		
8. Did analyzed CCBs meet the acceptance criteria?	< LOD or client/project specific	Yes		Yes		
9. Was a Method Blank prepared at the required frequency?	1 per 20 samples or at contract/program specific frequencies	Yes		Yes		
10. Was the method blank within acceptance criteria?	< LOD or client/project specific	Yes		Yes		
11. Was an LCS prepared at the required frequency?	1 per 20 samples or at contract/program specific frequencies	Yes		Yes		
12. Did the LCS meet the acceptance criteria?	90-110% or Within in-house or contract/program specific limits	Yes		Yes		
13. Was an MS and MSD prepared at the required frequency?	1 per 10 per batch or at contract/program specific frequencies	Yes		Yes		
14. Did the MS/ MSD's meet the acceptance criteria?	90-110% or Within in-house or contract/program specific limits	Yes		Yes		

15. Did the MS/MSD's meet the RPD criteria?	Within in-house or contract/program specific limits	Yes		Yes		
16. Was a Duplicate prepared at the required frequency?	1per 10 per batch or at contract/program specific frequencies	Yes		Yes		
17. Did the Duplicate meet the RPD criteria?	Within in-house or contract/program specific limits	Yes		Yes		
18. Were the samples digested within hold time?	28 days	Yes		Yes		
19. Was the max temperature(s) for reactor(s) documented?	---	Yes		Yes		
20. Was the method specifed temperature reached?		Yes		Yes		
21. Were reagents/standards used before expiration date?	---	Yes		Yes		
22. Are all samples on the job lists accounted for?	---	Yes		Yes		

CHEMICAL OXYGEN DEMAND REAGENT LOG

Prep Batch(es): 130553
Date/Time/Analyst: 07/18/2023 8:45:00 RLB
Run(s): 273727
Date/Time/Analyst: 07/19/2023 11:20 RLB

Reagents:	W #	Exp Date
ICAL Preparation.....	54537	07/26/2023
CCV Preparation.....	54538	07/26/2023
LCS/ICV Preparation.....	54540	07/26/2023
Silver Sulfate Acid.....	54727	05/26/2024
Potassium Dichromate Dig Solution...	54197	02/16/2024
COD DIGESTION BLOCK TEMPS Date: 07/18/2023 Time: 13:45		
	A	B
Temperature (Max) 150°C ± 2°C:		
	E	D
Temperature (Max) 150°C ± 2°C:	105.1	

Spiked Samples:	W #	Exp Date
Spiking Solution.....	54539	07/26/2023
Concentration..... 2000 mg/L		
Volume of Spike Used... 0.2 mL		
Final Sample Volume..... 2.5 mL		
Final Spike Concentration... 148.2 mg/L		

GENESYS 30 Instrument Run Logbook						
Date	Start Time	End Time	Analyst	Test/Analyte	Calibration Test #	Run #/ Comments
07/19/23	10:54	11:30	RLB	COD	CODW54537	273726, 727

WANIONS IC QSM 5.0 Anion Run
273539 on 7/18/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	ANALYTE	SAMPLE DATE:	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1347677						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		ICV							
		Chloride		ICV							
		Sulfate		ICV							
	1347678						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		ICB							
		Chloride		ICB							
		Sulfate		ICB							
	1346951						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		CCV				0			
		Chloride		CCV				0			
		Sulfate		CCV				0			
	1346952						WANIONS IC QSM 5.0				
		Chloride		LCSW				0			
		Nitrate Nitrogen		LCSW				0			
		Sulfate		LCSW				0			
	1346953						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		MBW				0			
		Chloride		MBW				0			
		Sulfate		MBW				0			

Matrix: S-Soil Slg-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

WANIONS IC QSM 5.0 Anion Run
273539 on 7/18/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	ANALYTE	SAMPLE DATE:	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1346954						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		CCV				0			
		Chloride		CCV				0			
		Sulfate		CCV				0			
	1346955						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		CCB				0			
		Chloride		CCB				0			
		Sulfate		CCB				0			
178887	1346379		7/10/2023	10:15	WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ANIONS IC QSM 5.0		GW	4	
		Sulfate									
		Chloride									
		Nitrate Nitrogen									
178887	1346380		7/10/2023	10:15	WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ANIONS IC QSM 5.0		GW	4	
		Nitrate Nitrogen									
		Chloride									
		Sulfate									
178887	1346381		7/10/2023	12:45	WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ANIONS IC QSM 5.0		GW	4	
		Sulfate									
		Chloride									
		Nitrate Nitrogen									

Matrix: S-Soil Slg-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

WANIONS IC QSM 5.0 Anion Run
273539 on 7/18/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	ANALYTE	SAMPLE DATE:	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
178887	1346382		7/10/2023	14:00	WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ANIONS IC QSM 5.0		GW	4	
		Nitrate Nitrogen		*							
		Chloride		*							
		Sulfate		*							
178887	1346383		7/10/2023	15:30	WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ANIONS IC QSM 5.0		GW	4	
		Sulfate									
		Chloride									
		Nitrate Nitrogen									
	1346956						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		CCV				0			
		Chloride		CCV				0			
		Sulfate		CCV				0			
	1346957						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		CCB				0			
		Chloride		CCB				0			
		Sulfate		CCB				0			
	1346958		7/10/2023	14:00			ANIONS IC QSM 5.0				
		Nitrate Nitrogen		DUP	1346382			0			
		Chloride		DUP	1346382			0			
		Sulfate		DUP	1346382			0			

Matrix: S-Soil Slg-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

WANIONS IC QSM 5.0 Anion Run
273539 on 7/18/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	ANALYTE	SAMPLE DATE:	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1346959		7/10/2023	14:00			ANIONS IC QSM 5.0				
		Nitrate Nitrogen		MSW	1346382			0			
		Chloride		MSW	1346382			0			
		Sulfate		MSW	1346382			0			
	1346960		7/10/2023	14:00			ANIONS IC QSM 5.0				
		Nitrate Nitrogen		MSDW	1346959			0			
		Chloride		MSDW	1346959			0			
		Sulfate		MSDW	1346959			0			
	1346961						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		CCV				0			
		Chloride		CCV				0			
		Sulfate		CCV				0			
	1346962						WANIONS IC QSM 5.0				
		Nitrate Nitrogen		CCB				0			
		Chloride		CCB				0			
		Sulfate		CCB				0			
	1349262						WANIONS IC QSM 5.0				
		Sulfate		CCV							
	1349263						WANIONS IC QSM 5.0				
		Sulfate		CCB							

Matrix: S-Soil Slg-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

WANIONS IC QSM 5.0 Anion Run
273539 on 7/18/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	ANALYTE	SAMPLE DATE:	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
178887	1346381		7/10/2023 12:45		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ANIONS IC QSM 5.0		GW	4	
		Nitrate Nitrogen	RERUN								
		Chloride	RERUN								
		Sulfate	RERUN								
	1349264						WANIONS IC QSM 5.0				
		Sulfate		CCV							
	1349265						WANIONS IC QSM 5.0				
		Sulfate		CCB							

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Matrix: S-Soil Slg-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

Data Review Checklist

LIMS Run #(s)		Analysis Date		Method: Anions by Ion Chromatography 300.0/9056		Independent Data Review Checklist		Instrument: Aquion - System 4			
LIMS Run #(s)		Analysis Date		Analyst/Data Interpreter		Independent Reviewer		Date of Review		Approved? (Yes/No)	
273531 273537 273539		07/11/2023		TMG		RLD		07/18/2023		Yes	
Instructions: Complete one checklist per <i>analytical sequence</i> . Enter the appropriate response for each question. Each "No" response requires an explanation in the Comments section, and may require the initiation of a Nonconformance Report.											
Requirement		Acceptance Criteria		Analyst Review		Independent Review		Comments (Indicate reference to an attachment if necessary)			
				Yes	No	Yes	No				
1. Were the samples analyzed within hold time?		28 days for Cl, F, SO ₄ ; 14 days for preserved NO ₂ +NO ₃ ; 48 hours for O.Phos, and unpreserved NO ₂ and NO ₃		Yes		Yes					
2. Was the calibration performed using the required number of standards?		Minimum three plus a blank		Yes		Yes					
3. Is the standard prep log number noted on the analytical report bench sheet?		---		Yes		Yes					
4. Was the correlation coefficient acceptable?		≥ .995		Yes		Yes					
5. Were the ICV and ICB run immediately after the calibration check standard?		---		Yes		Yes					
6. Was the ICV recovery acceptable?		90 – 110 % or contract/program specific		Yes		Yes					
7. Was the ICB result acceptable?		< LOD or contract/program specific		Yes		Yes					
8. Were the CCV's and the CCB's analyzed at the required frequency?		1 / 10 samples or contract/program specific		Yes		Yes					
9. Were the CCV recoveries acceptable?		90 – 110 % or contract/program specific		Yes		Yes					
10. Were the CCB results acceptable?		< LOD or program/project specific		Yes		Yes					
11. Was the MB analyzed at the required frequency?		1 / 20 samples or contract/program specific		Yes		Yes					
12. Were the MB results acceptable?		< LOD or contract/program specific		Yes		Yes					

13. Was a LCS run at the required frequency?	1 / 20 samples or contract/program specific	Yes		Yes		
14. Was the LCS recovery acceptable?	Within in-house or contract/program specific limits	Yes		Yes		
15. Was the LCS used before the indicated expiration date?	---	Yes		Yes		
16. Were the MS and MSD (when required) prepared at the required frequency?	1 per 20 samples per matrix or contract/program specific	Yes		Yes		
17. Were the MS and MSD (when required) recoveries acceptable?	Within In-house or contract/program specific limits		No		No	Affected sample results were "M" flagged
18. Was the RPD between the MS and MSD (when required) acceptable?	Within in house or contract/program specific limits	Yes		Yes		
19. Was a sample duplicate prepared at the required frequency?	Contract/program specific or 1 per 20 samples (1 / 10 for SDWA samples)	Yes		Yes		
20. Was the duplicate within precision limits?	Within in-house or contract/program specific limits	Yes		Yes		
21. Were all chromatograms checked to ensure accurate peak identification?	---	Yes		Yes		
22. Are all samples on the job lists accounted for?	---	Yes		Yes		
23. Were all samples having analytes detected in amounts exceeding the calibration range diluted, reanalyzed and DF applied to the final results?	---	Yes		Yes		
24. Were non-matrix related nonconformities (if applicable) documented in the NCR spreadsheet?	---	Yes		Yes		

Non-Applicable Yes/No Cells Are Left Blank

Comments:

Aquion Run Log - System 4															
Start Date	Start Time	End Date	End Time	Analyst	Lims Run # (s)	Calibration ID#	Data File	CCV ID's	LCS ID's	Spike ID's	Total Cond.	Pressure (Mpa)	Flow (mL/min)	Comments	Reviewed/Date
05/15/23	12:41	05/16/23	02:05	TMG	271919 271920 271930	IC4679A	051523 -	IC4699 IC4702	IC4700 IC4703	IC4701 IC4704	22.07	1052.47	0.94		RLD 06/06/2023
05/16/23	9:46	05/16/23	20:29	TMG	271946 271958 271959	IC4679A	051623 -	IC4699 IC4710	IC4700 IC4711	IC4701 IC4712	22.12	1062.96	0.94		RLD 06/06/2023
05/17/23	9:23	05/18/23	08:48	TMG	IC4712A 271997 272006	IC4712A	051723 -	IC4699 IC4710	IC4700 IC4711	IC4701 IC4712	22.61	992.88	1		RLD 06/06/2023
05/18/23	13:36	05/19/23	10:58	TMG	272040	IC4712A	051823 -	IC4719 IC4722	IC4720 IC4723	IC4721 IC4724	22.44	982.31	0.98		RLD 06/06/2023
05/19/23	12:10	05/20/23	00:04	TMG	272072	IC4712A	051923 -	IC4719 IC4722	IC4720 IC4723	IC4721 IC4724	22.52	985.24	0.98		RLD 06/06/2023
05/22/23	12:33	05/23/23	09:01	TMG	272108 PT	IC4712A	052223 -	IC4719 IC4725	IC4720 IC4726	IC4721 IC4727	23.12	998.4	0.98		RLD 06/06/2023
05/23/23	10:30	05/24/23	10:49	TMG	272131 272135	IC4712A	052323 -	IC4719 IC4725	IC4720 IC4726	IC4721 IC4727	23.29	1021	0.98		RLD 06/06/2023
05/24/23	11:35	05/25/23	09:02	TMG	272170 272174 272202	IC4712A	052423 -	IC4719 IC4728	IC4720 IC4729	IC4721 IC4730	23.71	1013.36	0.98		RLD 06/06/2023
05/25/23	9:39	05/26/23	08:44	TMG	272228 272229	IC4712A	052523 -	IC4731 IC4734	IC4732 IC4735	IC4733 IC4736	22.37	985.74	0.98		RLD 06/06/2023
05/26/23	10:19	05/26/23	18:18	TMG	272271	IC4712A	052623 -	IC4731 IC4734	IC4732 IC4735	IC4733 IC4736	22.02	993.19	0.98		RLD 06/06/2023
05/30/23	8:08	05/30/23	11:30	TMG	272293ML	IC4712A	053023 -	IC4742	IC4742	IC4733 IC4736	22.97	1027.56	1		RLD 06/06/2023
05/30/23	13:58	05/31/23	00:24	TMG	272309	IC4712A	053023 -	IC4731 IC4734	IC4732 IC4735	IC4733 IC4736	22.82	1012.4	0.98		RLD 06/06/2023
05/31/23	11:21	05/31/23	20:44	TMG	272319 272330	IC4712A	053123 -	IC4731 IC4738	IC4732 IC4739	IC4733 IC4740	23	1009.89	0.98		RLD 06/06/2023
06/01/23	14:27	06/01/23	20:22	TMG	272377	IC4712A	060123 -	IC4743 IC4746	IC4744 IC4747	IC4745 IC4748	23.17	1004.76	0.98		RLD 06/06/2023
06/02/23	10:19	06/05/23	10:41	TMG	272407 272408 272417	IC4712A	060223 -	IC4743 IC4746	IC4744 IC4747	IC4745 IC4748	23.24	1014.87	0.98		
06/05/23	14:30	06/06/23	17:39	TMG	272448 272449	IC4712A	060523 -	IC4743 IC4746	IC4744 IC4747	IC4745 IC4748	23.67	1043.68	0.98		
06/07/23	7:27	06/08/23	12:14	TMG	272483 272507 IC4750A	IC4712A/IC4750 A	060723 -	IC4743 IC4751	IC4744 IC4752	IC4745 IC4753	24.61	1004.61	0.98		
06/08/23	13:21	06/09/23	08:06	TMG	272553 272554 272555	IC4750A	060823 -	IC4754 IC4757	IC4755 IC4758	IC4756 IC4759	24.9	1011.24	1		
06/09/23	10:19	06/12/23	11:56	TMG	272577 272578	IC4750A	060923 -	IC4754 IC4757	IC4755 IC4758	IC4756 IC4759	25.69	1047.34	1		
06/12/23	13:58	06/12/23	18:24	TMG	272507R 272646	IC4750A	061223 -	IC4754 IC4760	IC4755 IC4761	IC4756 IC4762	22.51	1059.53	1		
06/13/23	15:03	06/14/23	09:18	TMG	272692 272693	IC4750A	061323 -	IC4754 IC4760	IC4755 IC4761	IC4756 IC4762	22.68	1060.11	1		
06/14/23	11:33	06/15/23	03:32	TMG	272724 272725 272730	IC4712A	061423 -	IC4754 IC4763	IC4755 IC4764	IC4756 IC4765	22.66	1056.91	0.98		
06/15/23	9:30	06/16/23	20:48	TMG	272756 272765 272766 272802 272803 272826	IC4750A	061523 -	IC4767 IC4770	IC4768 IC4771	IC4769 IC4772	22.7	1006.11	0.98		
06/19/23	7:48	06/20/23	09:12	TMG	272847 ML	IC4750A	061923 -	IC4767 IC4770	IC4768 IC4771	IC4769 IC4772	23.21	1033.34	1		
06/20/23	10:39	06/21/23	09:51	TMG	272896	IC4750A	062023 -	IC4767 IC4773	IC4768 IC4774	IC4769 IC4775	23.08	1009.7	0.98		
06/21/23	12:34	06/21/23	23:42	TMG	272953 272954 272964	IC4750A	062123 -	IC4767 IC4773	IC4768 IC4774	IC4769 IC4775	23.17	1020.92	0.98		
06/22/23	9:30	06/23/23	00:27	TMG	272955 272991	IC4750A	062223 -	IC4776 IC4779	IC4777 IC4780	IC4778 IC4781	23.28	1024.86	0.98		
06/23/23	11:18	06/23/23	17:55	TMG	273043 273044	IC4750A	062323 -	IC4776 IC4779	IC4777 IC4780	IC4778 IC4781	23.31	1039.09	0.98		
06/26/23	11:45	06/27/23	09:43	TMG	273128 273131	IC4750A	062623 -	IC4776 IC4779	IC4777 IC4780	IC4778 IC4781	23.48	1038.82	0.98		
06/27/23	12:56	06/27/23	21:37	TMG	273172 273173	IC4750A	062723 -	IC4776 IC4782	IC4777 IC4783	IC4778 IC4784	23.38	1044.8	0.98		
06/28/23	13:18	06/28/23	20:57	TMG	273225 273226	IC4750A	062823 -	IC4776 IC4782	IC4777 IC4783	IC4778 IC4784	22.74	1030.53	0.98		
06/30/23	12:30	07/01/23	01:22	TMG	273292 273293	IC4750A	063023 -	IC4786 IC4789	IC4787 IC4790	IC4788 IC4791	22.56	1040.4	0.98		
07/03/23	12:41	07/03/23	21:23	TMG	273355	IC4750A	070323 -	IC4786 IC4789	IC4787 IC4790	IC4788 IC4791	23.08	1058.37	0.98		
07/05/23	12:49	07/06/23	09:56	TMG	273396	IC4750A	070523 -	IC4786 IC4789	IC4787 IC4790	IC4788 IC4791	23.28	1053.94	0.98		
07/06/23	15:36	07/10/23	12:58	TMG	273444	IC4750A	070623 -	IC4794 IC4797	IC4795 IC4798	IC4796 IC4799	23.57	1052.05	0.98		
07/11/23	12:21	07/12/23	00:32	TMG	273531 273537 273539	IC4750A	071123 -	IC4794 IC4800	IC4795 IC4801	IC4796 IC4802	25.22	1052.05	0.98		
07/12/23	11:41	07/13/23	11:27	TMG	273580 273581 273582 273588	IC4750A	071223 -	IC4794 IC4800	IC4795 IC4801	IC4796 IC4802	25.93	1066.47	0.98		
07/13/23	12:25	07/14/23	11:13	TMG	273619 273621	IC4750A	071323 -	IC4803 IC4806	IC4804 IC4807	IC4805 IC4808	25.92	1205.95	0.98		
07/14/23	11:58	07/17/23	22:33	TMG	273657 273658 273661 273662 273708 273715	IC4750A	071423 -	IC4803 IC4806	IC4804 IC4807	IC4805 IC4808	26.38	1011.74	0.98		
07/18/23	12:15	07/20/23	11:11	TMG	273741 273742 273749 273754 273755 273782 273786 273787 273799	IC4750A	071823 -	IC4803 IC4809	IC4804 IC4810	IC4804 IC4811	26.5	1005.72	0.98		

WPH Analytical Run
273548 on 7/17/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	SAMPLE DECRPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
178887	1346384	54IDW	7/10/2023 16:05		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	PH		GW		4

Matrix: S-Soil Sig-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

Distribution:

C:\Windows\ServiceProfiles\LocalService\AppData\Local\Temp\tmp3A45.tmp

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pH Data Validation Checklist

		Method: pH EPA 150.1, SM 4500-H+B, EPA 9040C, EPA 9045D			
LIMS Run #(s)	Analysis Date	Analyst / Data Interpreter	Independent Reviewer	Date of Review	Approved? (Yes or No)
273548	07/11/2023	BRB	HLB	07/13/2023	Yes

Instructions: Complete one checklist per *analytical run*. Enter the appropriate response for each question.

Each "No" response requires an explanation in the Comments section, and may require the initiation of a Nonconformance Report.

Requirement:	Acceptance Criteria	Analyst Review		Independent Review		Comments:
		Yes	No	Yes	No	(indicate reference to an attachment if necessary)
1. Was the calibration slope recorded on the bench sheet?	95-110%	Yes		Yes		
2. Were reagents/standards used before expiration date?	---	Yes		Yes		
3. Were duplicates analyzed at the appropriate frequency?	1 every 20 samples of the same matrix	Yes		Yes		
4. Were the duplicates within acceptable limits?	Differ by ≤ 0.10 pH units	Yes		Yes		
5. Are all samples on the job lists accounted for?	---	Yes		Yes		
6. Were SM 4500-H+B samples bracketed by calibration buffer 7?	Every 10 samples, Differ by ≤ 0.10 pH units	Yes		Yes		

Mettler Toledo (Easy Seven) Instrument Run Logbook					
Date	Start Time	End Time	Analyst	Analyte	Lims Run #(s)
07/11/23	14:15	14:45	BRB	PH	273548

Mettler Toledo (Easy Seven) pH Calibration & Maintenance Run Logb									
		pH Buffer Reference ID #			3 Point Calibration				
Date	Analyst	pH 7	pH 4	pH 10	1st Buffer	2nd Buffer	3rd Buffer	Slope (95-110%)	Temp ° C
07/11/23	SJP	WC550 EX: 12/01/2023	WC507 EX: 08/29/2023	WC453 EX: 01/31/2024	7.01	4	10.03	97%	23.5

W CARBON, INORG & ORG Analytical Run
273604 on 7/18/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	SAMPLE DECRPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1348107						W CARBON, INORG & ORG				
				CCV				0			
	1348108						W CARBON, INORG & ORG				
				LCSW				0			
	1348109						W CARBON, INORG & ORG				
				MBW				0			
178887	1346379		7/10/2023	10:15	WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	CARBON, INORG & ORG		GW	4	
		54MW13									
178887	1346380		7/10/2023	10:15	WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	CARBON, INORG & ORG		GW	4	
		54TW13									
178887	1346381		7/10/2023	12:45	WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	CARBON, INORG & ORG		GW	4	
		54MW10									
178887	1346382		7/10/2023	14:00	WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	CARBON, INORG & ORG		GW	4	
		54MW12			Designated MS/MSD						
178887	1346383		7/10/2023	15:30	WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	CARBON, INORG & ORG		GW	4	
		54MW1									
	1348110						W CARBON, INORG & ORG				
				CCV				0			
	1348111						W CARBON, INORG & ORG				
				CCB				0			
10	SAMPLE COUNT ON RUN, INCLUDING METHOD AND INSTRUMENT QC										

Matrix: S-Soil Sig-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

Distribution:

C:\Windows\ServiceProfiles\LocalService\AppData\Local\Temp\B539.tmp

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FWC39-01 Data Review Checklist

		Method: Total Organic Carbon Method 415.1/9060		Independent Data Review Checklist		Instrument: TOCW	
LIMS Run #(s)	Analysis Date	Analyst / Data Interpreter		Independent Reviewer	Date of Review	Approved? (Yes or No)	
273604	07/13/2023	TMG		RLD	07/18/2023	Yes	
Instructions: Complete one checklist per <i>analytical sequence</i> . Enter the appropriate response for each question. Each "No" response requires an explanation in the Comments section, and may require the initiation of a Nonconformance Report.							
Requirement	Acceptance Criteria	Analyst Review		Independent Review		Comments	
		Yes	No	Yes	No	(Indicate reference to an attachment if necessary)	
1. Were the samples preserved prior to analysis and analyzed within hold time?	pH <2, 28 days or program/project specific	Yes		Yes			
2. Was the calibration curve performed using the required number of standards?	3 standards and a blank	Yes		Yes			
3. Was the correlation coefficient acceptable?	$r \geq .995$	Yes		Yes			
4. Were the ICV and ICB analyzed?	---	Yes		Yes			
5. Was the ICV result acceptable?	90 – 110 % Rec. or contract/program specific	Yes		Yes			
6. Was the ICB result acceptable?	< LOD or contract/program specific	Yes		Yes			
7. Was an LCS & MB run with each batch of samples?	One each per analytical batch or contract/program specific frequency.	Yes		Yes			
8. Was the LCS recovery acceptable?	In-house derived or contract/program specific limits.	Yes		Yes			
9. Were the MB results acceptable?	< LOD or project/ program specific (<1/2 RL for DOD-QSM).	Yes		Yes			
10. Were the CCV's analyzed at the required frequency?	Beginning, after every 10 sample, & at the end of a sequence.	Yes		Yes			
11. Were the CCB's analyzed at the required frequency?	After each CCV (unless MB analyzed after CCV)	Yes		Yes			
12. Were the CCV recoveries acceptable?	90 – 110 % Rec. or project/ program specific	Yes		Yes			
13. Were the CCB results acceptable?	< LOD or project/ program specific	Yes		Yes			

14. Were all positive results that were reported within the calibration curve?	---	Yes		Yes		
15. Was an MS and MSD analyzed at the required frequency?	1 / 20 of the same matrix or project/ program specific	na		N/A		
16. Were the MS and MSD recoveries acceptable?	In-house derived or project/ program specific limits	na		N/A		
17. Was the RPD between the MS and MSD acceptable?	In-house derived or project/ program specific limits	na		N/A		
18. Was a Duplicate analyzed at the required frequency?	1 per 20 of the same matrix or contract/program specific	na		N/A		
19. Was the RPD between the Duplicate (if valid) and the sample acceptable?	In-house derived or project/ program specific limits (QSM samples, duplicate only valid when sample result $\geq 5 \times$ the LOQ)	na		N/A		
20. Are all samples on the job lists accounted for?	---	Yes		Yes		
21. Is the standards prep log numbers noted on the analytical report?	---	Yes		Yes		
22. Were post analysis corrections addressed and/or the Audit Trail function turned on (if available)?	Correction should be initiated, dated, and reason given. Audit trail must be on (if available)	Yes		Yes		
23. Were non-matrix related nonconformities (if applicable) documented in the NCR spreadsheet?	---	Yes		Yes		

Non-Applicable Yes/No Cells Are Left Blank

Comments:

WORGANIC CARBON QSM 5.0 Analytical Run
273651 on 7/18/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	SAMPLE DECIPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)		CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1349153							WORGANIC CARBON QSM 5.0				
				ICV								
	1349154			ICB				WORGANIC CARBON QSM 5.0				
	1348115			CCV				WORGANIC CARBON QSM 5.0	0			
	1348116			CCB				WORGANIC CARBON QSM 5.0	0			
178887	1346379		7/10/2023	10:15		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ORGAN CARBON T QSM 5.0		GW	4	
		54MW13										
178887	1346380		7/10/2023	10:15		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ORGAN CARBON T QSM 5.0		GW	4	
		54TW13										
178887	1346381		7/10/2023	12:45		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ORGAN CARBON T QSM 5.0		GW	4	
		54MW10										
178887	1346382		7/10/2023	14:00		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ORGAN CARBON T QSM 5.0		GW	4	
		54MW12			Designated MS/MSD							
	1348117		7/10/2023	14:00				ORGAN CARBON T QSM 5.0				
		54MW12			DUP	1346382			0			
	1348118		7/10/2023	14:00				ORGAN CARBON T QSM 5.0				
		54MW12			MSW	1346382			0			
	1348119		7/10/2023	14:00				ORGAN CARBON T QSM 5.0				
		54MW12			MSDW	1348118			0			
	1348120							WORGANIC CARBON QSM 5.0				
					CCV				0			
	1348121							WORGANIC CARBON QSM 5.0				
					LCSW				0			
	1348122							WORGANIC CARBON QSM 5.0				
					MBW				0			
178887	1346383		7/10/2023	15:30		WESTON SOLUTIONS, INC.	RADFORD AAP SWMU 54	ORGAN CARBON T QSM 5.0		GW	4	
		54MW1										
	1346821		7/11/2023	09:05						GW	4	
		13MW4			Designated MS/MSD							
	1348123		7/11/2023	09:05				ORGAN CARBON T QSM 5.0				
		13MW4			DUP	1346821			0			
	1348124		7/11/2023	09:05				ORGAN CARBON T QSM 5.0				
		13MW4			MSW	1346821			0			

Matrix: S-Soil Sig-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

Distribution:

C:\Windows\ServiceProfiles\LocalService\AppData\Local\Temp\tmpE63.tmp

Page 1 of 1

WORGANIC CARBON QSM 5.0 Analytical Run
273651 on 7/18/2023

Date Analyzed: _____

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	SAMPLE DECRPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)		CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	1348125		7/11/2023	09:05								
		13MW4			MSDW	1348124						
	1346822		7/11/2023	10:20						GW	4	
		13MW3										
	1346823		7/11/2023	11:25						GW	4	
		49MW04										
	1346824		7/11/2023	11:25						GW	4	
		49TW04										
	1346825		7/11/2023	12:30						GW	4	
		13MW2										
	1347302		7/12/2023	10:25						GW	4	
		48MW6										
	1348126											
					CCV							
	1348127											
					CCB							
	1347303		7/12/2023	12:55						GW	4	
		49MW01										
	1347304		7/12/2023	12:55						GW	4	
		49TW01										
	1347305		7/12/2023	14:15						GW	4	
		49MW01-EQB										
	1348128							WORGANIC CARBON QSM 5.0				
					CCV				0			
	1348129							WORGANIC CARBON QSM 5.0				
					CCB				0			

31 SAMPLE COUNT ON RUN, INCLUDING METHOD AND INSTRUMENT QC

Matrix: S-Soil Sig-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

Distribution:

C:\Windows\ServiceProfiles\LocalService\AppData\Local\Temp\F63.tmp

Page 1 of 1

FWC39-01 Data Review Checklist

		Method: Total Organic Carbon Method 415.1/9060		Independent Data Review Checklist		Instrument: TOCW	
LIMS Run #(s)	Analysis Date	Analyst / Data Interpreter		Independent Reviewer	Date of Review	Approved? (Yes or No)	
273651 273652	07/14/2023	TMG		RLD	07/18/2023	Yes	
Instructions: Complete one checklist per <i>analytical sequence</i> . Enter the appropriate response for each question. Each "No" response requires an explanation in the Comments section, and may require the initiation of a Nonconformance Report.							
Requirement	Acceptance Criteria	Analyst Review		Independent Review		Comments	
		Yes	No	Yes	No	(Indicate reference to an attachment if necessary)	
1. Were the samples preserved prior to analysis and analyzed within hold time?	pH <2, 28 days or program/project specific	Yes		Yes			
2. Was the calibration curve performed using the required number of standards?	3 standards and a blank	Yes		Yes			
3. Was the correlation coefficient acceptable?	$r \geq .995$	Yes		Yes			
4. Were the ICV and ICB analyzed?	---	Yes		Yes			
5. Was the ICV result acceptable?	90 – 110 % Rec. or contract/program specific	Yes		Yes			
6. Was the ICB result acceptable?	< LOD or contract/program specific	Yes		Yes			
7. Was an LCS & MB run with each batch of samples?	One each per analytical batch or contract/program specific frequency.	Yes		Yes			
8. Was the LCS recovery acceptable?	In-house derived or contract/program specific limits.	Yes		Yes			
9. Were the MB results acceptable?	< LOD or project/ program specific (<1/2 RL for DOD-QSM).	Yes		Yes			
10. Were the CCV's analyzed at the required frequency?	Beginning, after every 10 sample, & at the end of a sequence.	Yes		Yes			
11. Were the CCB's analyzed at the required frequency?	After each CCV (unless MB analyzed after CCV)	Yes		Yes			
12. Were the CCV recoveries acceptable?	90 – 110 % Rec. or project/ program specific	Yes		Yes			
13. Were the CCB results acceptable?	< LOD or project/ program specific	Yes		Yes			

14. Were all positive results that were reported within the calibration curve?	---	Yes		Yes		
15. Was an MS and MSD analyzed at the required frequency?	1 / 20 of the same matrix or project/ program specific	Yes		Yes		
16. Were the MS and MSD recoveries acceptable?	In-house derived or project/ program specific limits	Yes		Yes		
17. Was the RPD between the MS and MSD acceptable?	In-house derived or project/ program specific limits	Yes		Yes		
18. Was a Duplicate analyzed at the required frequency?	1 per 20 of the same matrix or contract/program specific	Yes		Yes		
19. Was the RPD between the Duplicate (if valid) and the sample acceptable?	In-house derived or project/ program specific limits (QSM samples, duplicate only valid when sample result $\geq 5 \times$ the LOQ)	Yes		Yes		
20. Are all samples on the job lists accounted for?	---	Yes		Yes		
21. Is the standards prep log numbers noted on the analytical report?	---	Yes		Yes		
22. Were post analysis corrections addressed and/or the Audit Trail function turned on (if available)?	Correction should be initiated, dated, and reason given. Audit trail must be on (if available)	Yes		Yes		
23. Were non-matrix related nonconformities (if applicable) documented in the NCR spreadsheet?	---	Yes		Yes		

Non-Applicable Yes/No Cells Are Left Blank

Comments:

TOC Instrument Run Logbook

Start Date	Start Time	End Date	End Time	Analyst	LIMs Run #	Matrix (S or W)	Calibration ID #	COMMENTS
6/19/2023	10:08	6/19/2023	18:29	TMG	272579	W	0651	
6/12/2023	12:02	6/12/2023	17:43	TMG	272025, 272026	W	0651	
6/13/2023	12:33	6/13/2023	13:41	TMG	272703	S	0646	MDL1, LOD, LOQ
6/14/2023	8:50	6/14/2023	9:31	TMG	272703	S	0646	MDL2
6/14/2023	10:05	6/14/2023	10:49	TMG	272702	S	0658	computer glitch
6/14/2023	11:10	6/14/2023	12:26	TMG	272702R	S	0658	
6/19/2023	10:19	6/19/2023	16:38	TMG	271162, 272852, 272851	W	0651	LOD, LOQ
6/20/2023	9:41	6/20/2023	13:03	TMG	272888	S	0658	
6/21/2023	10:12	6/21/2023	12:37	TMG	272940	S	0658	
6/26/2023	9:18	6/26/2023	16:35	TMG	273091, 273092	W	0651	LL CCV
6/28/2023	12:10	6/28/2023	17:42	TMG	273204, 273205	W	0651	
7/3/2023	9:19	7/3/2023	15:13	TMG	273205R, 273284, 273285	W	0651	CCV1
7/5/2023	11:21	7/5/2023	14:37	TMG	273385R	S	0658	TMG 7/6/2023
7/5/2023	10:44	7/5/2023	11:06	TMG	273385	S	0658	computer glitch
7/10/2023	13:36	7/10/2023	15:50	TMG	273495	S	0658	
7/12/2023	9:23	7/12/2023	18:37	TMG	273567, 273568	W	0637	
7/13/2023	9:30	7/13/2023	11:49	TMG	273604	W	0637	TIC
7/14/2023	11:01	7/14/2023	20:16	TMG	273651, 273652	W	0637	

Reviewed By: RD 7/25/2023

**CHAIN OF CUSTODY,
PM CONFIRMATION
AND
SAMPLE CONDITION FORMS
DOCUMENTS**

CHAIN OF CUSTODY

Company: Weston SolutionsProject Contact: Tony PaceTelephone: (757) 819-5310Project Name: Radford AAP SWMU 54

Project #:

Location: Radford, VASampled By: K. Martindale, P. Taylor

CT LABORATORIES

Folder #: 178887Company: WESTON SOLUTIONS, INC.Project: RADFORD AAP SWMU 54Logged By: erc PM: BMS

1230 Lange Court, Baraboo, WI 53913

608-356-2760 Fax 608-356-2766

www.ctlaboratories.com

Program:

ISM RCRA SDWA NPDES

Solid Waste Other _____

PO #

Report To: Tony PaceEMAIL: pacea@westonsolutions.comCompany: Weston SolutionsAddress: 2 Eaton St. Ste. 603
Hampton, VA 23669

Invoice To: *

EMAIL:

Company: Same

Address:

*Party listed is responsible for payment of invoice as per CT Laboratories' terms and conditions

Client Special Instructions

ANALYSES REQUESTED

Turnaround Time

☒ Normal ☐ RUSH*

Date Needed: _____

Rush analysis requires prior
CT Laboratories' approval

Surcharges:

24 hr 200%

2-3 days 100%

4-9 days 50%

Matrix:

GW - groundwater SW - surface water WW - wastewater DW - drinking water

S - soil/sediment SL - sludge A - air M - misc/waste

Filtered? Y/N

TOC 9060A

Anions 9056A

TIC 9060A

Chloride/Chlorite

COD 410.4

pH 9040C

TAL Metals

Total # Containers

Designated MS/MSD

CT Lab ID

Lab use only

Collection		Matrix	Grab/Comp	Sample #	Sample ID Description		Fill in Spaces with Bottles per Test																CT Lab ID # Lab use only	
Date	Time																							
7/10	1015	GW	G		54MW13	N	1	1	3	1										6		1346379		
7/10	1015	GW	G		54MW10 54TW13	N	1	1	3	1										6		80		
7/10	1245	GW	G		54MW10	N	1	1	3	1										6		81		
7/10	1400	GW	G		54MW12	N	3	3	9	3										18	X	82		
7/10	1530	GW	G		54MW1	N	1	1	3	1										6		83		
7/10	1605	GW	G		54IDW	N					1	1	1							3		84		

Relinquished By:

Date/Time

7/10/2023 1800

Received By:

Fedex

Date/Time

7/10/2023 1800

Lab Use Only

Ice Present ☒ Yes ☐ NoTemp 4.0 IR Gun 28Cooler # 6029

Received by:

Date/Time

Received for Laboratory by:

Date/Time

7/10/2023 1800

Ice Present YES NO

Observed Temperature 41

Actual Temperature _____

IR Gun # 28

Initials RL

Date 7/11/23 Time 10:20

Cooler #: 6029

Cooler Receipt Form

156297-435-AR031706P 11/23

2857 ROANOKE ST
CHRISTIANSBURG, VA 24073
UNITED STATES US

BILL THIRD PARTY

TO

CT LABORATORIES
1230 LANGE CT

BARABOO WI 53913

REF: 03886.552.500.2420 (SMU 49)

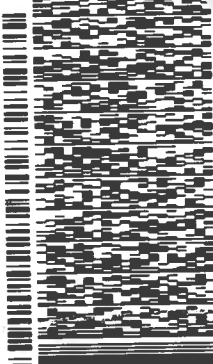
(803) 358-2760

IN1

PO1

DEPT:

FedEx
Express



RT 314
6 20:00
9026
07-11

JUL 10:30A
NIGHT OVERNIGHT

TRK# 7809 4340 6481

0201

XN LNRA

53913
WI-US MSN



CUSTODY SEAL

DATE

7/10/2023

SIGNATURE

[Signature]

QEC

Quality Environmental Containers
800-255-3950 • www.qecusa.com

CUSTODY SEAL

DATE

7/10/2023

SIGNATURE

[Signature]

QEC

Quality Environmental Containers
800-255-3950 • www.qecusa.com

Folder #: 178887

Company: WESTON SOLUTIONS, INC.

Project: RADFORD AAP SWMU 54

Folder #: 178887**PM Login Confirmation**

Contract #: 3313

Company: WESTON SOLUTIONS, INC.

Project: RADFORD AAP SWMU 54

Proj #:

Project Phase: RADFORD, VA

PO Number:

Invoice #:

179578

Project Manager: BMS

Date Received: 07/11/23

Log Date: 07/11/2023

Report To: ANTHONY PACE

CC:

Invoice To :ACCOUNTS PAYABLE

CC:

2 EATON STREET

1400 WESTON WAY, BLDG 5-1

HAMPTON, VA 23669

WEST CHESTER, PA 19380

Phone: 757-819-5310:

Fax:

Phone:

Fax:

Rep. E-Mail anthony.pace@westonsolutions.com

EMail:

Collected By:

Arrival Temperature: 4.1 oC

Collector's Phone: 757-819-5310

SAMPLE #: 1346379 DESCR: 54MW13 PRIMARY / DETAILED MATRIX: AQUEOUS / GROUND WATER SAMPLED: 7/10/2023 Time: 10:15**CLIENT SAMPLE #:****DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
759	CARBON, INORG & ORG	(EPA 9060A)				7/24/2023	7/23/2023		Logged
1227	ANIONS IC QSM 5.0	(EPA 9056A)				7/12/2023	7/23/2023		Logged
			Chloride						
			Nitrate Nitrogen						
			Sulfate						
1230	ORGAN CARBON T QSM 5.0	(EPA 9060A)				8/7/2023	7/23/2023		Logged
1279	SUB CHLORATE/CHLORITE	(300.1)					7/23/2023		Logged

SAMPLE #: 1346380 DESCR: 54TW13 PRIMARY / DETAILED MATRIX: AQUEOUS / GROUND WATER SAMPLED: 7/10/2023 Time: 10:15**CLIENT SAMPLE #:****DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
759	CARBON, INORG & ORG	(EPA 9060A)				7/24/2023	7/23/2023		Logged
1227	ANIONS IC QSM 5.0	(EPA 9056A)				7/12/2023	7/23/2023		Logged

Folder #: 178887

Company: WESTON SOLUTIONS, INC.

Project: RADFORD AAP SWMU 54

SAMPLE #: 1346380 DESCR: 54TW13				PRIMARY / DETAILED MATRIX: AQUEOUS / GROUND WATER			SAMPLED: 7/10/2023		Time: 10:15	
CLIENT SAMPLE #:				DETAILED SITE/POINT ID INFORMATION:						
TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS	
			Chloride							
			Nitrate Nitrogen							
			Sulfate							
1230	ORGAN CARBON T QSM 5.0	(EPA 9060A)				8/7/2023	7/23/2023		Logged	
1279	SUB CHLORATE/CHLORITE	(300.1)					7/23/2023		Logged	

SAMPLE #: 1346381 DESCR: 54MW10				PRIMARY / DETAILED MATRIX: AQUEOUS / GROUND WATER			SAMPLED: 7/10/2023		Time: 12:45	
CLIENT SAMPLE #:				DETAILED SITE/POINT ID INFORMATION:						
TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS	
759	CARBON, INORG & ORG	(EPA 9060A)				7/24/2023	7/23/2023		Logged	
1227	ANIONS IC QSM 5.0	(EPA 9056A)				7/12/2023	7/23/2023		Logged	
			Chloride							
			Nitrate Nitrogen							
			Sulfate							
1230	ORGAN CARBON T QSM 5.0	(EPA 9060A)				8/7/2023	7/23/2023		Logged	
1279	SUB CHLORATE/CHLORITE	(300.1)					7/23/2023		Logged	

SAMPLE #: 1346382 DESCR: 54MW12				PRIMARY / DETAILED MATRIX: AQUEOUS / GROUND WATER			SAMPLED: 7/10/2023		Time: 14:00	
CLIENT SAMPLE #:				DETAILED SITE/POINT ID INFORMATION:						
TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS	
759	CARBON, INORG & ORG	(EPA 9060A)			DESIGNATED MATRIX SPIKE	7/24/2023	7/23/2023		Logged	
1227	ANIONS IC QSM 5.0	(EPA 9056A)			DESIGNATED MATRIX SPIKE	7/12/2023	7/23/2023		Logged	
			Chloride							
			Nitrate Nitrogen							
			Sulfate							
1230	ORGAN CARBON T QSM 5.0	(EPA 9060A)			DESIGNATED MATRIX SPIKE	8/7/2023	7/23/2023		Logged	
1279	SUB CHLORATE/CHLORITE	(300.1)			DESIGNATED MATRIX SPIKE		7/23/2023		Logged	

Folder #: 178887

Company: WESTON SOLUTIONS, INC.

Project: RADFORD AAP SWMU 54

SAMPLE #:		1346383		DESCR:		54MW1		PRIMARY / DETAILED MATRIX:		AQUEOUS / GROUND WATER		SAMPLED:		7/10/2023		Time:		15:30	
CLIENT SAMPLE #:								DETAILED SITE/POINT ID INFORMATION:											
TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS							HOLD DATE	ANALYSIS DUE	RUSH	STATUS				

759	CARBON, INORG & ORG	(EPA 9060A)				7/24/2023	7/23/2023		Logged
1227	ANIONS IC QSM 5.0	(EPA 9056A)				7/12/2023	7/23/2023		Logged
			Chloride						
			Nitrate Nitrogen						
			Sulfate						
1230	ORGAN CARBON T QSM 5.0	(EPA 9060A)				8/7/2023	7/23/2023		Logged
1279	SUB CHLORATE/CHLORITE	(300.1)					7/23/2023		Logged

SAMPLE #:		1346384		DESCR:		54IDW		PRIMARY / DETAILED MATRIX:		AQUEOUS / GROUND WATER		SAMPLED:		7/10/2023		Time:		16:05	
CLIENT SAMPLE #:				DETAILED SITE/POINT ID INFORMATION:															
TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS							HOLD DATE	ANALYSIS DUE	RUSH	STATUS				

203	PH	(EPA 9040C)					7/23/2023		Logged
989	COD QSM	(EPA 410.4)				8/7/2023	7/23/2023		NeedPrep
1183	ICP K TOTAL QSM 5.0	(EPA 6010C)				1/6/2024	7/23/2023		NeedPrep
1190	ICP NA TOTAL QSM 5.0	(EPA 6010C)				1/6/2024	7/23/2023		NeedPrep
1200	ICP TOTAL QSM 5.0	(EPA 6010C)				1/6/2024	7/23/2023		NeedPrep
			Total Aluminum						
			Total Antimony						
			Total Arsenic						
			Total Barium						
			Total Beryllium						
			Total Cadmium						
			Total Calcium						
			Total Chromium						
			Total Cobalt						
			Total Copper						
			Total Iron						

Folder #: 178887

Company: WESTON SOLUTIONS, INC.

Project: RADFORD AAP SWMU 54

SAMPLE #: 1346384 DESCR: 54IDW

PRIMARY / DETAILED MATRIX: AQUEOUS / GROUND WATER

SAMPLED: 7/10/2023

Time: 16:05

CLIENT SAMPLE #:

DETAILED SITE/POINT ID INFORMATION:

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
-------	------	-------------	---------	------------	----------------------	-----------	--------------	------	--------

Total Lead

Total Magnesium

Total Manganese

Total Nickel

Total Selenium

Total Silver

Total Thallium

Total Vanadium

Total Zinc

1208 MERCURY TOTAL QSM 5.0 (EPA 7470A)

8/7/2023

7/23/2023

NeedPrep

Folder #: 178887

Company: WESTON SOLUTIONS, INC.

Project: RADFORD AAP SWMU 54

Invoice Number: 179578

Preliminary Invoice Estimate: \$1,402.00

Item	Matrix	Quantity	Price	Expedited TAT Surcharge	Total
ANIONS IC QSM 5.0 Chloride	GROUND WATER	7	\$12.00	0.00	\$84.00
ANIONS IC QSM 5.0 Nitrate Nitrogen	GROUND WATER	7	\$12.00	0.00	\$84.00
ANIONS IC QSM 5.0 Sulfate	GROUND WATER	7	\$12.00	0.00	\$84.00
CARBON, INORG & ORG	GROUND WATER	7	\$28.00	0.00	\$196.00
COD QSM	GROUND WATER	1	\$18.00	0.00	\$18.00
ICP K TOTAL QSM 5.0	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP NA TOTAL QSM 5.0	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Aluminum	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Antimony	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Arsenic	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Barium	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Beryllium	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Cadmium	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Calcium	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Chromium	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Cobalt	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Copper	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Iron	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Lead	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Magnesium	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Manganese	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Nickel	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Selenium	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Silver	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Thallium	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Vanadium	GROUND WATER	1	\$3.50	0.00	\$3.50
ICP TOTAL QSM 5.0 Total Zinc	GROUND WATER	1	\$3.50	0.00	\$3.50
MERCURY TOTAL QSM 5.0	GROUND WATER	1	\$23.00	0.00	\$23.00
ORGAN CARBON T QSM 5.0	GROUND WATER	7	\$28.00	0.00	\$196.00

Folder #: 178887**Company:** WESTON SOLUTIONS, INC.**Project:** RADFORD AAP SWMU 54

PH	GROUND WATER	1	\$10.00	0.00	\$10.00
SUB CHLORATE/CHLORITE	GROUND WATER	7	\$90.00	0.00	\$630.00
Temporary Fuel Surcharge on lab supplies and services (if applicable):					\$0.00

Bottle Information

Container	# Containers	Tests
H2SO4 PL	8	COD
HNO3	1	HG,ICP,K,NA
MISC	7	CHLORATE/CHLORITE
UNPRES PL	8	pH
VOA	21	

Sample Condition Report

Folder #:	178887	Print Date / Time:	07/11/2023	11:49
Client:	WESTON SOLUTIONS, INC.	Received Date / Time / By:	07/11/2023	10:20 DJL
Project Name:	RADFORD AAP SWMU 54	Log-In Date / Time / By:	07/11/2023	11:49 erc
Project Phase:	RADFORD, VA	Project #:		PM: BMS
Coolers:	6029	Temperature:	4.1 C	On Ice: Y
Custody Seals Present :	Y	COC Present:?	Y	Complete? Y
Seal Intact?	Y	Numbers:	DATED AND SIGNED	
Ship Method:	FEDEX EXPRESS	Tracking Number:	7809 4340 6481	
Adequate Packaging:	Y	Temp Blank Enclosed?	Y	

Notes: THE SAMPLES WERE RECEIVED IN GOOD CONDITION ON ICE.

TWO (2) CUSTODY SEALS WERE PRESENT AND INTACT UPON RECEIPT (BOTH WERE DATED 7/10/2023 AND SIGNED).

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
1346379 54MW13	VOA	1	/	
	VOA	1	/	
	VOA	1	/	
	Total # of Containers of Type (VOA) = 3			
1346379 54MW13	UNPRES PL	1	/	Anions
	Total # of Containers of Type (UNPRES PL) = 1			
1346379 54MW13	MISC	1	/	CHLORATE/CHLORITE
	Total # of Containers of Type (MISC) = 1			
1346379 54MW13	H2SO4 PL	1	Y / N	TOC
	Total # of Containers of Type (H2SO4 PL) = 1			
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
1346380 54TW13	VOA	1	/	
	VOA	1	/	
	VOA	1	/	
	Total # of Containers of Type (VOA) = 3			
1346380 54TW13	UNPRES PL	1	/	Anions

Total # of Containers of Type (UNPRES PL) = 1

1346380 54TW13

MISC 1 / CHLORATE/CHLORITE

Total # of Containers of Type (MISC) = 1

1346380 54TW13

H2SO4 PL 1 Y / N TOC

Total # of Containers of Type (H2SO4 PL) = 1

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
-------------------------	----------------	------------	------------------	-------

1346381 54MW10

VOA 1 /

VOA 1 /

VOA 1 /

Total # of Containers of Type (VOA) = 3

1346381 54MW10

UNPRES PL 1 / Anions

Total # of Containers of Type (UNPRES PL) = 1

1346381 54MW10

MISC 1 / CHLORATE/CHLORITE

Total # of Containers of Type (MISC) = 1

1346381 54MW10

H2SO4 PL 1 Y / N TOC

Total # of Containers of Type (H2SO4 PL) = 1

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
-------------------------	----------------	------------	------------------	-------

1346382 54MW12

VOA 1 /

VOA 1 /

VOA 1 /

VOA 1 N / N

VOA 1 N / N

VOA 1 N / N

VOA 1 N / N

VOA 1 N / N

VOA 1 N / N

Total # of Containers of Type (VOA) = 9

1346382 54MW12

UNPRES PL 1 N / N ANIONS

UNPRES PL 1 N / N ANIONS

UNPRES PL 1 / Anions

Total # of Containers of Type (UNPRES PL) = 3

1346382 54MW12

MISC 1 N / N CHLORATE/CHLORITE

MISC 1 N / N CHLORATE/CHLORITE

178887

		MISC	1	N	/	N	CHLORATE/CHLORITE
		Total # of Containers of Type (MISC) = 3					
1346382	54MW12						
		H2SO4 PL	1	Y	/	N	TOC
		H2SO4 PL	1	Y	/	N	TOC
		H2SO4 PL	1	Y	/	N	TOC
		Total # of Containers of Type (H2SO4 PL) = 3					
Sample ID / Description		Container Type	Cond. Code	pH OK?/Filtered?		Tests	
1346383	54MW1						
		VOA	1		/		
		VOA	1		/		
		VOA	1		/		
		Total # of Containers of Type (VOA) = 3					
1346383	54MW1						
		UNPRES PL	1		/		Anions
		Total # of Containers of Type (UNPRES PL) = 1					
1346383	54MW1						
		MISC	1		/		CHLORATE/CHLORITE
		Total # of Containers of Type (MISC) = 1					
1346383	54MW1						
		H2SO4 PL	1	Y	/	N	TOC
		Total # of Containers of Type (H2SO4 PL) = 1					
Sample ID / Description		Container Type	Cond. Code	pH OK?/Filtered?		Tests	
1346384	54IDW						
		H2SO4 PL	1	Y	/	N	COD
		Total # of Containers of Type (H2SO4 PL) = 1					
1346384	54IDW						
		HNO3	1	Y	/	N	HG,ICP,K,NA
		Total # of Containers of Type (HNO3) = 1					
1346384	54IDW						
		UNPRES PL	1		/		pH
		Total # of Containers of Type (UNPRES PL) = 1					
Condition Code		Condition Description					
1	Sample Received OK						

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Weston Solutions, Inc

Radford AAP; VA

SGS Job Number: FC2128

Sampling Date: 01/23/23

Report to:

Weston Solutions, Inc
2 Eaton St Suite 603
Hampton, VA 23669
pacea@westonsolutions.com

ATTN: Tony Pace

Total number of pages in report: **589**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'Norm Farmer'.

Norm Farmer
Technical Director

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)
DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),
AL, AK, AR, CT, IA, KY, MA, MI, MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV
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Test results relate only to samples analyzed.

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Sample Summary

Weston Solutions, Inc
Radford AAP; VA

Job No: FC2128

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC2128-1	01/23/23	13:10	CMPT 01/24/23	AQ	Ground Water	54MW13
FC2128-2	01/23/23	13:10	CMPT 01/24/23	AQ	Ground Water	54TW13
FC2128-3	01/23/23	15:20	CMPT 01/24/23	AQ	Ground Water	54MW10

SAMPLE DELIVERY GROUP CASE NARRATIVE

2

Client: Weston Solutions, Inc

Job No: FC2128

Site: Radford AAP; VA

Report Date: 2/7/2023 3:54:49 PM

On 01/24/2023, 3 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 2.2 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC2128 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method SW846 6850

Matrix: AQ

Batch ID: OP95334

Sample(s) FC2200-1MSD, FC2200-1MS were used as the QC samples indicated.

Matrix Spike Recovery(s) for Perchlorate are outside control limits. Outside control limits due to high level in sample relative to spike amount.

GC/LC Semi-volatiles By Method SW846 8330B

Matrix: AQ

Batch ID: OP95139

Sample(s) FC2128-1MS, FC2128-1MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for m-Nitrotoluene are outside control limits. Probable cause is due to matrix interference.

Matrix Spike Duplicate Recovery(s) for m-Nitrotoluene are outside control limits. Probable cause is due to matrix interference.

FC2128-1 for 3,5-Dinitroaniline: Primary and confirmation results differ by more than 40%.

FC2128-1: All hits confirmed by reanalysis on a dissimilar column.

FC2128-1: Confirmation run.

FC2128-2 for 3,5-Dinitroaniline: Primary and confirmation results differ by more than 40%.

FC2128-2: All hits confirmed by reanalysis on a dissimilar column.

FC2128-2: Confirmation run.

FC2128-3: All hits confirmed by reanalysis on a dissimilar column.

FC2128-3: Confirmation run.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

Kim Benham, Client Services (*Signature on File*)

Summary of Hits

Job Number: FC2128
Account: Weston Solutions, Inc
Project: Radford AAP; VA
Collected: 01/23/23



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
--------------------------	------------------	-----------------	-----	-----	-------	--------

FC2128-1 54MW13

Perchlorate	0.24	0.20	0.10	ug/l	SW846 6850
HMX ^a	3.1	0.20	0.10	ug/l	SW846 8330B
RDX ^a	0.91	0.20	0.10	ug/l	SW846 8330B
3,5-Dinitroaniline ^b	0.39	0.20	0.10	ug/l	SW846 8330B
2-amino-4,6-Dinitrotoluene ^a	1.7	0.20	0.10	ug/l	SW846 8330B
4-amino-2,6-Dinitrotoluene ^a	1.2	0.20	0.10	ug/l	SW846 8330B
1,3,5-Trinitrobenzene ^a	11.8	0.20	0.10	ug/l	SW846 8330B
2,4,6-Trinitrotoluene ^a	5.0	0.20	0.10	ug/l	SW846 8330B

FC2128-2 54TW13

Perchlorate	0.25	0.20	0.10	ug/l	SW846 6850
HMX ^a	3.0	0.19	0.097	ug/l	SW846 8330B
RDX ^a	0.94	0.19	0.097	ug/l	SW846 8330B
3,5-Dinitroaniline ^b	0.41	0.19	0.097	ug/l	SW846 8330B
2-amino-4,6-Dinitrotoluene ^a	1.6	0.19	0.097	ug/l	SW846 8330B
4-amino-2,6-Dinitrotoluene ^a	1.1	0.19	0.097	ug/l	SW846 8330B
1,3,5-Trinitrobenzene ^a	12.0	0.19	0.097	ug/l	SW846 8330B
2,4,6-Trinitrotoluene ^a	5.0	0.19	0.097	ug/l	SW846 8330B

FC2128-3 54MW10

HMX ^a	0.50	0.20	0.098	ug/l	SW846 8330B
RDX ^a	0.35	0.20	0.098	ug/l	SW846 8330B
3,5-Dinitroaniline ^a	0.23	0.20	0.098	ug/l	SW846 8330B
2-amino-4,6-Dinitrotoluene ^a	0.26	0.20	0.098	ug/l	SW846 8330B
4-amino-2,6-Dinitrotoluene ^a	0.37	0.20	0.098	ug/l	SW846 8330B

(a) All hits confirmed by reanalysis on a dissimilar column.

(b) All hits confirmed by reanalysis on a dissimilar column. Primary and confirmation results differ by more than 40%.



Orlando, FL

Section 4

4

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	54MW13	Date Sampled:	01/23/23
Lab Sample ID:	FC2128-1	Date Received:	01/24/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 6850 IN HOUSE		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q100172.D	1	02/06/23 20:42	AL	02/06/23 15:17	OP95334	SQ2133
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.24	0.20	0.10	0.050	ug/l	

U = Not detected

LOQ = Limit of Quantitation

E = Indicates value exceeds calibration range

LOD = Limit of Detection

DL = Detection Limit

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.1
4

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	54MW13	Date Sampled:	01/23/23
Lab Sample ID:	FC2128-1	Date Received:	01/24/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8330B SW846 3535A		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	BB075414.D	1	01/26/23 13:44	FS	01/25/23 08:30	OP95139	GBB2299
Run #2 ^b	GG625707.D	1	01/30/23 17:22	FS	01/25/23 08:30	OP95139	GGG3229

	Initial Volume	Final Volume
Run #1	1000 ml	10.0 ml
Run #2	1000 ml	10.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX	3.1	0.20	0.10	0.080	ug/l	
121-82-4	RDX	0.91	0.20	0.10	0.080	ug/l	
	DNX	0.10 U	0.20	0.10	0.080	ug/l	
	MNX	0.10 U	0.20	0.10	0.080	ug/l	
	TNX	0.10 U	0.20	0.10	0.080	ug/l	
618-87-1	3,5-Dinitroaniline ^c	0.39	0.20	0.10	0.080	ug/l	
99-65-0	1,3-Dinitrobenzene	0.10 U	0.20	0.10	0.080	ug/l	
606-20-2	2,6-Dinitrotoluene	0.10 U	0.20	0.10	0.080	ug/l	
121-14-2	2,4-Dinitrotoluene	0.10 U	0.20	0.10	0.080	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	1.7	0.20	0.10	0.080	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	1.2	0.20	0.10	0.080	ug/l	
98-95-3	Nitrobenzene	0.10 U	0.20	0.10	0.097	ug/l	
88-72-2	o-Nitrotoluene	0.10 U	0.20	0.10	0.080	ug/l	
99-08-1	m-Nitrotoluene	0.10 U	0.20	0.10	0.080	ug/l	
99-99-0	p-Nitrotoluene	0.10 U	0.20	0.10	0.080	ug/l	
479-45-8	Tetryl	0.10 U	0.20	0.10	0.080	ug/l	
99-35-4	1,3,5-Trinitrobenzene	11.8	0.20	0.10	0.099	ug/l	
118-96-7	2,4,6-Trinitrotoluene	5.0	0.20	0.10	0.080	ug/l	
55-63-0	Nitroglycerine	1.0 U	2.0	1.0	0.50	ug/l	
78-11-5	PETN	1.0 U	2.0	1.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	99%	99%	70-136%

- (a) All hits confirmed by reanalysis on a dissimilar column.
(b) Confirmation run.
(c) Primary and confirmation results differ by more than 40%.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	54TW13	Date Sampled:	01/23/23
Lab Sample ID:	FC2128-2	Date Received:	01/24/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 6850 IN HOUSE		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q100173.D	1	02/06/23 20:51	AL	02/06/23 15:17	OP95334	SQ2133
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.25	0.20	0.10	0.050	ug/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	54TW13		
Lab Sample ID:	FC2128-2	Date Sampled:	01/23/23
Matrix:	AQ - Ground Water	Date Received:	01/24/23
Method:	SW846 8330B SW846 3535A	Percent Solids:	n/a
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	BB075431.D	1	01/27/23 11:05	FS	01/25/23 08:30	OP95139	GBB2300
Run #2 ^b	GG625708.D	1	01/30/23 17:54	FS	01/25/23 08:30	OP95139	GGG3229

	Initial Volume	Final Volume
Run #1	1030 ml	10.0 ml
Run #2	1030 ml	10.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX	3.0	0.19	0.097	0.078	ug/l	
121-82-4	RDX	0.94	0.19	0.097	0.078	ug/l	
	DNX	0.097 U	0.19	0.097	0.078	ug/l	
	MNX	0.097 U	0.19	0.097	0.078	ug/l	
	TNX	0.097 U	0.19	0.097	0.078	ug/l	
618-87-1	3,5-Dinitroaniline ^c	0.41	0.19	0.097	0.078	ug/l	
99-65-0	1,3-Dinitrobenzene	0.097 U	0.19	0.097	0.078	ug/l	
606-20-2	2,6-Dinitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
121-14-2	2,4-Dinitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	1.6	0.19	0.097	0.078	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	1.1	0.19	0.097	0.078	ug/l	
98-95-3	Nitrobenzene	0.097 U	0.19	0.097	0.094	ug/l	
88-72-2	o-Nitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
99-08-1	m-Nitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
99-99-0	p-Nitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
479-45-8	Tetryl	0.097 U	0.19	0.097	0.078	ug/l	
99-35-4	1,3,5-Trinitrobenzene	12.0	0.19	0.097	0.096	ug/l	
118-96-7	2,4,6-Trinitrotoluene	5.0	0.19	0.097	0.078	ug/l	
55-63-0	Nitroglycerine	0.97 U	1.9	0.97	0.49	ug/l	
78-11-5	PETN	0.97 U	1.9	0.97	0.49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	100%	101%	70-136%

- (a) All hits confirmed by reanalysis on a dissimilar column.
(b) Confirmation run.
(c) Primary and confirmation results differ by more than 40%.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	54MW10	Date Sampled:	01/23/23
Lab Sample ID:	FC2128-3	Date Received:	01/24/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 6850 IN HOUSE		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q100174.D	1	02/06/23 20:59	AL	02/06/23 15:17	OP95334	SQ2133
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.10 U	0.20	0.10	0.050	ug/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

4.3
4

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	54MW10	Date Sampled:	01/23/23
Lab Sample ID:	FC2128-3	Date Received:	01/24/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8330B SW846 3535A		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	BB075432.D	1	01/27/23 11:36	FS	01/25/23 08:30	OP95139	GBB2300
Run #2 ^b	GG625709.D	1	01/30/23 18:25	FS	01/25/23 08:30	OP95139	GGG3229

	Initial Volume	Final Volume
Run #1	1020 ml	10.0 ml
Run #2	1020 ml	10.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX	0.50	0.20	0.098	0.078	ug/l	
121-82-4	RDX	0.35	0.20	0.098	0.078	ug/l	
	DNX	0.098 U	0.20	0.098	0.078	ug/l	
	MNX	0.098 U	0.20	0.098	0.078	ug/l	
	TNX	0.098 U	0.20	0.098	0.078	ug/l	
618-87-1	3,5-Dinitroaniline	0.23	0.20	0.098	0.078	ug/l	
99-65-0	1,3-Dinitrobenzene	0.098 U	0.20	0.098	0.078	ug/l	
606-20-2	2,6-Dinitrotoluene	0.098 U	0.20	0.098	0.078	ug/l	
121-14-2	2,4-Dinitrotoluene	0.098 U	0.20	0.098	0.078	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	0.26	0.20	0.098	0.078	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	0.37	0.20	0.098	0.078	ug/l	
98-95-3	Nitrobenzene	0.098 U	0.20	0.098	0.095	ug/l	
88-72-2	o-Nitrotoluene	0.098 U	0.20	0.098	0.078	ug/l	
99-08-1	m-Nitrotoluene	0.098 U	0.20	0.098	0.078	ug/l	
99-99-0	p-Nitrotoluene	0.098 U	0.20	0.098	0.078	ug/l	
479-45-8	Tetryl	0.098 U	0.20	0.098	0.078	ug/l	
99-35-4	1,3,5-Trinitrobenzene	0.098 U	0.20	0.098	0.097	ug/l	
118-96-7	2,4,6-Trinitrotoluene	0.098 U	0.20	0.098	0.078	ug/l	
55-63-0	Nitroglycerine	0.98 U	2.0	0.98	0.49	ug/l	
78-11-5	PETN	0.98 U	2.0	0.98	0.49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	83%	89%	70-136%

(a) All hits confirmed by reanalysis on a dissimilar column.

(b) Confirmation run.

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, FL 32811
TEL: 407-425-6700 FAX: 407-425-0707
www.sgs.com

FC 2128

SGS - ORLANDO JOB # :

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ORLD-SMT-0001-03-FORM-COC (4).xls Rev 031318

<http://www.sgs.com/en/terms-and-conditions>

FC2128: Chain of Custody

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5.1

SGS Sample Receipt Summary

Job Number: FC2128

Client: WESTON SOLUTION

Project: RADFORD AAP SWMVS4

Date / Time Received: 1/24/2023 9:30:00 AM

Delivery Method: FX

Airbill #s: 393777851097

Therm ID: IR 1;

Therm CF: 0.2;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (2.0);

Cooler Temps (Corrected) °C: Cooler 1: (2.2);

Cooler Information

Y or N

1. Custody Seals Present ☒ ☐
2. Custody Seals Intact ☒ ☐
3. Temp criteria achieved ☒ ☐
4. Cooler temp verification IR Gun
5. Cooler media Ice (Bag)

Trip Blank Information

Y or N N/A

1. Trip Blank present / cooler ☐ ☐ ☒
 2. Trip Blank listed on COC ☐ ☐ ☒
- W or S N/A
3. Type Of TB Received ☐ ☐ ☒

Sample Information

Y or N N/A

1. Sample labels present on bottles ☒ ☐
2. Samples preserved properly ☒ ☐
3. Sufficient volume/containers recvd for analysis: ☒ ☐
4. Condition of sample Intact
5. Sample recvd within HT ☒ ☐
6. Dates/Times/IDs on COC match Sample Label ☒ ☐
7. VOCs have headspace ☐ ☐ ☒
8. Bottles received for unspecified tests ☐ ☒ ☐
9. Compositing instructions clear ☐ ☐ ☒
10. Voa Soil Kits/Jars received past 48hrs? ☐ ☐ ☒
11. % Solids Jar received? ☐ ☐ ☒
12. Residual Chlorine Present? ☐ ☐ ☒

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____
Test Strip Lot #s: pH 0-3 230315
Residual Chlorine Test Strip Lot #: _____

Number of 5035 Field Kits: _____
pH 10-12 219813A

Number of Lab Filtered Metals: _____
Other: (Specify) _____

Comments

SM001
Rev. Date 05/24/17

Technician: NATHANS

Date: 1/24/2023 9:30:00 AM

Reviewer: _____

Date: _____

FC2128: Chain of Custody

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QC Evaluation: DOD QSM5.x Limits

Page 1 of 4

Job Number: FC2128
Account: Weston Solutions, Inc
Project: Radford AAP; VA
Collected: 01/23/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP95334	SW846 6850						
OP95334-BS	14797-73-0	Perchlorate	BSP	REC	85	%	84-119
OP95334-MS*	14797-73-0	Perchlorate	MS	REC	135 ^a	%	84-119
OP95334-MSD*	14797-73-0	Perchlorate	MSD	REC	115	%	84-119
OP95334-MSD*	14797-73-0	Perchlorate	MSD	RPD	4	%	15
OP95139	SW846 8330B						
OP95139-BS	2691-41-0	HMX	BSP	REC	102	%	65-135
OP95139-BS	121-82-4	RDX	BSP	REC	102	%	68-130
OP95139-BS		DNX	BSP	REC	82	%	66-119
OP95139-BS		MNX	BSP	REC	86	%	57-132
OP95139-BS	618-87-1	3,5-Dinitroaniline	BSP	REC	102	%	71-117
OP95139-BS	99-65-0	1,3-Dinitrobenzene	BSP	REC	102	%	78-120
OP95139-BS	606-20-2	2,6-Dinitrotoluene	BSP	REC	96	%	77-127
OP95139-BS	121-14-2	2,4-Dinitrotoluene	BSP	REC	80	%	78-120
OP95139-BS	35572-78-2	2-amino-4,6-Dinitrotoluene	BSP	REC	106	%	79-120
OP95139-BS	19406-51-0	4-amino-2,6-Dinitrotoluene	BSP	REC	108	%	76-125
OP95139-BS	98-95-3	Nitrobenzene	BSP	REC	94	%	65-134
OP95139-BS	88-72-2	o-Nitrotoluene	BSP	REC	92	%	70-127
OP95139-BS	99-08-1	m-Nitrotoluene	BSP	REC	98	%	73-125
OP95139-BS	99-99-0	p-Nitrotoluene	BSP	REC	98	%	71-127
OP95139-BS	479-45-8	Tetryl	BSP	REC	70	%	64-128
OP95139-BS	99-35-4	1,3,5-Trinitrobenzene	BSP	REC	84	%	73-125
OP95139-BS	118-96-7	2,4,6-Trinitrotoluene	BSP	REC	100	%	71-123
OP95139-BS	55-63-0	Nitroglycerine	BSP	REC	104	%	74-127
OP95139-BS	78-11-5	PETN	BSP	REC	118	%	73-127
OP95139-MS	2691-41-0	HMX	MS	REC	101	%	65-135
OP95139-MS	121-82-4	RDX	MS	REC	102	%	68-130
OP95139-MS		DNX	MS	REC	91	%	66-119
OP95139-MS		MNX	MS	REC	91	%	57-132
OP95139-MS	618-87-1	3,5-Dinitroaniline	MS	REC	103	%	71-117
OP95139-MS	99-65-0	1,3-Dinitrobenzene	MS	REC	104	%	78-120
OP95139-MS	606-20-2	2,6-Dinitrotoluene	MS	REC	99	%	77-127
OP95139-MS	121-14-2	2,4-Dinitrotoluene	MS	REC	81	%	78-120
OP95139-MS	35572-78-2	2-amino-4,6-Dinitrotoluene	MS	REC	106	%	79-120
OP95139-MS	19406-51-0	4-amino-2,6-Dinitrotoluene	MS	REC	108	%	76-125
OP95139-MS	98-95-3	Nitrobenzene	MS	REC	102	%	65-134
OP95139-MS	88-72-2	o-Nitrotoluene	MS	REC	105	%	70-127
OP95139-MS	99-08-1	m-Nitrotoluene	MS	REC	129	%	73-125
OP95139-MS	99-99-0	p-Nitrotoluene	MS	REC	120	%	71-127
OP95139-MS	479-45-8	Tetryl	MS	REC	85	%	64-128
OP95139-MS	99-35-4	1,3,5-Trinitrobenzene	MS	REC	91	%	73-125

* Sample used for QC is not from job FC2128

QC Evaluation: DOD QSM5.x Limits

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Job Number: FC2128
Account: Weston Solutions, Inc
Project: Radford AAP; VA
Collected: 01/23/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP95139-MS	118-96-7	2,4,6-Trinitrotoluene	MS	REC	103	%	71-123
OP95139-MS	55-63-0	Nitroglycerine	MS	REC	105	%	74-127
OP95139-MS	78-11-5	PETN	MS	REC	114	%	73-127
OP95139-MSD	2691-41-0	HMX	MSD	REC	102	%	65-135
OP95139-MSD	2691-41-0	HMX	MSD	RPD	1	%	20
OP95139-MSD	121-82-4	RDX	MSD	REC	101	%	68-130
OP95139-MSD	121-82-4	RDX	MSD	RPD	1	%	20
OP95139-MSD		DNX	MSD	REC	86	%	66-119
OP95139-MSD		DNX	MSD	RPD	6	%	20
OP95139-MSD		MNX	MSD	REC	88	%	57-132
OP95139-MSD		MNX	MSD	RPD	3	%	20
OP95139-MSD	618-87-1	3,5-Dinitroaniline	MSD	REC	103	%	71-117
OP95139-MSD	618-87-1	3,5-Dinitroaniline	MSD	RPD	0	%	20
OP95139-MSD	99-65-0	1,3-Dinitrobenzene	MSD	REC	105	%	78-120
OP95139-MSD	99-65-0	1,3-Dinitrobenzene	MSD	RPD	1	%	20
OP95139-MSD	606-20-2	2,6-Dinitrotoluene	MSD	REC	99	%	77-127
OP95139-MSD	606-20-2	2,6-Dinitrotoluene	MSD	RPD	0	%	20
OP95139-MSD	121-14-2	2,4-Dinitrotoluene	MSD	REC	81	%	78-120
OP95139-MSD	121-14-2	2,4-Dinitrotoluene	MSD	RPD	0	%	20
OP95139-MSD	35572-78-2	2-amino-4,6-Dinitrotoluene	MSD	REC	108	%	79-120
OP95139-MSD	35572-78-2	2-amino-4,6-Dinitrotoluene	MSD	RPD	2	%	20
OP95139-MSD	19406-51-0	4-amino-2,6-Dinitrotoluene	MSD	REC	110	%	76-125
OP95139-MSD	19406-51-0	4-amino-2,6-Dinitrotoluene	MSD	RPD	2	%	20
OP95139-MSD	98-95-3	Nitrobenzene	MSD	REC	103	%	65-134
OP95139-MSD	98-95-3	Nitrobenzene	MSD	RPD	1	%	20
OP95139-MSD	88-72-2	o-Nitrotoluene	MSD	REC	121	%	70-127
OP95139-MSD	88-72-2	o-Nitrotoluene	MSD	RPD	14	%	20
OP95139-MSD	99-08-1	m-Nitrotoluene	MSD	REC	125	%	73-125
OP95139-MSD	99-08-1	m-Nitrotoluene	MSD	RPD	3	%	20
OP95139-MSD	99-99-0	p-Nitrotoluene	MSD	REC	121	%	71-127
OP95139-MSD	99-99-0	p-Nitrotoluene	MSD	RPD	1	%	20
OP95139-MSD	479-45-8	Tetryl	MSD	REC	94	%	64-128
OP95139-MSD	479-45-8	Tetryl	MSD	RPD	10	%	20
OP95139-MSD	99-35-4	1,3,5-Trinitrobenzene	MSD	REC	105	%	73-125
OP95139-MSD	99-35-4	1,3,5-Trinitrobenzene	MSD	RPD	6	%	20
OP95139-MSD	118-96-7	2,4,6-Trinitrotoluene	MSD	REC	108	%	71-123
OP95139-MSD	118-96-7	2,4,6-Trinitrotoluene	MSD	RPD	3	%	20
OP95139-MSD	55-63-0	Nitroglycerine	MSD	REC	106	%	74-127
OP95139-MSD	55-63-0	Nitroglycerine	MSD	RPD	1	%	20
OP95139-MSD	78-11-5	PETN	MSD	REC	115	%	73-127
OP95139-MSD	78-11-5	PETN	MSD	RPD	1	%	20
OP95139	SW846 8330A						
OP95139-BS	2691-41-0	HMX	BSP	REC	102	%	65-135

* Sample used for QC is not from job FC2128

QC Evaluation: DOD QSM5.x Limits

Job Number: FC2128
Account: Weston Solutions, Inc
Project: Radford AAP; VA
Collected: 01/23/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP95139-BS	121-82-4	RDX	BSP	REC	102	%	68-130
OP95139-BS		DNX	BSP	REC	82	%	66-119
OP95139-BS		MNX	BSP	REC	86	%	57-132
OP95139-BS	618-87-1	3,5-Dinitroaniline	BSP	REC	102	%	71-117
OP95139-BS	99-65-0	1,3-Dinitrobenzene	BSP	REC	102	%	78-120
OP95139-BS	606-20-2	2,6-Dinitrotoluene	BSP	REC	96	%	77-127
OP95139-BS	121-14-2	2,4-Dinitrotoluene	BSP	REC	80	%	78-120
OP95139-BS	35572-78-2	2-amino-4,6-Dinitrotoluene	BSP	REC	106	%	79-120
OP95139-BS	19406-51-0	4-amino-2,6-Dinitrotoluene	BSP	REC	108	%	76-125
OP95139-BS	98-95-3	Nitrobenzene	BSP	REC	94	%	65-134
OP95139-BS	88-72-2	o-Nitrotoluene	BSP	REC	92	%	70-127
OP95139-BS	99-08-1	m-Nitrotoluene	BSP	REC	98	%	73-125
OP95139-BS	99-99-0	p-Nitrotoluene	BSP	REC	98	%	71-127
OP95139-BS	479-45-8	Tetryl	BSP	REC	70	%	64-128
OP95139-BS	99-35-4	1,3,5-Trinitrobenzene	BSP	REC	84	%	73-125
OP95139-BS	118-96-7	2,4,6-Trinitrotoluene	BSP	REC	100	%	71-123
OP95139-BS	55-63-0	Nitroglycerine	BSP	REC	104	%	74-127
OP95139-BS	78-11-5	PETN	BSP	REC	118	%	73-127
OP95139-MS	2691-41-0	HMX	MS	REC	101	%	65-135
OP95139-MS	121-82-4	RDX	MS	REC	102	%	68-130
OP95139-MS		DNX	MS	REC	91	%	66-119
OP95139-MS		MNX	MS	REC	91	%	57-132
OP95139-MS	618-87-1	3,5-Dinitroaniline	MS	REC	103	%	71-117
OP95139-MS	99-65-0	1,3-Dinitrobenzene	MS	REC	104	%	78-120
OP95139-MS	606-20-2	2,6-Dinitrotoluene	MS	REC	99	%	77-127
OP95139-MS	121-14-2	2,4-Dinitrotoluene	MS	REC	81	%	78-120
OP95139-MS	35572-78-2	2-amino-4,6-Dinitrotoluene	MS	REC	106	%	79-120
OP95139-MS	19406-51-0	4-amino-2,6-Dinitrotoluene	MS	REC	108	%	76-125
OP95139-MS	98-95-3	Nitrobenzene	MS	REC	102	%	65-134
OP95139-MS	88-72-2	o-Nitrotoluene	MS	REC	105	%	70-127
OP95139-MS	99-08-1	m-Nitrotoluene	MS	REC	129	%	73-125
OP95139-MS	99-99-0	p-Nitrotoluene	MS	REC	120	%	71-127
OP95139-MS	479-45-8	Tetryl	MS	REC	85	%	64-128
OP95139-MS	99-35-4	1,3,5-Trinitrobenzene	MS	REC	91	%	73-125
OP95139-MS	118-96-7	2,4,6-Trinitrotoluene	MS	REC	103	%	71-123
OP95139-MS	55-63-0	Nitroglycerine	MS	REC	105	%	74-127
OP95139-MS	78-11-5	PETN	MS	REC	114	%	73-127
OP95139-MSD	2691-41-0	HMX	MSD	REC	102	%	65-135
OP95139-MSD	2691-41-0	HMX	MSD	RPD	1	%	30
OP95139-MSD	121-82-4	RDX	MSD	REC	101	%	68-130
OP95139-MSD	121-82-4	RDX	MSD	RPD	1	%	30
OP95139-MSD		DNX	MSD	REC	86	%	66-119
OP95139-MSD		DNX	MSD	RPD	6	%	30
OP95139-MSD		MNX	MSD	REC	88	%	57-132
OP95139-MSD		MNX	MSD	RPD	3	%	30

* Sample used for QC is not from job FC2128

QC Evaluation: DOD QSM5.x Limits

Page 4 of 4

Job Number: FC2128
Account: Weston Solutions, Inc
Project: Radford AAP; VA
Collected: 01/23/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP95139-MSD	618-87-1	3,5-Dinitroaniline	MSD	REC	103	%	71-117
OP95139-MSD	618-87-1	3,5-Dinitroaniline	MSD	RPD	0	%	30
OP95139-MSD	99-65-0	1,3-Dinitrobenzene	MSD	REC	105	%	78-120
OP95139-MSD	99-65-0	1,3-Dinitrobenzene	MSD	RPD	1	%	30
OP95139-MSD	606-20-2	2,6-Dinitrotoluene	MSD	REC	99	%	77-127
OP95139-MSD	606-20-2	2,6-Dinitrotoluene	MSD	RPD	0	%	30
OP95139-MSD	121-14-2	2,4-Dinitrotoluene	MSD	REC	81	%	78-120
OP95139-MSD	121-14-2	2,4-Dinitrotoluene	MSD	RPD	0	%	30
OP95139-MSD	35572-78-2	2-amino-4,6-Dinitrotoluene	MSD	REC	108	%	79-120
OP95139-MSD	35572-78-2	2-amino-4,6-Dinitrotoluene	MSD	RPD	2	%	30
OP95139-MSD	19406-51-0	4-amino-2,6-Dinitrotoluene	MSD	REC	110	%	76-125
OP95139-MSD	19406-51-0	4-amino-2,6-Dinitrotoluene	MSD	RPD	2	%	30
OP95139-MSD	98-95-3	Nitrobenzene	MSD	REC	103	%	65-134
OP95139-MSD	98-95-3	Nitrobenzene	MSD	RPD	1	%	30
OP95139-MSD	88-72-2	o-Nitrotoluene	MSD	REC	121	%	70-127
OP95139-MSD	88-72-2	o-Nitrotoluene	MSD	RPD	14	%	30
OP95139-MSD	99-08-1	m-Nitrotoluene	MSD	REC	125	%	73-125
OP95139-MSD	99-08-1	m-Nitrotoluene	MSD	RPD	3	%	30
OP95139-MSD	99-99-0	p-Nitrotoluene	MSD	REC	121	%	71-127
OP95139-MSD	99-99-0	p-Nitrotoluene	MSD	RPD	1	%	30
OP95139-MSD	479-45-8	Tetryl	MSD	REC	94	%	64-128
OP95139-MSD	479-45-8	Tetryl	MSD	RPD	10	%	30
OP95139-MSD	99-35-4	1,3,5-Trinitrobenzene	MSD	REC	105	%	73-125
OP95139-MSD	99-35-4	1,3,5-Trinitrobenzene	MSD	RPD	6	%	30
OP95139-MSD	118-96-7	2,4,6-Trinitrotoluene	MSD	REC	108	%	71-123
OP95139-MSD	118-96-7	2,4,6-Trinitrotoluene	MSD	RPD	3	%	30
OP95139-MSD	55-63-0	Nitroglycerine	MSD	REC	106	%	74-127
OP95139-MSD	55-63-0	Nitroglycerine	MSD	RPD	1	%	30
OP95139-MSD	78-11-5	PETN	MSD	REC	115	%	73-127
OP95139-MSD	78-11-5	PETN	MSD	RPD	1	%	30

(a) Outside control limits due to high level in sample relative to spike amount.

* Sample used for QC is not from job FC2128

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Instrument Blank

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
SQ2133-IBLK	Q100188.D	1	02/06/23	AL	n/a	n/a	SQ2133

The QC reported here applies to the following samples: Method: SW846 6850
FC2128-1, FC2128-2, FC2128-3

CAS No.	Compound	Result	RL	MDL	Units	Q
14797-73-0	Perchlorate	ND	0.20	0.050	ug/l	

6.1.1
6

Method Blank Summary

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95334-MB	Q100171.D	1	02/06/23	AL	02/06/23	OP95334	SQ2133

The QC reported here applies to the following samples: Method: SW846 6850
FC2128-1, FC2128-2, FC2128-3

CAS No.	Compound	Result	RL	MDL	Units	Q
14797-73-0	Perchlorate	ND	0.20	0.050	ug/l	

Blank Spike Summary

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95334-BS	Q100170.D	1	02/06/23	AL	02/06/23	OP95334	SQ2133

The QC reported here applies to the following samples: Method: SW846 6850
FC2128-1, FC2128-2, FC2128-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
14797-73-0	Perchlorate	0.2	0.17	85	80-120

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95334-MS	Q100176.D	1	02/06/23	AL	02/06/23	OP95334	SQ2133
OP95334-MSD	Q100177.D	1	02/06/23	AL	02/06/23	OP95334	SQ2133
FC2200-1	Q100175.D	1	02/06/23	AL	02/06/23	OP95334	SQ2133

The QC reported here applies to the following samples: Method: SW846 6850

FC2128-1, FC2128-2, FC2128-3

CAS No.	Compound	FC2200-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
14797-73-0	Perchlorate	0.72	0.2	0.99	135* a	0.2	0.95	115	4	80-120/15

(a) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

Internal Standard Area Summary

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Check Std:	SQ2133-CC2133	Injection Date:	02/06/23
Lab File ID:	Q100167.D	Injection Time:	20:00
Instrument ID:	GCMSQ	Method:	SW846 6850

IS 1		
	AREA	RT
Initial Cal ^a	265991	5.01
Check Std ^b	297366	5.01
Upper Limit ^c	398987	7.01
Lower Limit ^d	132996	3.01

Lab Sample ID	IS 1 AREA	RT
OP95334-BS	313235	5.00
OP95334-MB	318757	5.01
FC2128-1	318925	4.96
FC2128-2	254757	4.90
FC2128-3	205238	4.71
FC2200-1	219658	4.86
OP95334-MS	226920	4.86
OP95334-MSD	227756	4.86
ZZZZZZ	232738	4.88

IS 1 = Cl18O4 (ISTD)

- (a) Initial Cal is: SQ2133-ICC2133 Q100152.D 02/06/23 17:54. Area is AVERAGE of initial cal points.
- (b) Check Std Limit = -50 to + 50% of initial cal area.
- (c) Upper Limit = + 50% of initial standard area; Retention time + 2 minutes of check standard.
- (d) Lower Limit = -50% of initial standard area; Retention time -2 minutes of check standard.

6.4.1
6

Initial Calibration Summary

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: SQ2133-ICC2133
Lab FileID: Q100152.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
T Perchlorate	Quadratic	$y = 0.024631 * x^2 + 0.715982 * x$	0.996331
(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike			

Initial Calibration Verification

Page 1 of 1

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: SQ2133-ICV2133
Lab FileID: Q100157.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\020623_6850_SQ2133\sq2133.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\020623_6850_SQ2133\Q100149.d
2:D:\MassHunter\Data\020623_6850_SQ2133\Q100150.d
3:D:\MassHunter\Data\020623_6850_SQ2133\Q100151.d
4:D:\MassHunter\Data\020623_6850_SQ2133\Q100152.d
5:D:\MassHunter\Data\020623_6850_SQ2133\Q100153.d
6:D:\MassHunter\Data\020623_6850_SQ2133\Q100154.d
7:D:\MassHunter\Data\020623_6850_SQ2133\Q100155.d
8:D:\MassHunter\Data\020623_6850_SQ2133\Q100156.d

Data File: Q100157

Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
=====	=====	=====	=====	=====
Cl1804	---	--ISTD--		
Perchlorate	2.000	2.138	6.9	106.9

CC Criteria: +/- 15%

Continuing Calibration Summary

Page 1 of 1

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: SQ2133-CC2133
Lab FileID: Q100167.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\020623_6850_SQ2133\sq2133.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\020623_6850_SQ2133\Q100149.d
2:D:\MassHunter\Data\020623_6850_SQ2133\Q100150.d
3:D:\MassHunter\Data\020623_6850_SQ2133\Q100151.d
4:D:\MassHunter\Data\020623_6850_SQ2133\Q100152.d
5:D:\MassHunter\Data\020623_6850_SQ2133\Q100153.d
6:D:\MassHunter\Data\020623_6850_SQ2133\Q100154.d
7:D:\MassHunter\Data\020623_6850_SQ2133\Q100155.d
8:D:\MassHunter\Data\020623_6850_SQ2133\Q100156.d

Data File: Q100167

Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
Cl1804	---	--ISTD--		
Perchlorate	2.000	2.018	0.9	100.9

CC Criteria: +/- 15%

Continuing Calibration Summary

Page 1 of 1

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: SQ2133-CC2133
Lab FileID: Q100168.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\020623_6850_SQ2133\sq2133.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\020623_6850_SQ2133\Q100149.d
2:D:\MassHunter\Data\020623_6850_SQ2133\Q100150.d
3:D:\MassHunter\Data\020623_6850_SQ2133\Q100151.d
4:D:\MassHunter\Data\020623_6850_SQ2133\Q100152.d
5:D:\MassHunter\Data\020623_6850_SQ2133\Q100153.d
6:D:\MassHunter\Data\020623_6850_SQ2133\Q100154.d
7:D:\MassHunter\Data\020623_6850_SQ2133\Q100155.d
8:D:\MassHunter\Data\020623_6850_SQ2133\Q100156.d

Data File: Q100168
Type : QC
Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
Cl1804	---	--ISTD--		
Perchlorate	0.200	0.183	-8.5	91.5

CC Criteria: +/- 15%

Continuing Calibration Summary

Page 1 of 1

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: SQ2133-CC2133
Lab FileID: Q100179.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\020623_6850_SQ2133\sq2133.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\020623_6850_SQ2133\Q100149.d
2:D:\MassHunter\Data\020623_6850_SQ2133\Q100150.d
3:D:\MassHunter\Data\020623_6850_SQ2133\Q100151.d
4:D:\MassHunter\Data\020623_6850_SQ2133\Q100152.d
5:D:\MassHunter\Data\020623_6850_SQ2133\Q100153.d
6:D:\MassHunter\Data\020623_6850_SQ2133\Q100154.d
7:D:\MassHunter\Data\020623_6850_SQ2133\Q100155.d
8:D:\MassHunter\Data\020623_6850_SQ2133\Q100156.d

Data File: Q100179

Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
Cl1804	---	--ISTD--		
Perchlorate	2.000	2.246	12.3	112.3

CC Criteria: +/- 15%

Continuing Calibration Summary

Page 1 of 1

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: SQ2133-CC2133
Lab FileID: Q100180.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\020623_6850_SQ2133\sq2133.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\020623_6850_SQ2133\Q100149.d
2:D:\MassHunter\Data\020623_6850_SQ2133\Q100150.d
3:D:\MassHunter\Data\020623_6850_SQ2133\Q100151.d
4:D:\MassHunter\Data\020623_6850_SQ2133\Q100152.d
5:D:\MassHunter\Data\020623_6850_SQ2133\Q100153.d
6:D:\MassHunter\Data\020623_6850_SQ2133\Q100154.d
7:D:\MassHunter\Data\020623_6850_SQ2133\Q100155.d
8:D:\MassHunter\Data\020623_6850_SQ2133\Q100156.d

Data File: Q100180
Type : QC
Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
Cl1804	---	--ISTD--		
Perchlorate	0.200	0.189	-5.5	94.5

CC Criteria: +/- 15%

Run Sequence Report

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Run ID: SQ2133	Method: SW846 6850	Instrument ID: GCMSQ
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
SQ2133-IC2133	Q100148.D	02/06/23 17:20	n/a	Mass Calibration Verification
SQ2133-IC2133	Q100149.D	02/06/23 17:29	n/a	Initial cal 0.2
SQ2133-IC2133	Q100150.D	02/06/23 17:37	n/a	Initial cal 0.5
SQ2133-IC2133	Q100151.D	02/06/23 17:46	n/a	Initial cal 1
SQ2133-ICC2133	Q100152.D	02/06/23 17:54	n/a	Initial cal 2
SQ2133-IC2133	Q100153.D	02/06/23 18:02	n/a	Initial cal 5
SQ2133-IC2133	Q100154.D	02/06/23 18:11	n/a	Initial cal 10
SQ2133-IC2133	Q100155.D	02/06/23 18:19	n/a	Initial cal 25
SQ2133-IC2133	Q100156.D	02/06/23 18:28	n/a	Initial cal 50
SQ2133-ICV2133	Q100157.D	02/06/23 18:36	n/a	Initial cal verification 2
OP95335-BS	Q100160.D	02/06/23 19:01	OP95335	Blank Spike
OP95335-MB	Q100161.D	02/06/23 19:10	OP95335	Method Blank
JD58805-1A	Q100162.D	02/06/23 19:18	OP95335	(used for QC only; not part of job FC2128)
OP95335-MS	Q100163.D	02/06/23 19:27	OP95335	Matrix Spike
OP95335-MSD	Q100164.D	02/06/23 19:35	OP95335	Matrix Spike Duplicate
ZZZZZZ	Q100165.D	02/06/23 19:43	OP95335	(unrelated sample)
ZZZZZZ	Q100166.D	02/06/23 19:52	OP95335	(unrelated sample)
SQ2133-CC2133	Q100167.D	02/06/23 20:00	n/a	Continuing cal 2
SQ2133-CC2133	Q100168.D	02/06/23 20:09	n/a	Continuing cal 0.2
OP95334-BS	Q100170.D	02/06/23 20:26	OP95334	Blank Spike
OP95334-MB	Q100171.D	02/06/23 20:34	OP95334	Method Blank
FC2128-1	Q100172.D	02/06/23 20:42	OP95334	54MW13
FC2128-2	Q100173.D	02/06/23 20:51	OP95334	54TW13
FC2128-3	Q100174.D	02/06/23 20:59	OP95334	54MW10
FC2200-1	Q100175.D	02/06/23 21:08	OP95334	(used for QC only; not part of job FC2128)
OP95334-MS	Q100176.D	02/06/23 21:16	OP95334	Matrix Spike
OP95334-MSD	Q100177.D	02/06/23 21:25	OP95334	Matrix Spike Duplicate
ZZZZZZ	Q100178.D	02/06/23 21:33	OP95334	(unrelated sample)
SQ2133-CC2133	Q100179.D	02/06/23 21:41	n/a	Continuing cal 2
SQ2133-CC2133	Q100180.D	02/06/23 21:50	n/a	Continuing cal 0.2
ZZZZZZ	Q100182.D	02/06/23 22:07	OP95334	(unrelated sample)
ZZZZZZ	Q100183.D	02/06/23 22:15	OP95334	(unrelated sample)
SQ2133-CC2133	Q100186.D	02/06/23 22:40	n/a	Continuing cal 2
SQ2133-ECC2133	Q100187.D	02/06/23 22:49	n/a	Ending cal 0.2
SQ2133-IBLK	Q100188.D	02/06/23 22:57	n/a	Instrument Blank
SQ2133-IBLK	Q100188.D	02/06/23 22:57	n/a	Instrument Blank



Orlando, FL

Section 7

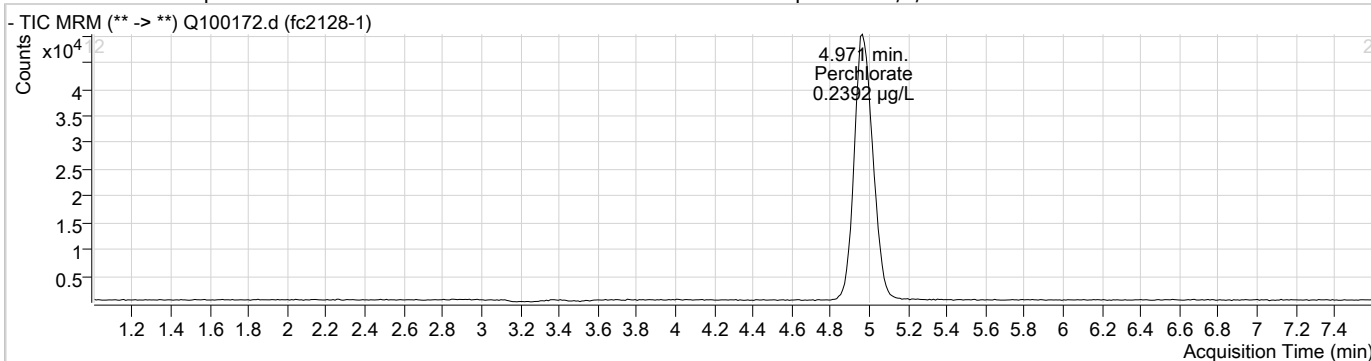
MS Semi-volatiles

Raw Data

7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100172.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 8:42:56 PM
Sample Name	fc2128-1	Instrument	Instrument 1
Vial	P2-B2	Sample Information	OP95334,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.964	107.0 -> 89.0	318925	NoQ	5.00 µg/L	-0.051

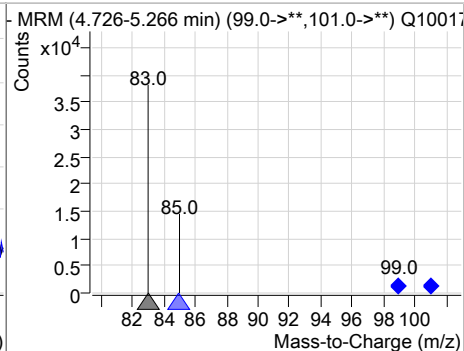
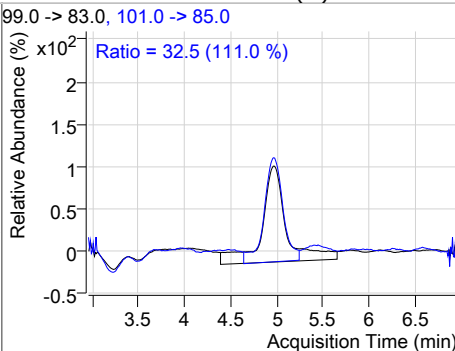
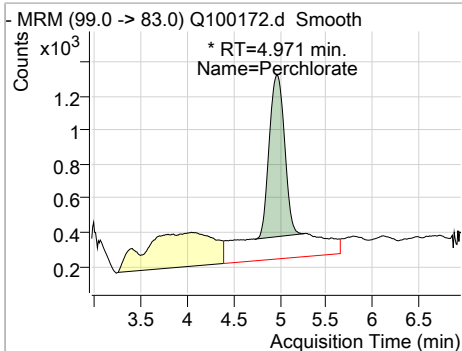
System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	m	QValue
Perchlorate	4.971	99.0 -> 83.0	10943	3.1	0.24 µg/L	m	94

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
Perchlorate	0.24	4.97	-0.04	10943 (m)	101.0 -> 85.0	3.1	1.6	



7.1.1

7

Manual Integration Approval Summary

Sample Number:

FC2128-1

Method:

SW846 6850

Lab FileID:

Q100172.D

Analyst approved:

02/07/23 11:39 Anna Ludwig

Injection Time:

02/06/23 20:42

Supervisor approved:

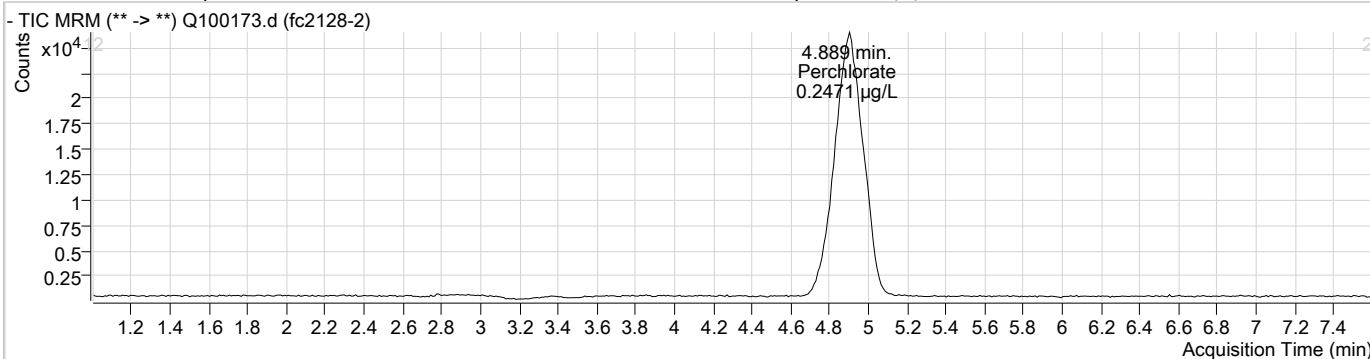
02/07/23 12:13 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perchlorate	14797-73-0		4.97	Poor instrument integration

7.1.1.1
7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100173.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 8:51:22 PM
Sample Name	fc2128-2	Instrument	Instrument 1
Vial	P2-B3	Sample Information	OP95334,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



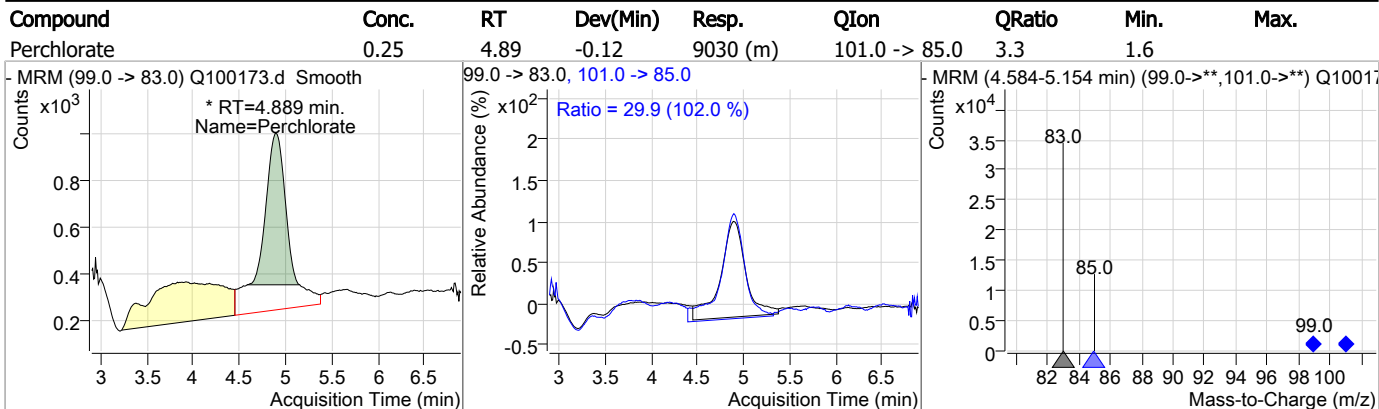
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.903	107.0 -> 89.0	254757	NoQ	5.00 µg/L	-0.112

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	m	QValue
Perchlorate	4.889	99.0 -> 83.0	9030	3.3	0.25 µg/L	m	99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



7.1.2
7

Manual Integration Approval Summary

Sample Number: FC2128-2

Method: SW846 6850

Lab FileID: Q100173.D

Analyst approved: 02/07/23 11:39 Anna Ludwig

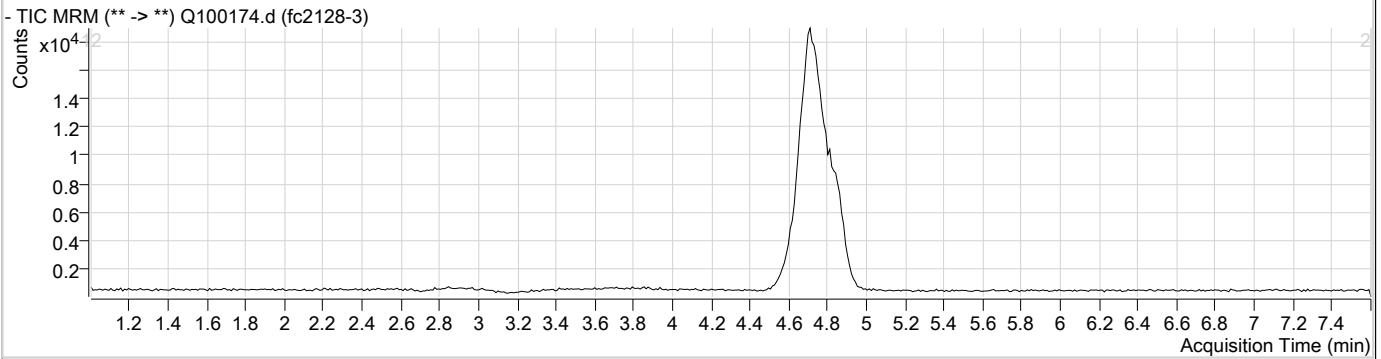
Injection Time: 02/06/23 20:51

Supervisor approved: 02/07/23 12:13 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perchlorate	14797-73-0		4.89	Poor instrument integration

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100174.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 8:59:49 PM
Sample Name	fc2128-3	Instrument	Instrument 1
Vial	P2-B4	Sample Information	OP95334,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



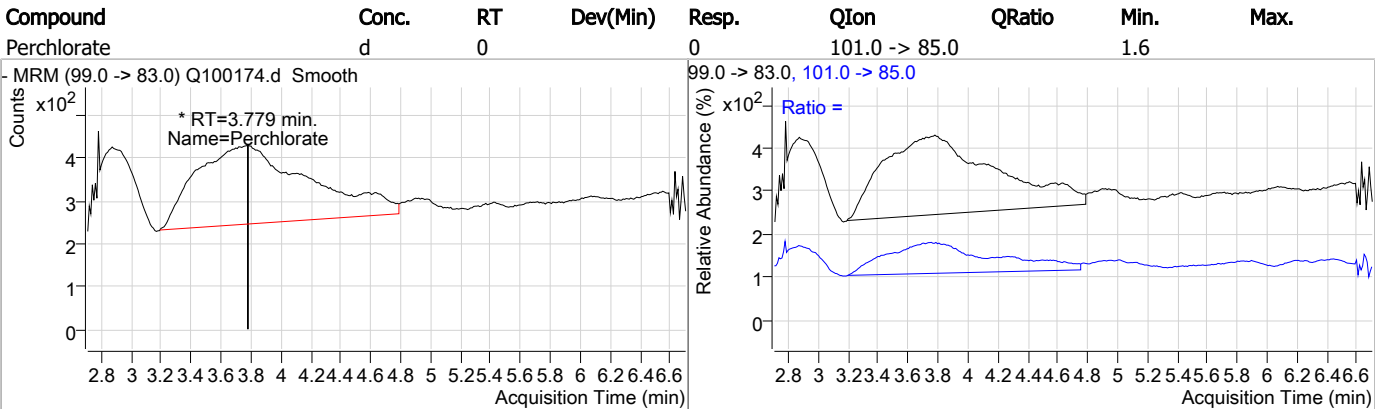
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.709	107.0 -> 89.0	205238	NoQ	5.00 µg/L	-0.306

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	md	QValue
Perchlorate	3.779	99.0 -> 83.0	0		0.00 µg/L	md	1

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

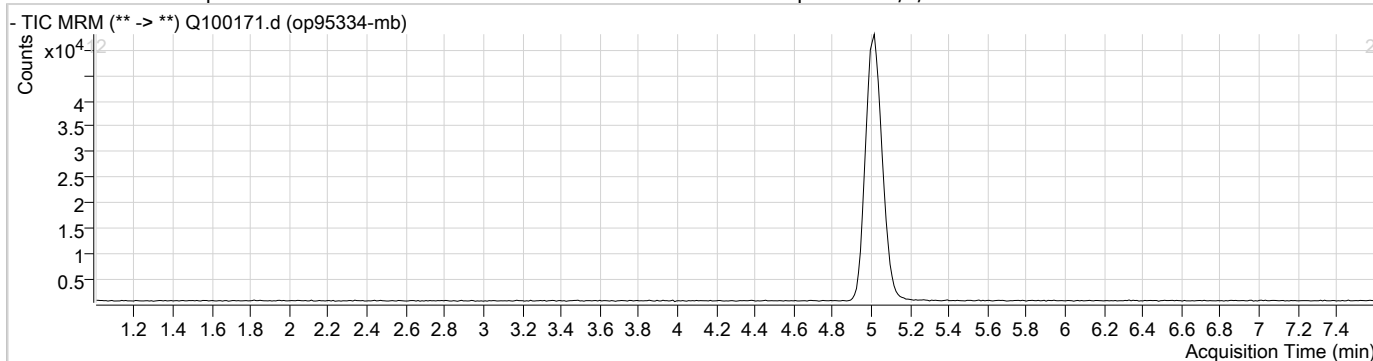
Quantitative Analysis Report for Perchlorate by 6850



7.1.3
7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100171.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 8:34:29 PM
Sample Name	op95334-mb	Instrument	Instrument 1
Vial	P2-B1	Sample Information	OP95334,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	318757	NoQ	5.00 µg/L	0.000

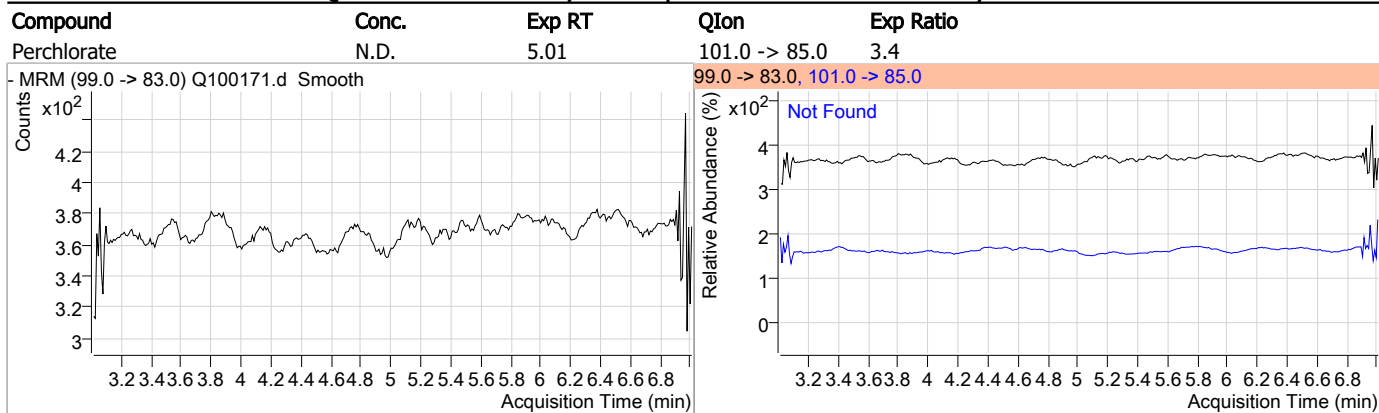
System Monitoring Compounds

Target Compounds

Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)	QValue
Perchlorate	-	99.0 -> 83.0	-	-	N.D.		

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

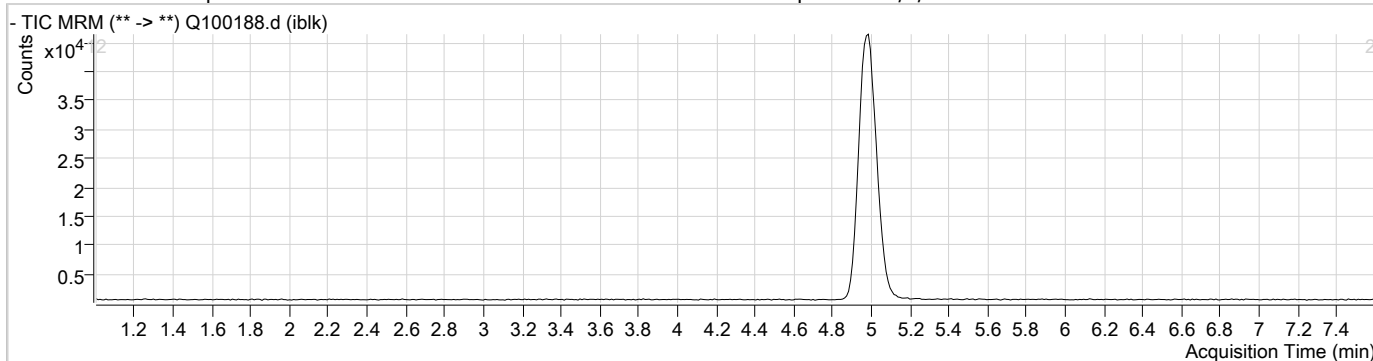
Quantitative Analysis Report for Perchlorate by 6850



7.2.1
7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100188.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 10:57:44 PM
Sample Name	iblk	Instrument	Instrument 1
Vial	Vial 1	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.974	107.0 -> 89.0	297487	NoQ	5.00 µg/L	-0.041

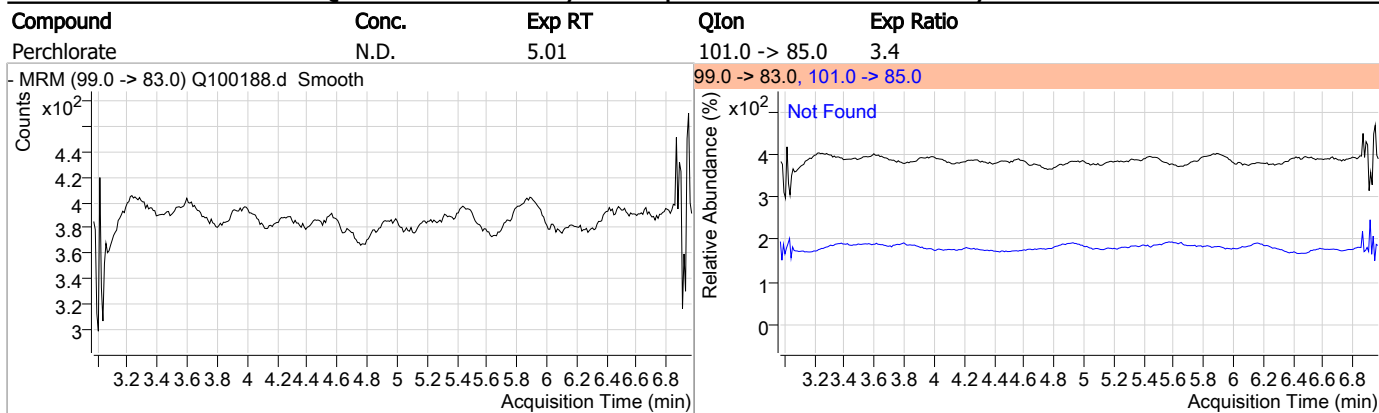
System Monitoring Compounds

Target Compounds

Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)	QValue
Perchlorate	-	99.0 -> 83.0	-	-	N.D.		

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

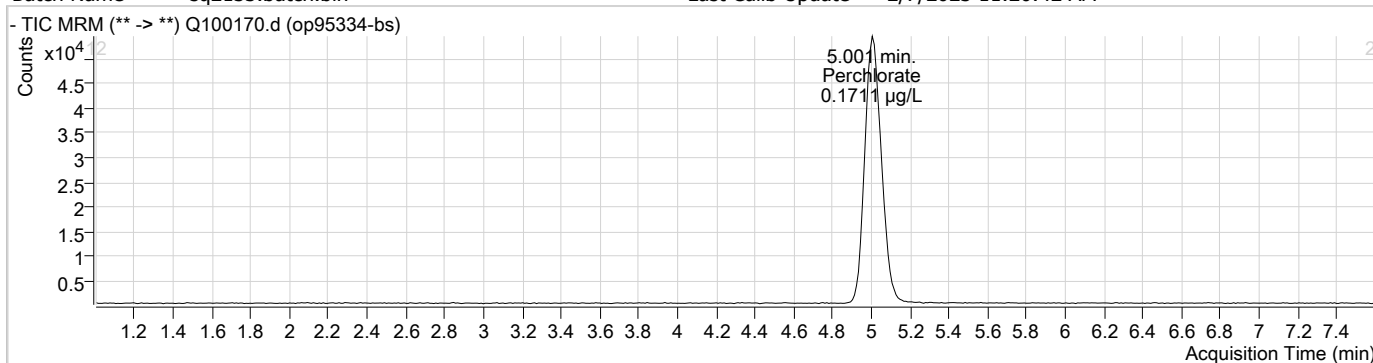
Quantitative Analysis Report for Perchlorate by 6850



7.2.2
7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100170.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 8:26:02 PM
Sample Name	op95334-bs	Instrument	Instrument 1
Vial	P2-A9	Sample Information	OP95334,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.005	107.0 -> 89.0	313235	NoQ	5.00 µg/L	-0.010

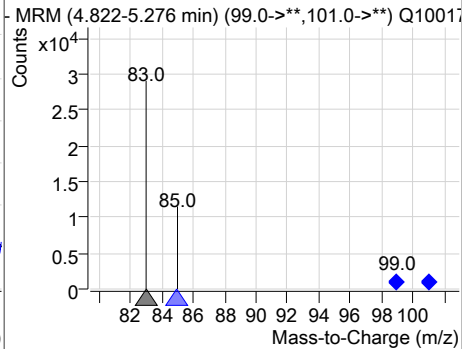
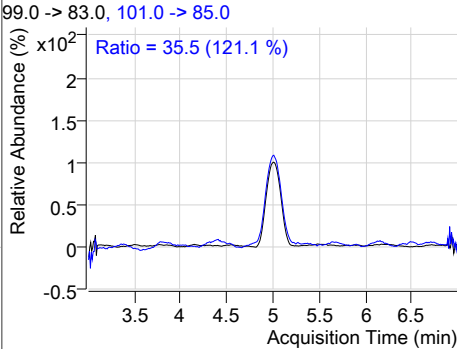
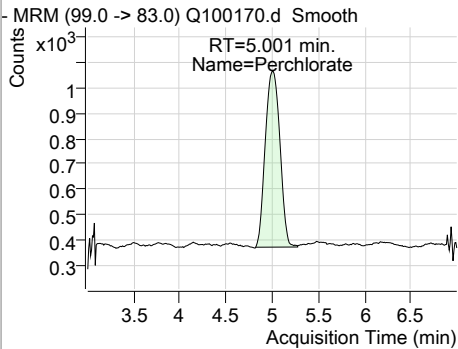
System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	5.001	99.0 -> 83.0	7683	2.8	0.17 µg/L	88

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
Perchlorate	0.17	5.00	-0.01	7683	101.0 -> 85.0	2.8	1.6	

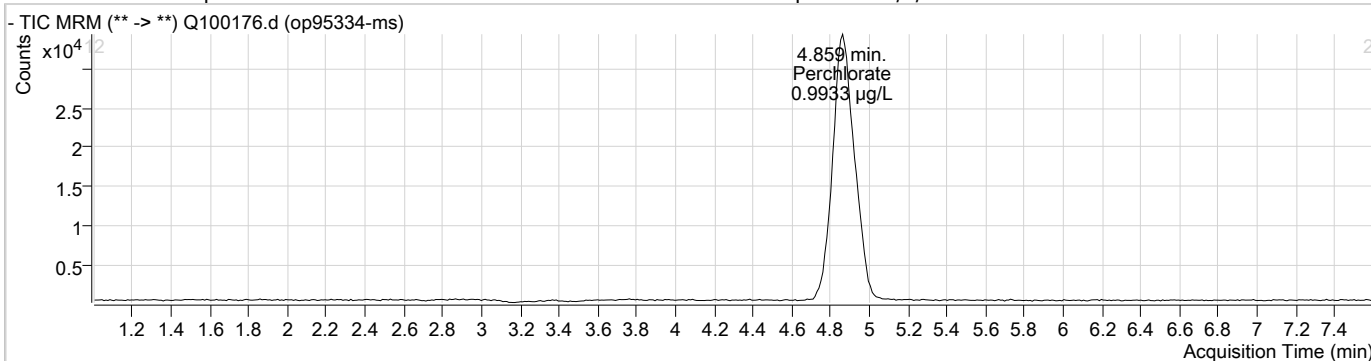


7.3.1
7

Natasha Gumtie
02/07/23 12:13

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100176.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 9:16:41 PM
Sample Name	op95334-ms	Instrument	Instrument 1
Vial	P2-B6	Sample Information	OP95334,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



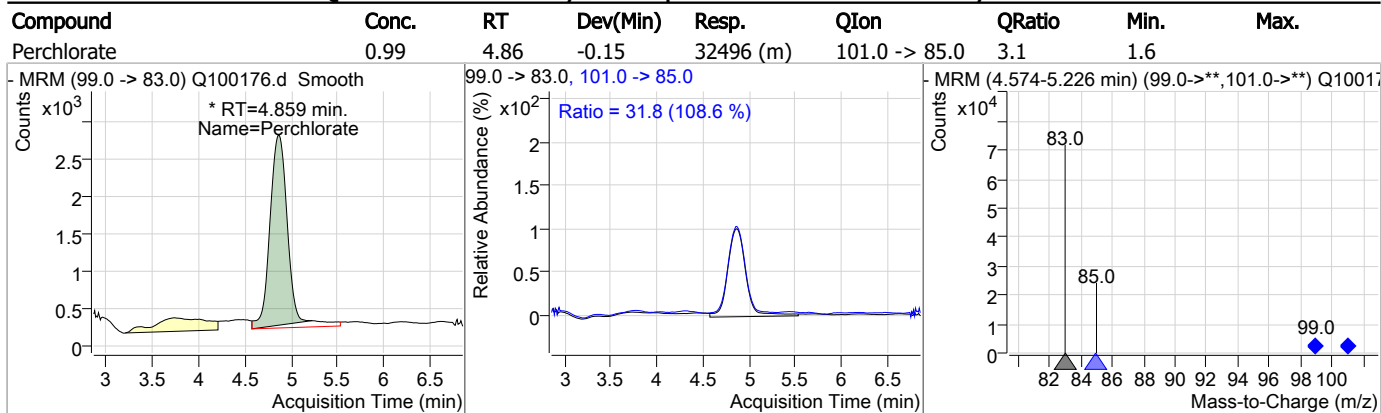
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.862	107.0 -> 89.0	226920	NoQ	5.00 µg/L	-0.153

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	m	QValue
Perchlorate	4.859	99.0 -> 83.0	32496	3.1	0.99 µg/L	m	95

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



7.4.1
7

Manual Integration Approval Summary

Sample Number:

OP95334-MS

Method:

SW846 6850

Lab FileID:

Q100176.D

Analyst approved:

02/07/23 11:39 Anna Ludwig

Injection Time:

02/06/23 21:16

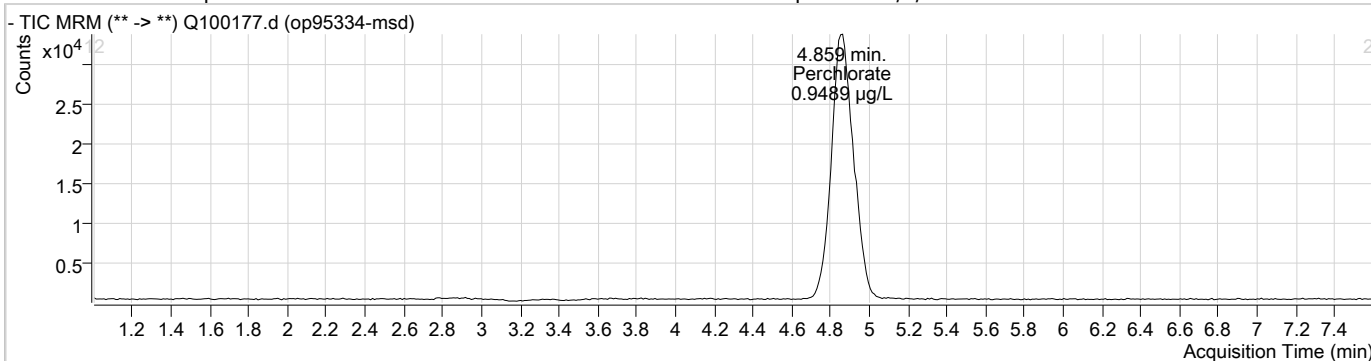
Supervisor approved:

02/07/23 12:13 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perchlorate	14797-73-0		4.86	Poor instrument integration

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100177.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 9:25:08 PM
Sample Name	op95334-msd	Instrument	Instrument 1
Vial	P2-B7	Sample Information	OP95334,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



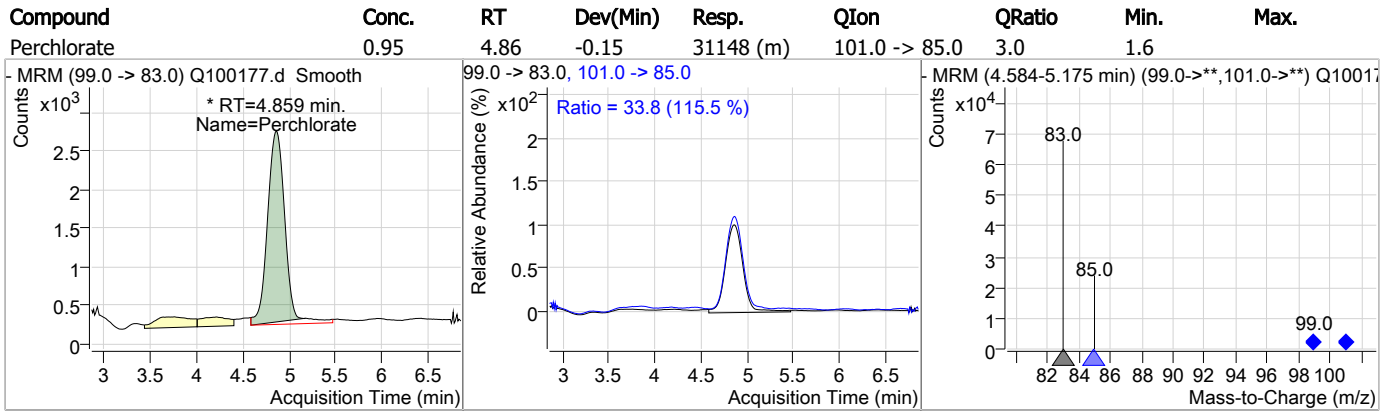
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.862	107.0 -> 89.0	227756	NoQ	5.00 µg/L	-0.153

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	m	QValue
Perchlorate	4.859	99.0 -> 83.0	31148	3.0	0.95 µg/L	m	92

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



7.4.2

7

Manual Integration Approval Summary

Sample Number: OP95334-MSD

Method: SW846 6850

Lab FileID: Q100177.D

Analyst approved: 02/07/23 11:39 Anna Ludwig

Injection Time: 02/06/23 21:25

Supervisor approved: 02/07/23 12:13 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perchlorate	14797-73-0		4.86	Poor instrument integration

7.4.2.1
7

QQQ Check Tune Report



Instrument Name	Instrument 1
MS Model	G6460A
MS Instrument Serial	SG10447001
Software_Firmware Version	B.08.02.B8260.0, FW: A.00.08.62
Tune Date & Time	06 February 2023 12:00:01
Data Path	D:\MassHunter\Tune\QQQ\G6460A\atunes.TUNE.XML
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.60E+0[R]; 2.39E-5[H]

Source Parameters

Parameter	Value
Gas Temp	300
Gas Flow	10
Nebulizer	15
Capillary	4000
Nozzle Voltage	1500
Sheath Gas Temp	250
Sheath Gas Flow	7

7.5.1

7

QQQ Check Tune Report



Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.00	0.01	Pass	0.70	0.67	-0.03	Pass	82262
302.00	302.01	0.01	Pass	0.70	0.68	-0.02	Pass	11583
601.98	602.03	0.05	Pass	0.70	0.66	-0.04	Pass	47475
1033.99	1034.06	0.07	Pass	0.70	0.66	-0.04	Pass	93868
1633.95	1634.03	0.08	Pass	0.70	0.66	-0.04	Pass	170977
2233.91	2233.98	0.07	Pass	0.70	0.74	0.04	Pass	101111

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.04	0.04	Pass	0.70	0.76	0.06	Pass	29689
112.99	112.96	-0.03	Pass	0.70	0.78	0.08	Pass	228557
302.00	301.99	-0.01	Pass	0.70	0.72	0.02	Pass	27123
601.98	602.00	0.02	Pass	0.70	0.70	0.00	Pass	100990
1033.99	1034.00	0.01	Pass	0.70	0.70	0.00	Pass	257825
1633.95	1634.00	0.05	Pass	0.70	0.70	0.00	Pass	365397
2233.91	2233.92	0.01	Pass	0.70	0.74	0.04	Pass	223603

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.97	-0.02	Pass	1.20	1.13	-0.07	Pass	128071
302.00	301.99	-0.01	Pass	1.20	1.22	0.02	Pass	18174
601.98	602.01	0.03	Pass	1.20	1.31	0.11	Pass	82319
1033.99	1034.02	0.03	Pass	1.20	1.37	0.17	Pass	197521
1633.95	1633.96	0.01	Pass	1.20	1.30	0.10	Pass	479994
2233.91	2233.98	0.07	Pass	1.20	1.26	0.06	Pass	315735

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.05	0.05	Pass	1.20	1.21	0.01	Pass	37982
112.99	112.97	-0.02	Pass	1.20	1.29	0.09	Pass	269812
302.00	301.94	-0.06	Pass	1.20	1.41	0.21	Pass	42371
601.98	601.93	-0.05	Pass	1.20	1.35	0.15	Pass	160250
1033.99	1033.96	-0.03	Pass	1.20	1.14	-0.06	Pass	493599
1633.95	1633.95	0.00	Pass	1.20	1.17	-0.03	Pass	1122808
2233.91	2233.85	-0.06	Pass	1.20	1.37	0.17	Pass	865457

Analyzer: MS1 Polarity: Negative Width: Widest

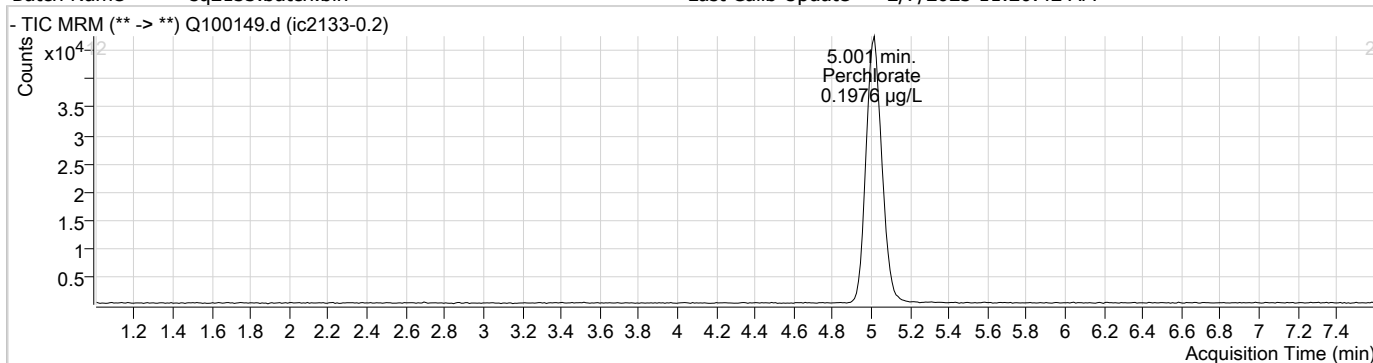
m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.66	-0.33	Pass	2.50	2.50	0.00	Pass	195027
302.00	301.99	-0.01	Pass	2.50	2.64	0.14	Pass	27169
601.98	602.01	0.03	Pass	2.50	2.65	0.15	Pass	131174
1033.99	1034.03	0.04	Pass	2.50	2.68	0.18	Pass	328997
1633.95	1634.00	0.05	Pass	2.50	2.55	0.05	Pass	861797
2233.91	2233.93	0.02	Pass	2.50	2.40	-0.10	Pass	687126

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.01	0.01	Pass	2.50	2.53	0.03	Pass	45773
112.99	112.93	-0.06	Pass	2.50	2.63	0.13	Pass	312933
302.00	301.92	-0.08	Pass	2.50	2.76	0.26	Pass	52690
601.98	601.92	-0.06	Pass	2.50	2.73	0.23	Pass	229458
1033.99	1033.95	-0.04	Pass	2.50	2.51	0.01	Pass	895517
1633.95	1633.93	-0.02	Pass	2.50	2.59	0.09	Pass	2592714
2233.91	2233.72	-0.19	Pass	2.50	2.82	0.32	Pass	2049948

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100149.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 5:29:15 PM
Sample Name	ic2133-0.2	Instrument	Instrument 1
Vial	Vial 2	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



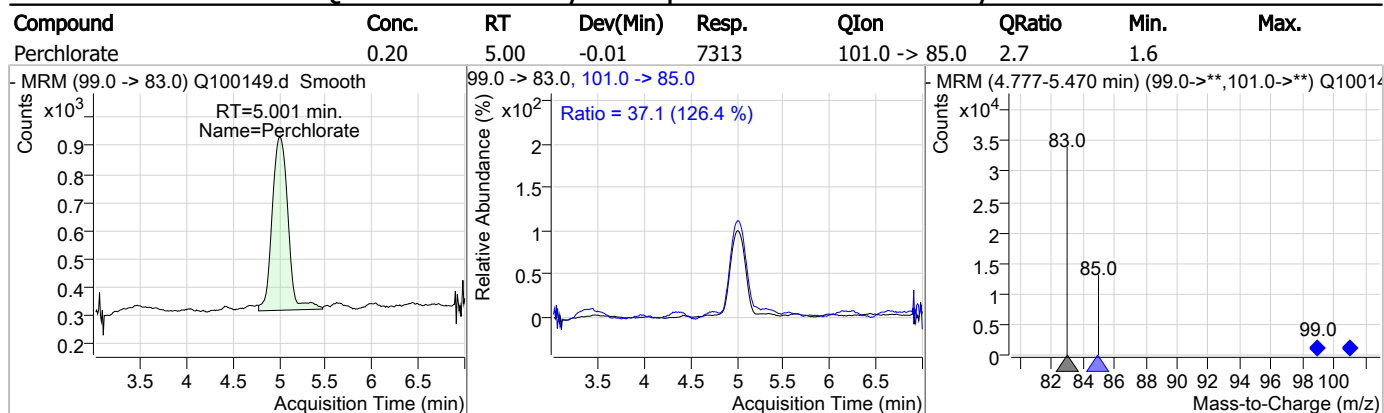
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	258147	NoQ	5.00 µg/L	0.000

System Monitoring Compounds

Target Compounds						QValue
Perchlorate	5.001	99.0 -> 83.0	7313	2.7	0.20 µg/L	86

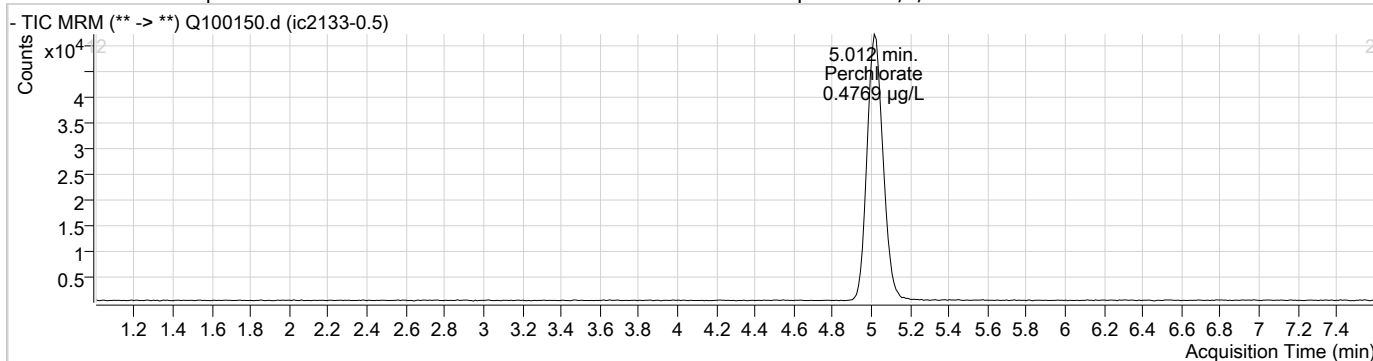
(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



Quantitative Analysis Report for Perchlorate by 6850

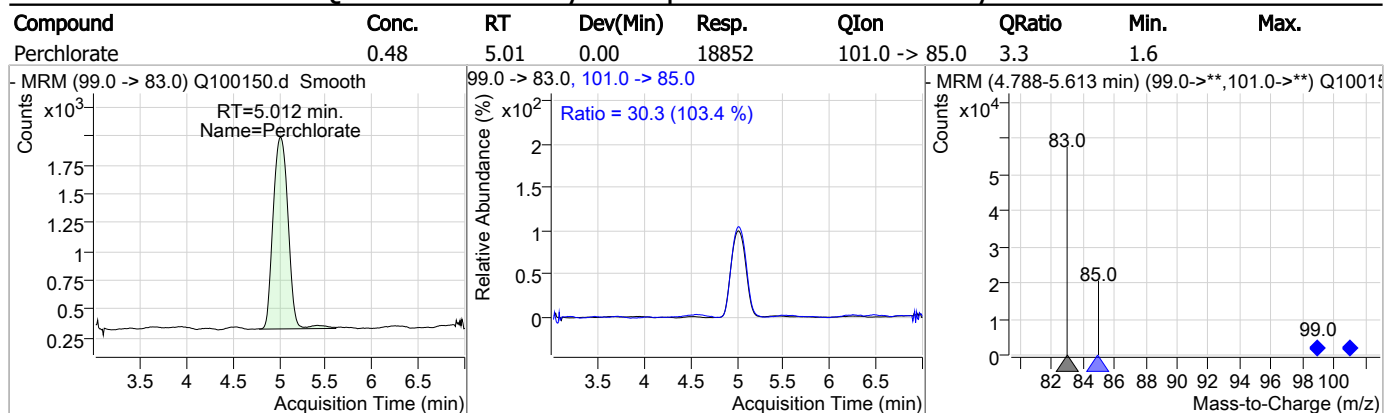
Data File	: Q100150.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 5:37:41 PM
Sample Name	ic2133-0.5	Instrument	Instrument 1
Vial	Vial 3	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	275130	NoQ	5.00 µg/L	0.000
System Monitoring Compounds						
Target Compounds						
Perchlorate	5.012	99.0 -> 83.0	18852	3.3	0.48 µg/L	98

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

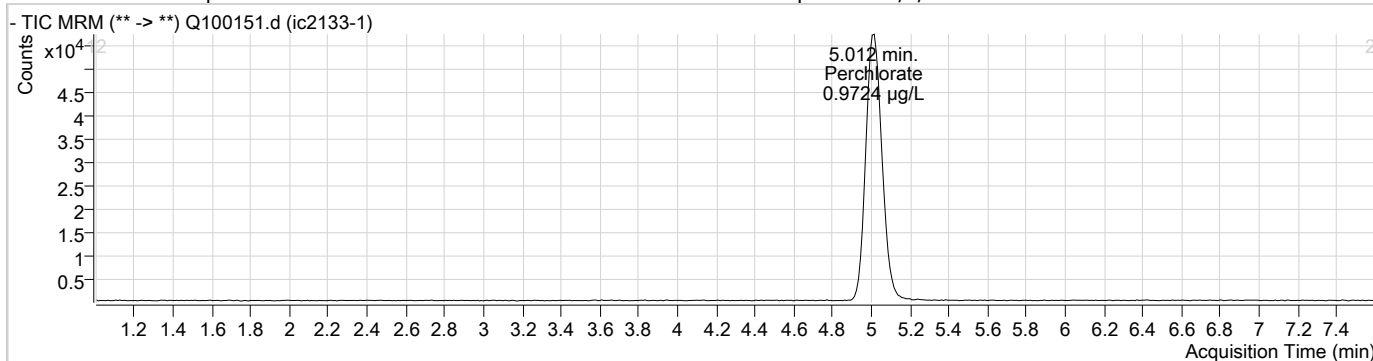


7.5.3

7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100151.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 5:46:05 PM
Sample Name	ic2133-1	Instrument	Instrument 1
Vial	Vial 4	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



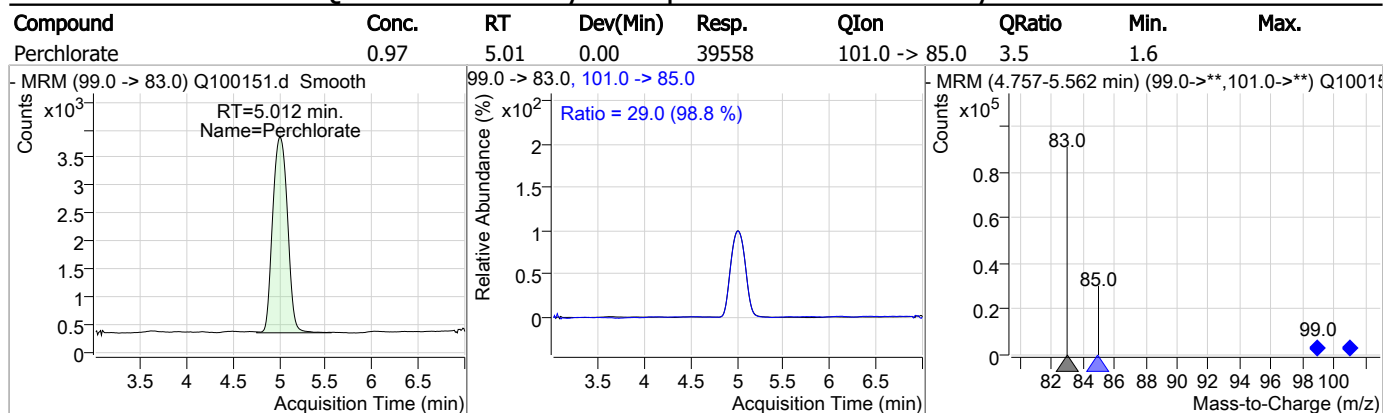
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	282188	NoQ	5.00 µg/L	0.000

System Monitoring Compounds

Target Compounds						QValue
Perchlorate	5.012	99.0 -> 83.0	39558	3.5	0.97 µg/L	99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

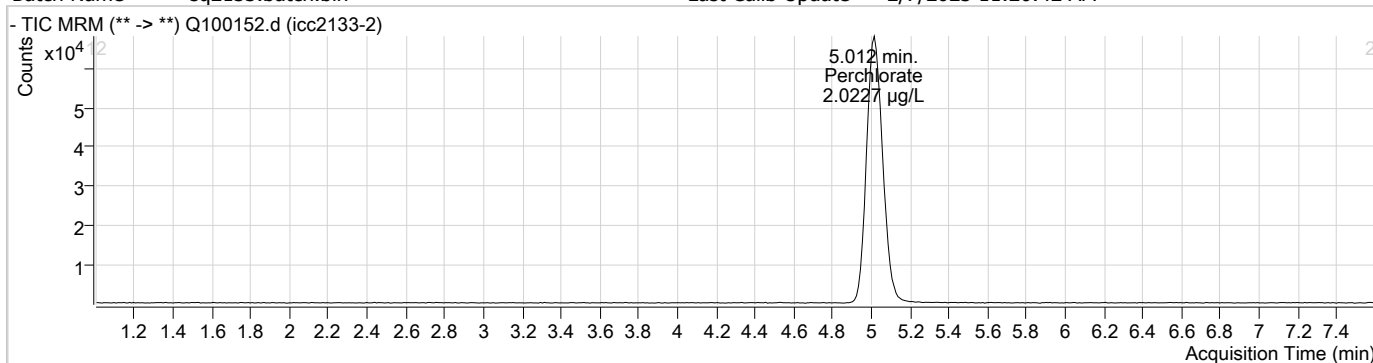


7.5.4

7

Quantitative Analysis Report for Perchlorate by 6850

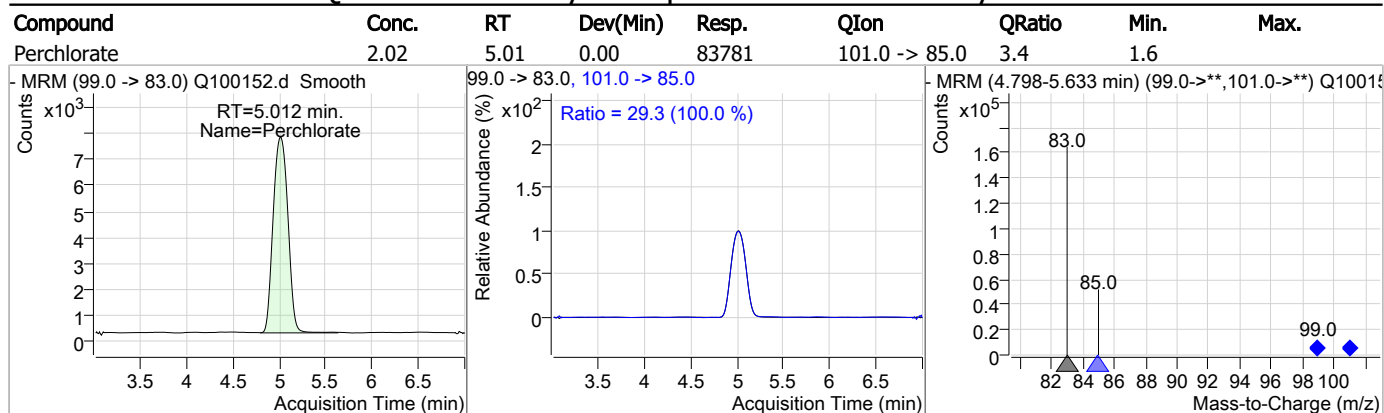
Data File	: Q100152.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 5:54:29 PM
Sample Name	icc2133-2	Instrument	Instrument 1
Vial	Vial 5	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	285283	NoQ	5.00 µg/L	0.000
System Monitoring Compounds						
Target Compounds						
Perchlorate	5.012	99.0 -> 83.0	83781	3.4	2.02 µg/L	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

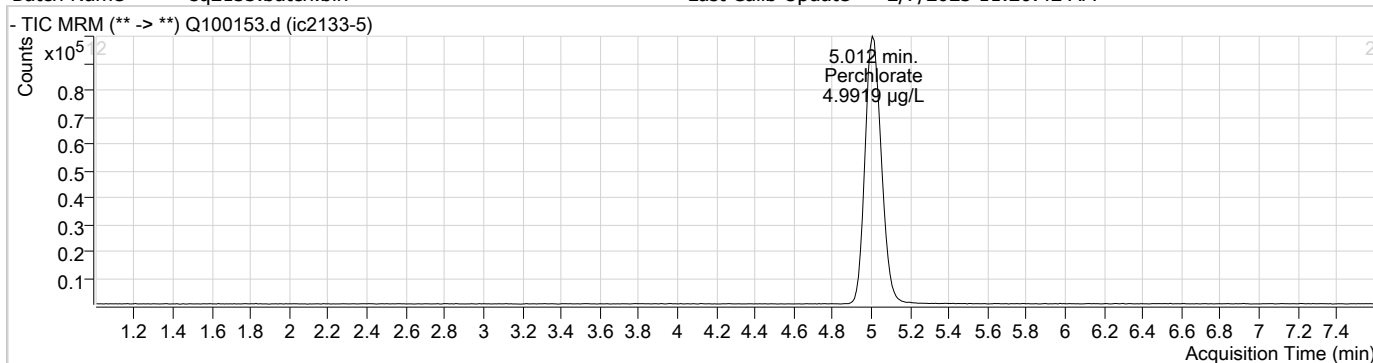


7.5.5

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Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100153.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 6:02:53 PM
Sample Name	ic2133-5	Instrument	Instrument 1
Vial	Vial 6	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



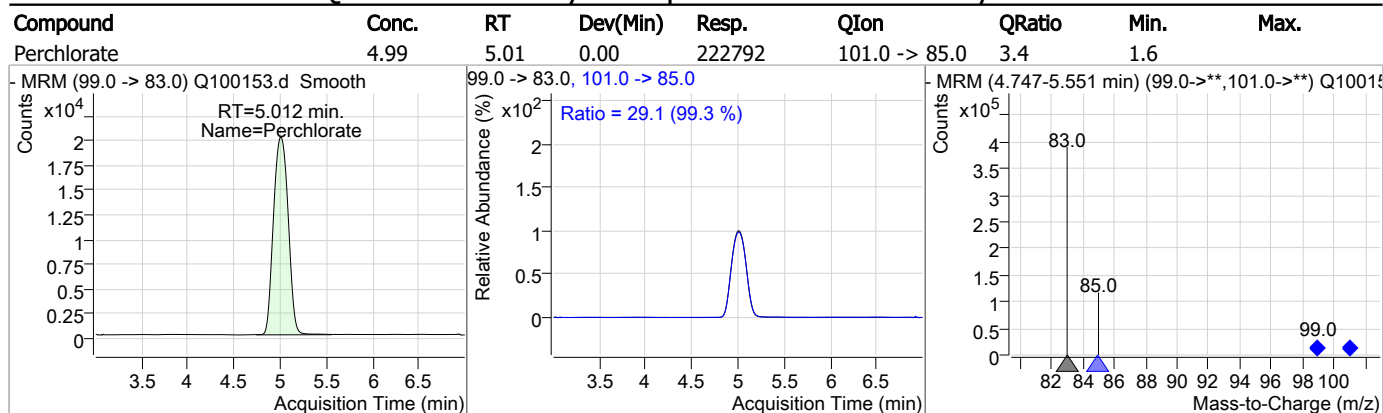
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.005	107.0 -> 89.0	301326	NoQ	5.00 µg/L	-0.010

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	5.012	99.0 -> 83.0	222792	3.4	4.99 µg/L	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

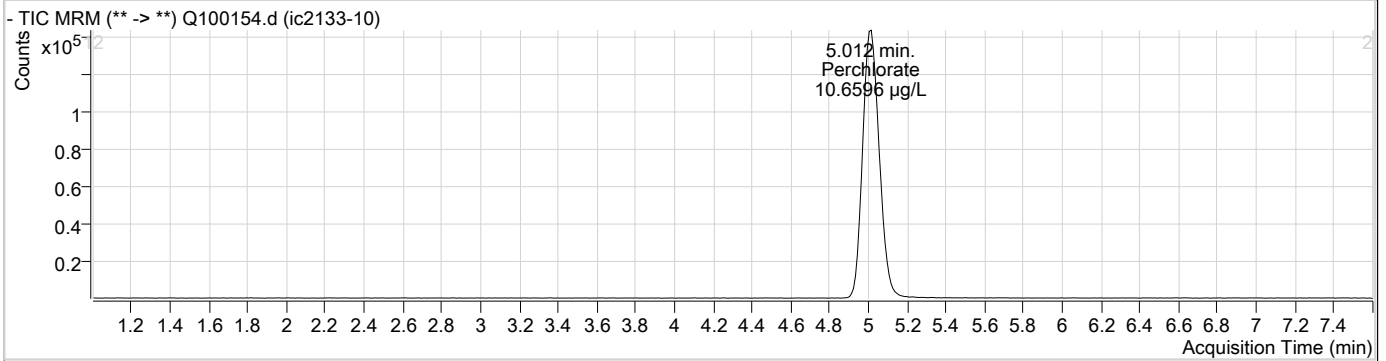


7.5.6

7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100154.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 6:11:17 PM
Sample Name	ic2133-10	Instrument	Instrument 1
Vial	Vial 7	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



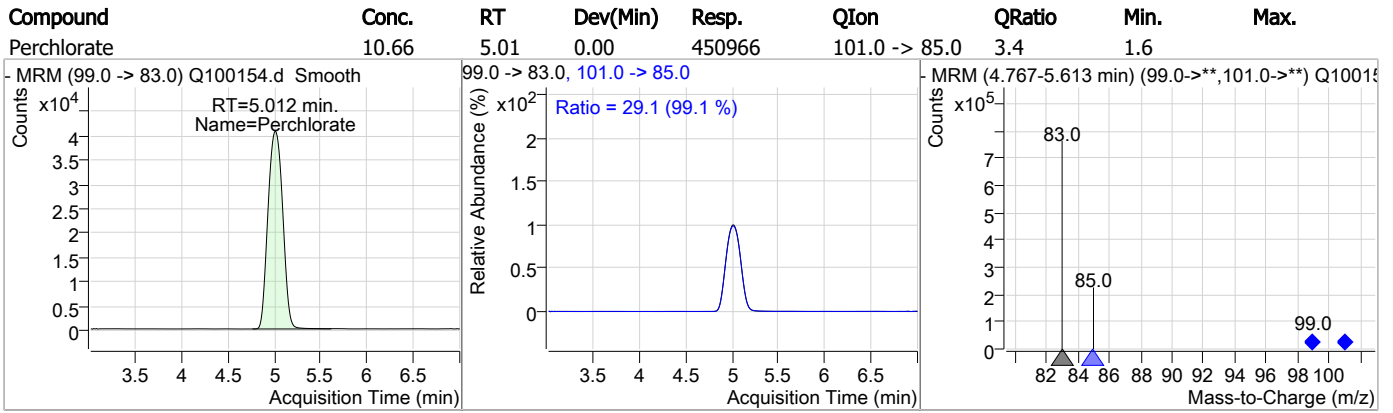
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	275255	NoQ	5.00 µg/L	0.000

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	5.012	99.0 -> 83.0	450966	3.4	10.66 µg/L	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

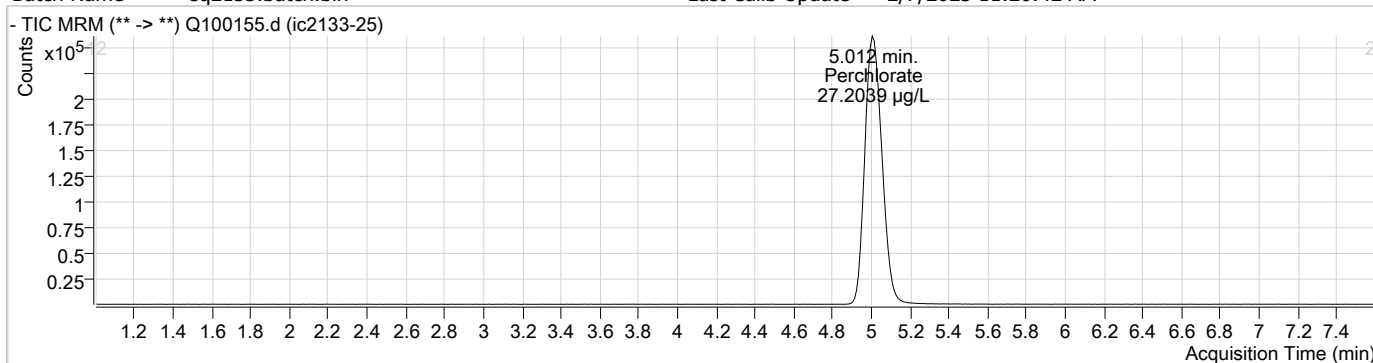


7.5.7

7

Quantitative Analysis Report for Perchlorate by 6850

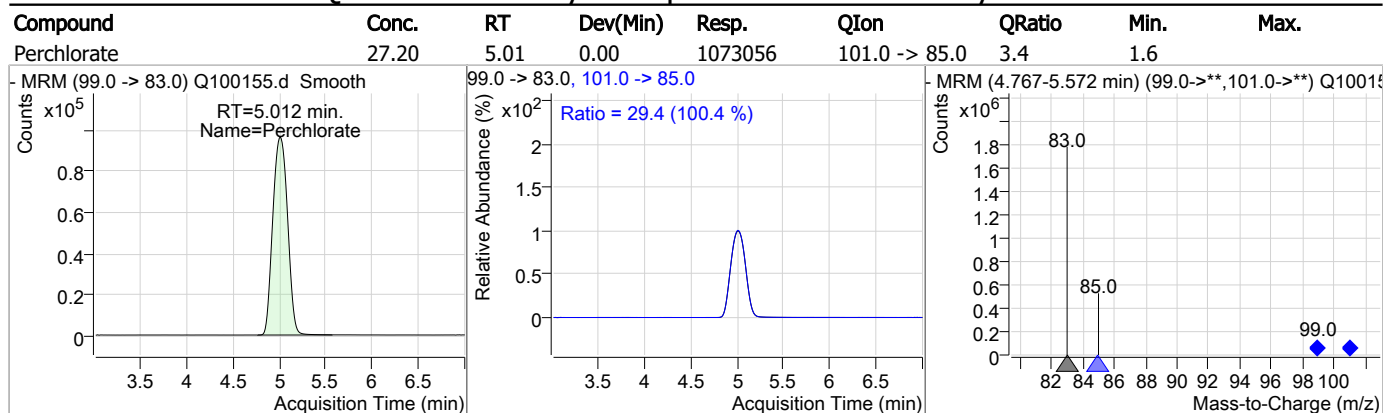
Data File	: Q100155.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 6:19:43 PM
Sample Name	ic2133-25	Instrument	Instrument 1
Vial	Vial 8	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	232032	NoQ	5.00 µg/L	0.000
System Monitoring Compounds						
Target Compounds						
Perchlorate	5.012	99.0 -> 83.0	1073056	3.4	27.20 µg/L	100

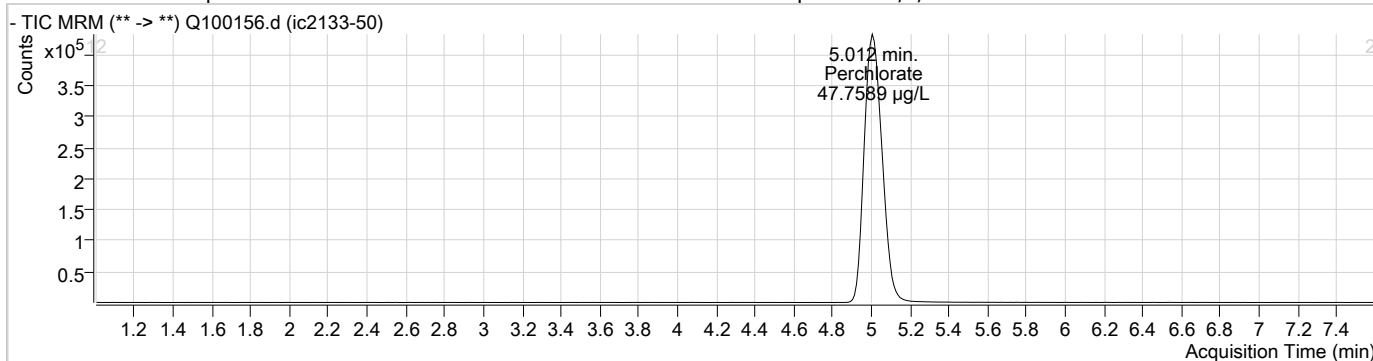
(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100156.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 6:28:08 PM
Sample Name	ic2133-50	Instrument	Instrument 1
Vial	Vial 9	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



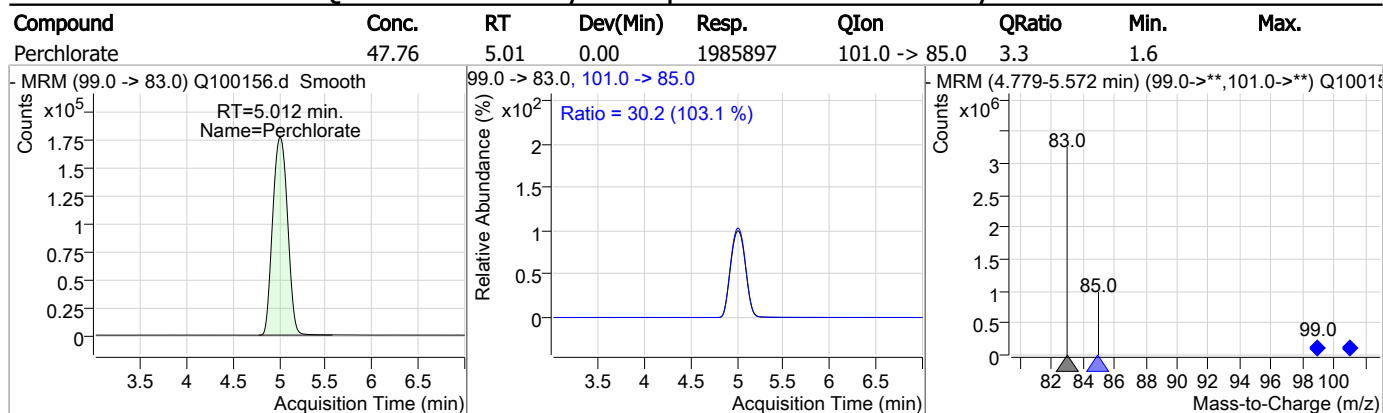
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	218564	NoQ	5.00 µg/L	0.000

System Monitoring Compounds

Target Compounds						QValue
Perchlorate	5.012	99.0 -> 83.0	1985897	3.3	47.76 µg/L	98

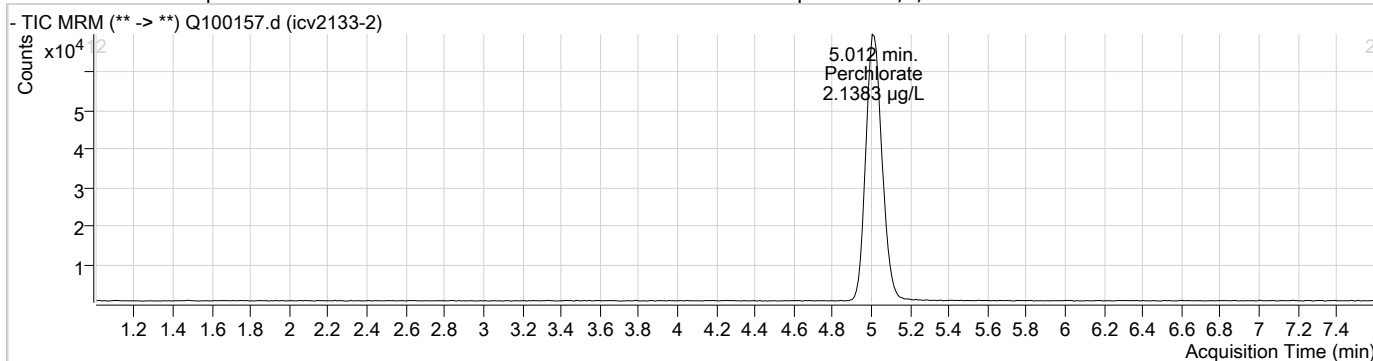
(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100157.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 6:36:33 PM
Sample Name	icv2133-2	Instrument	Instrument 1
Vial	Vial 10	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



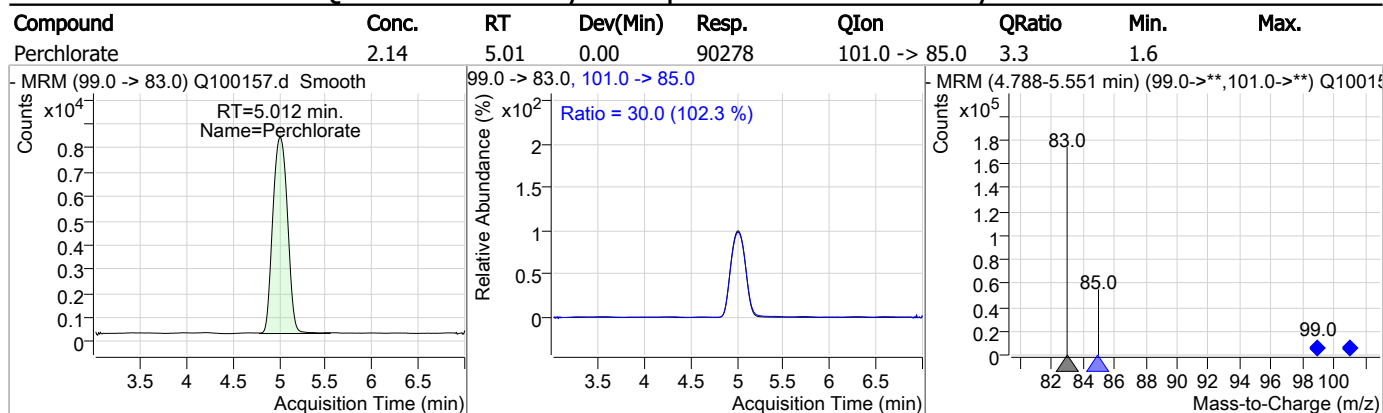
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	290557	NoQ	5.00 µg/L	0.000

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	5.012	99.0 -> 83.0	90278	3.3	2.14 µg/L	99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

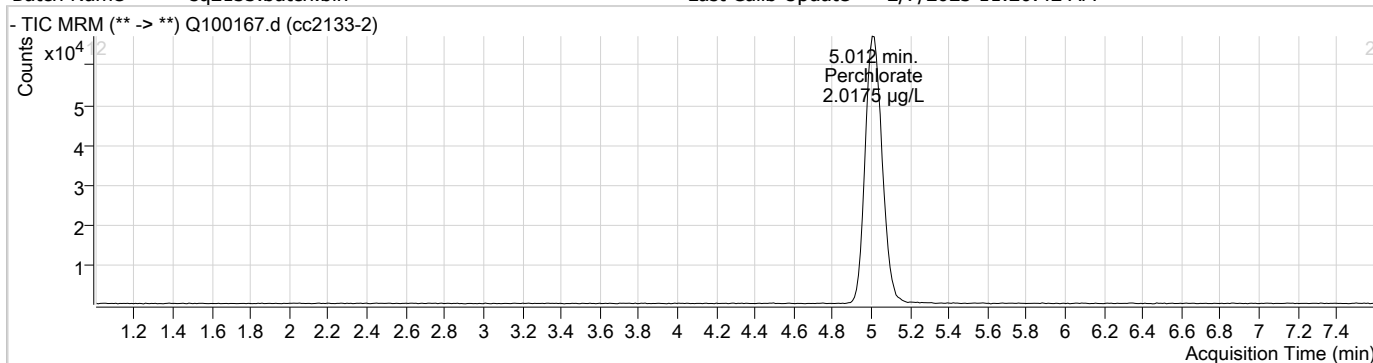


7.5.10

7

Quantitative Analysis Report for Perchlorate by 6850

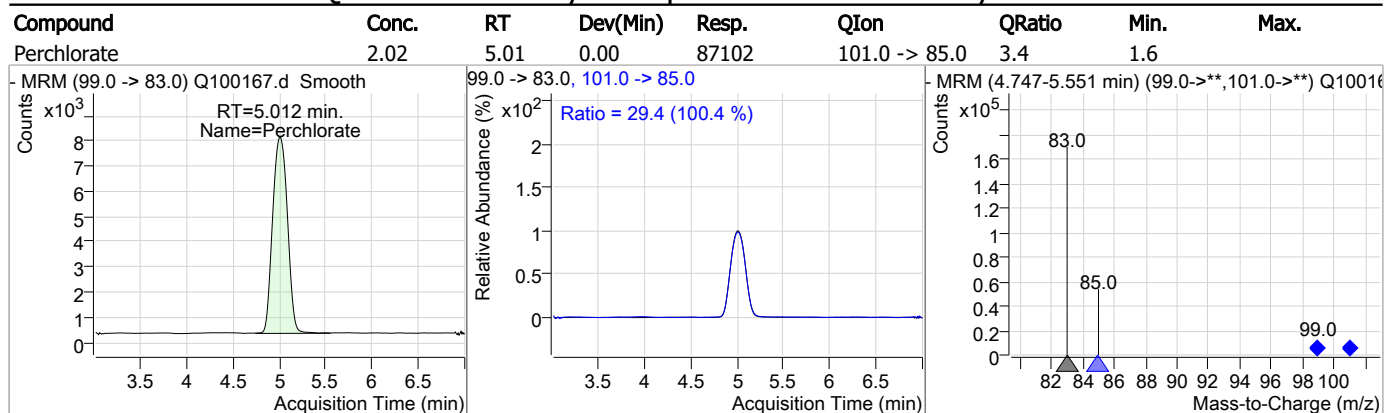
Data File	: Q100167.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 8:00:48 PM
Sample Name	cc2133-2	Instrument	Instrument 1
Vial	Vial 5	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	297366	NoQ	5.00 µg/L	0.000
System Monitoring Compounds						
Target Compounds						
Perchlorate	5.012	99.0 -> 83.0	87102	3.4	2.02 µg/L	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

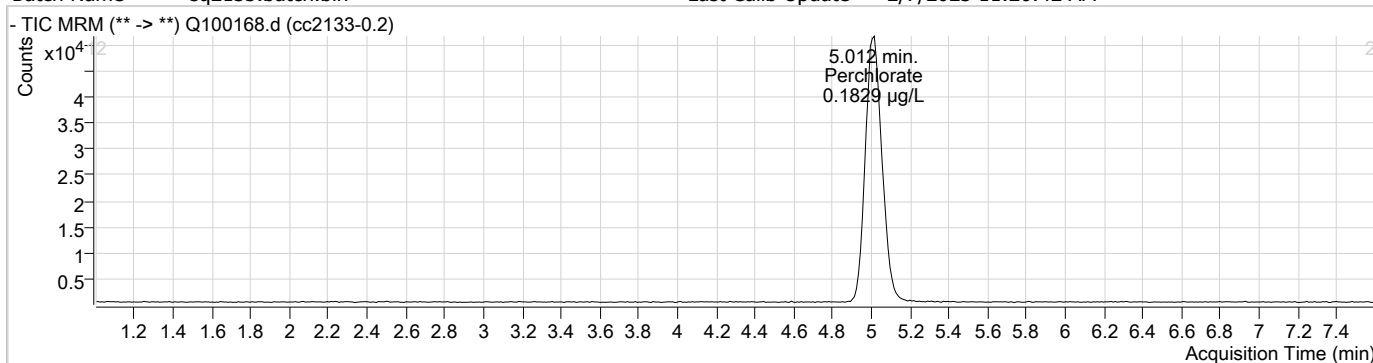


7.5.11

7

Quantitative Analysis Report for Perchlorate by 6850

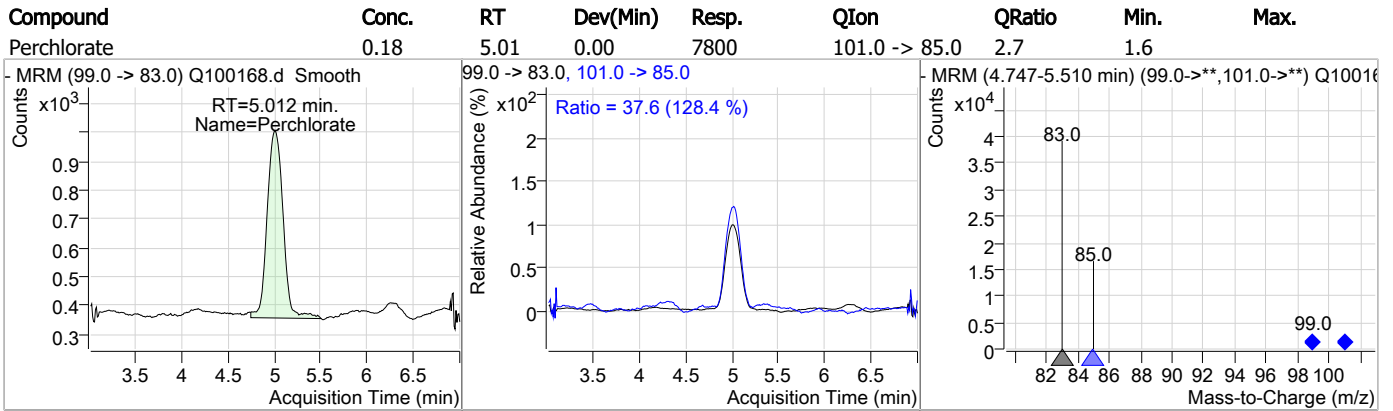
Data File	: Q100168.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 8:09:13 PM
Sample Name	cc2133-0.2	Instrument	Instrument 1
Vial	Vial 2	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	297397	NoQ	5.00 µg/L	0.000
System Monitoring Compounds						
Target Compounds						
Perchlorate	5.012	99.0 -> 83.0	7800	2.7	0.18 µg/L	84

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

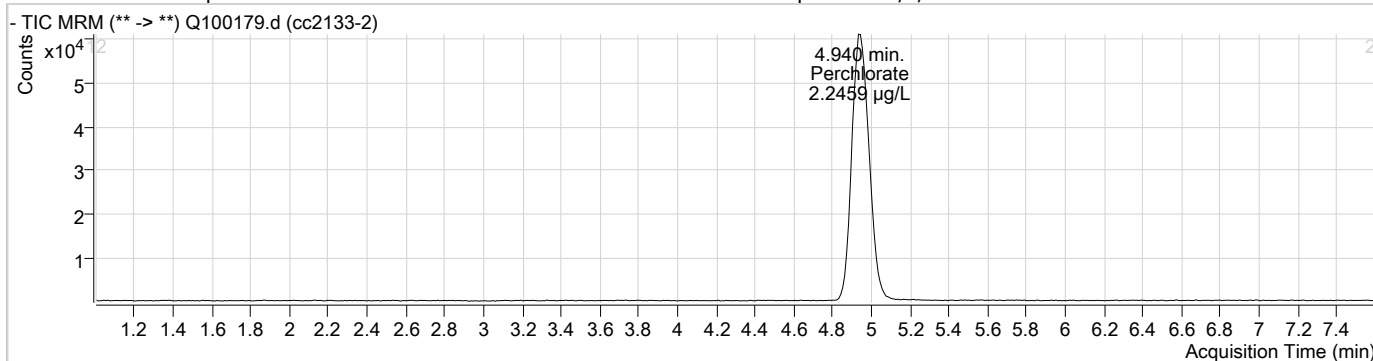


7.5.12

7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100179.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 9:41:59 PM
Sample Name	cc2133-2	Instrument	Instrument 1
Vial	Vial 5	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



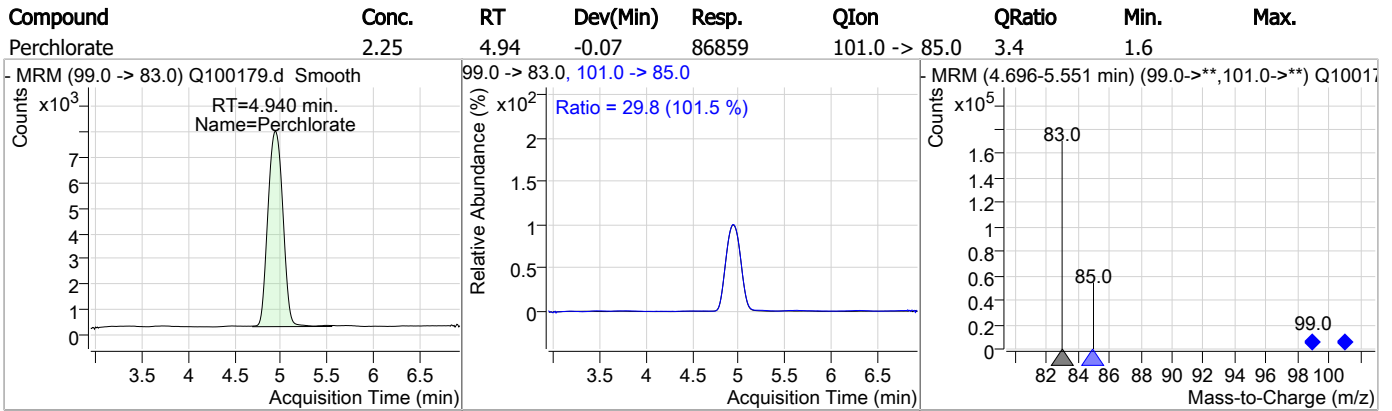
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.944	107.0 -> 89.0	265970	NoQ	5.00 µg/L	-0.071

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	4.940	99.0 -> 83.0	86859	3.4	2.25 µg/L	99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

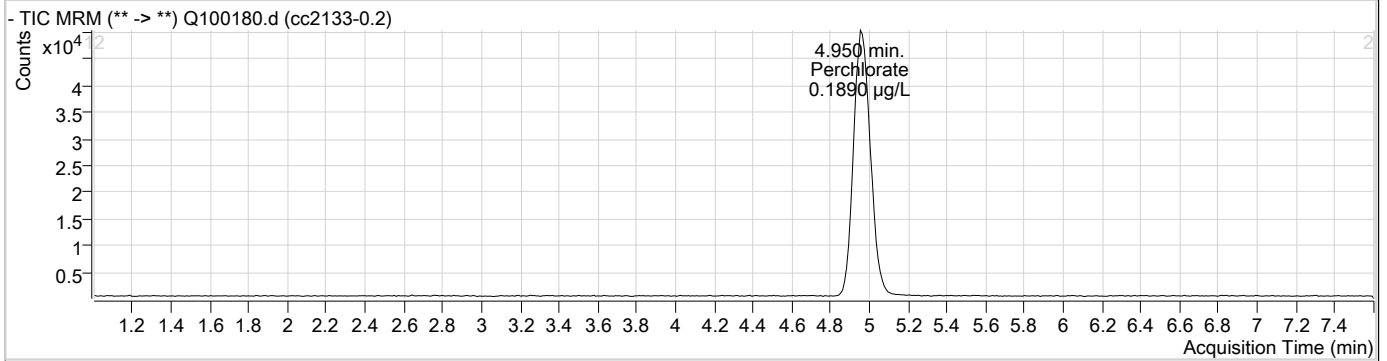


7.5.13

7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100180.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 9:50:23 PM
Sample Name	cc2133-0.2	Instrument	Instrument 1
Vial	Vial 2	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



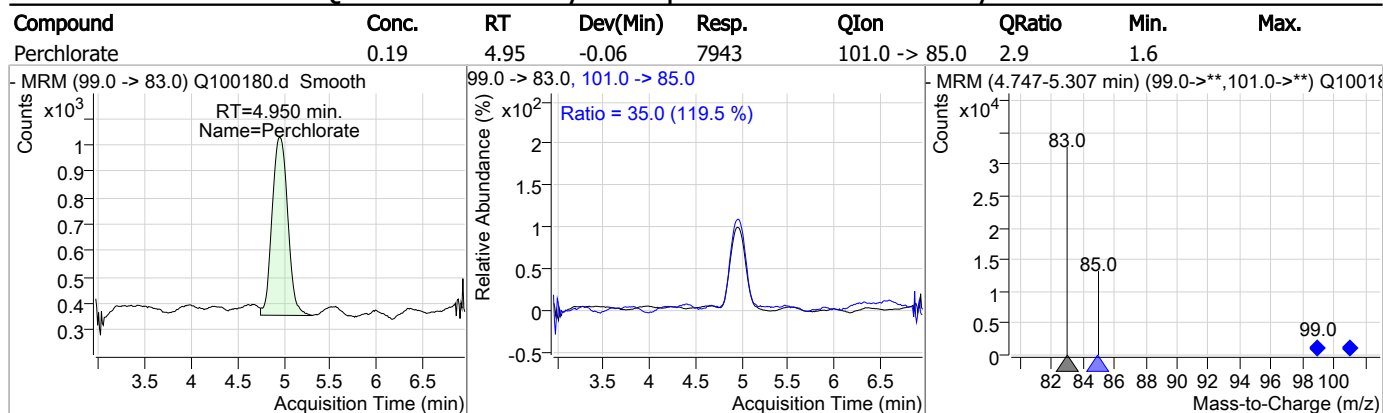
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.964	107.0 -> 89.0	293161	NoQ	5.00 µg/L	-0.051

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	4.950	99.0 -> 83.0	7943	2.9	0.19 µg/L	89

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



7.5.14

7

SGS ORLANDO

DATE:	02/06/23
COLUMN TYPE:	K-Prime
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS1-Q

LCMS1-Q ANALYSIS LOG

METHODS:	6850
PROC. METH:	6850_020623_SQ2133
CAL DATE:	02/06/23
ANALYST:	AL
RUN BATCH:	SQ2133

ELUENT A LOT #:	214324 W/0.1% AA 194003
ELUENT B LOT #:	216522 W/0.1% AA 194003
IC/CC STD LOT #:	LCMS 1981
ICV STD LOT #:	LCMS1982
ISTD/ID STD LOT #:	LCMS 1982

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	Q100145.d	Vial 1	ccb	Perchlorate2.m	Sample		OP94204, SQ2133,10,,,10,1,water	nd
2	Q100146.d	Vial 1	ccb	Perchlorate2.m	Sample		OP94204, SQ2133,10,,,10,1,water	nd
3	Q100147.d	Vial 1	ccb	Perchlorate2.m	Sample		OP94204, SQ2133,10,,,10,1,water	nd
4	Q100148.d	Vial 1	ic2133-0	Perchlorate2.m	Sample		OP94204, SQ2133,10,,,10,1,water	check tune file
5	Q100149.d	Vial 2	ic2133-0.2	Perchlorate2.m	Calibration	500x	OP94204, SQ2133,10,,,10,1,water	pass
6	Q100150.d	Vial 3	ic2133-0.5	Perchlorate2.m	Calibration	200x	OP94204, SQ2133,10,,,10,1,water	pass
7	Q100151.d	Vial 4	ic2133-1	Perchlorate2.m	Calibration	100x	OP94204, SQ2133,10,,,10,1,water	pass
8	Q100152.d	Vial 5	icc2133-2	Perchlorate2.m	Calibration	50x	OP94204, SQ2133,10,,,10,1,water	pass
9	Q100153.d	Vial 6	ic2133-5	Perchlorate2.m	Calibration	20x	OP94204, SQ2133,10,,,10,1,water	pass
10	Q100154.d	Vial 7	ic2133-10	Perchlorate2.m	Calibration	10x	OP94204, SQ2133,10,,,10,1,water	pass
11	Q100155.d	Vial 8	ic2133-25	Perchlorate2.m	Calibration	4x	OP94204, SQ2133,10,,,10,1,water	pass
12	Q100156.d	Vial 9	ic2133-50	Perchlorate2.m	Calibration	2x	OP94204, SQ2133,10,,,10,1,water	pass
13	Q100157.d	Vial 10	icv2133-2	Perchlorate2.m	QC	50x	OP94204, SQ2133,10,,,10,1,water	pass
14	Q100158.d	P2-A1	ics	Perchlorate2.m	Sample	500x	OP94204, SQ2133,10,,,10,1,water	pass
15	Q100159.d	Vial 1	ccb	Perchlorate2.m	Sample		OP94204, SQ2133,10,,,10,1,water	nd
16	Q100160.d	P2-A2	op95335-bs	Perchlorate2.m	Sample		OP95335, SQ2133,1.00,,10,1,soil	✓
17	Q100161.d	P2-A3	op95335-mb	Perchlorate2.m	Sample		OP95335, SQ2133,1.00,,10,1,soil	✓
18	Q100162.d	P2-A4	jd58805-1A	Perchlorate2.m	Sample		OP95335, SQ2133,1.06,,10,1,soil	✓
19	Q100163.d	P2-A5	op95335-ms	Perchlorate2.m	Sample		OP95335, SQ2133,0.99,,10,1,soil	✓
20	Q100164.d	P2-A6	op95335-msd	Perchlorate2.m	Sample		OP95335, SQ2133,0.97,,10,1,soil	✓
21	Q100165.d	P2-A7	jd58805-2A	Perchlorate2.m	Sample		OP95335, SQ2133,1.06,,10,1,soil	✓
22	Q100166.d	P2-A8	jd58805-3A	Perchlorate2.m	Sample		OP95335, SQ2133,0.99,,10,1,soil	✓
23	Q100167.d	Vial 5	cc2133-2	Perchlorate2.m	QC	50x	OP94204, SQ2133,10,,,10,1,water	pass
24	Q100168.d	Vial 2	cc2133-0.2	Perchlorate2.m	QC	500x	OP94204, SQ2133,10,,,10,1,water	pass
25	Q100169.d	Vial 1	ccb	Perchlorate2.m	Sample		OP94204, SQ2133,10,,,10,1,water	nd
26	Q100170.d	P2-A9	op95334-bs	Perchlorate2.m	Sample		OP95334, SQ2133,10,,,10,1,water	✓
27	Q100171.d	P2-B1	op95334-mb	Perchlorate2.m	Sample		OP95334, SQ2133,10,,,10,1,water	✓
28	Q100172.d	P2-B2	fc2128-1	Perchlorate2.m	Sample		OP95334, SQ2133,10,,,10,1,water	✓

LCMS1-Q ANALYSIS LOG

SGS ORLANDO

29	Q100173.d	P2-B3	fc2128-2	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	✓
30	Q100174.d	P2-B4	fc2128-3	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	✓
31	Q100175.d	P2-B5	fc2200-1	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	✓
32	Q100176.d	P2-B6	op95334-ms	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	✓
33	Q100177.d	P2-B7	op95334-msd	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	✓
34	Q100178.d	P2-B8	fc2200-2	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	✓
35	Q100179.d	Vial 5	cc2133-2	Perchlorate2.m	QC	OP94204, SQ2133.10,,,10.1,water	pass
36	Q100180.d	Vial 2	cc2133-0.2	Perchlorate2.m	QC	OP94204, SQ2133.10,,,10.1,water	pass
37	Q100181.d	Vial 1	ccb	Perchlorate2.m	Sample	OP94204, SQ2133.10,,,10.1,water	nd
38	Q100182.d	P2-B9	fc2057-1	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	✓
39	Q100183.d	P2-C1	fc2057-2	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	✓
40	Q100184.d	P2-C2	fc2057-3	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	rr 2x e flag
41	Q100185.d	P2-C3	fc2094-1	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	rr 1x co check
42	Q100186.d	Vial 5	cc2133-2	Perchlorate2.m	QC	OP94204, SQ2133.10,,,10.1,water	pass
43	Q100187.d	Vial 2	ecc2133-0.2	Perchlorate2.m	QC	OP94204, SQ2133.10,,,10.1,water	pass
44	Q100188.d	Vial 1	iblk	Perchlorate2.m	Sample	OP94204, SQ2133.10,,,10.1,water	nd

GC/LC Semi-volatiles

QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- GC Identification Summaries (Explosives)
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Method Blank Summary

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95139-MB	BB075412.D	1	01/26/23	FS	01/25/23	OP95139	GBB2299

The QC reported here applies to the following samples: Method: SW846 8330A
FC2128-1, FC2128-2, FC2128-3

CAS No.	Compound	Result	RL	MDL	Units	Q
2691-41-0	HMX	ND	0.20	0.080	ug/l	
121-82-4	RDX	ND	0.20	0.080	ug/l	
	DNX	ND	0.20	0.080	ug/l	
	MNX	ND	0.20	0.080	ug/l	
	TNX	ND	0.20	0.080	ug/l	
618-87-1	3,5-Dinitroaniline	ND	0.20	0.080	ug/l	
99-65-0	1,3-Dinitrobenzene	ND	0.20	0.080	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.20	0.080	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
98-95-3	Nitrobenzene	ND	0.20	0.097	ug/l	
88-72-2	o-Nitrotoluene	ND	0.20	0.080	ug/l	
99-08-1	m-Nitrotoluene	ND	0.20	0.080	ug/l	
99-99-0	p-Nitrotoluene	ND	0.20	0.080	ug/l	
479-45-8	Tetryl	ND	0.20	0.080	ug/l	
99-35-4	1,3,5-Trinitrobenzene	ND	0.20	0.099	ug/l	
118-96-7	2,4,6-Trinitrotoluene	ND	0.20	0.080	ug/l	
55-63-0	Nitroglycerine	ND	2.0	0.50	ug/l	
78-11-5	PETN	ND	2.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Limits
610-39-9	3,4-Dinitrotoluene	72% 70-136%

8.1.1
8

Method Blank Summary

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95139-MB	BB075412.D	1	01/26/23	FS	01/25/23	OP95139	GBB2299

The QC reported here applies to the following samples: Method: SW846 8330B

FC2128-1, FC2128-2, FC2128-3

CAS No.	Compound	Result	RL	MDL	Units	Q
2691-41-0	HMX	ND	0.20	0.080	ug/l	
121-82-4	RDX	ND	0.20	0.080	ug/l	
	DNX	ND	0.20	0.080	ug/l	
	MNX	ND	0.20	0.080	ug/l	
	TNX	ND	0.20	0.080	ug/l	
618-87-1	3,5-Dinitroaniline	ND	0.20	0.080	ug/l	
99-65-0	1,3-Dinitrobenzene	ND	0.20	0.080	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.20	0.080	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
98-95-3	Nitrobenzene	ND	0.20	0.097	ug/l	
88-72-2	o-Nitrotoluene	ND	0.20	0.080	ug/l	
99-08-1	m-Nitrotoluene	ND	0.20	0.080	ug/l	
99-99-0	p-Nitrotoluene	ND	0.20	0.080	ug/l	
479-45-8	Tetryl	ND	0.20	0.080	ug/l	
99-35-4	1,3,5-Trinitrobenzene	ND	0.20	0.099	ug/l	
118-96-7	2,4,6-Trinitrotoluene	ND	0.20	0.080	ug/l	
55-63-0	Nitroglycerine	ND	2.0	0.50	ug/l	
78-11-5	PETN	ND	2.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Limits
610-39-9	3,4-Dinitrotoluene	72% 70-136%

8.1.2
8

Method Blank Summary

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95139-MB	GG625706.D	1	01/30/23	FS	01/25/23	OP95139	GGG3229

The QC reported here applies to the following samples: Method: SW846 8330B

FC2128-1, FC2128-2, FC2128-3

CAS No.	Compound	Result	RL	MDL	Units	Q
2691-41-0	HMX	ND	0.20	0.080	ug/l	
121-82-4	RDX	ND	0.20	0.080	ug/l	
	DNX	ND	0.20	0.080	ug/l	
	MNX	ND	0.20	0.080	ug/l	
	TNX	ND	0.20	0.080	ug/l	
618-87-1	3,5-Dinitroaniline	ND	0.20	0.080	ug/l	
99-65-0	1,3-Dinitrobenzene	ND	0.20	0.080	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.20	0.080	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
98-95-3	Nitrobenzene	ND	0.20	0.097	ug/l	
88-72-2	o-Nitrotoluene	ND	0.20	0.080	ug/l	
99-08-1	m-Nitrotoluene	ND	0.20	0.080	ug/l	
99-99-0	p-Nitrotoluene	ND	0.20	0.080	ug/l	
479-45-8	Tetryl	ND	0.20	0.080	ug/l	
99-35-4	1,3,5-Trinitrobenzene	ND	0.20	0.099	ug/l	
118-96-7	2,4,6-Trinitrotoluene	ND	0.20	0.080	ug/l	
55-63-0	Nitroglycerine	ND	2.0	0.50	ug/l	
78-11-5	PETN	ND	2.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Limits
610-39-9	3,4-Dinitrotoluene	89% 70-136%

Blank Spike Summary

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95139-BS	BB075413.D	1	01/26/23	FS	01/25/23	OP95139	GBB2299

The QC reported here applies to the following samples: Method: SW846 8330A

FC2128-1, FC2128-2, FC2128-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
2691-41-0	HMX	5	5.1	102	77-144
121-82-4	RDX	5	5.1	102	77-125
	DNX	5	4.1	82	66-127
	MNX	5.8	5.0	86	71-137
	TNX	2.35	1.7	72	60-126
618-87-1	3,5-Dinitroaniline	5	5.1	102	77-115
99-65-0	1,3-Dinitrobenzene	5	5.1	102	79-122
606-20-2	2,6-Dinitrotoluene	5	4.8	96	81-131
121-14-2	2,4-Dinitrotoluene	5	4.0	80	80-123
35572-78-2	2-amino-4,6-Dinitrotoluene	5	5.3	106	81-120
19406-51-0	4-amino-2,6-Dinitrotoluene	5	5.4	108	79-119
98-95-3	Nitrobenzene	5	4.7	94	78-130
88-72-2	o-Nitrotoluene	5	4.6	92	76-131
99-08-1	m-Nitrotoluene	5	4.9	98	78-122
99-99-0	p-Nitrotoluene	5	4.9	98	79-124
479-45-8	Tetryl	5	3.5	70	65-124
99-35-4	1,3,5-Trinitrobenzene	5	4.2	84	79-128
118-96-7	2,4,6-Trinitrotoluene	5	5.0	100	72-112
55-63-0	Nitroglycerine	5	5.2	104	69-123
78-11-5	PETN	5	5.9	118	73-145

CAS No.	Surrogate Recoveries	BSP	Limits
610-39-9	3,4-Dinitrotoluene	95%	70-136%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95139-BS	BB075413.D	1	01/26/23	FS	01/25/23	OP95139	GBB2299

The QC reported here applies to the following samples: Method: SW846 8330B

FC2128-1, FC2128-2, FC2128-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
2691-41-0	HMX	5	5.1	102	77-144
121-82-4	RDX	5	5.1	102	77-125
	DNX	5	4.1	82	66-127
	MNX	5.8	5.0	86	71-137
	TNX	2.35	1.7	72	60-126
618-87-1	3,5-Dinitroaniline	5	5.1	102	77-115
99-65-0	1,3-Dinitrobenzene	5	5.1	102	79-122
606-20-2	2,6-Dinitrotoluene	5	4.8	96	81-131
121-14-2	2,4-Dinitrotoluene	5	4.0	80	80-123
35572-78-2	2-amino-4,6-Dinitrotoluene	5	5.3	106	81-120
19406-51-0	4-amino-2,6-Dinitrotoluene	5	5.4	108	79-119
98-95-3	Nitrobenzene	5	4.7	94	78-130
88-72-2	o-Nitrotoluene	5	4.6	92	76-131
99-08-1	m-Nitrotoluene	5	4.9	98	78-122
99-99-0	p-Nitrotoluene	5	4.9	98	79-124
479-45-8	Tetryl	5	3.5	70	65-124
99-35-4	1,3,5-Trinitrobenzene	5	4.2	84	79-128
118-96-7	2,4,6-Trinitrotoluene	5	5.0	100	72-112
55-63-0	Nitroglycerine	5	5.2	104	69-123
78-11-5	PETN	5	5.9	118	73-145

CAS No.	Surrogate Recoveries	BSP	Limits
610-39-9	3,4-Dinitrotoluene	95%	70-136%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95139-MS	BB075415.D	1	01/26/23	FS	01/25/23	OP95139	GBB2299
OP95139-MSD	BB075416.D	1	01/26/23	FS	01/25/23	OP95139	GBB2299
FC2128-1 ^a	BB075414.D	1	01/26/23	FS	01/25/23	OP95139	GBB2299
FC2128-1 ^b	GG625707.D	1	01/30/23	FS	01/25/23	OP95139	GGG3229

The QC reported here applies to the following samples: Method: SW846 8330A

FC2128-1, FC2128-2, FC2128-3

CAS No.	Compound	FC2128-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
2691-41-0	HMX	3.1	10	13.2	101	10	13.3	102	1	77-144/21
121-82-4	RDX	0.91	10	11.1	102	10	11.0	101	1	77-125/19
	DNX	0.20 U	10	9.1	91	10	8.6	86	6	66-127/25
	MNX	0.20 U	11.6	10.5	91	11.6	10.2	88	3	71-137/20
	TNX	0.20 U	4.7	4.2	89	4.7	3.8	81	10	60-126/18
618-87-1	3,5-Dinitroaniline	0.39	10	10.7	103	10	10.7	103	0	77-115/19
99-65-0	1,3-Dinitrobenzene	0.20 U	10	10.4	104	10	10.5	105	1	79-122/17
606-20-2	2,6-Dinitrotoluene	0.20 U	10	9.9	99	10	9.9	99	0	81-131/17
121-14-2	2,4-Dinitrotoluene	0.20 U	10	8.1	81	10	8.1	81	0	80-123/19
35572-78-2	2-amino-4,6-Dinitrotoluene	1.7	10	12.3	106	10	12.5	108	2	81-120/19
19406-51-0	4-amino-2,6-Dinitrotoluene	1.2	10	12.0	108	10	12.2	110	2	79-119/20
98-95-3	Nitrobenzene	0.20 U	10	10.2	102	10	10.3	103	1	78-130/19
88-72-2	o-Nitrotoluene	0.20 U	10	10.5	105	10	12.1	121	14	76-131/20
99-08-1	m-Nitrotoluene	0.20 U	10	12.9	129*	10	12.5	125*	3	78-122/18
99-99-0	p-Nitrotoluene	0.20 U	10	12.0	120	10	12.1	121	1	79-124/18
479-45-8	Tetryl	0.20 U	10	8.5	85	10	9.4	94	10	65-124/20
99-35-4	1,3,5-Trinitrobenzene	11.8	10	20.9	91	10	22.3	105	6	79-128/16
118-96-7	2,4,6-Trinitrotoluene	5.0	10	15.3	103	10	15.8	108	3	72-112/16
55-63-0	Nitroglycerine	2.0 U	10	10.5	105	10	10.6	106	1	69-123/18
78-11-5	PETN	2.0 U	10	11.4	114	10	11.5	115	1	73-145/18

CAS No.	Surrogate Recoveries	MS	MSD	FC2128-1	FC2128-1	Limits
610-39-9	3,4-Dinitrotoluene	100%	102%	99%	99%	70-136%

(a) All hits confirmed by reanalysis on a dissimilar column.
(b) Confirmation run.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95139-MS	BB075415.D	1	01/26/23	FS	01/25/23	OP95139	GBB2299
OP95139-MSD	BB075416.D	1	01/26/23	FS	01/25/23	OP95139	GBB2299
FC2128-1 ^a	BB075414.D	1	01/26/23	FS	01/25/23	OP95139	GBB2299
FC2128-1 ^b	GG625707.D	1	01/30/23	FS	01/25/23	OP95139	GGG3229

The QC reported here applies to the following samples: Method: SW846 8330B

FC2128-1, FC2128-2, FC2128-3

CAS No.	Compound	FC2128-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
2691-41-0	HMX	3.1	10	13.2	101	10	13.3	102	1	77-144/21
121-82-4	RDX	0.91	10	11.1	102	10	11.0	101	1	77-125/19
	DNX	0.20 U	10	9.1	91	10	8.6	86	6	66-127/25
	MNX	0.20 U	11.6	10.5	91	11.6	10.2	88	3	71-137/20
	TNX	0.20 U	4.7	4.2	89	4.7	3.8	81	10	60-126/18
618-87-1	3,5-Dinitroaniline	0.39	10	10.7	103	10	10.7	103	0	77-115/19
99-65-0	1,3-Dinitrobenzene	0.20 U	10	10.4	104	10	10.5	105	1	79-122/17
606-20-2	2,6-Dinitrotoluene	0.20 U	10	9.9	99	10	9.9	99	0	81-131/17
121-14-2	2,4-Dinitrotoluene	0.20 U	10	8.1	81	10	8.1	81	0	80-123/19
35572-78-2	2-amino-4,6-Dinitrotoluene	1.7	10	12.3	106	10	12.5	108	2	81-120/19
19406-51-0	4-amino-2,6-Dinitrotoluene	1.2	10	12.0	108	10	12.2	110	2	79-119/20
98-95-3	Nitrobenzene	0.20 U	10	10.2	102	10	10.3	103	1	78-130/19
88-72-2	o-Nitrotoluene	0.20 U	10	10.5	105	10	12.1	121	14	76-131/20
99-08-1	m-Nitrotoluene	0.20 U	10	12.9	129*	10	12.5	125*	3	78-122/18
99-99-0	p-Nitrotoluene	0.20 U	10	12.0	120	10	12.1	121	1	79-124/18
479-45-8	Tetryl	0.20 U	10	8.5	85	10	9.4	94	10	65-124/20
99-35-4	1,3,5-Trinitrobenzene	11.8	10	20.9	91	10	22.3	105	6	79-128/16
118-96-7	2,4,6-Trinitrotoluene	5.0	10	15.3	103	10	15.8	108	3	72-112/16
55-63-0	Nitroglycerine	2.0 U	10	10.5	105	10	10.6	106	1	69-123/18
78-11-5	PETN	2.0 U	10	11.4	114	10	11.5	115	1	73-145/18

CAS No.	Surrogate Recoveries	MS	MSD	FC2128-1	FC2128-1	Limits
610-39-9	3,4-Dinitrotoluene	100%	102%	99%	99%	70-136%

(a) All hits confirmed by reanalysis on a dissimilar column.
(b) Confirmation run.

* = Outside of Control Limits.

GC Identification Summary (Explosives)

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample ID:	FC2128-1	Method:	SW846 8330B
Client ID:	54MW13		

Injection Type	Lab File ID	Dilution	Prep Batch	Inst Batch	Injection Time	Inst ID
Reportable	BB075414.D	1	OP95139	GBB2299	01/26/23 13:44	GCBB
Confirmation	GG625707.D	1	OP95139	GGG3229	01/30/23 17:22	GCGG

Compound	Lab File ID	Dilution	Sig#	Conc	Q	Units	RPD Conc
HMX	BB075414.D	1	1	3.1		ug/l	3.2
HMX	GG625707.D	1	1	3.2		ug/l	
RDX	BB075414.D	1	1	.91		ug/l	18.9
RDX	GG625707.D	1	1	1.1		ug/l	
3,5-Dinitroaniline ^a	BB075414.D	1	1	.39		ug/l	125.4
3,5-Dinitroaniline	GG625707.D	1	1	1.7		ug/l	
2-amino-4,6-Dinitrotoluene	BB075414.D	1	1	1.7		ug/l	0.0
2-amino-4,6-Dinitrotoluene	GG625707.D	1	1	1.7		ug/l	
4-amino-2,6-Dinitrotoluene	BB075414.D	1	1	1.2		ug/l	15.4
4-amino-2,6-Dinitrotoluene	GG625707.D	1	1	1.4		ug/l	
1,3,5-Trinitrobenzene	BB075414.D	1	1	11.8		ug/l	4.1
1,3,5-Trinitrobenzene	GG625707.D	1	1	12.3		ug/l	
2,4,6-Trinitrotoluene	BB075414.D	1	1	5		ug/l	6.2
2,4,6-Trinitrotoluene	GG625707.D	1	1	4.7		ug/l	

(a) Primary and confirmation results differ by more than 40%.

8.4.1
8

GC Identification Summary (Explosives)

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample ID:	FC2128-2	Method:	SW846 8330B
Client ID:	54TW13		

Injection Type	Lab File ID	Dilution	Prep Batch	Inst Batch	Injection Time	Inst ID
Reportable	BB075431.D	1	OP95139	GBB2300	01/27/23 11:05	GCBB
Confirmation	GG625708.D	1	OP95139	GGG3229	01/30/23 17:54	GCGG

Compound	Lab File ID	Dilution	Sig#	Conc	Q	Units	RPD Conc
HMX	BB075431.D	1	1	3		ug/l	9.5
HMX	GG625708.D	1	1	3.3		ug/l	
RDX	BB075431.D	1	1	.94		ug/l	8.9
RDX	GG625708.D	1	1	.86		ug/l	
3,5-Dinitroaniline ^a	BB075431.D	1	1	.41		ug/l	122.3
3,5-Dinitroaniline	GG625708.D	1	1	1.7		ug/l	
2-amino-4,6-Dinitrotoluene	BB075431.D	1	1	1.6		ug/l	6.5
2-amino-4,6-Dinitrotoluene	GG625708.D	1	1	1.5		ug/l	
4-amino-2,6-Dinitrotoluene	BB075431.D	1	1	1.1		ug/l	24.0
4-amino-2,6-Dinitrotoluene	GG625708.D	1	1	1.4		ug/l	
1,3,5-Trinitrobenzene	BB075431.D	1	1	12		ug/l	1.7
1,3,5-Trinitrobenzene	GG625708.D	1	1	12.2		ug/l	
2,4,6-Trinitrotoluene	BB075431.D	1	1	5		ug/l	4.1
2,4,6-Trinitrotoluene	GG625708.D	1	1	4.8		ug/l	

(a) Primary and confirmation results differ by more than 40%.

8.4.2
8

GC Identification Summary (Explosives)

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample ID:	FC2128-3	Method:	SW846 8330B
Client ID:	54MW10		

Injection Type	Lab File ID	Dilution	Prep Batch	Inst Batch	Injection Time	Inst ID
Reportable	BB075432.D	1	OP95139	GBB2300	01/27/23 11:36	GCBB
Confirmation	GG625709.D	1	OP95139	GGG3229	01/30/23 18:25	GCGG

Compound	Lab File ID	Dilution	Sig#	Conc	Q	Units	RPD Conc
HMX	BB075432.D	1	1	.5		ug/l	10.5
HMX	GG625709.D	1	1	.45		ug/l	
RDX	BB075432.D	1	1	.35		ug/l	12.1
RDX	GG625709.D	1	1	.31		ug/l	
3,5-Dinitroaniline	BB075432.D	1	1	.23		ug/l	19.0
3,5-Dinitroaniline	GG625709.D	1	1	.19	J	ug/l	
2-amino-4,6-Dinitrotoluene	BB075432.D	1	1	.26		ug/l	37.5
2-amino-4,6-Dinitrotoluene	GG625709.D	1	1	.38		ug/l	
4-amino-2,6-Dinitrotoluene	BB075432.D	1	1	.37		ug/l	29.9
4-amino-2,6-Dinitrotoluene	GG625709.D	1	1	.5		ug/l	

8.4.3
8

Surrogate Recovery Summary

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Method: SW846 8330B	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 ^a
FC2128-1	BB075414.D	99
FC2128-1	GG625707.D	99
FC2128-2	GG625708.D	101
FC2128-2	BB075431.D	100
FC2128-3	GG625709.D	89
FC2128-3	BB075432.D	83
OP95139-BS	BB075413.D	95
OP95139-MB	GG625706.D	89
OP95139-MB	BB075412.D	72
OP95139-MS	BB075415.D	100
OP95139-MSD	BB075416.D	102

Surrogate Compounds	Recovery Limits
S1 = 3,4-Dinitrotoluene	70-136%

(a) Recovery from GC signal #1

8.5.1
8

GC Surrogate Retention Time Summary

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Check Std:	GBB2299-CC2232	Injection Date:	01/26/23
Lab File ID:	BB075407.D	Injection Time:	09:46
Instrument ID:	GCBB	Method:	SW846 8330B

S1 ^a
RT

Check Std	13.21
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Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT
OP95126-TRP	BB075408.D	01/26/23	10:27	13.24
JD58805-3A	BB075409.D	01/26/23	10:58	13.24
OP95127-MSD	BB075410.D	01/26/23	11:29	13.21
FC1992-1	BB075411.D	01/26/23	12:02	13.23
OP95139-MB	BB075412.D	01/26/23	12:33	13.23
OP95139-MB	BB075412.D	01/26/23	12:33	13.23
OP95139-BS	BB075413.D	01/26/23	13:04	13.23
OP95139-BS	BB075413.D	01/26/23	13:04	13.23
FC2128-1	BB075414.D	01/26/23	13:44	13.22
OP95139-MS	BB075415.D	01/26/23	14:14	13.22
OP95139-MS	BB075415.D	01/26/23	14:14	13.22
OP95139-MSD	BB075416.D	01/26/23	14:45	13.21
OP95139-MSD	BB075416.D	01/26/23	14:45	13.21

Surrogate
Compounds

S1 = 3,4-Dinitrotoluene

(a) Retention time from GC signal #1

8.6.1
8

GC Surrogate Retention Time Summary

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Check Std:	GBB2300-CC2232	Injection Date:	01/27/23
Lab File ID:	BB075430.D	Injection Time:	10:22
Instrument ID:	GCBB	Method:	SW846 8330B

S1^a S1^b
RT RT

Check Std	13.27	13.27
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Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT	S1 ^b RT
FC2128-2	BB075431.D	01/27/23	11:05		13.26
FC2128-3	BB075432.D	01/27/23	11:36		13.24
ZZZZZZ	BB075433.D	01/27/23	12:07		13.25
GBB2300-ECC2232	BB075435.D	01/27/23	14:12	13.26	13.26

Surrogate Compounds

- S1 = 3,4-Dinitrotoluene
- (a) Retention time from GC signal #2
- (b) Retention time from GC signal #1

8.6.2
8

GC Surrogate Retention Time Summary

Page 1 of 1

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Check Std:	GGG3229-ICC3229	Injection Date:	01/30/23
Lab File ID:	GG625702.D	Injection Time:	14:45
Instrument ID:	GCGG	Method:	SW846 8330B

S1^a
RT

Check Std	14.39
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Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT
OP95139-MB	GG625706.D	01/30/23	16:51	14.36
FC2128-1	GG625707.D	01/30/23	17:22	14.34
FC2128-2	GG625708.D	01/30/23	17:54	14.32
FC2128-3	GG625709.D	01/30/23	18:25	14.27
ZZZZZZ	GG625710.D	01/30/23	18:57	14.27
ZZZZZZ	GG625711.D	01/30/23	19:28	14.30
ZZZZZZ	GG625712.D	01/30/23	20:00	14.33
ZZZZZZ	GG625713.D	01/30/23	20:31	14.28

Surrogate Compounds

S1 = 3,4-Dinitrotoluene

(a) Retention time from GC signal #1

8.6.3
8

Initial Calibration Summary

Page 1 of 3

Job Number: FC2128
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GBB2232-ICC2232
 Lab FileID: BB073634.D

Response Factor Report G1315B

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Thu Sep 01 08:04:52 2022
 Response via : Initial Calibration

Calibration Files

20 =BB073629.D 50 =BB073630.D 100 =BB073631.D 200 =BB073632.D
 500 =BB073633.D 1000=BB073634.D 2500=BB073635.D 5000=BB073636.D

Compound	20	50	100	200	500	1000	2500	5000	Avg	%RSD
1) TNX	6.780	4.910	6.119	4.100	3.776	3.831	3.737	3.752	4.626	E3 26.01
----	Linear regr., Force(0,0) ---- Coefficient = 0.9999									
	Response Ratio = 0.00000 + 3753.20753 *A									
2) HMX	3.313	2.075	1.847	1.476	1.517	1.519	1.481	1.479	1.838	E3 34.56
----	Linear regr., Force(0,0) ---- Coefficient = 1.0000									
	Response Ratio = 0.00000 + 1480.64878 *A									
3) DNX	5.905	4.171	5.218	3.433	2.916	3.179	3.054	3.078	3.869	E3 29.17
----	Linear regr., Force(0,0) ---- Coefficient = 0.9997									
	Response Ratio = 0.00000 + 3076.33729 *A									
4) MNX	5.413	3.818	5.082	3.172	2.835	2.935	2.856	2.870	3.622	E3 29.18
----	Linear regr., Force(0,0) ---- Coefficient = 0.9998									
	Response Ratio = 0.00000 + 2869.93858 *A									
5) RDX	3.387	2.387	2.065	1.780	1.841	1.895	1.847	1.856	2.132	E3 25.49
----	Linear regr., Force(0,0) ---- Coefficient = 1.0000									
	Response Ratio = 0.00000 + 1854.96692 *A									
6) 1,3,5-Trinit	6.693	4.736	4.260	3.741	3.919	4.034	3.948	3.981	4.414	E3 21.95
----	Linear regr., Force(0,0) ---- Coefficient = 1.0000									
	Response Ratio = 0.00000 + 3975.62222 *A									
7) 1,3-Dinitrob	9.132	6.469	5.738	5.027	5.184	5.317	5.183	5.213	5.908	E3 23.41
----	Linear regr., Force(0,0) ---- Coefficient = 1.0000									
	Response Ratio = 0.00000 + 5210.64116 *A									
8) 3,5-Dinitroa	6.792	4.872	4.319	3.763	3.901	4.009	3.917	3.938	4.439	E3 22.84
----	Linear regr., Force(0,0) ---- Coefficient = 1.0000									
	Response Ratio = 0.00000 + 3935.82430 *A									
9) Nitrobenzene	5.147	3.542	3.266	2.849	2.980	3.054	2.998	2.997	3.354	E3 22.53
----	Linear regr., Force(0,0) ---- Coefficient = 1.0000									
	Response Ratio = 0.00000 + 2998.60435 *A									
10) Nitroglyceri						2.148		2.148	E1	0.00
11) Tetryl	5.100	3.533	3.035	2.696	2.790	2.871	2.806	2.829	3.207	E3 25.20
----	Linear regr., Force(0,0) ---- Coefficient = 1.0000									
	Response Ratio = 0.00000 + 2825.64692 *A									
12) 2,4,6-Trinit	6.203	4.462	3.940	3.489	3.614	3.719	3.634	3.658	4.090	E3 22.15
----	Linear regr., Force(0,0) ---- Coefficient = 1.0000									
	Response Ratio = 0.00000 + 3655.22572 *A									
13) 2-Amino-4,6-	5.279	3.818	3.361	2.985	3.092	3.206	3.138	3.165	3.506	E3 21.69
----	Linear regr., Force(0,0) ---- Coefficient = 0.9999									

8.7.1

8

Initial Calibration Summary

Page 2 of 3

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GBB2232-ICC2232
Lab FileID: BB073634.D

Response Ratio = 0.00000 + 3160.56365 *A												
14)	4-Amino-2,6-	4.020	2.809	2.464	2.189	2.250	2.331	2.281	2.300	2.580	E3	23.77
	----	Linear regr., Force(0,0) ---- Coefficient = 0.9999										
		Response Ratio = 0.00000 + 2296.58390 *A										
15)	3,4-Dinitrot	3.686	2.622	2.313	2.053	2.095	2.166	2.124	2.147	2.401	E3	22.91
	----	Linear regr., Force(0,0) ---- Coefficient = 0.9999										
		Response Ratio = 0.00000 + 2142.42370 *A										
16)	2,4-Dinitrot	7.673	5.494	4.954	4.319	4.553	4.654	4.587	4.711	5.118	E3	21.30
	----	Linear regr., Force(0,0) ---- Coefficient = 0.9998										
		Response Ratio = 0.00000 + 4683.74804 *A										
17)	2,6-Dinitrot	2.536	1.688	1.507	1.394	1.380	1.463	1.449	1.539	1.620	E3	23.64
	----	Linear regr., Force(0,0) ---- Coefficient = 0.9991										
		Response Ratio = 0.00000 + 1518.30476 *A										
18)	o-Nitrotolue	3.322	2.421	2.337	2.055	2.115	2.168	2.151	2.162	2.342	E3	17.68
	----	Linear regr., Force(0,0) ---- Coefficient = 1.0000										
		Response Ratio = 0.00000 + 2159.38682 *A										
19)	p-Nitrotolue	5.648	3.952	3.629	3.166	3.279	3.386	3.334	3.347	3.718	E3	22.00
	----	Linear regr., Force(0,0) ---- Coefficient = 1.0000										
		Response Ratio = 0.00000 + 3345.37743 *A										
20)	m-Nitrotolue	5.670	3.637	3.413	2.898	3.046	3.131	3.097	3.117	3.501	E3	25.89
	----	Linear regr., Force(0,0) ---- Coefficient = 1.0000										
		Response Ratio = 0.00000 + 3113.22098 *A										
21)	PETN										0.000	-1.00
Signal #2												
1)	TNX	1.013	0.745	0.953	0.638	0.592	0.589	0.576	0.574	0.710	E4	25.10
	----	Linear regr., Force(0,0) ---- Coefficient = 0.9999										
		Response Ratio = 0.00000 + 5754.99937 *A										
2)	HMX	1.407	0.658	0.601	0.425	0.435	0.422	0.410	0.408	0.596	E4	57.34
	----	Linear regr., Force(0,0) ---- Coefficient = 0.9999										
		Response Ratio = 0.00000 + 4090.24163 *A										
3)	DNX	1.039	0.677	0.841	0.549	0.467	0.504	0.485	0.486	0.631	E4	33.07
	----	Linear regr., Force(0,0) ---- Coefficient = 0.9968										
		Response Ratio = 0.00000 + 4937.62561 *A										
4)	MNX	8.263	5.886	7.812	4.871	4.380	4.508	4.369	4.398	5.561	E3	29.02
	----	Linear regr., Force(0,0) ---- Coefficient = 0.9998										
		Response Ratio = 0.00000 + 4397.53933 *A										
5)	RDX	5.097	3.706	3.263	2.827	2.922	2.989	2.915	2.931	3.331	E3	23.07
	----	Linear regr., Force(0,0) ---- Coefficient = 1.0000										
		Response Ratio = 0.00000 + 2929.41405 *A										
6)	1,3,5-Trinit	1.010	0.745	0.660	0.582	0.628	0.636	0.622	0.622	0.688	E4	20.07
	----	Linear regr., Force(0,0) ---- Coefficient = 1.0000										
		Response Ratio = 0.00000 + 6224.71312 *A										
7)	1,3-Dinitrob	6.349	4.251	3.873	3.342	3.467	3.707	3.452	3.422	3.983	E3	25.17
	----	Linear regr., Force(0,0) ---- Coefficient = 0.9998										

8.7.1
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Initial Calibration Summary

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Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GBB2232-ICC2232
Lab FileID: BB073634.D

Response Ratio = 0.00000 + 3436.76369 *A

8) 3,5-Dinitroa 1.115 0.796 0.713 0.632 0.648 0.660 0.649 0.655 0.733 E4 22.23
---- Linear regr., Force(0,0) ---- Coefficient = 1.0000
Response Ratio = 0.00000 + 6535.38234 *A

9) Nitrobenzene 5.161 3.763 3.253 2.827 2.953 3.015 2.955 2.965 3.362 E3 23.33
---- Linear regr., Force(0,0) ---- Coefficient = 1.0000
Response Ratio = 0.00000 + 2964.55380 *A

10) Nitroglyceri 2.368 1.598 1.459 1.221 1.266 1.304 1.262 1.271 1.468 E3 26.20
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 1270.23860 *A

11) Tetryl 7.358 5.545 4.372 4.037 4.402 4.619 4.563 4.619 4.939 E3 21.63
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 4605.90098 *A

12) 2,4,6-Trinit 5.695 4.428 4.152 3.762 4.205 4.459 4.432 4.491 4.453 E3 12.52
13) 2-Amino-4,6- 7.082 5.182 4.589 4.084 4.572 4.901 4.886 4.958 5.032 E3 17.74
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 4938.30281 *A

14) 4-Amino-2,6- 7.401 5.428 4.820 4.257 4.624 4.903 4.870 4.930 5.154 E3 18.71
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 4914.55640 *A

15) 3,4-Dinitrot 6.550 4.845 4.248 3.759 3.979 4.226 4.207 4.263 4.510 E3 19.52
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 4248.67100 *A

16) 2,4-Dinitrot 4.742 3.350 3.079 2.742 2.887 3.077 3.081 3.127 3.261 E3 19.15
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 3114.07320 *A

17) 2,6-Dinitrot 5.116 3.832 3.629 3.196 3.350 3.502 3.474 3.517 3.702 E3 16.24
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 3506.47159 *A

18) o-Nitrotolue 4.070 3.360 3.169 2.895 3.287 3.343 3.100 3.063 3.286 E3 10.75
19) p-Nitrotolue 3.850 2.857 2.465 2.390 2.688 2.808 2.779 2.841 2.835 E3 15.73
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 2826.22786 *A

20) m-Nitrotolue 4.626 4.307 3.878 3.413 3.553 3.739 3.746 3.786 3.881 E3 10.26
21) PETN 2.872 1.776 1.512 1.414 1.364 1.397 1.339 1.343 1.627 E3 32.17
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 1343.99257 *A

(#) = Out of Range ### Number of calibration levels exceeded format ###

BBB2232_083122.M

Fri Sep 02 08:46:07 2022

Initial Calibration Verification

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Job Number: FC2128
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GBB2232-ICV2232
 Lab FileID: BB073641.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1B.ch Vial: 11
 Signal #2 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1A.ch
 Acq On : 01-Sep-2022, 11:59:24 Operator: FOUADS
 Sample : icv2232-1000 Inst : G1315B
 Misc : op92417,GBB2232,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Sep 02 08:57:41 2022
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

Compound		Amount	Calc.	%Drift	Area%	Dev(min)	RT	Window

		Amount	Calc.	%Drift	-----			
1	TNX	472.000	473.292	-0.3	98	0.00	1.16	1.76
2	HMX	1000.000	1052.933	-5.3	103	0.00	1.35	1.95
3	DNX	1000.000	1015.390	-1.5	98	0.00	1.60	2.20
4	MNX	1166.000	1165.828	0.0	98	0.00	2.29	2.89
5	RDX	1000.000	1032.828	-3.3	101	-0.02	2.89	3.69
6	1,3,5-Trinitrobenzene	1000.000	1032.352	-3.2	102	-0.03	4.88	5.68
7	1,3-Dinitrobenzene	1000.000	1036.865	-3.7	102	-0.03	6.15	6.95
8	3,5-Dinitroaniline	1000.000	1097.506	-9.8	108	-0.04	6.63	7.43
9	Nitrobenzene	1000.000	1048.817	-4.9	103	-0.01	7.87	8.67
		Amount	Calc.	%Drift	-----			
10	Nitroglycerin	-----NA-----						
		Amount	Calc.	%Drift	-----			
11	Tetryl	1000.000	1052.052	-5.2	104	-0.03	10.55	11.35
12	2,4,6-Trinitrotoluene	1000.000	1050.880	-5.1	103	-0.02	10.90	11.70
13	2-Amino-4,6-Dinitrotol	1000.000	1071.801	-7.2	106	-0.04	11.41	12.21
14	4-Amino-2,6-Dinitrotol	1000.000	1100.014	-10.0	108	-0.04	11.95	12.75
15 S	3,4-Dinitrotoluene	-----NA-----						
16	2,4-Dinitrotoluene	1000.000	1000.701	-0.1	101	-0.03	12.96	13.76
17	2,6-Dinitrotoluene	1000.000	1013.932	-1.4	105	-0.03	13.42	14.22
18	o-Nitrotoluene	1000.000	1052.477	-5.2	105	-0.03	16.37	17.25
19	p-Nitrotoluene	1000.000	1055.075	-5.5	104	-0.02	16.72	17.72
20	m-Nitrotoluene	1000.000	1058.502	-5.9	105	-0.02	17.34	18.34
		Amount	Calc.	%Drift	-----			
21	PETN	-----NA-----						

***** Signal #2 *****

----- Amount Calc. %Drift -----							
1 TNX	472.000	479.293	-1.5	99	0.00	1.16	1.76
2 HMX	1000.000	1065.499	-6.5	103	0.00	1.35	1.95
3 DNX	1000.000	1004.753	-0.5	98	0.00	1.60	2.20
4 MNX	1166.000	1170.656	-0.4	98	0.00	2.29	2.89
5 RDX	1000.000	1034.048	-3.4	101	-0.02	2.89	3.69
6 1,3,5-Trinitrobenzene	1000.000	1030.523	-3.1	101	-0.03	4.88	5.68
7 1,3-Dinitrobenzene	1000.000	1083.554	-8.4	100	-0.03	6.15	6.95

Initial Calibration Verification

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Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GBB2232-ICV2232
Lab FileID: BB073641.D

8	3,5-Dinitroaniline								
9	Nitrobenzene	1000.000	1044.237	-4.4	103	-0.01	7.87-	8.67	
10	Nitroglycerin	1000.000	1020.238	-2.0	99	-0.01	9.58-	10.58	
11	Tetryl	1000.000	1023.751	-2.4	102	-0.03	10.55-	11.35	
		Amount	Calc.	%Drift					
12	2,4,6-Trinitrotoluene	1000.000	1020.964	-2.1	102	-0.02	10.90-	11.70	
		Amount	Calc.	%Drift					
13	2-Amino-4,6-Dinitrotol	1000.000	1020.765	-2.1	103	-0.04	11.41-	12.21	
14	4-Amino-2,6-Dinitrotol	1000.000	1030.991	-3.1	103	-0.04	11.95-	12.75	
15 S	3,4-Dinitrotoluene								
16	2,4-Dinitrotoluene	1000.000	1018.948	-1.9	103	-0.03	12.96-	13.76	
17	2,6-Dinitrotoluene	1000.000	1040.757	-4.1	104	-0.03	13.43-	14.23	
		Amount	Calc.	%Drift					
18	o-Nitrotoluene	1000.000	1024.193	-2.4	101	-0.03	16.25-	17.25	
		Amount	Calc.	%Drift					
19	p-Nitrotoluene	1000.000	1031.613	-3.2	104	-0.02	16.72-	17.72	
		Amount	Calc.	%Drift					
20	m-Nitrotoluene	1000.000	1011.429	-1.1	105	-0.02	17.34-	18.34	
		Amount	Calc.	%Drift					
21	PETN	1000.000	1109.024	-10.9	107	-0.02	18.66-	19.86	

(#) = Out of Range
BB073634.D BBB2232_083122.M

SPCC's out = 0 CCC's out = 0
Fri Sep 02 08:58:00 2022

8.7.2
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Continuing Calibration Summary

Page 1 of 2

Job Number: FC2128
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GBB2299-CC2232
 Lab FileID: BB075407.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1A.ch
 Acq On : 26-Jan-2023, 09:46:29 Operator: fouads
 Sample : cc2232-1000 Inst : G1315B
 Misc : op94879,GBB2299,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT	Window

		Amount	Calc.	%Drift				
1	TNX	472.000	505.919	-7.2	105	0.00	1.17	1.77
2	HMX	1000.000	1060.893	-6.1	103	0.00	1.38	1.98
3	DNX	1000.000	1075.347	-7.5	104	0.00	1.62	2.22
4	MNX	1166.000	1246.189	-6.9	105	0.00	2.33	2.93
5	RDX	1000.000	1055.489	-5.5	103	0.00	2.94	3.74
6	1,3,5-Trinitrobenzene	1000.000	1043.798	-4.4	103	0.00	5.01	5.81
7	1,3-Dinitrobenzene	1000.000	1063.260	-6.3	104	0.00	6.29	7.09
8	3,5-Dinitroaniline	1000.000	1060.992	-6.1	104	0.00	6.74	7.54
9	Nitrobenzene	1000.000	1055.451	-5.5	104	0.00	8.12	8.92

		Amount	Calc.	%Drift				
10	Nitroglycerin			NA				

		Amount	Calc.	%Drift				
11	Tetryl	1000.000	1069.442	-6.9	105	0.02	10.93	11.73
12	2,4,6-Trinitrotoluene	1000.000	1091.085	-9.1	107	0.02	11.30	12.10
13	2-Amino-4,6-Dinitrotol	1000.000	1107.805	-10.8	109	0.02	11.70	12.50
14	4-Amino-2,6-Dinitrotol	1000.000	1129.559	-13.0	111	0.02	12.26	13.06
15	S 3,4-Dinitrotoluene	1000.000	1156.624	-15.7#	114	0.01	12.80	13.60
16	2,4-Dinitrotoluene	1000.000	825.337	17.5#	83	0.02	13.36	14.16
17	2,6-Dinitrotoluene	1000.000	1009.297	-0.9	105	0.02	13.82	14.62
18	o-Nitrotoluene	1000.000	1050.789	-5.1	105	0.02	16.73	17.61
19	p-Nitrotoluene	1000.000	1069.945	-7.0	106	0.02	17.03	18.03
20	m-Nitrotoluene	1000.000	1064.838	-6.5	106	0.02	17.61	18.61

		Amount	Calc.	%Drift				
21	PETN			NA				

***** Signal #2 *****

----- Amount Calc. %Drift -----							
1 TNX	472.000	513.979	-8.9	106	0.00	1.17	1.77
2 HMX	1000.000	1067.368	-6.7	103	0.00	1.38	1.98
3 DNX	1000.000	1056.991	-5.7	104	0.00	1.62	2.22
4 MNX	1166.000	1250.353	-7.2	105	0.00	2.33	2.93
5 RDX	1000.000	1059.321	-5.9	104	0.00	2.94	3.74
6 1,3,5-Trinitrobenzene	1000.000	1066.172	-6.6	104	0.00	5.01	5.81
7 1,3-Dinitrobenzene	1000.000	1068.401	-6.8	99	0.00	6.29	7.09

Continuing Calibration Summary

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Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GBB2299-CC2232
Lab FileID: BB075407.D

8	3,5-Dinitroaniline	1000.000	1060.868	-6.1	105	0.00	6.74- 7.54
9	Nitrobenzene	1000.000	1056.780	-5.7	104	0.00	8.12- 8.92
10	Nitroglycerin	1000.000	1091.343	-9.1	106	0.03	9.85-10.85
11	Tetryl	1000.000	1050.482	-5.0	105	0.02	10.93-11.73
----- Amount Calc. %Drift -----							
12	2,4,6-Trinitrotoluene	1000.000	1072.960	-7.3	107	0.02	11.30-12.10
----- Amount Calc. %Drift -----							
13	2-Amino-4,6-Dinitrotol	1000.000	1056.596	-5.7	106	0.02	11.70-12.50
14	4-Amino-2,6-Dinitrotol	1000.000	1041.776	-4.2	104	0.02	12.26-13.06
15 S	3,4-Dinitrotoluene	1000.000	1022.787	-2.3	103	0.01	12.80-13.60
16	2,4-Dinitrotoluene	1000.000	989.034	1.1	100	0.02	13.36-14.16
17	2,6-Dinitrotoluene	1000.000	1038.377	-3.8	104	0.02	13.82-14.62
----- Amount Calc. %Drift -----							
18	o-Nitrotoluene	1000.000	1075.518	-7.6	106	0.02	16.61-17.61
----- Amount Calc. %Drift -----							
19	p-Nitrotoluene	1000.000	1041.335	-4.1	105	0.02	17.03-18.03
----- Amount Calc. %Drift -----							
20	m-Nitrotoluene	1000.000	1022.235	-2.2	106	0.02	17.61-18.61
----- Amount Calc. %Drift -----							
21	PETN	1000.000	1140.305	-14.0	110	0.04	18.84-20.04

(#) = Out of Range

BB073634.D BBB2232_083122.M

SPCC's out = 0 CCC's out = 0

Fri Jan 27 11:22:45 2023

8.7.3

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Continuing Calibration Summary

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Job Number: FC2128
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GBB2299-CC2232
 Lab FileID: BB075419.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1A.ch
 Acq On : 26-Jan-2023, 16:18:55 Operator: fouads
 Sample : cc2232-1000 Inst : G1315B
 Misc : op94879,GBB2299,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

Compound		Amount	Calc.	%Drift	Area%	Dev(min)	RT	Window

		Amount	Calc.	%Drift	-----			
1	TNX	472.000	516.978	-9.5	107	0.00	1.17	1.77
2	HMX	1000.000	1075.474	-7.5	105	0.00	1.38	1.98
3	DNX	1000.000	1102.376	-10.2	107	0.00	1.62	2.22
4	MNX	1166.000	1278.132	-9.6	107	0.00	2.33	2.93
5	RDX	1000.000	1082.375	-8.2	106	0.00	2.94	3.74
6	1,3,5-Trinitrobenzene	1000.000	1069.583	-7.0	105	0.00	5.01	5.81
7	1,3-Dinitrobenzene	1000.000	1087.247	-8.7	107	0.00	6.29	7.09
8	3,5-Dinitroaniline	1000.000	1085.447	-8.5	107	0.02	6.74	7.54
9	Nitrobenzene	1000.000	1092.665	-9.3	107	0.01	8.12	8.92
		Amount	Calc.	%Drift	-----			
10	Nitroglycerin			-----NA-----				
		Amount	Calc.	%Drift	-----			
11	Tetryl	1000.000	1085.424	-8.5	107	0.03	10.93	11.73
12	2,4,6-Trinitrotoluene	1000.000	1116.685	-11.7	110	0.02	11.30	12.10
13	2-Amino-4,6-Dinitrotol	1000.000	1132.340	-13.2	112	0.04	11.70	12.50
14	4-Amino-2,6-Dinitrotol	1000.000	1153.678	-15.4#	114	0.03	12.26	13.06
15	S 3,4-Dinitrotoluene	1000.000	1175.664	-17.6#	116	0.02	12.80	13.60
16	2,4-Dinitrotoluene	1000.000	844.545	15.5#	85	0.03	13.36	14.16
17	2,6-Dinitrotoluene	1000.000	1036.920	-3.7	108	0.03	13.82	14.62
18	o-Nitrotoluene	1000.000	1101.932	-10.2	110	0.02	16.73	17.61
19	p-Nitrotoluene	1000.000	1108.398	-10.8	110	0.02	17.03	18.03
20	m-Nitrotoluene	1000.000	1104.391	-10.4	110	0.02	17.61	18.61
		Amount	Calc.	%Drift	-----			
		-----NA-----						

***** Signal #2 *****

----- Amount Calc. %Drift -----							
1 TNX	472.000	522.205	-10.6	108	0.00	1.17	1.77
2 HMX	1000.000	1092.670	-9.3	106	0.00	1.38	1.98
3 DNX	1000.000	1085.427	-8.5	106	0.00	1.62	2.22
4 MNX	1166.000	1282.846	-10.0	107	0.00	2.33	2.93
5 RDX	1000.000	1086.799	-8.7	107	0.00	2.94	3.74
6 1,3,5-Trinitrobenzene	1000.000	1104.443	-10.4	108	0.00	5.01	5.81
7 1,3-Dinitrobenzene	1000.000	1133.192	-13.3	105	0.00	6.29	7.09

Continuing Calibration Summary

Page 2 of 2

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GBB2299-CC2232
Lab FileID: BB075419.D

8	3,5-Dinitroaniline	1000.000	1090.985	-9.1	108	0.01	6.74- 7.54
9	Nitrobenzene	1000.000	1091.373	-9.1	107	0.01	8.12- 8.92
10	Nitroglycerin	1000.000	1119.012	-11.9	109	0.03	9.85-10.85
11	Tetryl	1000.000	1062.614	-6.3	106	0.03	10.93-11.73
----- Amount Calc. %Drift -----							
12	2,4,6-Trinitrotoluene	1000.000	1097.332	-9.7	110	0.02	11.30-12.10
----- Amount Calc. %Drift -----							
13	2-Amino-4,6-Dinitrotol	1000.000	1077.106	-7.7	109	0.04	11.70-12.50
14	4-Amino-2,6-Dinitrotol	1000.000	1064.038	-6.4	107	0.03	12.26-13.06
15 S	3,4-Dinitrotoluene	1000.000	1037.847	-3.8	104	0.02	12.80-13.60
16	2,4-Dinitrotoluene	1000.000	1007.729	-0.8	102	0.03	13.36-14.16
17	2,6-Dinitrotoluene	1000.000	1016.699	-1.7	102	0.02	13.82-14.62
----- Amount Calc. %Drift -----							
18	o-Nitrotoluene	1000.000	1118.586	-11.9	110	0.02	16.61-17.61
----- Amount Calc. %Drift -----							
19	p-Nitrotoluene	1000.000	1074.239	-7.4	108	0.02	17.03-18.03
----- Amount Calc. %Drift -----							
20	m-Nitrotoluene	1000.000	1056.229	-5.6	110	0.02	17.61-18.61
----- Amount Calc. %Drift -----							
21	PETN	1000.000	1151.762	-15.2#	111	0.03	18.84-20.04

(#) = Out of Range

BB073634.D BBB2232_083122.M

SPCC's out = 0 CCC's out = 0

Fri Jan 27 11:22:46 2023

8.7.4
8

Continuing Calibration Summary

Page 1 of 2

Job Number: FC2128
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GBB2300-CC2232
 Lab FileID: BB075430.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075430.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075430.D\dad1A.ch
 Acq On : 27-Jan-2023, 10:22:59 Operator: fouads
 Sample : cc2232-1000 Inst : G1315B
 Misc : op95139,GBB2300,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 12:18:29 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT	Window

		Amount	Calc.	%Drift				
1	TNX	472.000	515.712	-9.3	107	0.00	1.17	1.77
2	HMX	1000.000	1083.136	-8.3	106	0.00	1.38	1.98
3	DNX	1000.000	1096.743	-9.7	106	0.00	1.62	2.22
4	MNX	1166.000	1268.592	-8.8	106	0.00	2.33	2.93
5	RDX	1000.000	1078.185	-7.8	106	0.00	2.95	3.75
6	1,3,5-Trinitrobenzene	1000.000	1086.269	-8.6	107	0.00	5.02	5.82
7	1,3-Dinitrobenzene	1000.000	1086.051	-8.6	106	0.00	6.31	7.11
8	3,5-Dinitroaniline	1000.000	1081.505	-8.2	106	0.00	6.77	7.57
9	Nitrobenzene	1000.000	1074.052	-7.4	105	0.00	8.14	8.94

		Amount	Calc.	%Drift				
10	Nitroglycerin			NA				

		Amount	Calc.	%Drift				
11	Tetryl	1000.000	1093.567	-9.4	108	0.01	10.99	11.79
12	2,4,6-Trinitrotoluene	1000.000	1108.463	-10.8	109	0.01	11.36	12.16
13	2-Amino-4,6-Dinitrotol	1000.000	1121.497	-12.1	111	0.00	11.77	12.57
14	4-Amino-2,6-Dinitrotol	1000.000	1137.276	-13.7	112	0.00	12.32	13.12
15	3,4-Dinitrotoluene	1000.000	1163.655	-16.4#	115	0.01	12.85	13.65
16	2,4-Dinitrotoluene	1000.000	855.530	14.4	86	0.01	13.41	14.21
17	2,6-Dinitrotoluene	1000.000	1041.000	-4.1	108	0.01	13.88	14.68
18	o-Nitrotoluene	1000.000	1087.092	-8.7	108	0.01	16.77	17.65
19	p-Nitrotoluene	1000.000	1092.844	-9.3	108	0.01	17.06	18.06
20	m-Nitrotoluene	1000.000	1081.896	-8.2	108	0.01	17.64	18.64

		Amount	Calc.	%Drift				
21	PETN			NA				

***** Signal #2 *****

----- Amount Calc. %Drift -----							
1 TNX	472.000	521.688	-10.5	108	0.00	1.17	1.77
2 HMX	1000.000	1090.049	-9.0	106	0.00	1.38	1.98
3 DNX	1000.000	1074.599	-7.5	105	0.00	1.62	2.22
4 MNX	1166.000	1271.331	-9.0	106	0.00	2.33	2.93
5 RDX	1000.000	1082.782	-8.3	106	0.00	2.95	3.75
6 1,3,5-Trinitrobenzene	1000.000	1115.978	-11.6	109	0.00	5.02	5.82
7 1,3-Dinitrobenzene	1000.000	1098.410	-9.8	102	0.00	6.31	7.11

Continuing Calibration Summary

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GBB2300-CC2232
Lab FileID: BB075430.D

8	3,5-Dinitroaniline	1000.000	1056.560	-5.7	105	0.00	6.77- 7.57
9	Nitrobenzene	1000.000	1067.889	-6.8	105	0.00	8.14- 8.94
10	Nitroglycerin	1000.000	1115.796	-11.6	109	0.01	9.90-10.90
11	Tetryl	1000.000	1063.825	-6.4	106	0.01	10.99-11.79
----- Amount Calc. %Drift -----							
12	2,4,6-Trinitrotoluene	1000.000	1089.573	-9.0	109	0.01	11.36-12.16
----- Amount Calc. %Drift -----							
13	2-Amino-4,6-Dinitrotol	1000.000	1073.259	-7.3	108	0.00	11.77-12.57
14	4-Amino-2,6-Dinitrotol	1000.000	1059.879	-6.0	106	0.00	12.32-13.12
15 S	3,4-Dinitrotoluene	1000.000	1040.082	-4.0	105	0.01	12.85-13.65
16	2,4-Dinitrotoluene	1000.000	979.514	2.0	99	0.01	13.41-14.21
17	2,6-Dinitrotoluene	1000.000	1032.159	-3.2	103	0.01	13.88-14.68
----- Amount Calc. %Drift -----							
18	o-Nitrotoluene	1000.000	1095.697	-9.6	108	0.01	16.65-17.65
----- Amount Calc. %Drift -----							
19	p-Nitrotoluene	1000.000	1064.333	-6.4	107	0.01	17.06-18.06
----- Amount Calc. %Drift -----							
20	m-Nitrotoluene	1000.000	1044.091	-4.4	108	0.01	17.64-18.64
----- Amount Calc. %Drift -----							
21	PETN	1000.000	1154.723	-15.5#	111	0.00	18.88-20.08

(#) = Out of Range
BB073634.D BBB2232_083122.M

SPCC's out = 0 CCC's out = 0
Tue Jan 31 12:18:47 2023

8.7.5
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Continuing Calibration Summary

Page 1 of 2

Job Number: FC2128
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GBB2300-ECC2232
 Lab FileID: BB075435.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075435.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075435.D\dad1A.ch
 Acq On : 27-Jan-2023, 14:12:12 Operator: fouads
 Sample : ecc2232-1000 Inst : G1315B
 Misc : op95139,GBB2300,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 12:18:29 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT	Window

		Amount	Calc.	%Drift				
1	TNX	472.000	513.255	-8.7	107	0.00	1.17	1.77
2	HMX	1000.000	1078.642	-7.9	105	0.00	1.38	1.98
3	DNX	1000.000	1086.893	-8.7	105	0.00	1.62	2.22
4	MNX	1166.000	1258.178	-7.9	106	0.00	2.33	2.93
5	RDX	1000.000	1071.595	-7.2	105	0.00	2.95	3.75
6	1,3,5-Trinitrobenzene	1000.000	1077.874	-7.8	106	0.00	5.02	5.82
7	1,3-Dinitrobenzene	1000.000	1078.191	-7.8	106	0.00	6.31	7.11
8	3,5-Dinitroaniline	1000.000	1073.801	-7.4	105	0.00	6.77	7.57
9	Nitrobenzene	1000.000	1073.522	-7.4	105	0.00	8.14	8.94

		Amount	Calc.	%Drift				
10	Nitroglycerin			NA				

		Amount	Calc.	%Drift				
11	Tetryl	1000.000	1084.820	-8.5	107	0.00	10.99	11.79
12	2,4,6-Trinitrotoluene	1000.000	1101.237	-10.1	108	0.00	11.36	12.16
13	2-Amino-4,6-Dinitrotol	1000.000	1112.930	-11.3	110	0.00	11.77	12.57
14	4-Amino-2,6-Dinitrotol	1000.000	1131.215	-13.1	111	0.00	12.32	13.12
15	S 3,4-Dinitrotoluene	1000.000	1153.747	-15.4#	114	0.00	12.85	13.65
16	2,4-Dinitrotoluene	1000.000	854.409	14.6	86	0.00	13.41	14.21
17	2,6-Dinitrotoluene	1000.000	1017.110	-1.7	106	0.00	13.88	14.68
18	o-Nitrotoluene	1000.000	1085.578	-8.6	108	0.00	16.77	17.65
19	p-Nitrotoluene	1000.000	1092.812	-9.3	108	0.00	17.06	18.06
20	m-Nitrotoluene	1000.000	1081.478	-8.1	108	0.00	17.64	18.64

		Amount	Calc.	%Drift				
21	PETN			NA				

***** Signal #2 *****

----- Amount Calc. %Drift -----							
1 TNX	472.000	520.495	-10.3	108	0.00	1.17	1.77
2 HMX	1000.000	1098.788	-9.9	106	0.00	1.38	1.98
3 DNX	1000.000	1071.746	-7.2	105	0.00	1.62	2.22
4 MNX	1166.000	1261.977	-8.2	106	0.00	2.33	2.93
5 RDX	1000.000	1075.750	-7.6	105	0.00	2.95	3.75
6 1,3,5-Trinitrobenzene	1000.000	1045.785	-4.6	102	0.00	5.02	5.82
7 1,3-Dinitrobenzene	1000.000	1082.187	-8.2	100	0.00	6.31	7.11

Continuing Calibration Summary

Page 2 of 2

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GBB2300-ECC2232
Lab FileID: BB075435.D

8	3,5-Dinitroaniline	1000.000	1049.896	-5.0	104	0.00	6.77- 7.57
9	Nitrobenzene	1000.000	1069.545	-7.0	105	0.00	8.14- 8.94
10	Nitroglycerin	1000.000	1101.774	-10.2	107	0.00	9.90-10.90
11	Tetryl	1000.000	1062.765	-6.3	106	0.00	10.99-11.79
----- Amount Calc. %Drift -----							
12	2,4,6-Trinitrotoluene	1000.000	1082.002	-8.2	108	0.00	11.36-12.16
----- Amount Calc. %Drift -----							
13	2-Amino-4,6-Dinitrotol	1000.000	1063.279	-6.3	107	0.00	11.77-12.57
14	4-Amino-2,6-Dinitrotol	1000.000	1051.341	-5.1	105	0.00	12.32-13.12
15 S	3,4-Dinitrotoluene	1000.000	1028.226	-2.8	103	0.00	12.85-13.65
16	2,4-Dinitrotoluene	1000.000	1027.772	-2.8	104	0.00	13.41-14.21
17	2,6-Dinitrotoluene	1000.000	936.703	6.3	94	0.00	13.88-14.68
----- Amount Calc. %Drift -----							
18	o-Nitrotoluene			-----NA-----			
----- Amount Calc. %Drift -----							
19	p-Nitrotoluene	1000.000	1064.193	-6.4	107	0.00	17.06-18.06
----- Amount Calc. %Drift -----							
20	m-Nitrotoluene	1000.000	1043.489	-4.3	108	0.00	17.64-18.64
----- Amount Calc. %Drift -----							
21	PETN	1000.000	1124.614	-12.5	108	0.00	18.88-20.08

(#) = Out of Range

BB073634.D BBB2232_083122.M

SPCC's out = 0 CCC's out = 0

Tue Feb 07 14:49:51 2023

8.7.6
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Initial Calibration Summary

Page 1 of 2

Job Number: FC2128
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GGG3229-ICC3229
 Lab FileID: GG625702.D

Response Factor Report G1315B

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Initial Calibration

Calibration Files

20 =GG625698.D 50 =GG625699.D 100 =GG625700.D 200 =GG625701.D
 500 =GG625697.D 1000=GG625702.D 2500=GG625703.D 5000=GG625704.D

Compound	20	50	100	200	500	1000	2500	5000	Avg	%RSD	
1) TNX	1.094	0.928	0.785	0.882	0.841	0.841	0.838	0.852	0.883	E4	10.74
2) HMX	3.639	3.128	2.492	2.819	2.822	2.753	2.739	2.823	2.902	E3	11.88
3) DNX	8.940	8.514	7.355	7.125	7.182	6.940	6.978	6.887	7.490	E3	10.50
4) MNX	7.199	6.973	5.718	6.438	6.259	6.357	6.252	6.287	6.435	E3	7.14
5) 1,3,5-Trinit	1.102	0.935	0.781	0.874	0.845	0.859	0.845	0.851	0.886	E4	10.91
6) RDX	5.354	4.805	3.700	4.175	4.030	4.114	4.015	4.053	4.281	E3	12.45
7) 1,3-Dinitrob	1.548	1.266	1.086	1.205	1.162	1.178	1.163	1.169	1.222	E4	11.52
8) Nitrobenzene	9.829	8.246	6.906	7.609	7.457	7.498	7.432	7.381	7.795	E3	11.54
9) 2,4,6-Trinit	1.188	0.924	0.786	0.847	0.809	0.829	0.820	0.826	0.879	E4	14.95
10) Nitroglyceri							6.976	6.421	6.698	E1	5.85
11) Tetryl	6.988	6.414	5.716	6.277	5.949	6.289	6.316	6.404	6.294	E3	5.89
12) 3,4-Dinitrot	5.654	5.955	4.945	5.394	5.155	5.314	5.265	5.289	5.371	E3	5.77
13) 2,6-Dinitrot	6.544	6.407	5.321	5.806	5.624	5.763	5.676	5.716	5.857	E3	7.01
14) 2,4-Dinitrot	1.346	1.199	0.985	1.085	1.047	1.069	1.058	1.065	1.107	E4	10.25
15) 3,5-Dinitroa	1.146	1.027	0.854	0.928	0.890	0.908	0.897	0.905	0.944	E4	10.13
16) o-Nitrotolue	5.280	5.247	4.306	4.776	4.642	4.676	4.671	4.664	4.783	E3	6.84
17) p-Nitrotolue	7.021	5.340	4.516	5.034	4.857	4.914	4.866	4.880	5.178	E3	15.03
---- Linear regr., Force(0,0) ---- Coefficient = 1.0000											
Response Ratio = 0.00000 + 4878.13579 *A											
18) 4-Amino-2,6-	7.021	5.340	4.516	5.034	4.857	4.914	4.866	4.880	5.178	E3	15.03
---- Linear regr., Force(0,0) ---- Coefficient = 1.0000											
Response Ratio = 0.00000 + 4878.13579 *A											
19) m-Nitrotolue	5.905	4.829	4.633	4.853	4.839	4.819	4.775	4.806	4.933	E3	8.09
20) 2-Amino-4,6-	1.033	0.926	0.770	0.843	0.806	0.821	0.809	0.807	0.852	E4	10.10
21) PETN							4.814	4.529	4.671	E1	4.32

Signal #2

1) TNX	1.283	0.934	0.795	0.871	0.850	0.858	0.842	0.844	0.910	E4	17.12
---- Quadratic regr., Force(0,0) ---- Coefficient = 1.0000											
Response Ratio = 0.00000 + 8463.21382 *A + -0.00988 *A^2											
2) HMX	3.848	3.021	2.523	2.886	2.862	2.885	2.847	2.859	2.966	E3	12.91
3) DNX	9.438	7.905	6.499	7.226	7.021	7.155	7.034	7.080	7.420	E3	12.15
4) MNX	8.271	6.898	5.655	6.439	6.239	6.356	6.251	6.287	6.549	E3	11.81
5) 1,3,5-Trinit	1.077	0.947	0.783	0.870	0.846	0.859	0.846	0.851	0.885	E4	10.13
6) RDX	5.203	4.846	3.711	4.158	4.031	4.113	4.035	4.056	4.269	E3	11.58
7) 1,3-Dinitrob	1.393	1.021	0.789	0.978	0.928	0.954	0.905	0.872	0.980	E4	18.48
---- Linear regr., Force(0,0) ---- Coefficient = 0.9995											
Response Ratio = 0.00000 + 8817.14222 *A											
8) Nitrobenzene	9.290	8.012	7.184	7.452	8.331	7.466	7.106	6.840	7.710	E3	10.40
9) 2,4,6-Trinit	1.542	1.315	1.186	1.150	1.149	1.116	1.092	1.080	1.204	E4	12.88
10) Nitroglyceri	4.083	3.134	2.448	3.551	3.219	3.000	2.927	2.866	3.153	E3	15.54
---- Linear regr., Force(0,0) ---- Coefficient = 0.9997											

Initial Calibration Summary

Page 2 of 2

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GGG3229-ICC3229
Lab FileID: GG625702.D

Response Ratio = 0.00000 + 2885.45205 *A

11)	Tetryl	1.134	1.015	0.926	1.167	1.108	1.101	1.101	1.094	1.081	E4	7.03
12)	3,4-Dinitrot	0.985	1.024	0.850	1.062	1.027	1.031	1.031	1.021	1.004	E4	6.55
13)	2,6-Dinitrot	7.595	7.790	6.154	7.389	8.041	8.315	8.327	8.302	7.739	E3	9.45
14)	2,4-Dinitrot	9.588	7.874	6.040	6.815	7.287	7.612	7.566	7.511	7.537	E3	13.41
15)	3,5-Dinitroa	1.917	1.584	1.523	1.511	1.497	1.501	1.496	1.497	1.566	E4	9.25
16)	o-Nitrotolue	9.754	8.401	6.509	5.859	6.607	6.615	6.858	6.852	7.182	E3	17.59

---- Linear regr., Force(0,0) ---- Coefficient = 0.9999

Response Ratio = 0.00000 + 6842.78978 *A

17)	p-Nitrotolue	2.013	0.785	0.811	0.894	0.892	0.894	0.896	0.897	1.010	E4	40.36
-----	--------------	-------	-------	-------	-------	-------	-------	-------	-------	-------	----	-------

---- Linear regr., Force(0,0) ---- Coefficient = 1.0000

Response Ratio = 0.00000 + 8967.51685 *A

18)	4-Amino-2,6-	2.013	0.785	0.811	0.894	0.892	0.894	0.896	0.897	1.010	E4	40.36
-----	--------------	-------	-------	-------	-------	-------	-------	-------	-------	-------	----	-------

---- Linear regr., Force(0,0) ---- Coefficient = 1.0000

Response Ratio = 0.00000 + 8967.51685 *A

19)	m-Nitrotolue	9.824	5.795	6.744	7.886	7.960	8.442	8.282	8.280	7.902	E3	15.17
-----	--------------	-------	-------	-------	-------	-------	-------	-------	-------	-------	----	-------

---- Linear regr., Force(0,0) ---- Coefficient = 0.9990

Response Ratio = 0.00000 + 8245.93207 *A

20)	2-Amino-4,6-	0.942	1.117	1.137	1.175	1.148	1.197	1.165	1.158	1.130	E4	7.05
-----	--------------	-------	-------	-------	-------	-------	-------	-------	-------	-------	----	------

21)	PETN	3.358	2.926	4.431	3.113	2.628	2.985	2.950	3.022	3.177	E3	17.18
-----	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	----	-------

---- Linear regr., Force(0,0) ---- Coefficient = 0.9996

Response Ratio = 0.00000 + 3004.68317 *A

(#) = Out of Range ### Number of calibration levels exceeded format ###

GGG3229_013023.M

Tue Jan 31 11:34:17 2023

8.7.7
8

Initial Calibration Verification

Page 1 of 2

Job Number: FC2128
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GGG3229-ICV3229
 Lab FileID: GG625705.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
 Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
 Sample : icv3229-1000 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT	Window
1	TNX	472.000	452.208	4.2	101	0.00	3.72	5.17
2	HMX	1000.000	1042.220	-4.2	110	0.00	4.56	5.56
3	DNX	1000.000	964.850	3.5	104	0.00	4.77	5.77
4	MXN	1166.000	1133.193	2.8	98	0.00	5.92	6.92
5	1,3,5-Trinitrobenzene	1000.000	1019.868	-2.0	105	0.00	6.88	7.88
6	RDX	1000.000	1003.691	-0.4	104	0.02	7.25	8.25
7	1,3-Dinitrobenzene	1000.000	1018.683	-1.9	106	0.01	9.34	10.34
8	Nitrobenzene	1000.000	1013.251	-1.3	105	0.01	10.49	11.49
9	2,4,6-Trinitrotoluene	1000.000	970.179	3.0	103	0.00	11.21	12.21
10	Nitroglycerin			-----NA-----				
11	Tetryl	1000.000	986.124	1.4	99	0.00	12.59	13.59
12 S	3,4-Dinitrotoluene			-----NA-----				
13	2,6-Dinitrotoluene	1000.000	980.543	1.9	100	-0.02	14.31	15.31
14	2,4-Dinitrotoluene	1000.000	1016.080	-1.6	105	-0.02	14.94	15.94
15	3,5-Dinitroaniline	1000.000	1066.198	-6.6	111	-0.02	15.76	16.76
16	o-Nitrotoluene	1000.000	1024.785	-2.5	105	-0.02	16.84	17.84
		----- Amount	Calc.	%Drift	-----			
17	p-Nitrotoluene	2000.000	2090.417	-4.5	104	-0.02	17.83	18.83
18	4-Amino-2,6-Dinitrotol	2000.000	2090.417	-4.5	104	-0.02	17.83	18.83
		----- Amount	Calc.	%Drift	-----			
19	m-Nitrotoluene	1000.000	1031.944	-3.2	106	-0.02	19.19	20.19
20	2-Amino-4,6-Dinitrotol	1000.000	1014.709	-1.5	105	-0.02	19.58	20.58
21	PETN			-----NA-----				

***** Signal #2 *****

		----- Amount	Calc.	%Drift	-----			
1	TNX	472.000	476.755	-1.0	100	0.00	4.16	5.17
		----- Amount	Calc.	%Drift	-----			
2	HMX	1000.000	1038.701	-3.9	107	0.00	4.56	5.56
3	DNX	1000.000	947.561	5.2	98	0.00	4.77	5.77
4	MXN	1166.000	1113.801	4.5	98	0.00	5.92	6.92
5	1,3,5-Trinitrobenzene	1000.000	1021.694	-2.2	105	0.00	6.88	7.88
6	RDX	1000.000	1006.258	-0.6	104	0.02	7.25	8.25
		----- Amount	Calc.	%Drift	-----			
7	1,3-Dinitrobenzene	1000.000	1064.546	-6.5	98	0.01	9.34	10.34

Initial Calibration Verification

Page 2 of 2

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GGG3229-ICV3229
Lab FileID: GG625705.D

		Amount	Calc.	%Drift			
8	Nitrobenzene	1000.000	1020.942	-2.1	105	0.01	10.48-11.48
9	2,4,6-Trinitrotoluene	1000.000	960.539	3.9	104	0.00	11.21-12.21
		Amount	Calc.	%Drift			
10	Nitroglycerin	1000.000	1084.658	-8.5	104	0.00	11.94-12.94
		Amount	Calc.	%Drift			
11	Tetryl	1000.000	1005.767	-0.6	99	0.00	12.59-13.59
12 S	3,4-Dinitrotoluene			NA			
13	2,6-Dinitrotoluene	1000.000	1080.390	-8.0	101	-0.02	14.31-15.31
14	2,4-Dinitrotoluene	1000.000	1051.017	-5.1	104	-0.01	14.94-15.94
15	3,5-Dinitroaniline	1000.000	1072.757	-7.3	112	-0.02	15.76-16.76
		Amount	Calc.	%Drift			
16	o-Nitrotoluene	1000.000	1046.172	-4.6	108	-0.02	16.84-17.84
17	p-Nitrotoluene	2000.000	2078.475	-3.9	104	-0.02	17.81-18.81
18	4-Amino-2,6-Dinitrotol	2000.000	2078.475	-3.9	104	-0.02	17.81-18.81
19	m-Nitrotoluene	1000.000	1052.573	-5.3	103	-0.02	19.19-20.19
		Amount	Calc.	%Drift			
20	2-Amino-4,6-Dinitrotol	1000.000	1090.721	-9.1	103	-0.02	19.58-20.58
		Amount	Calc.	%Drift			
21	PETN	1000.000	1020.922	-2.1	103	-0.03	21.27-22.27

(#) = Out of Range
GG625702.D GGG3229_013023.M

SPCC's out = 0 CCC's out = 0
Tue Jan 31 11:33:35 2023

8.7.8
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Continuing Calibration Summary

Page 1 of 2

Job Number: FC2128
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GGG3229-CC3229
 Lab FileID: GG625715.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1B.ch Vial: 7
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1A.ch
 Acq On : 30-Jan-2023, 21:34:27 Operator: fouads
 Sample : cc3229-1000 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT	Window
1	TNX	472.000	454.238	3.8	101	0.00	3.72-	5.17
2	HMX	1000.000	947.493	5.3	100	0.01	4.56-	5.56
3	DNX	1000.000	958.467	4.2	103	0.01	4.77-	5.77
4	MXN	1166.000	1139.175	2.3	99	0.02	5.92-	6.92
5	1,3,5-Trinitrobenzene	1000.000	962.312	3.8	99	0.01	6.88-	7.88
6	RDX	1000.000	948.730	5.1	99	0.02	7.25-	8.25
7	1,3-Dinitrobenzene	1000.000	961.102	3.9	100	0.02	9.34-	10.34
8	Nitrobenzene	1000.000	937.482	6.3	97	0.02	10.49-	11.49
9	2,4,6-Trinitrotoluene	1000.000	931.815	6.8	99	0.02	11.21-	12.21
10	Nitroglycerin	-----NA-----						
11	Tetryl	1000.000	985.968	1.4	99	0.03	12.59-	13.59
12 S	3,4-Dinitrotoluene	1000.000	990.156	1.0	100	0.03	13.90-	14.90
13	2,6-Dinitrotoluene	1000.000	971.238	2.9	99	0.03	14.31-	15.31
14	2,4-Dinitrotoluene	1000.000	961.365	3.9	100	0.04	14.94-	15.94
15	3,5-Dinitroaniline	1000.000	953.136	4.7	99	0.04	15.76-	16.76
16	o-Nitrotoluene	1000.000	959.700	4.0	98	0.04	16.84-	17.84
----- Amount Calc. %Drift -----								
17	p-Nitrotoluene	2000.000	1998.767	0.1	99	0.04	17.83-	18.83
18	4-Amino-2,6-Dinitrotol	2000.000	1998.767	0.1	99	0.04	17.83-	18.83
----- Amount Calc. %Drift -----								
19	m-Nitrotoluene	1000.000	975.899	2.4	100	0.06	19.19-	20.19
20	2-Amino-4,6-Dinitrotol	1000.000	949.293	5.1	99	0.07	19.58-	20.58
21	PETN	-----NA-----						

***** Signal #2 *****

----- Amount Calc. %Drift -----								
1	TNX	472.000	482.561	-2.2	101	0.00	4.16-	5.17
----- Amount Calc. %Drift -----								
2	HMX	1000.000	979.936	2.0	101	0.01	4.56-	5.56
3	DNX	1000.000	955.639	4.4	99	0.01	4.77-	5.77
4	MXN	1166.000	1121.237	3.8	99	0.02	5.92-	6.92
5	1,3,5-Trinitrobenzene	1000.000	964.004	3.6	99	0.01	6.88-	7.88
6	RDX	1000.000	951.222	4.9	99	0.02	7.25-	8.25
----- Amount Calc. %Drift -----								
7	1,3-Dinitrobenzene	1000.000	1085.308	-8.5	100	0.02	9.34-	10.34

Continuing Calibration Summary

Page 2 of 2

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GGG3229-CC3229
Lab FileID: GG625715.D

		Amount	Calc.	%Drift			
8	Nitrobenzene	1000.000	963.530	3.6	100	0.02	10.48-11.48
9	2,4,6-Trinitrotoluene	1000.000	959.341	4.1	103	0.02	11.21-12.21
		Amount	Calc.	%Drift			
10	Nitroglycerin	1000.000	1064.652	-6.5	102	0.02	11.94-12.94
		Amount	Calc.	%Drift			
11	Tetryl	1000.000	1029.109	-2.9	101	0.03	12.59-13.59
12 S	3,4-Dinitrotoluene	1000.000	1036.244	-3.6	101	0.03	13.90-14.90
13	2,6-Dinitrotoluene	1000.000	1076.999	-7.7	100	0.03	14.31-15.31
14	2,4-Dinitrotoluene	1000.000	1001.146	-0.1	99	0.04	14.94-15.94
15	3,5-Dinitroaniline	1000.000	953.575	4.6	99	0.04	15.76-16.76
		Amount	Calc.	%Drift			
16	o-Nitrotoluene	1000.000	975.704	2.4	101	0.04	16.84-17.84
17	p-Nitrotoluene	2000.000	1980.939	1.0	99	0.04	17.81-18.81
18	4-Amino-2,6-Dinitrotol	2000.000	1980.939	1.0	99	0.04	17.81-18.81
19	m-Nitrotoluene	1000.000	982.580	1.7	96	0.06	19.19-20.19
		Amount	Calc.	%Drift			
20	2-Amino-4,6-Dinitrotol	1000.000	1028.348	-2.8	97	0.07	19.58-20.58
		Amount	Calc.	%Drift			
21	PETN	1000.000	908.411	9.2	91	0.04	21.27-22.27

(#) = Out of Range
GG625702.D GGG3229_013023.M

SPCC's out = 0 CCC's out = 0
Tue Jan 31 11:33:36 2023

8.7.9
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Run Sequence Report

Page 1 of 1

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Run ID: GBB2232	Method: SW846 8330A	Instrument ID: GCBB
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
GBB2232-IC2232	BB073629.D	08/31/22 09:43	n/a	Initial cal 20
GBB2232-IC2232	BB073630.D	08/31/22 10:14	n/a	Initial cal 50
GBB2232-IC2232	BB073631.D	08/31/22 10:45	n/a	Initial cal 100
GBB2232-IC2232	BB073632.D	08/31/22 11:16	n/a	Initial cal 200
GBB2232-IC2232	BB073633.D	08/31/22 11:58	n/a	Initial cal 500
GBB2232-ICC2232	BB073634.D	08/31/22 12:29	n/a	Initial cal 1000
GBB2232-IC2232	BB073635.D	08/31/22 13:00	n/a	Initial cal 2500
GBB2232-IC2232	BB073636.D	08/31/22 13:31	n/a	Initial cal 5000
GBB2232-ICV2232	BB073641.D	09/01/22 11:59	n/a	Initial cal verification 1000

8.8.1

8

Run Sequence Report

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Run ID: GBB2299	Method: SW846 8330A	Instrument ID: GCBB
------------------------	----------------------------	----------------------------

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
GBB2299-CC2232	BB075407.D	01/26/23 09:46	n/a	Continuing cal 1000
OP95126-TRP	BB075408.D	01/26/23 10:27	OP95126	Duplicate
JD58805-3A	BB075409.D	01/26/23 10:58	OP95127	(used for QC only; not part of job FC2128)
OP95127-MSD	BB075410.D	01/26/23 11:29	OP95127	Matrix Spike Duplicate
FC1992-1	BB075411.D	01/26/23 12:02	OP95126	(used for QC only; not part of job FC2128)
OP95139-MB	BB075412.D	01/26/23 12:33	OP95139	Method Blank
OP95139-MB	BB075412.D	01/26/23 12:33	OP95139	Method Blank
OP95139-BS	BB075413.D	01/26/23 13:04	OP95139	Blank Spike
OP95139-BS	BB075413.D	01/26/23 13:04	OP95139	Blank Spike
FC2128-1	BB075414.D	01/26/23 13:44	OP95139	54MW13
OP95139-MS	BB075415.D	01/26/23 14:14	OP95139	Matrix Spike
OP95139-MS	BB075415.D	01/26/23 14:14	OP95139	Matrix Spike
OP95139-MSD	BB075416.D	01/26/23 14:45	OP95139	Matrix Spike Duplicate
OP95139-MSD	BB075416.D	01/26/23 14:45	OP95139	Matrix Spike Duplicate
GBB2299-CC2232	BB075419.D	01/26/23 16:18	n/a	Continuing cal 1000
ZZZZZZ	BB075421.D	01/26/23 17:20	OP95139	(unrelated sample)
ZZZZZZ	BB075422.D	01/26/23 17:51	OP95139	(unrelated sample)
ZZZZZZ	BB075423.D	01/26/23 18:22	OP95139	(unrelated sample)
ZZZZZZ	BB075424.D	01/26/23 18:53	OP95139	(unrelated sample)
ZZZZZZ	BB075425.D	01/26/23 19:24	OP95139	(unrelated sample)
GBB2299-ECC2232	BB075428.D	01/26/23 20:57	n/a	Ending cal 1000

Run Sequence Report

Page 1 of 1

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Run ID: GBB2300	Method: SW846 8330B	Instrument ID: GCBB
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
GBB2300-CC2232	BB075430.D	01/27/23 10:22	n/a	Continuing cal 1000
FC2128-2	BB075431.D	01/27/23 11:05	OP95139	54TW13
FC2128-3	BB075432.D	01/27/23 11:36	OP95139	54MW10
ZZZZZZ	BB075433.D	01/27/23 12:07	OP95139	(unrelated sample)
GBB2300-ECC2232	BB075435.D	01/27/23 14:12	n/a	Ending cal 1000

8.8.3

8

Run Sequence Report

Job Number: FC2128
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Run ID: GGG3229	Method: SW846 8330B	Instrument ID: GCGG
------------------------	----------------------------	----------------------------

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
GGG3229-IC3229	GG625697.D	01/30/23 11:54	n/a	Initial cal 500
GGG3229-IC3229	GG625698.D	01/30/23 12:37	n/a	Initial cal 20
GGG3229-IC3229	GG625699.D	01/30/23 13:08	n/a	Initial cal 50
GGG3229-IC3229	GG625700.D	01/30/23 13:40	n/a	Initial cal 100
GGG3229-IC3229	GG625701.D	01/30/23 14:11	n/a	Initial cal 200
GGG3229-ICC3229	GG625702.D	01/30/23 14:45	n/a	Initial cal 1000
GGG3229-IC3229	GG625703.D	01/30/23 15:17	n/a	Initial cal 2500
GGG3229-IC3229	GG625704.D	01/30/23 15:48	n/a	Initial cal 50000
GGG3229-ICV3229	GG625705.D	01/30/23 16:19	n/a	Initial cal verification 1000
OP95139-MB	GG625706.D	01/30/23 16:51	OP95139	Method Blank
FC2128-1	GG625707.D	01/30/23 17:22	OP95139	54MW13
FC2128-2	GG625708.D	01/30/23 17:54	OP95139	54TW13
FC2128-3	GG625709.D	01/30/23 18:25	OP95139	54MW10
ZZZZZZ	GG625710.D	01/30/23 18:57	OP95139	(unrelated sample)
ZZZZZZ	GG625711.D	01/30/23 19:28	OP95139	(unrelated sample)
ZZZZZZ	GG625712.D	01/30/23 20:00	OP95139	(unrelated sample)
ZZZZZZ	GG625713.D	01/30/23 20:31	OP95139	(unrelated sample)
GGG3229-CC3229	GG625715.D	01/30/23 21:34	n/a	Continuing cal 1000
OP95195-MB	GG625716.D	01/30/23 22:05	OP95195	Method Blank
ZZZZZZ	GG625717.D	01/30/23 22:37	OP95195	(unrelated sample)
ZZZZZZ	GG625718.D	01/30/23 23:08	OP95195	(unrelated sample)
ZZZZZZ	GG625719.D	01/30/23 23:40	OP95195	(unrelated sample)
FC2200-1	GG625720.D	01/31/23 00:11	OP95195	(used for QC only; not part of job FC2128)
ZZZZZZ	GG625721.D	01/31/23 00:43	OP95195	(unrelated sample)
GGG3229-ECC3229	GG625723.D	01/31/23 10:13	n/a	Ending cal 1000



Orlando, FL

Section 9

GC/LC Semi-volatiles

Raw Data

6

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075414.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075414.D\dad1A.ch
Acq On : 26-Jan-2023, 13:44:00 Operator: fouads
Sample : fc2128-1 Inst : G1315B
Misc : op95139,GBB2299,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 15:11:08 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Initial Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.22	13.22	1065542	1796983	497.354	422.952
Spiked Amount	500.000	Range	70 - 136	Recovery	=	99.47% 84.59%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	1.68	1.68	452890	1374639	305.872	336.078
3) DNX	0.00	0.00	0	0	N.D. d	N.D. d
4) MNX	0.00	0.00	0	0	N.D.	N.D.
5) RDX	3.33	3.33	168984	263709	91.098	90.021
6) 1,3,5-Trinitrobe	5.40	5.40	4699053	7424299	1181.967	1192.713
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D. d	N.D. d
8) 3,5-Dinitroanili	7.14	7.14	154485	272970	39.251	41.768m
9) Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
12) 2,4,6-Trinitroto	11.73	11.72	1813583	2336590	496.162	524.749m
13) 2-Amino-4,6-Dini	12.13	12.13	525234	695310	166.184	140.799
14) 4-Amino-2,6-Dini	12.68	12.68	283309	452896	123.361	92.154
16) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
17) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D. d	N.D. d
18) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
19) p-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
20) m-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
21) PETN	0.00	0.00	0	0	N.D. d	N.D. d

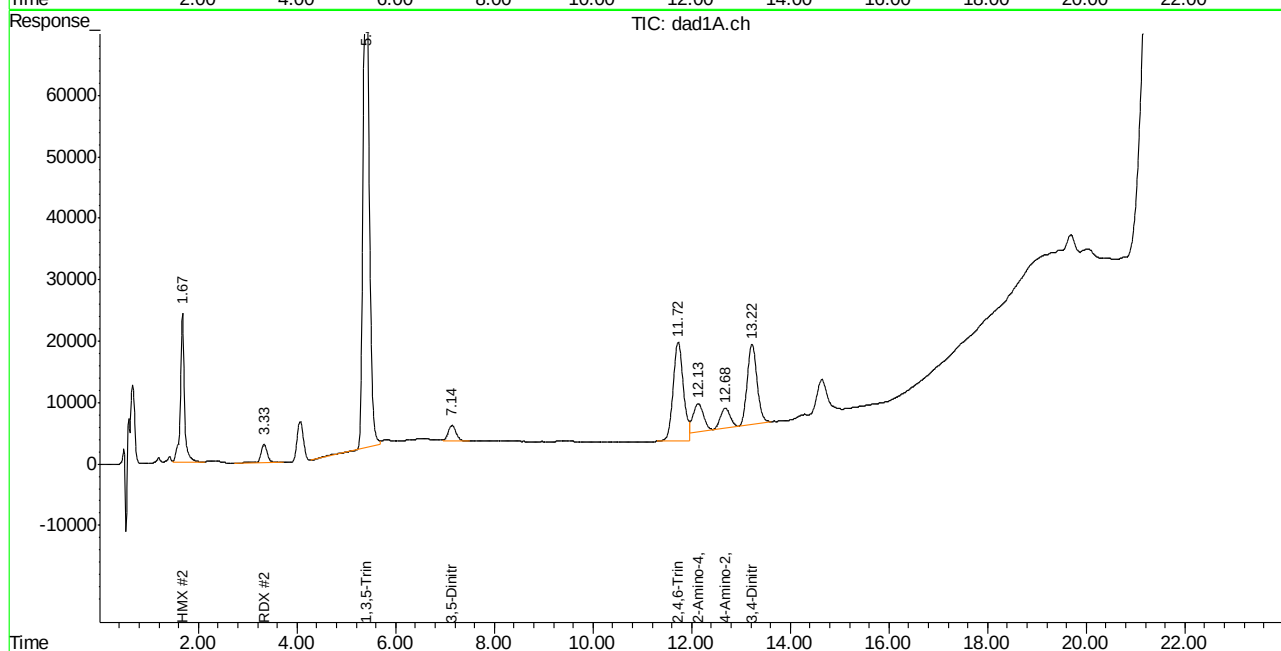
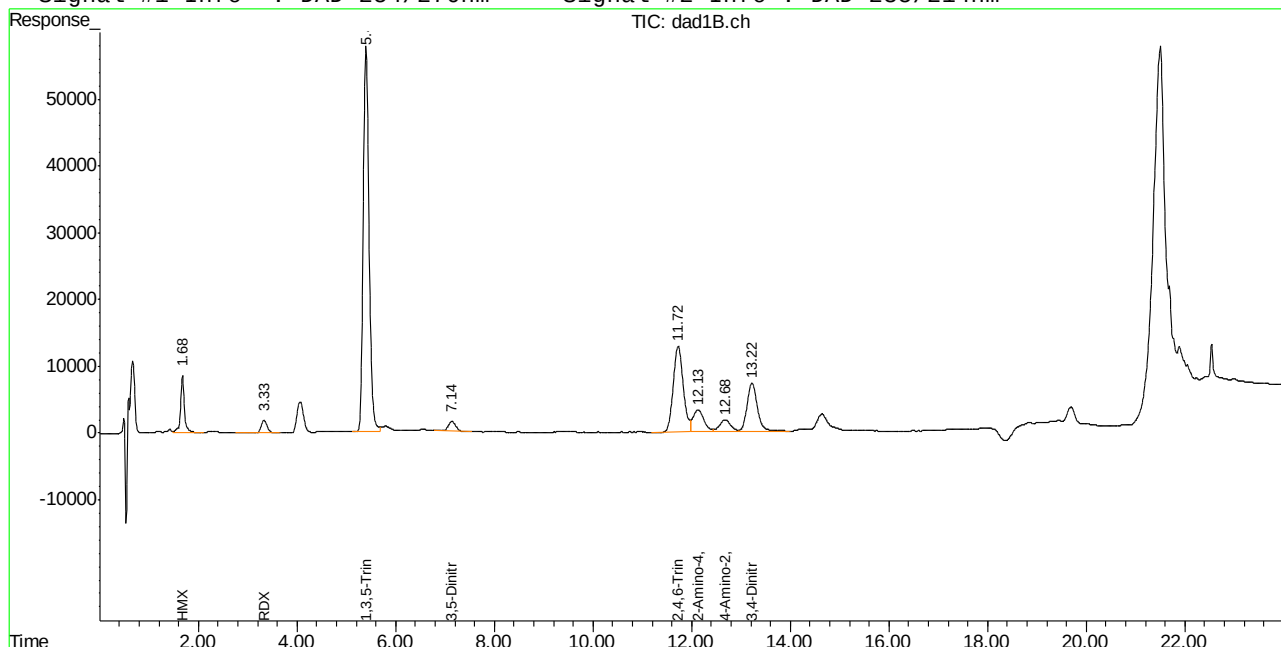
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
BB075414.D BBB2232_083122.M Tue Jan 31 11:47:17 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075414.D\dad1B.ch Vial: 9
 Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075414.D\dad1A.ch
 Acq On : 26-Jan-2023, 13:44:00 Operator: fouads
 Sample : fc2128-1 Inst : G1315B
 Misc : op95139,GBB2299,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 31 8:45 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Multiple Level Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

FC2128-1

Method:

SW846 8330B

Lab FileID:

BB075414.D

Analyst approved:

01/31/23 11:54 Fouad Sekkar

Injection Time:

01/26/23 13:44

Supervisor approved:

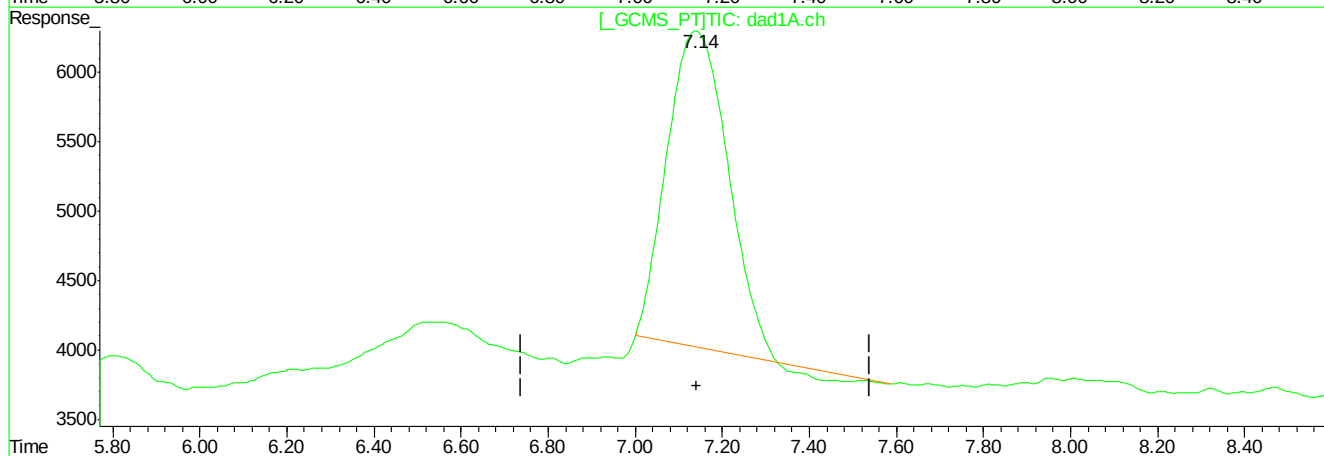
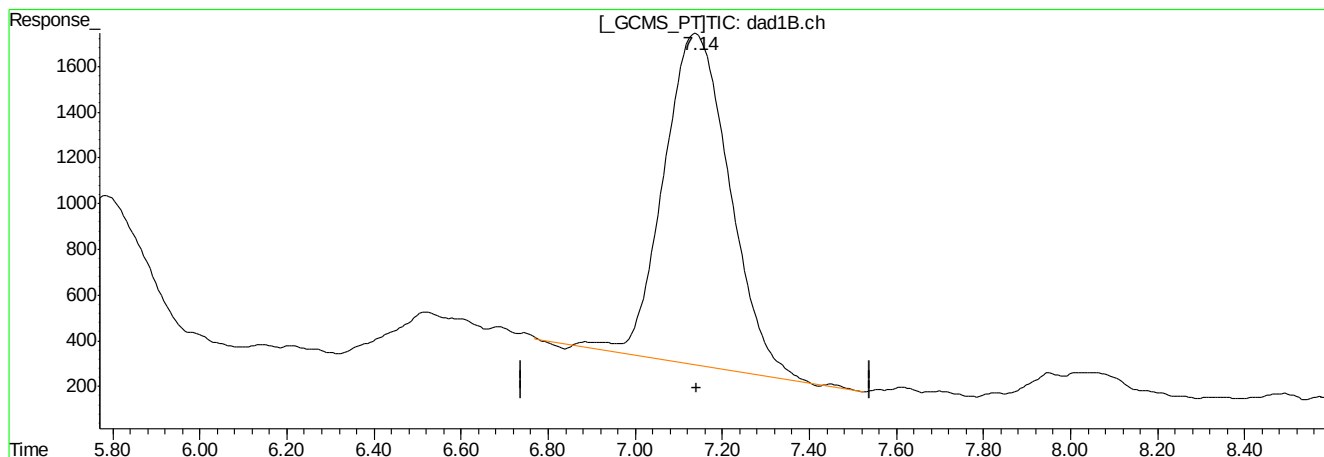
01/31/23 12:26 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	2	7.14	Poor instrument integration
2,4,6-Trinitrotoluene	118-96-7	2	11.72	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075414.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075414.D\dad1A.ch
Acq On : 26-Jan-2023, 13:44:00 Operator: fouads
Sample : fc2128-1 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 15:11 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.14min 39.251ppb

response 154485

(8) 3,5-Dinitroaniline #2

7.14min 33.420ppb

response 218413

(+) = Expected Retention Time

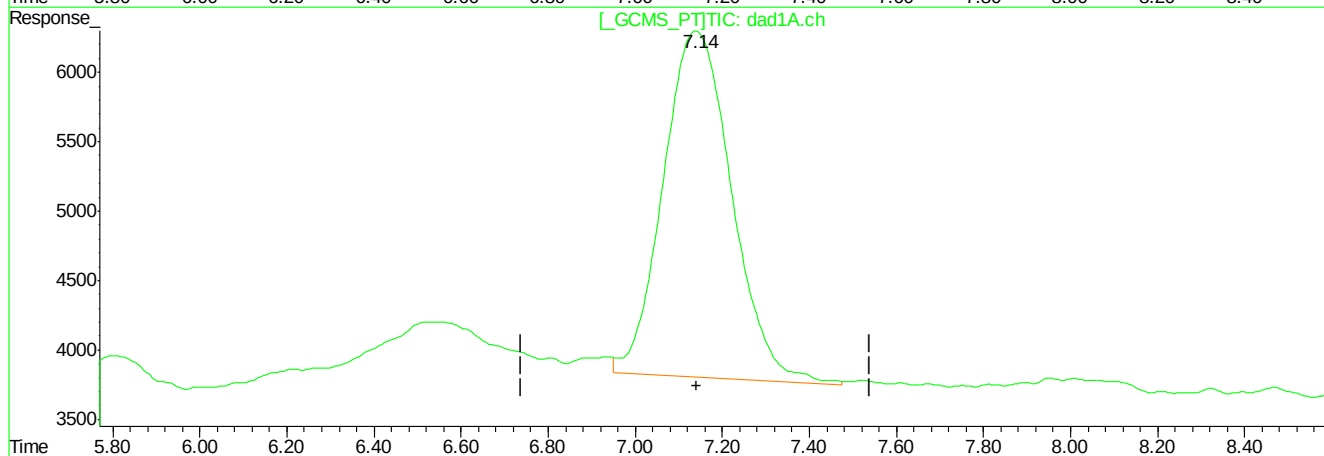
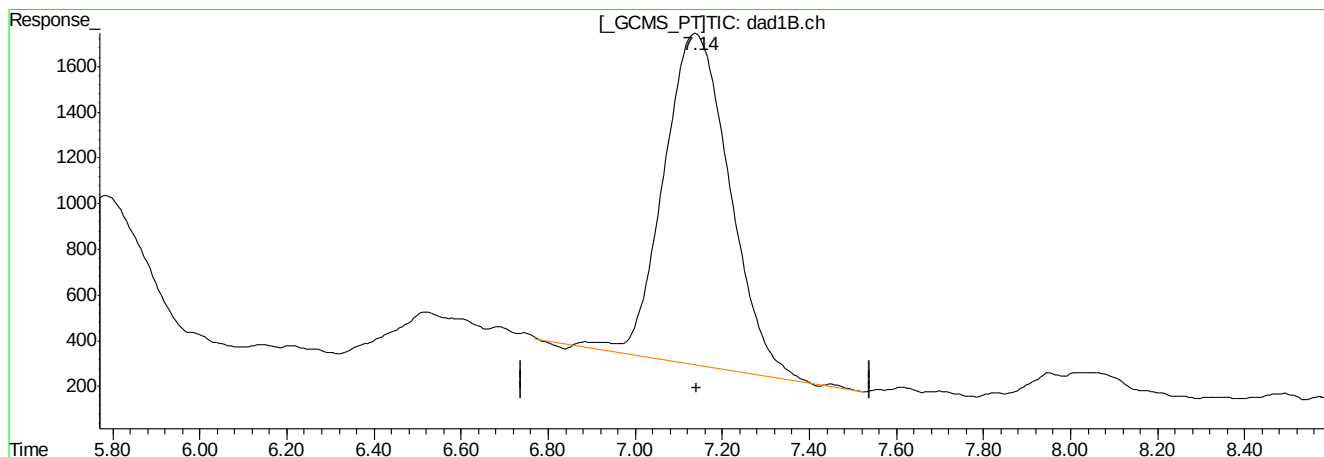
BB075414.D BBB2232_083122.M

Fri Jan 27 08:24:31 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075414.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075414.D\dad1A.ch
Acq On : 26-Jan-2023, 13:44:00 Operator: fouads
Sample : fc2128-1 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 15:11 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.14min 39.251ppb

response 154485

(8) 3,5-Dinitroaniline #2

7.14min 41.768ppb m

response 272970

(+) = Expected Retention Time

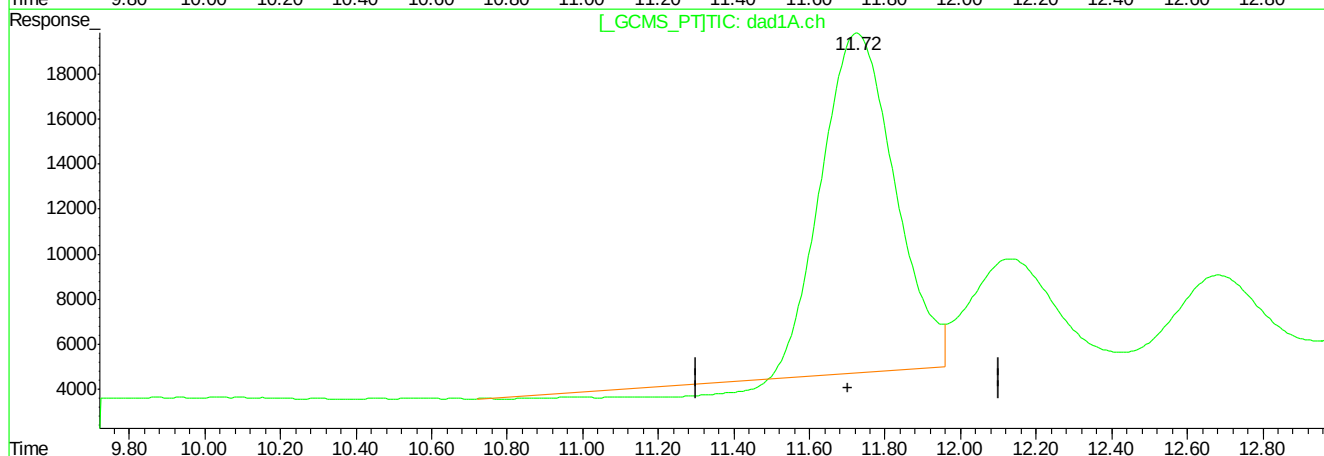
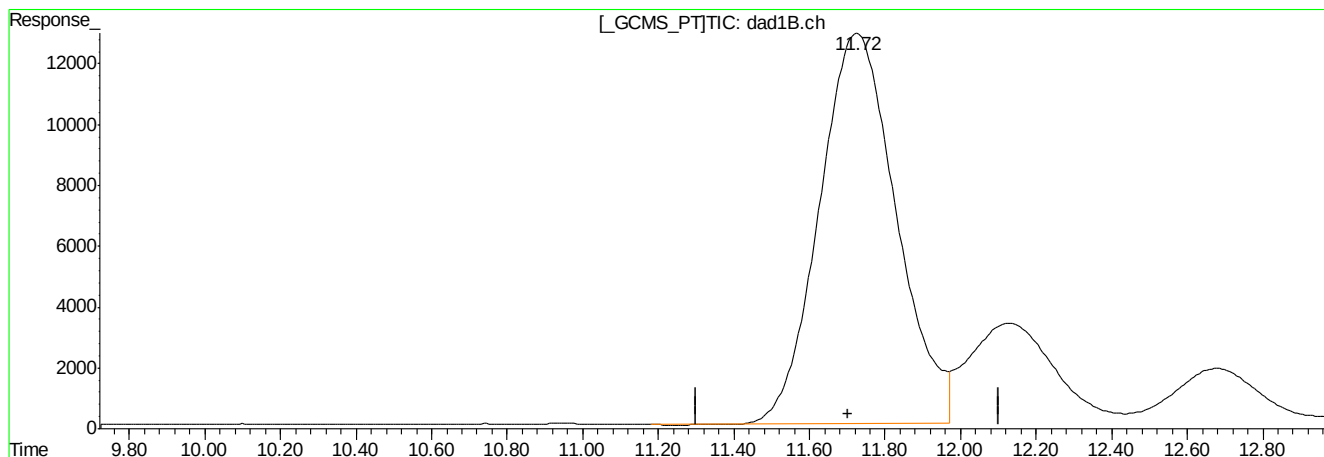
BB075414.D BBB2232_083122.M

Fri Jan 27 08:24:37 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075414.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075414.D\dad1A.ch
Acq On : 26-Jan-2023, 13:44:00 Operator: fouads
Sample : fc2128-1 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 15:11 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(12) 2,4,6-Trinitrotoluene

11.73min 496.162ppb

response 1813583

(12) 2,4,6-Trinitrotoluene #2

11.73min 427.068ppb

response 1901639

(+) = Expected Retention Time

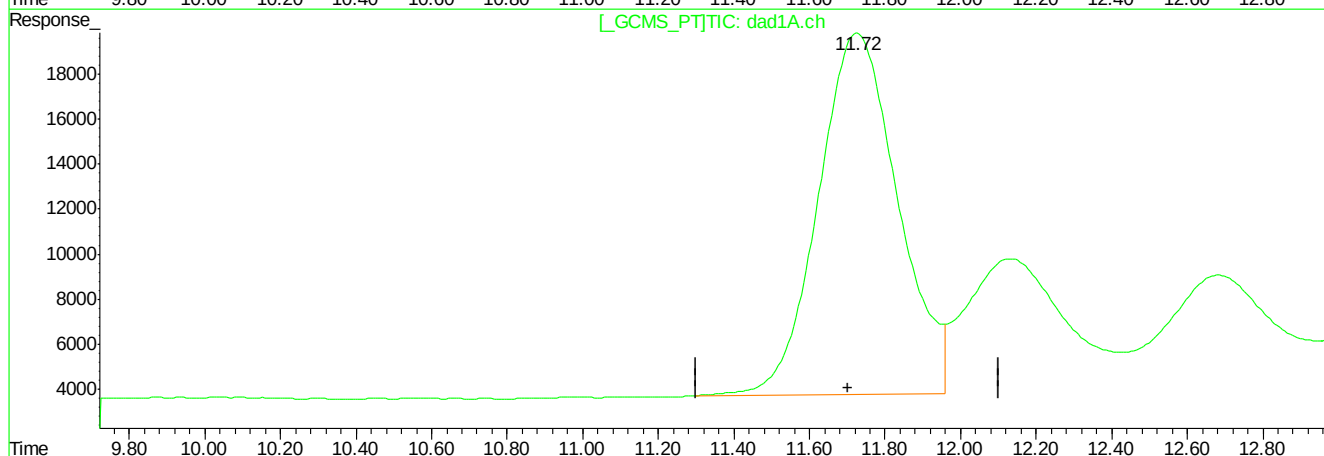
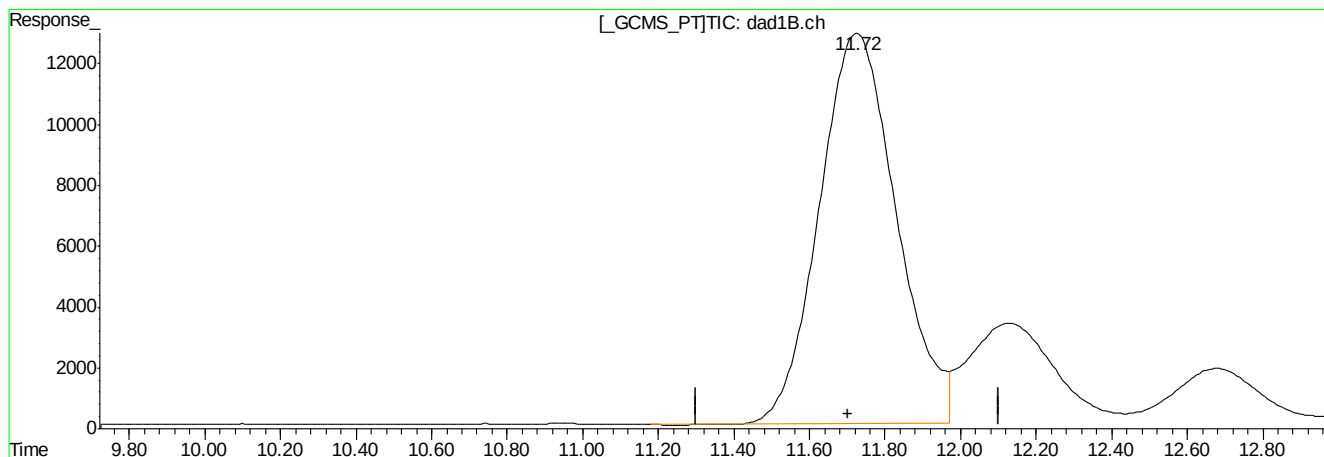
BB075414.D BBB2232_083122.M

Fri Jan 27 08:24:45 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075414.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075414.D\dad1A.ch
Acq On : 26-Jan-2023, 13:44:00 Operator: fouads
Sample : fc2128-1 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 15:11 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(12) 2,4,6-Trinitrotoluene

11.73min 496.162ppb

response 1813583

(12) 2,4,6-Trinitrotoluene #2

11.72min 524.749ppb m

response 2336590

(+) = Expected Retention Time

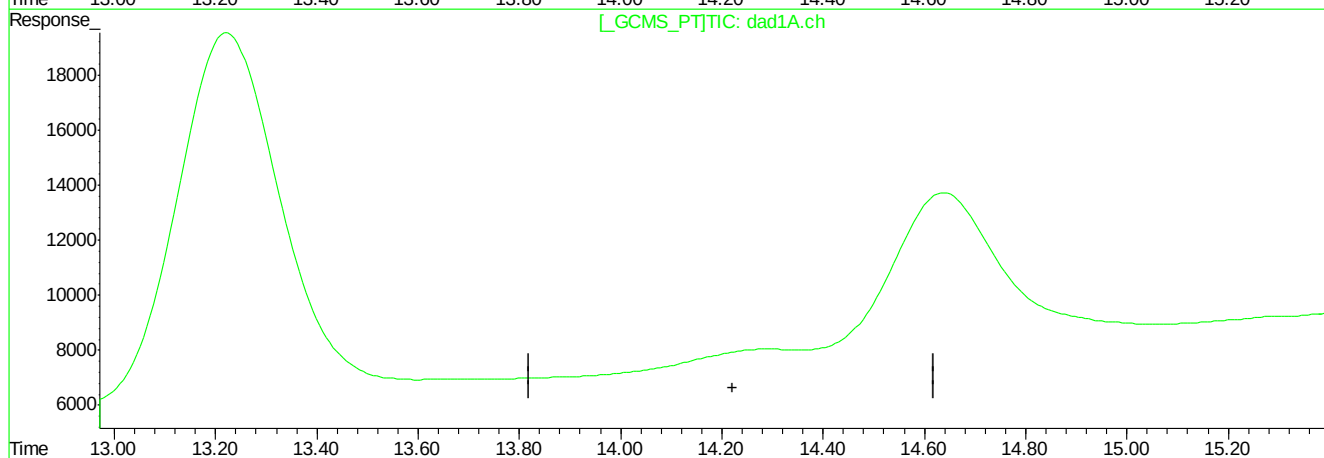
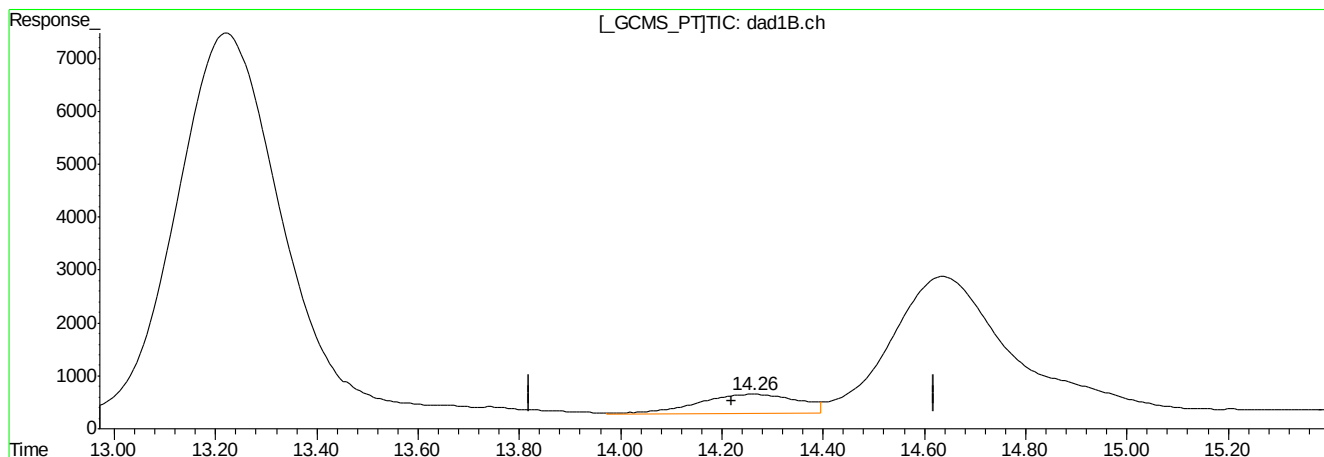
BB075414.D BBB2232_083122.M

Fri Jan 27 08:24:56 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075414.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075414.D\dad1A.ch
Acq On : 26-Jan-2023, 13:44:00 Operator: fouads
Sample : fc2128-1 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 15:11 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

14.27min 33.208ppb

response 50419

(17) 2,6-Dinitrotoluene #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

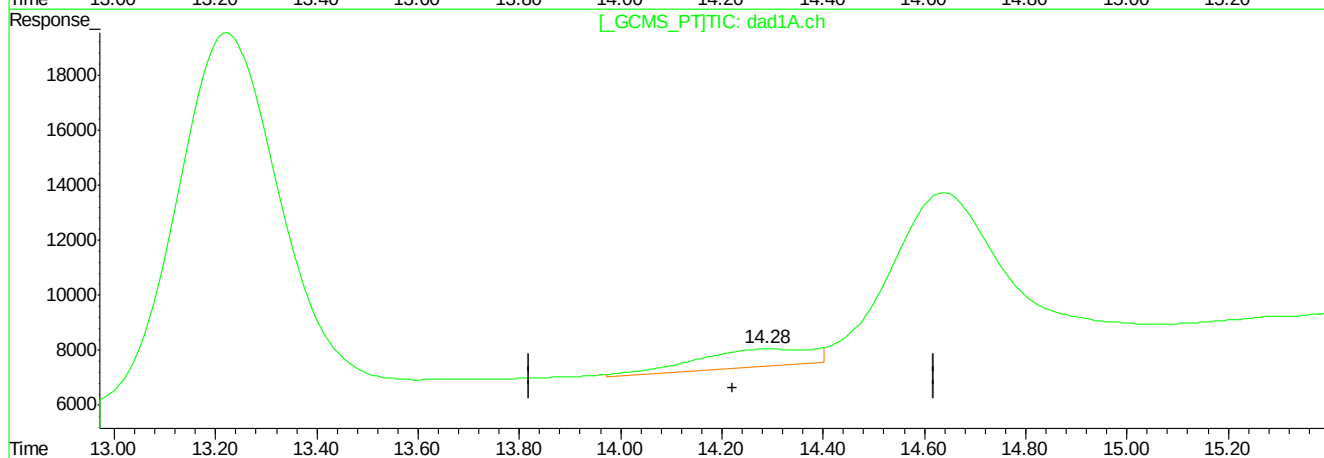
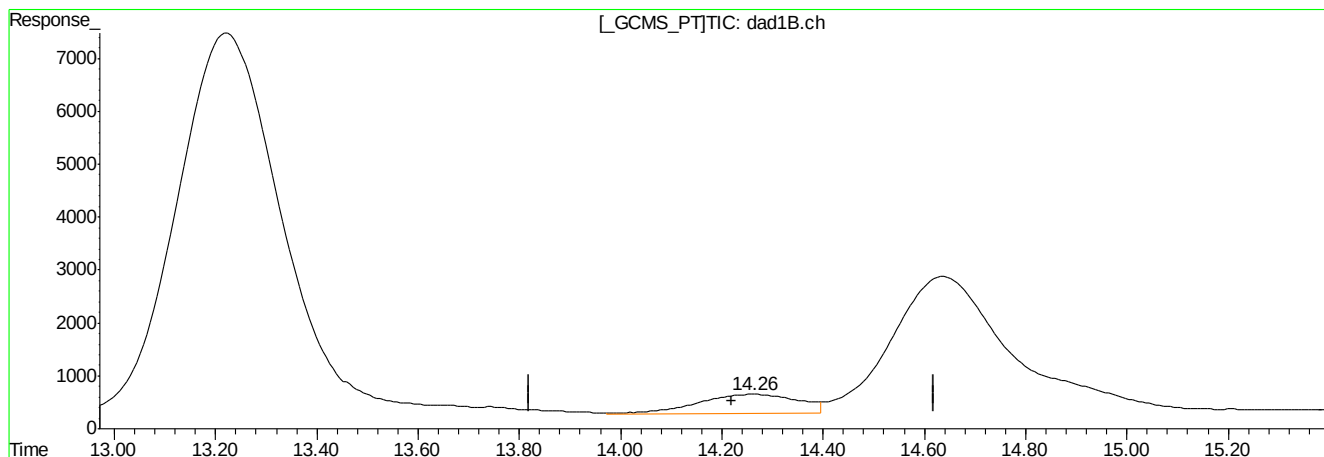
BB075414.D BBB2232_083122.M

Fri Jan 27 08:25:12 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075414.D\dad1B.ch Vial: 9
 Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075414.D\dad1A.ch
 Acq On : 26-Jan-2023, 13:44:00 Operator: fouads
 Sample : fc2128-1 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 26 15:11 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

14.27min 33.208ppb

response 50419

(17) 2,6-Dinitrotoluene #2

14.28min 29.877ppb m

response 104764

(+) = Expected Retention Time

BB075414.D BBB2232_083122.M

Fri Jan 27 08:25:19 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625707.D\dad1B.ch Vial: 12
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625707.D\dad1A.ch
 Acq On : 30-Jan-2023, 17:22:52 Operator: fouads
 Sample : fc2128-1 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 08:38:31 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.34	14.34	2646096	5010236	492.636	499.175
Spiked Amount	500.000	Range	70 - 136	Recovery	=	98.53% 99.84%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	5.05	5.05	932570	976109	321.384m	329.046
3) DNX	0.00	0.00	0	0	N.D. d	N.D. d
4) MNX	0.00	0.00	0	0	N.D. d	N.D. d
5) 1,3,5-Trinitrobe	7.36	7.36	10929063	10904414	1232.868m	1232.172m
6) RDX	7.63	7.62	487571	421482	113.895m	98.728m
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D. d	N.D. d
8) Nitrobenzene	0.00	0.00	0	0	N.D. d	N.D. d
9) 2,4,6-Trinitroto	11.67	11.67	4144935	5595474	471.772	464.855
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
13) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
14) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
15) 3,5-Dinitroanili	16.24	16.25	1580815	2860368	167.418	182.676
16) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
17) p-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
18) 4-Amino-2,6-Dini	18.17	18.18	686700	1292678	140.771	144.151m
19) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20) 2-Amino-4,6-Dini	20.03	20.03	1407209	1917094	165.182	169.703
21) PETN	0.00	0.00	0	0	N.D.	N.D.

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625707.D GGG3229_013023.M Tue Jan 31 11:32:49 2023

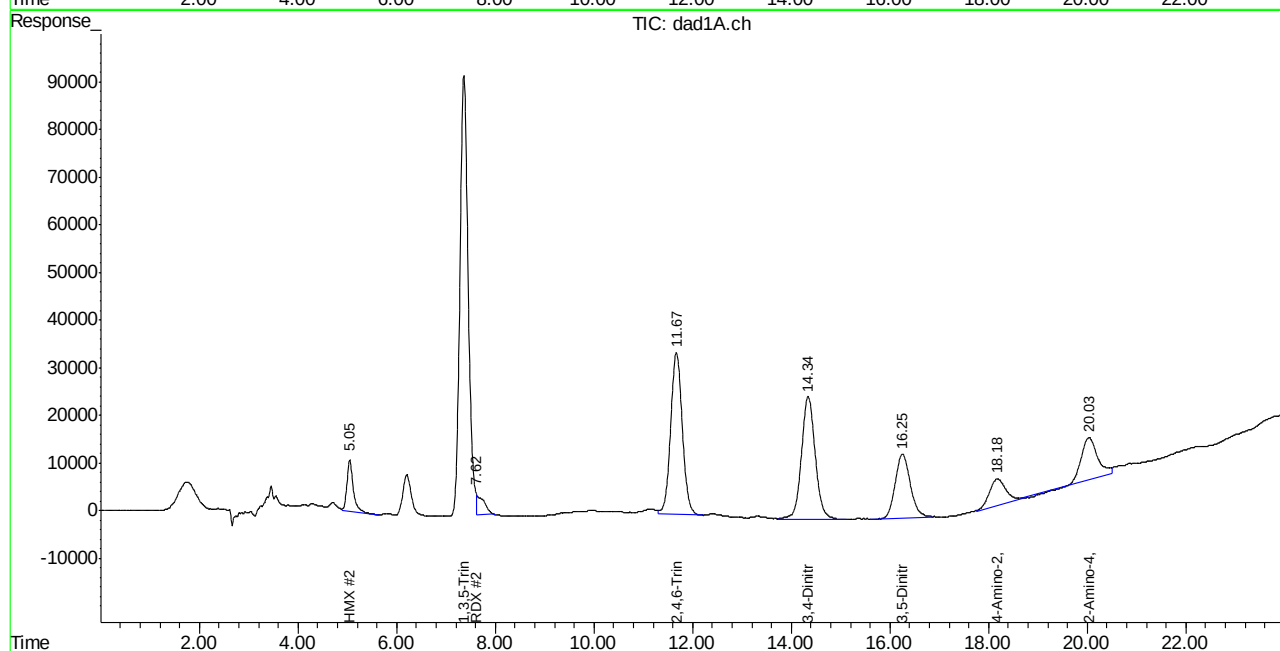
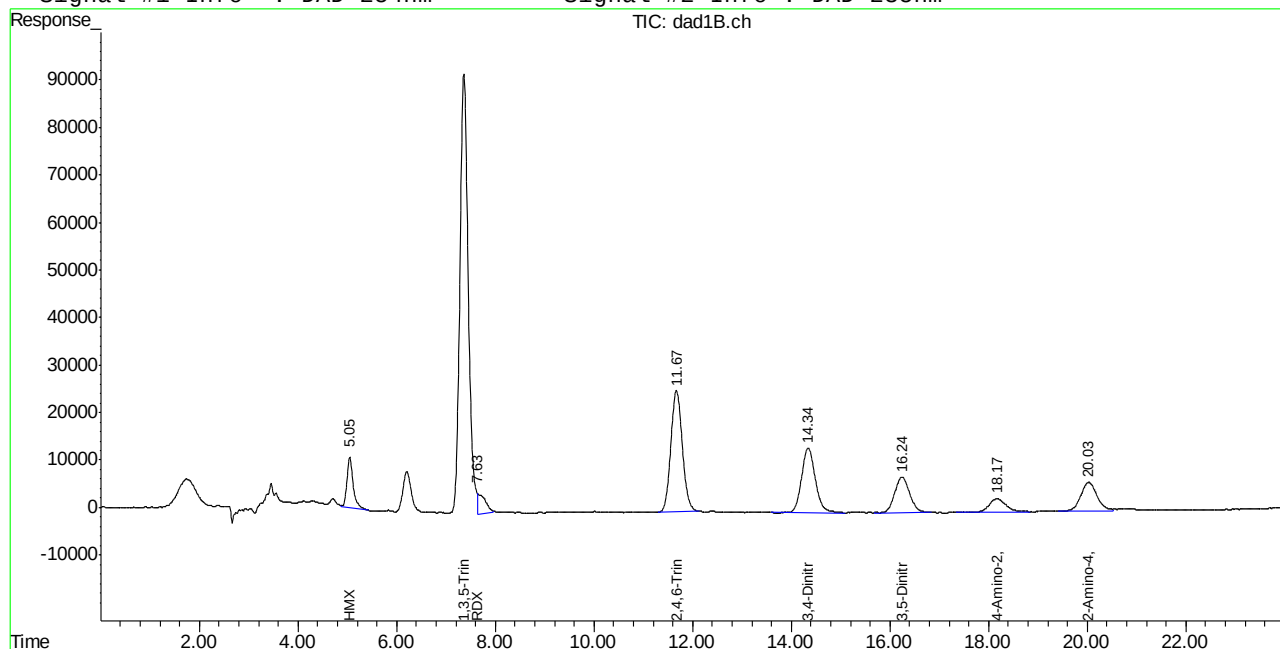
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625707.D\dad1B.ch Vial: 12
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625707.D\dad1A.ch
Acq On : 30-Jan-2023, 17:22:52 Operator: fouads
Sample : fc2128-1 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:47 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number:

FC2128-1

Method:

SW846 8330B

Lab FileID:

GG625707.D

Analyst approved:

01/31/23 11:38 Fouad Sekkar

Injection Time:

01/30/23 17:22

Supervisor approved:

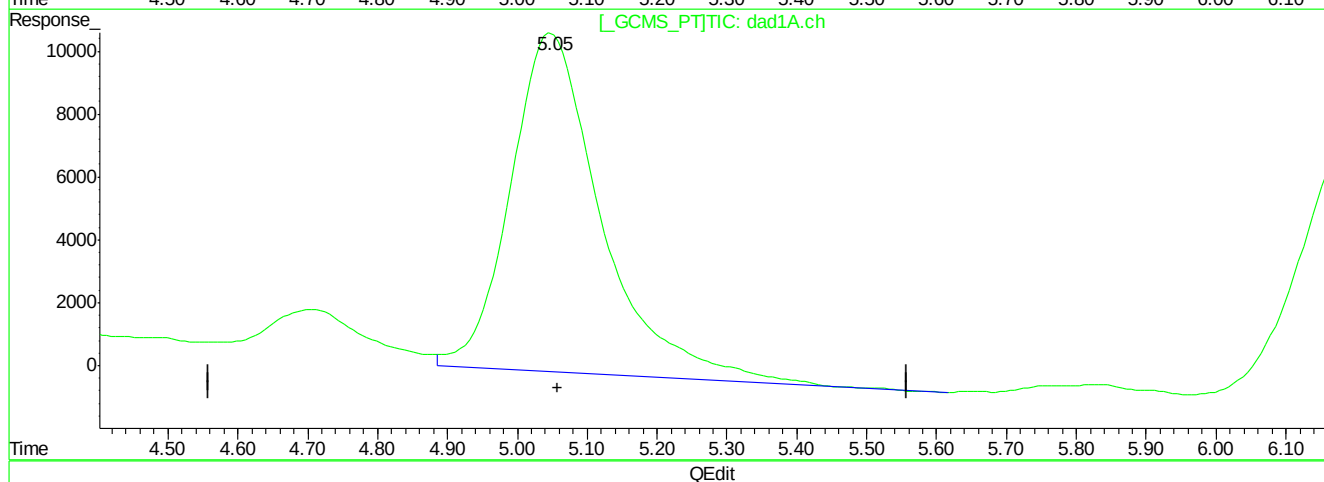
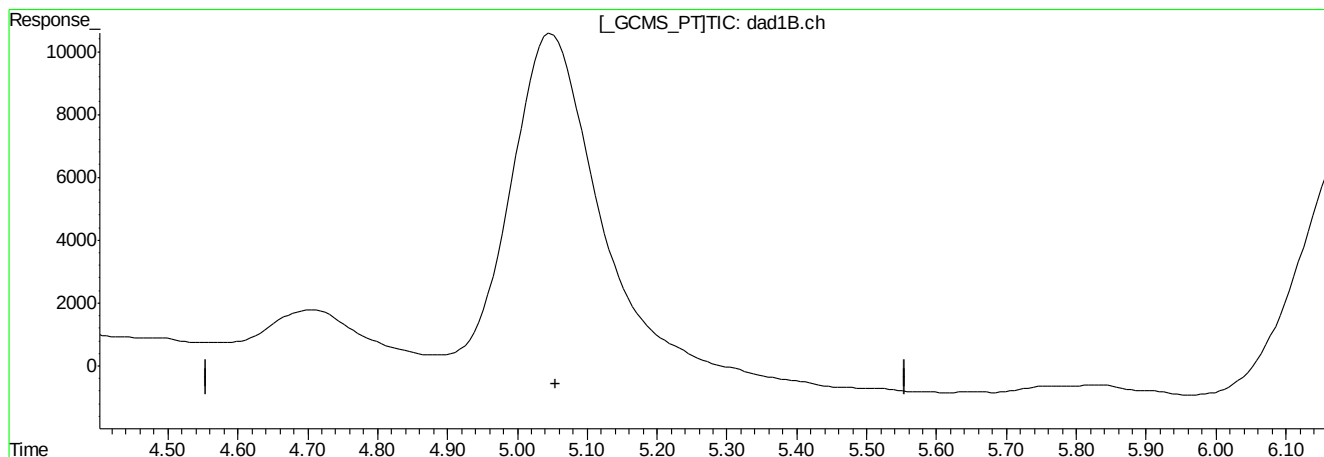
01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
HMX	2691-41-0	1	5.05	Poor instrument integration
1,3,5-Trinitrobenzene	99-35-4	1	7.36	Poor instrument integration
1,3,5-Trinitrobenzene	99-35-4	2	7.36	Poor instrument integration
RDX	121-82-4	2	7.62	Poor instrument integration
RDX	121-82-4	1	7.63	Poor instrument integration
4-amino-2,6-Dinitrotoluene	19406-51-0	2	18.18	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625707.D\dad1B.ch Vial: 12
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625707.D\dad1A.ch
Acq On : 30-Jan-2023, 17:22:52 Operator: fouads
Sample : fc2128-1 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



(2) HMX

0.00min 0.000ppb

response 0

(2) HMX #2

5.05min 329.046ppb

response 976109

(+) = Expected Retention Time

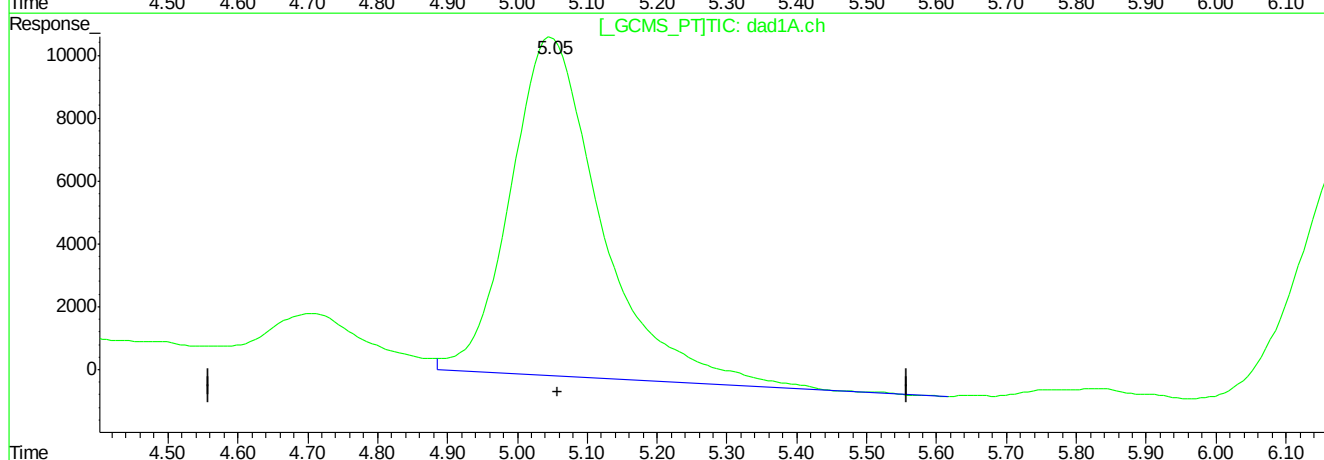
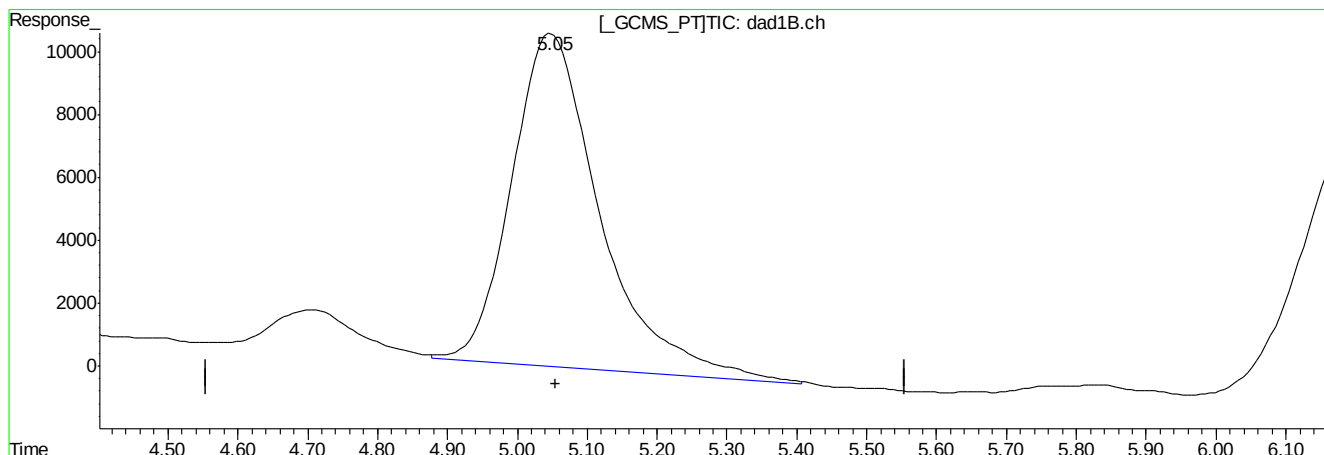
GG625707.D GGG3229_013023.M

Tue Jan 31 08:45:28 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625707.D\dad1B.ch Vial: 12
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625707.D\dad1A.ch
 Acq On : 30-Jan-2023, 17:22:52 Operator: fouads
 Sample : fc2128-1 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration



(2) HMX

5.05min 321.384ppb m

response 932570

(2) HMX #2

5.05min 329.046ppb

response 976109

(+) = Expected Retention Time

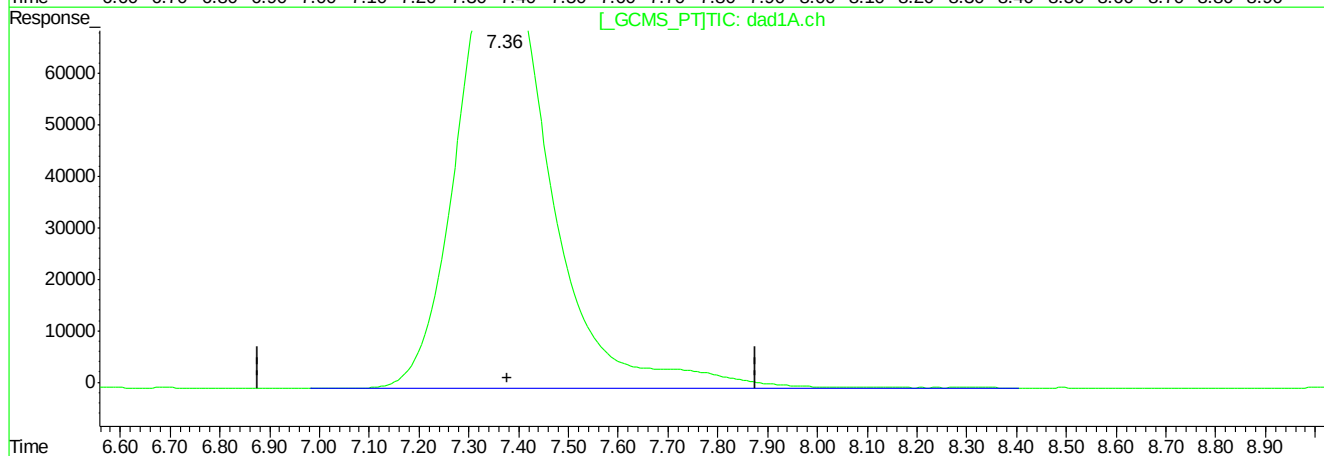
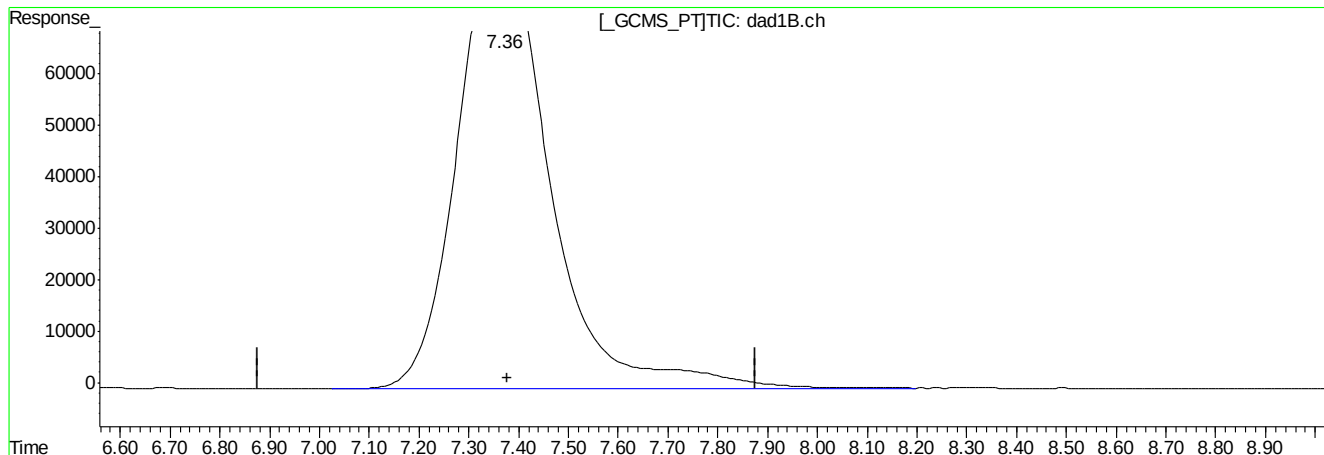
GG625707.D GGG3229_013023.M

Tue Jan 31 08:45:34 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625707.D\dad1B.ch Vial: 12
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625707.D\dad1A.ch
Acq On : 30-Jan-2023, 17:22:52 Operator: fouads
Sample : fc2128-1 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(5) 1,3,5-Trinitrobenzene

7.36min 1275.004ppb

response 11302589

(5) 1,3,5-Trinitrobenzene #2

7.36min 1278.744ppb

response 11316566

(+) = Expected Retention Time

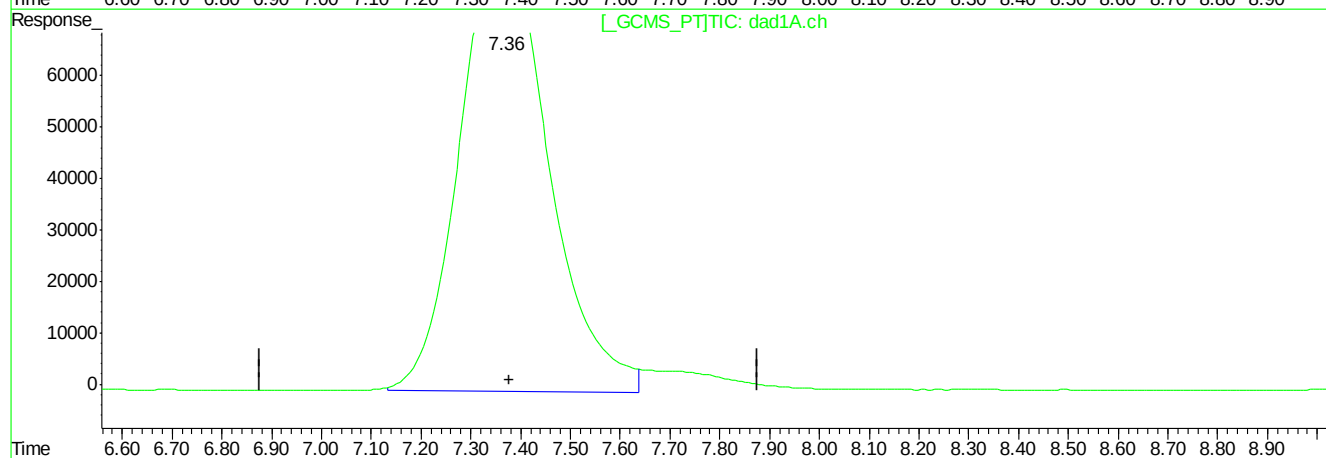
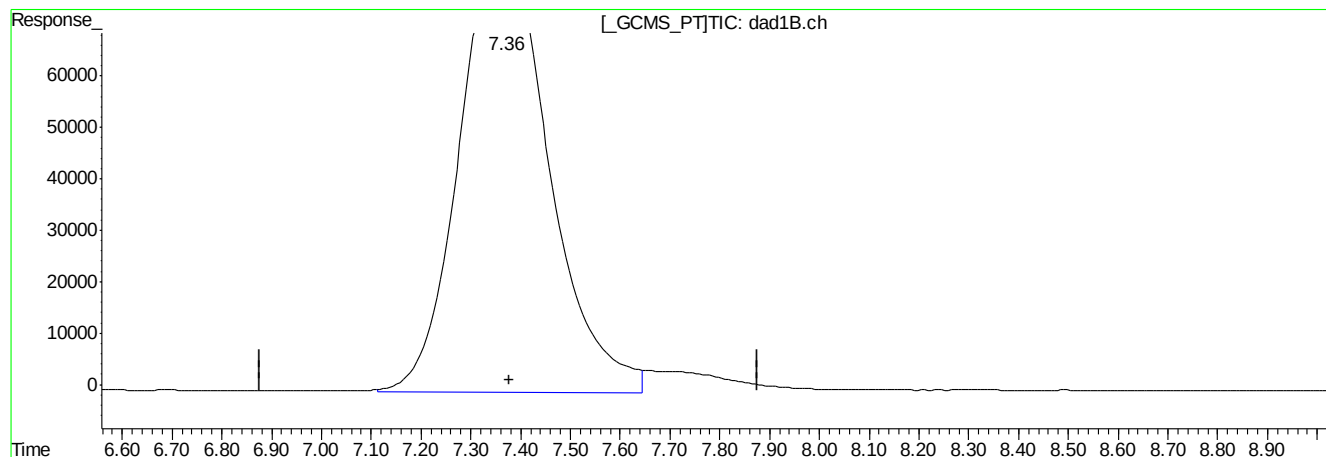
GG625707.D GGG3229_013023.M

Tue Jan 31 08:45:55 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625707.D\dad1B.ch Vial: 12
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625707.D\dad1A.ch
 Acq On : 30-Jan-2023, 17:22:52 Operator: fouads
 Sample : fc2128-1 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration



QEdit

(5) 1,3,5-Trinitrobenzene

7.36min 1232.868ppb m

response 10929063

(5) 1,3,5-Trinitrobenzene #2

7.36min 1232.172ppb m

response 10904414

(+) = Expected Retention Time

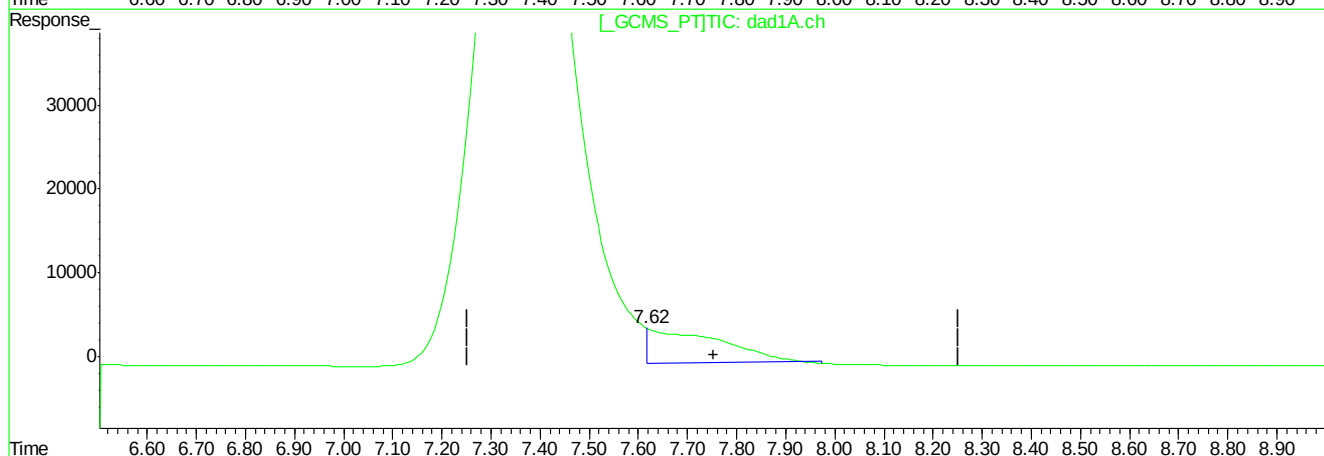
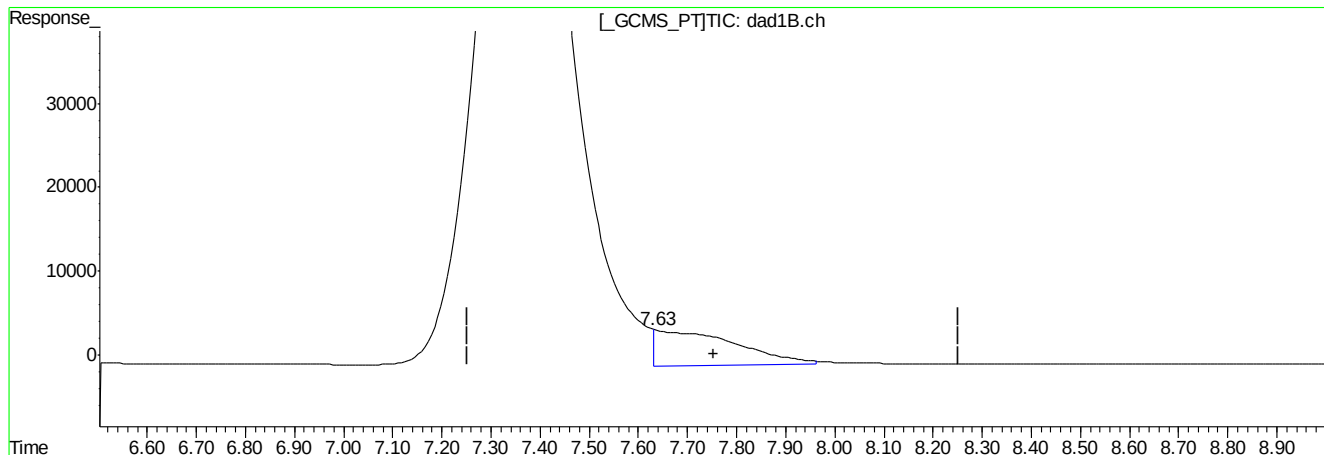
GG625707.D GGG3229_013023.M

Tue Jan 31 08:46:03 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625707.D\dad1B.ch Vial: 12
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625707.D\dad1A.ch
Acq On : 30-Jan-2023, 17:22:52 Operator: fouads
Sample : fc2128-1 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(6) RDX

7.63min 113.895ppb m

response 487571

(6) RDX #2

7.62min 98.728ppb m

response 421482

(+) = Expected Retention Time

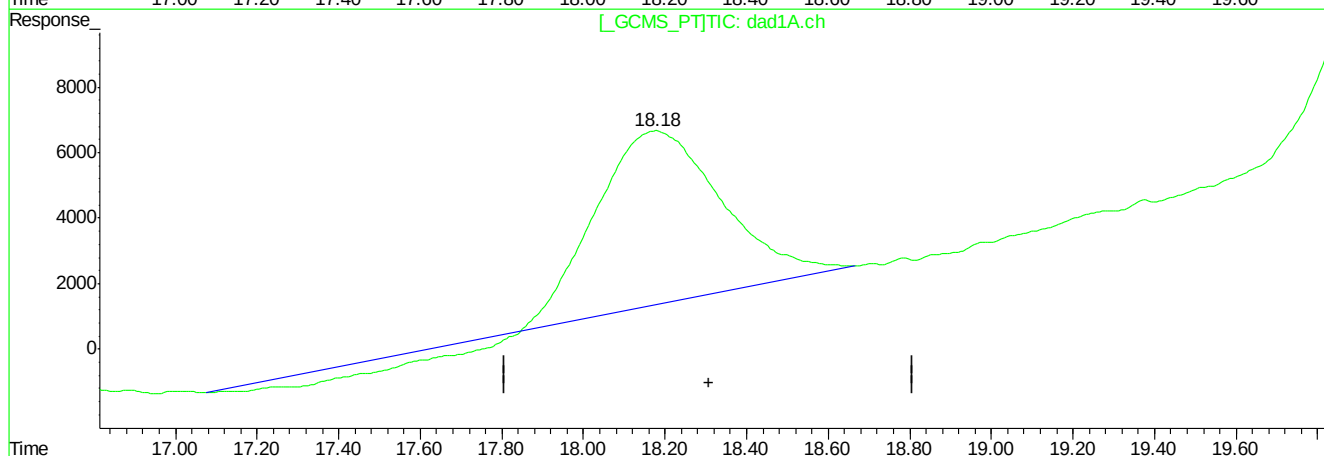
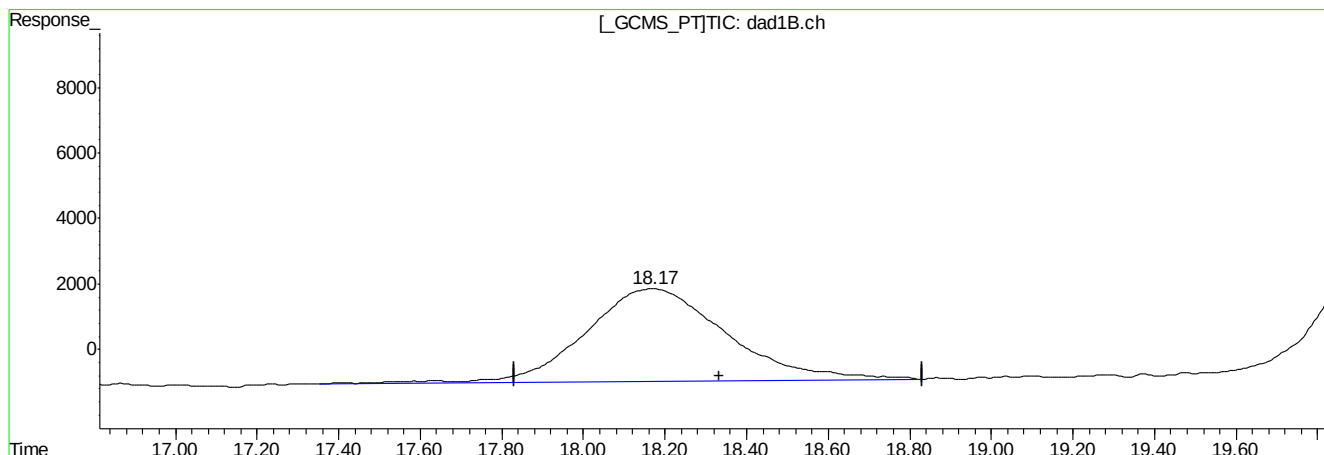
GG625707.D GGG3229_013023.M

Tue Jan 31 08:46:18 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625707.D\dad1B.ch Vial: 12
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625707.D\dad1A.ch
 Acq On : 30-Jan-2023, 17:22:52 Operator: fouads
 Sample : fc2128-1 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration



QEdit

(18) 4-Amino-2,6-Dinitrotoluene

18.17min 140.771ppb

response 686700

(18) 4-Amino-2,6-Dinitrotoluene #2

18.18min 114.385ppb

response 1025754

(+) = Expected Retention Time

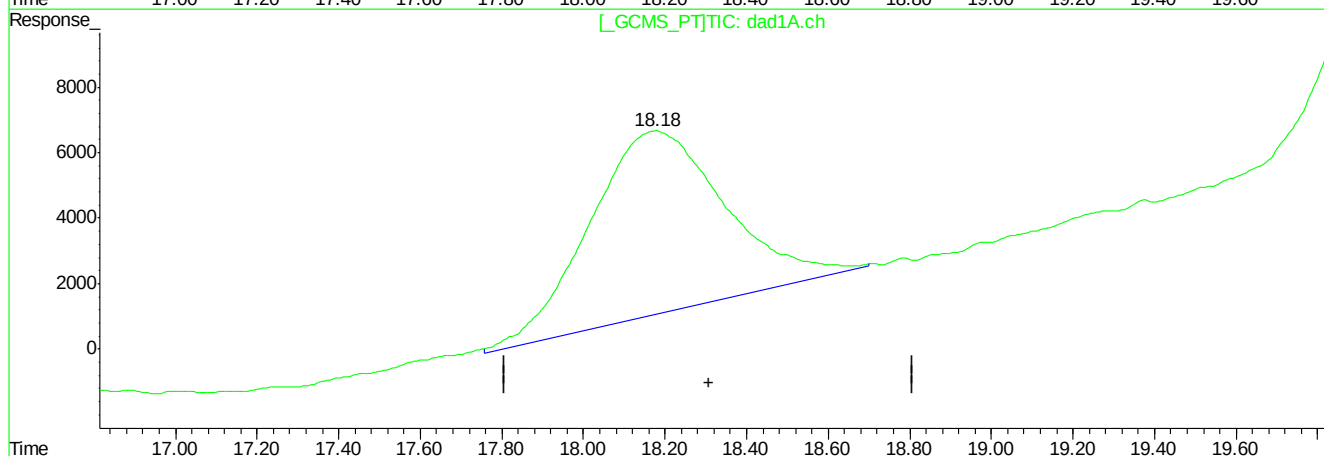
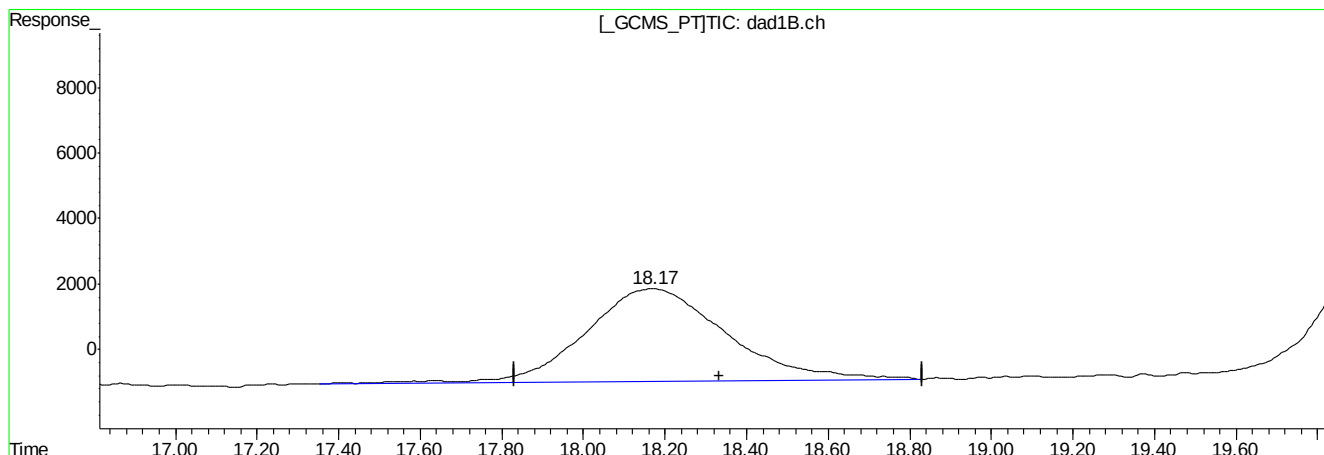
GG625707.D GGG3229_013023.M

Tue Jan 31 08:47:14 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625707.D\dad1B.ch Vial: 12
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625707.D\dad1A.ch
Acq On : 30-Jan-2023, 17:22:52 Operator: fouads
Sample : fc2128-1 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(18) 4-Amino-2,6-Dinitrotoluene

18.17min 140.771ppb

response 686700

(18) 4-Amino-2,6-Dinitrotoluene #2

18.18min 144.151ppb m

response 1292678

(+) = Expected Retention Time

GG625707.D GGG3229_013023.M

Tue Jan 31 08:47:20 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075431.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075431.D\dad1A.ch
Acq On : 27-Jan-2023, 11:05:30 Operator: fouads
Sample : fc2128-2 Inst : G1315B
Misc : op95139,GBB2300,1030,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 11:52:55 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Initial Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.26	13.26	1065994	1837467	497.564	432.480
Spiked Amount	500.000	Range	70 - 136	Recovery	=	99.51% 86.50%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	1.68	1.68	459248	1345709	310.167	329.005
3) DNX	0.00	0.00	0	0	N.D. d	N.D. d
4) MNX	0.00	0.00	0	0	N.D.	N.D.
5) RDX	3.34	3.34	179860	270832	96.961	92.453
6) 1,3,5-Trinitrobe	5.41	5.41	4909156	7652387	1234.814	1229.356
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
8) 3,5-Dinitroanili	7.14	7.15	166123	283242	42.208m	43.340m
9) Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
12) 2,4,6-Trinitroto	11.76	11.76	1867255	2386311	510.845	535.916m
13) 2-Amino-4,6-Dini	12.15	12.16	520297	760610	164.621	154.022
14) 4-Amino-2,6-Dini	12.70	12.71	269995	497270	117.564	101.183
16) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
17) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D. d	N.D. d
18) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
19) p-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
20) m-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
21) PETN	0.00	0.00	0	0	N.D. d	N.D. d

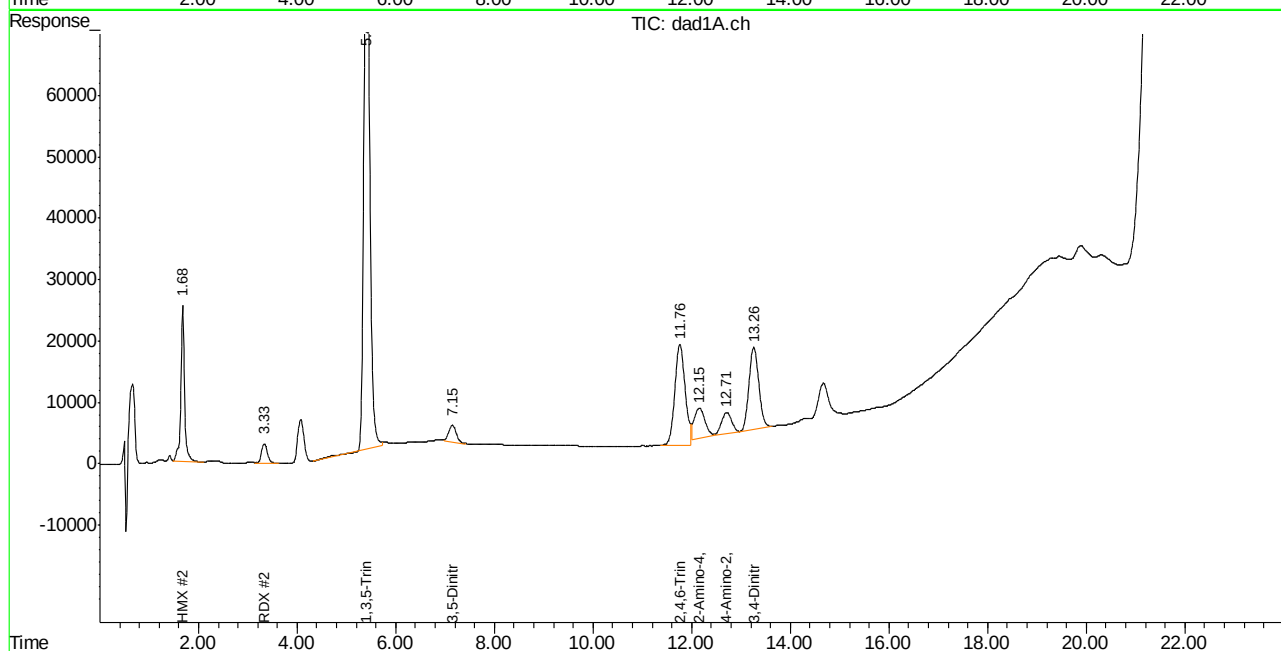
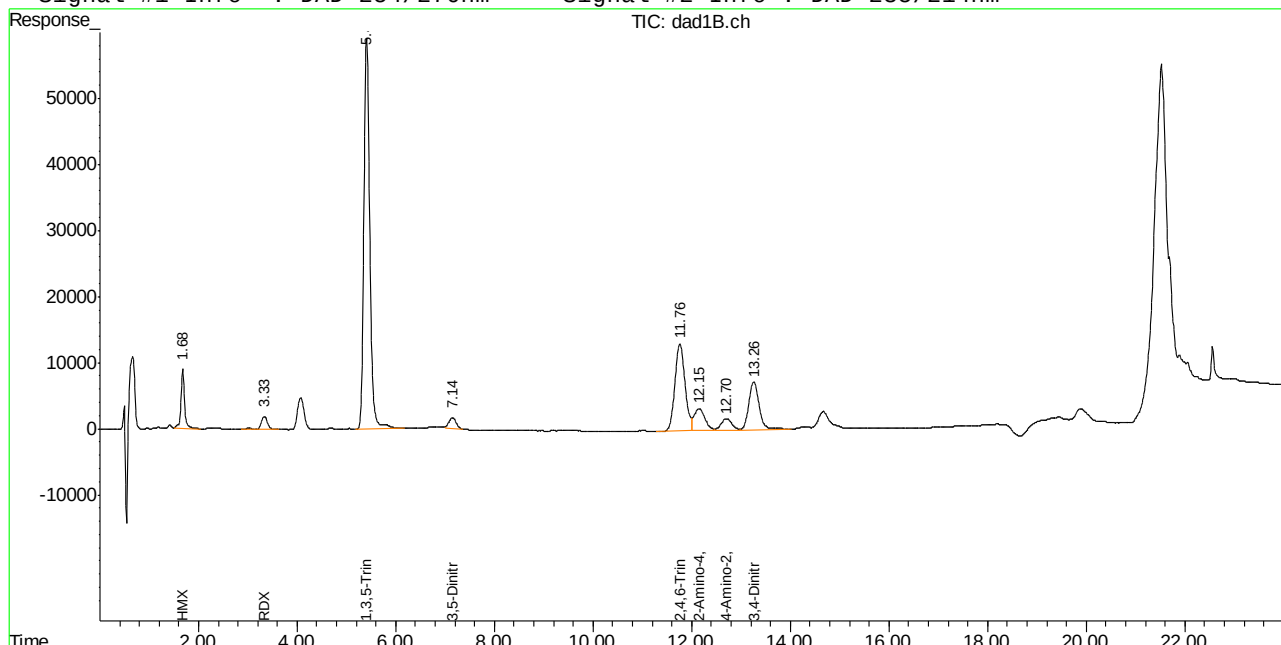
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
BB075431.D BBB2232_083122.M Tue Jan 31 11:56:29 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075431.D\dad1B.ch Vial: 3
 Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075431.D\dad1A.ch
 Acq On : 27-Jan-2023, 11:05:30 Operator: fouads
 Sample : fc2128-2 Inst : G1315B
 Misc : op95139,GBB2300,1030,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 31 9:04 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Multiple Level Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

FC2128-2

Method:

SW846 8330B

Lab FileID:

BB075431.D

Analyst approved:

01/31/23 12:02 Fouad Sekkar

Injection Time:

01/27/23 11:05

Supervisor approved:

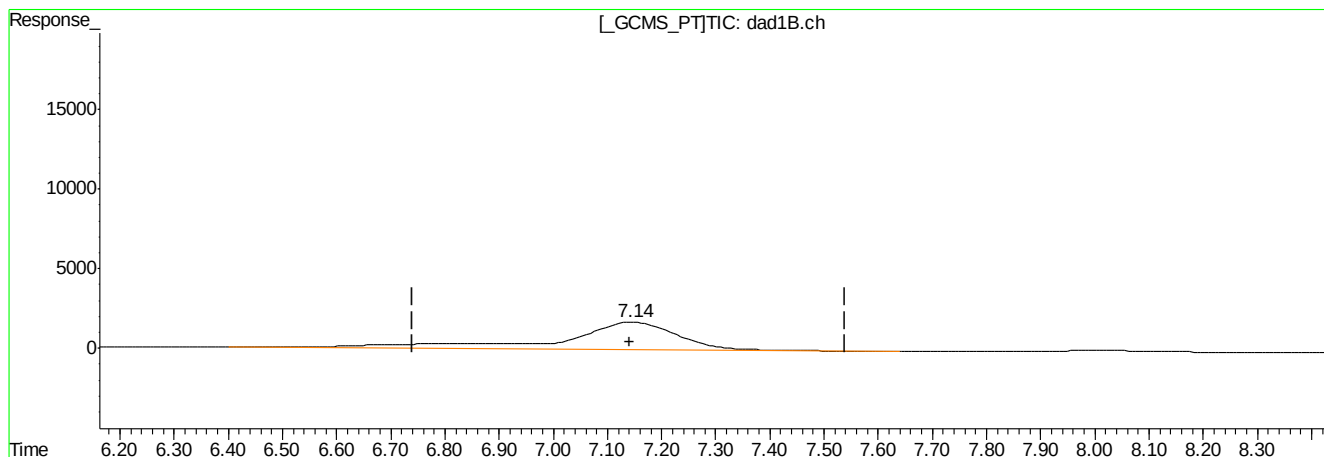
01/31/23 12:32 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	1	7.14	Poor instrument integration
3,5-Dinitroaniline	618-87-1	2	7.15	Poor instrument integration
2,4,6-Trinitrotoluene	118-96-7	2	11.76	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075431.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075431.D\dad1A.ch
Acq On : 27-Jan-2023, 11:05:30 Operator: fouads
Sample : fc2128-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 11:52 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.15min 68.303ppb

response 268830

(8) 3,5-Dinitroaniline #2

7.15min 26.141ppb

response 170839

(+) = Expected Retention Time

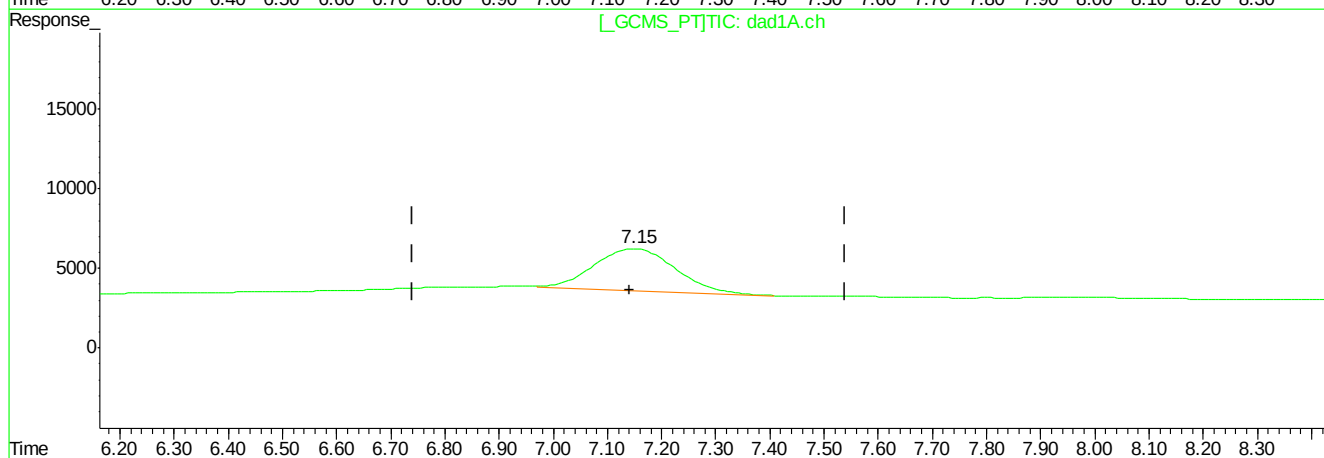
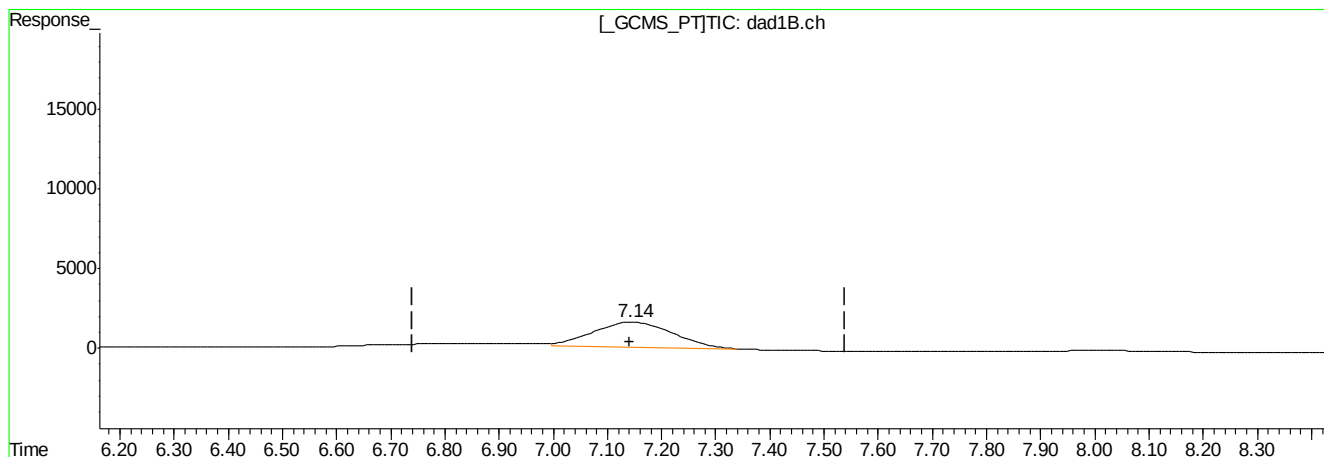
BB075431.D BBB2232_083122.M

Mon Jan 30 08:46:11 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075431.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075431.D\dad1A.ch
Acq On : 27-Jan-2023, 11:05:30 Operator: fouads
Sample : fc2128-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 11:52 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline
7.14min 42.208ppb m
response 166123

(8) 3,5-Dinitroaniline #2
7.15min 43.340ppb m
response 283242

(+) = Expected Retention Time

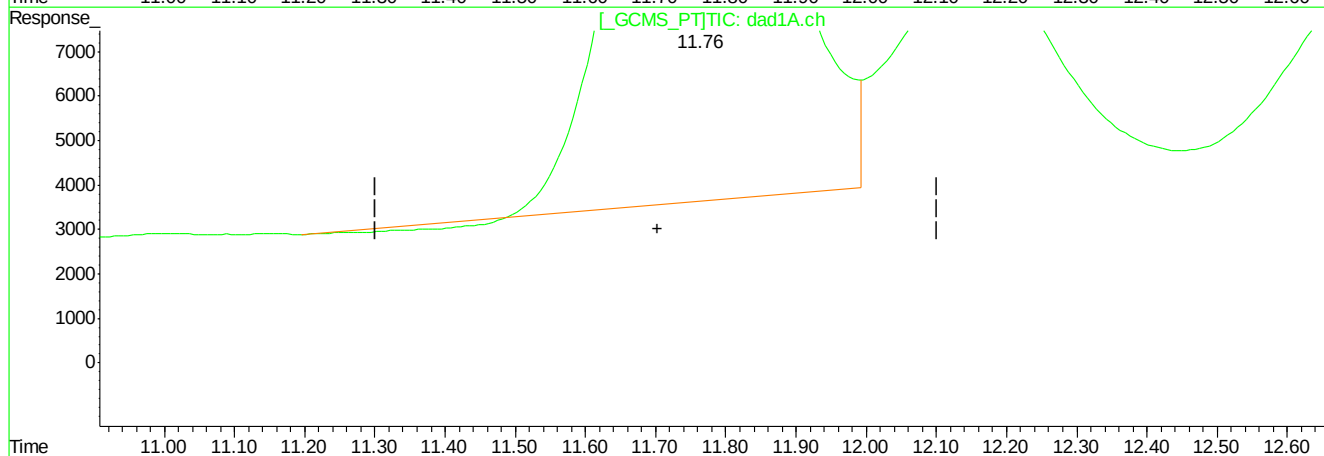
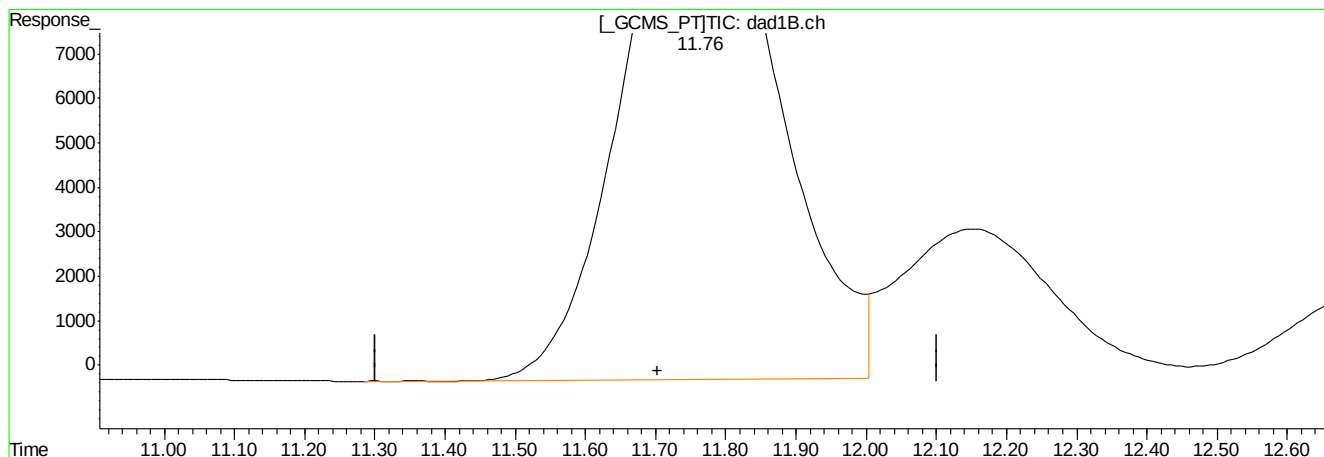
BB075431.D BBB2232_083122.M

Mon Jan 30 08:46:30 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075431.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075431.D\dad1A.ch
Acq On : 27-Jan-2023, 11:05:30 Operator: fouads
Sample : fc2128-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 11:52 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(12) 2,4,6-Trinitrotoluene

11.76min 510.845ppb

response 1867255

(12) 2,4,6-Trinitrotoluene #2

11.76min 494.830ppb

response 2203368

(+) = Expected Retention Time

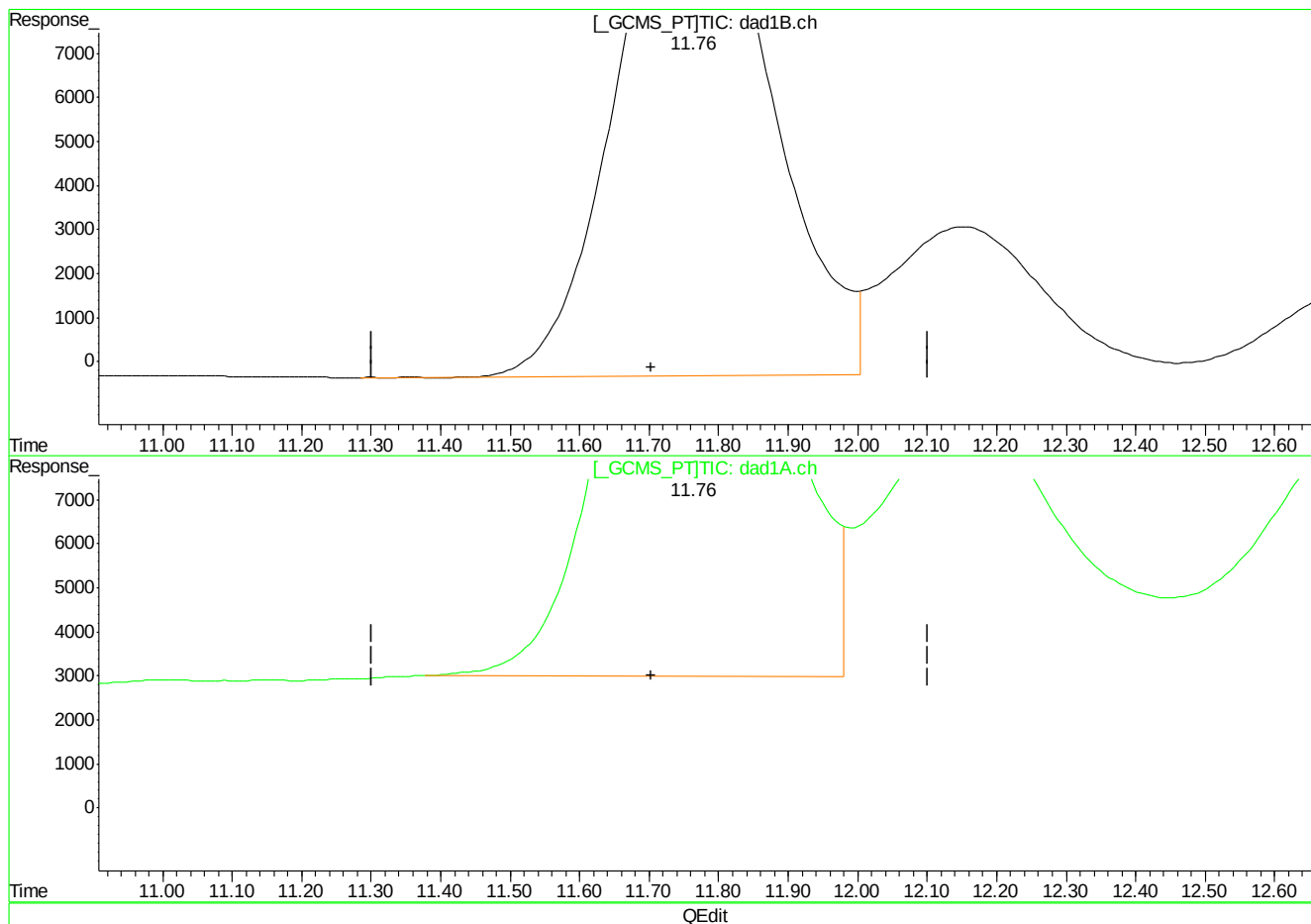
BB075431.D BBB2232_083122.M

Mon Jan 30 08:46:38 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075431.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075431.D\dad1A.ch
Acq On : 27-Jan-2023, 11:05:30 Operator: fouads
Sample : fc2128-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 11:52 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(12) 2,4,6-Trinitrotoluene

11.76min 510.845ppb

response 1867255

(12) 2,4,6-Trinitrotoluene #2

11.76min 535.916ppb m

response 2386311

(+) = Expected Retention Time

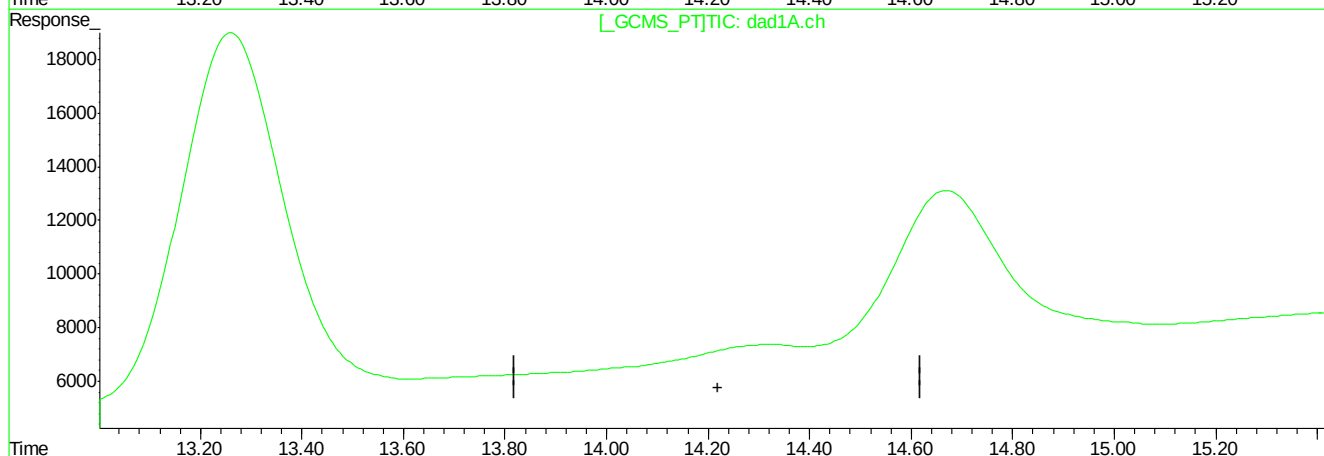
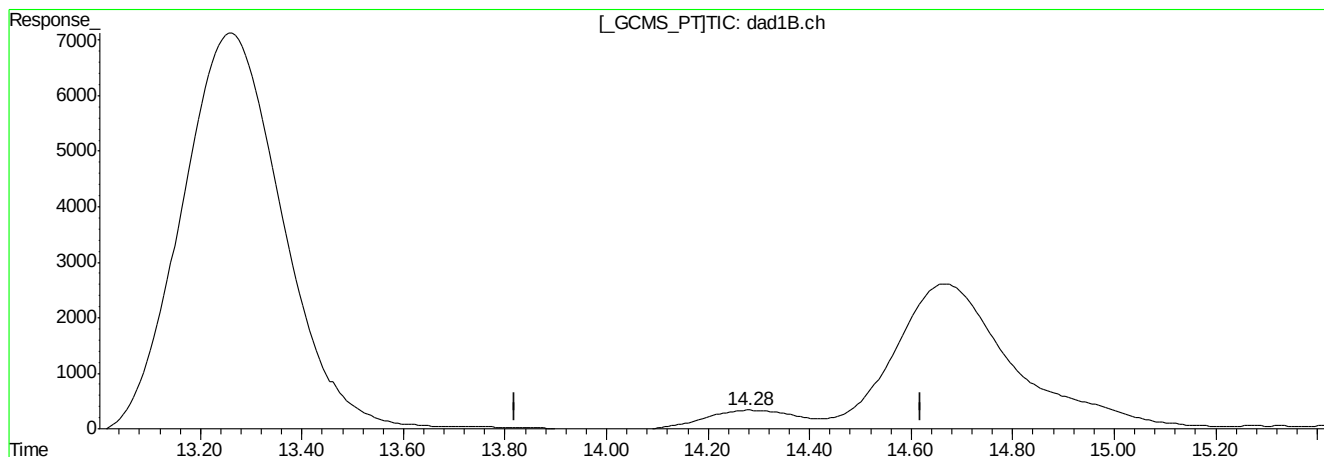
BB075431.D BBB2232_083122.M

Mon Jan 30 08:46:44 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075431.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075431.D\dad1A.ch
Acq On : 27-Jan-2023, 11:05:30 Operator: fouads
Sample : fc2128-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 11:52 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

14.28min 38.400ppb

response 58302

(17) 2,6-Dinitrotoluene #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

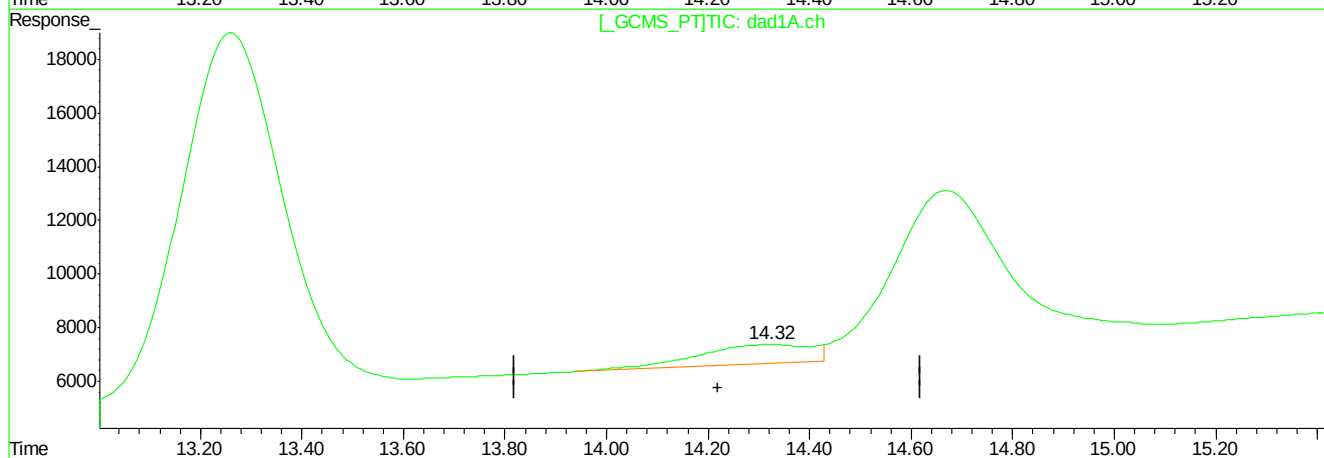
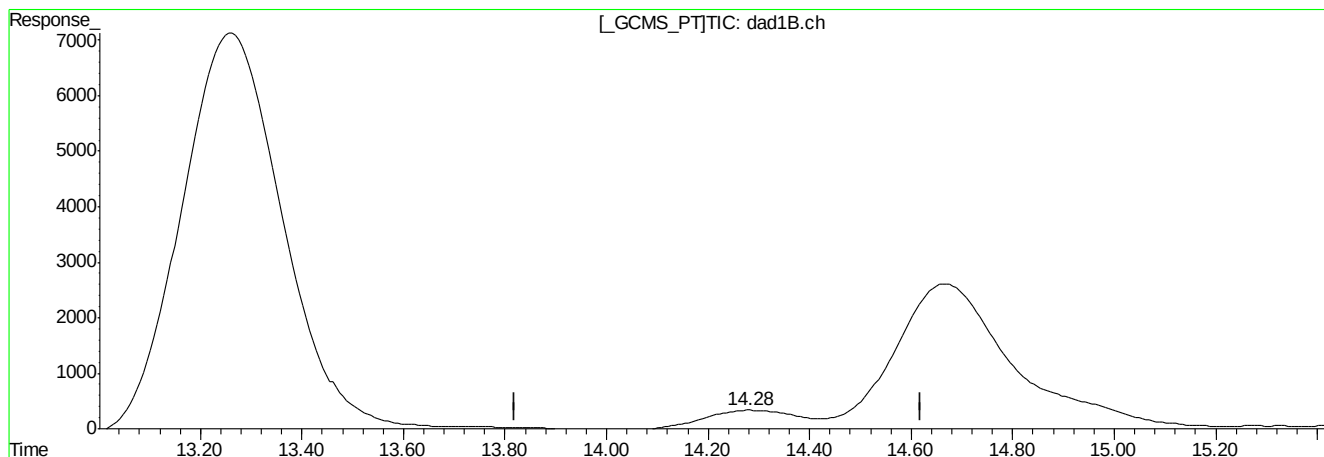
BB075431.D BBB2232_083122.M

Mon Jan 30 08:47:13 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075431.D\dad1B.ch Vial: 3
 Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075431.D\dad1A.ch
 Acq On : 27-Jan-2023, 11:05:30 Operator: fouads
 Sample : fc2128-2 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 27 11:52 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

14.28min 38.400ppb

response 58302

(17) 2,6-Dinitrotoluene #2

14.32min 31.514ppb m

response 110505

(+) = Expected Retention Time

BB075431.D BBB2232_083122.M

Mon Jan 30 08:47:29 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1B.ch Vial: 13
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1A.ch
 Acq On : 30-Jan-2023, 17:54:19 Operator: fouads
 Sample : fc2128-2 Inst : G1315B
 Misc : op95139,GGG3229,1030,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 08:38:32 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.32	14.33	2699550	5099468	502.588	508.065
Spiked Amount	500.000	Range	70 - 136	Recovery	=	100.52% 101.61%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	5.05	5.05	976403	1003744	336.490m	338.362
3) DNX	0.00	0.00	0	0	N.D. d	N.D. d
4) MNX	0.00	0.00	0	0	N.D. d	N.D. d
5) 1,3,5-Trinitrobe	7.36	7.36	11122051	11067667	1254.638m	1250.619m
6) RDX	7.65	7.66	377562	381636	88.197m	89.395m
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D. d	N.D. d
8) Nitrobenzene	0.00	0.00	0	0	N.D. d	N.D. d
9) 2,4,6-Trinitroto	11.69	11.69	4314976	5682725	491.126	472.104
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
13) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
14) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D. d	N.D. d
15) 3,5-Dinitroanili	16.22	16.22	1655752	3096121	175.354	197.732
16) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
17) p-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
18) 4-Amino-2,6-Dini	18.14	18.14	688783	1244100	141.198	138.734m
19) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20) 2-Amino-4,6-Dini	20.00	20.01	1324501	1947539	155.474	172.398m
21) PETN	0.00	0.00	0	0	N.D.	N.D.

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625708.D GGG3229_013023.M Tue Jan 31 11:32:50 2023

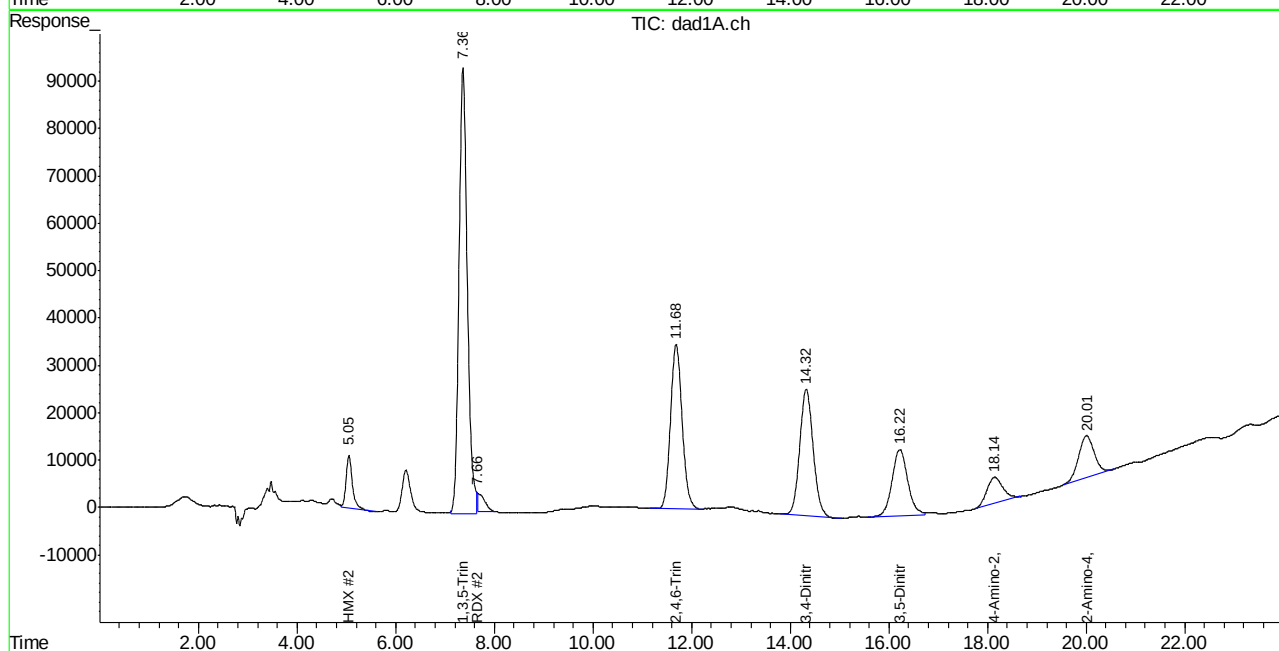
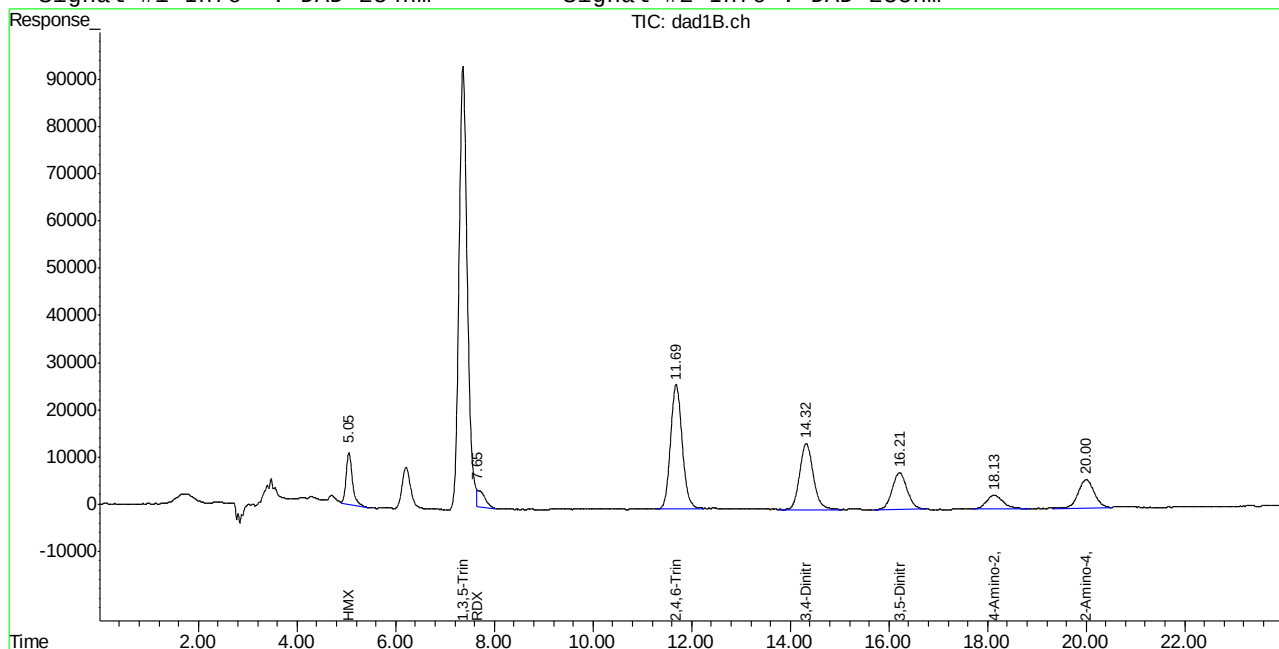
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1B.ch Vial: 13
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1A.ch
Acq On : 30-Jan-2023, 17:54:19 Operator: fouads
Sample : fc2128-2 Inst : G1315B
Misc : op95139,GGG3229,1030,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:52 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number: FC2128-2

Method: SW846 8330B

Lab FileID: GG625708.D

Analyst approved: 01/31/23 11:38 Fouad Sekkar

Injection Time: 01/30/23 17:54

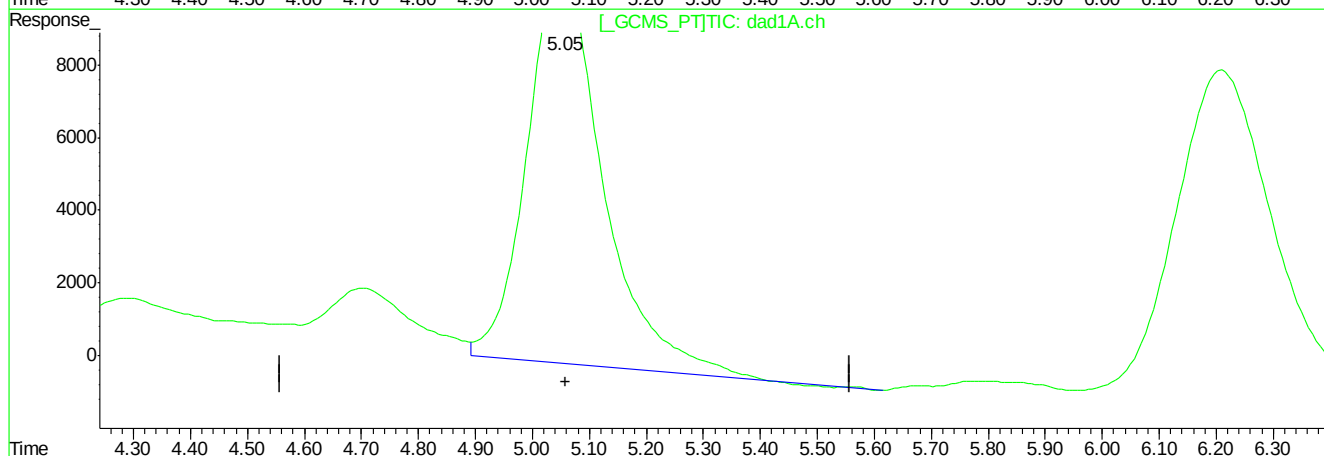
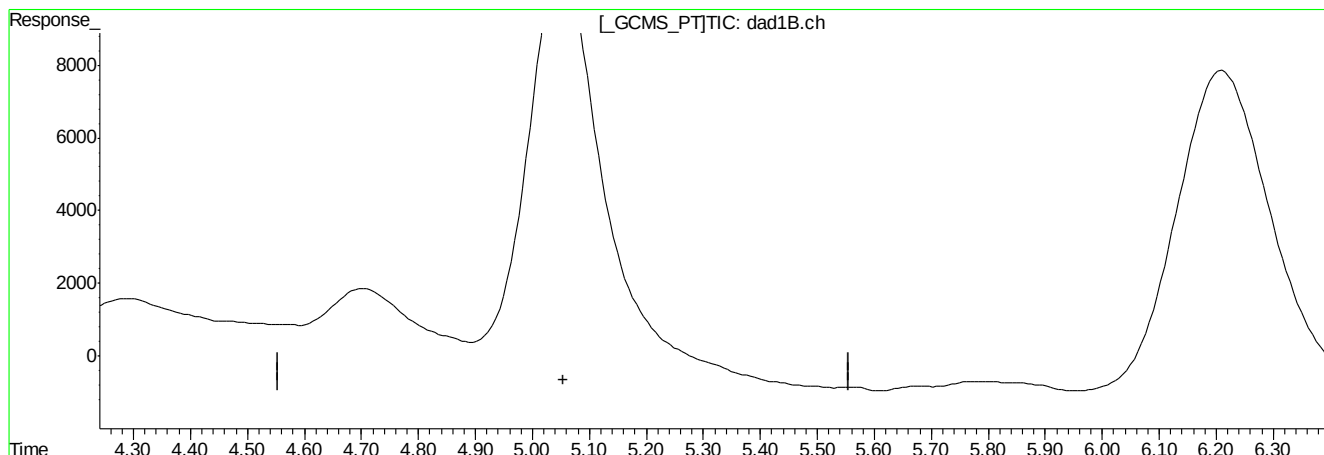
Supervisor approved: 01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
HMX	2691-41-0	1	5.05	Poor instrument integration
1,3,5-Trinitrobenzene	99-35-4	1	7.36	Poor instrument integration
1,3,5-Trinitrobenzene	99-35-4	2	7.36	Poor instrument integration
RDX	121-82-4	1	7.65	Poor instrument integration
RDX	121-82-4	2	7.66	Poor instrument integration
4-amino-2,6-Dinitrotoluene	19406-51-0	2	18.14	Poor instrument integration
2-amino-4,6-Dinitrotoluene	35572-78-2	2	20.01	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1B.ch Vial: 13
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1A.ch
Acq On : 30-Jan-2023, 17:54:19 Operator: fouads
Sample : fc2128-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

0.00min 0.000ppb

response 0

(2) HMX #2

5.05min 338.362ppb

response 1003744

(+) = Expected Retention Time

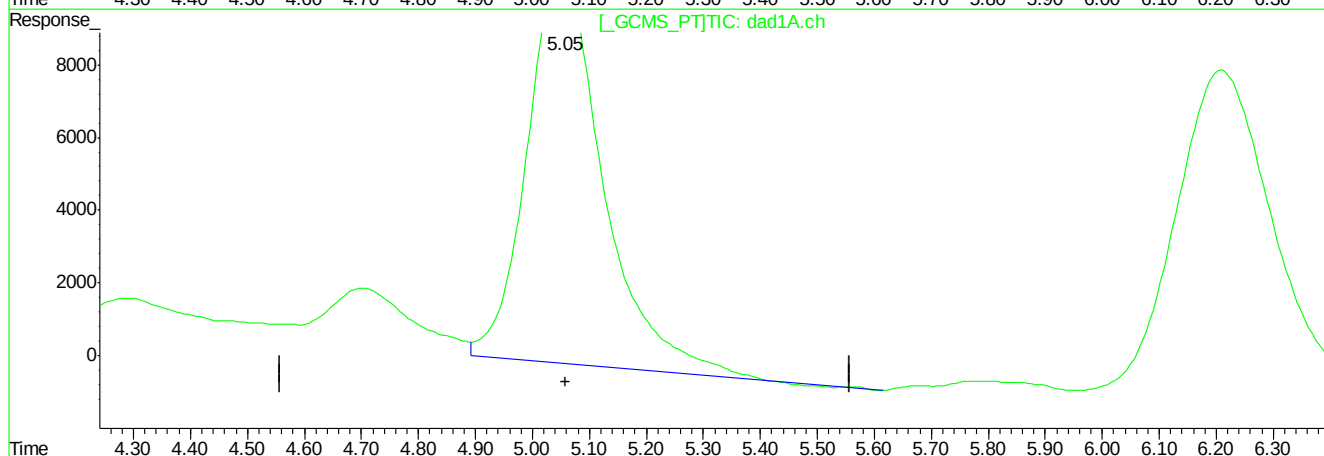
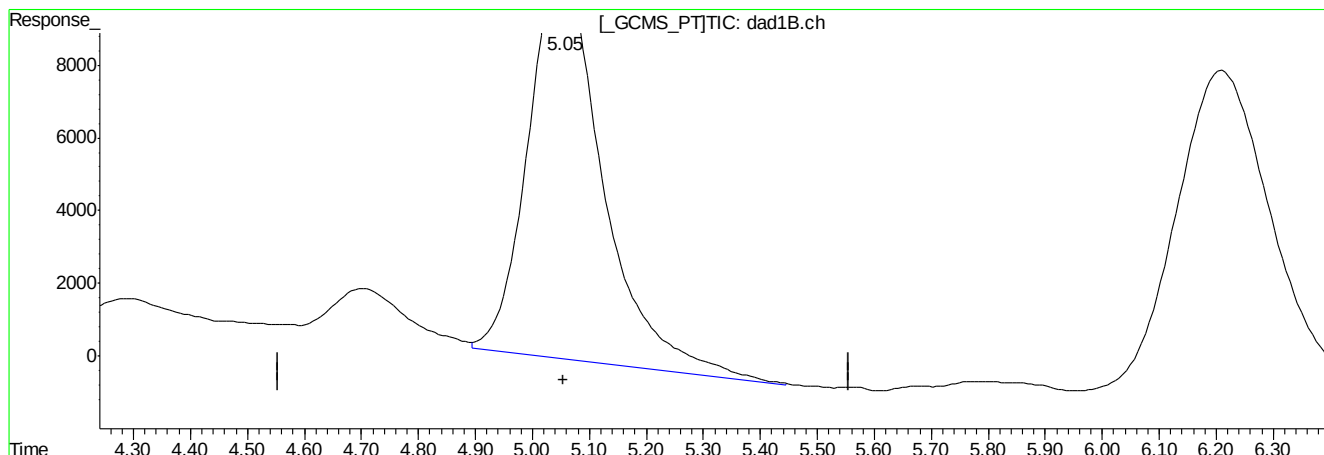
GG625708.D GGG3229_013023.M

Tue Jan 31 08:49:28 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1B.ch Vial: 13
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1A.ch
 Acq On : 30-Jan-2023, 17:54:19 Operator: fouads
 Sample : fc2128-2 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration



QEdit

(2) HMX

5.05min 336.490ppb m

response 976403

(2) HMX #2

5.05min 338.362ppb

response 1003744

(+) = Expected Retention Time

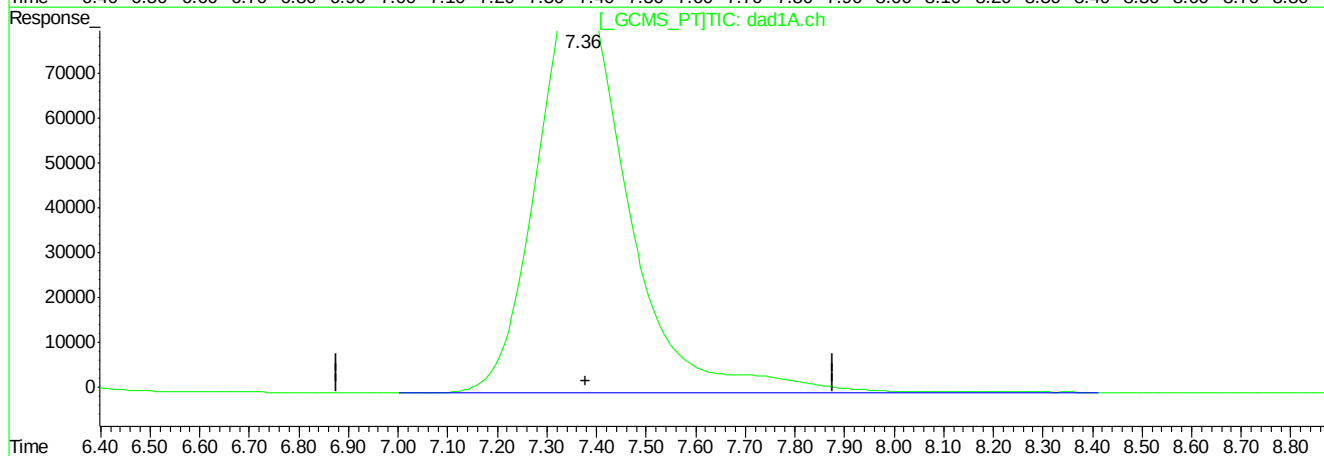
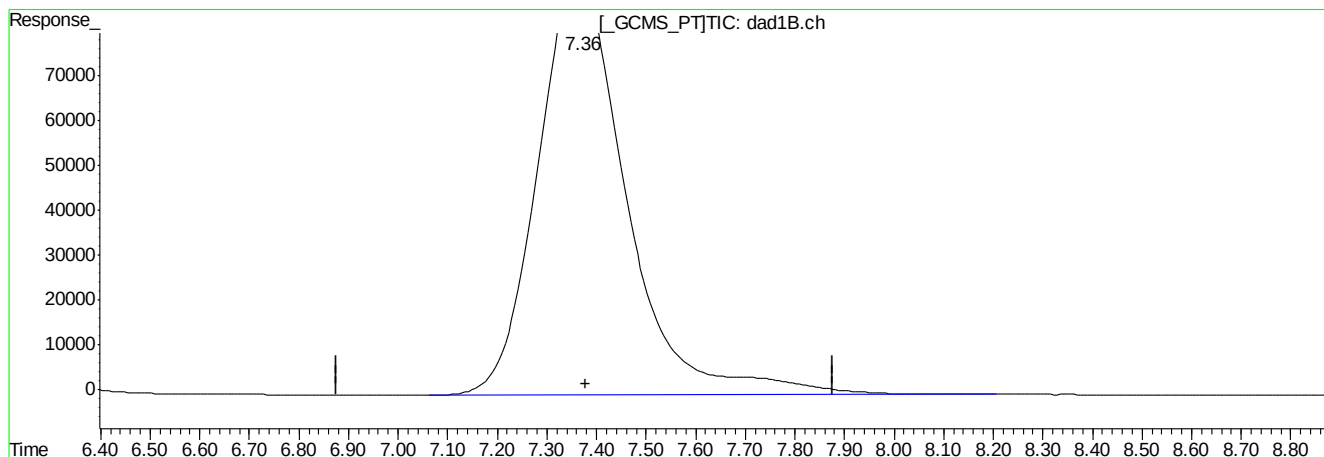
GG625708.D GGG3229_013023.M

Tue Jan 31 08:49:42 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1B.ch Vial: 13
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1A.ch
Acq On : 30-Jan-2023, 17:54:19 Operator: fouads
Sample : fc2128-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(5) 1,3,5-Trinitrobenzene

7.36min 1302.045ppb

response 11542304

(5) 1,3,5-Trinitrobenzene #2

7.36min 1307.136ppb

response 11567826

(+) = Expected Retention Time

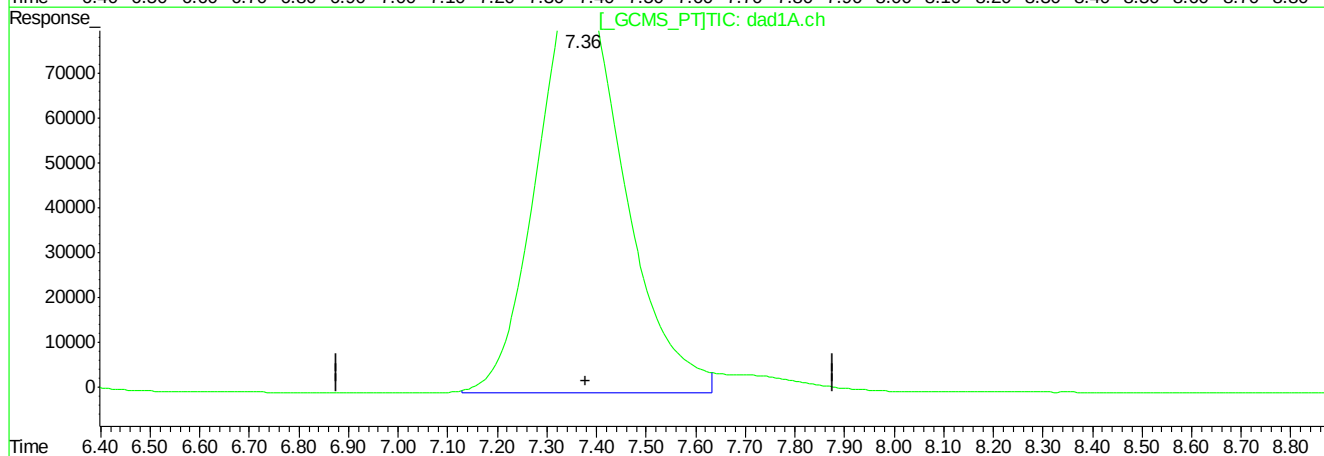
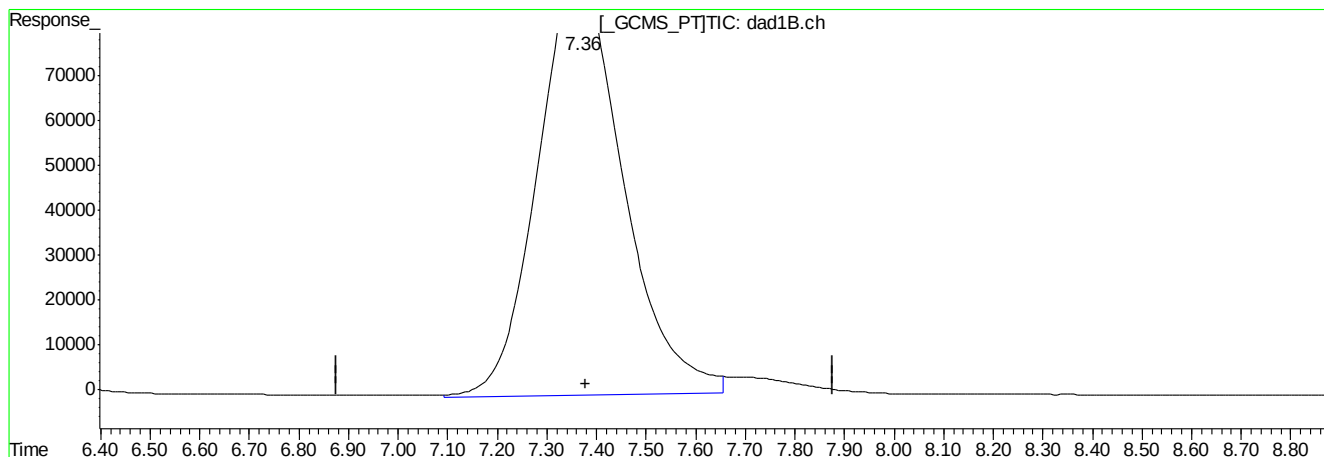
GG625708.D GGG3229_013023.M

Tue Jan 31 08:49:58 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1B.ch Vial: 13
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1A.ch
 Acq On : 30-Jan-2023, 17:54:19 Operator: fouads
 Sample : fc2128-2 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration



QEdit

(5) 1,3,5-Trinitrobenzene

7.36min 1254.638ppb m

response 11122051

(5) 1,3,5-Trinitrobenzene #2

7.36min 1250.619ppb m

response 11067667

(+) = Expected Retention Time

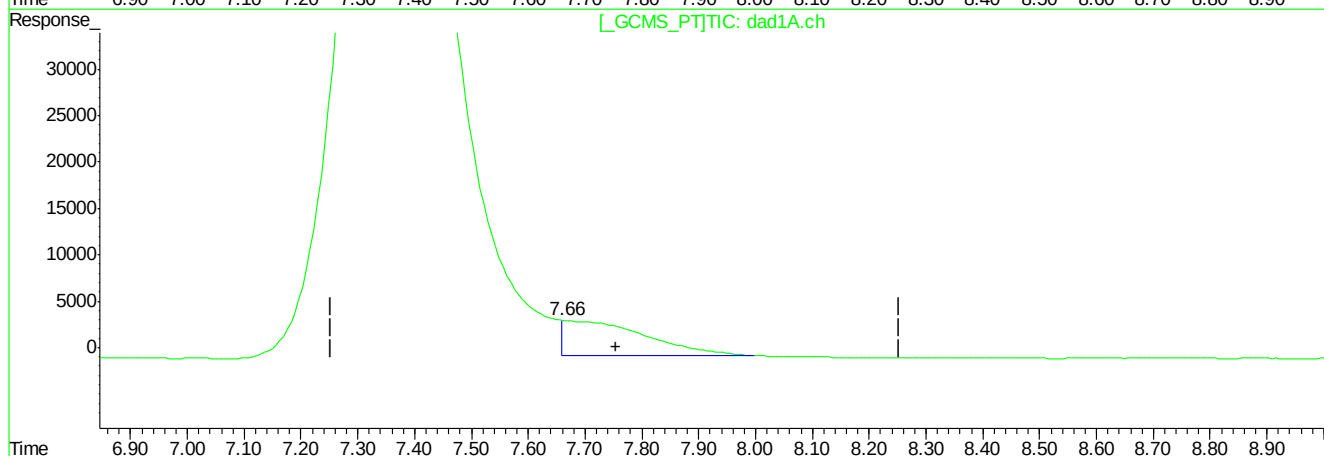
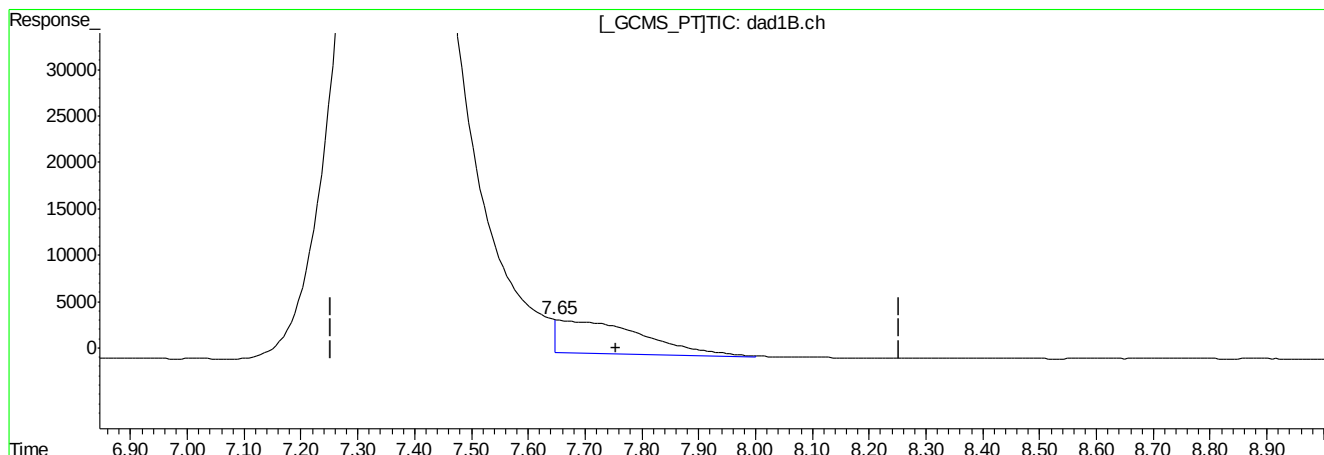
GG625708.D GGG3229_013023.M

Tue Jan 31 08:50:07 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1B.ch Vial: 13
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1A.ch
 Acq On : 30-Jan-2023, 17:54:19 Operator: fouads
 Sample : fc2128-2 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration



QEdit

(6) RDX

7.65min 88.197ppb m

response 377562

(6) RDX #2

7.66min 89.395ppb m

response 381636

(+) = Expected Retention Time

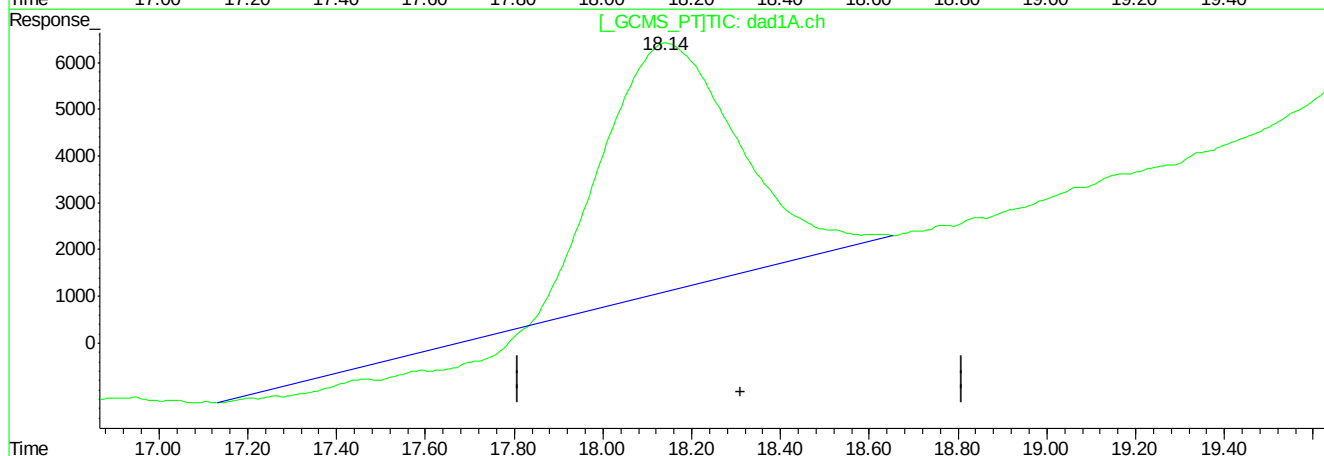
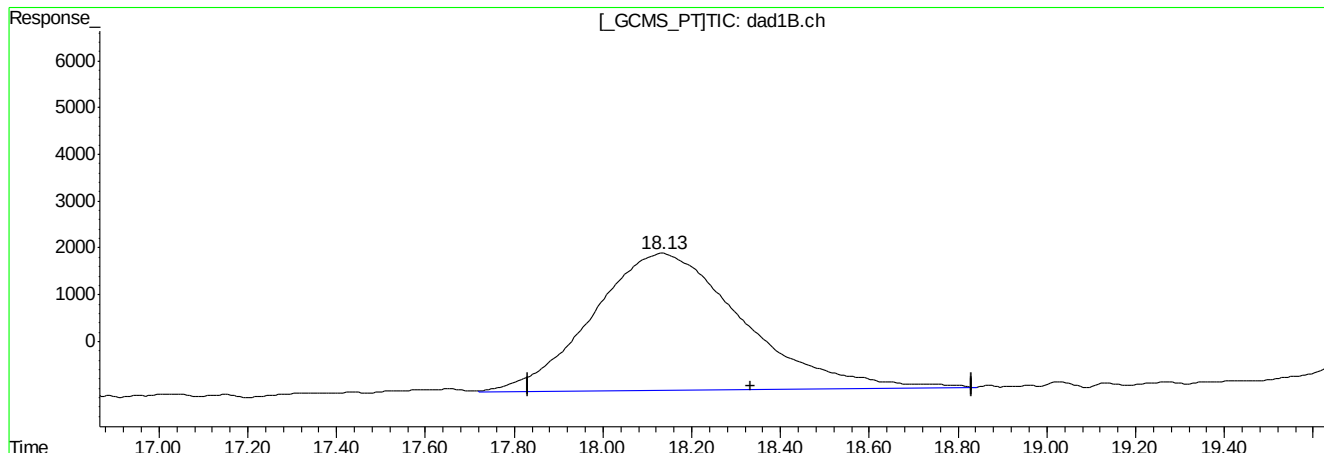
GG625708.D GGG3229_013023.M

Tue Jan 31 08:50:19 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1B.ch Vial: 13
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1A.ch
 Acq On : 30-Jan-2023, 17:54:19 Operator: fouads
 Sample : fc2128-2 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration



(18) 4-Amino-2,6-Dinitrotoluene

18.14min 141.198ppb

response 688783

(18) 4-Amino-2,6-Dinitrotoluene #2

18.14min 112.389ppb

response 1007851

(+) = Expected Retention Time

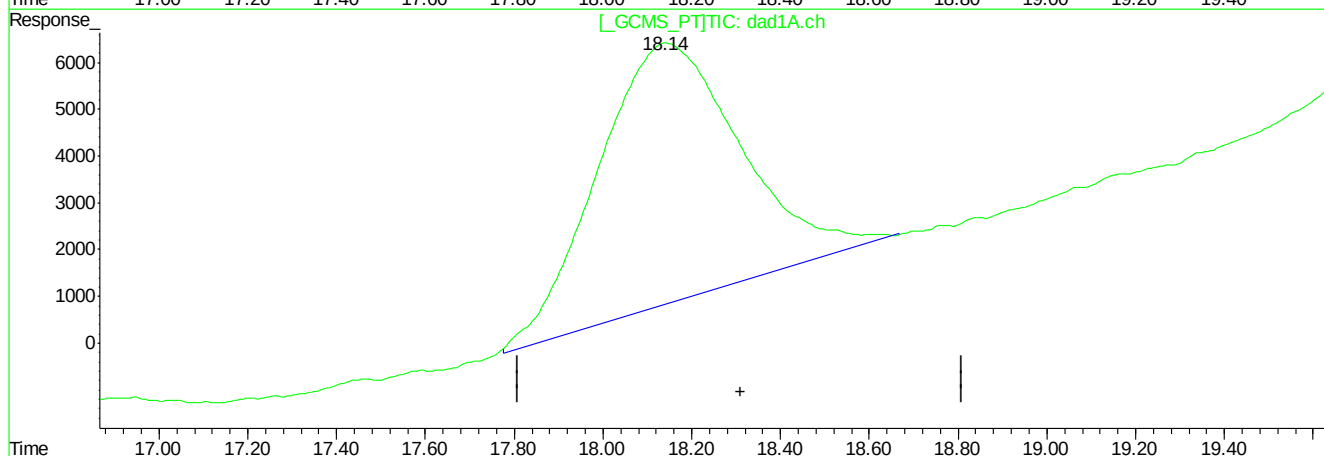
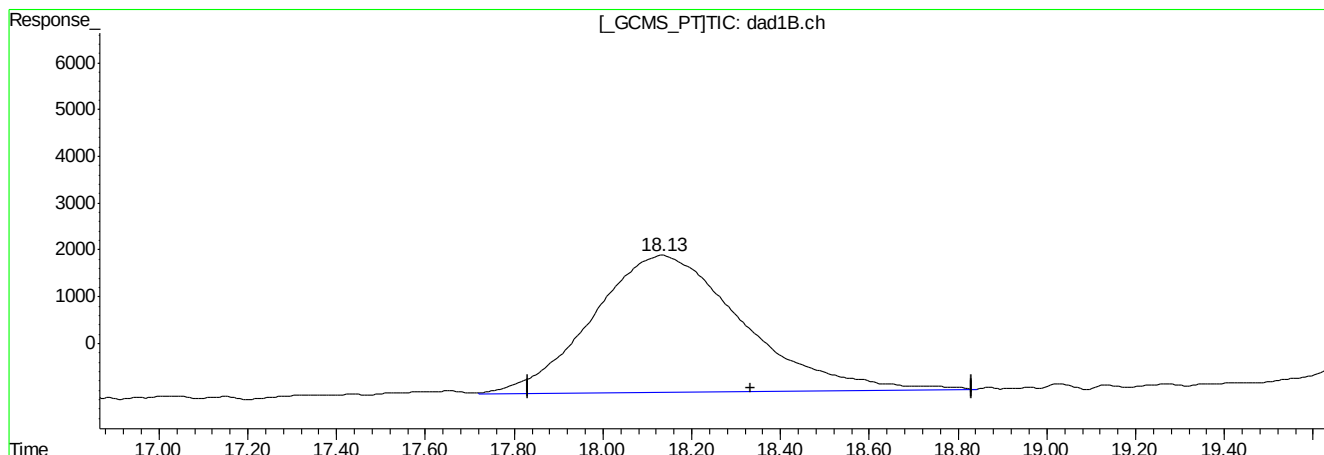
GG625708.D GGG3229_013023.M

Tue Jan 31 08:51:38 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1B.ch Vial: 13
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1A.ch
 Acq On : 30-Jan-2023, 17:54:19 Operator: fouads
 Sample : fc2128-2 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration



QEdit

(18) 4-Amino-2,6-Dinitrotoluene

18.14min 141.198ppb

response 688783

(18) 4-Amino-2,6-Dinitrotoluene #2

18.14min 138.734ppb m

response 1244100

(+) = Expected Retention Time

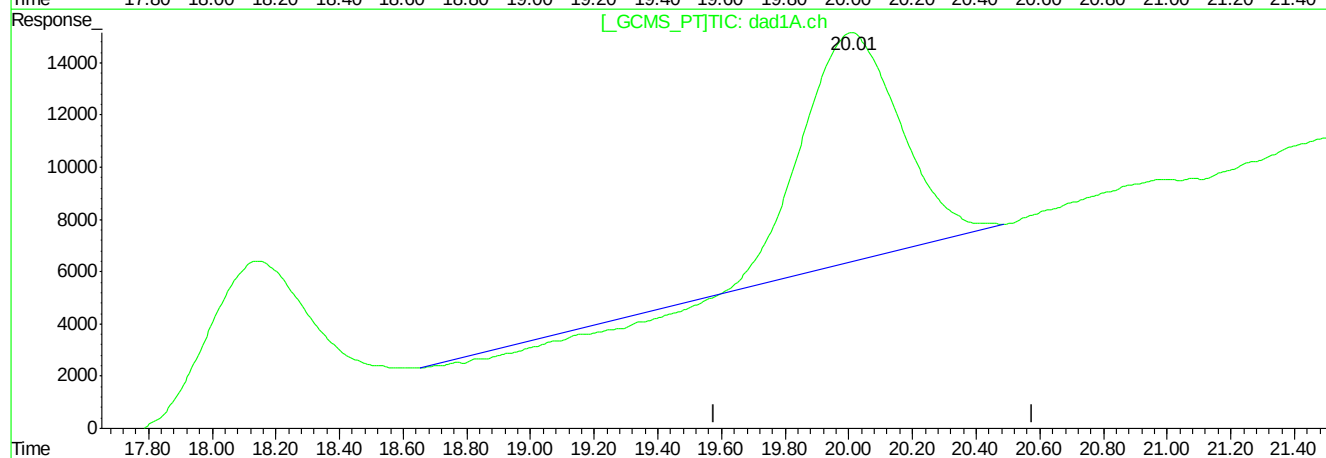
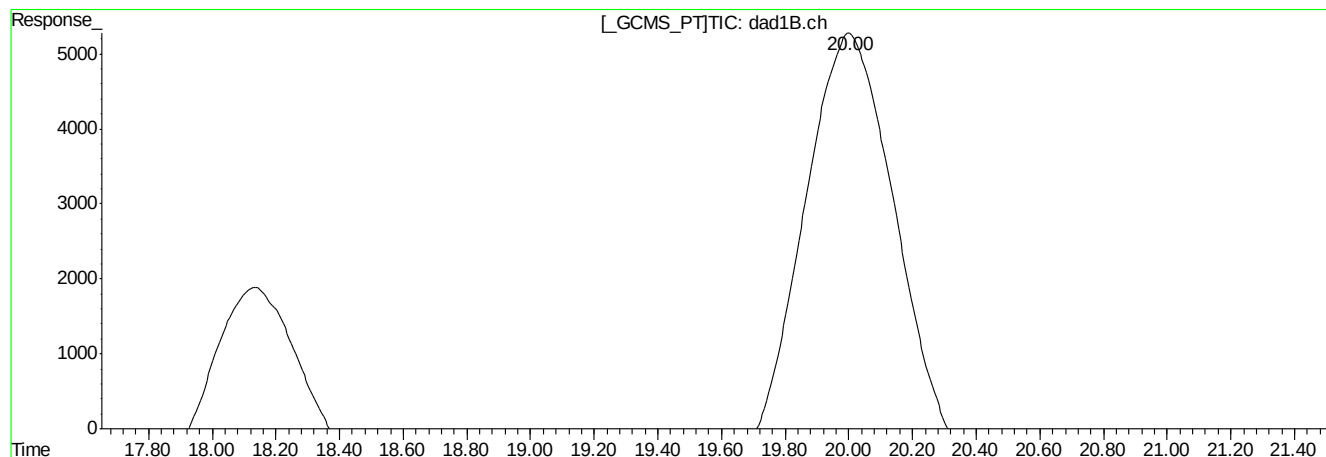
GG625708.D GGG3229_013023.M

Tue Jan 31 08:51:43 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1B.ch Vial: 13
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1A.ch
 Acq On : 30-Jan-2023, 17:54:19 Operator: fouads
 Sample : fc2128-2 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration



(20) 2-Amino-4,6-Dinitrotoluene

20.00min 155.474ppb

response 1324501

(20) 2-Amino-4,6-Dinitrotoluene #2

20.01min 156.209ppb

response 1764653

(+) = Expected Retention Time

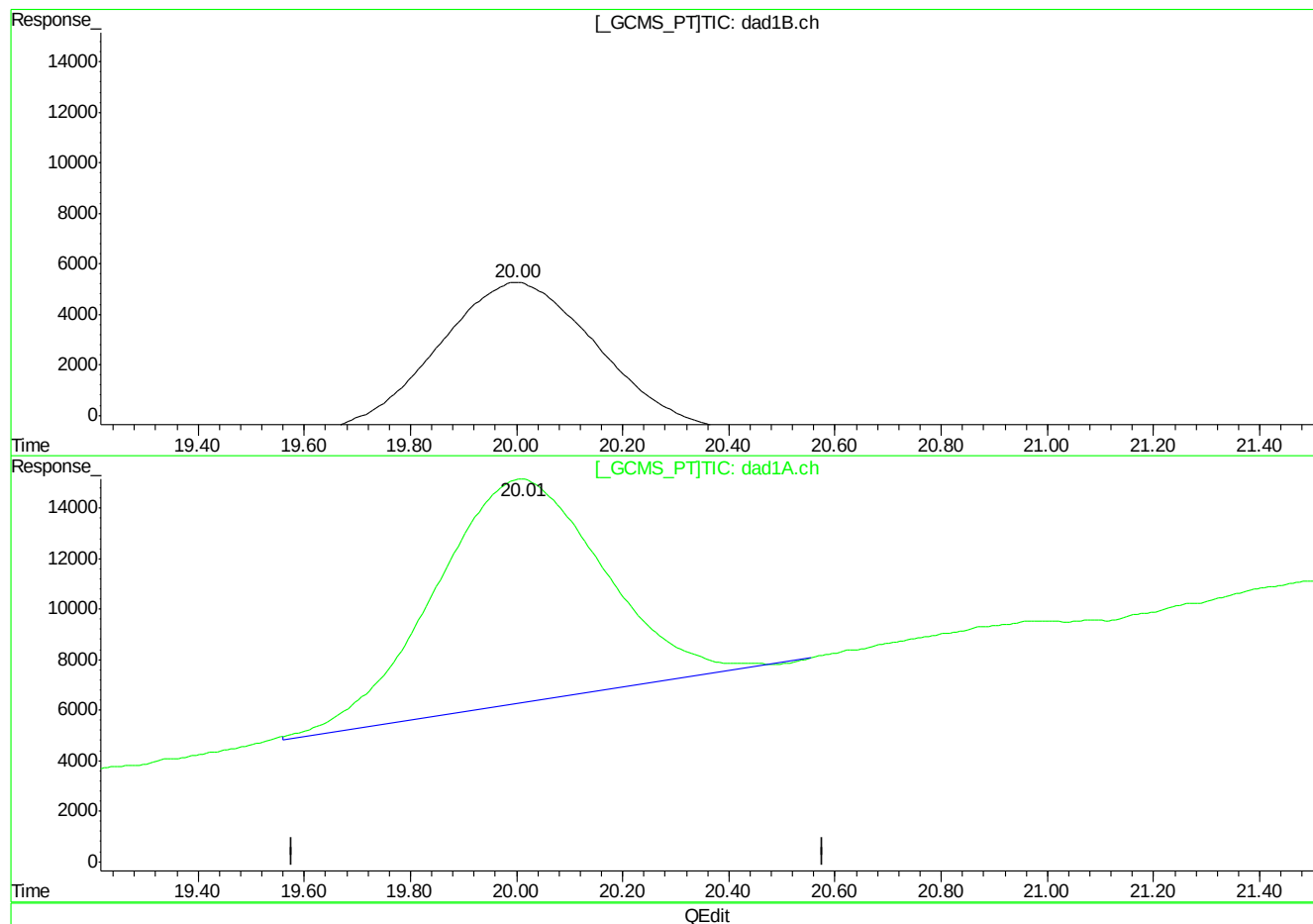
GG625708.D GGG3229_013023.M

Tue Jan 31 08:51:51 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1B.ch Vial: 13
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625708.D\dad1A.ch
 Acq On : 30-Jan-2023, 17:54:19 Operator: fouads
 Sample : fc2128-2 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration



(20) 2-Amino-4,6-Dinitrotoluene

20.00min 155.474ppb

response 1324501

(20) 2-Amino-4,6-Dinitrotoluene #2

20.01min 172.398ppb m

response 1947539

(+) = Expected Retention Time

GG625708.D GGG3229_013023.M

Tue Jan 31 08:52:00 2023

Mike Eger
01/31/23 12:32

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075432.D\dad1B.ch Vial: 4
 Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075432.D\dad1A.ch
 Acq On : 27-Jan-2023, 11:36:25 Operator: fouads
 Sample : fc2128-3 Inst : G1315B
 Misc : op95139,GBB2300,1020,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 27 12:17:23 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.24	13.24	888812	1619166	414.863	381.099
Spiked Amount	500.000	Range	70 - 136	Recovery	=	82.97% 76.22%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	1.67	1.66	74896	429758	50.583m	105.069m#
3) DNX	0.00	0.00	0	0	N.D. d	N.D. d
4) MNX	0.00	0.00	0	0	N.D.	N.D.
5) RDX	3.34	3.34	65342	97863	35.225	33.407
6) 1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
8) 3,5-Dinitroanili	7.14	7.15	91441	122701	23.233	18.775m
9) Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
12) 2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
13) 2-Amino-4,6-Dini	12.14	12.14	85414	142210	27.025	28.797m
14) 4-Amino-2,6-Dini	12.69	12.69	85968	161392	37.433	32.839
16) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
17) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
18) o-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
19) p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
21) PETN	0.00	0.00	0	0	N.D. d	N.D. d

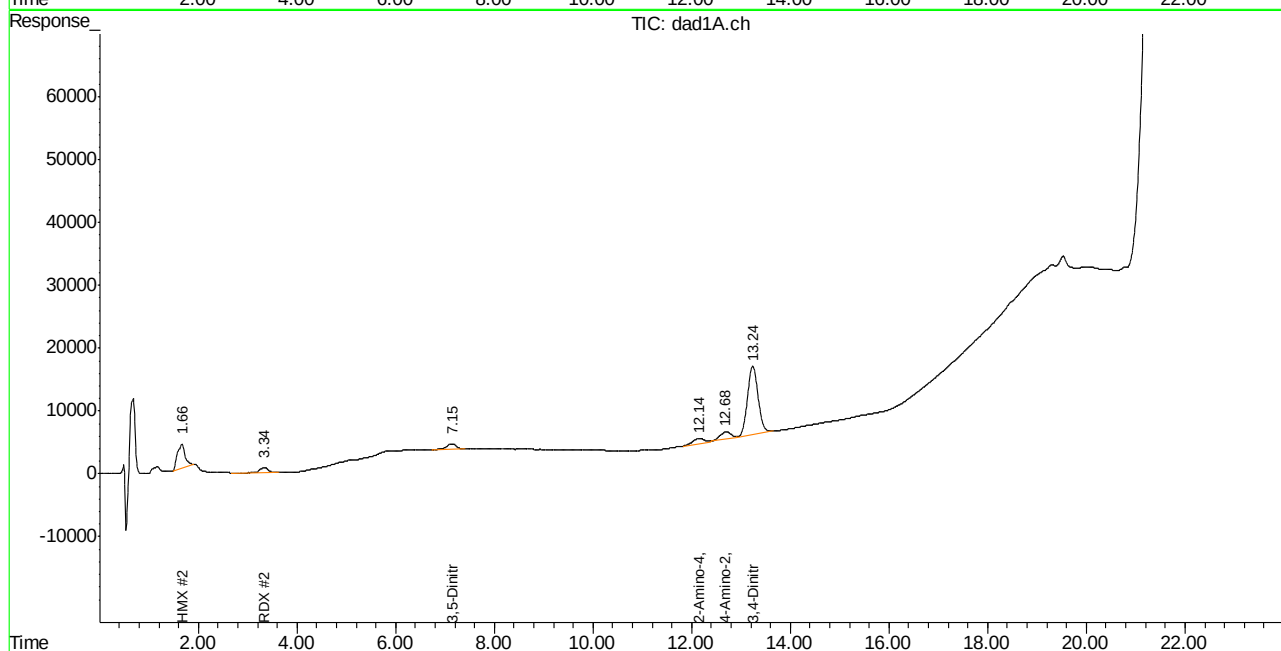
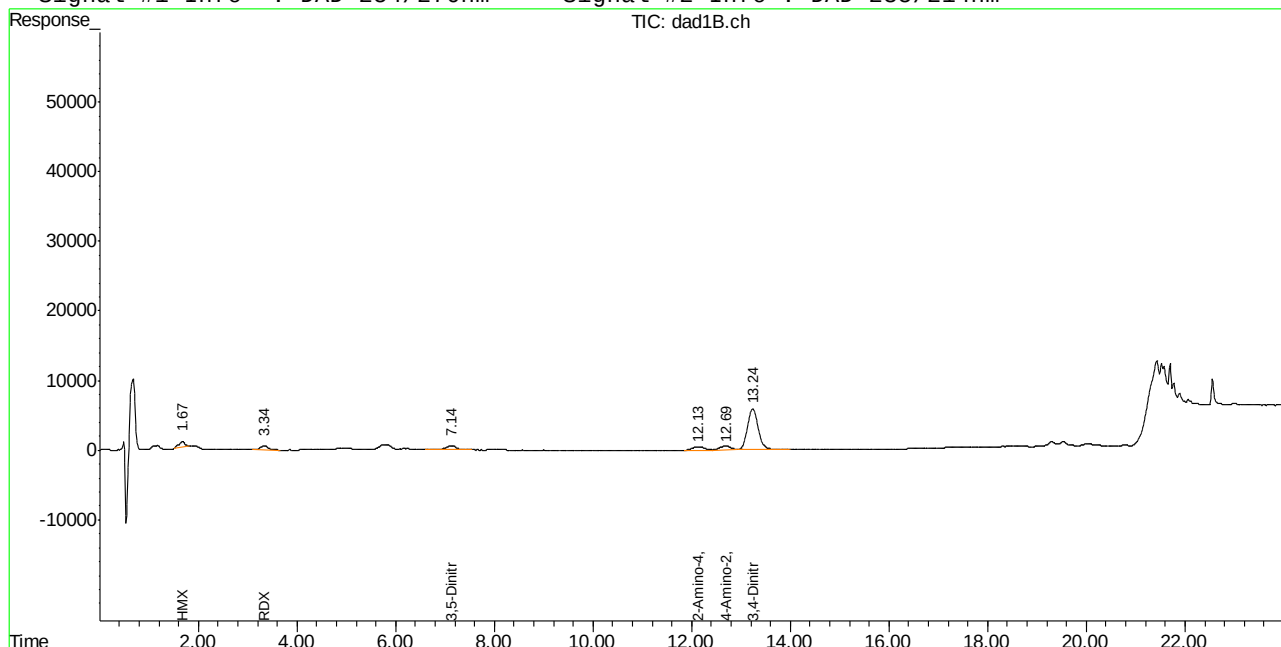
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075432.D BBB2232_083122.M Tue Jan 31 11:47:41 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075432.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075432.D\dad1A.ch
Acq On : 27-Jan-2023, 11:36:25 Operator: fouads
Sample : fc2128-3 Inst : G1315B
Misc : op95139,GBB2300,1020,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 9:05 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: FC2128-3

Method: SW846 8330B

Lab FileID: BB075432.D

Analyst approved: 01/31/23 12:02 Fouad Sekkar

Injection Time: 01/27/23 11:36

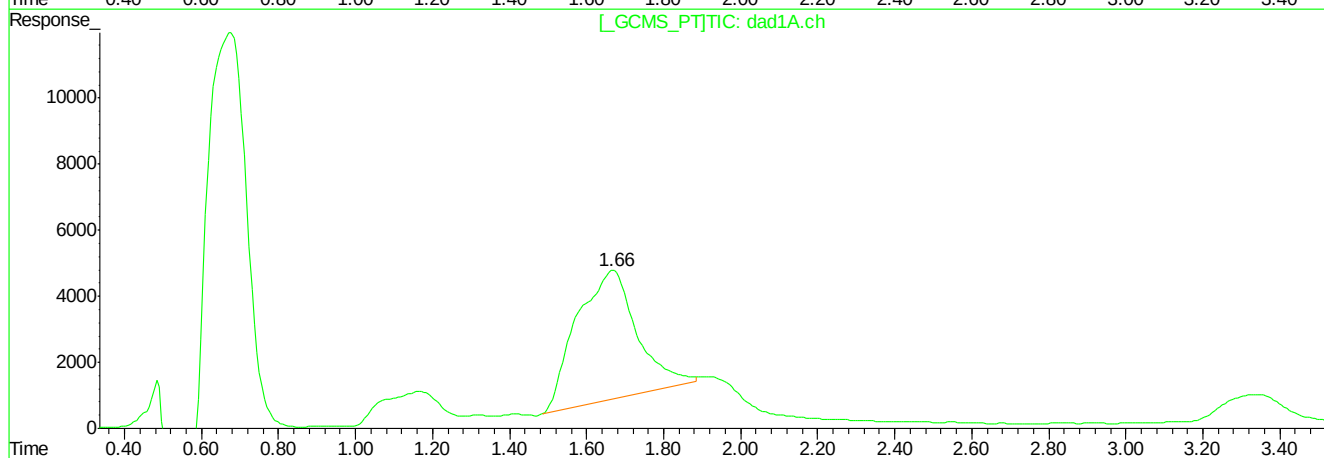
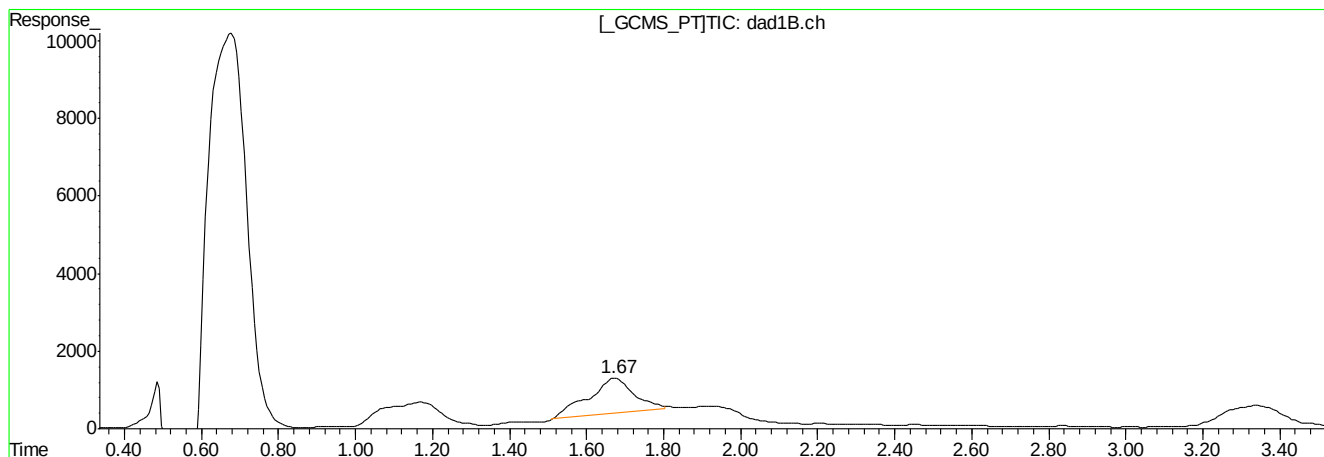
Supervisor approved: 01/31/23 12:32 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
HMX	2691-41-0	2	1.66	Poor instrument integration
HMX	2691-41-0	1	1.67	Poor instrument integration
3,5-Dinitroaniline	618-87-1	2	7.15	Poor instrument integration
2-amino-4,6-Dinitrotoluene	35572-78-2	2	12.14	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075432.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075432.D\dad1A.ch
Acq On : 27-Jan-2023, 11:36:25 Operator: fouads
Sample : fc2128-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 12:17 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(2) HMX

1.67min 50.583ppb m

response 74896

(2) HMX #2

1.66min 105.069ppb m

response 429758

QEdit

(+) = Expected Retention Time

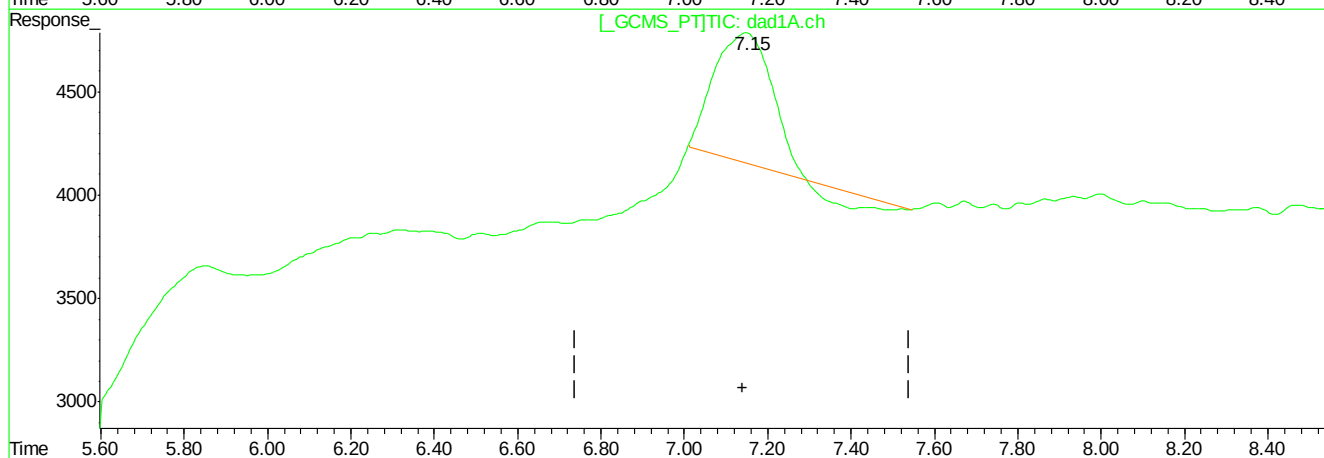
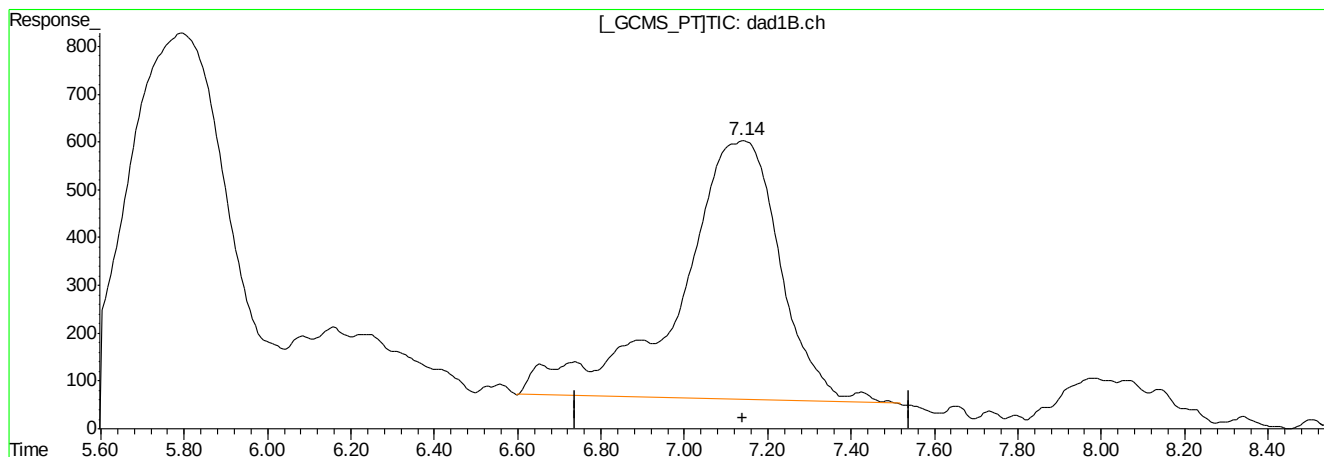
BB075432.D BBB2232_083122.M

Mon Jan 30 08:48:31 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075432.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075432.D\dad1A.ch
Acq On : 27-Jan-2023, 11:36:25 Operator: fouads
Sample : fc2128-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 12:17 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.14min 23.233ppb

response 91441

(8) 3,5-Dinitroaniline #2

7.15min 8.373ppb

response 54720

(+) = Expected Retention Time

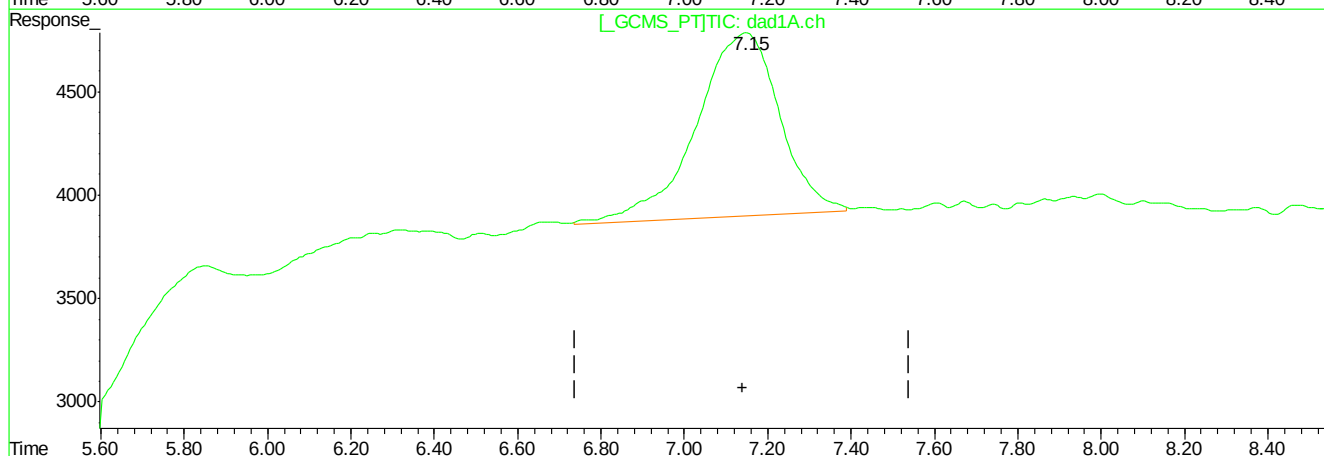
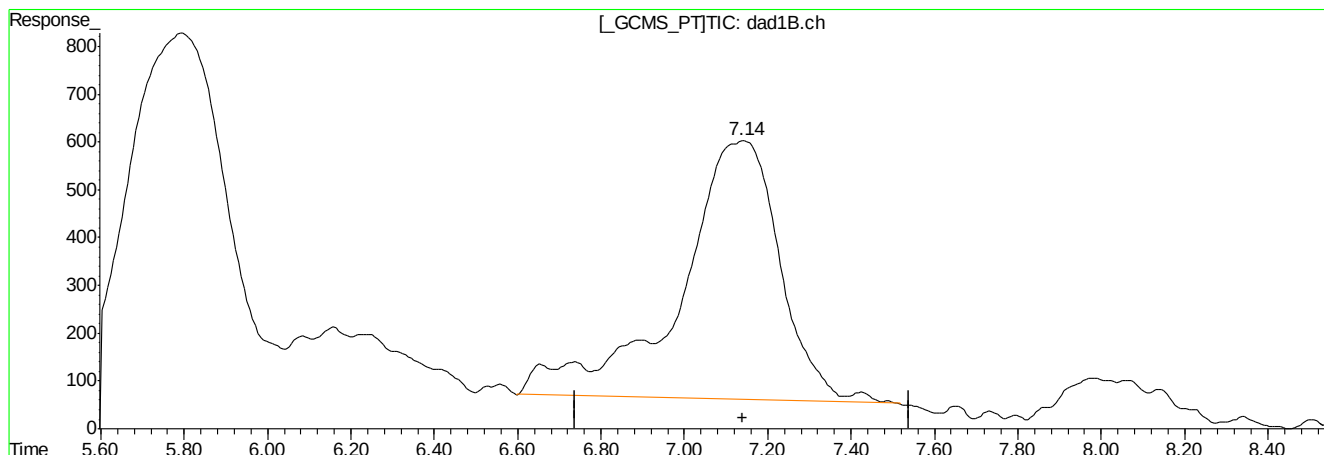
BB075432.D BBB2232_083122.M

Mon Jan 30 08:48:45 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075432.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075432.D\dad1A.ch
Acq On : 27-Jan-2023, 11:36:25 Operator: fouads
Sample : fc2128-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 12:17 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.14min 23.233ppb

response 91441

(8) 3,5-Dinitroaniline #2

7.15min 18.775ppb m

response 122701

(+) = Expected Retention Time

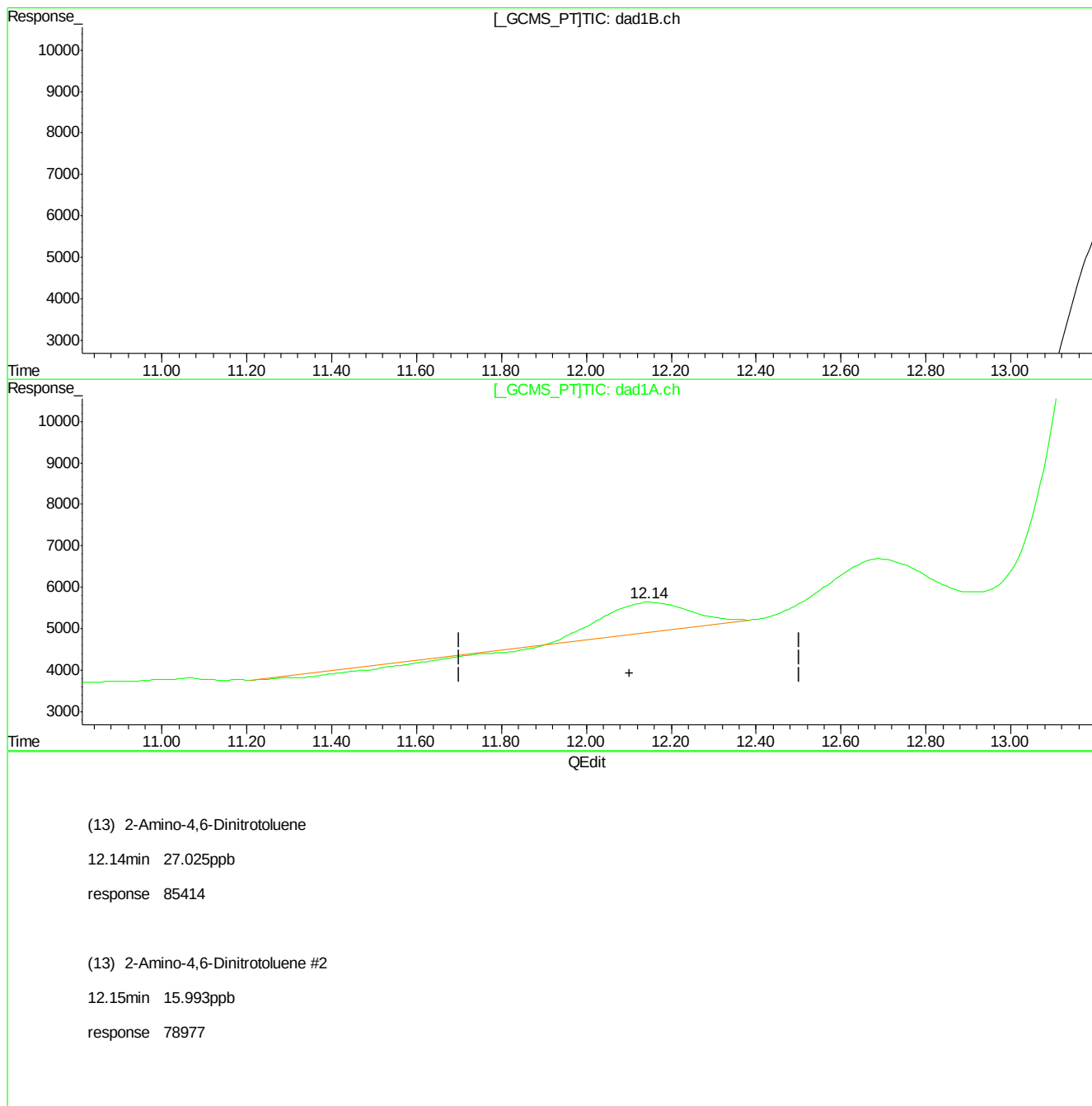
BB075432.D BBB2232_083122.M

Mon Jan 30 08:48:51 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075432.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075432.D\dad1A.ch
Acq On : 27-Jan-2023, 11:36:25 Operator: fouads
Sample : fc2128-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 12:17 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(+) = Expected Retention Time

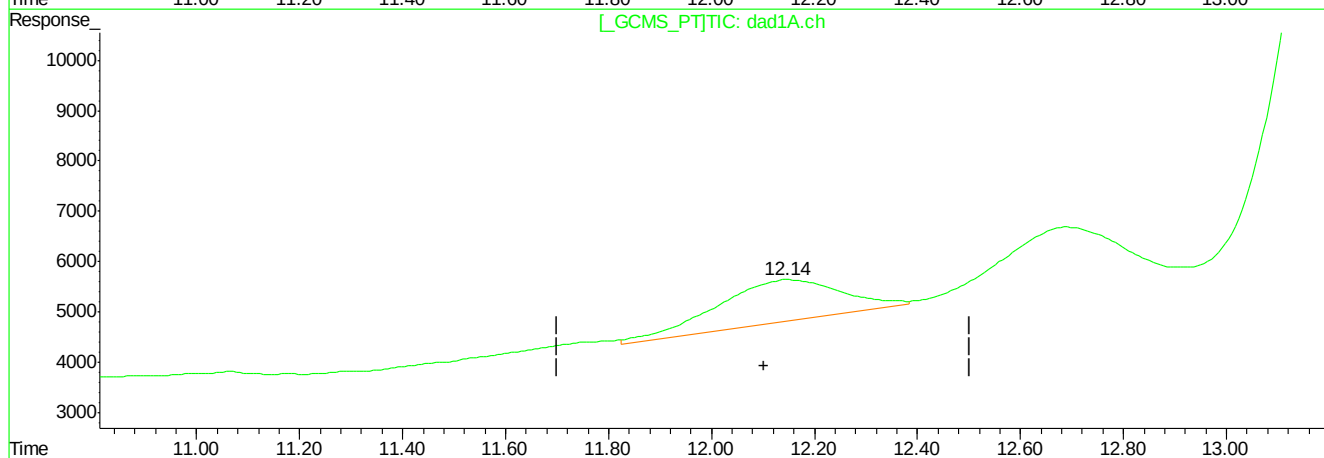
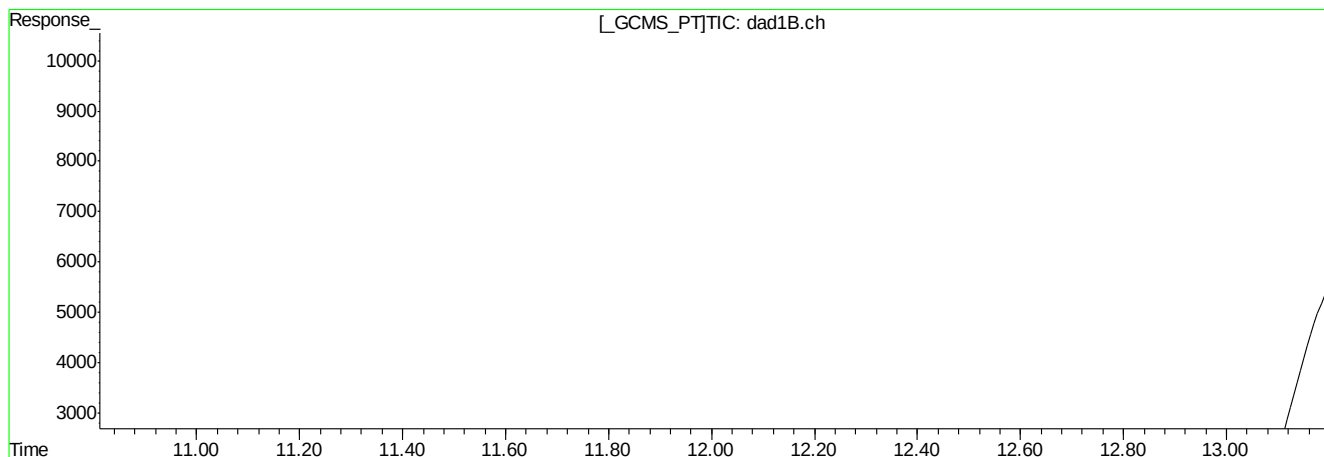
BB075432.D BBB2232_083122.M

Mon Jan 30 08:49:02 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075432.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075432.D\dad1A.ch
Acq On : 27-Jan-2023, 11:36:25 Operator: fouads
Sample : fc2128-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 12:17 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(13) 2-Amino-4,6-Dinitrotoluene

12.14min 27.025ppb

response 85414

(13) 2-Amino-4,6-Dinitrotoluene #2

12.14min 28.797ppb m

response 142210

(+) = Expected Retention Time

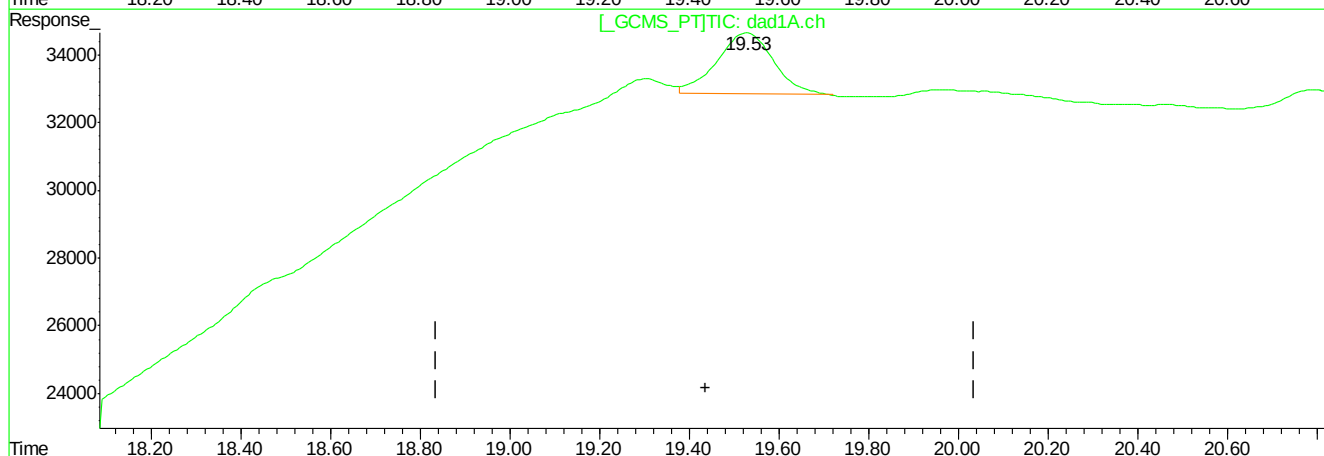
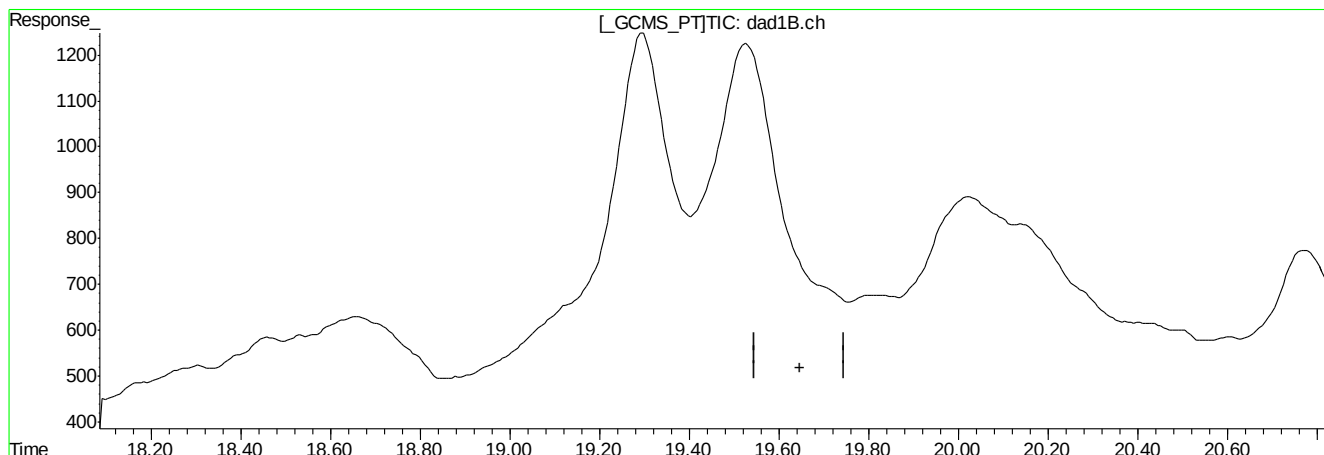
BB075432.D BBB2232_083122.M

Mon Jan 30 08:49:08 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075432.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075432.D\dad1A.ch
Acq On : 27-Jan-2023, 11:36:25 Operator: fouads
Sample : fc2128-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 12:17 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.53min 114.561ppb m

response 153970

(+) = Expected Retention Time

BB075432.D BBB2232_083122.M

Mon Jan 30 08:49:36 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625709.D\dad1B.ch Vial: 14
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625709.D\dad1A.ch
 Acq On : 30-Jan-2023, 18:25:47 Operator: fouads
 Sample : fc2128-3 Inst : G1315B
 Misc : op95139,GGG3229,1020,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 08:38:33 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.27	14.27	2401602	4598281	447.117	458.132
Spiked Amount	500.000	Range	70 - 136	Recovery	=	89.42% 91.63%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D.	N.D.
2) HMX	5.03	5.03	132558	133328	45.682m	44.945m
3) DNX	0.00	0.00	0	0	N.D.	N.D.
4) MNX	0.00	0.00	0	0	N.D.	N.D.
5) 1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
6) RDX	7.65	7.66	133560	150740	31.199	35.310
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D. d	N.D. d
8) Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
9) 2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
13) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
14) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D. d	N.D. d
15) 3,5-Dinitroanili	16.10	16.14	186674	372810	19.770	23.809
16) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
17) p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
18) 4-Amino-2,6-Dini	18.05f	18.10	249150	427400	51.075m	47.661m
19) m-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
20) 2-Amino-4,6-Dini	19.93	19.91	328418	498563	38.551	44.133m
21) PETN	0.00	0.00	0	0	N.D.	N.D.

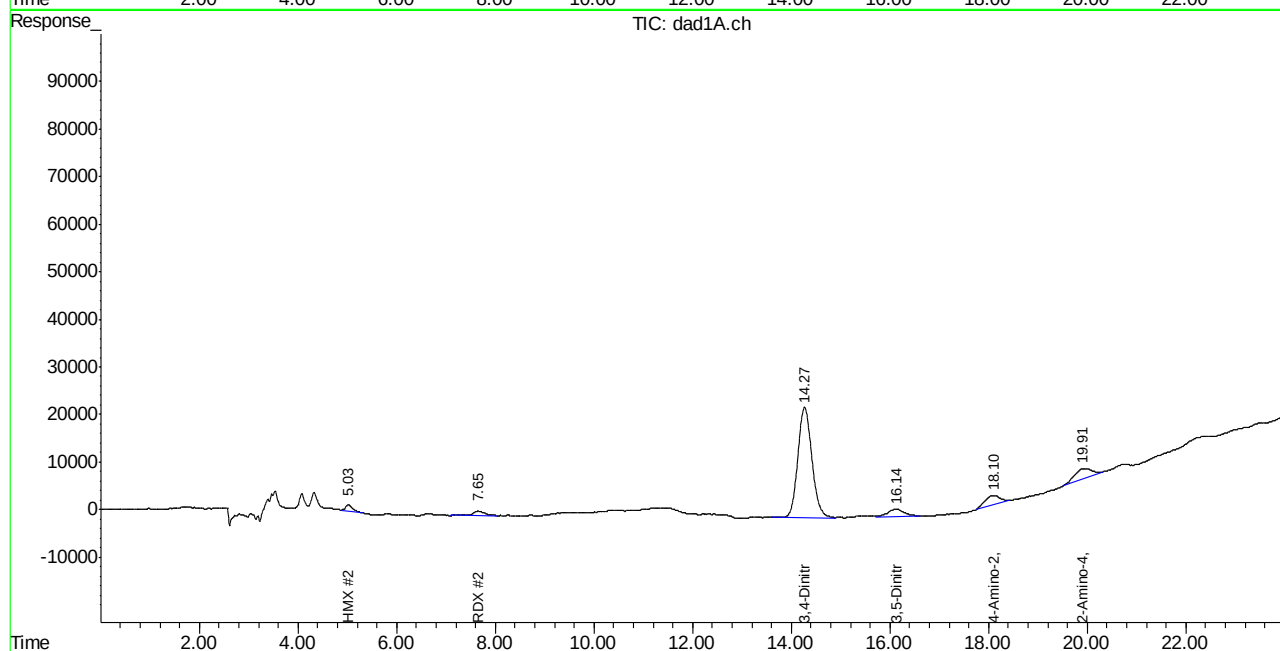
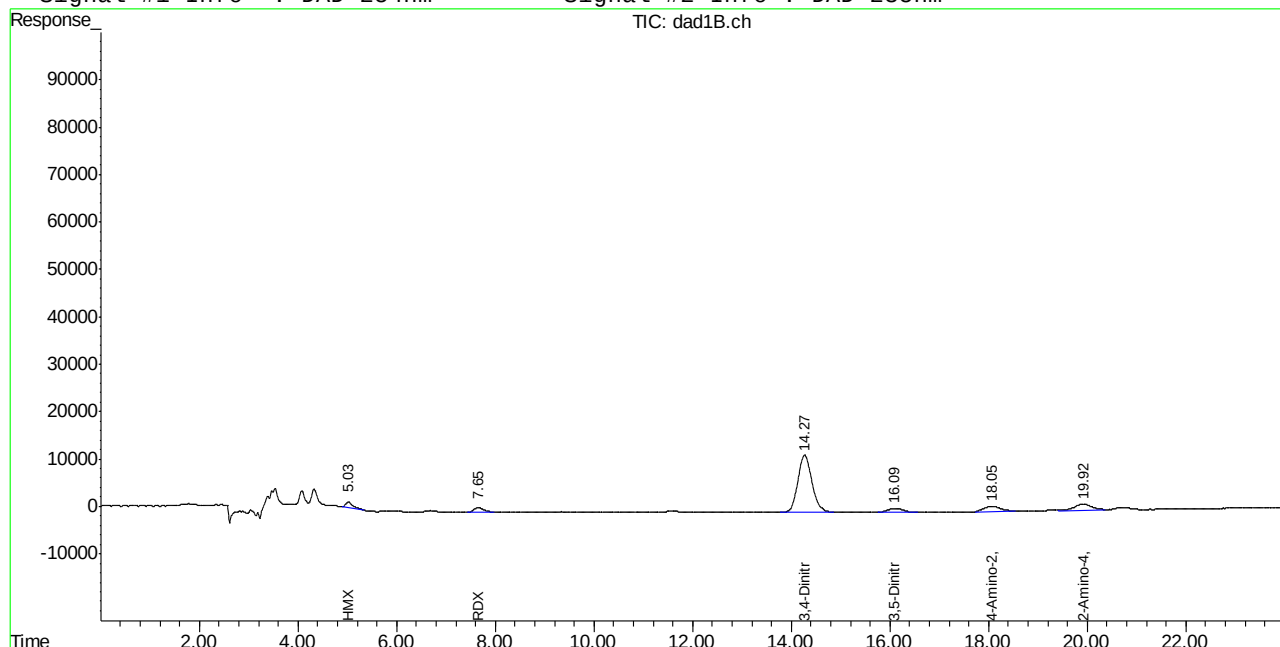
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625709.D GGG3229_013023.M Tue Jan 31 11:32:51 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625709.D\dad1B.ch Vial: 14
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625709.D\dad1A.ch
Acq On : 30-Jan-2023, 18:25:47 Operator: fouads
Sample : fc2128-3 Inst : G1315B
Misc : op95139,GGG3229,1020,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:55 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number: FC2128-3

Method: SW846 8330B

Lab FileID: GG625709.D

Analyst approved: 01/31/23 11:38 Fouad Sekkar

Injection Time: 01/30/23 18:25

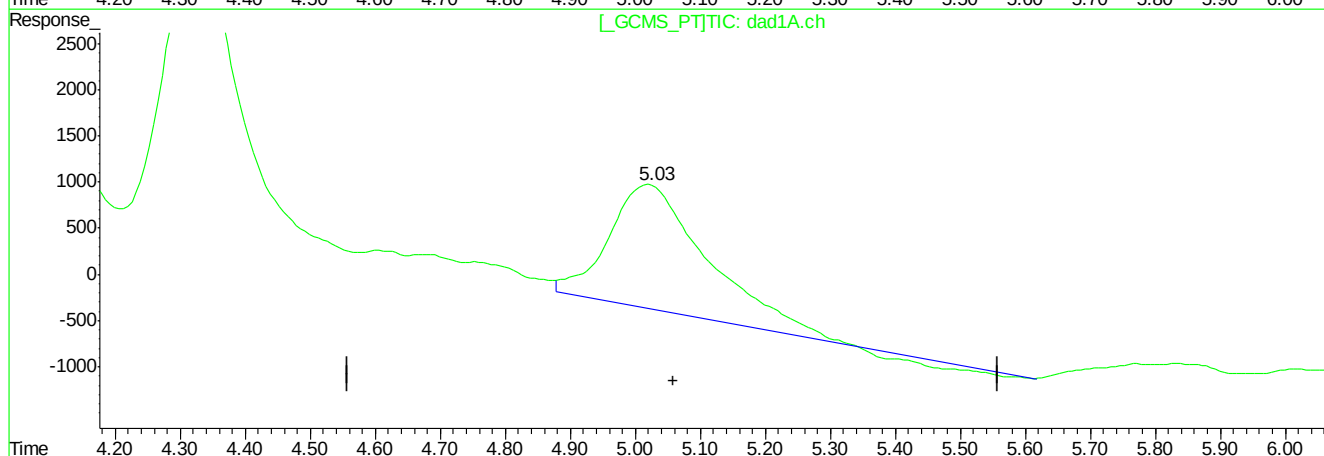
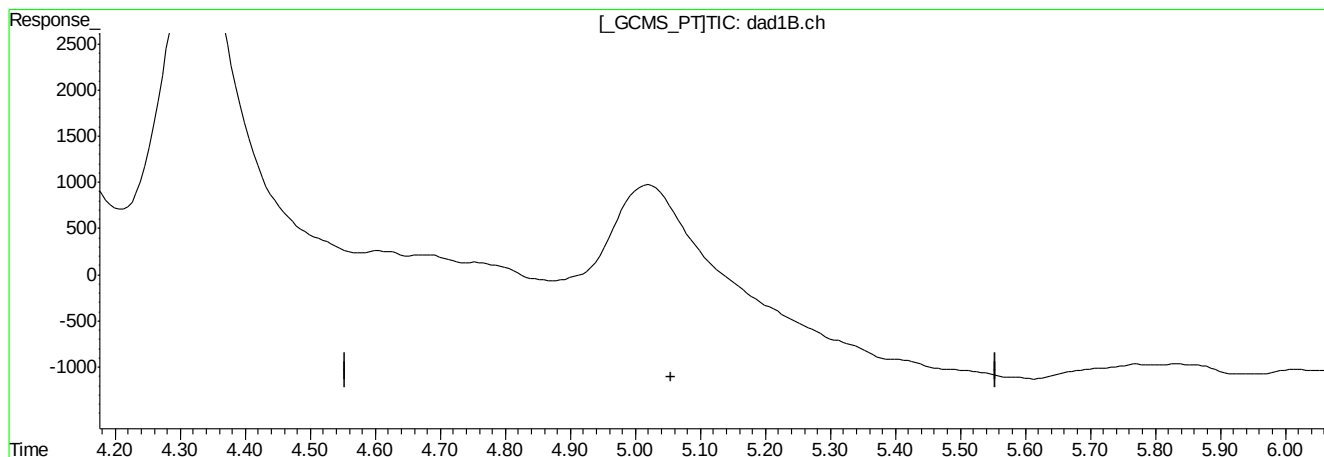
Supervisor approved: 01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
HMX	2691-41-0	1	5.03	Poor instrument integration
HMX	2691-41-0	2	5.03	Poor instrument integration
4-amino-2,6-Dinitrotoluene	19406-51-0	1	18.05	Poor instrument integration
4-amino-2,6-Dinitrotoluene	19406-51-0	2	18.10	Poor instrument integration
2-amino-4,6-Dinitrotoluene	35572-78-2	2	19.91	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625709.D\dad1B.ch Vial: 14
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625709.D\dad1A.ch
Acq On : 30-Jan-2023, 18:25:47 Operator: fouads
Sample : fc2128-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

0.00min 0.000ppb

response 0

(2) HMX #2

5.02min 46.516ppb

response 137988

(+) = Expected Retention Time

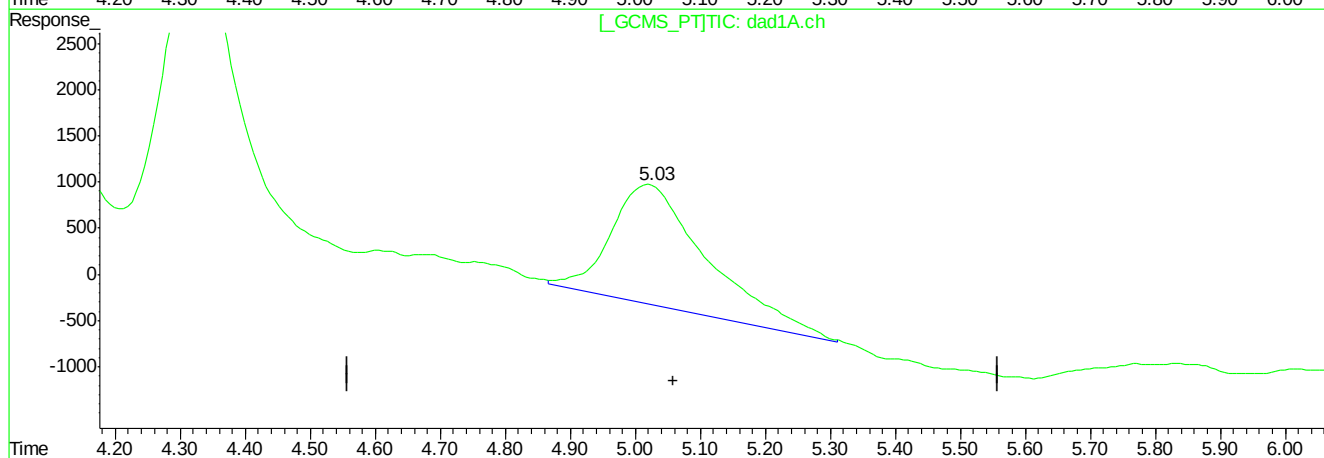
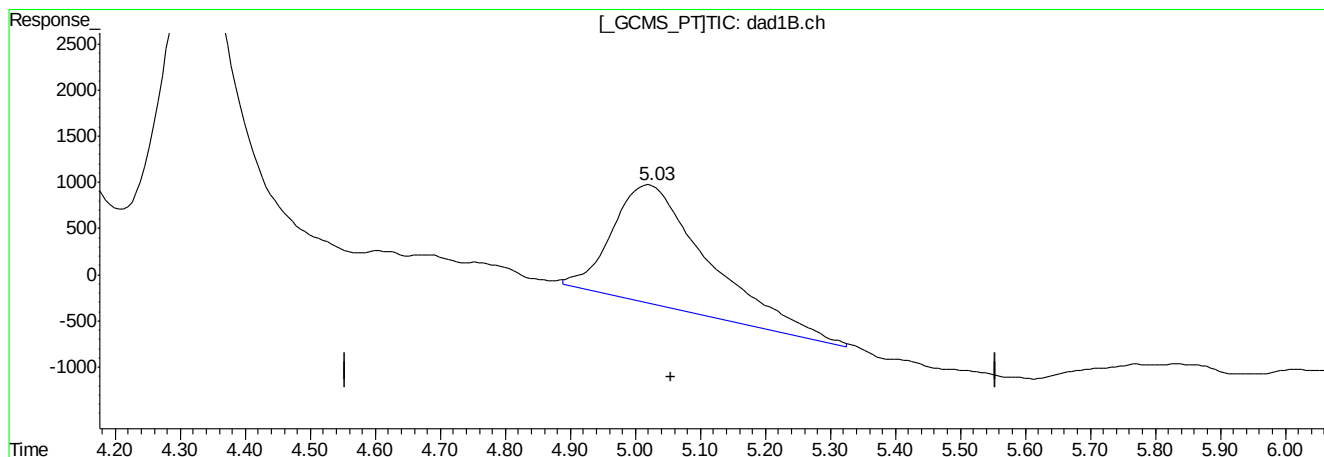
GG625709.D GGG3229_013023.M

Tue Jan 31 08:53:25 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625709.D\dad1B.ch Vial: 14
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625709.D\dad1A.ch
 Acq On : 30-Jan-2023, 18:25:47 Operator: fouads
 Sample : fc2128-3 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration



QEdit

(2) HMX

5.03min 45.682ppb m

response 132558

(2) HMX #2

5.03min 44.945ppb m

response 133328

(+) = Expected Retention Time

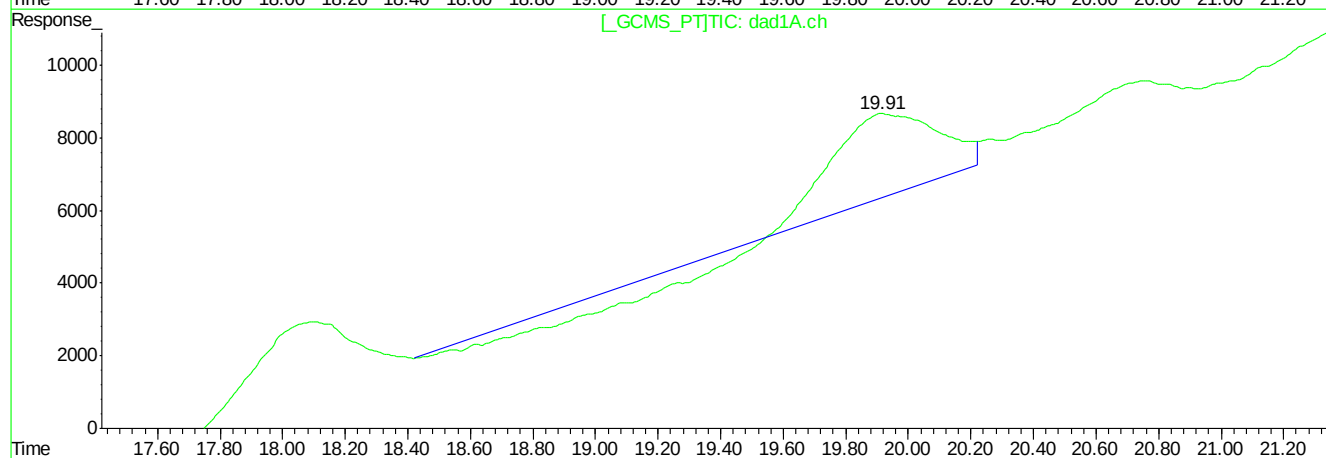
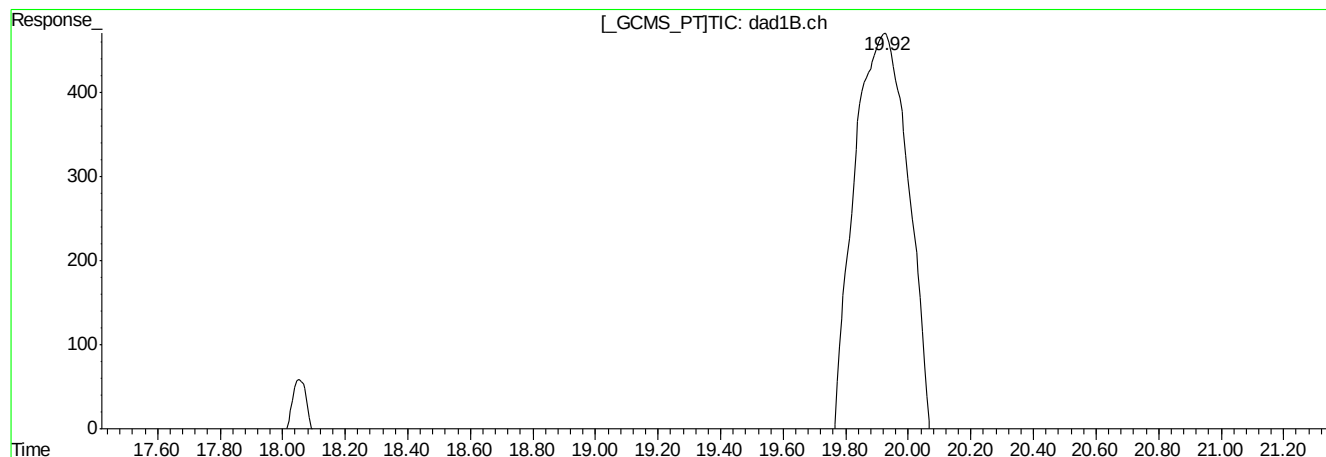
GG625709.D GGG3229_013023.M

Tue Jan 31 08:53:45 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625709.D\dad1B.ch Vial: 14
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625709.D\dad1A.ch
 Acq On : 30-Jan-2023, 18:25:47 Operator: fouads
 Sample : fc2128-3 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration



QEdit

(20) 2-Amino-4,6-Dinitrotoluene

19.93min 38.551ppb

response 328418

(20) 2-Amino-4,6-Dinitrotoluene #2

19.92min 28.691ppb

response 324118

(+) = Expected Retention Time

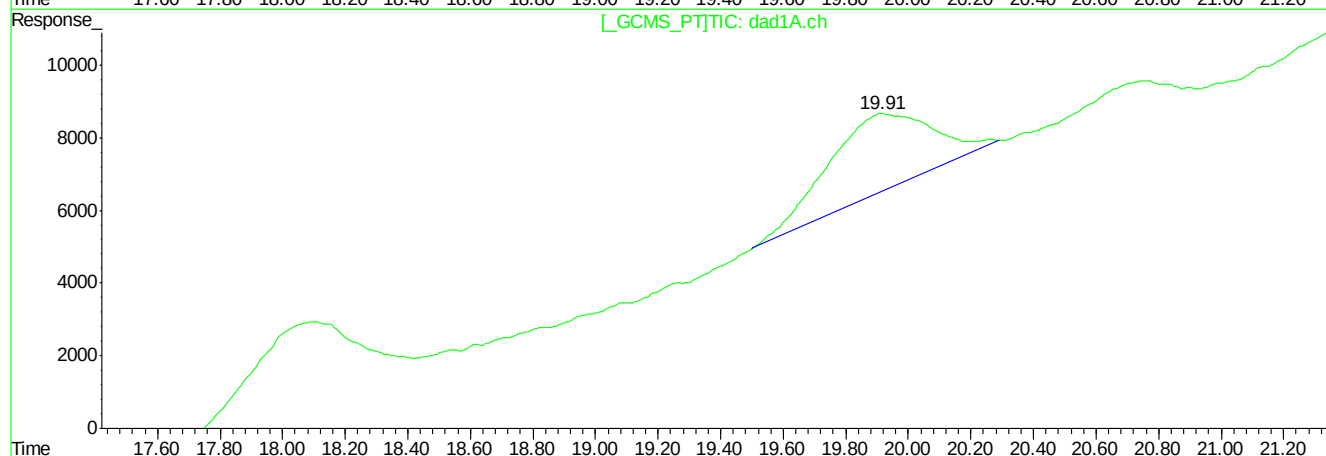
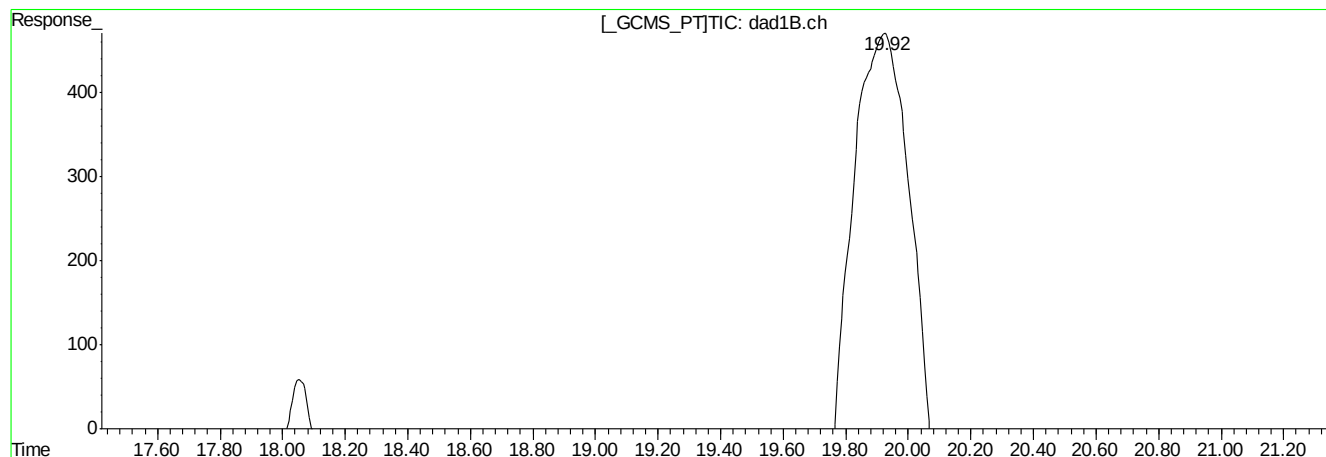
GG625709.D GGG3229_013023.M

Tue Jan 31 08:54:35 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625709.D\dad1B.ch Vial: 14
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625709.D\dad1A.ch
 Acq On : 30-Jan-2023, 18:25:47 Operator: fouads
 Sample : fc2128-3 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration



QEdit

(20) 2-Amino-4,6-Dinitrotoluene

19.93min 38.551ppb

response 328418

(20) 2-Amino-4,6-Dinitrotoluene #2

19.91min 44.133ppb m

response 498563

(+) = Expected Retention Time

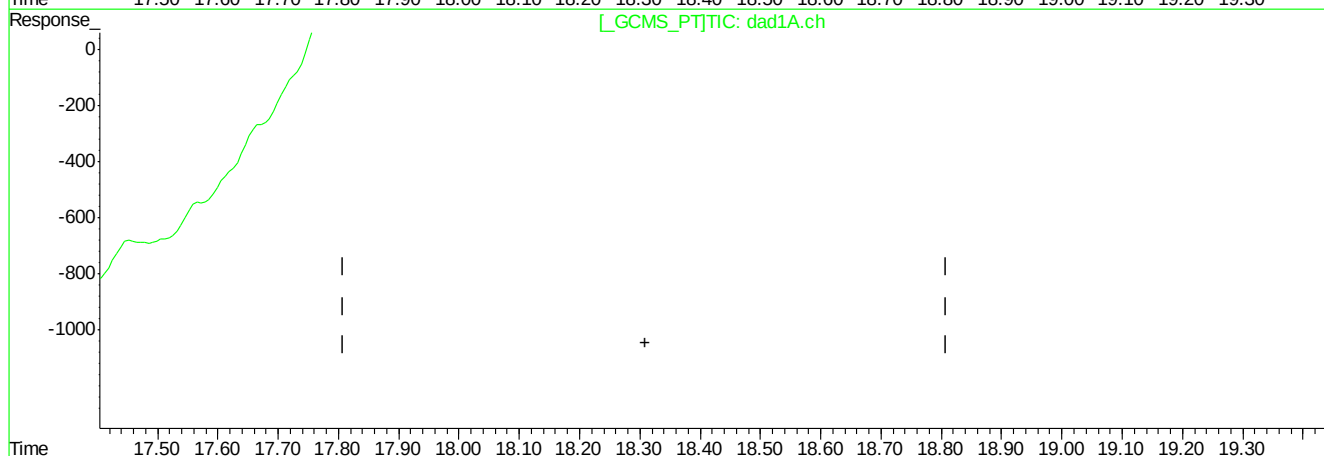
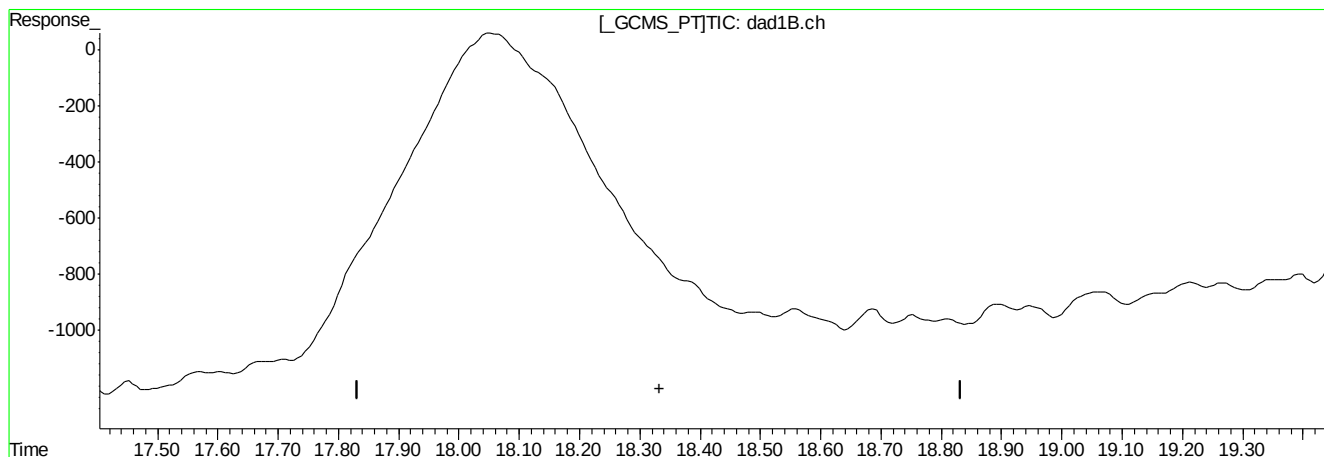
GG625709.D GGG3229_013023.M

Tue Jan 31 08:55:00 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625709.D\dad1B.ch Vial: 14
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625709.D\dad1A.ch
Acq On : 30-Jan-2023, 18:25:47 Operator: fouads
Sample : fc2128-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(18) 4-Amino-2,6-Dinitrotoluene

0.00min 0.000ppb

response 0

(18) 4-Amino-2,6-Dinitrotoluene #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

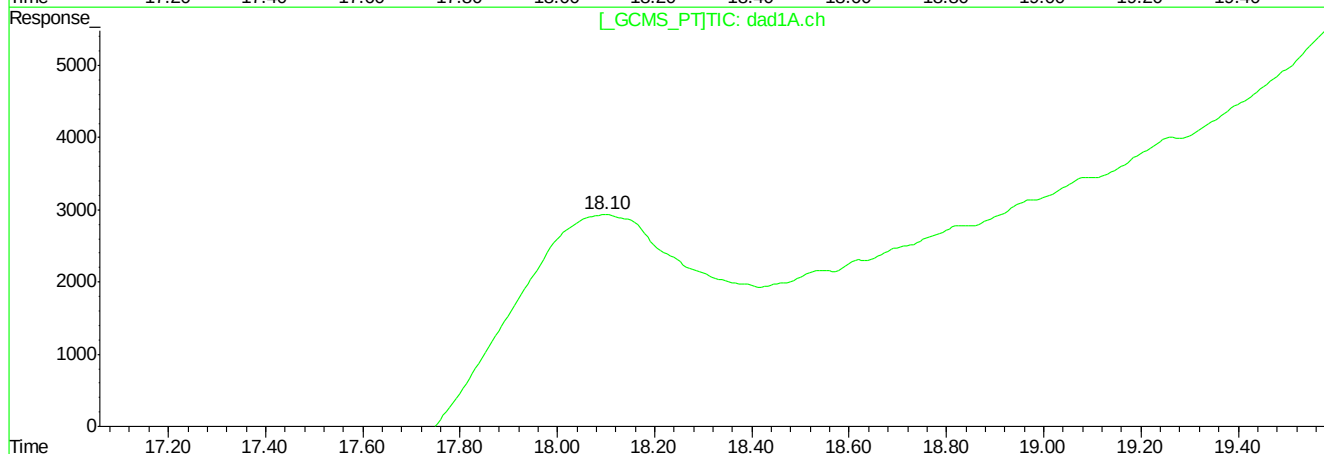
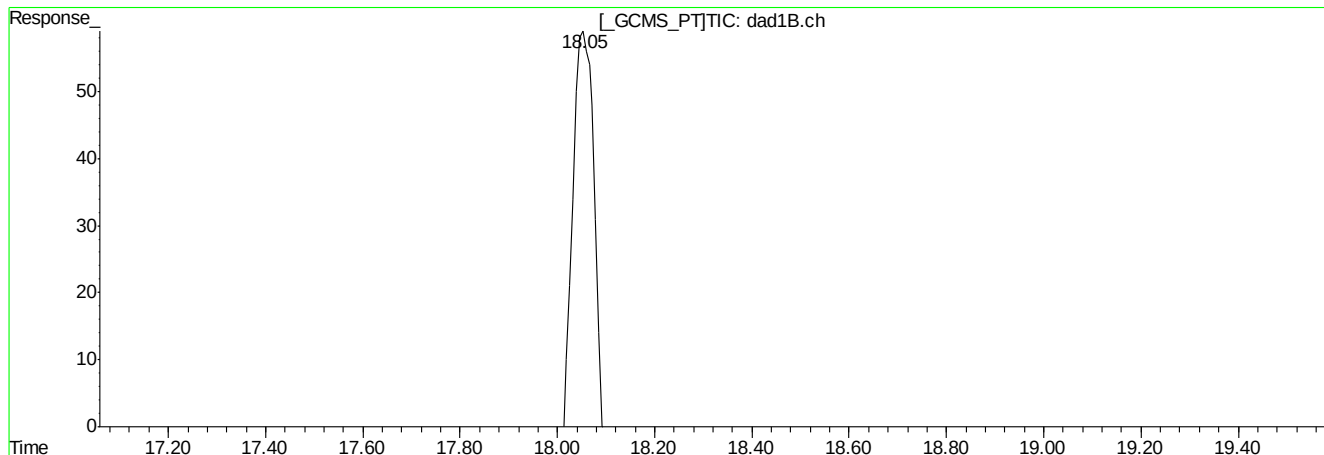
GG625709.D GGG3229_013023.M

Tue Jan 31 08:55:21 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625709.D\dad1B.ch Vial: 14
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625709.D\dad1A.ch
Acq On : 30-Jan-2023, 18:25:47 Operator: fouads
Sample : fc2128-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



(18) 4-Amino-2,6-Dinitrotoluene

18.05min 51.075ppb m

response 249150

(18) 4-Amino-2,6-Dinitrotoluene #2

18.10min 47.661ppb m

response 427400

QEdit

(+) = Expected Retention Time

GG625709.D GGG3229_013023.M

Tue Jan 31 08:55:34 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075412.D\dad1B.ch Vial: 7
 Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075412.D\dad1A.ch
 Acq On : 26-Jan-2023, 12:33:22 Operator: fouads
 Sample : op95139-mb Inst : G1315B
 Misc : op95139,GBB2299,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 26 13:13:11 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.23	13.23	775623	1446832	362.031	340.538m
Spiked Amount	500.000	Range	70 - 136	Recovery	=	72.41% 68.11%#
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	0.00	0.00	0	0	N.D. d	N.D. d
3) DNx	0.00	0.00	0	0	N.D.	N.D.
4) MNx	0.00	0.00	0	0	N.D.	N.D.
5) RDX	0.00	0.00	0	0	N.D.	N.D.
6) 1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D. d	N.D. d
8) 3,5-Dinitroanili	0.00	0.00	0	0	N.D. d	N.D. d
9) Nitrobenzene	0.00	0.00	0	0	N.D. d	N.D. d
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
12) 2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
13) 2-Amino-4,6-Dini	0.00	0.00	0	0	N.D.	N.D.
14) 4-Amino-2,6-Dini	0.00	0.00	0	0	N.D.	N.D.
16) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
17) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
18) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
19) p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20) m-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
21) PETN	0.00	0.00	0	0	N.D. d	N.D. d

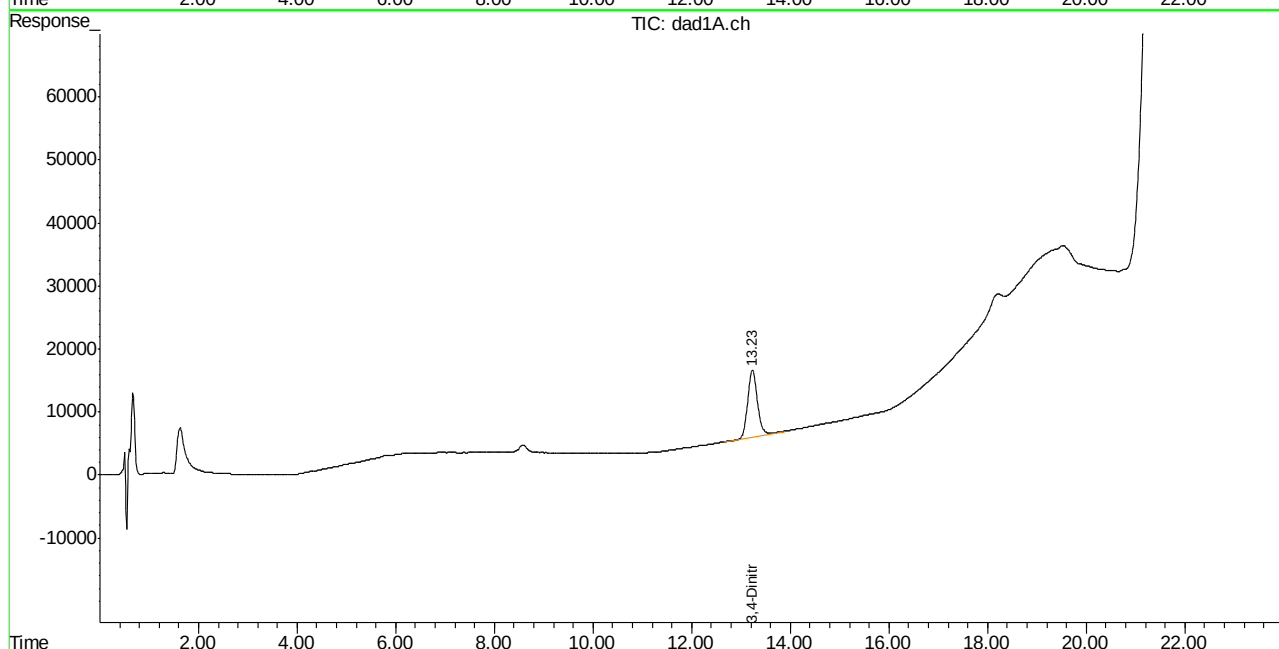
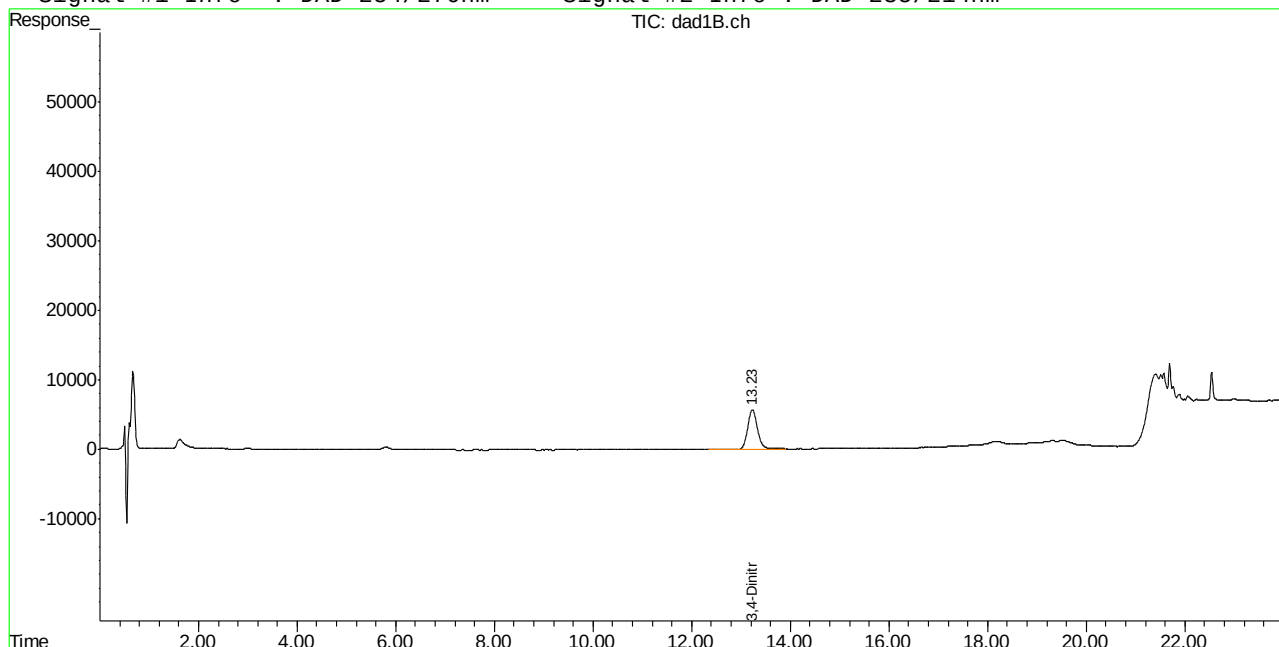
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075412.D BBB2232_083122.M Tue Jan 31 11:47:15 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075412.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075412.D\dad1A.ch
Acq On : 26-Jan-2023, 12:33:22 Operator: fouads
Sample : op95139-mb Inst : G1315B
Misc : op95139,GBB2299,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:20 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: OP95139-MB

Method: SW846 8330A

Lab FileID: BB075412.D

Analyst approved: 02/06/23 14:09 Naresh Jiawan

Injection Time: 01/26/23 12:33

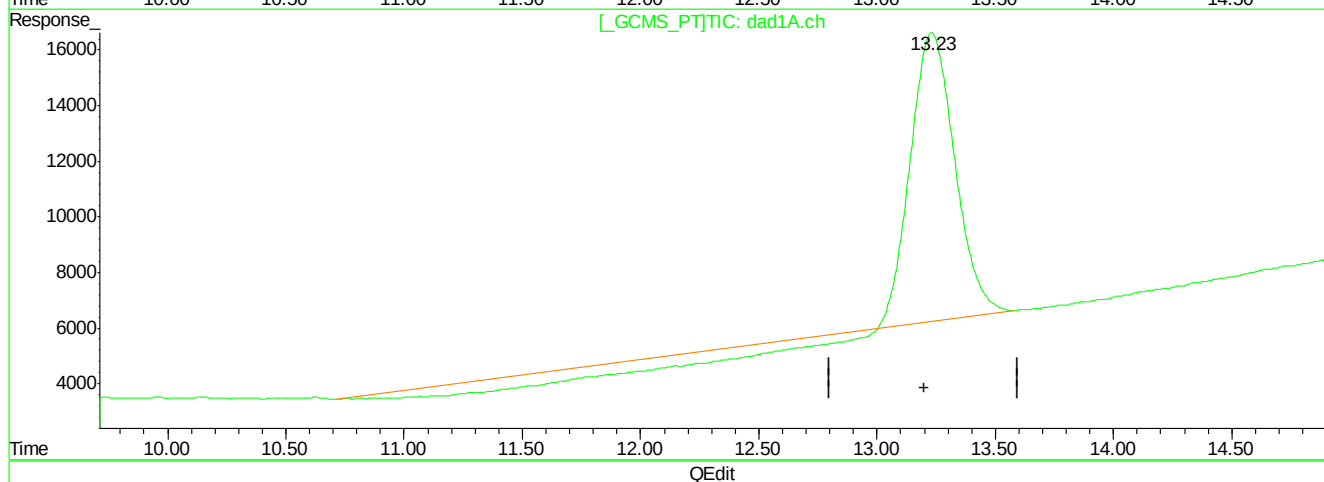
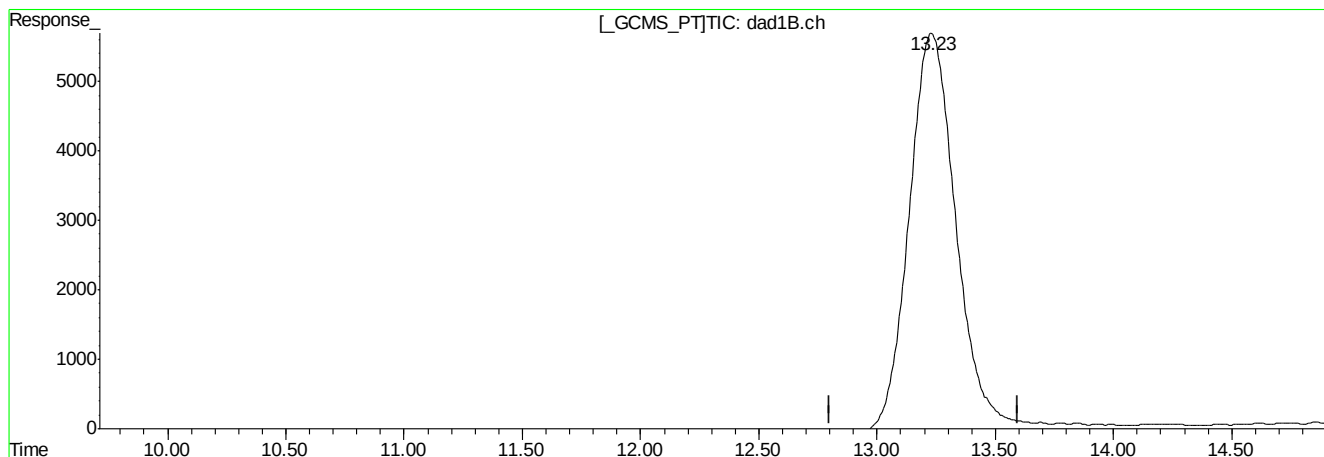
Supervisor approved: 02/06/23 14:09 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,4-Dinitrotoluene	610-39-9	2	13.23	Poorly defined baseline

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075412.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075412.D\dad1A.ch
Acq On : 26-Jan-2023, 12:33:22 Operator: fouads
Sample : op95139-mb Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 13:13 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(15) 3,4-Dinitrotoluene (S)

13.23min 362.031ppb

response 775623

(15) 3,4-Dinitrotoluene #2 (S)

13.23min 204.827ppb

response 870242

(+) = Expected Retention Time

BB075412.D BBB2232_083122.M

Fri Jan 27 08:20:11 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075412.D\dad1B.ch Vial: 7
 Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075412.D\dad1A.ch
 Acq On : 26-Jan-2023, 12:33:22 Operator: fouads
 Sample : op95139-mb Inst : G1315B
 Misc : op95139,GBB2299,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 26 13:13:11 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.23	13.23	775623	1446832	362.031	340.538m
Spiked Amount	500.000	Range	70 - 136	Recovery	=	72.41% 68.11%#
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	0.00	0.00	0	0	N.D. d	N.D. d
3) DNx	0.00	0.00	0	0	N.D.	N.D.
4) MNx	0.00	0.00	0	0	N.D.	N.D.
5) RDX	0.00	0.00	0	0	N.D.	N.D.
6) 1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D. d	N.D. d
8) 3,5-Dinitroanili	0.00	0.00	0	0	N.D. d	N.D. d
9) Nitrobenzene	0.00	0.00	0	0	N.D. d	N.D. d
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
12) 2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
13) 2-Amino-4,6-Dini	0.00	0.00	0	0	N.D.	N.D.
14) 4-Amino-2,6-Dini	0.00	0.00	0	0	N.D.	N.D.
16) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
17) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
18) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
19) p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20) m-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
21) PETN	0.00	0.00	0	0	N.D. d	N.D. d

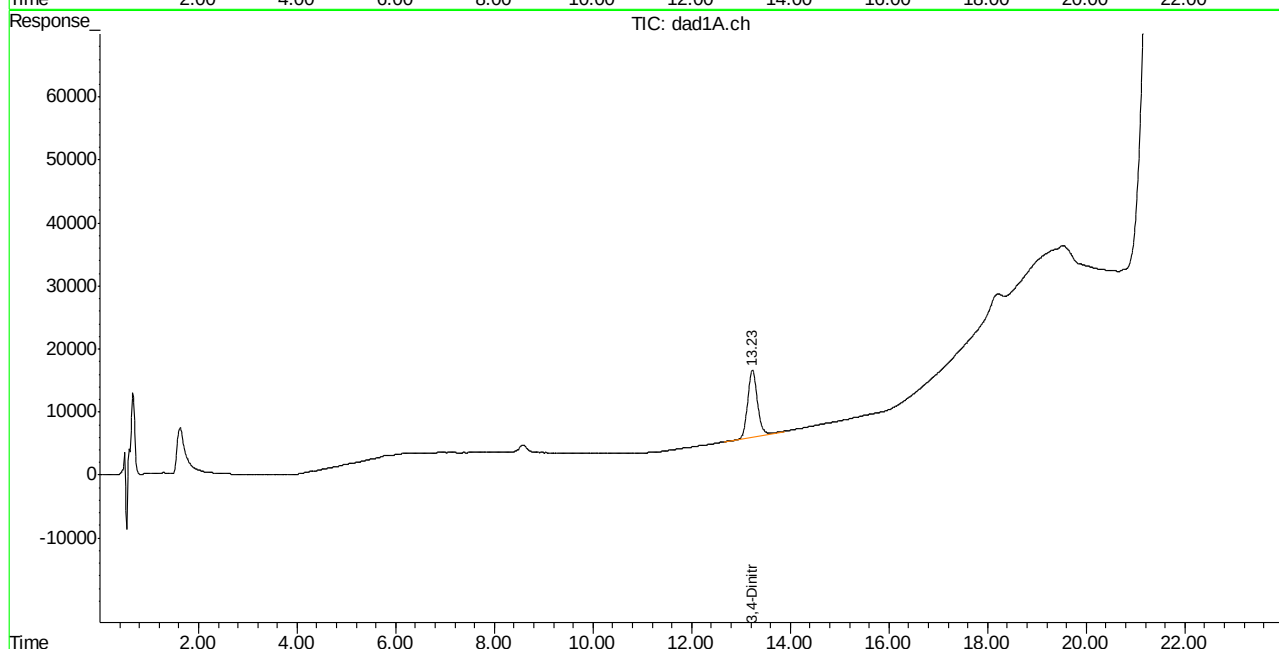
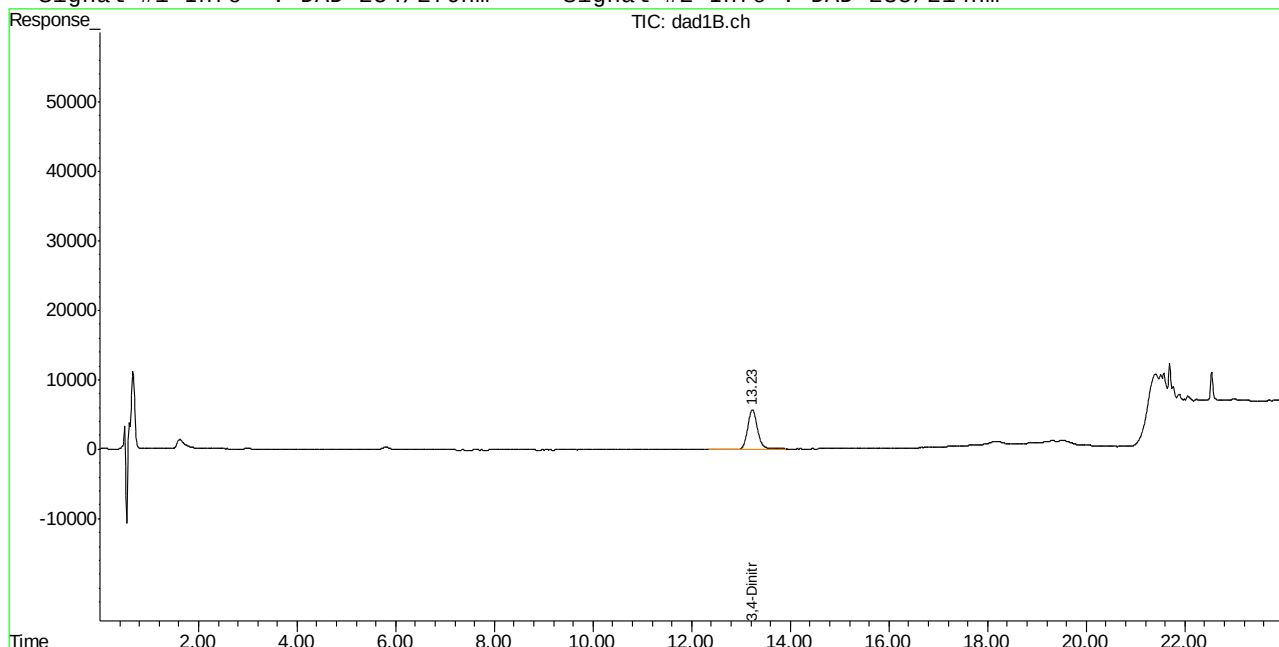
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075412.D BBB2232_083122.M Tue Jan 31 11:47:15 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075412.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075412.D\dad1A.ch
Acq On : 26-Jan-2023, 12:33:22 Operator: fouads
Sample : op95139-mb Inst : G1315B
Misc : op95139,GBB2299,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:20 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: OP95139-MB

Method: SW846 8330A

Lab FileID: BB075412.D

Analyst approved: 02/06/23 14:09 Naresh Jiawan

Injection Time: 01/26/23 12:33

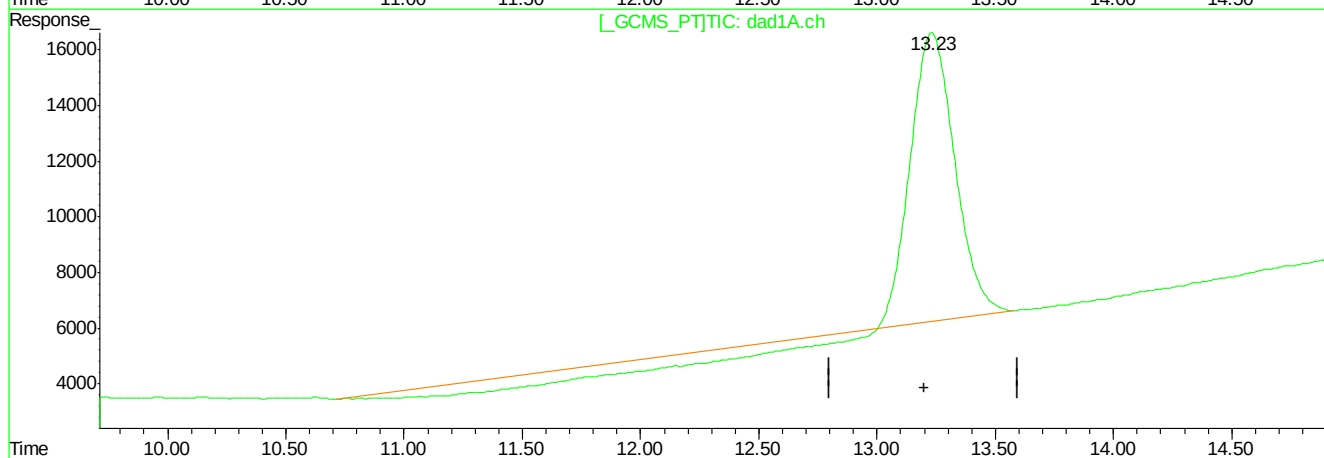
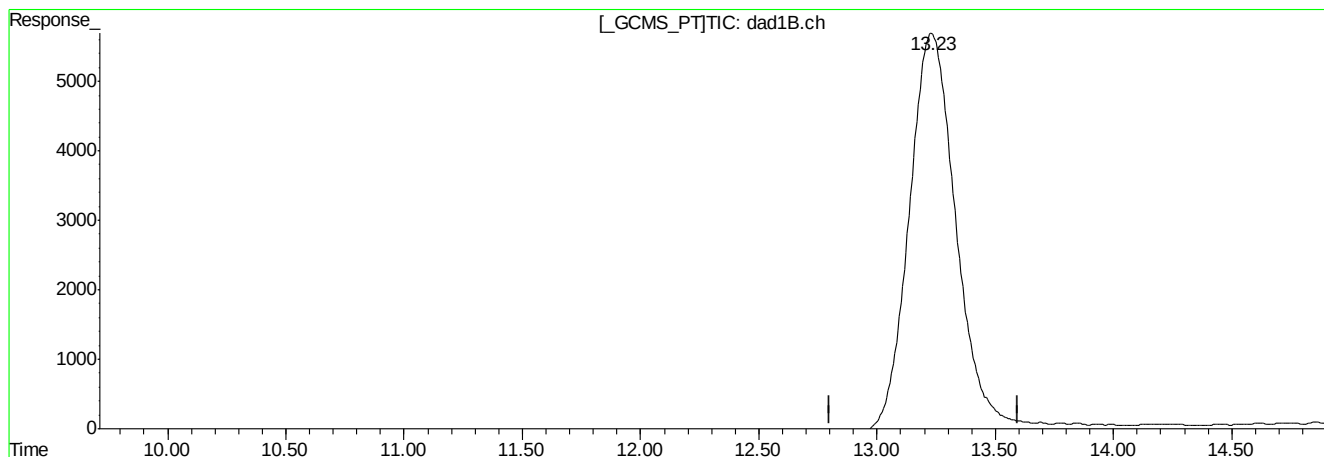
Supervisor approved: 02/06/23 14:09 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,4-Dinitrotoluene	610-39-9	2	13.23	Poorly defined baseline

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075412.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075412.D\dad1A.ch
Acq On : 26-Jan-2023, 12:33:22 Operator: fouads
Sample : op95139-mb Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 13:13 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(15) 3,4-Dinitrotoluene (S)

13.23min 362.031ppb

response 775623

(15) 3,4-Dinitrotoluene #2 (S)

13.23min 204.827ppb

response 870242

(+) = Expected Retention Time

BB075412.D BBB2232_083122.M

Fri Jan 27 08:20:11 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625706.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625706.D\dad1A.ch
Acq On : 30-Jan-2023, 16:51:22 Operator: fouads
Sample : op95139-mb Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 08:38:30 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Initial Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.36	14.36	2396107	4677574	446.094	466.032
Spiked Amount	500.000	Range	70 - 136	Recovery	=	89.22% 93.21%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D.	N.D.
2) HMX	0.00	0.00	0	0	N.D.	N.D.
3) DNX	0.00	0.00	0	0	N.D.	N.D.
4) MNX	0.00	0.00	0	0	N.D.	N.D.
5) 1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
6) RDX	0.00	0.00	0	0	N.D. d	N.D. d
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
8) Nitrobenzene	0.00	0.00	0	0	N.D. d	N.D. d
9) 2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D. d	N.D. d
13) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
14) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
15) 3,5-Dinitroanili	0.00	0.00	0	0	N.D. d	N.D. d
16) o-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
17) p-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
18) 4-Amino-2,6-Dini	0.00	0.00	0	0	N.D. d	N.D. d
19) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20) 2-Amino-4,6-Dini	0.00	0.00	0	0	N.D.	N.D.
21) PETN	0.00	0.00	0	0	N.D.	N.D.

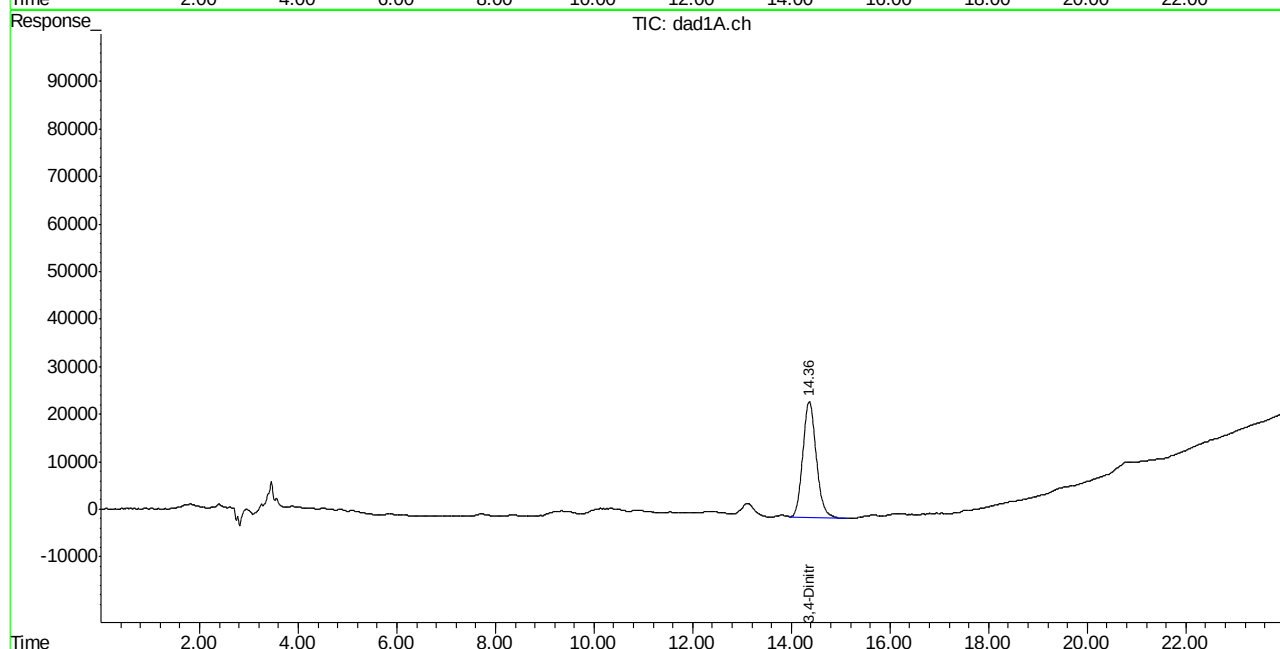
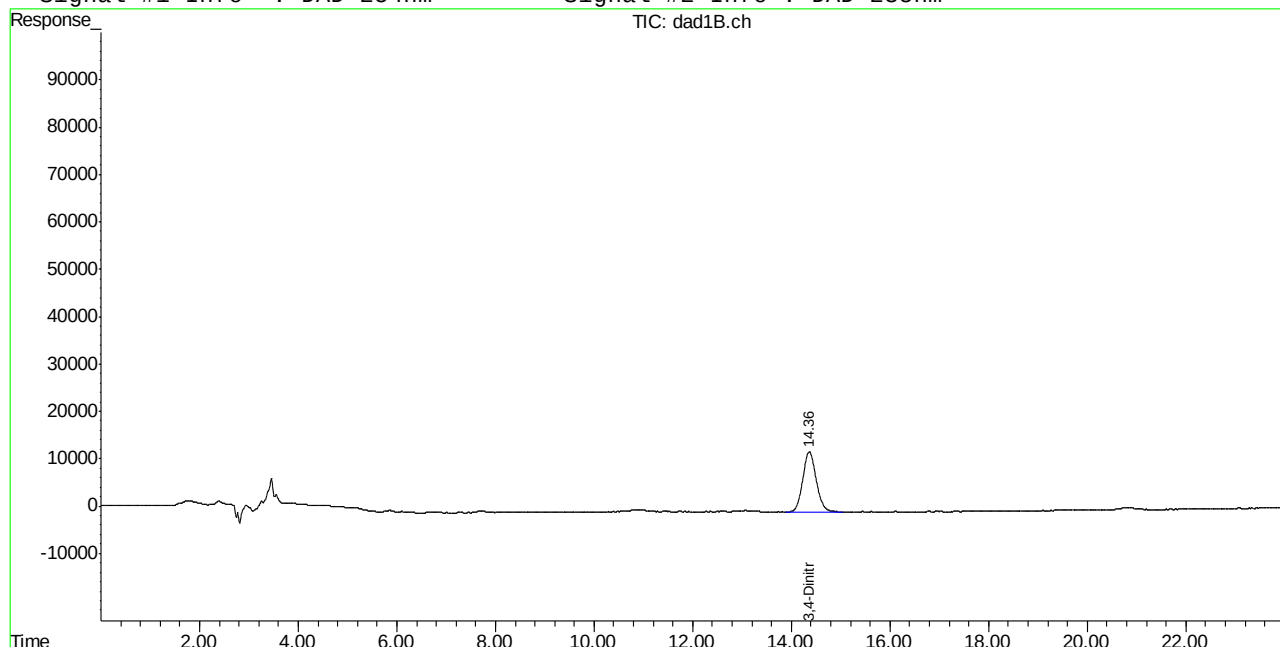
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
GG625706.D GGG3229_013023.M Tue Jan 31 11:32:48 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625706.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625706.D\dad1A.ch
Acq On : 30-Jan-2023, 16:51:22 Operator: fouads
Sample : op95139-mb Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:42 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm



Naresh Jiawan
02/06/23 14:09

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
 Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
 Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
 Sample : op95139-bs Inst : G1315B
 Misc : op95139,GBB2299,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 26 13:37:40 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.23	13.23	1021973	1747720	477.017	411.357
Spiked Amount	500.000	Range	70 - 136	Recovery	=	95.40% 82.27%
Target Compounds						
1) TNX	1.46	1.46	656301	1026140	174.864	178.304
2) HMX	1.68	1.68	757071	2126410	511.310	519.874
3) DNX	1.92	1.92	1273499	2039705	413.966	413.094
4) MNX	2.62	2.62	1431247	2191128	498.703	498.262
5) RDX	3.34	3.34	945738	1495855	509.841	510.633
6) 1,3,5-Trinitrobe	5.41	5.41	1670724	2702637	420.242	434.179
7) 1,3-Dinitrobenze	6.69	6.69	2668932	1721084	512.208	500.786
8) 3,5-Dinitroanili	7.15	7.14	2023640	3400419	514.159	520.309m
9) Nitrobenzene	8.52	8.53	1414364	1566002	471.674	528.242
10) Nitroglycerin	0.00	10.39	0	660514	N.D.	519.992 #
11) Tetryl	11.37	11.37	984098	1527270	348.273	331.590
12) 2,4,6-Trinitroto	11.73	11.73	1812635	2140606	495.902	480.735
13) 2-Amino-4,6-Dini	12.14	12.14	1677013	2472706	530.606	500.720
14) 4-Amino-2,6-Dini	12.69	12.69	1243571	2415290	541.487	491.456
16) 2,4-Dinitrotolue	13.79	13.79	1860430	1421068	397.210	456.337
17) 2,6-Dinitrotolue	14.25	14.25	735526	1683699	484.439	480.169m
18) o-Nitrotoluene	17.14	17.14	995977	1491145	461.231	453.773m
19) p-Nitrotoluene	17.56	17.56	1646848	1282831	492.276	453.902
20) m-Nitrotoluene	18.13	18.13	1513525	1688036	486.160	434.951
21) PETN	0.00	19.48	0	788809	N.D.	586.915m#

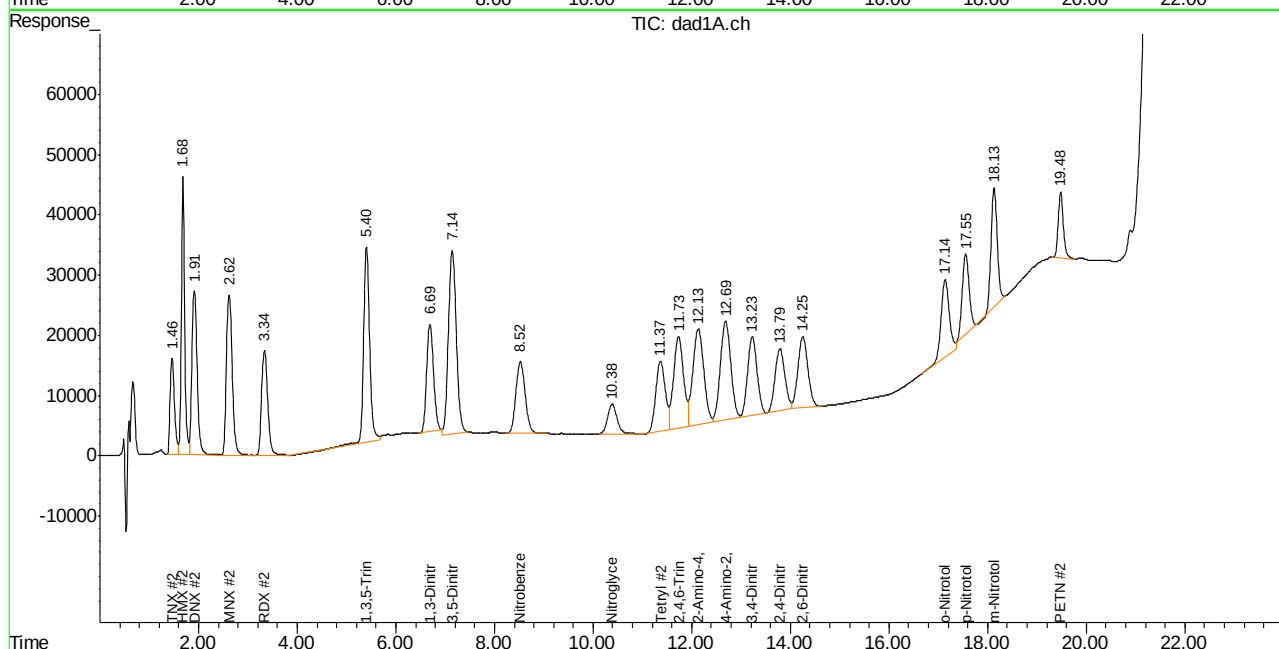
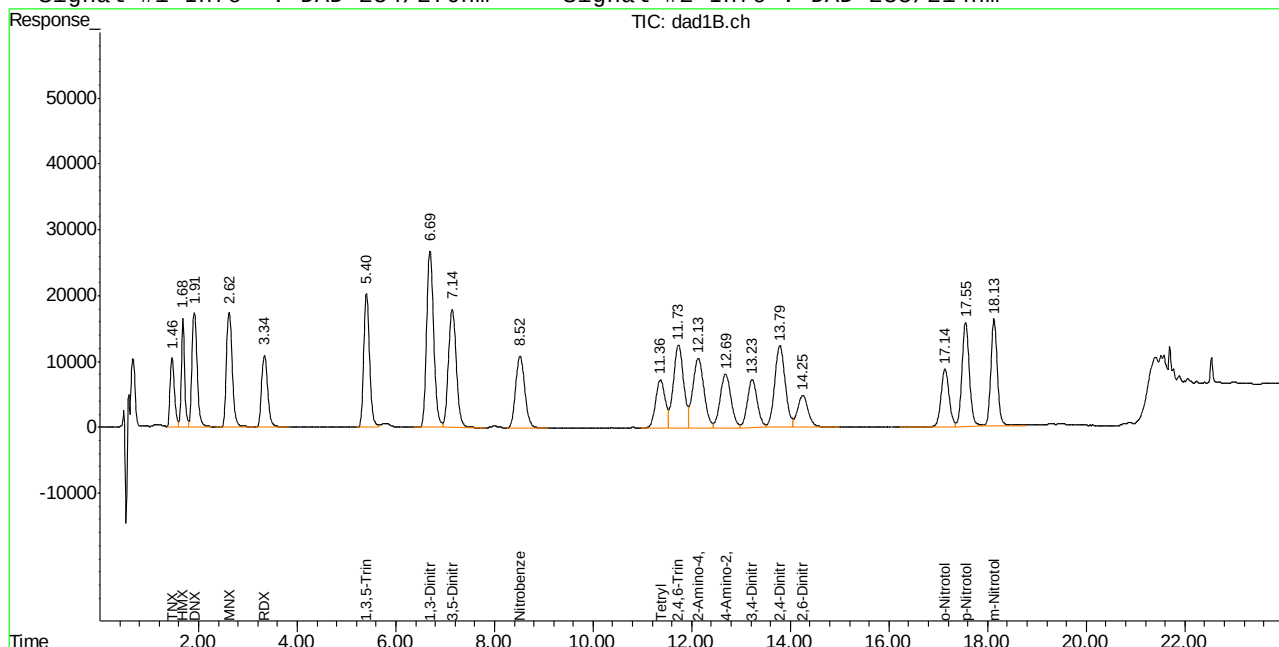
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075413.D BBB2232_083122.M Tue Jan 31 11:47:16 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
Sample : op95139-bs Inst : G1315B
Misc : op95139,GBB2299,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:21 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: OP95139-BS

Method: SW846 8330A

Lab FileID: BB075413.D

Analyst approved: 02/06/23 14:09 Naresh Jiawan

Injection Time: 01/26/23 13:04

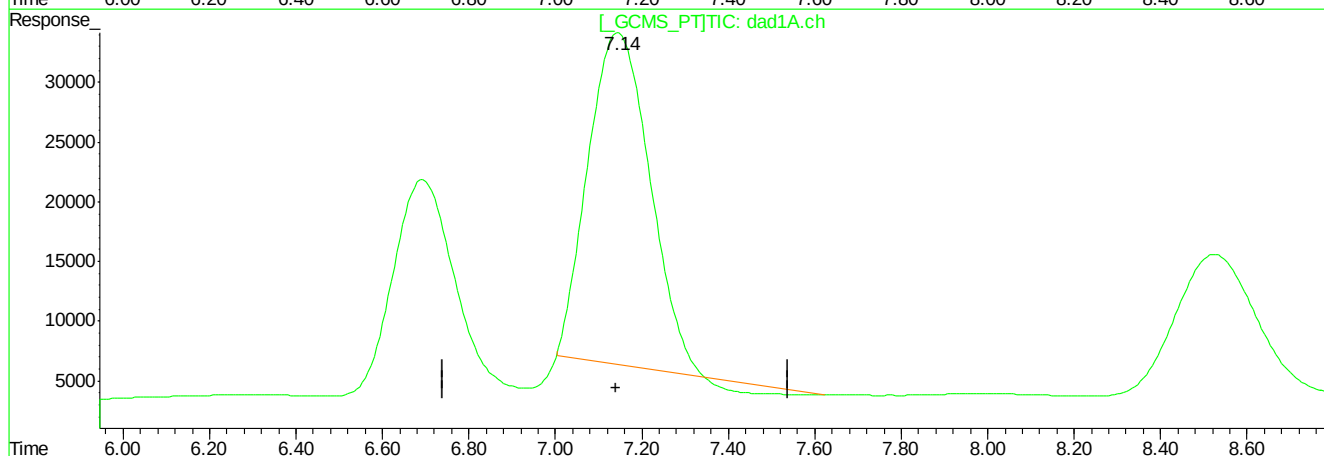
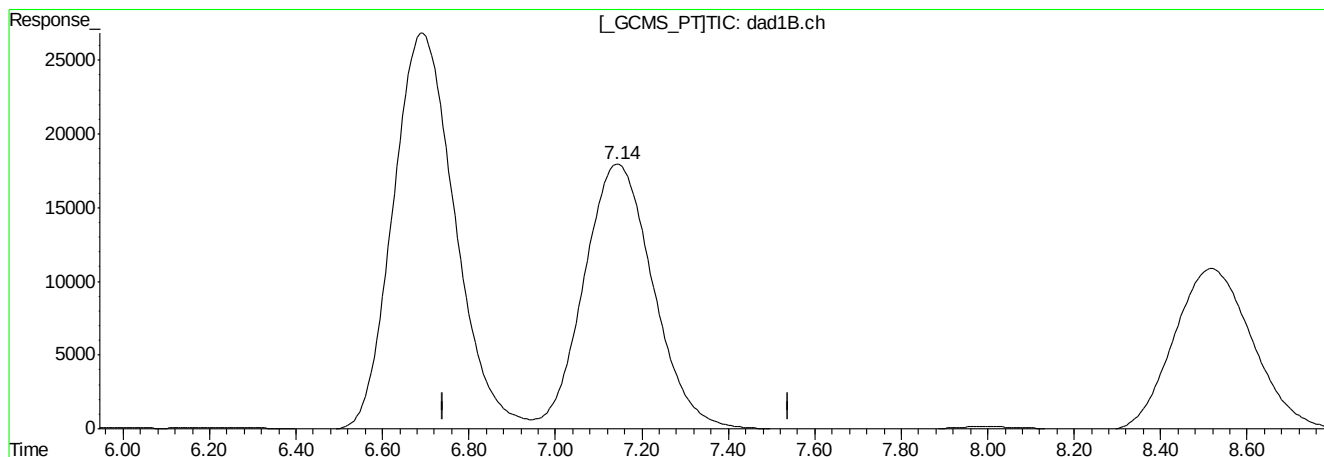
Supervisor approved: 02/06/23 14:09 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	2	7.14	Poorly defined baseline
2,6-Dinitrotoluene	606-20-2	2	14.25	Poorly defined baseline
o-Nitrotoluene	88-72-2	2	17.14	Poorly defined baseline
PETN	78-11-5	2	19.48	Poorly defined baseline

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
Sample : op95139-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 13:37 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.15min 514.159ppb

response 2023640

(8) 3,5-Dinitroaniline #2

7.15min 412.124ppb

response 2693389

(+) = Expected Retention Time

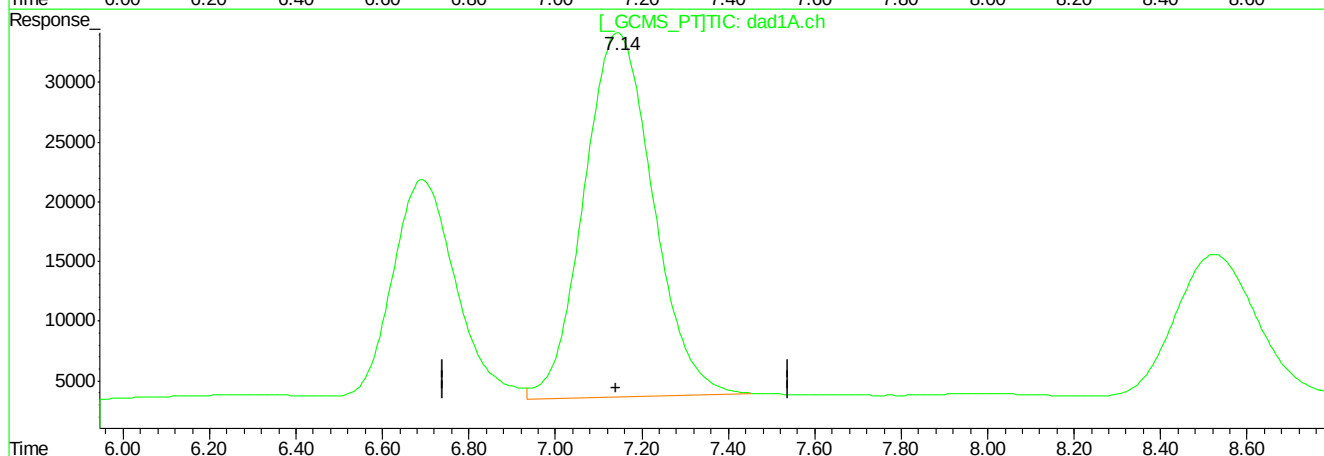
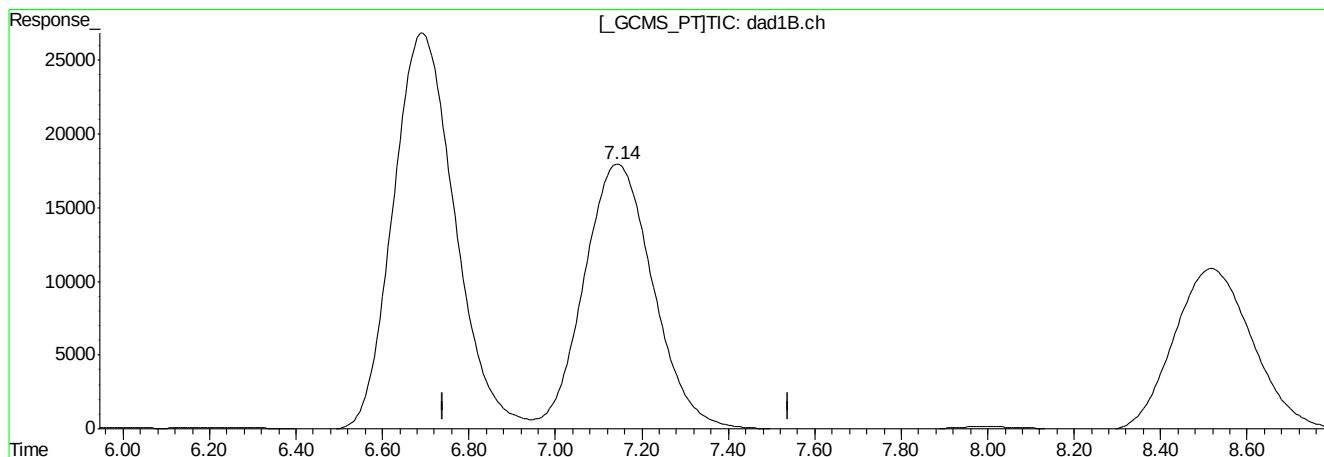
BB075413.D BBB2232_083122.M

Fri Jan 27 08:20:54 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
Sample : op95139-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 13:37 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.15min 514.159ppb

response 2023640

(8) 3,5-Dinitroaniline #2

7.14min 520.309ppb m

response 3400419

(+) = Expected Retention Time

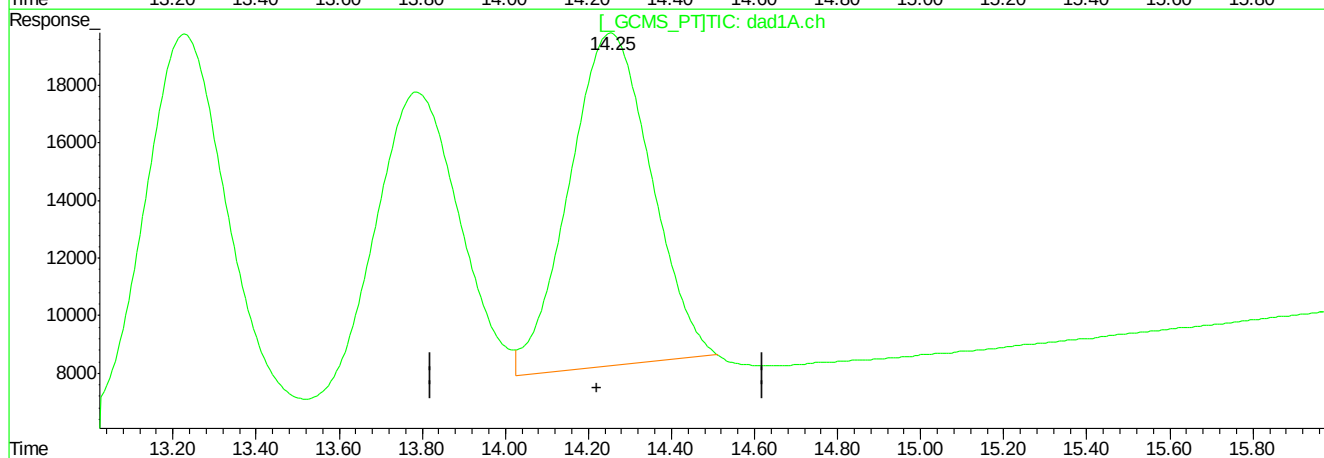
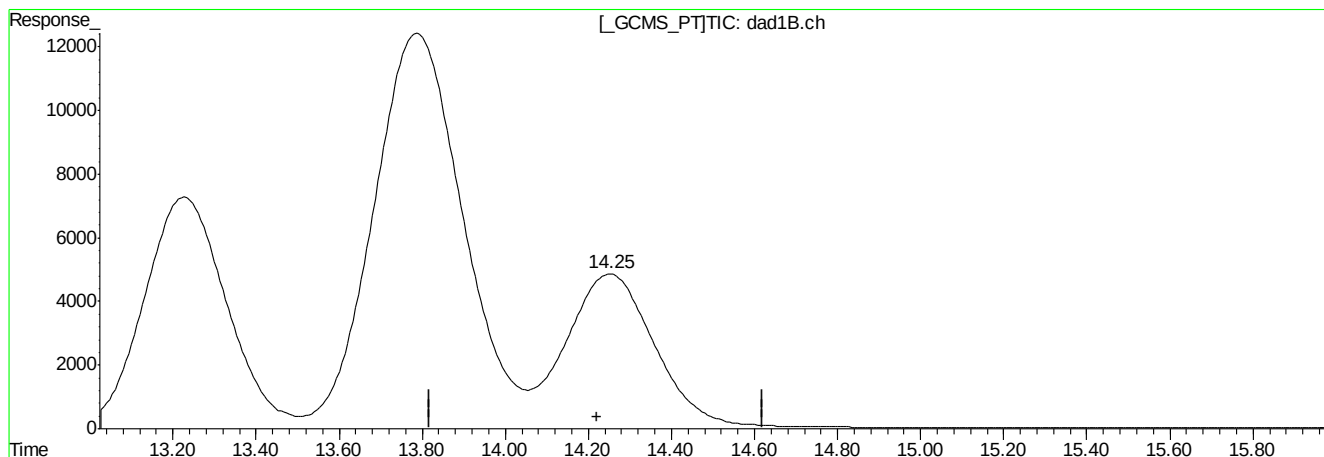
BB075413.D BBB2232_083122.M

Fri Jan 27 08:21:01 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
Sample : op95139-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 13:37 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

14.25min 484.439ppb

response 735526

(17) 2,6-Dinitrotoluene #2

14.26min 456.664ppb

response 1601281

QEdit

(+) = Expected Retention Time

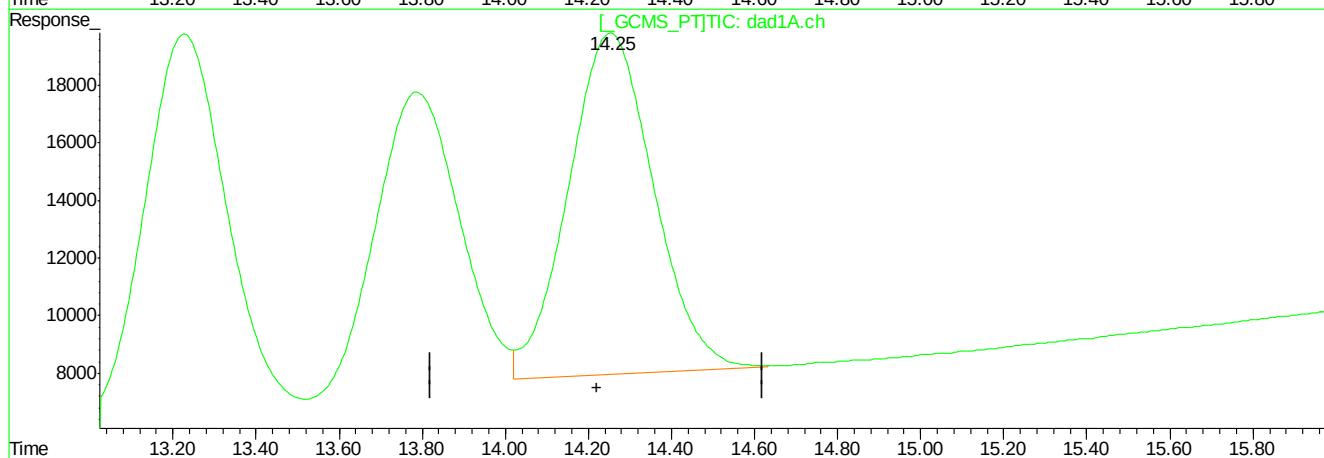
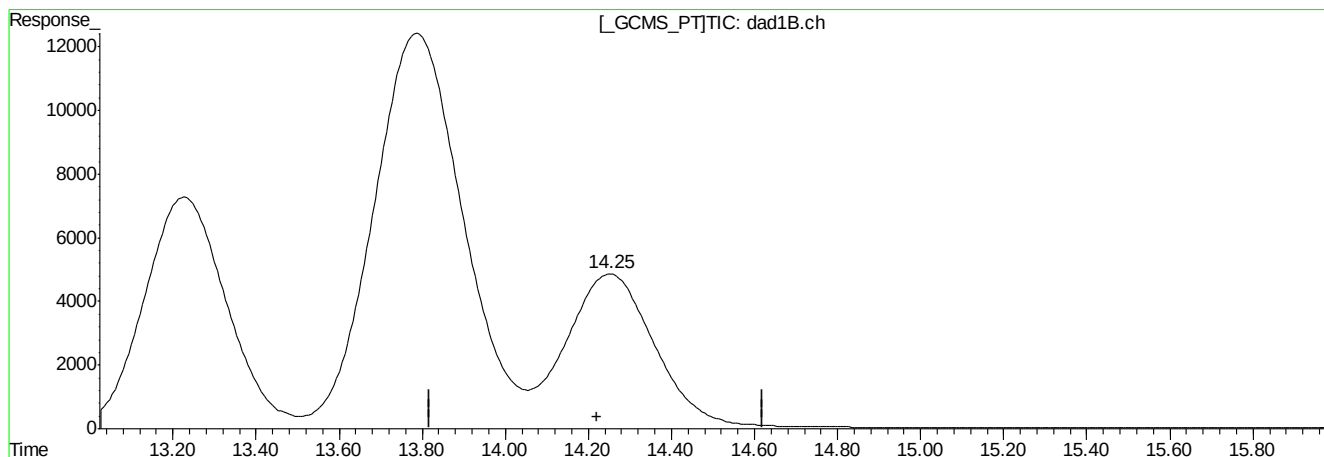
BB075413.D BBB2232_083122.M

Fri Jan 27 08:21:11 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
Sample : op95139-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 13:37 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

14.25min 484.439ppb

response 735526

(17) 2,6-Dinitrotoluene #2

14.25min 480.169ppb m

response 1683699

(+) = Expected Retention Time

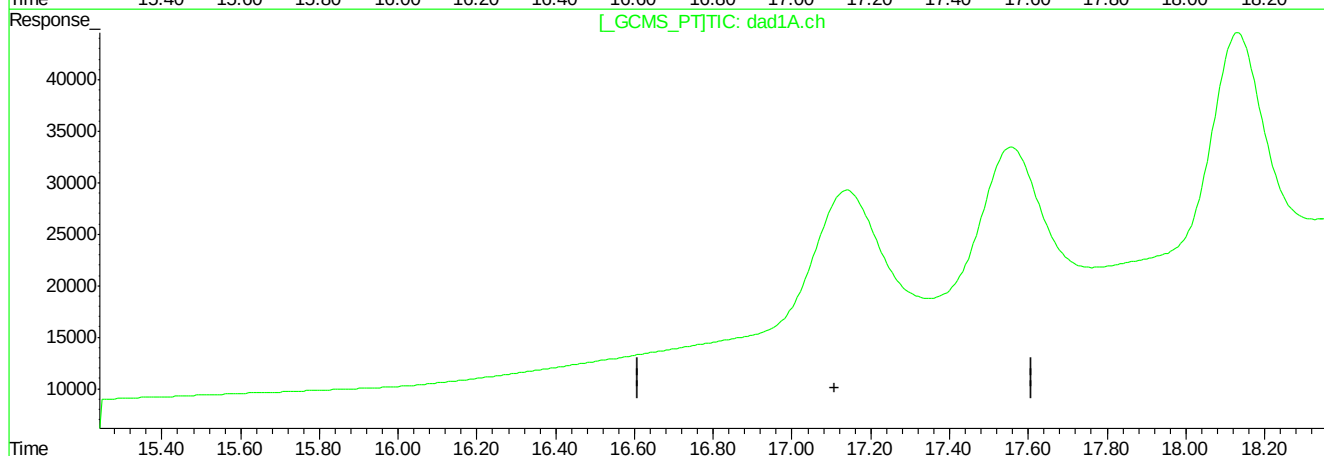
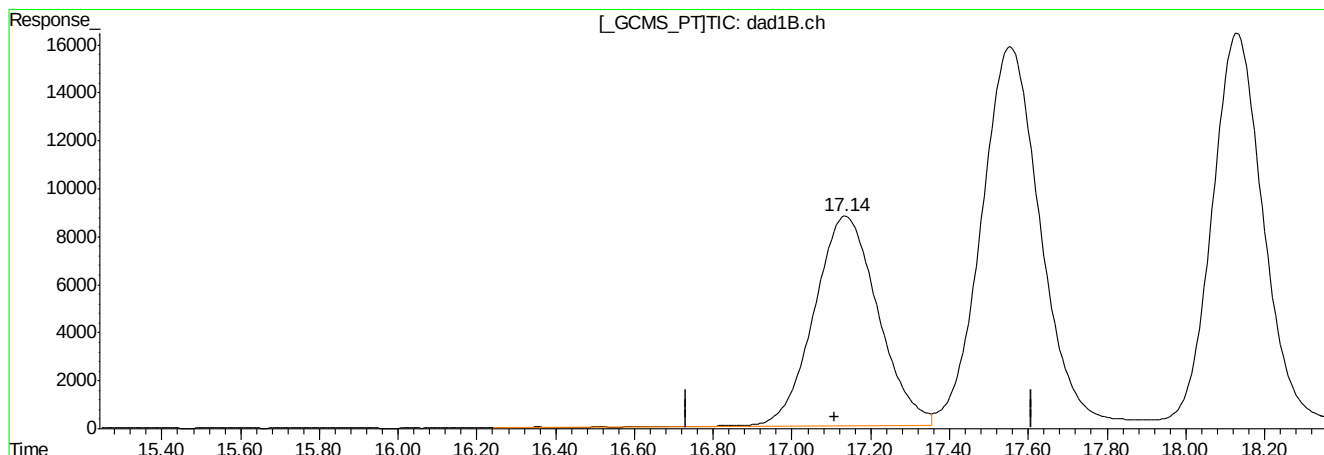
BB075413.D BBB2232_083122.M

Fri Jan 27 08:21:18 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
Sample : op95139-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 13:37 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
17.14min 461.231ppb
response 995977

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

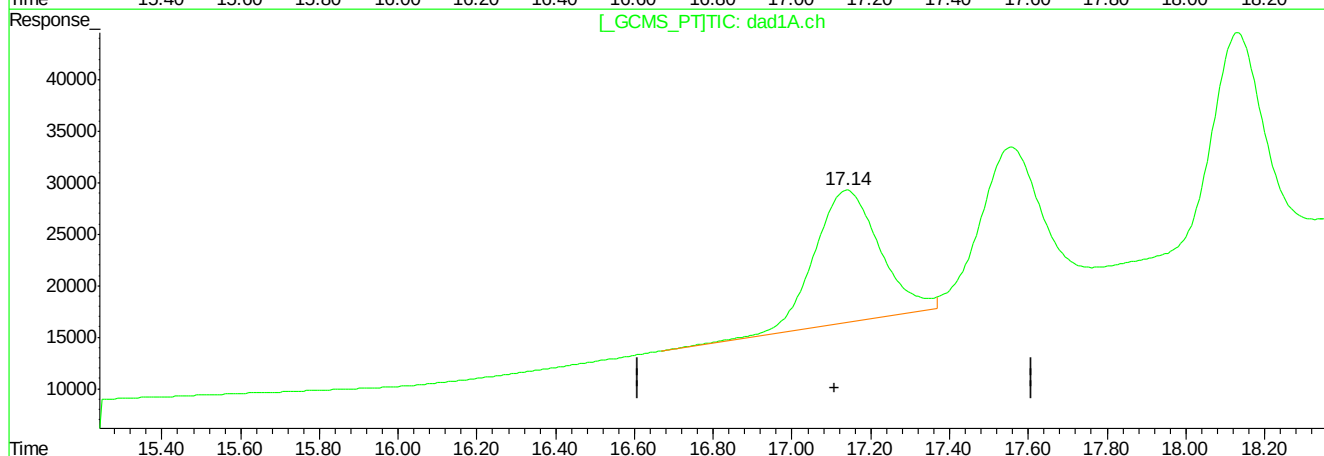
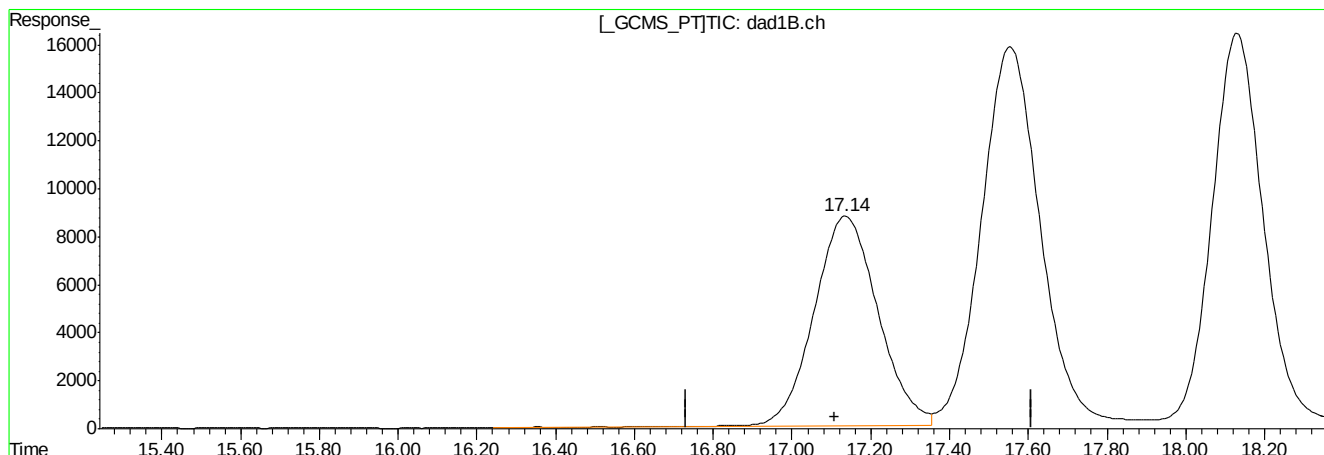
BB075413.D BBB2232_083122.M

Fri Jan 27 08:21:25 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
Sample : op95139-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 13:37 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

17.14min 461.231ppb

response 995977

(18) o-Nitrotoluene #2

17.14min 453.773ppb m

response 1491145

(+) = Expected Retention Time

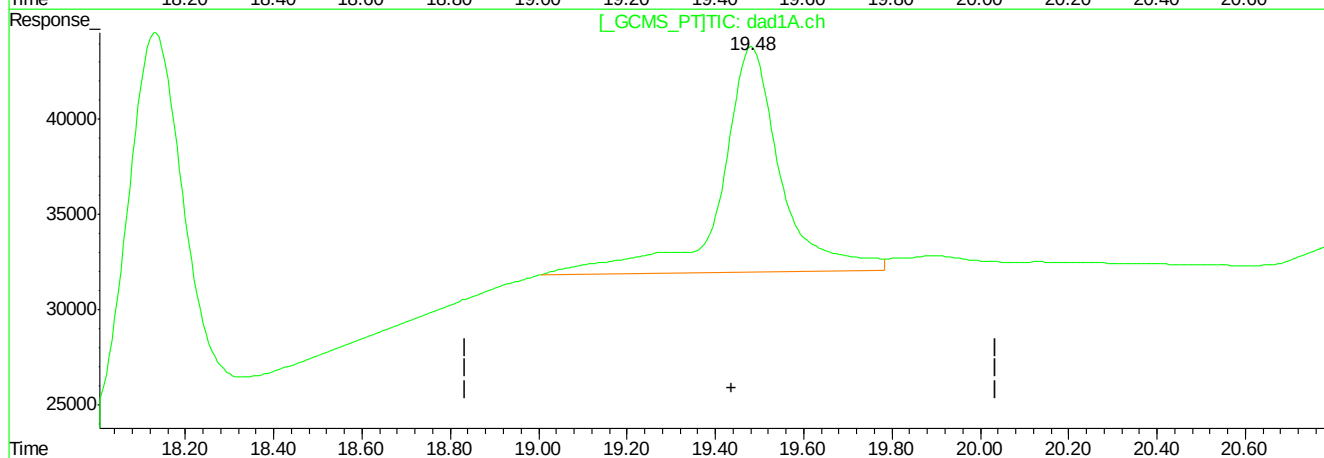
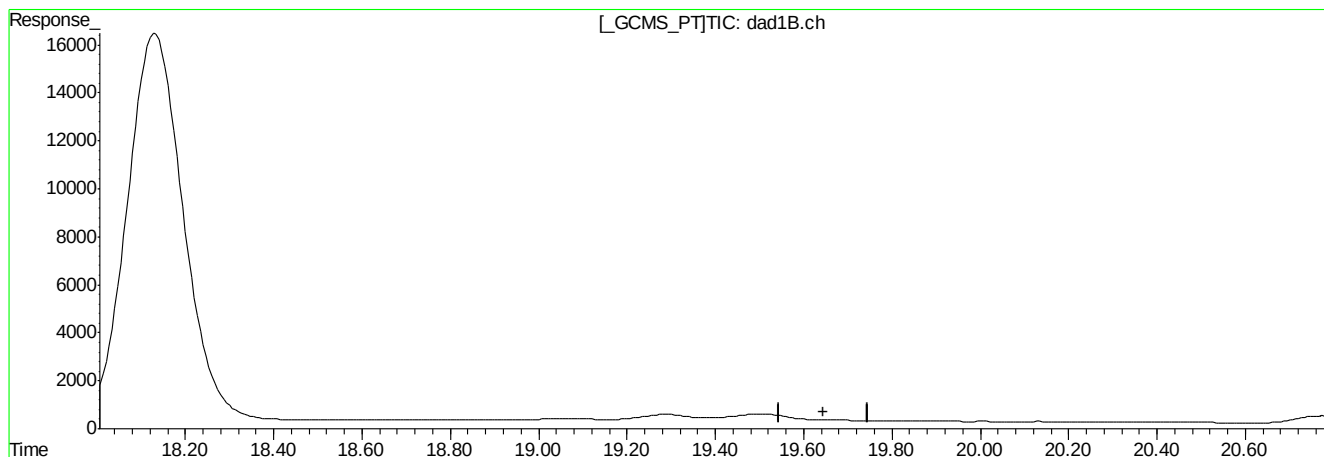
BB075413.D BBB2232_083122.M

Fri Jan 27 08:21:32 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
Sample : op95139-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 13:37 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.48min 842.866ppb

response 1132806

(+) = Expected Retention Time

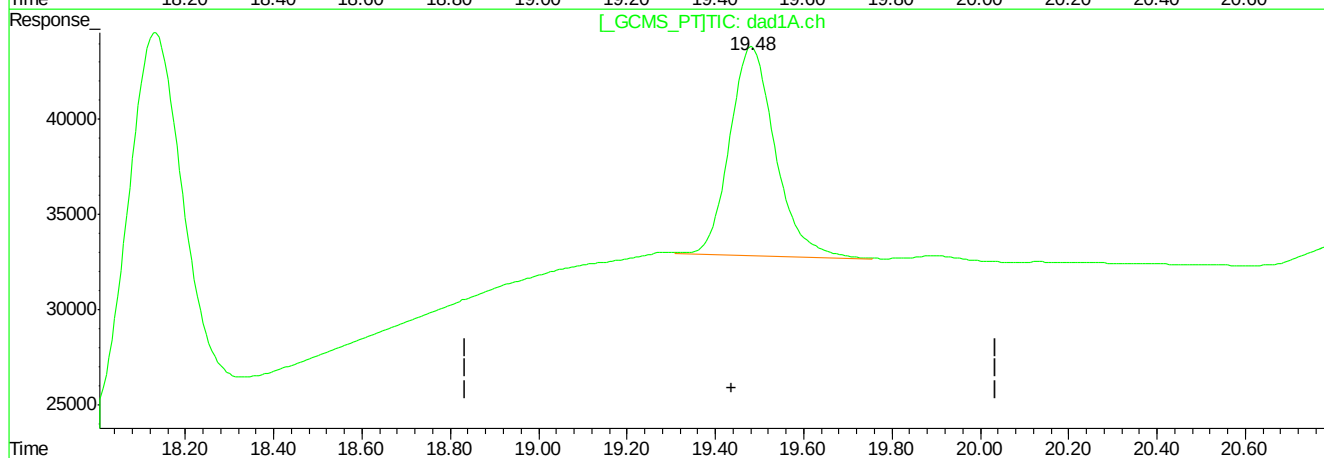
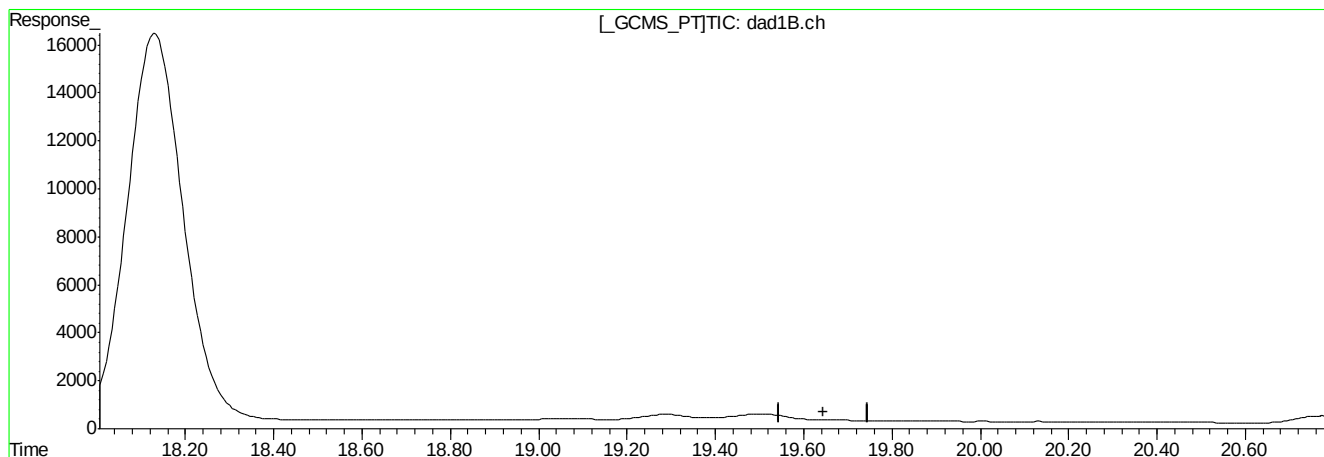
BB075413.D BBB2232_083122.M

Fri Jan 27 08:21:39 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
Sample : op95139-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 13:37 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.48min 586.915ppb m

response 788809

QEdit

(+) = Expected Retention Time

BB075413.D BBB2232_083122.M

Fri Jan 27 08:21:47 2023

Naresh Jiawan
02/06/23 14:09

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
 Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
 Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
 Sample : op95139-bs Inst : G1315B
 Misc : op95139,GBB2299,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 26 13:37:40 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.23	13.23	1021973	1747720	477.017	411.357
Spiked Amount	500.000	Range	70 - 136	Recovery	= 95.40%	82.27%
Target Compounds						
1) TNX	1.46	1.46	656301	1026140	174.864	178.304
2) HMX	1.68	1.68	757071	2126410	511.310	519.874
3) DNX	1.92	1.92	1273499	2039705	413.966	413.094
4) MNX	2.62	2.62	1431247	2191128	498.703	498.262
5) RDX	3.34	3.34	945738	1495855	509.841	510.633
6) 1,3,5-Trinitrobe	5.41	5.41	1670724	2702637	420.242	434.179
7) 1,3-Dinitrobenze	6.69	6.69	2668932	1721084	512.208	500.786
8) 3,5-Dinitroanili	7.15	7.14	2023640	3400419	514.159	520.309m
9) Nitrobenzene	8.52	8.53	1414364	1566002	471.674	528.242
10) Nitroglycerin	0.00	10.39	0	660514	N.D.	519.992 #
11) Tetryl	11.37	11.37	984098	1527270	348.273	331.590
12) 2,4,6-Trinitroto	11.73	11.73	1812635	2140606	495.902	480.735
13) 2-Amino-4,6-Dini	12.14	12.14	1677013	2472706	530.606	500.720
14) 4-Amino-2,6-Dini	12.69	12.69	1243571	2415290	541.487	491.456
16) 2,4-Dinitrotolue	13.79	13.79	1860430	1421068	397.210	456.337
17) 2,6-Dinitrotolue	14.25	14.25	735526	1683699	484.439	480.169m
18) o-Nitrotoluene	17.14	17.14	995977	1491145	461.231	453.773m
19) p-Nitrotoluene	17.56	17.56	1646848	1282831	492.276	453.902
20) m-Nitrotoluene	18.13	18.13	1513525	1688036	486.160	434.951
21) PETN	0.00	19.48	0	788809	N.D.	586.915m#

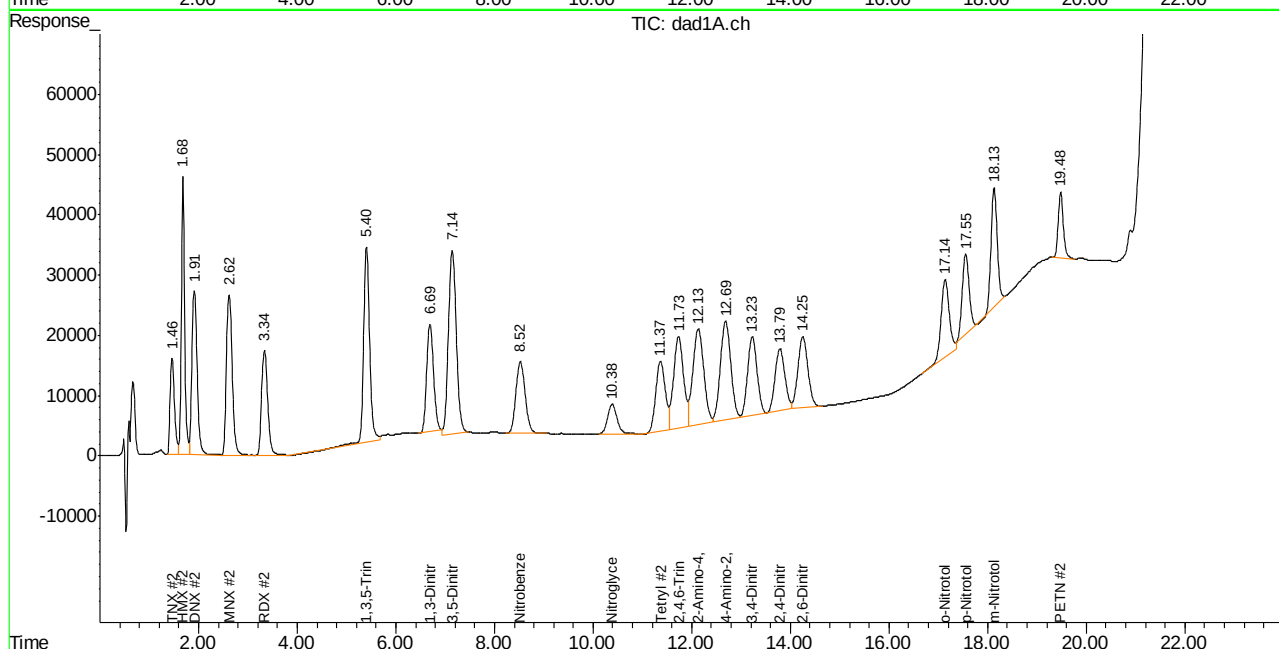
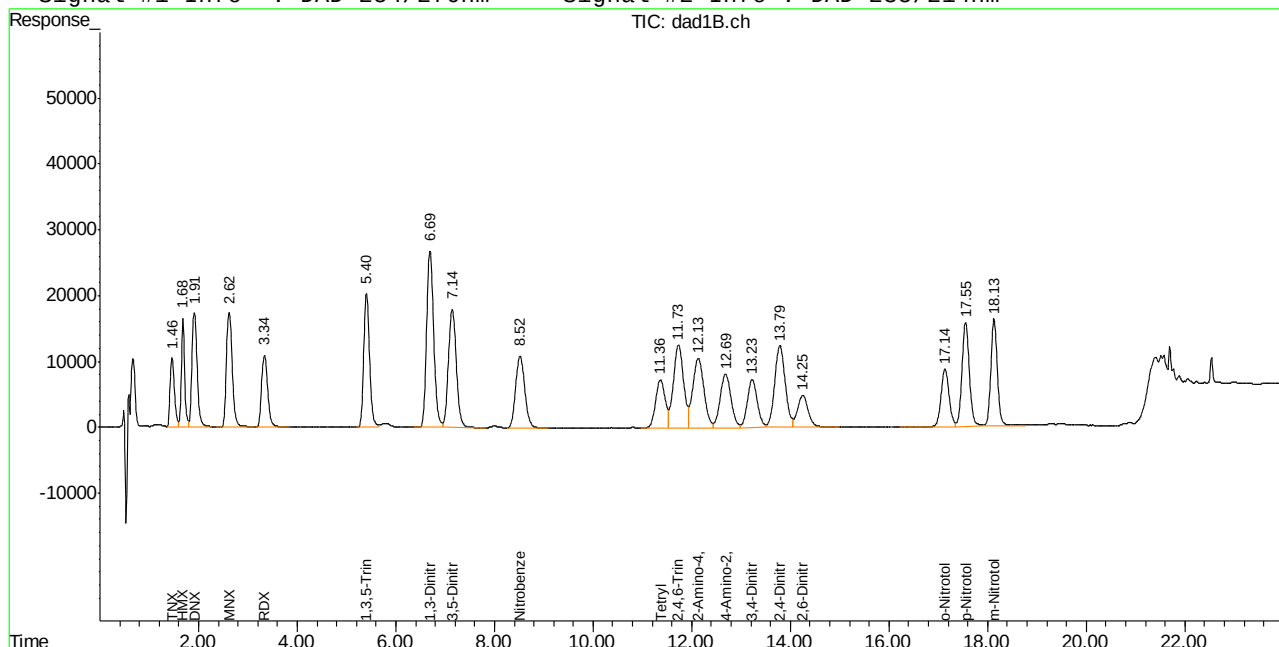
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075413.D BBB2232_083122.M Tue Jan 31 11:47:16 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
Sample : op95139-bs Inst : G1315B
Misc : op95139,GBB2299,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:21 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: OP95139-BS

Method: SW846 8330A

Lab FileID: BB075413.D

Analyst approved: 02/06/23 14:09 Naresh Jiawan

Injection Time: 01/26/23 13:04

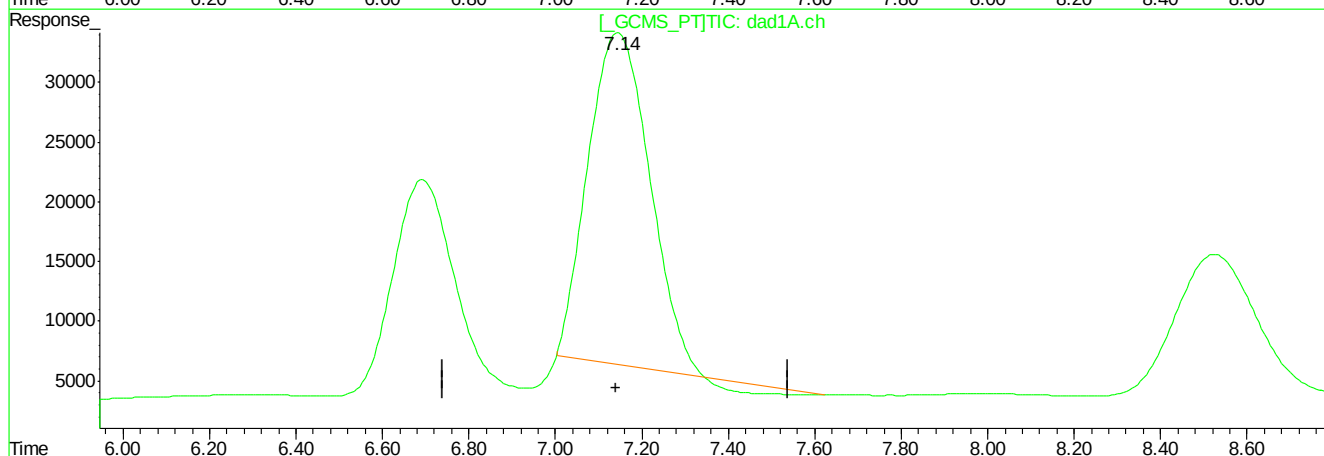
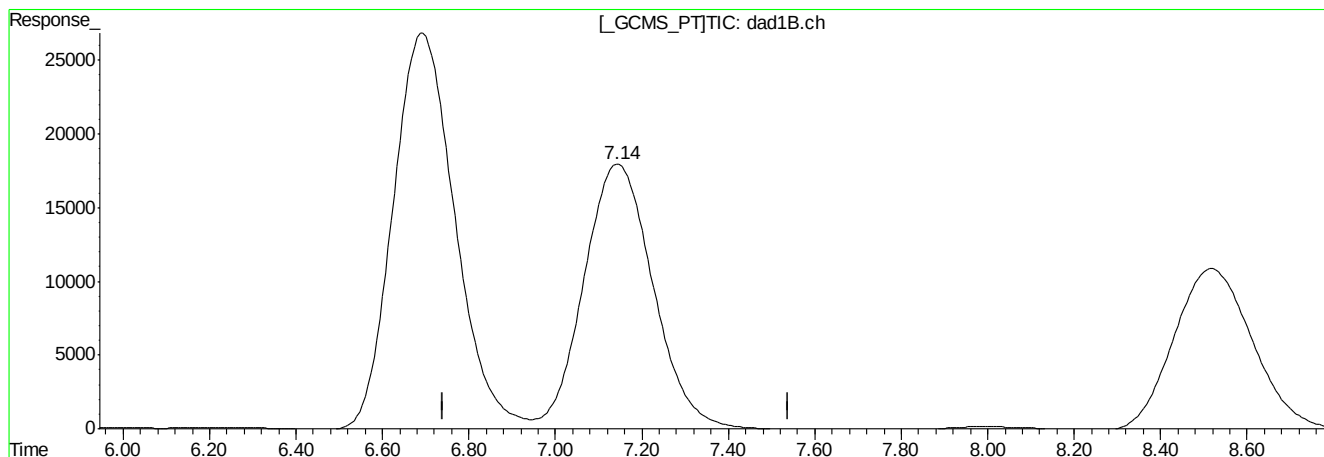
Supervisor approved: 02/06/23 14:09 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	2	7.14	Poorly defined baseline
2,6-Dinitrotoluene	606-20-2	2	14.25	Poorly defined baseline
o-Nitrotoluene	88-72-2	2	17.14	Poorly defined baseline
PETN	78-11-5	2	19.48	Poorly defined baseline

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
Sample : op95139-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 13:37 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.15min 514.159ppb

response 2023640

(8) 3,5-Dinitroaniline #2

7.15min 412.124ppb

response 2693389

(+) = Expected Retention Time

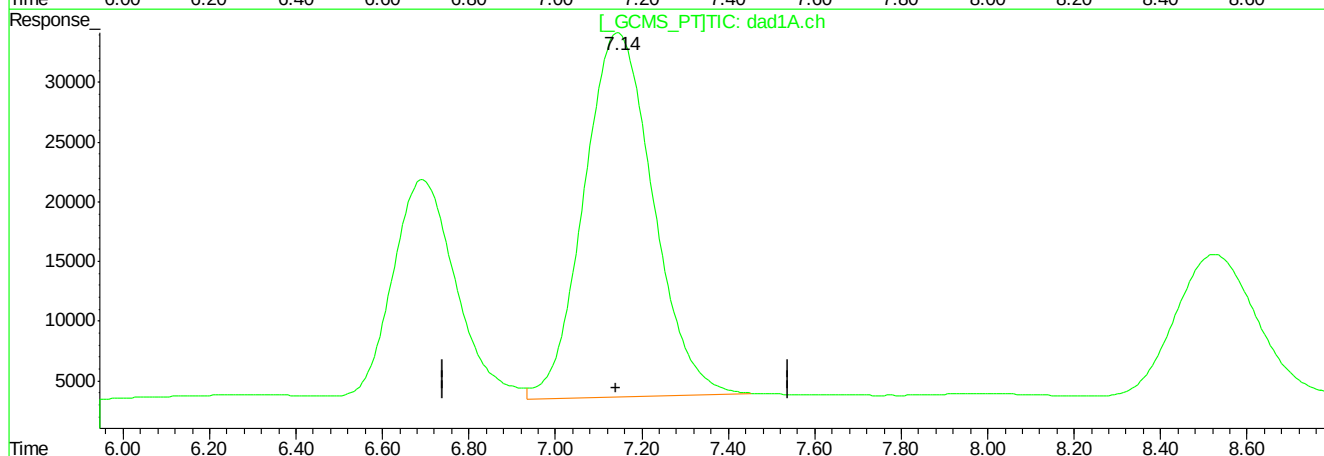
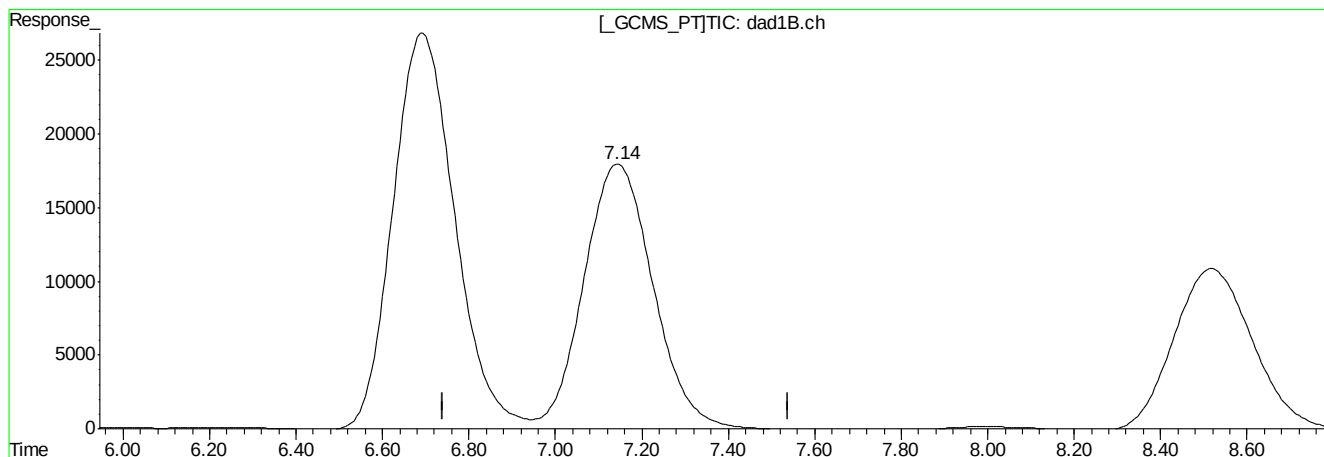
BB075413.D BBB2232_083122.M

Fri Jan 27 08:20:54 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
Sample : op95139-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 13:37 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.15min 514.159ppb

response 2023640

(8) 3,5-Dinitroaniline #2

7.14min 520.309ppb m

response 3400419

(+) = Expected Retention Time

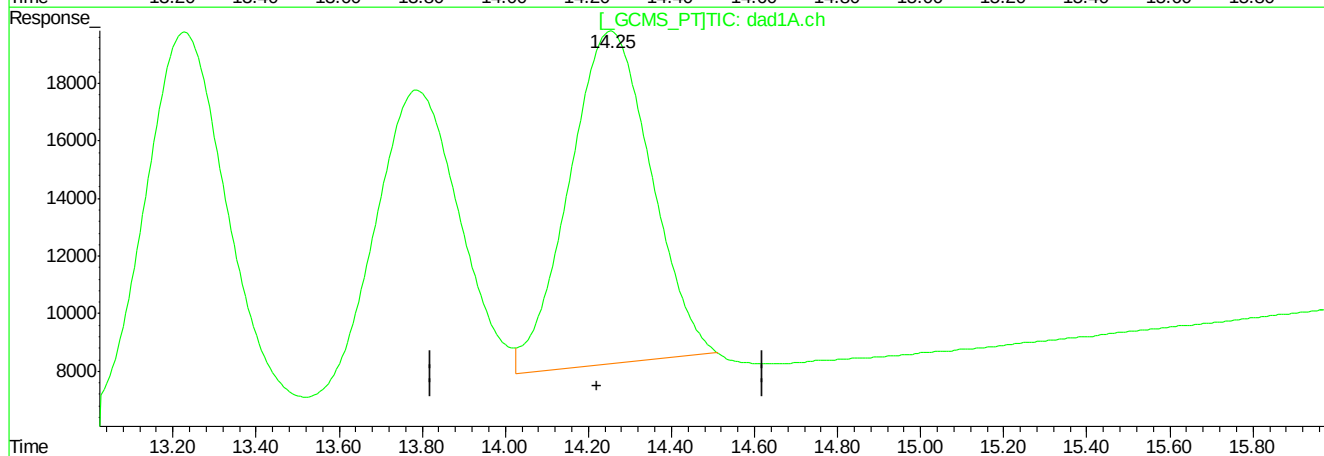
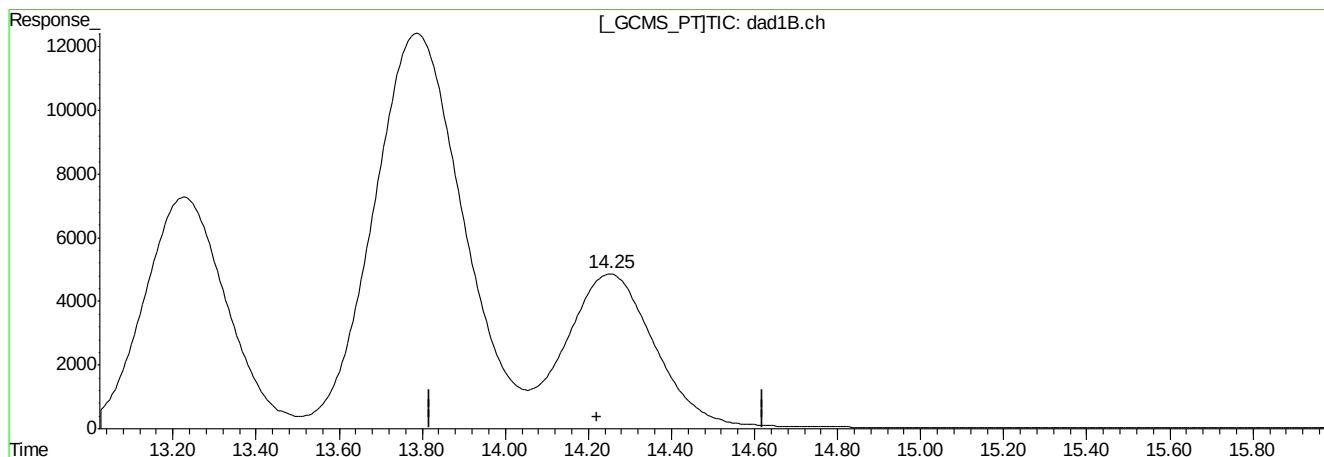
BB075413.D BBB2232_083122.M

Fri Jan 27 08:21:01 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
Sample : op95139-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 13:37 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

14.25min 484.439ppb

response 735526

(17) 2,6-Dinitrotoluene #2

14.26min 456.664ppb

response 1601281

(+) = Expected Retention Time

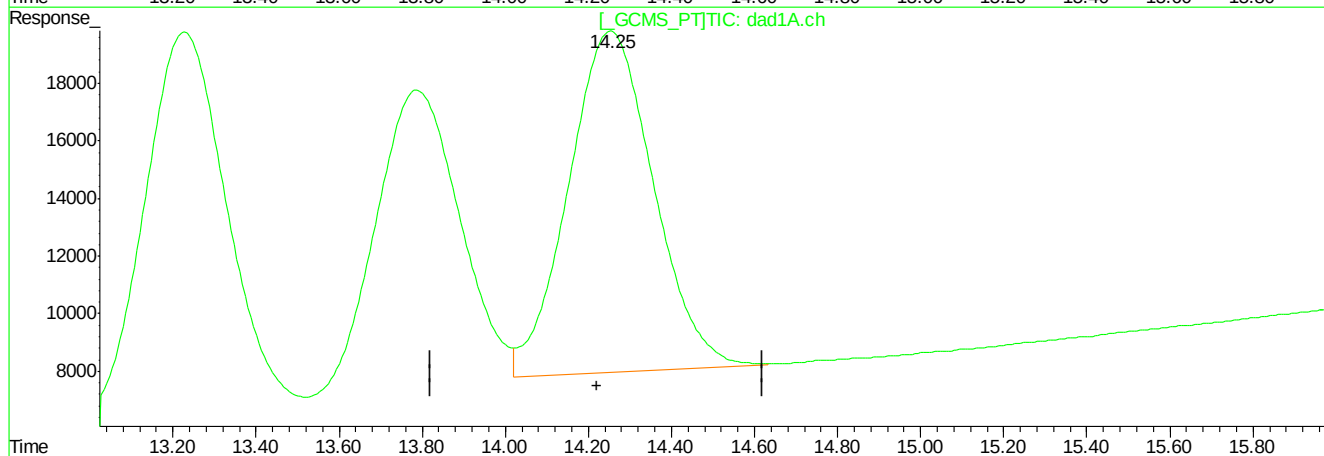
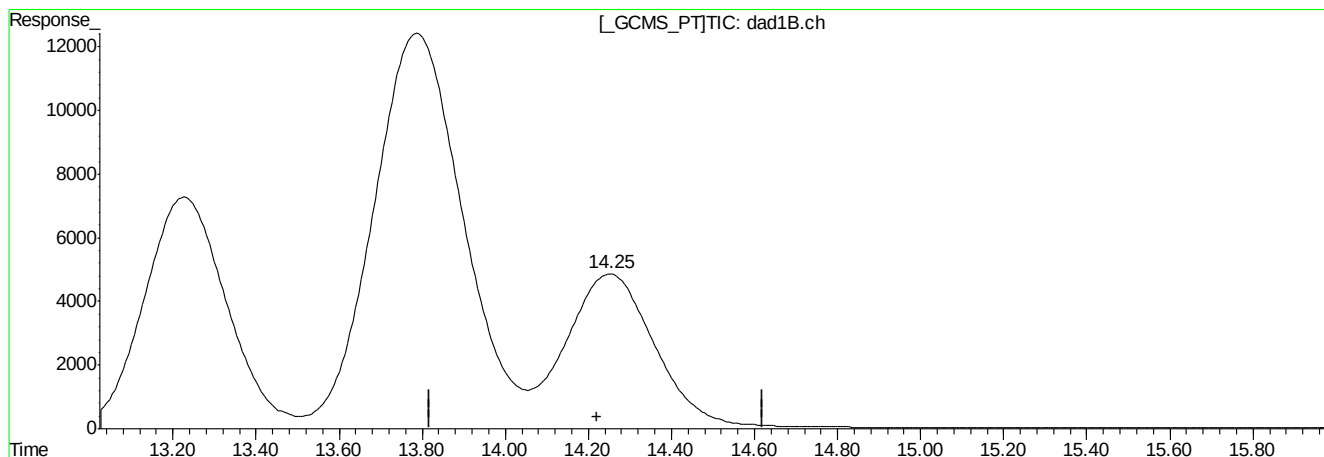
BB075413.D BBB2232_083122.M

Fri Jan 27 08:21:11 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
Sample : op95139-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 13:37 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

14.25min 484.439ppb

response 735526

(17) 2,6-Dinitrotoluene #2

14.25min 480.169ppb m

response 1683699

QEdit

(+) = Expected Retention Time

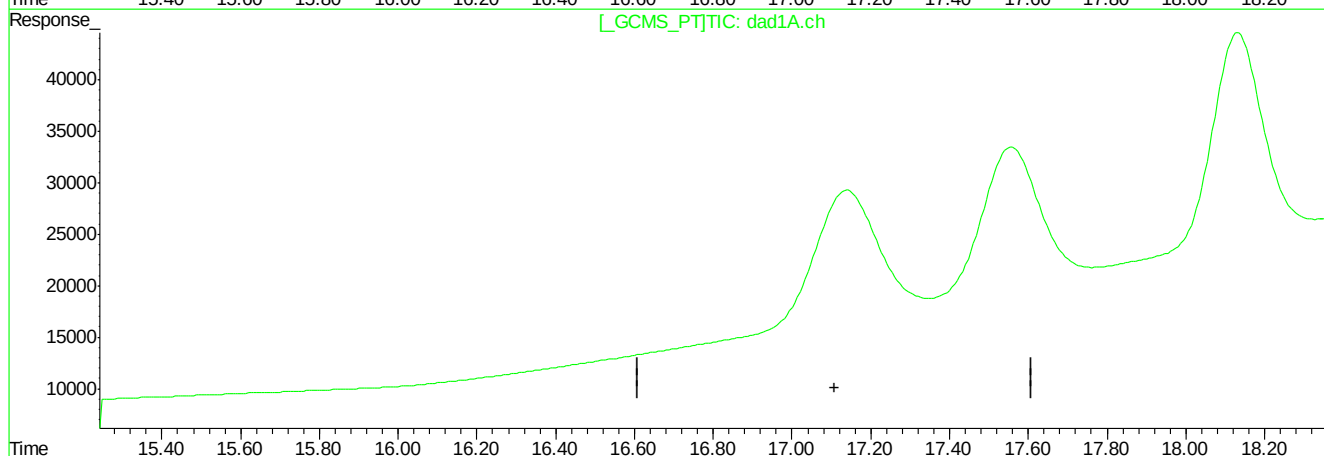
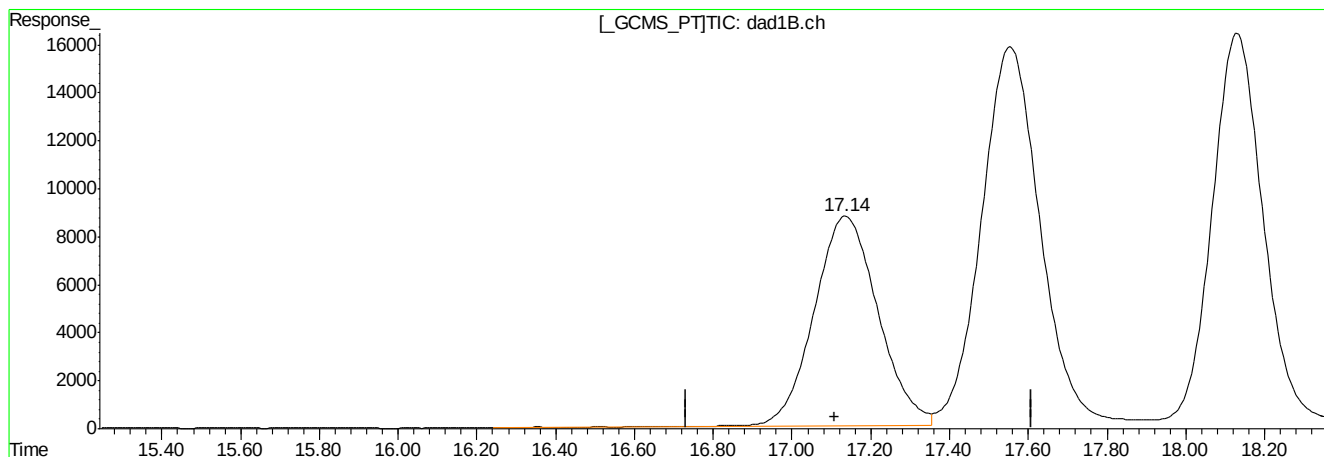
BB075413.D BBB2232_083122.M

Fri Jan 27 08:21:18 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
Sample : op95139-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 13:37 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(18) o-Nitrotoluene
17.14min 461.231ppb
response 995977

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

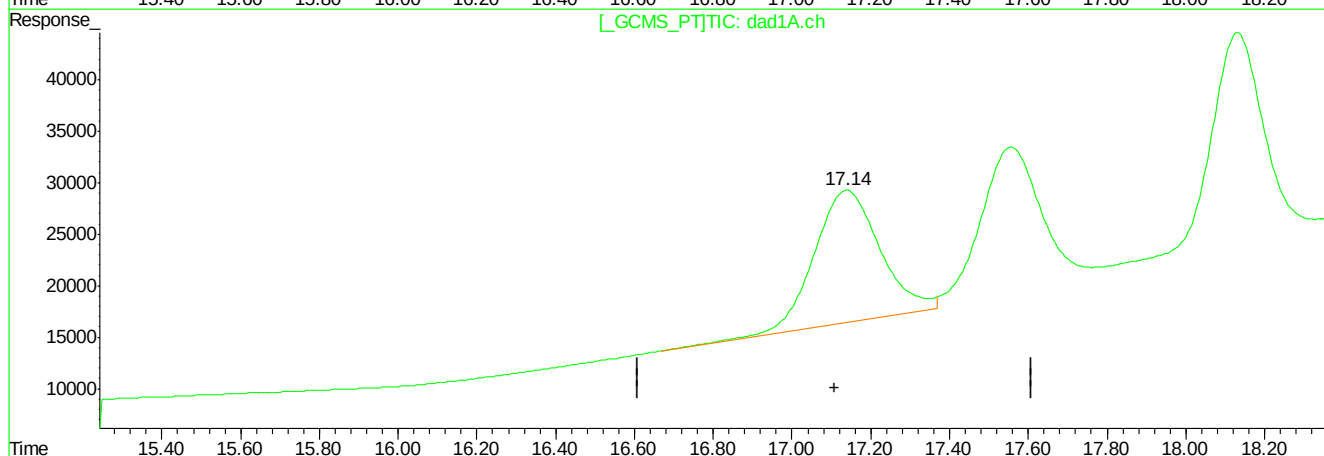
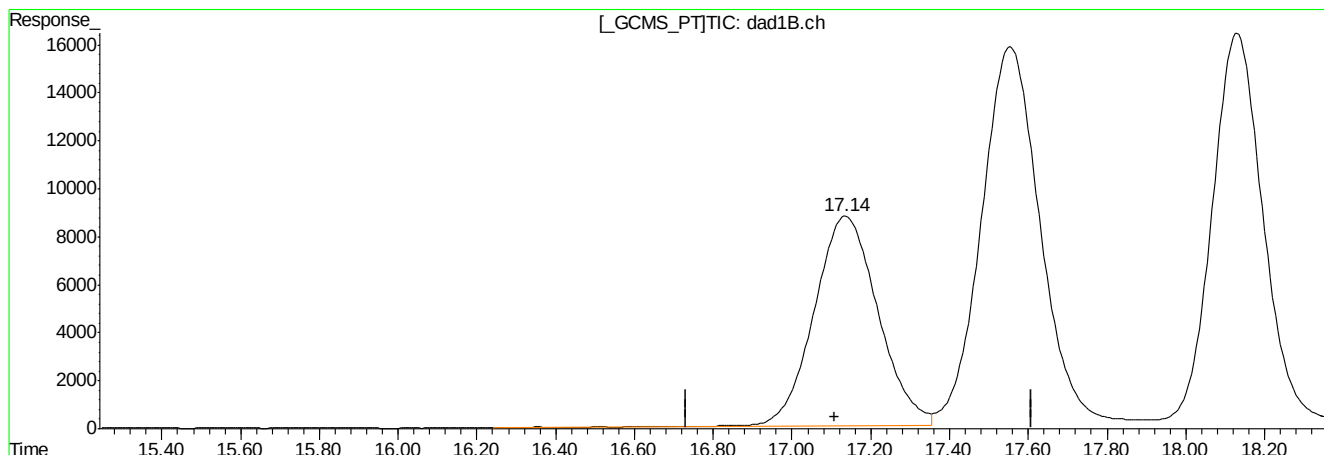
BB075413.D BBB2232_083122.M

Fri Jan 27 08:21:25 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
Sample : op95139-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 13:37 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

17.14min 461.231ppb

response 995977

(18) o-Nitrotoluene #2

17.14min 453.773ppb m

response 1491145

(+) = Expected Retention Time

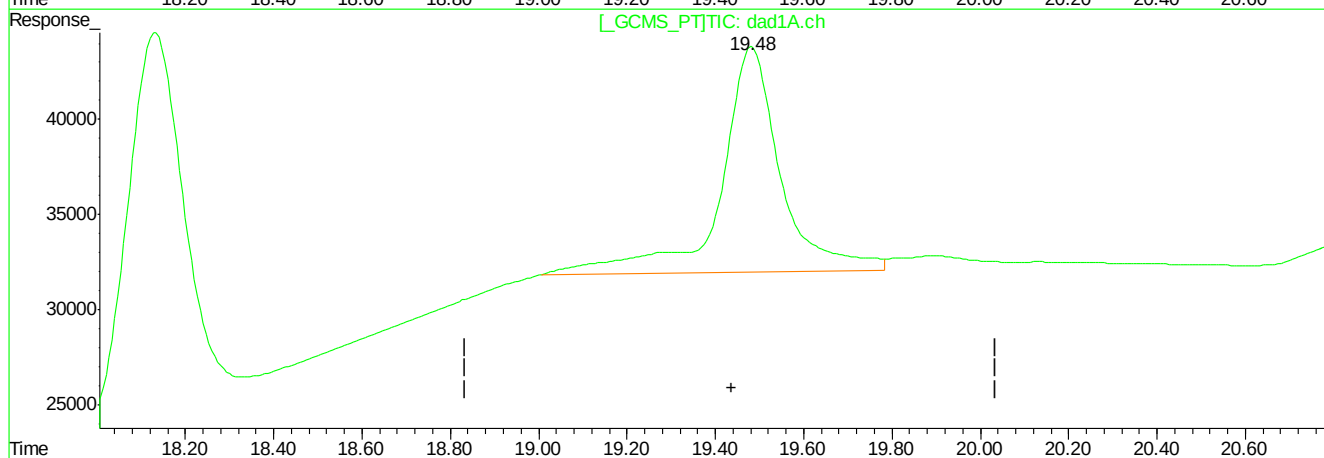
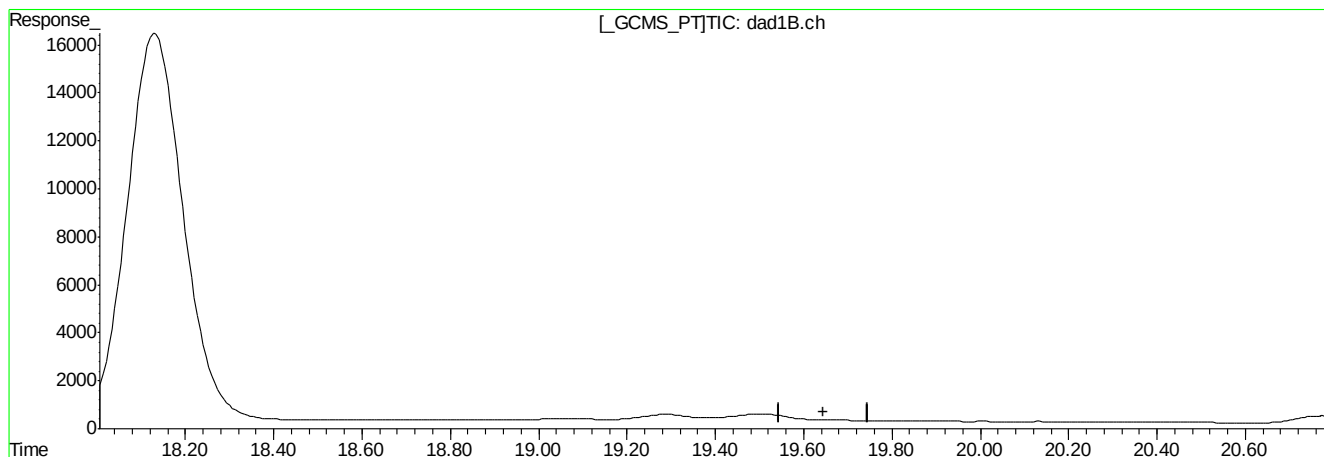
BB075413.D BBB2232_083122.M

Fri Jan 27 08:21:32 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
Sample : op95139-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 13:37 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.48min 842.866ppb

response 1132806

(+) = Expected Retention Time

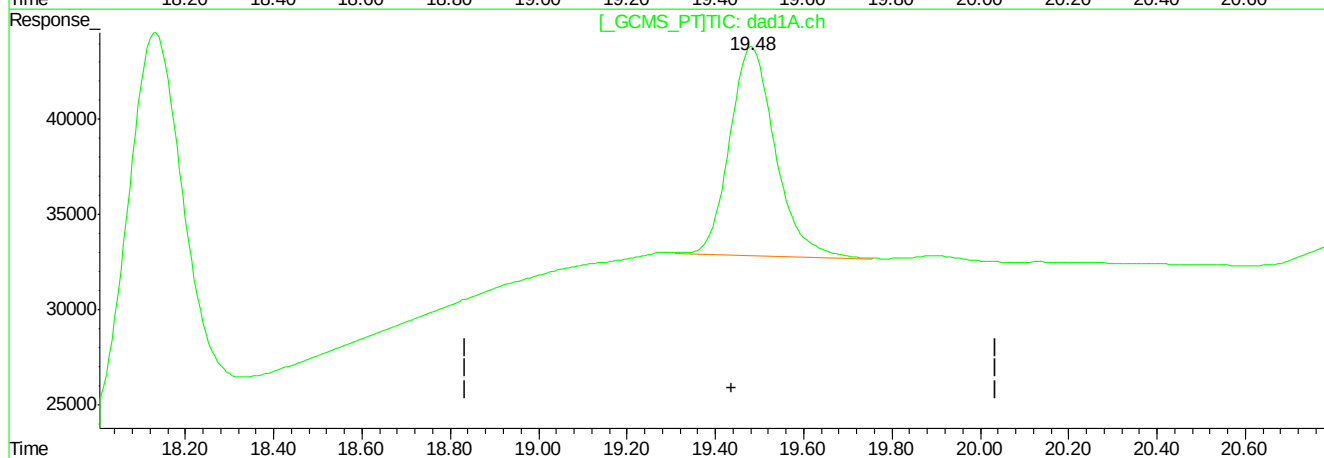
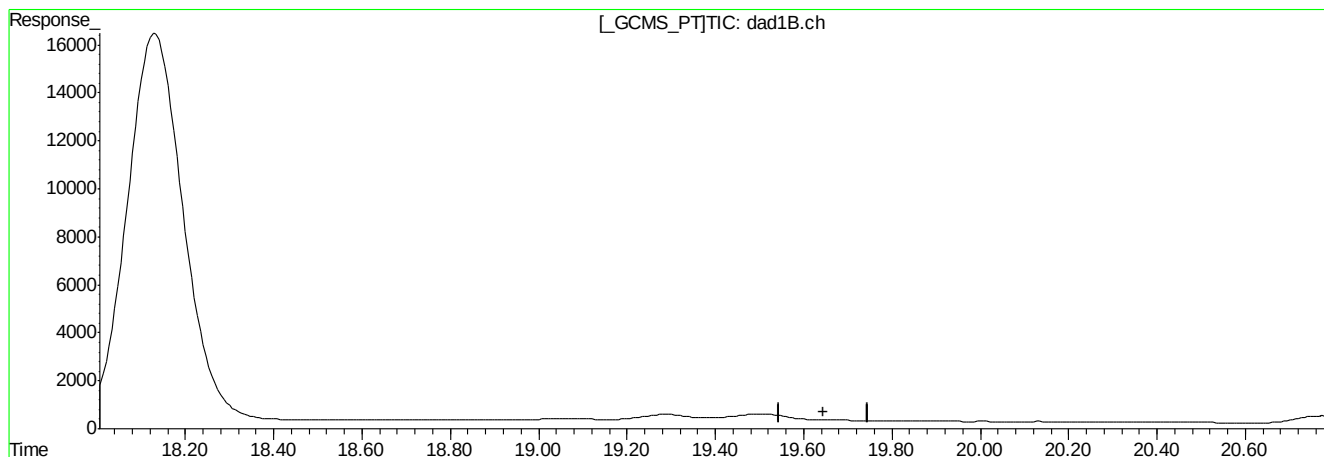
BB075413.D BBB2232_083122.M

Fri Jan 27 08:21:39 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075413.D\dad1A.ch
Acq On : 26-Jan-2023, 13:04:21 Operator: fouads
Sample : op95139-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 13:37 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.48min 586.915ppb m

response 788809

QEdit

(+) = Expected Retention Time

BB075413.D BBB2232_083122.M

Fri Jan 27 08:21:47 2023

Naresh Jiawan
02/06/23 14:09

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1B.ch Vial: 10
 Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1A.ch
 Acq On : 26-Jan-2023, 14:14:57 Operator: fouads
 Sample : op95139-ms Inst : G1315B
 Misc : op95139,GBB2299,500,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 26 15:11:21 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.22	13.22	1071563	1786341	500.164	420.447
Spiked Amount	500.000	Range	70 - 136	Recovery	=	100.03% 84.09%
Target Compounds						
1) TNX	1.46	1.46	782495	1194016	208.487	207.474
2) HMX	1.68	1.68	975999	2700993	659.170	660.350
3) DNX	1.91	1.91	1393602	2238215	453.007	453.298
4) MNX	2.62	2.62	1512291	2328606	526.942	529.525
5) RDX	3.33	3.33	1028731	1627834	554.582	555.686
6) 1,3,5-Trinitrobe	5.40	5.40	4144889	6713667	1042.576	1078.550
7) 1,3-Dinitrobenze	6.69	6.69	2713417	1789948	520.745	520.824
8) 3,5-Dinitroanili	7.14	7.13	2098458	3521507	533.169	538.837m
9) Nitrobenzene	8.51	8.51	1528338	1526714	509.683	514.990
10) Nitroglycerin	0.00	10.38	0	669103	N.D.	526.754 #
11) Tetryl	11.36	11.36	1203881	1881200	426.055	408.433
12) 2,4,6-Trinitroto	11.72	11.72	2803772	3332146	767.058	748.330
13) 2-Amino-4,6-Dini	12.12	12.12	1938792	2839394	613.432	574.974
14) 4-Amino-2,6-Dini	12.68	12.68	1378748	2641057	600.347	537.395
16) 2,4-Dinitrotolue	13.78	13.78	1887787	1361178	403.051	437.105
17) 2,6-Dinitrotolue	14.24	14.25	749624	1443830	493.724	411.762
18) o-Nitrotoluene	17.12	17.13	1137662	1778517	526.845m	541.224m
19) p-Nitrotoluene	17.55	17.55	2006974	1382931	599.925	489.320
20) m-Nitrotoluene	18.12	18.13	2008571	1882452	645.175	485.046
21) PETN	0.00	19.47	0	768781	N.D.	572.013m#

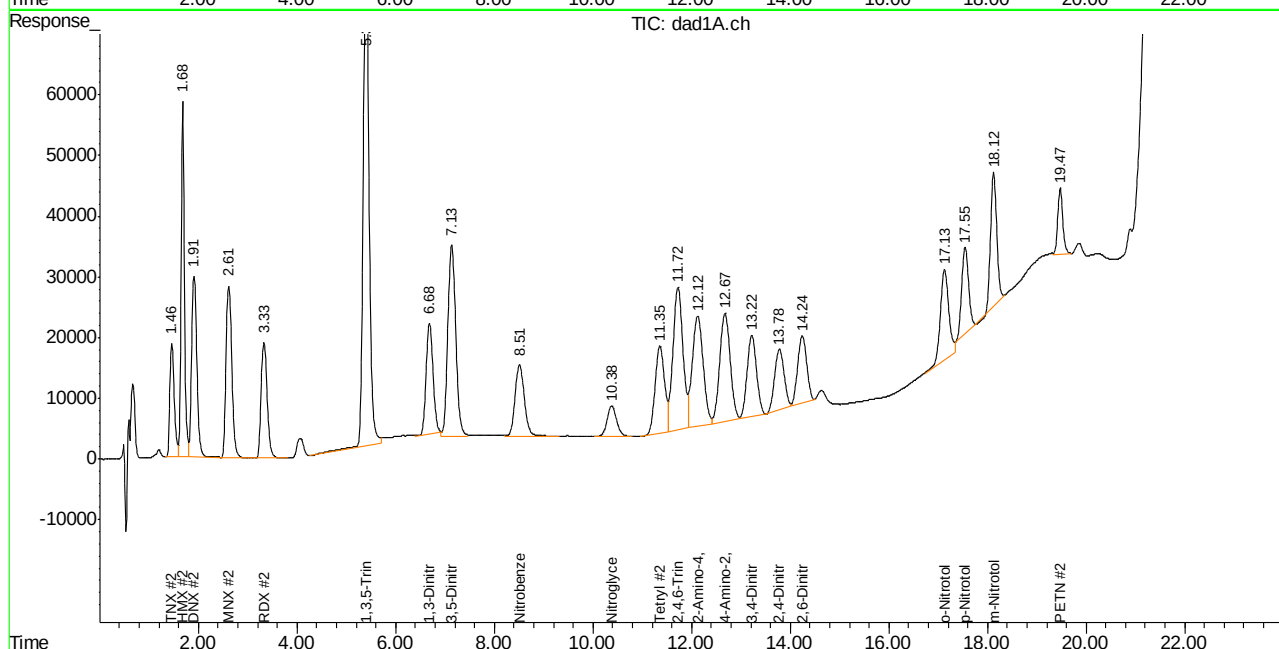
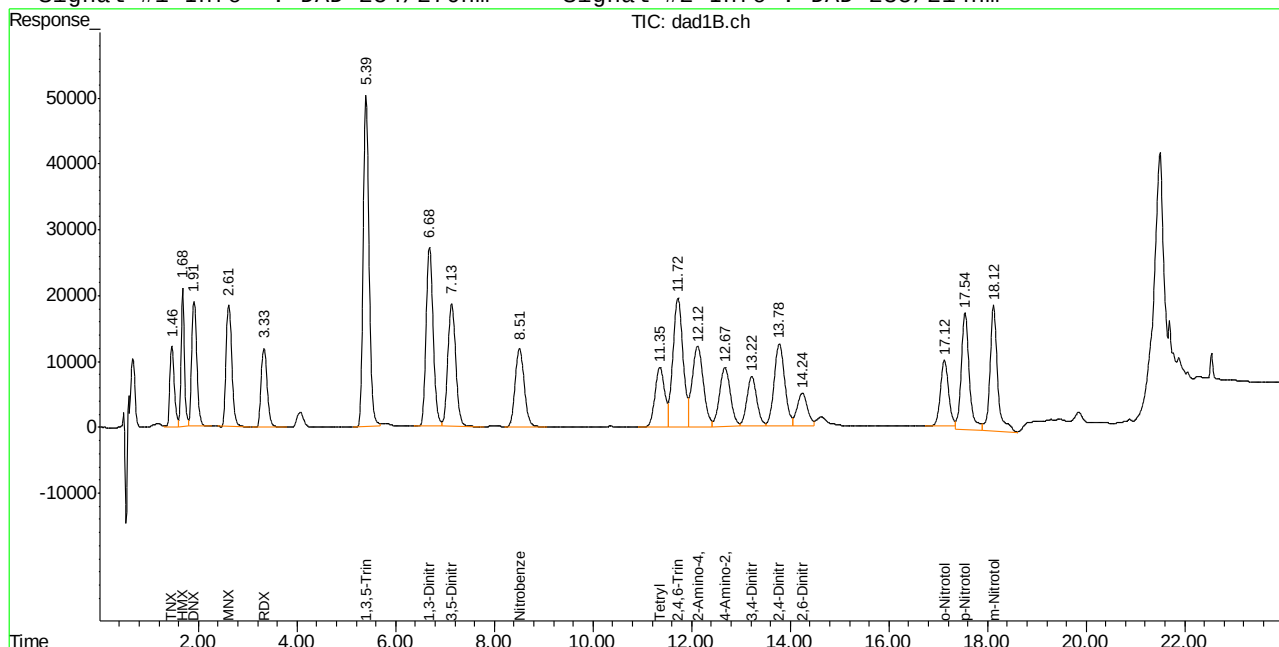
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075415.D BBB2232_083122.M Tue Jan 31 09:07:28 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1A.ch
Acq On : 26-Jan-2023, 14:14:57 Operator: fouads
Sample : op95139-ms Inst : G1315B
Misc : op95139, GBB2299, 500,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:27 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: OP95139-MS

Method: SW846 8330A

Lab FileID: BB075415.D

Analyst approved: 02/06/23 14:09 Naresh Jiawan

Injection Time: 01/26/23 14:14

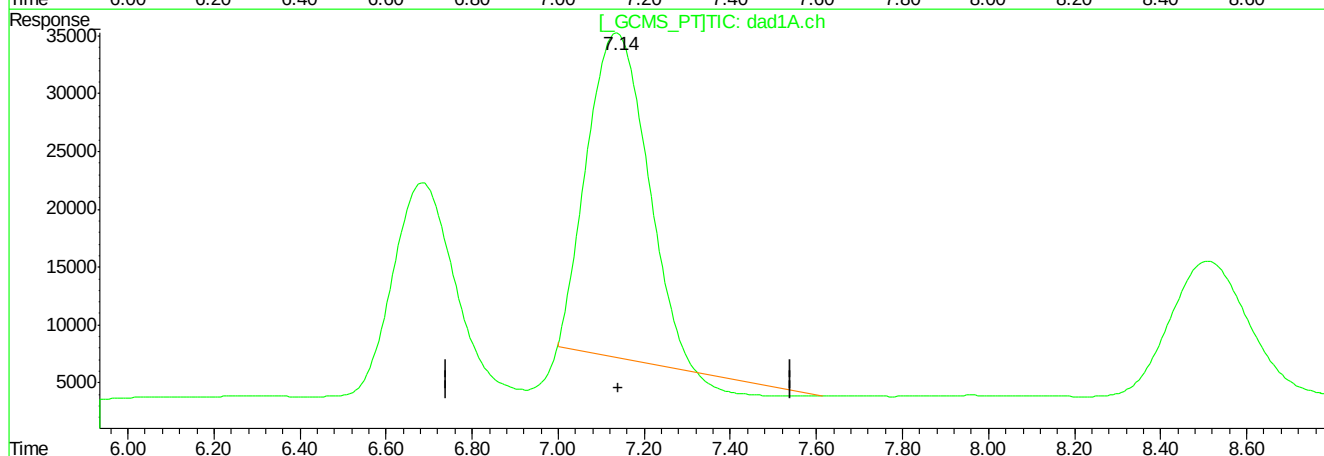
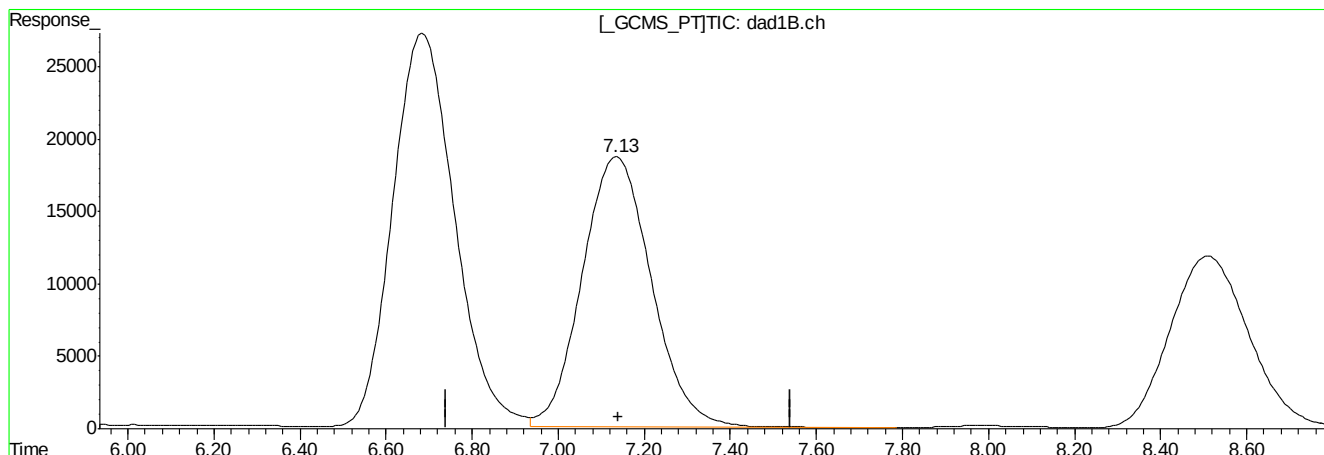
Supervisor approved: 02/06/23 14:09 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	2	7.13	Poorly defined baseline
o-Nitrotoluene	88-72-2	1	17.12	Poorly defined baseline
o-Nitrotoluene	88-72-2	2	17.13	Poorly defined baseline
PETN	78-11-5	2	19.47	Poorly defined baseline

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1A.ch
Acq On : 26-Jan-2023, 14:14:57 Operator: fouads
Sample : op95139-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 15:11 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.14min 533.169ppb

response 2098458

(8) 3,5-Dinitroaniline #2

7.14min 403.000ppb

response 2633757

(+) = Expected Retention Time

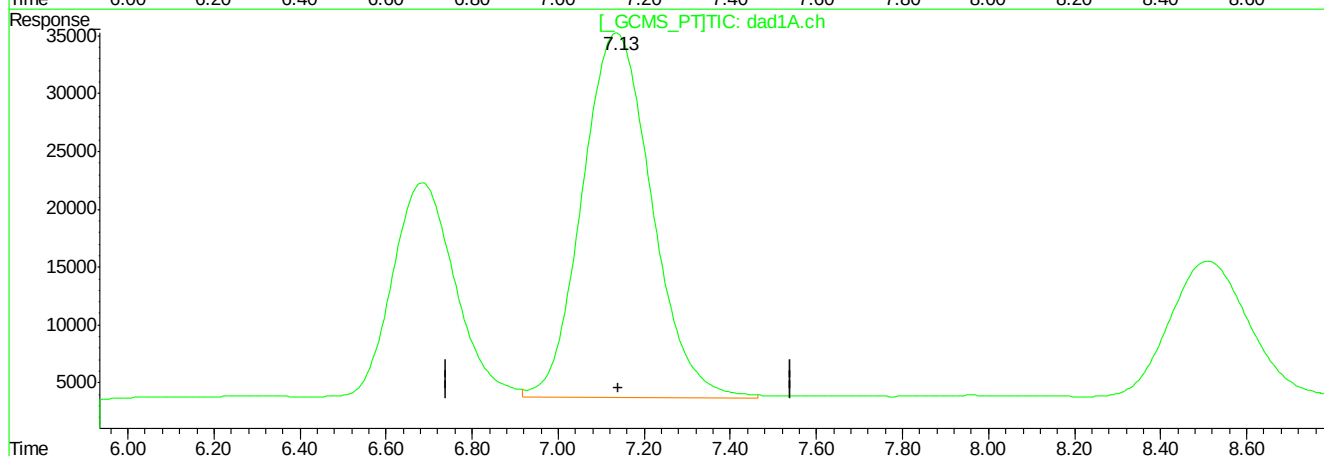
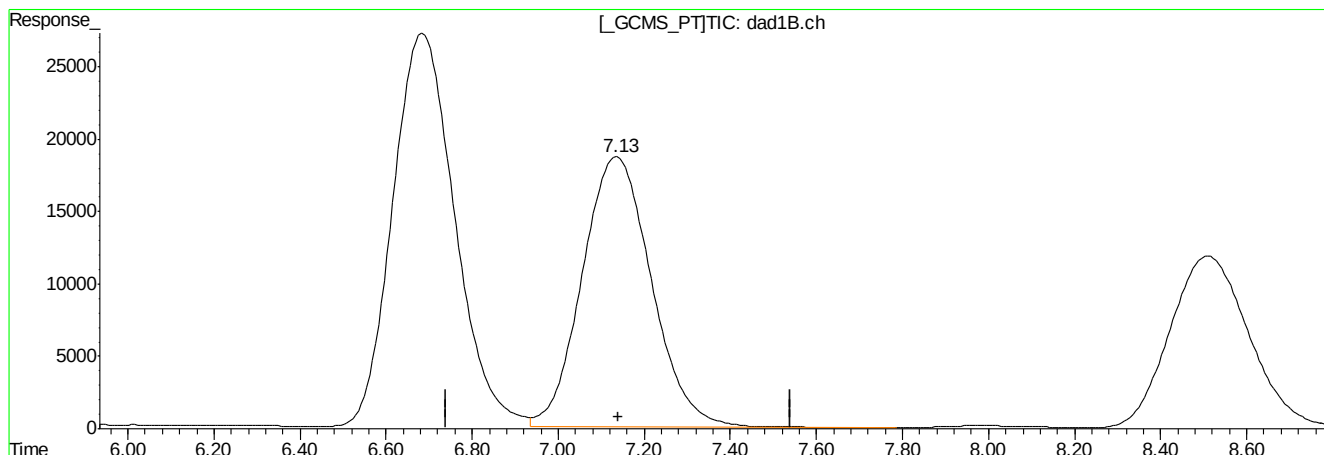
BB075415.D BBB2232_083122.M

Fri Jan 27 08:26:37 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1A.ch
Acq On : 26-Jan-2023, 14:14:57 Operator: fouads
Sample : op95139-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 15:11 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.14min 533.169ppb

response 2098458

(8) 3,5-Dinitroaniline #2

7.13min 538.837ppb m

response 3521507

QEdit

(+) = Expected Retention Time

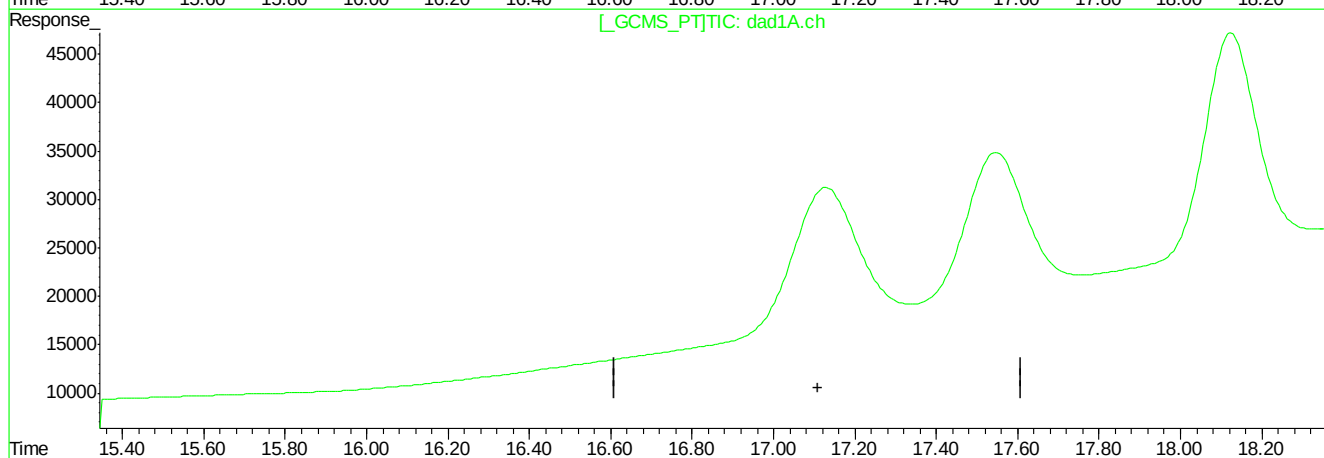
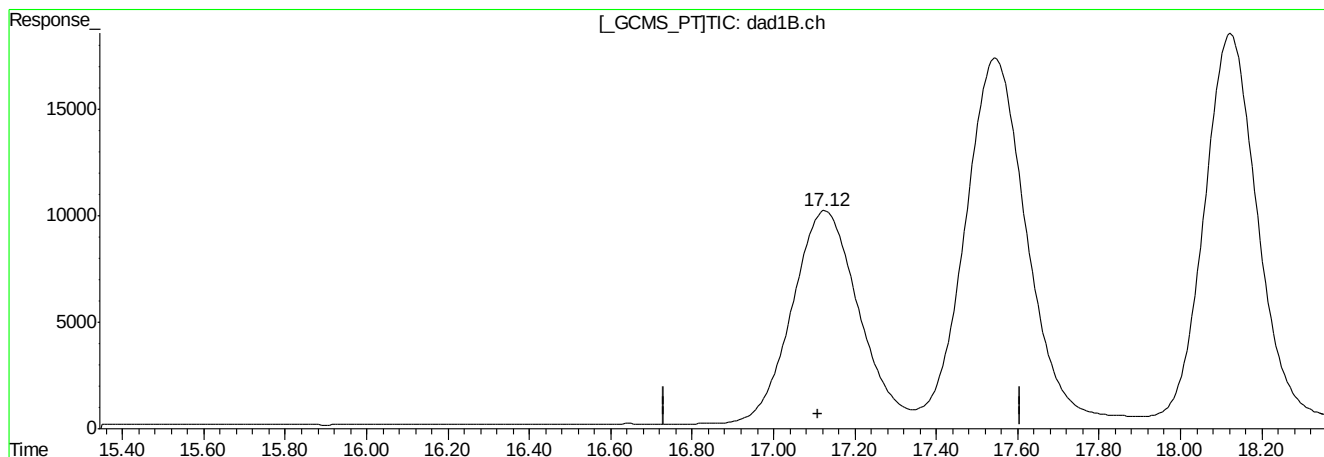
BB075415.D BBB2232_083122.M

Fri Jan 27 08:26:42 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1A.ch
Acq On : 26-Jan-2023, 14:14:57 Operator: fouads
Sample : op95139-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 15:11 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
17.13min 590.124ppb
response 1274305

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

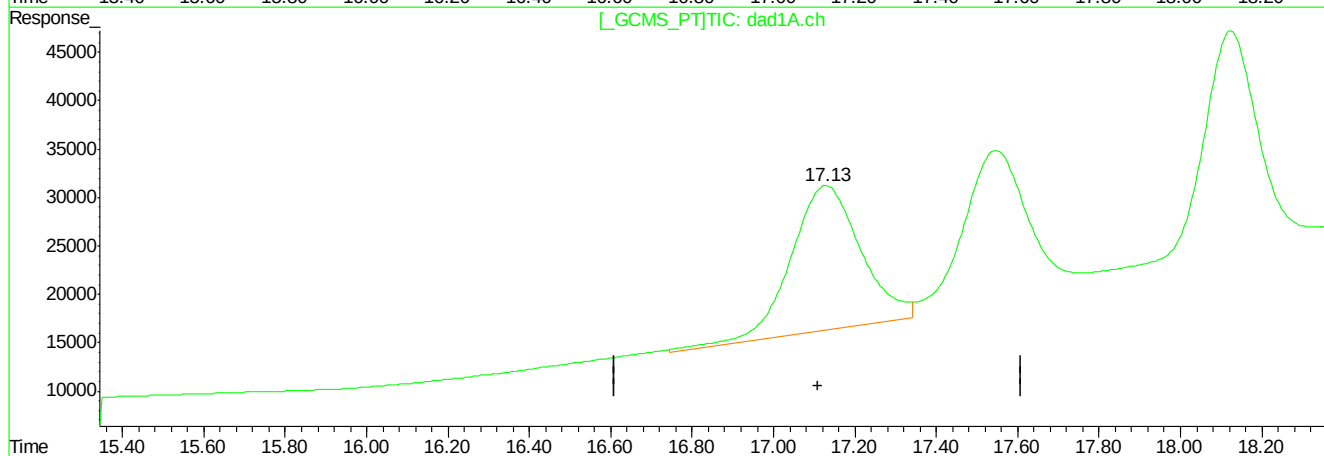
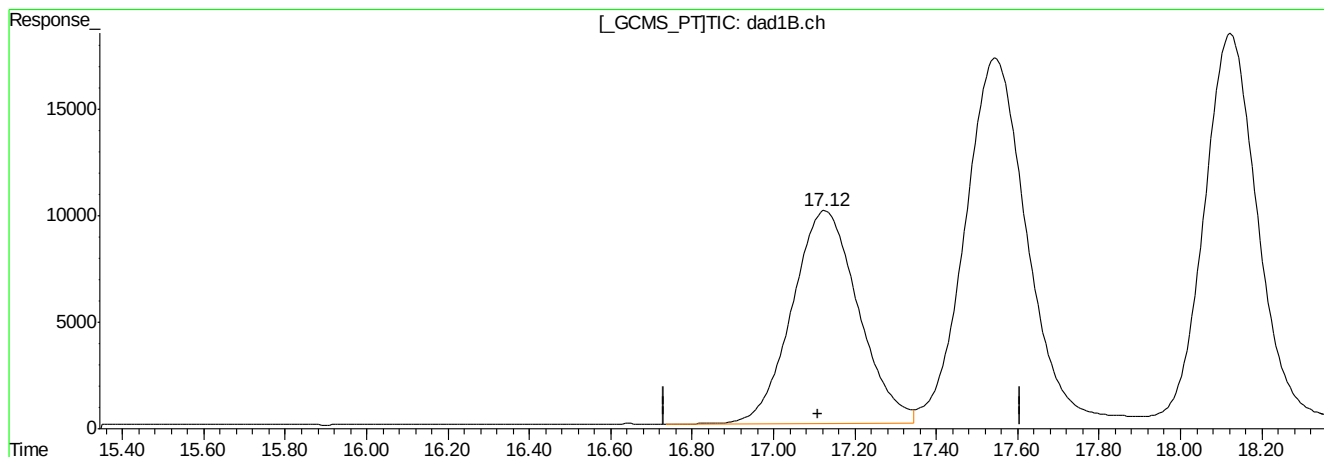
BB075415.D BBB2232_083122.M

Fri Jan 27 08:26:57 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1A.ch
Acq On : 26-Jan-2023, 14:14:57 Operator: fouads
Sample : op95139-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 15:11 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

17.12min 526.845ppb m

response 1137662

(18) o-Nitrotoluene #2

17.13min 541.224ppb m

response 1778517

(+) = Expected Retention Time

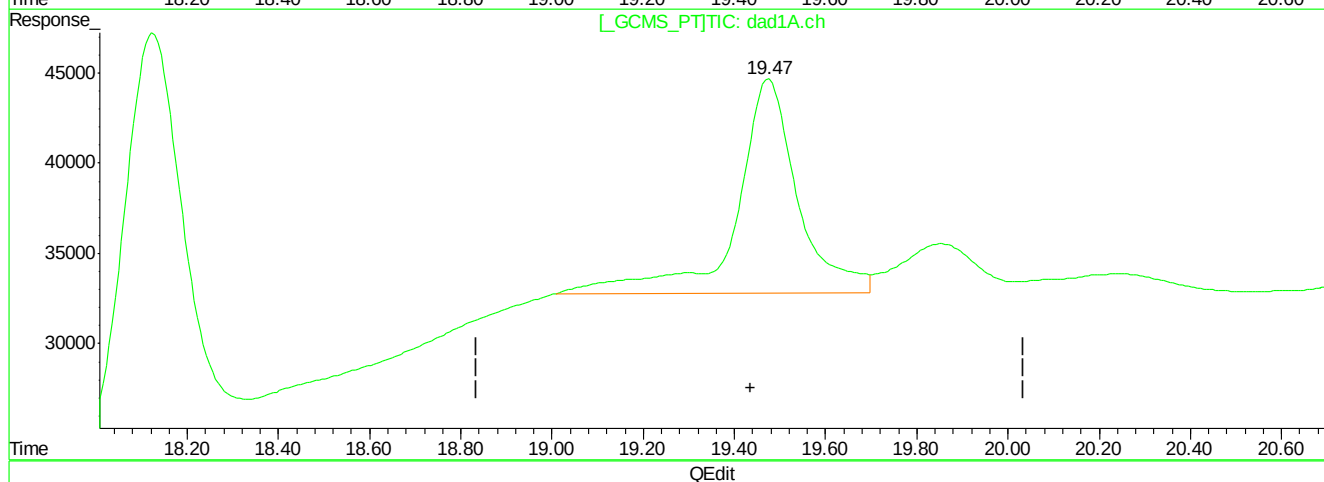
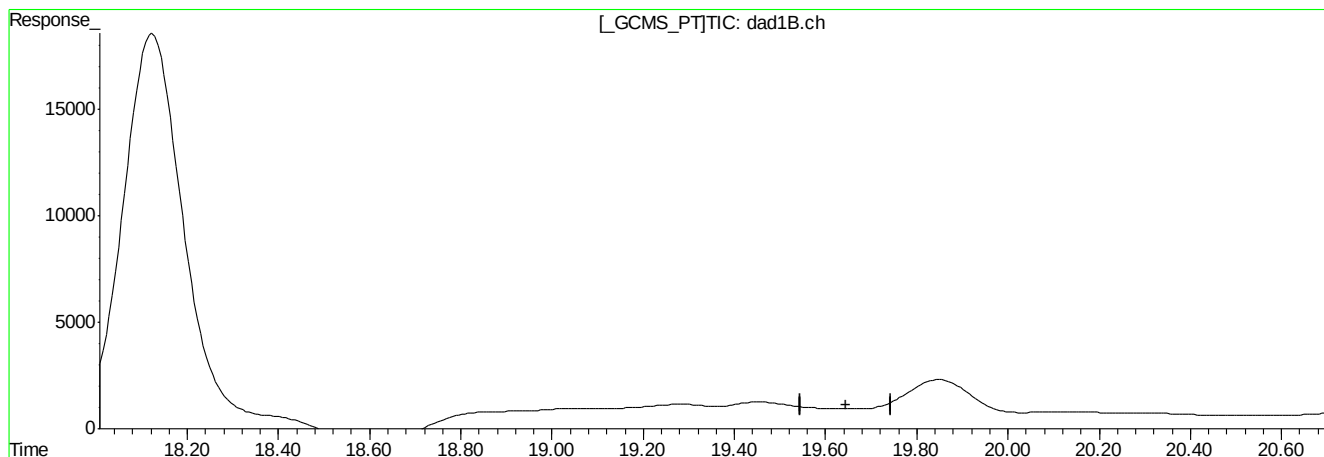
BB075415.D BBB2232_083122.M

Fri Jan 27 08:27:11 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1A.ch
Acq On : 26-Jan-2023, 14:14:57 Operator: fouads
Sample : op95139-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 15:11 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.48min 832.691ppb

response 1119130

(+) = Expected Retention Time

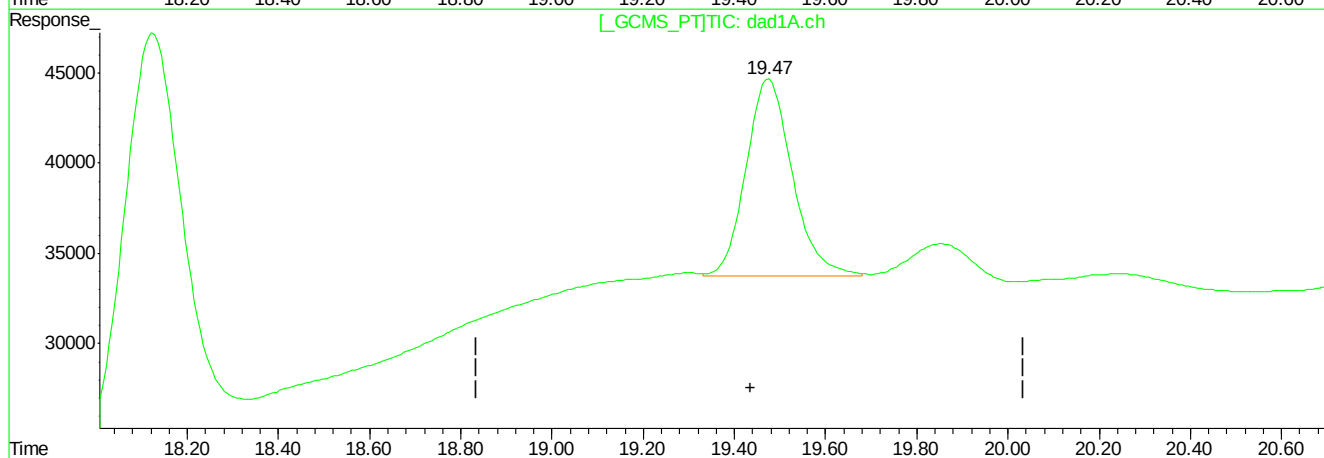
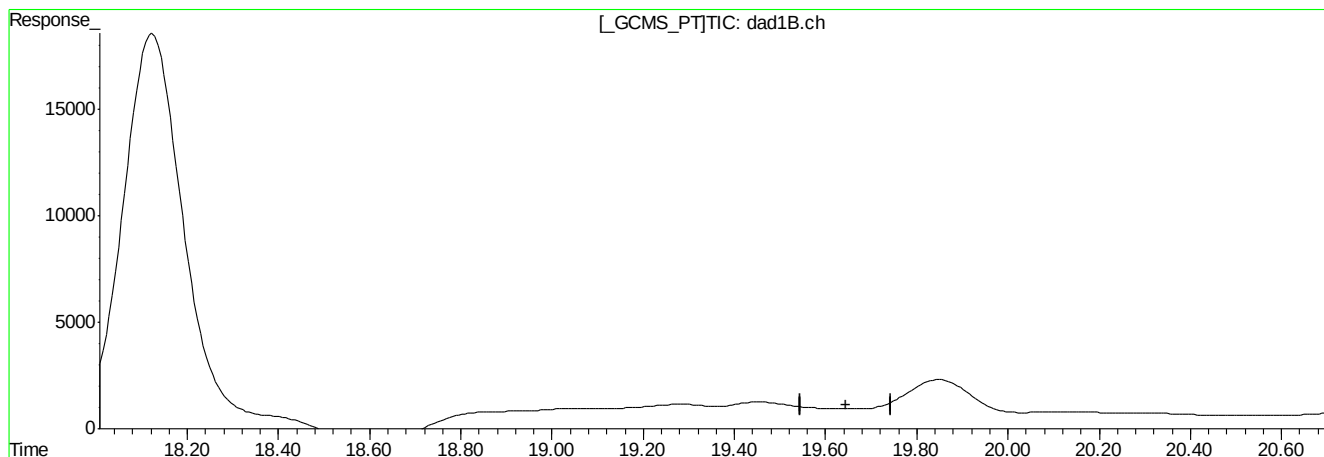
BB075415.D BBB2232_083122.M

Fri Jan 27 08:27:19 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1A.ch
Acq On : 26-Jan-2023, 14:14:57 Operator: fouads
Sample : op95139-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 15:11 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.47min 572.013ppb m

response 768781

QEdit

(+) = Expected Retention Time

BB075415.D BBB2232_083122.M

Fri Jan 27 08:27:25 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1B.ch Vial: 11
 Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1A.ch
 Acq On : 26-Jan-2023, 14:45:59 Operator: fouads
 Sample : op95139-msd Inst : G1315B
 Misc : op95139,GBB2299,500,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 27 08:27:39 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.21	13.21	1090961	1807937	509.218	425.530
Spiked Amount	500.000	Range 70 - 136	Recovery	=	101.84%	85.11%
Target Compounds						
1) TNX	1.46	1.46	718654	1137206	191.477	197.603
2) HMX	1.68	1.68	982607	2782034	663.633	680.164
3) DNX	1.91	1.91	1326452	2179180	431.179	441.342
4) MNX	2.61	2.61	1464875	2279447	510.420	518.346
5) RDX	3.33	3.33	1020740	1630324	550.274	556.536
6) 1,3,5-Trinitrobe	5.40	5.40	4437373	7159821	1116.146	1150.225
7) 1,3-Dinitrobenze	6.68	6.68	2727241	1913245	523.398	556.700
8) 3,5-Dinitroanili	7.13	7.13	2097552	3544850	532.938	542.409m
9) Nitrobenzene	8.50	8.50	1550789	1525805	517.170	514.683
10) Nitroglycerin	0.00	10.37	0	673816	N.D.	530.464 #
11) Tetryl	11.34	11.34	1332963	2014198	471.737	437.308
12) 2,4,6-Trinitroto	11.71	11.71	2882782	3389876	788.674	761.295
13) 2-Amino-4,6-Dini	12.11	12.11	1968999	2846334	622.990	576.379
14) 4-Amino-2,6-Dini	12.66	12.66	1398924	2645211	609.133	538.240
16) 2,4-Dinitrotolue	13.77	13.77	1899626	1361337	405.578	437.156
17) 2,6-Dinitrotolue	14.23	14.23	755280	1434711	497.450	409.161
18) o-Nitrotoluene	17.12	17.12	1307818	1759688	605.643	535.494m
19) p-Nitrotoluene	17.54	17.54	2032075	1421738	607.428	503.051
20) m-Nitrotoluene	18.12	18.12	1950506	1923970	626.524	495.743
21) PETN	0.00	19.47	0	773437	N.D.	575.477m#

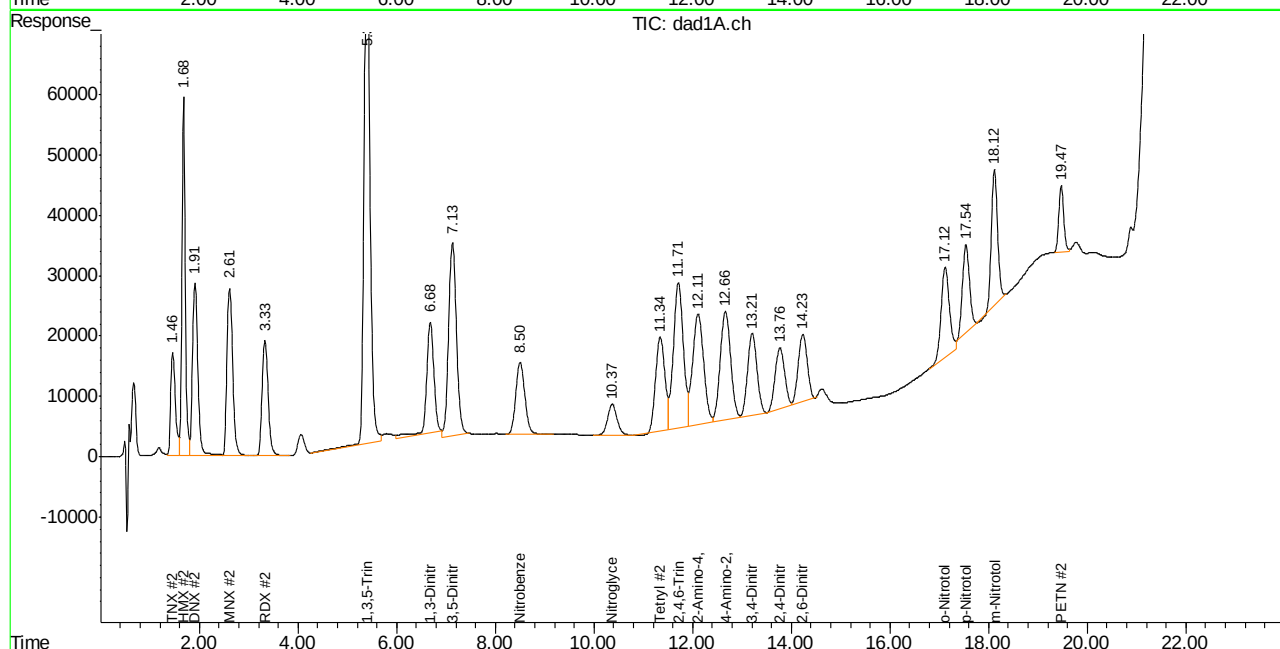
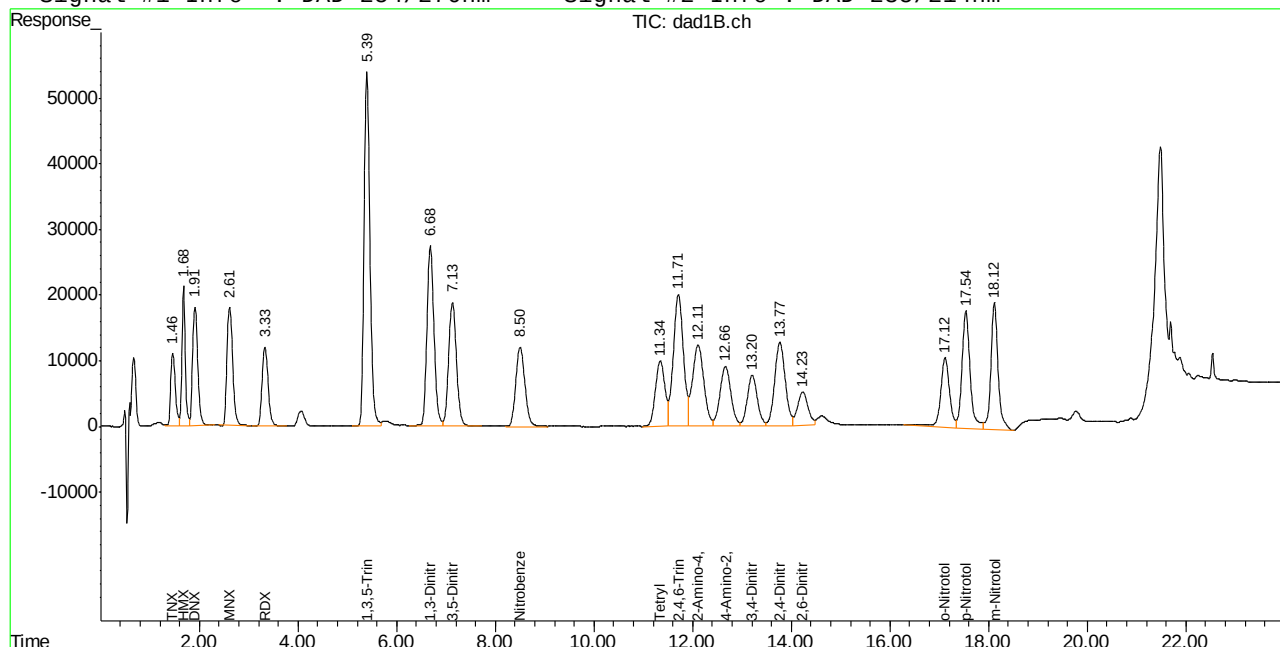
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075416.D BBB2232_083122.M Tue Jan 31 09:07:29 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1A.ch
Acq On : 26-Jan-2023, 14:45:59 Operator: fouads
Sample : op95139-msd Inst : G1315B
Misc : op95139, GBB2299, 500,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:28 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

OP95139-MSD

Method:

SW846 8330A

Lab FileID:

BB075416.D

Analyst approved:

02/06/23 14:09 Naresh Jiawan

Injection Time:

01/26/23 14:45

Supervisor approved:

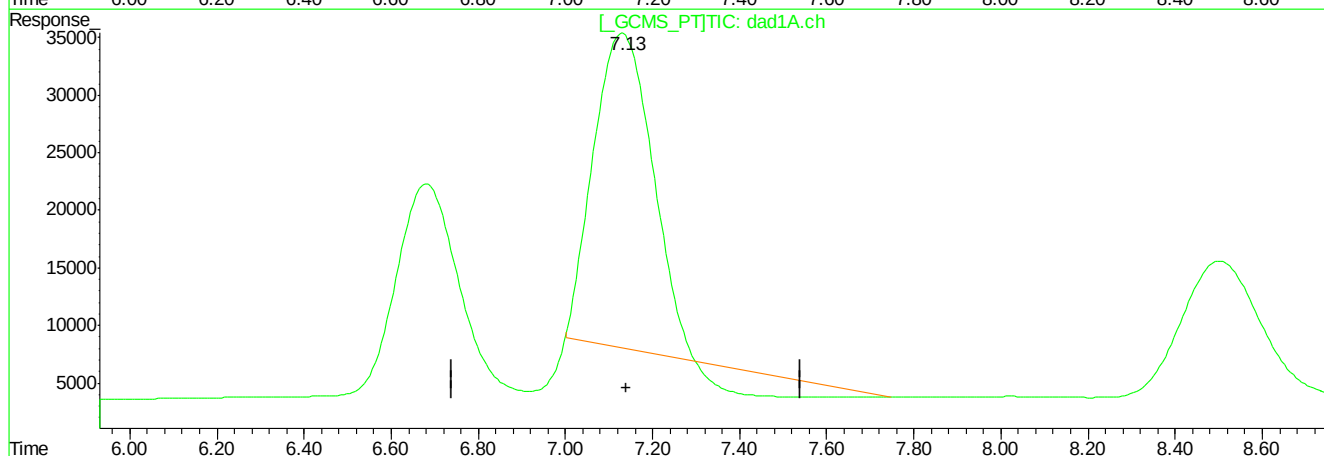
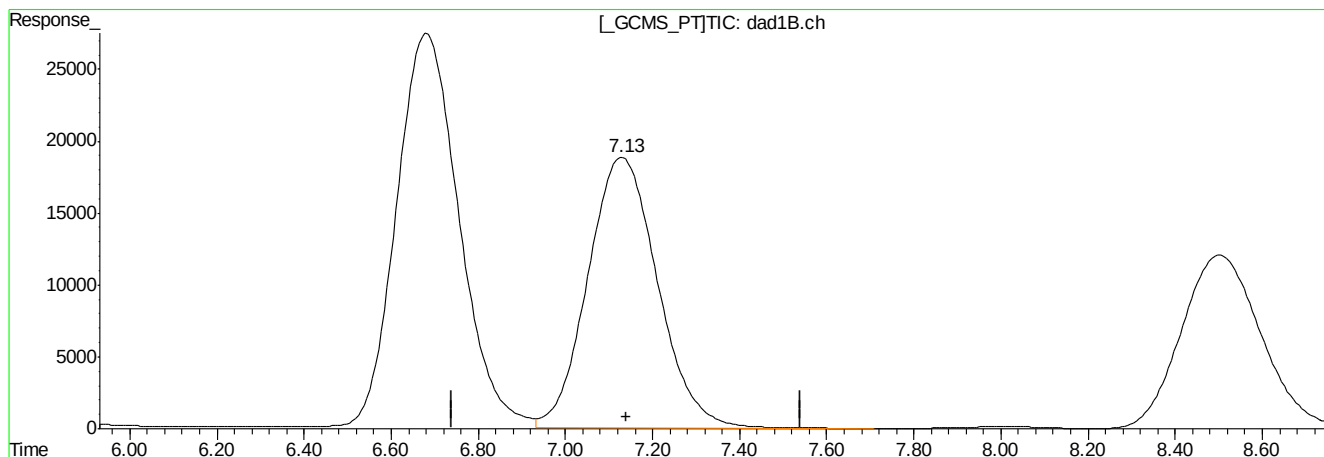
02/06/23 14:09 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	2	7.13	Poorly defined baseline
o-Nitrotoluene	88-72-2	2	17.12	Poorly defined baseline
PETN	78-11-5	2	19.47	Poorly defined baseline

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1A.ch
Acq On : 26-Jan-2023, 14:45:59 Operator: fouads
Sample : op95139-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:27 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.13min 532.938ppb

response 2097552

(8) 3,5-Dinitroaniline #2

7.13min 343.987ppb

response 2248089

QEdit

(+) = Expected Retention Time

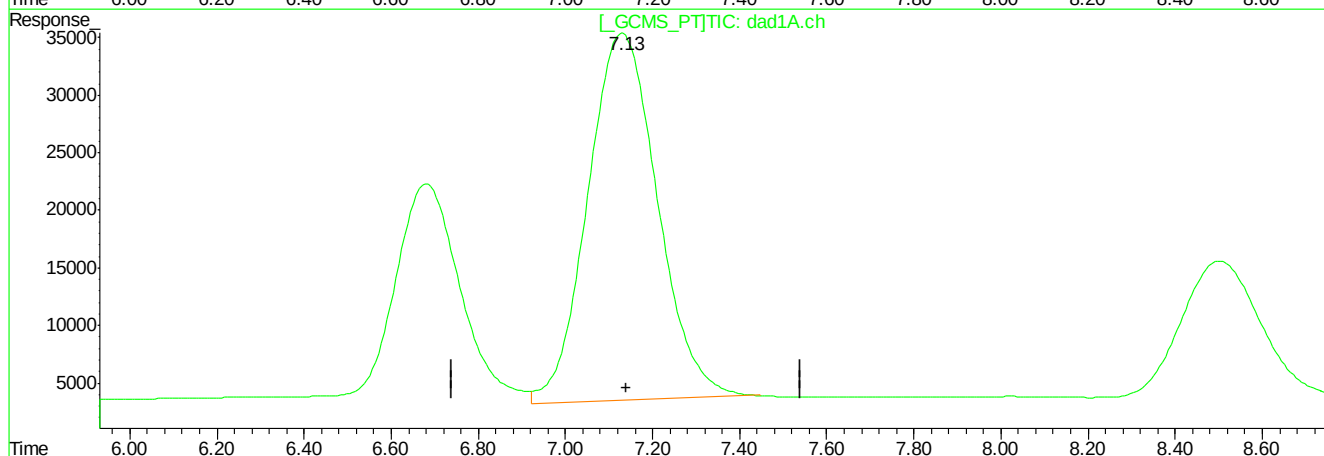
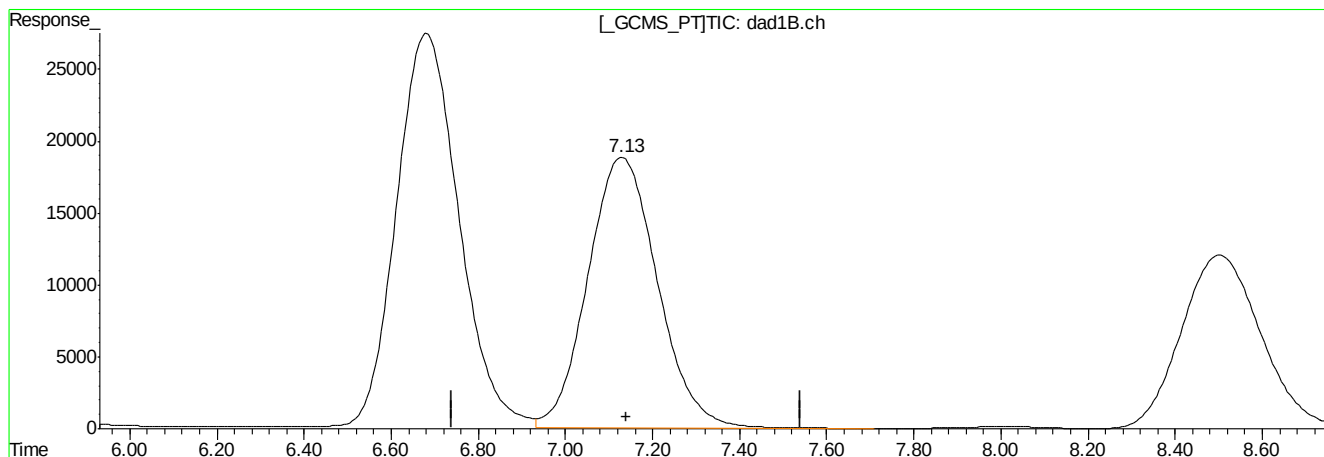
BB075416.D BBB2232_083122.M

Fri Jan 27 08:27:59 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1A.ch
Acq On : 26-Jan-2023, 14:45:59 Operator: fouads
Sample : op95139-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:27 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.13min 532.938ppb

response 2097552

(8) 3,5-Dinitroaniline #2

7.13min 542.409ppb m

response 3544850

(+) = Expected Retention Time

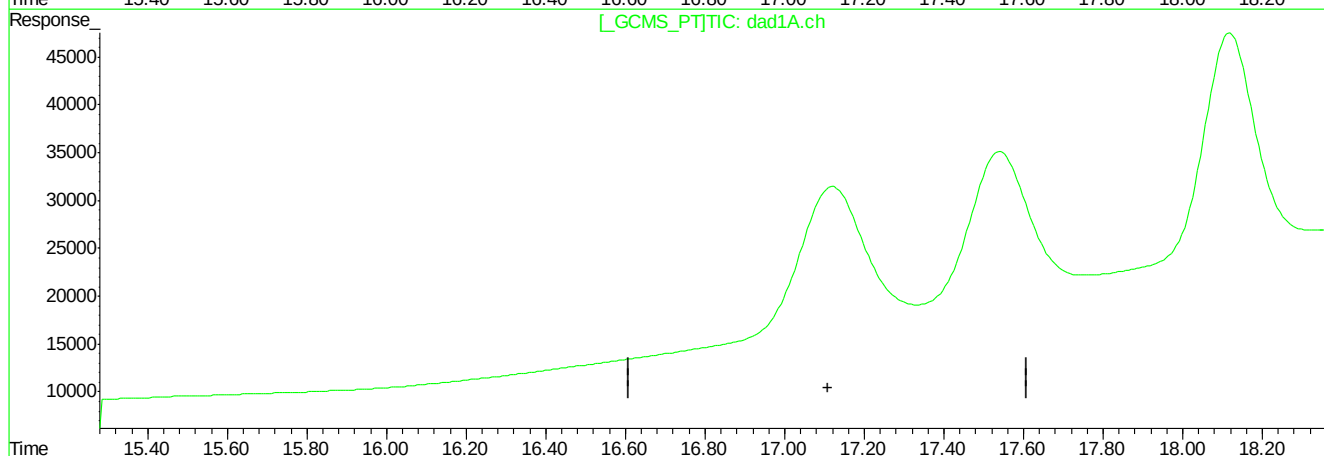
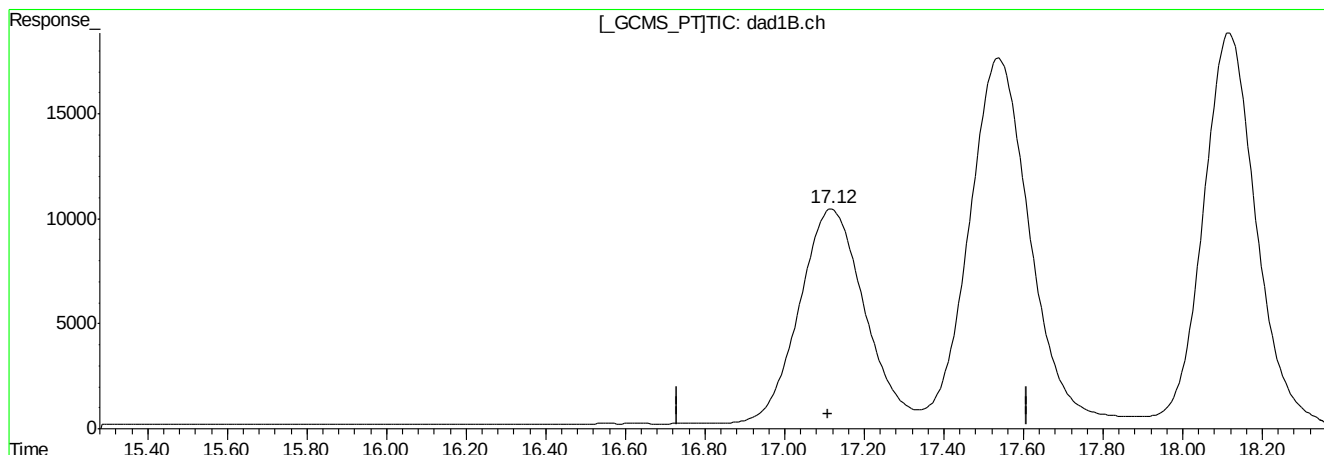
BB075416.D BBB2232_083122.M

Fri Jan 27 08:28:05 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1A.ch
Acq On : 26-Jan-2023, 14:45:59 Operator: fouads
Sample : op95139-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:27 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
17.12min 605.643ppb
response 1307818

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

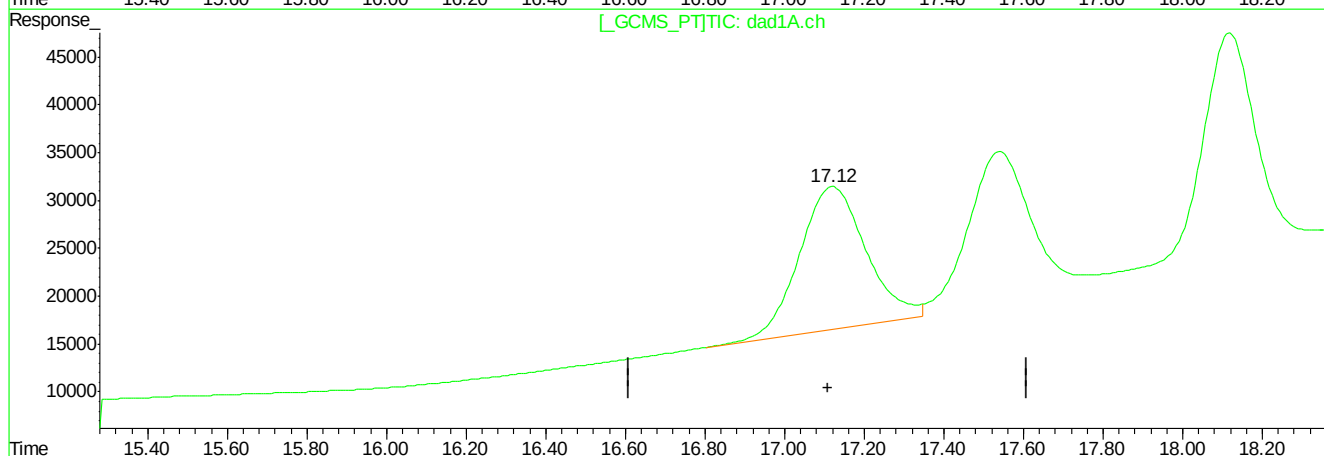
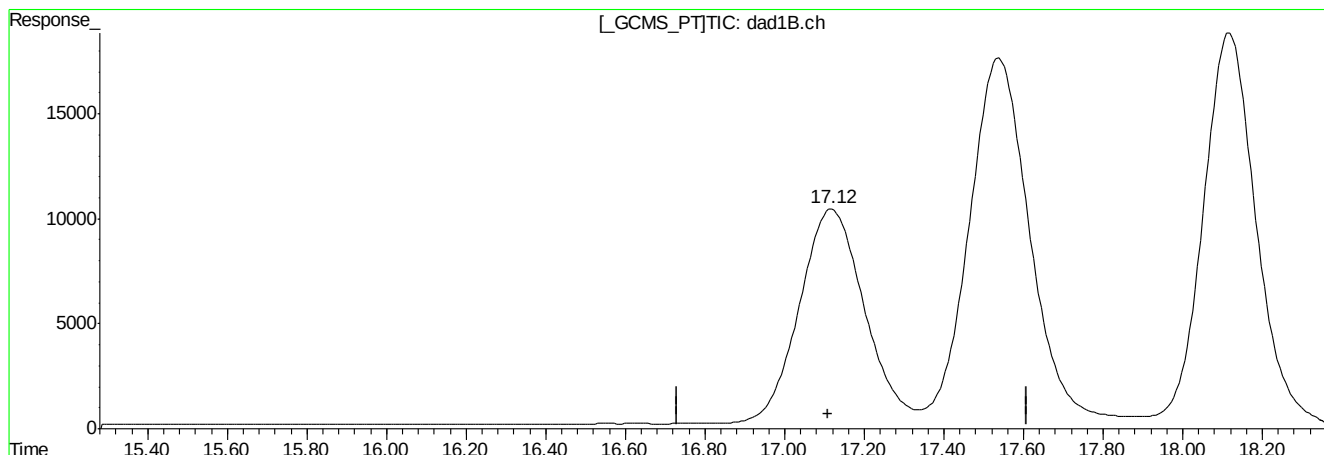
BB075416.D BBB2232_083122.M

Fri Jan 27 08:28:19 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1A.ch
Acq On : 26-Jan-2023, 14:45:59 Operator: fouads
Sample : op95139-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:27 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(18) o-Nitrotoluene
17.12min 605.643ppb
response 1307818

(18) o-Nitrotoluene #2
17.12min 535.494ppb m
response 1759688

(+) = Expected Retention Time

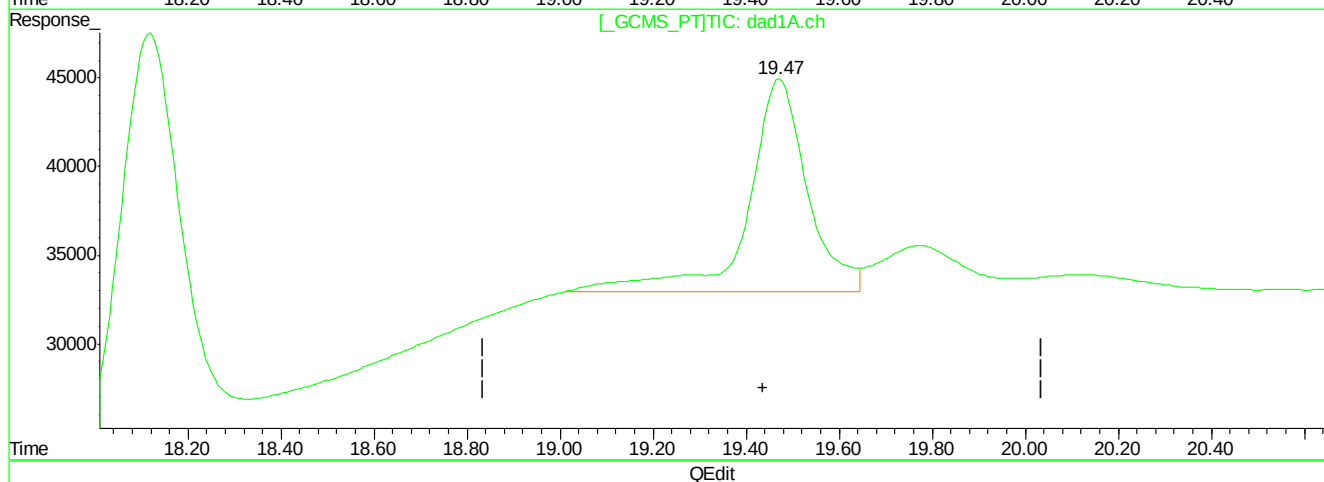
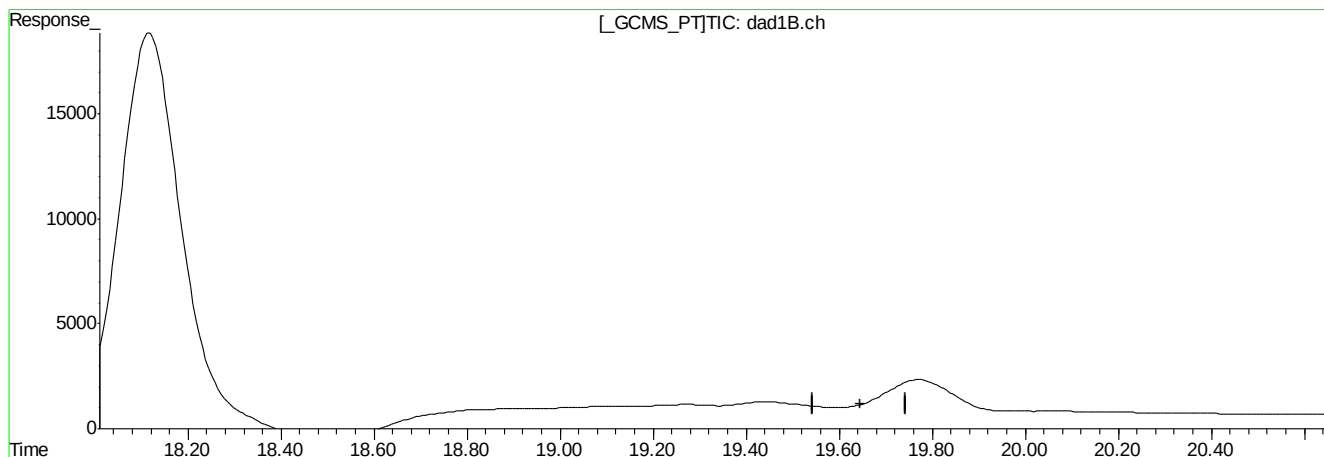
BB075416.D BBB2232_083122.M

Fri Jan 27 08:28:26 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1A.ch
Acq On : 26-Jan-2023, 14:45:59 Operator: fouads
Sample : op95139-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:27 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.47min 792.435ppb

response 1065027

(+) = Expected Retention Time

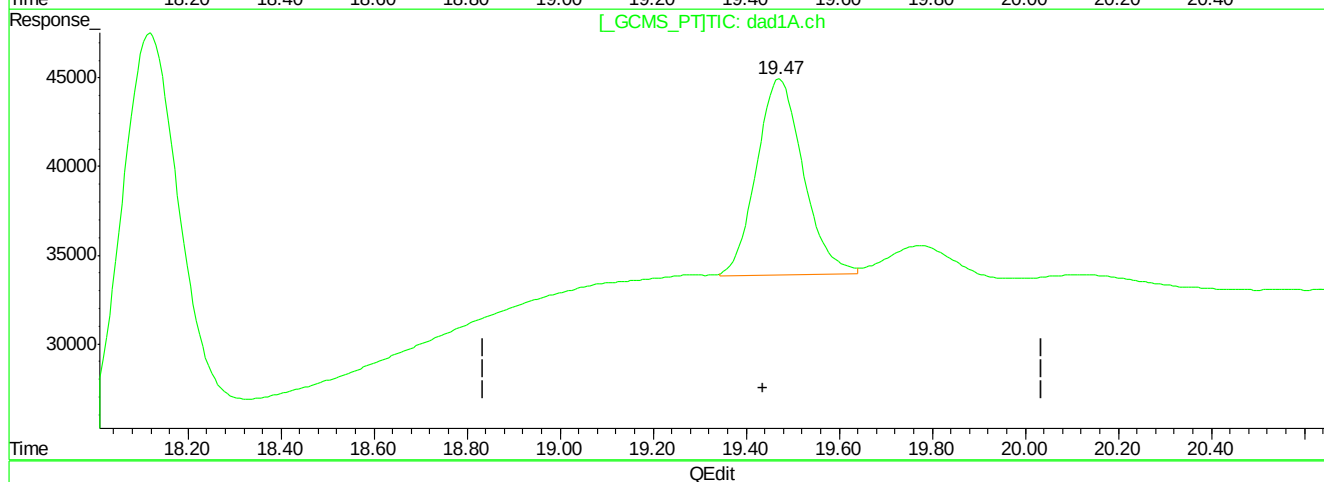
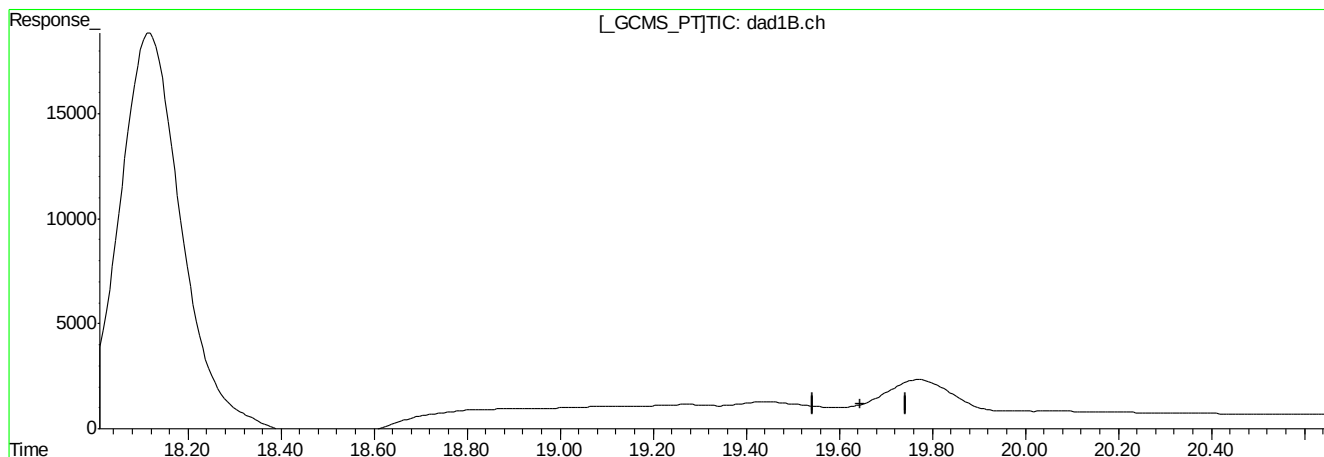
BB075416.D BBB2232_083122.M

Fri Jan 27 08:28:32 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1A.ch
Acq On : 26-Jan-2023, 14:45:59 Operator: fouads
Sample : op95139-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:27 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.47min 575.477ppb m

response 773437

(+) = Expected Retention Time

BB075416.D BBB2232_083122.M

Fri Jan 27 08:28:37 2023

Naresh Jiawan
02/06/23 14:09

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1B.ch Vial: 10
 Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1A.ch
 Acq On : 26-Jan-2023, 14:14:57 Operator: fouads
 Sample : op95139-ms Inst : G1315B
 Misc : op95139,GBB2299,500,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 26 15:11:21 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.22	13.22	1071563	1786341	500.164	420.447
Spiked Amount	500.000	Range	70 - 136	Recovery	=	100.03% 84.09%
Target Compounds						
1) TNX	1.46	1.46	782495	1194016	208.487	207.474
2) HMX	1.68	1.68	975999	2700993	659.170	660.350
3) DNX	1.91	1.91	1393602	2238215	453.007	453.298
4) MNX	2.62	2.62	1512291	2328606	526.942	529.525
5) RDX	3.33	3.33	1028731	1627834	554.582	555.686
6) 1,3,5-Trinitrobe	5.40	5.40	4144889	6713667	1042.576	1078.550
7) 1,3-Dinitrobenze	6.69	6.69	2713417	1789948	520.745	520.824
8) 3,5-Dinitroanili	7.14	7.13	2098458	3521507	533.169	538.837m
9) Nitrobenzene	8.51	8.51	1528338	1526714	509.683	514.990
10) Nitroglycerin	0.00	10.38	0	669103	N.D.	526.754 #
11) Tetryl	11.36	11.36	1203881	1881200	426.055	408.433
12) 2,4,6-Trinitroto	11.72	11.72	2803772	3332146	767.058	748.330
13) 2-Amino-4,6-Dini	12.12	12.12	1938792	2839394	613.432	574.974
14) 4-Amino-2,6-Dini	12.68	12.68	1378748	2641057	600.347	537.395
16) 2,4-Dinitrotolue	13.78	13.78	1887787	1361178	403.051	437.105
17) 2,6-Dinitrotolue	14.24	14.25	749624	1443830	493.724	411.762
18) o-Nitrotoluene	17.12	17.13	1137662	1778517	526.845m	541.224m
19) p-Nitrotoluene	17.55	17.55	2006974	1382931	599.925	489.320
20) m-Nitrotoluene	18.12	18.13	2008571	1882452	645.175	485.046
21) PETN	0.00	19.47	0	768781	N.D.	572.013m#

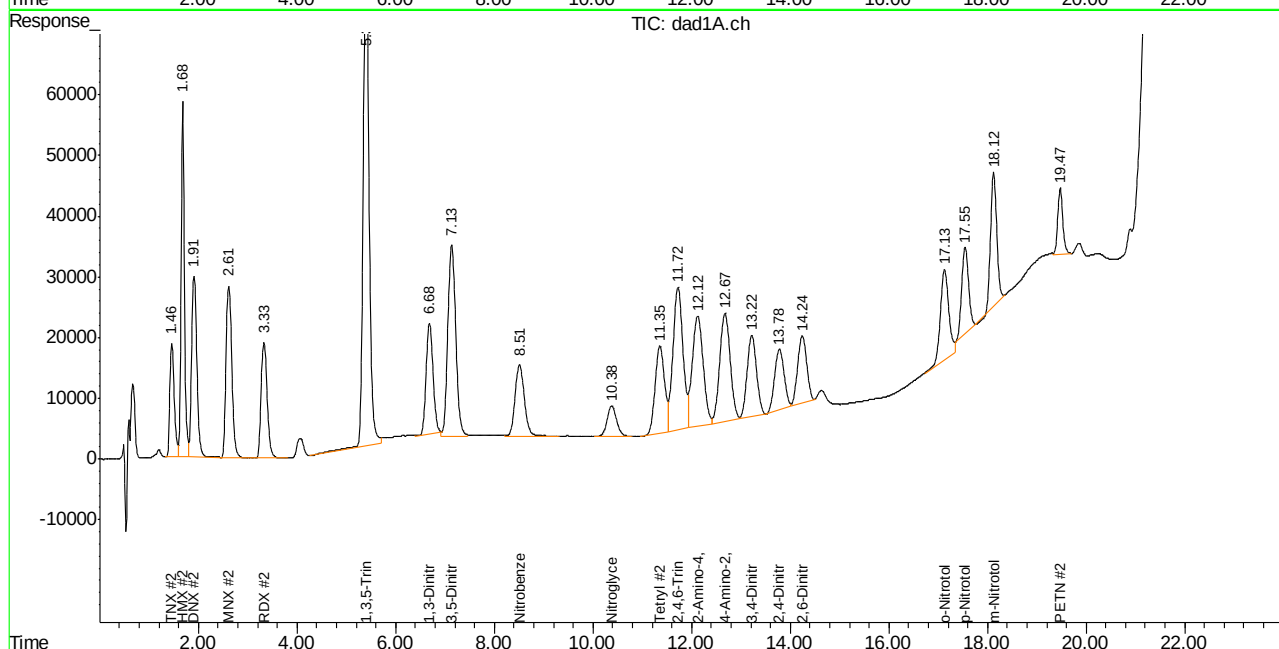
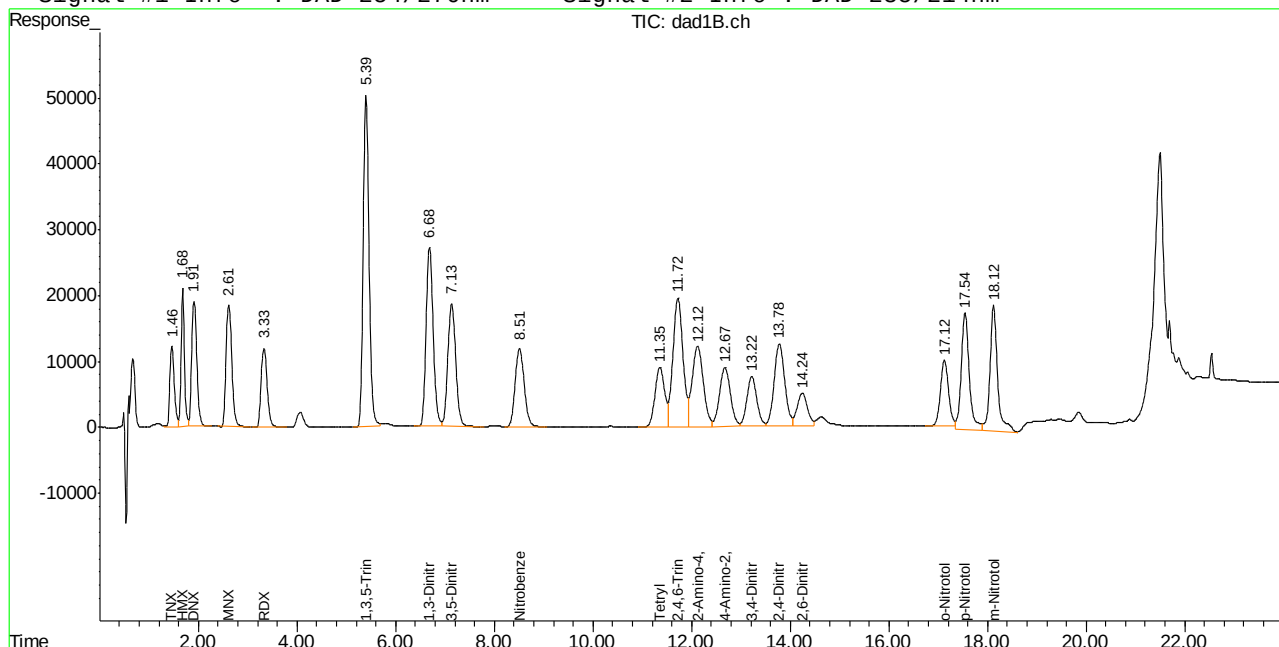
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075415.D BBB2232_083122.M Tue Jan 31 09:07:28 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1A.ch
Acq On : 26-Jan-2023, 14:14:57 Operator: fouads
Sample : op95139-ms Inst : G1315B
Misc : op95139, GBB2299, 500,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:27 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: OP95139-MS

Method: SW846 8330A

Lab FileID: BB075415.D

Analyst approved: 02/06/23 14:09 Naresh Jiawan

Injection Time: 01/26/23 14:14

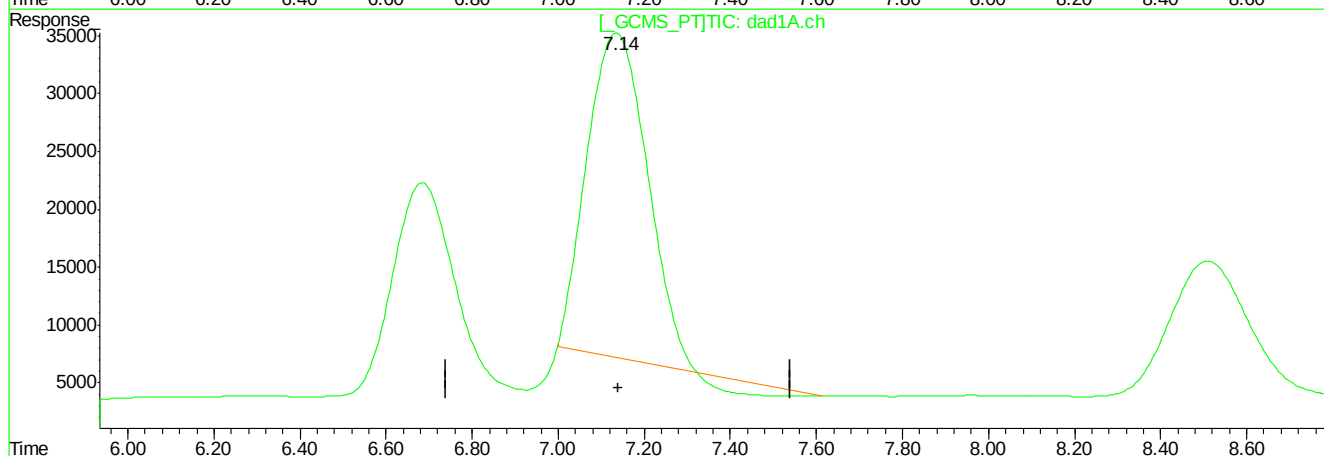
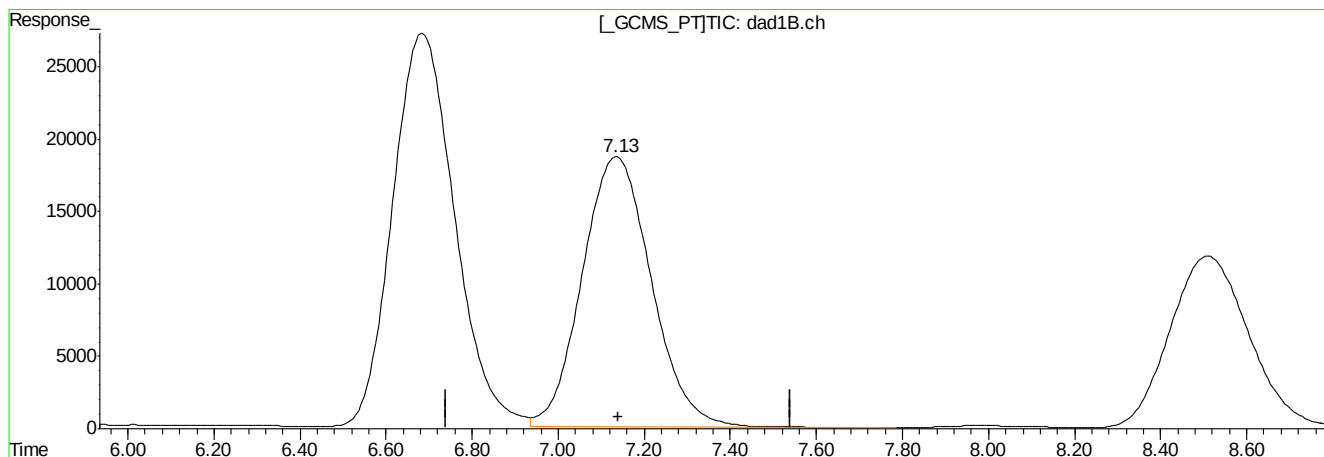
Supervisor approved: 02/06/23 14:09 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	2	7.13	Poorly defined baseline
o-Nitrotoluene	88-72-2	1	17.12	Poorly defined baseline
o-Nitrotoluene	88-72-2	2	17.13	Poorly defined baseline
PETN	78-11-5	2	19.47	Poorly defined baseline

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1A.ch
Acq On : 26-Jan-2023, 14:14:57 Operator: fouads
Sample : op95139-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 15:11 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.14min 533.169ppb

response 2098458

(8) 3,5-Dinitroaniline #2

7.14min 403.000ppb

response 2633757

(+) = Expected Retention Time

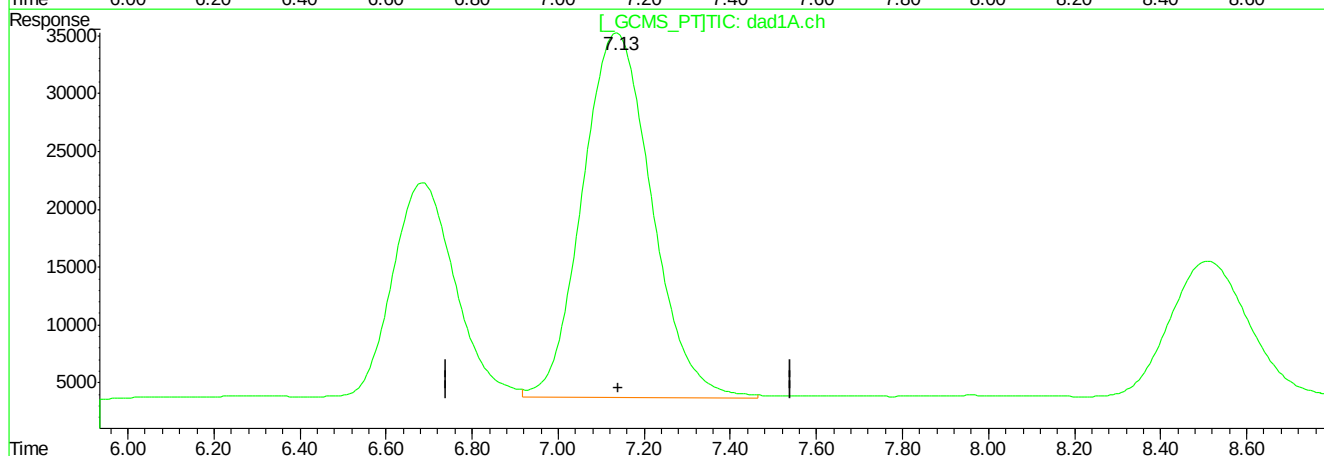
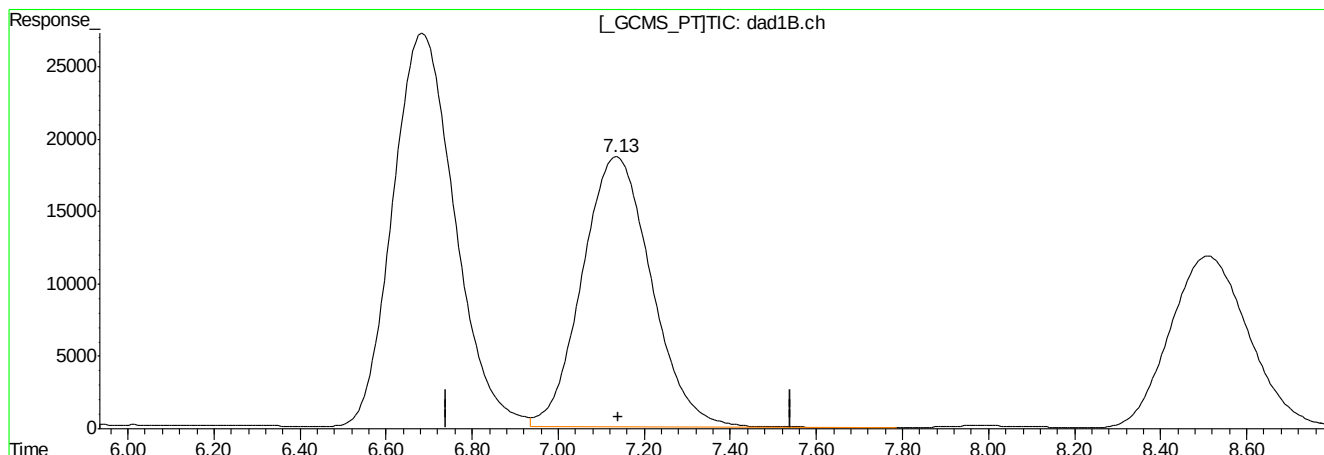
BB075415.D BBB2232_083122.M

Fri Jan 27 08:26:37 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1A.ch
Acq On : 26-Jan-2023, 14:14:57 Operator: fouads
Sample : op95139-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 15:11 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.14min 533.169ppb

response 2098458

(8) 3,5-Dinitroaniline #2

7.13min 538.837ppb m

response 3521507

(+) = Expected Retention Time

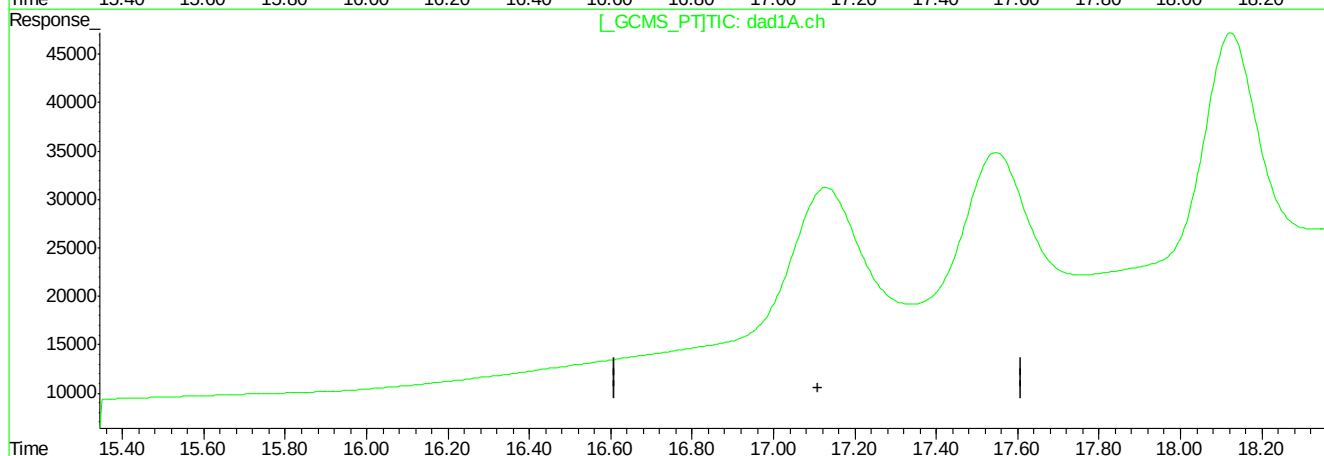
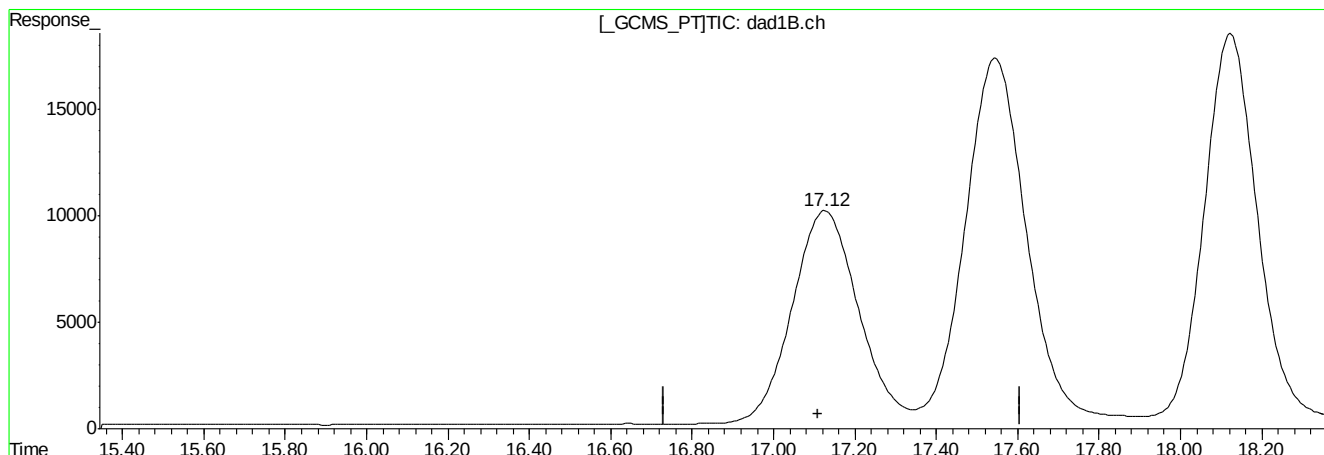
BB075415.D BBB2232_083122.M

Fri Jan 27 08:26:42 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1A.ch
Acq On : 26-Jan-2023, 14:14:57 Operator: fouads
Sample : op95139-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 15:11 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
17.13min 590.124ppb
response 1274305

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

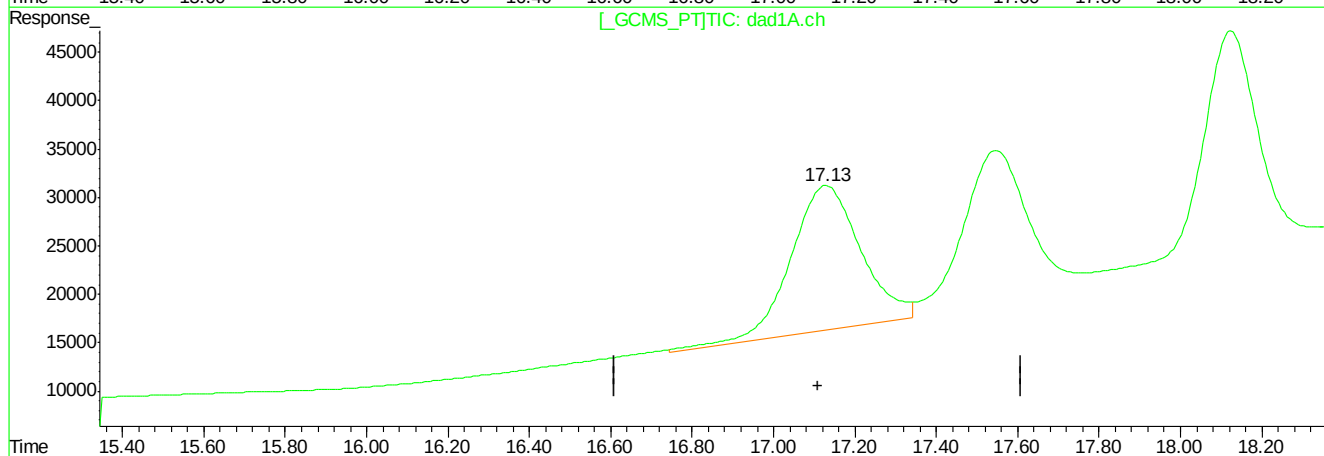
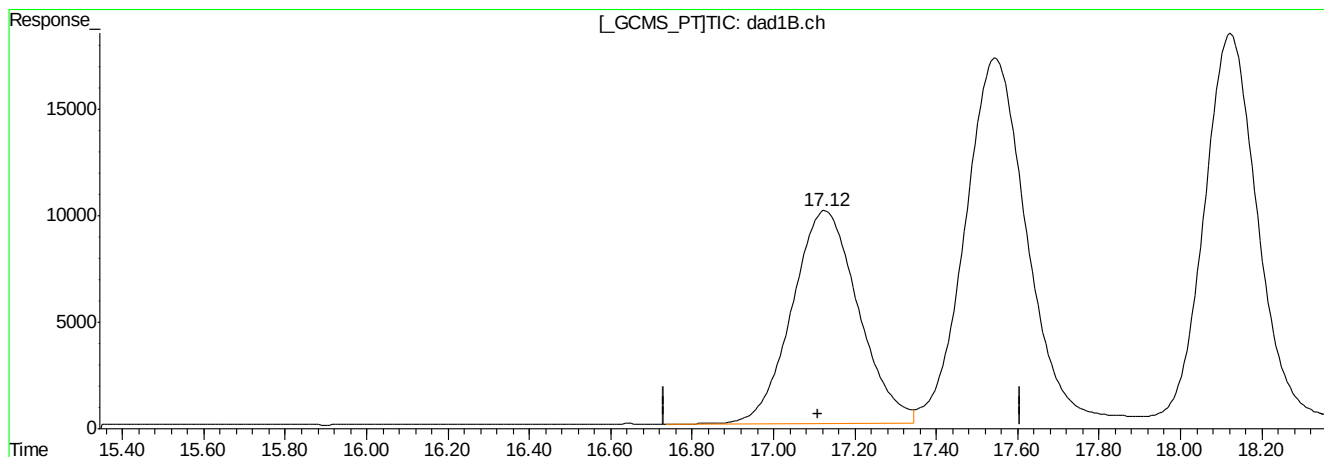
BB075415.D BBB2232_083122.M

Fri Jan 27 08:26:57 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1A.ch
Acq On : 26-Jan-2023, 14:14:57 Operator: fouads
Sample : op95139-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 15:11 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
17.12min 526.845ppb m
response 1137662

(18) o-Nitrotoluene #2
17.13min 541.224ppb m
response 1778517

(+) = Expected Retention Time

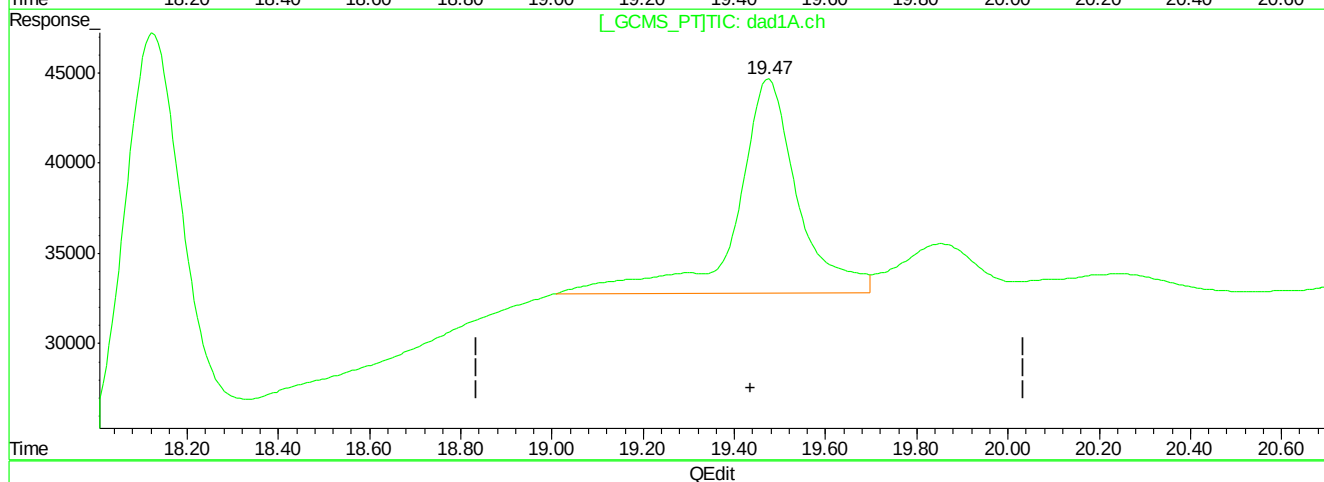
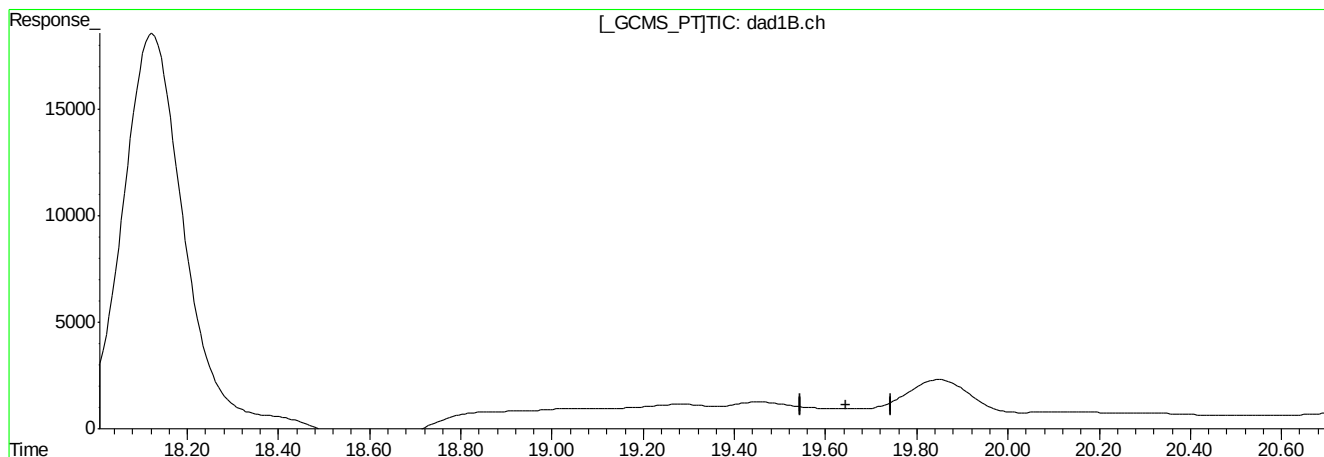
BB075415.D BBB2232_083122.M

Fri Jan 27 08:27:11 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1A.ch
Acq On : 26-Jan-2023, 14:14:57 Operator: fouads
Sample : op95139-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 15:11 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.48min 832.691ppb

response 1119130

(+) = Expected Retention Time

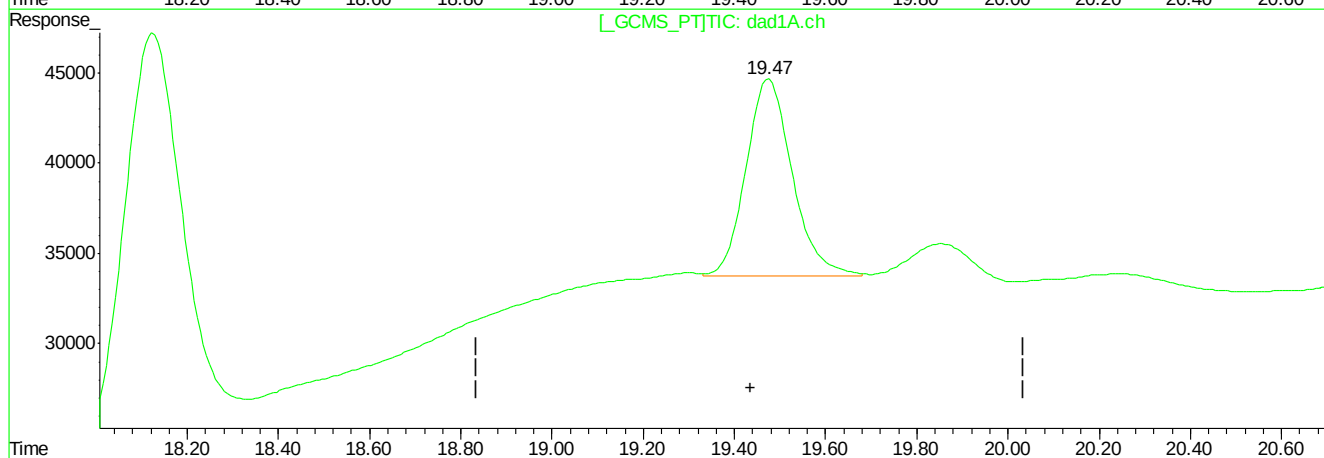
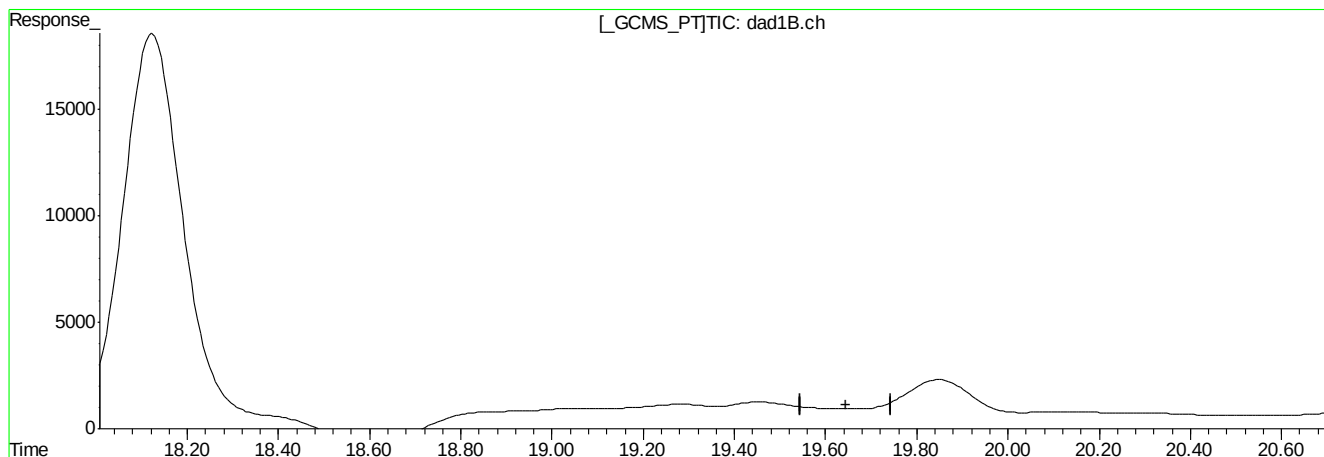
BB075415.D BBB2232_083122.M

Fri Jan 27 08:27:19 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075415.D\dad1A.ch
Acq On : 26-Jan-2023, 14:14:57 Operator: fouads
Sample : op95139-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 15:11 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.47min 572.013ppb m

response 768781

(+) = Expected Retention Time

BB075415.D BBB2232_083122.M

Fri Jan 27 08:27:25 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1B.ch Vial: 11
 Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1A.ch
 Acq On : 26-Jan-2023, 14:45:59 Operator: fouads
 Sample : op95139-msd Inst : G1315B
 Misc : op95139,GBB2299,500,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 27 08:27:39 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.21	13.21	1090961	1807937	509.218	425.530
Spiked Amount	500.000	Range	70 - 136	Recovery	=	101.84% 85.11%
Target Compounds						
1) TNX	1.46	1.46	718654	1137206	191.477	197.603
2) HMX	1.68	1.68	982607	2782034	663.633	680.164
3) DNX	1.91	1.91	1326452	2179180	431.179	441.342
4) MNX	2.61	2.61	1464875	2279447	510.420	518.346
5) RDX	3.33	3.33	1020740	1630324	550.274	556.536
6) 1,3,5-Trinitrobe	5.40	5.40	4437373	7159821	1116.146	1150.225
7) 1,3-Dinitrobenze	6.68	6.68	2727241	1913245	523.398	556.700
8) 3,5-Dinitroanili	7.13	7.13	2097552	3544850	532.938	542.409m
9) Nitrobenzene	8.50	8.50	1550789	1525805	517.170	514.683
10) Nitroglycerin	0.00	10.37	0	673816	N.D.	530.464 #
11) Tetryl	11.34	11.34	1332963	2014198	471.737	437.308
12) 2,4,6-Trinitroto	11.71	11.71	2882782	3389876	788.674	761.295
13) 2-Amino-4,6-Dini	12.11	12.11	1968999	2846334	622.990	576.379
14) 4-Amino-2,6-Dini	12.66	12.66	1398924	2645211	609.133	538.240
16) 2,4-Dinitrotolue	13.77	13.77	1899626	1361337	405.578	437.156
17) 2,6-Dinitrotolue	14.23	14.23	755280	1434711	497.450	409.161
18) o-Nitrotoluene	17.12	17.12	1307818	1759688	605.643	535.494m
19) p-Nitrotoluene	17.54	17.54	2032075	1421738	607.428	503.051
20) m-Nitrotoluene	18.12	18.12	1950506	1923970	626.524	495.743
21) PETN	0.00	19.47	0	773437	N.D.	575.477m#

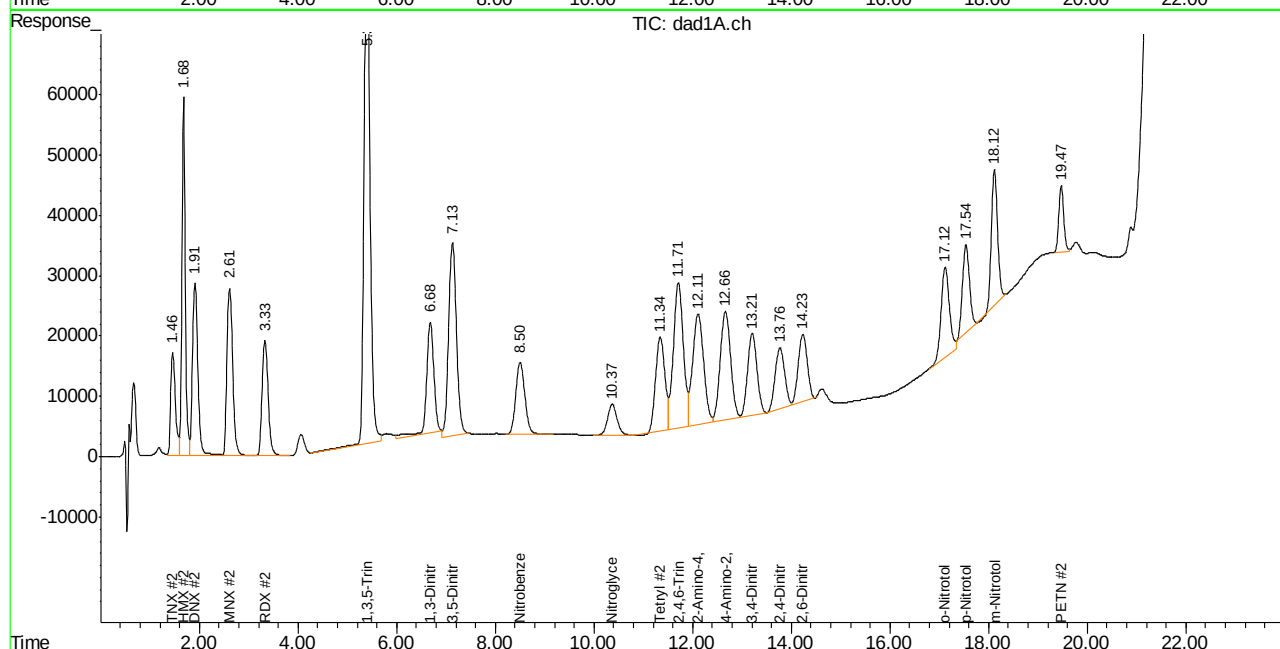
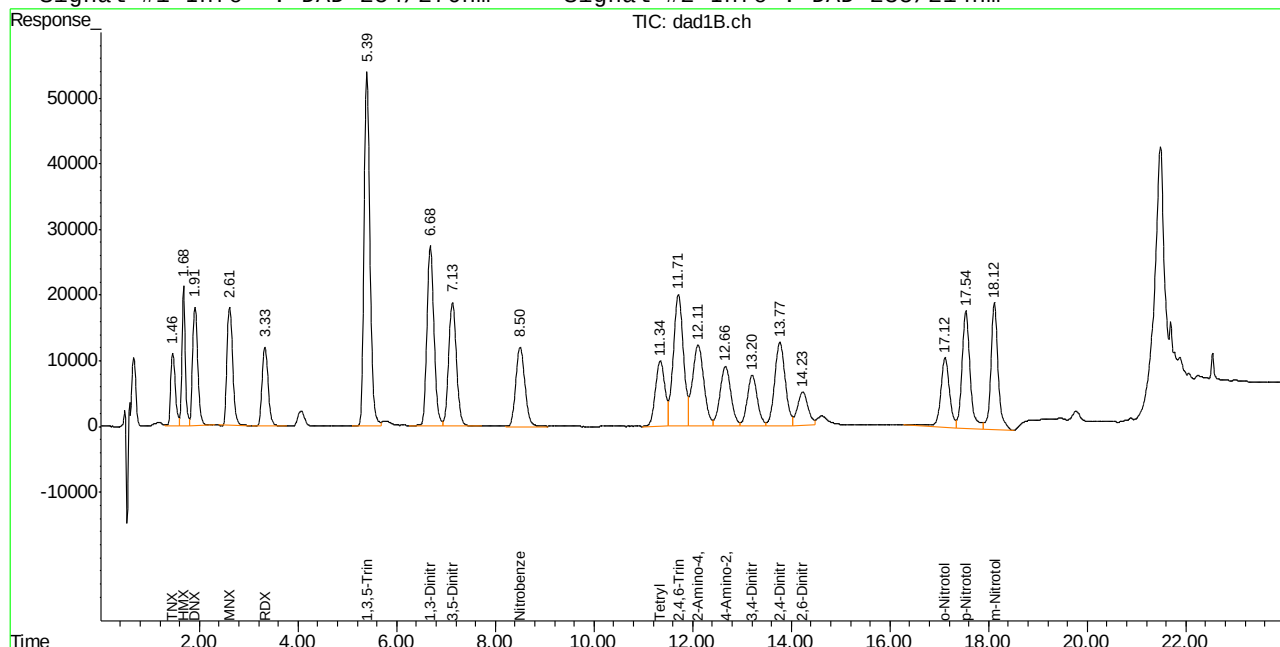
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075416.D BBB2232_083122.M Tue Jan 31 09:07:29 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1A.ch
Acq On : 26-Jan-2023, 14:45:59 Operator: fouads
Sample : op95139-msd Inst : G1315B
Misc : op95139,GBB2299,500,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:28 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: OP95139-MSD

Method: SW846 8330A

Lab FileID: BB075416.D

Analyst approved: 02/06/23 14:09 Naresh Jiawan

Injection Time: 01/26/23 14:45

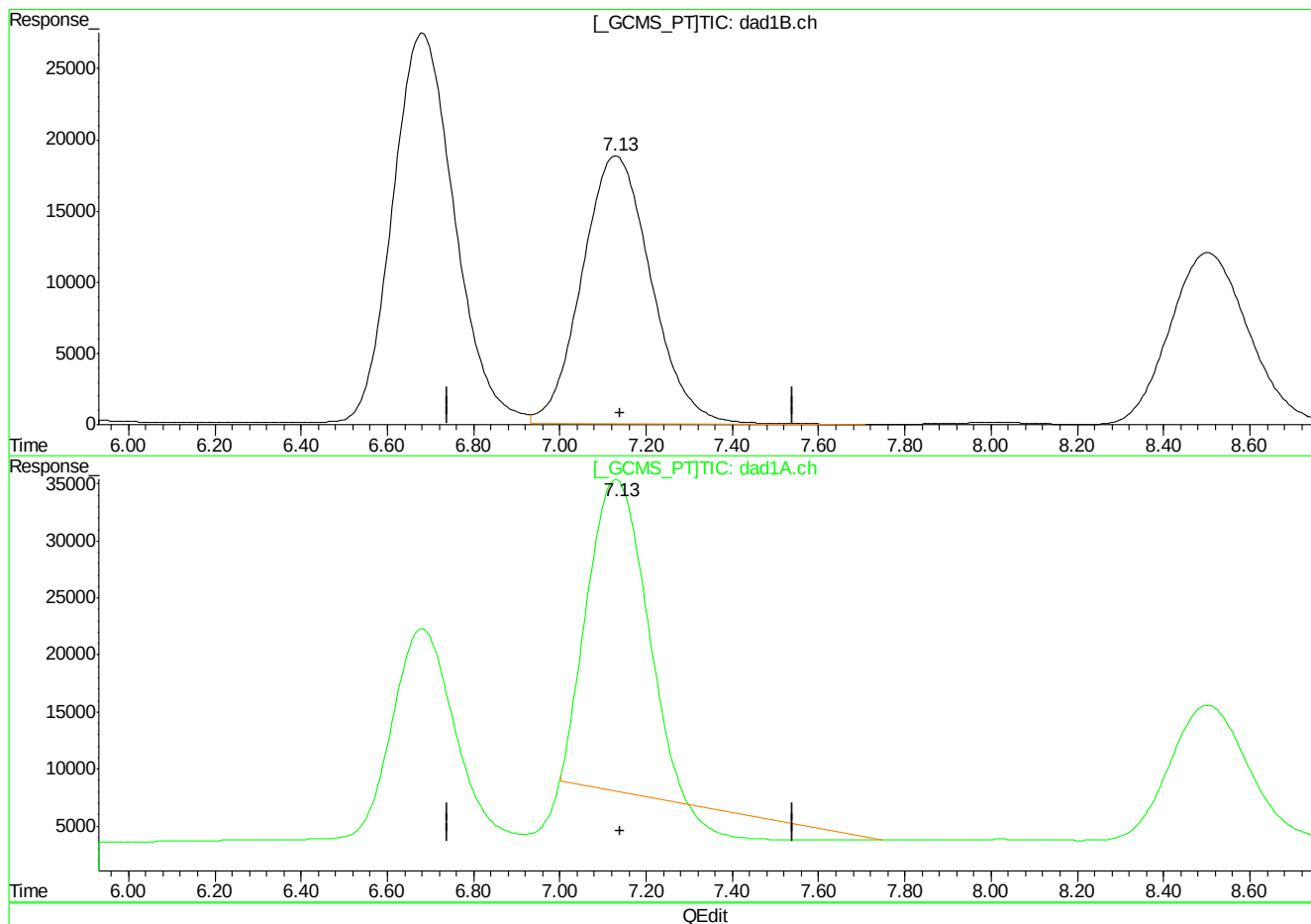
Supervisor approved: 02/06/23 14:09 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	2	7.13	Poorly defined baseline
o-Nitrotoluene	88-72-2	2	17.12	Poorly defined baseline
PETN	78-11-5	2	19.47	Poorly defined baseline

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1A.ch
Acq On : 26-Jan-2023, 14:45:59 Operator: fouads
Sample : op95139-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:27 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.13min 532.938ppb

response 2097552

(8) 3,5-Dinitroaniline #2

7.13min 343.987ppb

response 2248089

(+) = Expected Retention Time

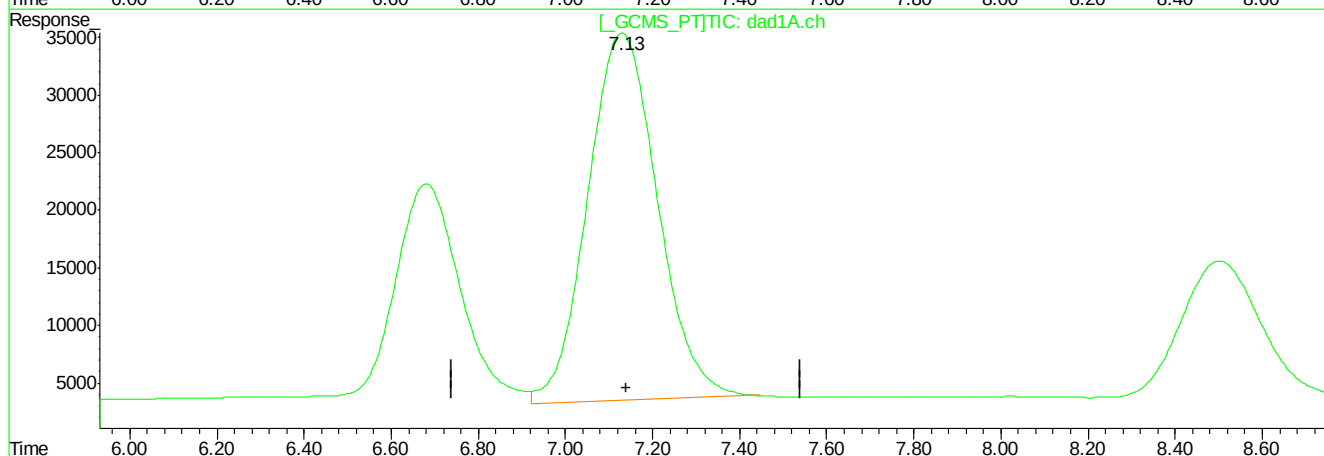
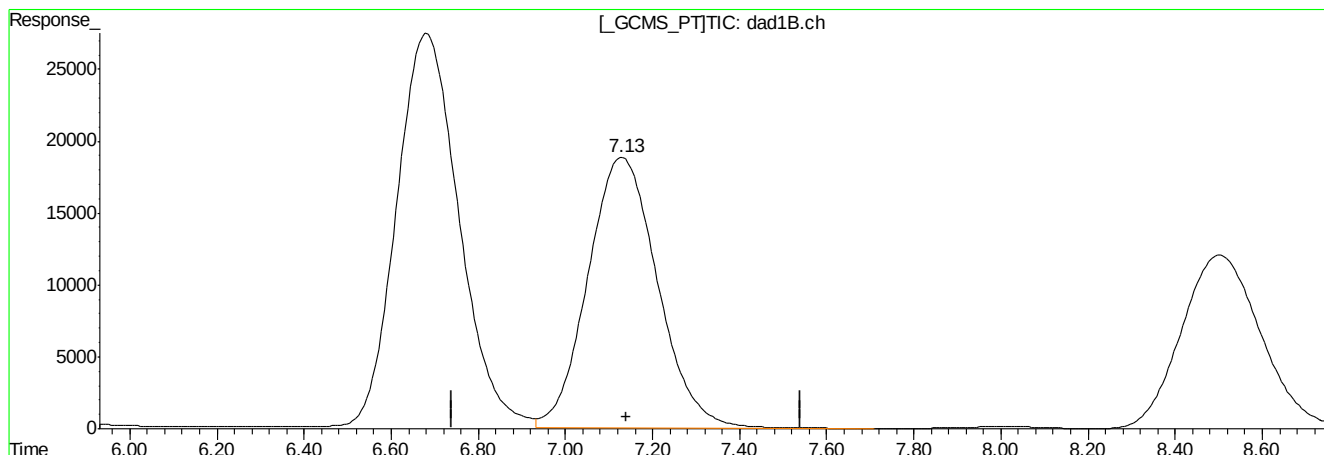
BB075416.D BBB2232_083122.M

Fri Jan 27 08:27:59 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1A.ch
Acq On : 26-Jan-2023, 14:45:59 Operator: fouads
Sample : op95139-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:27 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.13min 532.938ppb

response 2097552

(8) 3,5-Dinitroaniline #2

7.13min 542.409ppb m

response 3544850

(+) = Expected Retention Time

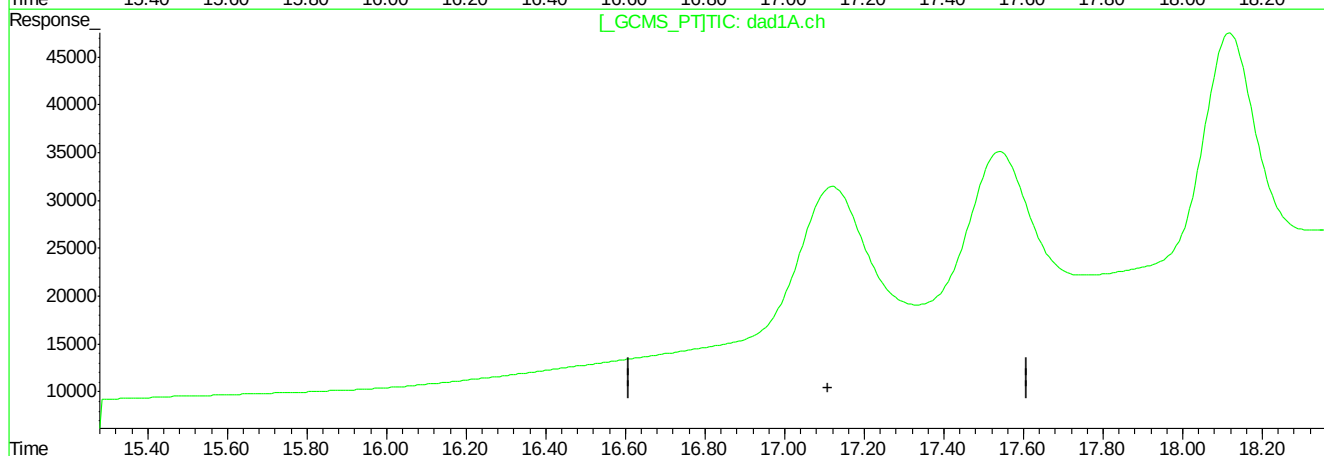
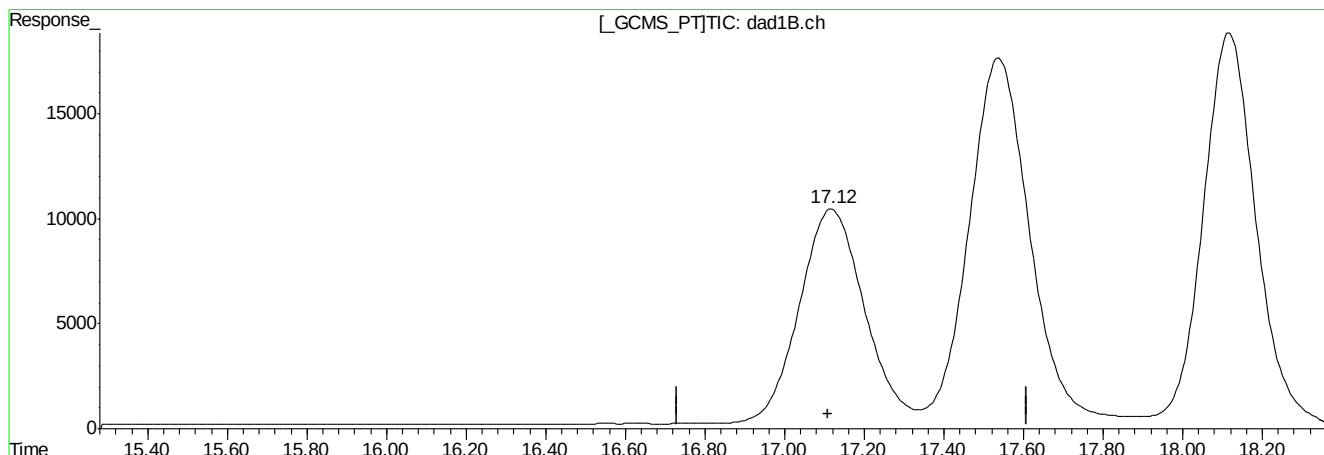
BB075416.D BBB2232_083122.M

Fri Jan 27 08:28:05 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1A.ch
Acq On : 26-Jan-2023, 14:45:59 Operator: fouads
Sample : op95139-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:27 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
17.12min 605.643ppb
response 1307818

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

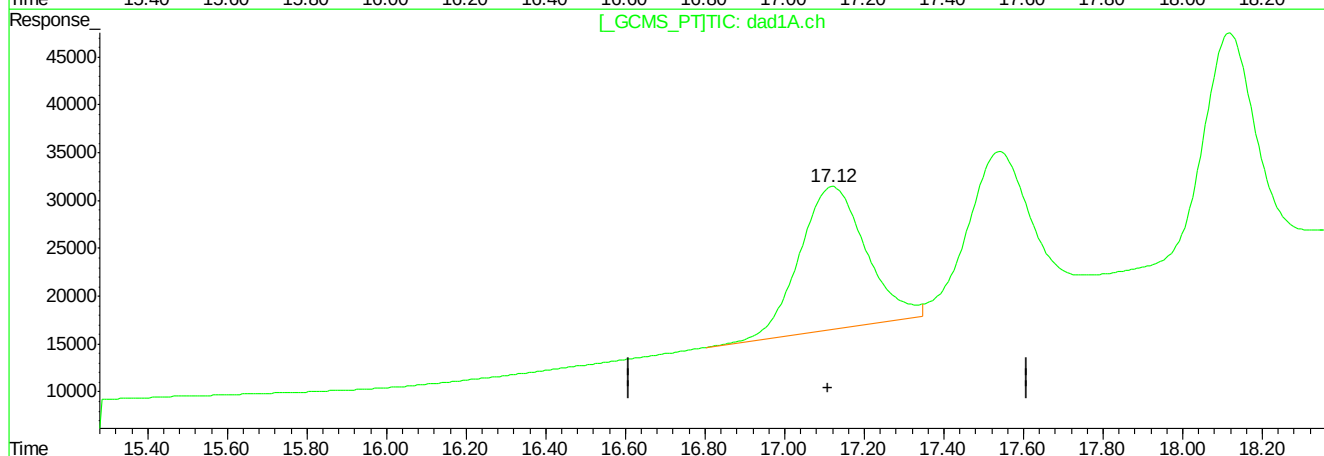
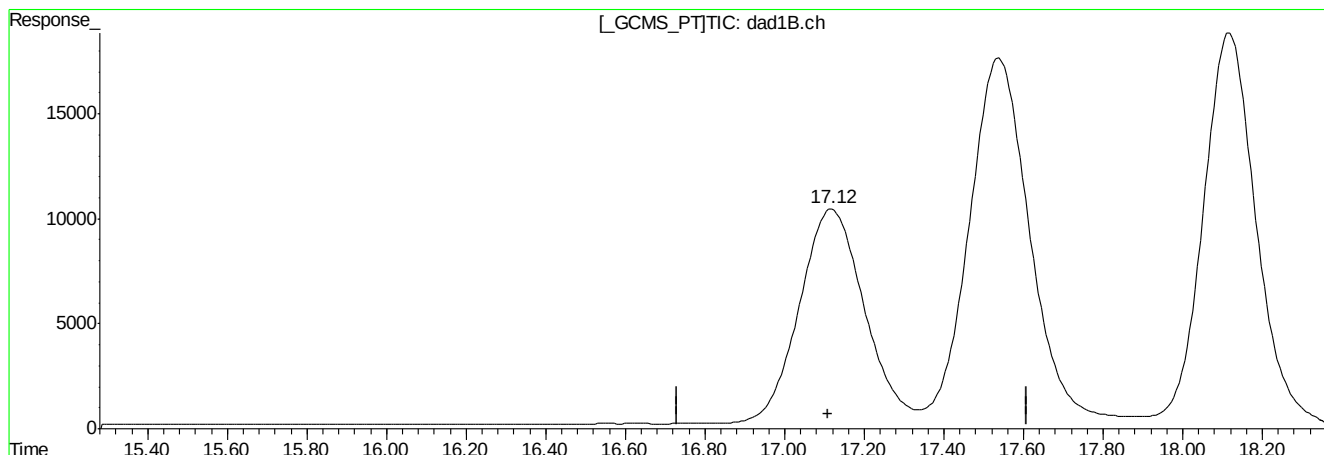
BB075416.D BBB2232_083122.M

Fri Jan 27 08:28:19 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1A.ch
Acq On : 26-Jan-2023, 14:45:59 Operator: fouads
Sample : op95139-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:27 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
17.12min 605.643ppb
response 1307818

(18) o-Nitrotoluene #2
17.12min 535.494ppb m
response 1759688

(+) = Expected Retention Time

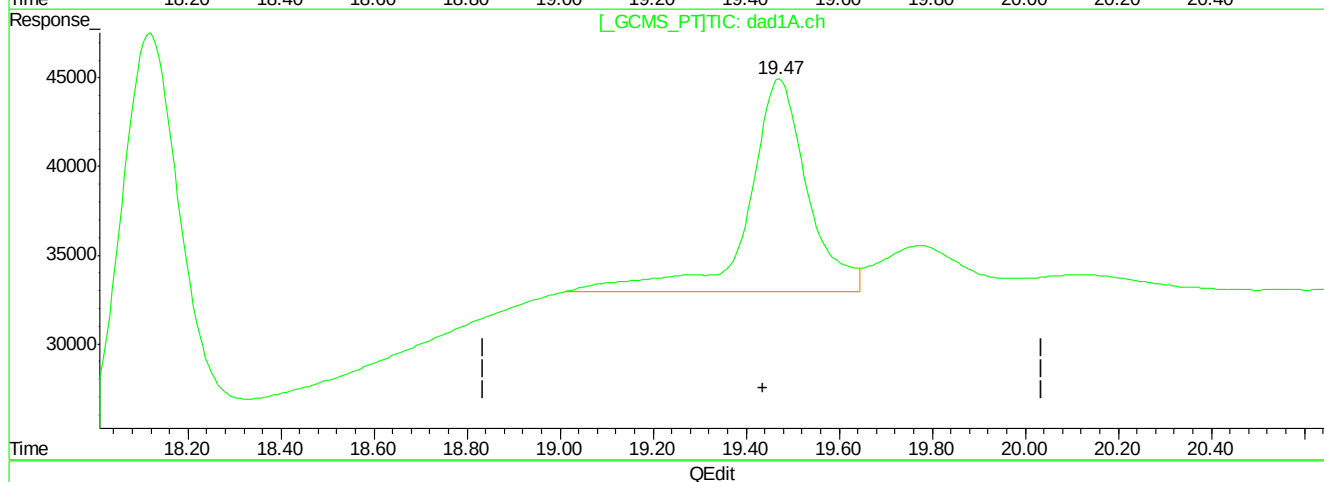
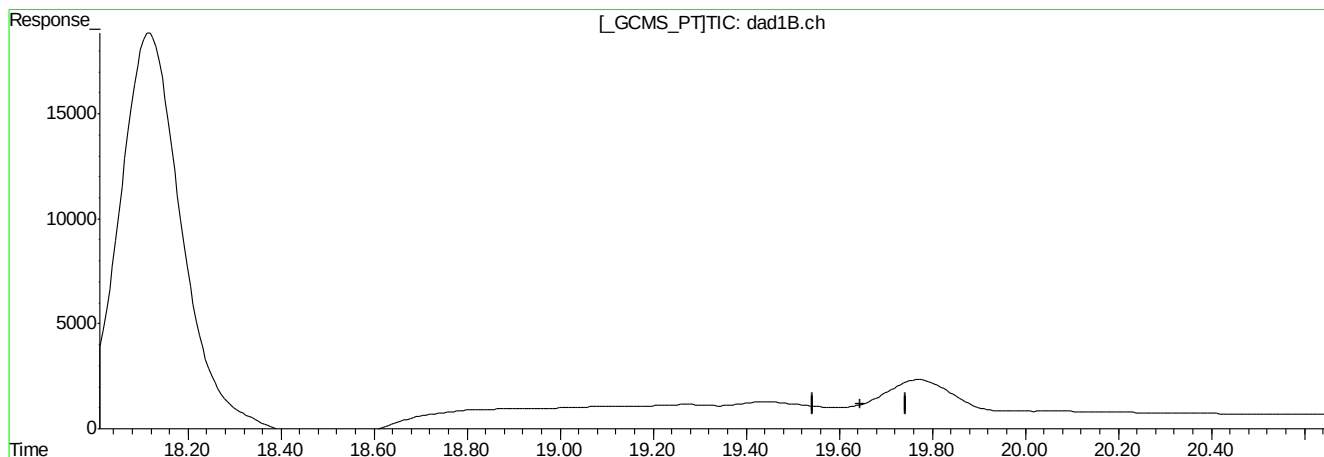
BB075416.D BBB2232_083122.M

Fri Jan 27 08:28:26 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1A.ch
Acq On : 26-Jan-2023, 14:45:59 Operator: fouads
Sample : op95139-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:27 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.47min 792.435ppb

response 1065027

(+) = Expected Retention Time

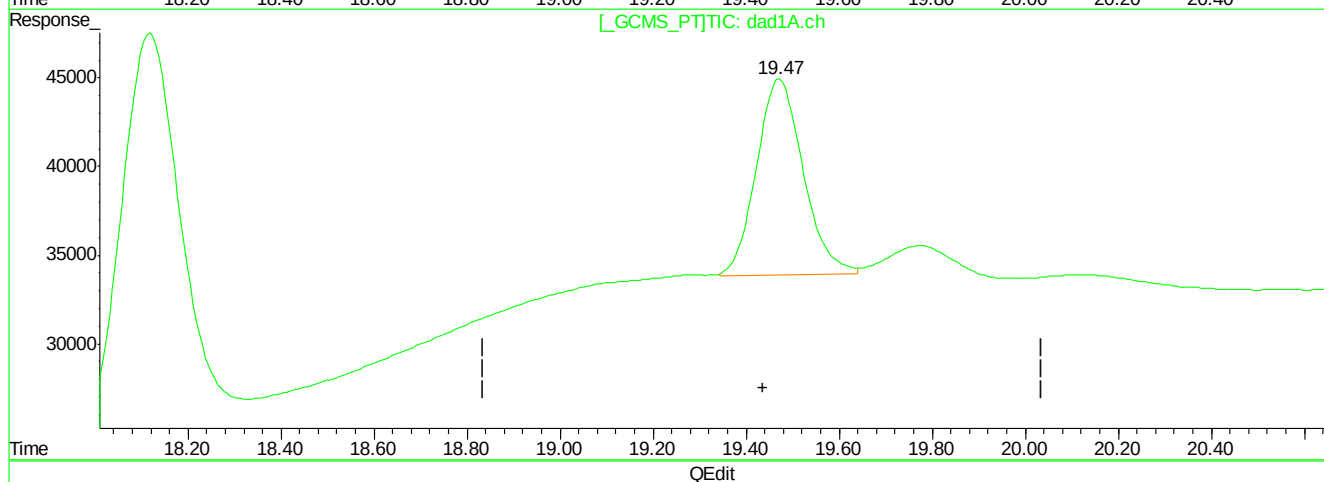
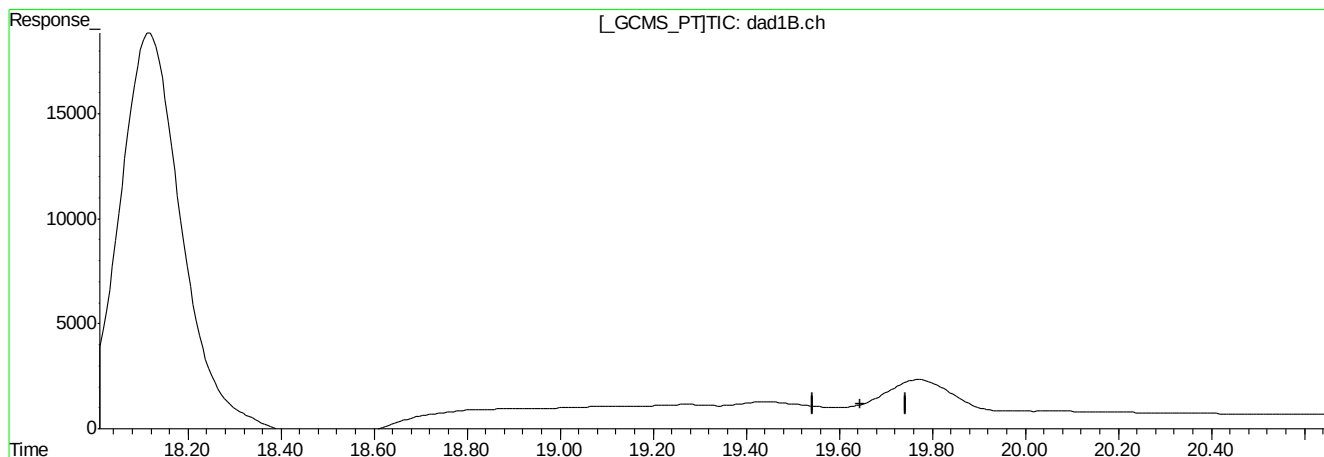
BB075416.D BBB2232_083122.M

Fri Jan 27 08:28:32 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075416.D\dad1A.ch
Acq On : 26-Jan-2023, 14:45:59 Operator: fouads
Sample : op95139-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:27 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.47min 575.477ppb m

response 773437

(+) = Expected Retention Time

BB075416.D BBB2232_083122.M

Fri Jan 27 08:28:37 2023

Naresh Jiawan
09/02/22 15:07

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
 Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
 Sample : ic2232-20 Inst : G1315B
 Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Aug 31 10:11:55 2022 Quant Results File: BBB2230_080822.RES

Quant Method : C:\MSDCHEM\2...\BBB2230_080822.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Aug 31 08:15:37 2022
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	12.84	12.86	73715	131006	29.941	28.164
Spiked Amount	500.000	Range	70 - 136	Recovery =	5.99%#	5.63%#
Target Compounds						
1) TNX	1.46	1.46	64413	96236	15.939	15.665
2) HMX	1.65	1.65	66266	281403	35.432m	54.956m#
3) DNX	1.91	1.90	118097	207737	33.225	37.161
4) MNX	2.60	2.60	124494	190049	38.594	38.351
5) RDX	3.30	3.30	67737	101940	30.587	28.593
6) 1,3,5-Trinitrobe	5.28	5.28	133864	201921	29.065	27.234m
7) 1,3-Dinitrobenze	6.56	6.56	182635	126985	29.748	29.740m
8) 3,5-Dinitroanili	7.04	7.04	135842	222924	29.800	28.860m
9) Nitrobenzene	8.31	8.31	102941	103211	33.723	32.210
10) Nitroglycerin	0.00	10.13	0	47352	N.D.	30.891 #
11) Tetryl	11.00	11.00	102005	147152	29.435	25.805m
12) 2,4,6-Trinitroto	11.36	11.36	124064	113899	28.688	22.245
13) 2-Amino-4,6-Dini	11.87	11.88	105580	141644	28.036	24.873
14) 4-Amino-2,6-Dini	12.42	12.43	80408	148013	29.004	26.297
16) 2,4-Dinitrotolue	13.42	13.43	153453	94850	29.783	26.822m
17) 2,6-Dinitrotolue	13.88	13.89	50723	102329	16.992m	25.635 #
18) o-Nitrotoluene	16.79	16.84	66446	81402	32.194	22.086m
19) p-Nitrotoluene	17.26	17.29	112968	76996	33.949	28.427m
20) m-Nitrotoluene	17.87	17.88	113405	92524	37.319	26.032m
21) PETN	0.00	19.28	0	57447	N.D. d	36.189m

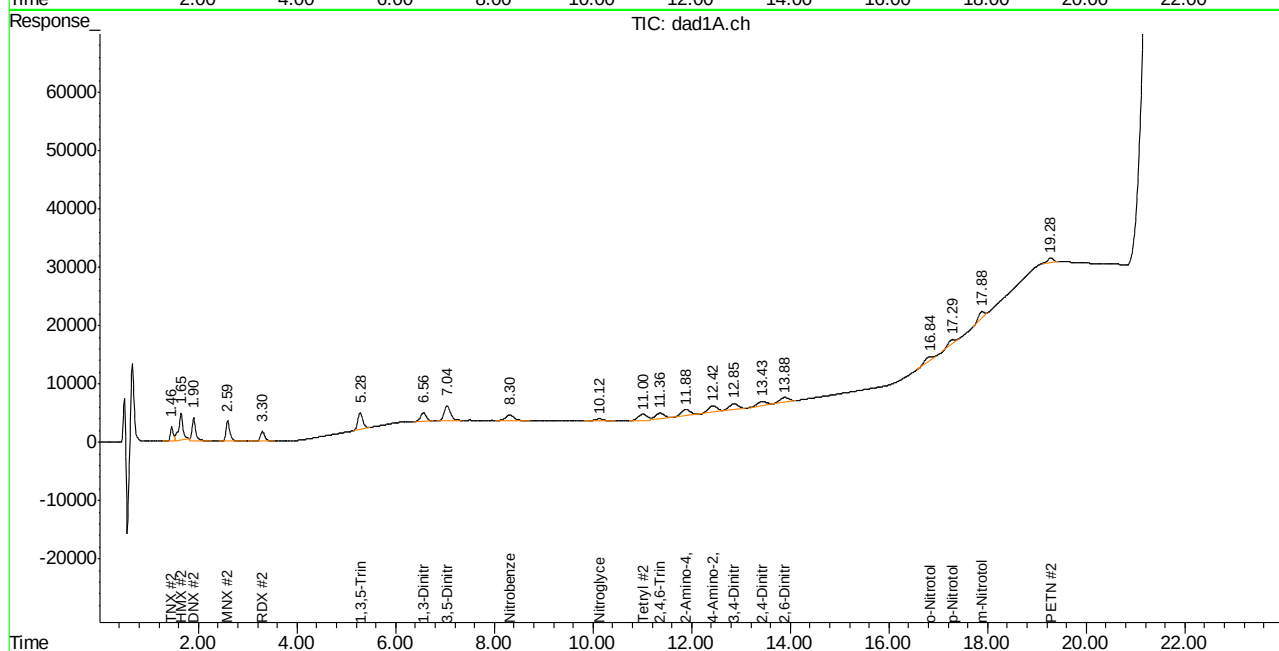
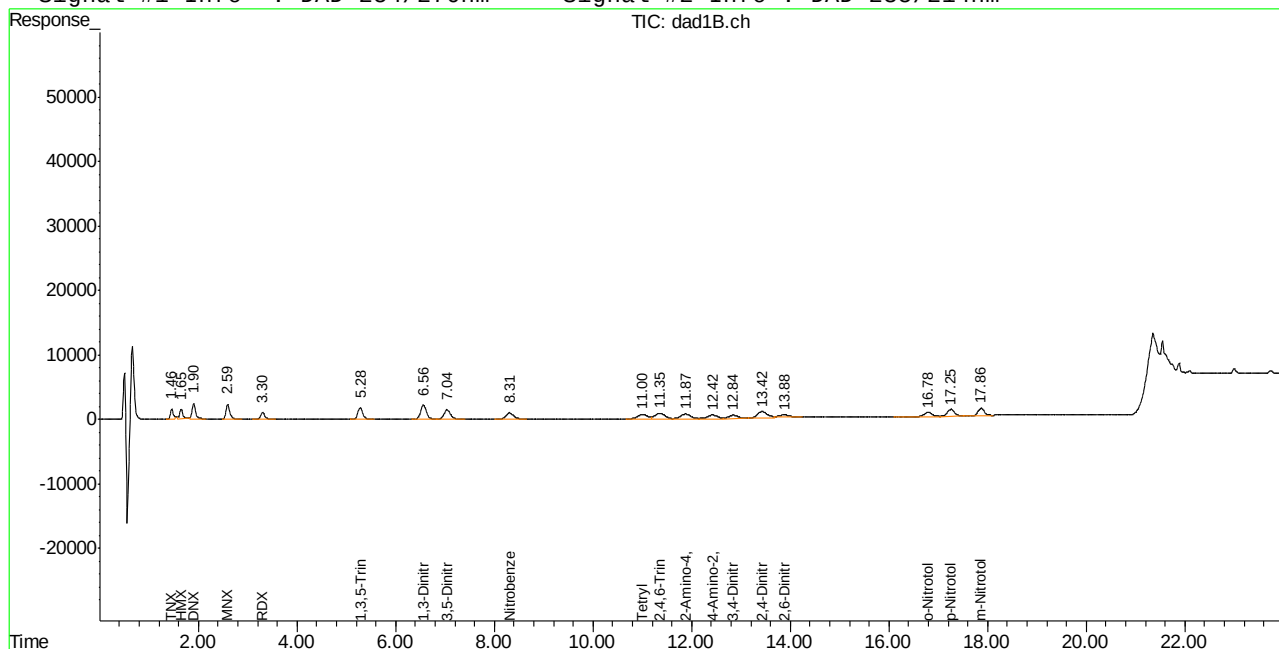
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB073629.D BBB2232_083122.M Thu Sep 01 14:21:44 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:54 2022 Quant Results File: BBB2230_080822.RES

Quant Method : C:\MSDCHEM\2...\BBB2230_080822.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Page 1 of 1

Sample Number: GBB2232-IC2232 **Method:** SW846 8330A
Lab FileID: BB073629.D **Analyst approved:** 09/02/22 08:50 Fouad Sekkar
Injection Time: 08/31/22 09:43 **Supervisor approved:** 09/02/22 15:07 Naresh Jiawan

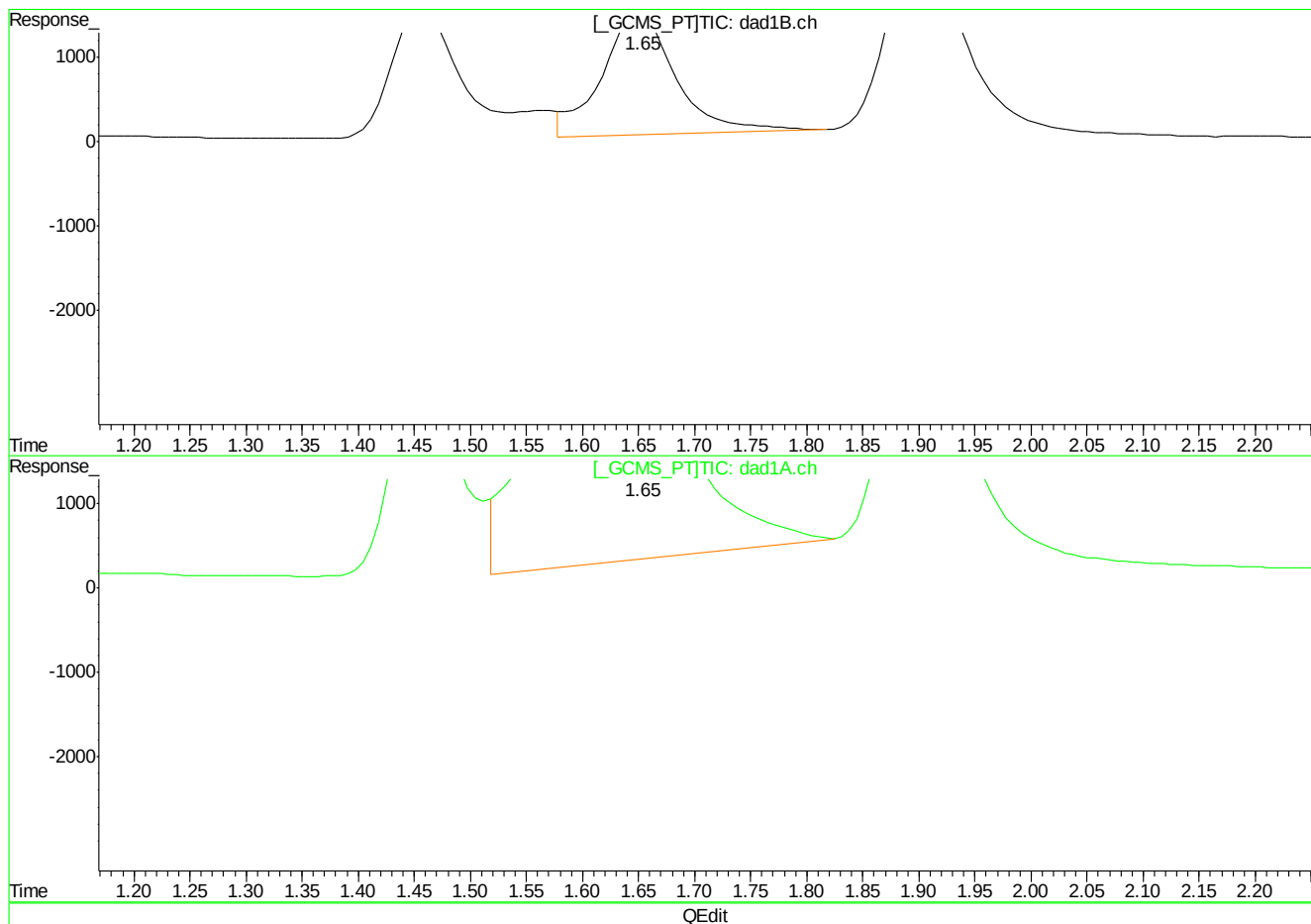
Parameter	CAS	Sig#	R.T. (min.)	Reason
HMX	2691-41-0	1	1.65	Missed peak
HMX	2691-41-0	2	1.65	Missed peak
1,3,5-Trinitrobenzene	99-35-4	2	5.28	Missed peak
1,3-Dinitrobenzene	99-65-0	2	6.56	Missed peak
3,5-Dinitroaniline	618-87-1	2	7.04	Missed peak
Tetryl	479-45-8	2	11.00	Missed peak
2,4-Dinitrotoluene	121-14-2	2	13.43	Missed peak
2,6-Dinitrotoluene	606-20-2	1	13.88	Missed peak
o-Nitrotoluene	88-72-2	2	16.84	Missed peak
p-Nitrotoluene	99-99-0	2	17.29	Missed peak
m-Nitrotoluene	99-08-1	2	17.88	Missed peak
PETN	78-11-5	2	19.28	Missed peak

9.5.1.1
9

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(2) HMX

1.65min 35.432ppb m

response 66266

(2) HMX #2

1.65min 54.956ppb m

response 281403

(+) = Expected Retention Time

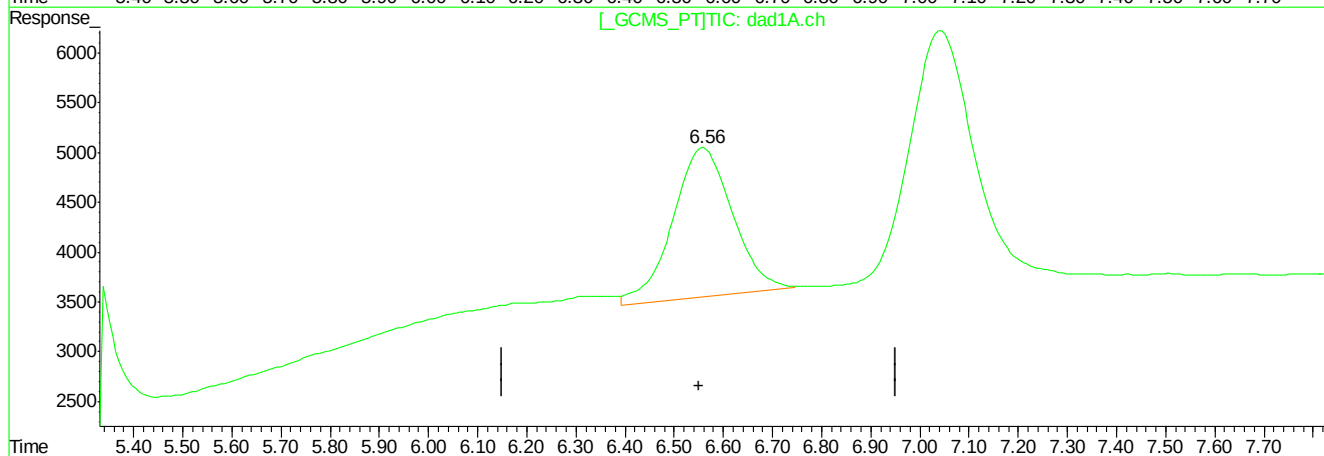
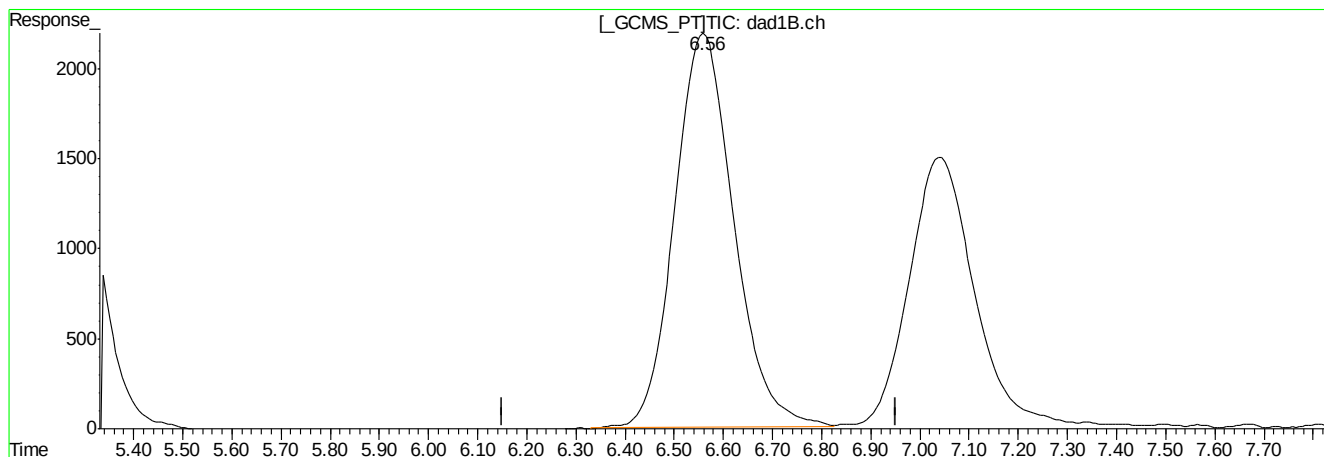
BB073629.D BBB2232_083122.M

Wed Aug 31 11:51:10 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

6.56min 29.748ppb

response 182635

(7) 1,3-Dinitrobenzene #2

6.56min 29.740ppb m

response 126985

(+) = Expected Retention Time

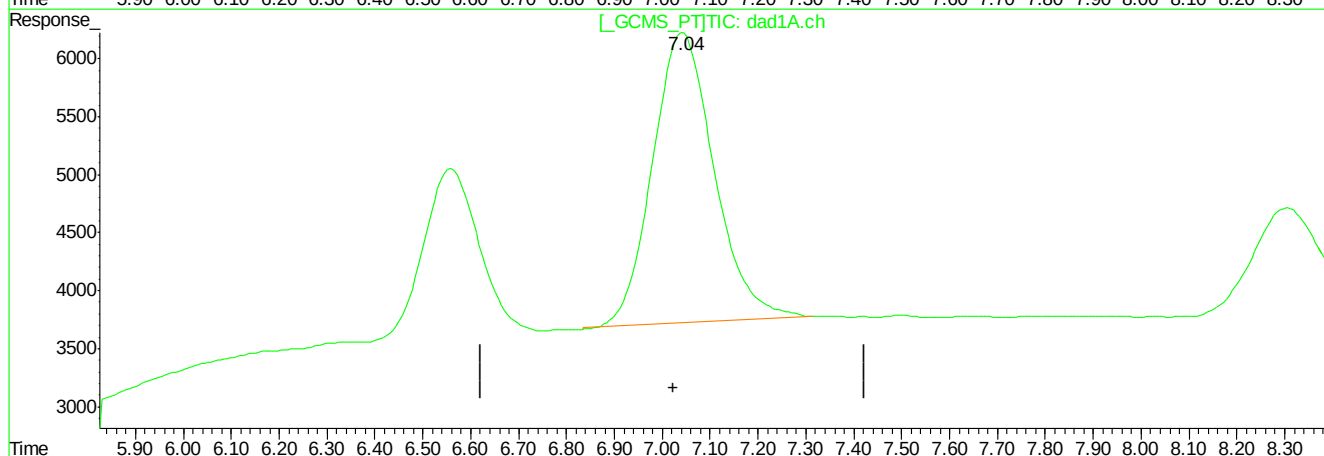
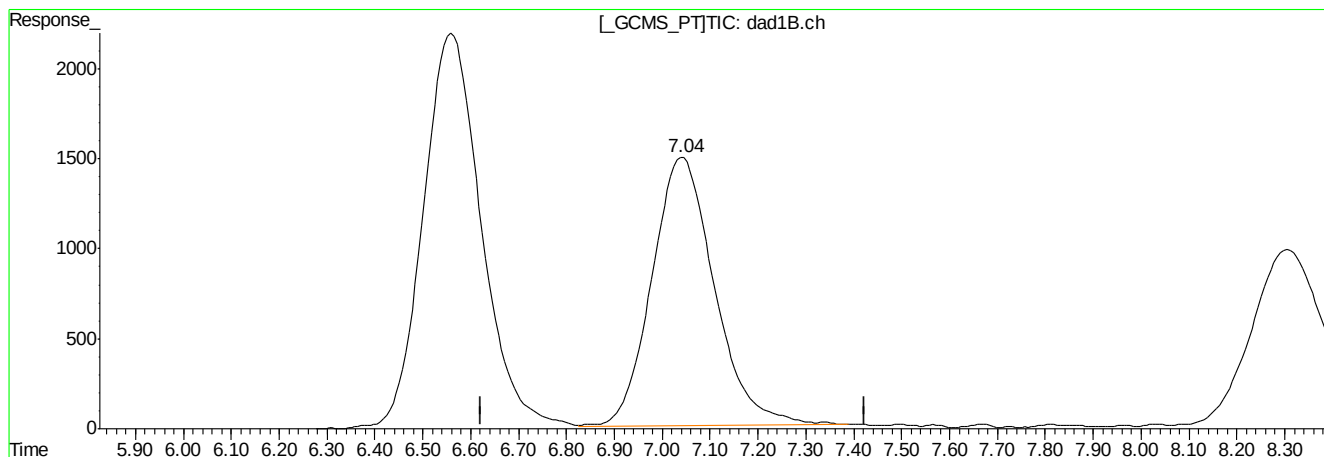
BB073629.D BBB2232_083122.M

Wed Aug 31 11:51:22 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.04min 29.800ppb

response 135842

(8) 3,5-Dinitroaniline #2

7.04min 28.860ppb m

response 222924

QEdit

(+) = Expected Retention Time

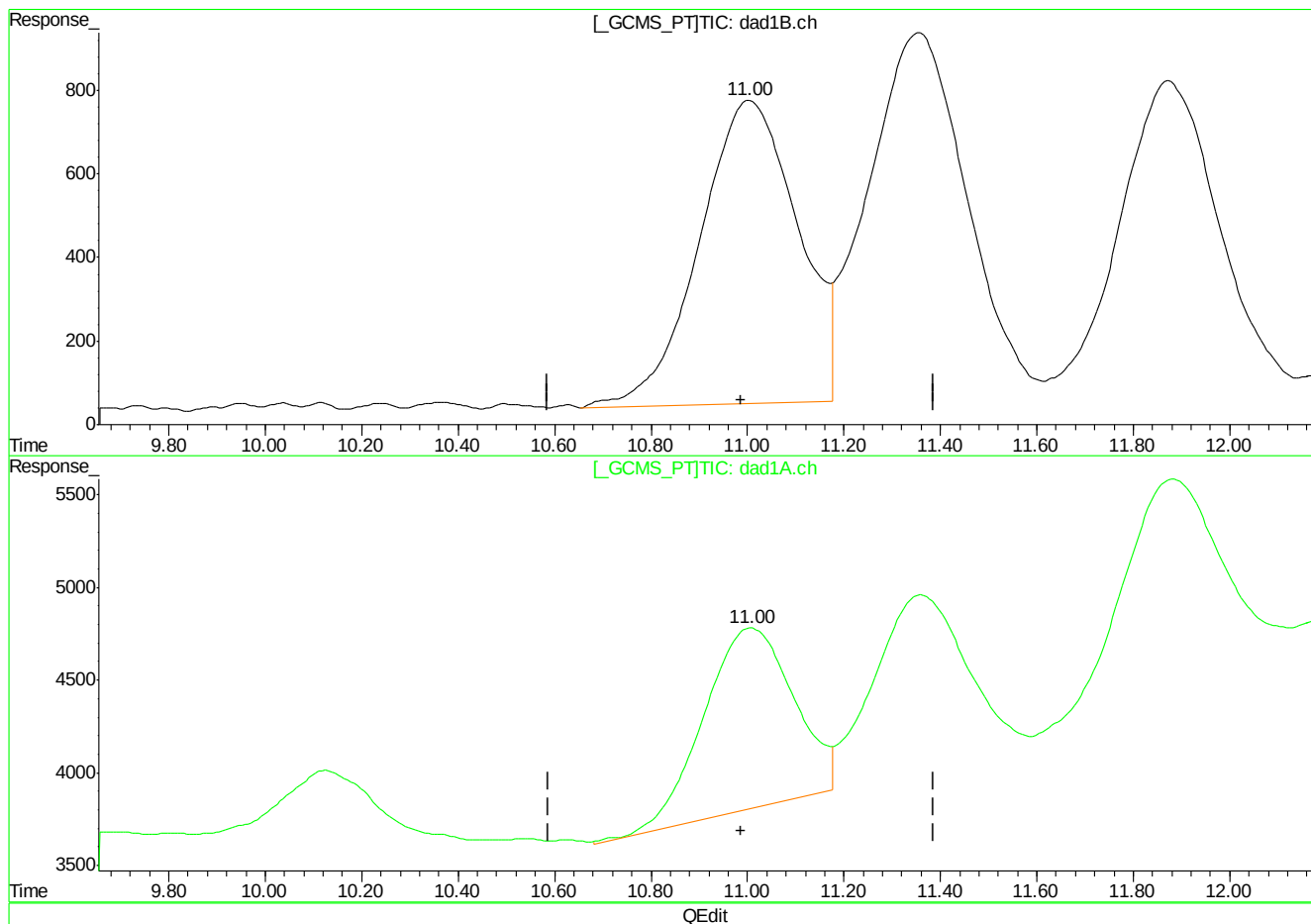
BB073629.D BBB2232_083122.M

Wed Aug 31 11:51:28 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(11) Tetryl

11.00min 29.435ppb

response 102005

(11) Tetryl #2

11.00min 22.138ppb m

response 126240

(+) = Expected Retention Time

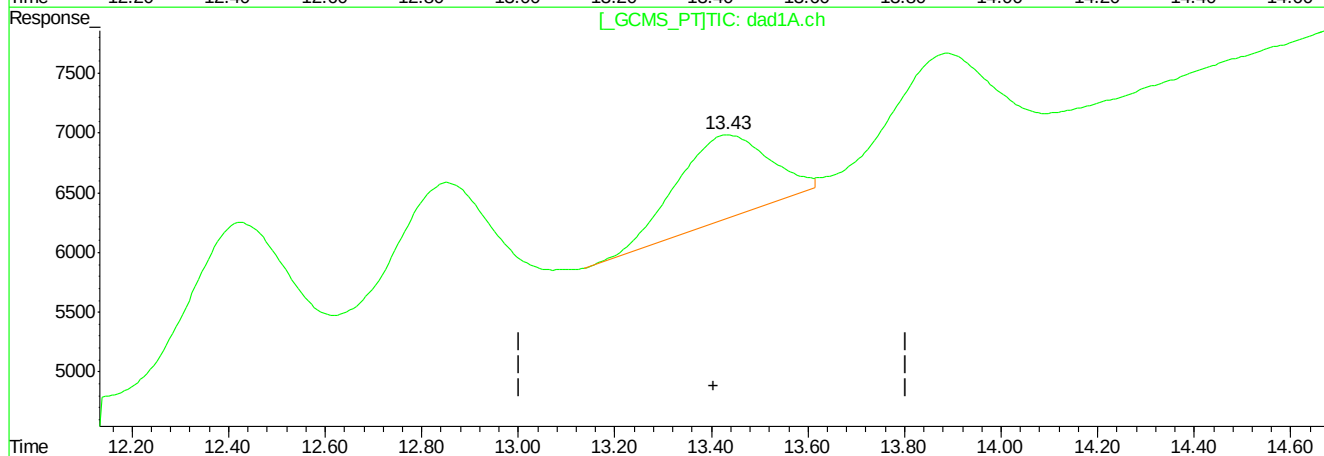
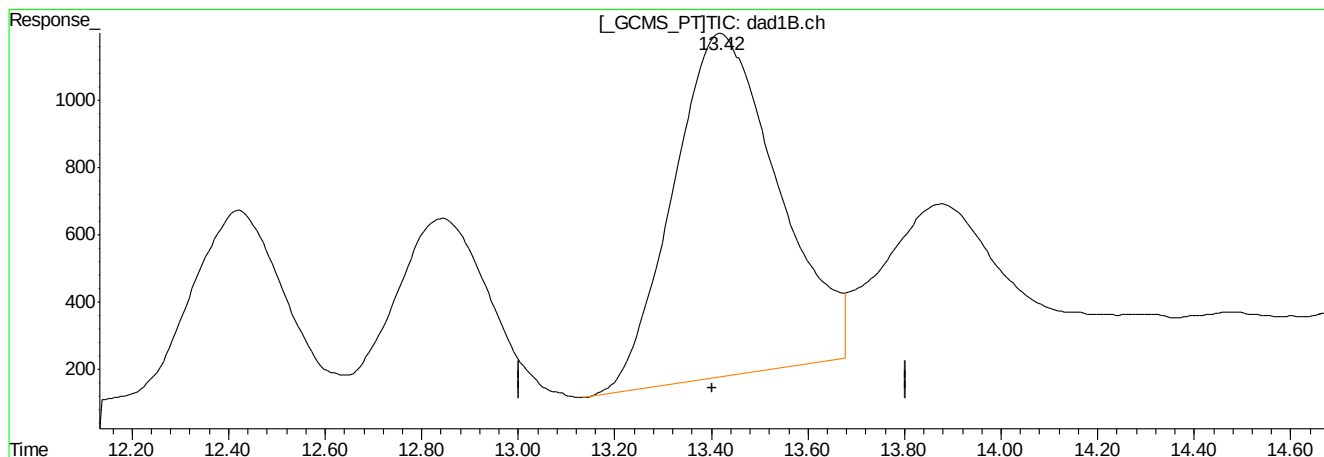
BB073629.D BBB2232_083122.M

Wed Aug 31 11:51:36 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(16) 2,4-Dinitrotoluene

13.42min 29.783ppb

response 153453

(16) 2,4-Dinitrotoluene #2

13.43min 26.822ppb m

response 94850

(+) = Expected Retention Time

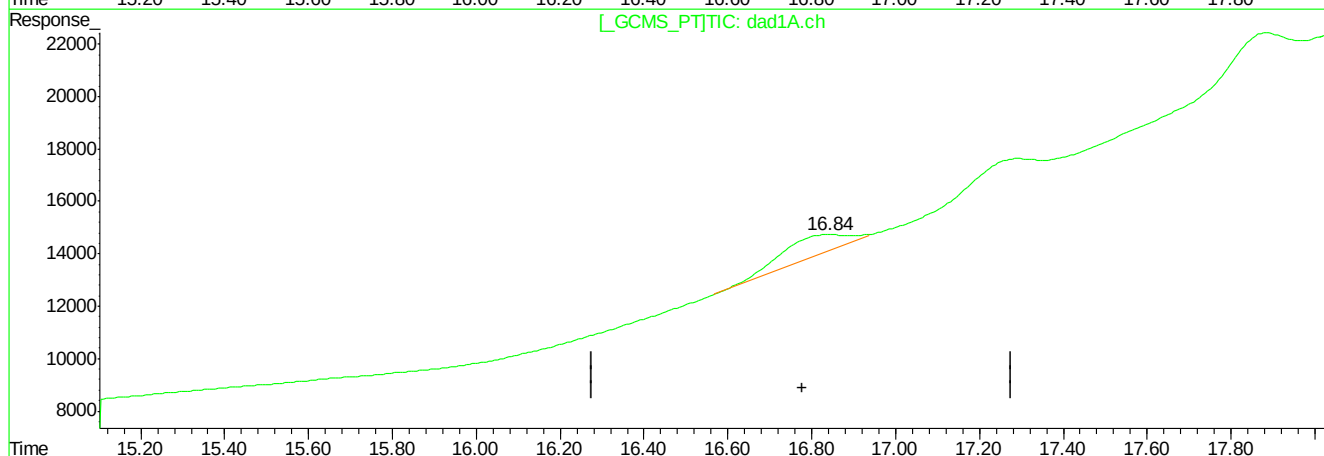
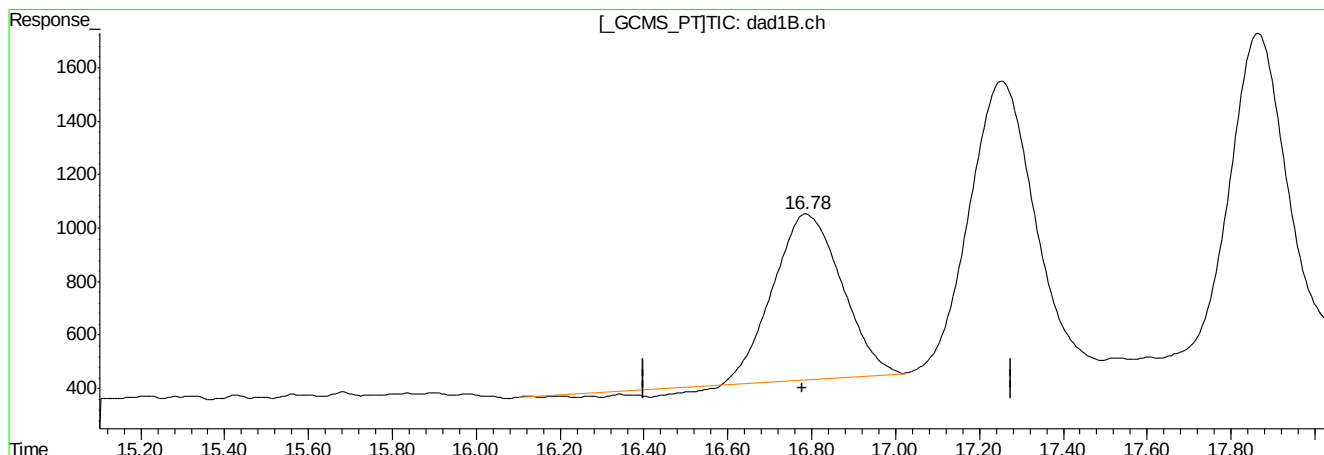
BB073629.D BBB2232_083122.M

Wed Aug 31 11:51:45 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(18) o-Nitrotoluene

16.79min 32.194ppb

response 66446

(18) o-Nitrotoluene #2

16.84min 22.086ppb m

response 81402

(+) = Expected Retention Time

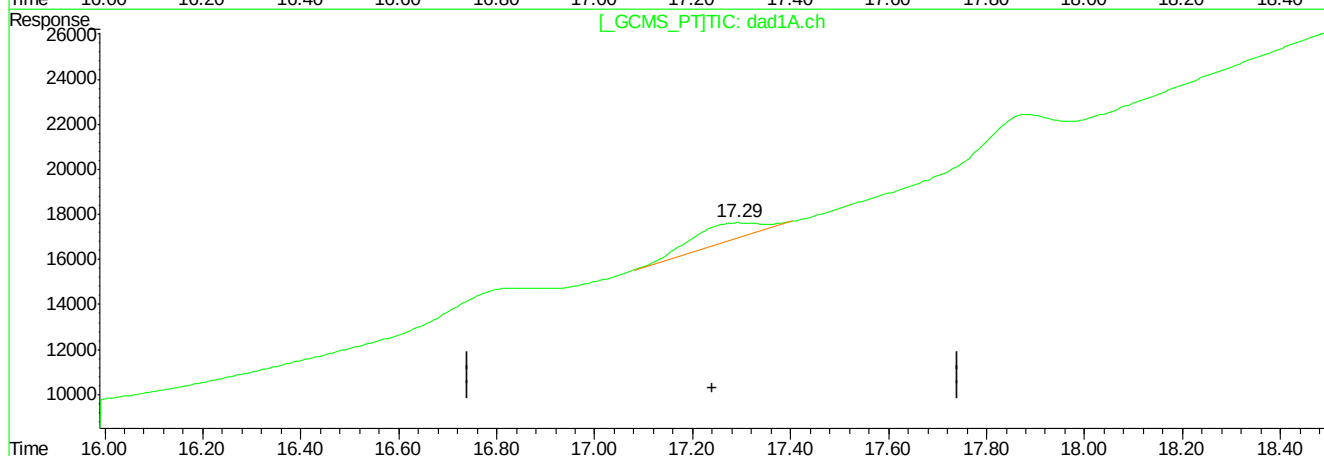
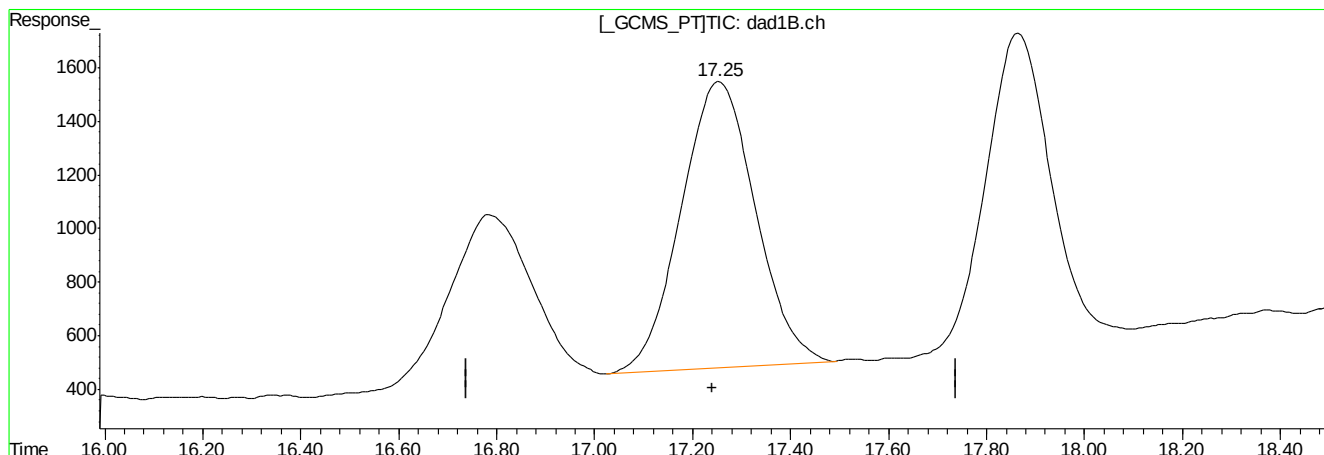
BB073629.D BBB2232_083122.M

Wed Aug 31 11:51:53 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(19) p-Nitrotoluene

17.26min 33.949ppb

response 112968

(19) p-Nitrotoluene #2

17.29min 28.427ppb m

response 76996

(+) = Expected Retention Time

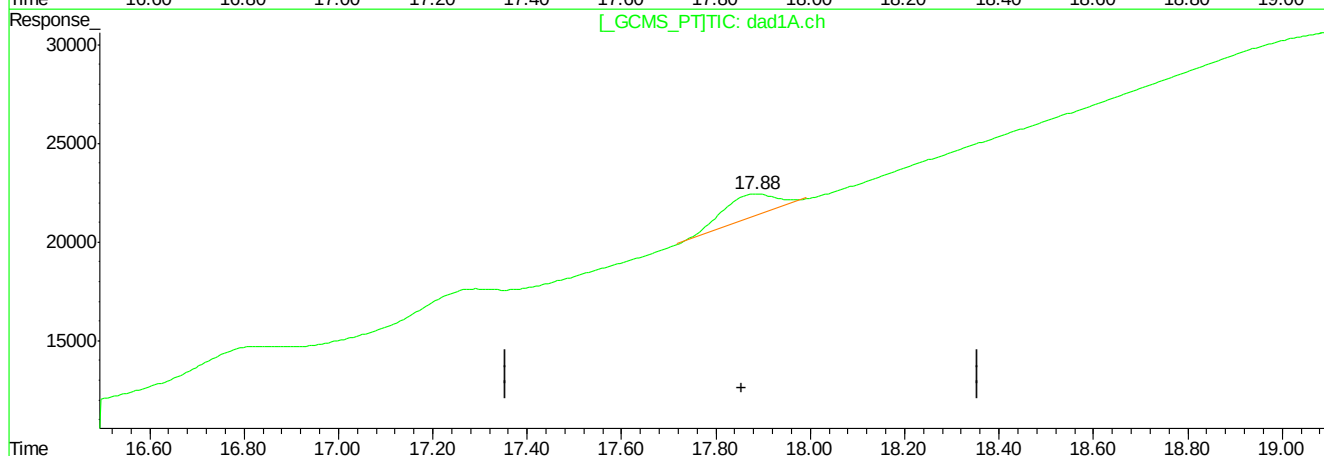
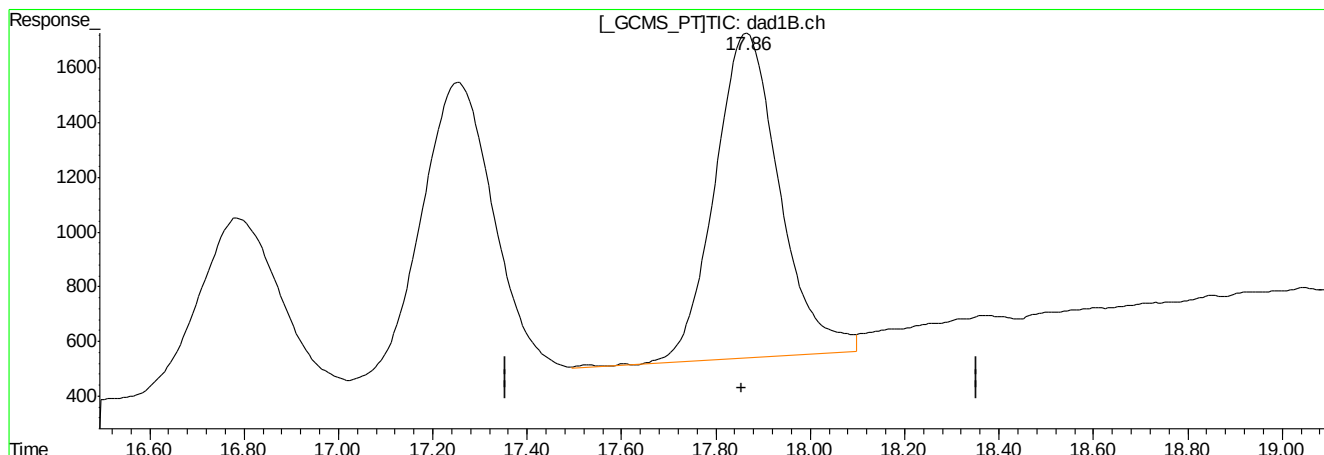
BB073629.D BBB2232_083122.M

Wed Aug 31 11:51:58 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(20) m-Nitrotoluene

17.87min 37.319ppb

response 113405

(20) m-Nitrotoluene #2

17.88min 26.032ppb m

response 92524

(+) = Expected Retention Time

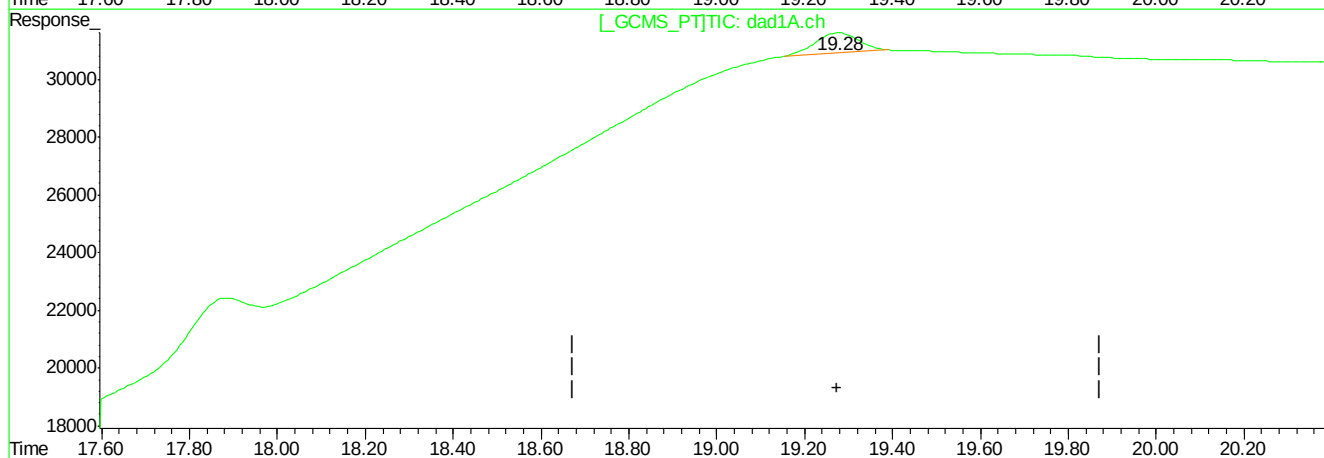
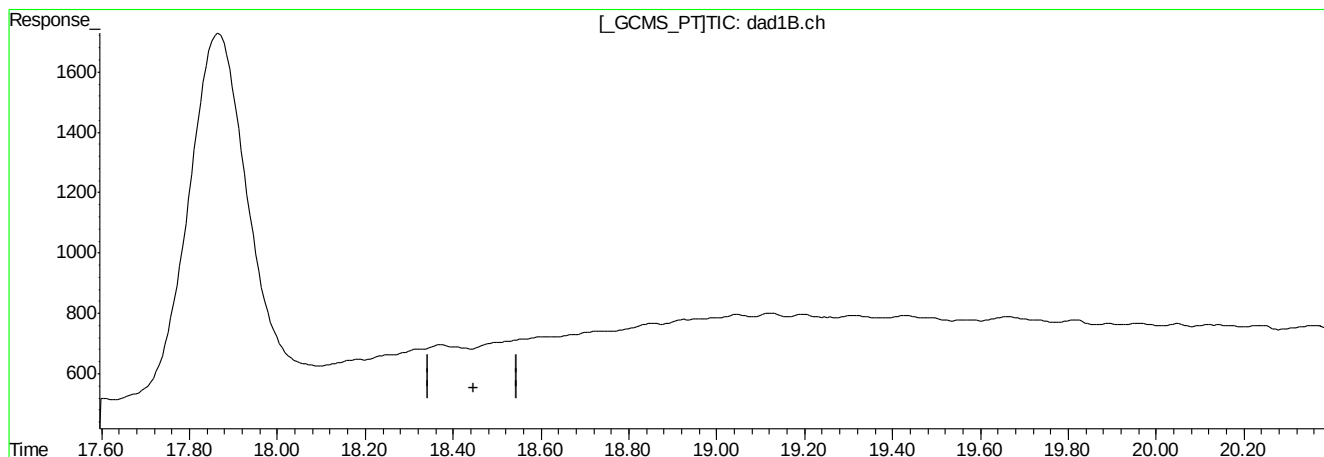
BB073629.D BBB2232_083122.M

Wed Aug 31 11:52:02 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb d

response 0

(21) PETN #2

19.28min 29.285ppb m

response 46488

(+) = Expected Retention Time

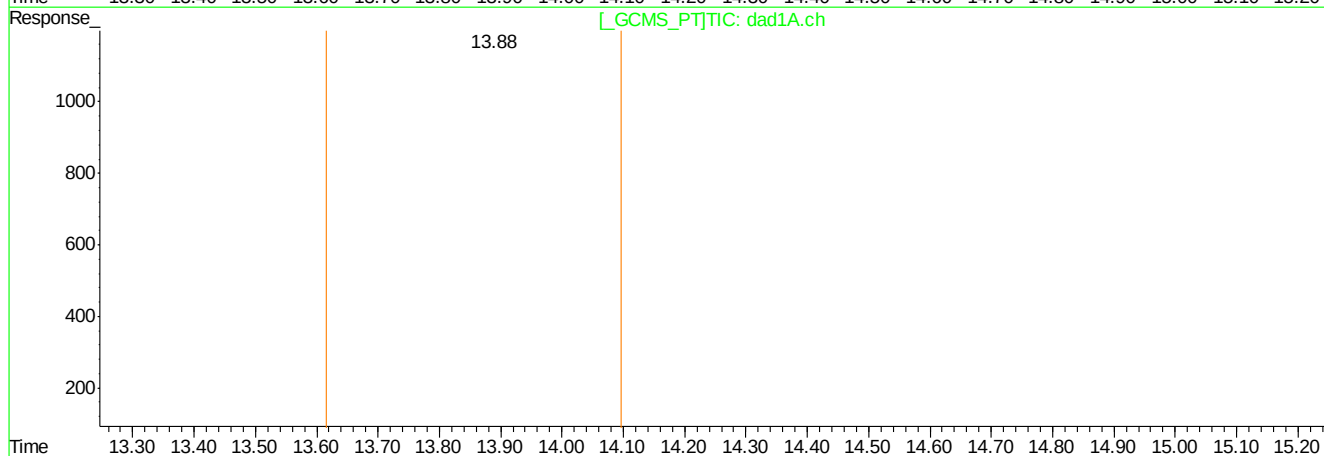
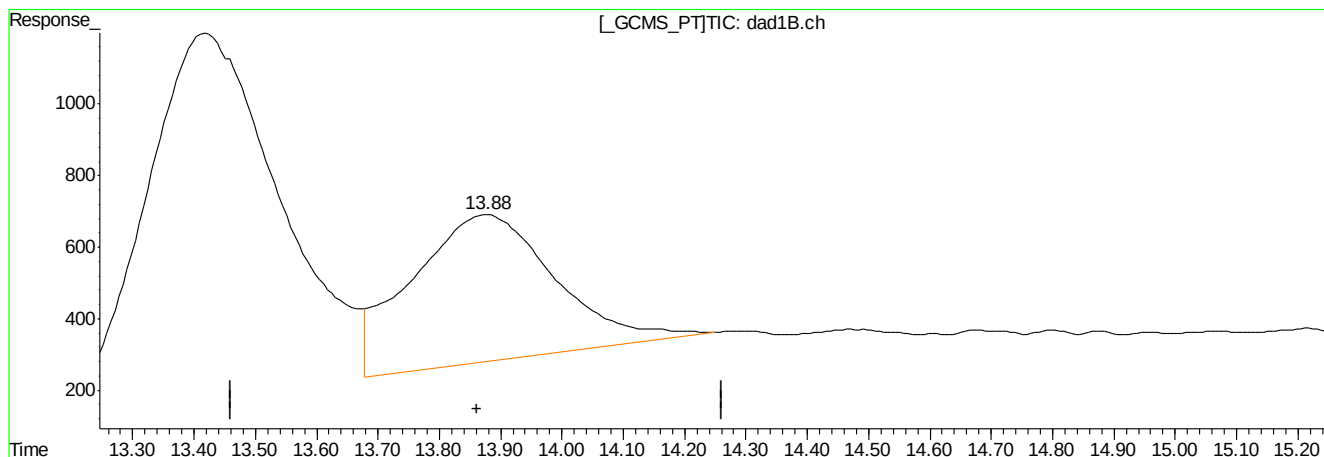
BB073629.D BBB2232_083122.M

Wed Aug 31 11:52:07 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.88min 22.734ppb

response 67862

(17) 2,6-Dinitrotoluene #2

13.89min 25.635ppb

response 102329

(+) = Expected Retention Time

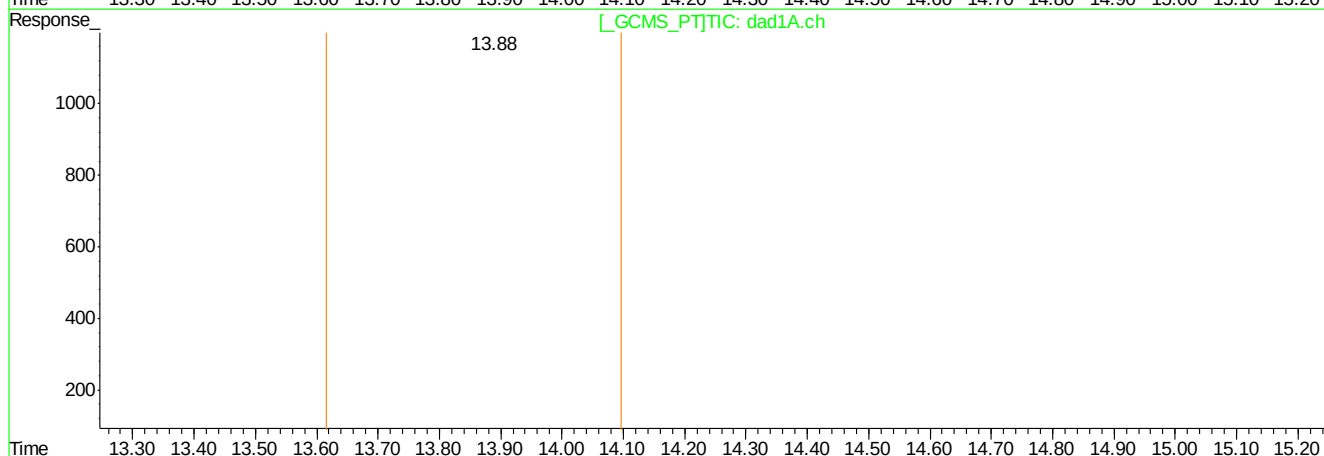
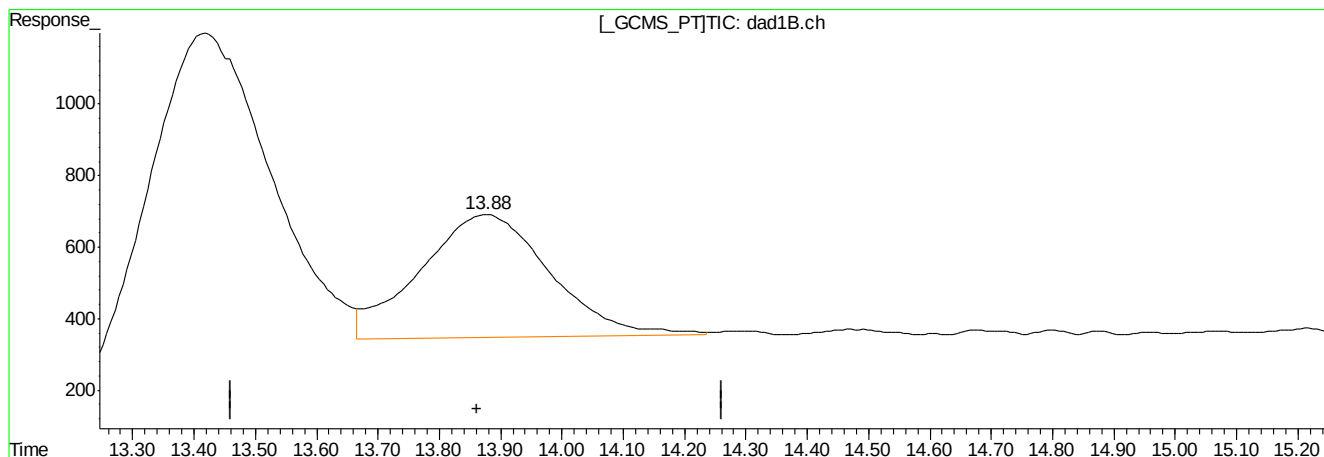
BB073629.D BBB2232_083122.M

Wed Aug 31 13:59:26 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.88min 16.992ppb m

response 50723

(17) 2,6-Dinitrotoluene #2

13.89min 25.635ppb

response 102329

(+) = Expected Retention Time

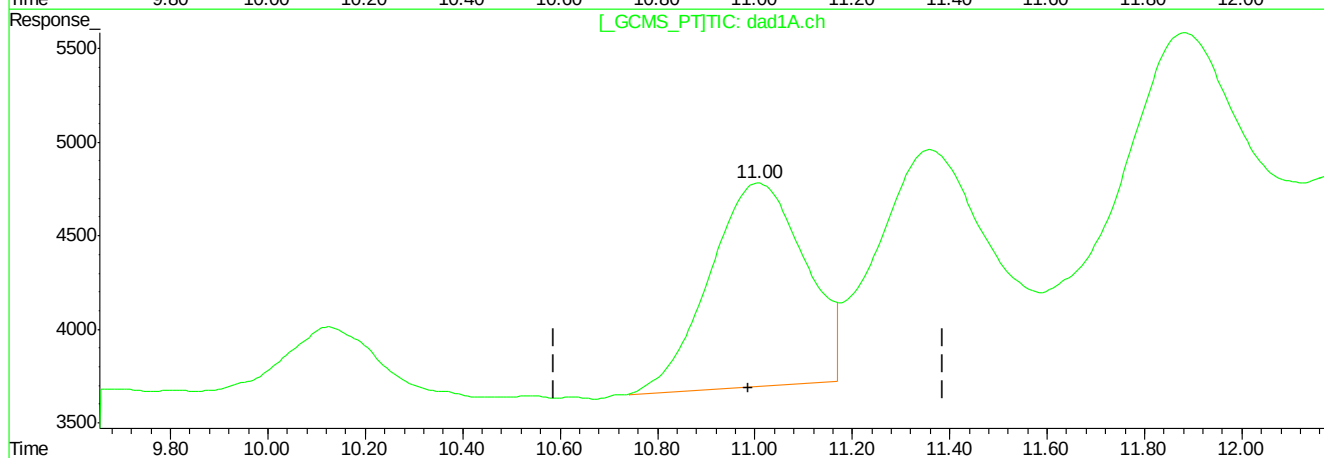
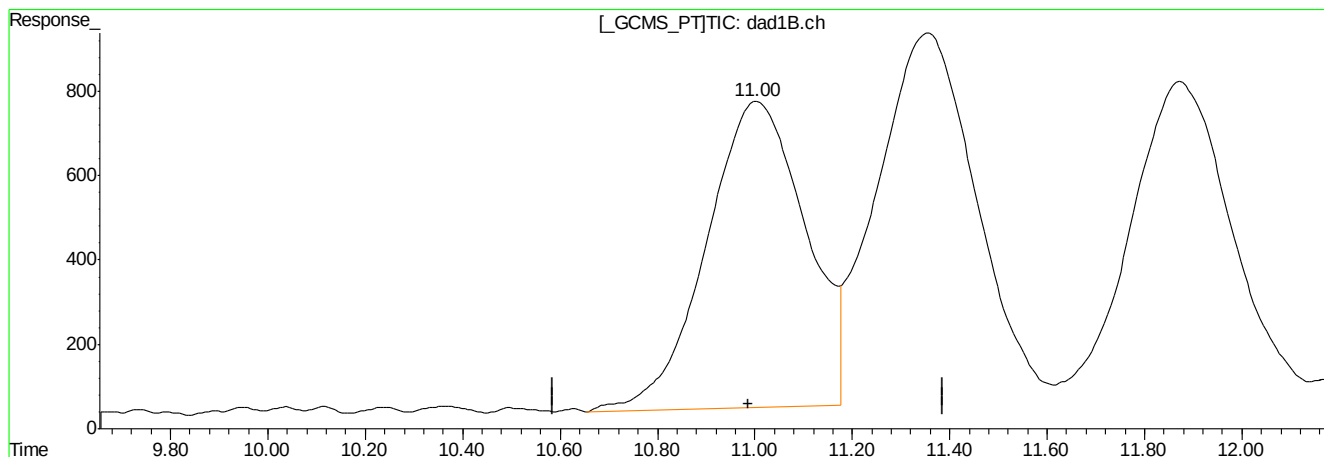
BB073629.D BBB2232_083122.M

Wed Aug 31 13:59:37 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:59 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



QEdit

(11) Tetryl

11.00min 29.435ppb

response 102005

(11) Tetryl #2

11.00min 25.805ppb m

response 147152

(+) = Expected Retention Time

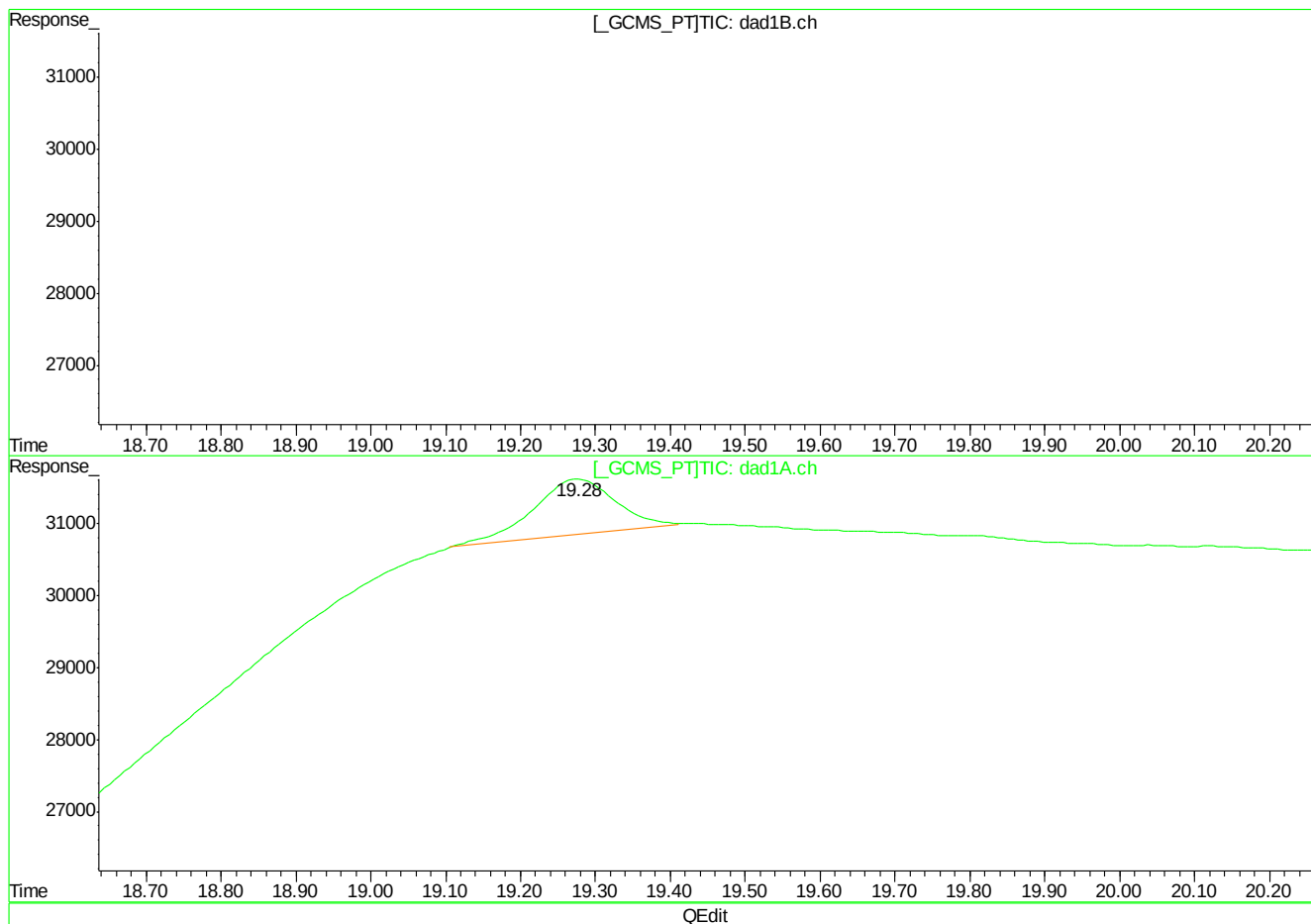
BB073629.D BBB2232_083122.M

Thu Sep 01 07:54:04 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:59 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb d

response 0

(21) PETN #2

19.28min 36.189ppb m

response 57447

(+) = Expected Retention Time

BB073629.D BBB2232_083122.M

Thu Sep 01 07:54:48 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
 Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
 Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
 Sample : ic2232-50 Inst : G1315B
 Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Aug 31 11:52:18 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Aug 31 08:15:37 2022
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	12.85	12.86	131119	242225	53.257	52.075
Spiked Amount	500.000	Range	70 - 136	Recovery	=	10.65%# 10.42%#
Target Compounds						
1) TNX	1.46	1.46	117832	178819	29.158	29.108
2) HMX	1.66	1.66	103730	329099	55.464	64.271
3) DNX	1.91	1.91	208549	338449	58.672	60.544
4) MNX	2.60	2.60	221457	341376	68.653	68.888
5) RDX	3.31	3.31	119366	185317	53.900	51.980
6) 1,3,5-Trinitrobe	5.29	5.29	236780	372540	51.410	50.246m
7) 1,3-Dinitrobenze	6.57	6.56	323442	212568	52.683	49.785m
8) 3,5-Dinitroanili	7.05	7.05	243609	397923	53.441	51.516m
9) Nitrobenzene	8.32	8.32	177082	188170	58.011	58.725
10) Nitroglycerin	0.00	10.14	0	79883	N.D.	52.113 #
11) Tetryl	11.01	11.01	176638	277249	50.972	48.620m
12) 2,4,6-Trinitroto	11.37	11.37	223087	221382	51.585	43.236
13) 2-Amino-4,6-Dini	11.89	11.89	190922	259096	50.697	45.499
14) 4-Amino-2,6-Dini	12.43	12.43	140472	271376	50.670	48.215
16) 2,4-Dinitrotolue	13.43	13.44	274701	167496	53.316	47.365
17) 2,6-Dinitrotolue	13.88	13.90	84383	191581	28.268m	47.993 #
18) o-Nitrotoluene	16.80	16.82	121072	168010	58.660	45.657m
19) p-Nitrotoluene	17.26	17.28	197599	142844	59.382	52.737m
20) m-Nitrotoluene	17.87	17.88	181853	215354	59.844	60.592m
21) PETN	0.00	19.28	0	88792	N.D.	55.935m#

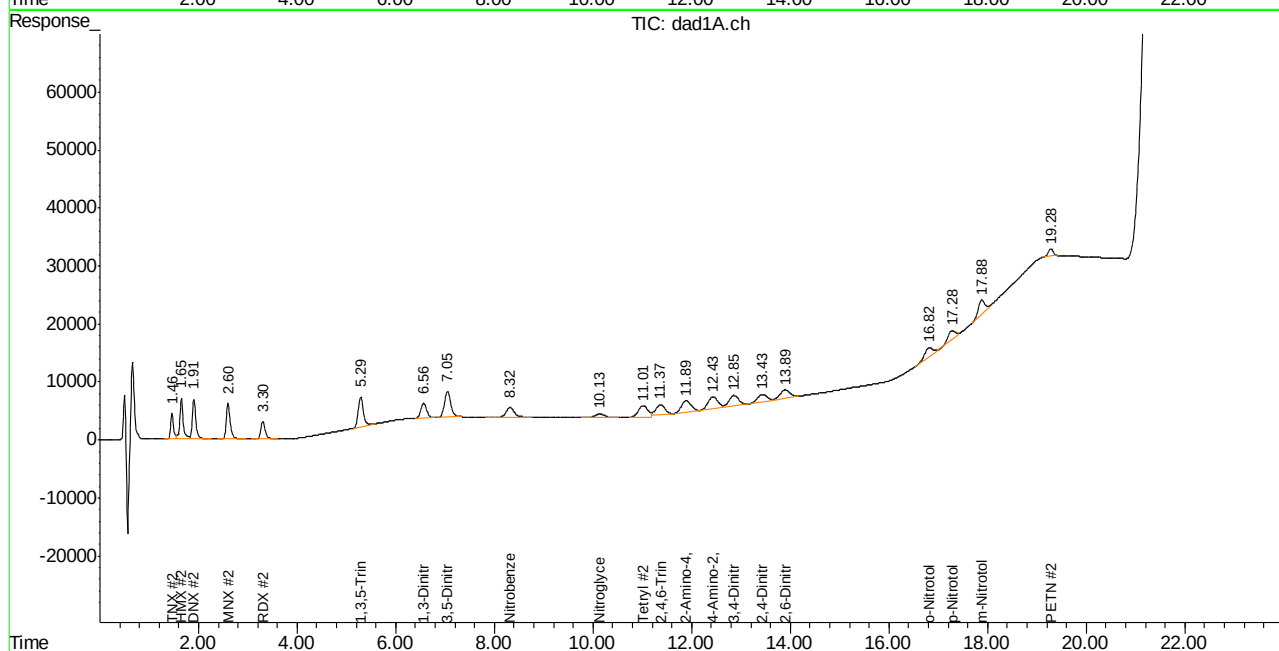
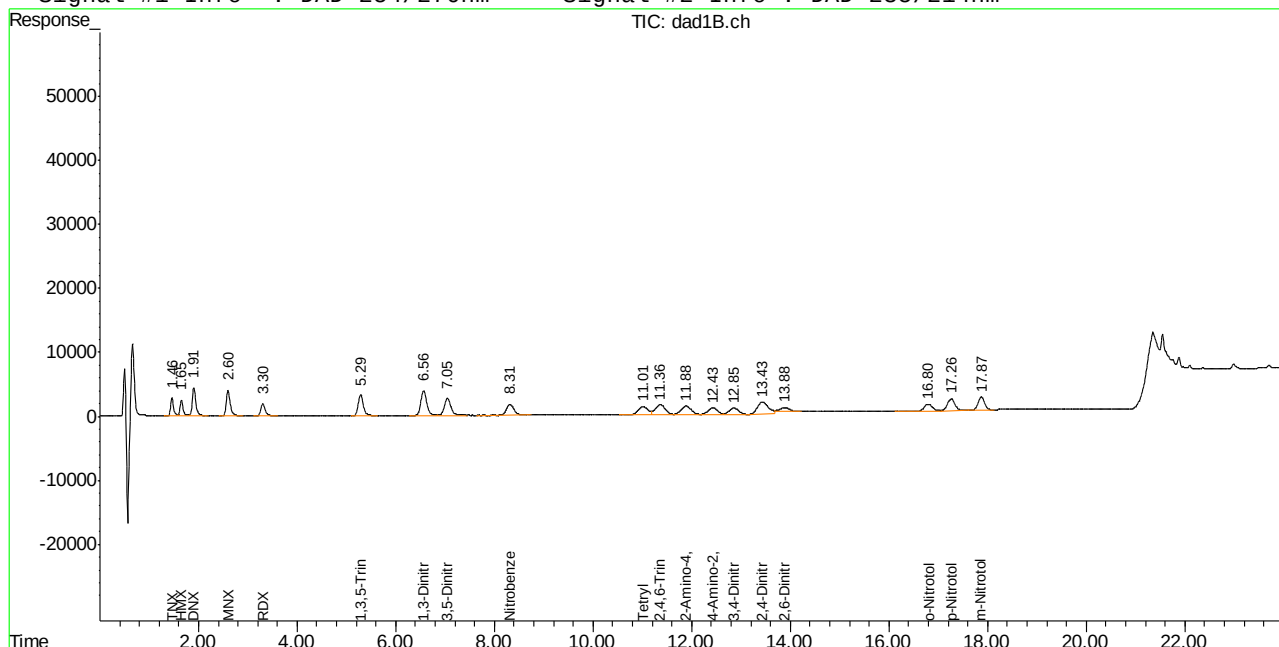
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB073630.D BBB2232_083122.M Thu Sep 01 14:19:28 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 8:00 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2232-IC2232

Method:

SW846 8330A

Lab FileID:

BB073630.D

Analyst approved:

09/02/22 08:50 Fouad Sekkar

Injection Time:

08/31/22 10:14

Supervisor approved:

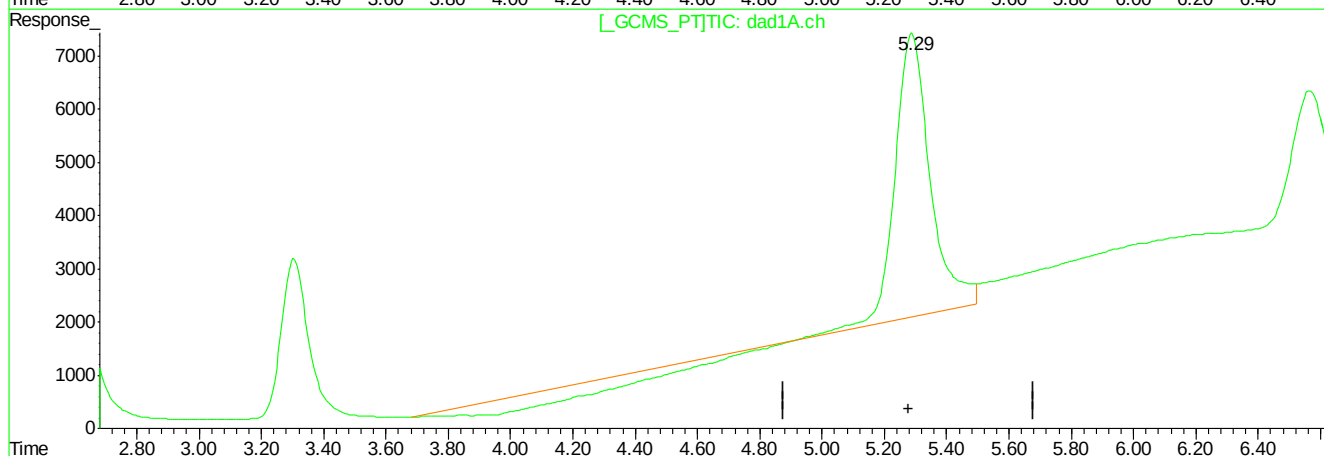
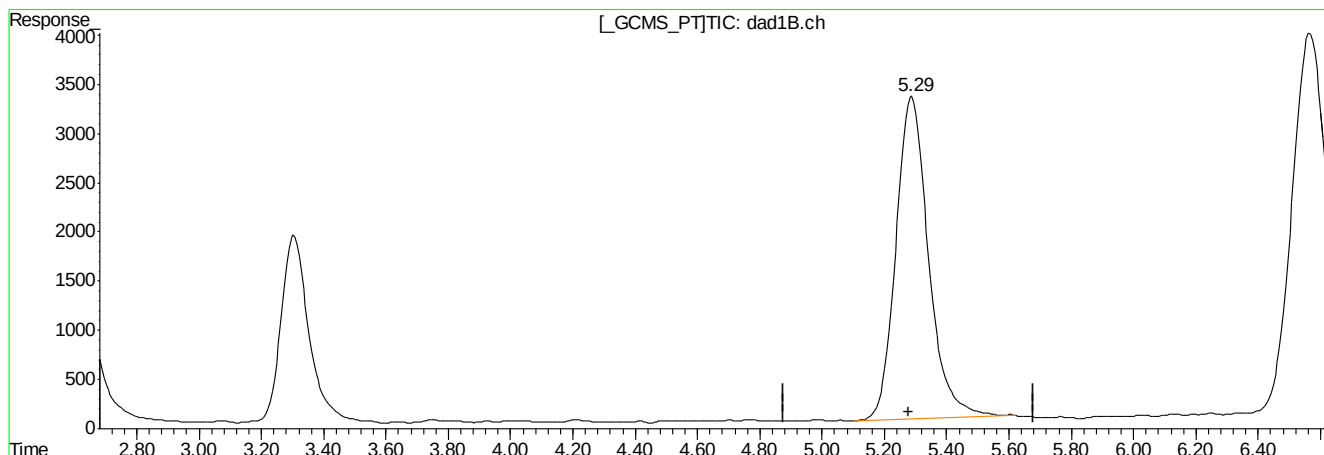
09/02/22 15:07 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3,5-Trinitrobenzene	99-35-4	2	5.29	Missed peak
1,3-Dinitrobenzene	99-65-0	2	6.56	Missed peak
3,5-Dinitroaniline	618-87-1	2	7.05	Missed peak
Tetryl	479-45-8	2	11.01	Missed peak
2,6-Dinitrotoluene	606-20-2	1	13.88	Missed peak
o-Nitrotoluene	88-72-2	2	16.82	Missed peak
p-Nitrotoluene	99-99-0	2	17.28	Missed peak
m-Nitrotoluene	99-08-1	2	17.88	Missed peak
PETN	78-11-5	2	19.28	Missed peak

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

5.29min 51.410ppb

response 236780

(6) 1,3,5-Trinitrobenzene #2

5.29min 40.937ppb

response 303523

(+) = Expected Retention Time

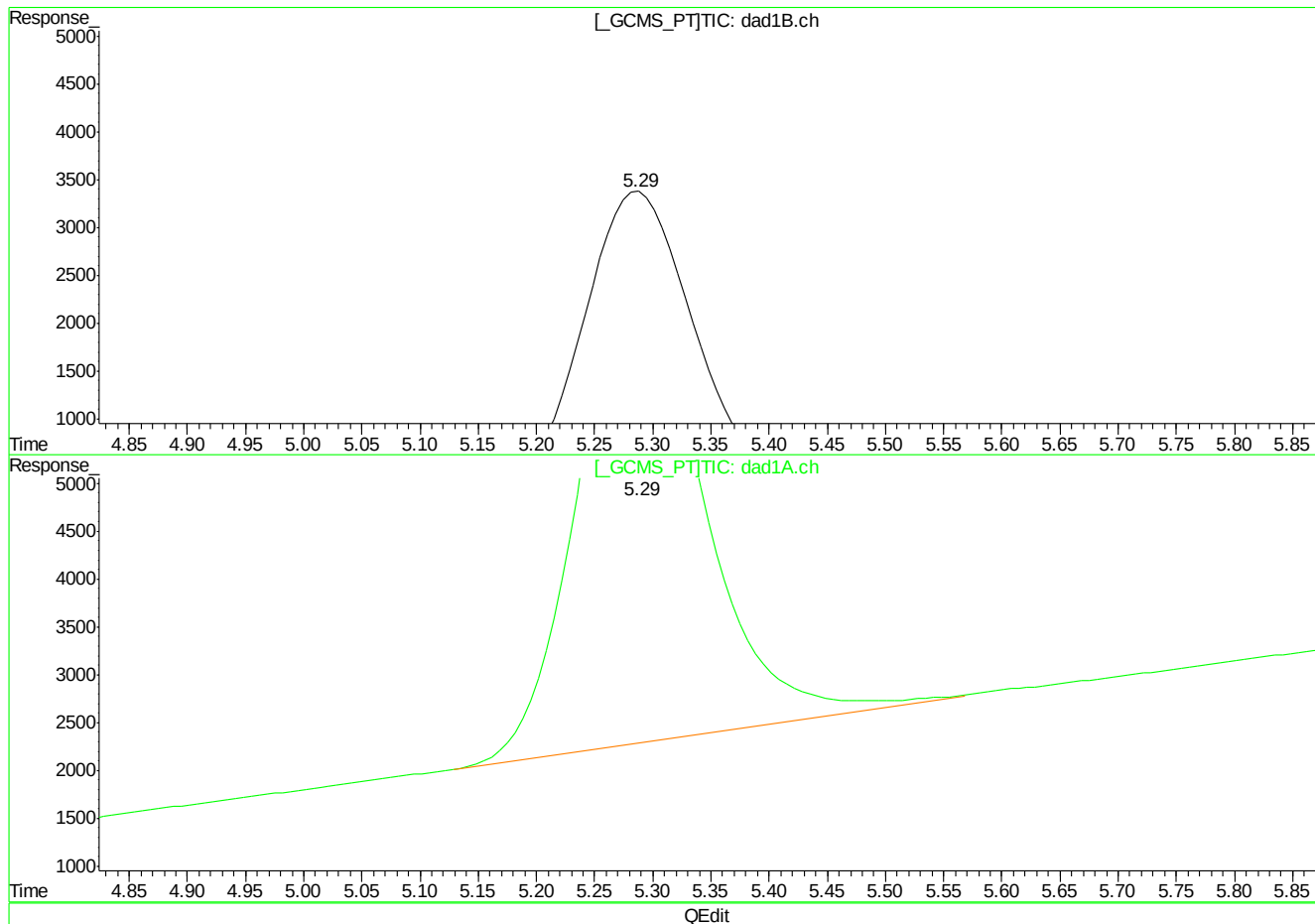
BB073630.D BBB2232_083122.M

Wed Aug 31 11:52:51 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

5.29min 51.410ppb

response 236780

(6) 1,3,5-Trinitrobenzene #2

5.29min 50.246ppb m

response 372540

(+) = Expected Retention Time

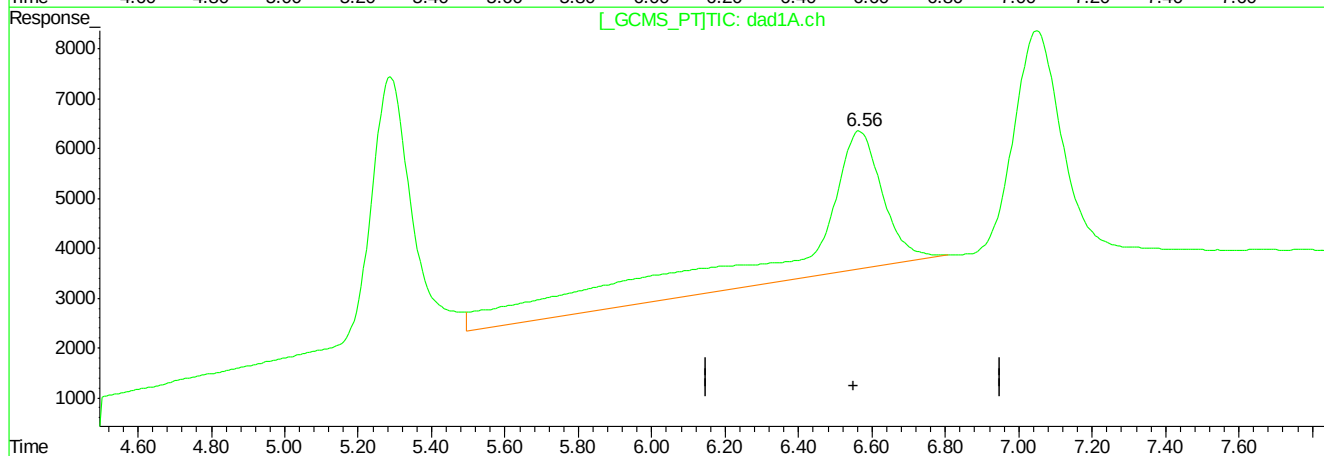
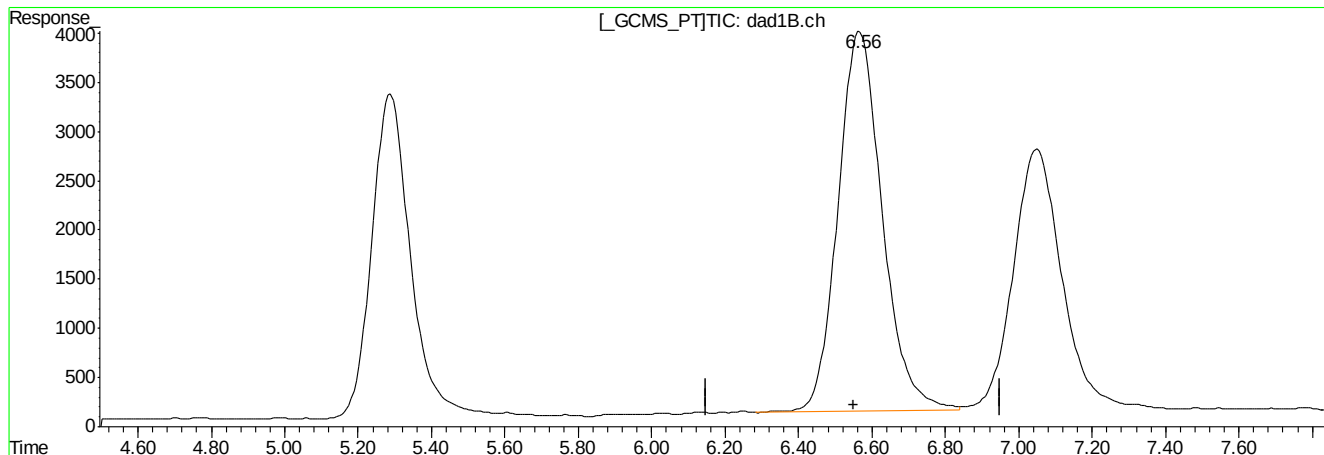
BB073630.D BBB2232_083122.M

Wed Aug 31 11:53:09 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

6.57min 52.683ppb

response 323442

(7) 1,3-Dinitrobenzene #2

6.57min 115.986ppb

response 495233

(+) = Expected Retention Time

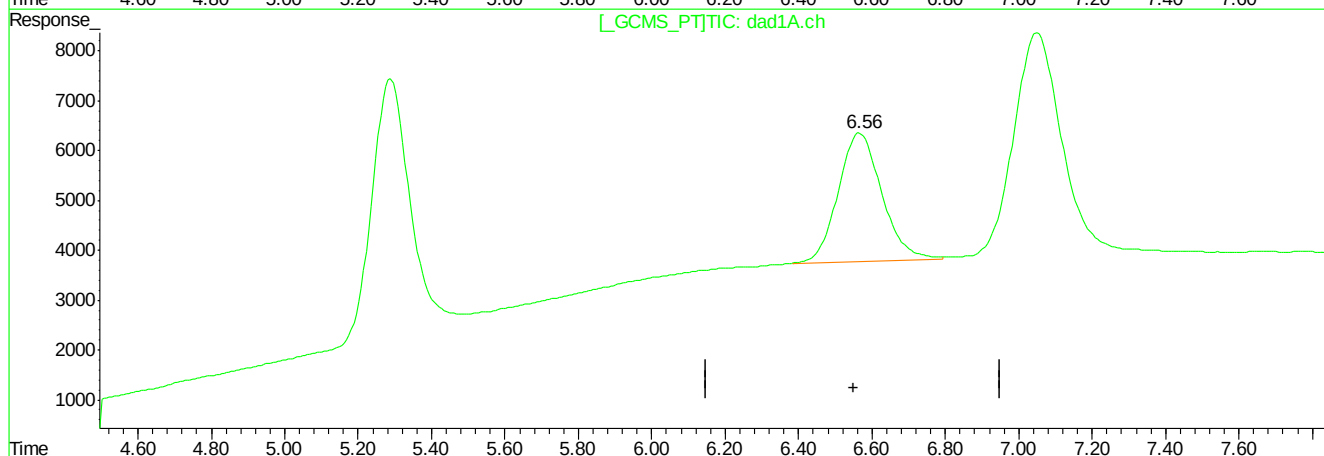
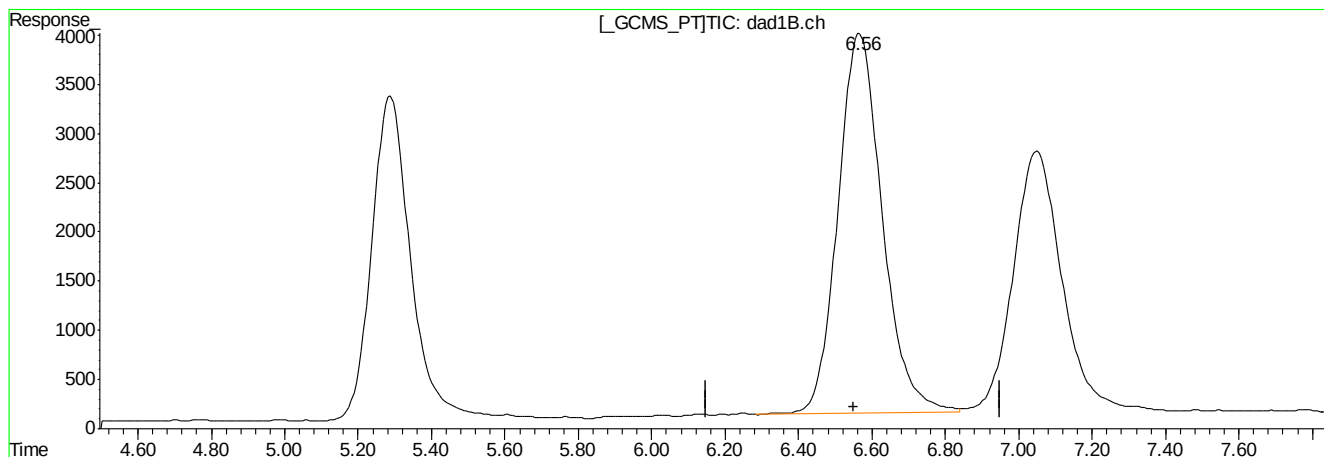
BB073630.D BBB2232_083122.M

Wed Aug 31 11:53:15 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

6.57min 52.683ppb

response 323442

(7) 1,3-Dinitrobenzene #2

6.56min 49.785ppb m

response 212568

(+) = Expected Retention Time

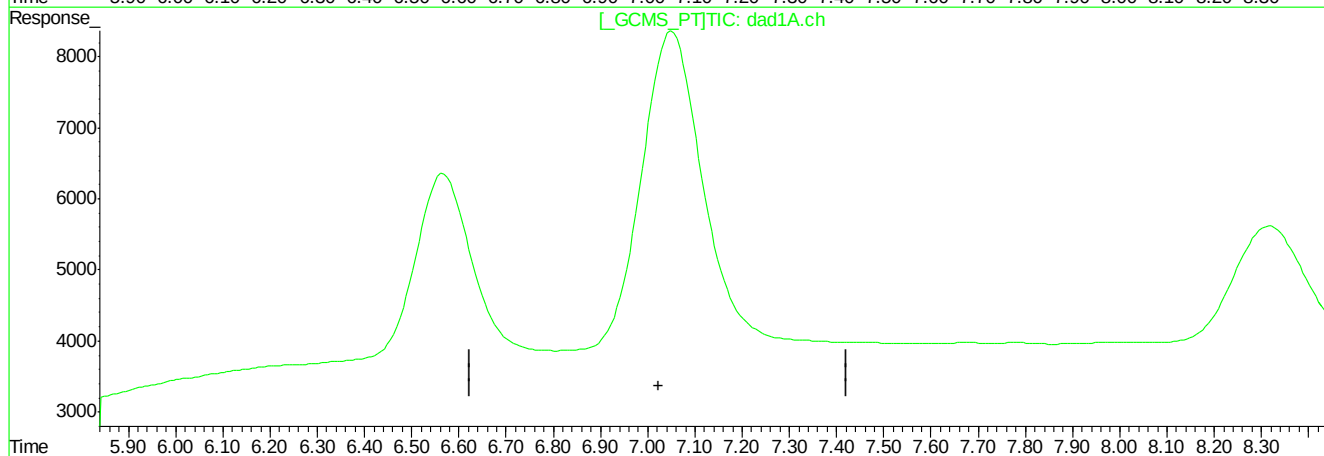
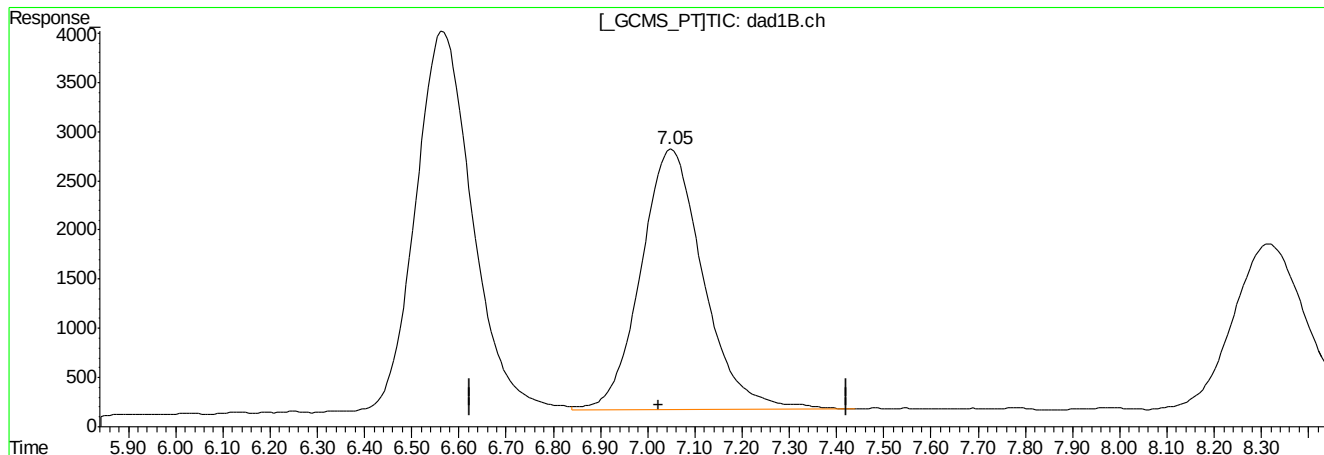
BB073630.D BBB2232_083122.M

Wed Aug 31 11:53:23 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.05min 53.441ppb

response 243609

(8) 3,5-Dinitroaniline #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

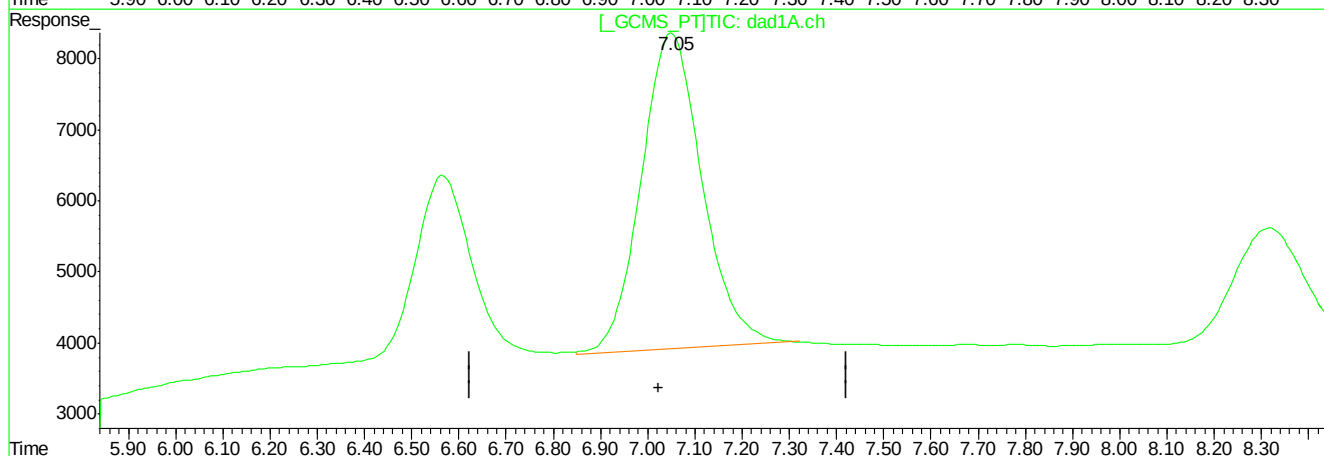
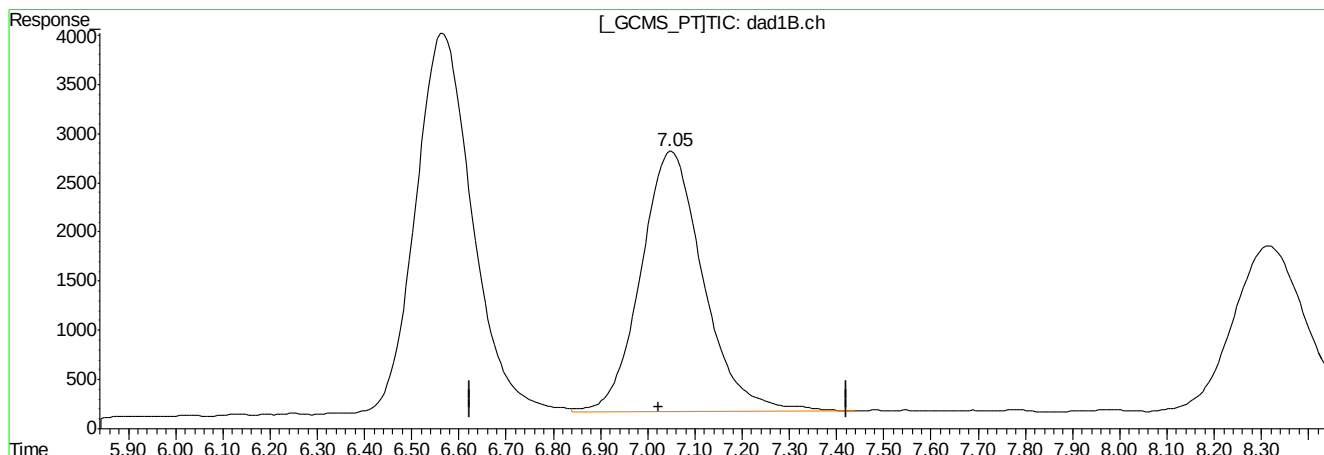
BB073630.D BBB2232_083122.M

Wed Aug 31 11:53:28 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.05min 53.441ppb

response 243609

(8) 3,5-Dinitroaniline #2

7.05min 51.516ppb m

response 397923

(+) = Expected Retention Time

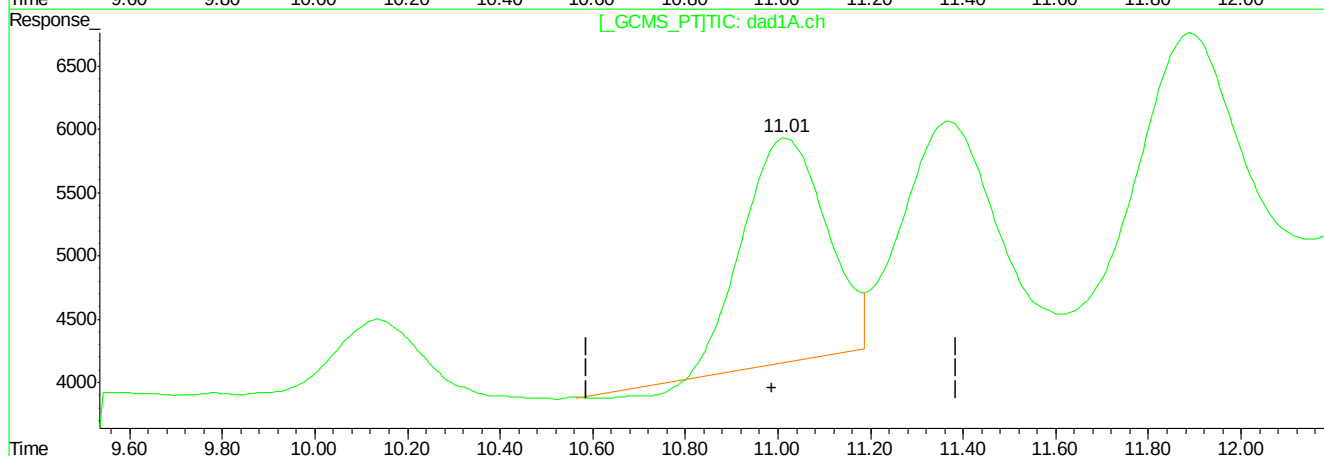
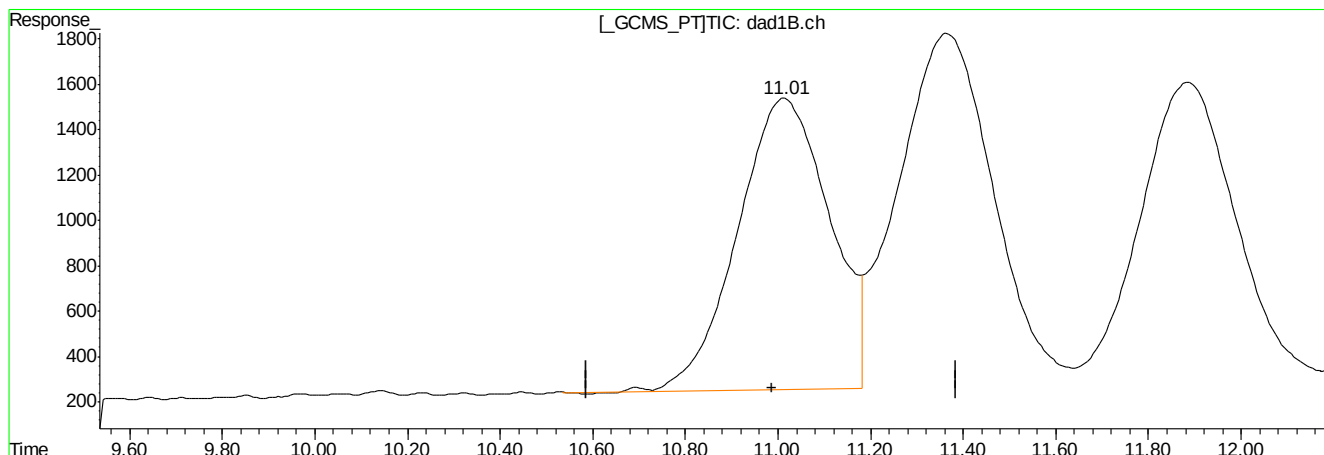
BB073630.D BBB2232_083122.M

Wed Aug 31 11:53:34 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(11) Tetryl

11.01min 50.972ppb

response 176638

(11) Tetryl #2

11.02min 38.075ppb

response 217116

(+) = Expected Retention Time

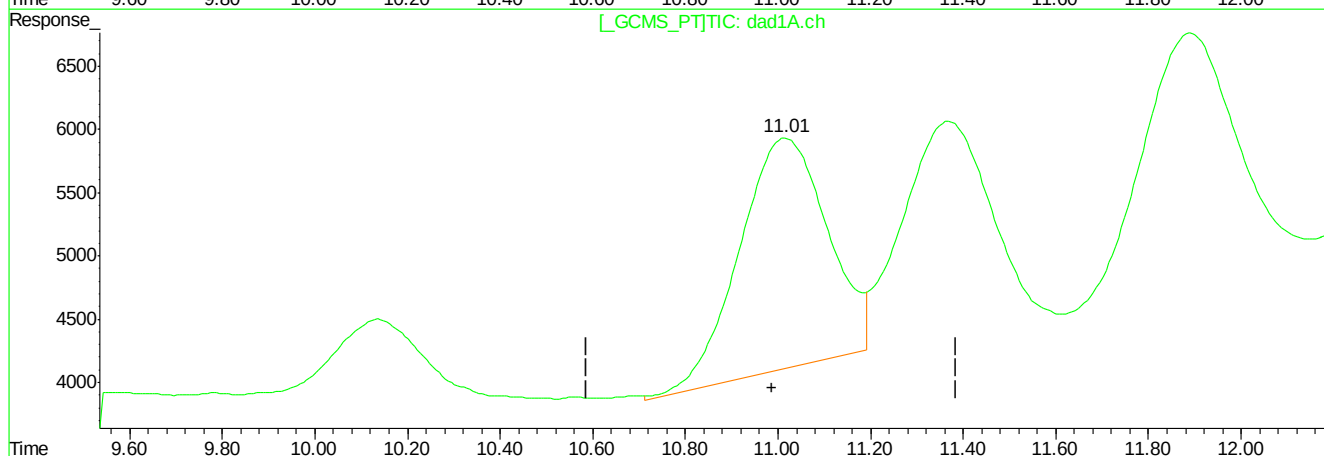
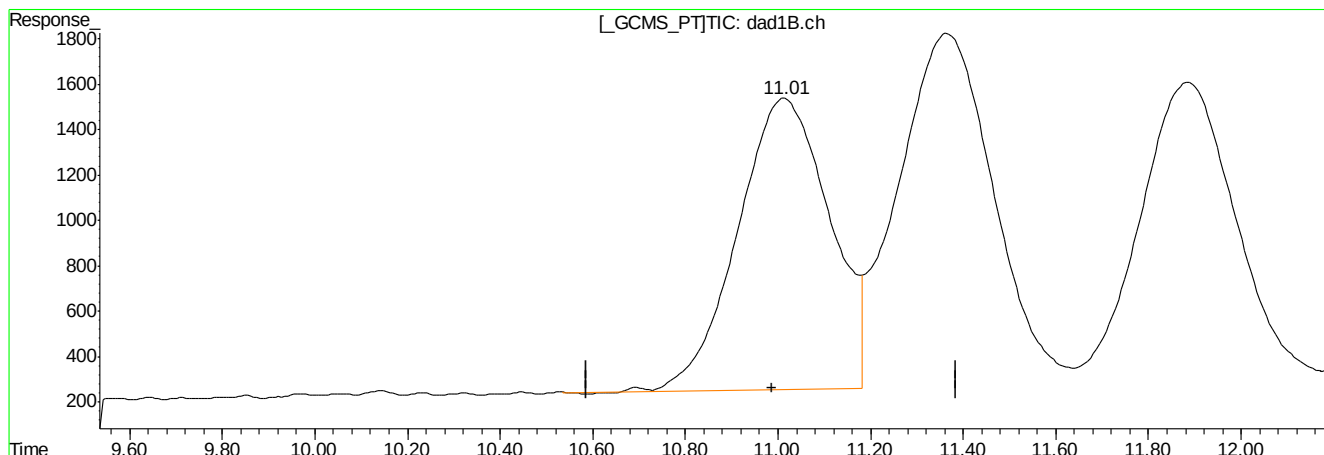
BB073630.D BBB2232_083122.M

Wed Aug 31 11:53:44 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(11) Tetryl

11.01min 50.972ppb

response 176638

(11) Tetryl #2

11.01min 42.402ppb m

response 241792

(+) = Expected Retention Time

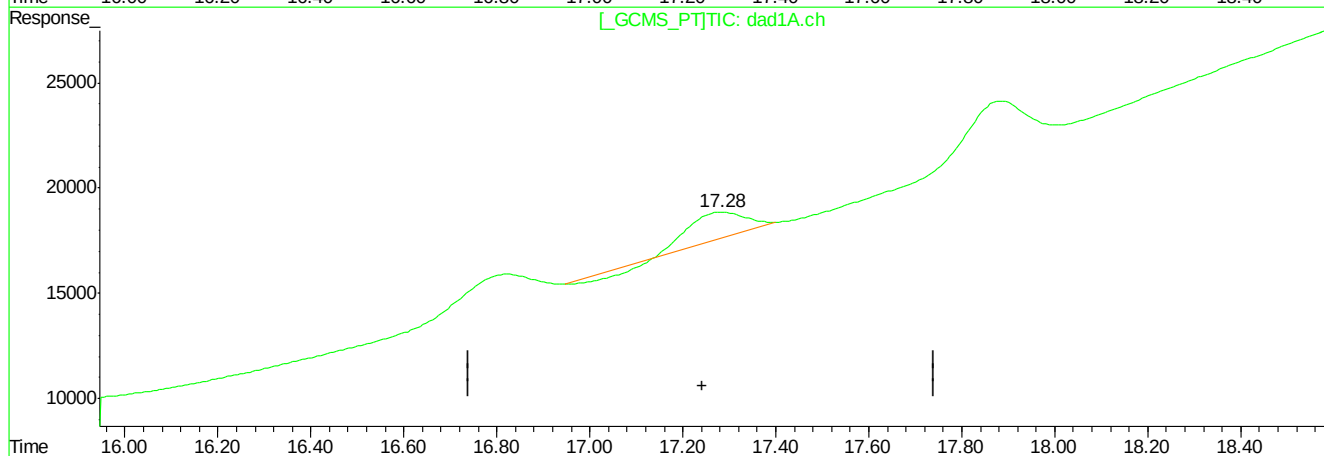
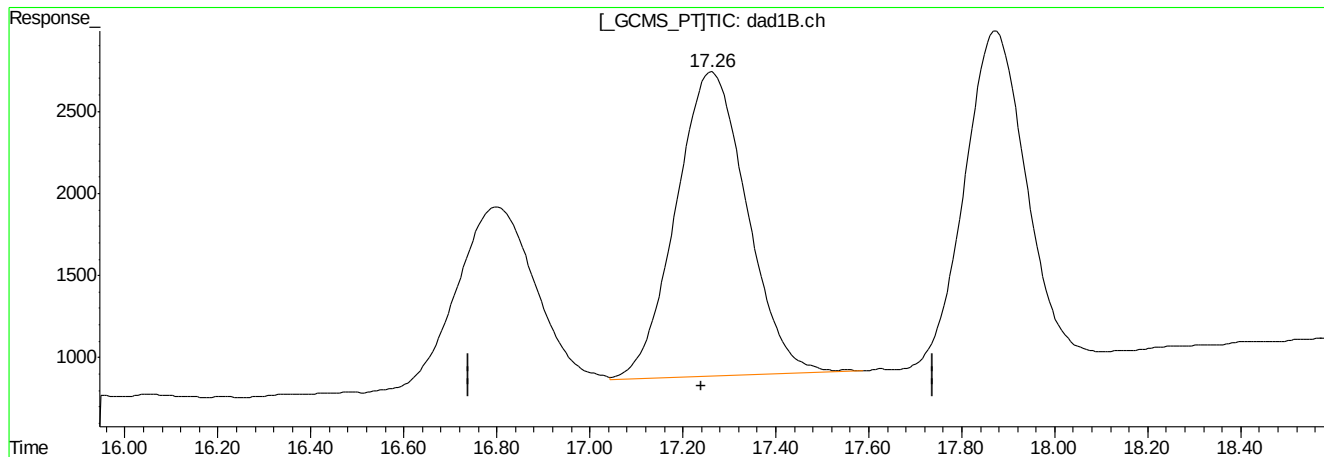
BB073630.D BBB2232_083122.M

Wed Aug 31 11:53:54 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(19) p-Nitrotoluene
17.26min 59.382ppb
response 197599

(19) p-Nitrotoluene #2
17.29min 31.547ppb
response 85448

(+) = Expected Retention Time

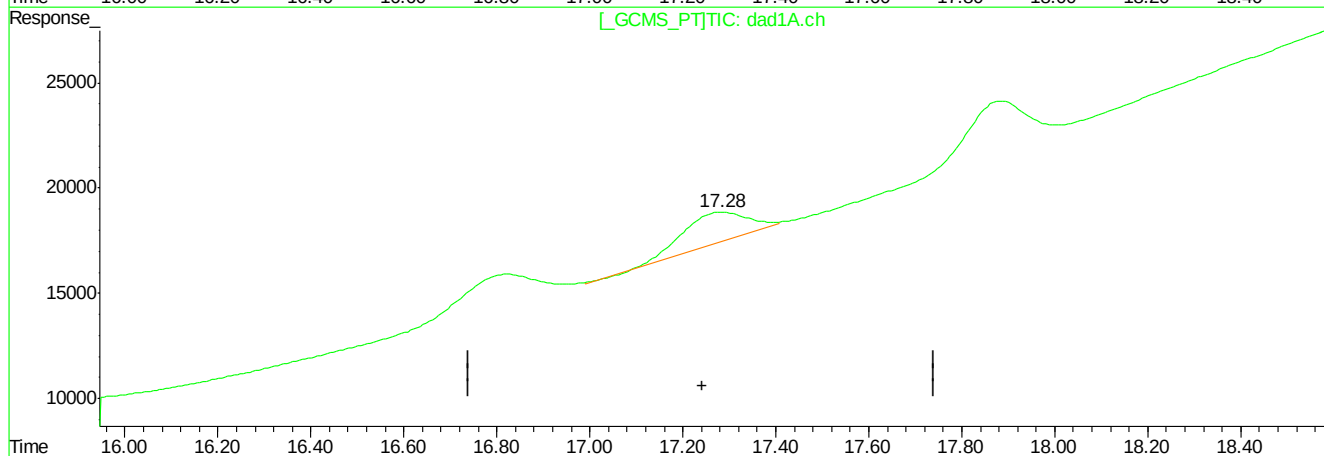
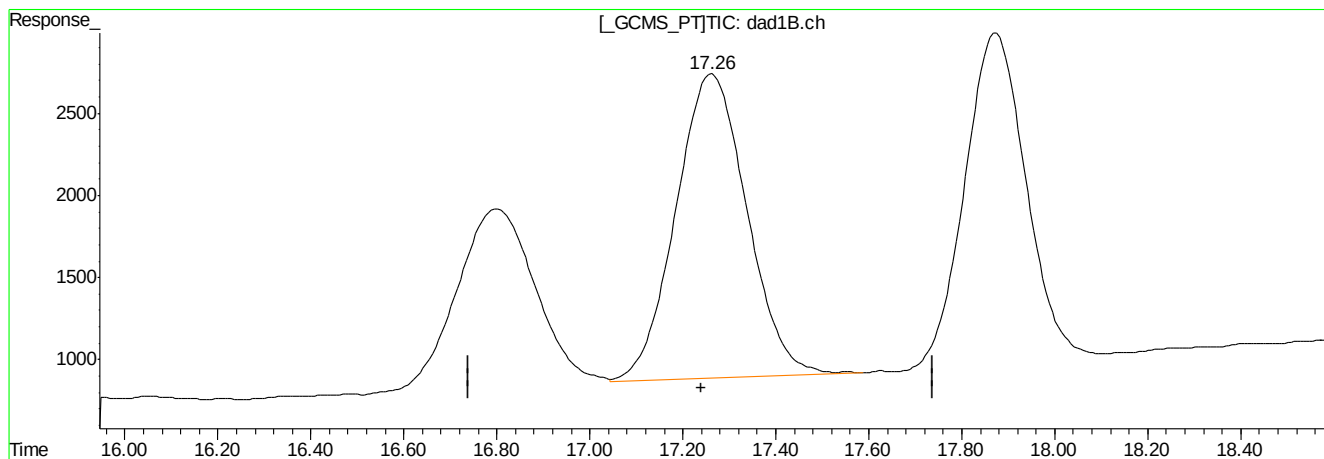
BB073630.D BBB2232_083122.M

Wed Aug 31 11:54:14 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(19) p-Nitrotoluene

17.26min 59.382ppb

response 197599

(19) p-Nitrotoluene #2

17.28min 52.737ppb m

response 142844

(+) = Expected Retention Time

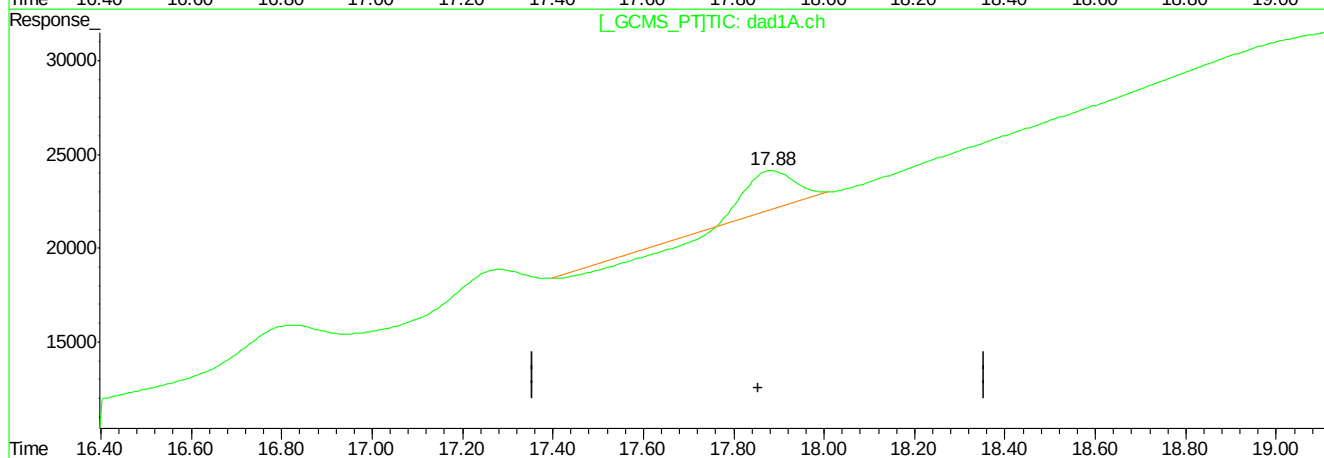
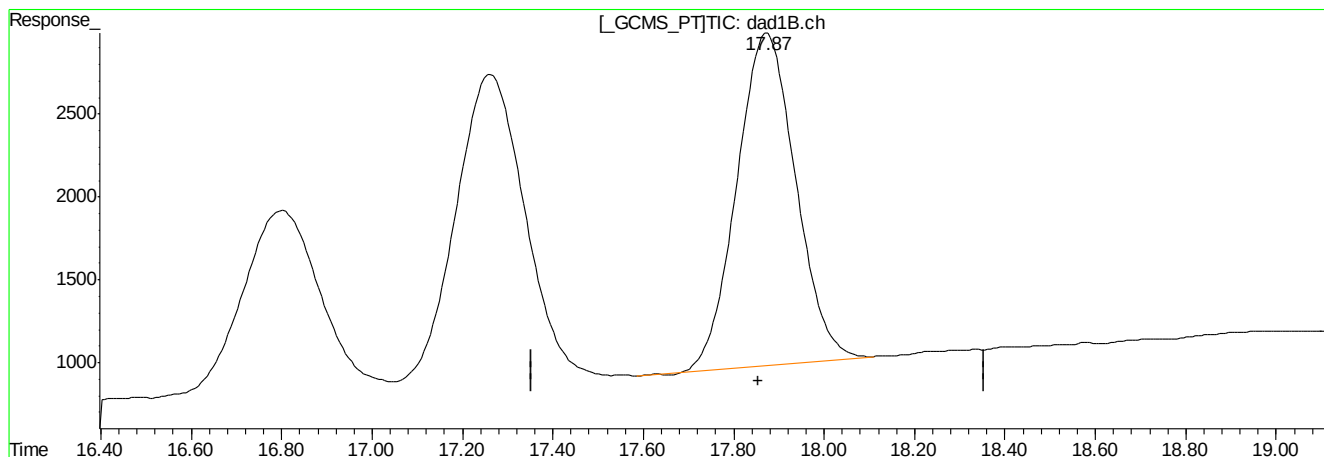
BB073630.D BBB2232_083122.M

Wed Aug 31 11:54:22 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(20) m-Nitrotoluene

17.87min 59.844ppb

response 181853

(20) m-Nitrotoluene #2

17.89min 26.156ppb

response 92962

(+) = Expected Retention Time

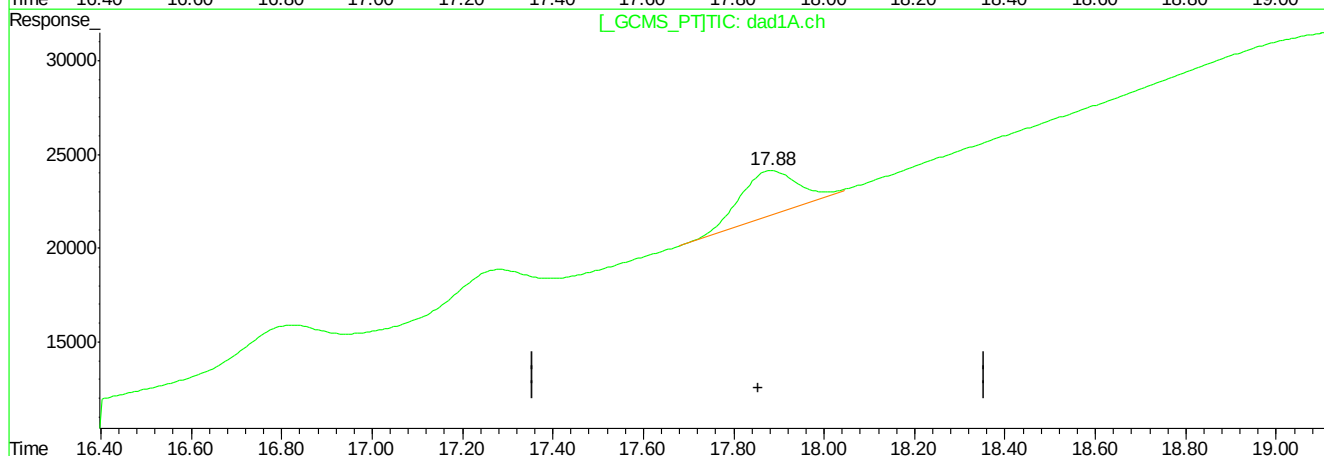
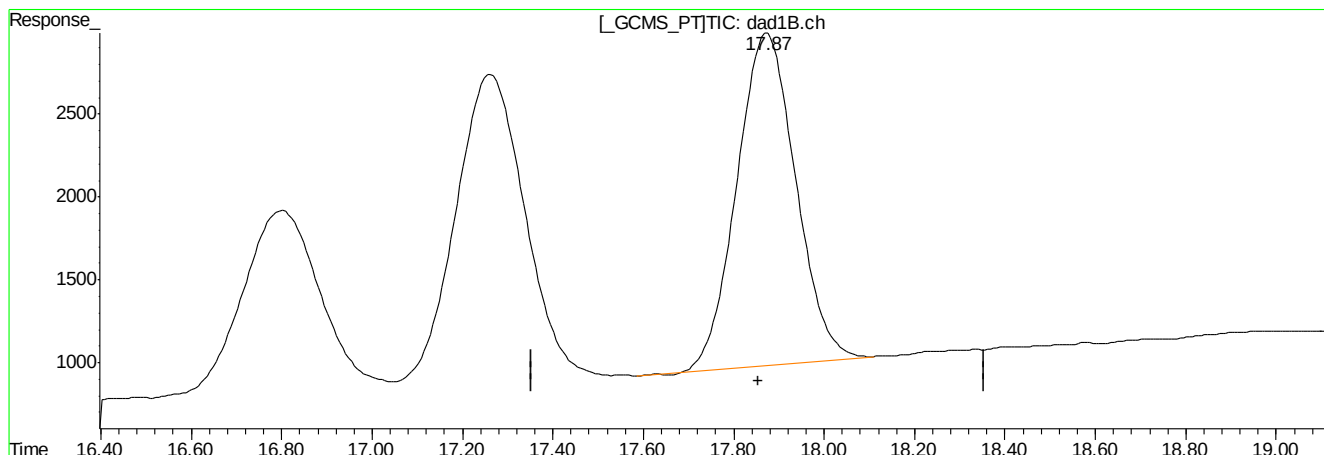
BB073630.D BBB2232_083122.M

Wed Aug 31 11:54:26 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(20) m-Nitrotoluene

17.87min 59.844ppb

response 181853

(20) m-Nitrotoluene #2

17.88min 60.592ppb m

response 215354

(+) = Expected Retention Time

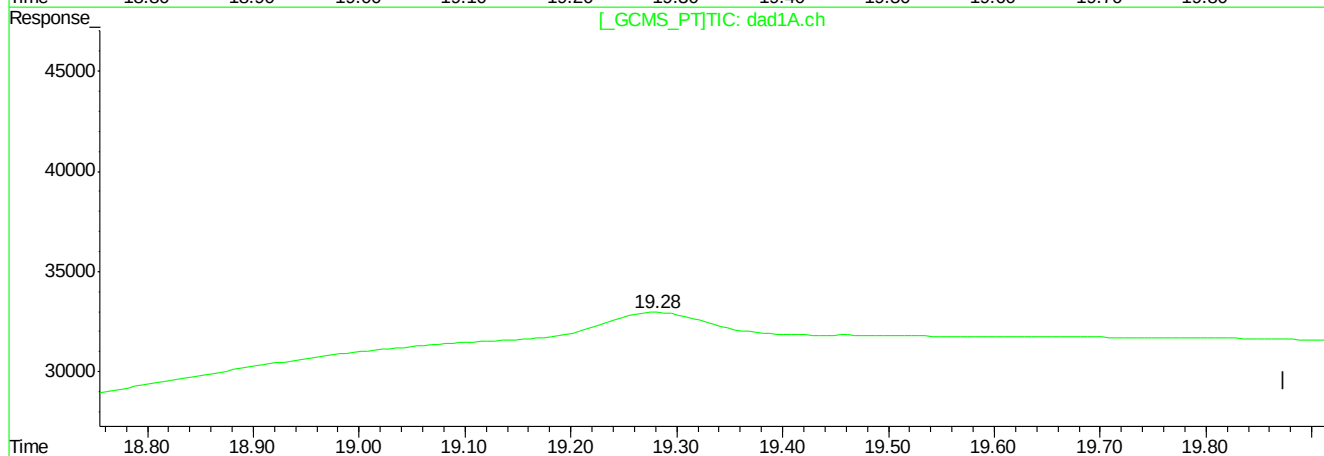
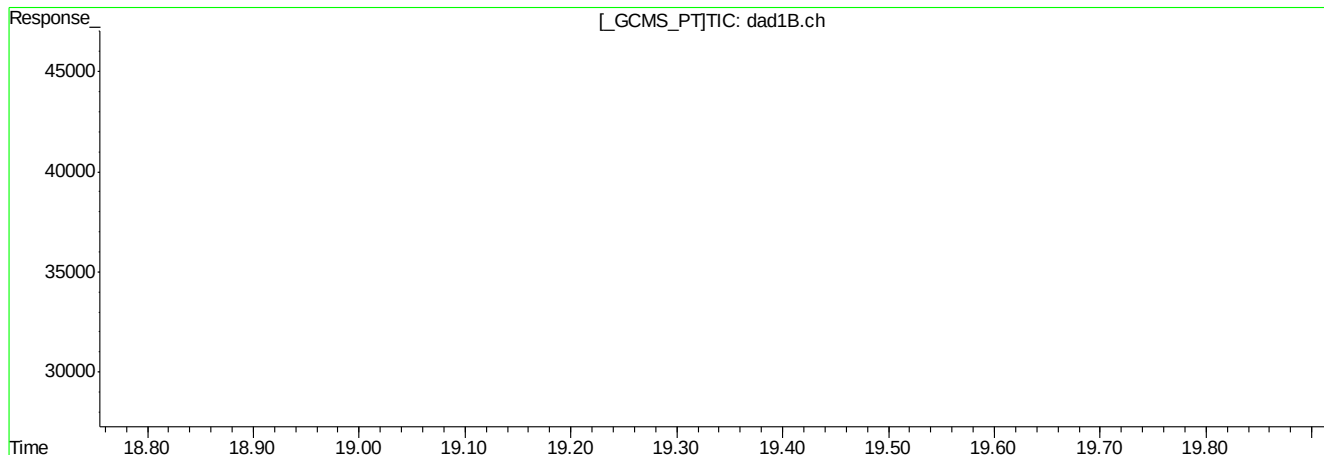
BB073630.D BBB2232_083122.M

Wed Aug 31 11:54:42 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 315.072ppb

response 500148

(+) = Expected Retention Time

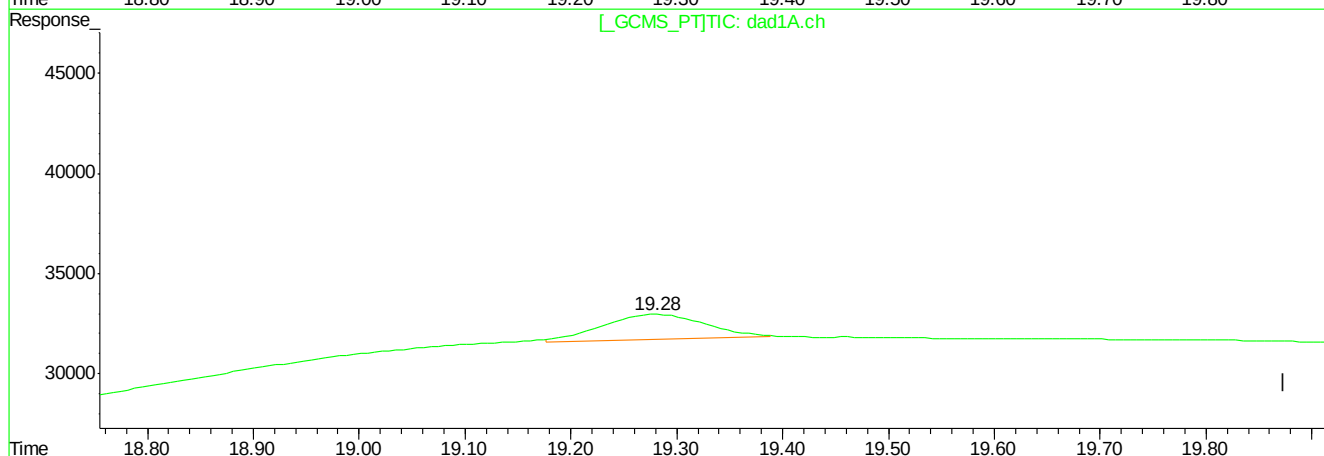
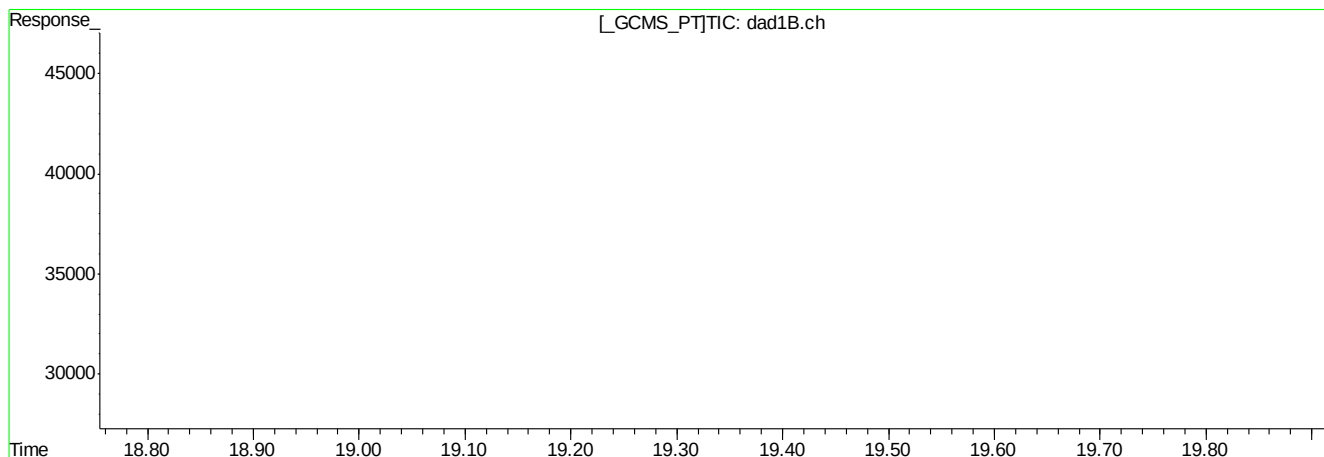
BB073630.D BBB2232_083122.M

Wed Aug 31 11:54:52 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 52.519ppb m

response 83370

(+) = Expected Retention Time

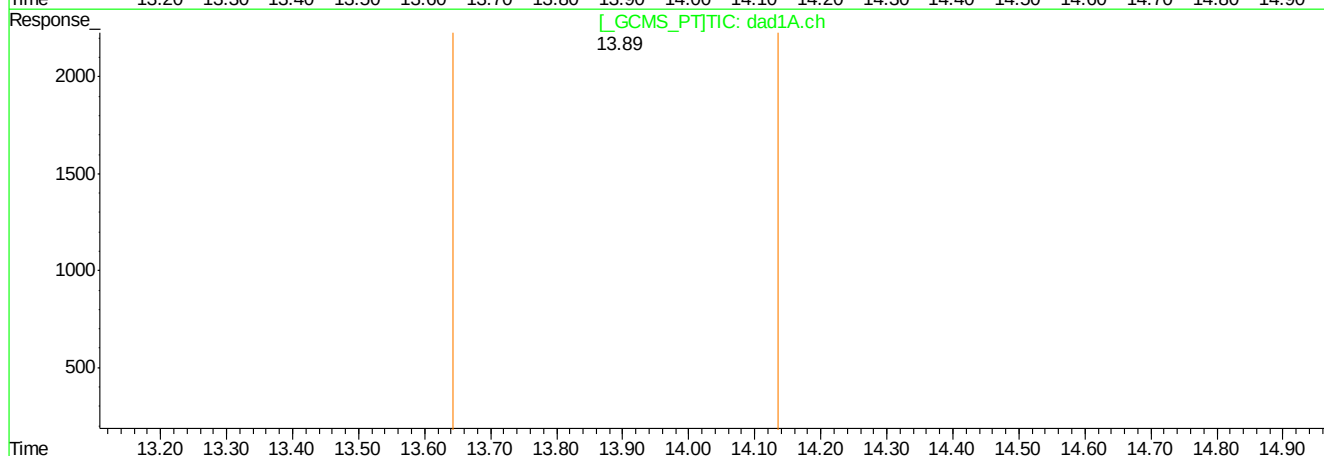
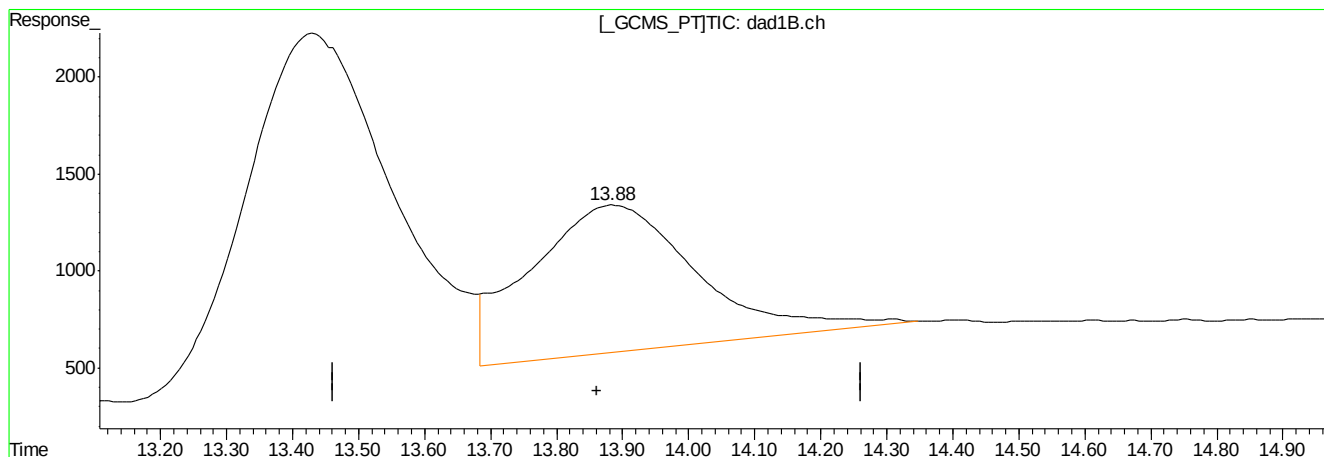
BB073630.D BBB2232_083122.M

Wed Aug 31 11:55:00 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.89min 44.751ppb

response 133585

(17) 2,6-Dinitrotoluene #2

13.90min 47.993ppb

response 191581

(+) = Expected Retention Time

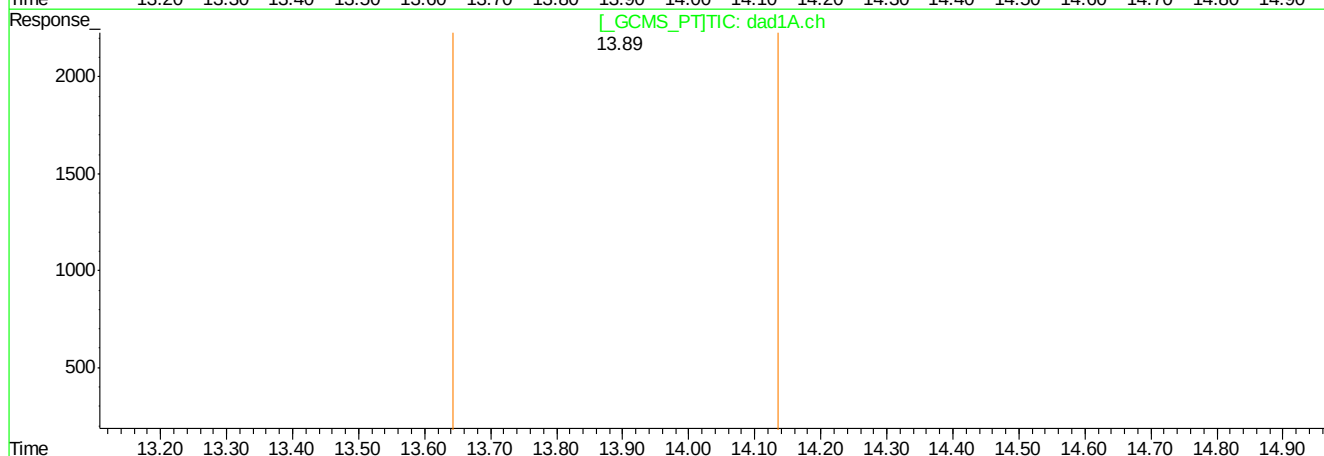
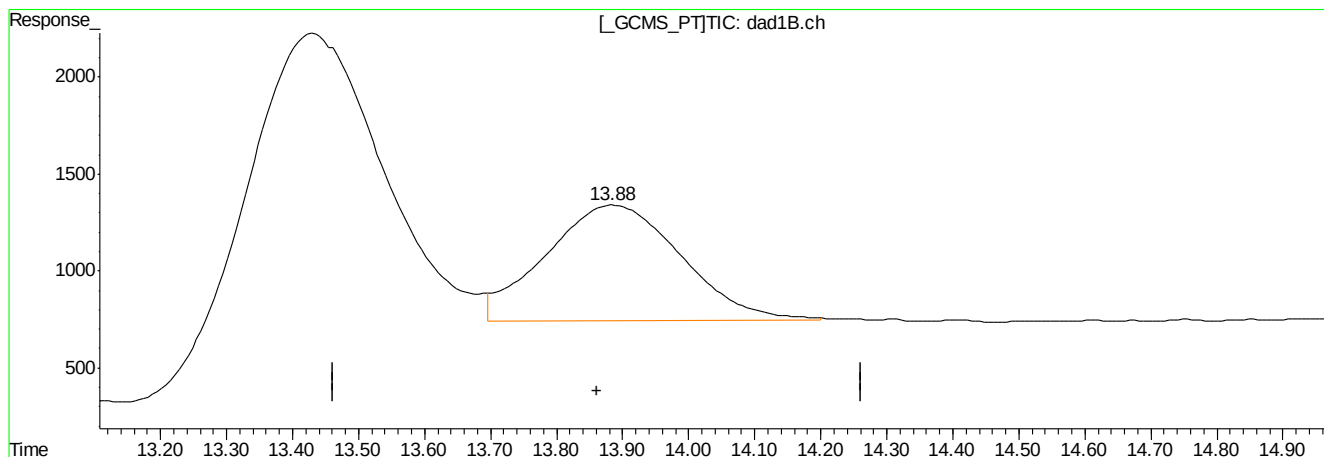
BB073630.D BBB2232_083122.M

Wed Aug 31 13:59:48 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.88min 28.268ppb m

response 84383

(17) 2,6-Dinitrotoluene #2

13.90min 47.993ppb

response 191581

(+) = Expected Retention Time

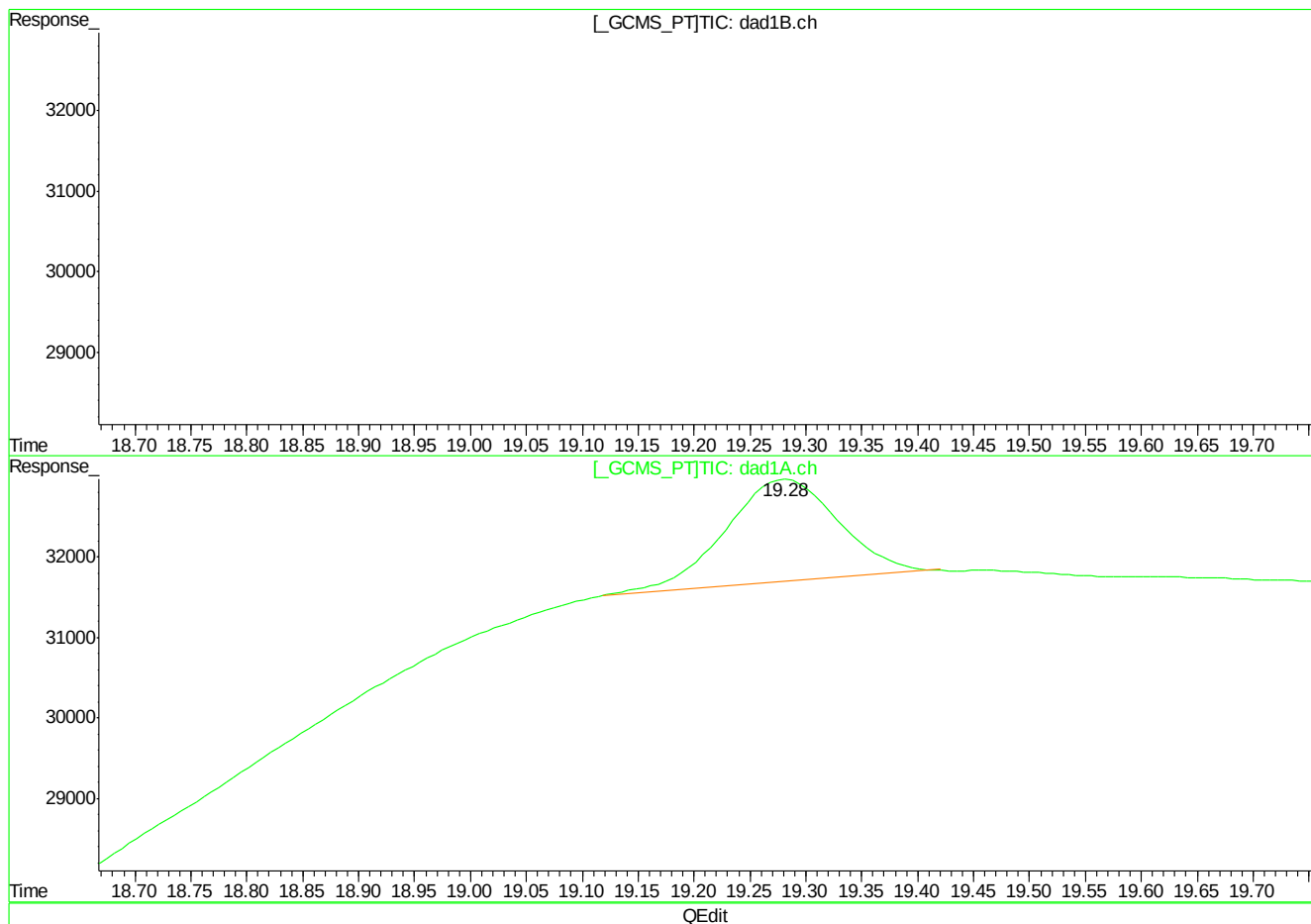
BB073630.D BBB2232_083122.M

Wed Aug 31 13:59:55 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:59 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 55.935ppb m

response 88792

(+) = Expected Retention Time

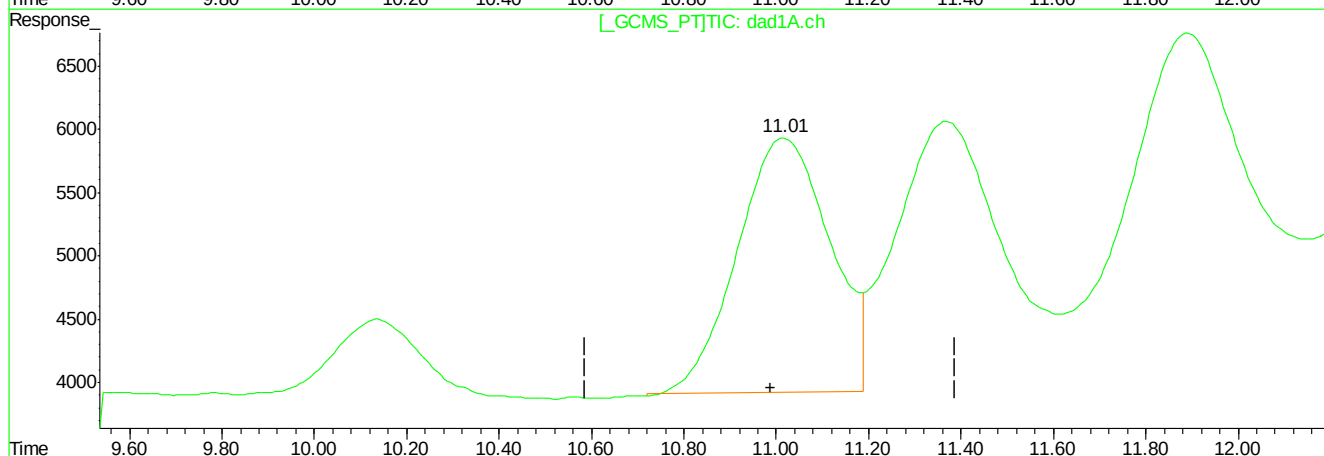
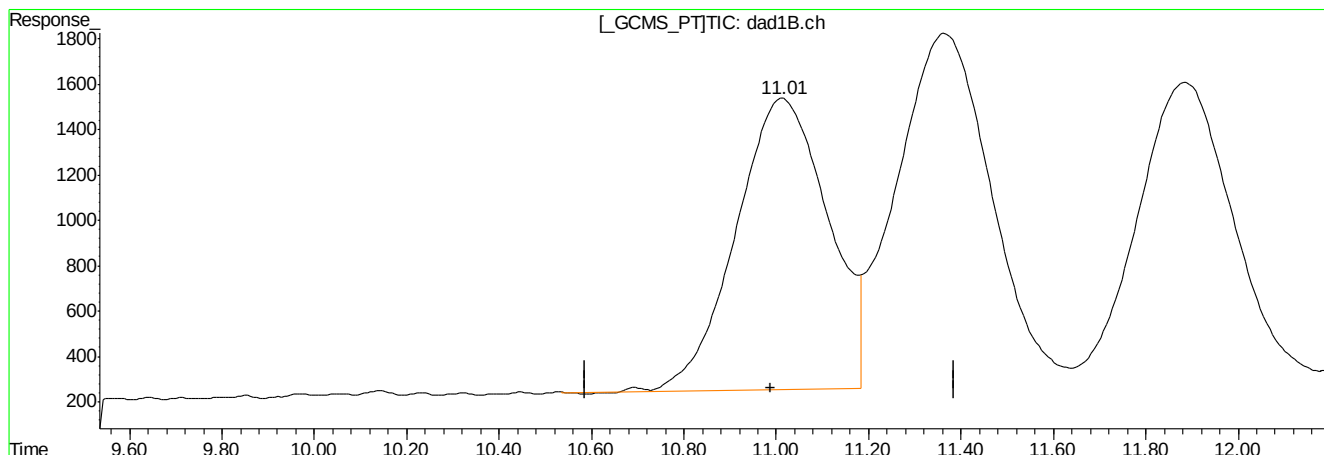
BB073630.D BBB2232_083122.M

Thu Sep 01 07:55:15 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Thu Sep 01 07:58:42 2022
Response via : Multiple Level Calibration



QEdit

(11) Tetryl

11.01min 50.972ppb

response 176638

(11) Tetryl #2

11.01min 48.620ppb m

response 277249

(+) = Expected Retention Time

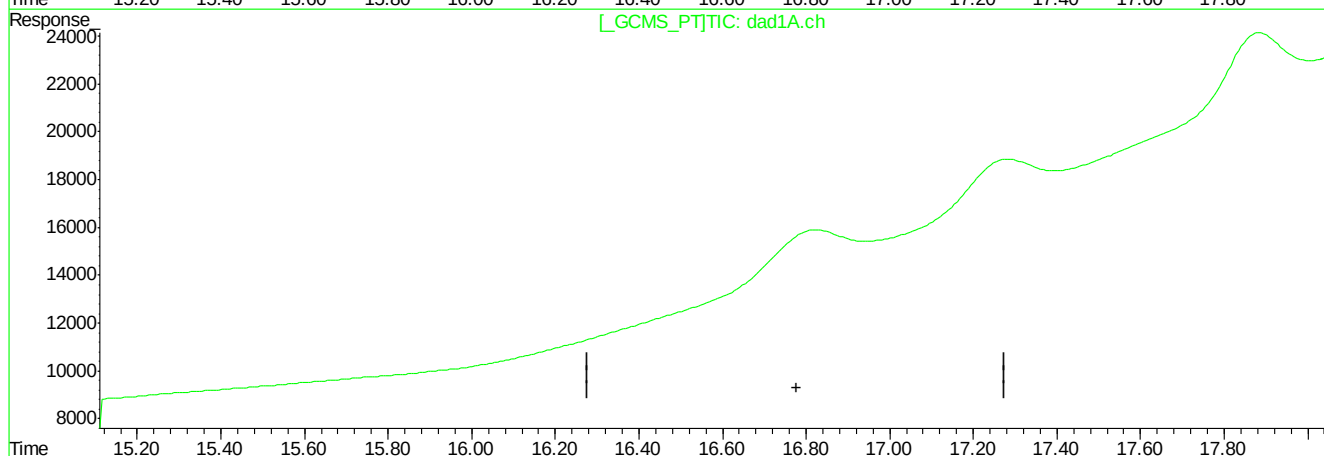
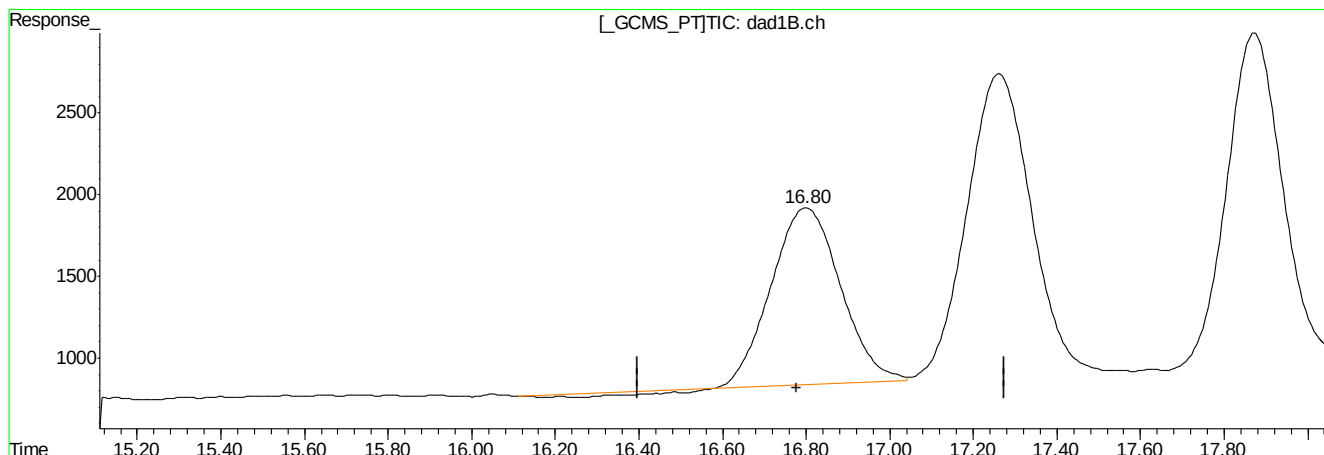
BB073630.D BBB2232_083122.M

Thu Sep 01 07:59:39 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:59 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Thu Sep 01 07:58:42 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
16.80min 58.660ppb
response 121072

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

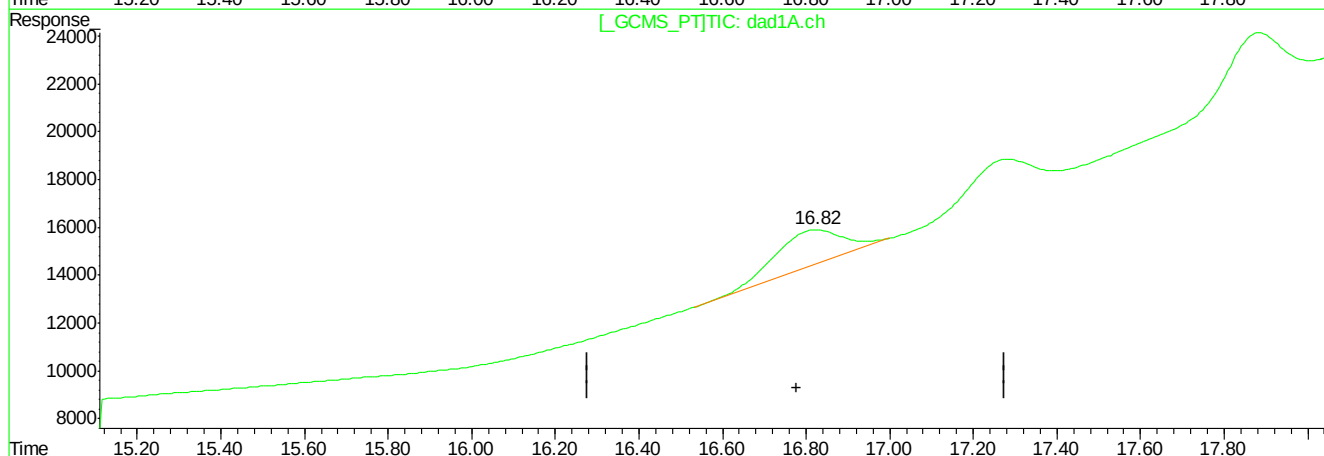
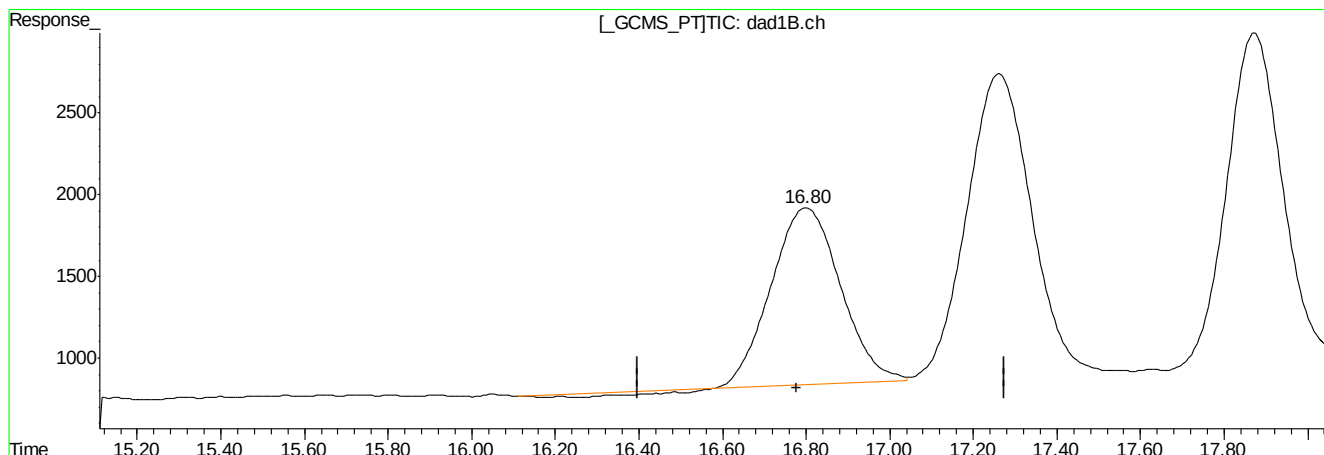
BB073630.D BBB2232_083122.M

Thu Sep 01 08:00:21 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:59 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Thu Sep 01 07:58:42 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

16.80min 58.660ppb

response 121072

(18) o-Nitrotoluene #2

16.82min 45.657ppb m

response 168010

(+) = Expected Retention Time

BB073630.D BBB2232_083122.M

Thu Sep 01 08:00:30 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
 Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
 Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
 Sample : ic2232-100 Inst : G1315B
 Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Aug 31 11:55:11 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Aug 31 08:15:37 2022
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	12.85	12.86	231315	424805	93.954	91.327
Spiked Amount	500.000	Range	70 - 136	Recovery	=	18.79%# 18.27%#
Target Compounds						
1) TNX	1.46	1.46	287602	447956	71.168	72.918
2) HMX	1.65	1.65	184734	601496	98.776	117.468
3) DNX	1.90	1.90	521752	841209	146.787m	150.482m
4) MNX	2.59	2.59	594555	914056	184.315m	184.452m
5) RDX	3.30	3.30	206547	326280	93.267	91.519
6) 1,3,5-Trinitrobe	5.29	5.28	425977	660195	92.489	89.043m
7) 1,3-Dinitrobenze	6.56	6.56	573818	387316	93.465	90.711m
8) 3,5-Dinitroanili	7.05	7.04	431864	713400	94.739	92.359m
9) Nitrobenzene	8.31	8.31	326620	325342	106.999	101.534
10) Nitroglycerin	0.00	10.14	0	145889	N.D.	95.172 #
11) Tetryl	11.02	11.02	303476	437204	87.573	76.670
12) 2,4,6-Trinitroto	11.37	11.37	393958	415167	91.097	81.083
13) 2-Amino-4,6-Dini	11.88	11.89	336060	458936	89.237	80.592
14) 4-Amino-2,6-Dini	12.43	12.43	246369	482043	88.868	85.644
16) 2,4-Dinitrotolue	13.43	13.44	495368	307872	96.144	87.062
17) 2,6-Dinitrotolue	13.89	13.90	150737	362928	50.497m	90.918 #
18) o-Nitrotoluene	16.80	16.81	233721	316939	113.240	86.365m
19) p-Nitrotoluene	17.27	17.28	362921	246496	109.065	91.006
20) m-Nitrotoluene	17.88	17.88	341272	387787	112.306	109.108m
21) PETN	0.00	19.28	0	151208	N.D.	95.255m#

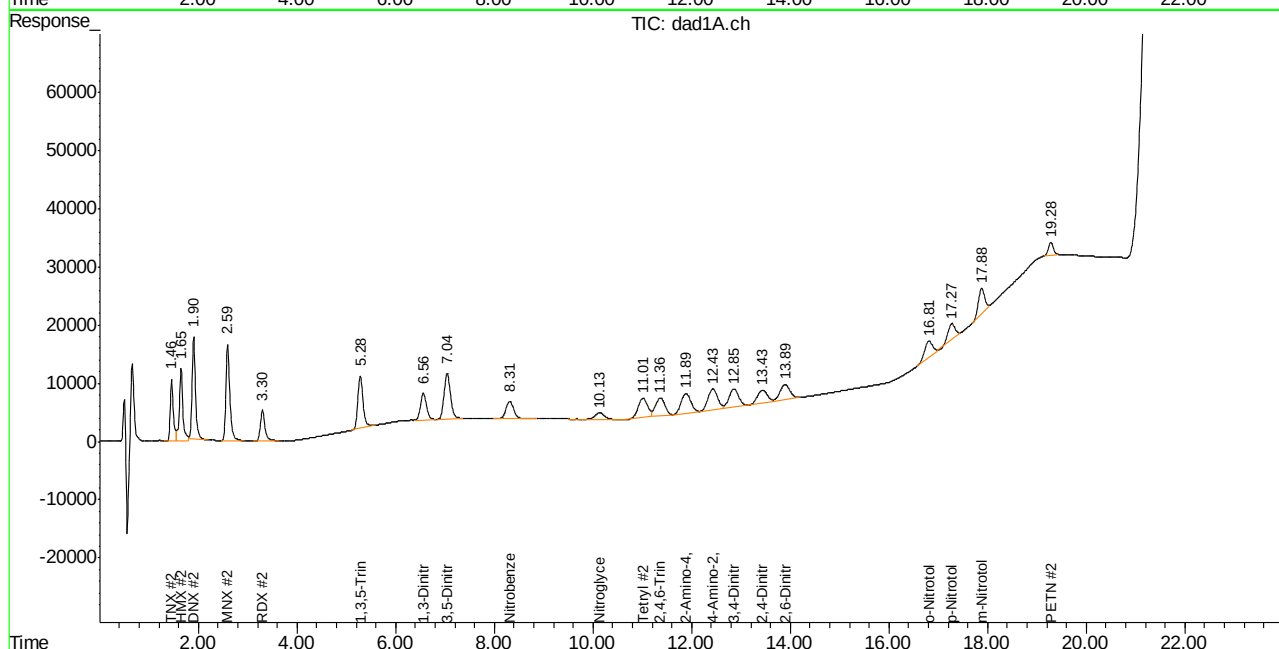
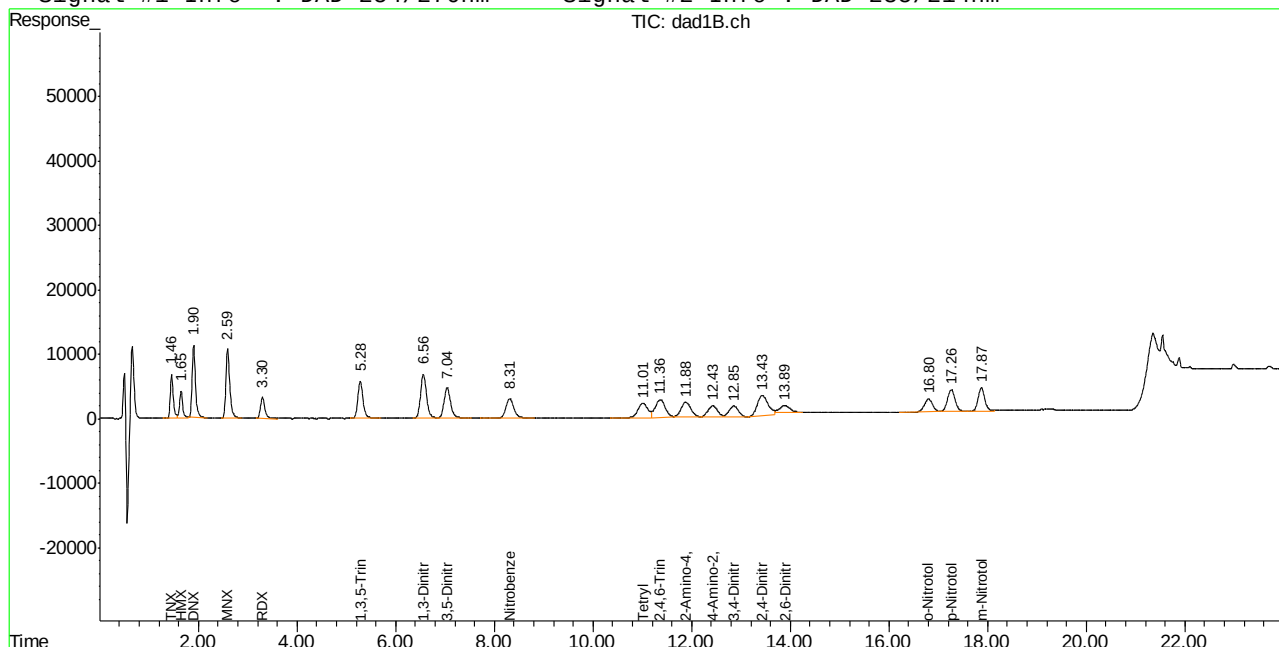
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB073631.D BBB2232_083122.M Thu Sep 01 14:19:29 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:55 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: GBB2232-IC2232

Method: SW846 8330A

Lab FileID: BB073631.D

Analyst approved: 09/02/22 08:50 Fouad Sekkar

Injection Time: 08/31/22 10:45

Supervisor approved: 09/02/22 15:07 Naresh Jiawan

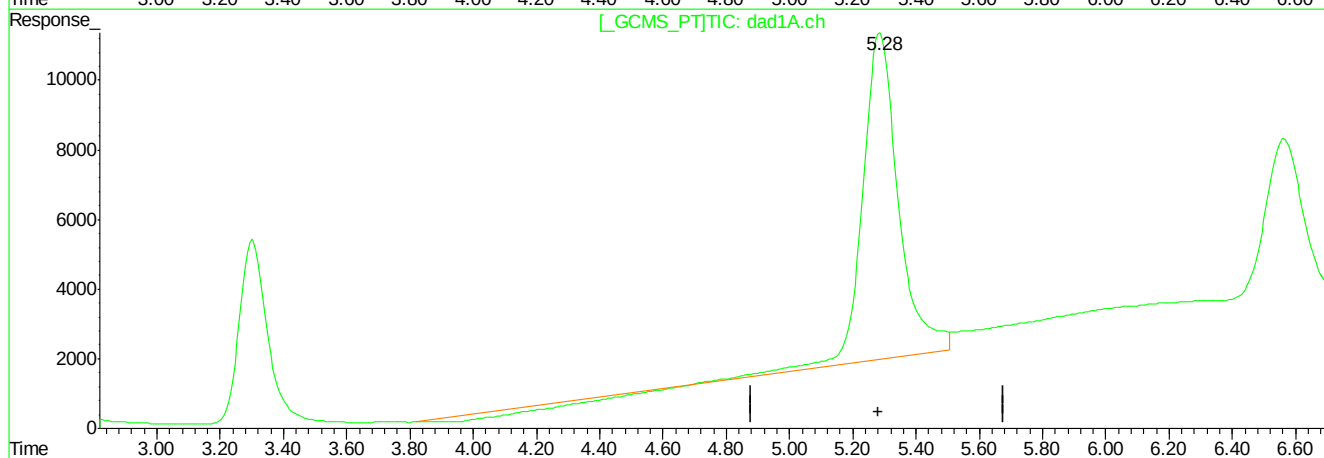
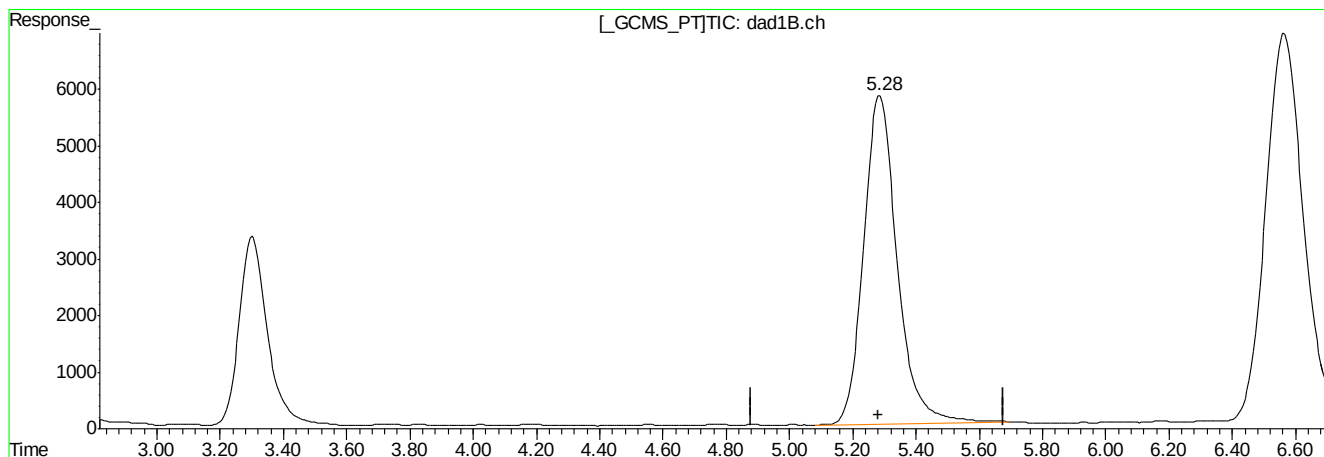
Parameter	CAS	Sig#	R. T. (min.)	Reason
DNX		1	1.90	Missed peak
DNX		2	1.90	Missed peak
MNX		1	2.59	Missed peak
MNX		2	2.59	Missed peak
1,3,5-Trinitrobenzene	99-35-4	2	5.28	Missed peak
1,3-Dinitrobenzene	99-65-0	2	6.56	Missed peak
3,5-Dinitroaniline	618-87-1	2	7.04	Missed peak
2,6-Dinitrotoluene	606-20-2	1	13.89	Missed peak
o-Nitrotoluene	88-72-2	2	16.81	Missed peak
m-Nitrotoluene	99-08-1	2	17.88	Missed peak
PETN	78-11-5	2	19.28	Missed peak

9.5.3.1
9

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

5.29min 92.489ppb

response 425977

(6) 1,3,5-Trinitrobenzene #2

5.29min 94.818ppb

response 703012

(+) = Expected Retention Time

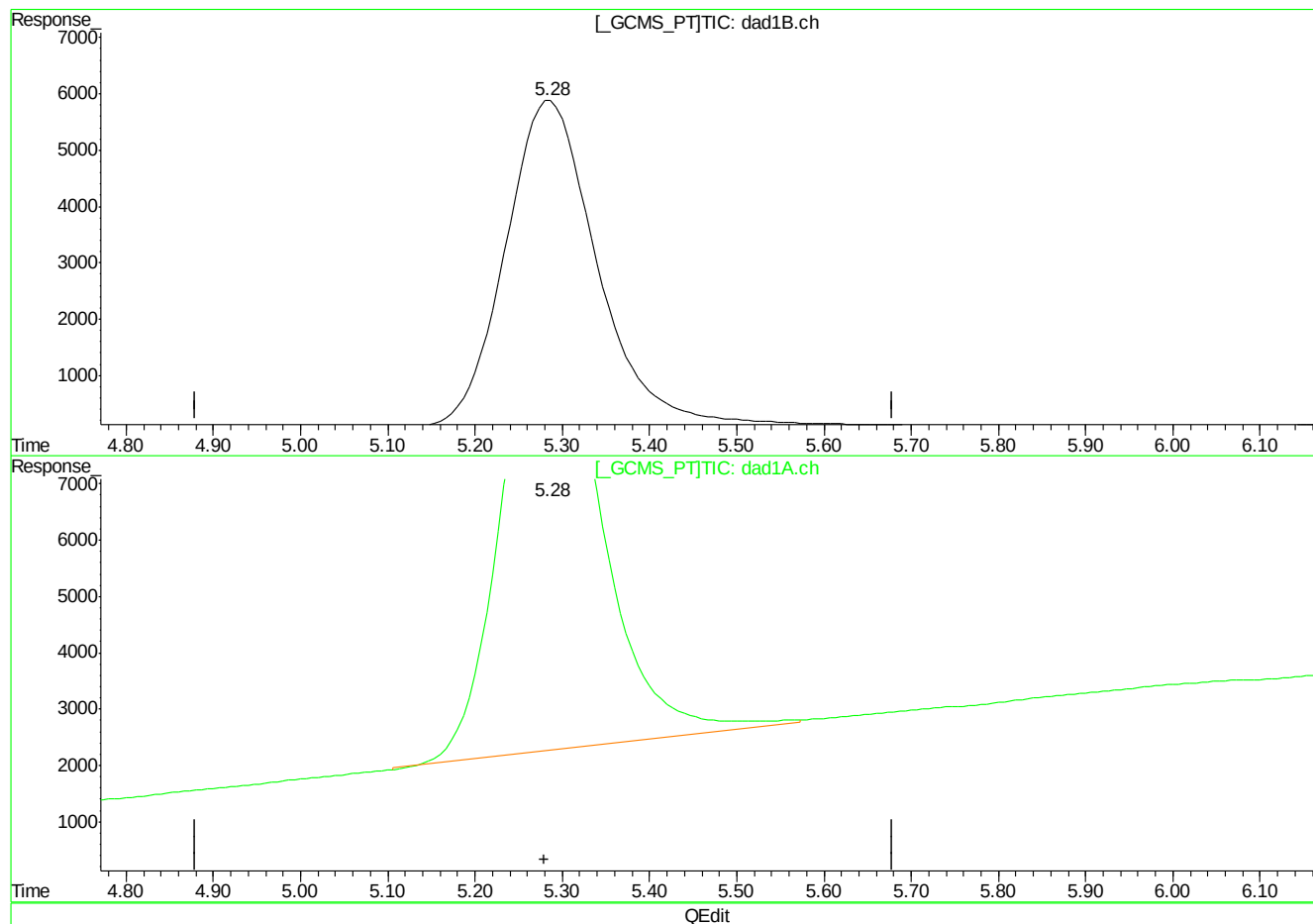
BB073631.D BBB2232_083122.M

Wed Aug 31 11:55:41 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

5.29min 92.489ppb

response 425977

(6) 1,3,5-Trinitrobenzene #2

5.28min 89.043ppb m

response 660195

(+) = Expected Retention Time

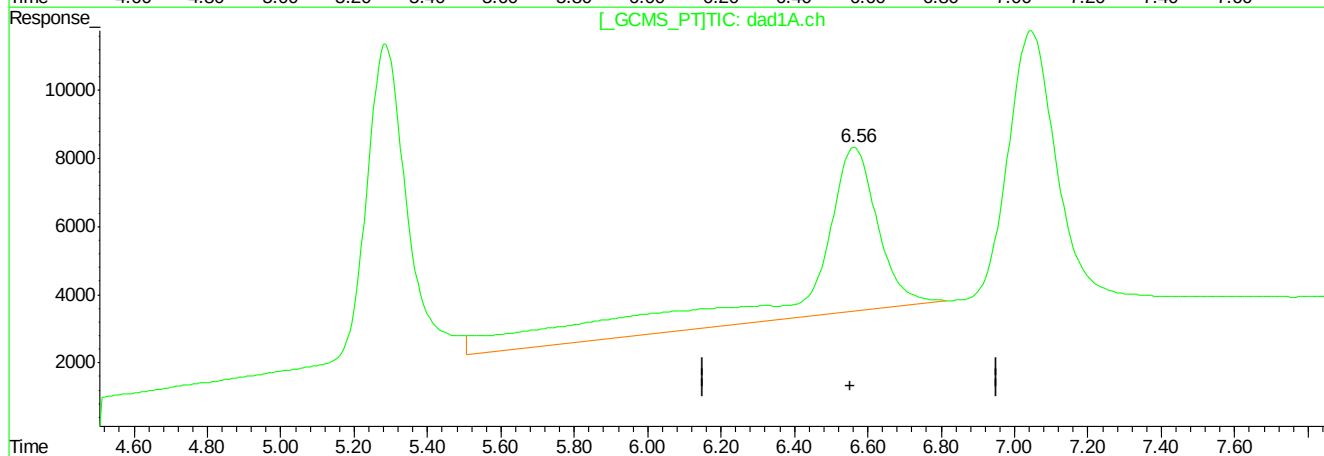
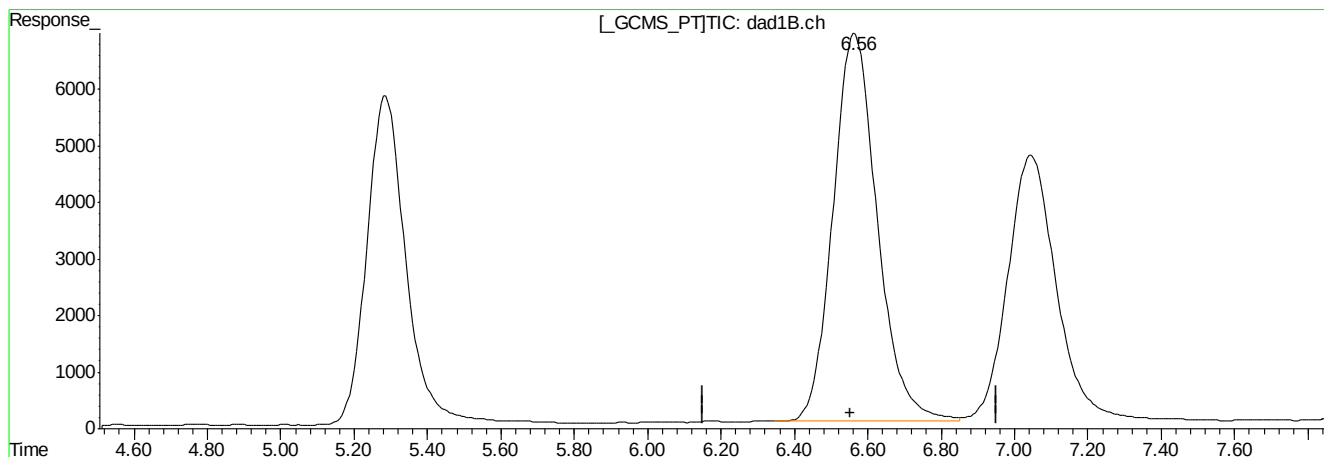
BB073631.D BBB2232_083122.M

Wed Aug 31 11:55:53 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

6.56min 93.465ppb

response 573818

(7) 1,3-Dinitrobenzene #2

6.56min 163.216ppb

response 696892

(+) = Expected Retention Time

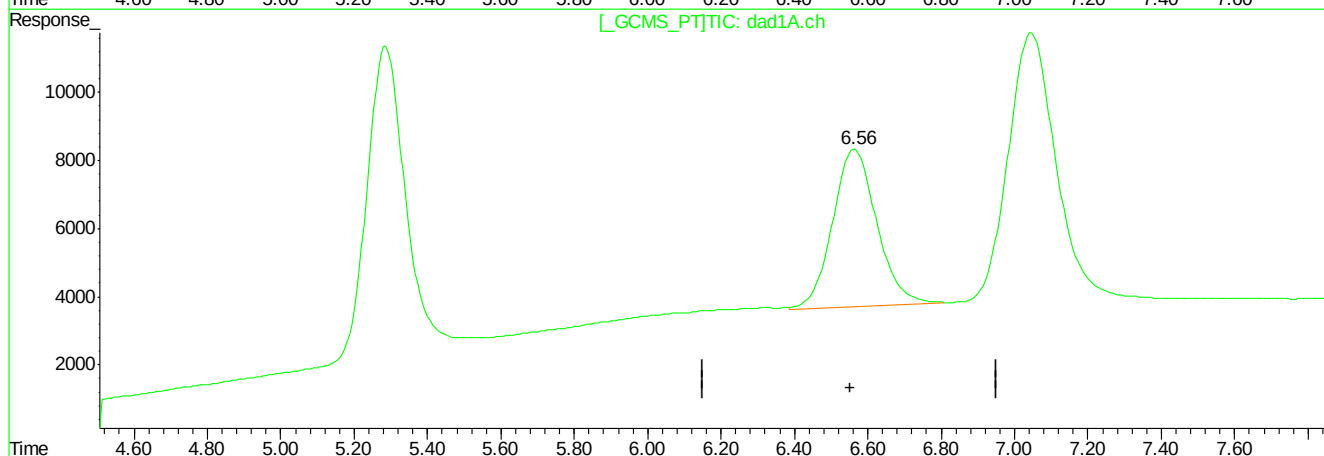
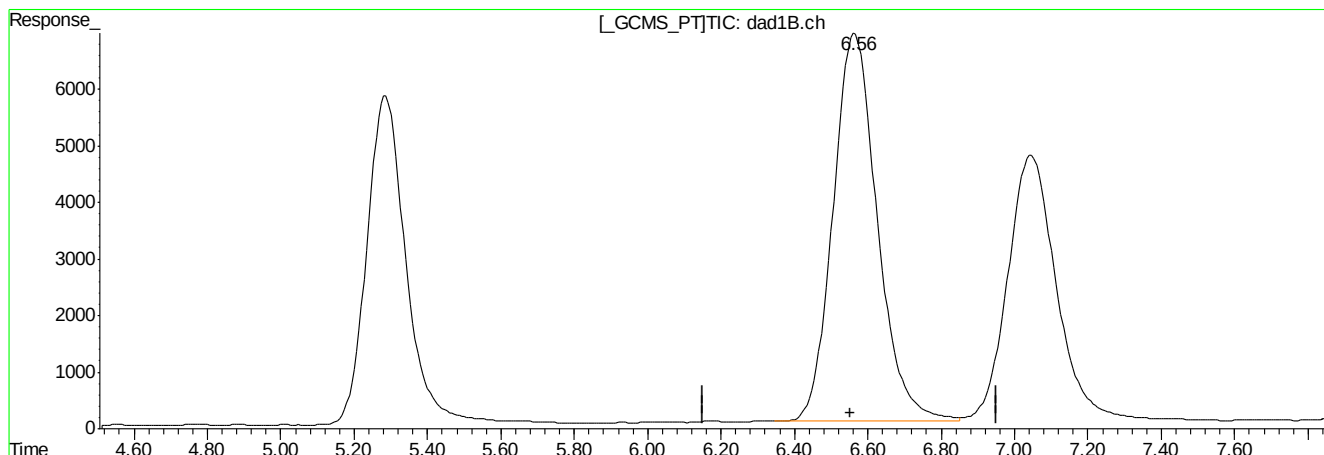
BB073631.D BBB2232_083122.M

Wed Aug 31 11:56:00 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

6.56min 93.465ppb

response 573818

(7) 1,3-Dinitrobenzene #2

6.56min 90.711ppb m

response 387316

(+) = Expected Retention Time

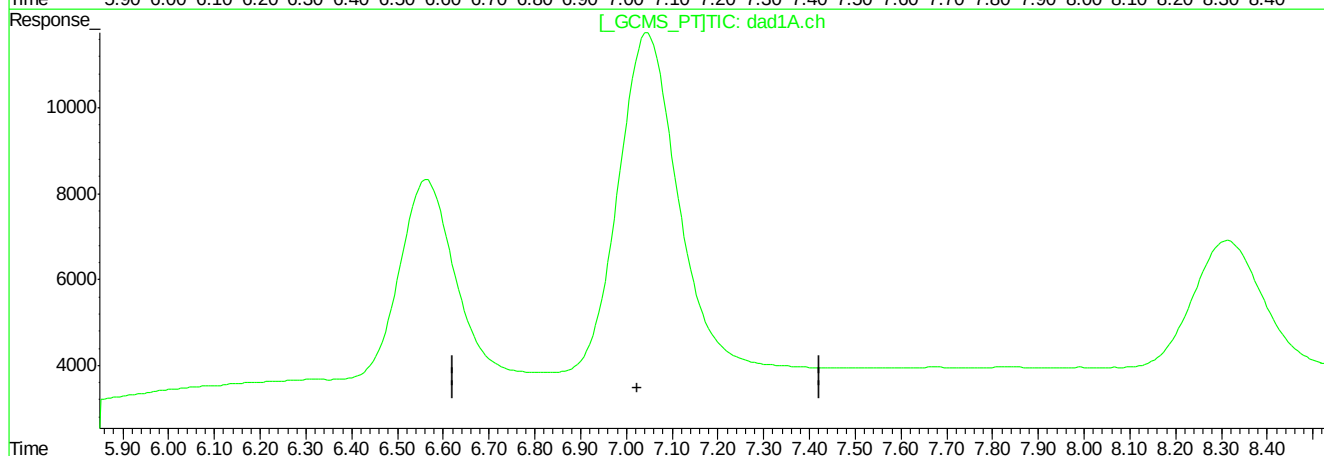
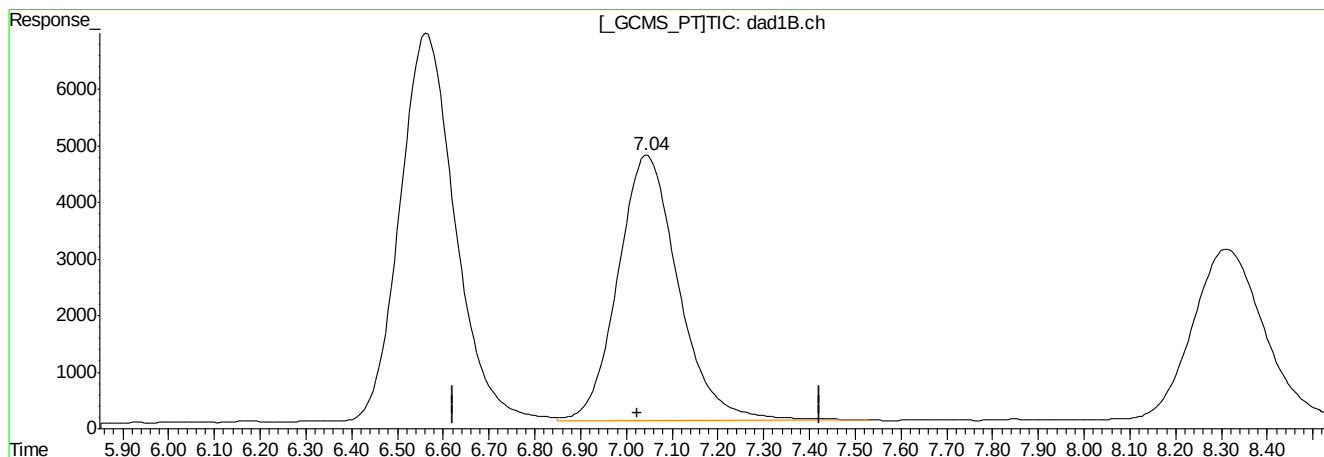
BB073631.D BBB2232_083122.M

Wed Aug 31 11:56:07 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.05min 94.739ppb

response 431864

(8) 3,5-Dinitroaniline #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

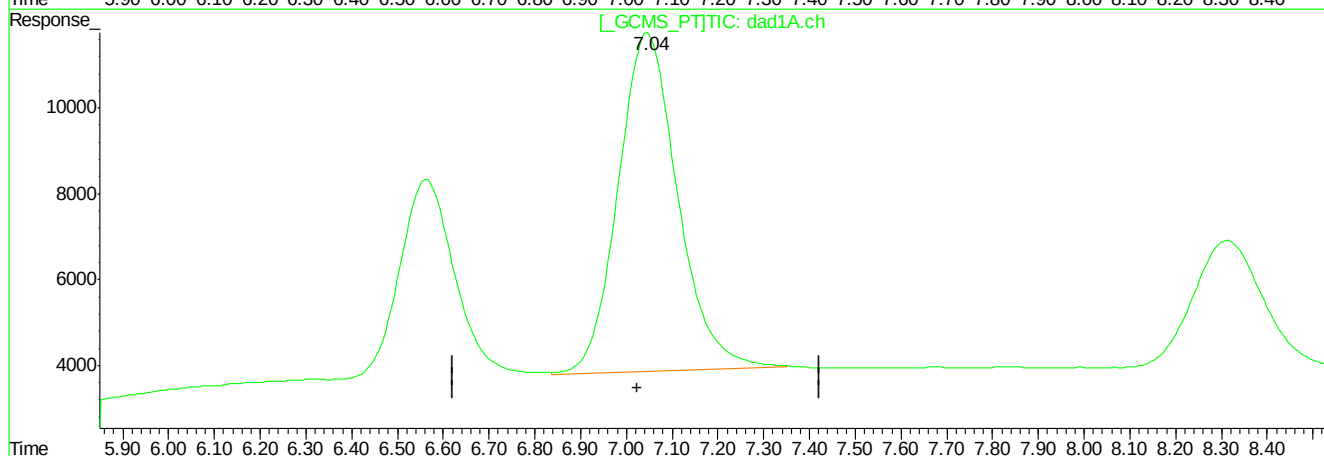
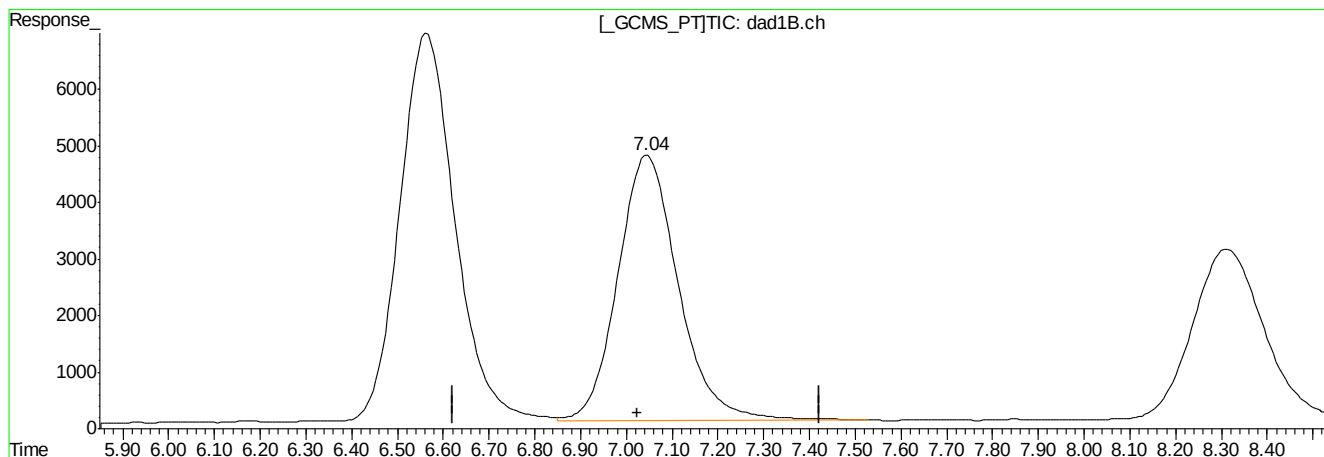
BB073631.D BBB2232_083122.M

Wed Aug 31 11:56:14 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.05min 94.739ppb

response 431864

(8) 3,5-Dinitroaniline #2

7.04min 92.359ppb m

response 713400

(+) = Expected Retention Time

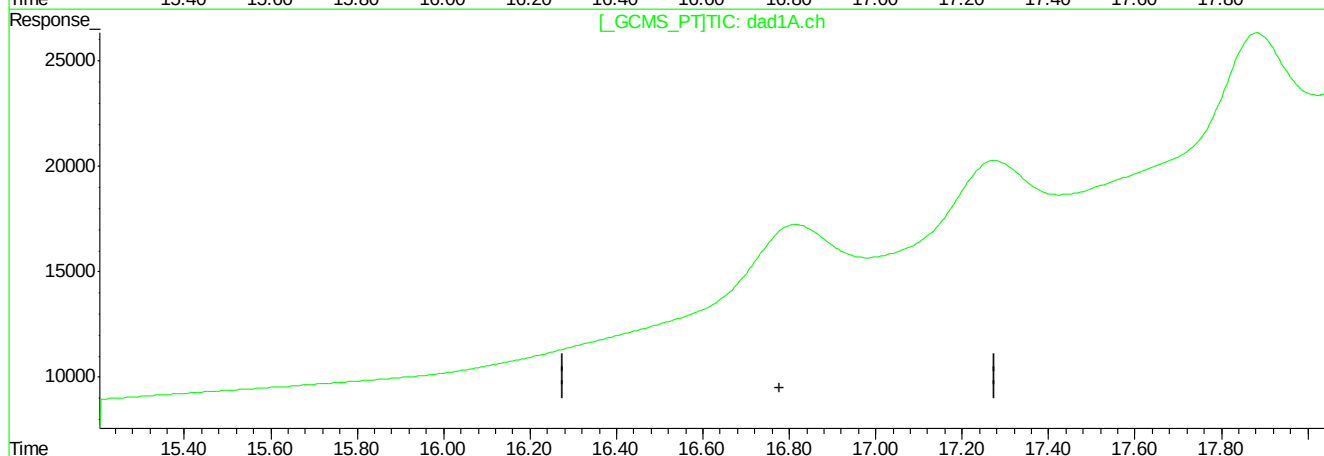
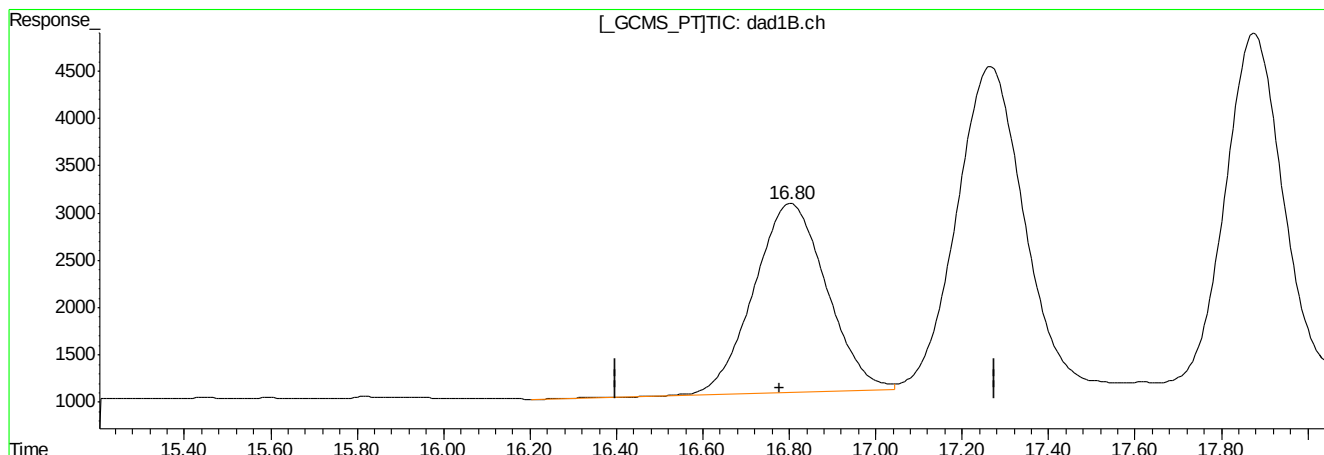
BB073631.D BBB2232_083122.M

Wed Aug 31 11:56:20 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
16.80min 113.240ppb
response 233721

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

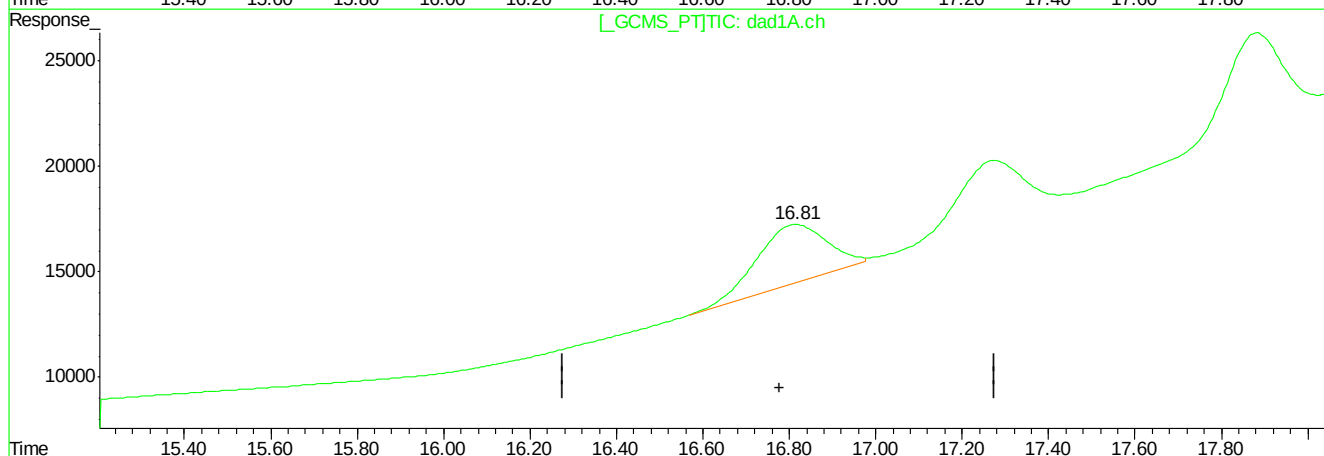
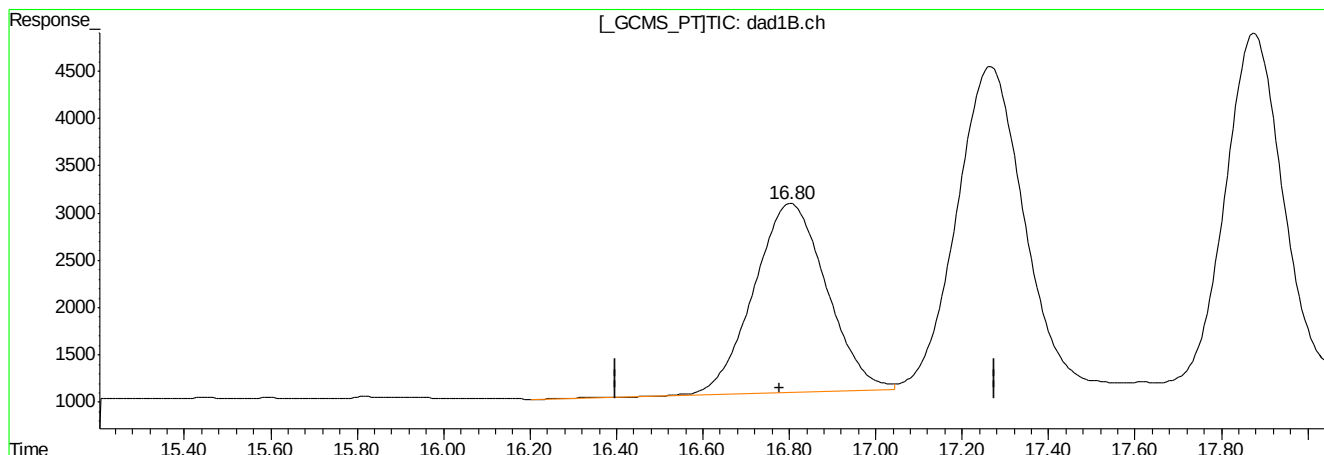
BB073631.D BBB2232_083122.M

Wed Aug 31 11:56:36 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

16.80min 113.240ppb

response 233721

(18) o-Nitrotoluene #2

16.81min 86.365ppb m

response 316939

(+) = Expected Retention Time

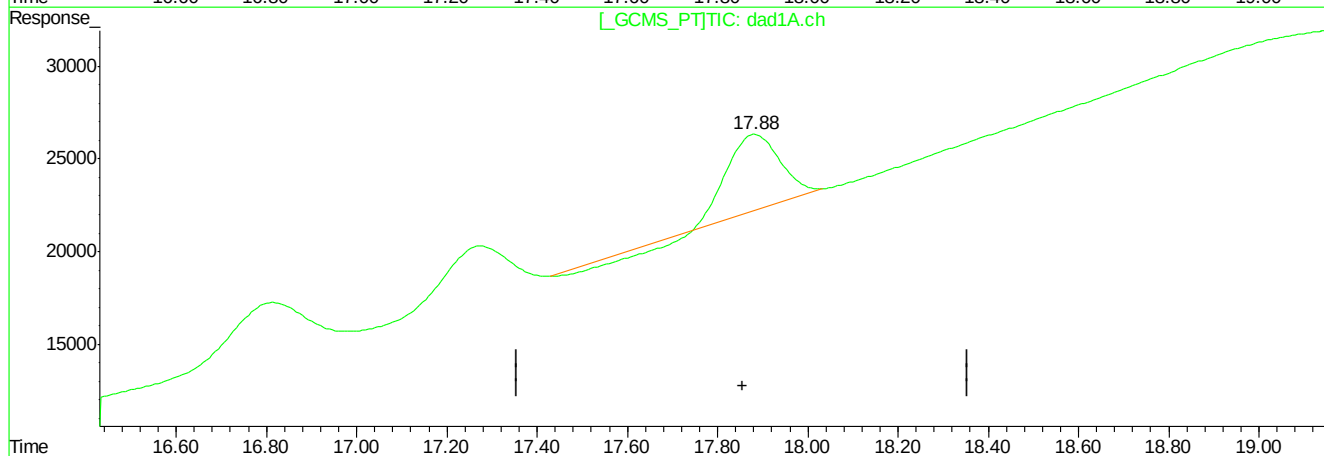
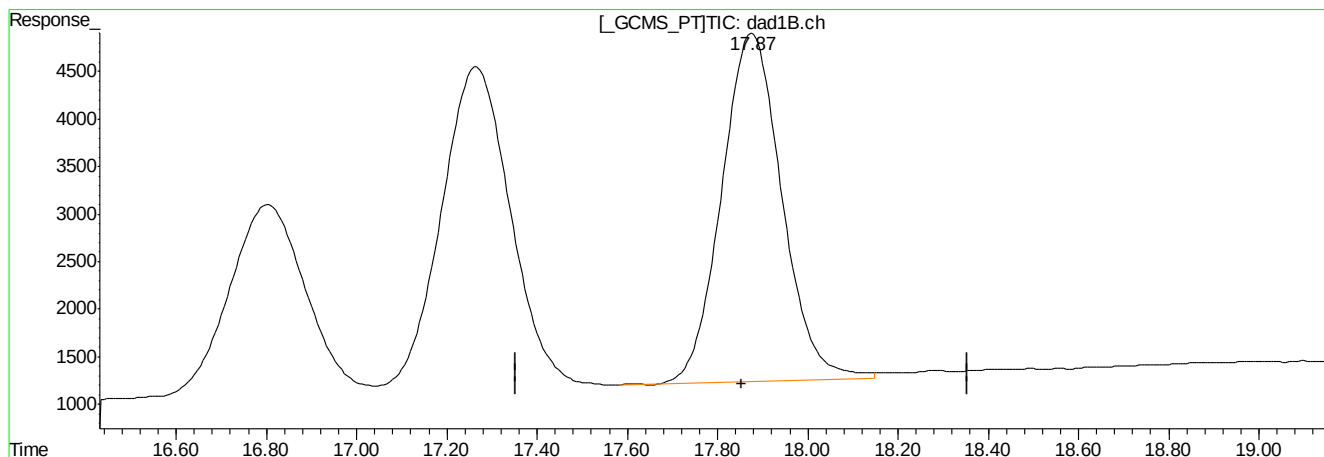
BB073631.D BBB2232_083122.M

Wed Aug 31 11:56:41 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(20) m-Nitrotoluene
17.88min 112.306ppb
response 341272

(20) m-Nitrotoluene #2
17.88min 80.032ppb
response 284447

(+) = Expected Retention Time

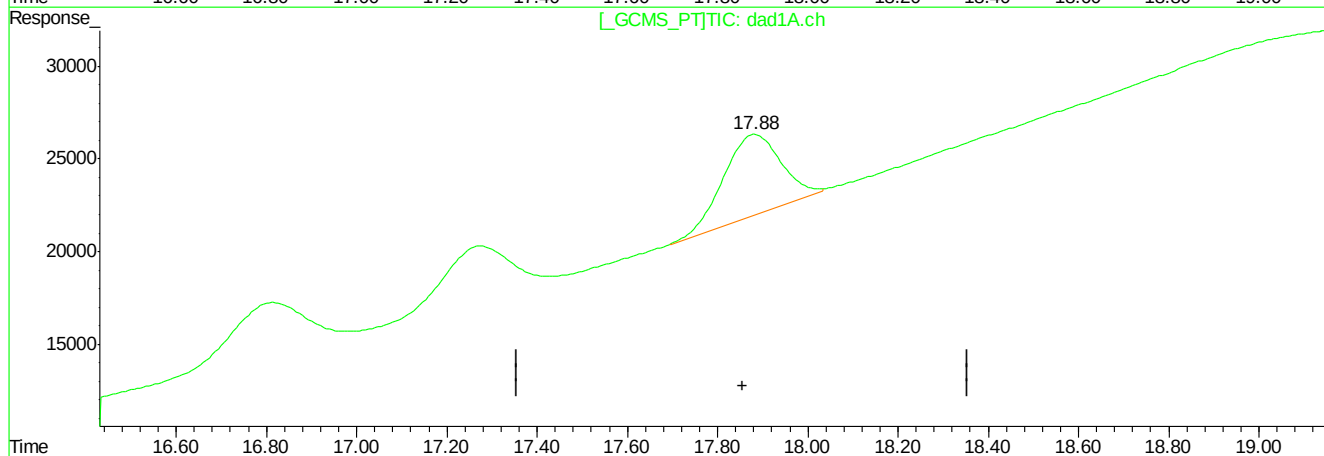
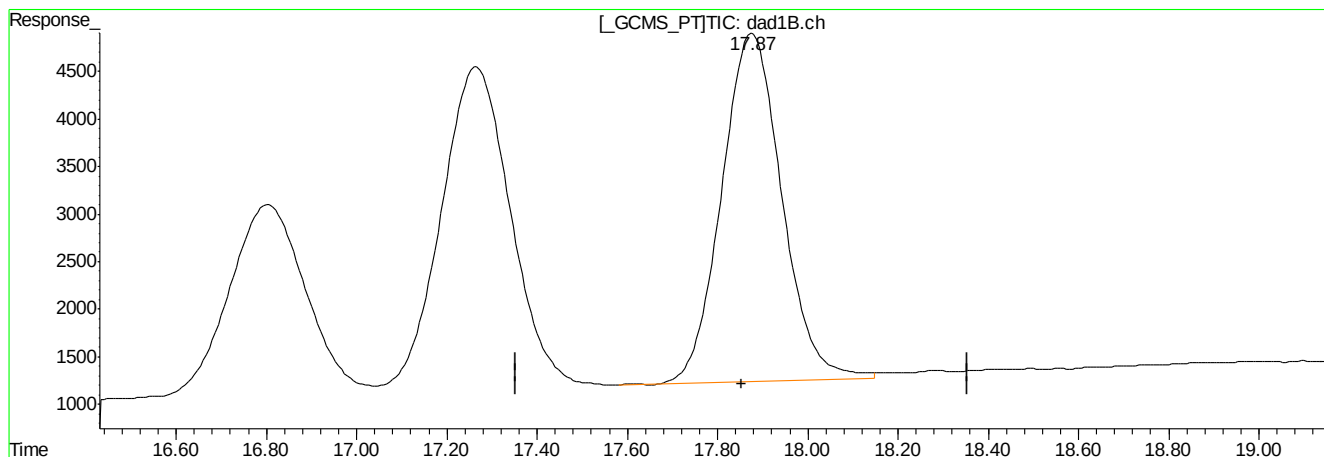
BB073631.D BBB2232_083122.M

Wed Aug 31 11:56:49 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(20) m-Nitrotoluene
17.88min 112.306ppb
response 341272

(20) m-Nitrotoluene #2
17.88min 109.108ppb m
response 387787

(+) = Expected Retention Time

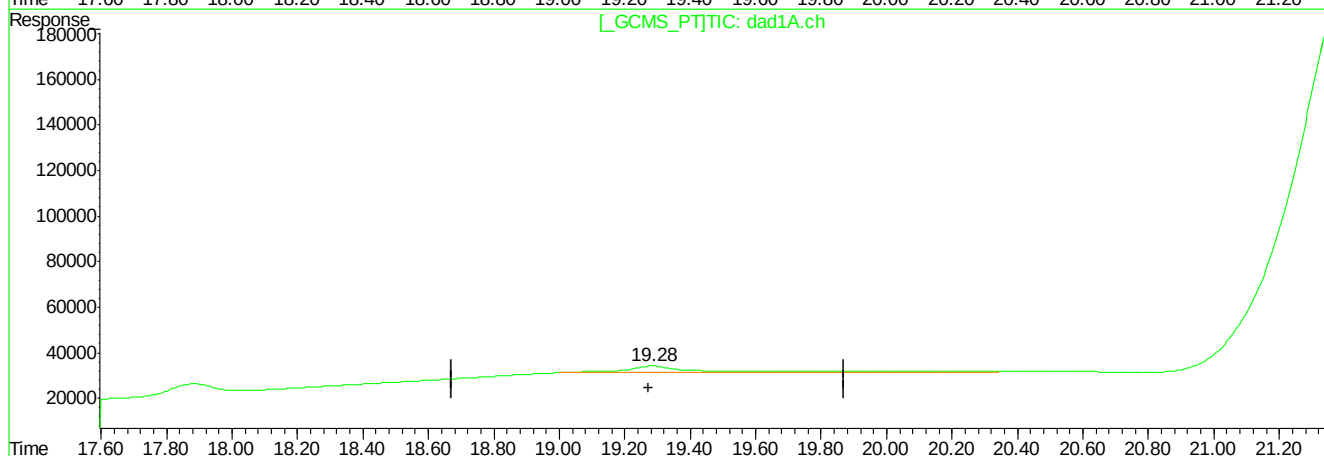
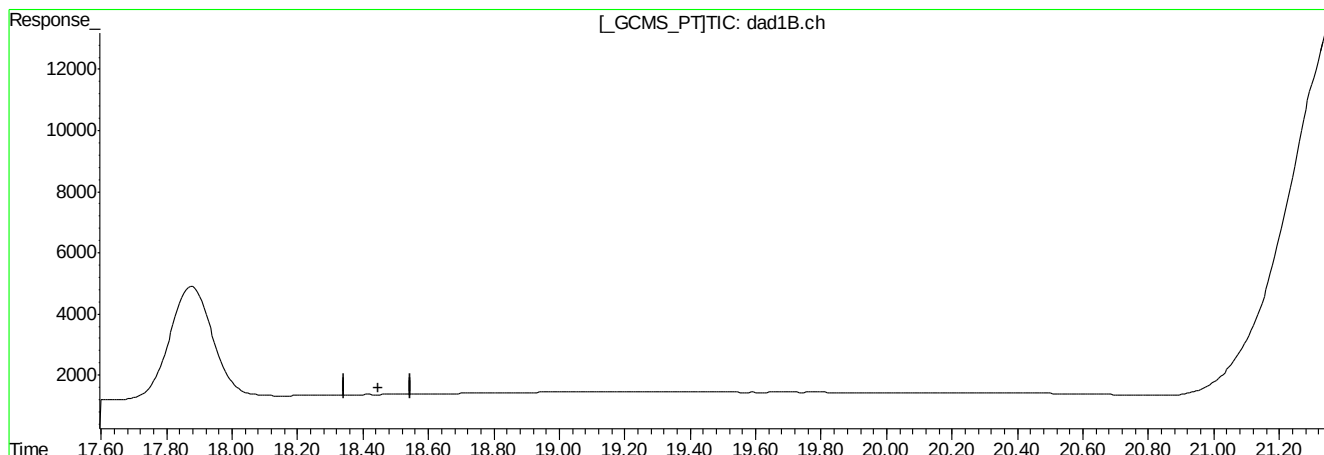
BB073631.D BBB2232_083122.M

Wed Aug 31 11:57:04 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.29min 367.945ppb

response 584079

(+) = Expected Retention Time

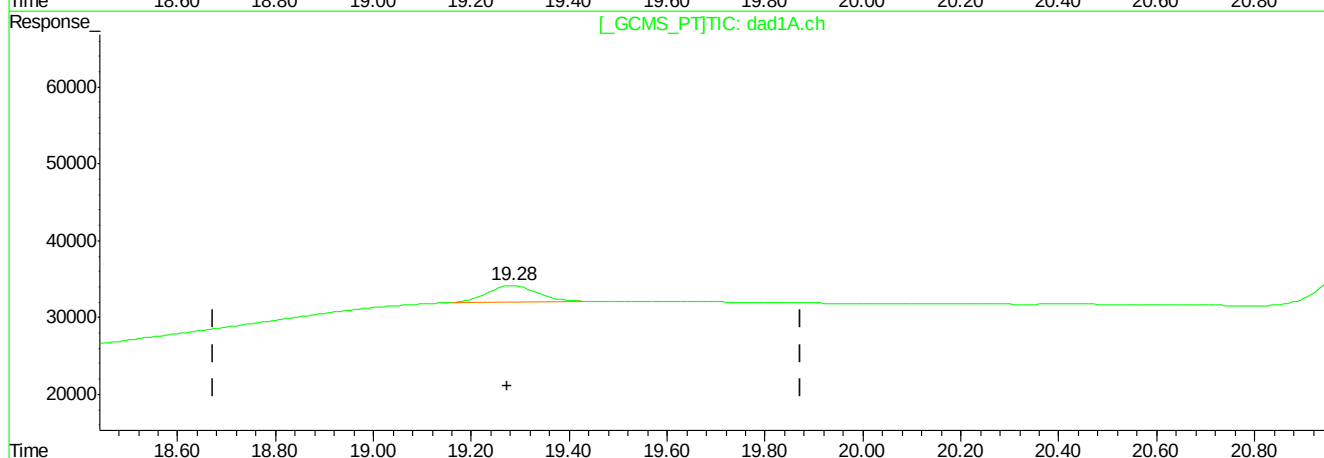
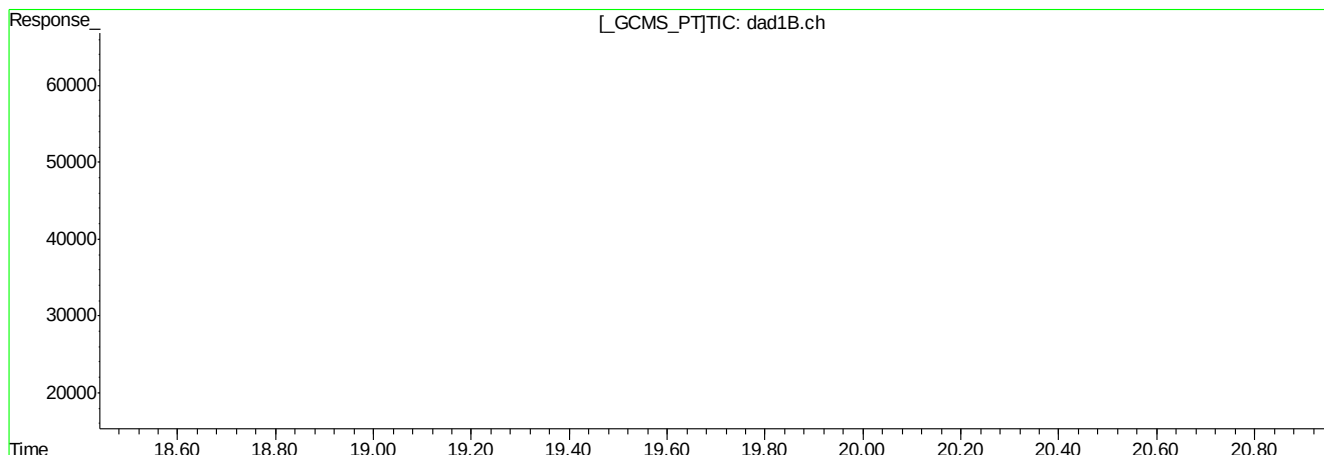
BB073631.D BBB2232_083122.M

Wed Aug 31 11:57:11 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 93.699ppb m

response 148739

(+) = Expected Retention Time

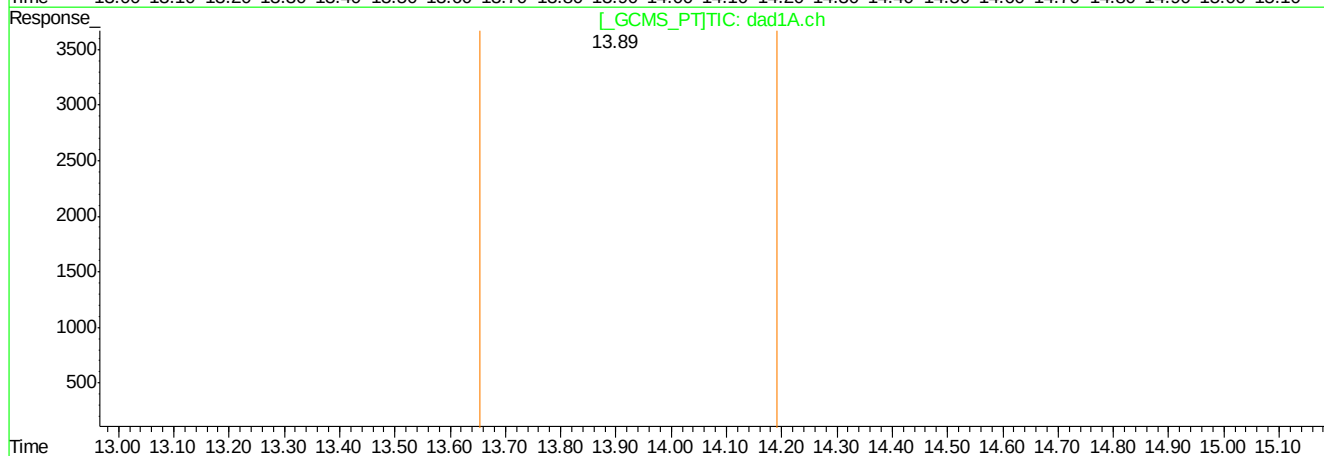
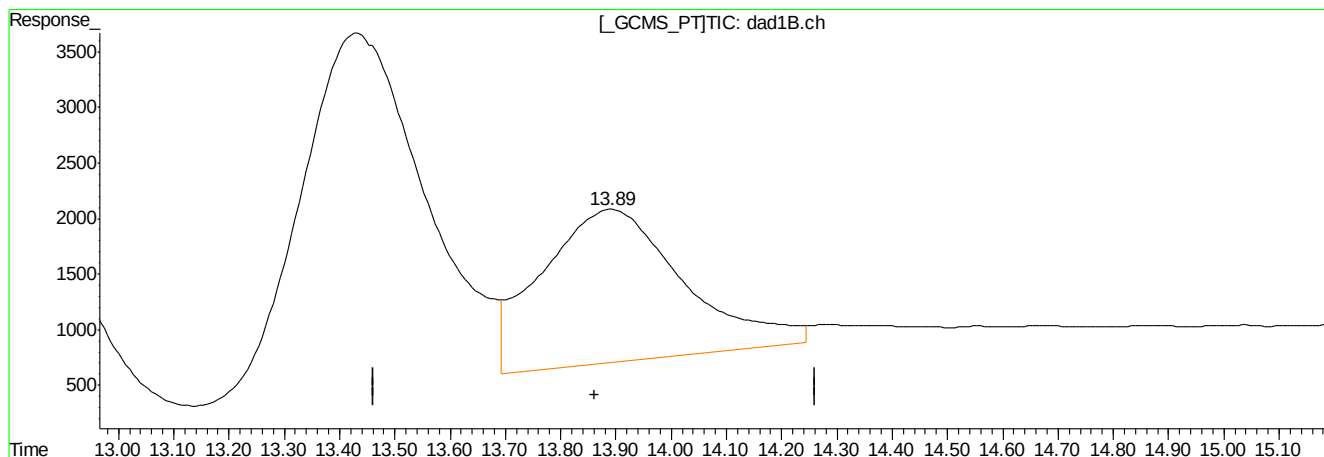
BB073631.D BBB2232_083122.M

Wed Aug 31 11:57:23 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.89min 82.863ppb

response 247353

(17) 2,6-Dinitrotoluene #2

13.90min 90.918ppb

response 362928

(+) = Expected Retention Time

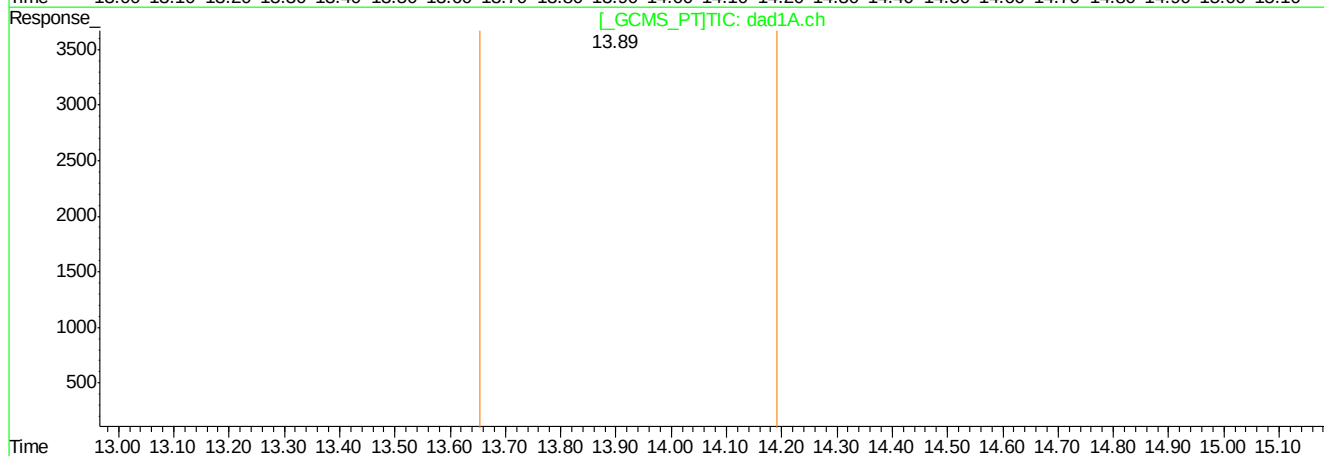
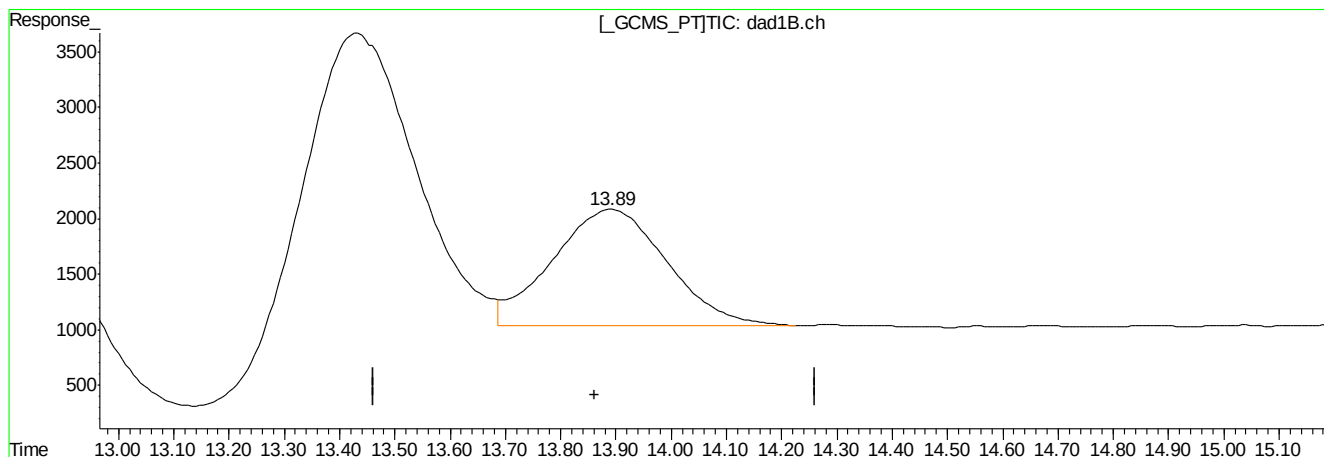
BB073631.D BBB2232_083122.M

Wed Aug 31 14:00:08 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.89min 50.497ppb m

response 150737

(17) 2,6-Dinitrotoluene #2

13.90min 90.918ppb

response 362928

(+) = Expected Retention Time

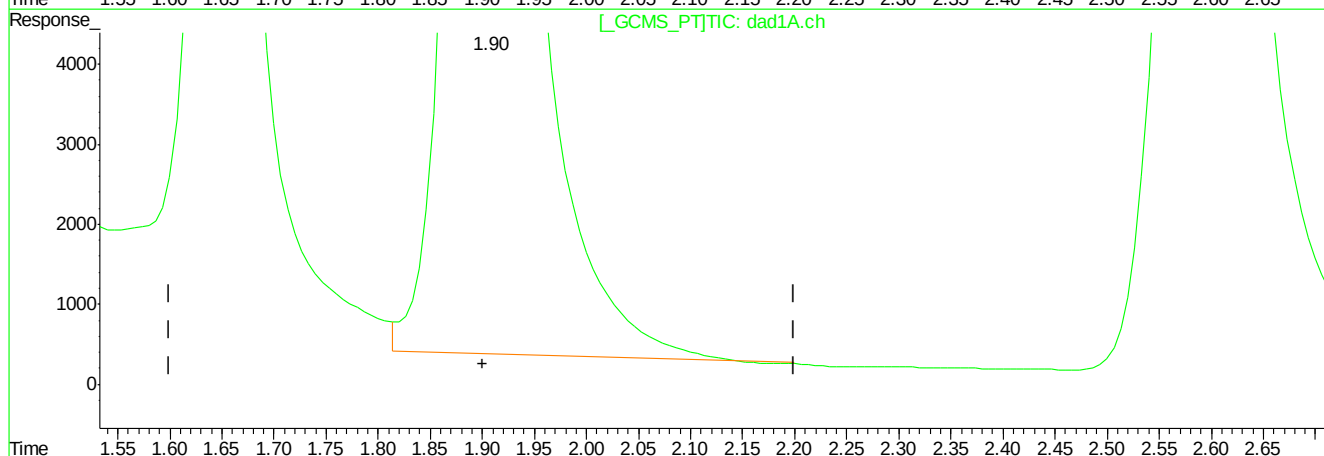
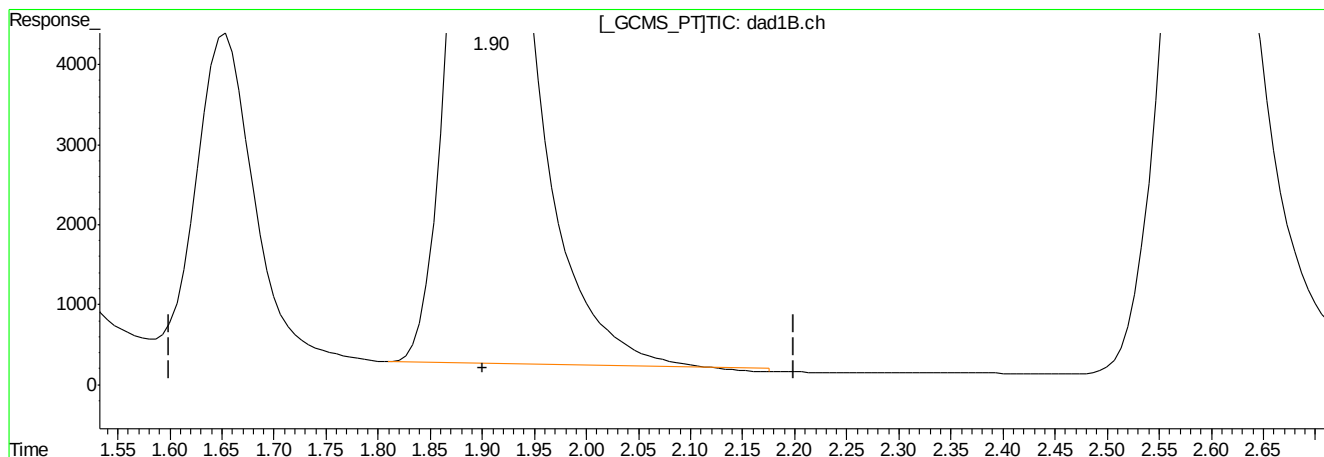
BB073631.D BBB2232_083122.M

Wed Aug 31 14:00:14 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:00 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(3) DNX

1.90min 146.787ppb m

response 521752

(3) DNX #2

1.90min 150.482ppb m

response 841209

QEdit

(+) = Expected Retention Time

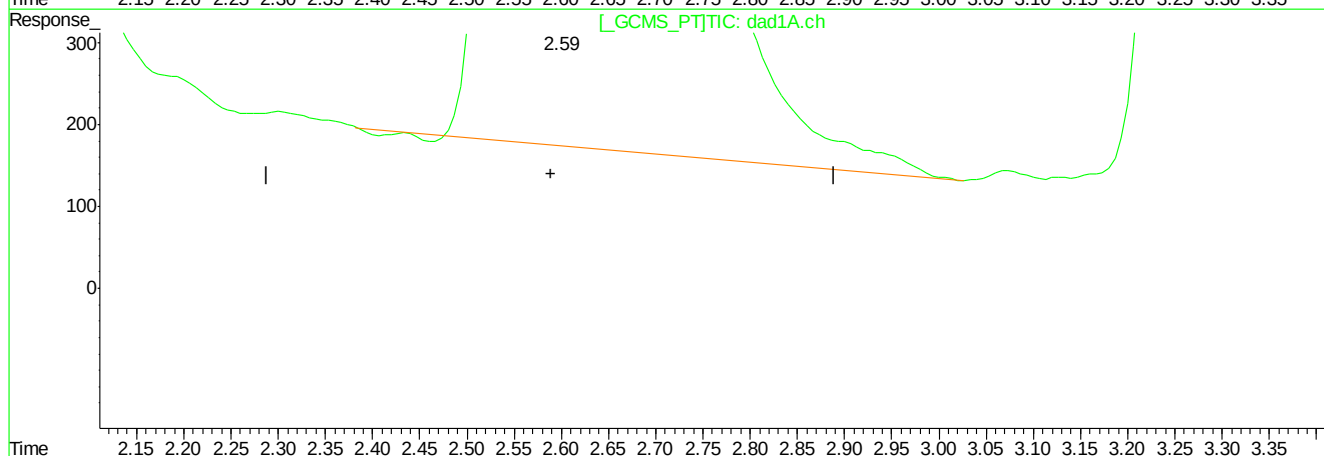
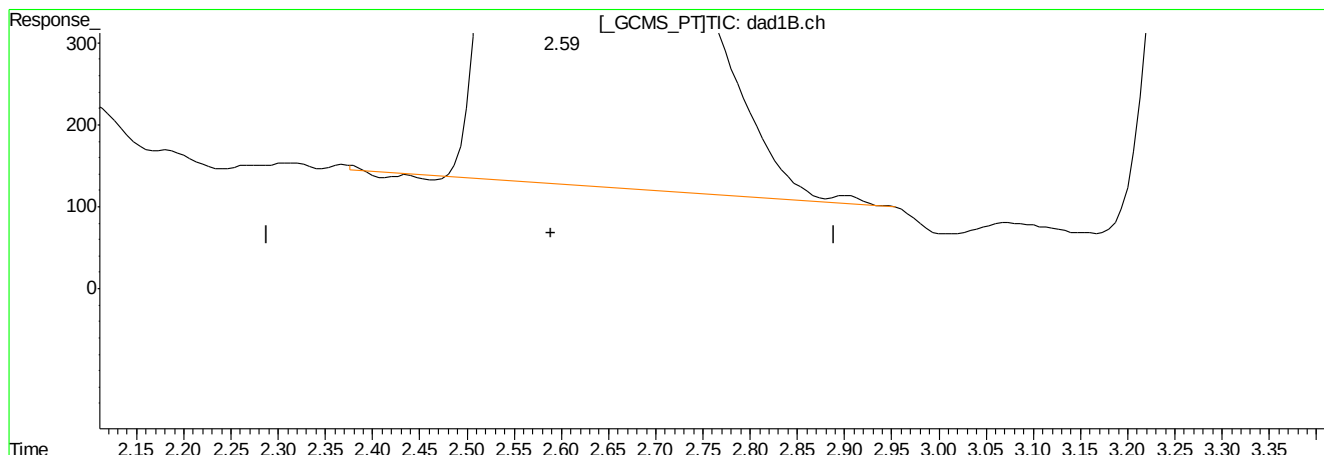
BB073631.D BBB2232_083122.M

Thu Sep 01 07:48:18 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:00 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



QEdit

(4) MNX

2.60min 184.290ppb

response 594473

(4) MNX #2

2.60min 185.073ppb

response 917136

(+) = Expected Retention Time

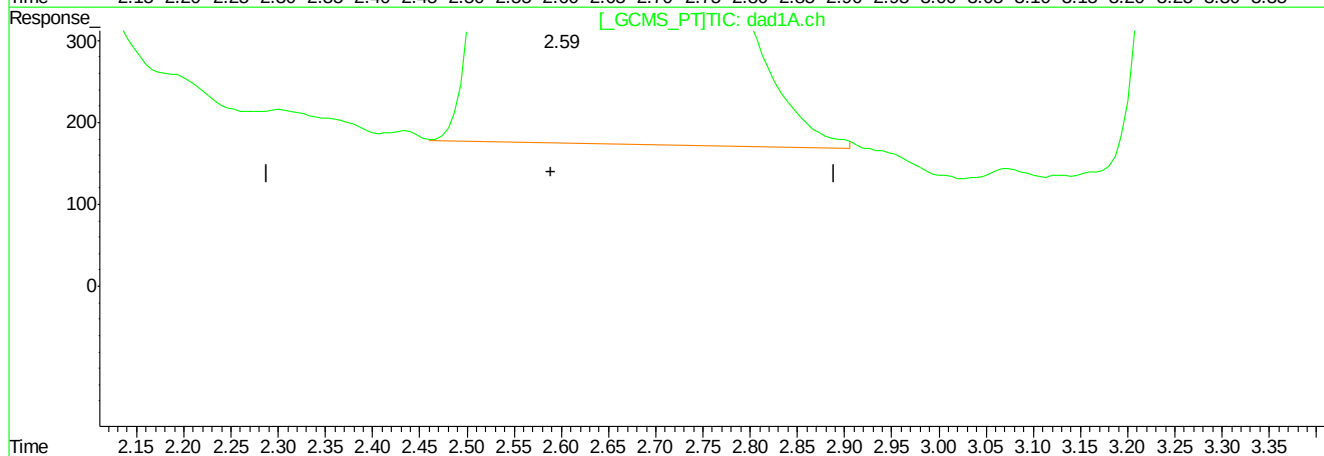
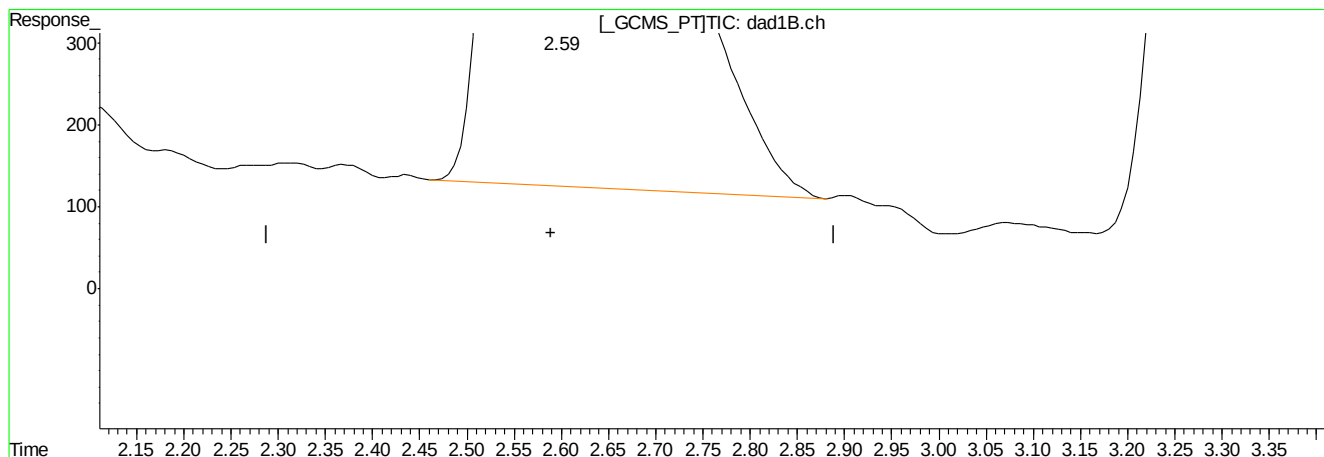
BB073631.D BBB2232_083122.M

Thu Sep 01 07:48:28 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:00 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



QEdit

(4) MNX

2.59min 184.315ppb m

response 594555

(4) MNX #2

2.59min 184.452ppb m

response 914056

(+) = Expected Retention Time

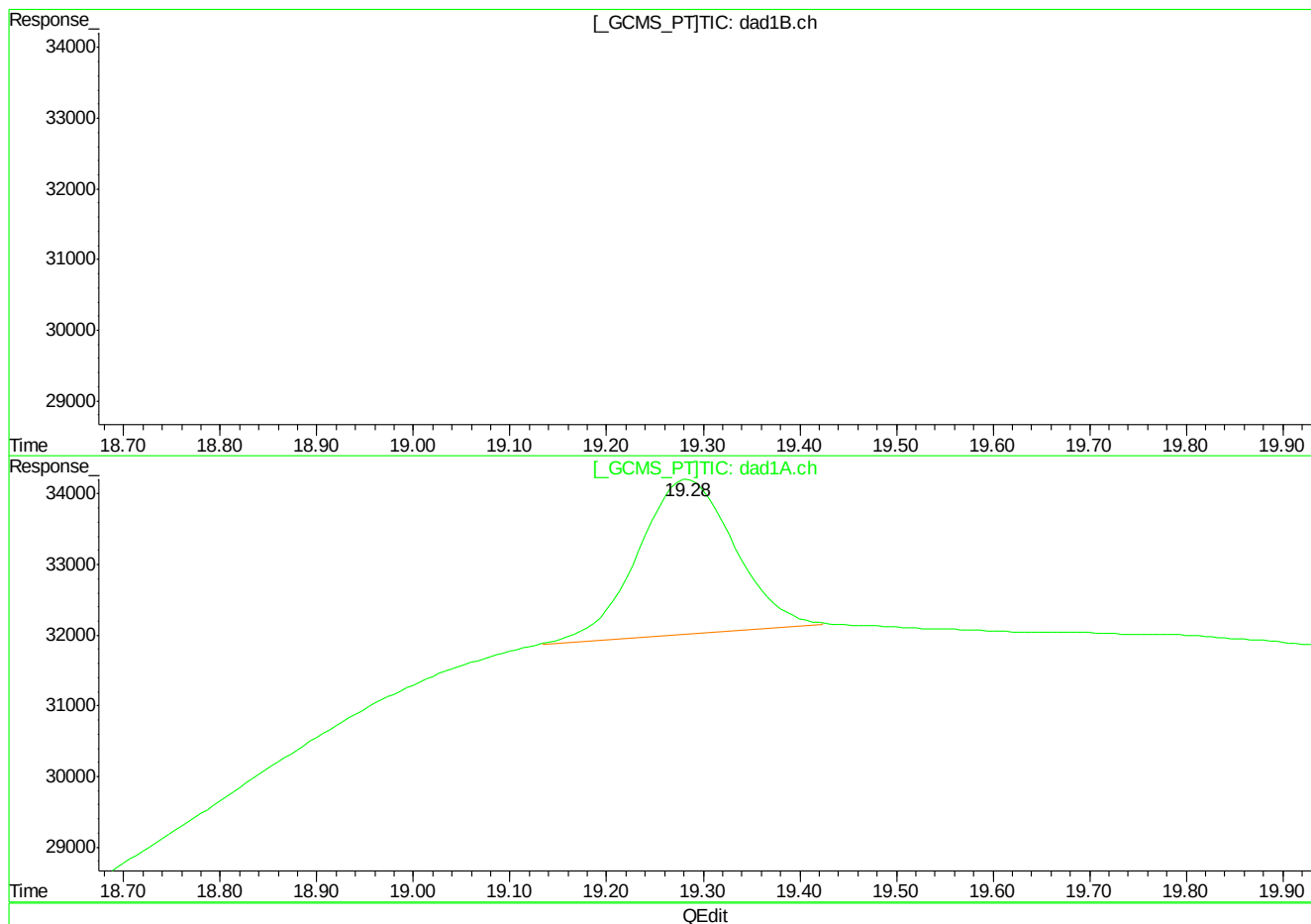
BB073631.D BBB2232_083122.M

Thu Sep 01 07:48:36 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:48 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 95.255ppb m

response 151208

(+) = Expected Retention Time

BB073631.D BBB2232_083122.M

Thu Sep 01 07:55:52 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
 Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
 Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
 Sample : ic2232-200 Inst : G1315B
 Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Aug 31 11:57:33 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Aug 31 08:15:37 2022
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	12.84	12.85	410589	751741	166.771	161.614
Spiked Amount	500.000	Range	70 - 136	Recovery	= 33.35%#	32.32%#
Target Compounds						
1) TNX	1.46	1.46	385433	599618	95.377	97.605
2) HMX	1.65	1.65	295234	850946	157.859	166.184
3) DNX	1.91	1.91	686665	1097907	193.183	196.402
4) MNX	2.60	2.60	738974	1134903	229.086	229.018
5) RDX	3.30	3.30	355934	565364	160.724	158.580
6) 1,3,5-Trinitrobe	5.28	5.28	748243	1164958	162.460	157.122m
7) 1,3-Dinitrobenze	6.56	6.56	1005338	668343	163.753	156.529m
8) 3,5-Dinitroanili	7.04	7.04	752642	1264957	165.109	163.766m
9) Nitrobenzene	8.31	8.31	569818	565488	186.669	176.480
10) Nitroglycerin	0.00	10.13	0	244170	N.D.	159.287 #
11) Tetryl	11.01	11.01	539105	807316	155.567	141.575
12) 2,4,6-Trinitroto	11.36	11.36	697856	752382	161.368	146.941
13) 2-Amino-4,6-Dini	11.87	11.87	596958	816865	158.516	143.446
14) 4-Amino-2,6-Dini	12.42	12.42	437739	851382	157.898	151.263
16) 2,4-Dinitrotolue	13.42	13.42	863707	548466	167.634	155.098
17) 2,6-Dinitrotolue	13.88	13.88	278774	639198	93.389m	160.127 #
18) o-Nitrotoluene	16.80	16.80	411077	579069	199.169	158.569m
19) p-Nitrotoluene	17.26	17.27	633153	478013	190.274	176.481
20) m-Nitrotoluene	17.87	17.87	579575	682607	190.727	192.058m
21) PETN	0.00	19.28	0	282803	N.D.	178.154m#

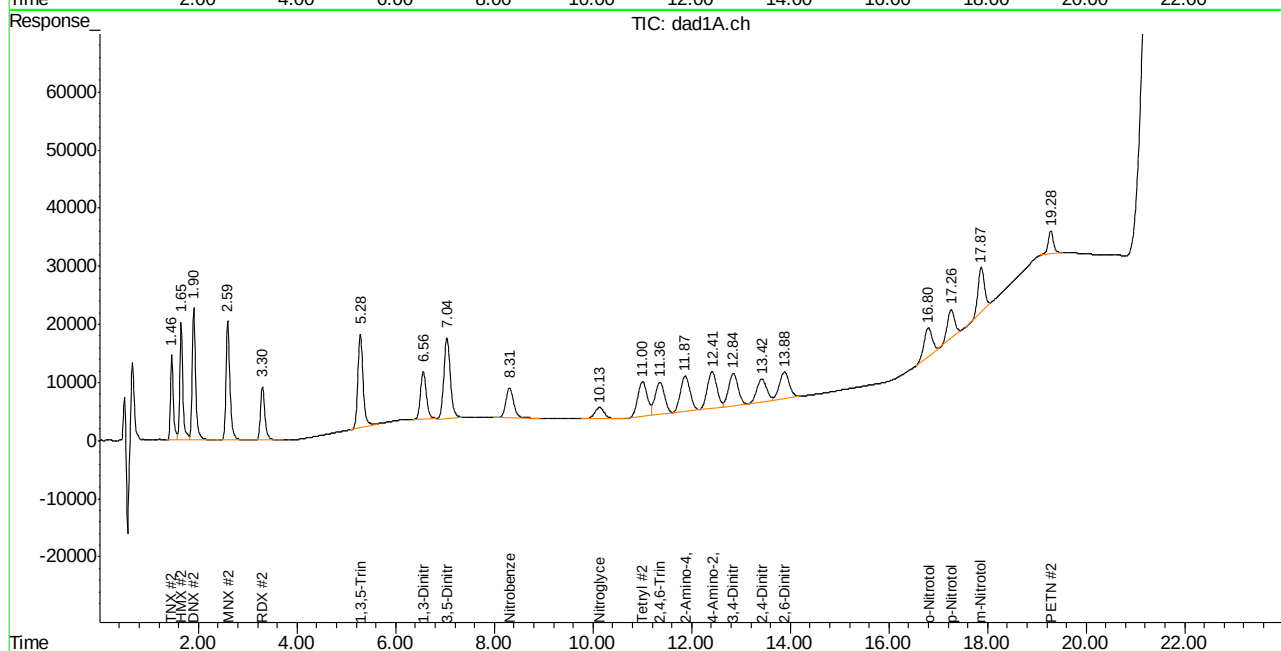
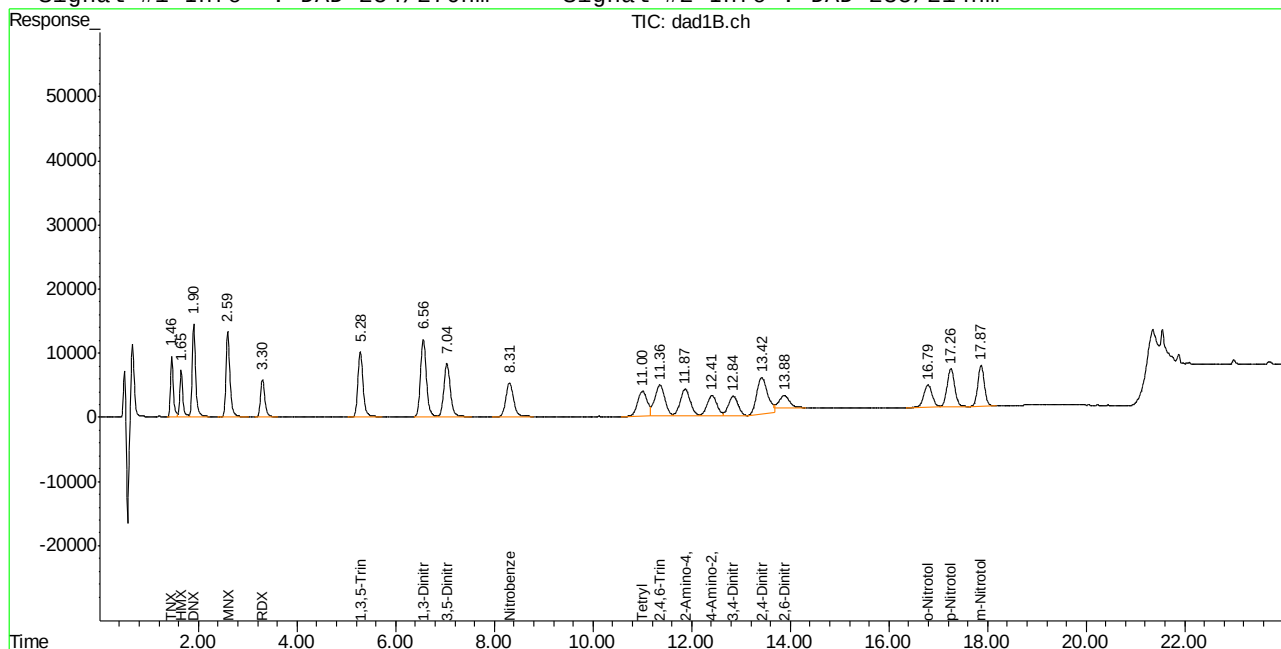
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB073632.D BBB2232_083122.M Thu Sep 01 14:19:30 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : op92480, GBB2232, 1000,,, 10, 1, water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:56 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2232-IC2232

Method:

SW846 8330A

Lab FileID:

BB073632.D

Analyst approved:

09/02/22 08:50 Fouad Sekkar

Injection Time:

08/31/22 11:16

Supervisor approved:

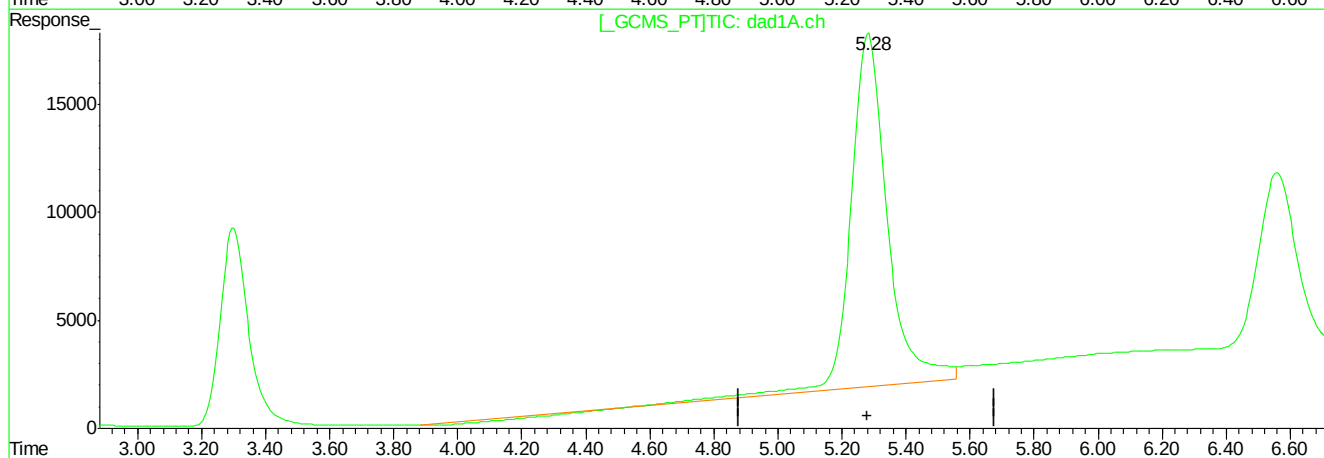
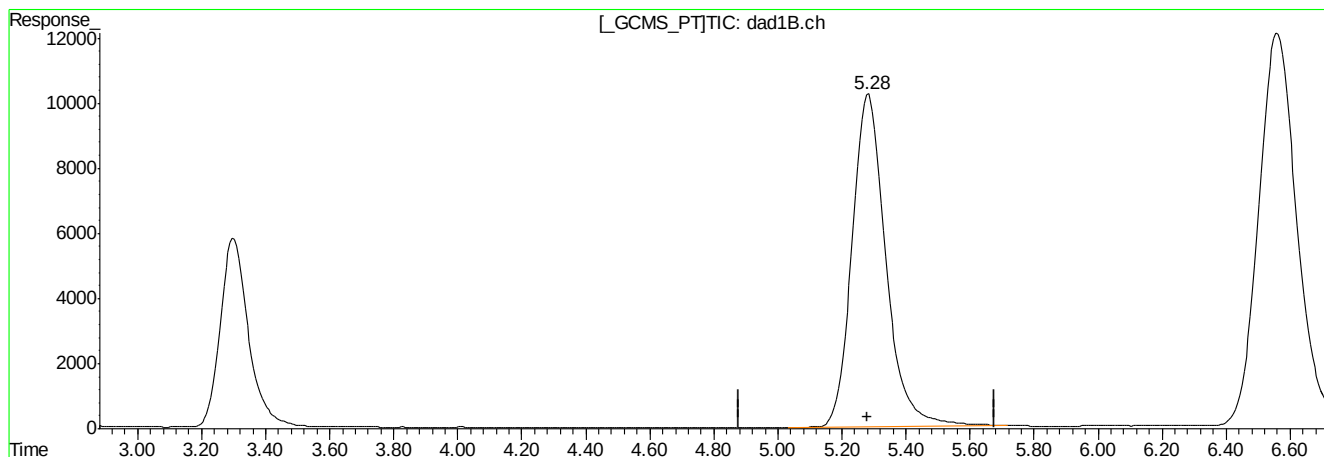
09/02/22 15:07 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3,5-Trinitrobenzene	99-35-4	2	5.28	Missed peak
1,3-Dinitrobenzene	99-65-0	2	6.56	Missed peak
3,5-Dinitroaniline	618-87-1	2	7.04	Missed peak
2,6-Dinitrotoluene	606-20-2	1	13.88	Missed peak
o-Nitrotoluene	88-72-2	2	16.80	Missed peak
m-Nitrotoluene	99-08-1	2	17.87	Missed peak
PETN	78-11-5	2	19.28	Missed peak

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(6) 1,3,5-Trinitrobenzene

5.28min 162.460ppb

response 748243

(6) 1,3,5-Trinitrobenzene #2

5.28min 172.288ppb

response 1277401

(+) = Expected Retention Time

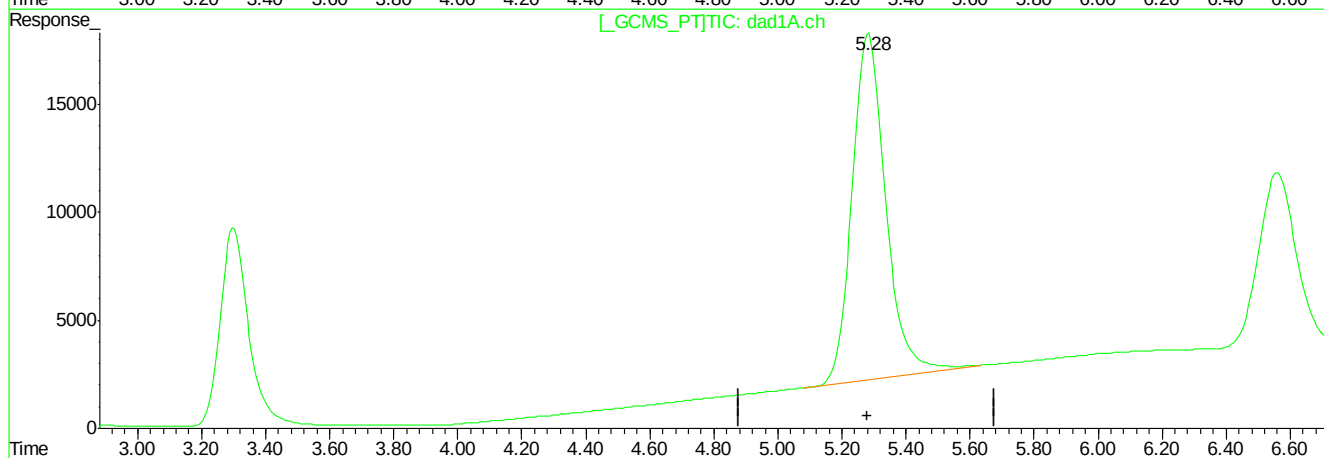
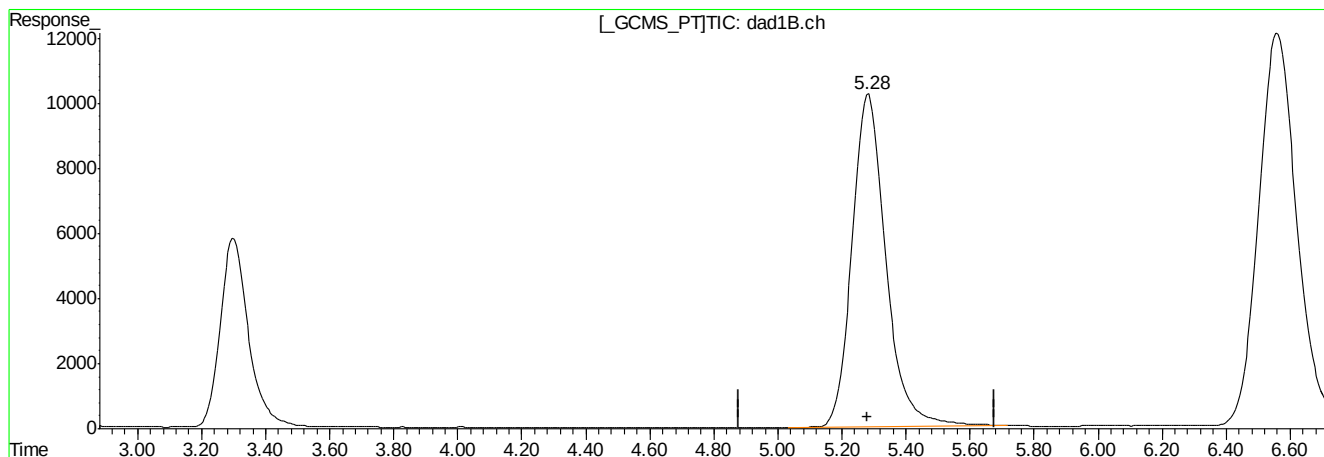
BB073632.D BBB2232_083122.M

Wed Aug 31 11:57:52 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(6) 1,3,5-Trinitrobenzene

5.28min 162.460ppb

response 748243

(6) 1,3,5-Trinitrobenzene #2

5.28min 157.122ppb m

response 1164958

(+) = Expected Retention Time

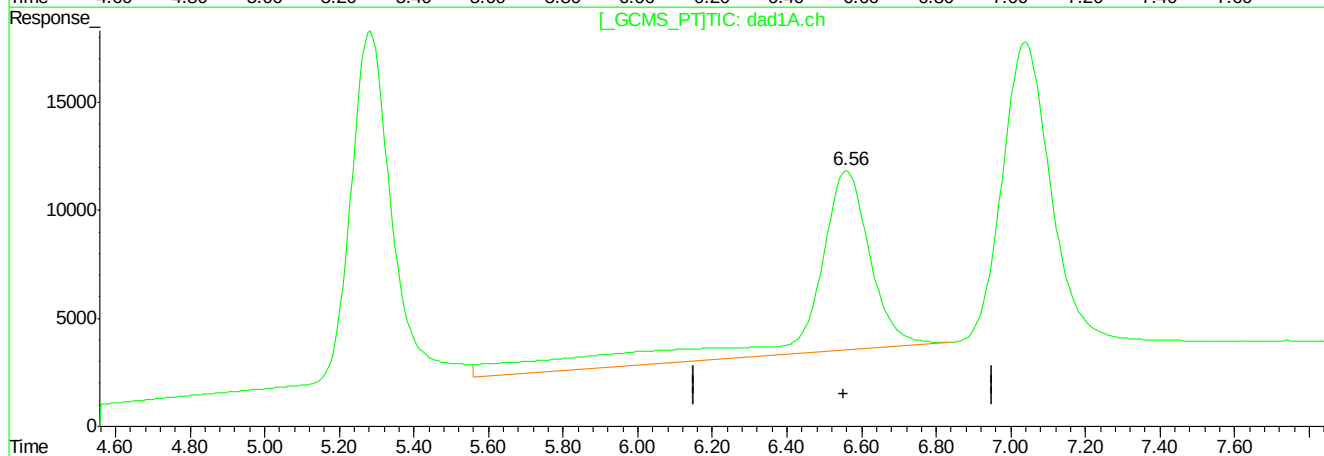
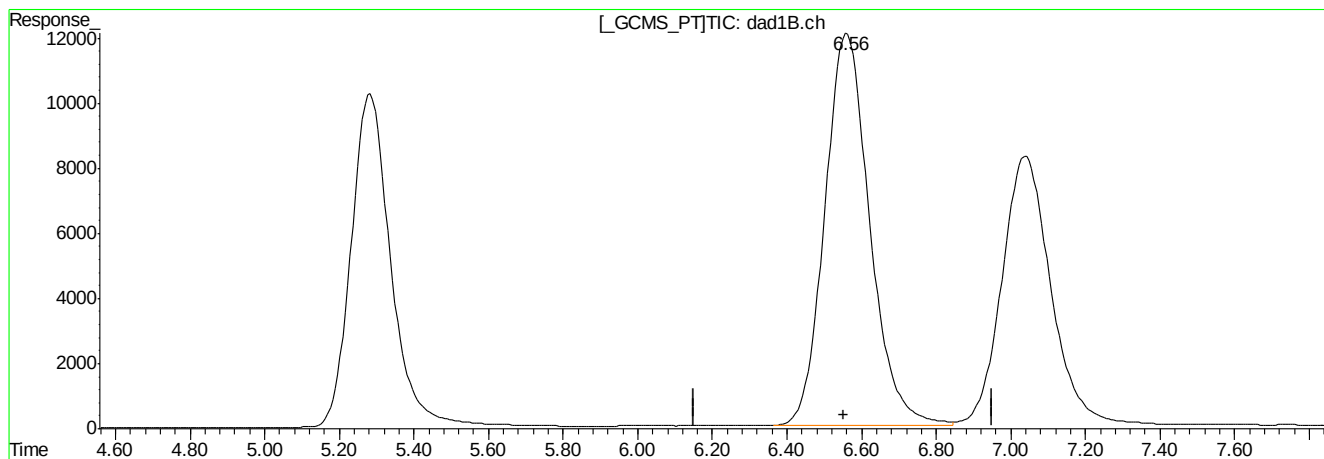
BB073632.D BBB2232_083122.M

Wed Aug 31 11:58:01 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

6.56min 163.753ppb

response 1005338

(7) 1,3-Dinitrobenzene #2

6.56min 231.565ppb

response 988727

(+) = Expected Retention Time

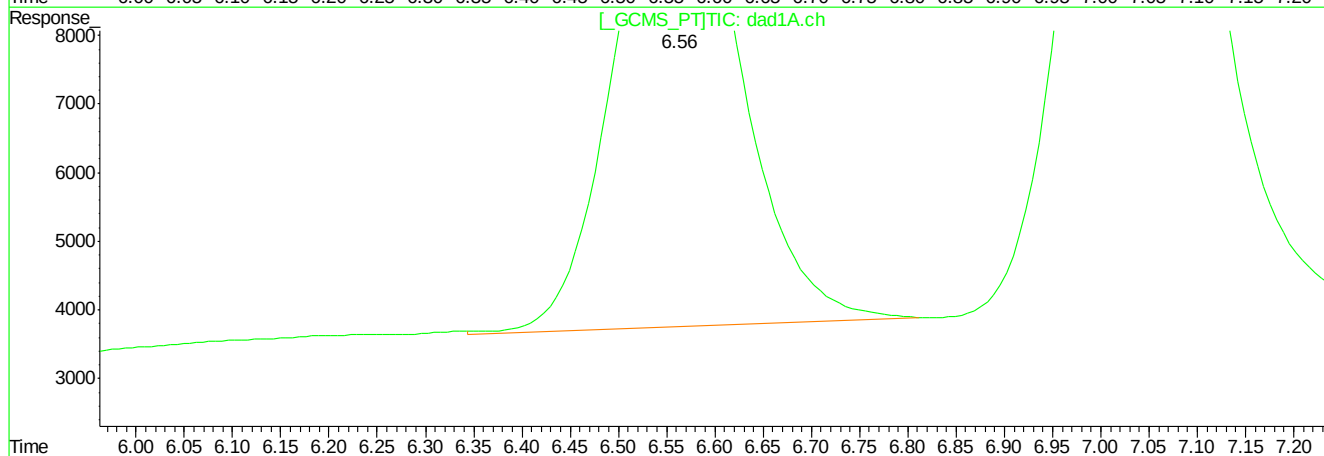
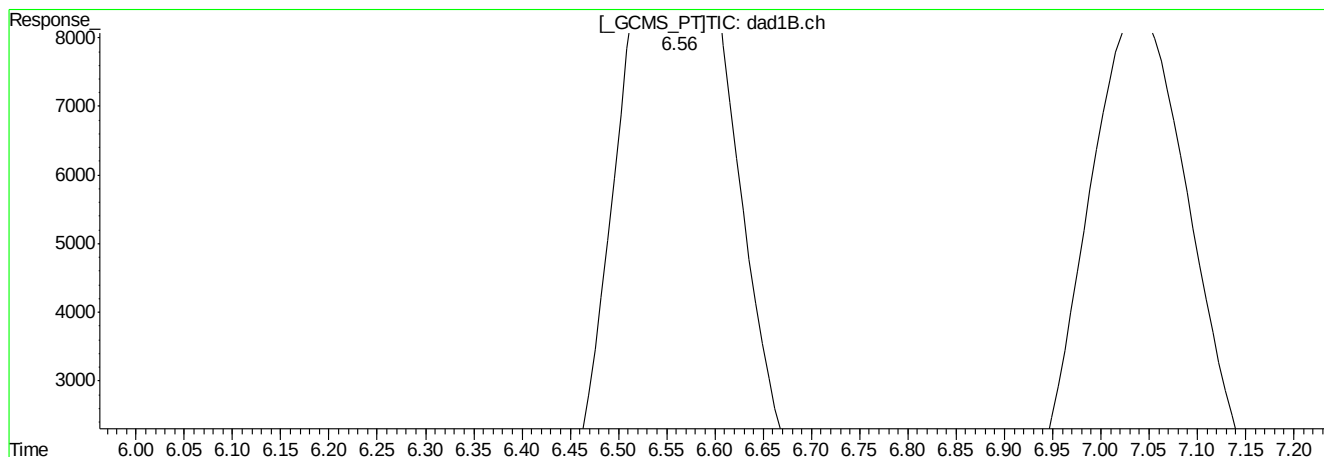
BB073632.D BBB2232_083122.M

Wed Aug 31 11:58:08 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

6.56min 163.753ppb

response 1005338

(7) 1,3-Dinitrobenzene #2

6.56min 156.529ppb m

response 668343

(+) = Expected Retention Time

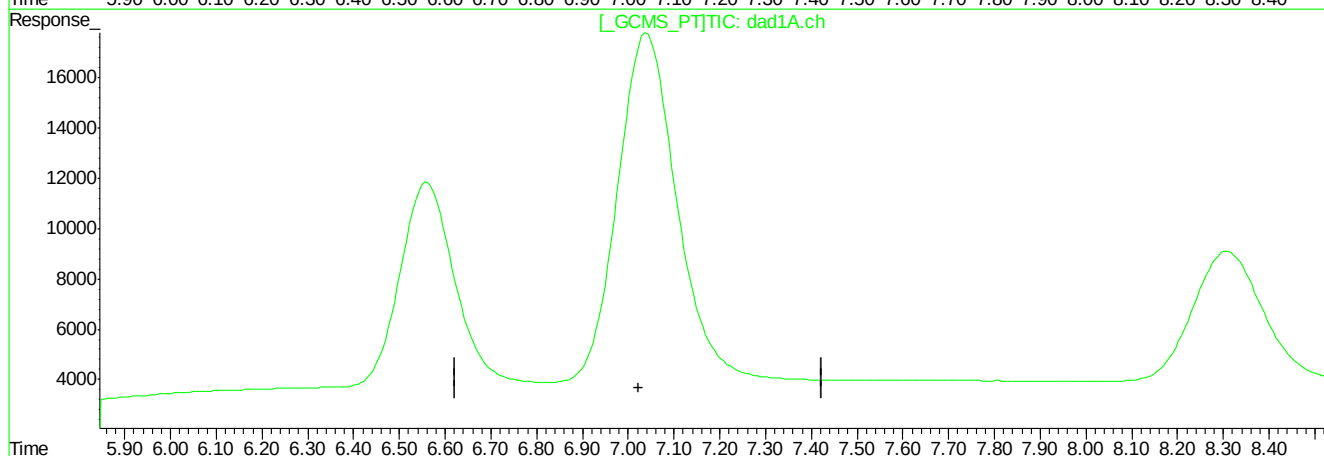
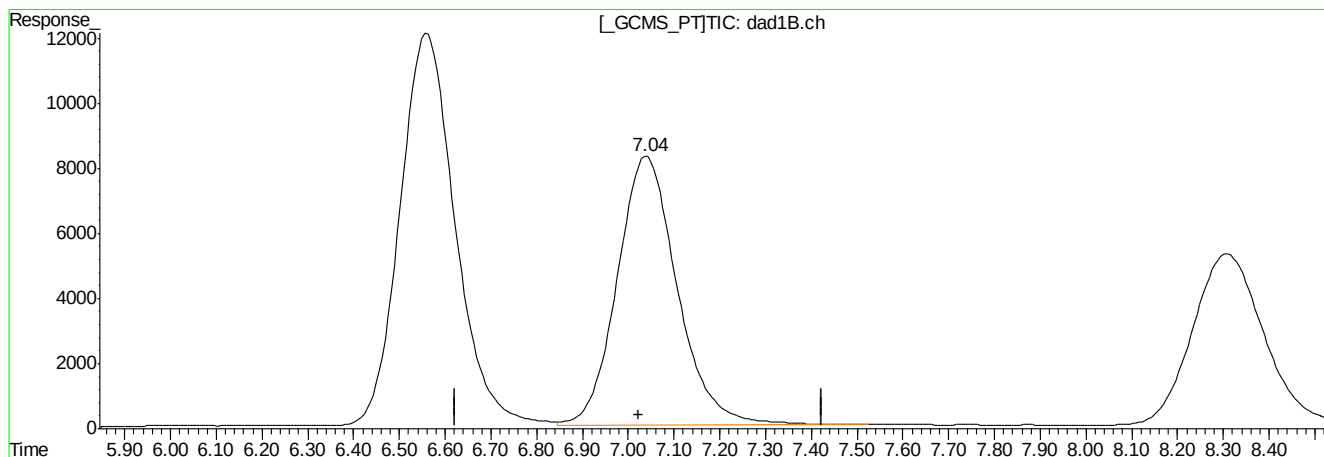
BB073632.D BBB2232_083122.M

Wed Aug 31 11:58:19 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.04min 165.109ppb

response 752642

(8) 3,5-Dinitroaniline #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

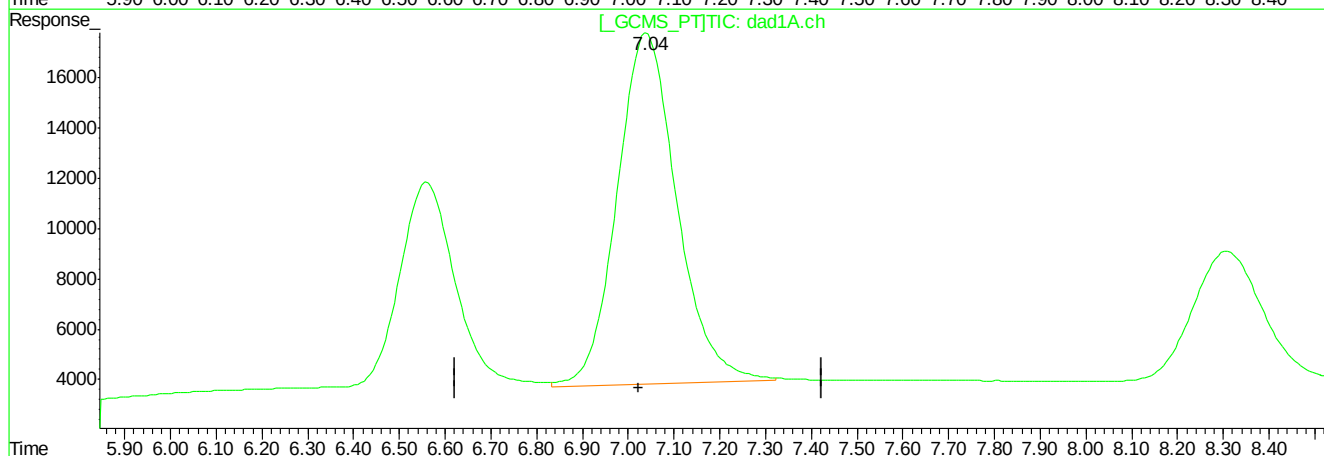
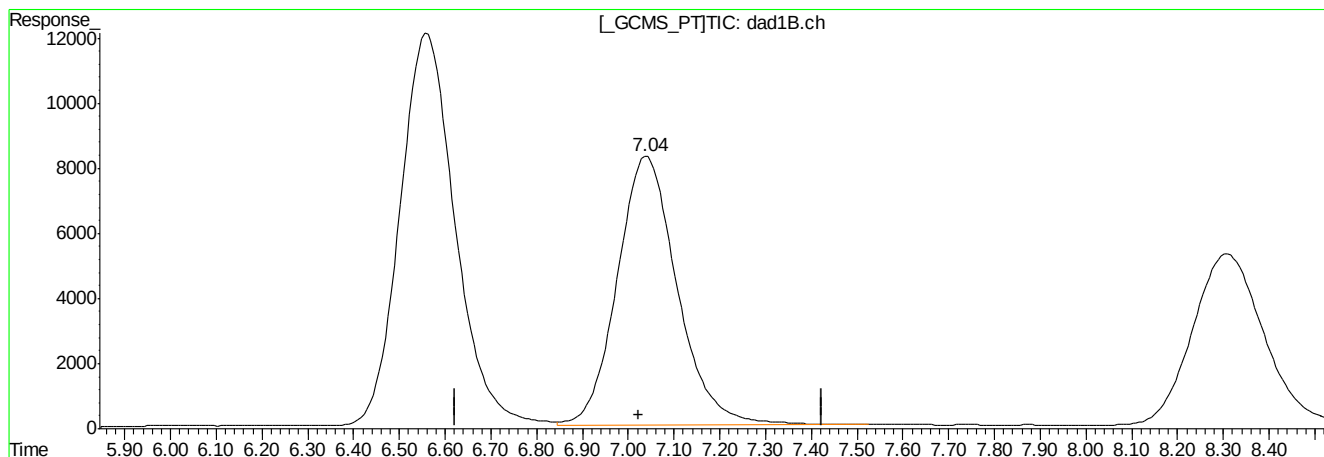
BB073632.D BBB2232_083122.M

Wed Aug 31 11:58:24 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.04min 165.109ppb

response 752642

(8) 3,5-Dinitroaniline #2

7.04min 163.766ppb m

response 1264957

(+) = Expected Retention Time

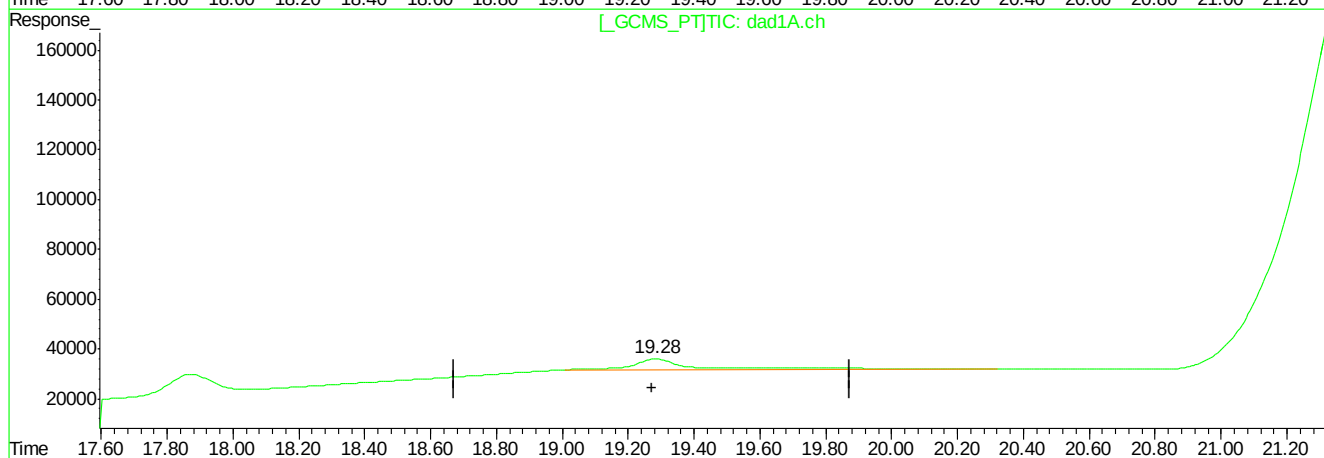
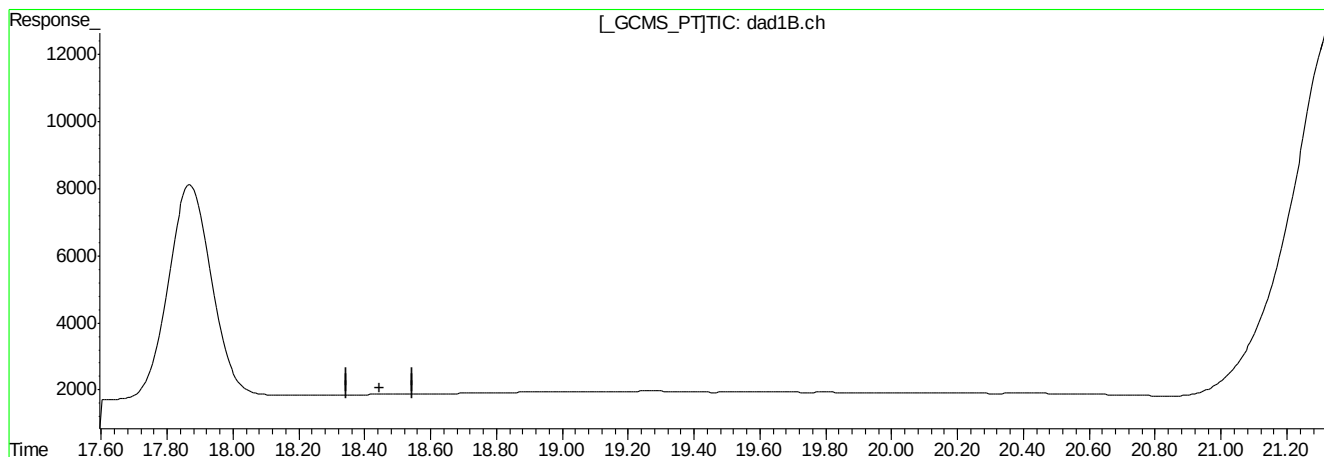
BB073632.D BBB2232_083122.M

Wed Aug 31 11:58:32 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.29min 424.404ppb

response 673702

(+) = Expected Retention Time

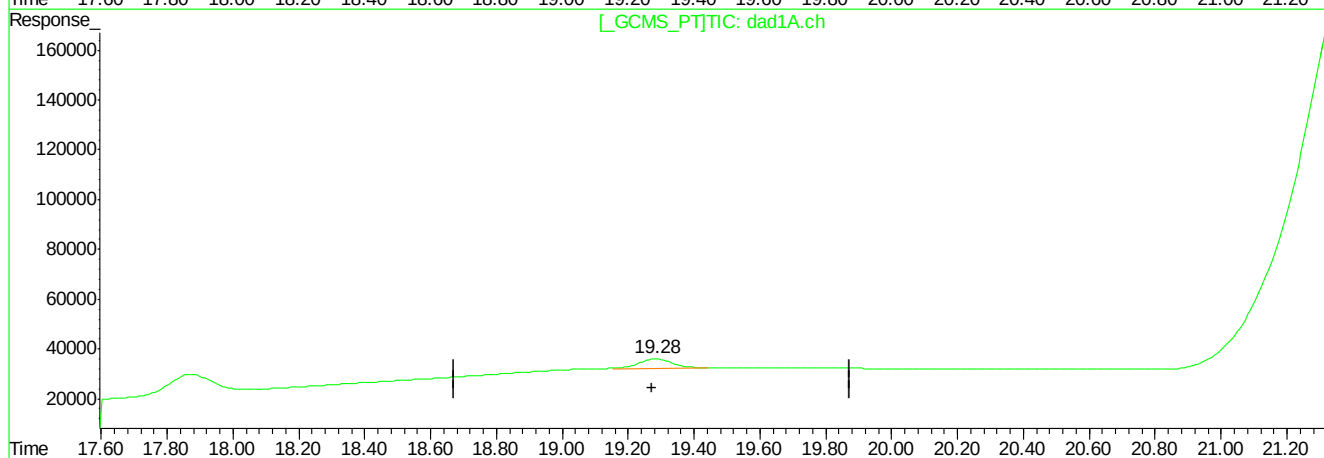
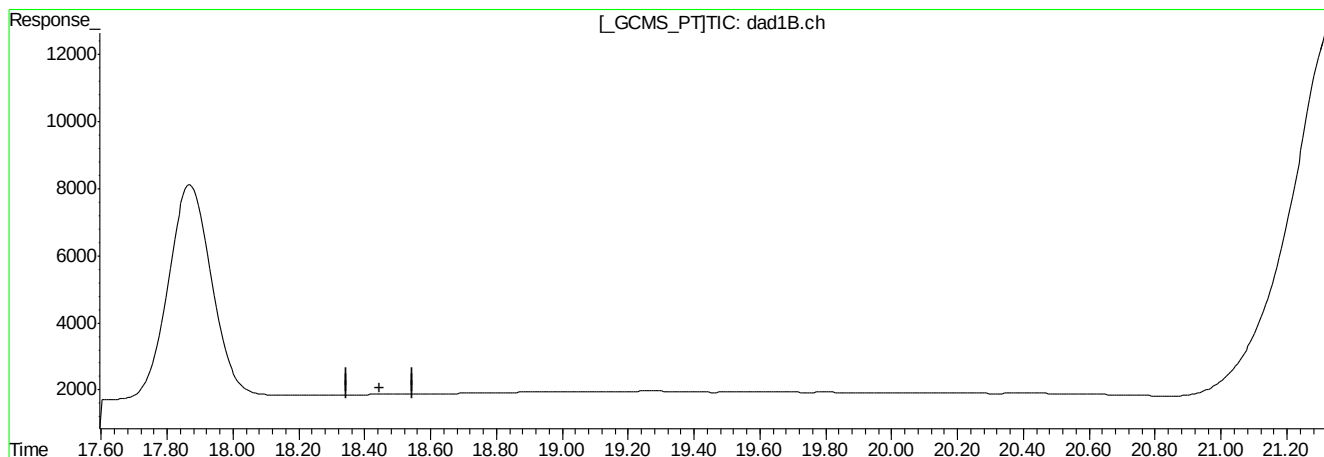
BB073632.D BBB2232_083122.M

Wed Aug 31 11:58:59 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 164.305ppb m

response 260819

(+) = Expected Retention Time

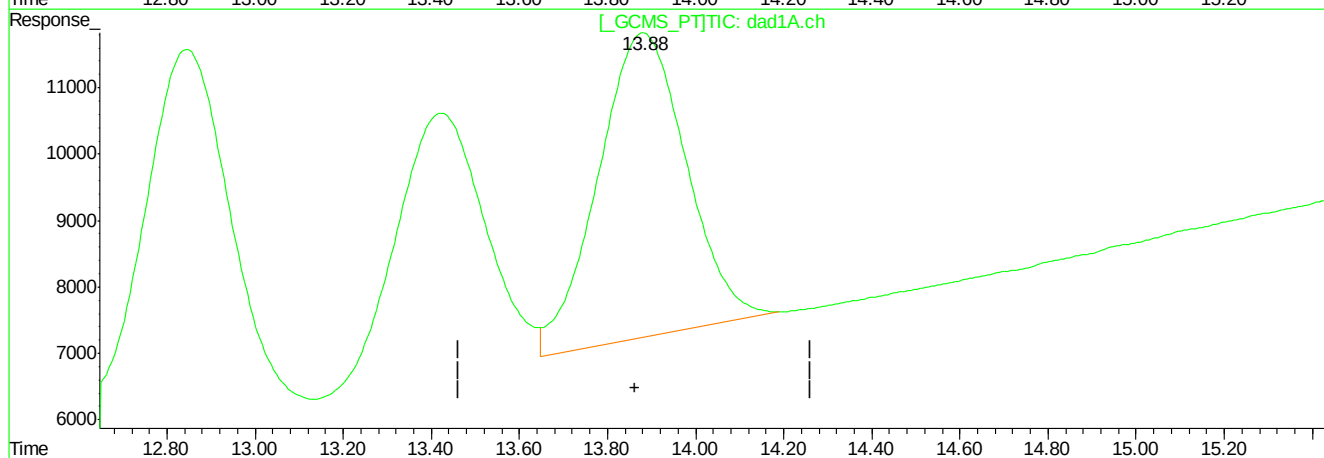
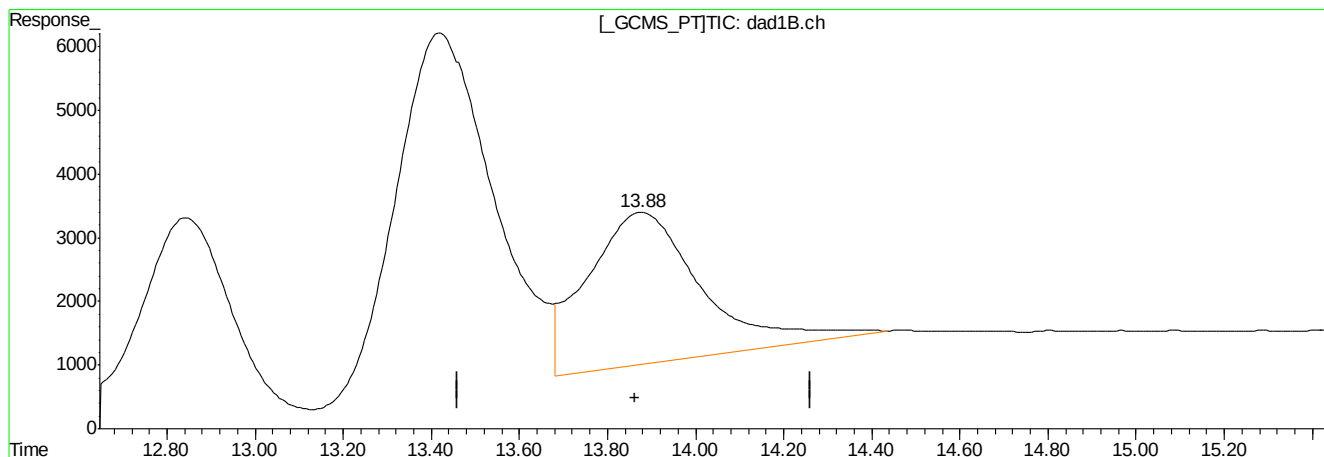
BB073632.D BBB2232_083122.M

Wed Aug 31 11:59:09 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:59 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

13.88min 145.116ppb

response 433183

(17) 2,6-Dinitrotoluene #2

13.88min 160.127ppb

response 639198

QEdit

(+) = Expected Retention Time

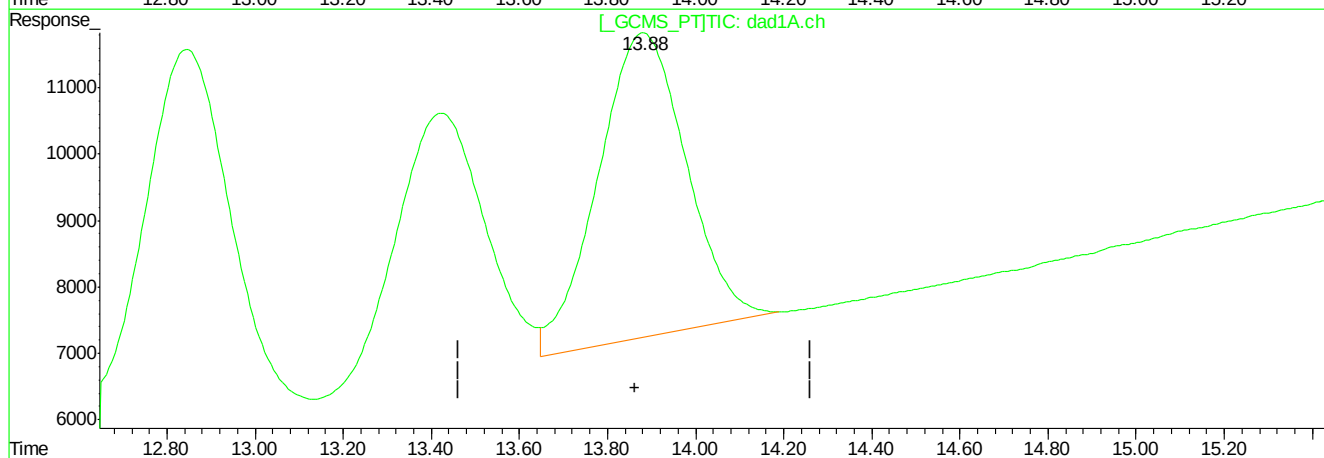
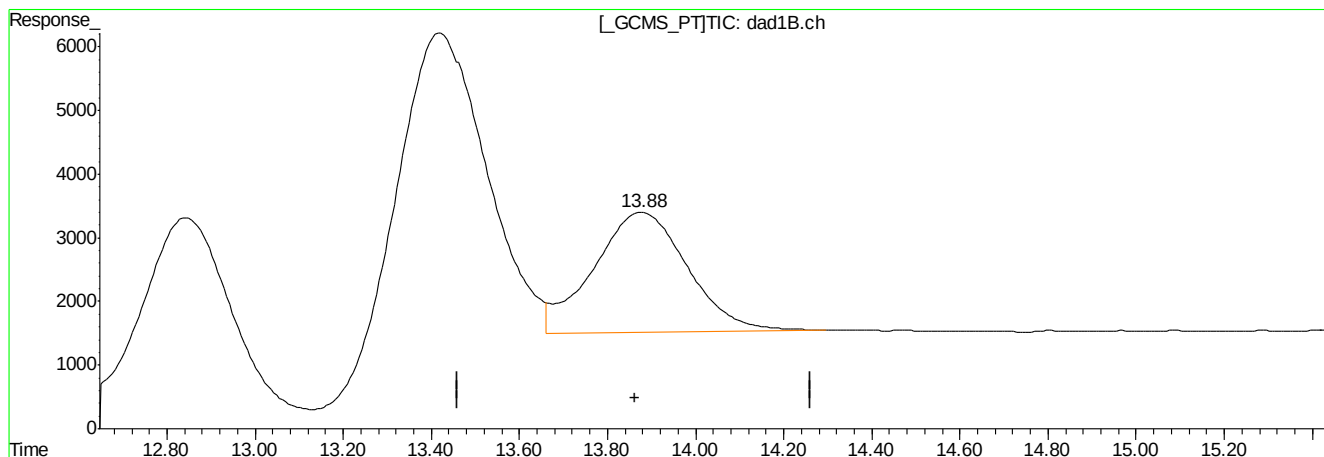
BB073632.D BBB2232_083122.M

Wed Aug 31 14:00:25 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:59 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

13.88min 93.389ppb m

response 278774

(17) 2,6-Dinitrotoluene #2

13.88min 160.127ppb

response 639198

(+) = Expected Retention Time

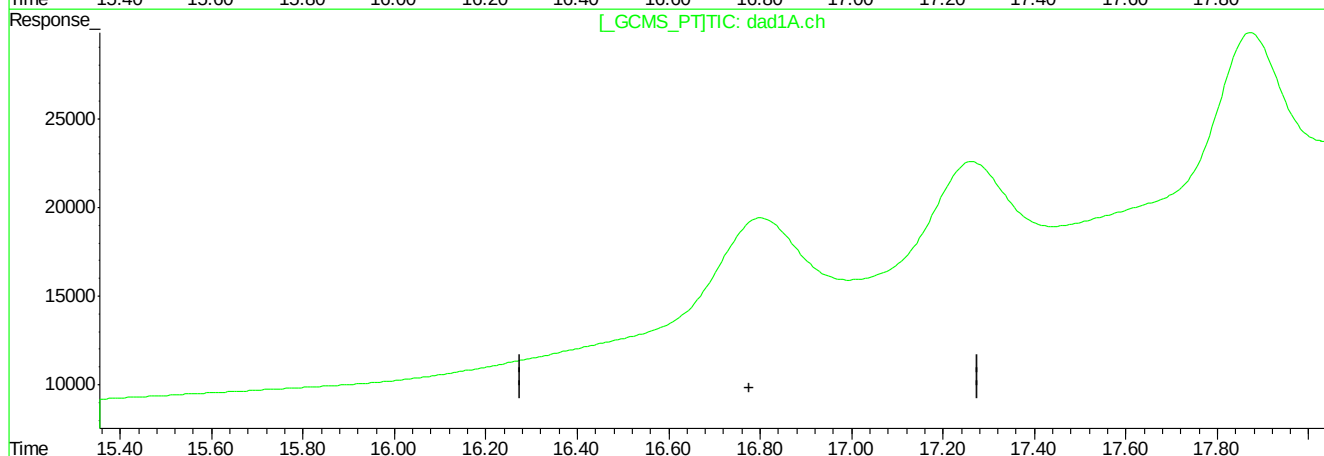
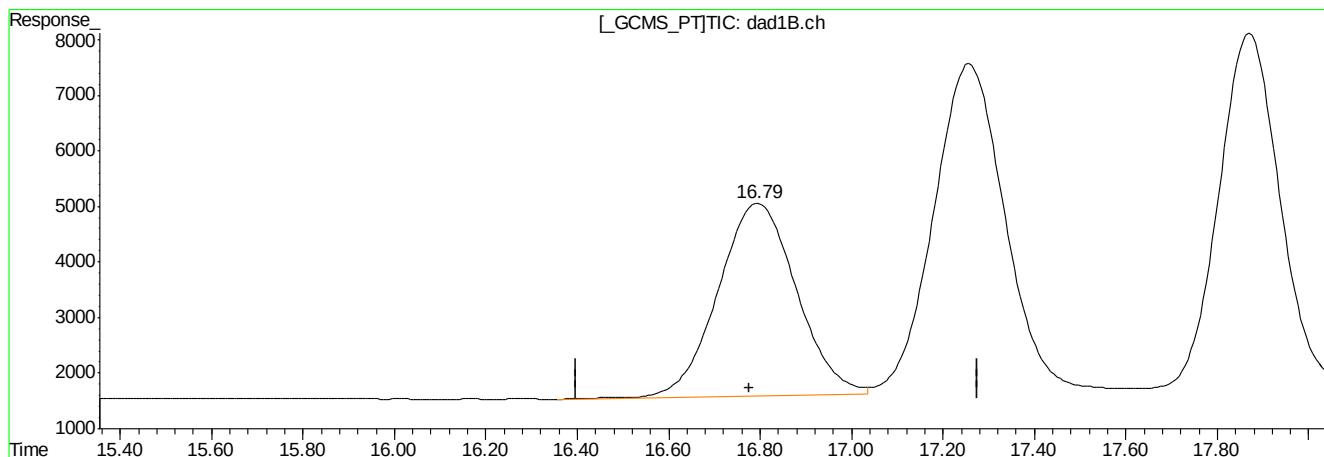
BB073632.D BBB2232_083122.M

Wed Aug 31 14:00:40 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:59 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
16.80min 199.169ppb
response 411077

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

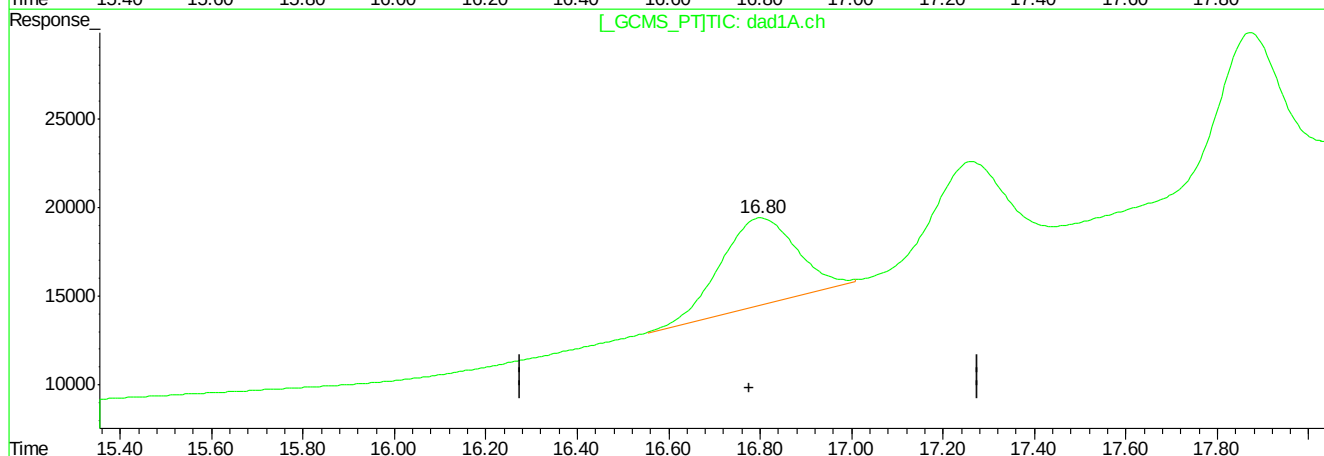
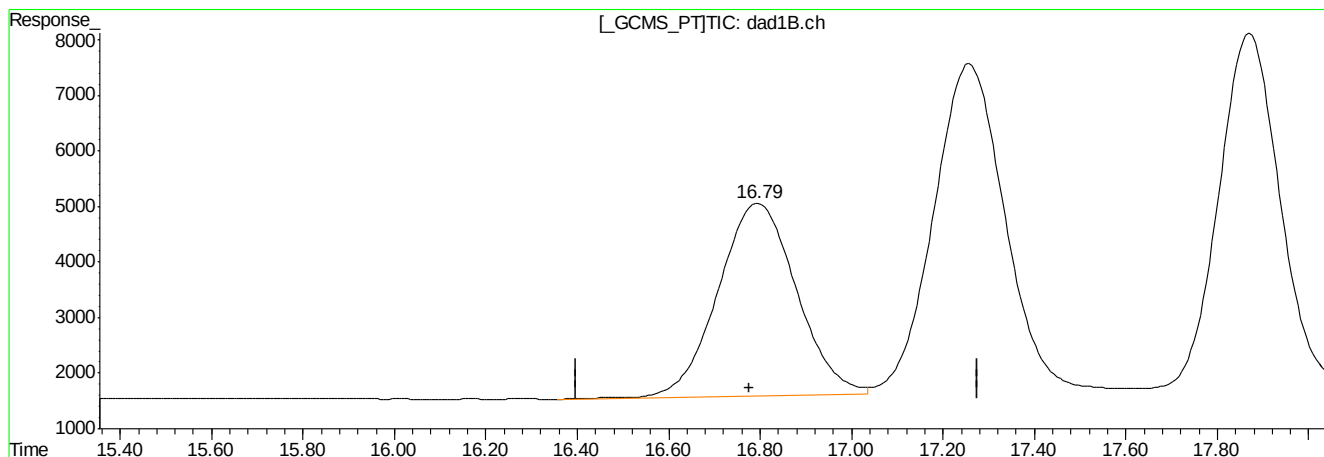
BB073632.D BBB2232_083122.M

Wed Aug 31 14:00:47 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:59 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
16.80min 199.169ppb
response 411077

(18) o-Nitrotoluene #2
16.80min 158.569ppb m
response 579069

(+) = Expected Retention Time

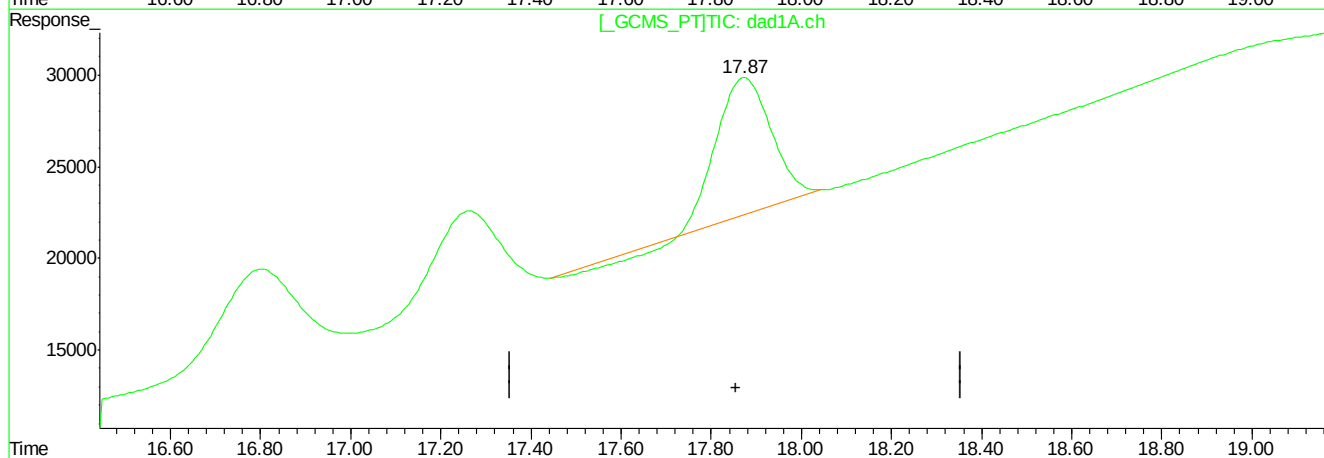
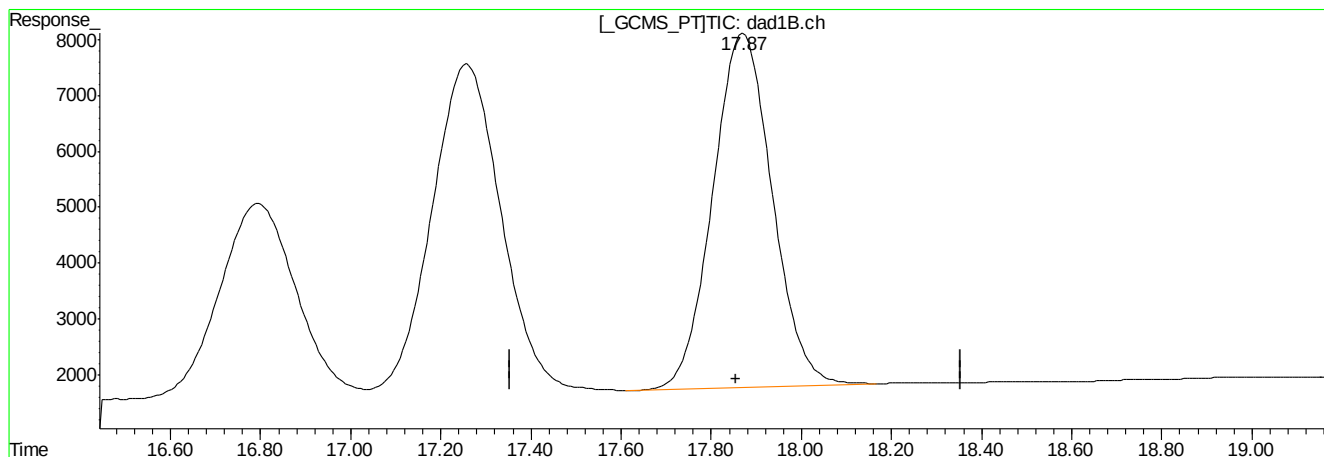
BB073632.D BBB2232_083122.M

Wed Aug 31 14:00:53 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:59 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(20) m-Nitrotoluene
17.87min 190.727ppb
response 579575

(20) m-Nitrotoluene #2
17.88min 167.126ppb
response 593992

(+) = Expected Retention Time

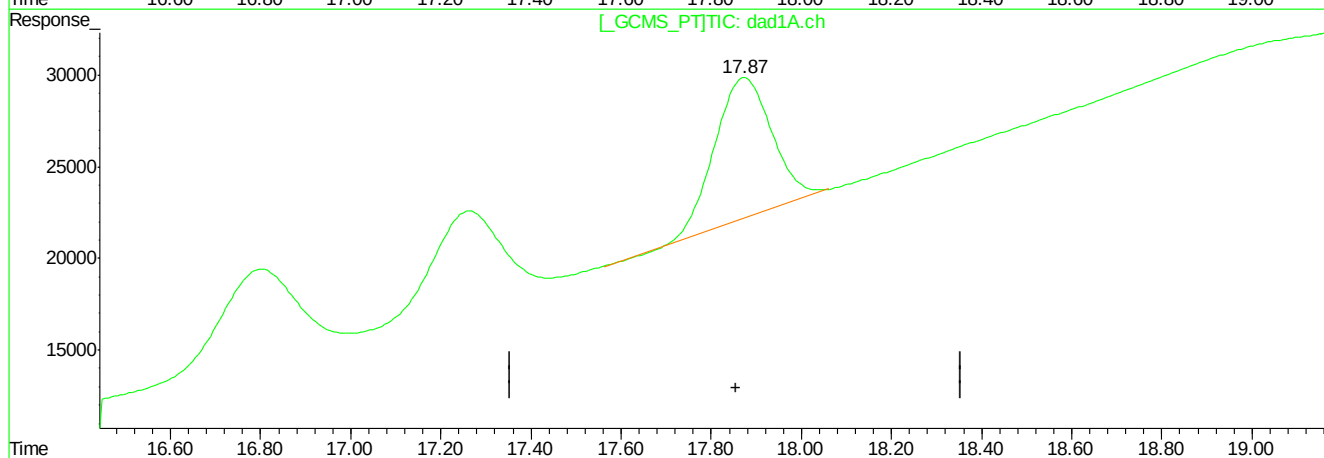
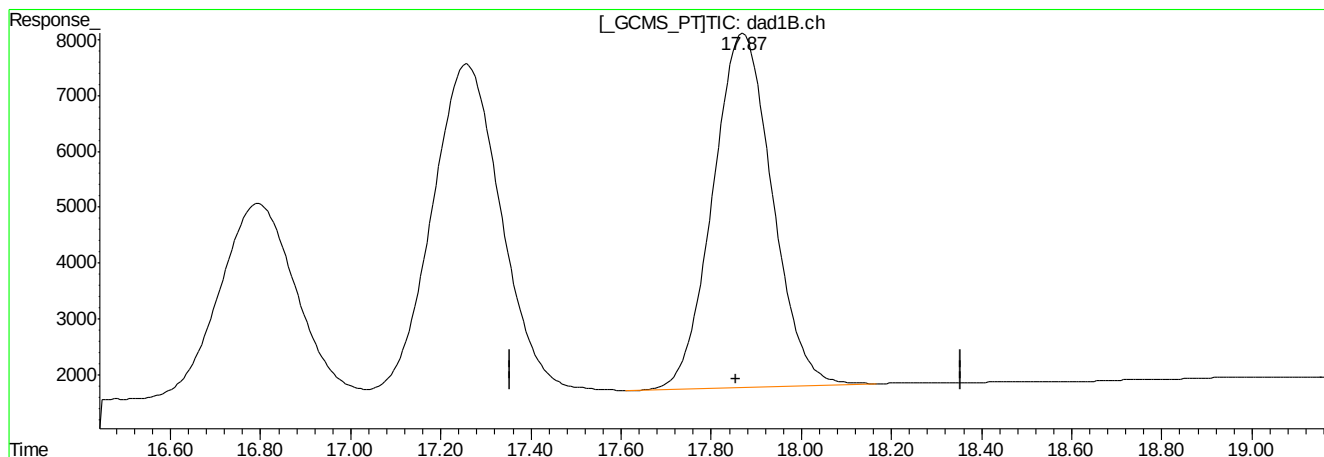
BB073632.D BBB2232_083122.M

Wed Aug 31 14:01:03 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:59 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(20) m-Nitrotoluene
17.87min 190.727ppb
response 579575

(20) m-Nitrotoluene #2
17.87min 192.058ppb m
response 682607

(+) = Expected Retention Time

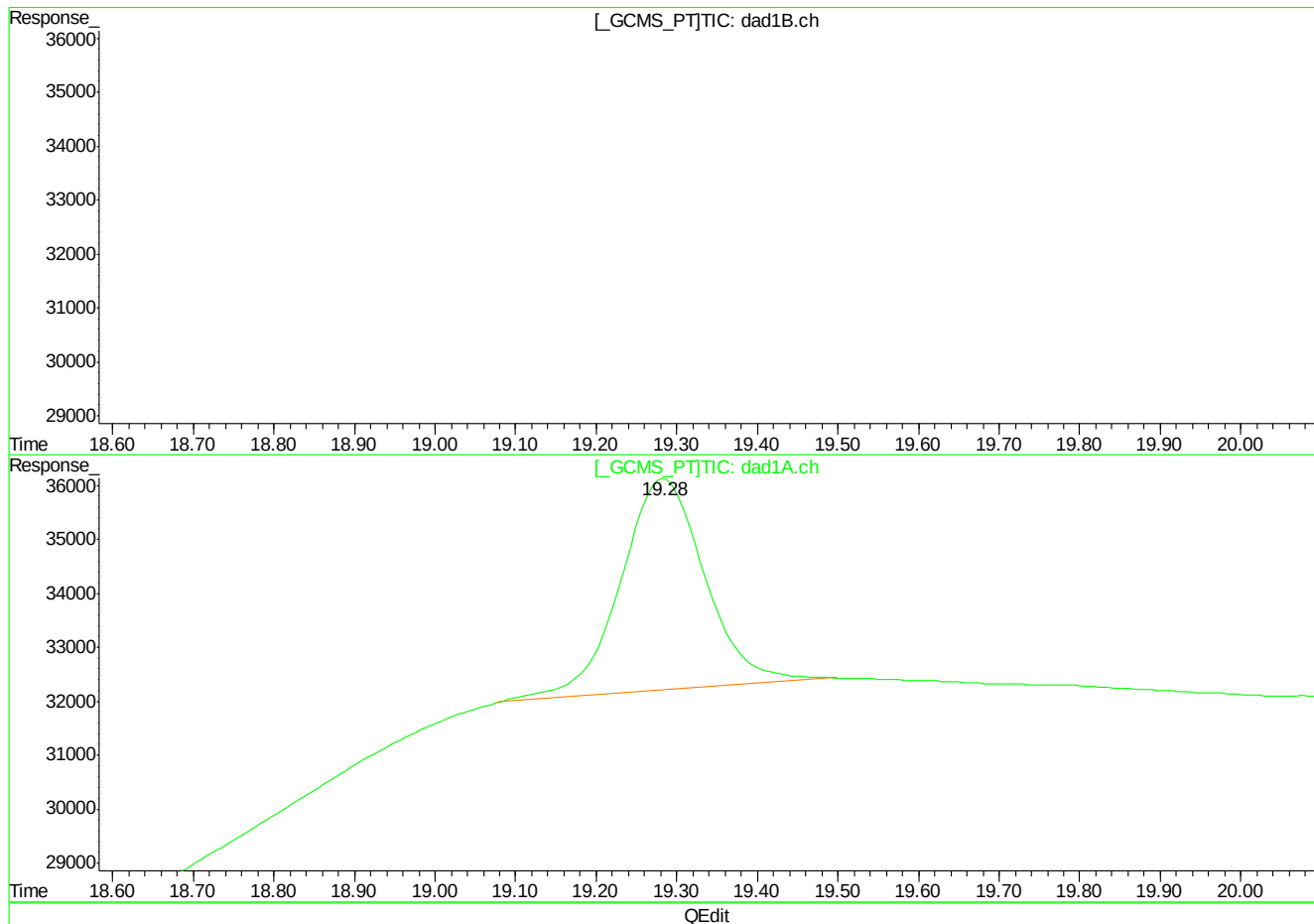
BB073632.D BBB2232_083122.M

Wed Aug 31 14:01:09 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:01 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 178.154ppb m

response 282803

(+) = Expected Retention Time

BB073632.D BBB2232_083122.M

Thu Sep 01 07:56:25 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
 Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
 Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
 Sample : ic2232-500 Inst : G1315B
 Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Aug 31 13:54:11 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Aug 31 08:15:37 2022
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	12.87	12.87	1047692	1989748	425.545	427.768
Spiked Amount	500.000	Range	70 - 136	Recovery	= 85.11%	85.55%
Target Compounds						
1) TNX	1.46	1.46	891049	1396043	220.495	227.246
2) HMX	1.66	1.66	758576	2175228	405.604	424.807
3) DNX	1.91	1.91	1458226	2335743	410.250m	417.835m
4) MNX	2.60	2.60	1652648	2553728	512.330m	515.329m
5) RDX	3.31	3.31	920631	1461089	415.717	409.825
6) 1,3,5-Trinitrobe	5.30	5.30	1959721	3140744	425.499	423.604
7) 1,3-Dinitrobenze	6.57	6.57	2591847	1733679	422.168	406.036m
8) 3,5-Dinitroanili	7.05	7.05	1950542	3239193	427.895	419.357m
9) Nitrobenzene	8.32	8.32	1489981	1476273	488.110	460.722
10) Nitroglycerin	0.00	10.15	0	633032	N.D.	412.966 #
11) Tetryl	11.03	11.03	1395001	2201230	402.550	386.018
12) 2,4,6-Trinitroto	11.38	11.38	1806761	2102674	417.785	410.655
13) 2-Amino-4,6-Dini	11.89	11.89	1546158	2286041	410.567	401.440
14) 4-Amino-2,6-Dini	12.44	12.44	1124872	2312144	405.756	410.794
16) 2,4-Dinitrotolue	13.44	13.44	2276525	1443515	441.843	408.204
17) 2,6-Dinitrotolue	13.90	13.90	689964	1674989	231.137m	419.605 #
18) o-Nitrotoluene	16.81	16.81	1057585	1643609	512.407	459.461m
19) p-Nitrotoluene	17.27	17.27	1639633	1343834	492.741	496.140
20) m-Nitrotoluene	17.88	17.88	1523242	1776605	501.270	499.866
21) PETN	0.00	19.29	0	681847	N.D.	429.535m#

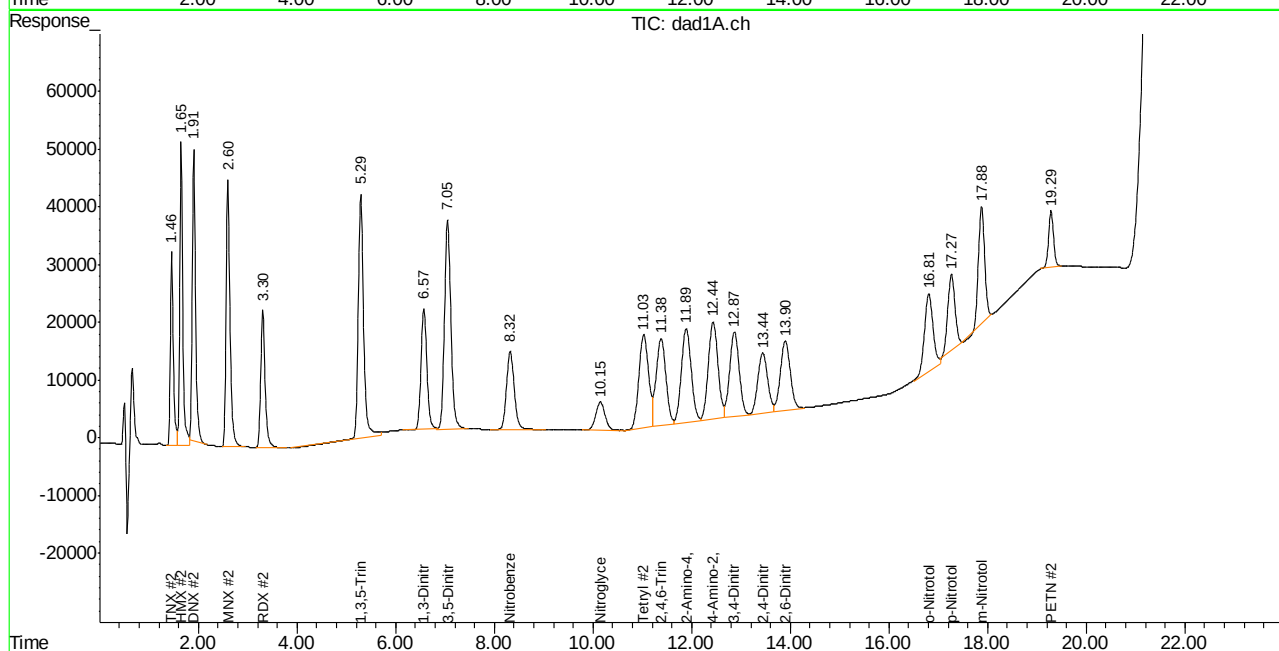
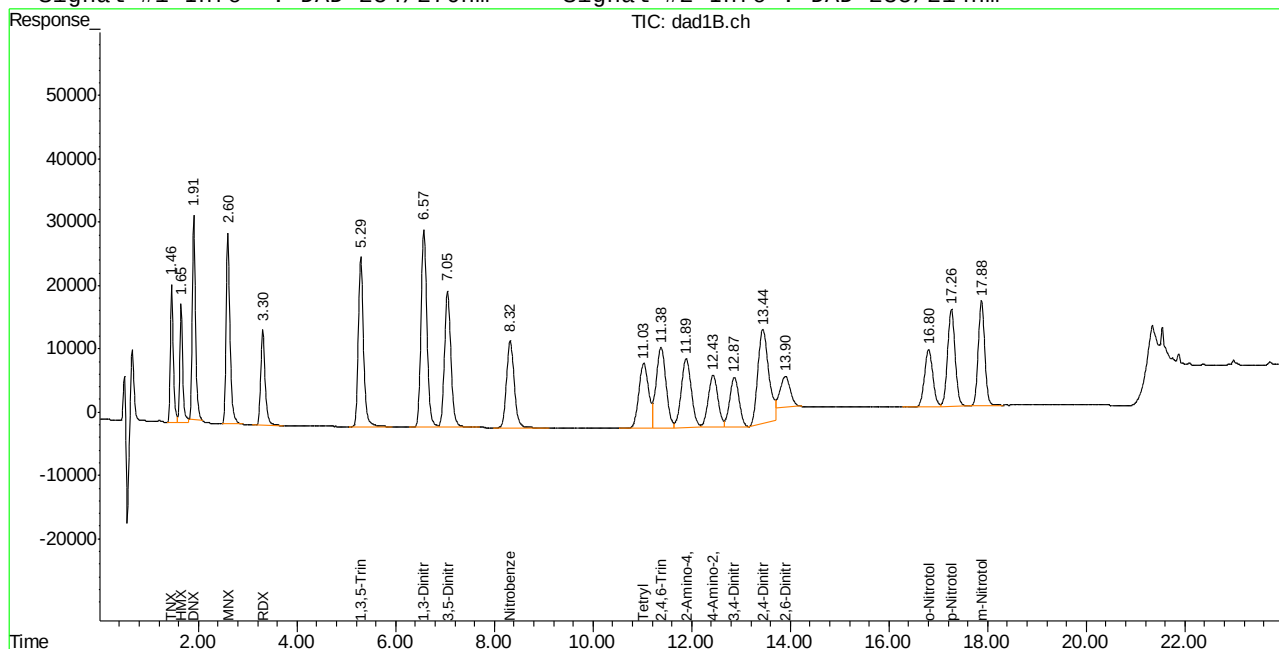
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB073633.D BBB2232_083122.M Thu Sep 01 14:19:31 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:56 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2232-IC2232

Lab FileID:

BB073633.D

Injection Time:

08/31/22 11:58

Method:

SW846 8330A

Analyst approved:

09/02/22 08:50 Fouad Sekkar

Supervisor approved:

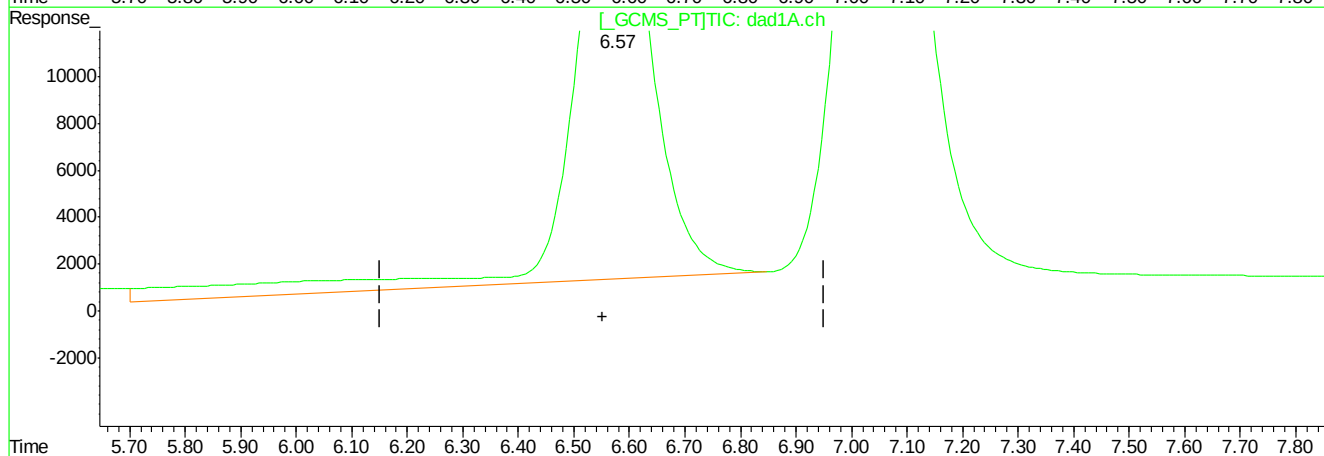
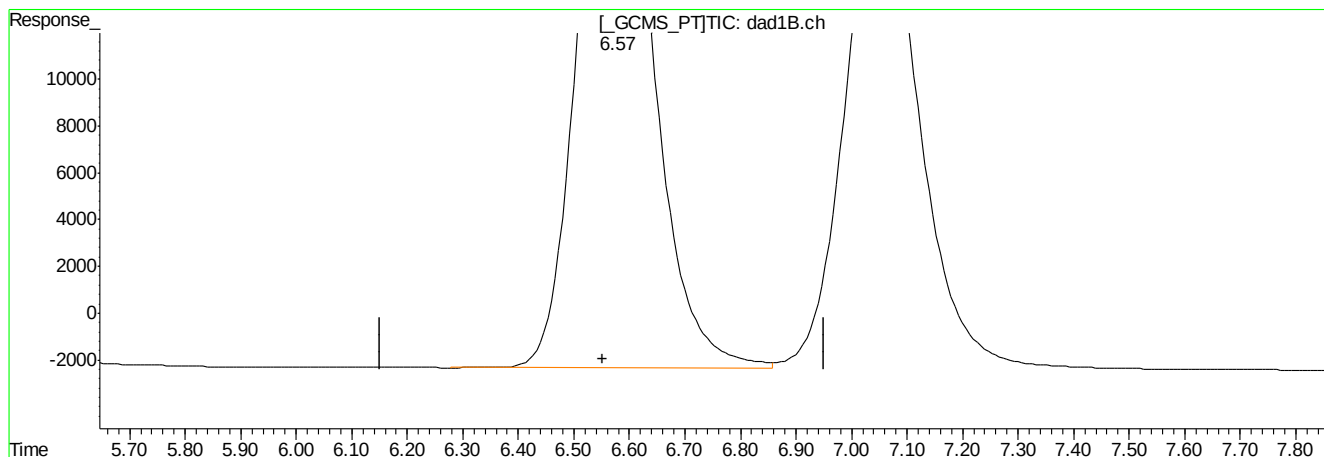
09/02/22 15:07 Naresh Jiawan

Parameter	CAS	Sig#	R. T. (min.)	Reason
DNX		1	1.91	Missed peak
DNX		2	1.91	Missed peak
MNX		1	2.60	Missed peak
MNX		2	2.60	Missed peak
1,3-Dinitrobenzene	99-65-0	2	6.57	Missed peak
3,5-Dinitroaniline	618-87-1	2	7.05	Missed peak
2,6-Dinitrotoluene	606-20-2	1	13.90	Missed peak
o-Nitrotoluene	88-72-2	2	16.81	Missed peak
PETN	78-11-5	2	19.29	Missed peak

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

6.57min 422.168ppb

response 2591847

(7) 1,3-Dinitrobenzene #2

6.57min 456.178ppb

response 1947771

(+) = Expected Retention Time

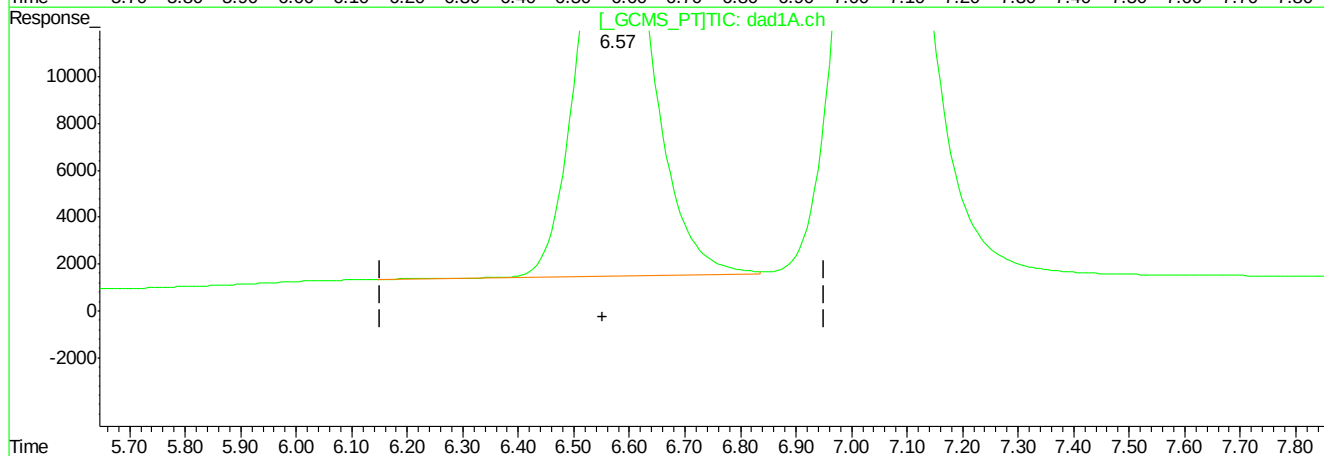
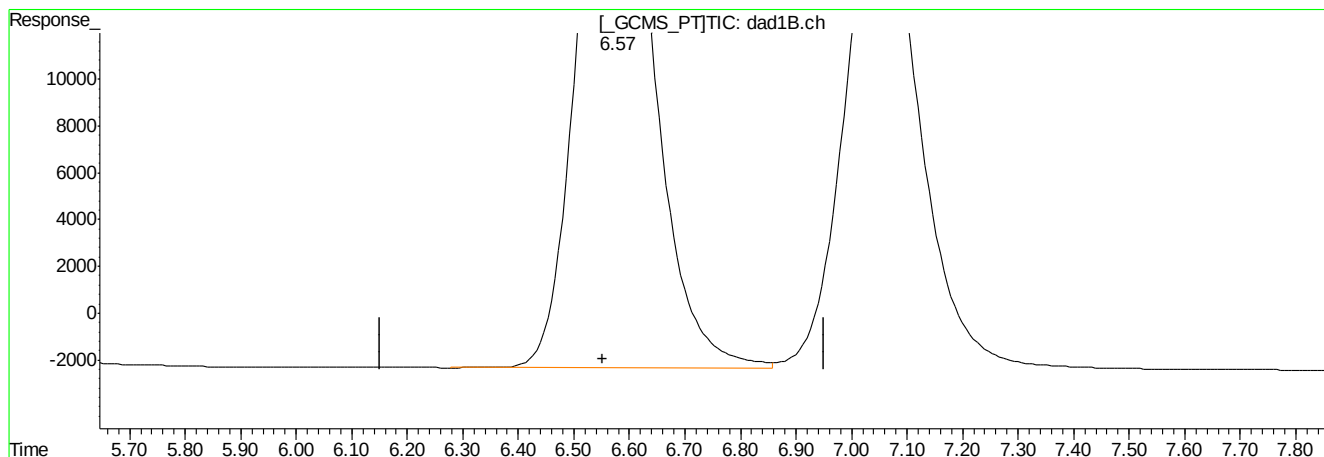
BB073633.D BBB2232_083122.M

Wed Aug 31 13:54:41 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

6.57min 422.168ppb

response 2591847

(7) 1,3-Dinitrobenzene #2

6.57min 406.036ppb m

response 1733679

(+) = Expected Retention Time

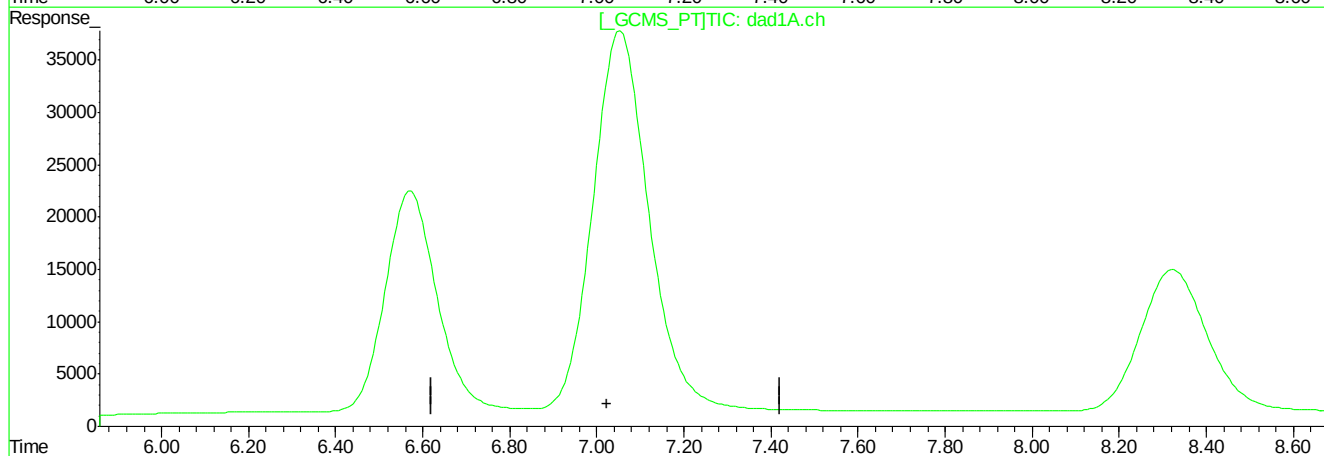
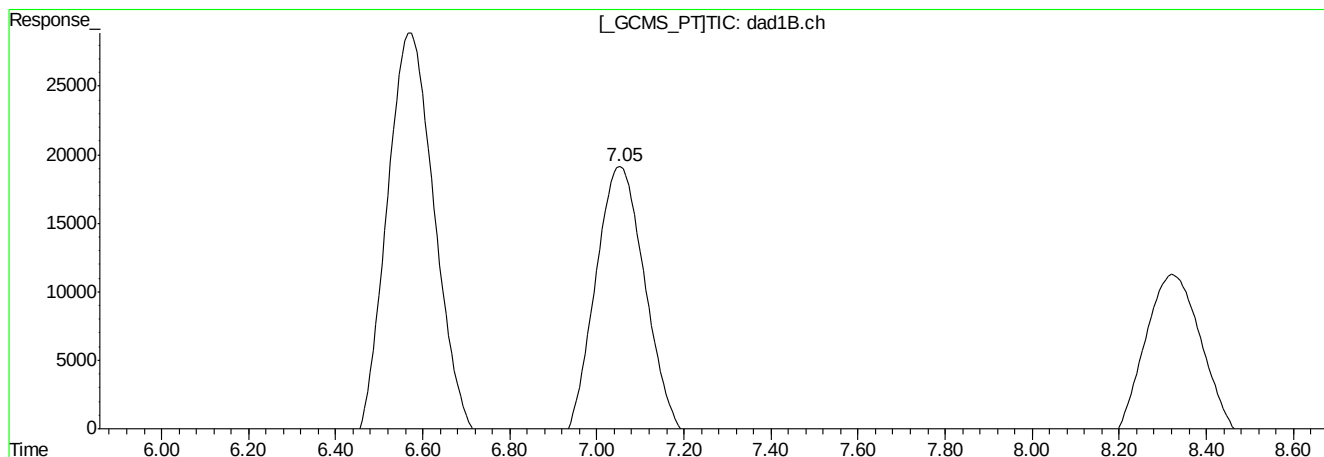
BB073633.D BBB2232_083122.M

Wed Aug 31 13:54:49 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.05min 427.895ppb

response 1950542

(8) 3,5-Dinitroaniline #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

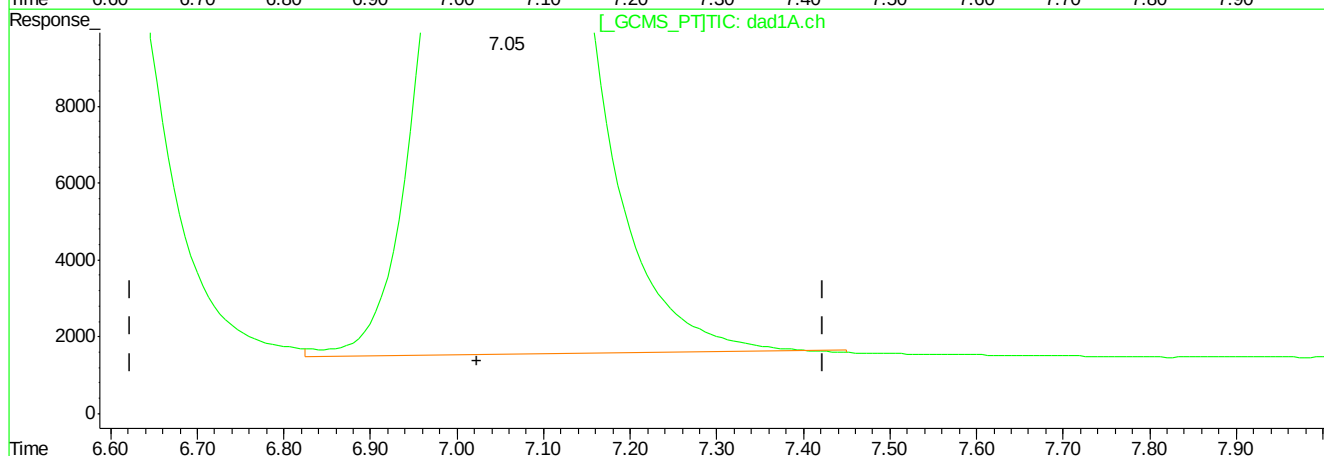
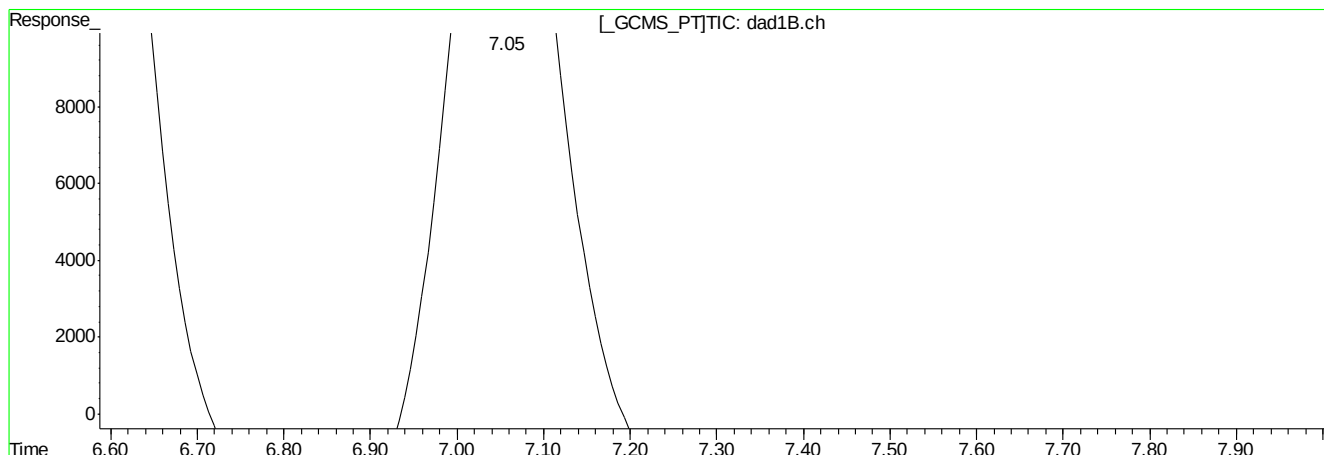
BB073633.D BBB2232_083122.M

Wed Aug 31 13:54:56 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.05min 427.895ppb

response 1950542

(8) 3,5-Dinitroaniline #2

7.05min 419.357ppb m

response 3239193

(+) = Expected Retention Time

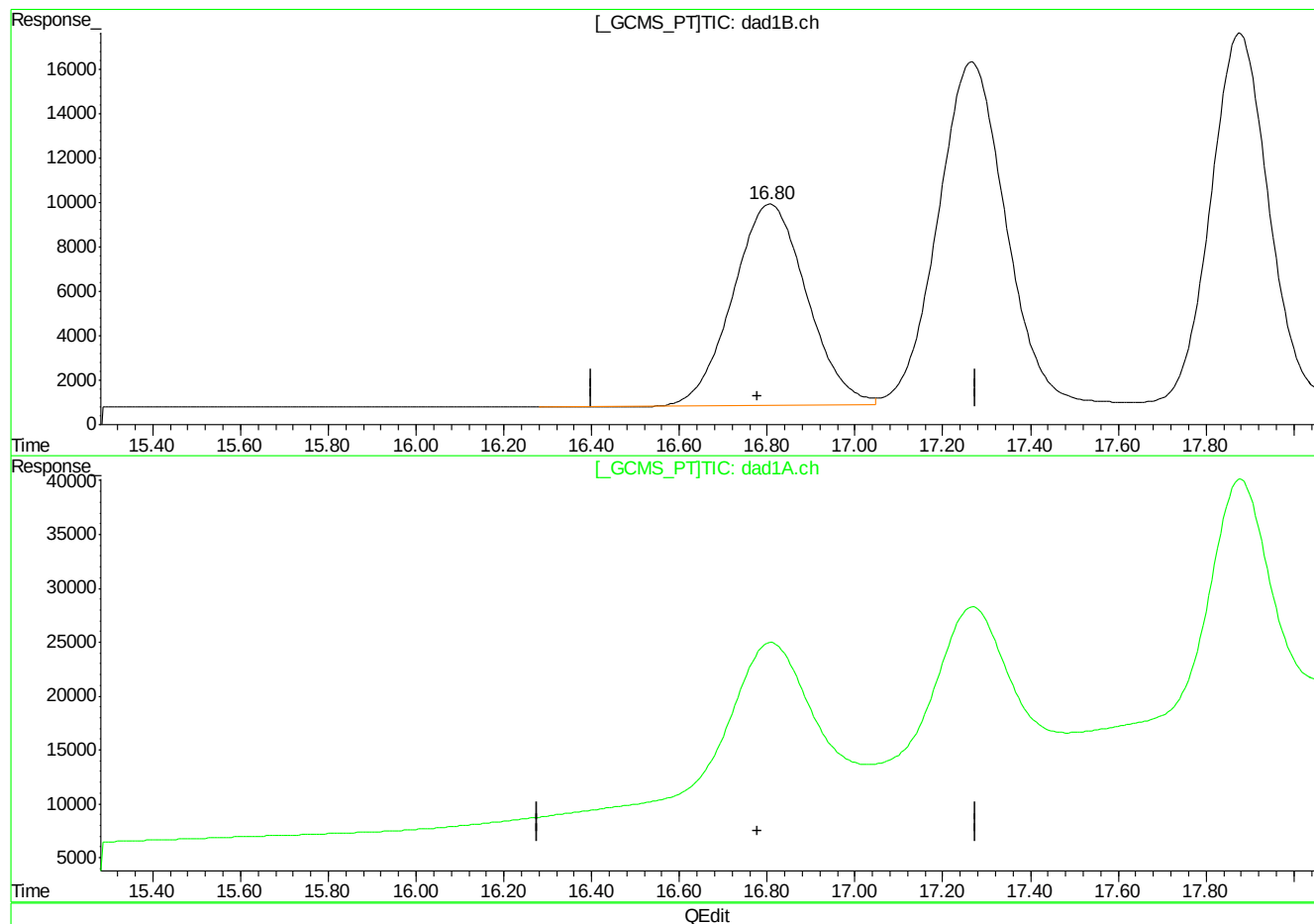
BB073633.D BBB2232_083122.M

Wed Aug 31 13:55:07 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(18) o-Nitrotoluene
16.81min 512.407ppb
response 1057585

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

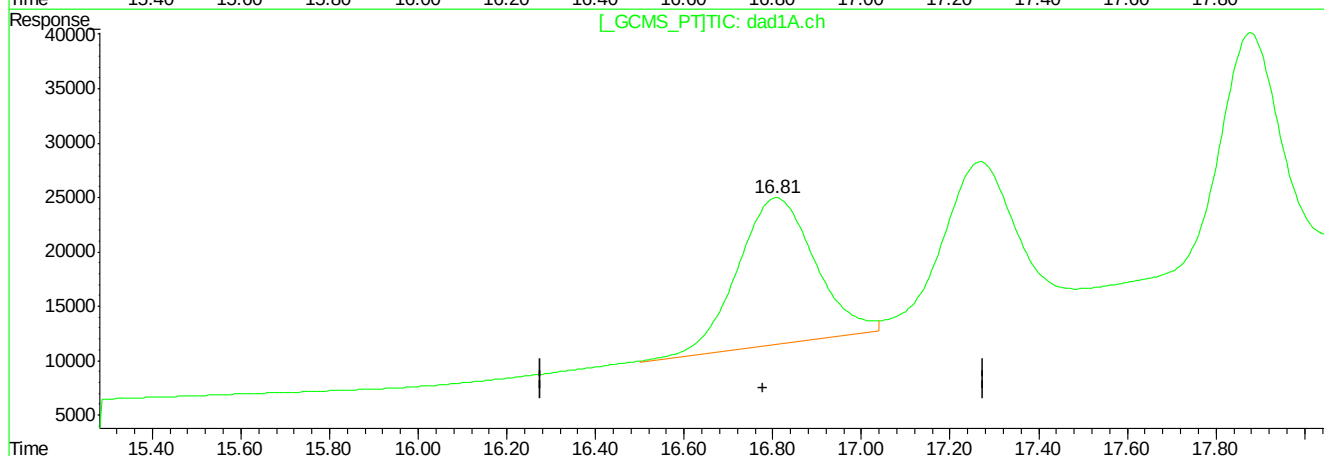
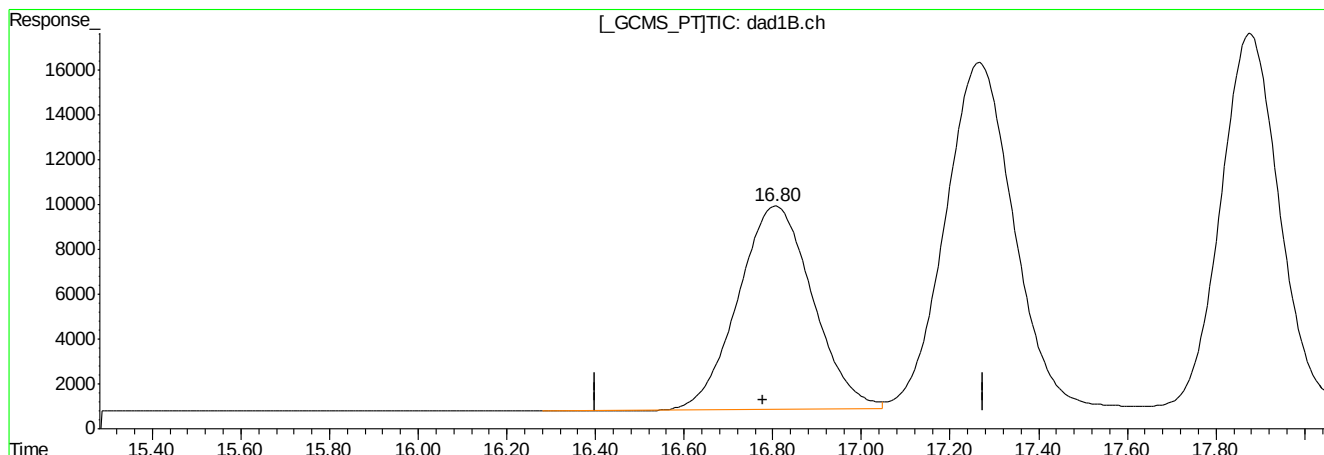
BB073633.D BBB2232_083122.M

Wed Aug 31 13:55:26 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
16.81min 512.407ppb
response 1057585

(18) o-Nitrotoluene #2
16.81min 459.461ppb m
response 1643609

(+) = Expected Retention Time

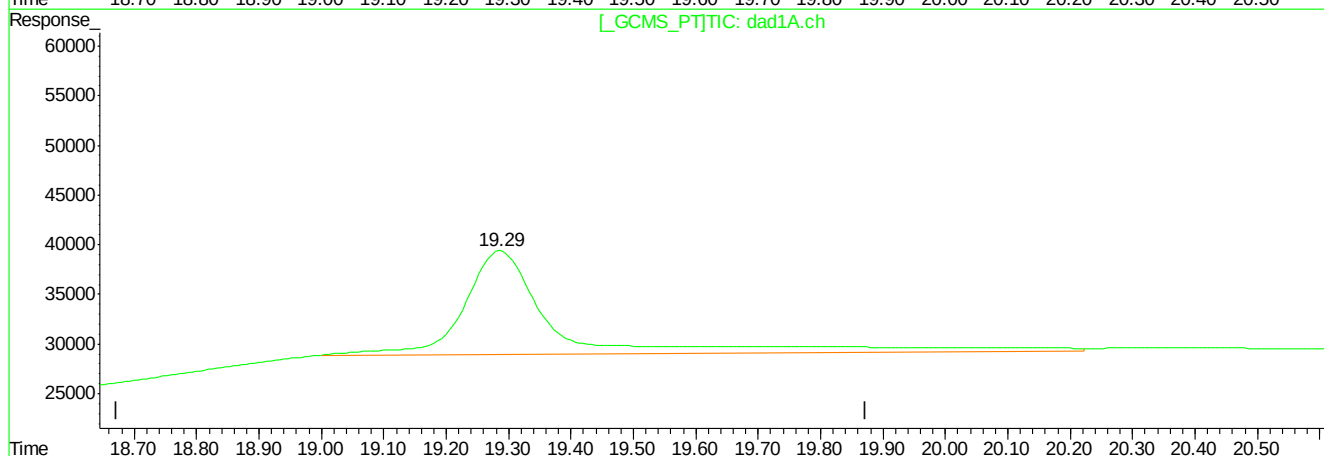
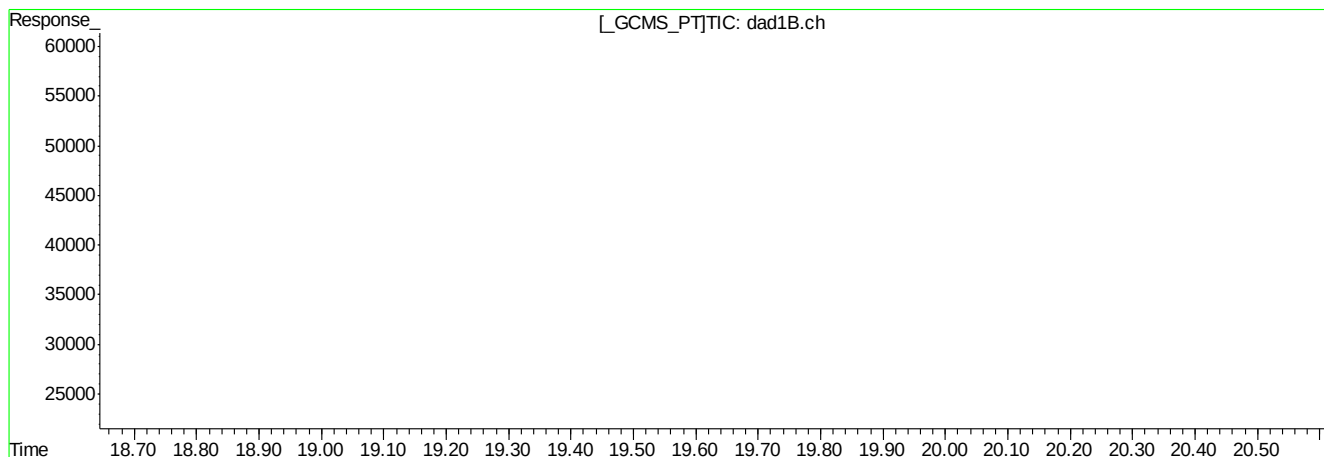
BB073633.D BBB2232_083122.M

Wed Aug 31 13:55:36 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.29min 677.205ppb

response 1075001

(+) = Expected Retention Time

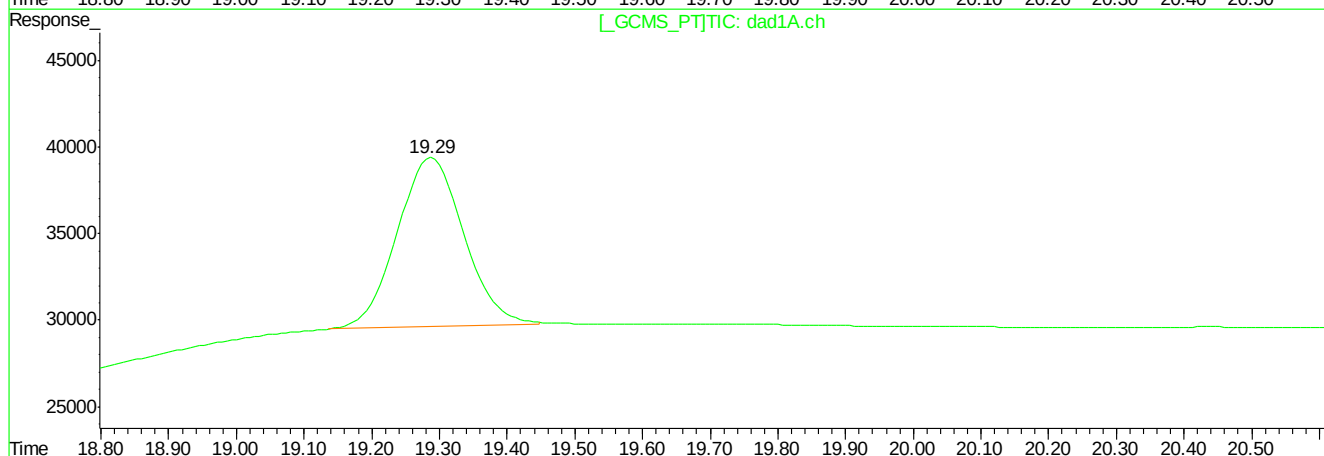
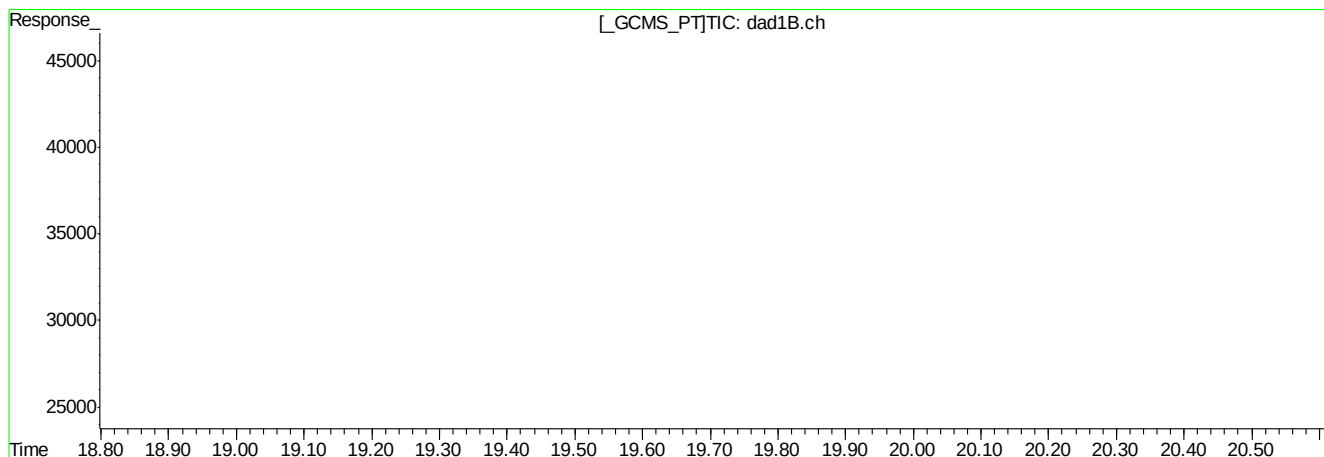
BB073633.D BBB2232_083122.M

Wed Aug 31 13:55:52 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.29min 416.318ppb m

response 660866

(+) = Expected Retention Time

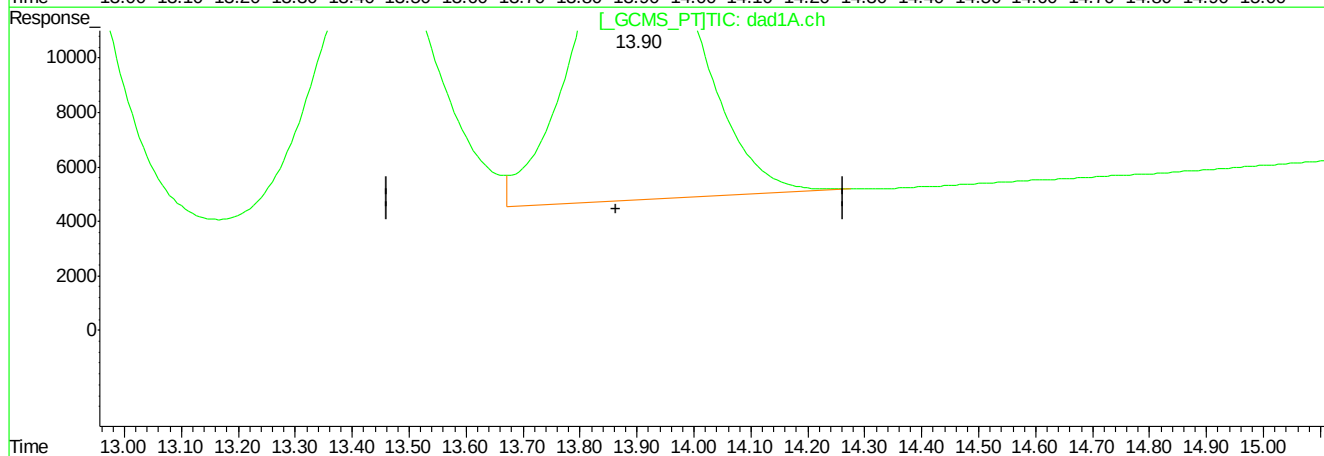
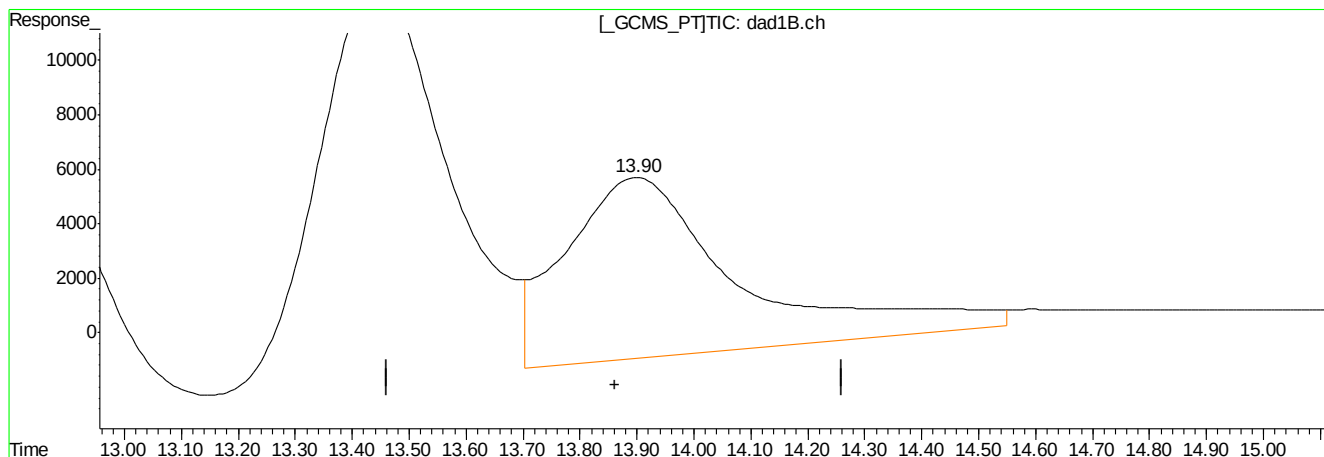
BB073633.D BBB2232_083122.M

Wed Aug 31 13:56:03 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.90min 468.060ppb

response 1397197

(17) 2,6-Dinitrotoluene #2

13.90min 419.605ppb

response 1674989

(+) = Expected Retention Time

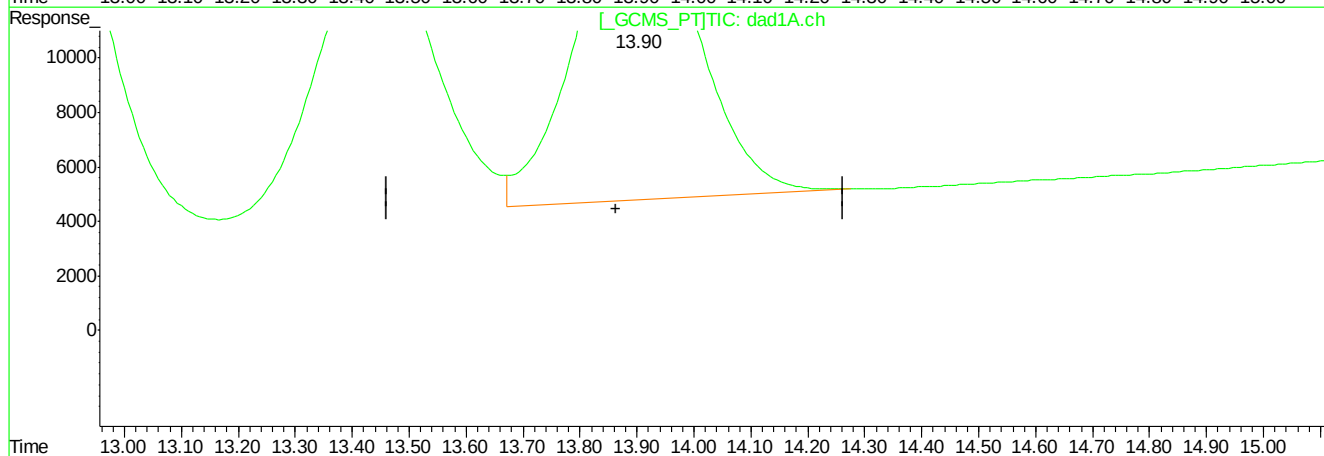
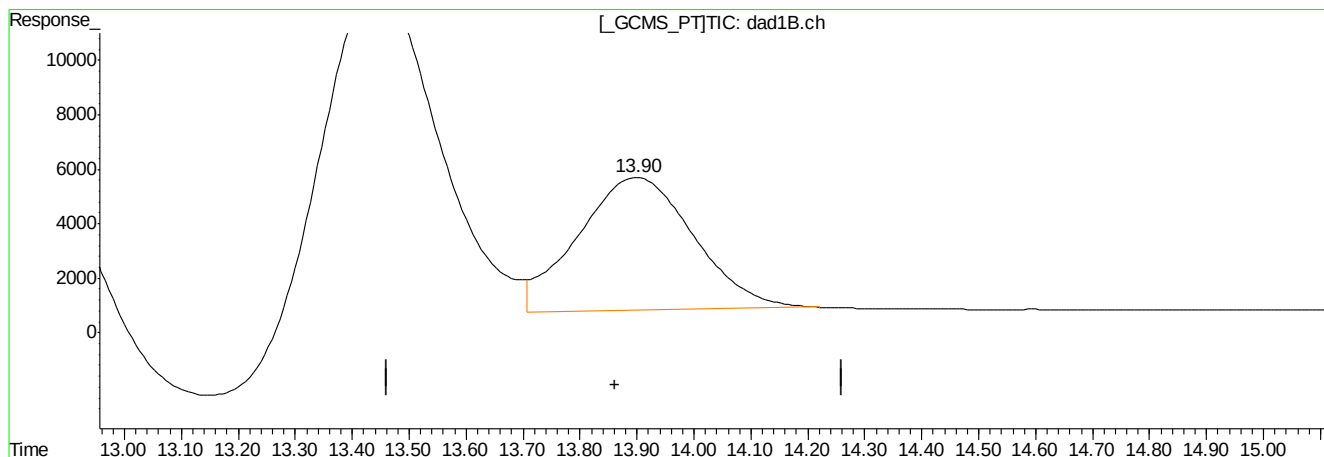
BB073633.D BBB2232_083122.M

Wed Aug 31 13:57:32 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.90min 231.137ppb m

response 689964

(17) 2,6-Dinitrotoluene #2

13.90min 419.605ppb

response 1674989

(+) = Expected Retention Time

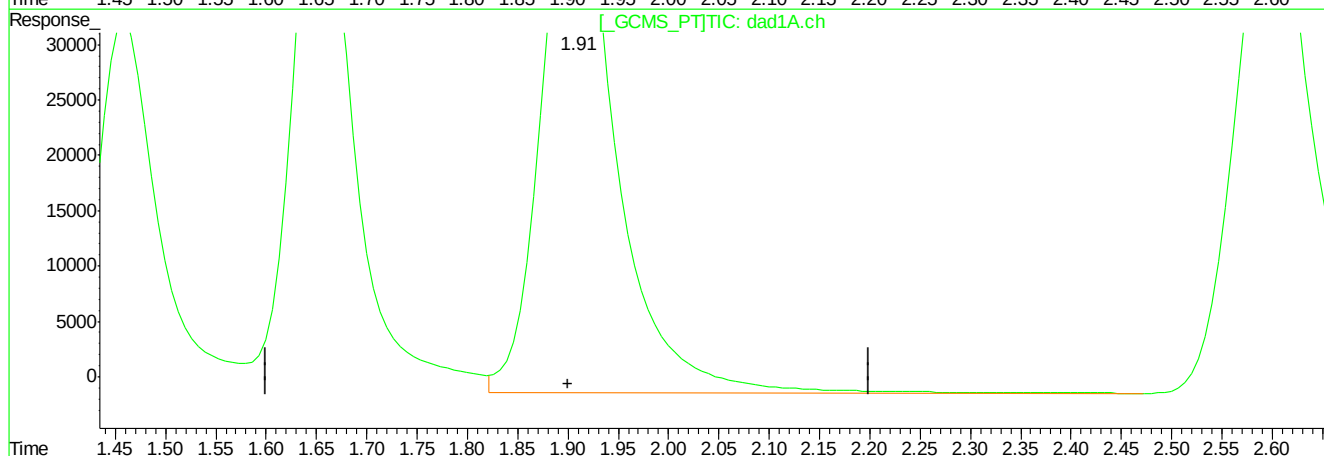
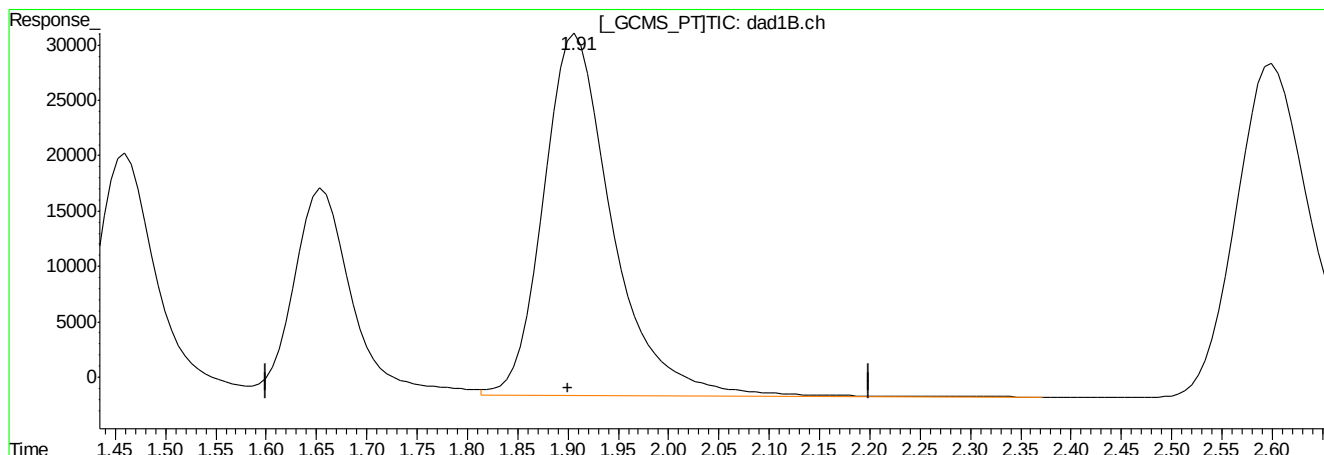
BB073633.D BBB2232_083122.M

Wed Aug 31 13:57:40 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(3) DNX

1.91min 439.087ppb

response 1560726

(3) DNX #2

1.91min 446.410ppb

response 2495480

(+) = Expected Retention Time

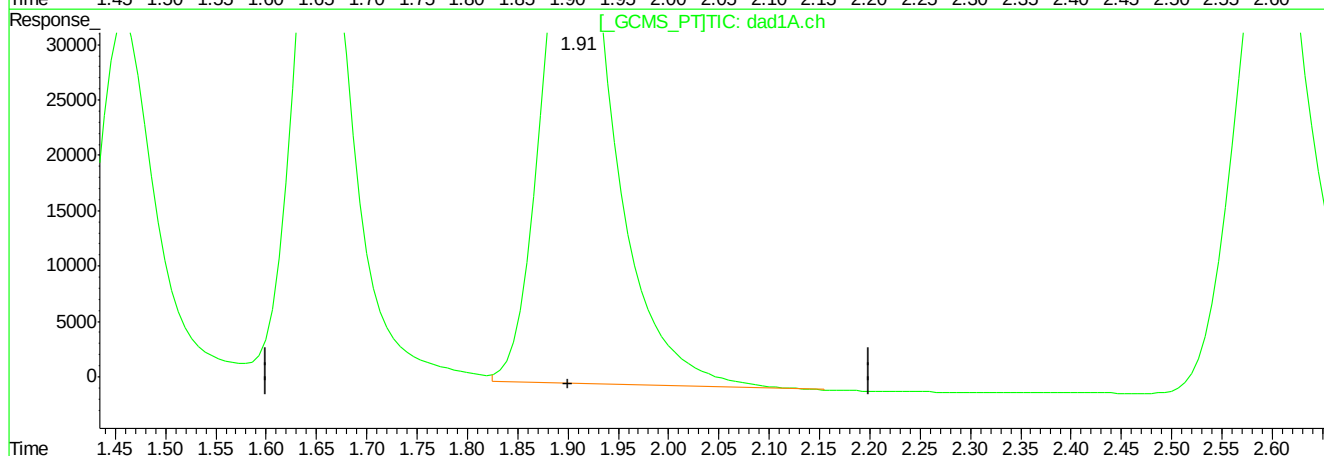
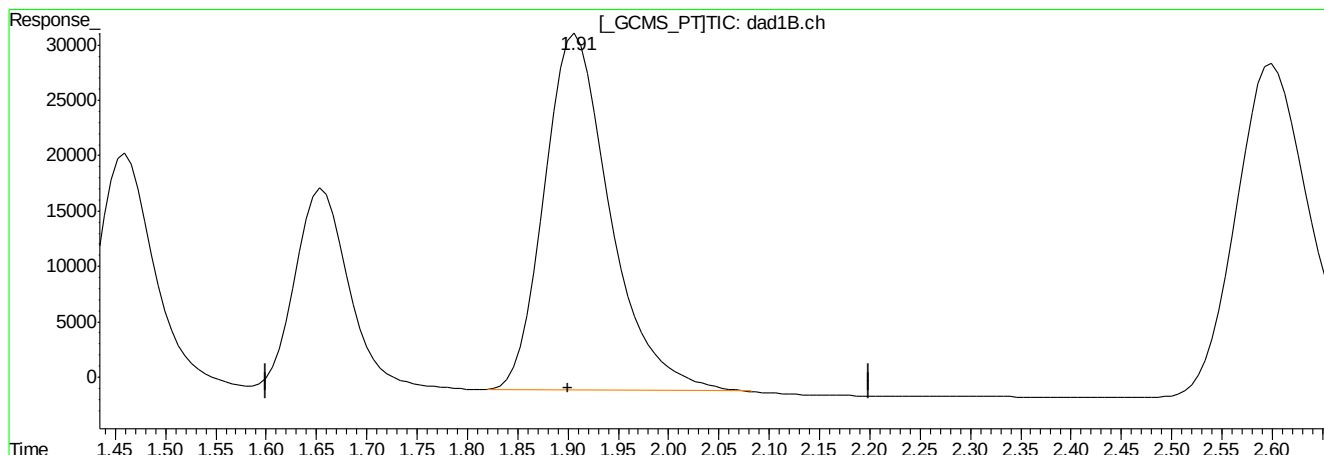
BB073633.D BBB2232_083122.M

Thu Sep 01 07:49:53 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(3) DNX

1.91min 410.250ppb m

response 1458226

(3) DNX #2

1.91min 417.835ppb m

response 2335743

(+) = Expected Retention Time

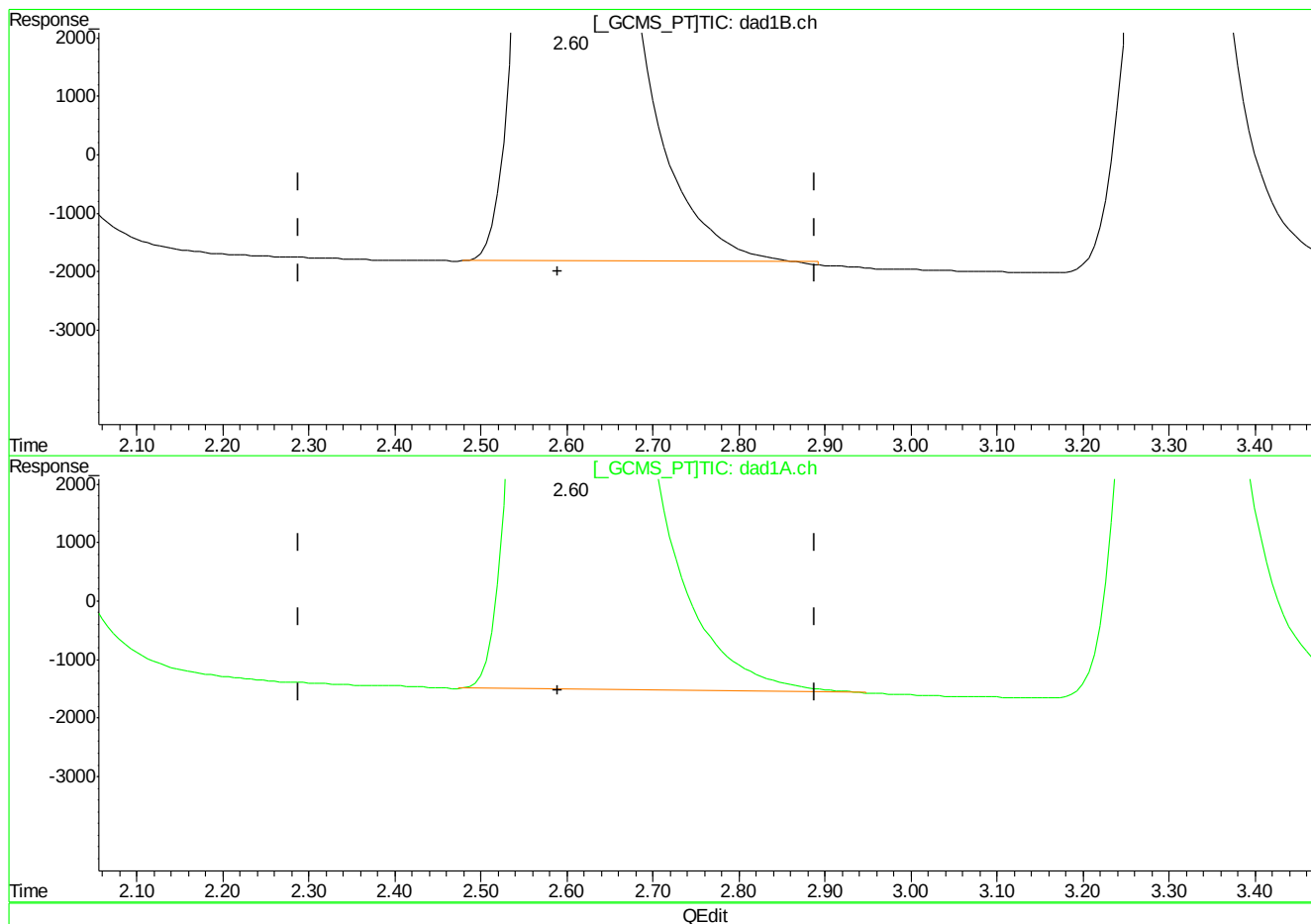
BB073633.D BBB2232_083122.M

Thu Sep 01 07:50:05 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(4) MNX

2.60min 512.330ppb m

response 1652648

(4) MNX #2

2.60min 515.329ppb m

response 2553728

(+) = Expected Retention Time

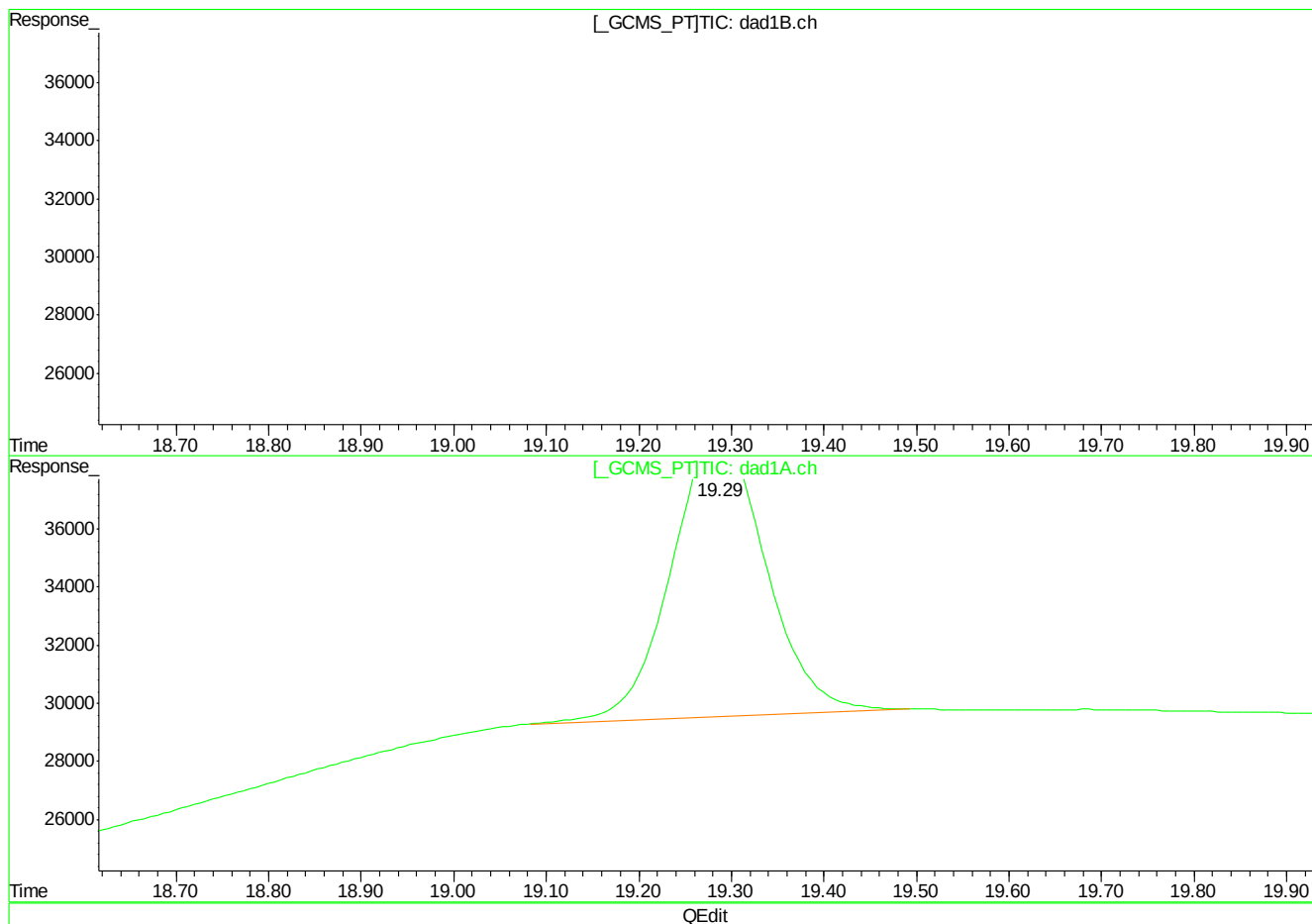
BB073633.D BBB2232_083122.M

Thu Sep 01 07:50:25 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:50 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.29min 429.535ppb m

response 681847

(+) = Expected Retention Time

BB073633.D BBB2232_083122.M

Thu Sep 01 07:56:47 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
 Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
 Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
 Sample : icc2232-1000 Inst : G1315B
 Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Aug 31 13:54:12 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Aug 31 08:15:37 2022
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	12.84	12.84	2166318	4226446	879.902	908.627
Spiked Amount	500.000	Range	70 - 136	Recovery	=	175.98%# 181.73%#
Target Compounds						
1) TNX	1.46	1.46	1808438	2778604	447.507	452.297
2) HMX	1.65	1.65	1518605	4220641	811.985	824.262
3) DNX	1.90	1.90	3178687	5039002	894.276	901.414
4) MNX	2.59	2.59	3421780	5256224	1060.770	1060.680
5) RDX	3.30	3.30	1894875	2988890	855.643	838.361
6) 1,3,5-Trinitrobe	5.28	5.28	4034180	6364871	875.911	858.455
7) 1,3-Dinitrobenze	6.56	6.56	5317280	3706513	866.095	868.084
8) 3,5-Dinitroanili	7.03	7.03	4009314	6596851	879.532	854.050m
9) Nitrobenzene	8.30	8.30	3054276	3015166	1000.565	940.986
10) Nitroglycerin	0.00	10.13	0	1303660	N.D.	850.457 #
11) Tetryl	11.00	11.00	2870904	4618520	828.445	809.926
12) 2,4,6-Trinitroto	11.35	11.35	3719461	4458590	860.068	870.769
13) 2-Amino-4,6-Dini	11.85	11.85	3206018	4901177	851.326	860.671
14) 4-Amino-2,6-Dini	12.40	12.40	2331185	4902950	840.889	871.097
16) 2,4-Dinitrotolue	13.41	13.41	4654270	3077462	903.331	870.260
17) 2,6-Dinitrotolue	13.87	13.87	1462981	3502077	490.098m	877.313 #
18) o-Nitrotoluene	16.79	16.79	2168190	3343437	1050.502	968.839m
19) p-Nitrotoluene	17.25	17.25	3386010	2807957	1017.560	1036.690
20) m-Nitrotoluene	17.87	17.87	3130845	3738809	1030.302	1051.952
21) PETN	0.00	19.28	0	1396516	N.D.	879.746m#

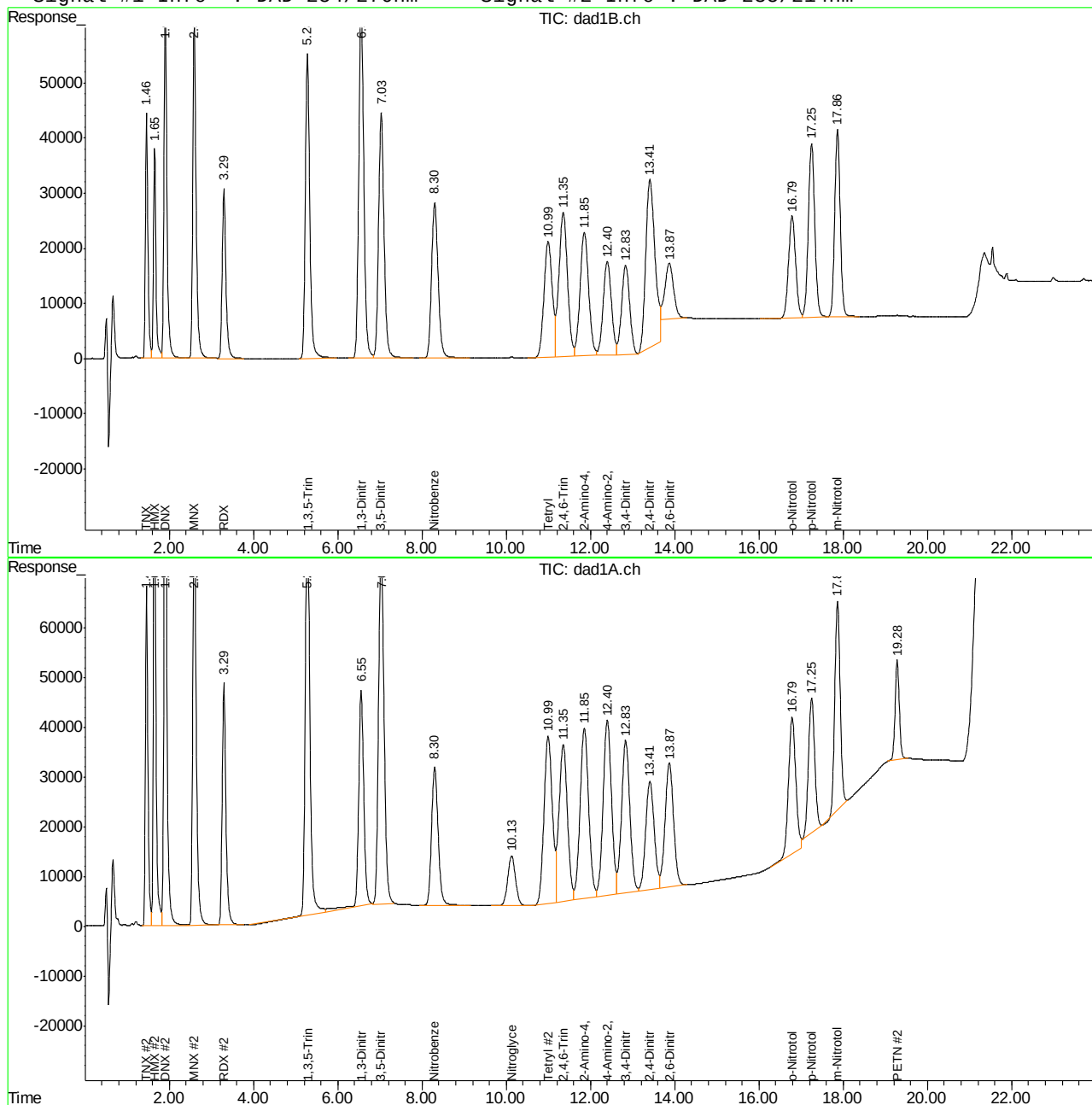
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB073634.D BBB2232_083122.M Thu Sep 01 14:19:32 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : icc2232-1000 Inst : G1315B
Misc : op92480, GBB2232, 1000,,, 10, 1, water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:57 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2232-ICC2232

Method:

SW846 8330A

Lab FileID:

BB073634.D

Analyst approved:

09/02/22 08:50 Fouad Sekkar

Injection Time:

08/31/22 12:29

Supervisor approved:

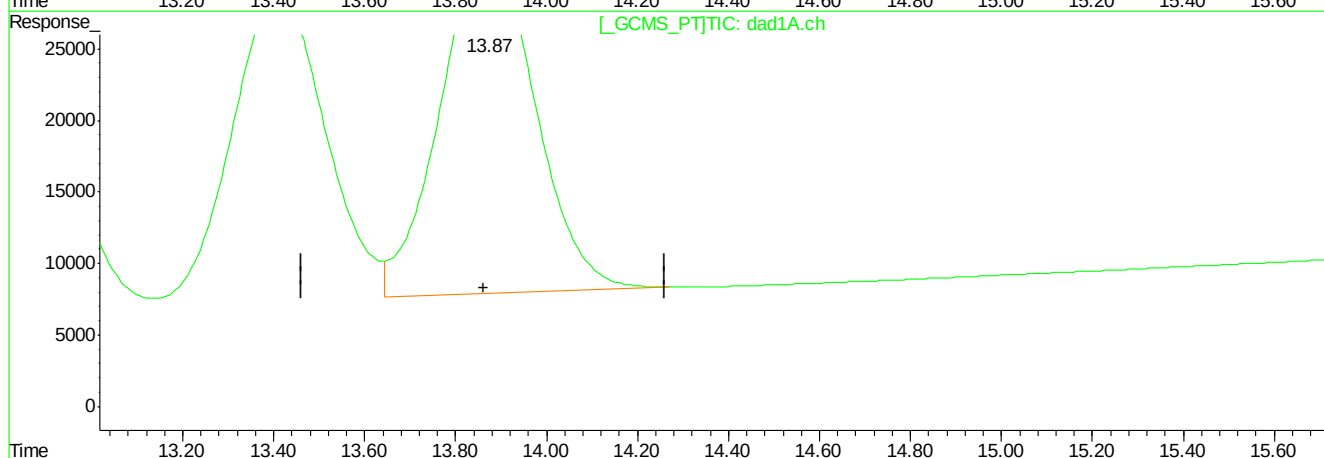
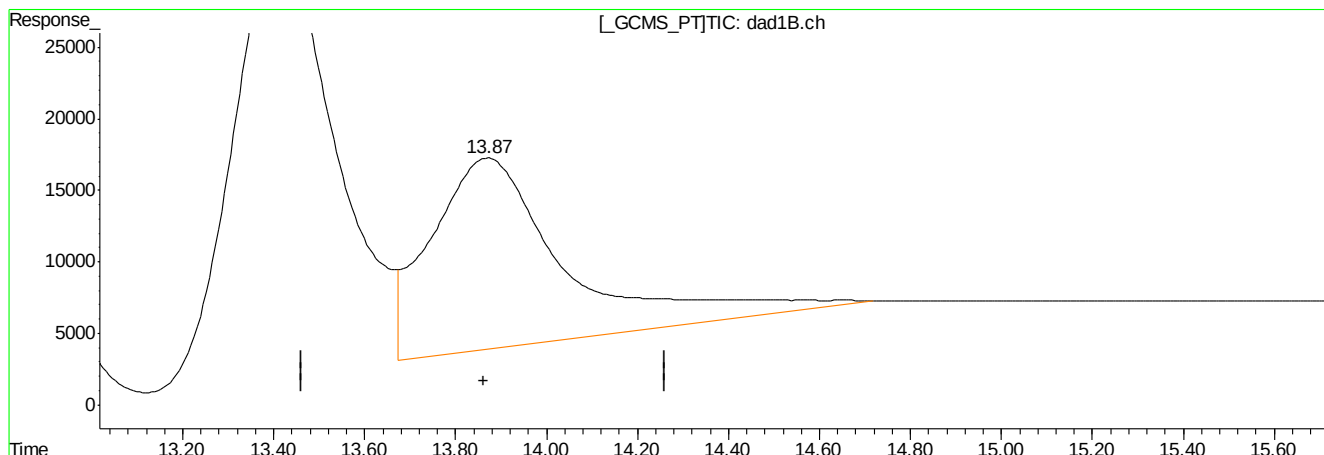
09/02/22 15:07 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	2	7.03	Missed peak
2,6-Dinitrotoluene	606-20-2	1	13.87	Missed peak
o-Nitrotoluene	88-72-2	2	16.79	Missed peak
PETN	78-11-5	2	19.28	Missed peak

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : ic2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.87min 924.004ppb

response 2758226

(17) 2,6-Dinitrotoluene #2

13.87min 877.313ppb

response 3502077

(+) = Expected Retention Time

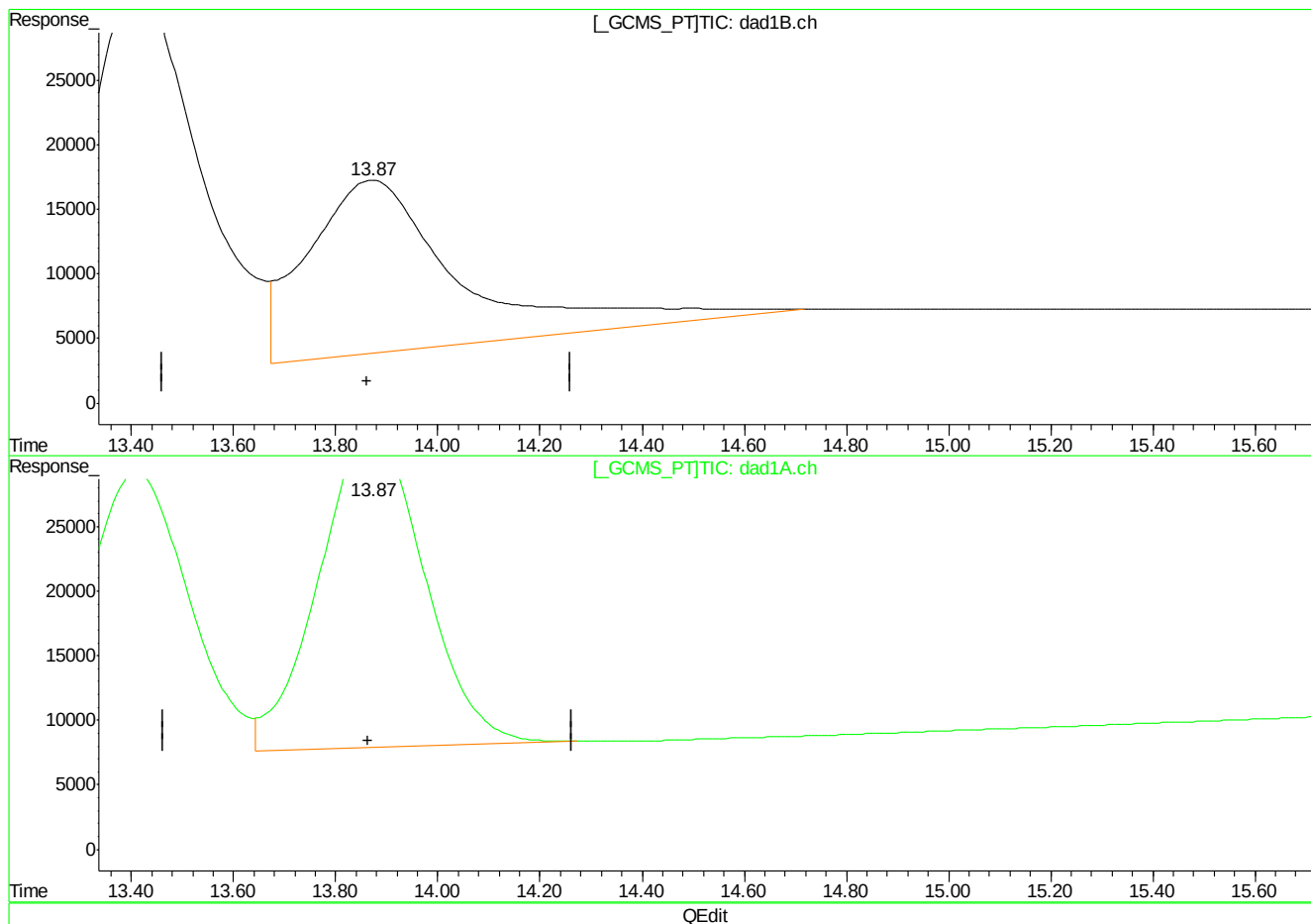
BB073634.D BBB2232_083122.M

Wed Aug 31 13:56:54 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : ic2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

13.87min 924.004ppb

response 2758226

(17) 2,6-Dinitrotoluene #2

13.87min 877.313ppb

response 3502077

(+) = Expected Retention Time

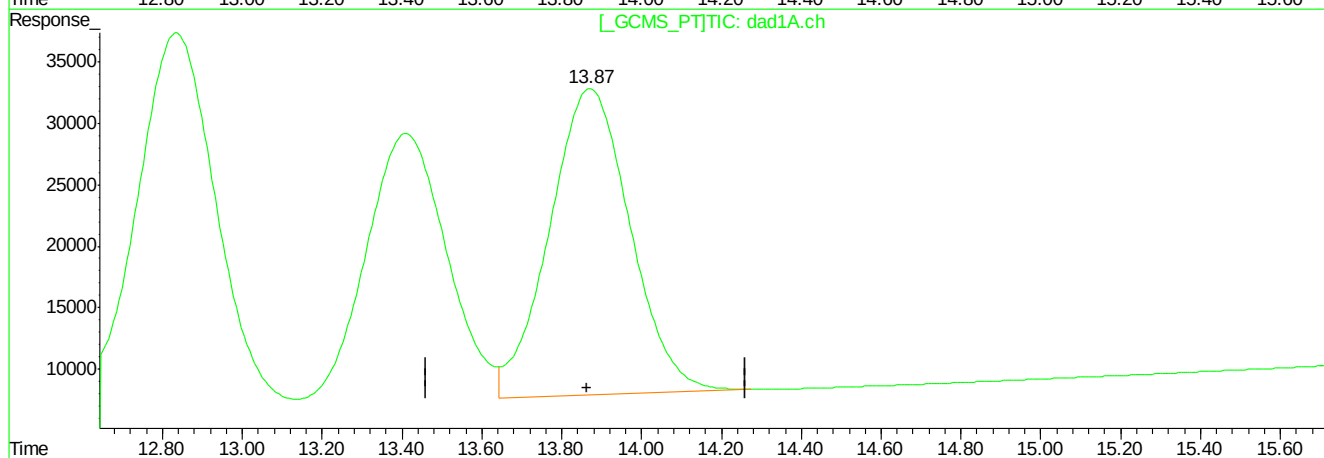
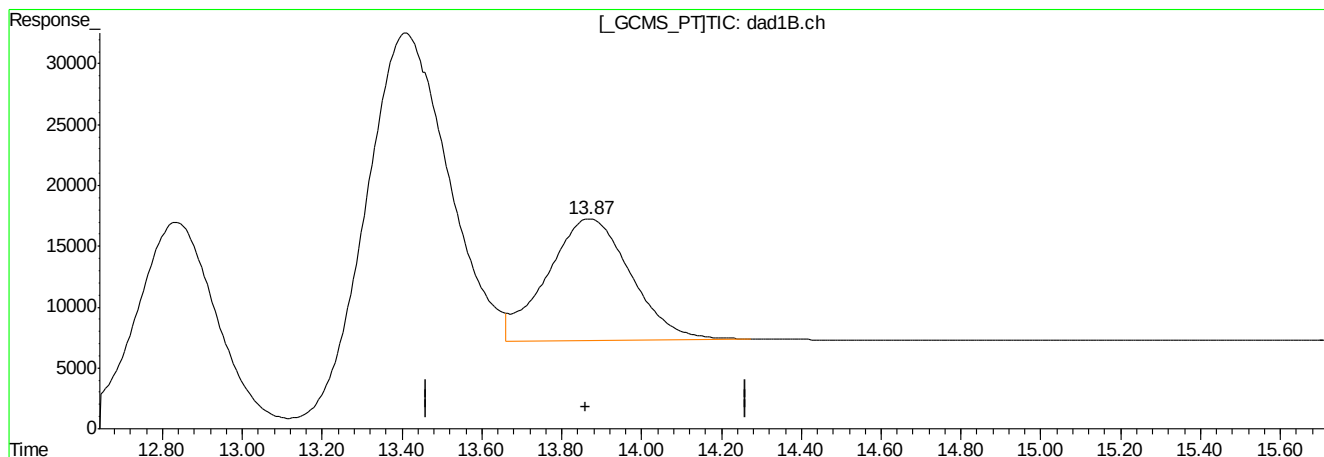
BB073634.D BBB2232_083122.M

Wed Aug 31 13:58:00 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : ic2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

13.87min 490.098ppb m

response 1462981

(17) 2,6-Dinitrotoluene #2

13.87min 877.313ppb

response 3502077

QEdit

(+) = Expected Retention Time

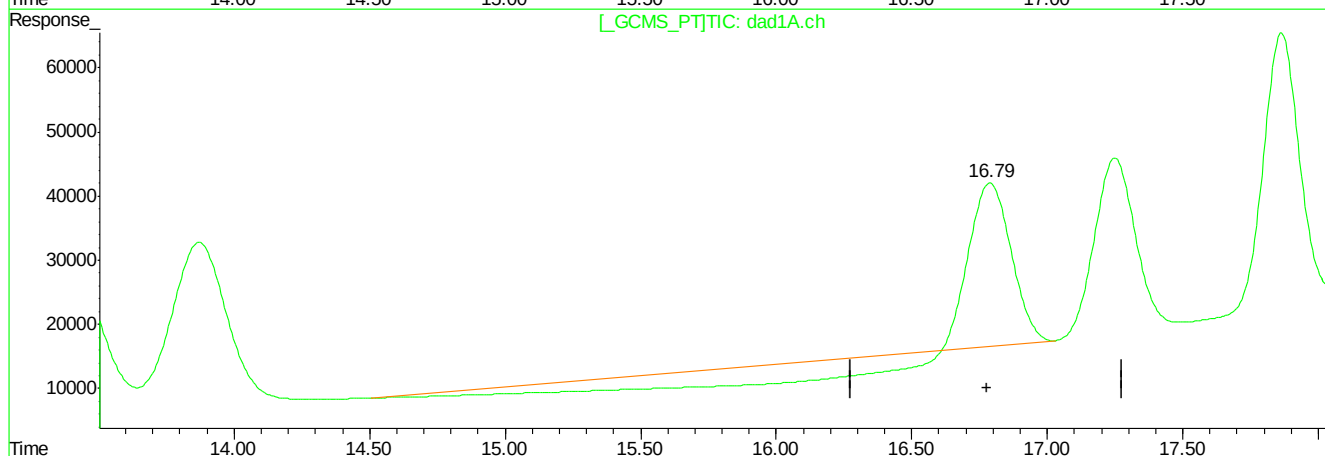
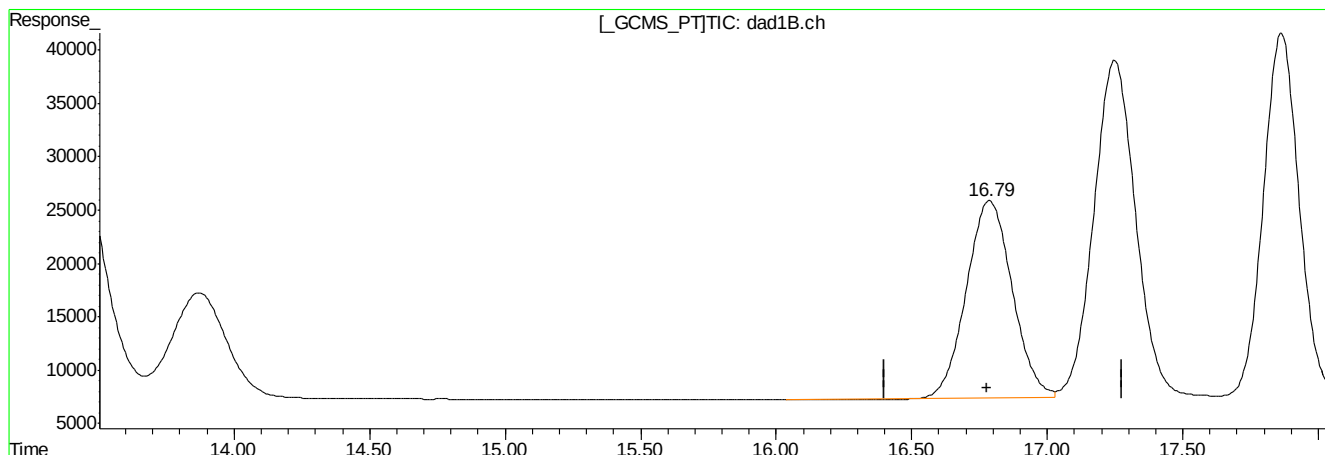
BB073634.D BBB2232_083122.M

Wed Aug 31 13:58:19 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : ic2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
16.79min 1050.502ppb
response 2168190

(18) o-Nitrotoluene #2
16.79min 109.154ppb
response 399950

(+) = Expected Retention Time

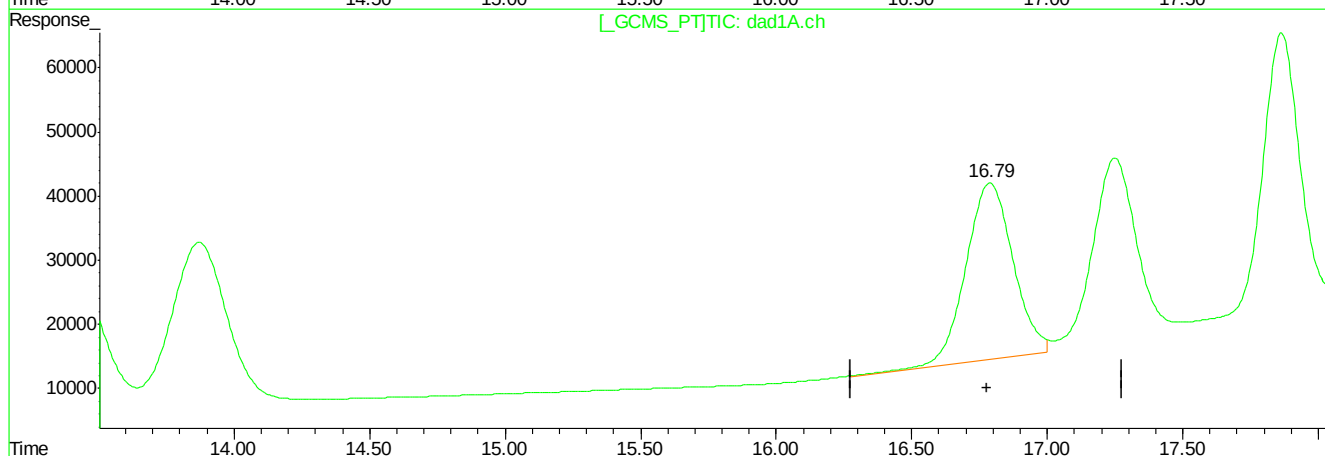
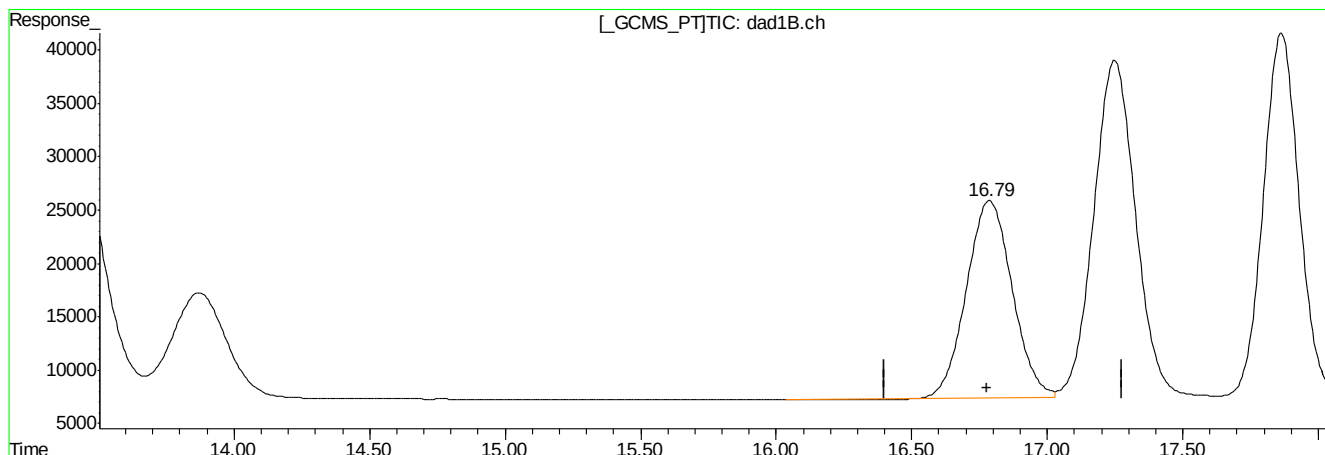
BB073634.D BBB2232_083122.M

Wed Aug 31 13:58:25 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : ic2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

16.79min 1050.502ppb

response 2168190

(18) o-Nitrotoluene #2

16.79min 968.839ppb m

response 3343437

(+) = Expected Retention Time

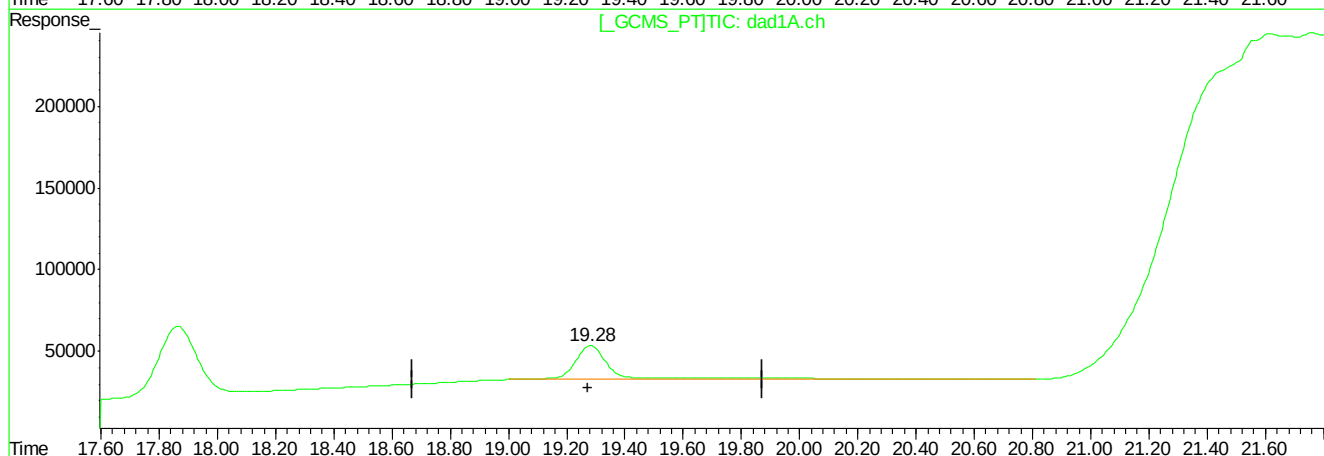
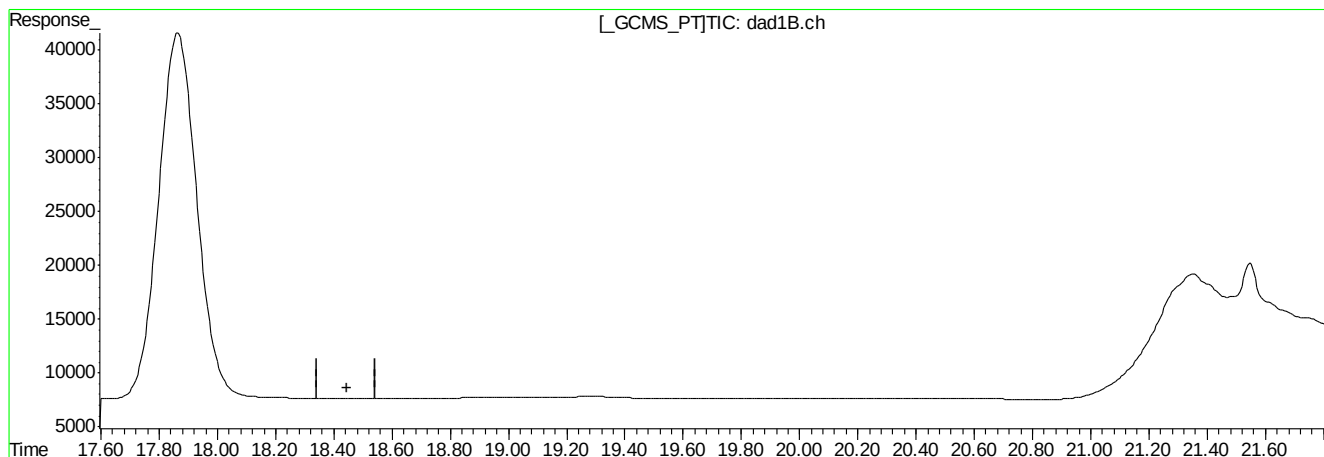
BB073634.D BBB2232_083122.M

Wed Aug 31 13:58:33 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : ic2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 1171.229ppb

response 1859219

(+) = Expected Retention Time

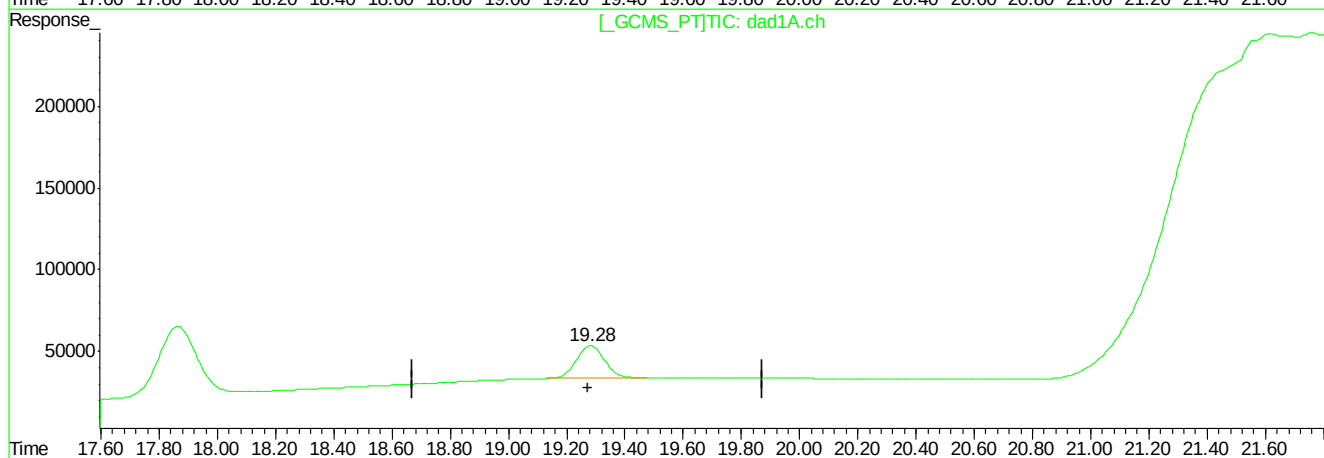
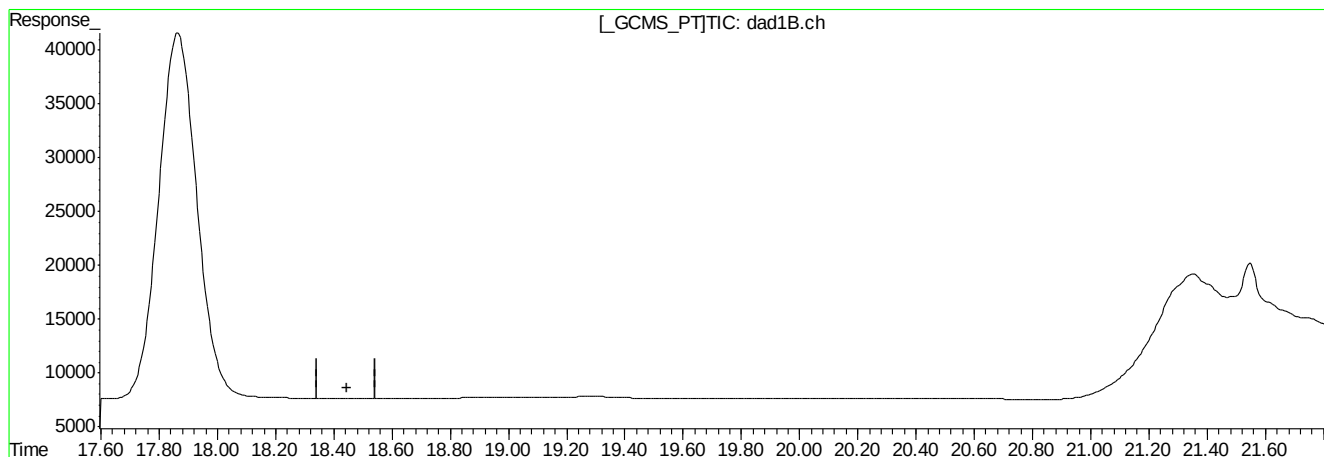
BB073634.D BBB2232_083122.M

Wed Aug 31 13:58:42 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : ic2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 851.141ppb m

response 1351108

(+) = Expected Retention Time

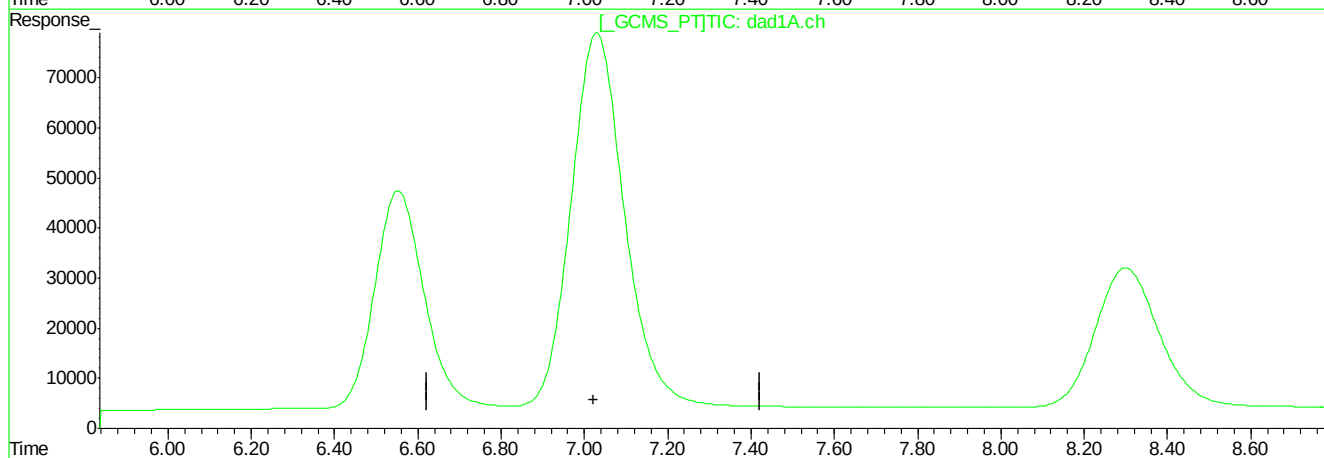
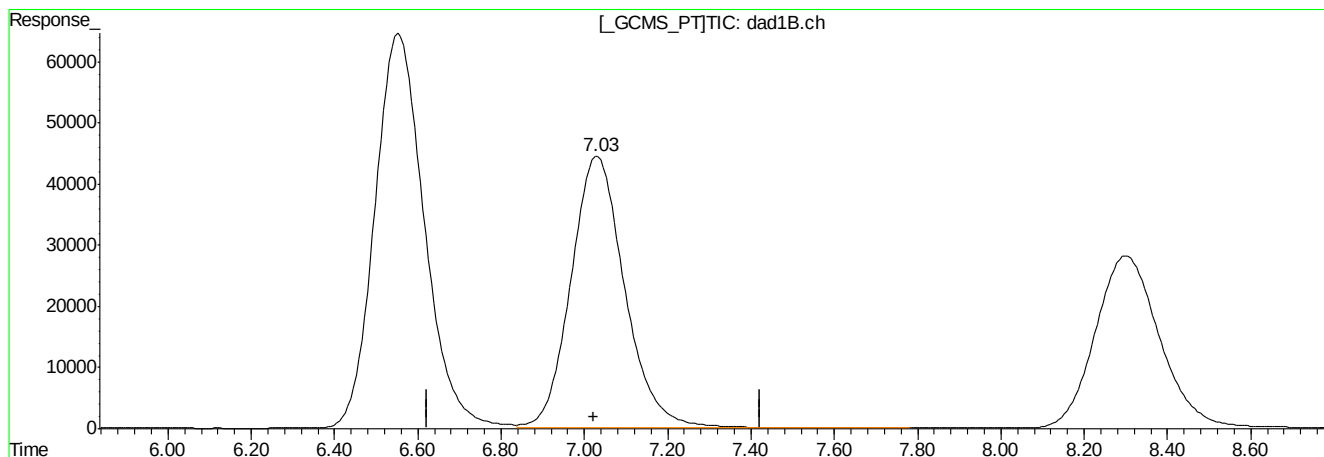
BB073634.D BBB2232_083122.M

Wed Aug 31 13:59:04 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : icc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:58 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:09:17 2022
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.03min 879.532ppb

response 4009314

(8) 3,5-Dinitroaniline #2

0.00min 0.000ppb

response 0

QEdit

(+) = Expected Retention Time

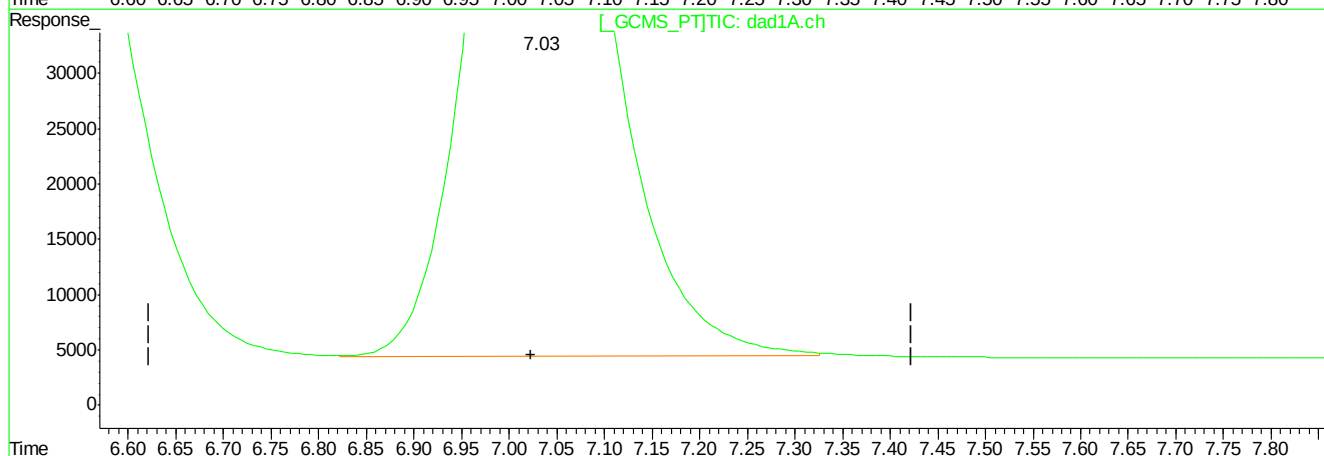
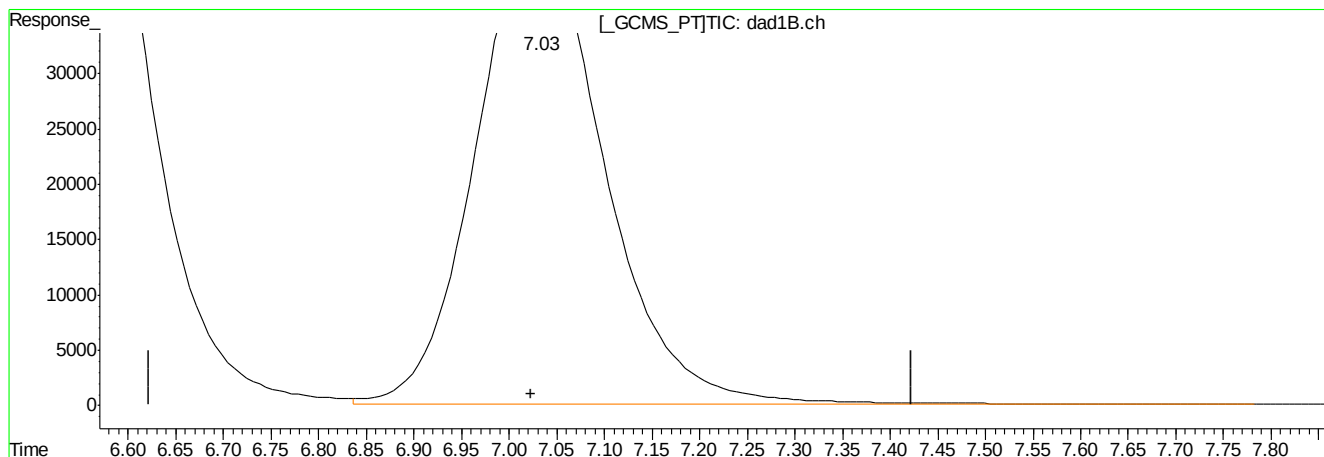
BB073634.D BBB2232_083122.M

Wed Aug 31 14:09:44 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : icc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:58 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:09:17 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.03min 879.532ppb

response 4009314

(8) 3,5-Dinitroaniline #2

7.03min 854.050ppb m

response 6596851

(+) = Expected Retention Time

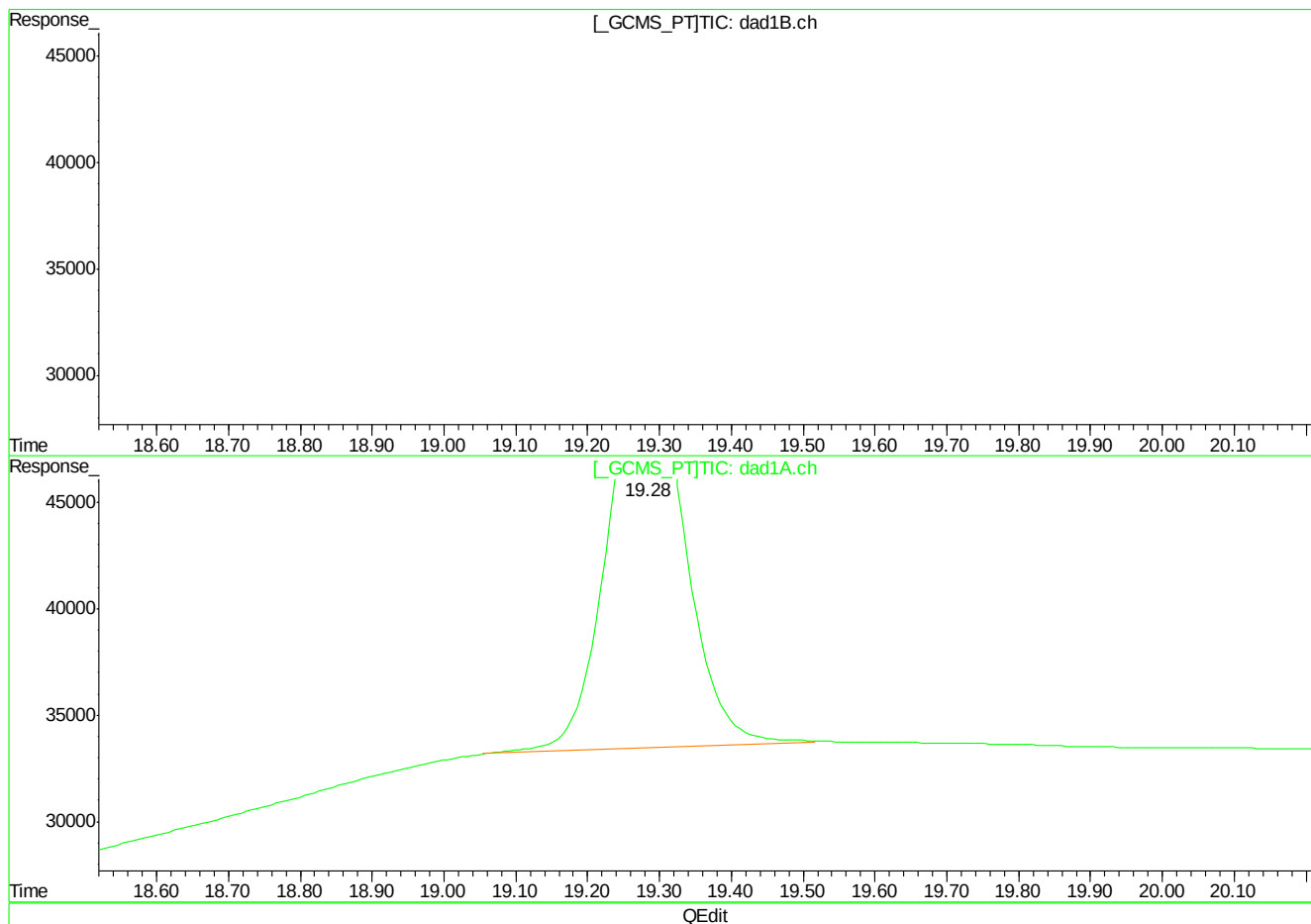
BB073634.D BBB2232_083122.M

Wed Aug 31 14:09:54 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : icc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:09 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 879.746ppb m

response 1396516

(+) = Expected Retention Time

BB073634.D BBB2232_083122.M

Thu Sep 01 07:57:07 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
 Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
 Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
 Sample : ic2232-2500 Inst : G1315B
 Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Aug 31 13:54:13 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Aug 31 08:15:37 2022
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	12.84	12.84	5309919	10517724	2156.752	2261.164
Spiked Amount	500.000	Range	70 - 136	Recovery	= 431.35%#	452.23%#
Target Compounds						
1) TNX	1.46	1.46	4409283	6800461	1091.100	1106.969
2) HMX	1.65	1.65	3701798	10238074	1979.319	1999.425
3) DNx	1.90	1.90	7635665	12124946	2148.179m	2169.001m
4) MNx	2.59	2.59	8325882	12736376	2581.069m	2570.136m
5) RDX	3.30	3.30	4616846	7287666	2084.766	2044.136
6) 1,3,5-Trinitrobe	5.28	5.28	9870127	15550253	2143.026	2097.322
7) 1,3-Dinitrobenze	6.55	6.55	12957736	8630306	2110.595	2021.262
8) 3,5-Dinitroanili	7.03	7.03	9791506	16213870	2147.984	2099.101m
9) Nitrobenzene	8.30	8.30	7495861	7387674	2455.605	2305.577
10) Nitroglycerin	0.00	10.13	0	3154953	N.D. d	2058.168
11) Tetryl	11.00	11.00	7016057	11406481	2024.595	2000.297
12) 2,4,6-Trinitroto	11.36	11.36	9085999	11078795	2100.996	2163.704
13) 2-Amino-4,6-Dini	11.85	11.85	7845053	12214514	2083.176	2144.931
14) 4-Amino-2,6-Dini	12.40	12.40	5701607	12175181	2056.644	2163.138
16) 2,4-Dinitrotolue	13.41	13.41	11467609	7701445	2225.707	2177.854
17) 2,6-Dinitrotolue	13.87	13.88	3622774	8686078	1213.627m	2175.970 #
18) o-Nitrotoluene	16.79	16.79	5377433	7749343	2605.401	2529.003m
19) p-Nitrotoluene	17.25	17.25	8334265	6946475	2504.604	2564.620
20) m-Nitrotoluene	17.86	17.86	7742523	9364646	2547.919	2634.838
21) PETN	0.00	19.28	0	3347273	N.D.	2108.640m#

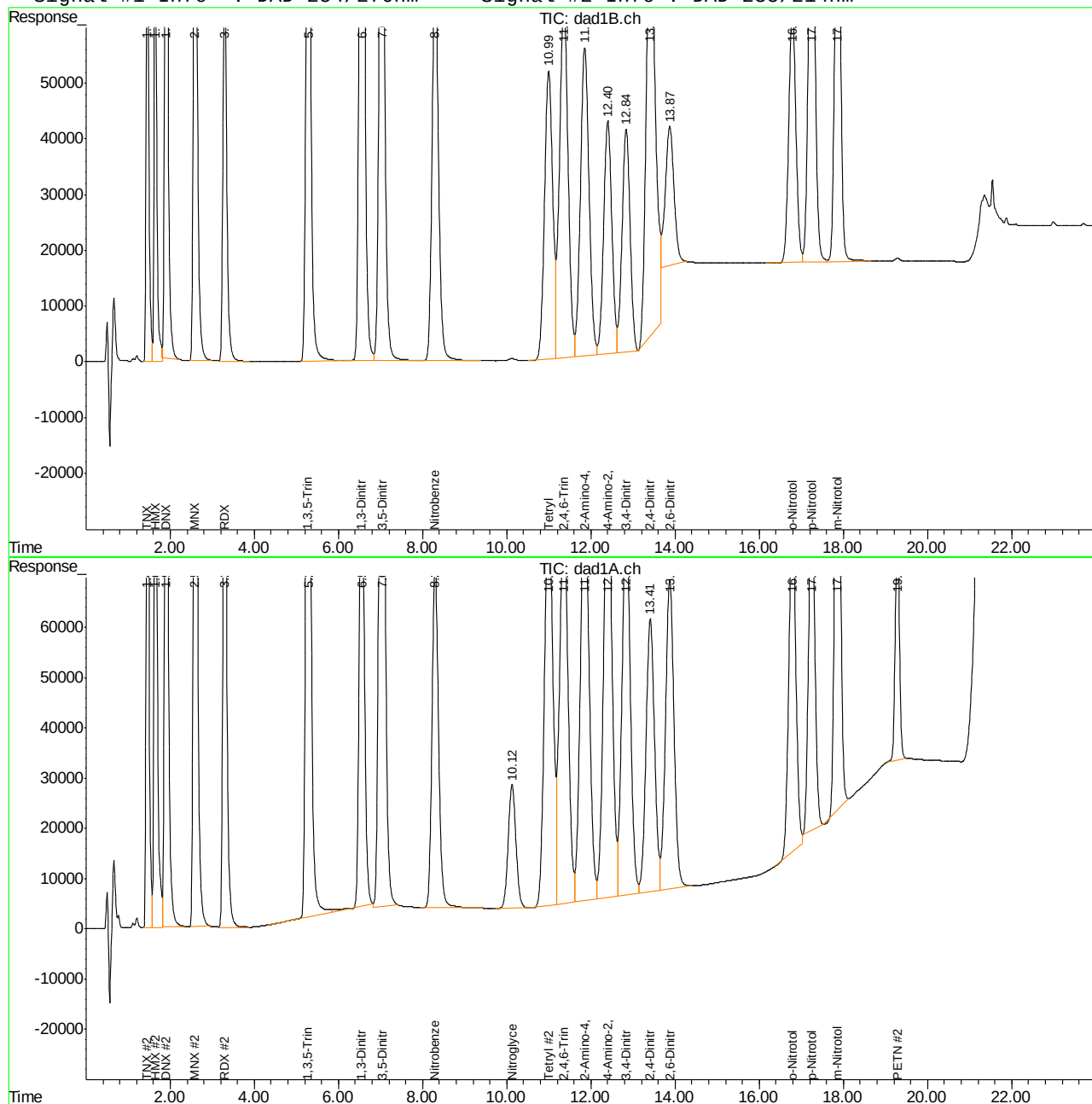
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB073635.D BBB2232_083122.M Thu Sep 01 14:19:33 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 8:02 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2232-IC2232

Lab FileID:

BB073635.D

Injection Time:

08/31/22 13:00

Method:

SW846 8330A

Analyst approved:

09/02/22 08:50 Fouad Sekkar

Supervisor approved:

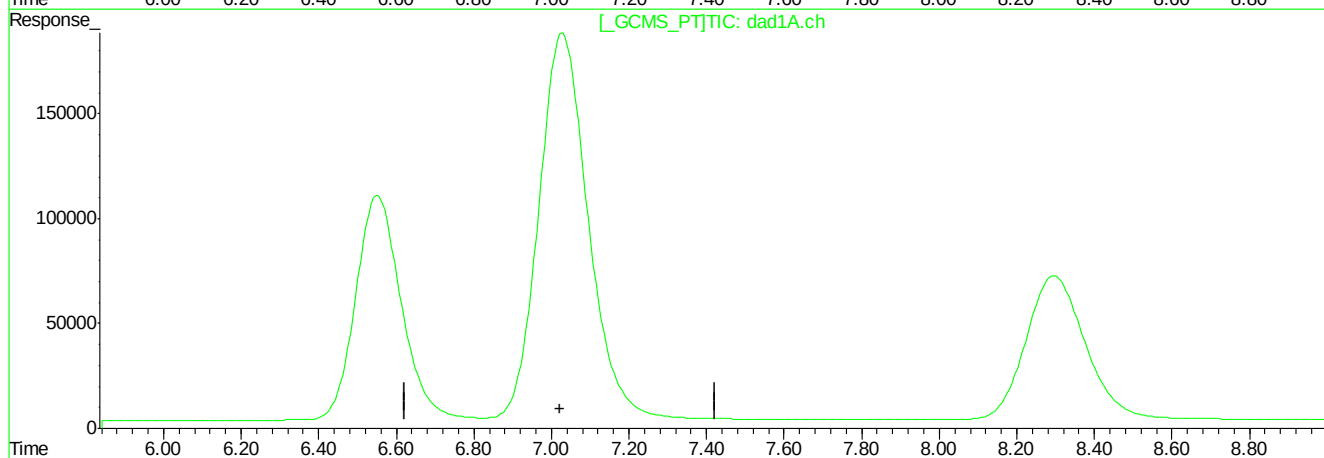
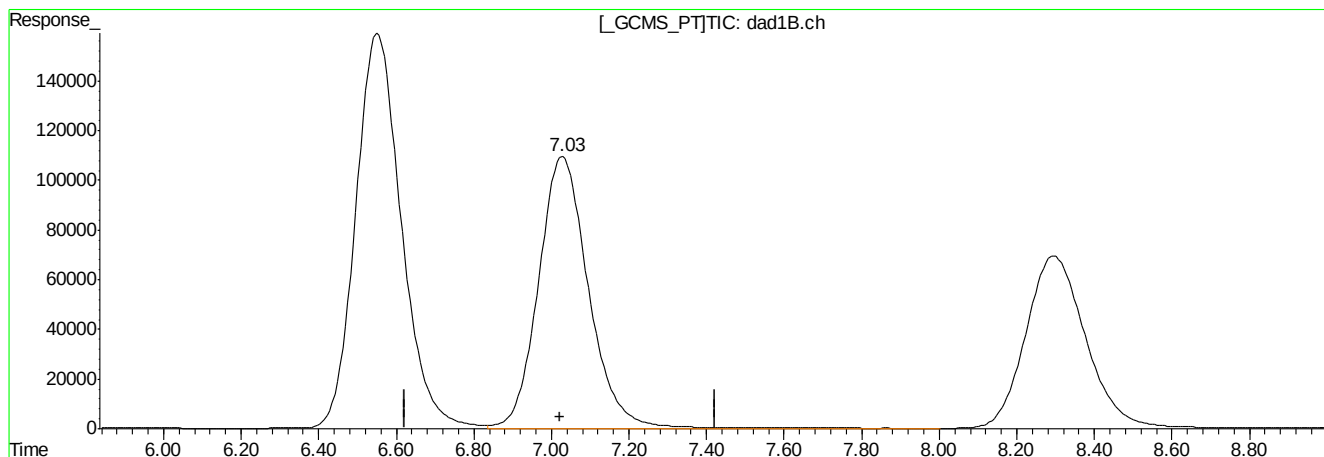
09/02/22 15:07 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
DNX		1	1.90	Poor instrument integration
DNX		2	1.90	Poor instrument integration
MNX		1	2.59	Poor instrument integration
MNX		2	2.59	Poor instrument integration
3,5-Dinitroaniline	618-87-1	2	7.03	Poor instrument integration
2,6-Dinitrotoluene	606-20-2	1	13.87	Poor instrument integration
o-Nitrotoluene	88-72-2	2	16.79	Poor instrument integration
PETN	78-11-5	2	19.28	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline
7.03min 2147.984ppb
response 9791506

(8) 3,5-Dinitroaniline #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

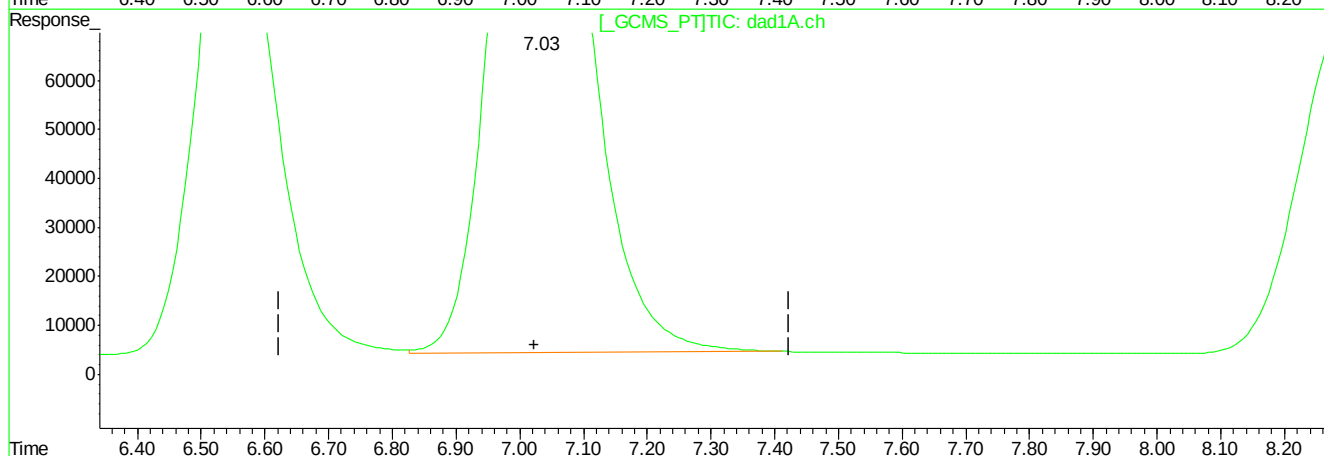
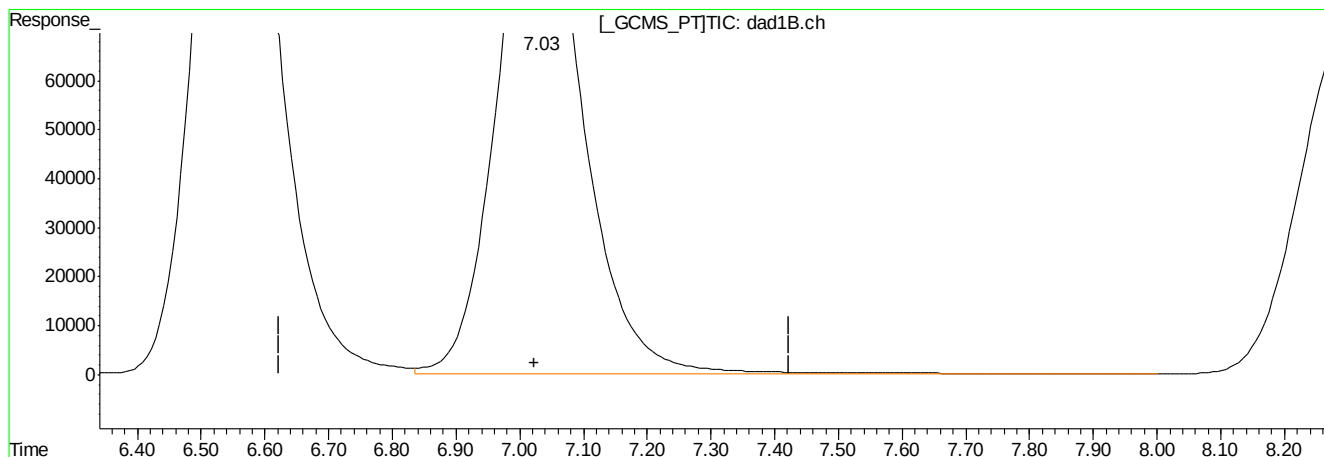
BB073635.D BBB2232_083122.M

Wed Aug 31 14:02:21 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.03min 2147.984ppb

response 9791506

(8) 3,5-Dinitroaniline #2

7.03min 2099.101ppb m

response 16213870

(+) = Expected Retention Time

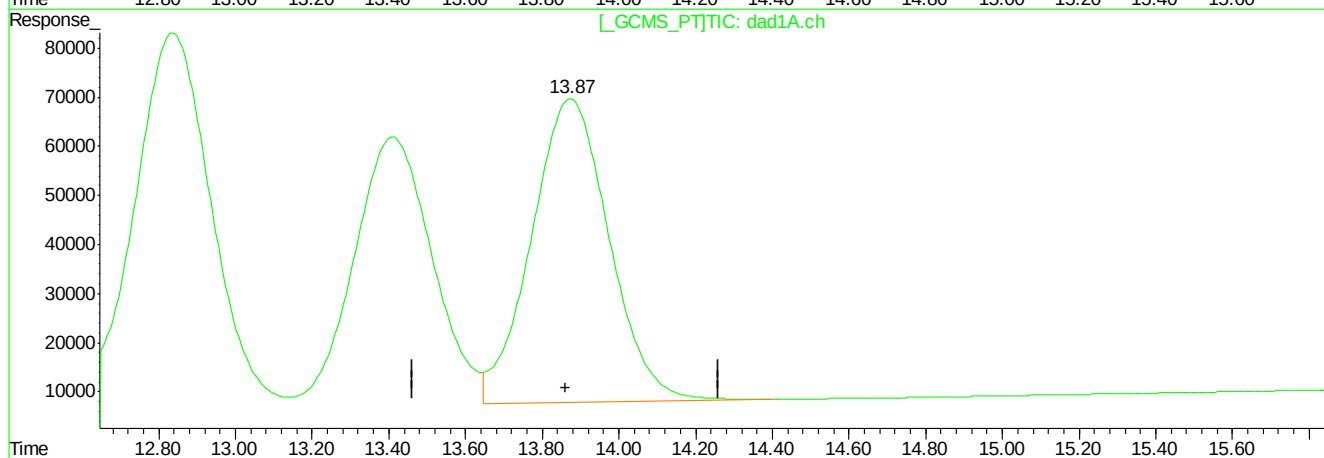
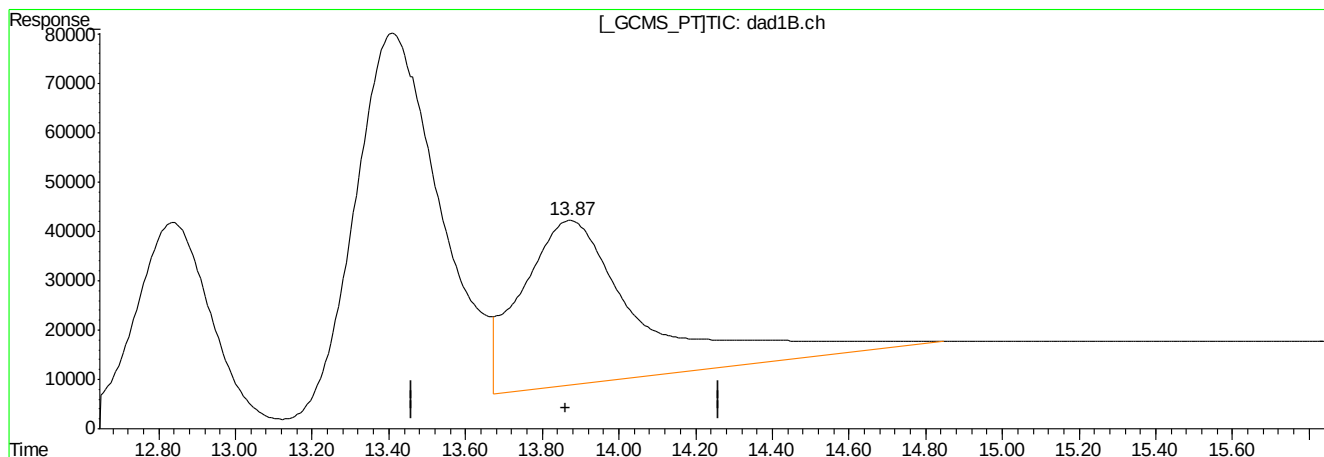
BB073635.D BBB2232_083122.M

Wed Aug 31 14:02:31 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

13.87min 2447.368ppb

response 7305590

(17) 2,6-Dinitrotoluene #2

13.88min 2175.970ppb

response 8686078

QEdit

(+) = Expected Retention Time

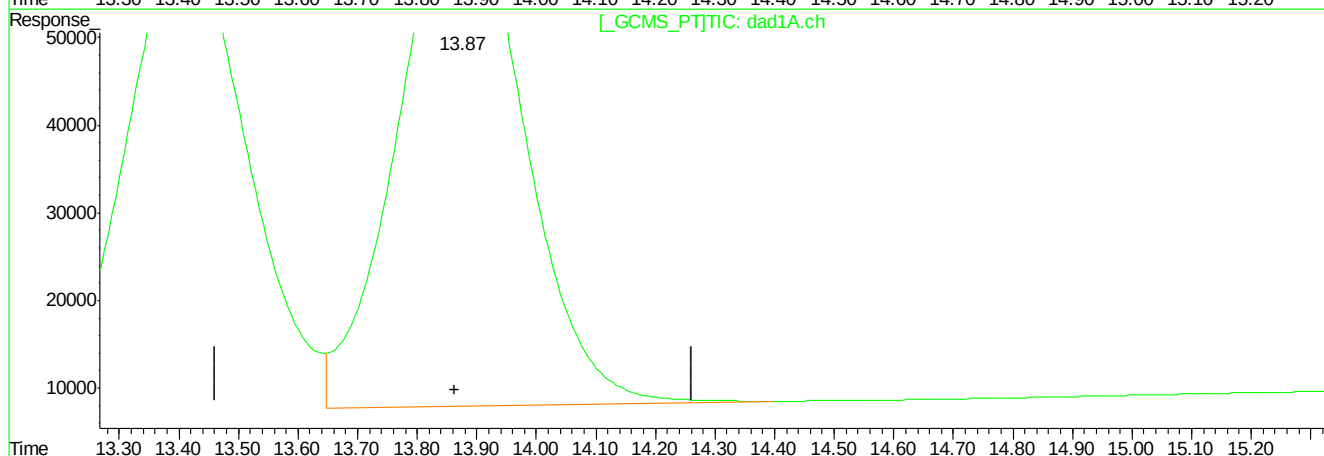
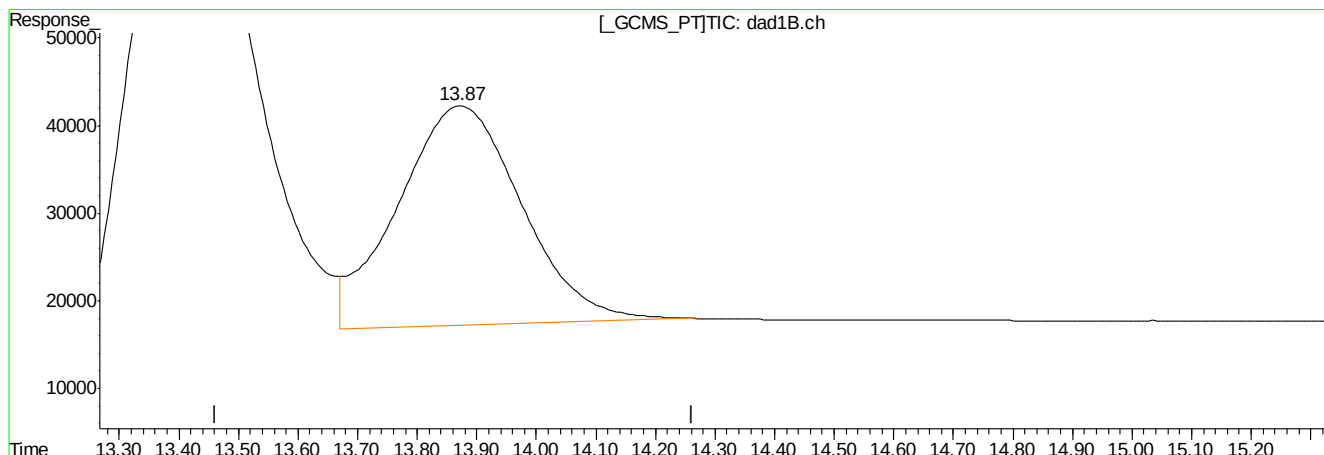
BB073635.D BBB2232_083122.M

Wed Aug 31 14:02:42 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene
13.87min 1213.627ppb m
response 3622774

(17) 2,6-Dinitrotoluene #2
13.88min 2175.970ppb
response 8686078

(+) = Expected Retention Time

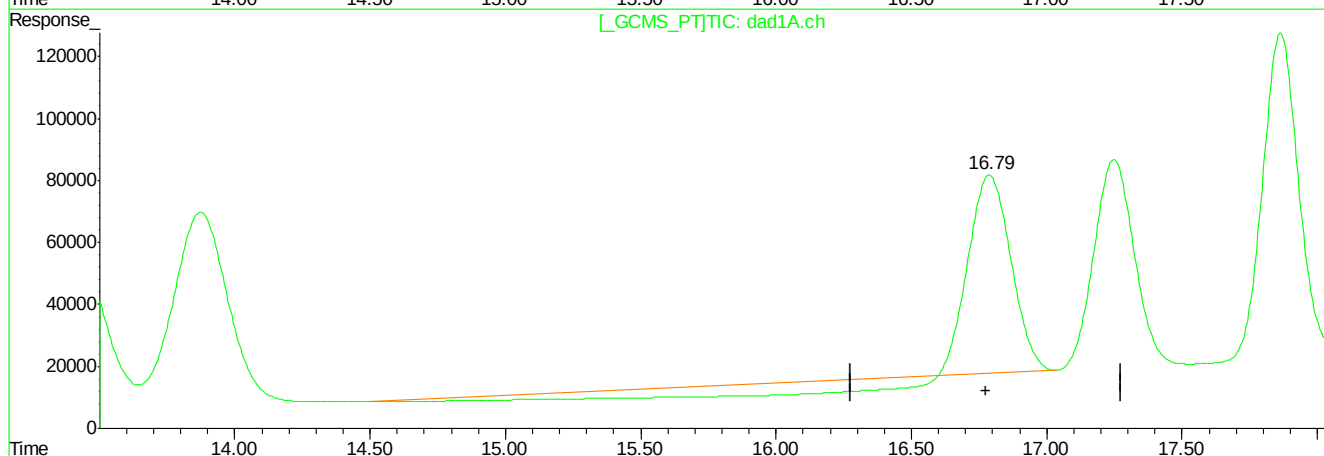
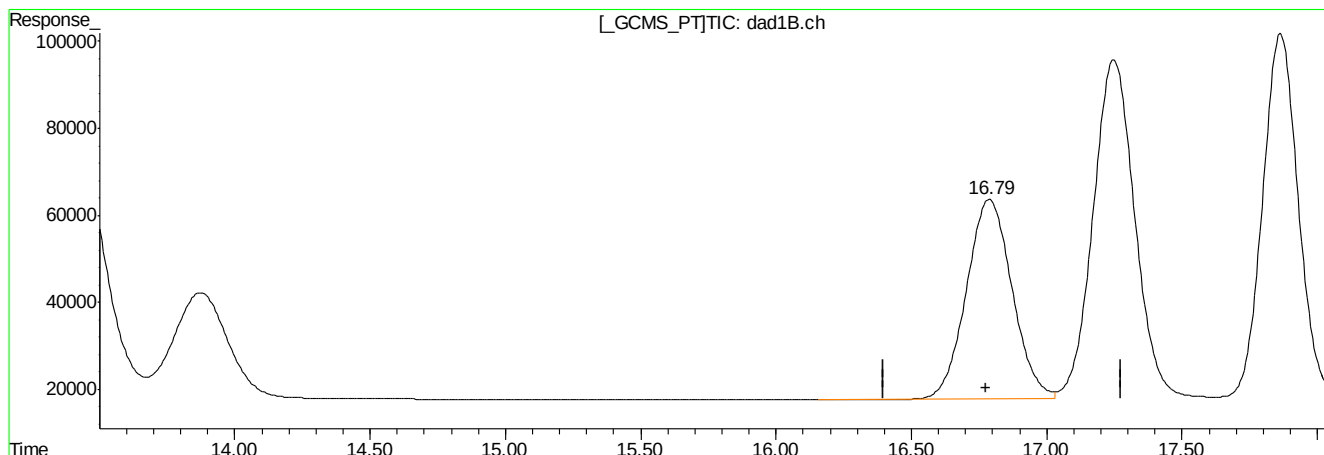
BB073635.D BBB2232_083122.M

Wed Aug 31 14:02:51 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
16.79min 2605.401ppb
response 5377433

(18) o-Nitrotoluene #2
16.79min 1202.241ppb
response 4079336

(+) = Expected Retention Time

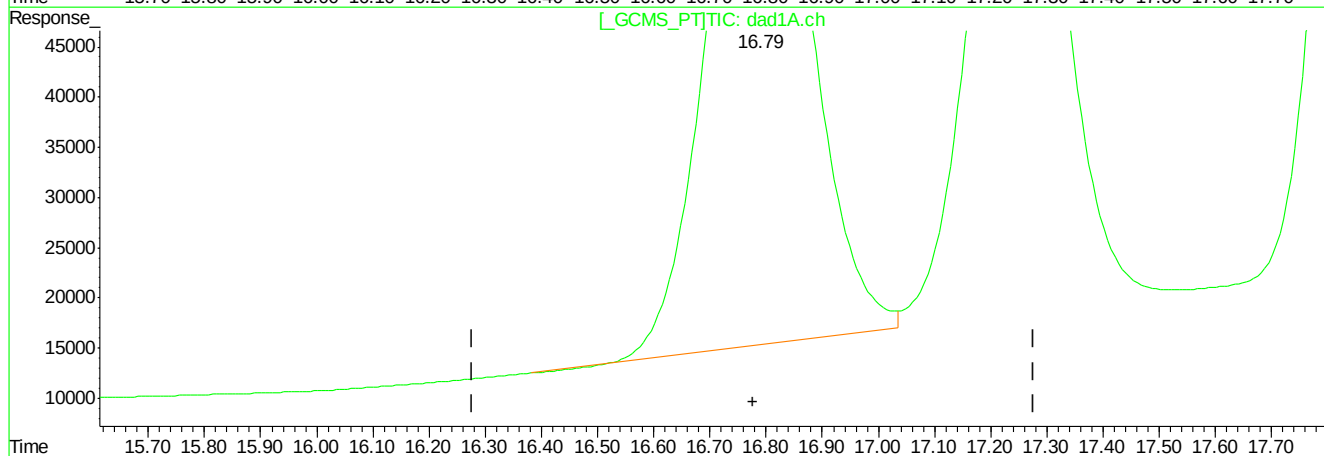
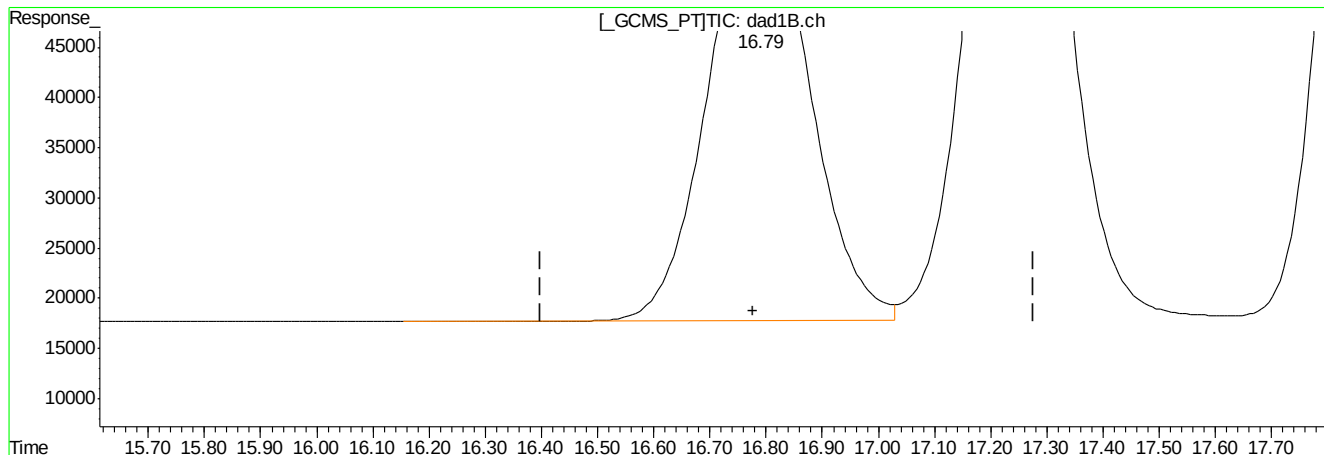
BB073635.D BBB2232_083122.M

Wed Aug 31 14:02:56 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

16.79min 2605.401ppb

response 5377433

(18) o-Nitrotoluene #2

16.79min 2529.003ppb m

response 7749343

(+) = Expected Retention Time

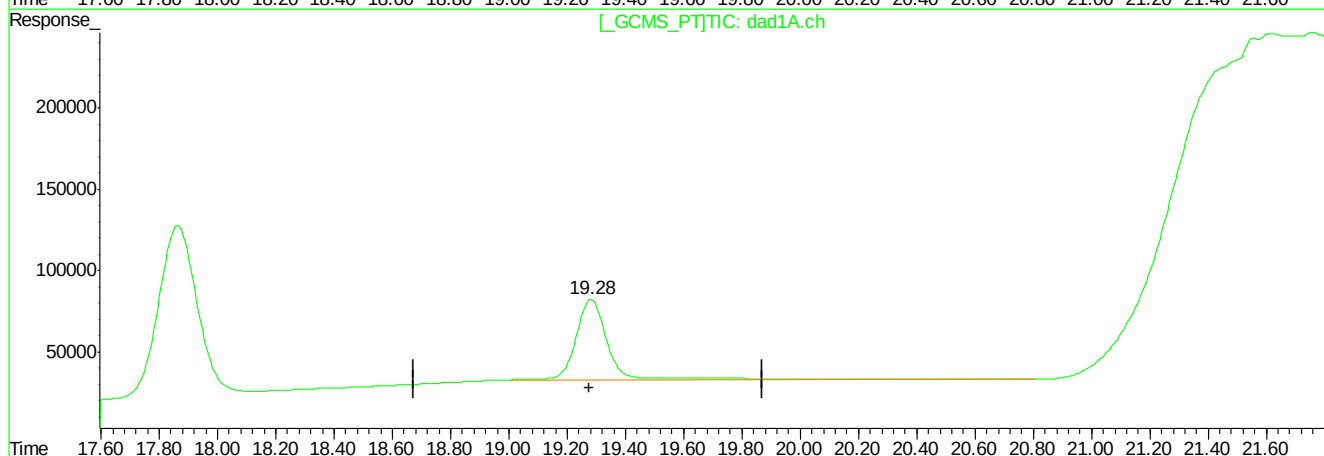
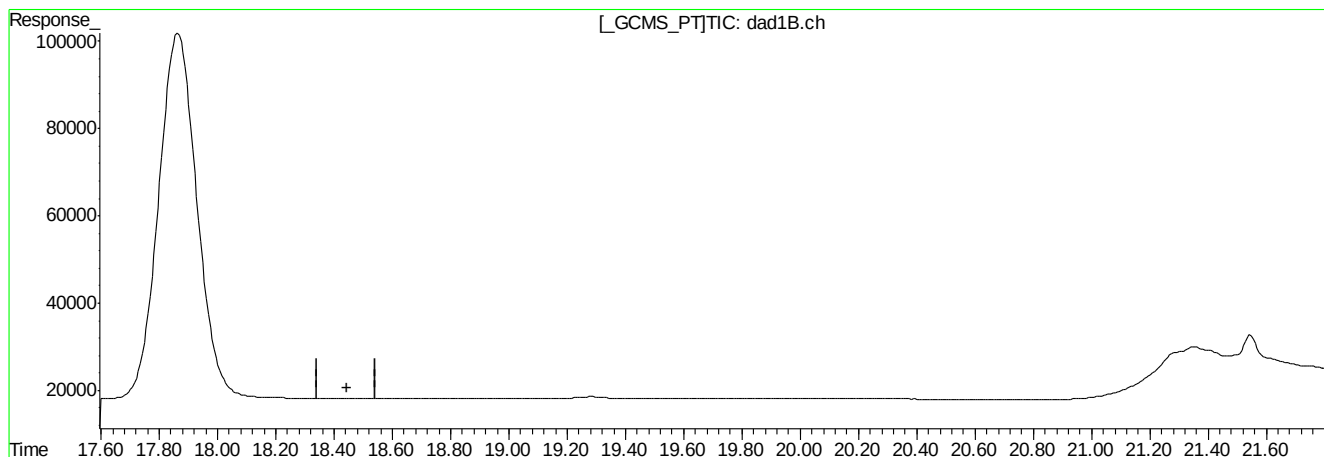
BB073635.D BBB2232_083122.M

Wed Aug 31 14:03:21 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 2385.592ppb

response 3786909

(+) = Expected Retention Time

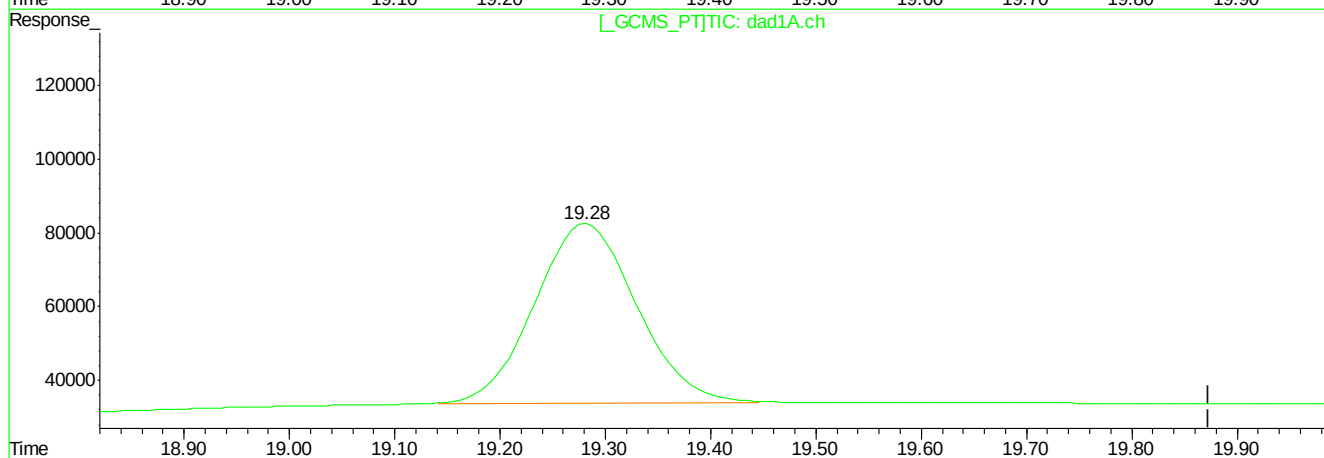
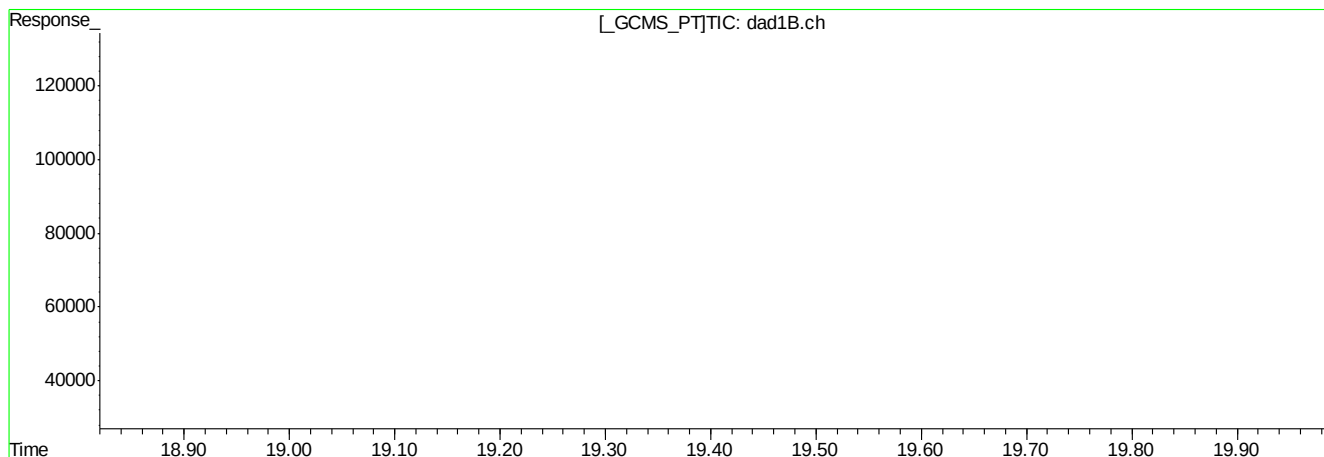
BB073635.D BBB2232_083122.M

Wed Aug 31 14:03:38 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 2068.162ppb m

response 3283018

(+) = Expected Retention Time

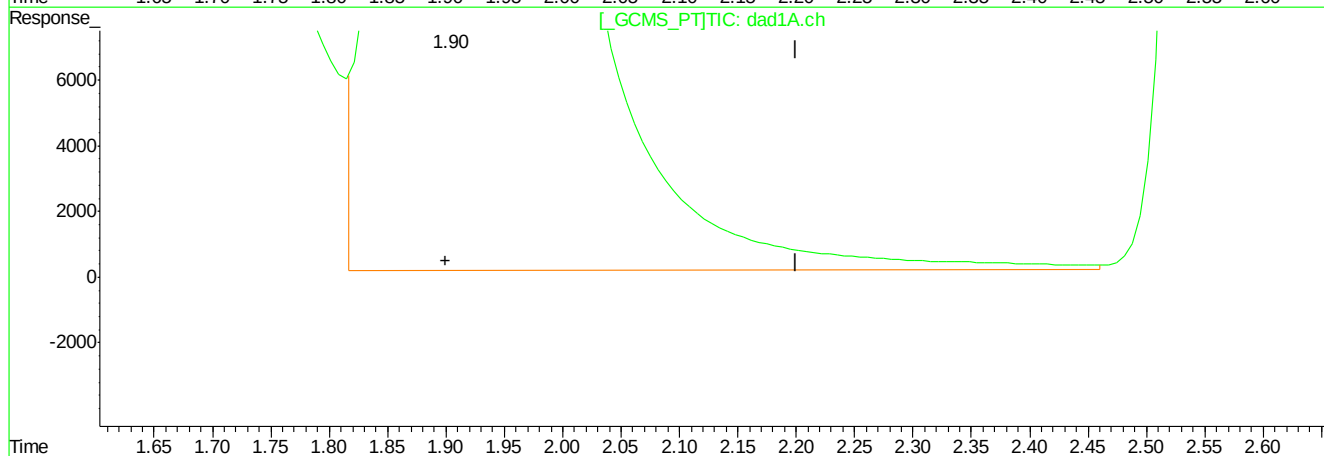
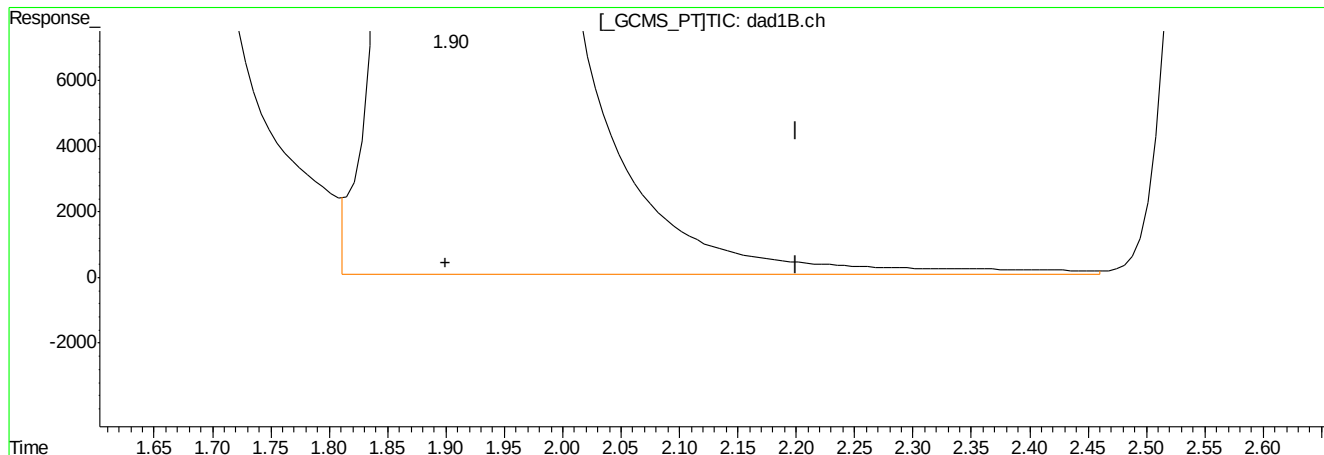
BB073635.D BBB2232_083122.M

Wed Aug 31 14:03:54 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:03 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



QEdit

(3) DNX

1.90min 2188.428ppb

response 7778728

(3) DNX #2

1.90min 2186.249ppb

response 12221360

(+) = Expected Retention Time

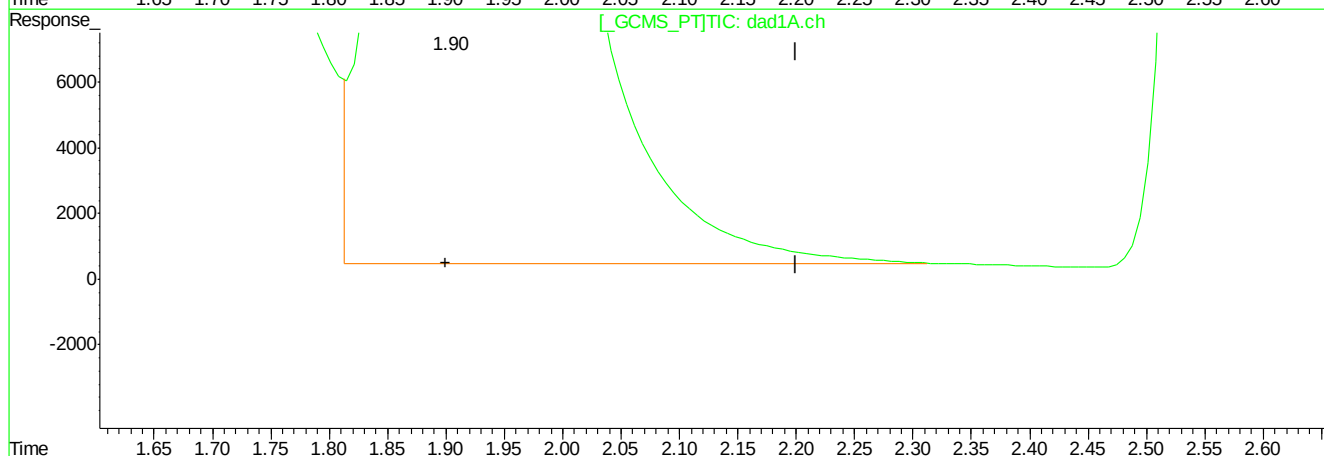
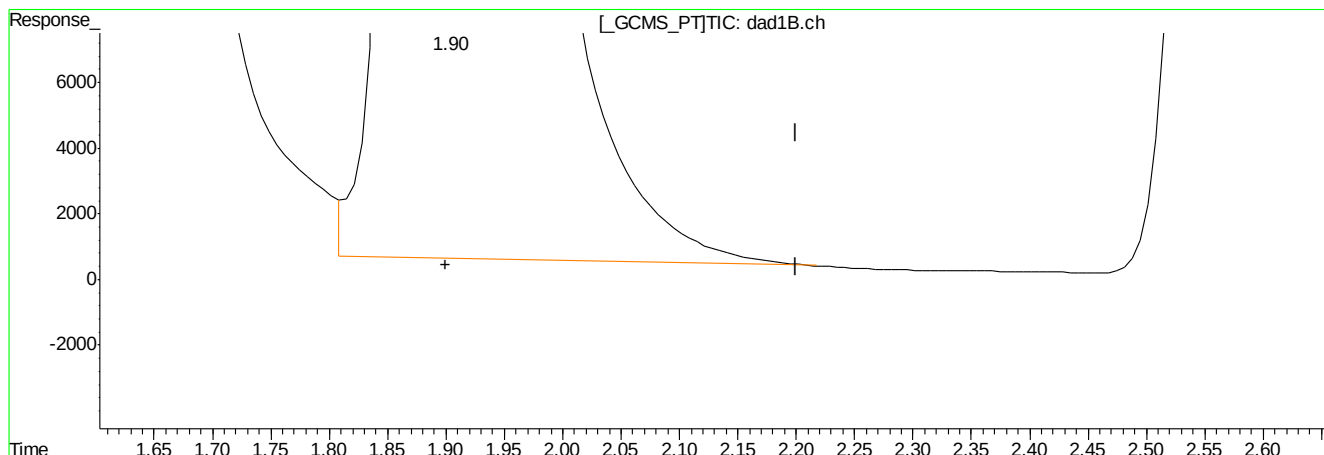
BB073635.D BBB2232_083122.M

Thu Sep 01 07:51:29 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:03 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(3) DNX

1.90min 2148.179ppb m

response 7635665

(3) DNX #2

1.90min 2169.001ppb m

response 12124946

(+) = Expected Retention Time

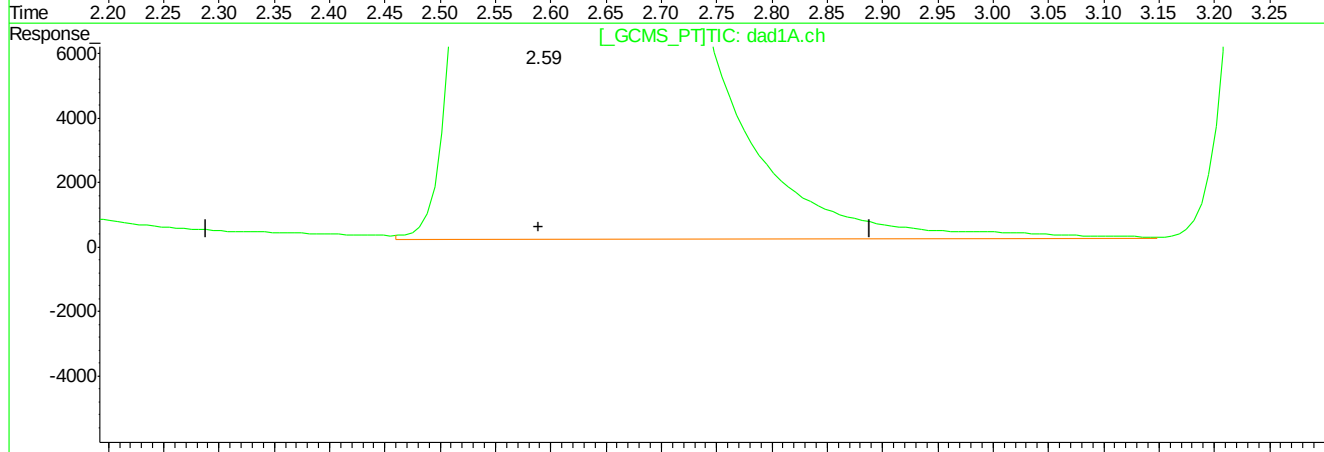
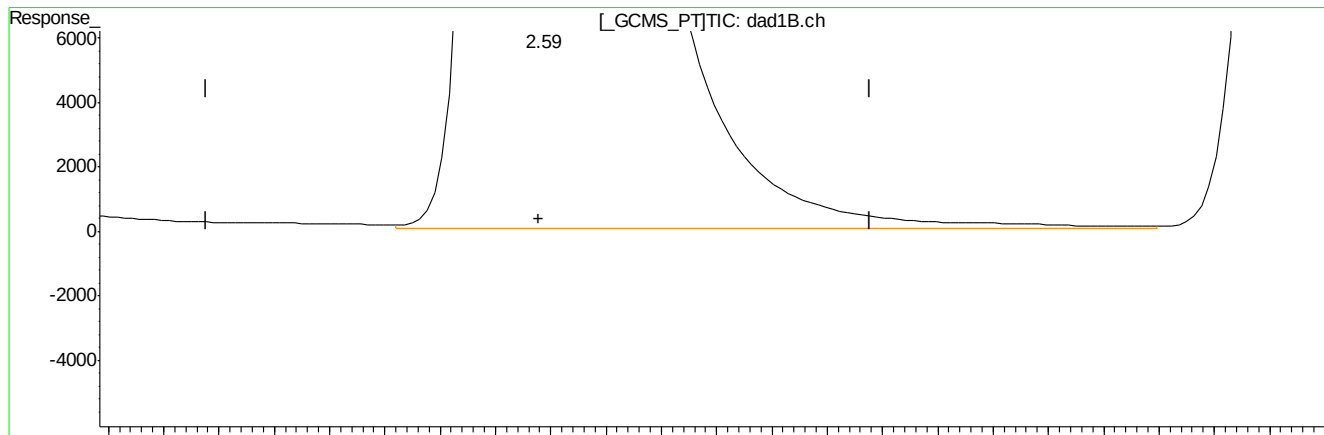
BB073635.D BBB2232_083122.M

Thu Sep 01 07:51:39 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:03 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



QEdit

(4) MNX

2.59min 2595.472ppb

response 8372346

(4) MNX #2

2.59min 2586.084ppb

response 12815407

(+) = Expected Retention Time

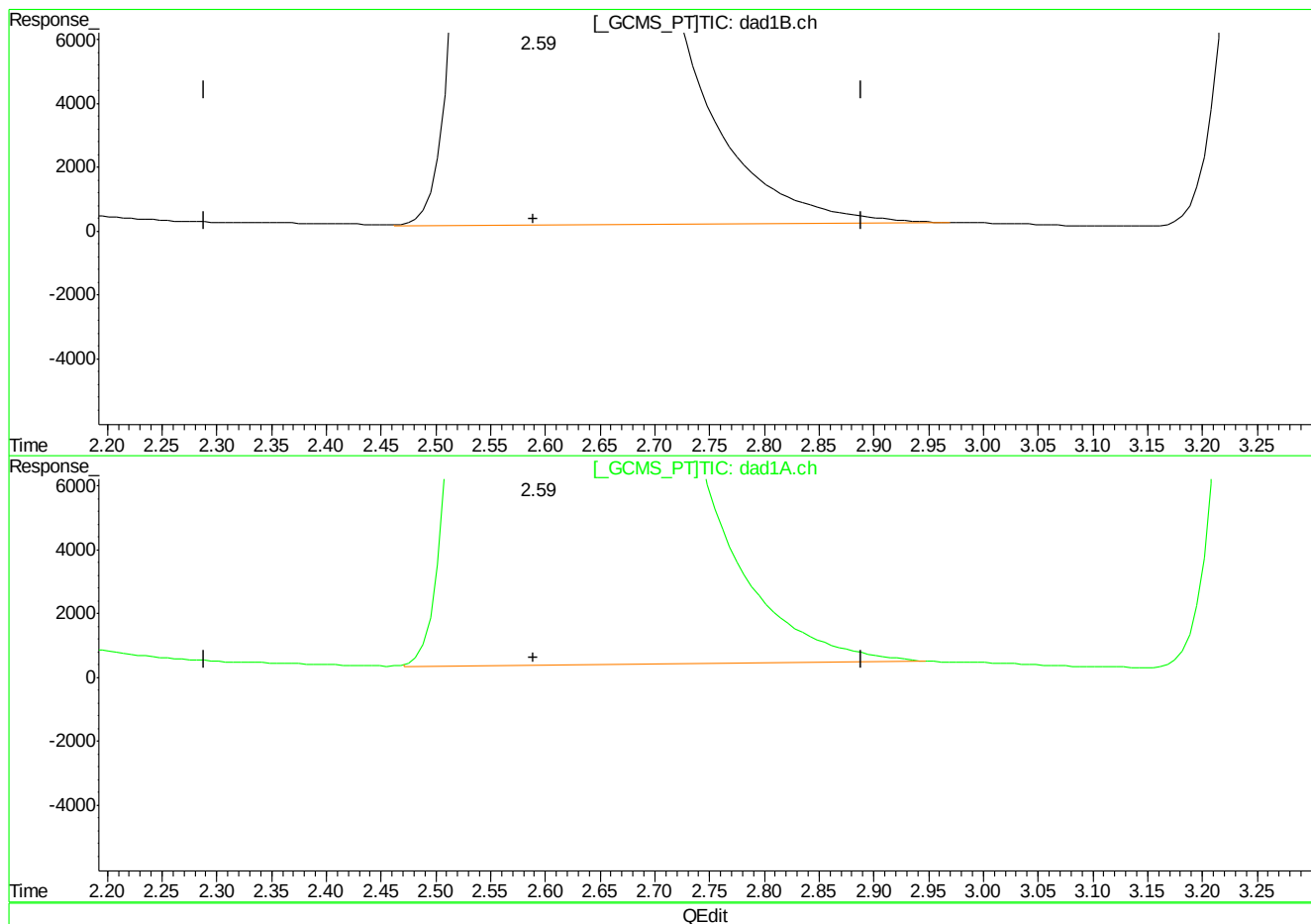
BB073635.D BBB2232_083122.M

Thu Sep 01 07:51:50 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:03 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(4) MNX

2.59min 2581.069ppb m

response 8325882

(4) MNX #2

2.59min 2570.136ppb m

response 12736376

(+) = Expected Retention Time

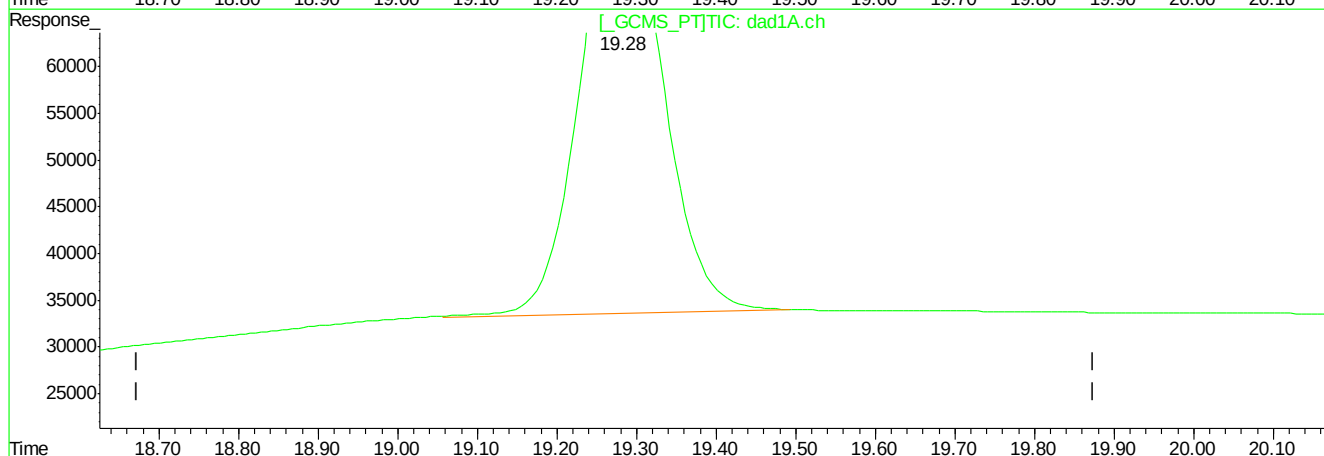
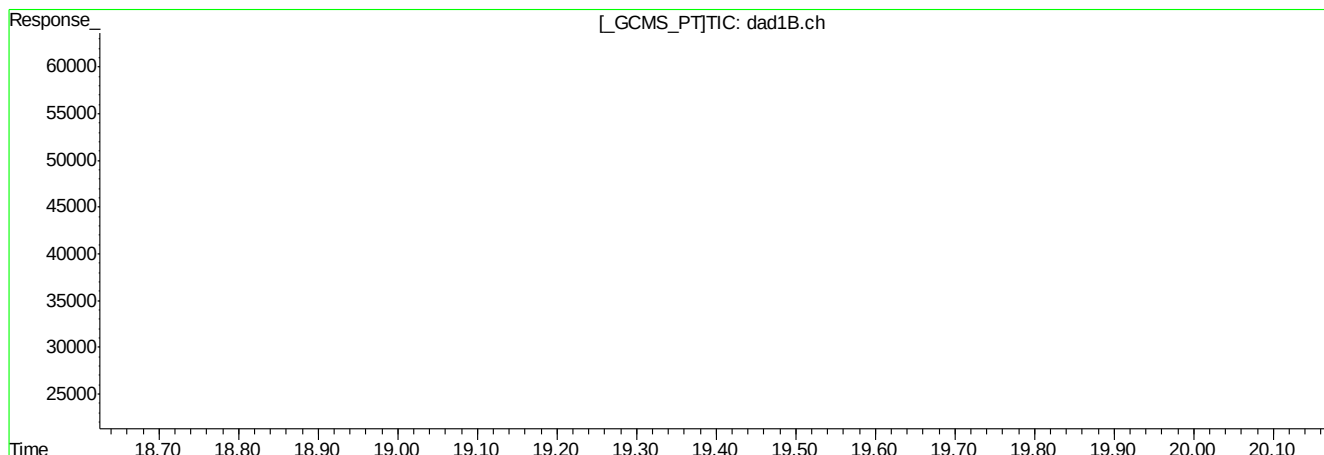
BB073635.D BBB2232_083122.M

Thu Sep 01 07:52:01 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:51 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 2108.640ppb m

response 3347273

(+) = Expected Retention Time

BB073635.D BBB2232_083122.M

Thu Sep 01 07:57:28 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
 Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
 Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
 Sample : ic2232-5000 Inst : G1315B
 Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Aug 31 14:06:17 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Aug 31 14:06:08 2022
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	12.84	12.84	10732773	21316674	4359.375	4582.788
Spiked Amount	500.000	Range	70 - 136	Recovery	= 871.88%#	916.56%#
Target Compounds						
1) TNX	1.46	1.46	8855494	13554331	2191.338	2206.353
2) HMX	1.65	1.65	7392598	20398673	3952.757	3983.720
3) DNX	1.90	1.90	15388888	24280558	4329.432m	4343.488m
4) MNX	2.59	2.59	16729923	25640510	5186.366m	5174.125m
5) RDX	3.29	3.29	9277617	14653063	4189.365	4110.075
6) 1,3,5-Trinitrobe	5.28	5.28	19904383	31099983	4321.688	4194.574
7) 1,3-Dinitrobenze	6.55	6.55	26067133	17108388	4245.894	4006.872
8) 3,5-Dinitroanili	7.03	7.02	19690106	32729168	4319.462	4237.226m
9) Nitrobenzene	8.29	8.29	14983362	14825046	4908.471	4626.665
10) Nitroglycerin	0.00	10.12	0	6354805	N.D. d	4145.628
11) Tetryl	10.99	10.99	14145083	23095622	4081.790	4050.162
12) 2,4,6-Trinitroto	11.36	11.36	18291551	22452818	4229.638	4385.066
13) 2-Amino-4,6-Dini	11.85	11.85	15825826	24790108	4202.391	4353.269
14) 4-Amino-2,6-Dini	12.40	12.40	11498402	24650215	4147.623	4379.550
16) 2,4-Dinitrotolue	13.41	13.41	23553789	15633706	4571.470	4420.979
17) 2,6-Dinitrotolue	13.87	13.88	7696853	17583059	2578.440m	4404.773 #
18) o-Nitrotoluene	16.79	16.78	10808154	15316847	5236.621	5697.542m
19) p-Nitrotoluene	17.25	17.25	16737037	14205383	5029.796	5244.589
20) m-Nitrotoluene	17.86	17.86	15586839	18928929	5129.336	5325.846
21) PETN	0.00	19.28	0	6713593	N.D.	4229.279m#

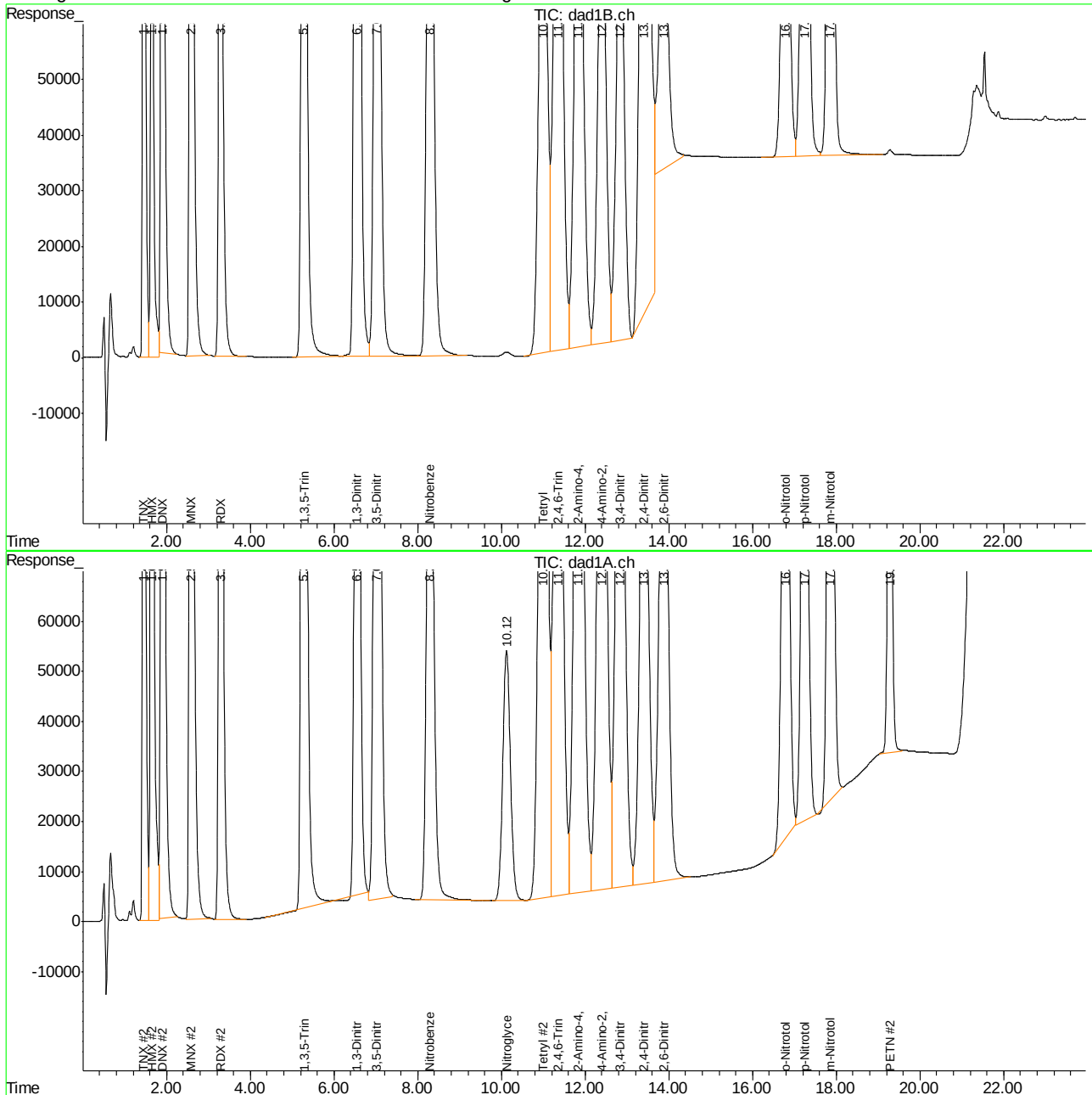
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB073636.D BBB2232_083122.M Thu Sep 01 14:19:34 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : op92480, GBB2232, 1000,,, 10, 1, water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:57 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Wed Aug 31 14:06:08 2022
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Page 1 of 1

Sample Number: GBB2232-IC2232 **Method:** SW846 8330A
Lab FileID: BB073636.D **Analyst approved:** 09/02/22 08:50 Fouad Sekkar
Injection Time: 08/31/22 13:31 **Supervisor approved:** 09/02/22 15:07 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
DNX		1	1.90	Poor instrument integration
DNX		2	1.90	Poor instrument integration
MNX		1	2.59	Poor instrument integration
MNX		2	2.59	Poor instrument integration
3,5-Dinitroaniline	618-87-1	2	7.02	Poor instrument integration
2,6-Dinitrotoluene	606-20-2	1	13.87	Poor instrument integration
o-Nitrotoluene	88-72-2	2	16.78	Poor instrument integration
PETN	78-11-5	2	19.28	Poor instrument integration

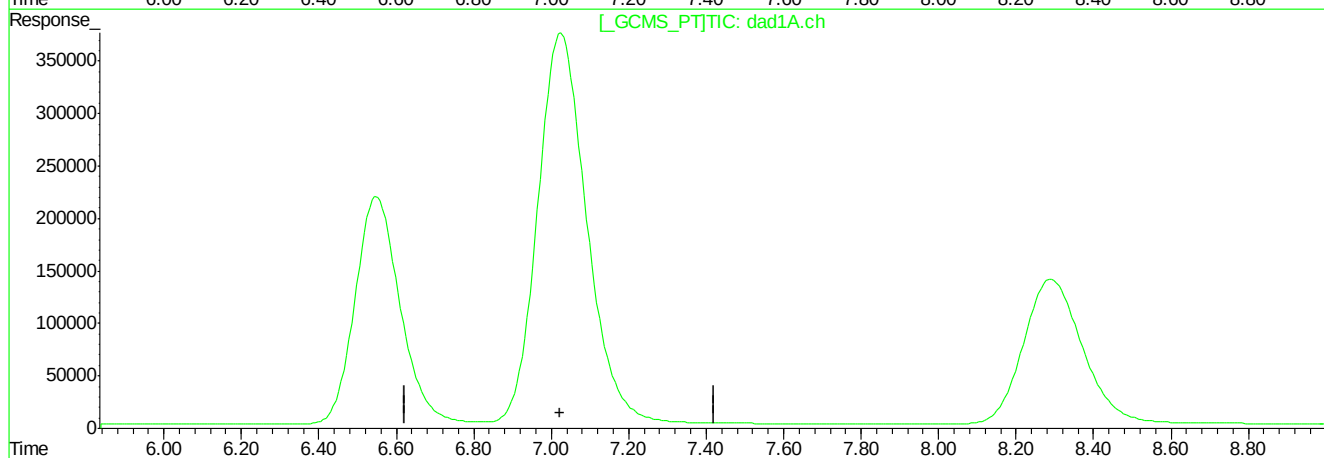
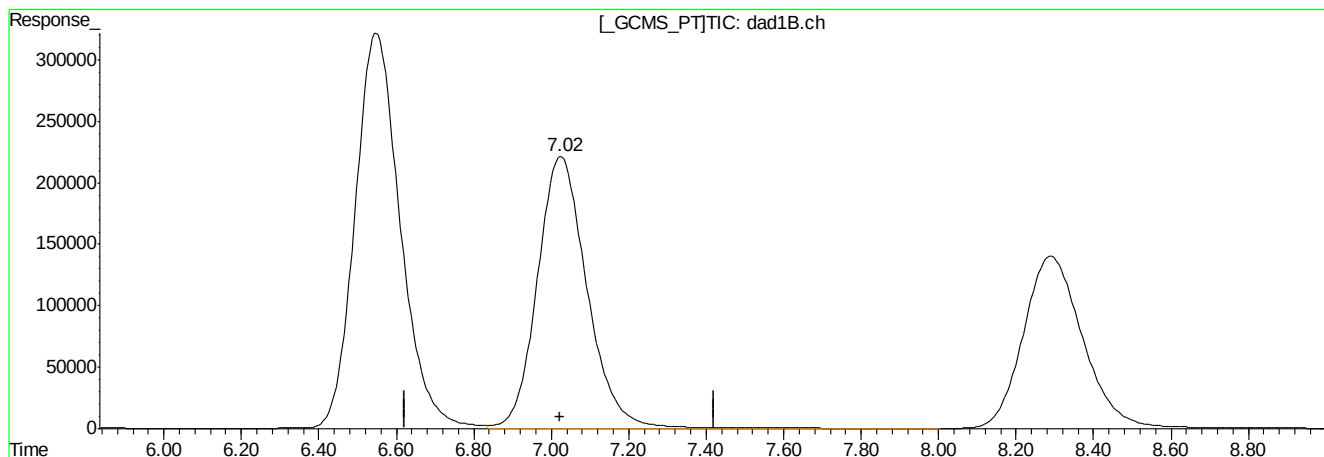
9.5.8.1

9

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:04 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.03min 4319.462ppb

response 19690106

(8) 3,5-Dinitroaniline #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

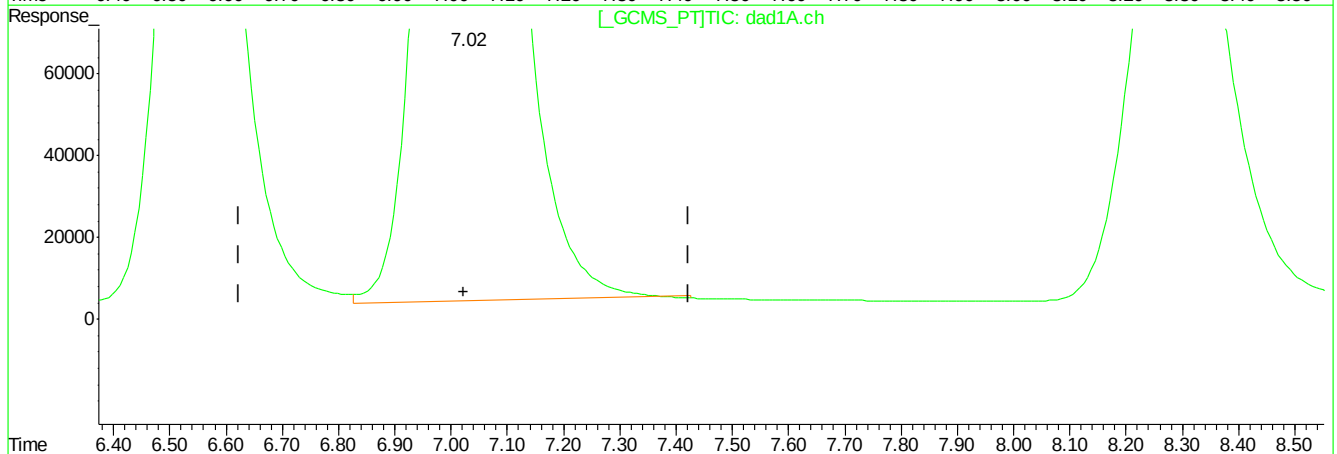
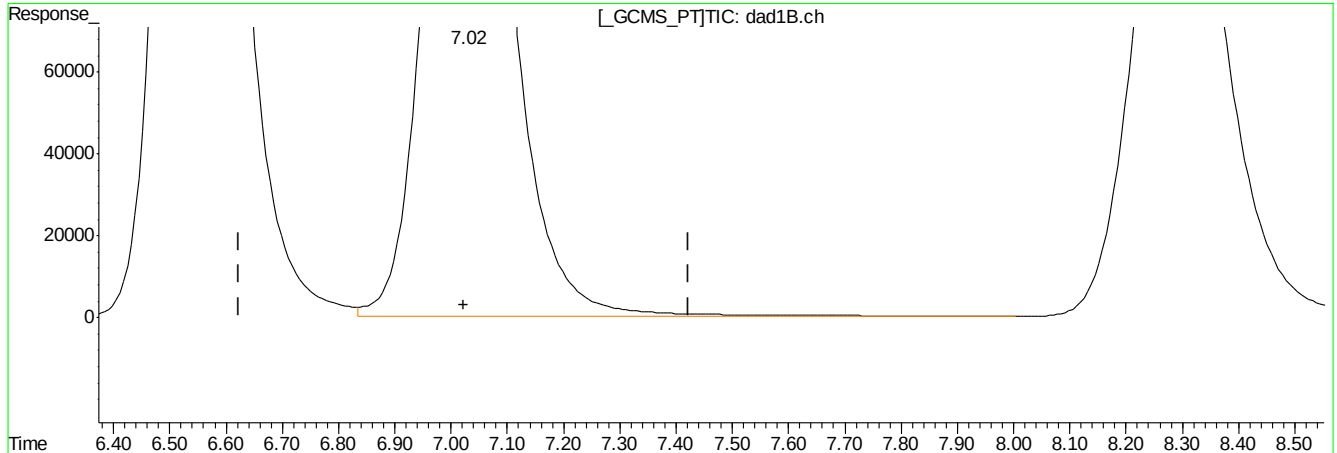
BB073636.D BBB2232_083122.M

Wed Aug 31 14:04:28 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:04 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.03min 4319.462ppb

response 19690106

(8) 3,5-Dinitroaniline #2

7.02min 4226.472ppb m

response 32646107

(+) = Expected Retention Time

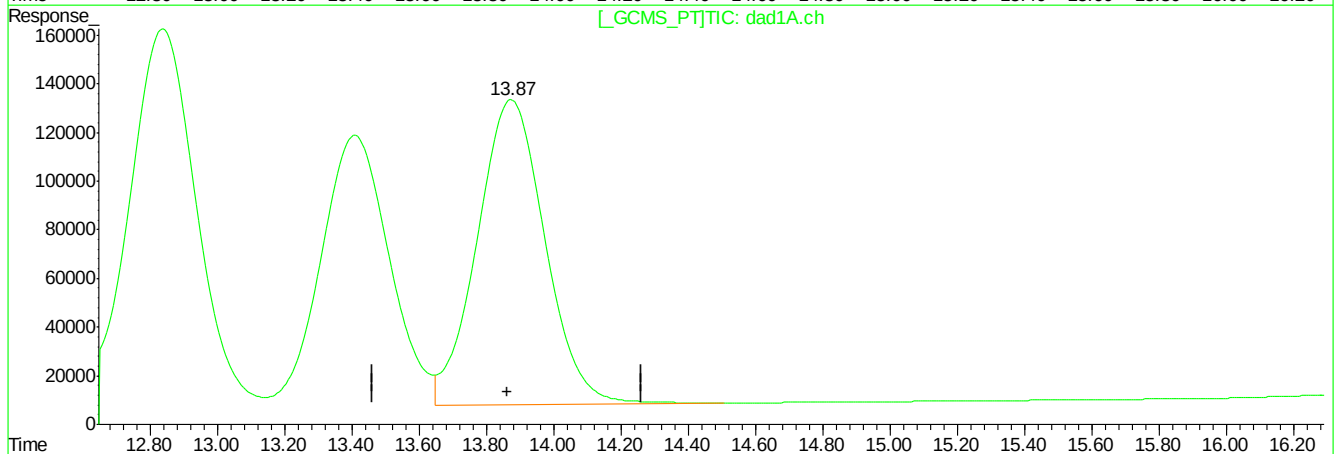
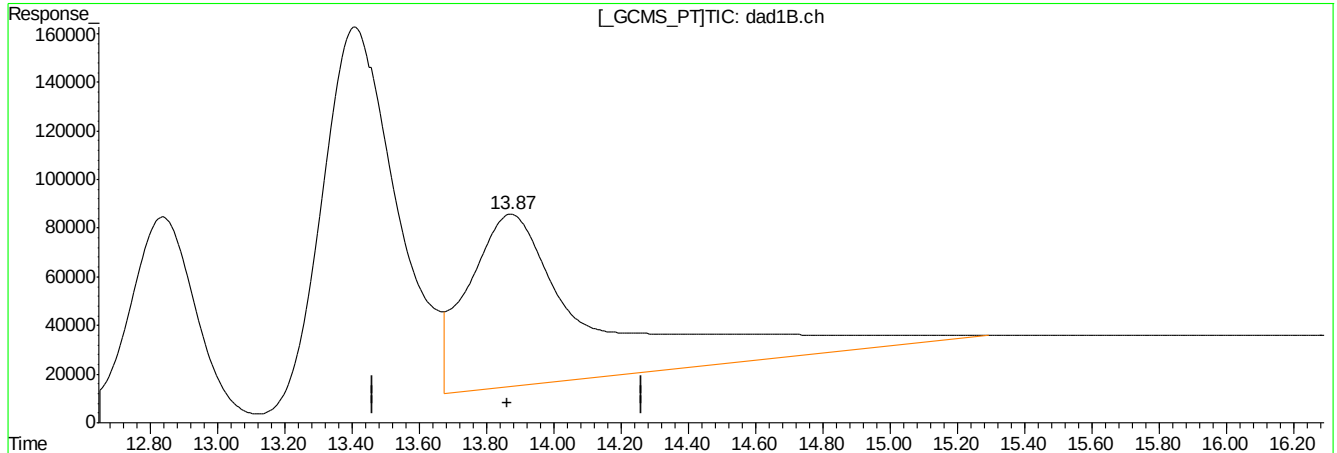
BB073636.D BBB2232_083122.M

Wed Aug 31 14:04:37 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:04 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

13.87min 6339.111ppb

response 18922758

(17) 2,6-Dinitrotoluene #2

13.88min 4404.773ppb

response 17583059

QEdit

(+) = Expected Retention Time

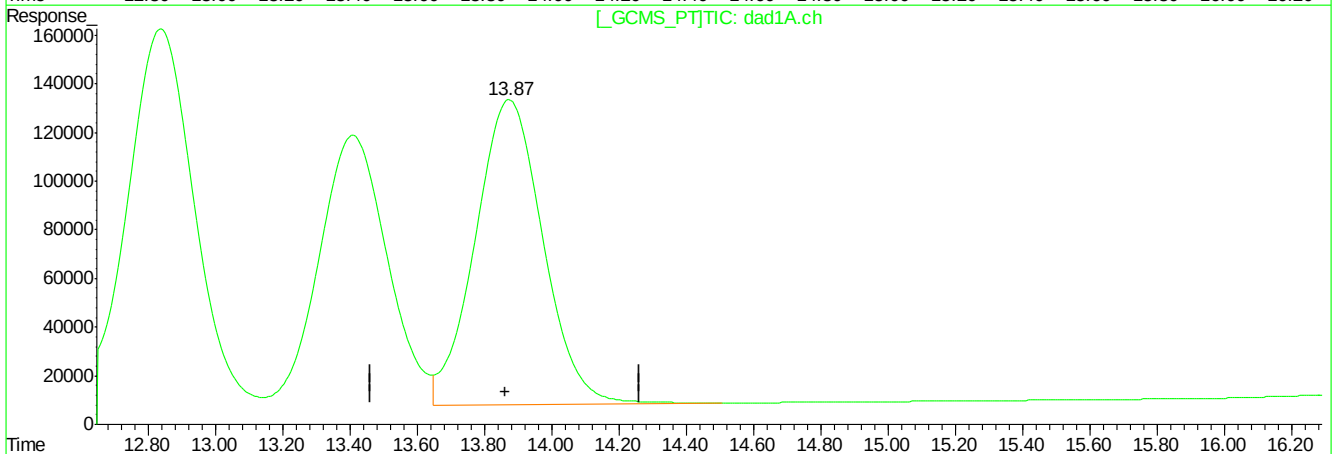
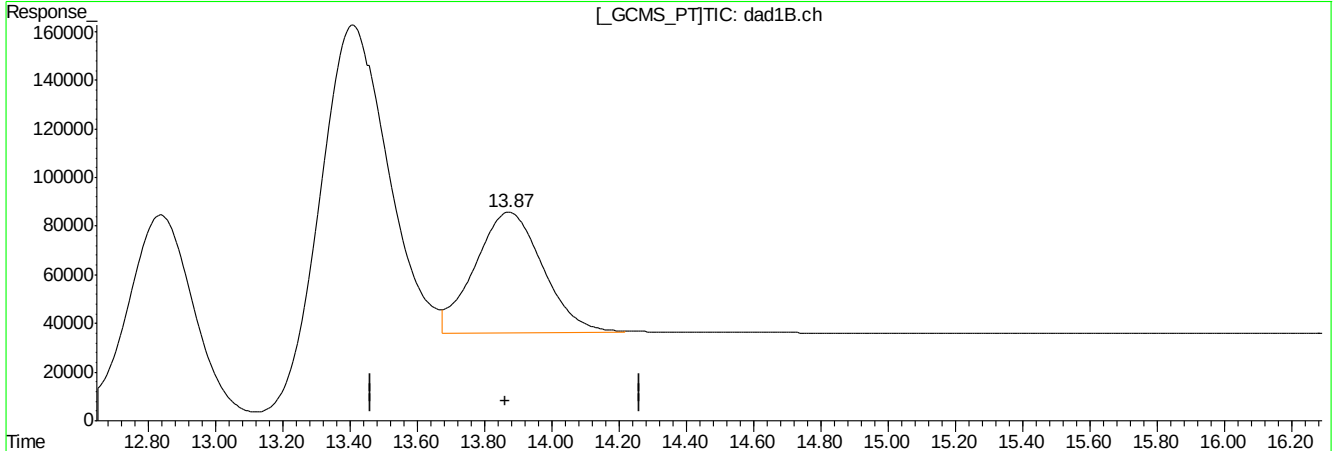
BB073636.D BBB2232_083122.M

Wed Aug 31 14:04:53 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:04 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

13.87min 2341.594ppb m

response 6989846

(17) 2,6-Dinitrotoluene #2

13.88min 4404.773ppb

response 17583059

(+) = Expected Retention Time

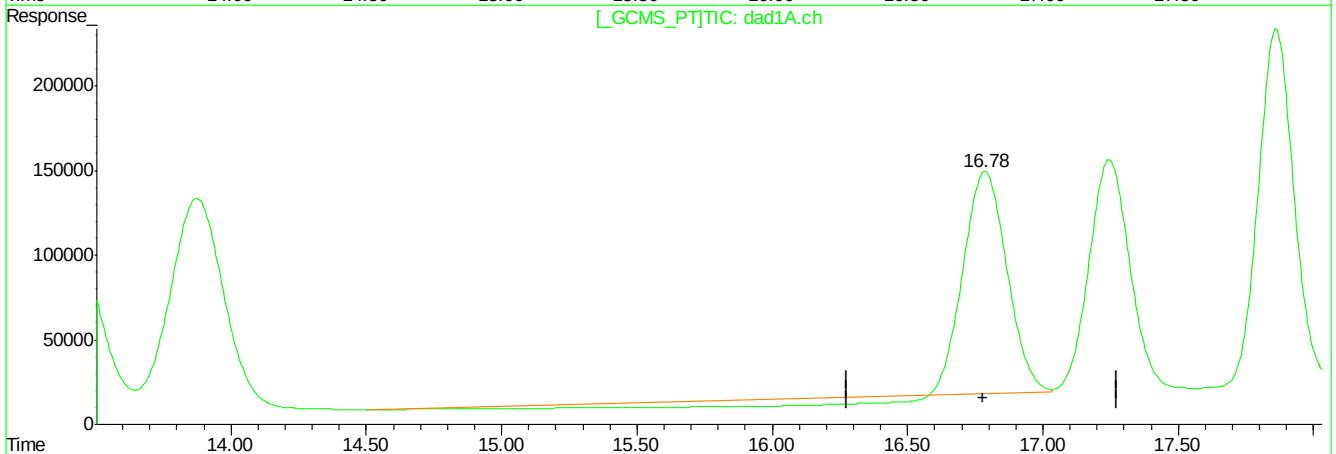
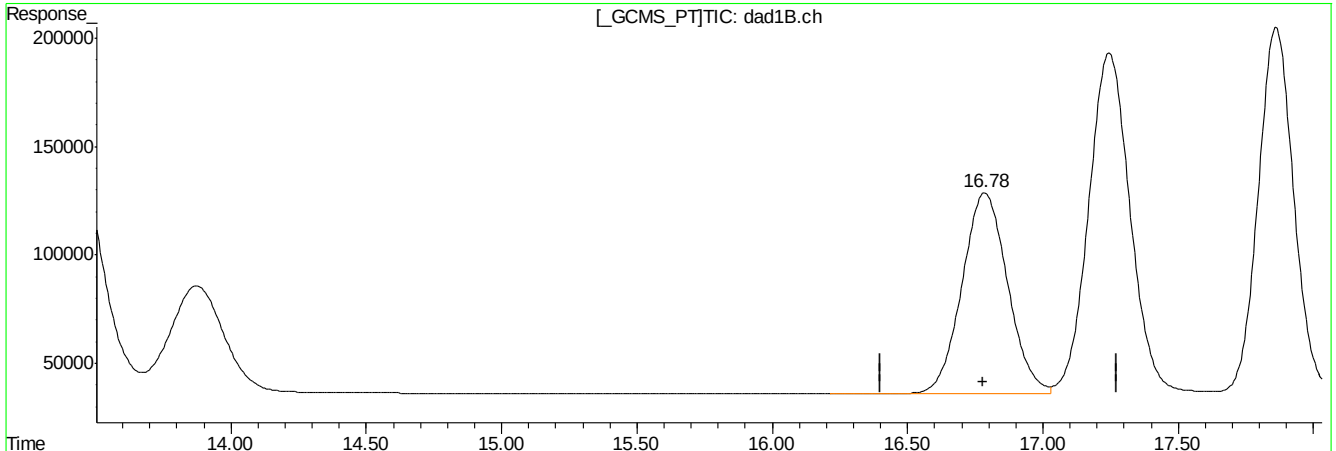
BB073636.D BBB2232_083122.M

Wed Aug 31 14:05:04 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:04 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

16.79min 5236.621ppb

response 10808154

(18) o-Nitrotoluene #2

16.79min 4421.993ppb

response 11474606

(+) = Expected Retention Time

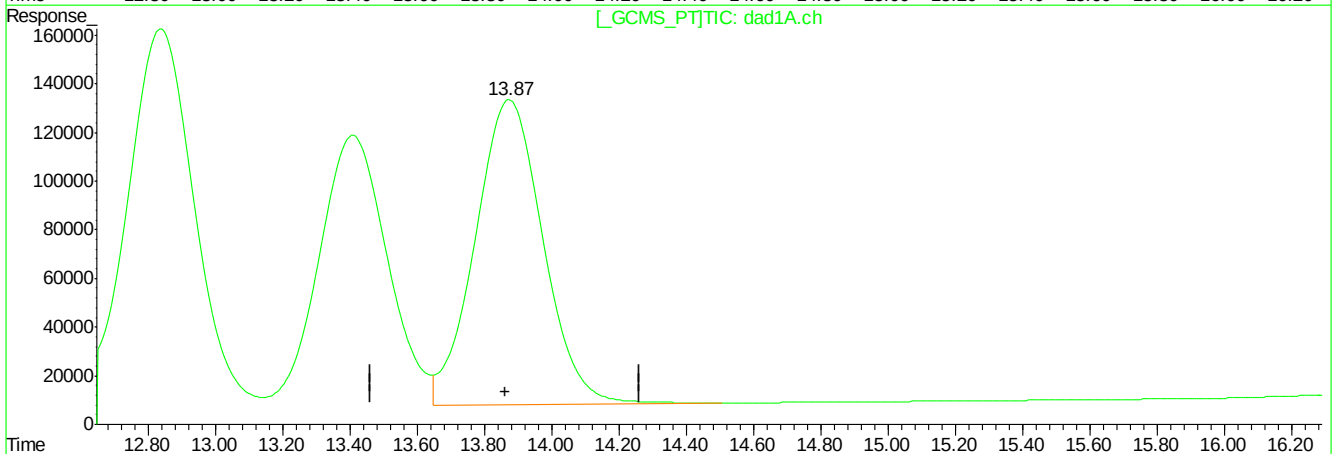
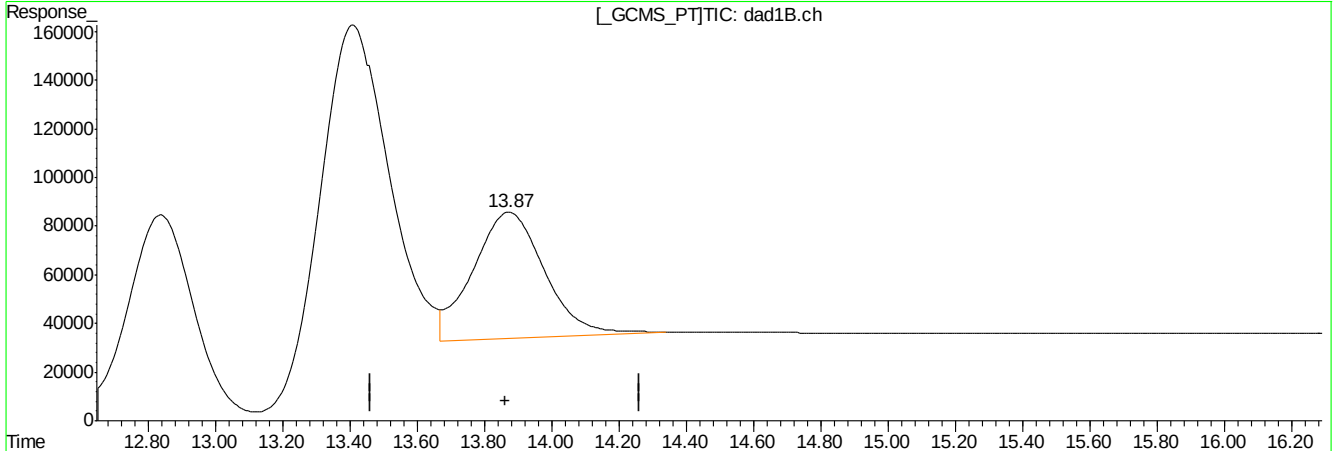
BB073636.D BBB2232_083122.M

Wed Aug 31 14:05:09 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:06 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:06:08 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene
13.87min 2578.440ppb m
response 7696853

(17) 2,6-Dinitrotoluene #2
13.88min 4404.773ppb
response 17583059

(+) = Expected Retention Time

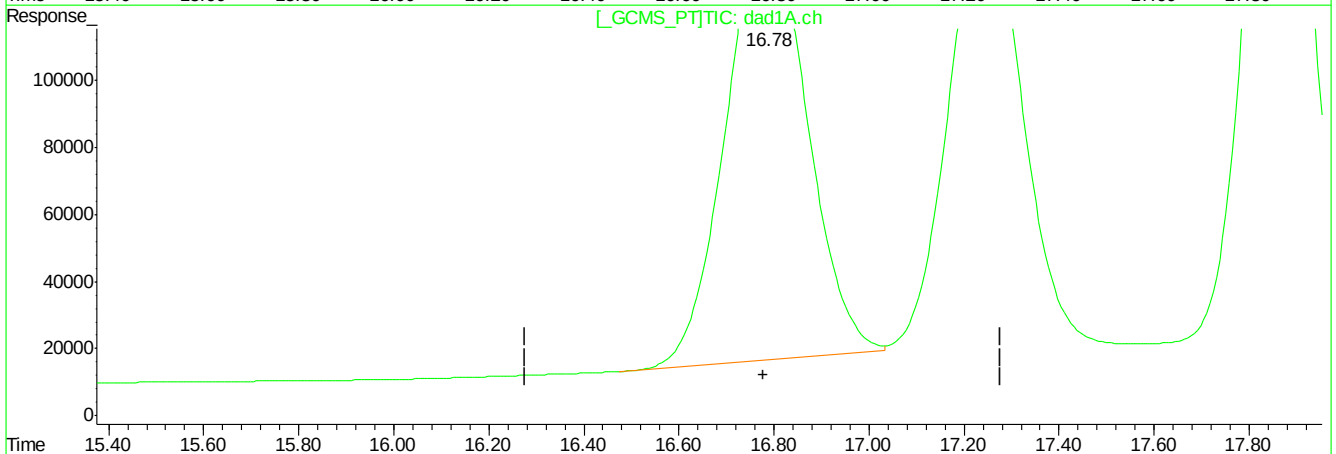
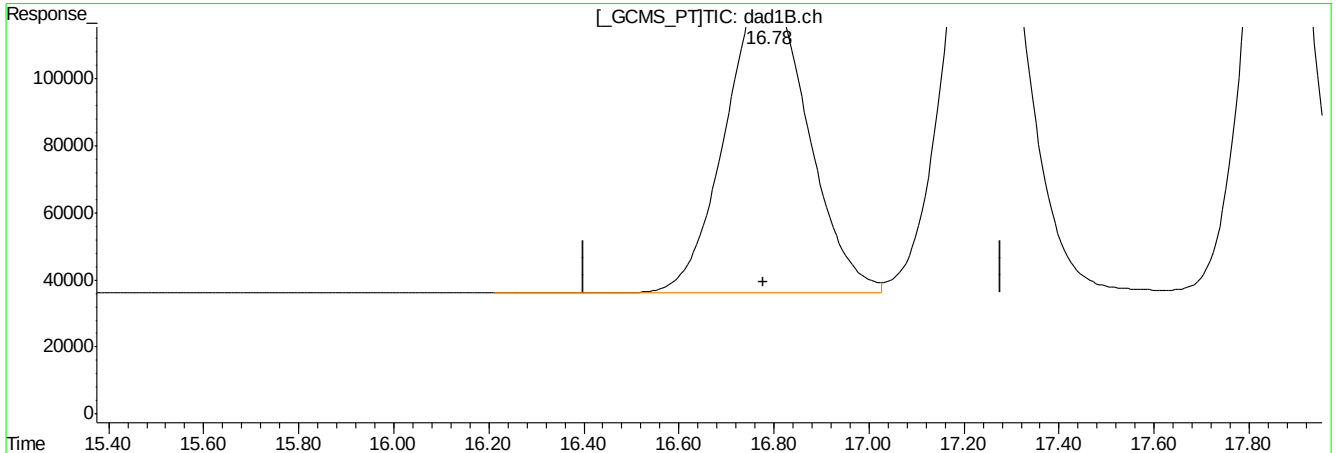
BB073636.D BBB2232_083122.M

Wed Aug 31 14:06:40 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:06 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:06:08 2022
Response via : Multiple Level Calibration



(18) o-Nitrotoluene

16.79min 5236.621ppb

response 10808154

(18) o-Nitrotoluene #2

16.78min 5697.542ppb m

response 15316847

(+) = Expected Retention Time

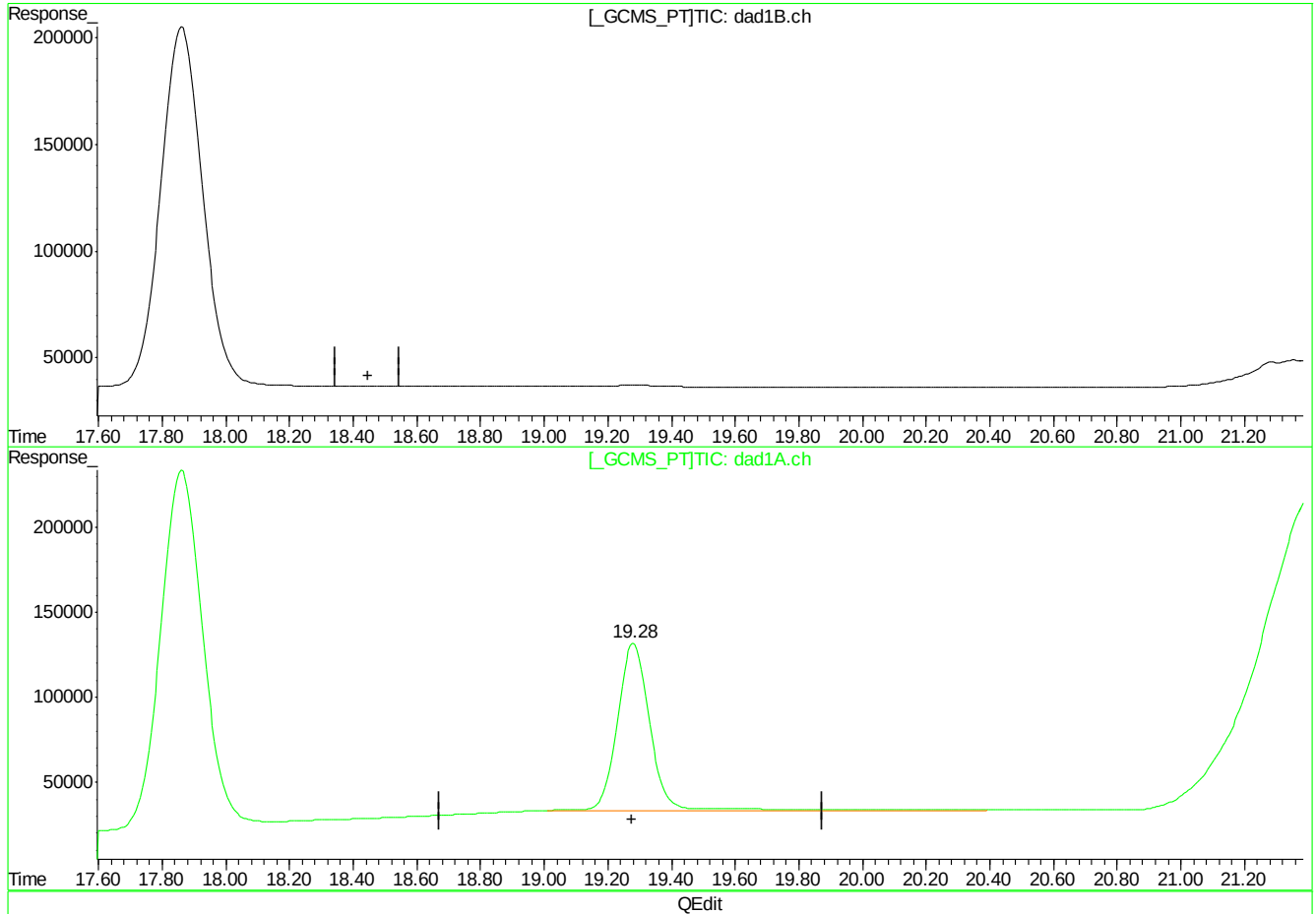
BB073636.D BBB2232_083122.M

Wed Aug 31 14:07:04 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:06 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:06:08 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 4440.875ppb

response 7049483

(+) = Expected Retention Time

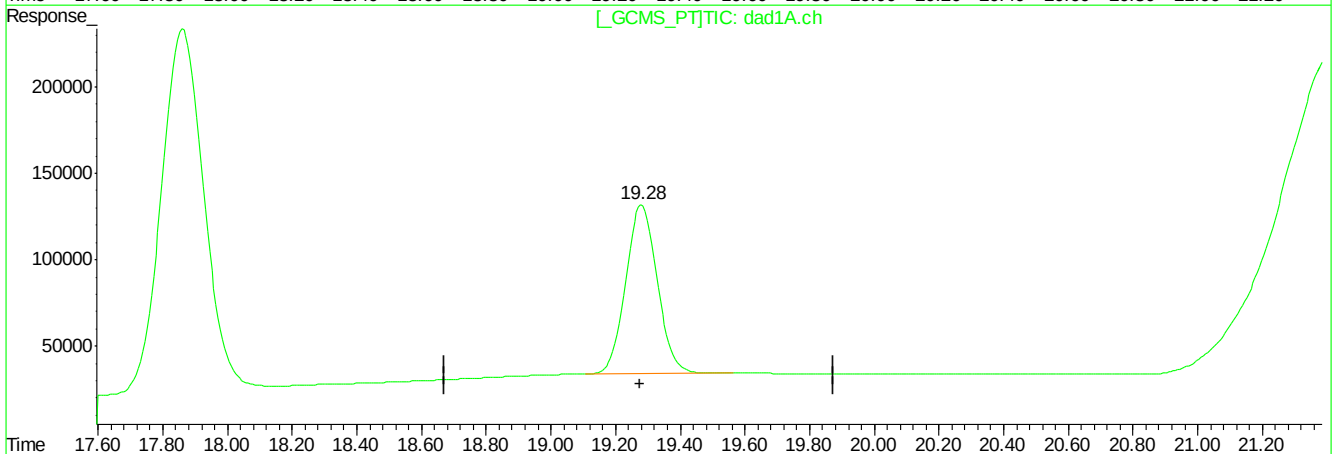
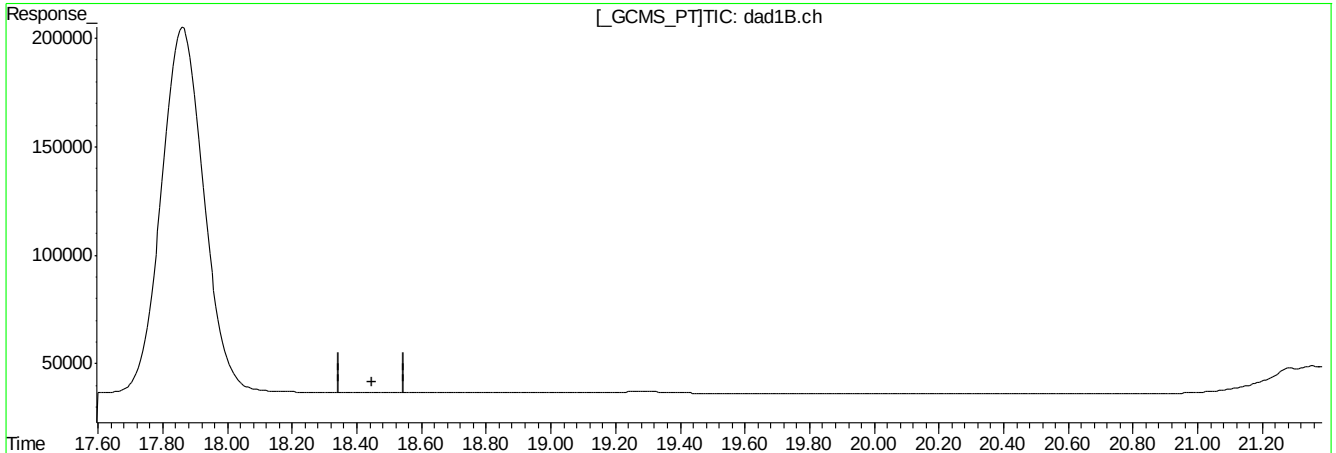
BB073636.D BBB2232_083122.M

Wed Aug 31 14:07:15 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:06 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:06:08 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 4177.269ppb m

response 6631032

(+) = Expected Retention Time

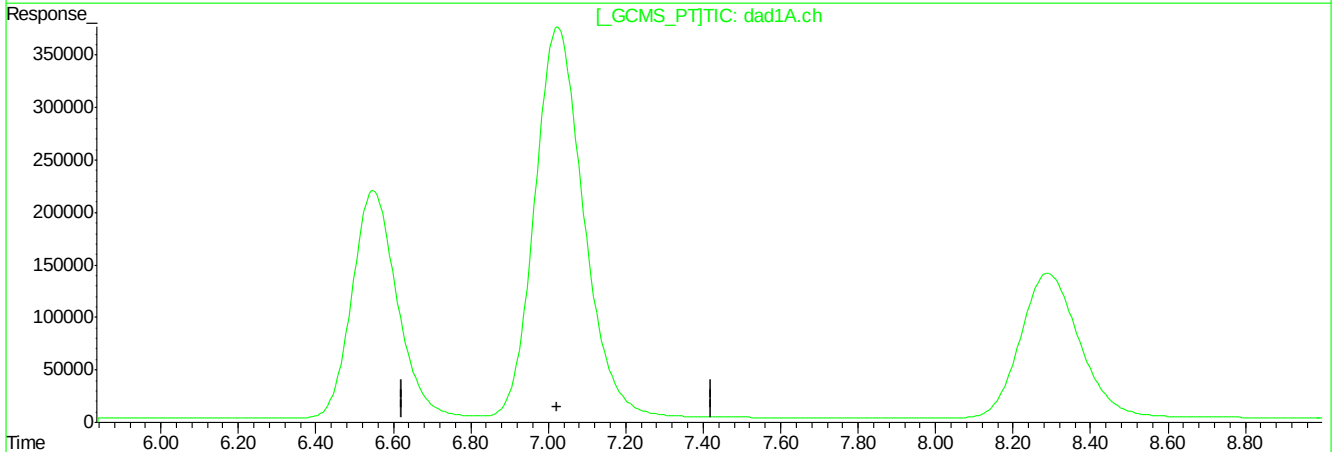
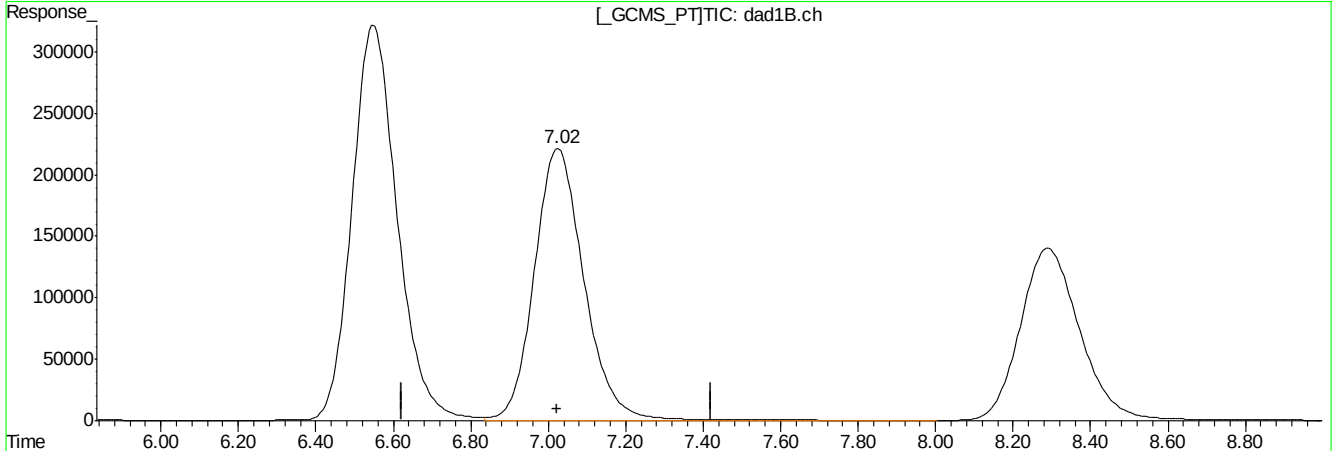
BB073636.D BBB2232_083122.M

Wed Aug 31 14:07:26 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:07 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:10:20 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.03min 4319.462ppb

response 19690106

(8) 3,5-Dinitroaniline #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

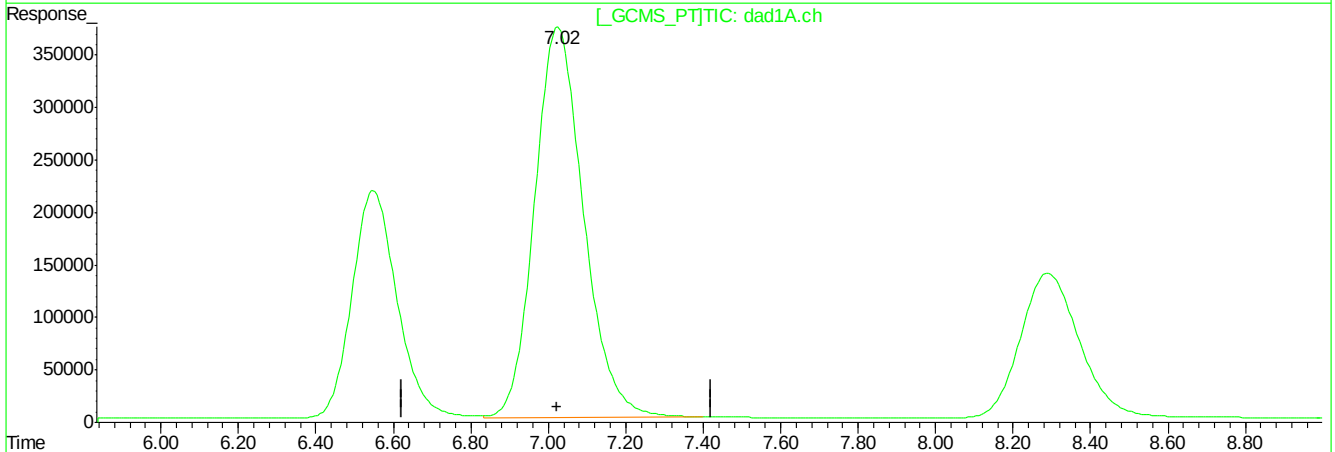
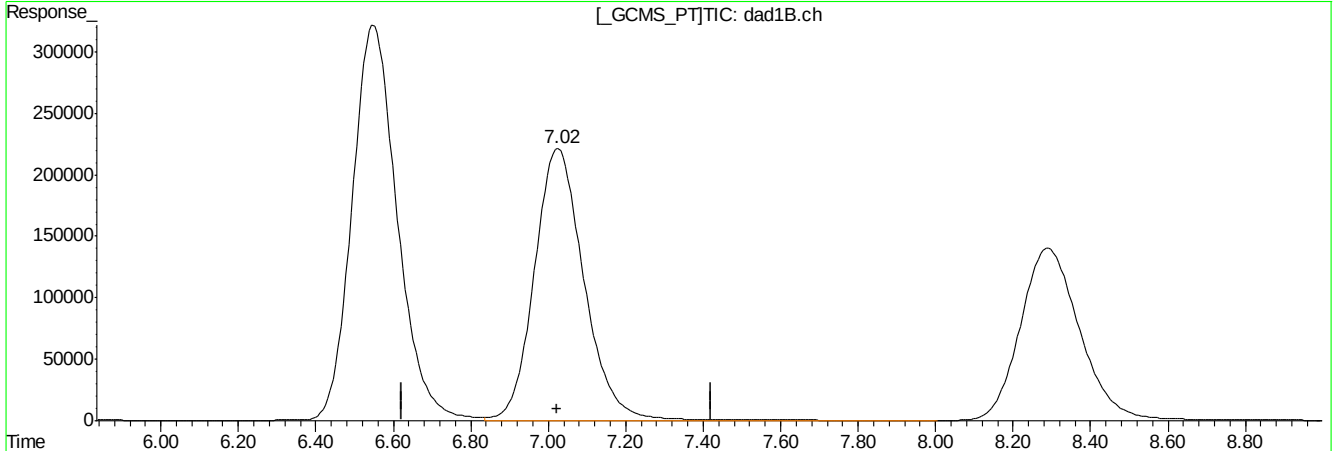
BB073636.D BBB2232_083122.M

Wed Aug 31 14:11:13 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:07 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:10:20 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.03min 4319.462ppb

response 19690106

(8) 3,5-Dinitroaniline #2

7.02min 4237.226ppb m

response 32729168

(+) = Expected Retention Time

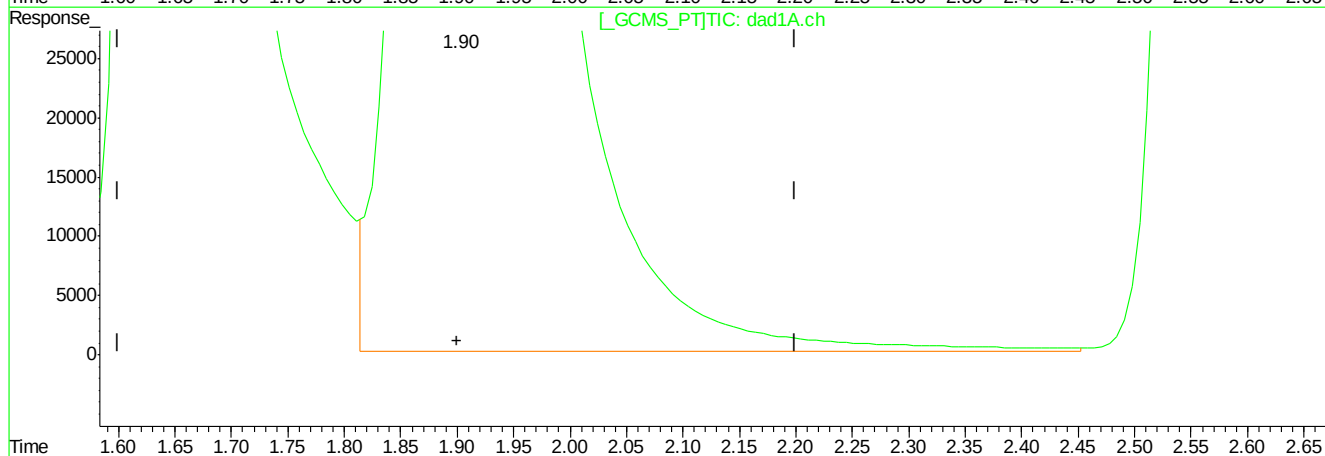
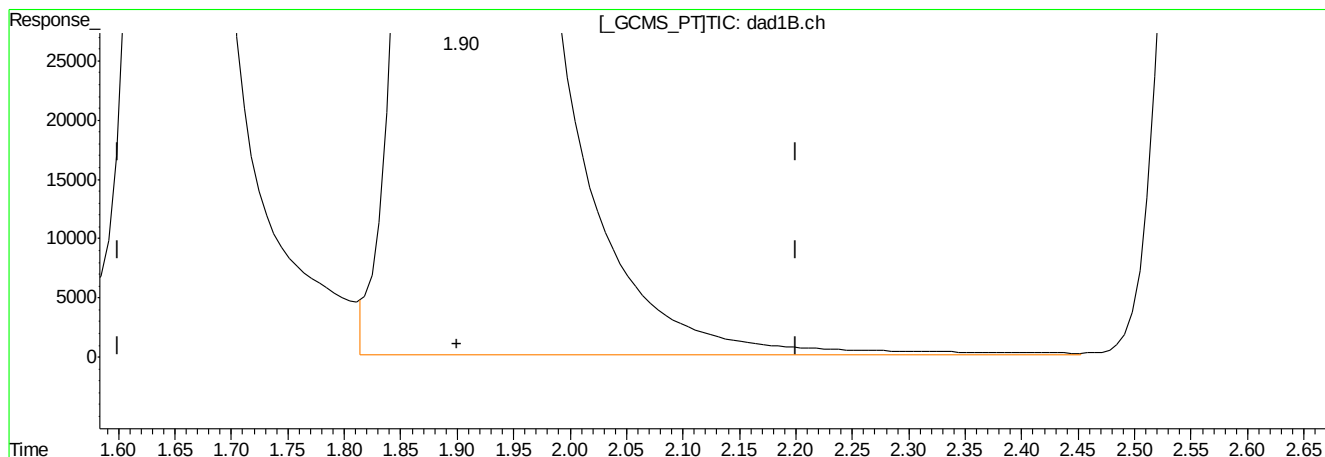
BB073636.D BBB2232_083122.M

Wed Aug 31 14:11:23 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:12 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



QEdit

(3) DNX

1.90min 4382.120ppb

response 15576166

(3) DNX #2

1.90min 4378.035ppb

response 24473676

(+) = Expected Retention Time

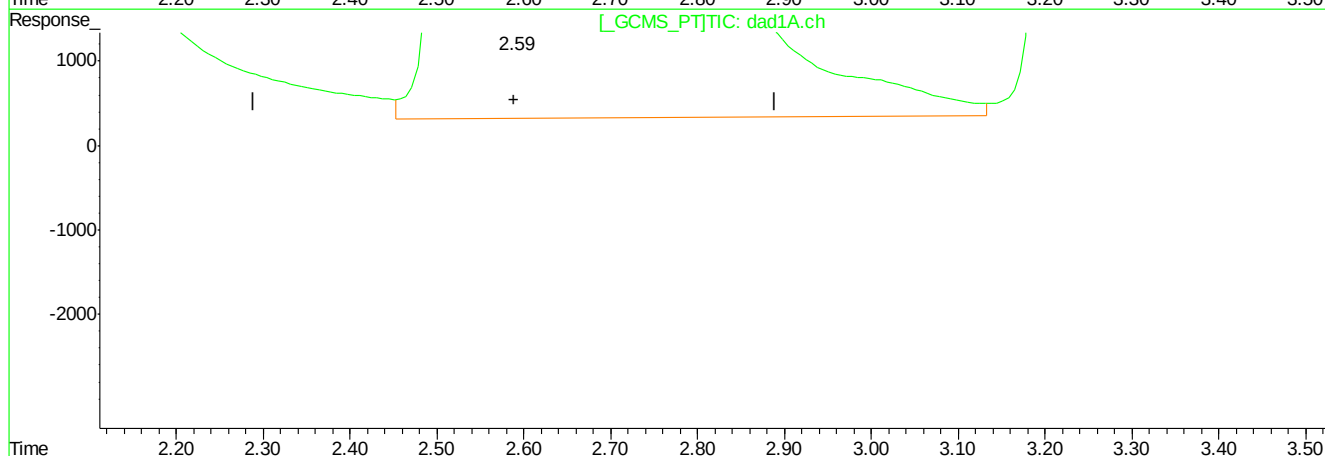
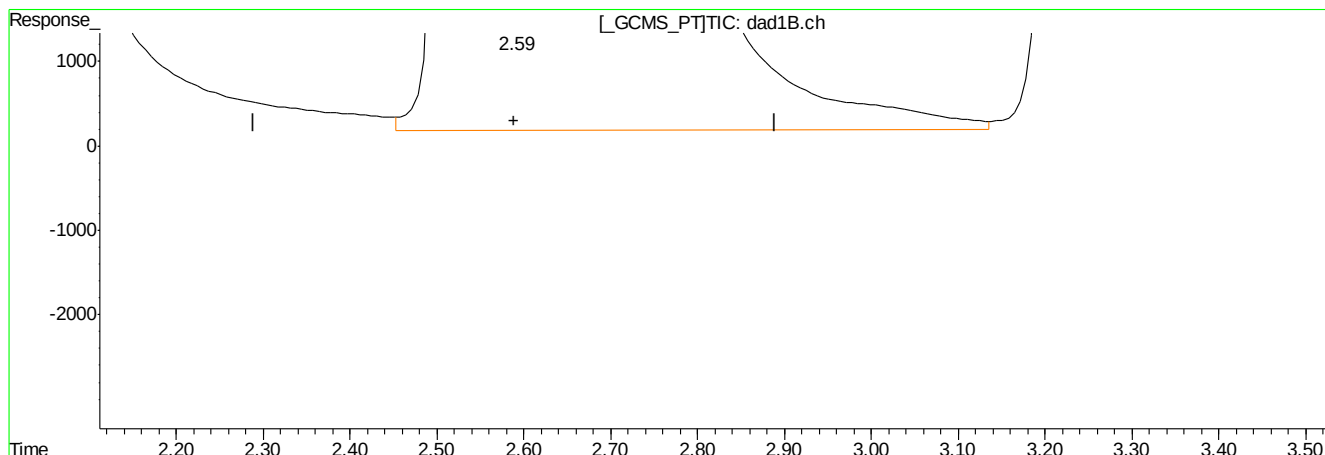
BB073636.D BBB2232_083122.M

Thu Sep 01 07:52:26 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:12 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



QEdit

(4) MNX

2.59min 5208.884ppb

response 16802559

(4) MNX #2

2.59min 5194.853ppb

response 25743226

(+) = Expected Retention Time

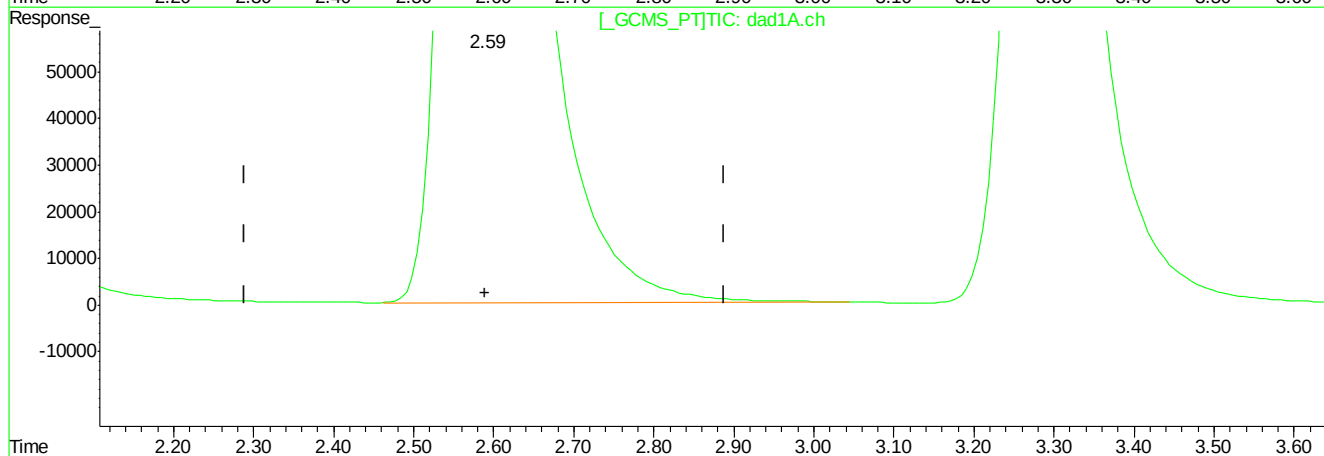
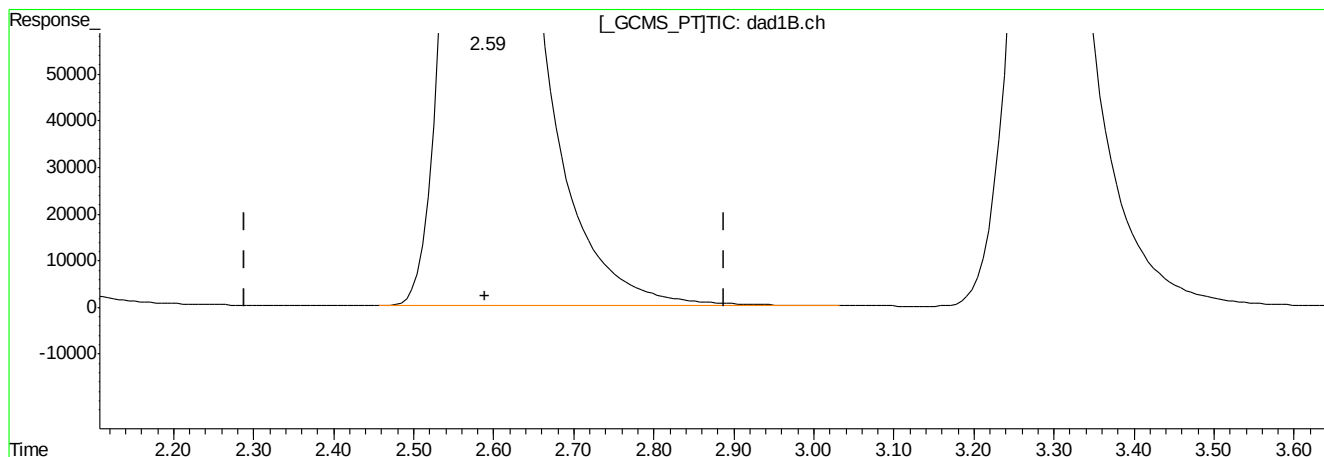
BB073636.D BBB2232_083122.M

Thu Sep 01 07:52:45 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:12 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(4) MNX

2.59min 5186.366ppb m

response 16729923

(4) MNX #2

2.59min 5174.125ppb m

response 25640510

(+) = Expected Retention Time

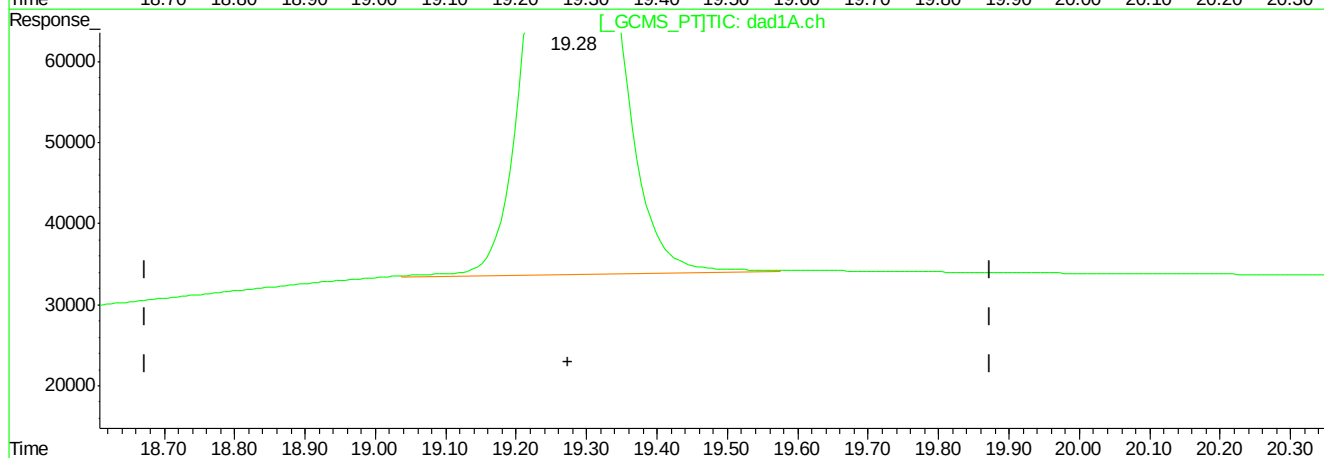
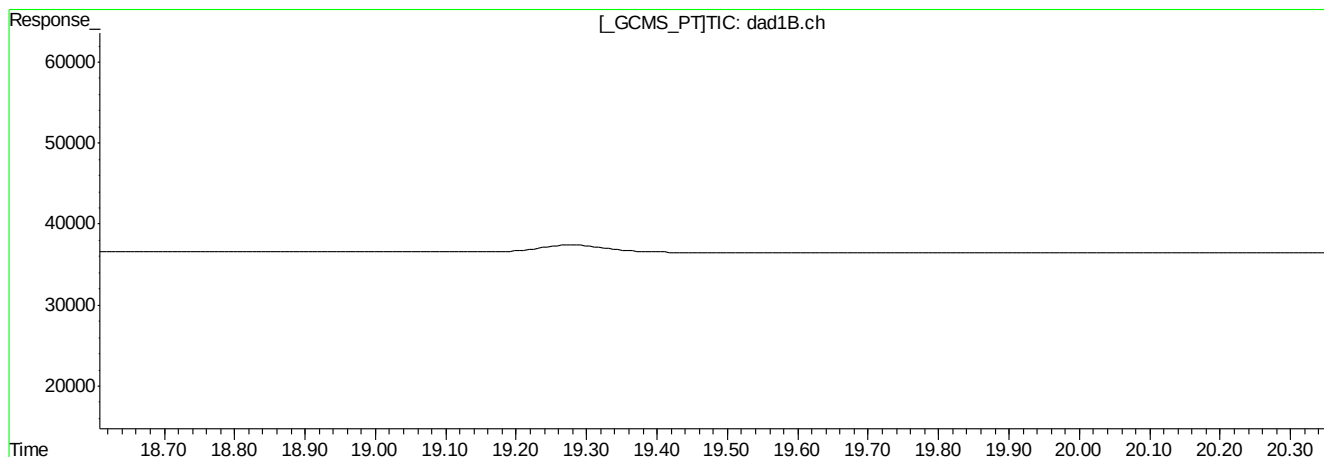
BB073636.D BBB2232_083122.M

Thu Sep 01 07:52:58 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 4229.279ppb m

response 6713593

(+) = Expected Retention Time

BB073636.D BBB2232_083122.M

Thu Sep 01 07:57:46 2022

Naresh Jiawan
09/02/22 15:07

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1B.ch Vial: 11
 Signal #2 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1A.ch
 Acq On : 01-Sep-2022, 11:59:24 Operator: FOUADS
 Sample : icv2232-1000 Inst : G1315B
 Misc : op92417,GBB2232,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Sep 01 12:29:21 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Thu Sep 01 08:04:52 2022
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
Spiked Amount	500.000	Range	70 - 136	Recovery	=	0.00%# 0.00%#
Target Compounds						
1) TNX	1.45	1.45	1776363	2758329	473.292	479.293
2) HMX	1.64	1.64	1559024	4358148	1052.933	1065.499
3) DNX	1.89	1.89	3123683	4961093	1015.390	1004.753
4) MNX	2.58	2.58	3345856	5148004	1165.828	1170.656
5) RDX	3.28	3.28	1915862	3029156	1032.828	1034.048
6) 1,3,5-Trinitrobe	5.25	5.25	4104243	6414711	1032.352	1030.523
7) 1,3-Dinitrobenze	6.52	6.52	5402733	3723918	1036.865	1083.554
8) 3,5-Dinitroanili	6.99	0.00	4319590	0	1097.506	N.D. #
9) Nitrobenzene	8.26	8.26	3144988	3095698	1048.817	1044.237
10) Nitroglycerin	0.00	10.07	0	1295945	N.D.	1020.238 #
11) Tetryl	10.91	10.91	2972729	4715297	1052.052	1023.751
12) 2,4,6-Trinitroto	11.28	11.28	3841203	4546121	1050.880	1020.964
13) 2-Amino-4,6-Dini	11.77	11.77	3387495	5040845	1071.801	1020.765
14) 4-Amino-2,6-Dini	12.32	12.32	2526275	5066864	1100.014	1030.991
16) 2,4-Dinitrotolue	13.33	13.33	4687031	3173080	1000.701	1018.948
17) 2,6-Dinitrotolue	13.79	13.79	1539458	3649386	1013.932m	1040.757
18) o-Nitrotoluene	16.72	16.72	2272705	3365603	1052.477	1024.193m
19) p-Nitrotoluene	17.19	17.19	3529623	2915575	1055.075	1031.613
20) m-Nitrotoluene	17.82	17.82	3295351	3925334	1058.502	1011.429
21) PETN	0.00	19.24	0	1490521	N.D.	1109.024m#

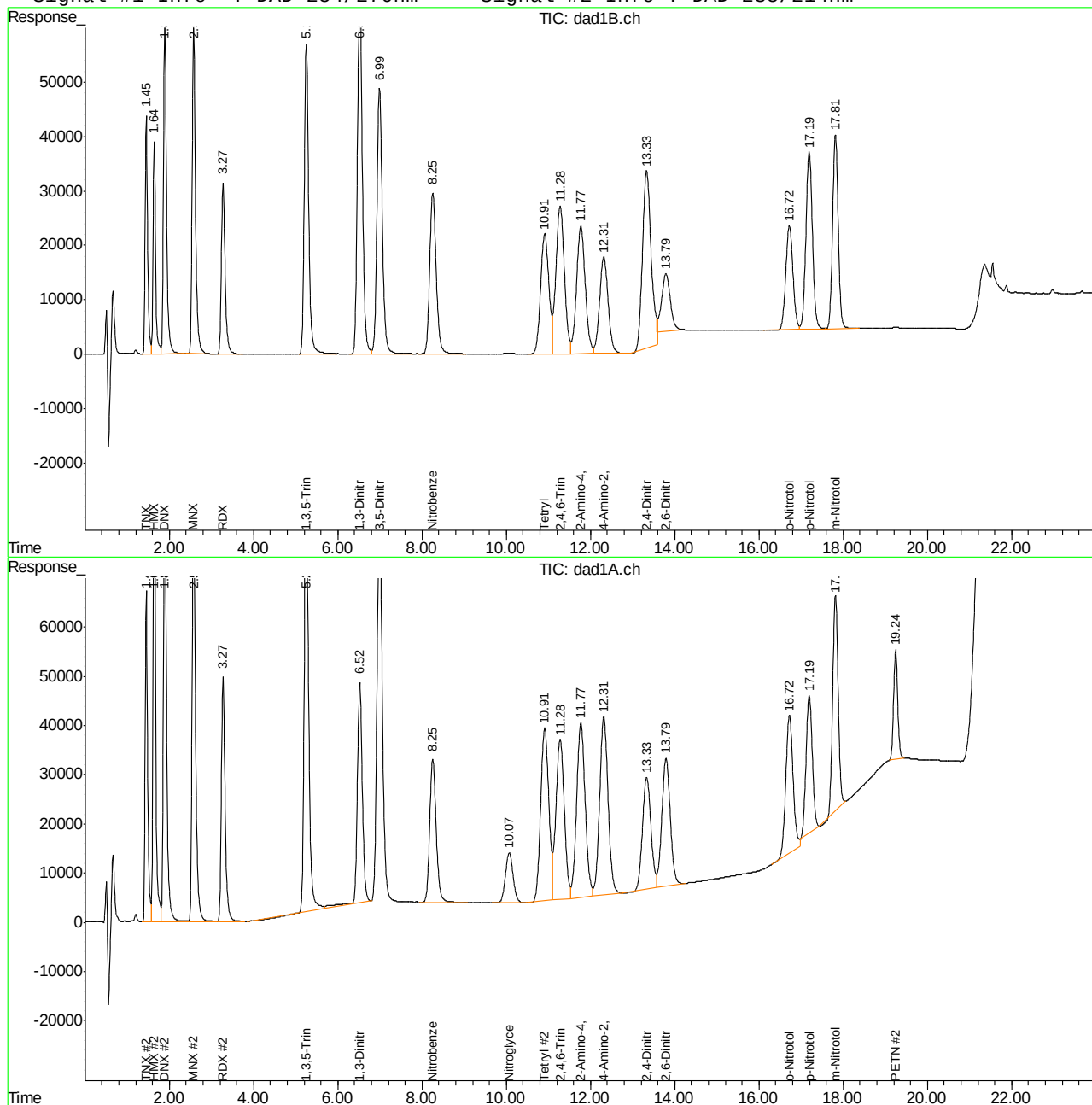
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB073641.D BBB2232_083122.M Fri Sep 02 08:51:10 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1A.ch
Acq On : 01-Sep-2022, 11:59:24 Operator: FOUADS
Sample : icv2232-1000 Inst : G1315B
Misc : op92417, GBB2232, 1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 12:30 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Thu Sep 01 08:04:52 2022
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2232-ICV2232

Method:

SW846 8330B

Lab FileID:

BB073641.D

Analyst approved:

09/02/22 08:54 Fouad Sekkar

Injection Time:

09/01/22 11:59

Supervisor approved:

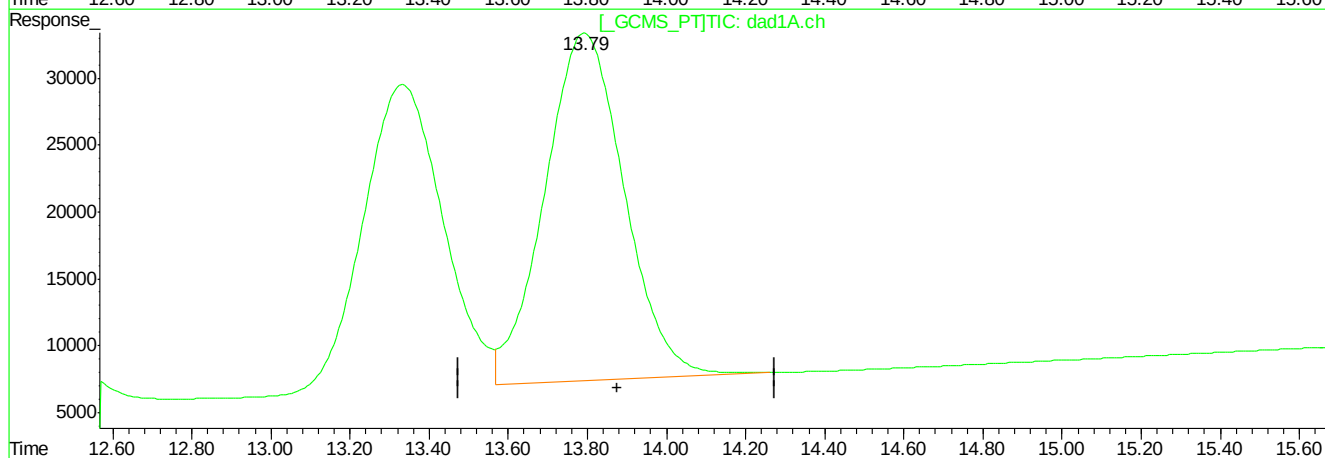
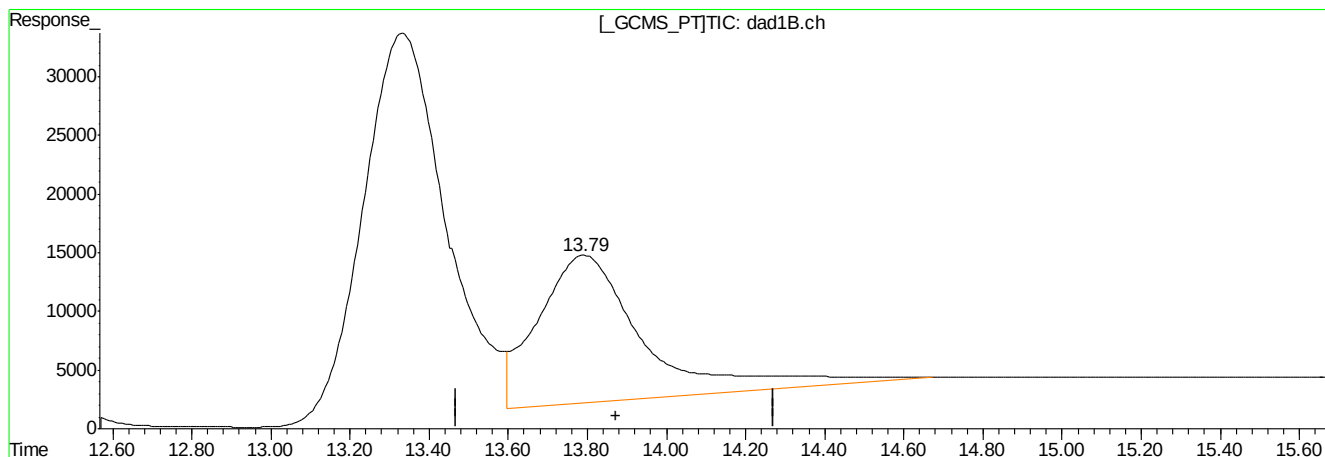
09/02/22 15:07 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
2,6-Dinitrotoluene	606-20-2	1	13.79	Poor instrument integration
o-Nitrotoluene	88-72-2	2	16.72	Poor instrument integration
PETN	78-11-5	2	19.24	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1A.ch
Acq On : 01-Sep-2022, 11:59:24 Operator: FOUADS
Sample : icv2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 12:29 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Thu Sep 01 08:04:52 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.79min 1551.446ppb

response 2355568

(17) 2,6-Dinitrotoluene #2

13.79min 1040.757ppb

response 3649386

(+) = Expected Retention Time

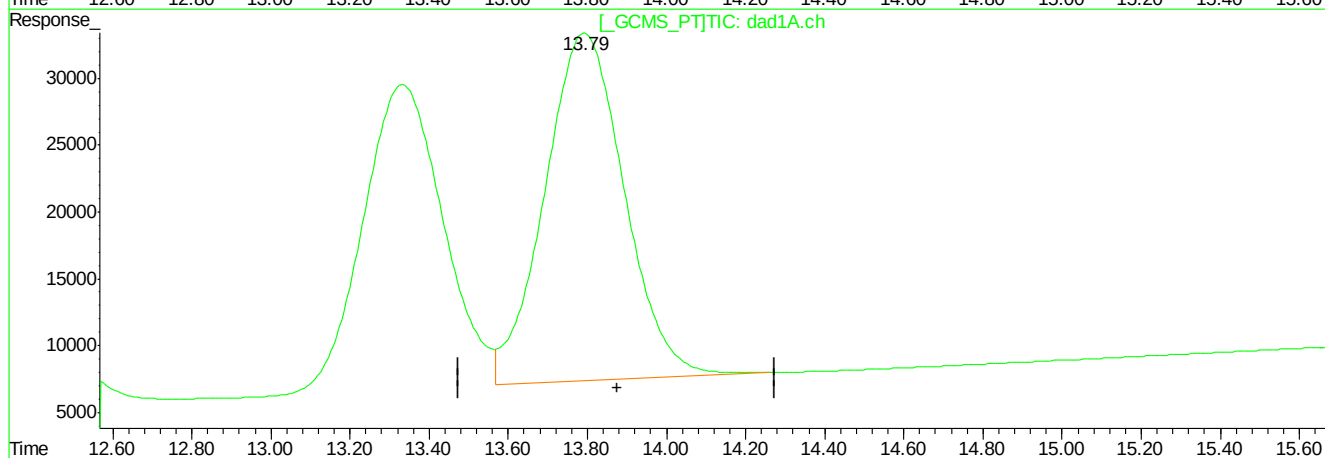
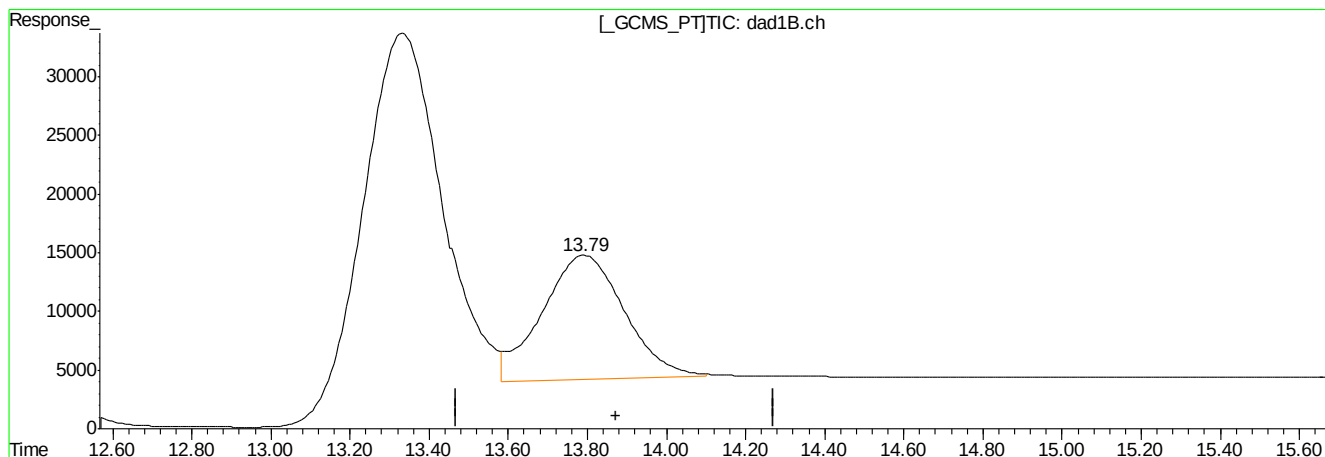
BB073641.D BBB2232_083122.M

Thu Sep 01 12:29:48 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1A.ch
Acq On : 01-Sep-2022, 11:59:24 Operator: FOUADS
Sample : icv2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 12:29 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Thu Sep 01 08:04:52 2022
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

13.79min 1013.932ppb m

response 1539458

(17) 2,6-Dinitrotoluene #2

13.79min 1040.757ppb

response 3649386

(+) = Expected Retention Time

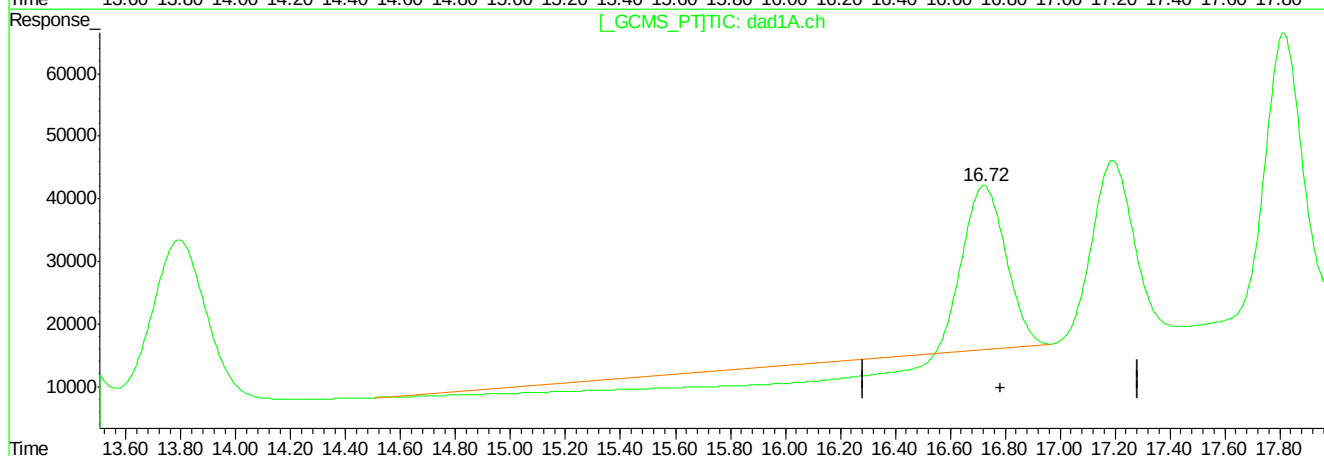
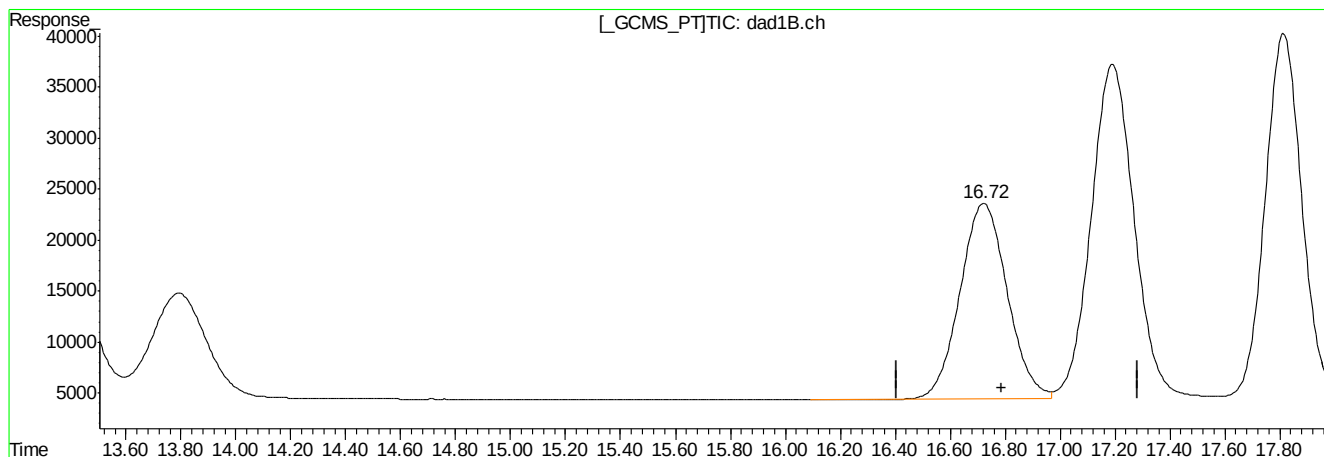
BB073641.D BBB2232_083122.M

Thu Sep 01 12:30:00 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1A.ch
Acq On : 01-Sep-2022, 11:59:24 Operator: FOUADS
Sample : icv2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 12:29 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Thu Sep 01 08:04:52 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

16.72min 1052.477ppb

response 2272705

(18) o-Nitrotoluene #2

16.73min 201.853ppb

response 663311

(+) = Expected Retention Time

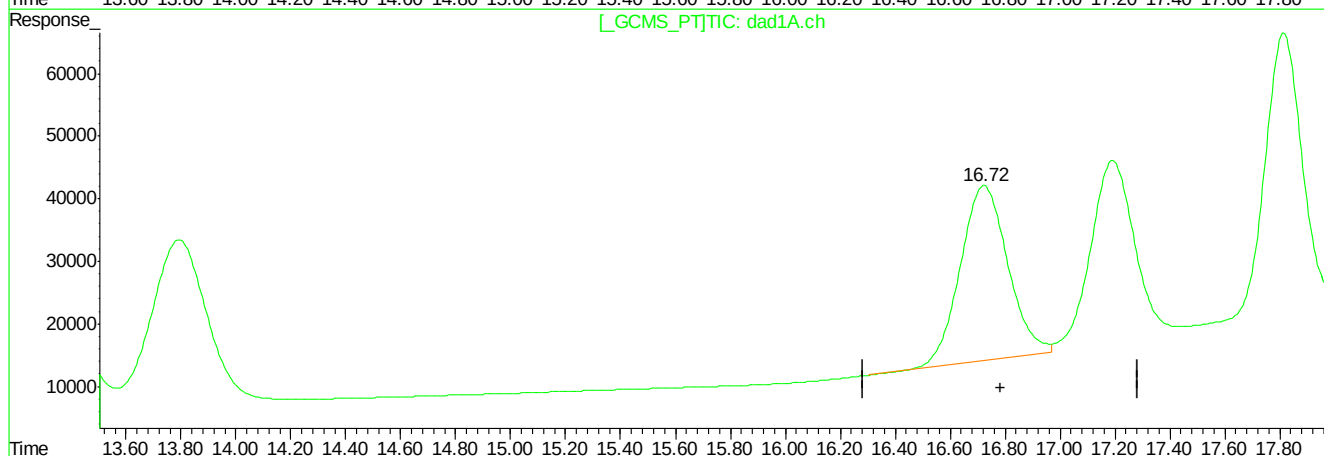
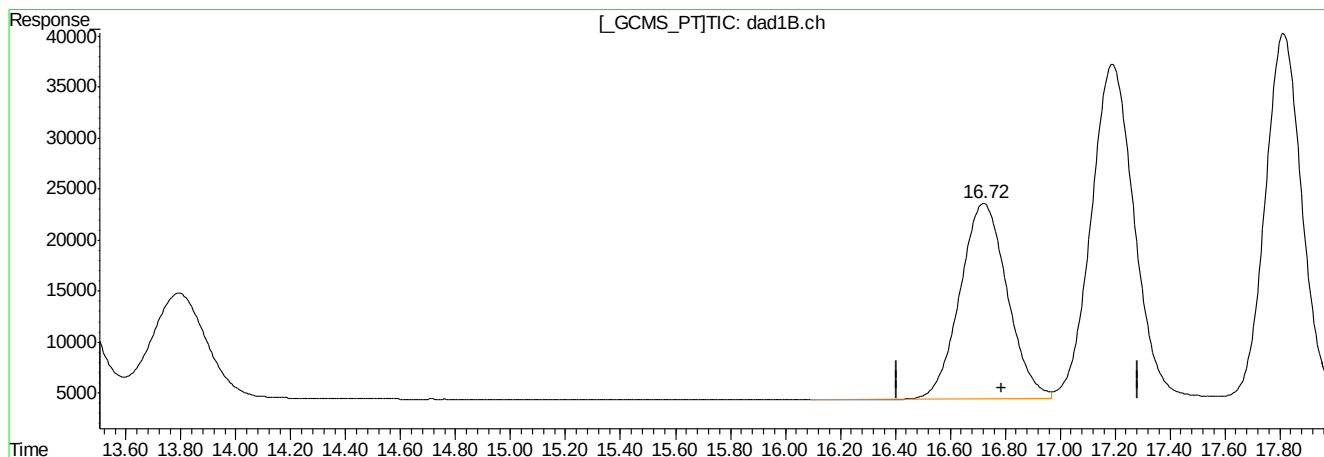
BB073641.D BBB2232_083122.M

Thu Sep 01 12:30:06 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1A.ch
Acq On : 01-Sep-2022, 11:59:24 Operator: FOUADS
Sample : icv2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 12:29 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Thu Sep 01 08:04:52 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

16.72min 1052.477ppb

response 2272705

(18) o-Nitrotoluene #2

16.72min 1024.193ppb m

response 3365603

(+) = Expected Retention Time

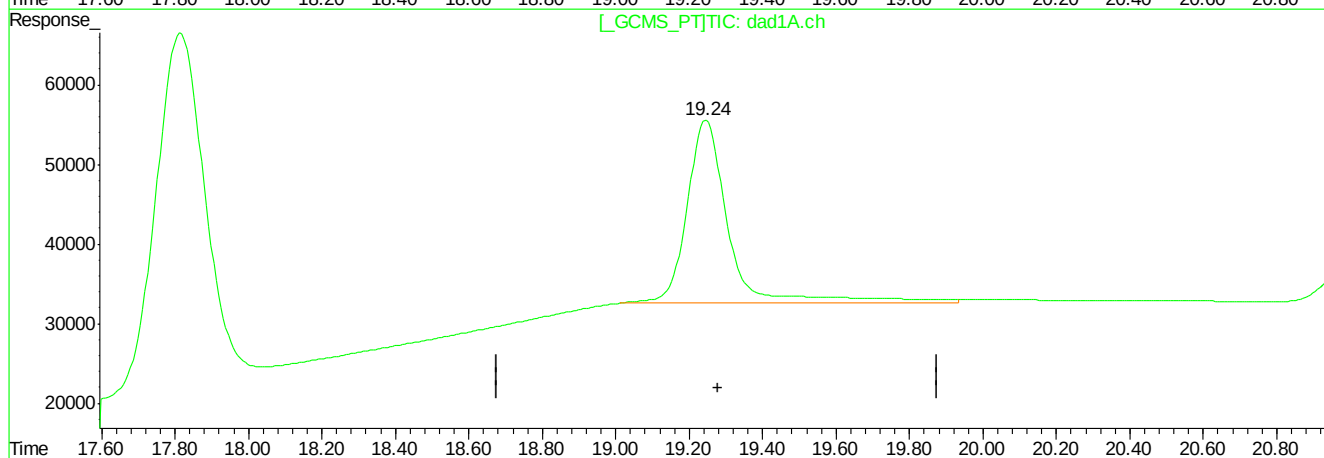
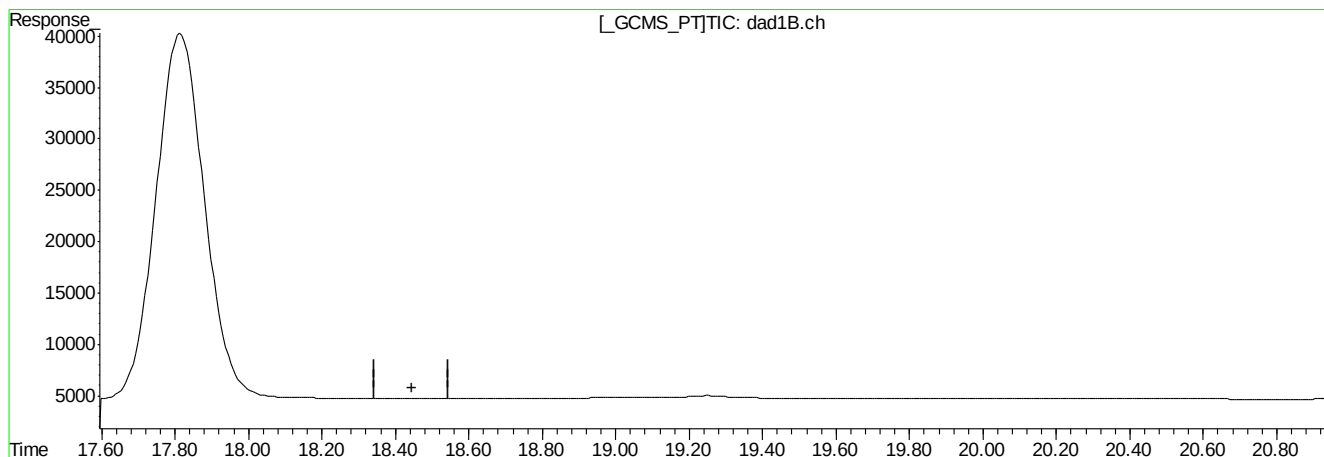
BB073641.D BBB2232_083122.M

Thu Sep 01 12:30:20 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1A.ch
Acq On : 01-Sep-2022, 11:59:24 Operator: FOUADS
Sample : icv2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 12:29 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Thu Sep 01 08:04:52 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.25min 1356.130ppb

response 1822628

(+) = Expected Retention Time

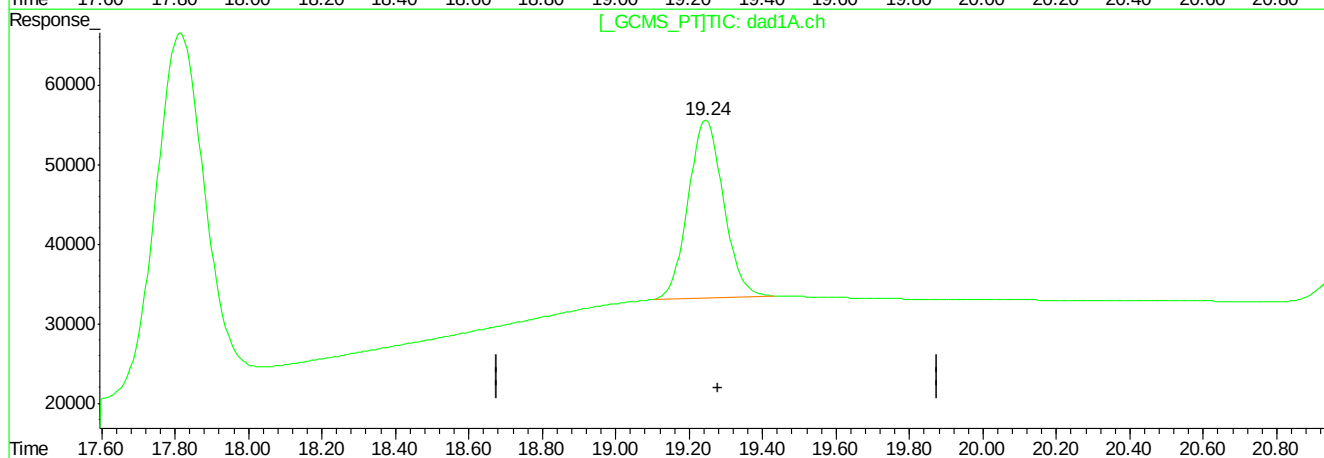
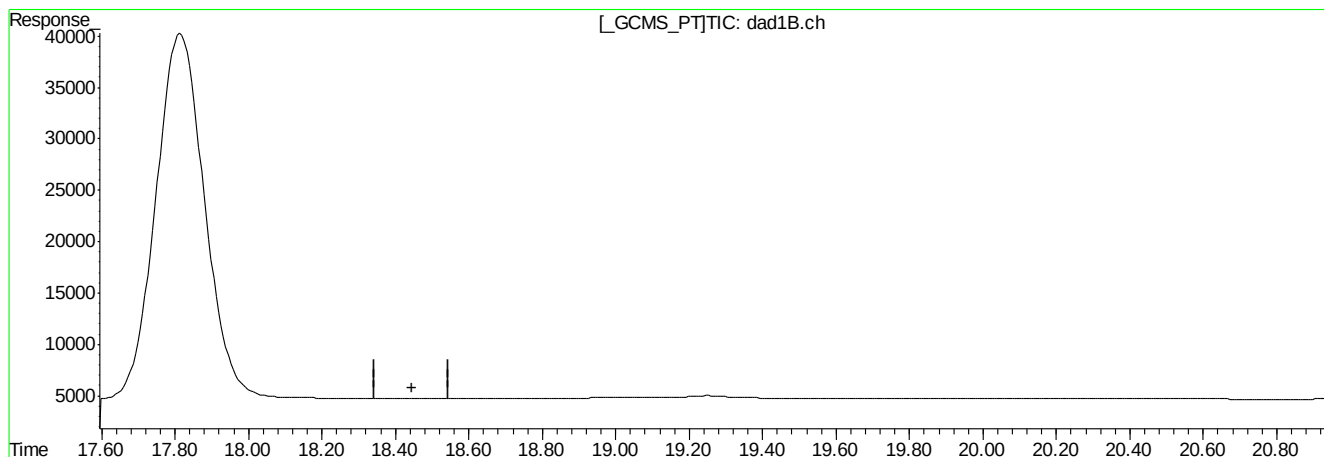
BB073641.D BBB2232_083122.M

Thu Sep 01 12:30:30 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1A.ch
Acq On : 01-Sep-2022, 11:59:24 Operator: FOUADS
Sample : icv2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 12:29 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Thu Sep 01 08:04:52 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.24min 1109.024ppb m

response 1490521

(+) = Expected Retention Time

BB073641.D BBB2232_083122.M

Thu Sep 01 12:30:43 2022

Mike Eger
01/31/23 12:26

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1A.ch
 Acq On : 26-Jan-2023, 09:46:29 Operator: fouads
 Sample : cc2232-1000 Inst : G1315B
 Misc : op94879,GBB2299,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 26 10:12:55 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.21	13.21	2477979	4345486	1156.624	1022.787
Spiked Amount	500.000	Range	70 - 136	Recovery	= 231.32%#	204.56%#
Target Compounds						
1) TNX	1.47	1.47	1898818	2957949	505.919	513.979
2) HMX	1.68	1.68	1570811	4365792	1060.893	1067.368
3) DNx	1.92	1.92	3308130	5219024	1075.347	1056.991
4) MNX	2.63	2.63	3576485	5498476	1246.189	1250.353
5) RDX	3.34	3.34	1957897	3103190	1055.489	1059.321
6) 1,3,5-Trinitrobe	5.40	5.40	4149748	6636615	1043.798	1066.172
7) 1,3-Dinitrobenze	6.69	6.69	5540268	3671841	1063.260	1068.401m
8) 3,5-Dinitroanili	7.15	7.15	4175877	6933178	1060.992	1060.868m
9) Nitrobenzene	8.52	8.52	3164881	3132881	1055.451	1056.780
10) Nitroglycerin	0.00	10.37	0	1386265	N.D.	1091.343 #
11) Tetryl	11.35	11.35	3021865	4838415	1069.442	1050.482
12) 2,4,6-Trinitroto	11.72	11.72	3988161	4777648	1091.085	1072.960
13) 2-Amino-4,6-Dini	12.12	12.12	3501288	5217791	1107.805	1056.596
14) 4-Amino-2,6-Dini	12.67	12.67	2594126	5119869	1129.559	1041.776
16) 2,4-Dinitrotolue	13.77	13.78	3865670	3079925	825.337	989.034
17) 2,6-Dinitrotolue	14.24	14.24	1532421	3641038	1009.297	1038.377m
18) o-Nitrotoluene	17.13	17.13	2269061	3534261	1050.789	1075.518m
19) p-Nitrotoluene	17.55	17.55	3579371	2943051	1069.945	1041.335
20) m-Nitrotoluene	18.13	18.13	3315075	3967274	1064.838	1022.235
21) PETN	0.00	19.47	0	1532562	N.D.	1140.305m#

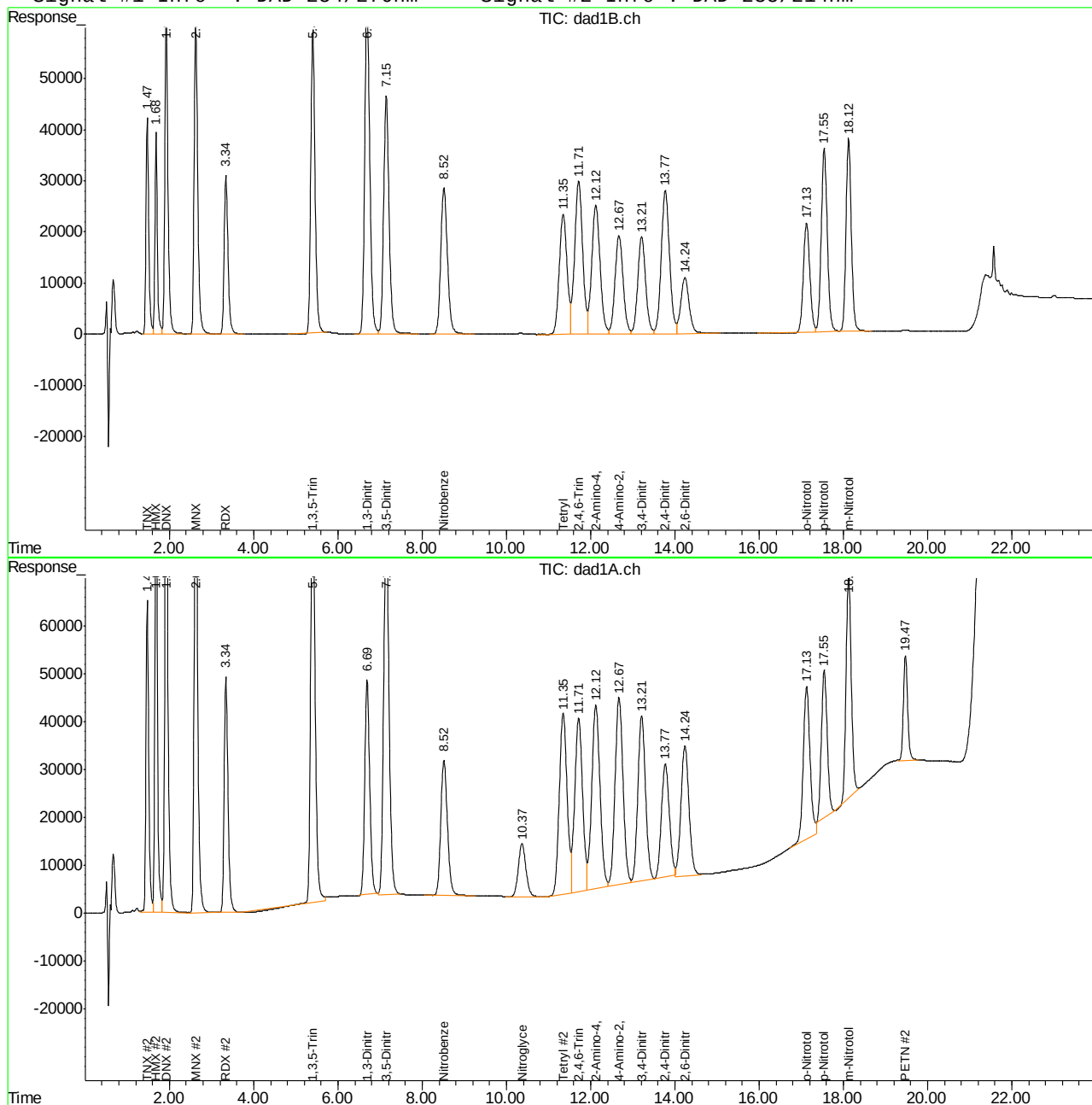
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075407.D BBB2232_083122.M Fri Jan 27 11:23:37 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1A.ch
Acq On : 26-Jan-2023, 09:46:29 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : op94879, GBB2299, 1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:12 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2299-CC2232

Method:

SW846 8330A

Lab FileID:

BB075407.D

Analyst approved:

01/27/23 11:26 Fouad Sekkar

Injection Time:

01/26/23 09:46

Supervisor approved:

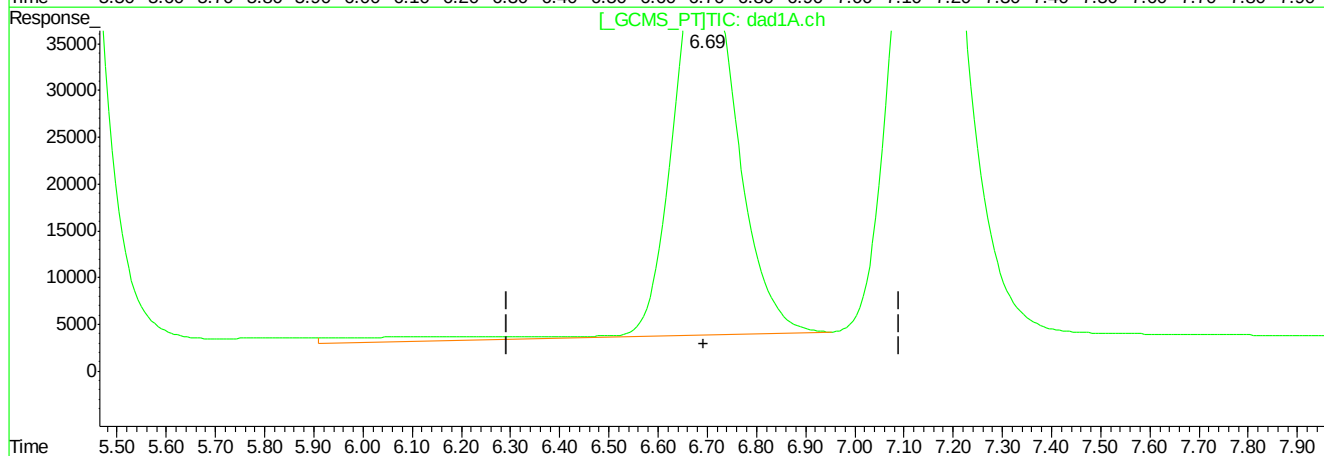
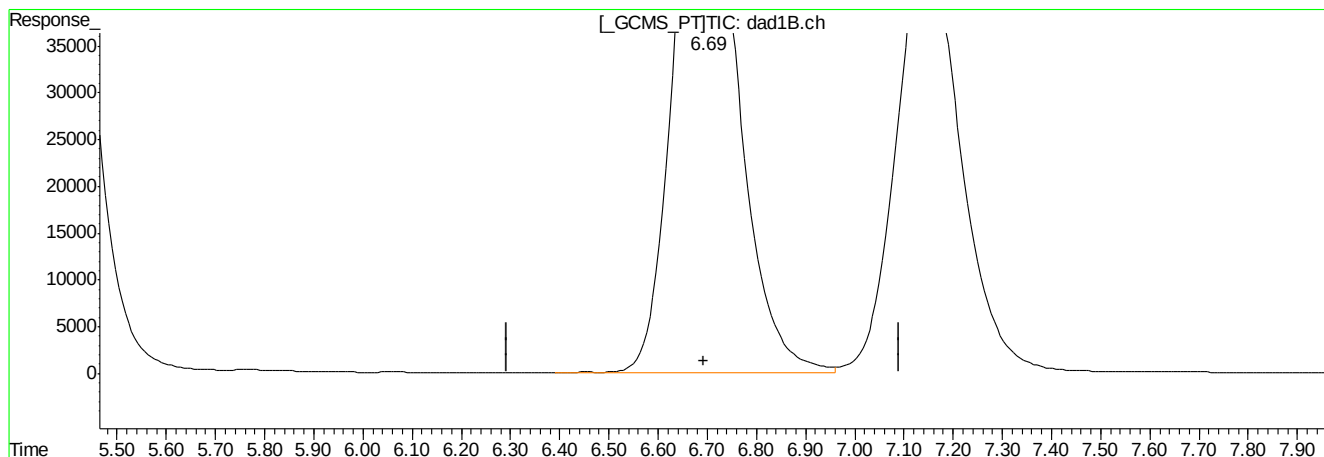
01/31/23 12:26 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3-Dinitrobenzene	99-65-0	2	6.69	Poor instrument integration
3,5-Dinitroaniline	618-87-1	2	7.15	Poor instrument integration
2,6-Dinitrotoluene	606-20-2	2	14.24	Poor instrument integration
o-Nitrotoluene	88-72-2	2	17.13	Missed peak
PETN	78-11-5	2	19.47	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1A.ch
Acq On : 26-Jan-2023, 09:46:29 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 10:12 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

6.69min 1063.260ppb

response 5540268

(7) 1,3-Dinitrobenzene #2

6.69min 1113.686ppb

response 3827477

(+) = Expected Retention Time

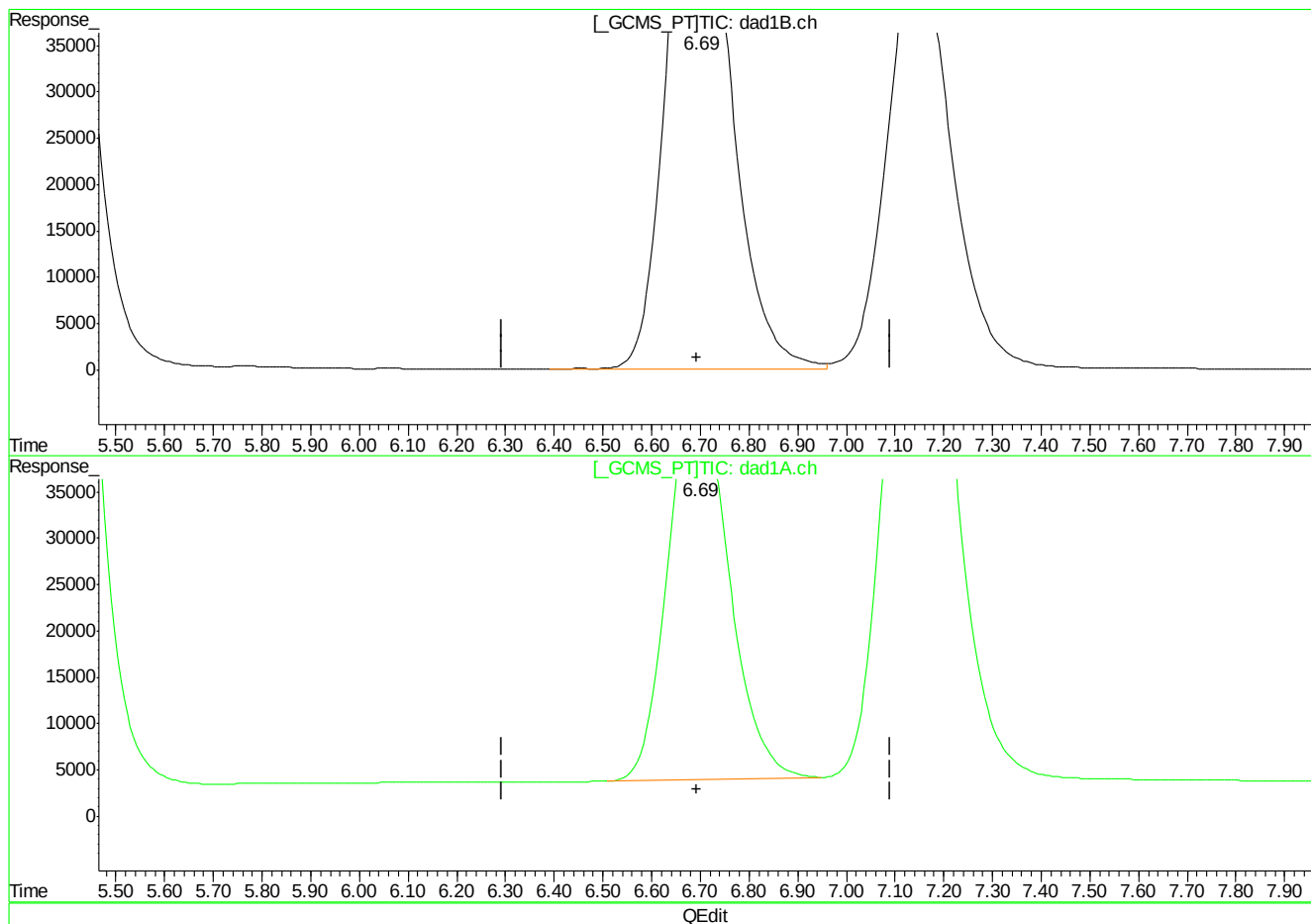
BB075407.D BBB2232_083122.M

Fri Jan 27 08:10:55 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1A.ch
Acq On : 26-Jan-2023, 09:46:29 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 10:12 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

6.69min 1063.260ppb

response 5540268

(7) 1,3-Dinitrobenzene #2

6.69min 1068.401ppb m

response 3671841

(+) = Expected Retention Time

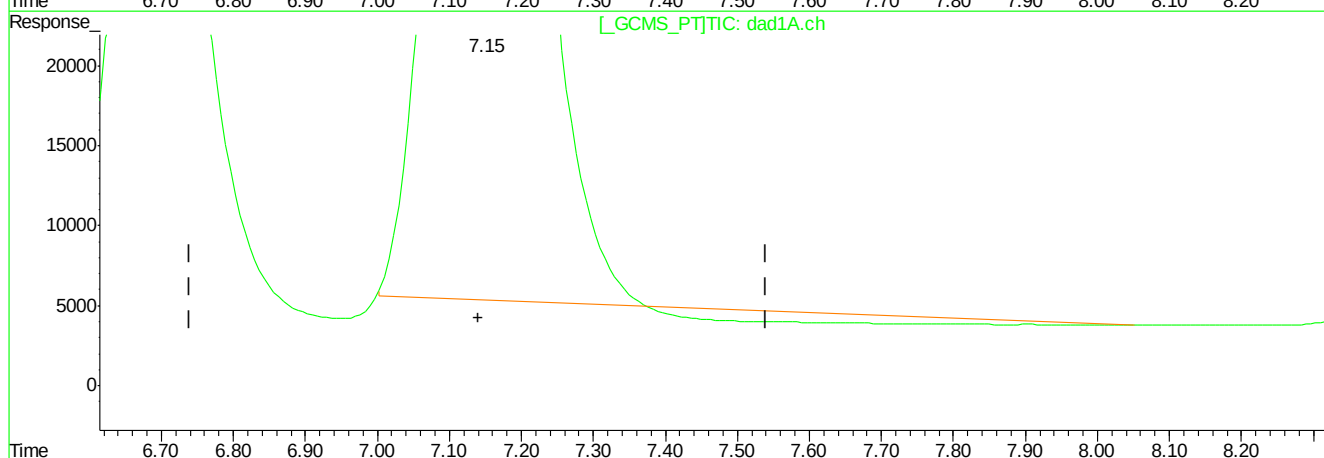
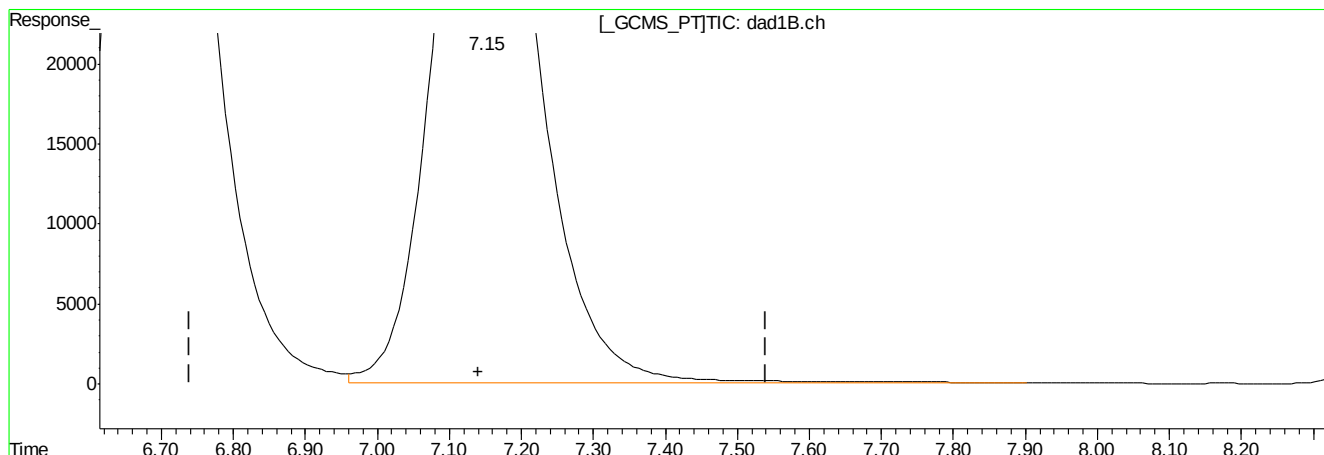
BB075407.D BBB2232_083122.M

Fri Jan 27 08:11:02 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1A.ch
Acq On : 26-Jan-2023, 09:46:29 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 10:12 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.15min 1060.992ppb

response 4175877

(8) 3,5-Dinitroaniline #2

7.15min 985.275ppb

response 6439146

QEdit

(+) = Expected Retention Time

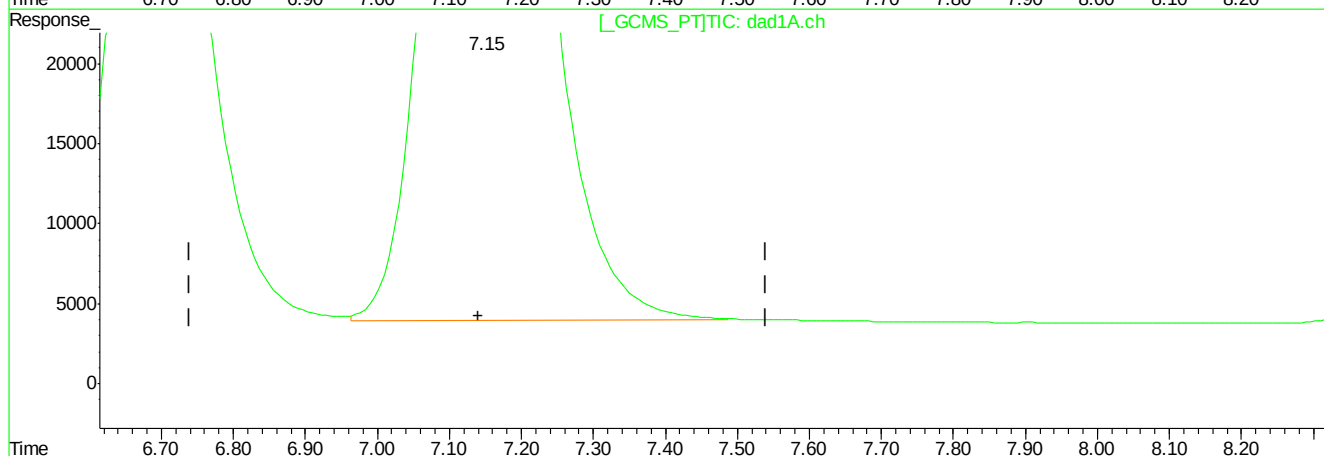
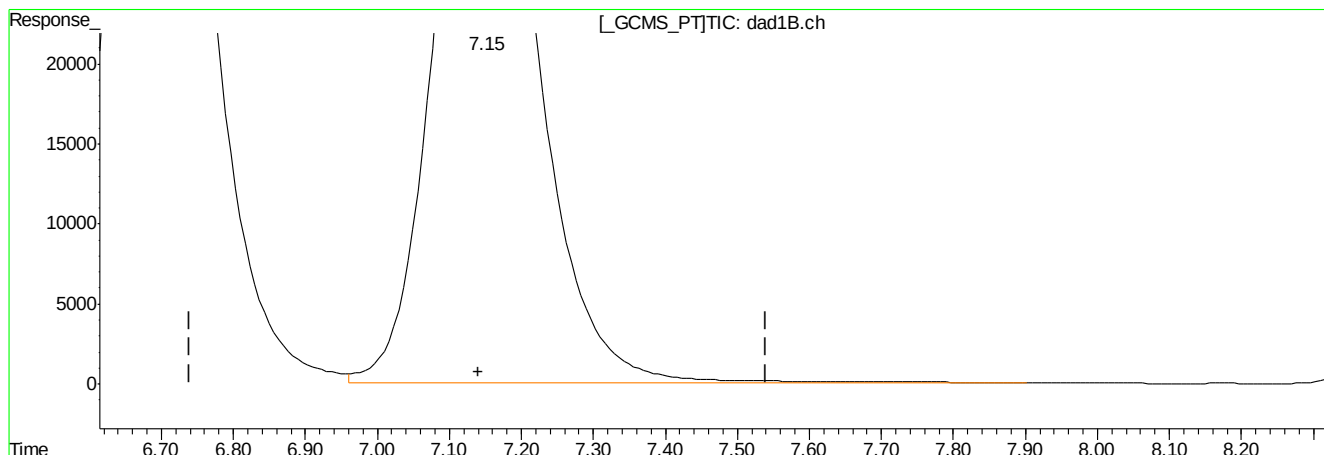
BB075407.D BBB2232_083122.M

Fri Jan 27 08:11:09 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1A.ch
Acq On : 26-Jan-2023, 09:46:29 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 10:12 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.15min 1060.992ppb

response 4175877

(8) 3,5-Dinitroaniline #2

7.15min 1060.868ppb m

response 6933178

(+) = Expected Retention Time

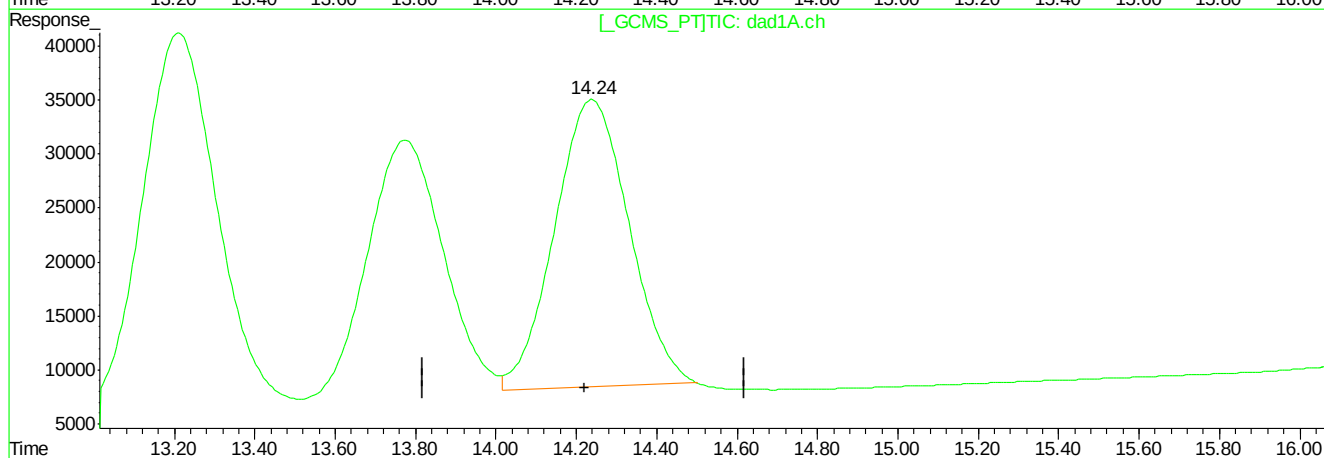
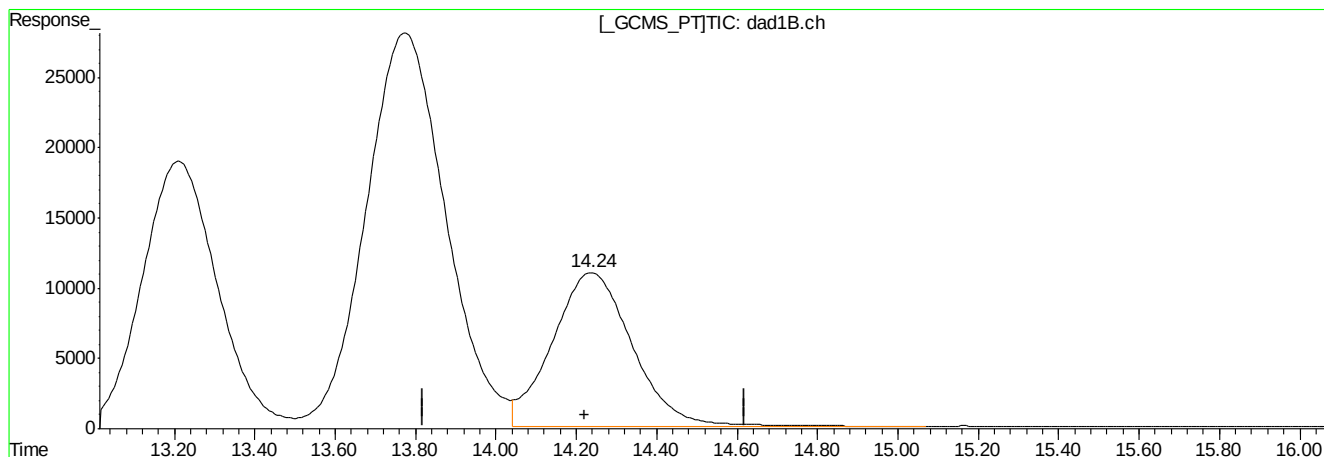
BB075407.D BBB2232_083122.M

Fri Jan 27 08:11:15 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1A.ch
Acq On : 26-Jan-2023, 09:46:29 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 10:12 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

14.24min 1009.297ppb

response 1532421

(17) 2,6-Dinitrotoluene #2

14.24min 984.250ppb

response 3451246

(+) = Expected Retention Time

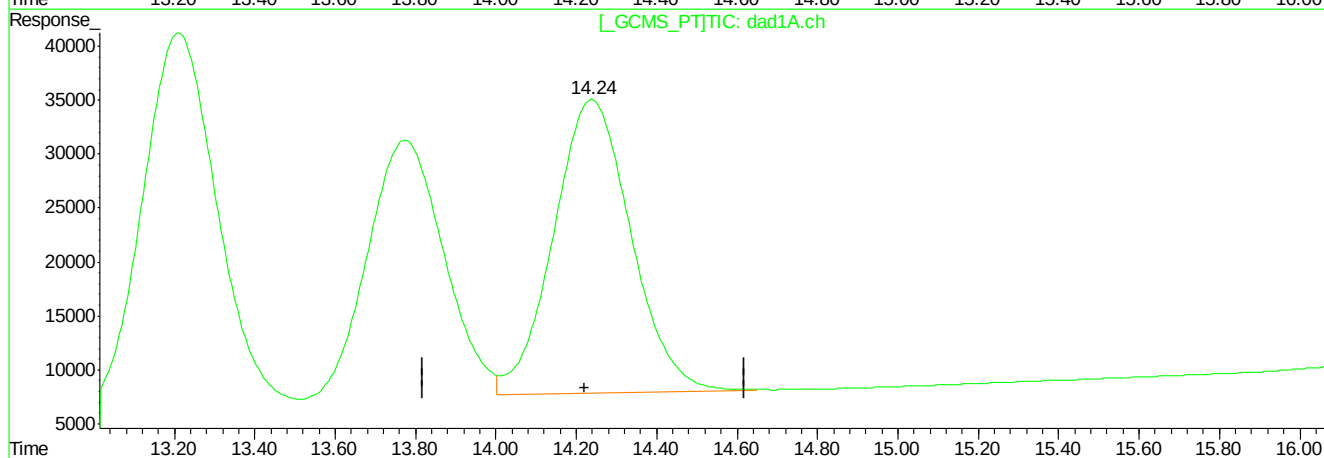
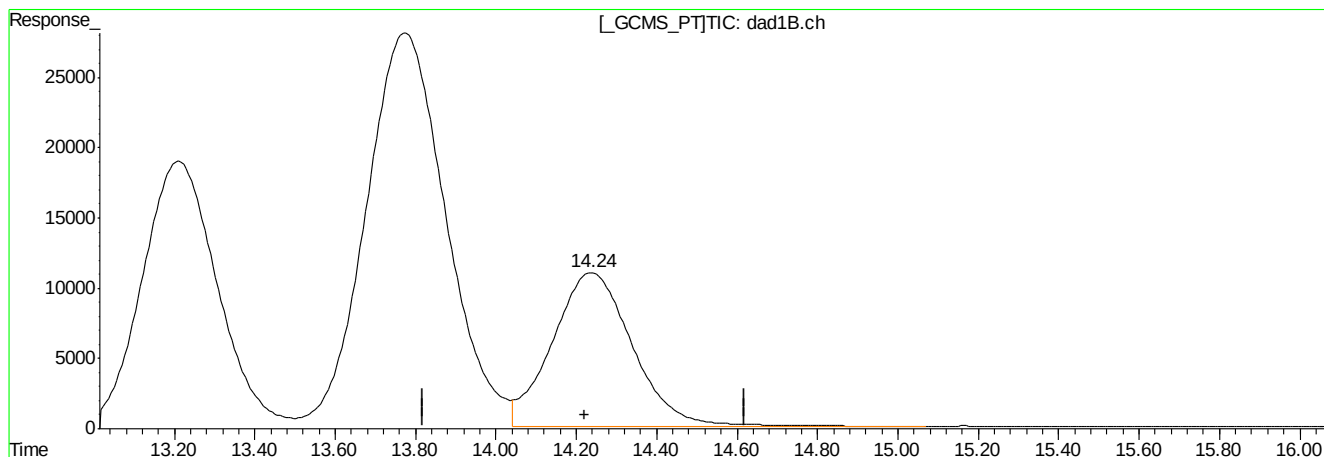
BB075407.D BBB2232_083122.M

Fri Jan 27 08:11:34 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1A.ch
Acq On : 26-Jan-2023, 09:46:29 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 10:12 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

14.24min 1009.297ppb

response 1532421

(17) 2,6-Dinitrotoluene #2

14.24min 1038.377ppb m

response 3641038

(+) = Expected Retention Time

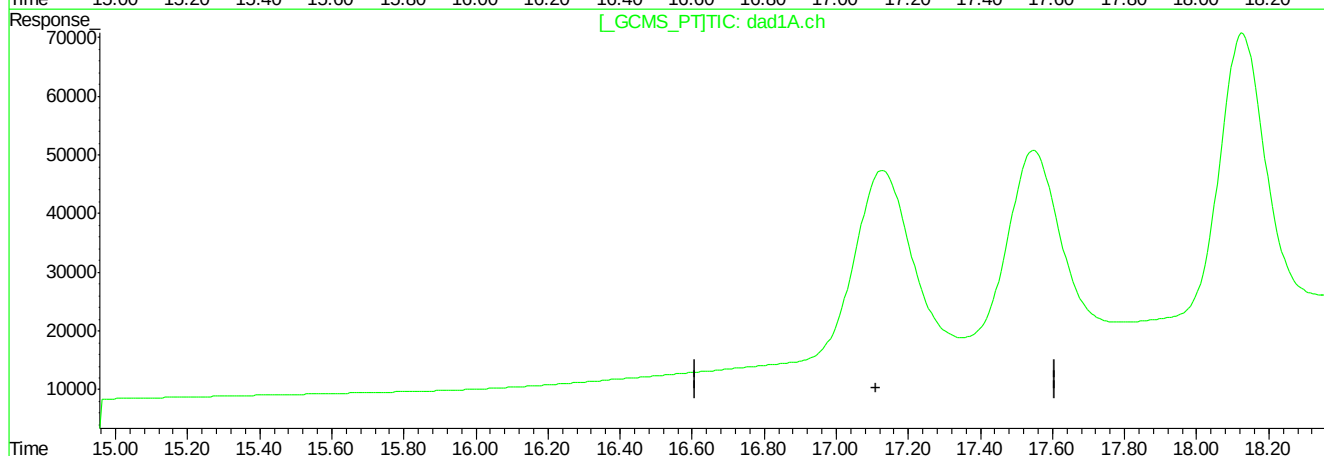
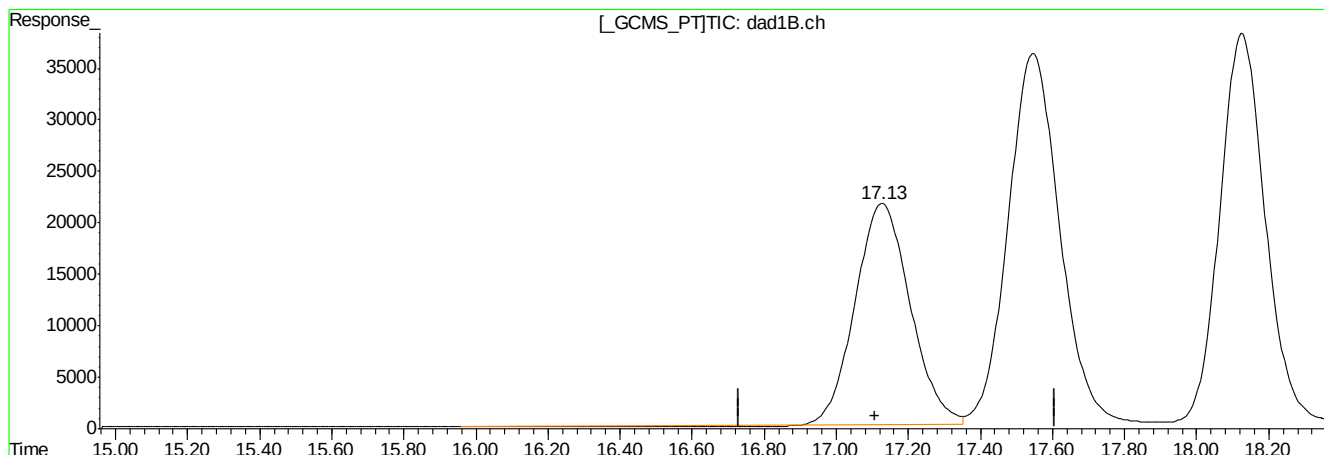
BB075407.D BBB2232_083122.M

Fri Jan 27 08:11:41 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1A.ch
Acq On : 26-Jan-2023, 09:46:29 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 10:12 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(18) o-Nitrotoluene
17.13min 1050.789ppb
response 2269061

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

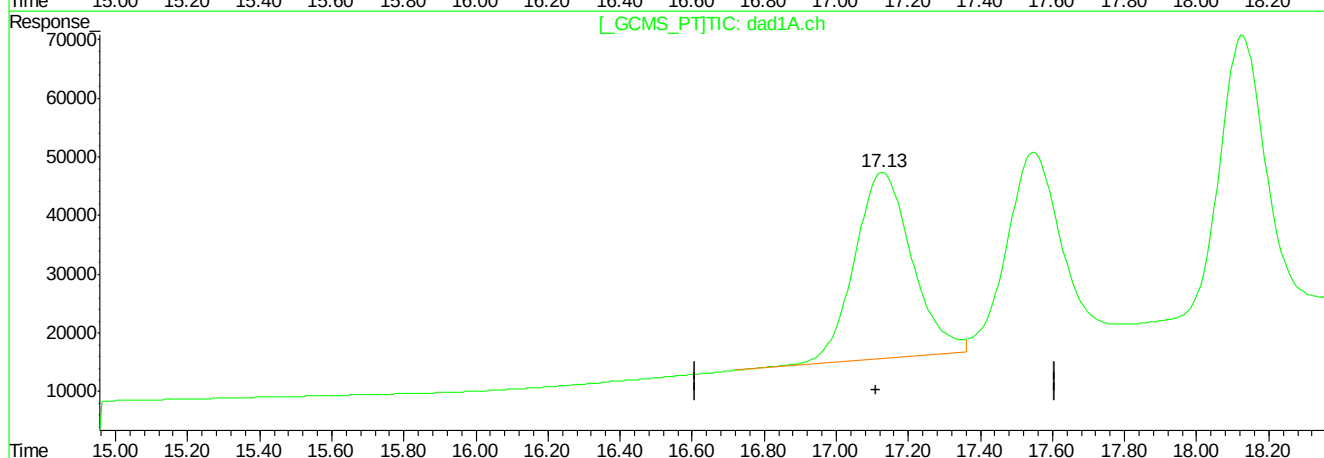
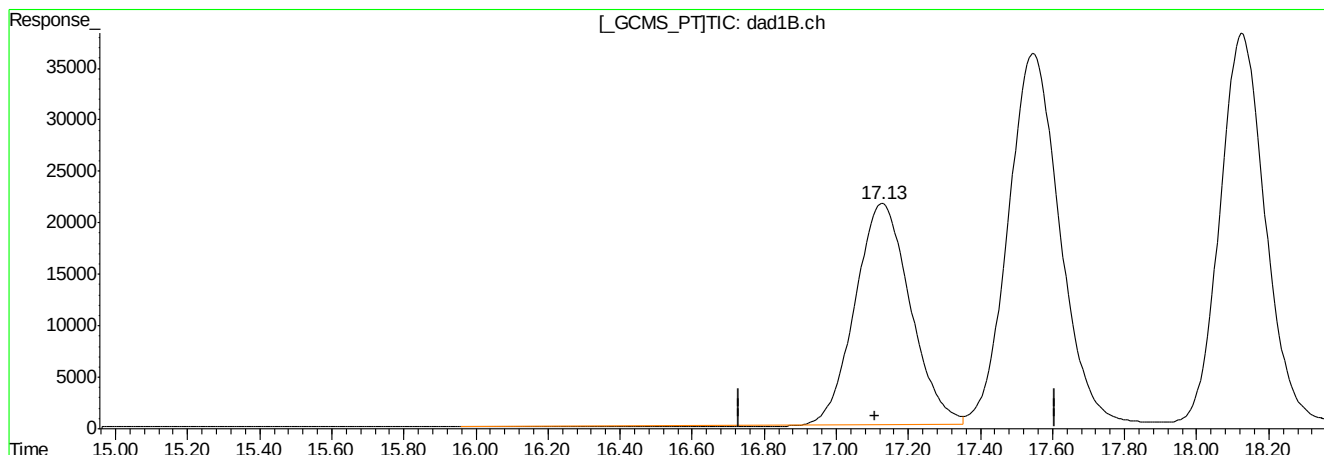
BB075407.D BBB2232_083122.M

Fri Jan 27 08:11:55 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1A.ch
Acq On : 26-Jan-2023, 09:46:29 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 10:12 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

17.13min 1050.789ppb

response 2269061

(18) o-Nitrotoluene #2

17.13min 1075.518ppb m

response 3534261

(+) = Expected Retention Time

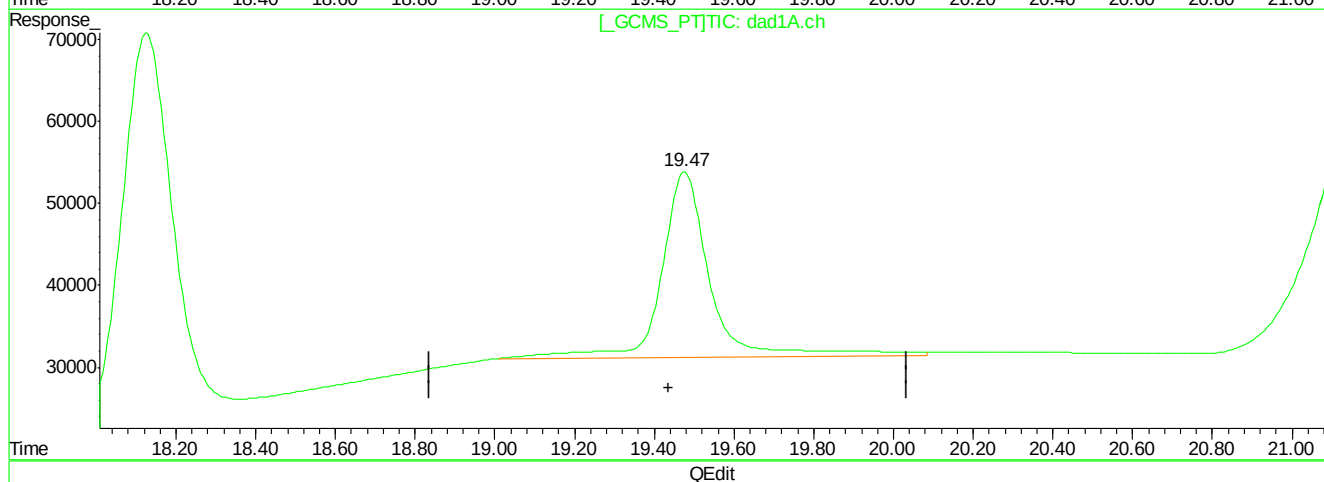
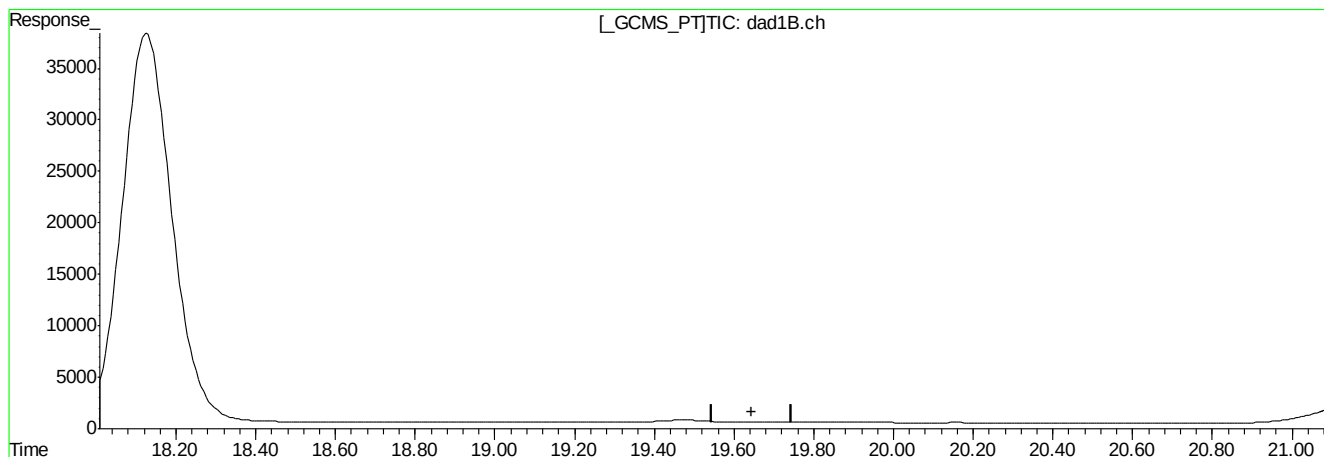
BB075407.D BBB2232_083122.M

Fri Jan 27 08:12:03 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1A.ch
Acq On : 26-Jan-2023, 09:46:29 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 10:12 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.48min 1433.588ppb

response 1926732

(+) = Expected Retention Time

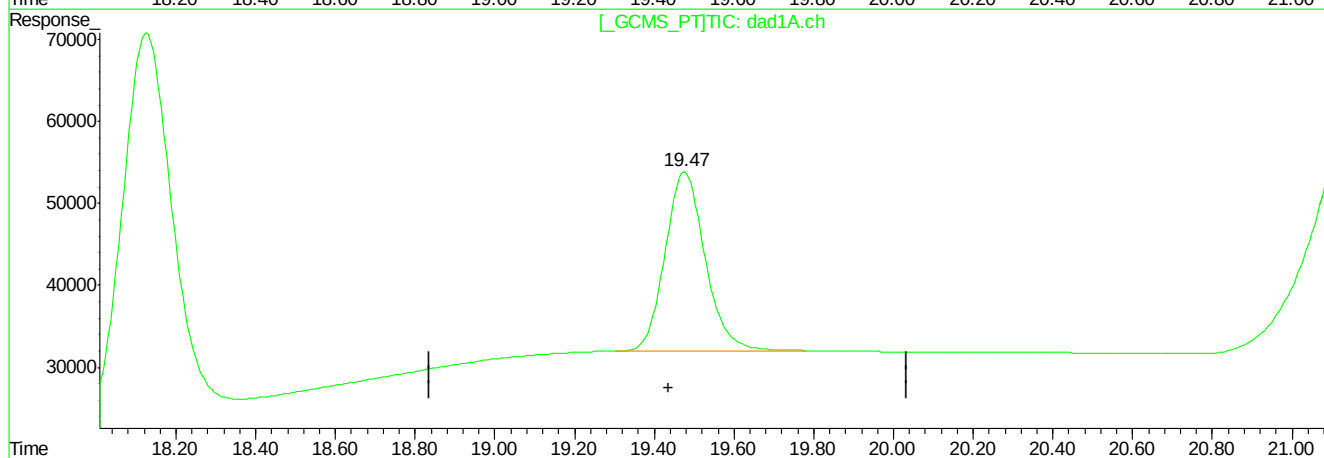
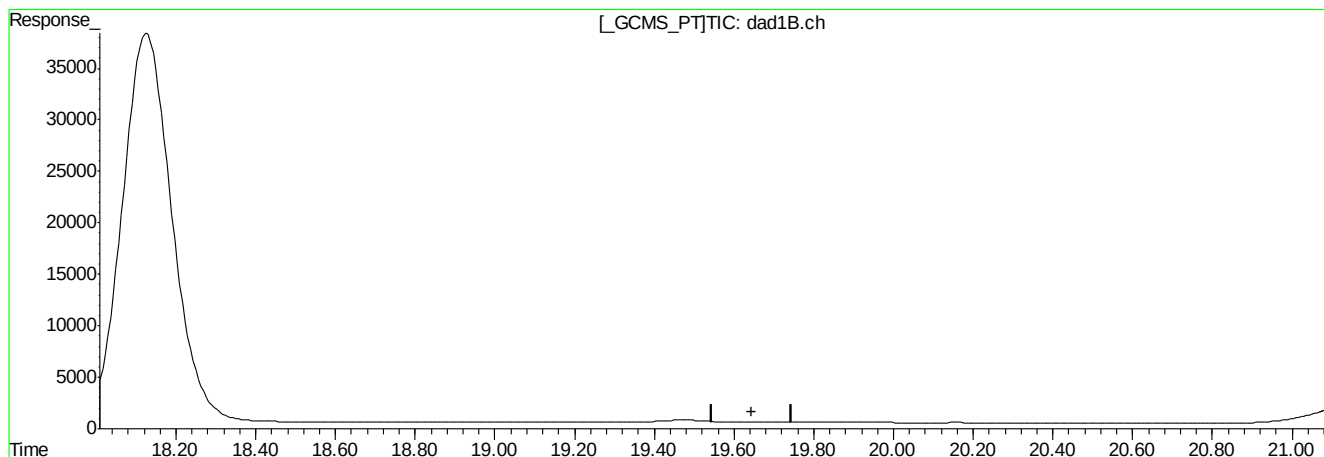
BB075407.D BBB2232_083122.M

Fri Jan 27 08:12:12 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075407.D\dad1A.ch
Acq On : 26-Jan-2023, 09:46:29 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 26 10:12 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.47min 1140.305ppb m

response 1532562

(+) = Expected Retention Time

BB075407.D BBB2232_083122.M

Fri Jan 27 08:12:22 2023

Mike Eger
01/31/23 12:26

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1A.ch
 Acq On : 26-Jan-2023, 16:18:55 Operator: fouads
 Sample : cc2232-1000 Inst : G1315B
 Misc : op94879,GBB2299,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 27 08:31:28 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.22	13.22	2518769	4409469	1175.664	1037.847
Spiked Amount	500.000	Range	70 - 136	Recovery	= 235.13%#	207.57%#
Target Compounds						
1) TNX	1.47	1.47	1940327	3005292	516.978	522.205
2) HMX	1.69	1.69	1592400	4469285	1075.474	1092.670
3) DNX	1.93	1.93	3391280	5359430	1102.376	1085.427
4) MNX	2.63	2.63	3668161	5641365	1278.132	1282.846
5) RDX	3.35	3.35	2007769	3183683	1082.375	1086.799
6) 1,3,5-Trinitrobe	5.41	5.41	4252257	6874843	1069.583	1104.443
7) 1,3-Dinitrobenze	6.70	6.70	5665252	3894515	1087.247	1133.192
8) 3,5-Dinitroanili	7.16	7.16	4272128	7130002	1085.447	1090.985m
9) Nitrobenzene	8.53	8.53	3276470	3235433	1092.665	1091.373
10) Nitroglycerin	0.00	10.38	0	1421413	N.D.	1119.012 #
11) Tetryl	11.36	11.36	3067025	4894297	1085.424	1062.614
12) 2,4,6-Trinitroto	11.72	11.72	4081737	4886171	1116.685	1097.332
13) 2-Amino-4,6-Dini	12.14	12.14	3578834	5319073	1132.340	1077.106
14) 4-Amino-2,6-Dini	12.69	12.69	2649518	5229276	1153.678	1064.038
16) 2,4-Dinitrotolue	13.78	13.78	3955636	3138142	844.545	1007.729
17) 2,6-Dinitrotolue	14.25	14.24	1574360	3565026	1036.920	1016.699m
18) o-Nitrotoluene	17.13	17.13	2379498	3675789	1101.932	1118.586m
19) p-Nitrotoluene	17.55	17.55	3708008	3036045	1108.398	1074.239
20) m-Nitrotoluene	18.13	18.13	3438214	4099203	1104.391	1056.229
21) PETN	0.00	19.47	0	1547960	N.D.	1151.762m#

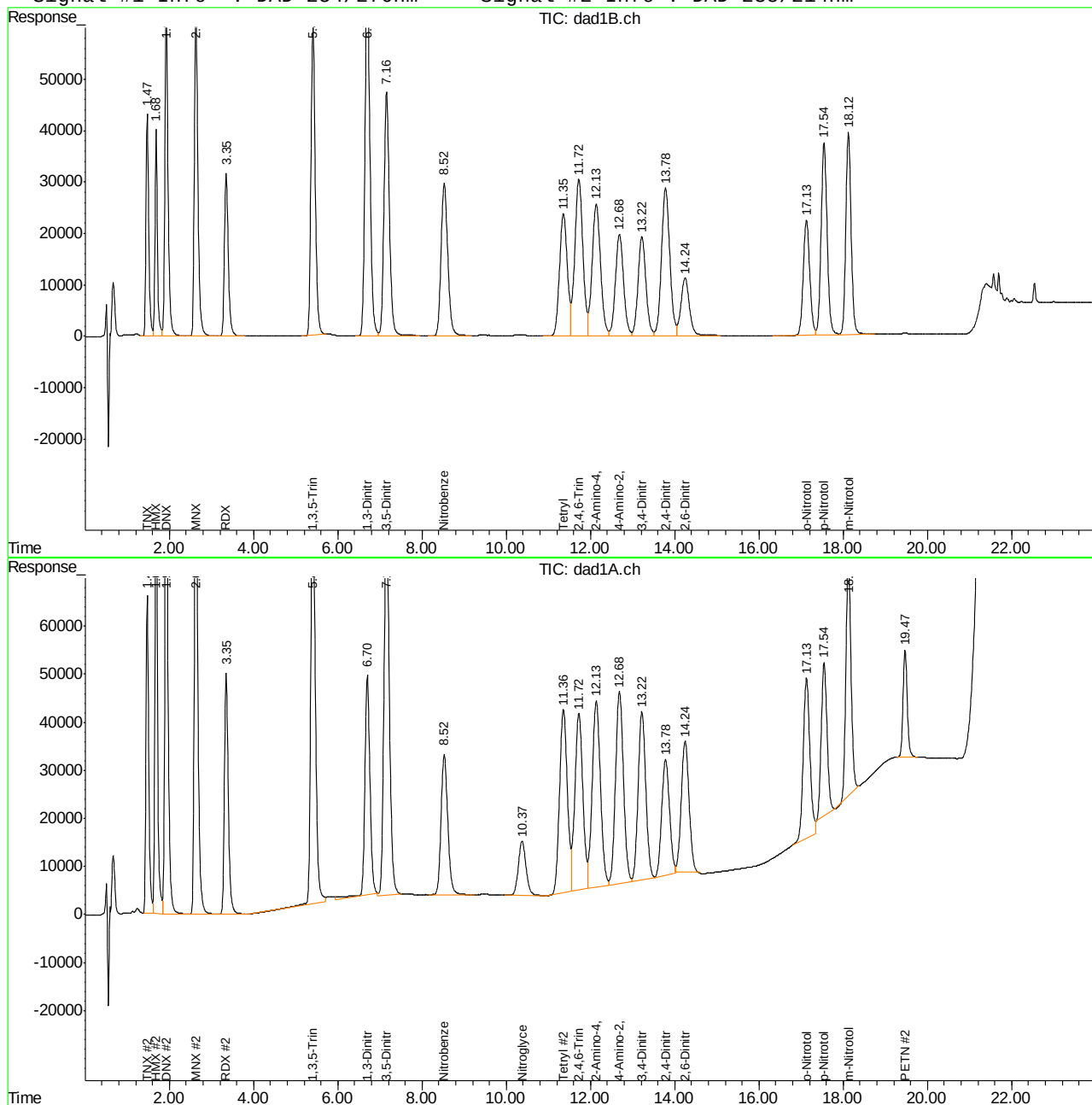
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075419.D BBB2232_083122.M Fri Jan 27 11:23:42 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1A.ch
Acq On : 26-Jan-2023, 16:18:55 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : op94879, GBB2299, 1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:33 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

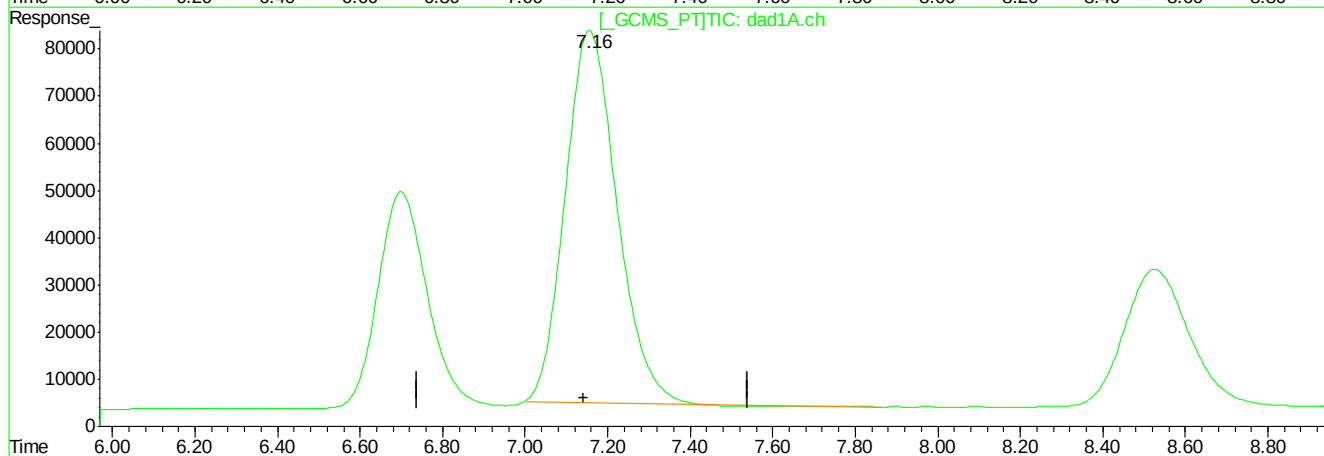
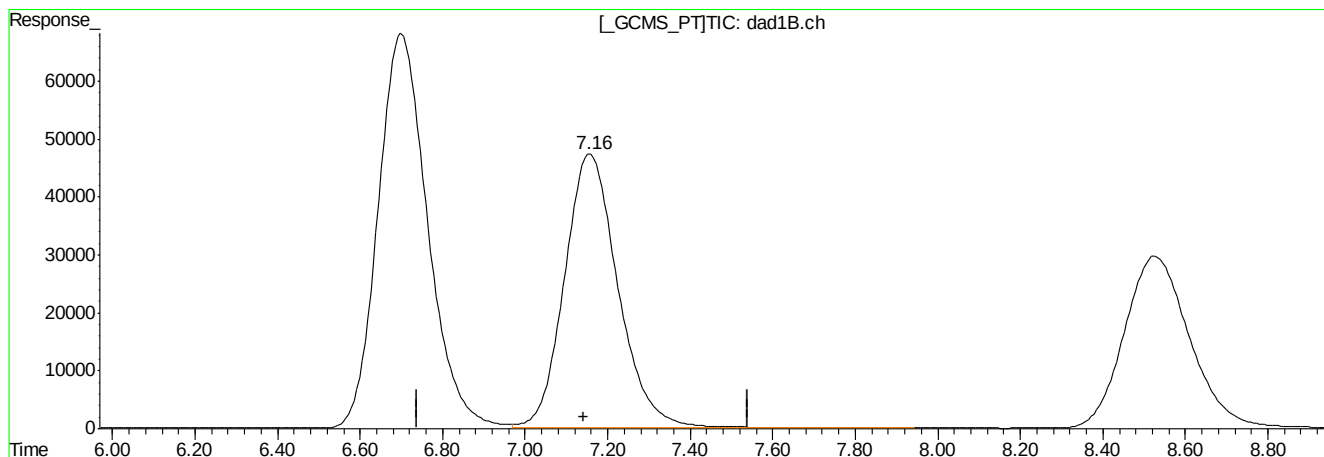
Sample Number: GBB2299-CC2232 Method: SW846 8330A
Lab FileID: BB075419.D Analyst approved: 01/27/23 11:26 Fouad Sekkar
Injection Time: 01/26/23 16:18 Supervisor approved: 01/31/23 12:26 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	2	7.16	Poor instrument integration
2,6-Dinitrotoluene	606-20-2	2	14.24	Poor instrument integration
o-Nitrotoluene	88-72-2	2	17.13	Missed peak
PETN	78-11-5	2	19.47	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1A.ch
Acq On : 26-Jan-2023, 16:18:55 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:31 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.16min 1085.447ppb

response 4272128

(8) 3,5-Dinitroaniline #2

7.16min 1041.914ppb

response 6809309

(+) = Expected Retention Time

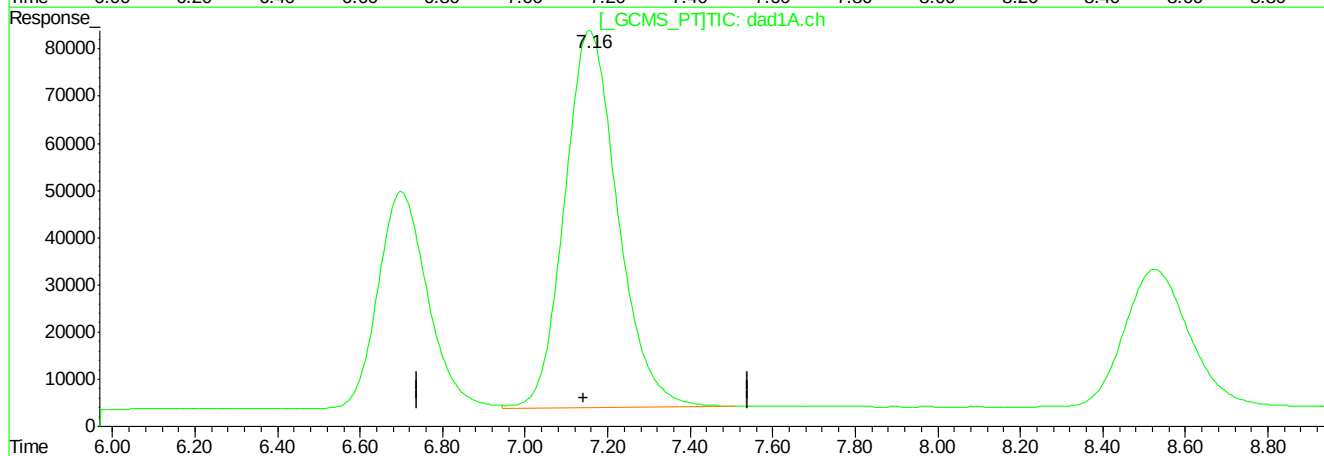
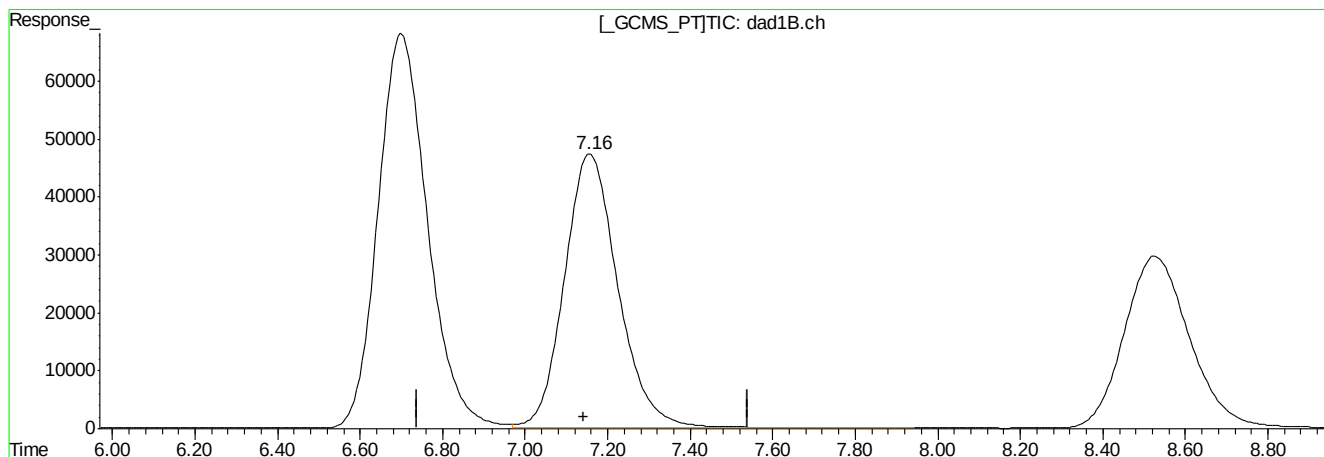
BB075419.D BBB2232_083122.M

Fri Jan 27 08:32:31 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1A.ch
Acq On : 26-Jan-2023, 16:18:55 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:31 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.16min 1085.447ppb

response 4272128

(8) 3,5-Dinitroaniline #2

7.16min 1090.985ppb m

response 7130002

(+) = Expected Retention Time

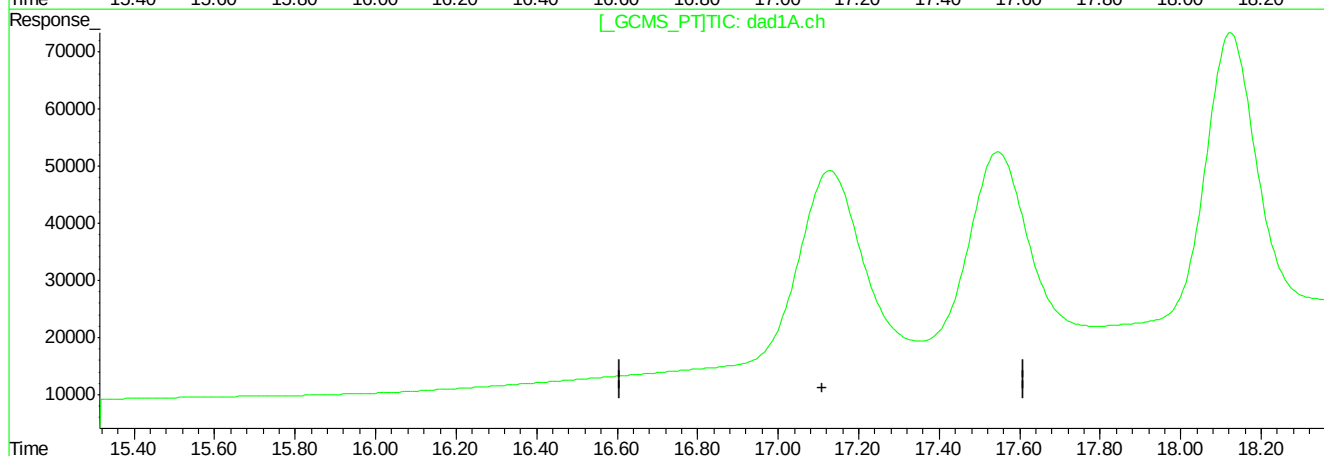
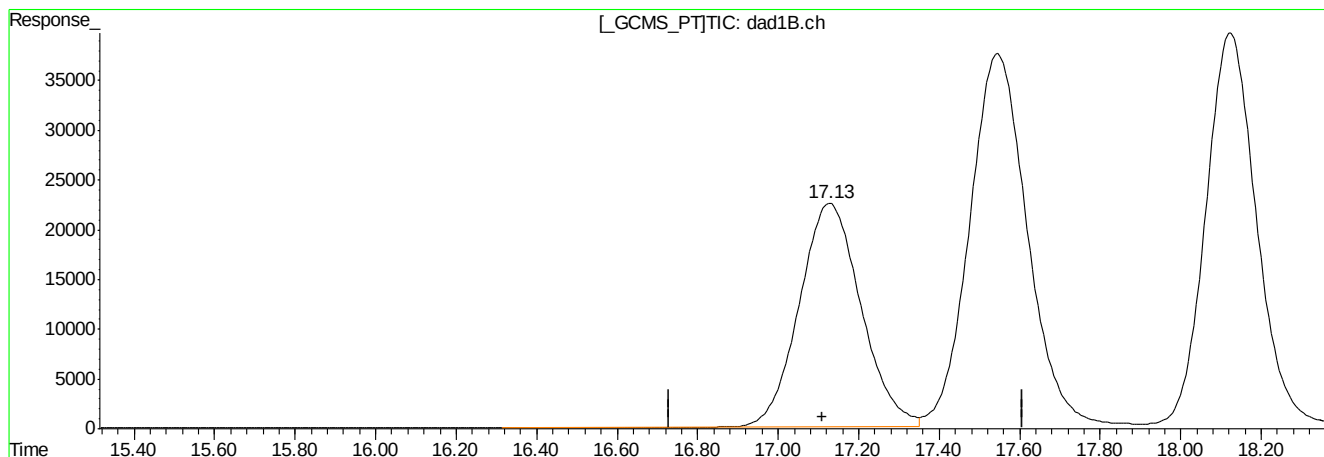
BB075419.D BBB2232_083122.M

Fri Jan 27 08:32:42 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1A.ch
Acq On : 26-Jan-2023, 16:18:55 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:31 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
17.13min 1101.932ppb
response 2379498

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

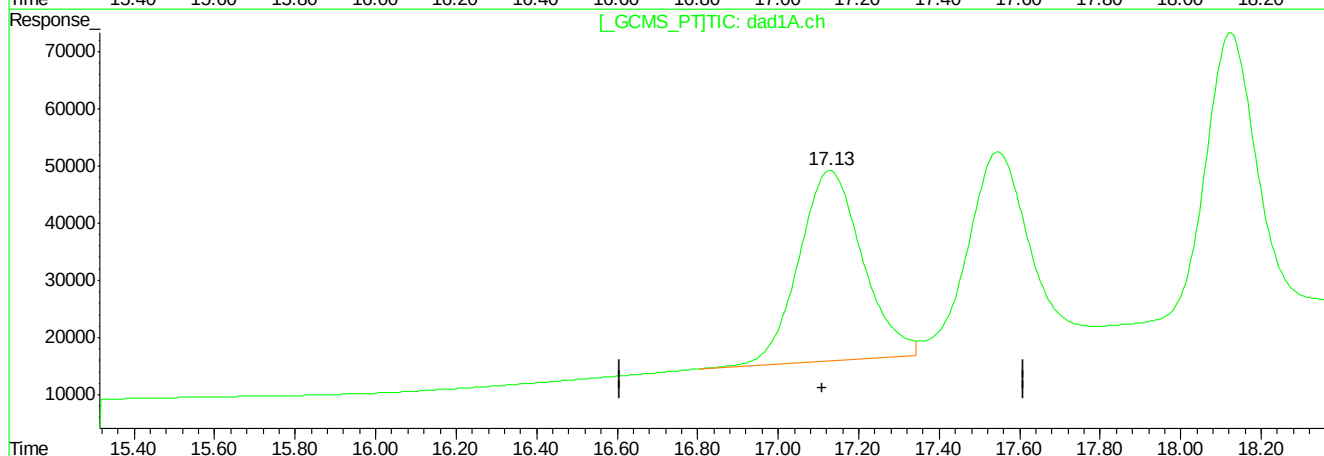
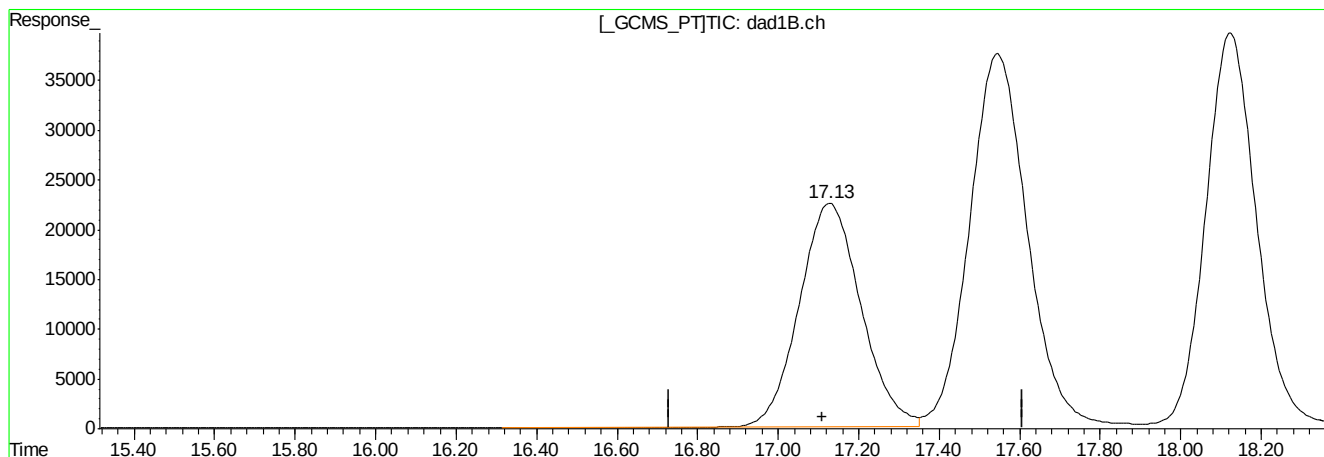
BB075419.D BBB2232_083122.M

Fri Jan 27 08:32:53 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1A.ch
Acq On : 26-Jan-2023, 16:18:55 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:31 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(18) o-Nitrotoluene

17.13min 1101.932ppb

response 2379498

(18) o-Nitrotoluene #2

17.13min 1118.586ppb m

response 3675789

(+) = Expected Retention Time

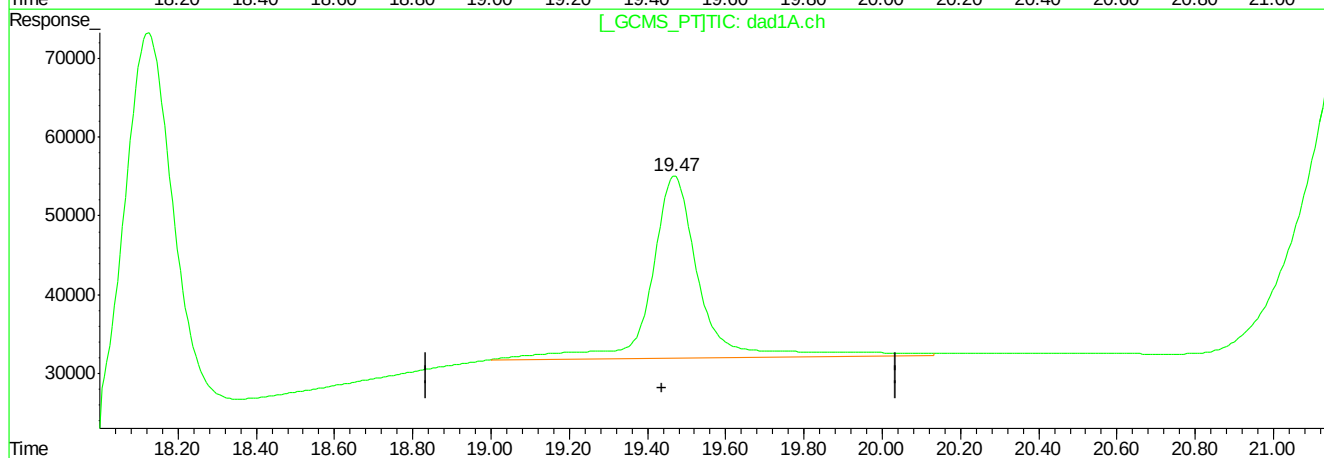
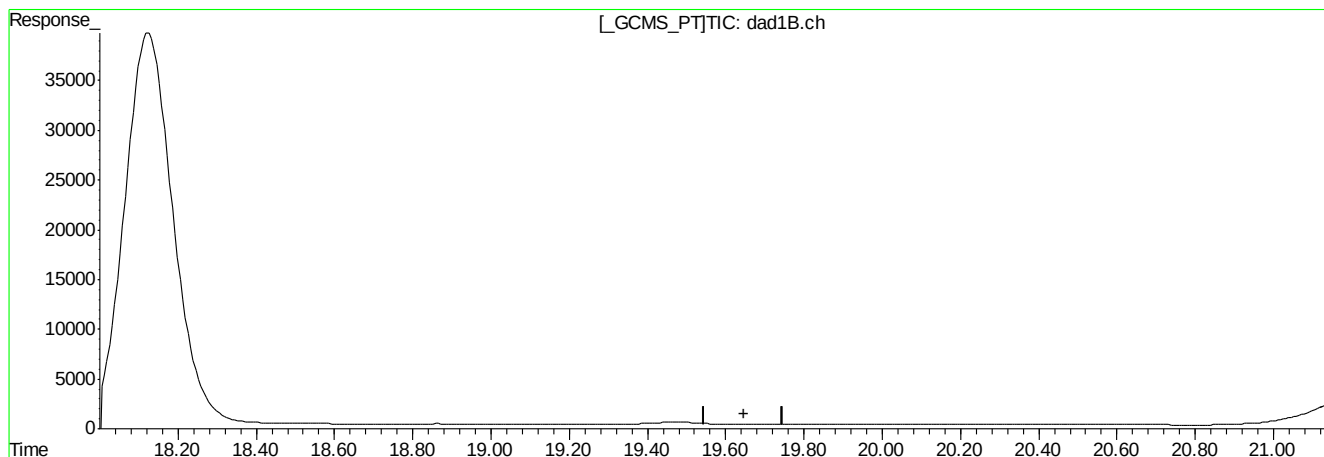
BB075419.D BBB2232_083122.M

Fri Jan 27 08:32:59 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1A.ch
Acq On : 26-Jan-2023, 16:18:55 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:31 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.47min 1488.138ppb

response 2000047

QEdit

(+) = Expected Retention Time

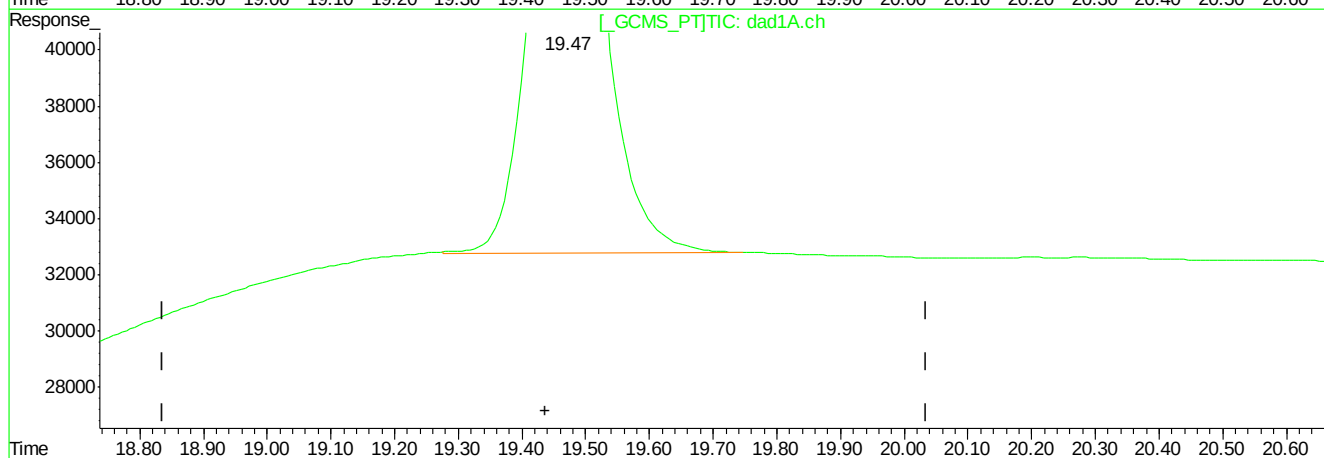
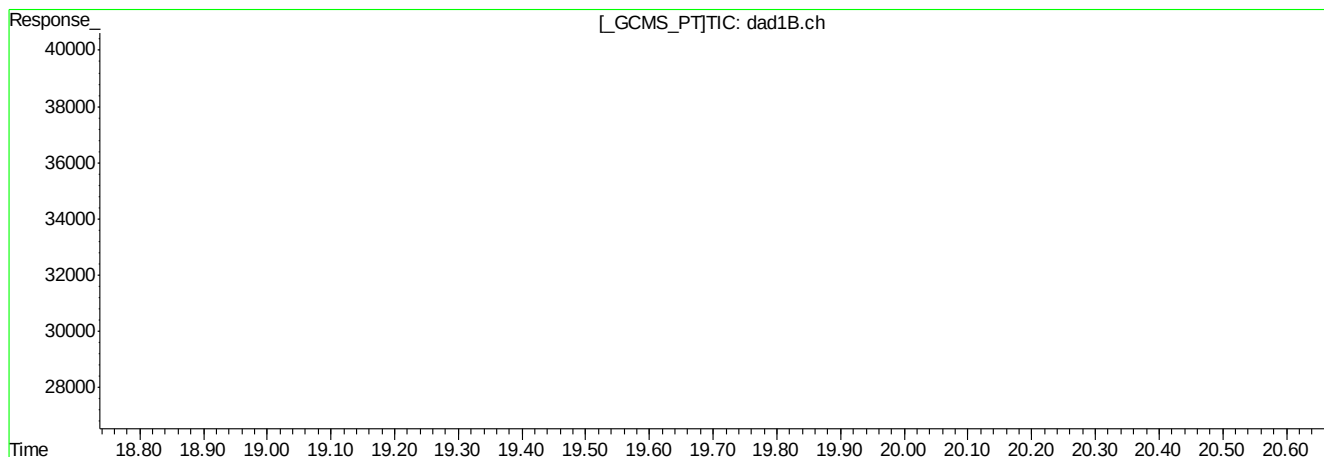
BB075419.D BBB2232_083122.M

Fri Jan 27 08:33:07 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1A.ch
Acq On : 26-Jan-2023, 16:18:55 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:31 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.47min 1151.762ppb m

response 1547960

(+) = Expected Retention Time

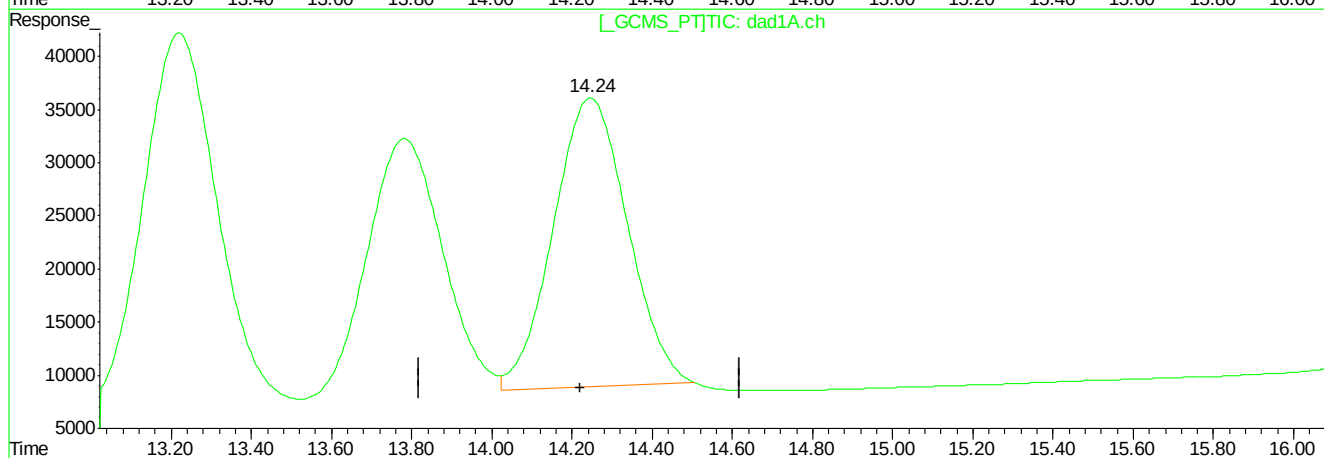
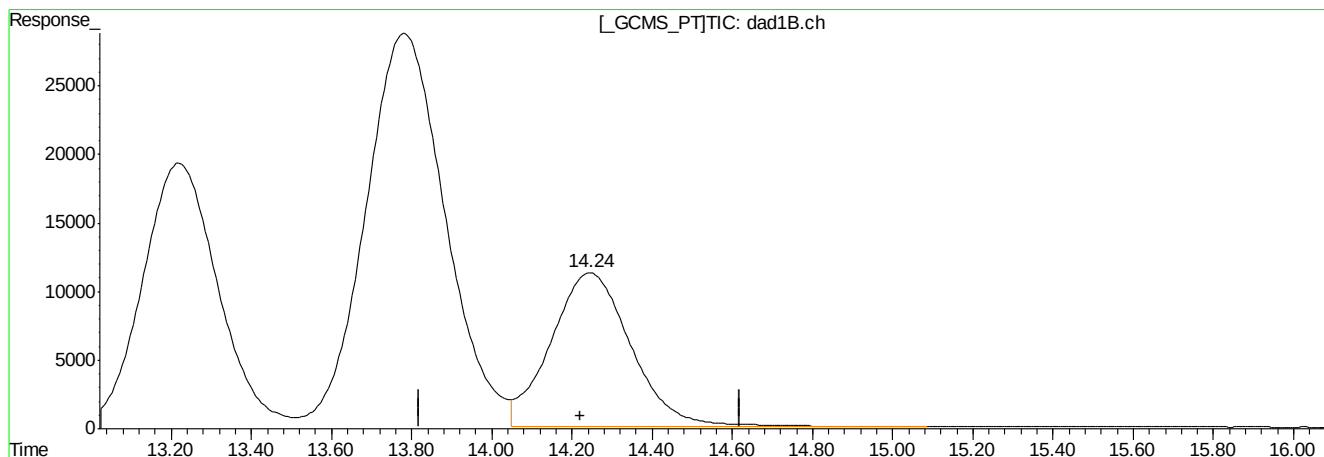
BB075419.D BBB2232_083122.M

Fri Jan 27 08:33:13 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1A.ch
Acq On : 26-Jan-2023, 16:18:55 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:33 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

14.25min 1036.920ppb

response 1574360

(17) 2,6-Dinitrotoluene #2

14.25min 1000.474ppb

response 3508134

(+) = Expected Retention Time

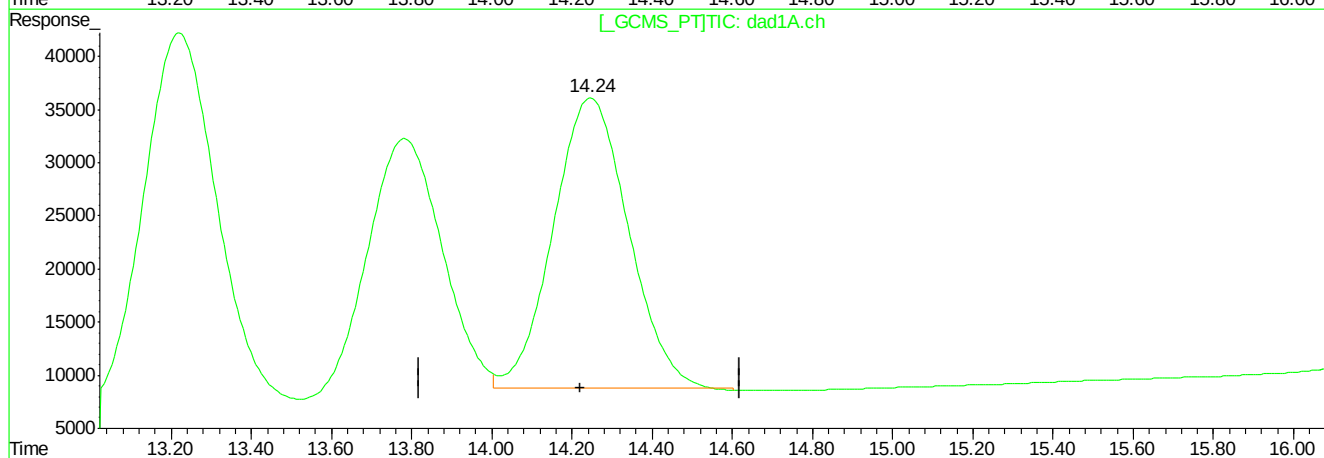
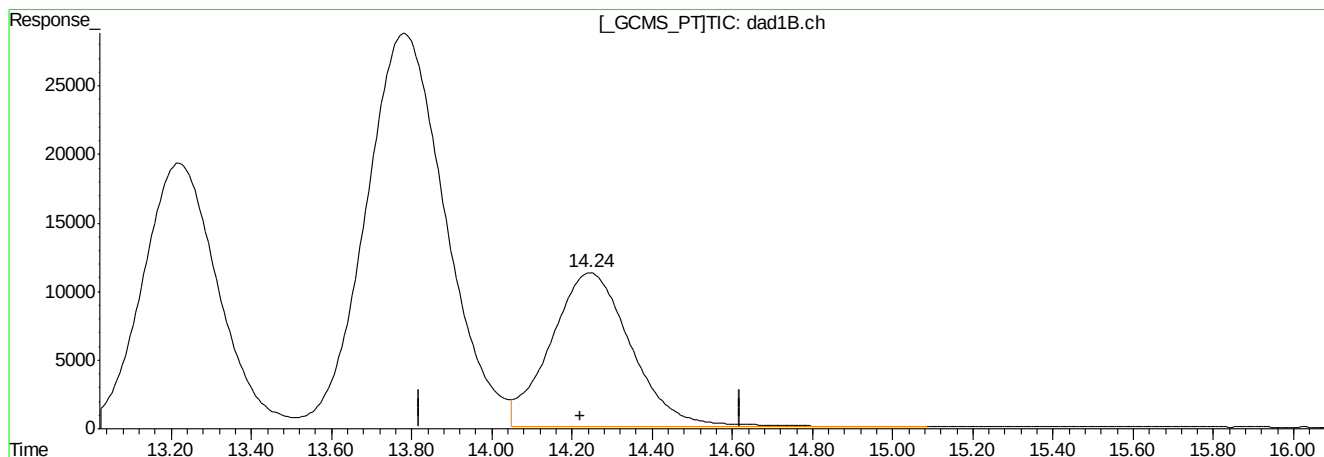
BB075419.D BBB2232_083122.M

Fri Jan 27 08:33:52 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2299\BB075419.D\dad1A.ch
Acq On : 26-Jan-2023, 16:18:55 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 8:33 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

14.25min 1036.920ppb

response 1574360

(17) 2,6-Dinitrotoluene #2

14.24min 1016.699ppb m

response 3565026

(+) = Expected Retention Time

BB075419.D BBB2232_083122.M

Fri Jan 27 08:33:58 2023

Mike Eger
01/31/23 12:32

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075430.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075430.D\dad1A.ch
 Acq On : 27-Jan-2023, 10:22:59 Operator: fouads
 Sample : cc2232-1000 Inst : G1315B
 Misc : op95139,GBB2300,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 27 10:56:31 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.27	13.27	2493042	4418966	1163.655	1040.082
Spiked Amount	500.000	Range	70 - 136	Recovery	= 232.73%#	208.02%#
Target Compounds						
1) TNX	1.48	1.48	1935576	3002312	515.712	521.688
2) HMX	1.69	1.69	1603744	4458564	1083.136	1090.049
3) DNX	1.93	1.93	3373952	5305969	1096.743	1074.599
4) MNX	2.64	2.64	3640782	5590727	1268.592	1271.331
5) RDX	3.35	3.35	1999997	3171917	1078.185	1082.782
6) 1,3,5-Trinitrobe	5.43	5.43	4318594	6946643	1086.269	1115.978
7) 1,3-Dinitrobenze	6.72	6.72	5659020	3774976	1086.051	1098.410
8) 3,5-Dinitroanili	7.17	7.17	4256612	6905026	1081.505	1056.560
9) Nitrobenzene	8.55	8.55	3220656	3165814	1074.052	1067.889
10) Nitroglycerin	0.00	10.41	0	1417327	N.D.	1115.796 #
11) Tetryl	11.40	11.40	3090033	4899872	1093.567	1063.825
12) 2,4,6-Trinitroto	11.77	11.77	4051682	4851624	1108.463	1089.573
13) 2-Amino-4,6-Dini	12.17	12.18	3544563	5300079	1121.497	1073.259
14) 4-Amino-2,6-Dini	12.73	12.73	2611850	5208833	1137.276	1059.879
16) 2,4-Dinitrotolue	13.82	13.83	4007088	3050278	855.530m	979.514
17) 2,6-Dinitrotolue	14.29	14.29	1580556	3619237	1041.000	1032.159m
18) o-Nitrotoluene	17.16	17.16	2347452	3600572	1087.092	1095.697m
19) p-Nitrotoluene	17.58	17.58	3655975	3008047	1092.844	1064.333
20) m-Nitrotoluene	18.15	18.15	3368182	4052097	1081.896	1044.091
21) PETN	0.00	19.49	0	1551940	N.D.	1154.723m#

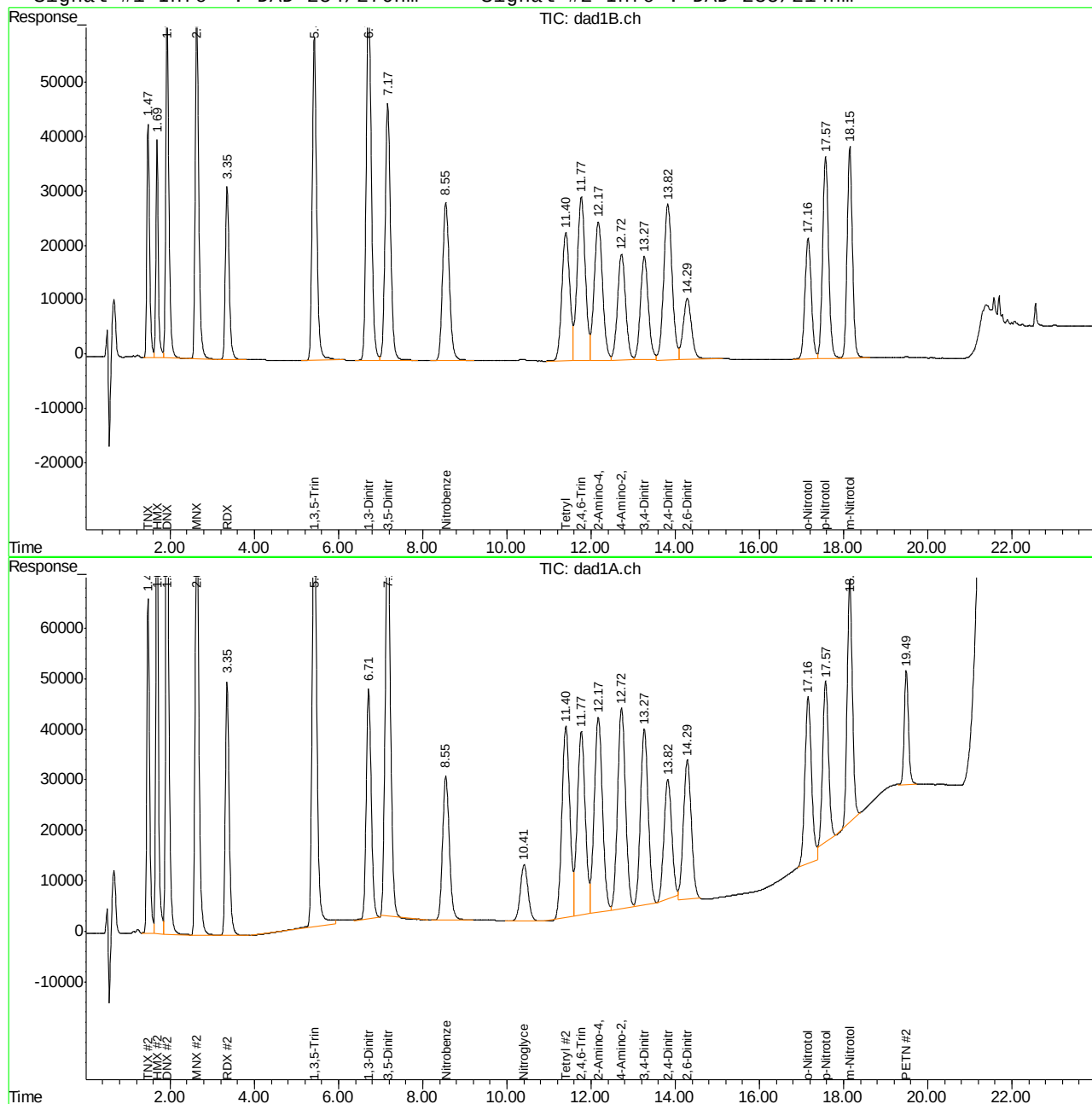
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075430.D BBB2232_083122.M Tue Jan 31 12:27:29 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075430.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075430.D\dad1A.ch
Acq On : 27-Jan-2023, 10:22:59 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : op95139, GBB2300, 1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 10:59 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: GBB2300-CC2232

Method: SW846 8330B

Lab FileID: BB075430.D

Analyst approved: 01/31/23 12:02 Fouad Sekkar

Injection Time: 01/27/23 10:22

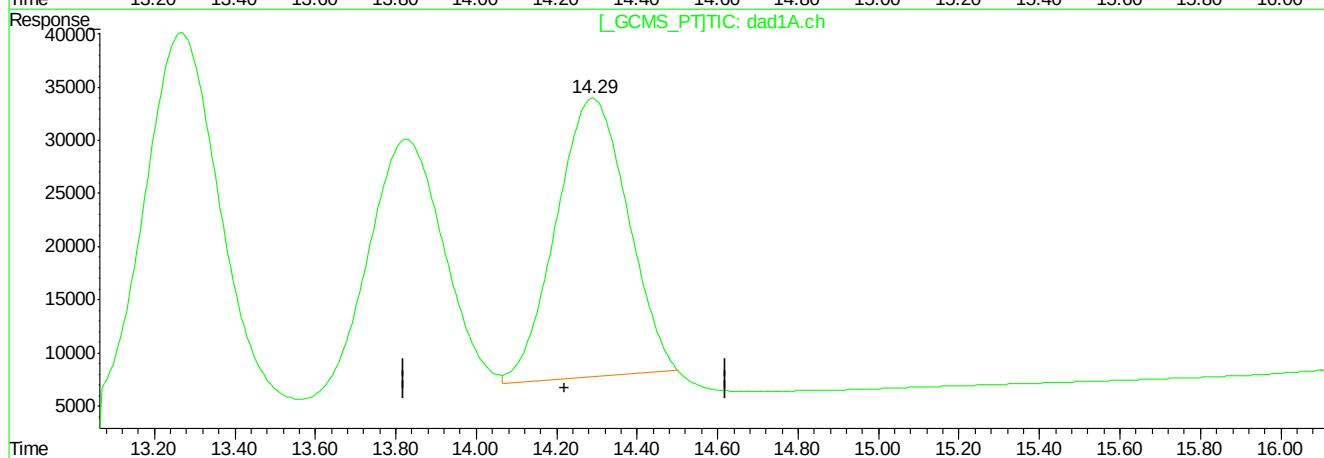
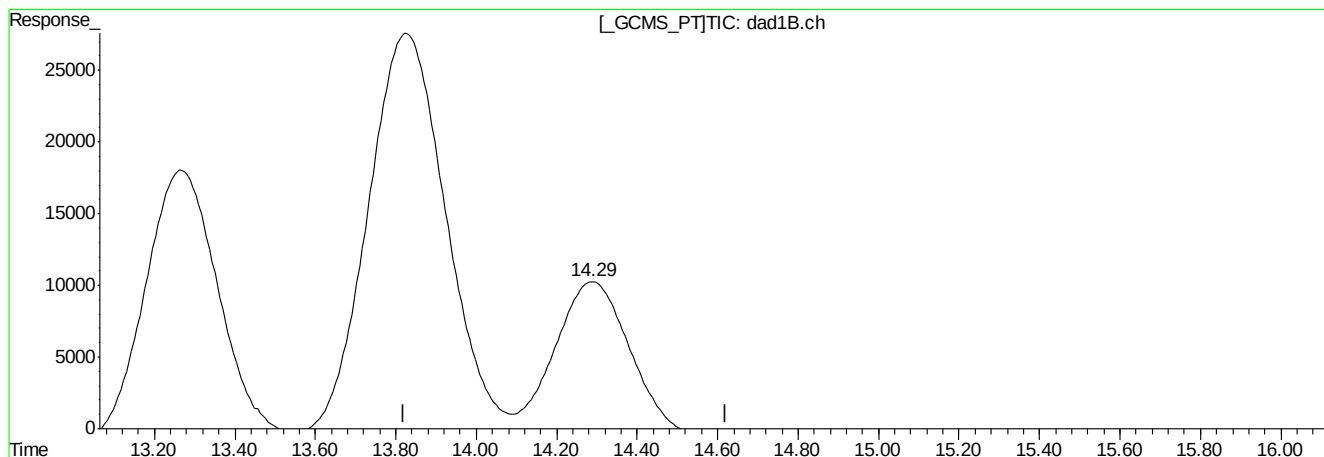
Supervisor approved: 01/31/23 12:32 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
2,4-Dinitrotoluene	121-14-2	1	13.82	Poor instrument integration
2,6-Dinitrotoluene	606-20-2	2	14.29	Poor instrument integration
o-Nitrotoluene	88-72-2	2	17.16	Missed peak
PETN	78-11-5	2	19.49	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075430.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075430.D\dad1A.ch
Acq On : 27-Jan-2023, 10:22:59 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 10:56 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

14.29min 1041.000ppb

response 1580556

(17) 2,6-Dinitrotoluene #2

14.29min 926.633ppb

response 3249212

QEdit

(+) = Expected Retention Time

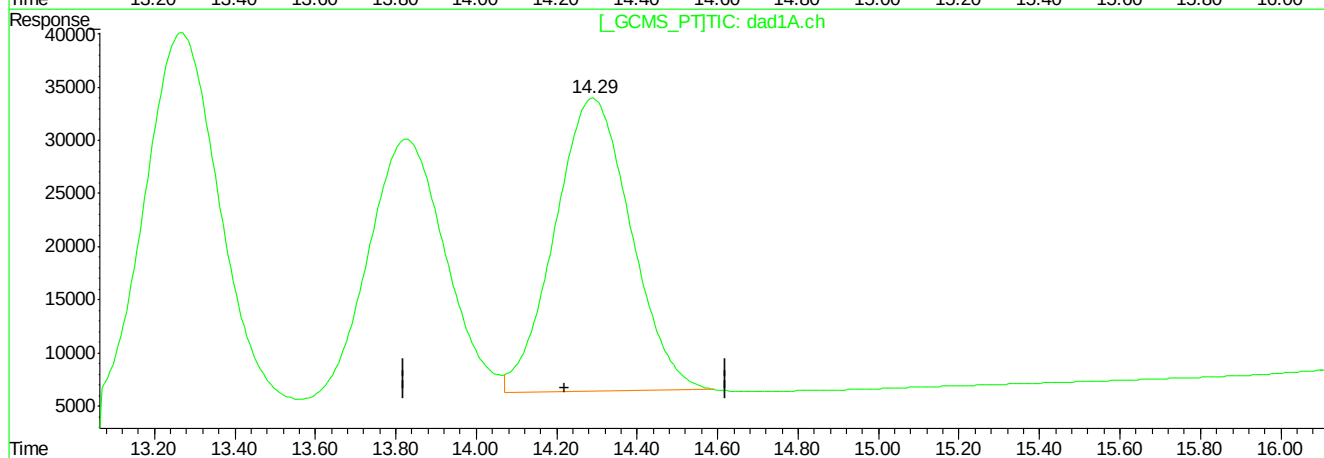
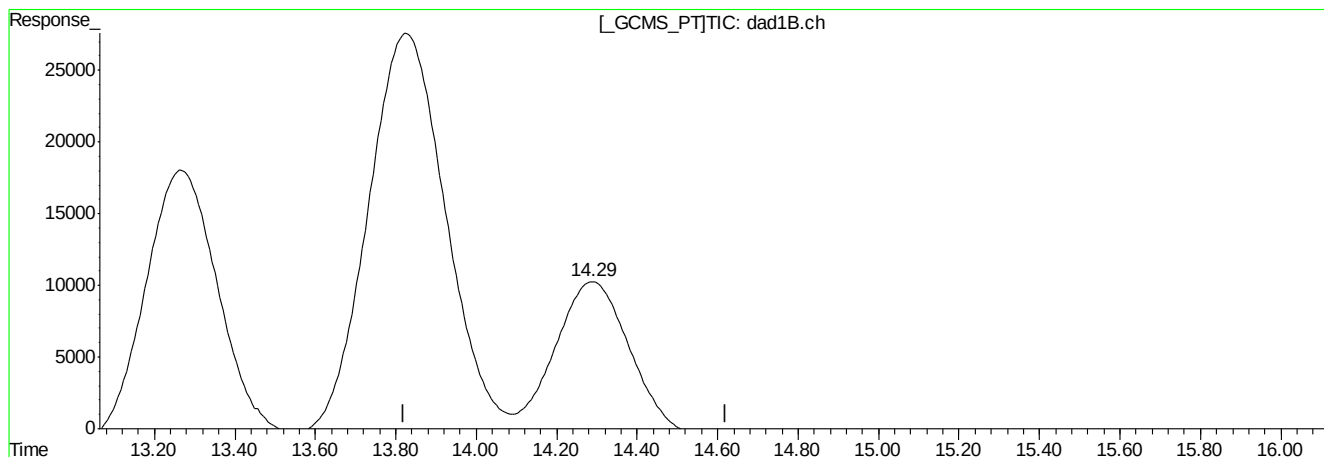
BB075430.D BBB2232_083122.M

Fri Jan 27 10:57:55 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075430.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075430.D\dad1A.ch
Acq On : 27-Jan-2023, 10:22:59 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 10:56 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

14.29min 1041.000ppb

response 1580556

(17) 2,6-Dinitrotoluene #2

14.29min 1032.159ppb m

response 3619237

(+) = Expected Retention Time

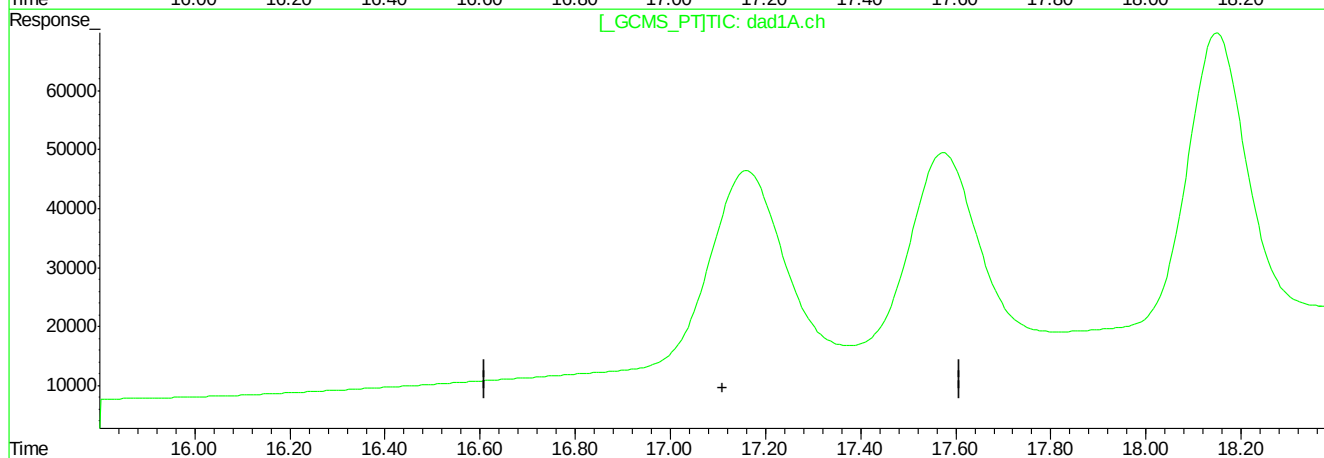
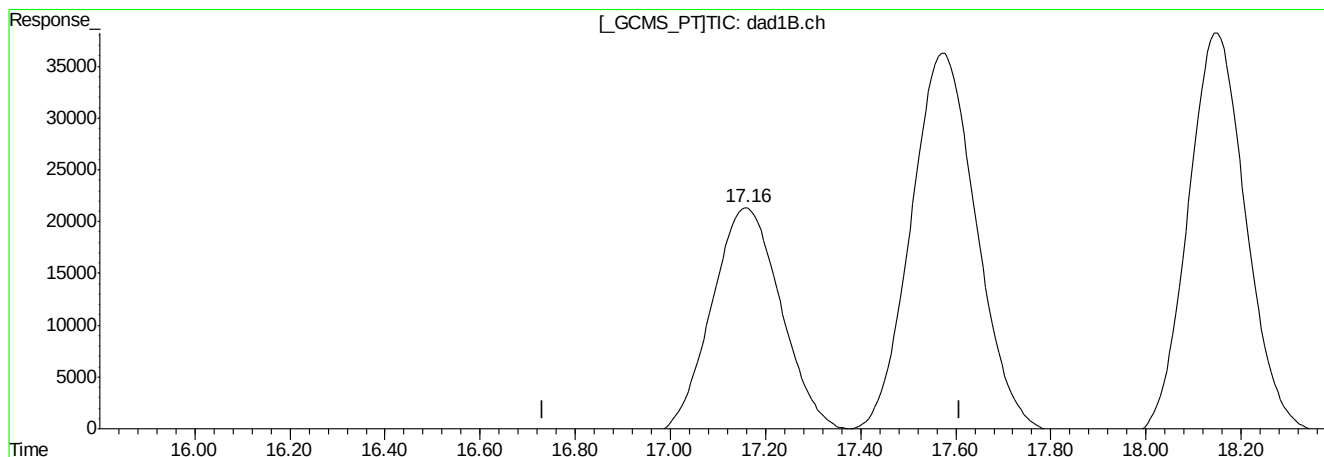
BB075430.D BBB2232_083122.M

Fri Jan 27 10:58:02 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075430.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075430.D\dad1A.ch
Acq On : 27-Jan-2023, 10:22:59 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 10:56 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(18) o-Nitrotoluene
17.16min 1087.092ppb
response 2347452

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

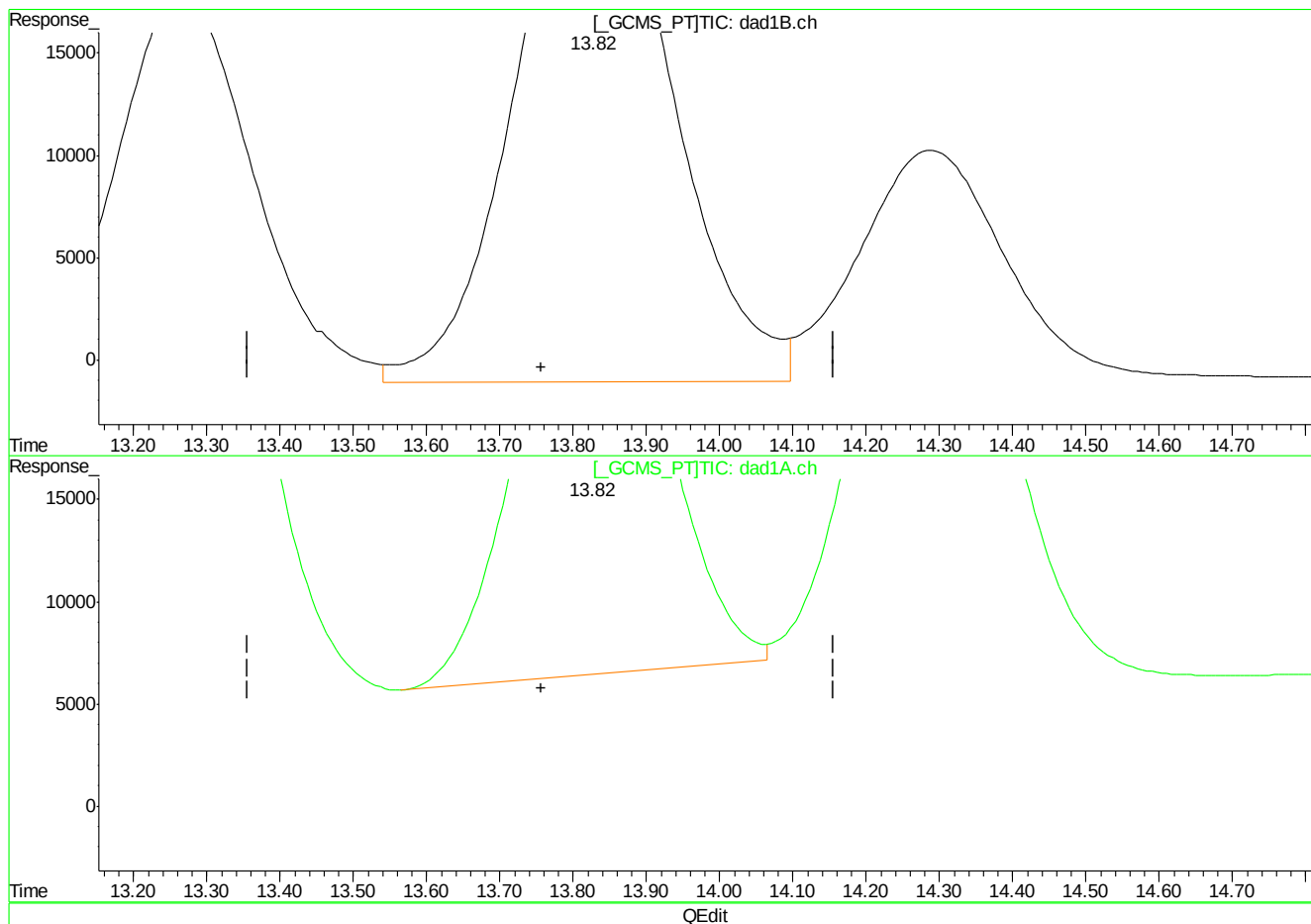
BB075430.D BBB2232_083122.M

Fri Jan 27 10:58:06 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075430.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075430.D\dad1A.ch
Acq On : 27-Jan-2023, 10:22:59 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 10:56 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(16) 2,4-Dinitrotoluene

13.82min 855.530ppb m

response 4007088

(16) 2,4-Dinitrotoluene #2

13.83min 979.514ppb

response 3050278

(+) = Expected Retention Time

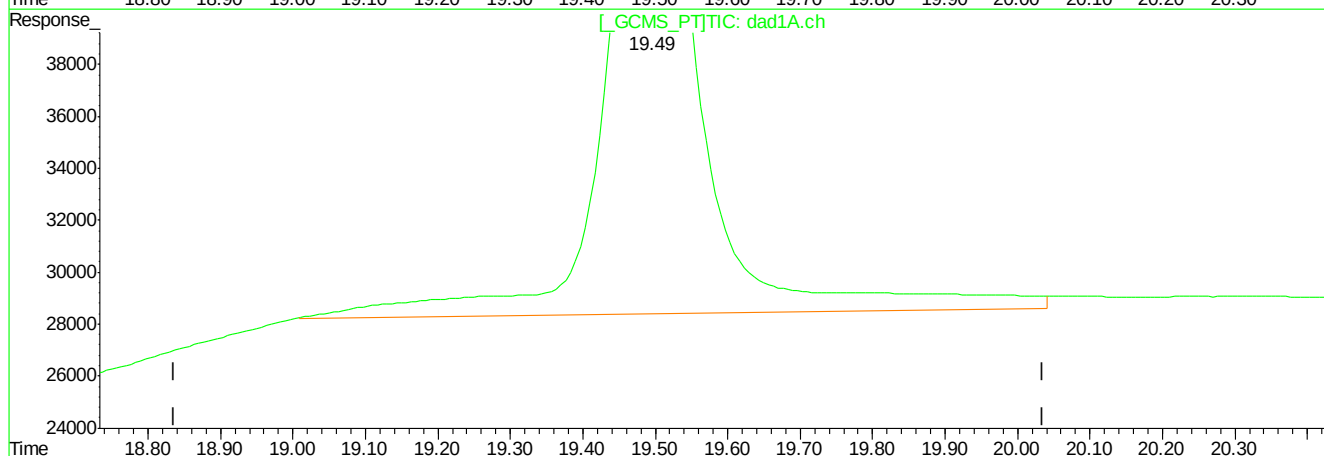
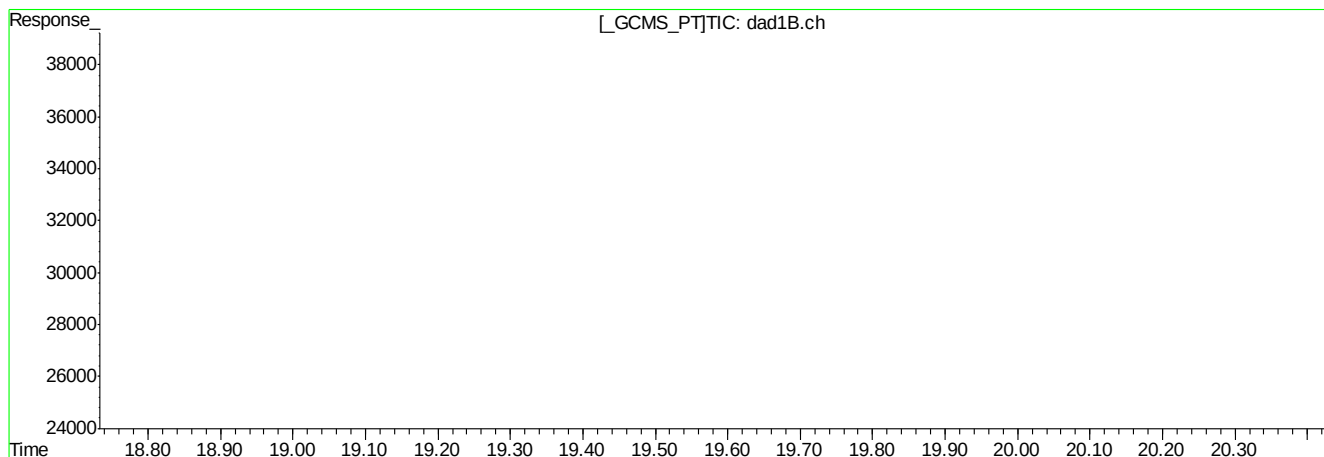
BB075430.D BBB2232_083122.M

Fri Jan 27 10:58:16 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075430.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075430.D\dad1A.ch
Acq On : 27-Jan-2023, 10:22:59 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 10:58 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.50min 1439.957ppb

response 1935292

(+) = Expected Retention Time

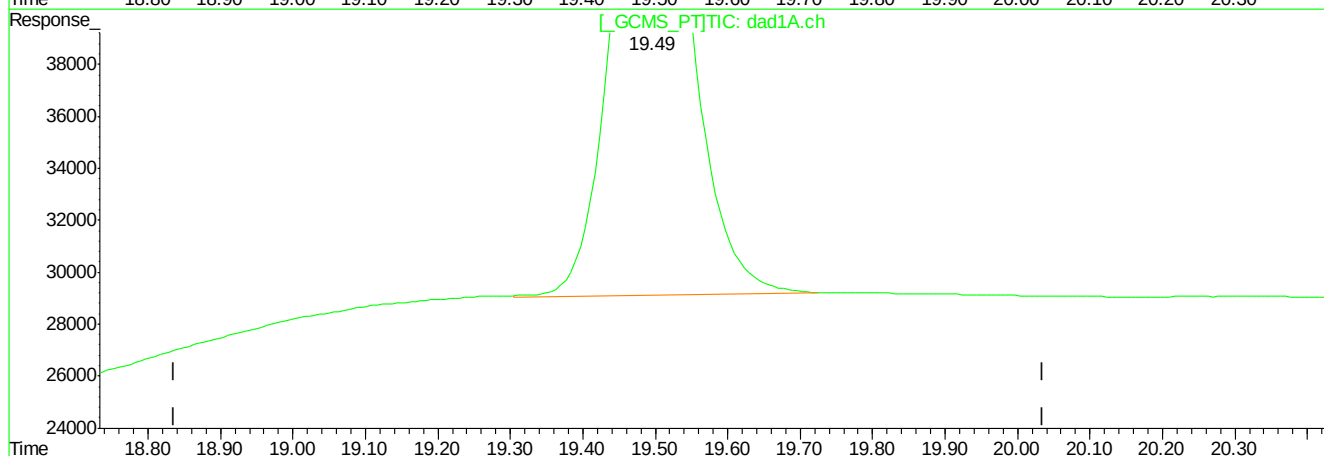
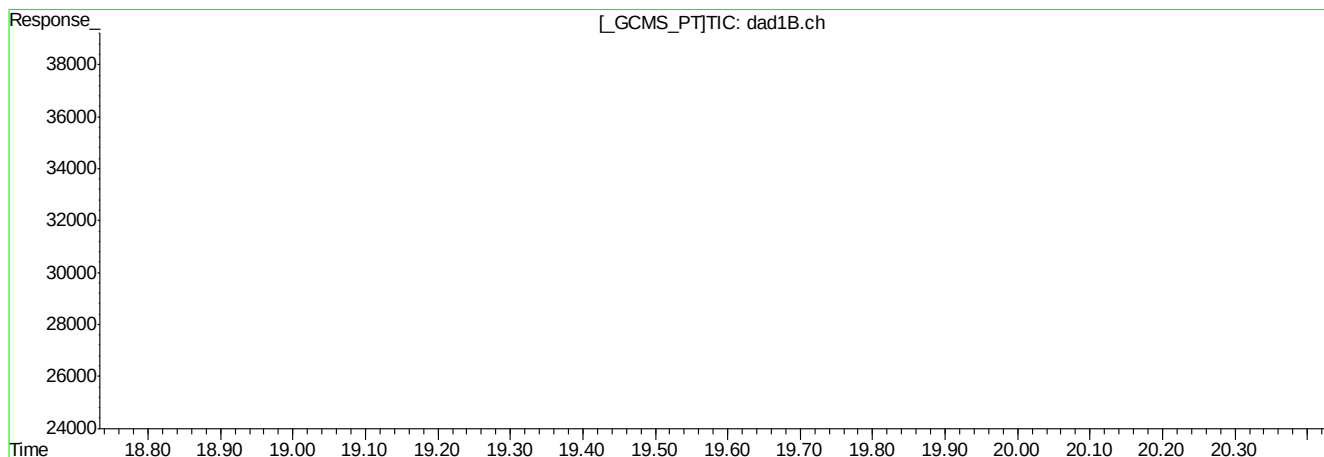
BB075430.D BBB2232_083122.M

Fri Jan 27 10:59:00 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075430.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075430.D\dad1A.ch
Acq On : 27-Jan-2023, 10:22:59 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 10:58 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.49min 1154.723ppb m

response 1551940

(+) = Expected Retention Time

BB075430.D BBB2232_083122.M

Fri Jan 27 10:59:07 2023

Mike Eger
01/31/23 12:32

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075435.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075435.D\dad1A.ch
 Acq On : 27-Jan-2023, 14:12:12 Operator: fouads
 Sample : ecc2232-1000 Inst : G1315B
 Misc : op95139,GBB2300,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 27 14:52:40 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.26	13.26	2471814	4368596	1153.747	1028.226
Spiked Amount	500.000	Range	70 - 136	Recovery	= 230.75%#	205.65%#
Target Compounds						
1) TNX	1.47	1.47	1926354	2995451	513.255	520.495
2) HMX	1.69	1.69	1597090	4494309	1078.642	1098.788
3) DNX	1.93	1.93	3343649	5291879	1086.893	1071.746
4) MNX	2.63	2.63	3610894	5549596	1258.178	1261.977
5) RDX	3.35	3.35	1987773	3151317	1071.595	1075.750
6) 1,3,5-Trinitrobe	5.42	5.42	4285220	6509712	1077.874	1045.785
7) 1,3-Dinitrobenze	6.71	6.71	5618067	3719222	1078.191	1082.187
8) 3,5-Dinitroanili	7.17	7.17	4226294	6861474	1073.801	1049.896
9) Nitrobenzene	8.55	8.55	3219069	3170725	1073.522	1069.545
10) Nitroglycerin	0.00	10.40	0	1399516	N.D.	1101.774 #
11) Tetryl	11.39	11.39	3065318	4894991	1084.820	1062.765
12) 2,4,6-Trinitroto	11.76	11.76	4025270	4817909	1101.237	1082.002
13) 2-Amino-4,6-Dini	12.17	12.17	3517487	5250792	1112.930	1063.279
14) 4-Amino-2,6-Dini	12.72	12.72	2597931	5166874	1131.215	1051.341
16) 2,4-Dinitrotolue	13.81	13.81	4001837	3200557	854.409m	1027.772m
17) 2,6-Dinitrotolue	14.28	14.28	1544283	3284522	1017.110	936.703
18) o-Nitrotoluene	17.15	0.00	2344184	0	1085.578	N.D. #
19) p-Nitrotoluene	17.56	17.57	3655869	3007652	1092.812	1064.193
20) m-Nitrotoluene	18.14	18.14	3366879	4049760	1081.478	1043.489
21) PETN	0.00	19.48	0	1511473	N.D.	1124.614m#

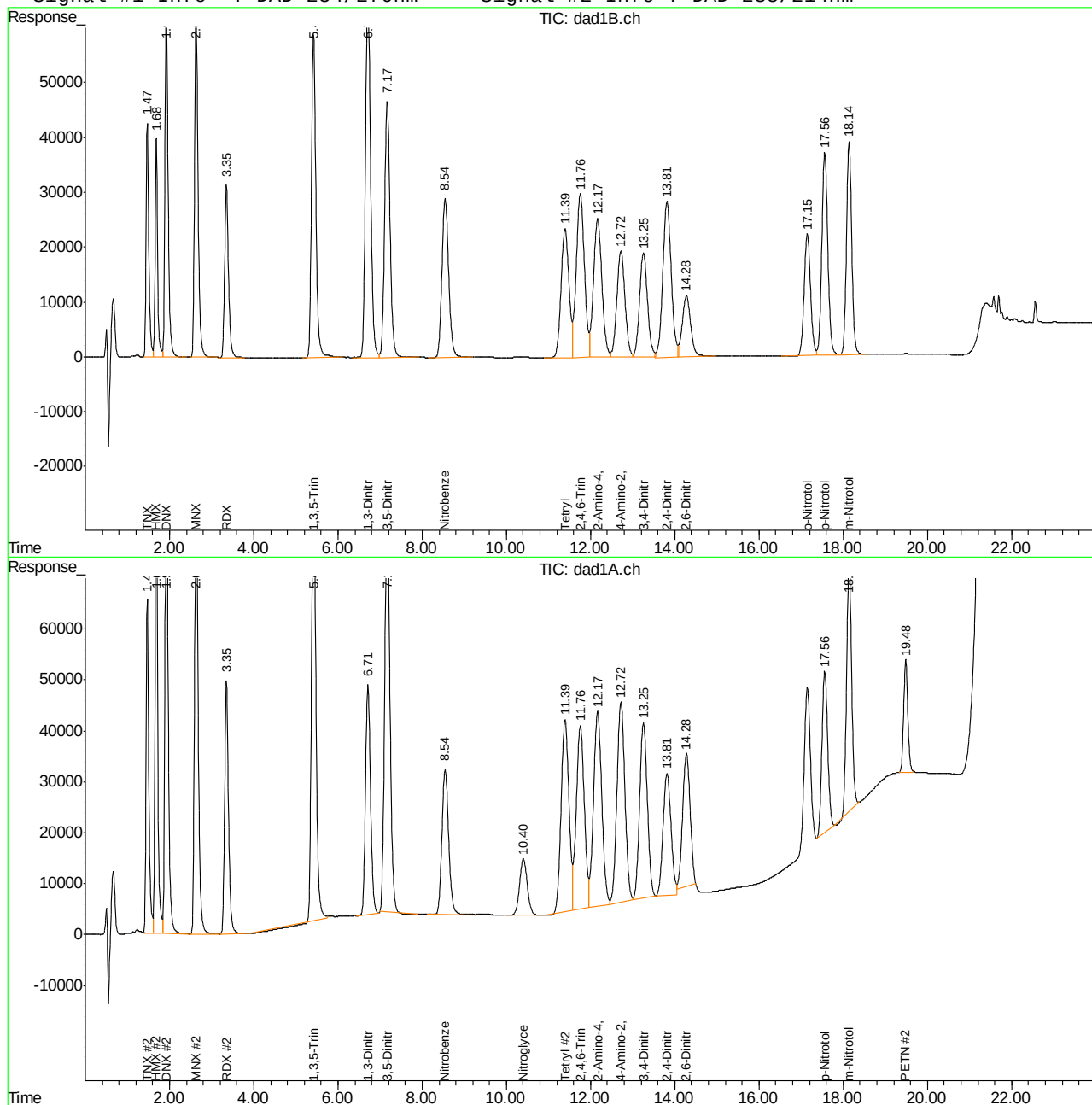
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075435.D BBB2232_083122.M Tue Feb 07 14:49:38 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075435.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075435.D\dad1A.ch
Acq On : 27-Jan-2023, 14:12:12 Operator: fouads
Sample : ecc2232-1000 Inst : G1315B
Misc : op95139, GBB2300, 1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 14:54 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2300-ECC2232

Method:

SW846 8330B

Lab FileID:

BB075435.D

Analyst approved:

01/31/23 12:02 Fouad Sekkar

Injection Time:

01/27/23 14:12

Supervisor approved:

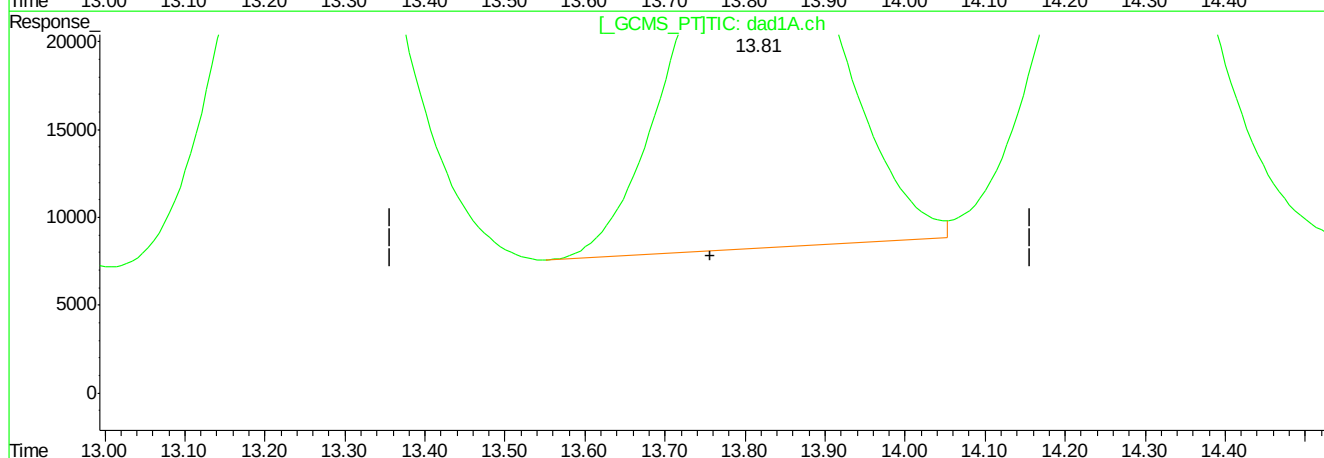
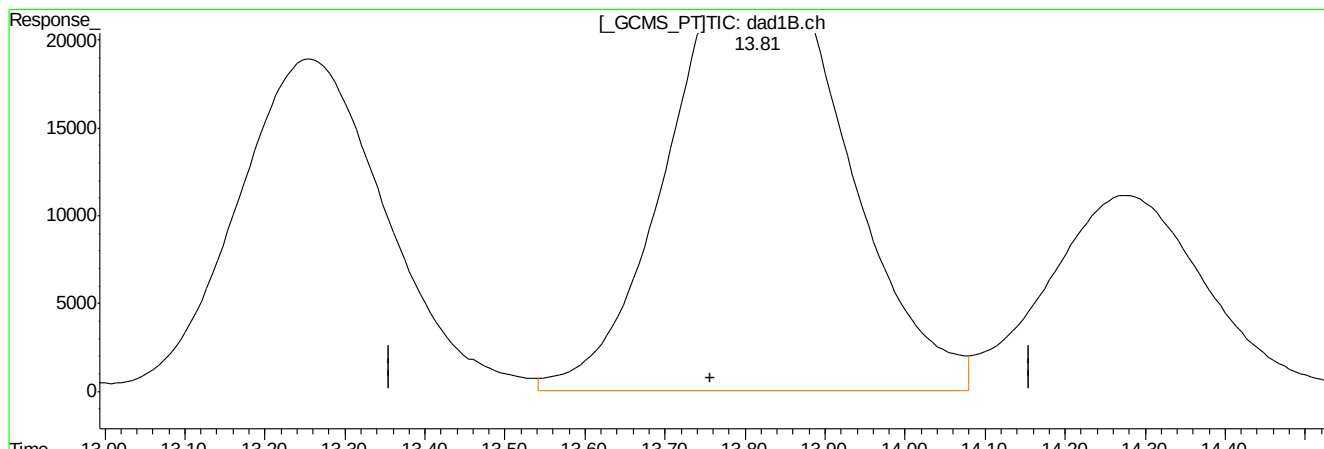
01/31/23 12:32 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
2,4-Dinitrotoluene	121-14-2	1	13.81	Poor instrument integration
2,4-Dinitrotoluene	121-14-2	2	13.81	Poor instrument integration
PETN	78-11-5	2	19.48	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075435.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075435.D\dad1A.ch
Acq On : 27-Jan-2023, 14:12:12 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 14:52 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(16) 2,4-Dinitrotoluene

13.82min 838.042ppb

response 3925176

(16) 2,4-Dinitrotoluene #2

13.82min 977.221ppb

response 3043139

(+) = Expected Retention Time

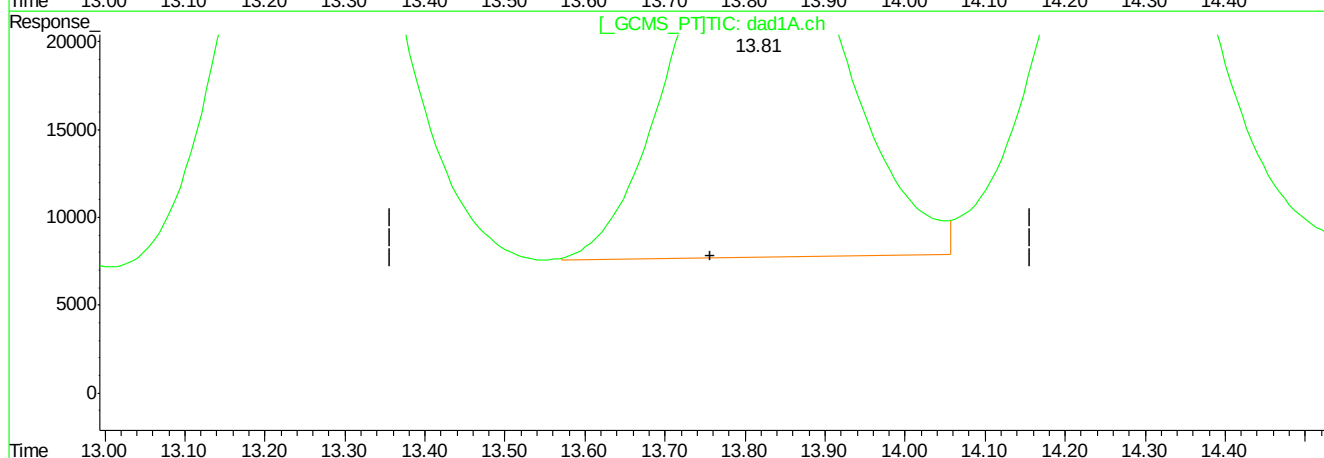
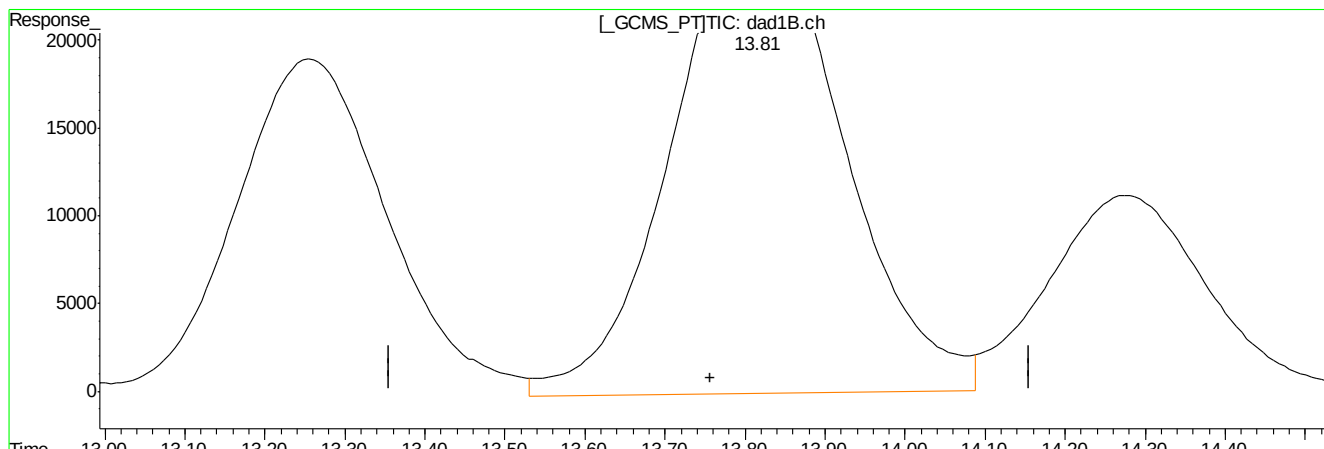
BB075435.D BBB2232_083122.M

Fri Jan 27 14:53:17 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075435.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075435.D\dad1A.ch
Acq On : 27-Jan-2023, 14:12:12 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 14:52 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(16) 2,4-Dinitrotoluene

13.81min 854.409ppb m

response 4001837

(16) 2,4-Dinitrotoluene #2

13.81min 1027.772ppb m

response 3200557

(+) = Expected Retention Time

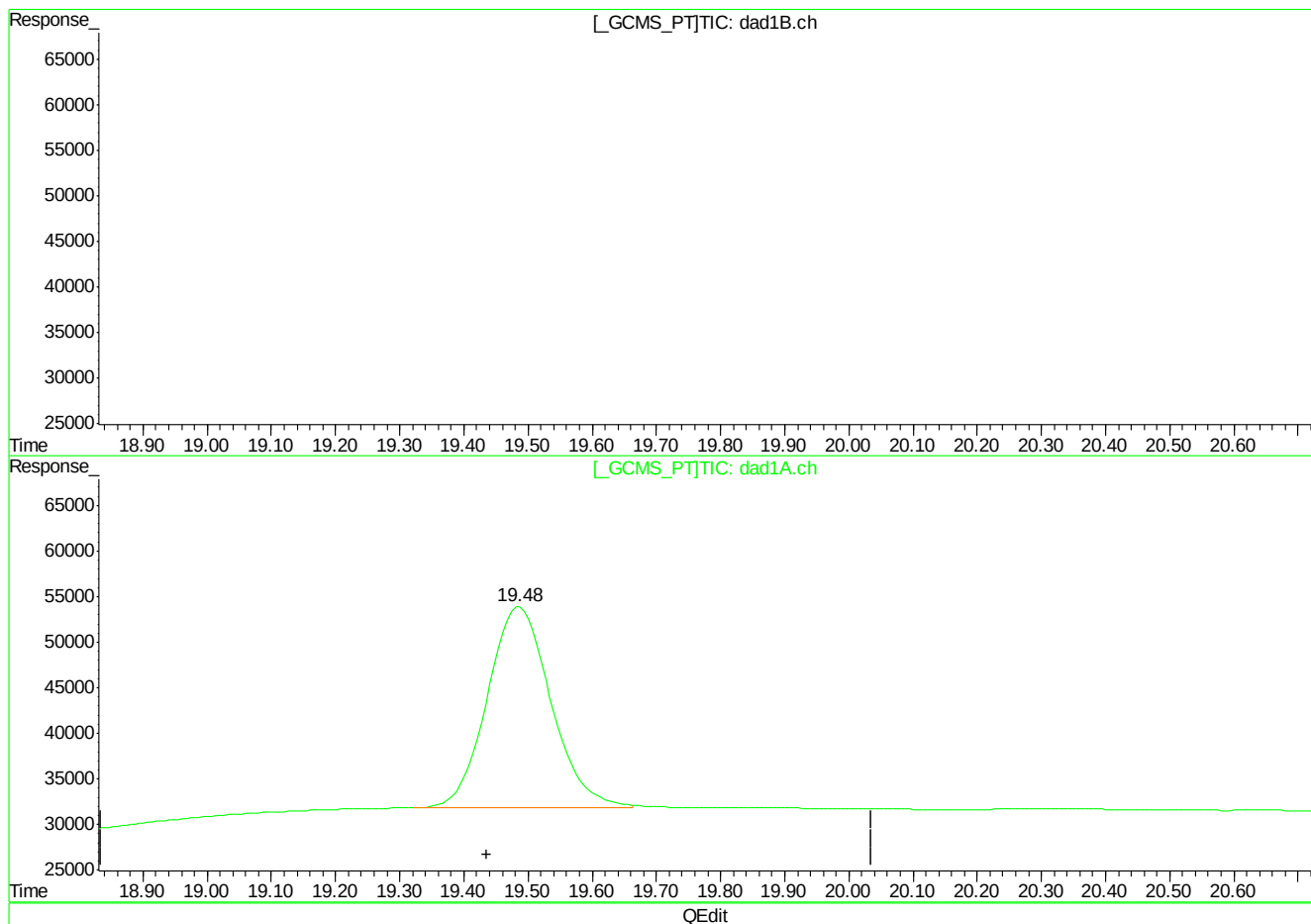
BB075435.D BBB2232_083122.M

Fri Jan 27 14:53:56 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2300\BB075435.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2300\BB075435.D\dad1A.ch
Acq On : 27-Jan-2023, 14:12:12 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 27 14:52 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.48min 1124.614ppb m

response 1511473

(+) = Expected Retention Time

BB075435.D BBB2232_083122.M

Fri Jan 27 14:54:06 2023

Mike Eger
01/31/23 12:29

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
 Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
 Sample : ic3229-500 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 30 12:26:34 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Mon Jan 30 12:26:09 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.49	14.49	2577265	5135329	559.996	561.091
Spiked Amount	500.000	Range	70 - 136	Recovery	=	112.00% 112.22%
Target Compounds						
1) TNX	4.68	4.68	1984157	2006912	224.509m	223.313
2) HMX	5.07	5.07	1411050	1431062	506.702m	510.805
3) DNx	5.28	5.29	3590869	3510665	470.489m	453.010
4) MNX	6.44	6.44	3649025	3637518	546.146	544.436
5) 1,3,5-Trinitrobe	7.41	7.41	4227391	4229921	471.101	469.892
6) RDX	7.79	7.79	2014903	2015666	472.086	469.396
7) 1,3-Dinitrobenze	9.89	9.89	5810051	4642171	472.015	447.116
8) Nitrobenzene	11.04	11.04	3728304	4165545	473.990	575.135
9) 2,4,6-Trinitroto	11.78	11.78	4045457	5746058	462.380	513.773
10) Nitroglycerin	0.00	12.51	0	1609522	N.D.	554.108 #
11) Tetryl	13.17	13.18	2974614	5539878	431.888	482.917
13) 2,6-Dinitrotolue	14.90	14.90	2811946	4020271	424.524	421.579
14) 2,4-Dinitrotolue	15.54	15.54	5234476	3643586	463.234	469.376
15) 3,5-Dinitroanili	16.37	16.37	4449966	7486019	472.139	483.589
16) o-Nitrotoluene	17.47	17.47	2320870	3303589	450.250	458.661
17) p-Nitrotoluene	18.46	18.43	4856562	8916462	957.586	1019.671
18) 4-Amino-2,6-Dini	18.46	18.43	4856562	8916462	976.107	1025.887
19) m-Nitrotoluene	19.83	19.83	2419304	3980105	480.322	503.828
20) 2-Amino-4,6-Dini	20.23	20.23	4028949	5738357	484.966	499.262
21) PETN	0.00	21.93	0	1314017	N.D.	427.143m#

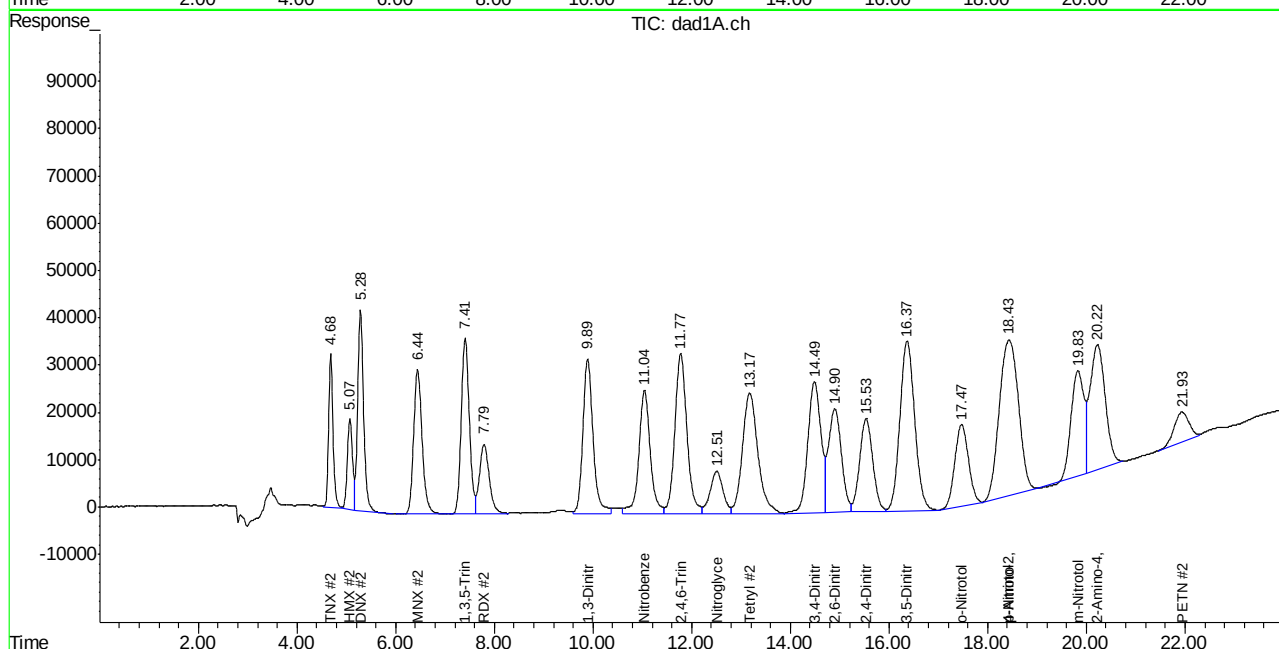
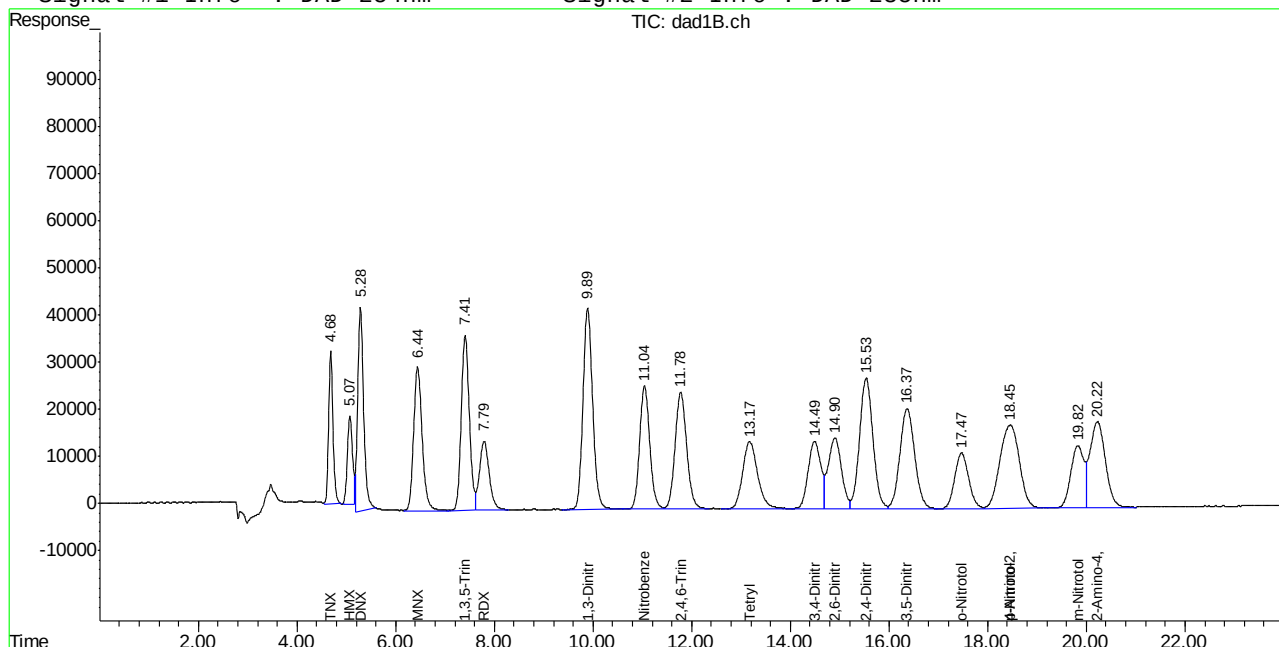
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625697.D GGG3229_013023.M Tue Jan 31 11:32:11 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
Sample : ic3229-500 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:43 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number: GGG3229-IC3229

Method: SW846 8330B

Lab FileID: GG625697.D

Analyst approved: 01/31/23 11:38 Fouad Sekkar

Injection Time: 01/30/23 11:54

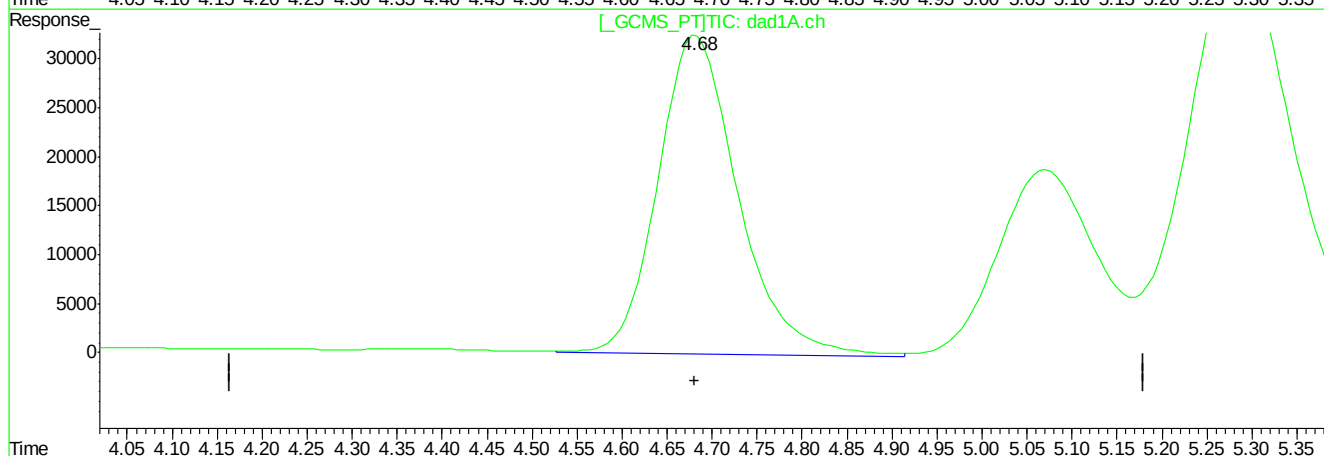
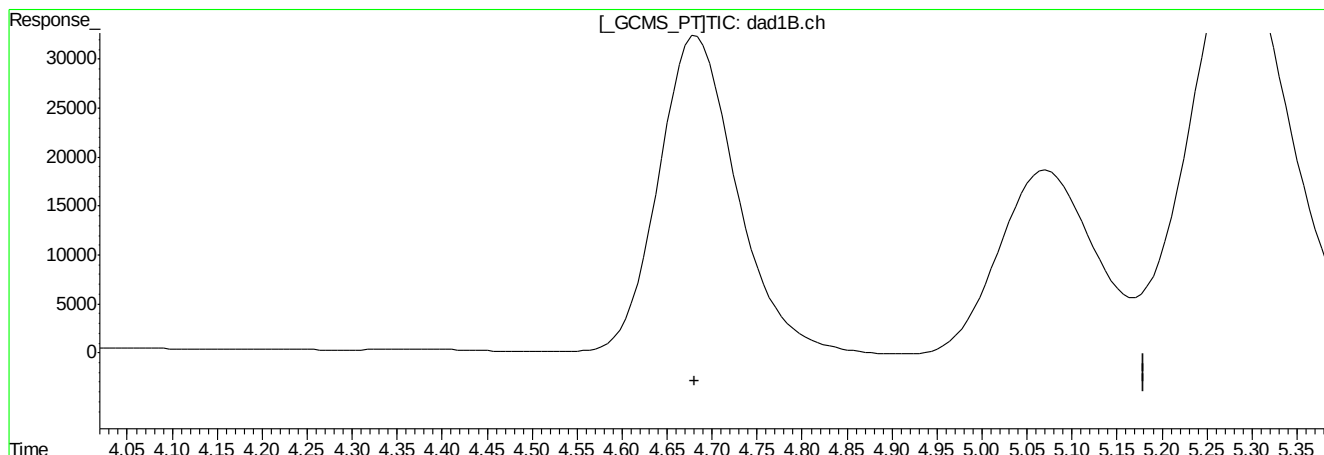
Supervisor approved: 01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.68	Missed peak
HMX	2691-41-0	1	5.07	Poor instrument integration
DNX		1	5.28	Poor instrument integration
PETN	78-11-5	2	21.93	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
Sample : ic3229-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 12:26 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.68min 223.313ppb

response 2006912

(+) = Expected Retention Time

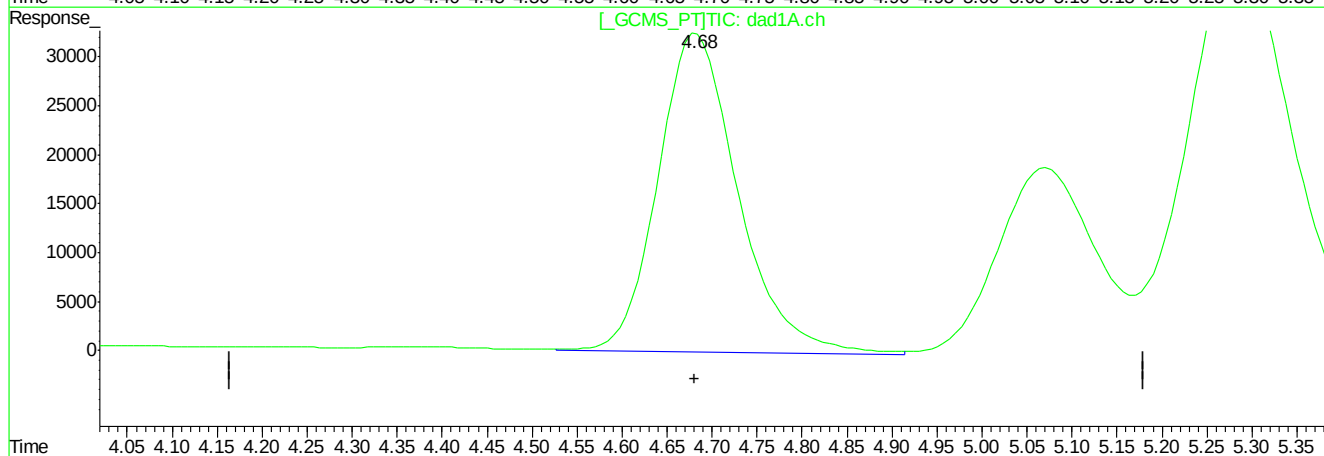
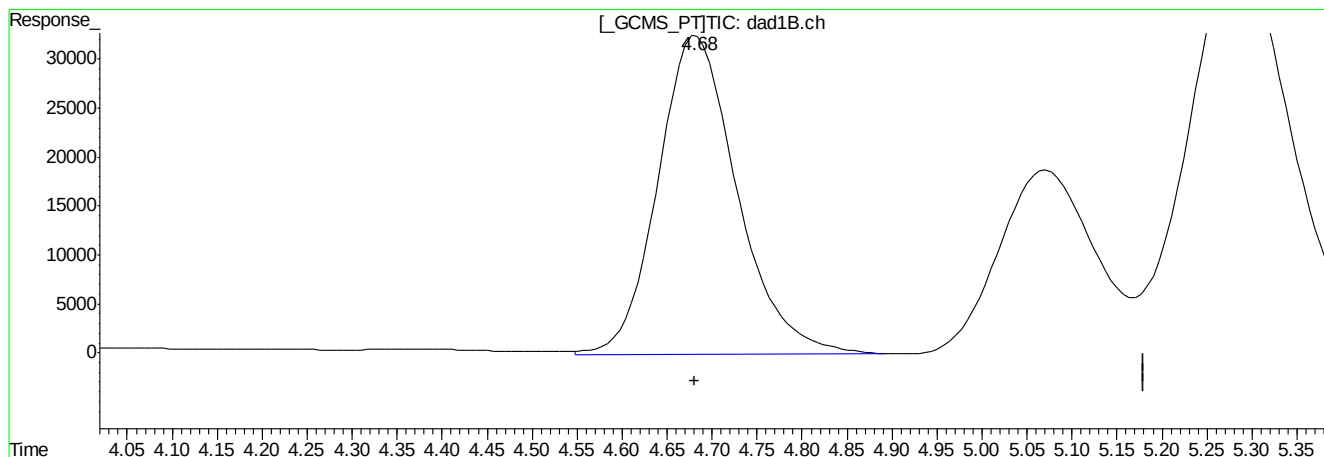
GG625697.D GGG3229_013023.M

Mon Jan 30 15:41:50 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
Sample : ic3229-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 12:26 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

4.68min 224.509ppb m

response 1984157

(1) TNX #2

4.68min 223.313ppb

response 2006912

(+) = Expected Retention Time

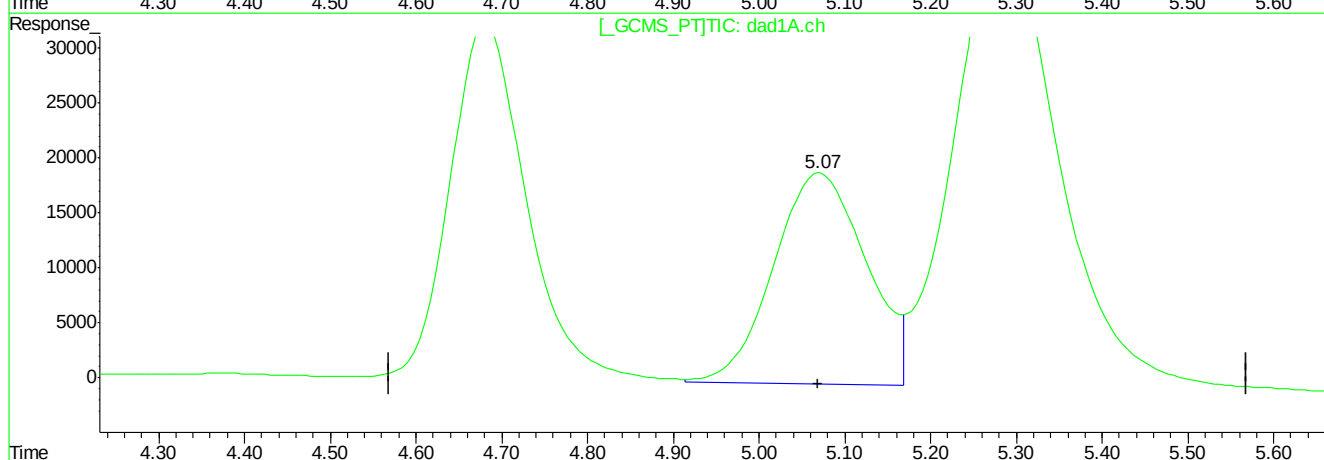
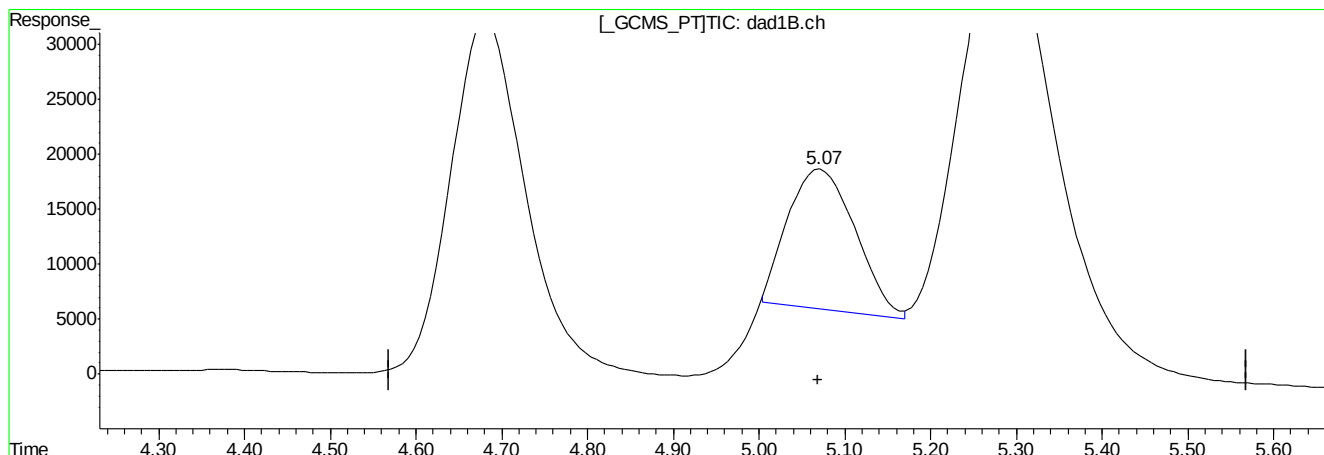
GG625697.D GGG3229_013023.M

Mon Jan 30 15:41:59 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
Sample : ic3229-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 12:26 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.07min 250.297ppb

response 697021

(2) HMX #2

5.07min 510.805ppb

response 1431062

(+) = Expected Retention Time

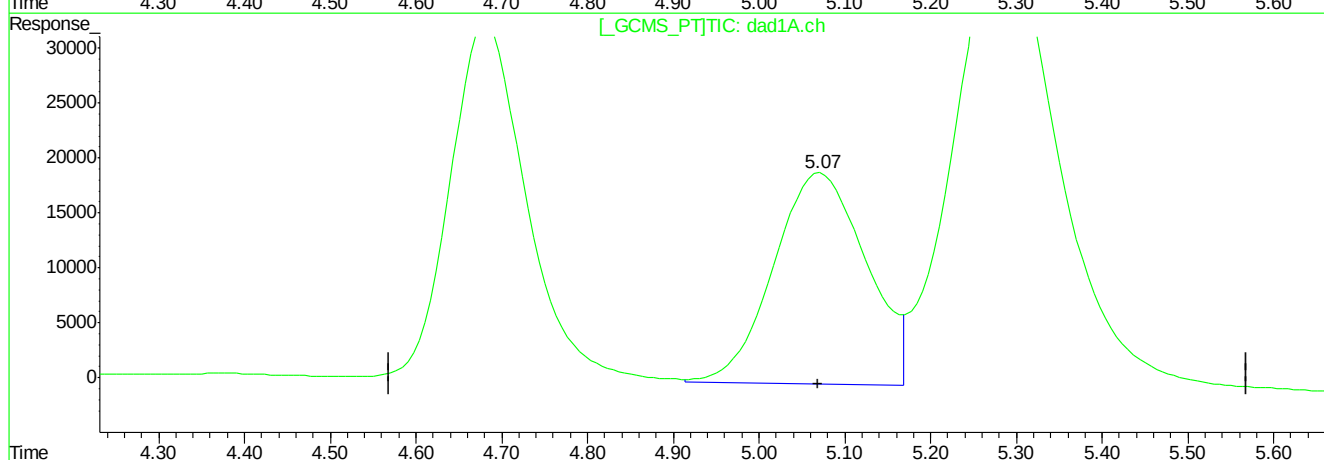
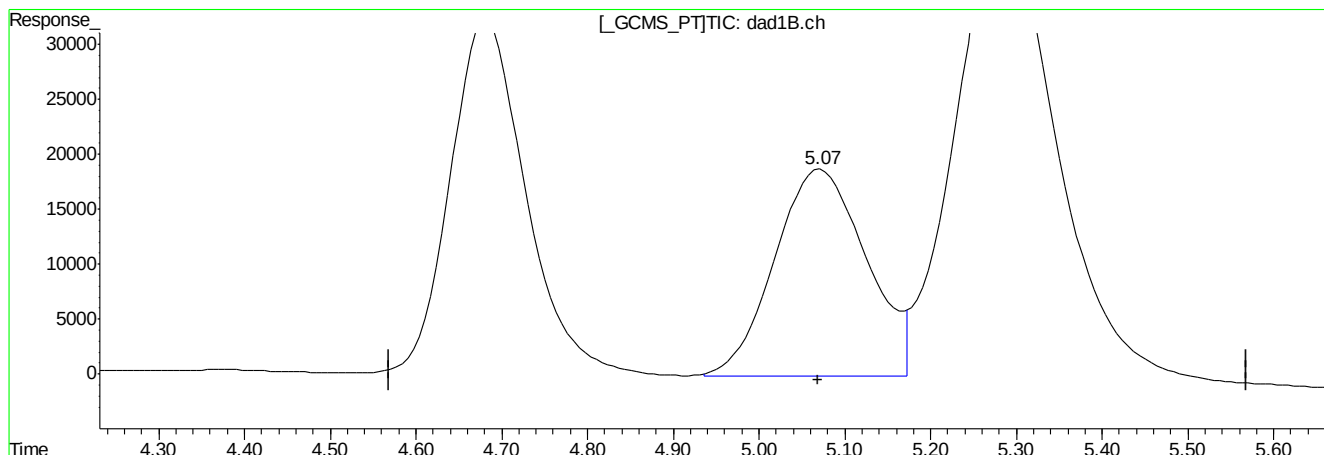
GG625697.D GGG3229_013023.M

Mon Jan 30 15:42:04 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
Sample : ic3229-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 12:26 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.07min 506.702ppb m

response 1411050

(2) HMX #2

5.07min 510.805ppb

response 1431062

(+) = Expected Retention Time

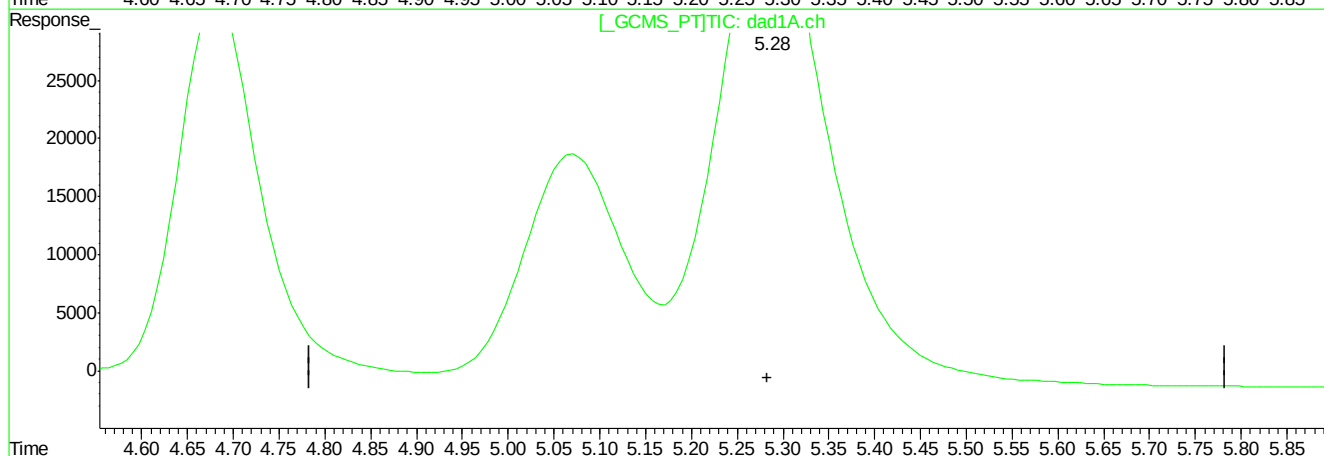
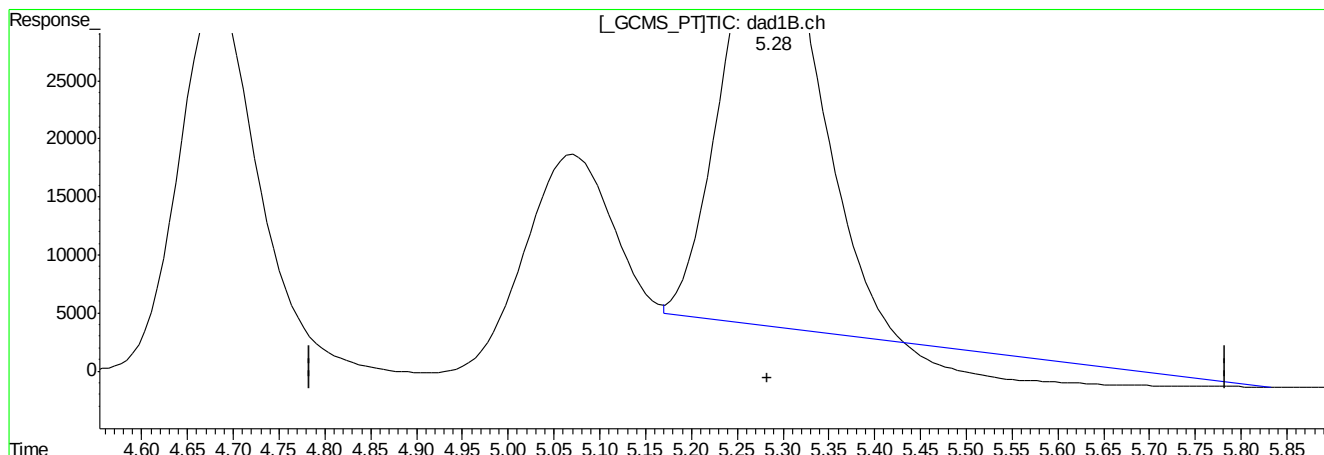
GG625697.D GGG3229_013023.M

Mon Jan 30 15:42:10 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
Sample : ic3229-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 12:26 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.29min 315.862ppb

response 2410725

(3) DNX #2

5.29min 453.010ppb

response 3510665

(+) = Expected Retention Time

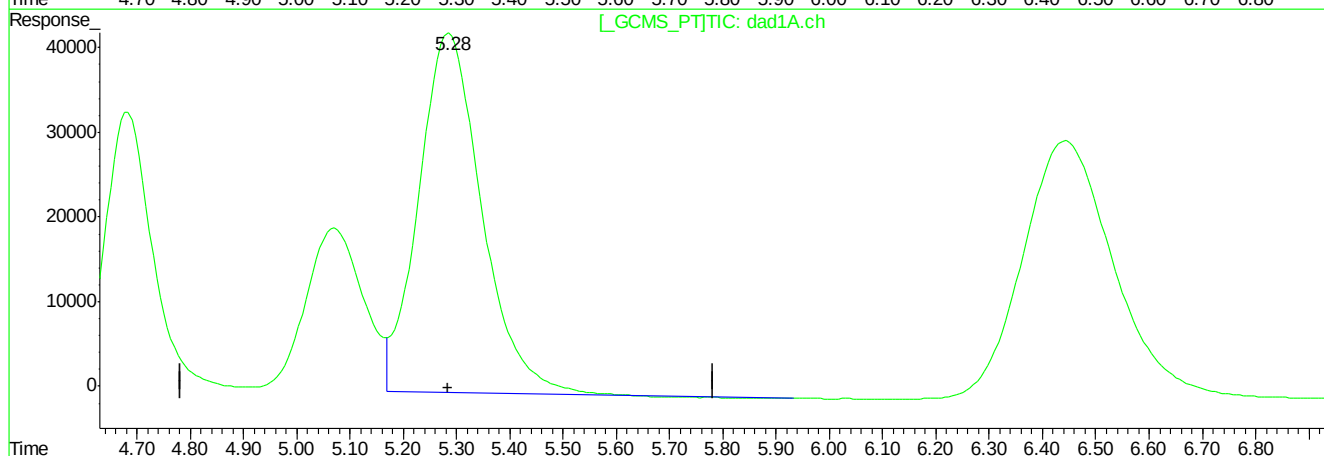
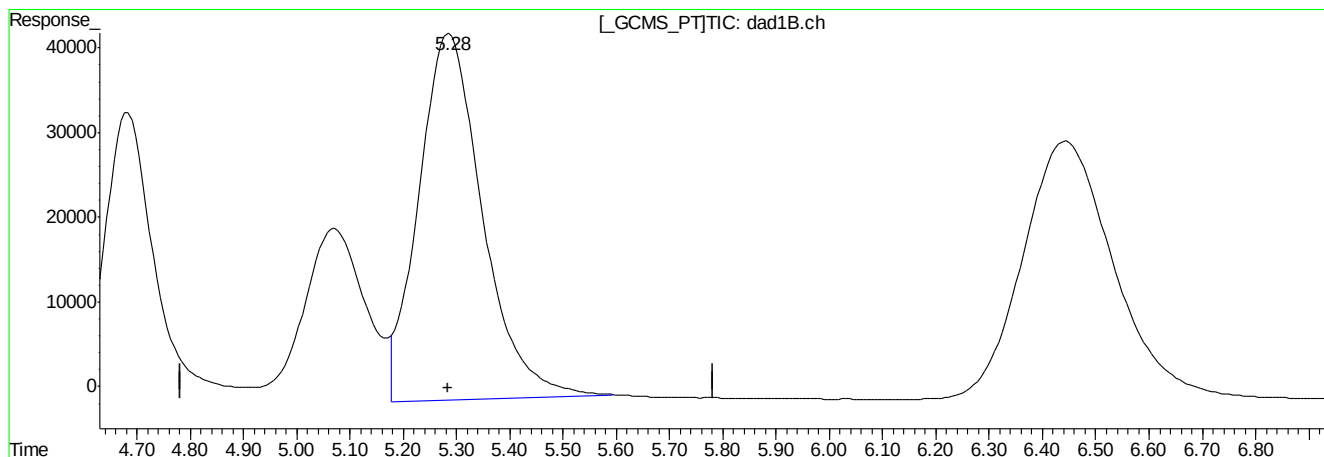
GG625697.D GGG3229_013023.M

Mon Jan 30 15:42:17 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
Sample : ic3229-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 12:26 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.28min 470.489ppb m

response 3590869

(3) DNX #2

5.29min 453.010ppb

response 3510665

QEdit

(+) = Expected Retention Time

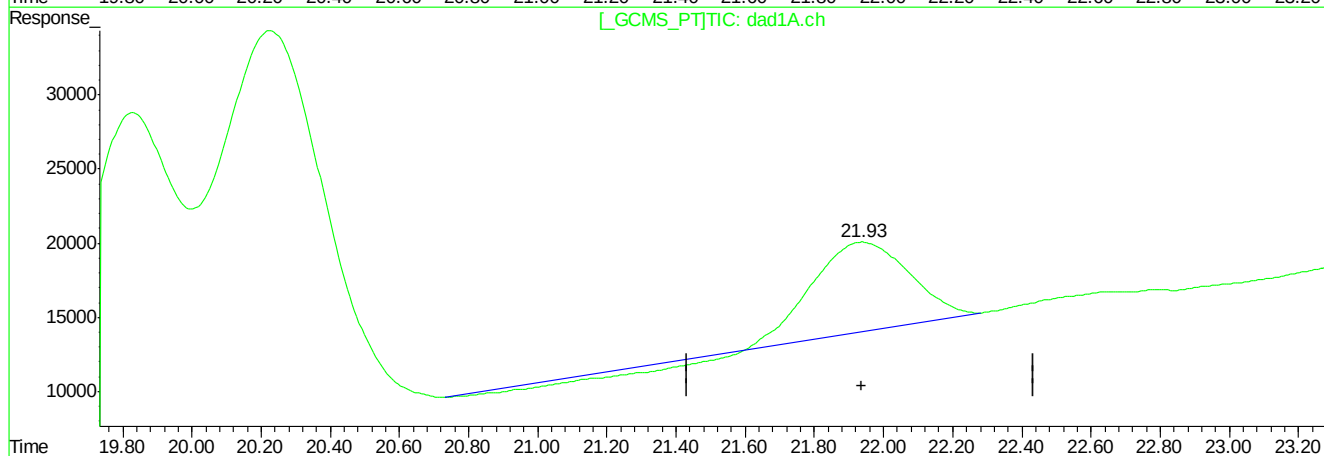
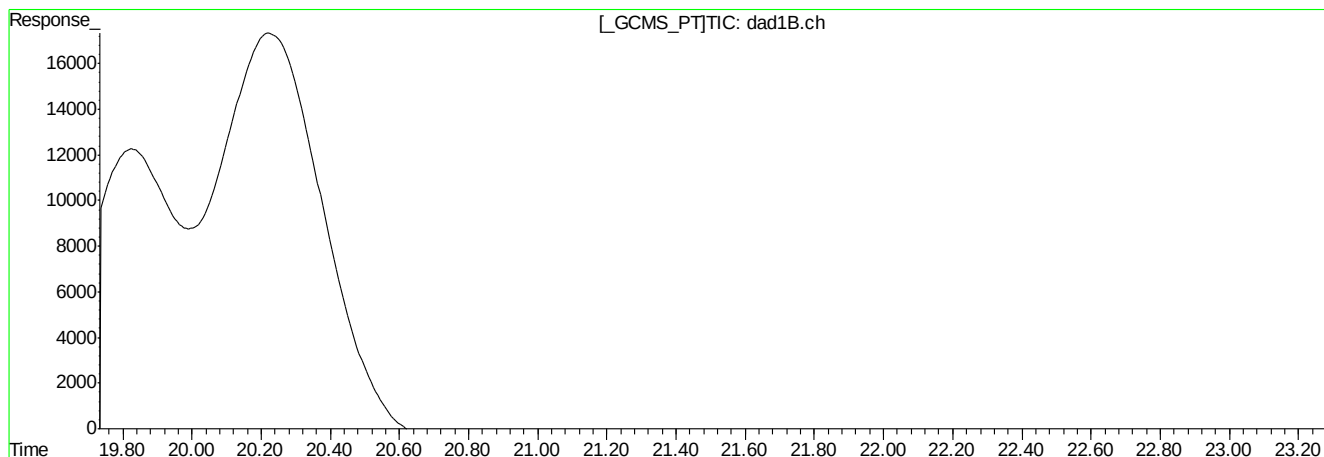
GG625697.D GGG3229_013023.M

Mon Jan 30 15:42:30 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
Sample : ic3229-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 12:26 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

21.94min 335.298ppb

response 1031474

QEdit

(+) = Expected Retention Time

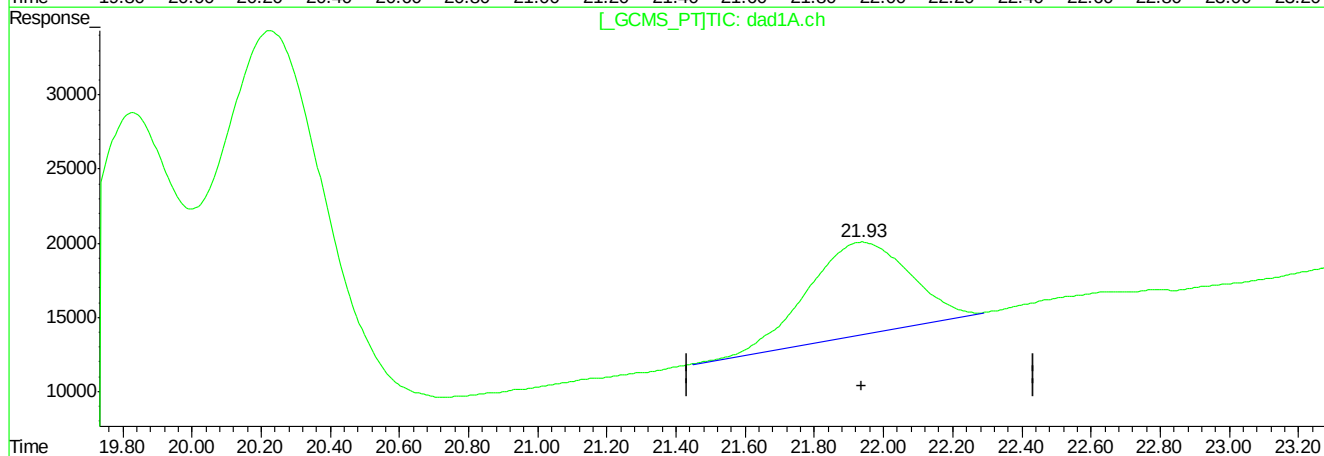
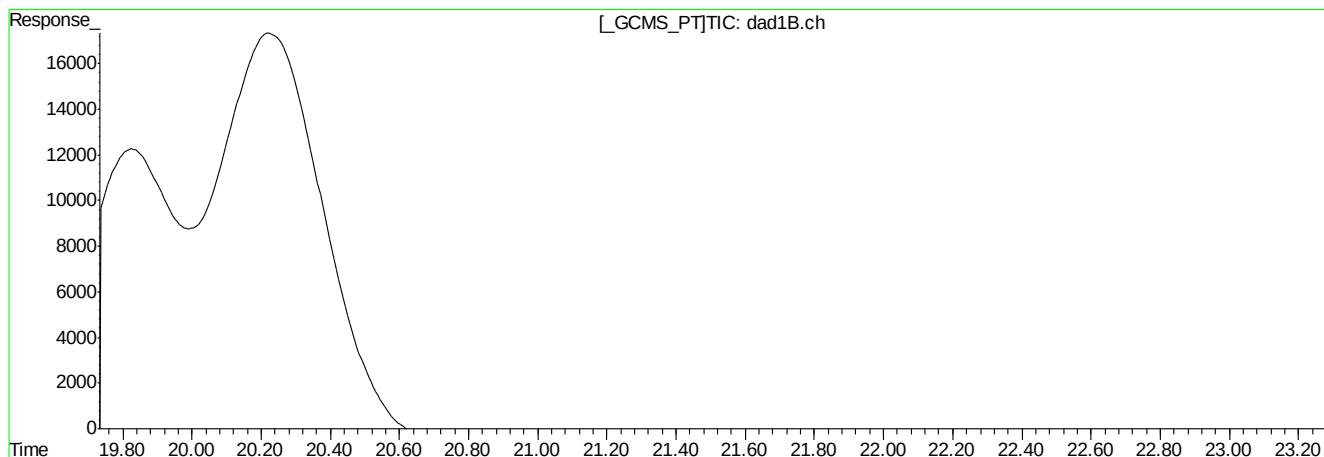
GG625697.D GGG3229_013023.M

Mon Jan 30 15:43:45 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
Sample : ic3229-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 12:26 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

21.93min 427.143ppb m

response 1314017

QEdit

(+) = Expected Retention Time

GG625697.D GGG3229_013023.M

Mon Jan 30 15:43:52 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
 Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
 Sample : ic3229-20 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 30 13:32:59 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Mon Jan 30 12:26:09 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.45	14.45	113079	196978	24.570	21.522m
Spiked Amount	500.000	Range	70 - 136	Recovery	=	4.91%# 4.30%#
Target Compounds						
1) TNX	4.69	4.69	103973	121903	11.765m	13.564
2) HMX	5.08	5.08	72786	76960	26.137m	27.470
3) DNx	5.30	5.30	178810	188762	23.428m	24.358m
4) MNX	6.47	6.47	165566	190222	24.780	28.471m
5) 1,3,5-Trinitrobe	7.42	7.42	220381	215483	24.559	23.937
6) RDX	7.81	7.81	107083	104058	25.089	24.232
7) 1,3-Dinitrobenze	9.90	9.89	309647	278691	25.156	26.842m
8) Nitrobenzene	11.05	11.05	196574	185807	24.991	25.654m
9) 2,4,6-Trinitroto	11.79	11.78	237572	308344	27.154	27.570m
10) Nitroglycerin	0.00	12.47	0	81663	N.D.	28.114m#
11) Tetryl	13.19	13.12	139767	226761	20.293	19.767m
13) 2,6-Dinitrotolue	14.86	14.86	130890	151891	19.761	15.928m
14) 2,4-Dinitrotolue	15.50	15.50	269187	191769	23.822	24.704
15) 3,5-Dinitroanili	16.31	16.30	229227	383340	24.321	24.763
16) o-Nitrotoluene	17.44	17.46	105593	195087	20.485	27.085m
17) p-Nitrotoluene	18.39	18.42	280840	805248	55.374	92.087 #
18) 4-Amino-2,6-Dini	18.39	18.42	280840	805248	56.445	92.648 #
19) m-Nitrotoluene	19.78	19.80	118109	196481	23.449	24.872m
20) 2-Amino-4,6-Dini	20.16	20.20	206546	188374	24.862	16.389m
21) PETN	0.00	21.93	0	67166	N.D.	21.834m#

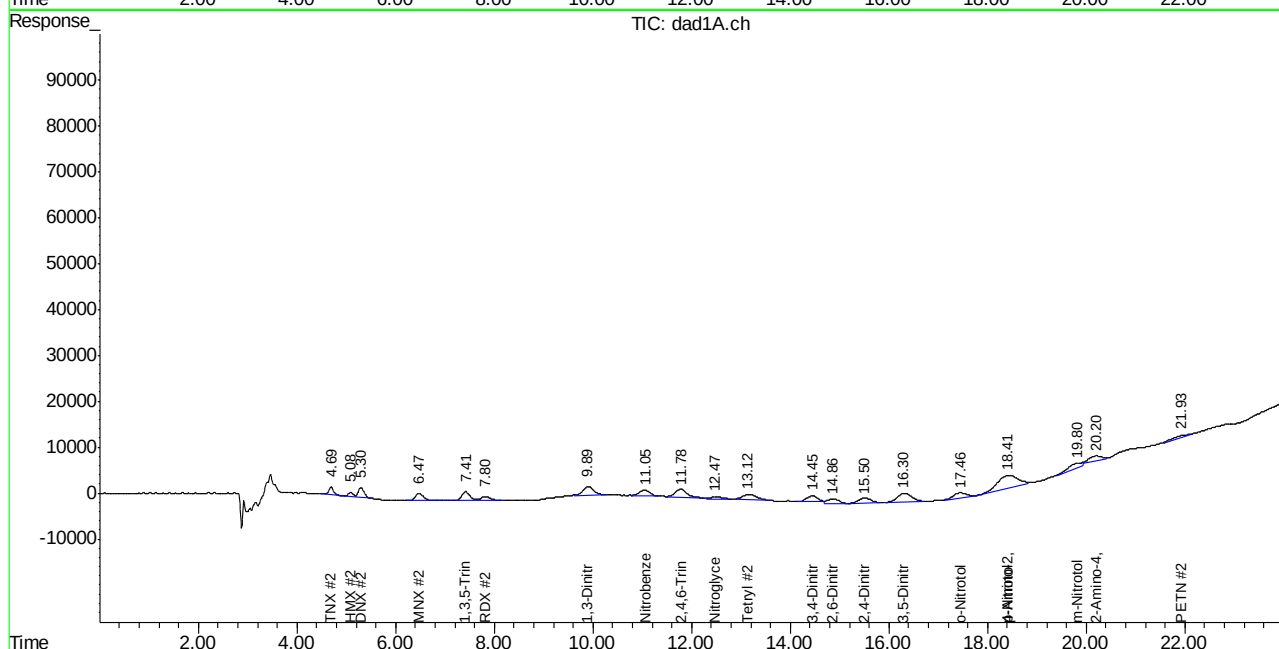
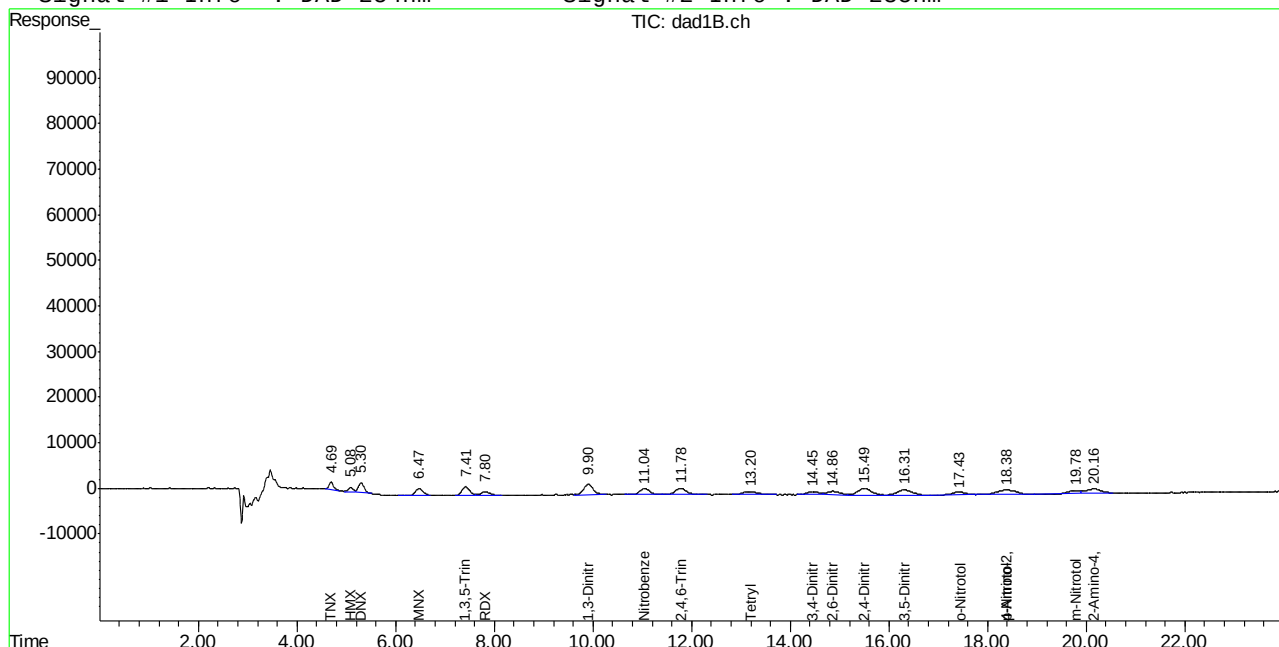
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625698.D GGG3229_013023.M Tue Jan 31 11:32:12 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:50 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Page 1 of 1

Sample Number: GGG3229-IC3229 **Method:** SW846 8330B
Lab FileID: GG625698.D **Analyst approved:** 01/31/23 11:38 Fouad Sekkar
Injection Time: 01/30/23 12:37 **Supervisor approved:** 01/31/23 12:29 Mike Eger

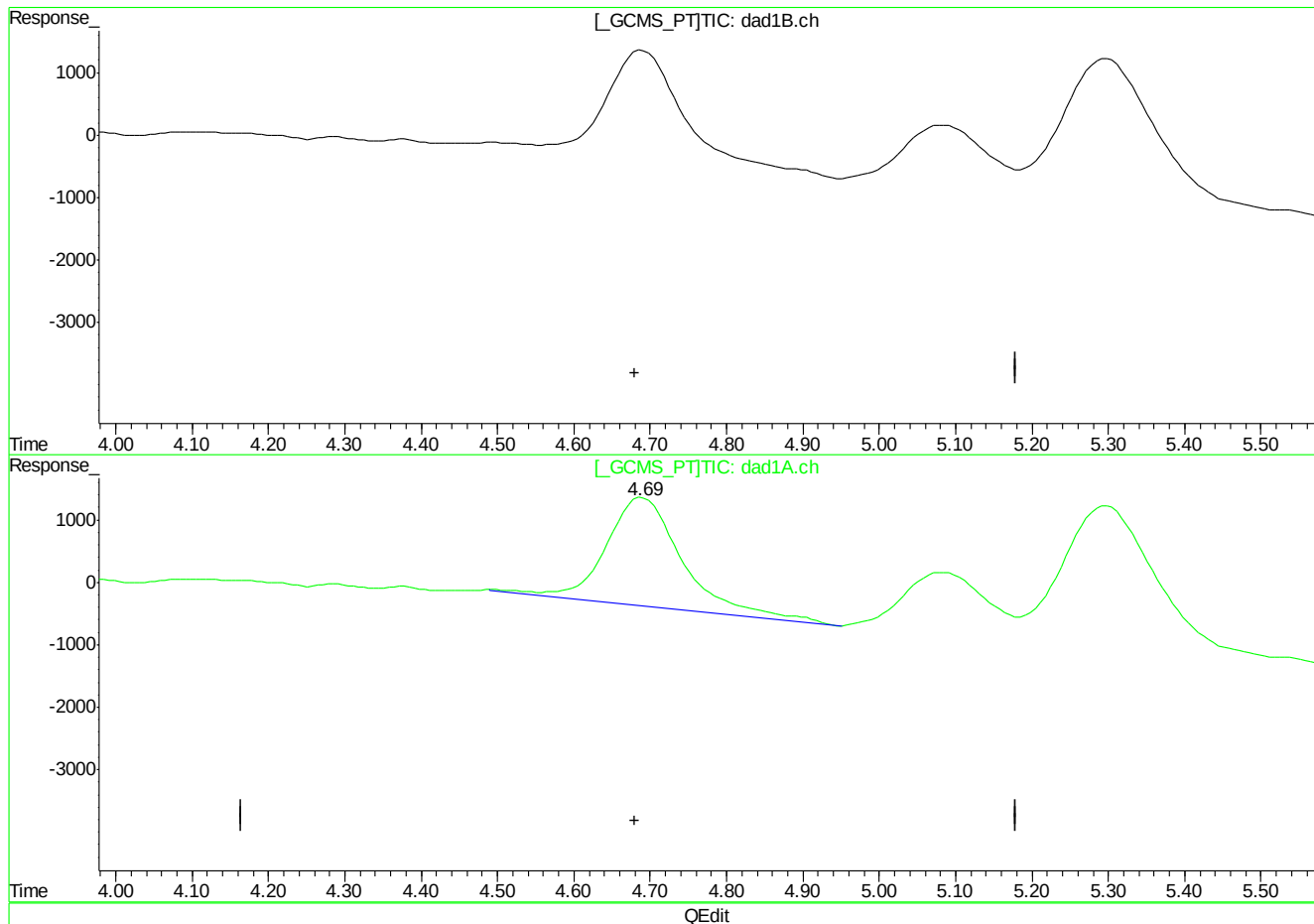
Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.69	Missed peak
HMX	2691-41-0	1	5.08	Poor instrument integration
DNX		1	5.30	Poor instrument integration
DNX		2	5.30	Poor instrument integration
MNX		2	6.47	Poor instrument integration
1,3-Dinitrobenzene	99-65-0	2	9.89	Poor instrument integration
Nitrobenzene	98-95-3	2	11.05	Poor instrument integration
2,4,6-Trinitrotoluene	118-96-7	2	11.78	Poor instrument integration
Nitroglycerine	55-63-0	2	12.47	Poor instrument integration
Tetryl	479-45-8	2	13.12	Poor instrument integration
3,4-Dinitrotoluene	610-39-9	2	14.45	Poor instrument integration
2,6-Dinitrotoluene	606-20-2	2	14.86	Poor instrument integration
o-Nitrotoluene	88-72-2	2	17.46	Poor instrument integration
m-Nitrotoluene	99-08-1	2	19.80	Poor instrument integration
2-amino-4,6-Dinitrotoluene	35572-78-2	2	20.20	Poor instrument integration
PETN	78-11-5	2	21.93	Poor instrument integration

9.5.15.1
9

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.69min 13.564ppb

response 121903

(+) = Expected Retention Time

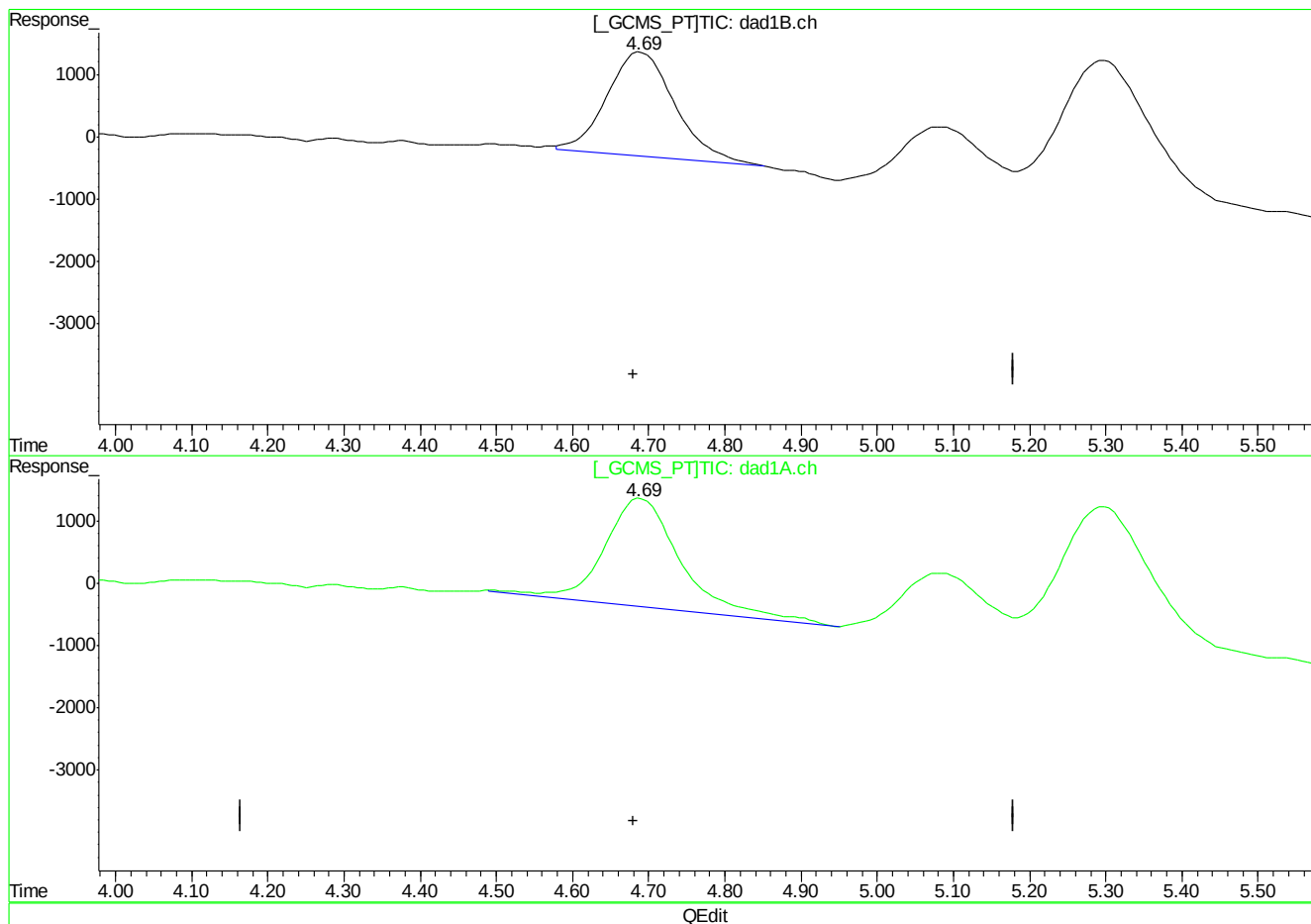
GG625698.D GGG3229_013023.M

Mon Jan 30 15:44:27 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(1) TNX

4.69min 11.765ppb m

response 103973

(1) TNX #2

4.69min 13.564ppb

response 121903

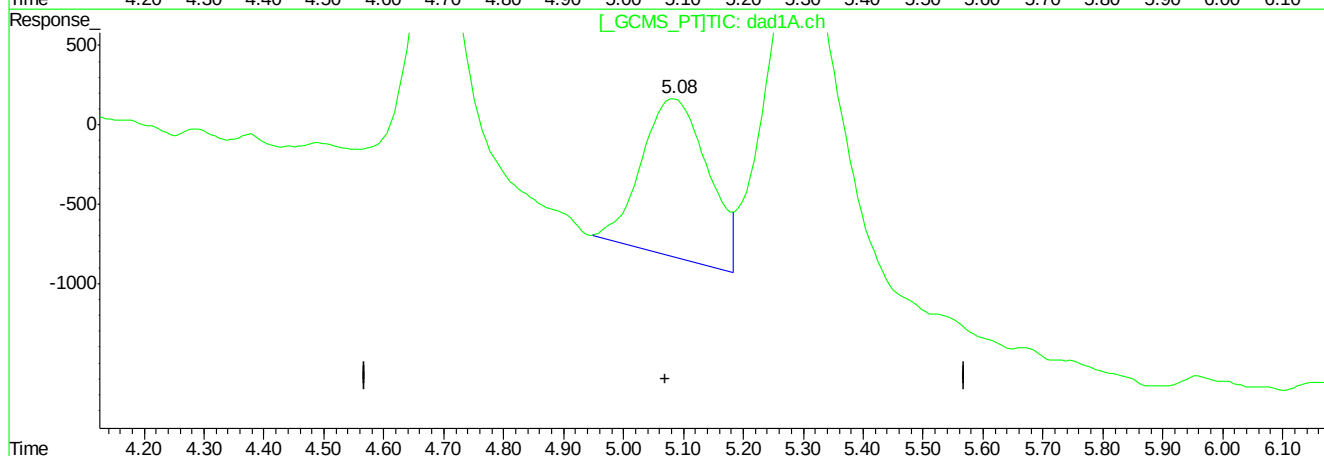
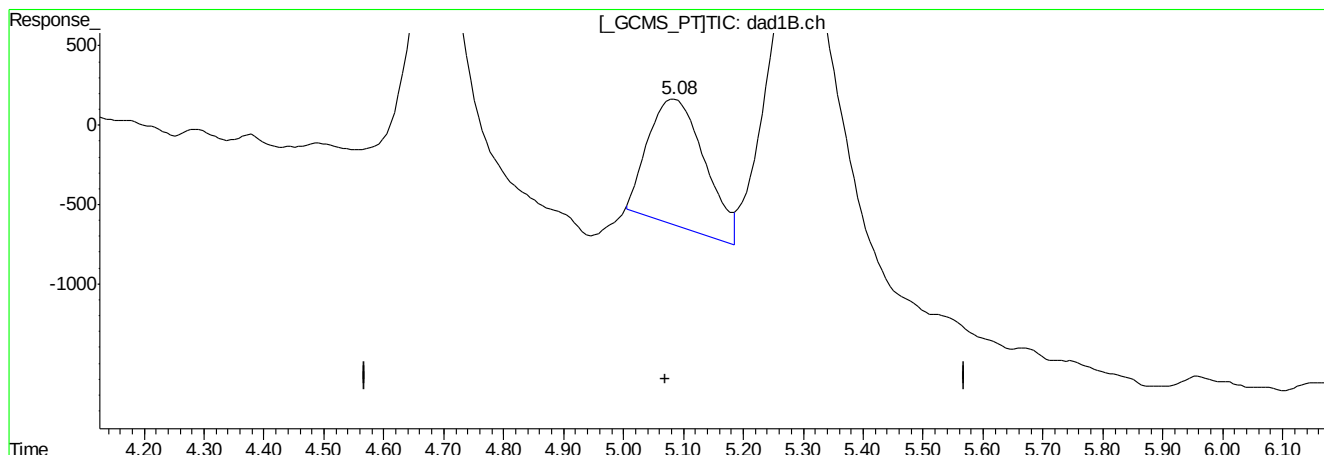
(+) = Expected Retention Time
GG625698.D GGG3229_013023.M

Mon Jan 30 15:44:34 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(2) HMX

5.08min 18.793ppb

response 52335

(2) HMX #2

5.08min 27.470ppb

response 76960

(+) = Expected Retention Time

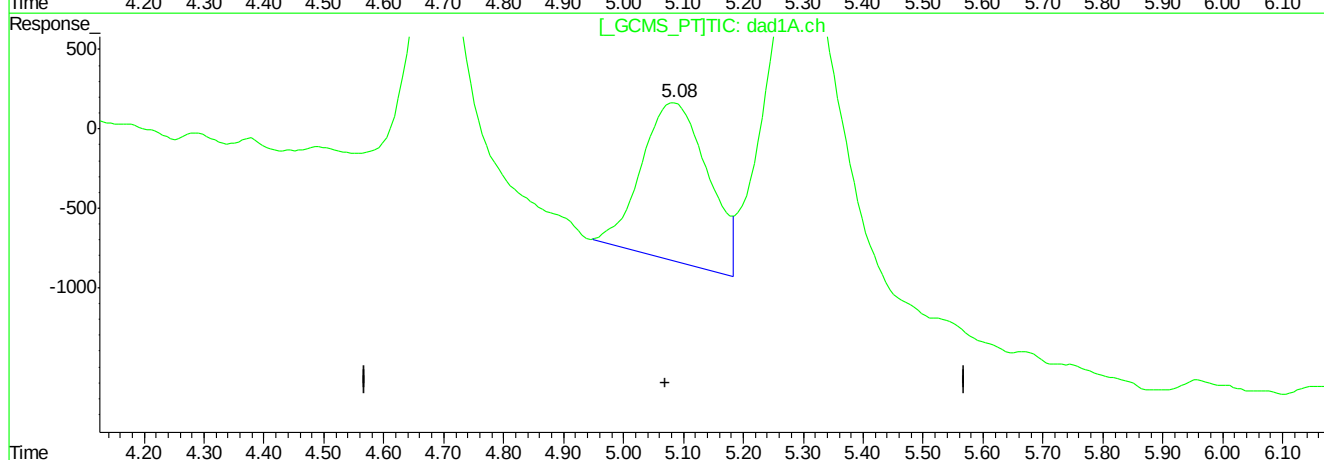
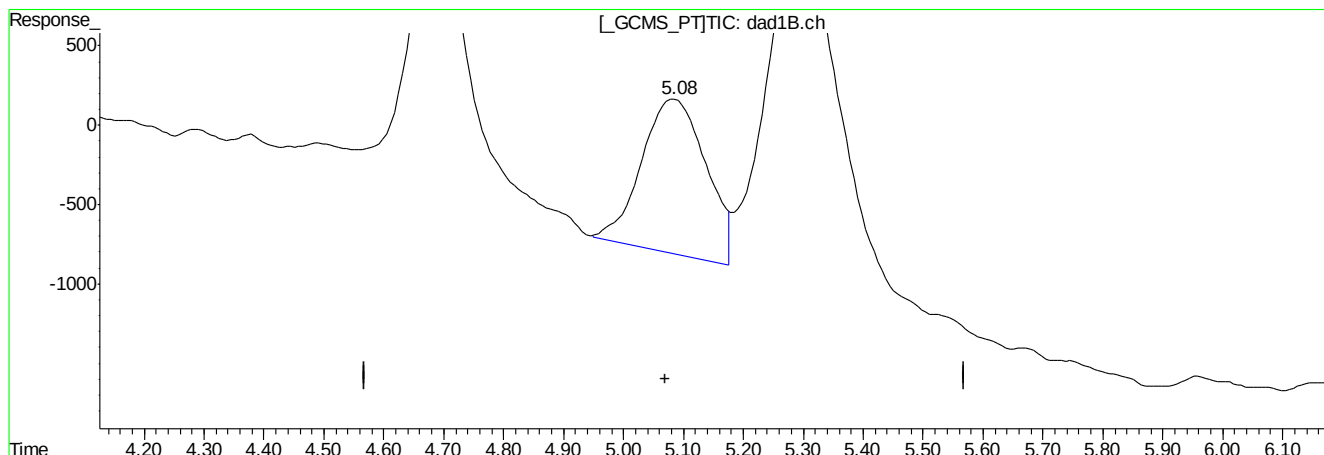
GG625698.D GGG3229_013023.M

Mon Jan 30 15:44:41 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(2) HMX

5.08min 26.137ppb m

response 72786

(2) HMX #2

5.08min 27.470ppb

response 76960

(+) = Expected Retention Time

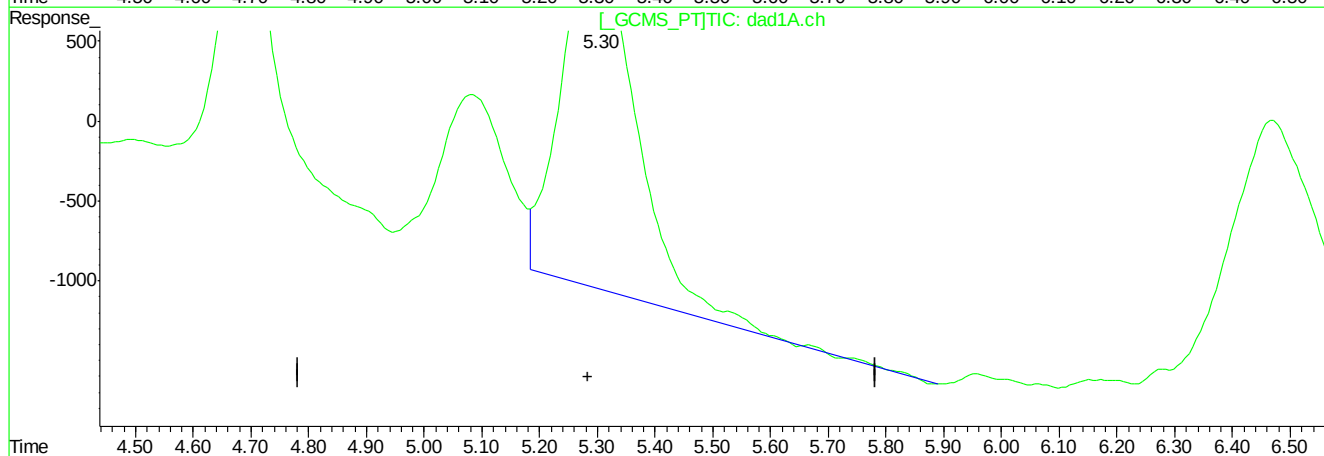
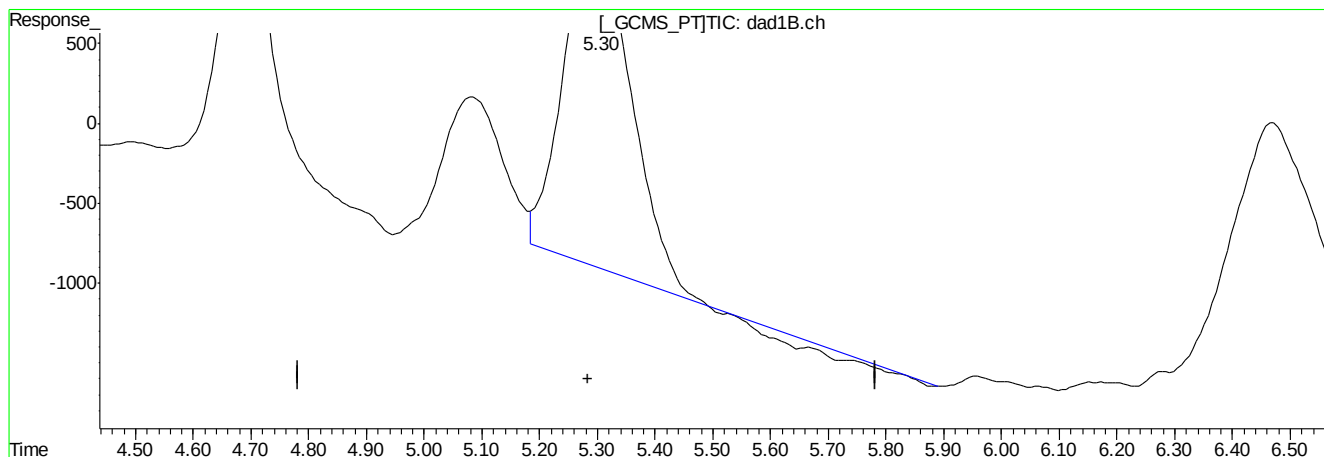
GG625698.D GGG3229_013023.M

Mon Jan 30 15:44:47 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.30min 21.475ppb

response 163904

(3) DNX #2

5.30min 26.031ppb

response 201728

(+) = Expected Retention Time

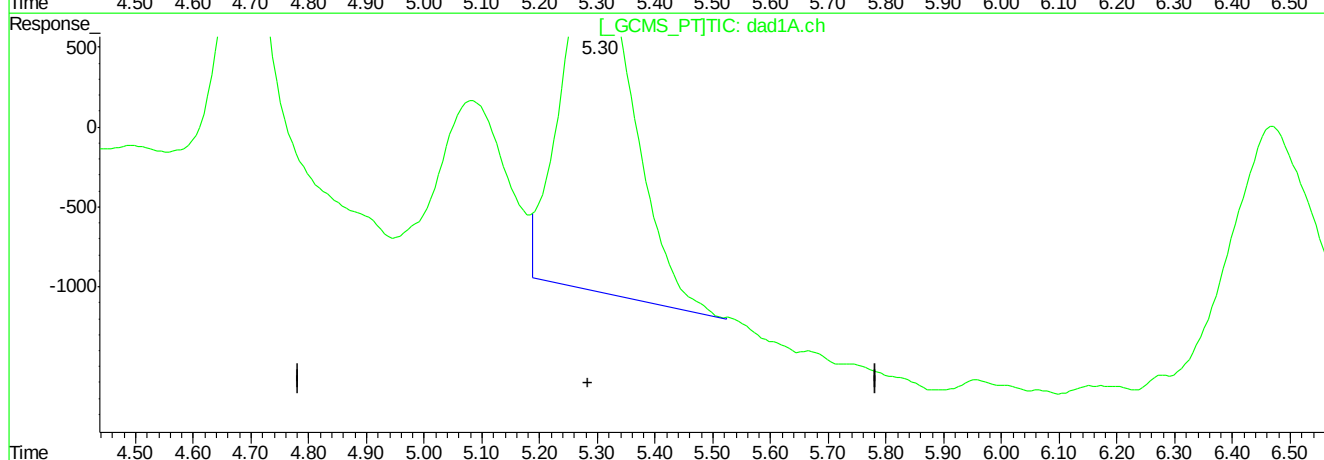
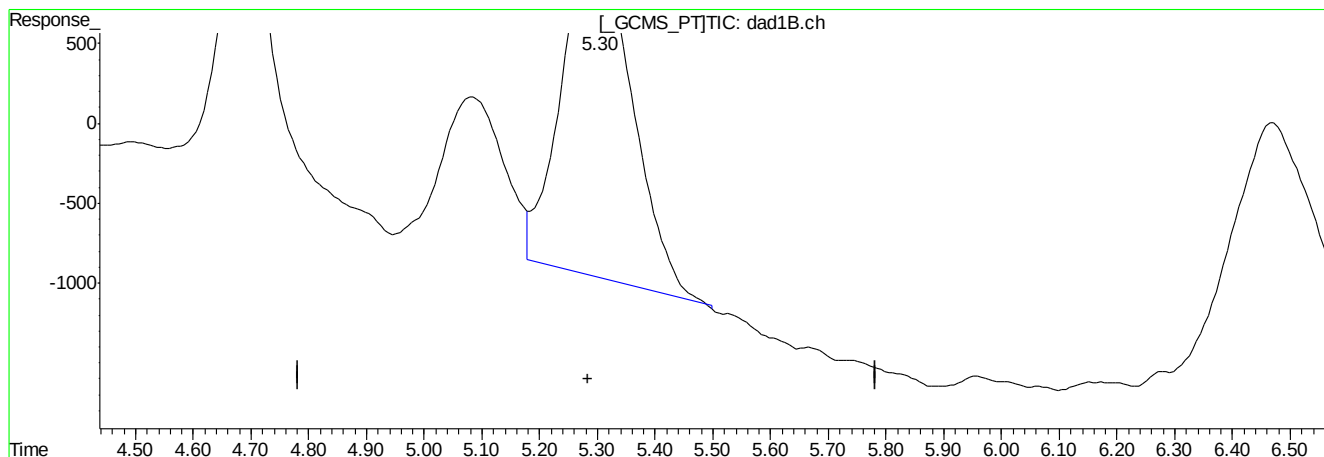
GG625698.D GGG3229_013023.M

Mon Jan 30 15:44:56 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.30min 23.428ppb m

response 178810

(3) DNX #2

5.30min 24.358ppb m

response 188762

(+) = Expected Retention Time

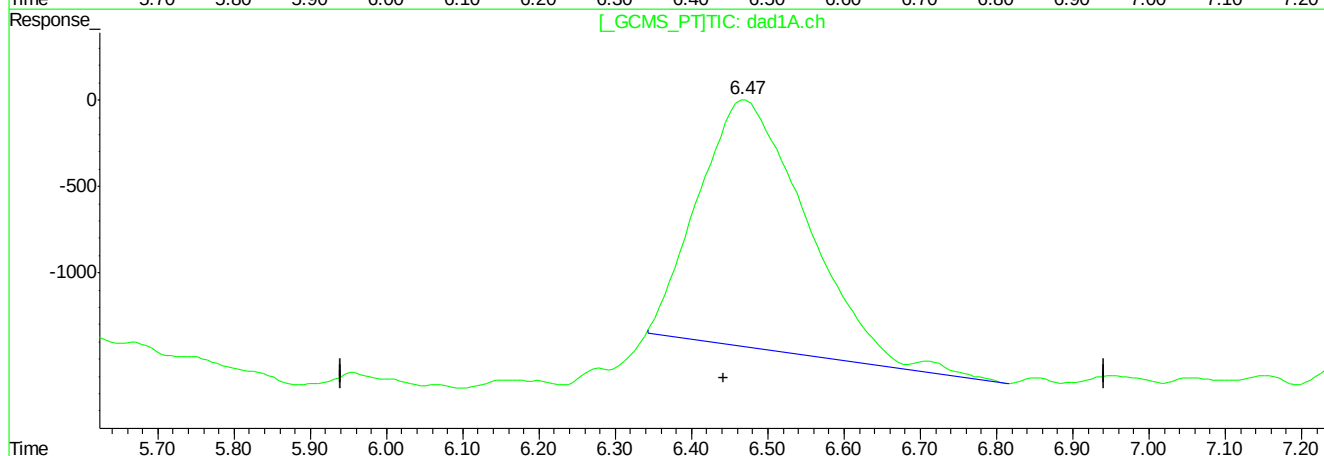
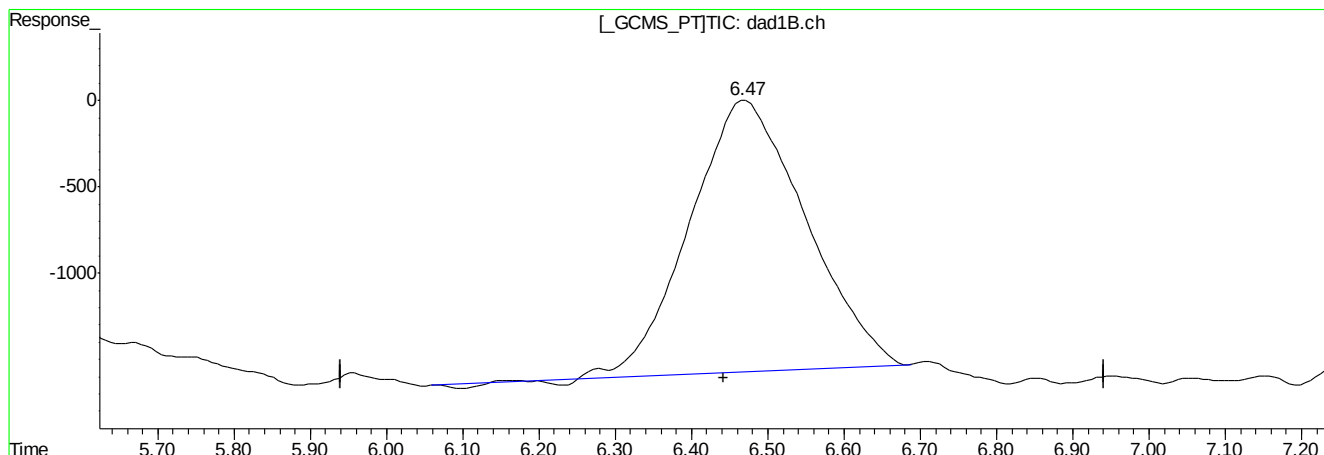
GG625698.D GGG3229_013023.M

Mon Jan 30 15:45:06 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(4) MNX

6.47min 24.780ppb

response 165566

(4) MNX #2

6.47min 21.345ppb

response 142609

(+) = Expected Retention Time

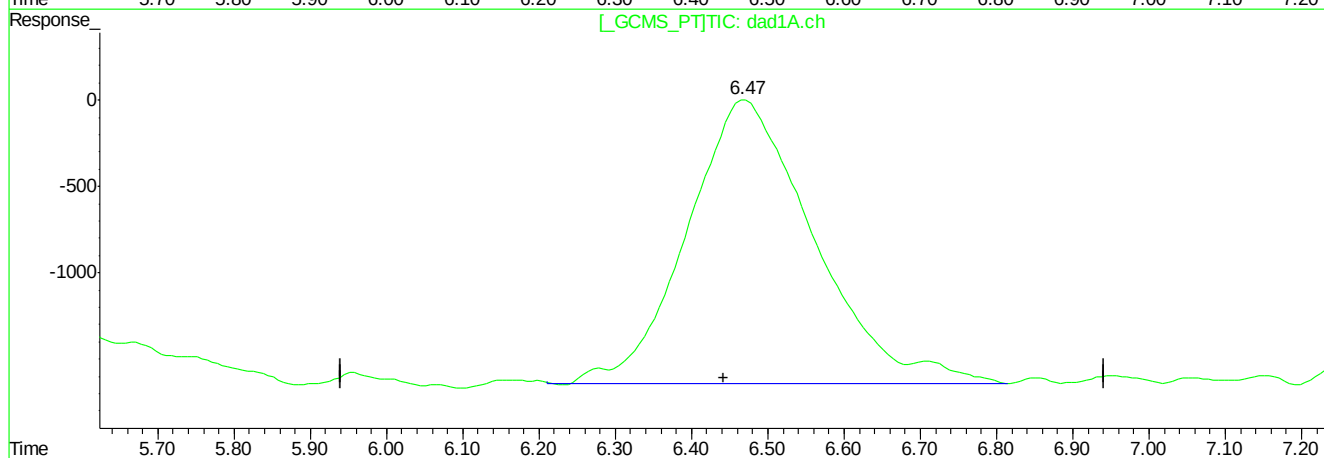
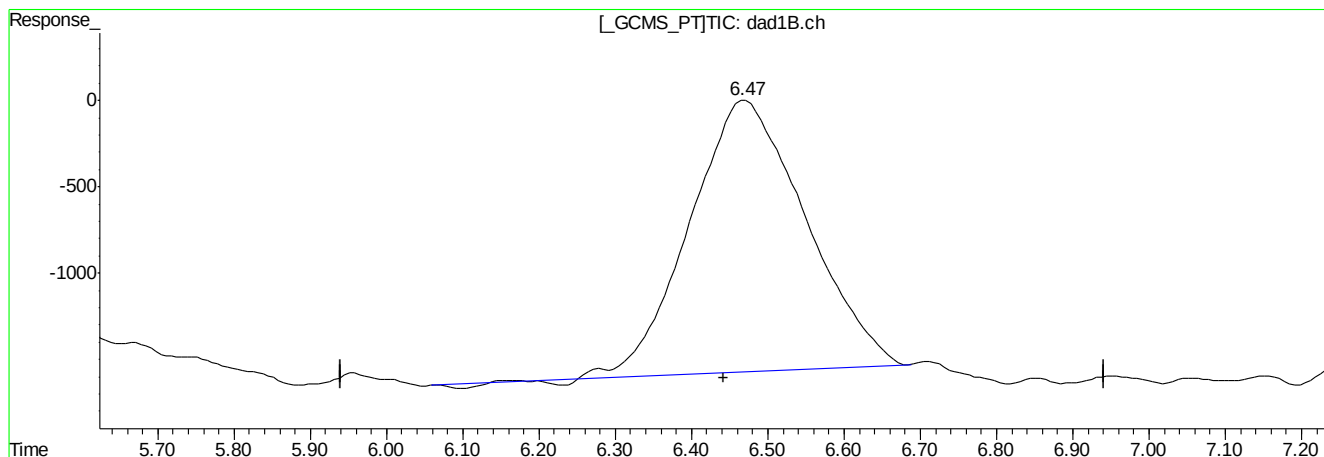
GG625698.D GGG3229_013023.M

Mon Jan 30 15:45:13 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(4) MNX

6.47min 24.780ppb

response 165566

(4) MNX #2

6.47min 28.471ppb m

response 190222

(+) = Expected Retention Time

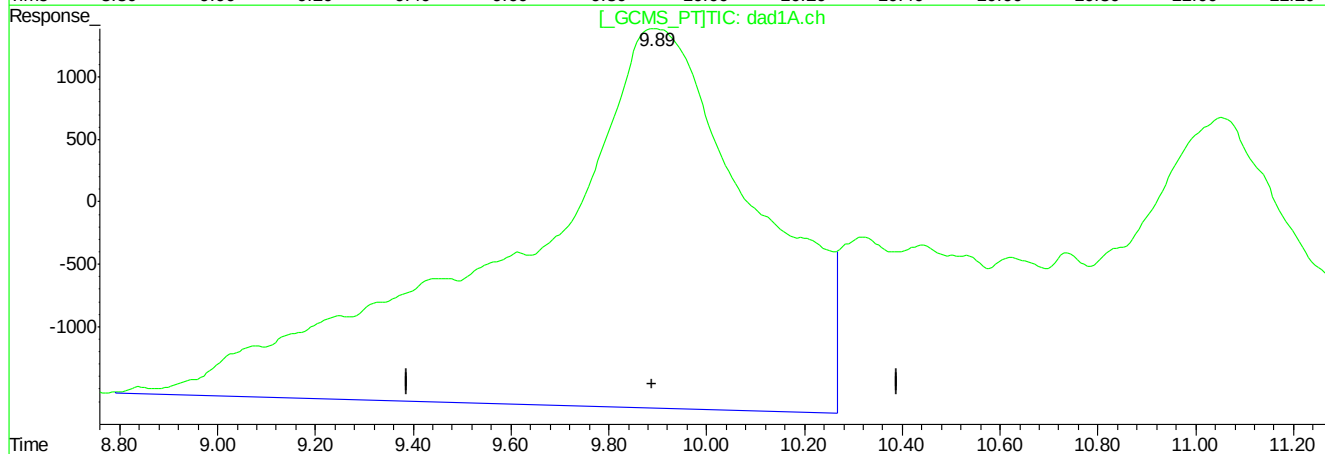
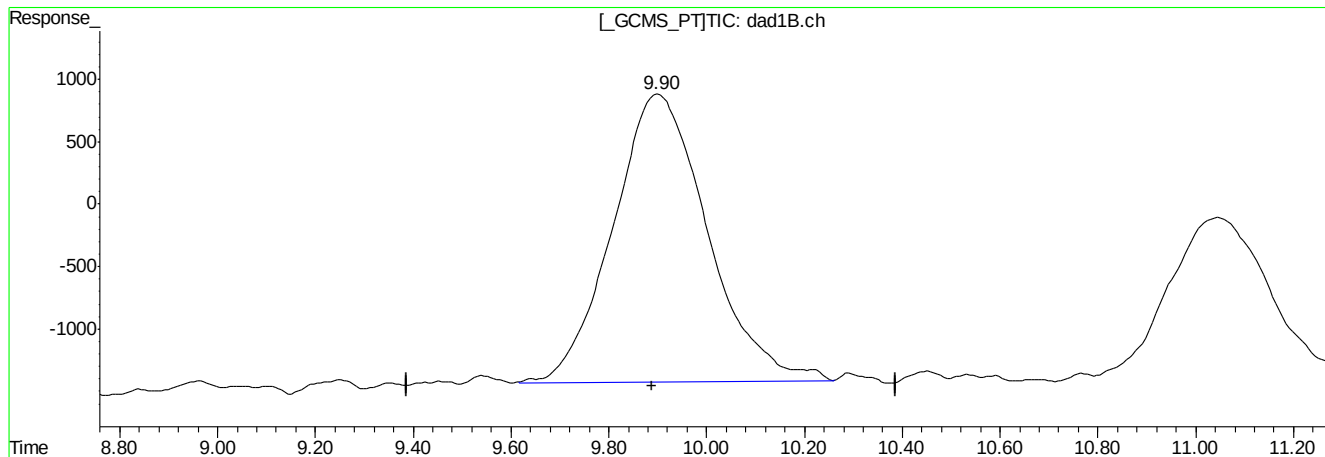
GG625698.D GGG3229_013023.M

Mon Jan 30 15:45:20 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

9.90min 25.156ppb

response 309647

(7) 1,3-Dinitrobenzene #2

9.90min 100.474ppb

response 1043168

(+) = Expected Retention Time

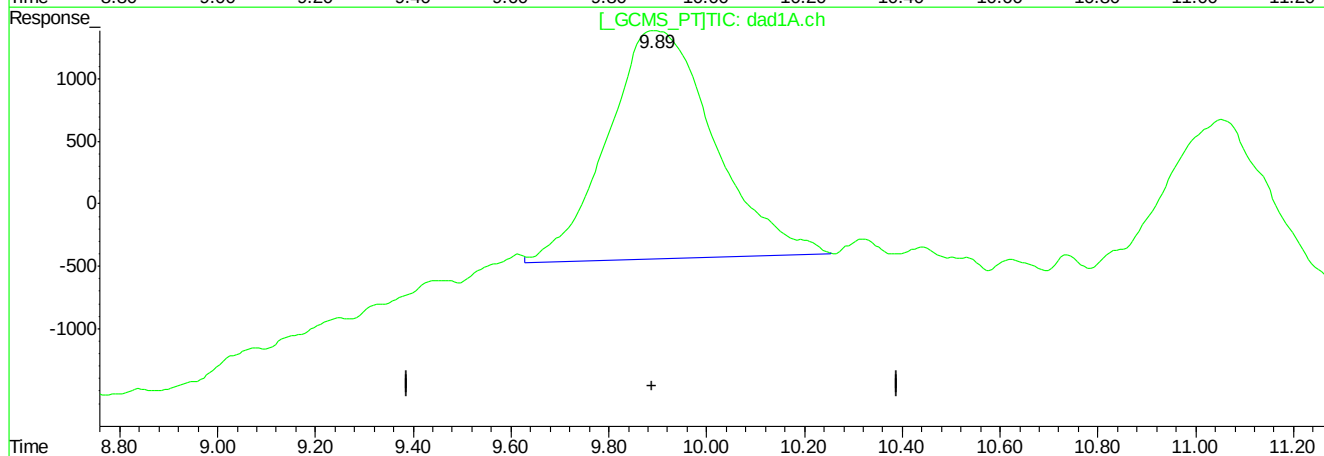
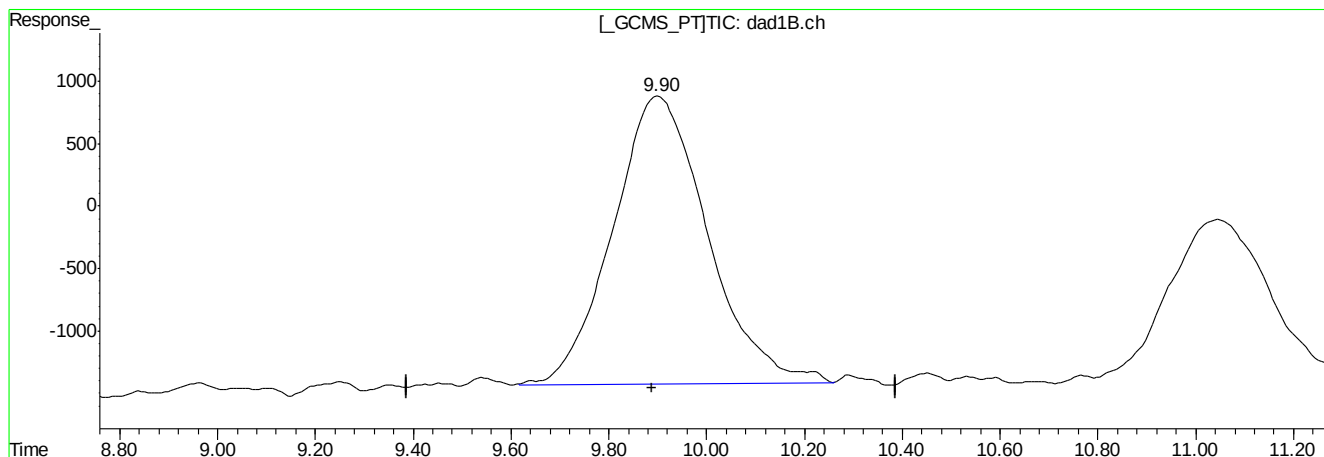
GG625698.D GGG3229_013023.M

Mon Jan 30 15:45:37 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

9.90min 25.156ppb

response 309647

(7) 1,3-Dinitrobenzene #2

9.89min 26.842ppb m

response 278691

(+) = Expected Retention Time

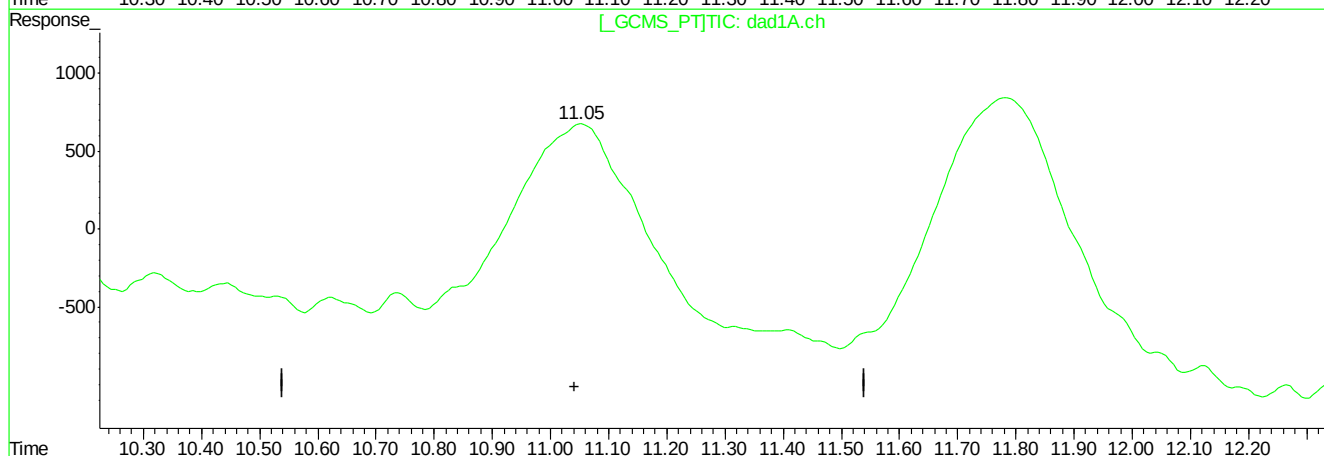
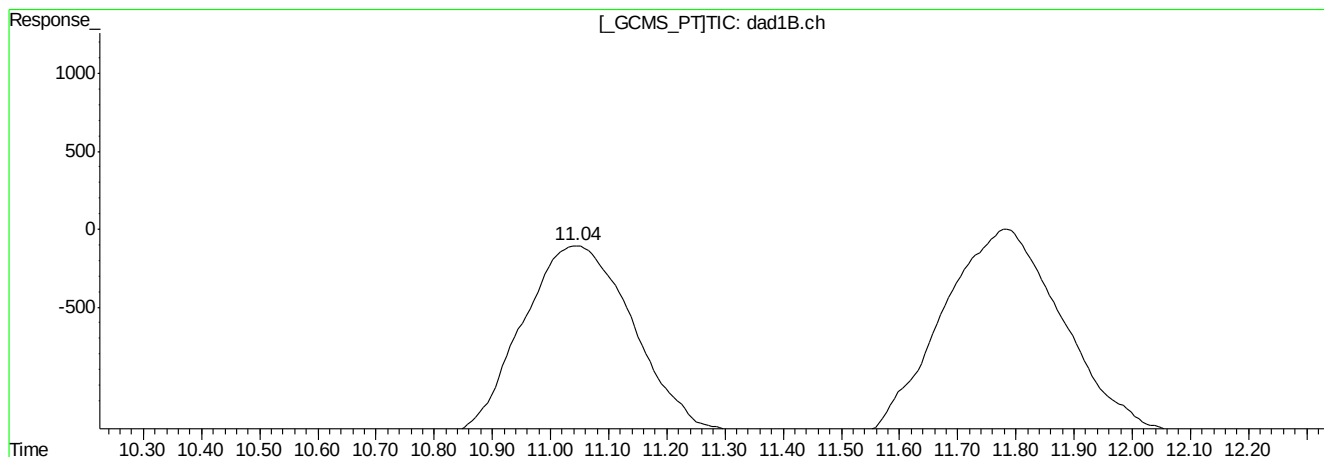
GG625698.D GGG3229_013023.M

Mon Jan 30 15:45:49 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene

11.05min 24.991ppb

response 196574

(8) Nitrobenzene #2

11.05min 95.594ppb

response 692360

(+) = Expected Retention Time

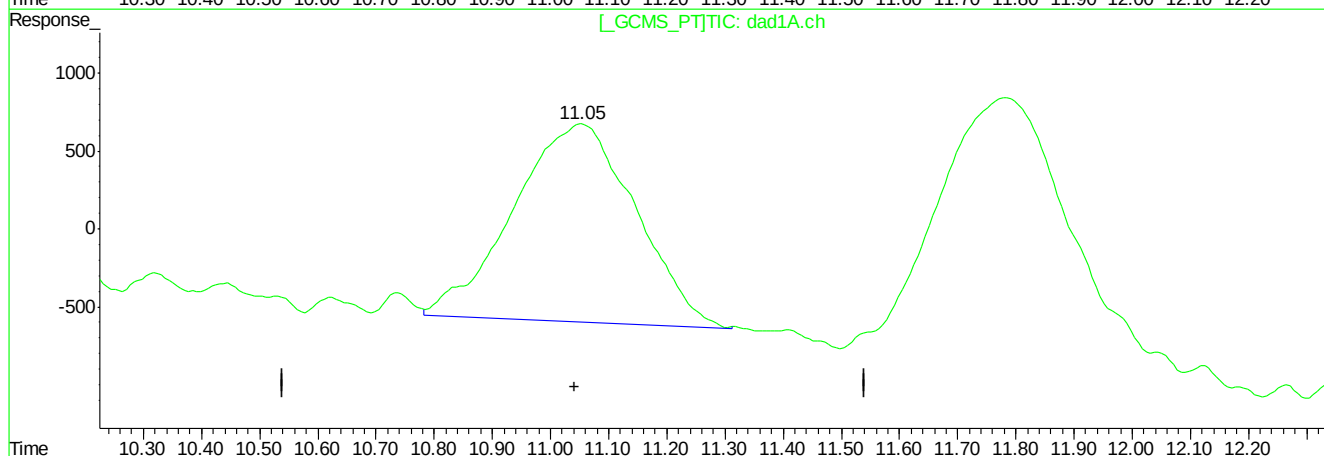
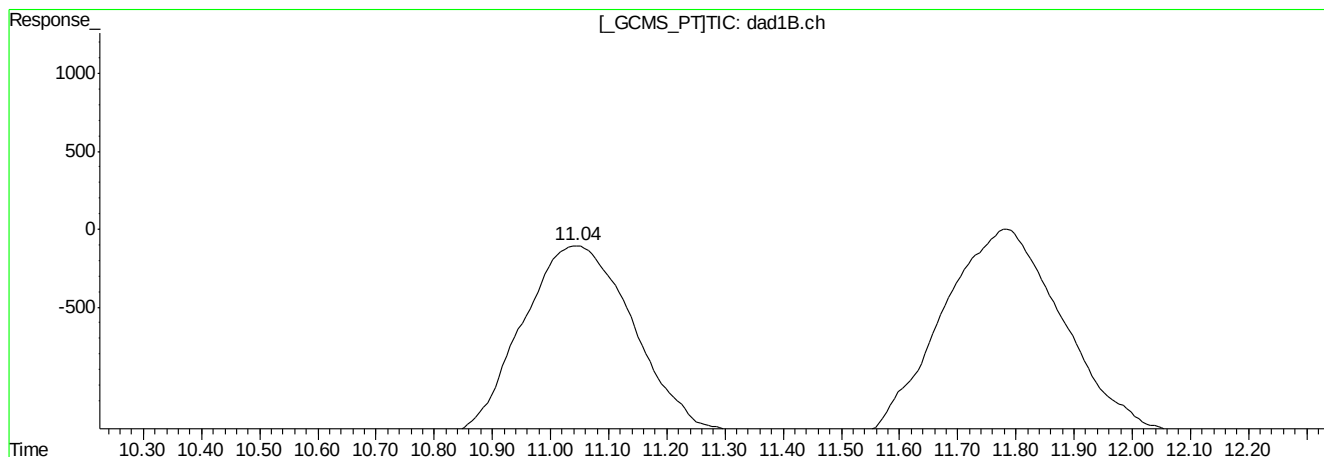
GG625698.D GGG3229_013023.M

Mon Jan 30 15:46:04 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene

11.05min 24.991ppb

response 196574

(8) Nitrobenzene #2

11.05min 25.654ppb m

response 185807

(+) = Expected Retention Time

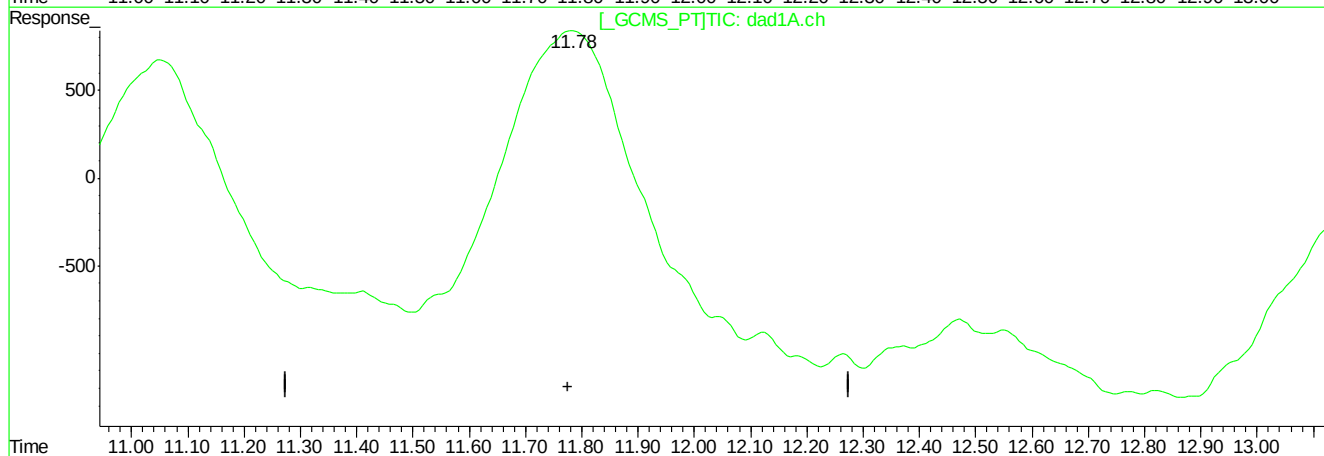
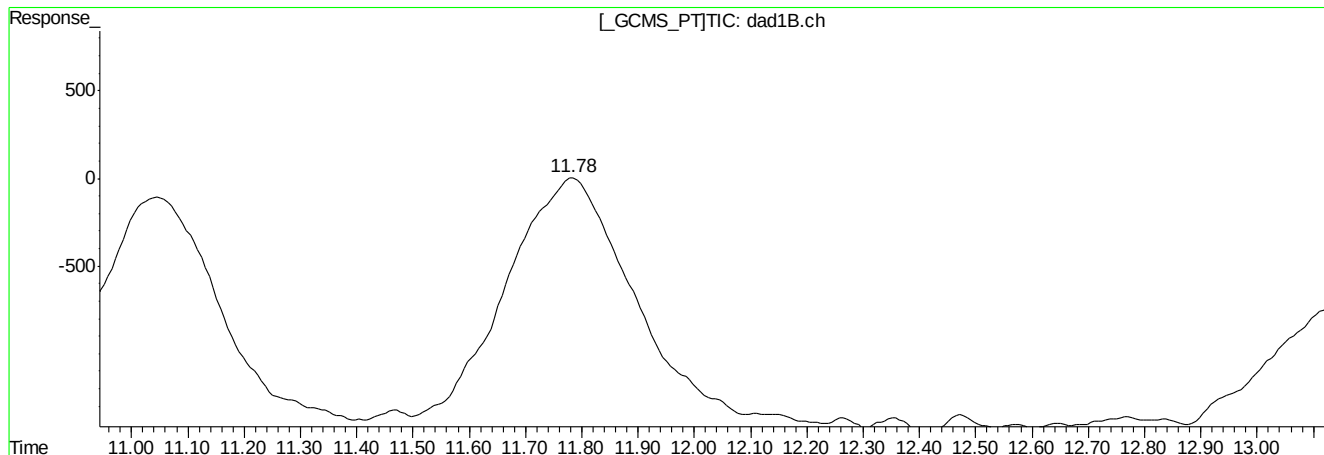
GG625698.D GGG3229_013023.M

Mon Jan 30 15:46:10 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(9) 2,4,6-Trinitrotoluene

11.79min 27.154ppb

response 237572

(9) 2,4,6-Trinitrotoluene #2

11.78min 62.458ppb

response 698535

(+) = Expected Retention Time

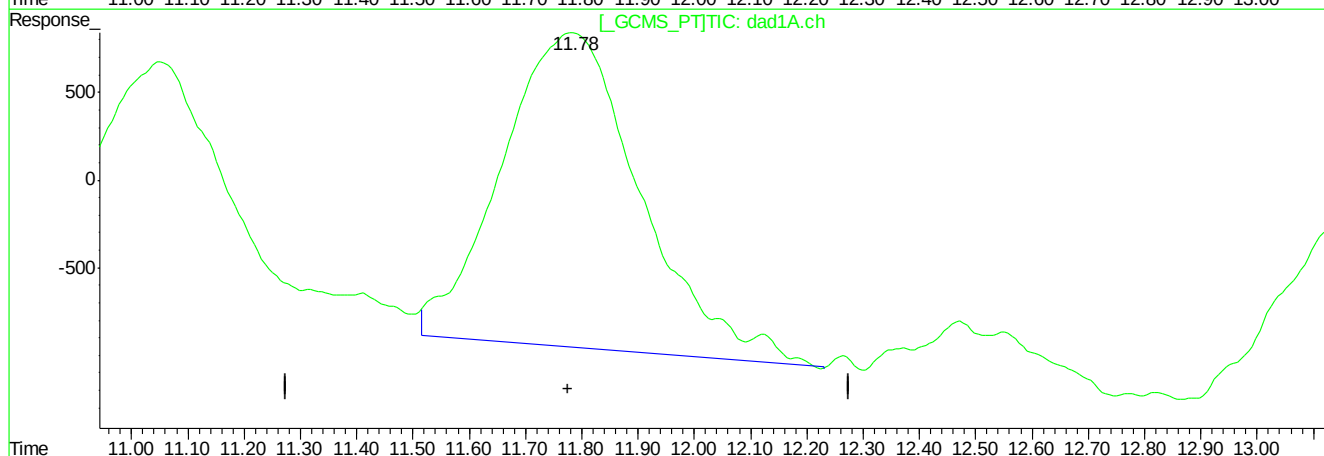
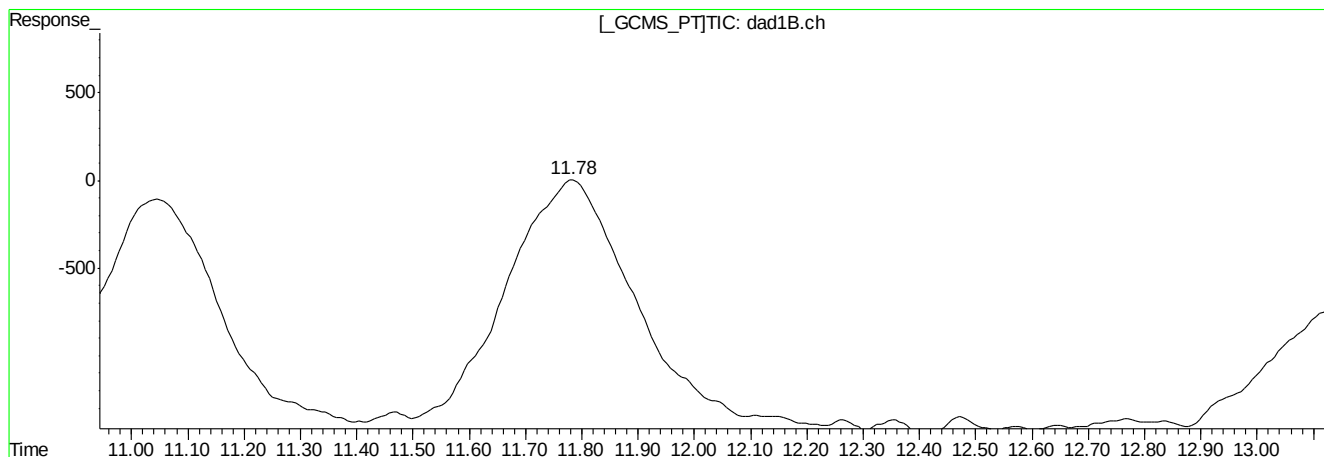
GG625698.D GGG3229_013023.M

Mon Jan 30 15:46:21 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(9) 2,4,6-Trinitrotoluene

11.79min 27.154ppb

response 237572

(9) 2,4,6-Trinitrotoluene #2

11.78min 27.570ppb m

response 308344

(+) = Expected Retention Time

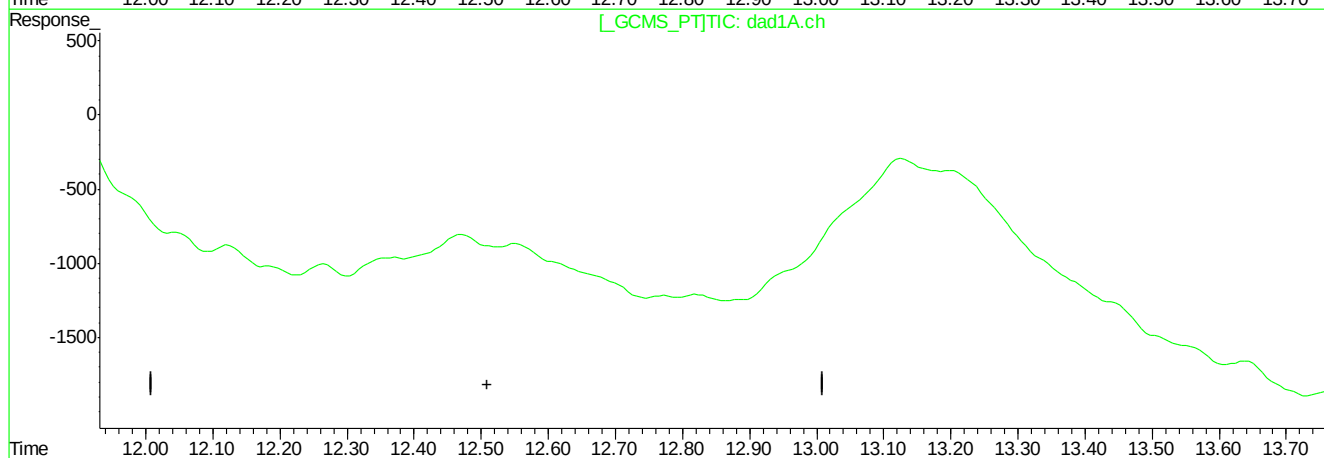
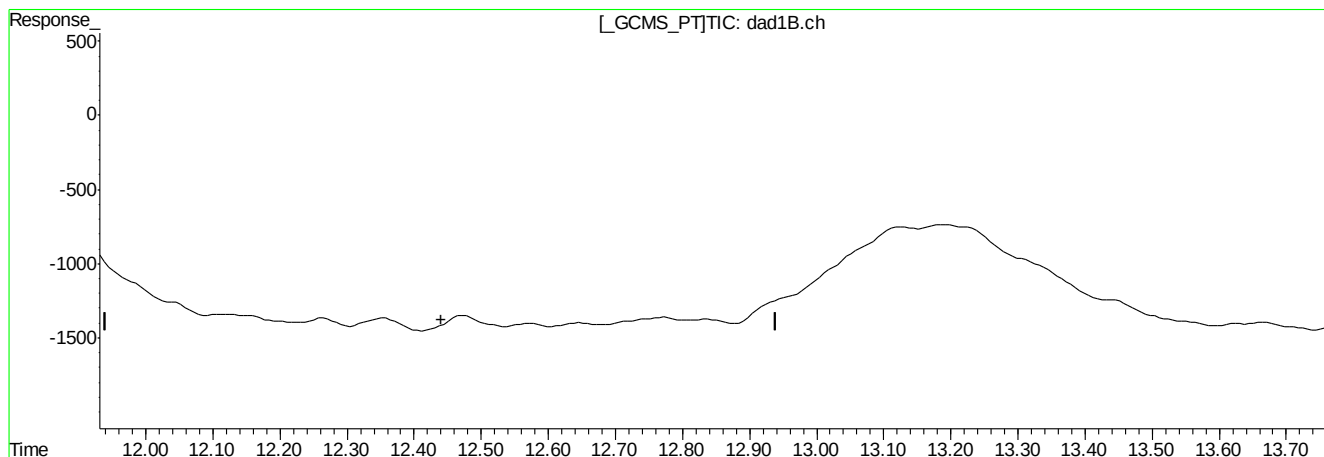
GG625698.D GGG3229_013023.M

Mon Jan 30 15:46:28 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(10) Nitroglycerin

0.00min 0.000ppb

response 0

(10) Nitroglycerin #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

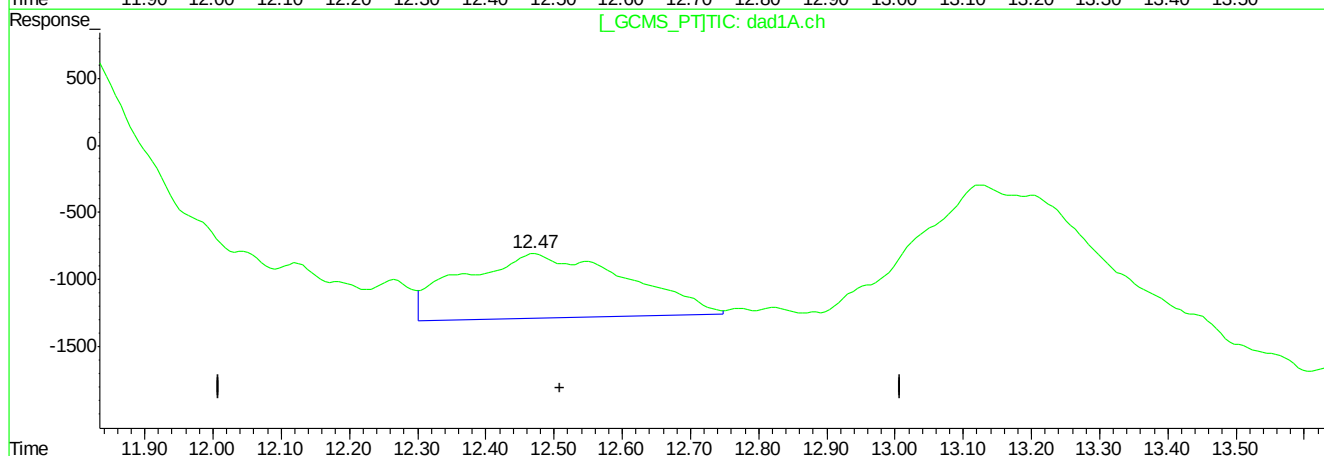
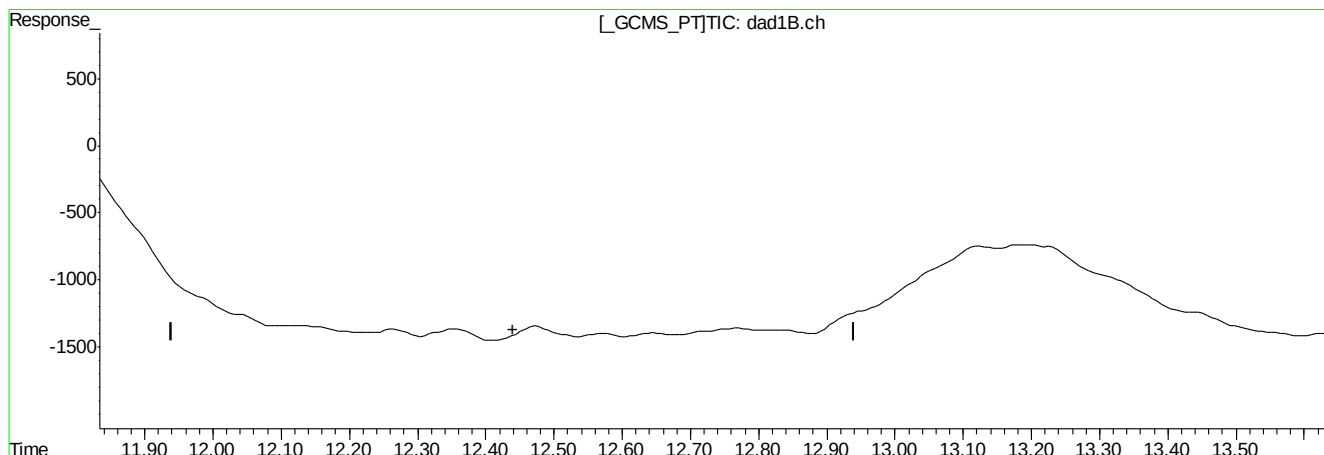
GG625698.D GGG3229_013023.M

Mon Jan 30 15:46:37 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(10) Nitroglycerin

0.00min 0.000ppb

response 0

(10) Nitroglycerin #2

12.47min 28.114ppb m

response 81663

(+) = Expected Retention Time

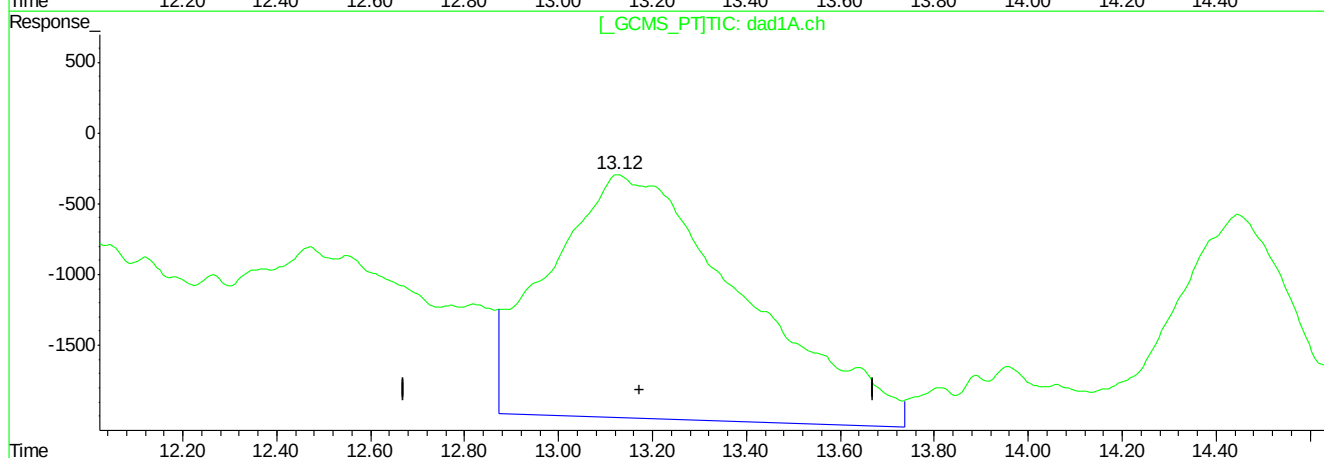
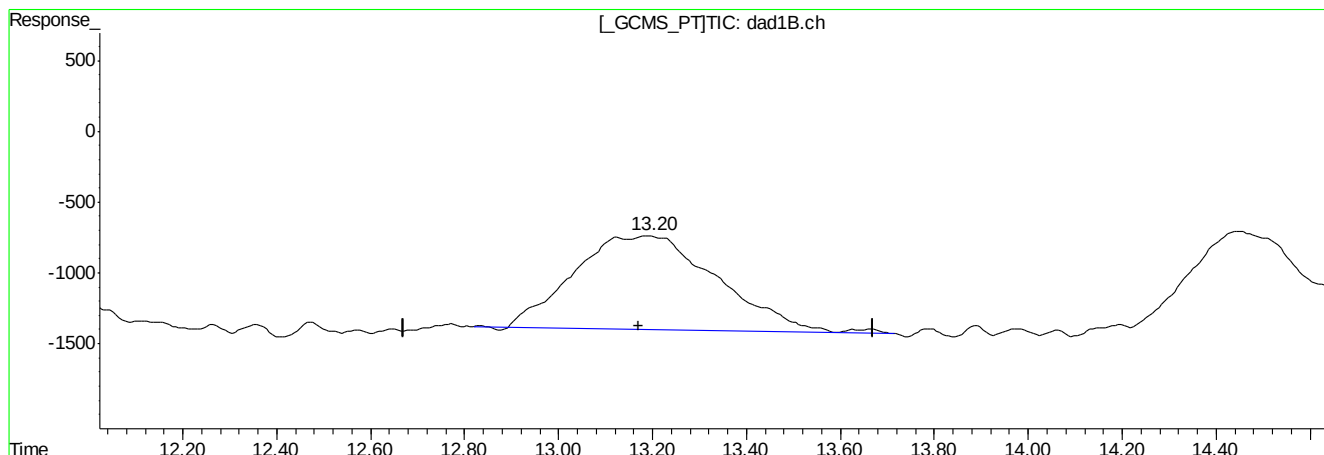
GG625698.D GGG3229_013023.M

Mon Jan 30 15:46:50 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(11) Tetryl

13.19min 20.293ppb

response 139767

(11) Tetryl #2

13.13min 43.457ppb

response 498524

(+) = Expected Retention Time

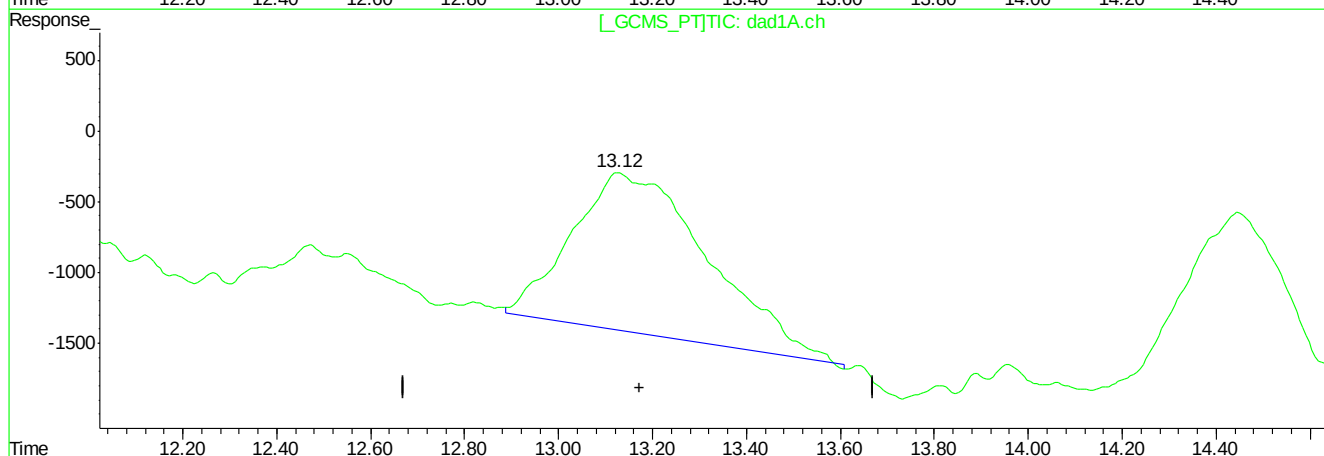
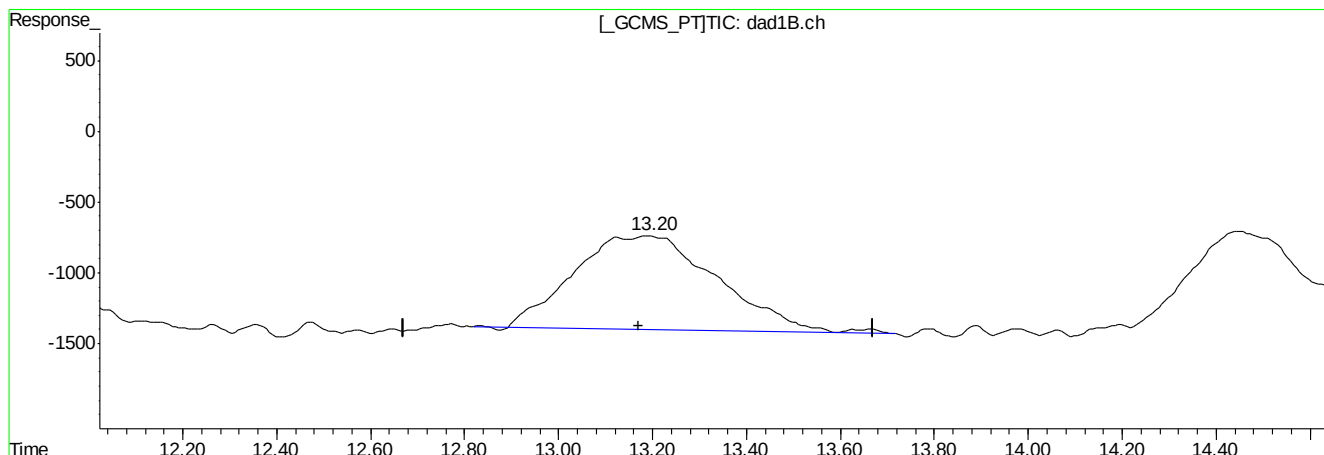
GG625698.D GGG3229_013023.M

Mon Jan 30 15:47:00 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(11) Tetryl

13.19min 20.293ppb

response 139767

(11) Tetryl #2

13.12min 19.767ppb m

response 226761

(+) = Expected Retention Time

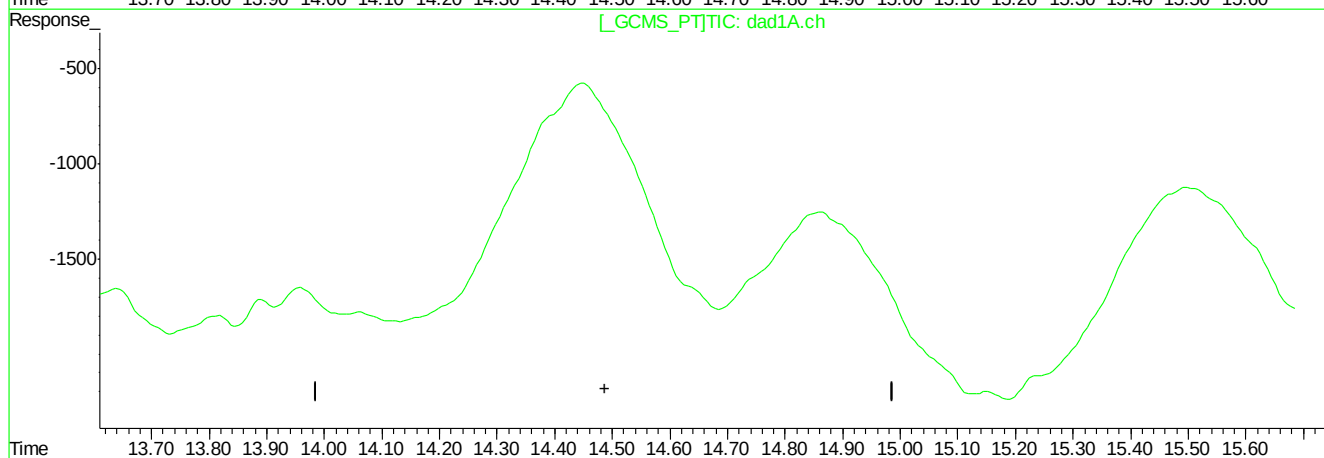
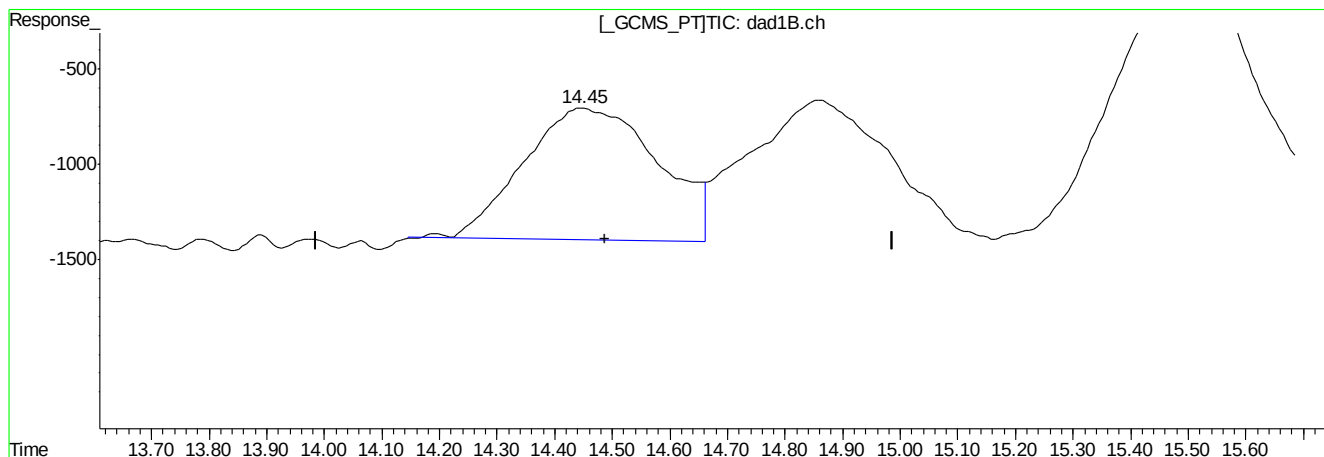
GG625698.D GGG3229_013023.M

Mon Jan 30 15:47:07 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(12) 3,4-Dinitrotoluene (S)

14.45min 24.570ppb

response 113079

(12) 3,4-Dinitrotoluene #2 (S)

14.45min 32.098ppb

response 293777

(+) = Expected Retention Time

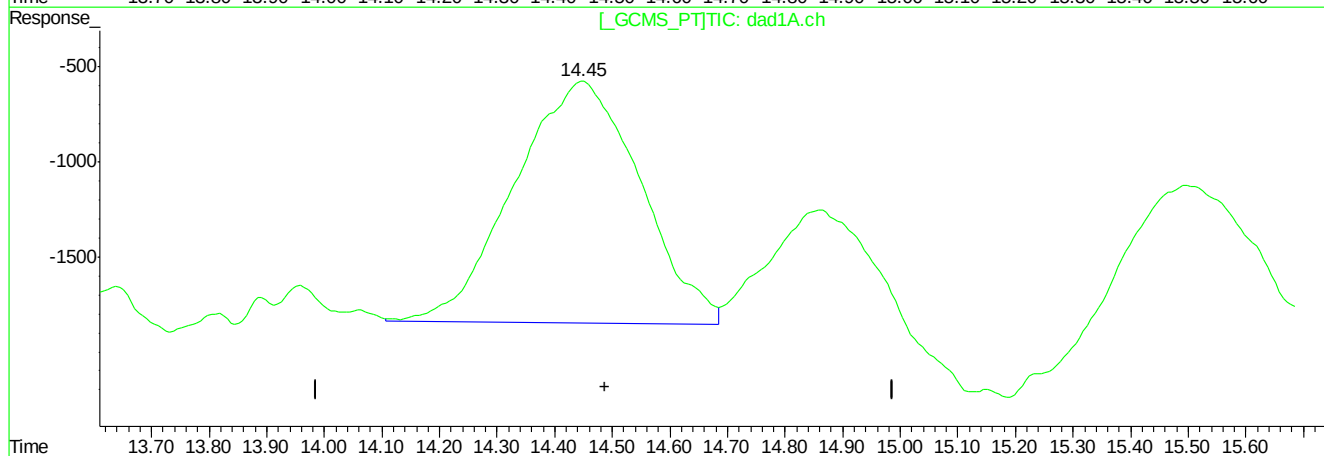
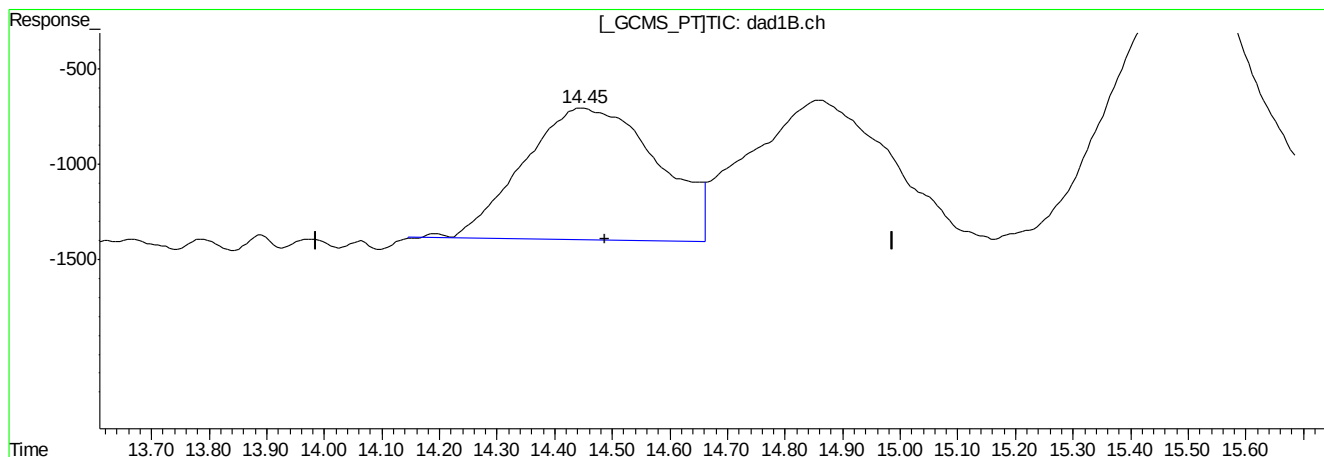
GG625698.D GGG3229_013023.M

Mon Jan 30 15:47:16 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(12) 3,4-Dinitrotoluene (S)

14.45min 24.570ppb

response 113079

(12) 3,4-Dinitrotoluene #2 (S)

14.45min 21.203ppb m

response 194058

(+) = Expected Retention Time

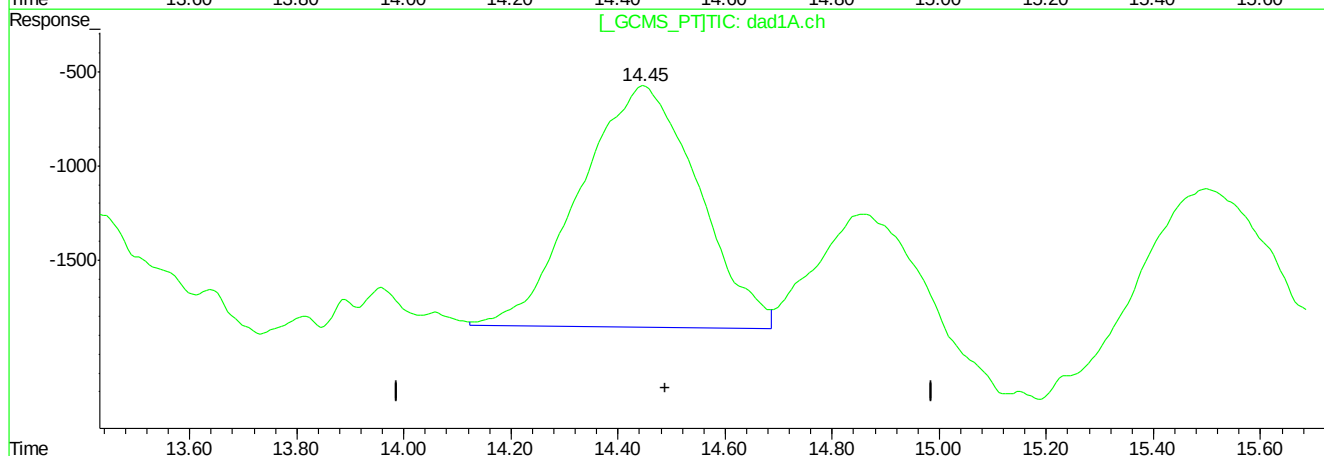
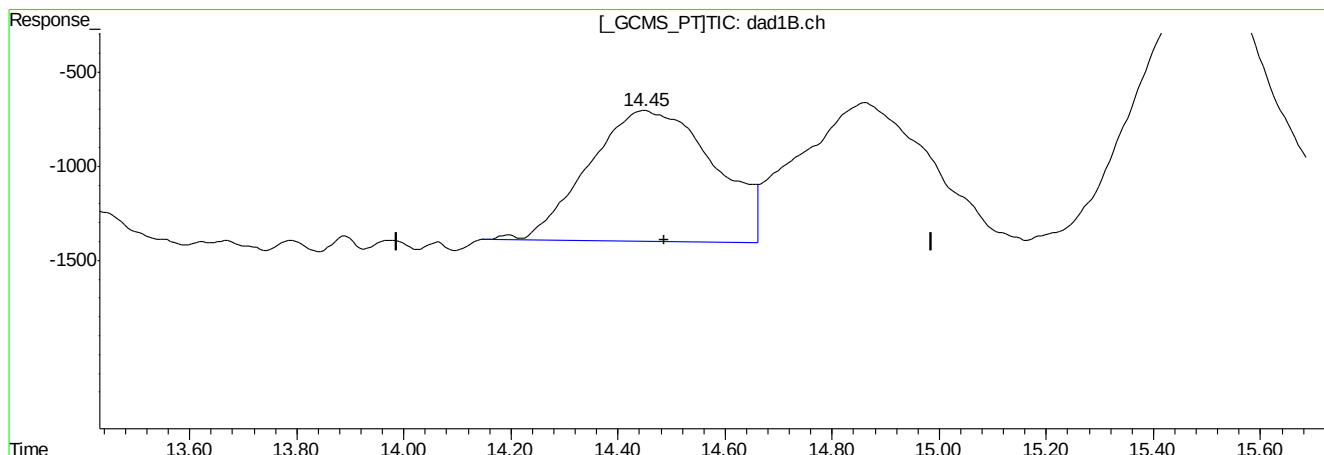
GG625698.D GGG3229_013023.M

Mon Jan 30 15:47:22 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(12) 3,4-Dinitrotoluene (S)

14.45min 24.570ppb

response 113079

(12) 3,4-Dinitrotoluene #2 (S)

14.45min 21.522ppb m

response 196978

(+) = Expected Retention Time

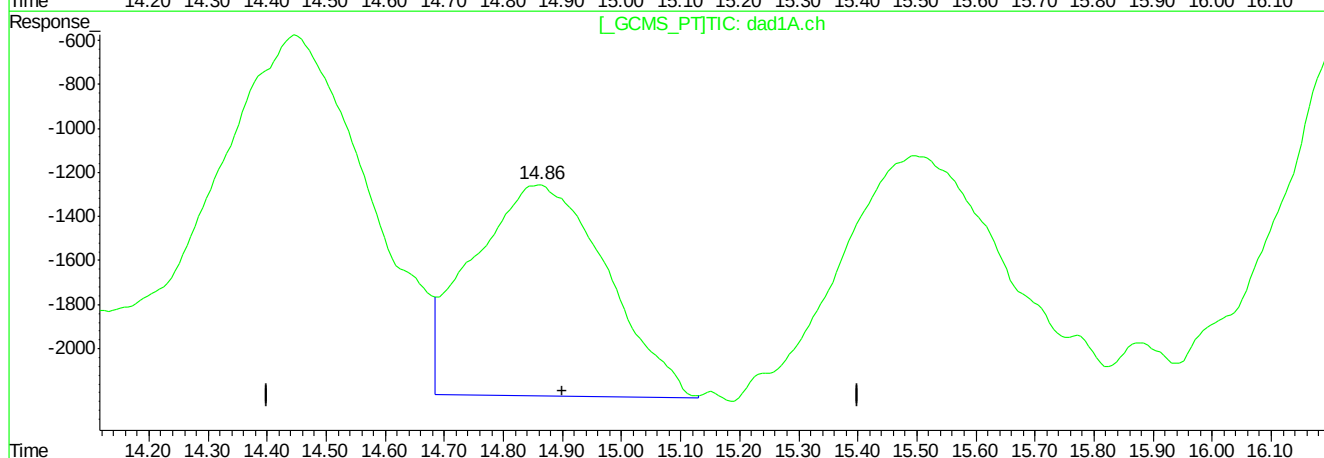
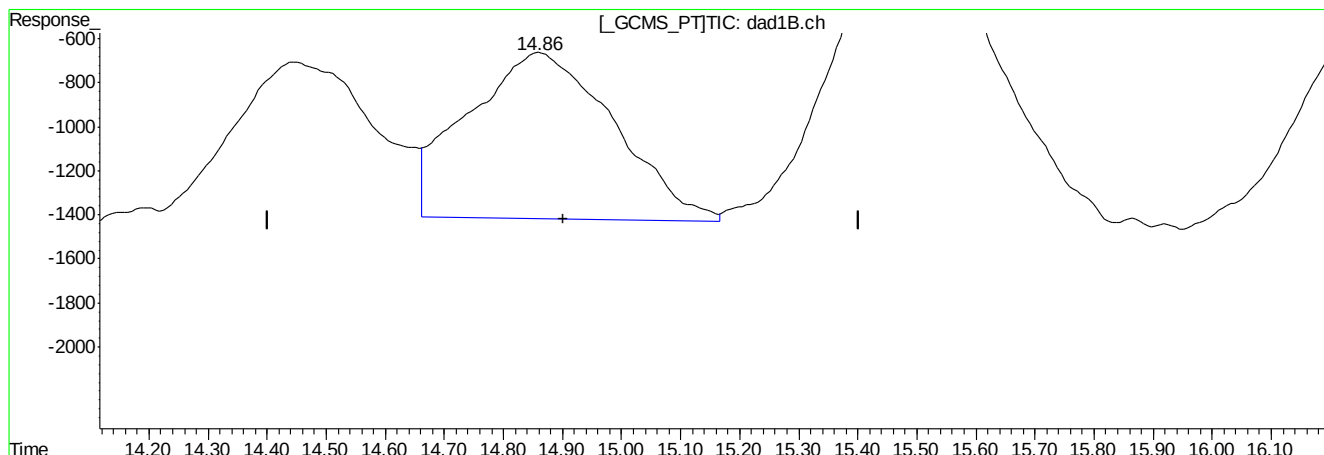
GG625698.D GGG3229_013023.M

Mon Jan 30 15:47:43 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
 Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
 Sample : ic3229-20 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Mon Jan 30 12:26:09 2023
 Response via : Multiple Level Calibration



QEdit

(13) 2,6-Dinitrotoluene

14.86min 19.761ppb

response 130890

(13) 2,6-Dinitrotoluene #2

14.86min 15.928ppb m

response 151891

(+) = Expected Retention Time

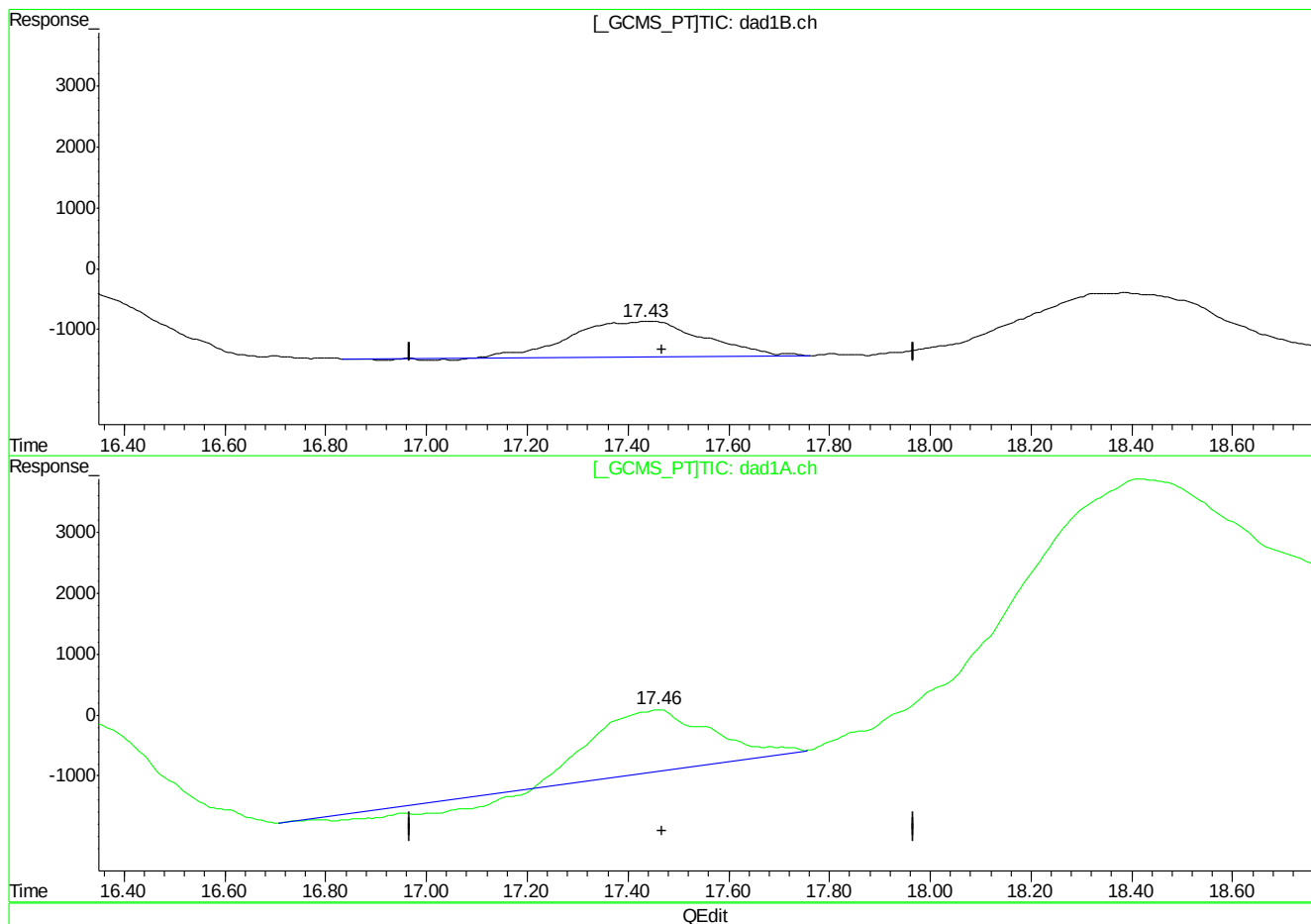
GG625698.D GGG3229_013023.M

Mon Jan 30 15:47:55 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(16) o-Nitrotoluene
17.44min 20.485ppb
response 105593

(16) o-Nitrotoluene #2
17.46min 18.344ppb
response 132126

(+) = Expected Retention Time

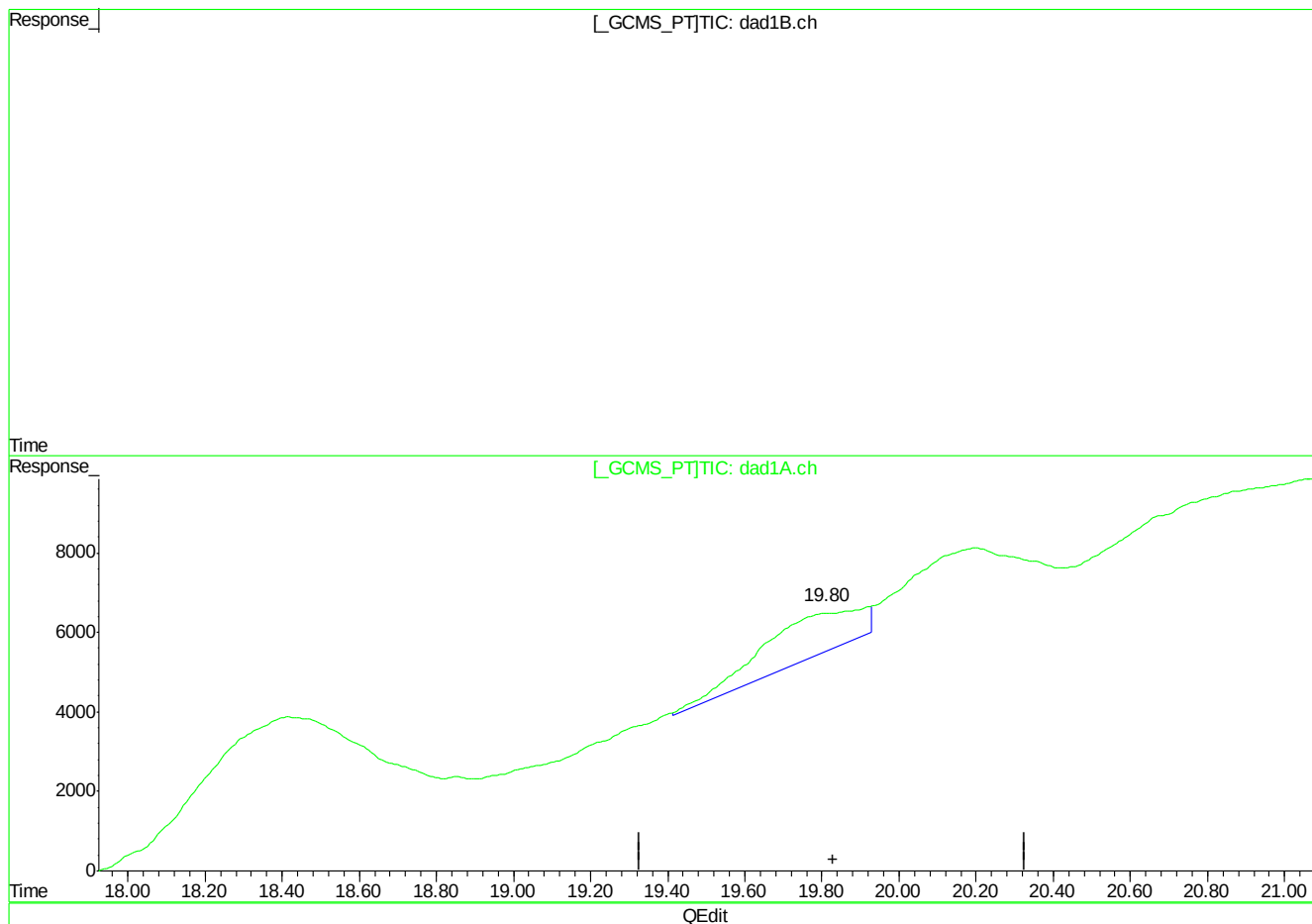
GG625698.D GGG3229_013023.M

Mon Jan 30 15:48:24 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(19) m-Nitrotoluene

19.78min 23.449ppb

response 118109

(19) m-Nitrotoluene #2

19.80min 24.872ppb m

response 196481

(+) = Expected Retention Time

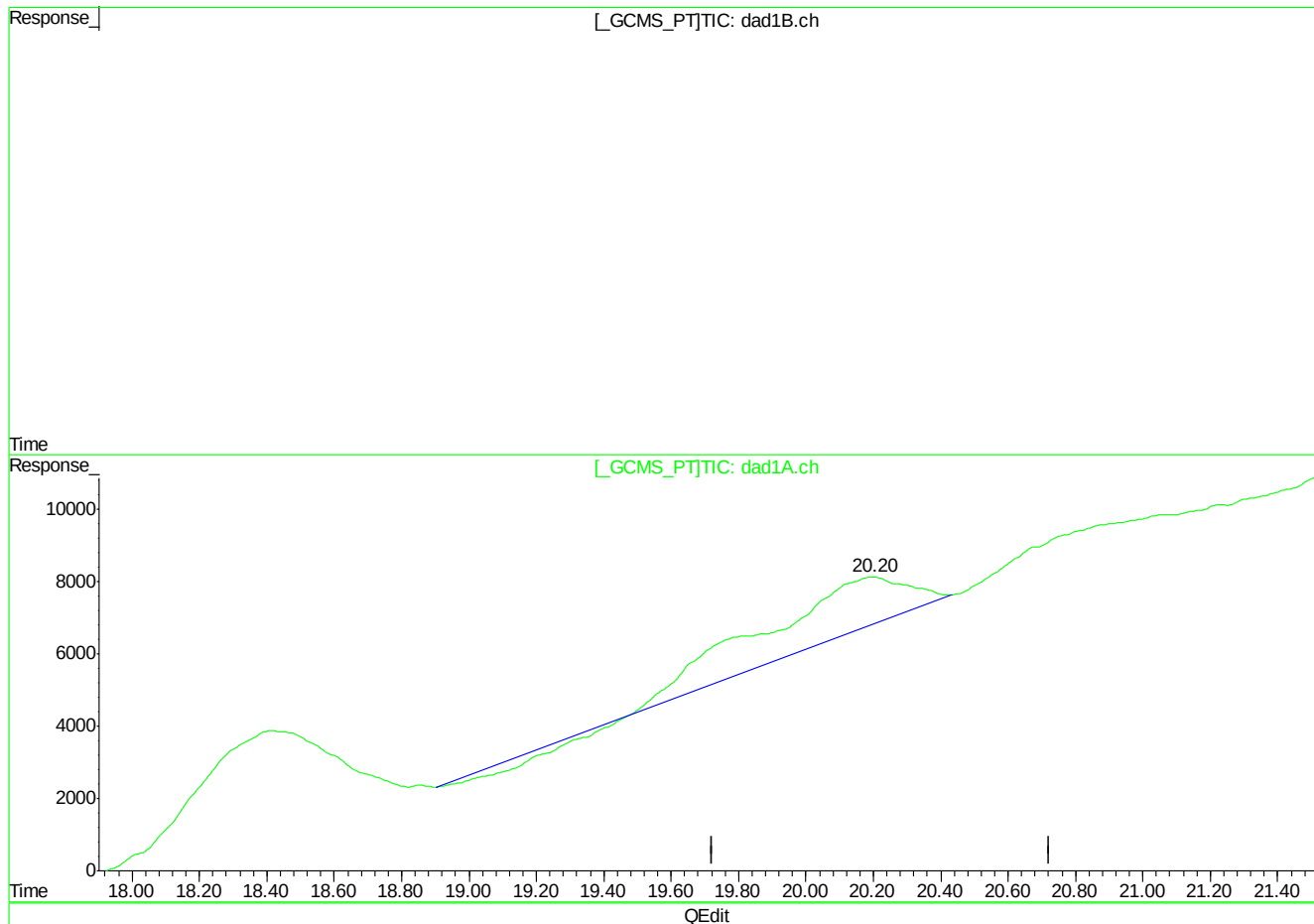
GG625698.D GGG3229_013023.M

Mon Jan 30 15:49:37 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(20) 2-Amino-4,6-Dinitrotoluene

20.16min 24.862ppb

response 206546

(20) 2-Amino-4,6-Dinitrotoluene #2

20.20min 34.747ppb

response 399366

(+) = Expected Retention Time

GG625698.D GGG3229_013023.M

Mon Jan 30 15:49:42 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
 Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
 Sample : ic3229-50 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 30 14:07:21 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Mon Jan 30 12:26:09 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.43	14.43	297758	511823	64.698	55.922
Spiked Amount	500.000	Range	70 - 136	Recovery	=	12.94%# 11.18%#
Target Compounds						
1) TNX	4.67	4.67	222830	224059	25.213m	24.932
2) HMX	5.06	5.06	156394	151037	56.160m	53.911
3) DNx	5.27	5.27	425692	395248	55.776m	51.002m
4) MNX	6.43	6.43	404419	400060	60.529	59.878
5) 1,3,5-Trinitrobe	7.38	7.38	467295	473324	52.075	52.580
6) RDX	7.77	7.77	240272	242290	56.295	56.423
7) 1,3-Dinitrobenze	9.86	9.85	632958	510400	51.422	49.160m
8) Nitrobenzene	11.00	11.00	412278	400625	52.414	55.314
9) 2,4,6-Trinitroto	11.73	11.73	461928	657311	52.797	58.772m
10) Nitroglycerin	0.00	12.44	0	156701	N.D.	53.947 #
11) Tetryl	13.12	13.11	320682	507504	46.560	44.240
13) 2,6-Dinitrotolue	14.84	14.84	320357	389479	48.365	40.842
14) 2,4-Dinitrotolue	15.47	15.47	599341	393724	53.040	50.721
15) 3,5-Dinitroanili	16.29	16.30	513298	792058	54.461	51.166
16) o-Nitrotoluene	17.39	17.41	262370	420054	50.900	58.319
17) p-Nitrotoluene	18.39	18.39	534036	784726	105.298	89.740
18) 4-Amino-2,6-Dini	18.39	18.39	534036	784726	107.334	90.287
19) m-Nitrotoluene	19.74	19.77	241465	289743	47.940	36.678m
20) 2-Amino-4,6-Dini	20.12	20.14	463028	558434	55.735	48.586
21) PETN	0.00	22.06	0	146325	N.D.	47.565m#

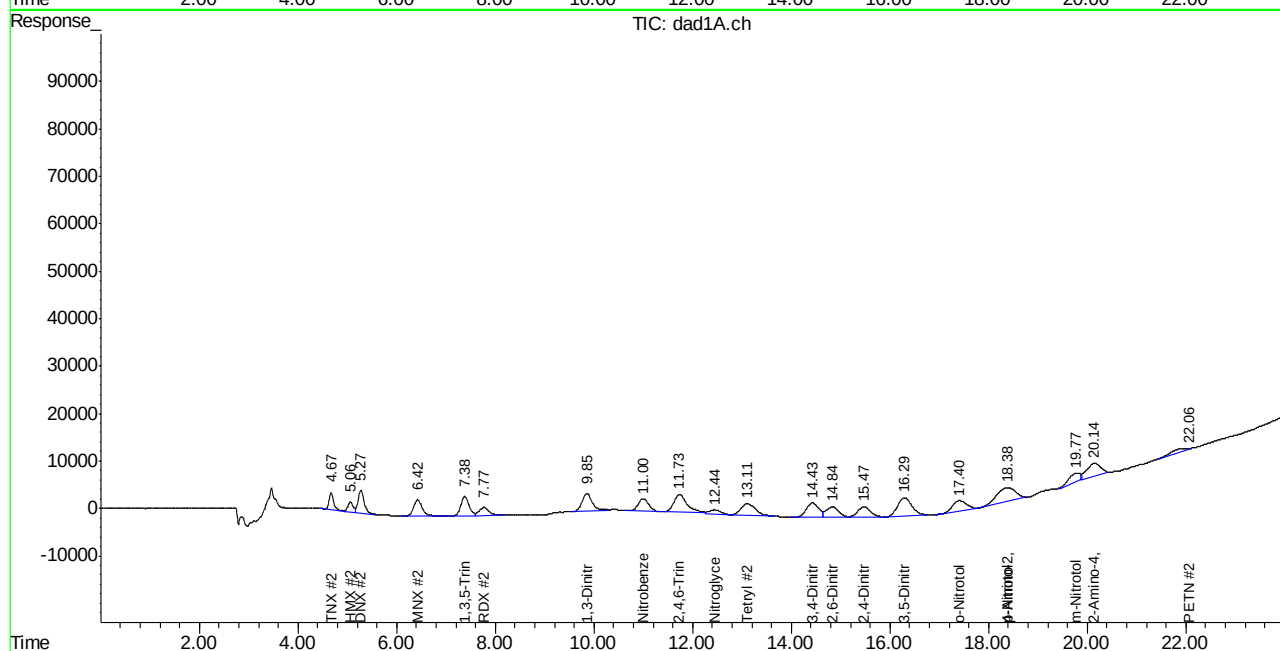
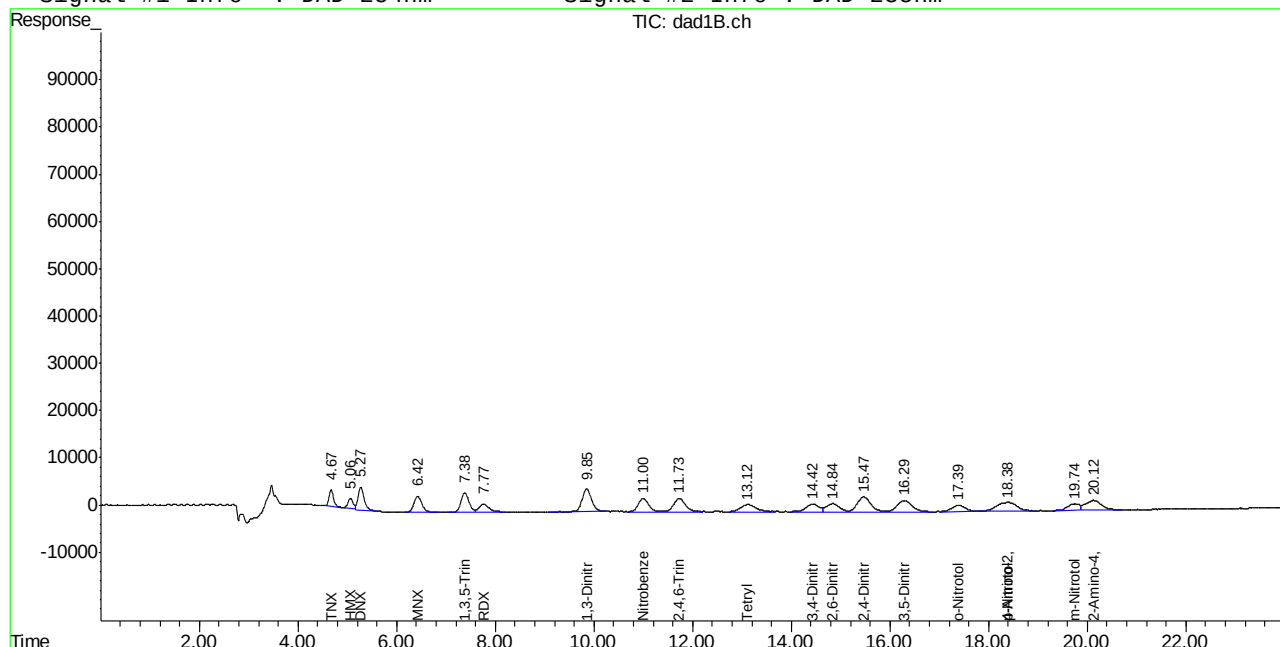
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625699.D GGG3229_013023.M Tue Jan 31 11:32:13 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Page 1 of 1

Sample Number: GGG3229-IC3229 **Method:** SW846 8330B
Lab FileID: GG625699.D **Analyst approved:** 01/31/23 11:38 Fouad Sekkar
Injection Time: 01/30/23 13:08 **Supervisor approved:** 01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.67	Missed peak
HMX	2691-41-0	1	5.06	Poor instrument integration
DNX		1	5.27	Poor instrument integration
DNX		2	5.27	Poor instrument integration
1,3-Dinitrobenzene	99-65-0	2	9.85	Poor instrument integration
2,4,6-Trinitrotoluene	118-96-7	2	11.73	Poor instrument integration
m-Nitrotoluene	99-08-1	2	19.77	Poor instrument integration
PETN	78-11-5	2	22.06	Poor instrument integration

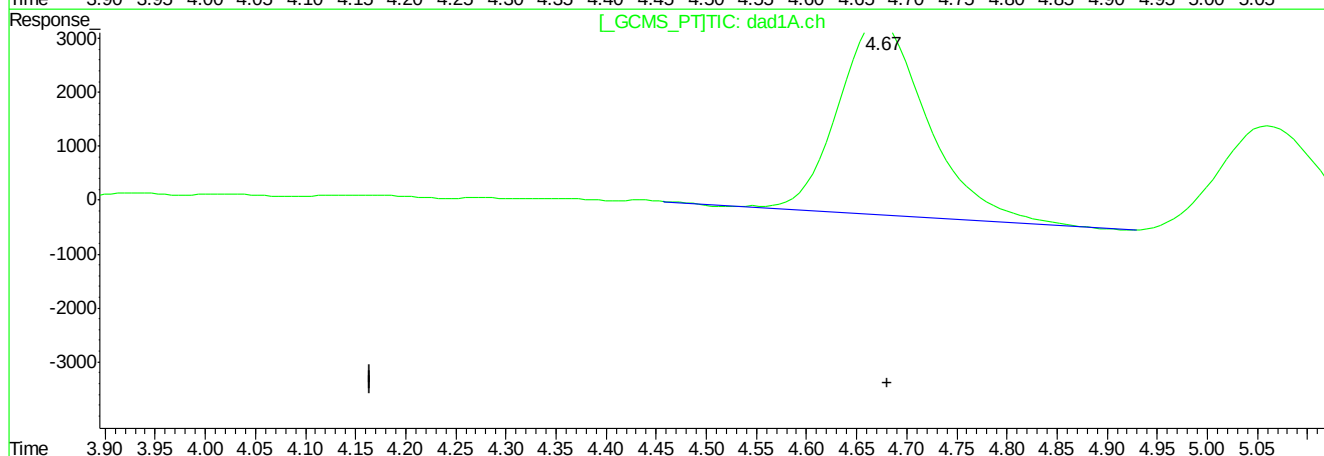
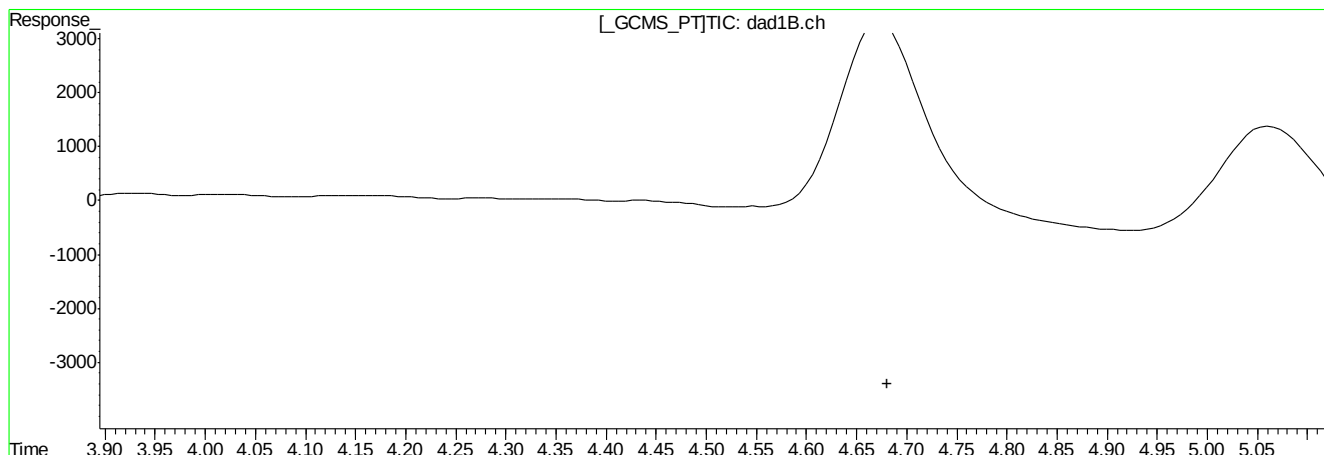
9.5.16.1

9

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.67min 24.932ppb

response 224059

(+) = Expected Retention Time

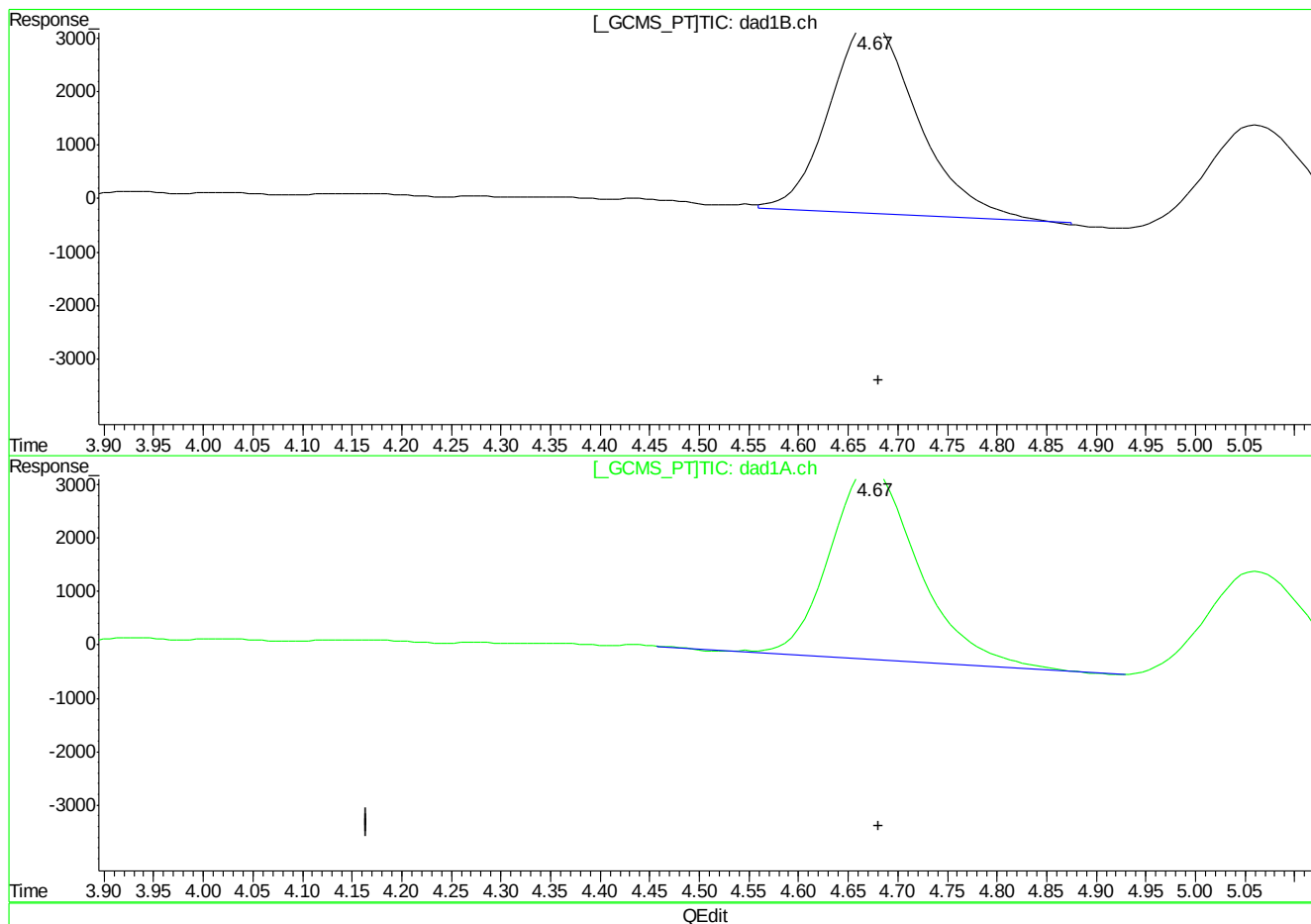
GG625699.D GGG3229_013023.M

Mon Jan 30 15:51:59 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(1) TNX

4.67min 25.213ppb m

response 222830

(1) TNX #2

4.67min 24.932ppb

response 224059

(+) = Expected Retention Time

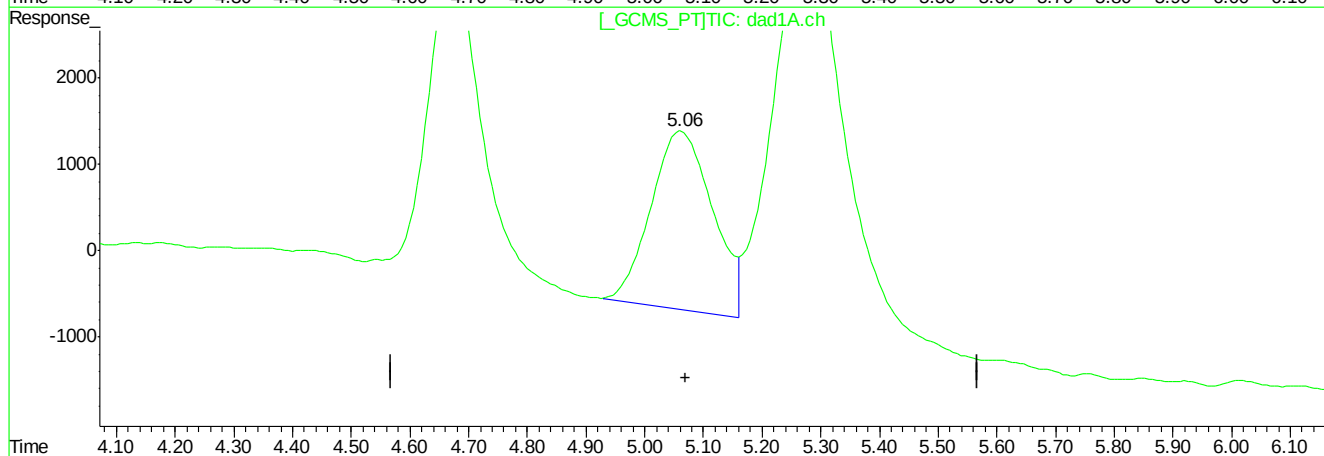
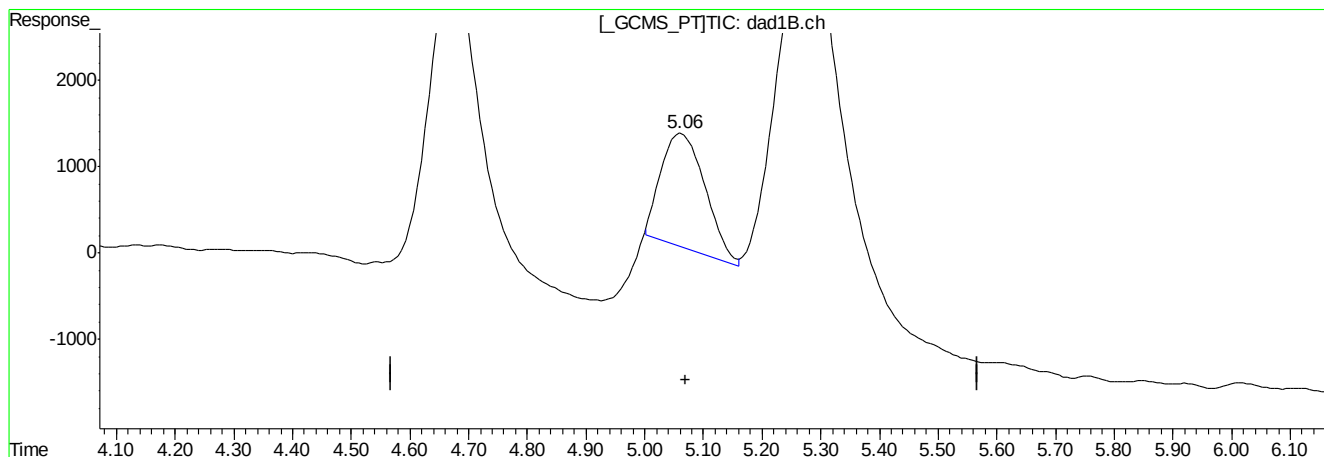
GG625699.D GGG3229_013023.M

Mon Jan 30 15:52:04 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 24.860ppb

response 69229

(2) HMX #2

5.06min 53.911ppb

response 151037

(+) = Expected Retention Time

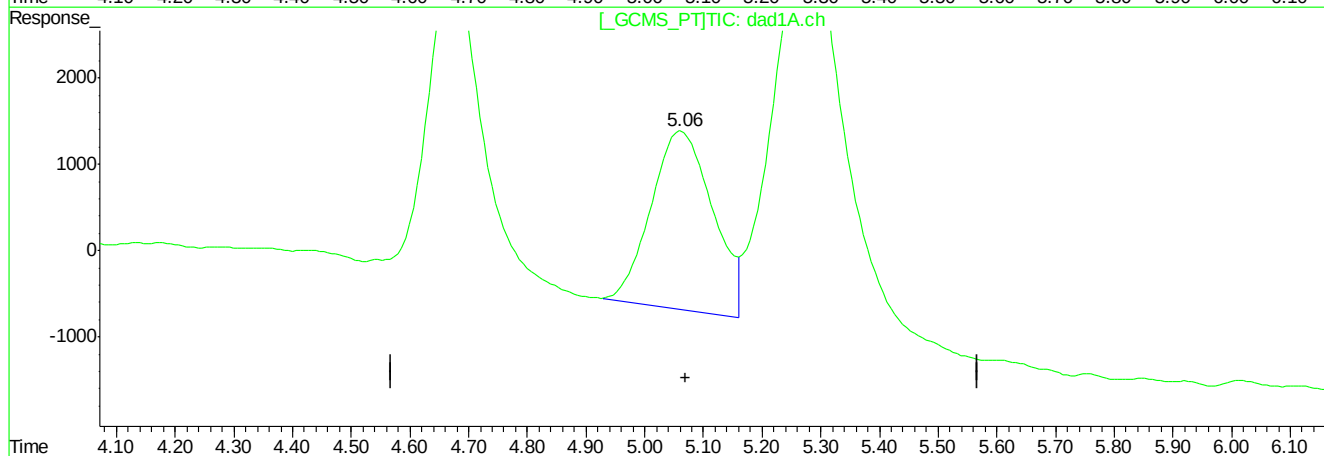
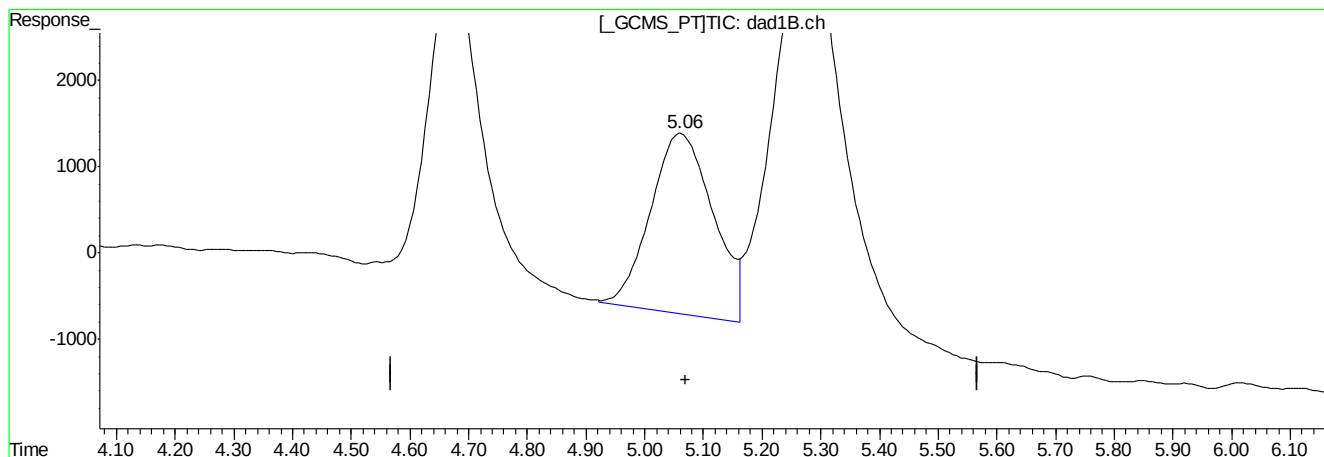
GG625699.D GGG3229_013023.M

Mon Jan 30 15:52:09 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(2) HMX

5.06min 56.160ppb m

response 156394

(2) HMX #2

5.06min 53.911ppb

response 151037

QEdit

(+) = Expected Retention Time

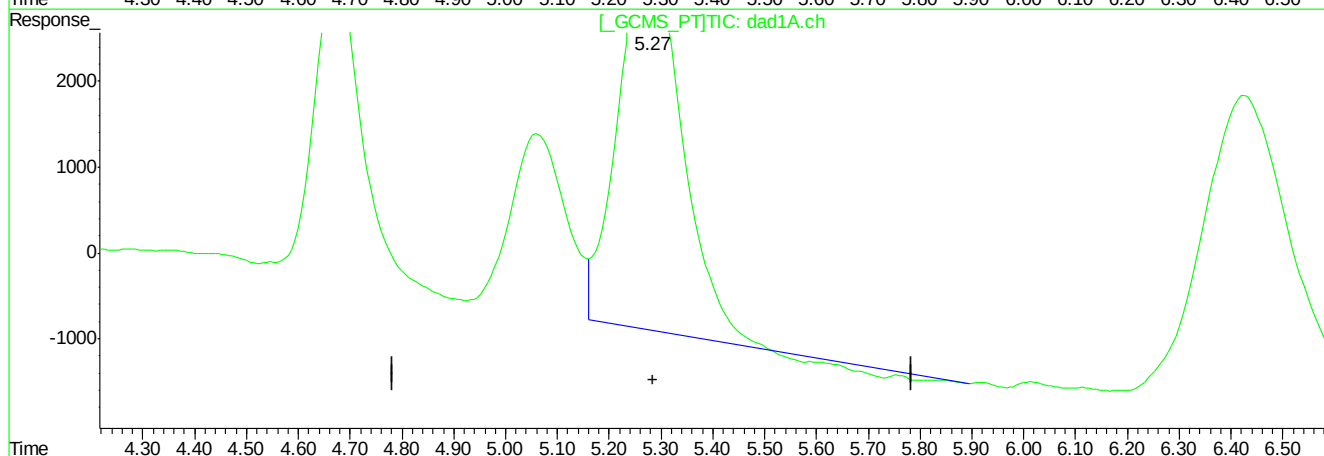
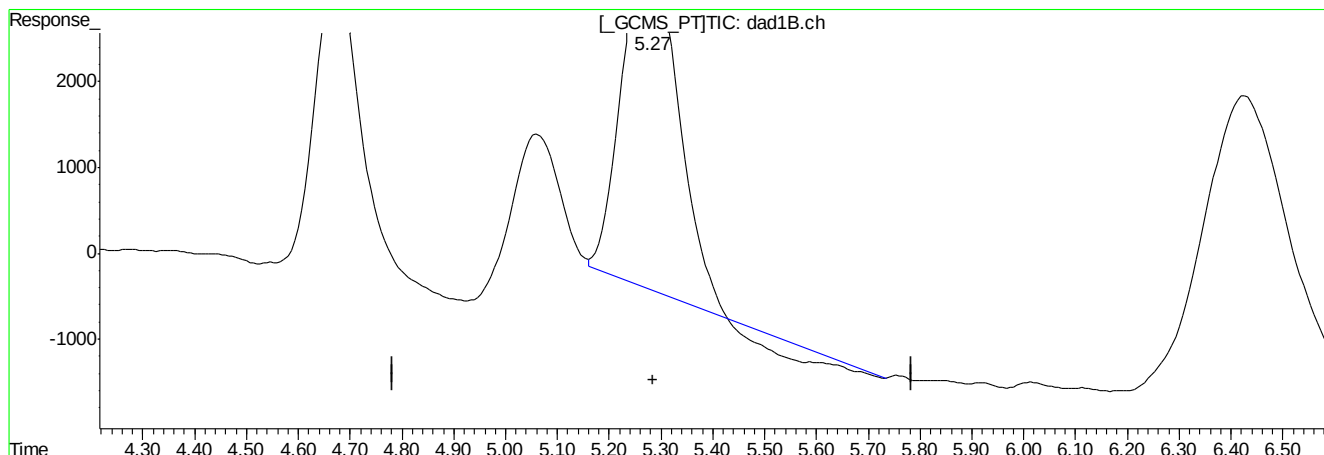
GG625699.D GGG3229_013023.M

Mon Jan 30 15:52:19 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(3) DNX

5.28min 37.798ppb

response 288479

(3) DNX #2

5.28min 48.622ppb

response 376803

(+) = Expected Retention Time

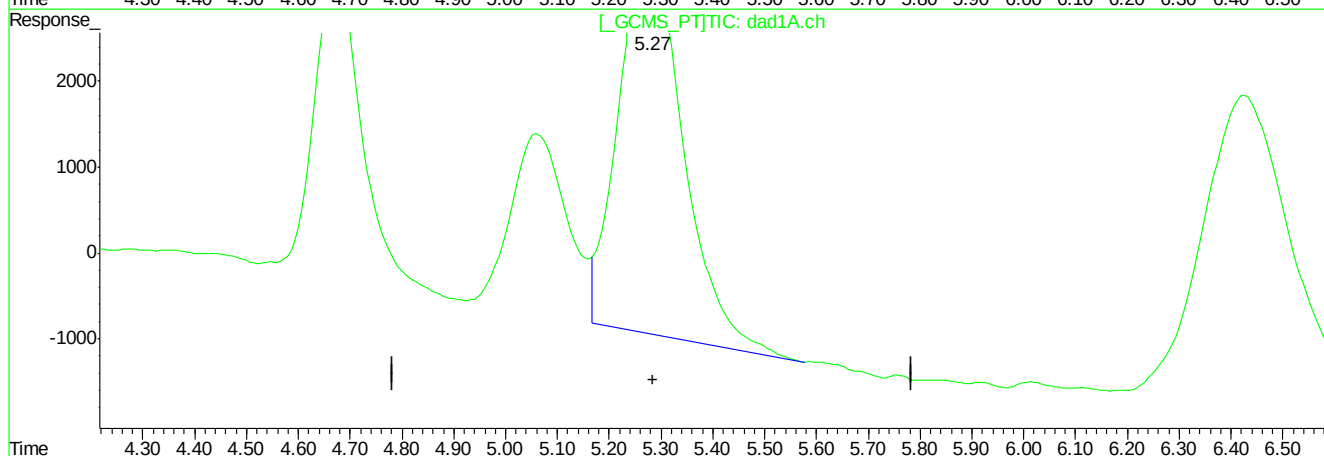
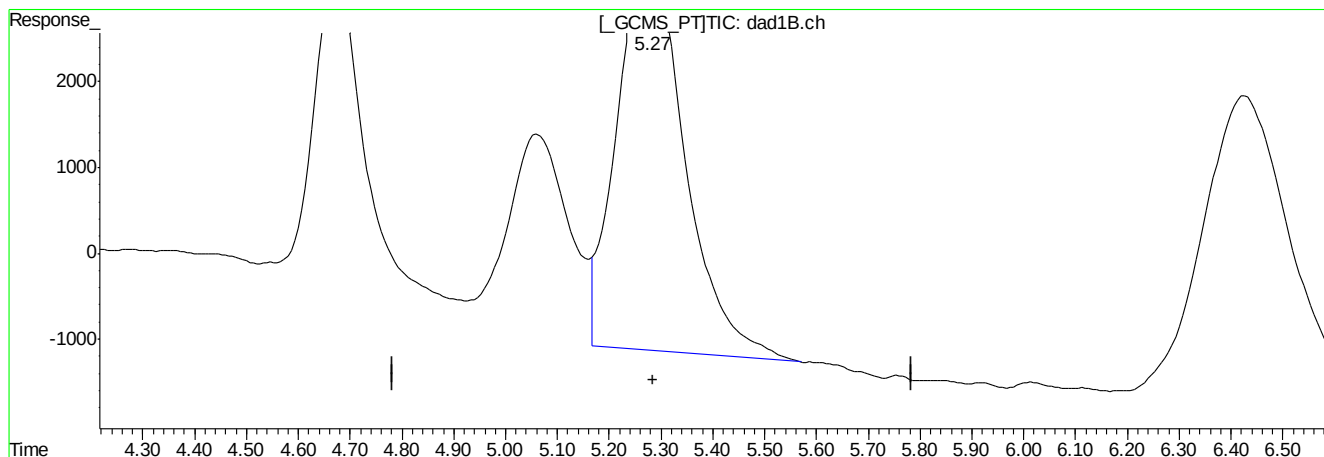
GG625699.D GGG3229_013023.M

Mon Jan 30 15:52:25 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.27min 55.776ppb m

response 425692

(3) DNX #2

5.27min 51.002ppb m

response 395248

(+) = Expected Retention Time

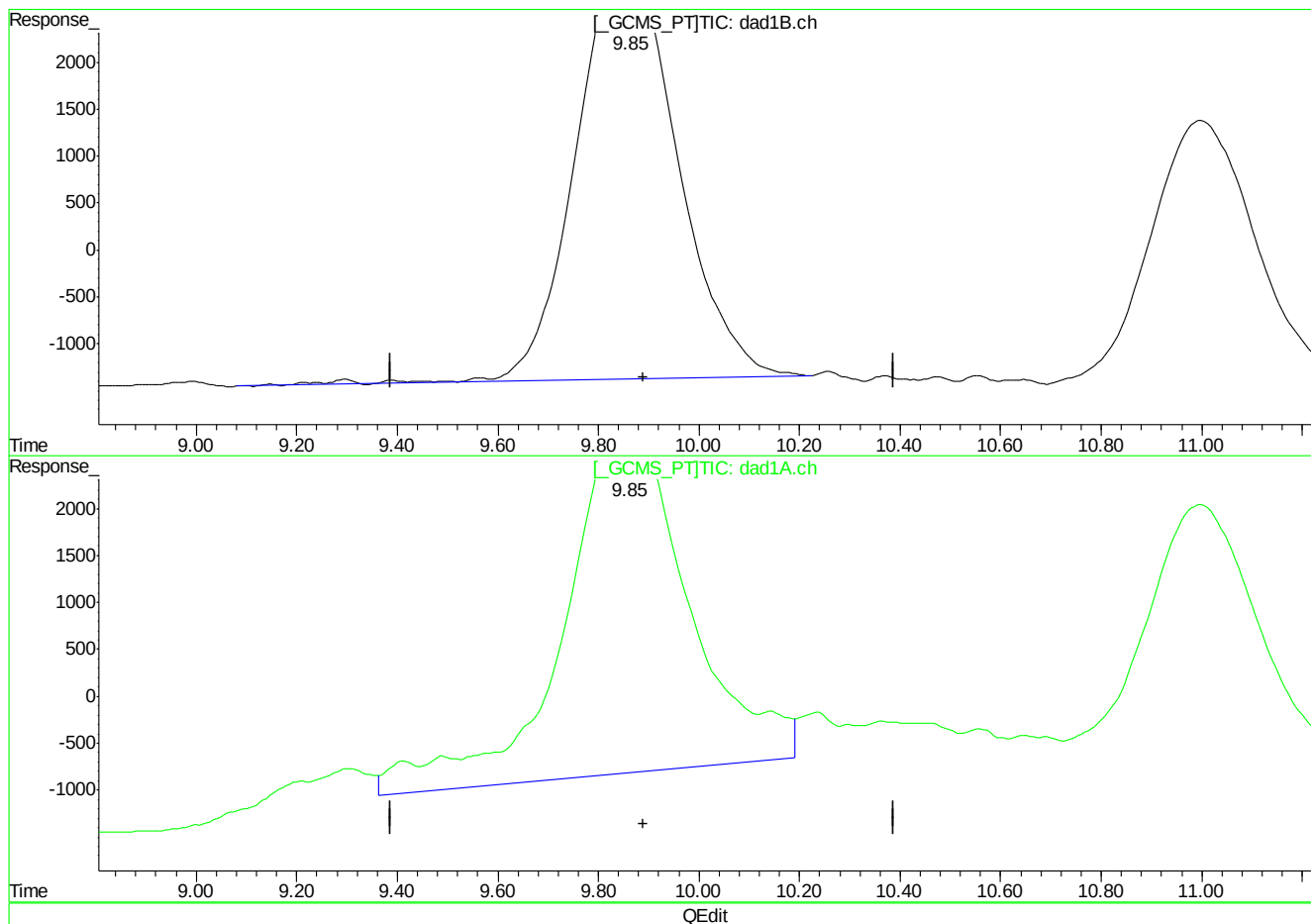
GG625699.D GGG3229_013023.M

Mon Jan 30 15:52:36 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

9.86min 51.422ppb

response 632958

(7) 1,3-Dinitrobenzene #2

9.86min 62.626ppb

response 650208

(+) = Expected Retention Time

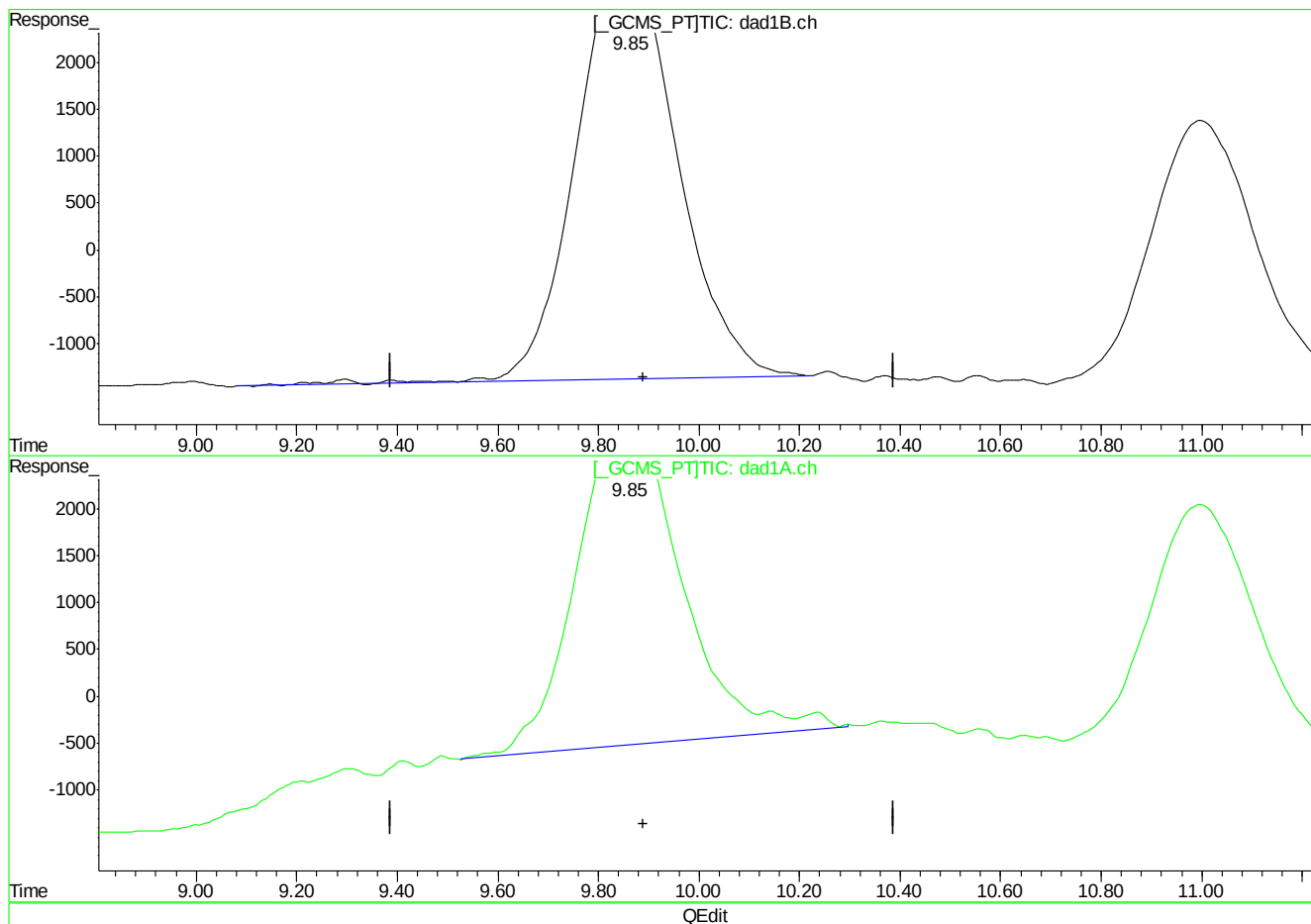
GG625699.D GGG3229_013023.M

Mon Jan 30 15:52:51 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

9.86min 51.422ppb

response 632958

(7) 1,3-Dinitrobenzene #2

9.85min 49.160ppb m

response 510400

(+) = Expected Retention Time

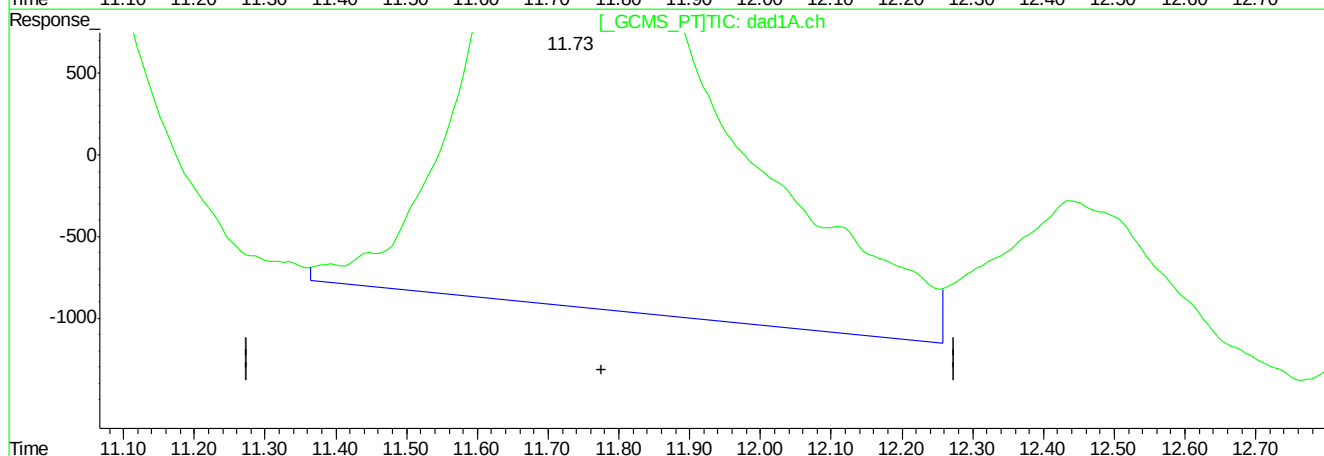
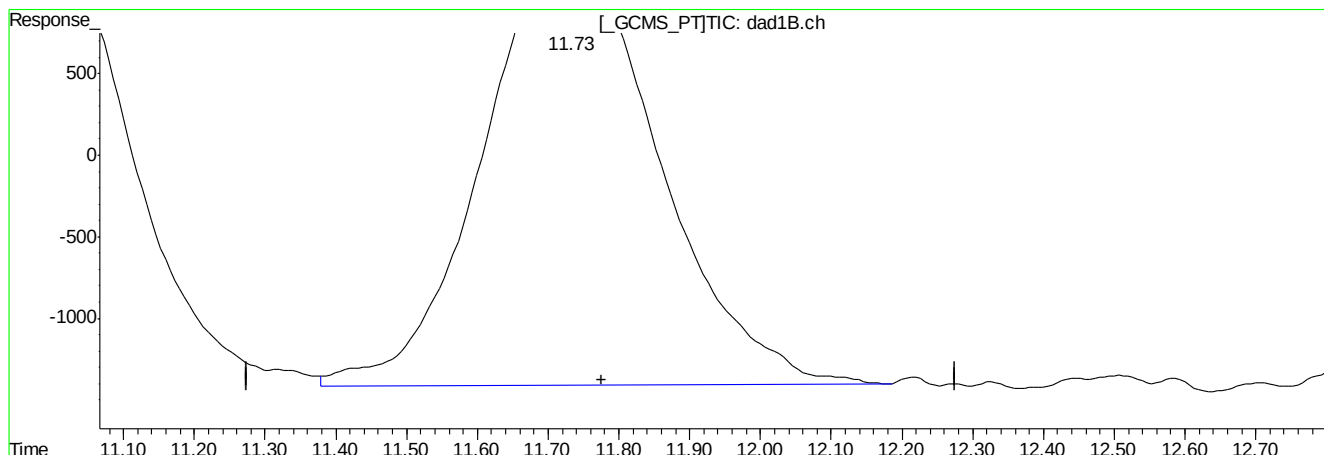
GG625699.D GGG3229_013023.M

Mon Jan 30 15:52:58 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(9) 2,4,6-Trinitrotoluene

11.73min 52.797ppb

response 461928

(9) 2,4,6-Trinitrotoluene #2

11.73min 69.088ppb

response 772683

QEdit

(+) = Expected Retention Time

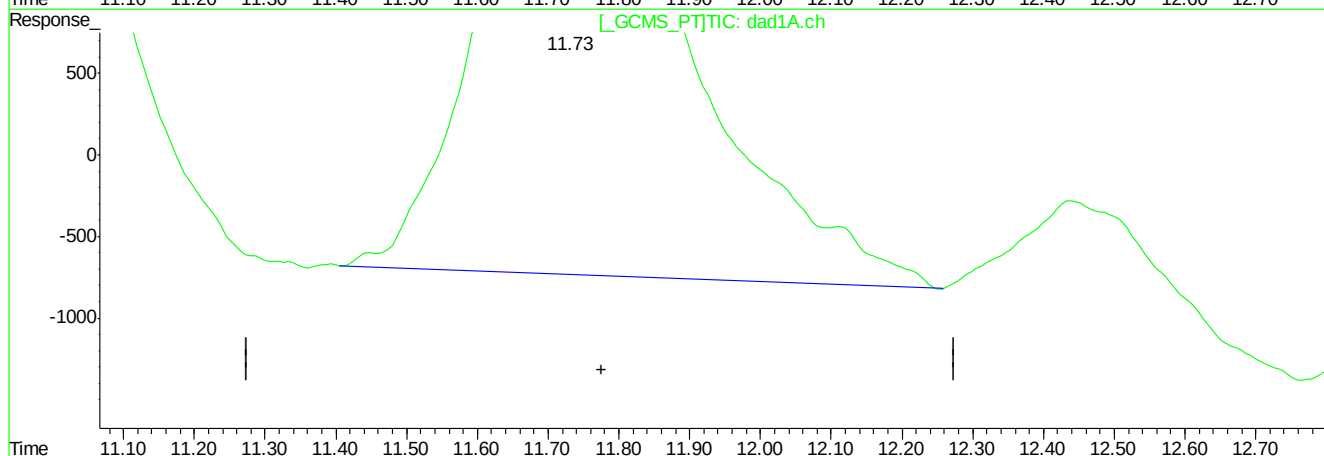
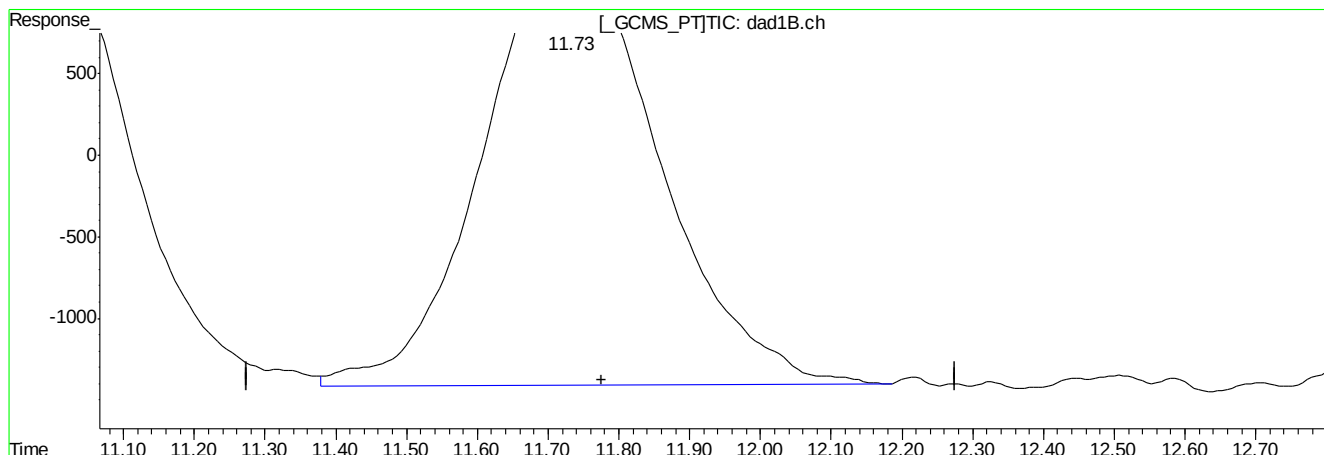
GG625699.D GGG3229_013023.M

Mon Jan 30 15:53:08 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(9) 2,4,6-Trinitrotoluene

11.73min 52.797ppb

response 461928

(9) 2,4,6-Trinitrotoluene #2

11.73min 58.772ppb m

response 657311

(+) = Expected Retention Time

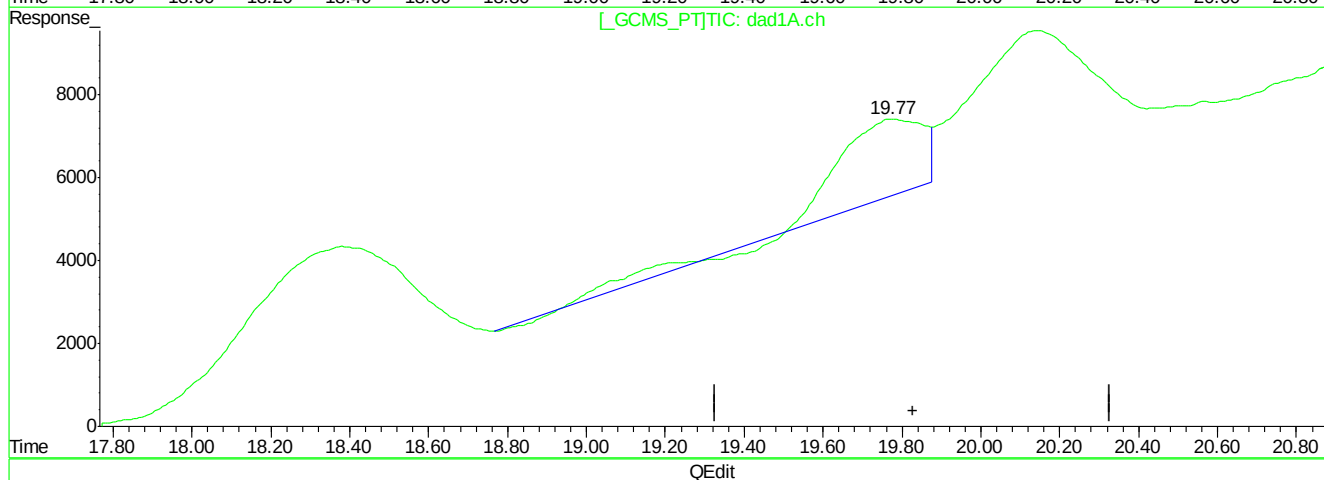
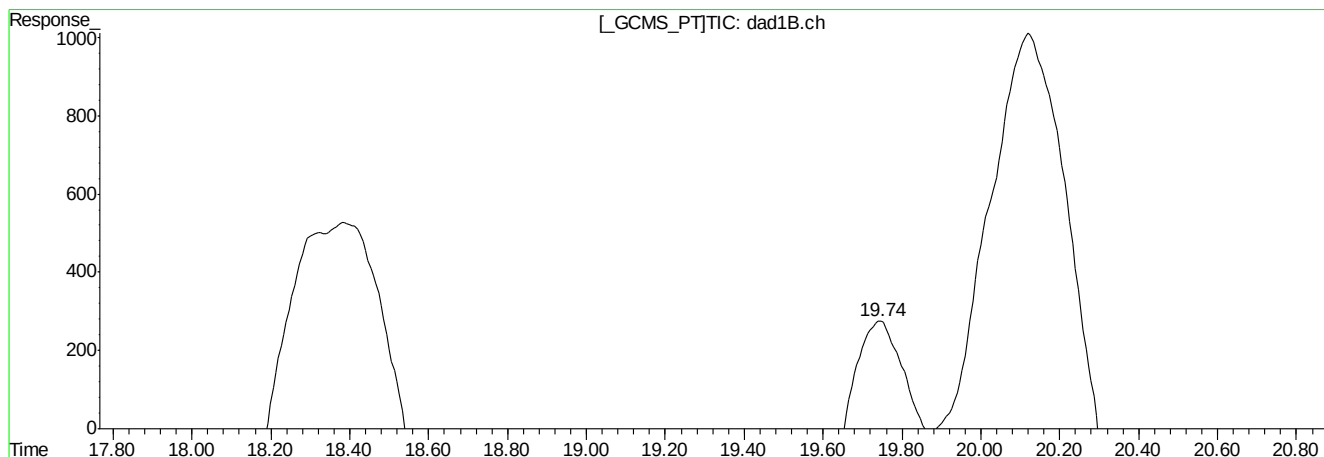
GG625699.D GGG3229_013023.M

Mon Jan 30 15:53:15 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(19) m-Nitrotoluene

19.74min 47.940ppb

response 241465

(19) m-Nitrotoluene #2

19.78min 36.532ppb

response 288596

(+) = Expected Retention Time

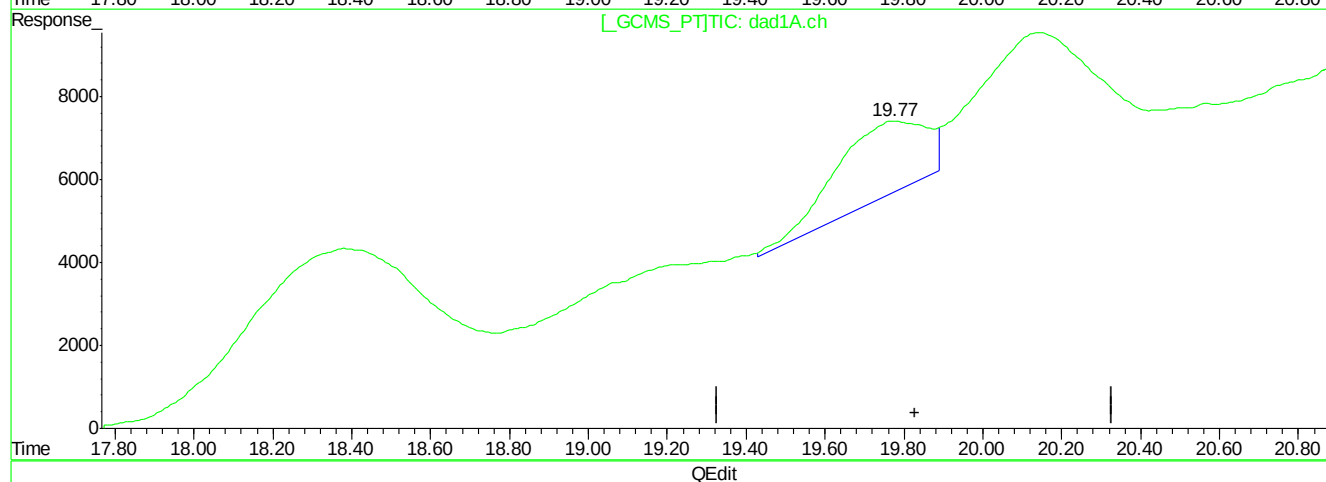
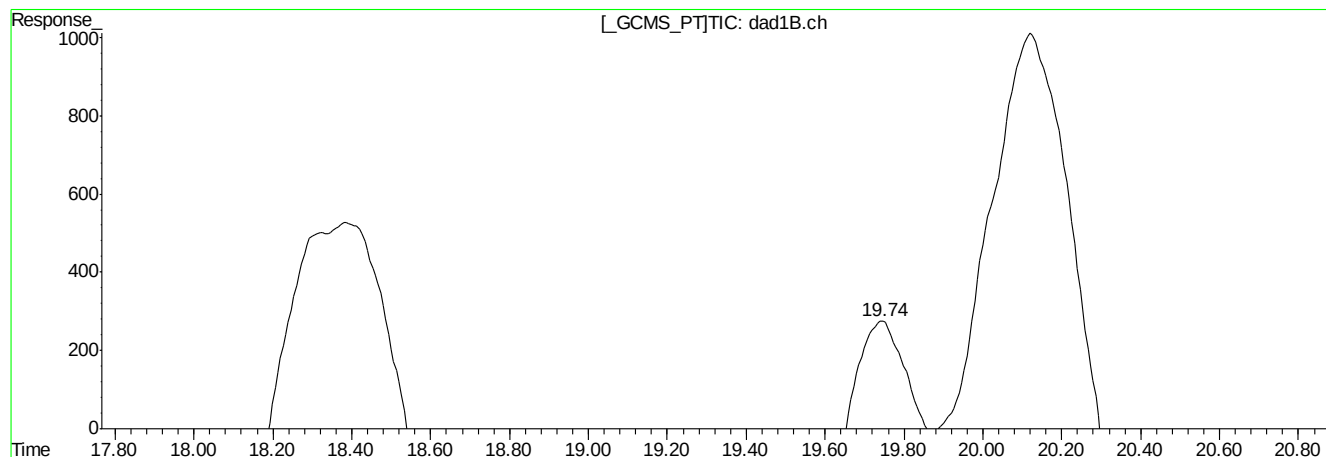
GG625699.D GGG3229_013023.M

Mon Jan 30 15:54:11 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(19) m-Nitrotoluene

19.74min 47.940ppb

response 241465

(19) m-Nitrotoluene #2

19.77min 36.678ppb m

response 289743

(+) = Expected Retention Time

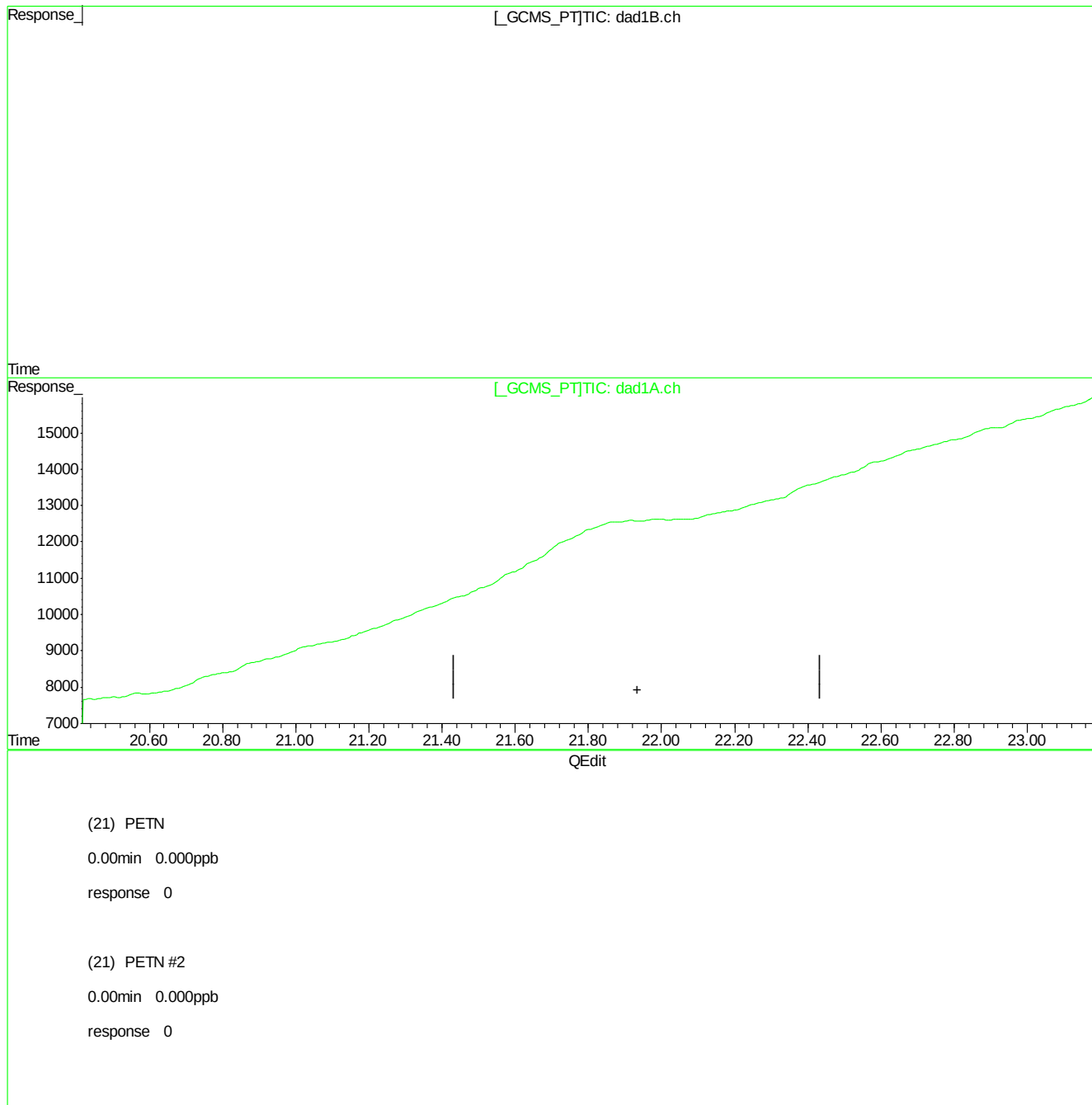
GG625699.D GGG3229_013023.M

Mon Jan 30 15:54:48 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(+) = Expected Retention Time

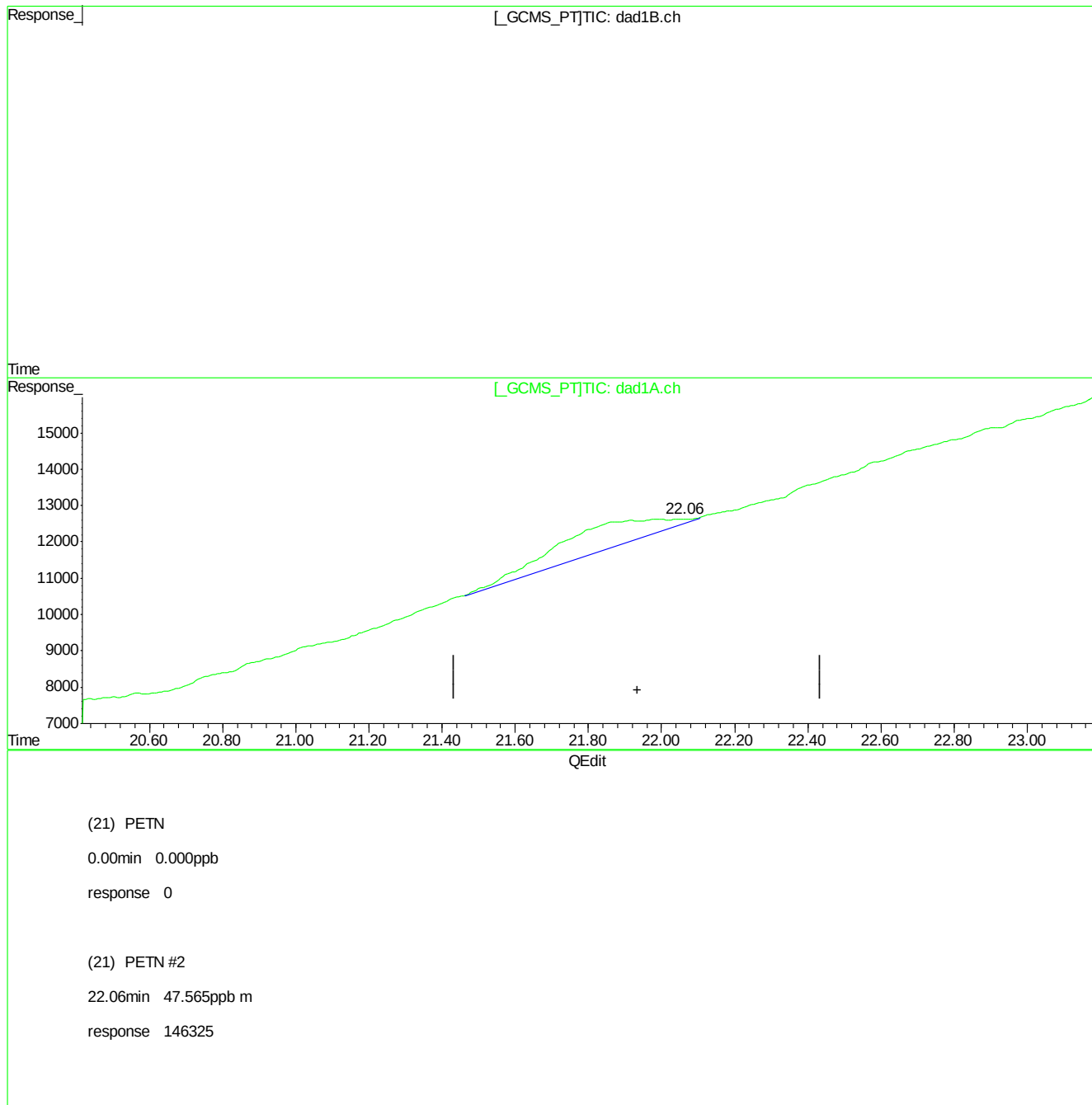
GG625699.D GGG3229_013023.M

Mon Jan 30 15:55:01 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(+) = Expected Retention Time

GG625699.D GGG3229_013023.M

Mon Jan 30 15:55:07 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
 Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
 Sample : ic3229-100 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 30 15:55:42 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Mon Jan 30 12:26:09 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.45	14.44	494507	849644	107.448	92.833
Spiked Amount	500.000	Range	70 - 136	Recovery	=	21.49%#
Target Compounds						
1) TNX	4.67	4.68	369142	373852	41.769m	41.599
2) HMX	5.06	5.07	249203	252329	89.488m	90.066
3) DNx	5.28	5.28	735467	649897	96.363m	83.862
4) MNX	6.44	6.44	668997	661601	100.128	99.023
5) 1,3,5-Trinitrobe	7.39	7.39	780831	783339	87.016	87.019
6) RDX	7.78	7.78	370008	371072	86.692	86.413
7) 1,3-Dinitrobenze	9.87	9.86	1086300	789283	88.252	76.021m
8) Nitrobenzene	11.01	11.01	690640	718398	87.803	99.189m
9) 2,4,6-Trinitroto	11.74	11.74	785664	1186038	89.798	106.047m
10) Nitroglycerin	0.00	12.46	0	244824	N.D.	84.285 #
11) Tetryl	13.13	13.14	571614	925762	82.993	80.700
13) 2,6-Dinitrotolue	14.85	14.86	532079	615399	80.329	64.533
14) 2,4-Dinitrotolue	15.48	15.49	985063	604012	87.175	77.810
15) 3,5-Dinitroanili	16.31	16.32	854062	1522831	90.616	98.373
16) o-Nitrotoluene	17.39	17.39	430556	650882	83.528	90.367
17) p-Nitrotoluene	18.39	18.39	903288	1622293	178.105	185.523
18) 4-Amino-2,6-Dini	18.39	18.39	903288	1622293	181.549	186.653
19) m-Nitrotoluene	19.76	19.76	463315	674352	91.985	85.364m
20) 2-Amino-4,6-Dini	20.17	20.18	770374	1136522	92.730	98.882
21) PETN	0.00	21.88	0	443070	N.D.	144.027m#

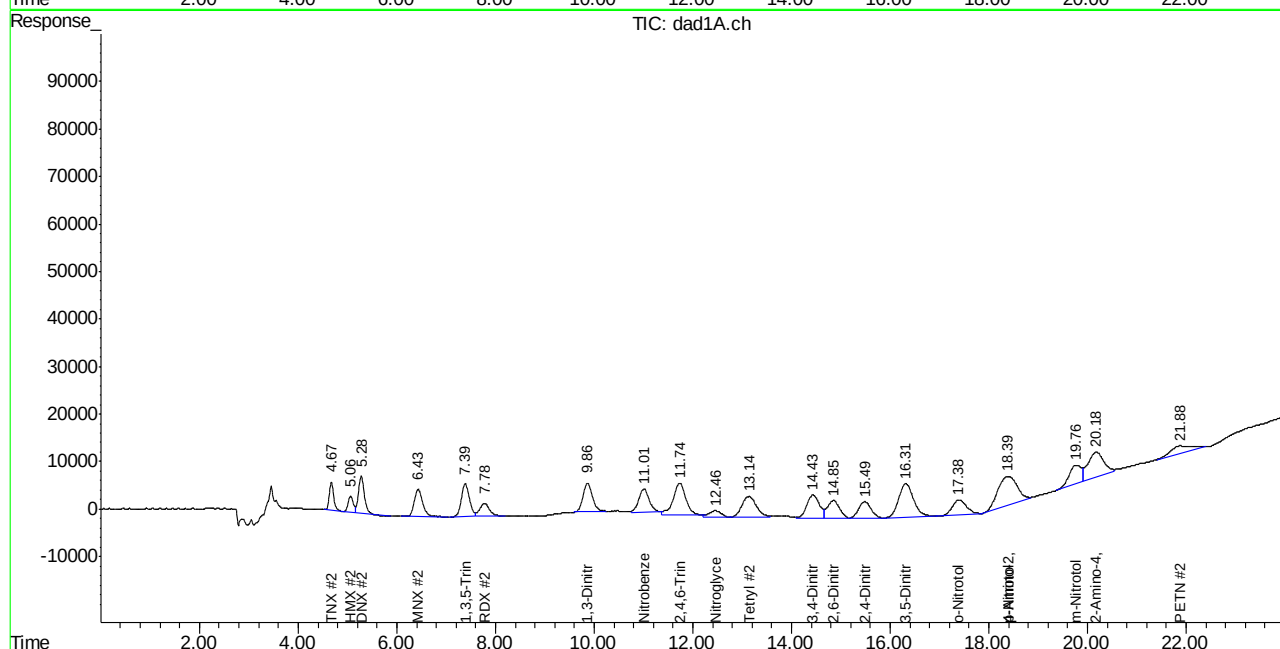
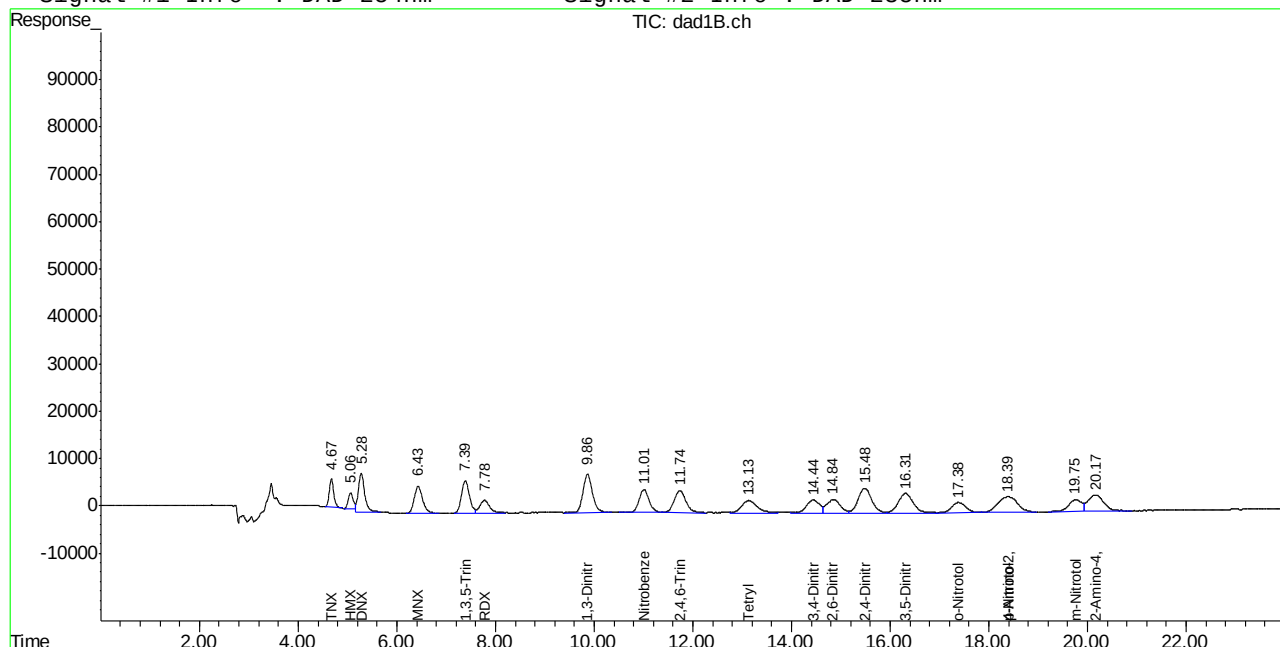
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625700.D GGG3229_013023.M Tue Jan 31 11:32:14 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:58 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Page 1 of 1

Sample Number: GGG3229-IC3229 **Method:** SW846 8330B
Lab FileID: GG625700.D **Analyst approved:** 01/31/23 11:38 Fouad Sekkar
Injection Time: 01/30/23 13:40 **Supervisor approved:** 01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.67	Missed peak
HMX	2691-41-0	1	5.06	Poor instrument integration
DNX		1	5.28	Poor instrument integration
1,3-Dinitrobenzene	99-65-0	2	9.86	Poor instrument integration
Nitrobenzene	98-95-3	2	11.01	Poor instrument integration
2,4,6-Trinitrotoluene	118-96-7	2	11.74	Poor instrument integration
m-Nitrotoluene	99-08-1	2	19.76	Poor instrument integration
PETN	78-11-5	2	21.88	Poor instrument integration

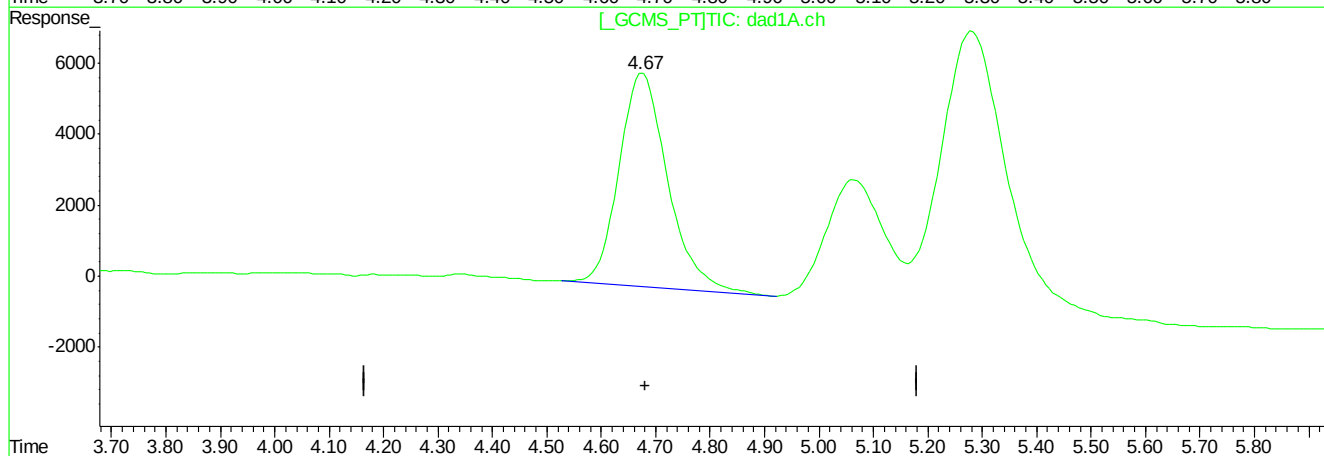
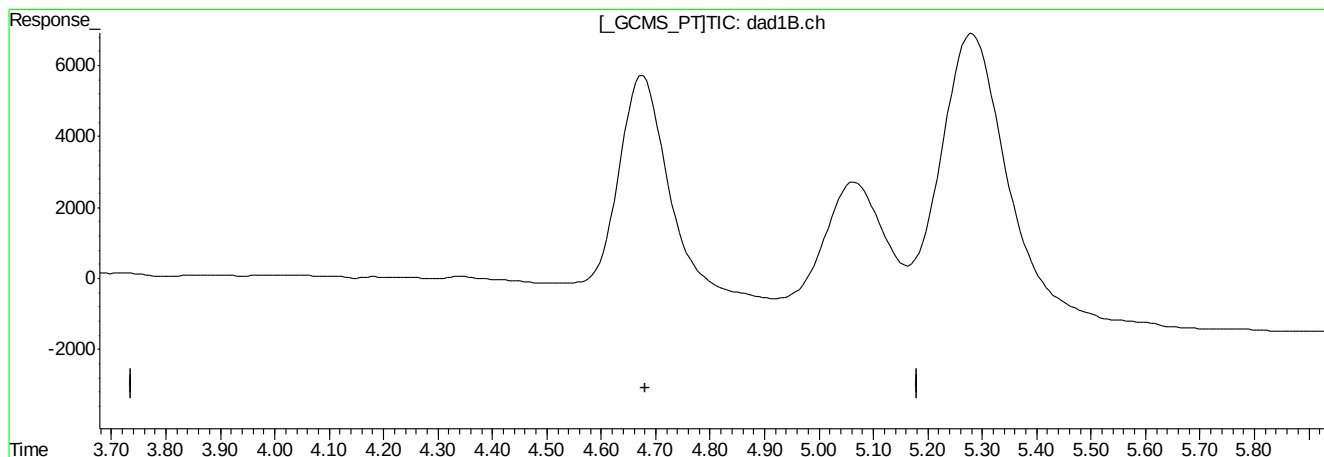
9.5.17.1

9

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.68min 41.599ppb

response 373852

(+) = Expected Retention Time

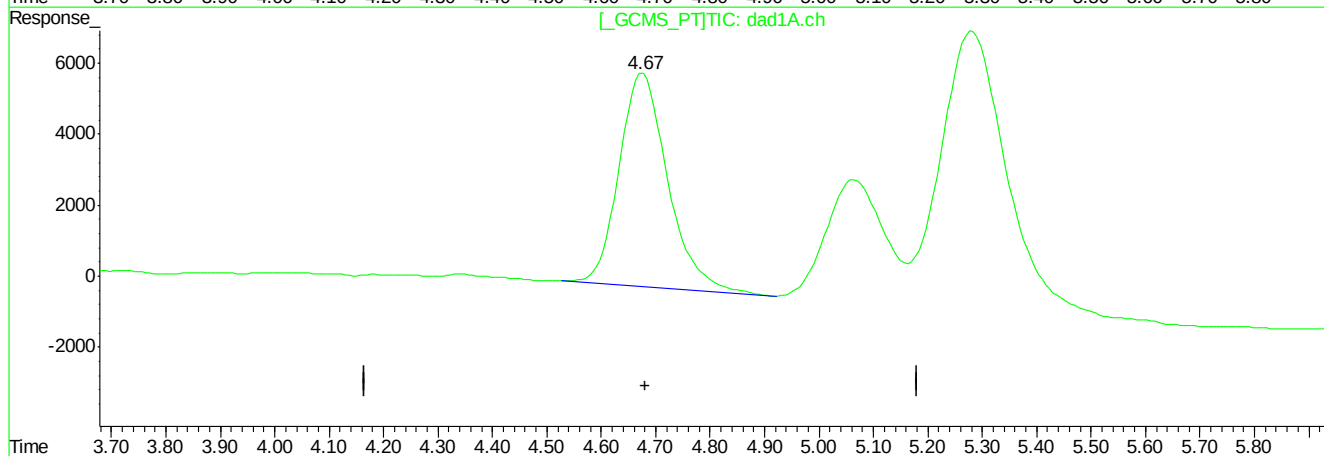
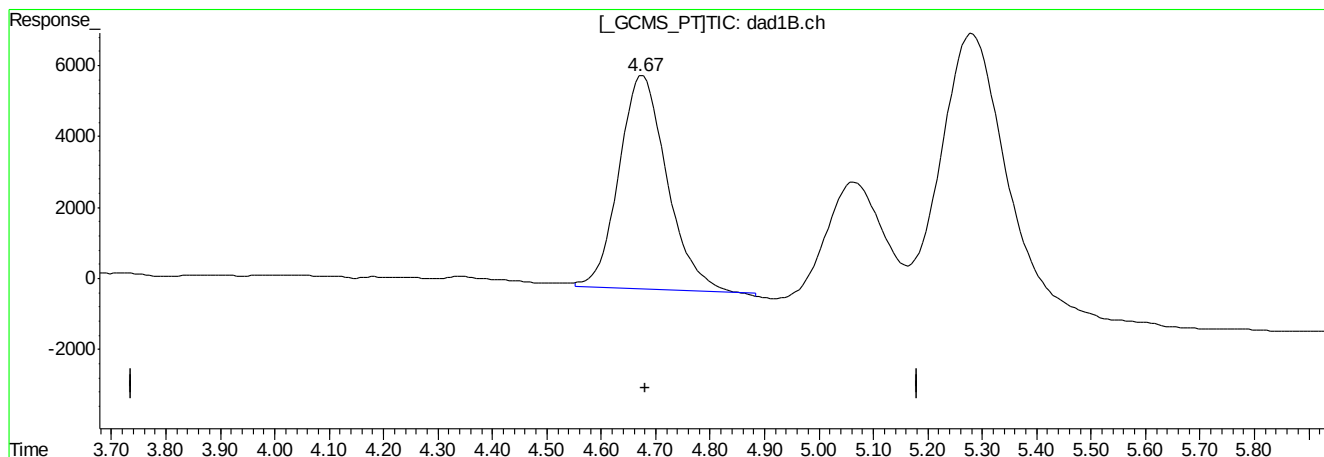
GG625700.D GGG3229_013023.M

Mon Jan 30 15:55:50 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

4.67min 41.769ppb m

response 369142

(1) TNX #2

4.68min 41.599ppb

response 373852

(+) = Expected Retention Time

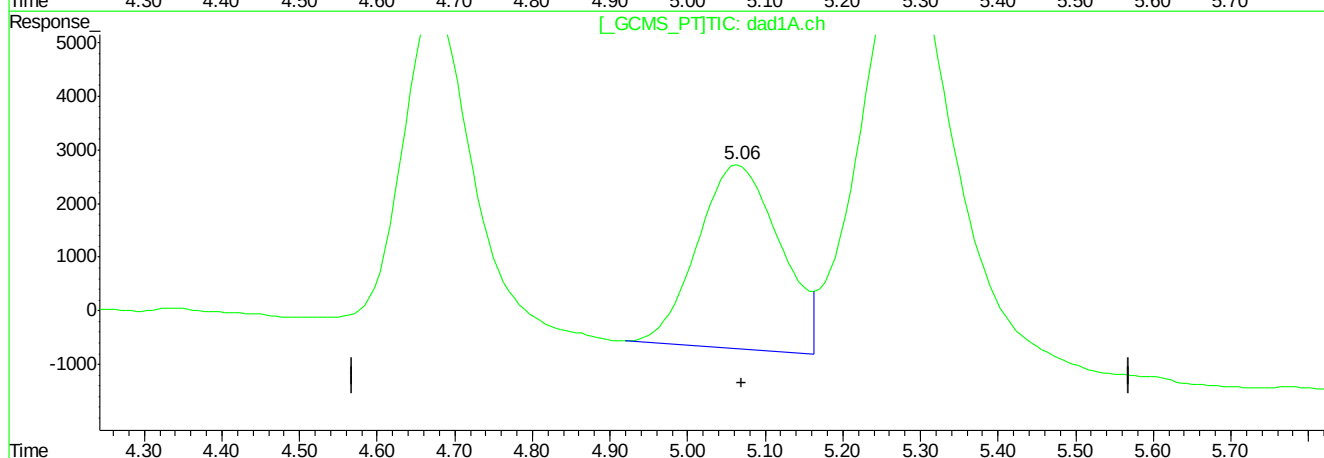
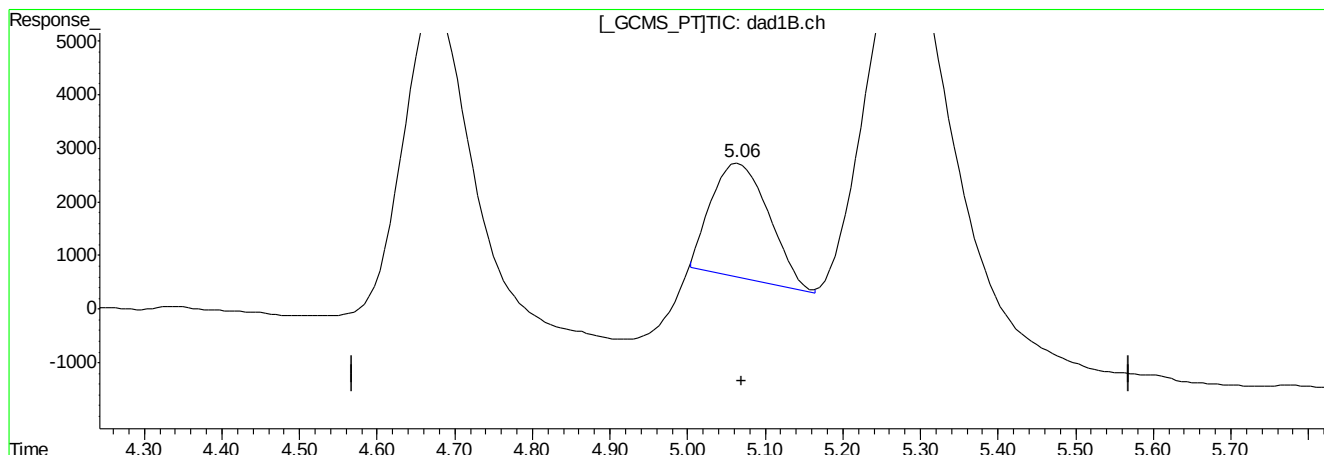
GG625700.D GGG3229_013023.M

Mon Jan 30 15:55:58 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 40.074ppb

response 111596

(2) HMX #2

5.07min 90.066ppb

response 252329

(+) = Expected Retention Time

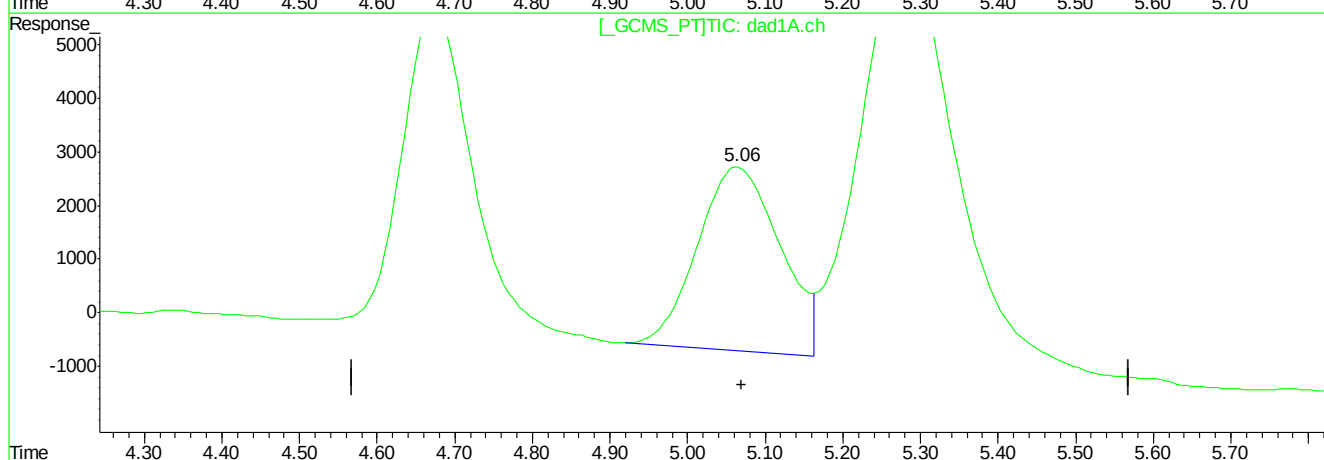
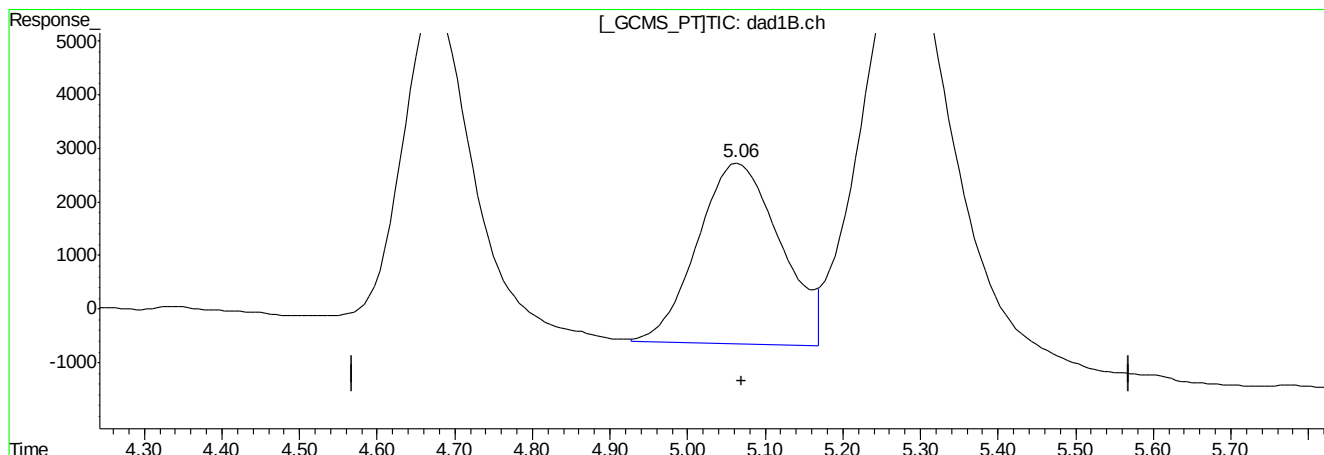
GG625700.D GGG3229_013023.M

Mon Jan 30 15:56:03 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 89.488ppb m

response 249203

(2) HMX #2

5.07min 90.066ppb

response 252329

(+) = Expected Retention Time

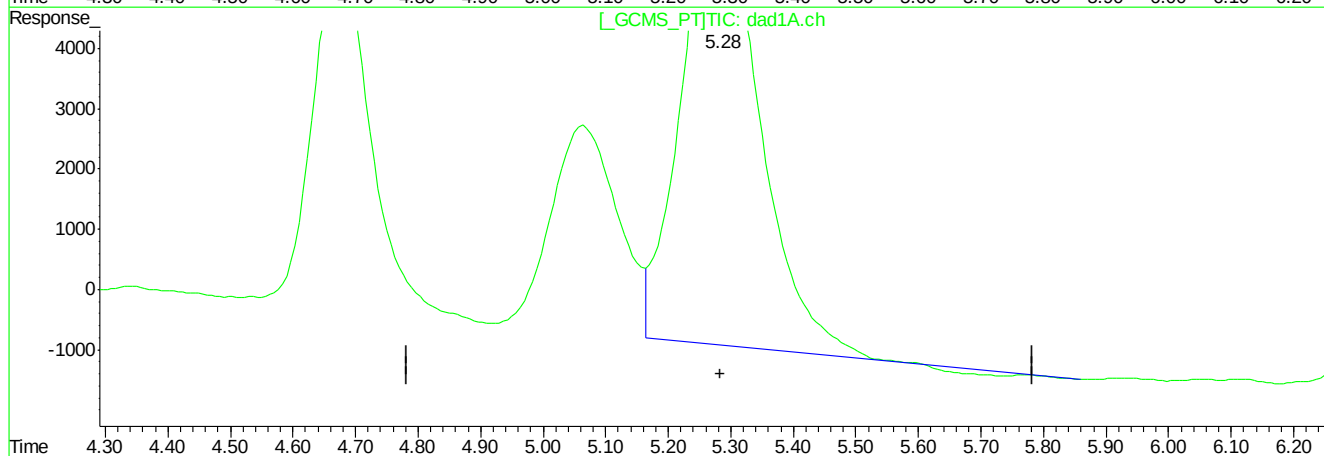
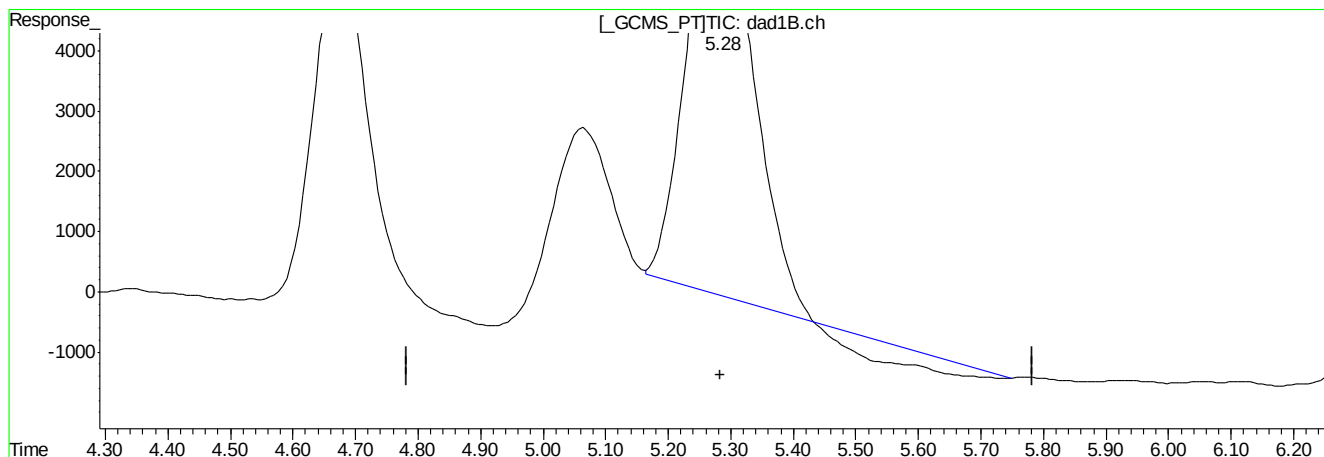
GG625700.D GGG3229_013023.M

Mon Jan 30 15:56:09 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.28min 61.159ppb

response 466779

(3) DNX #2

5.28min 83.862ppb

response 649897

(+) = Expected Retention Time

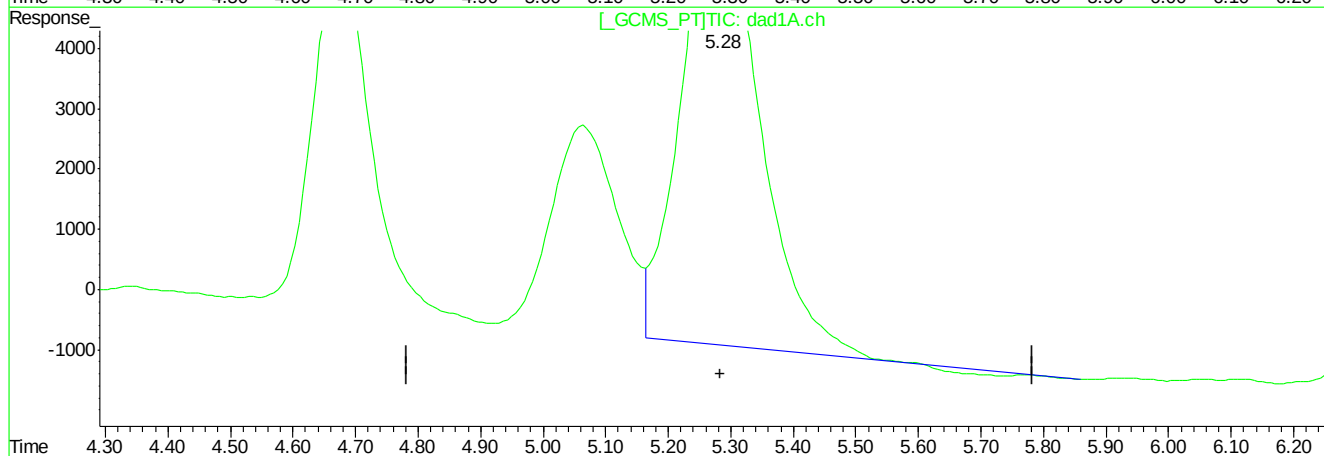
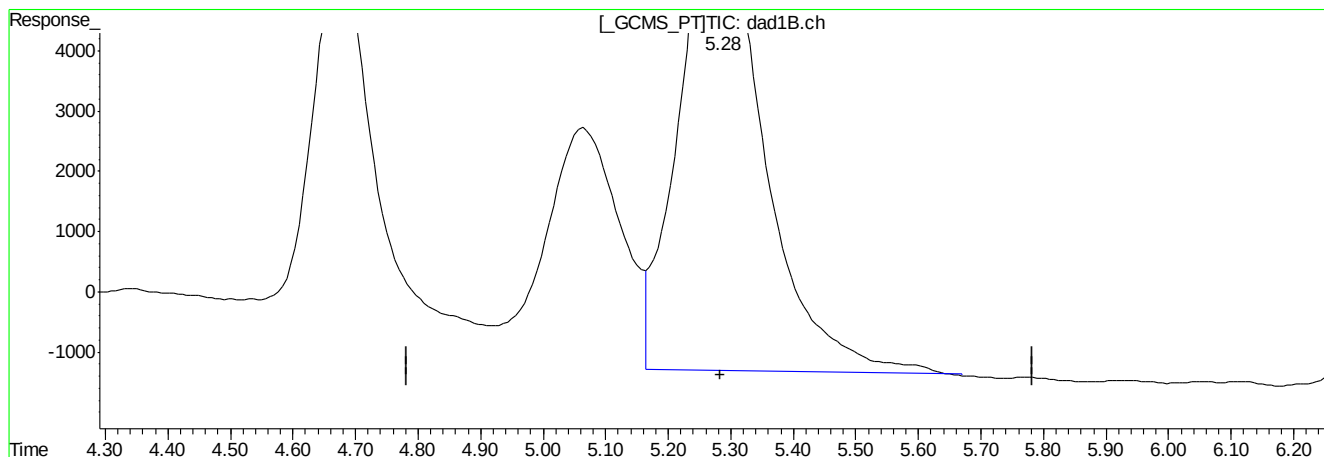
GG625700.D GGG3229_013023.M

Mon Jan 30 15:56:15 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.28min 96.363ppb m

response 735467

(3) DNX #2

5.28min 83.862ppb

response 649897

(+) = Expected Retention Time

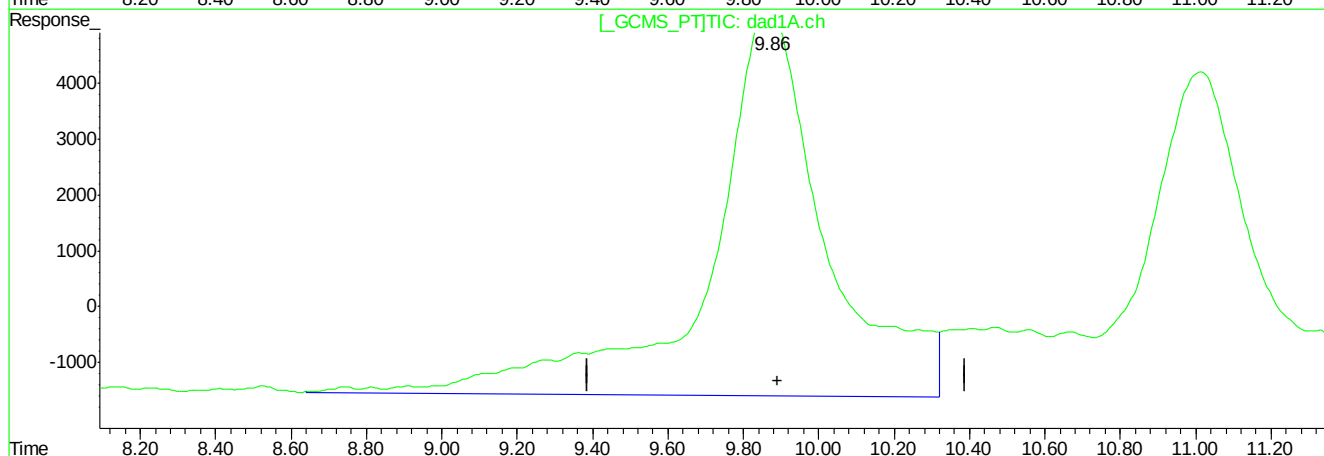
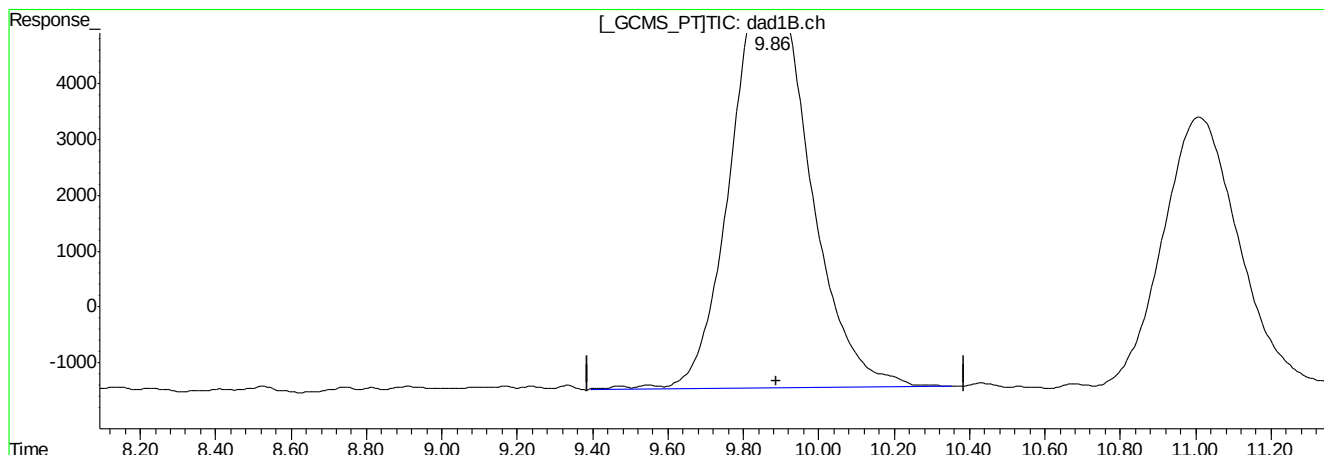
GG625700.D GGG3229_013023.M

Mon Jan 30 15:56:20 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

9.87min 88.252ppb

response 1086300

(7) 1,3-Dinitrobenzene #2

9.87min 142.689ppb

response 1481464

QEdit

(+) = Expected Retention Time

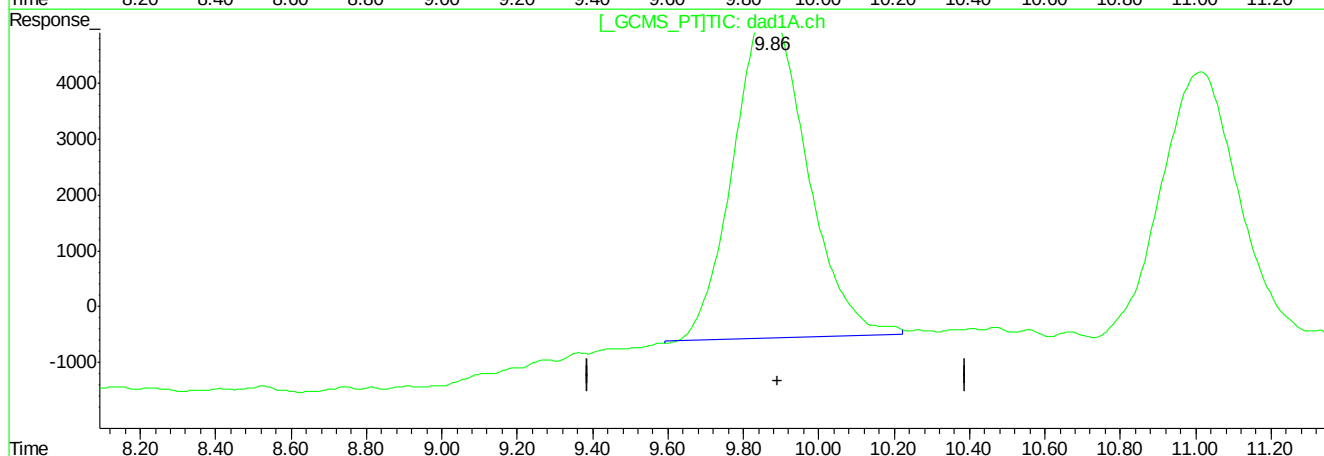
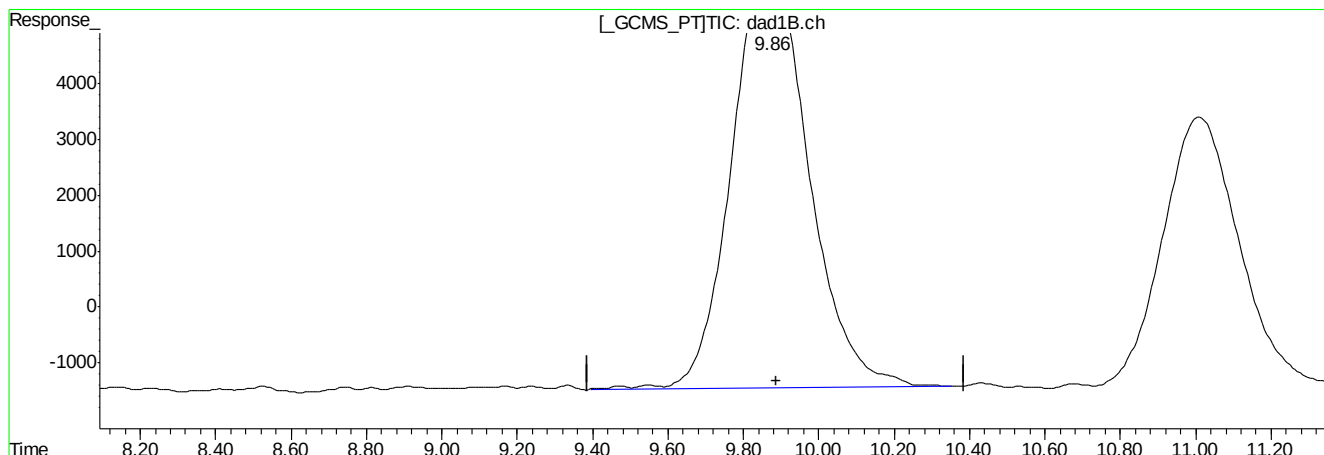
GG625700.D GGG3229_013023.M

Mon Jan 30 15:56:35 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

9.87min 88.252ppb

response 1086300

(7) 1,3-Dinitrobenzene #2

9.86min 76.021ppb m

response 789283

QEdit

(+) = Expected Retention Time

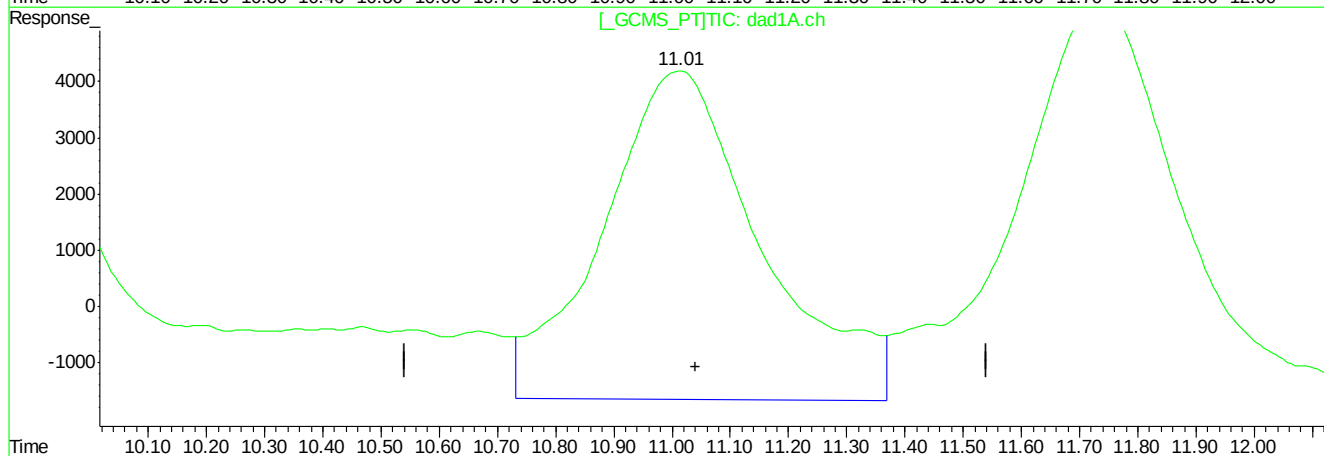
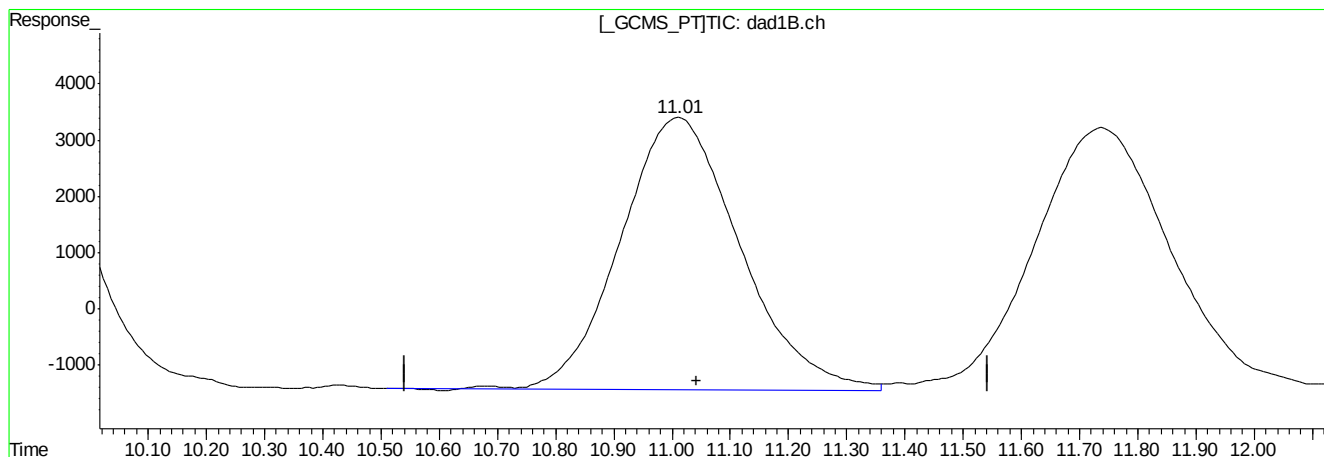
GG625700.D GGG3229_013023.M

Mon Jan 30 15:56:41 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene

11.01min 87.803ppb

response 690640

(8) Nitrobenzene #2

11.01min 152.884ppb

response 1107294

(+) = Expected Retention Time

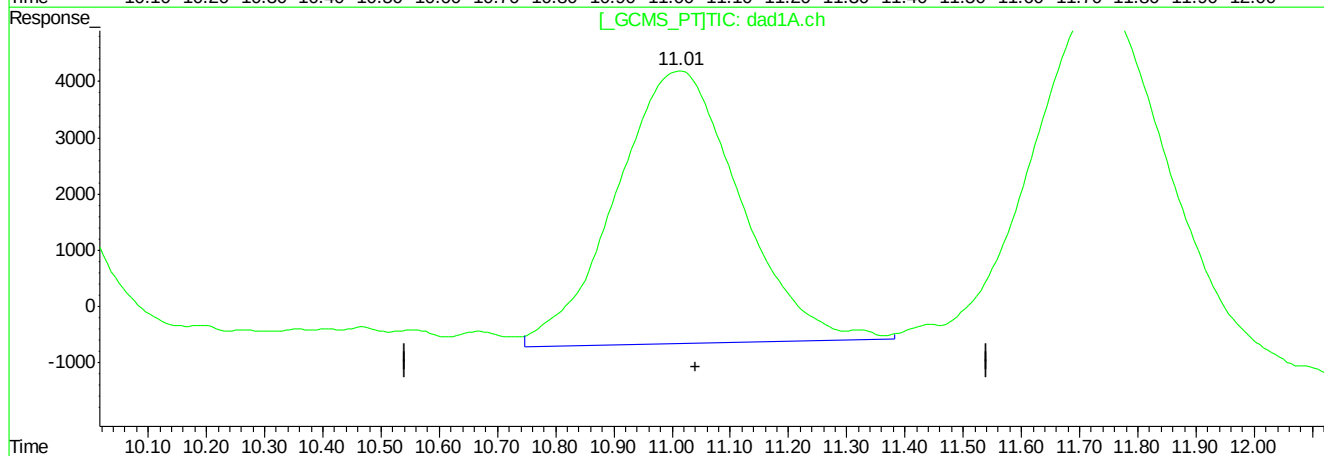
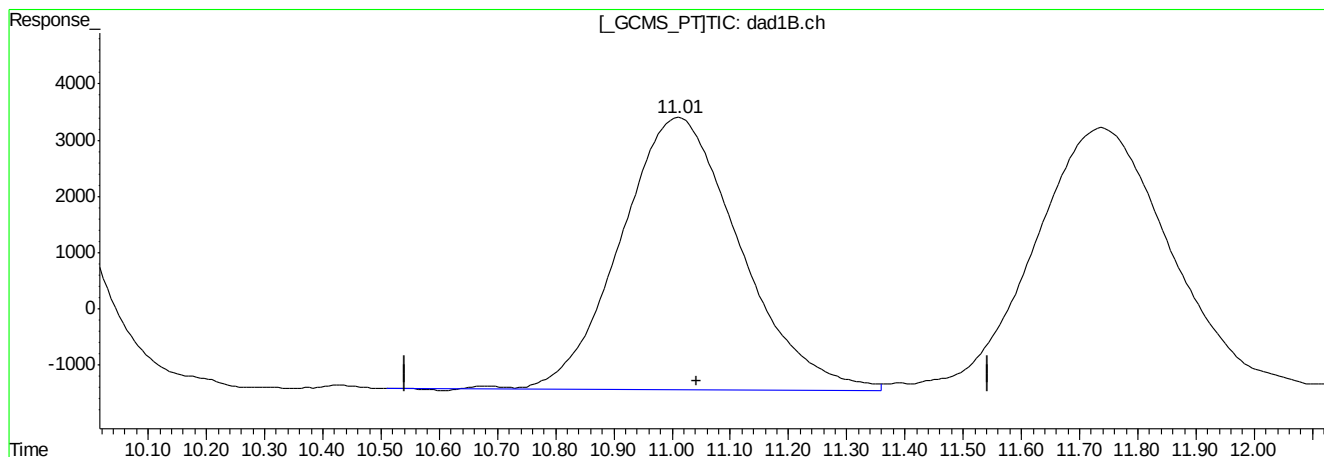
GG625700.D GGG3229_013023.M

Mon Jan 30 15:56:51 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene

11.01min 87.803ppb

response 690640

(8) Nitrobenzene #2

11.01min 99.189ppb m

response 718398

(+) = Expected Retention Time

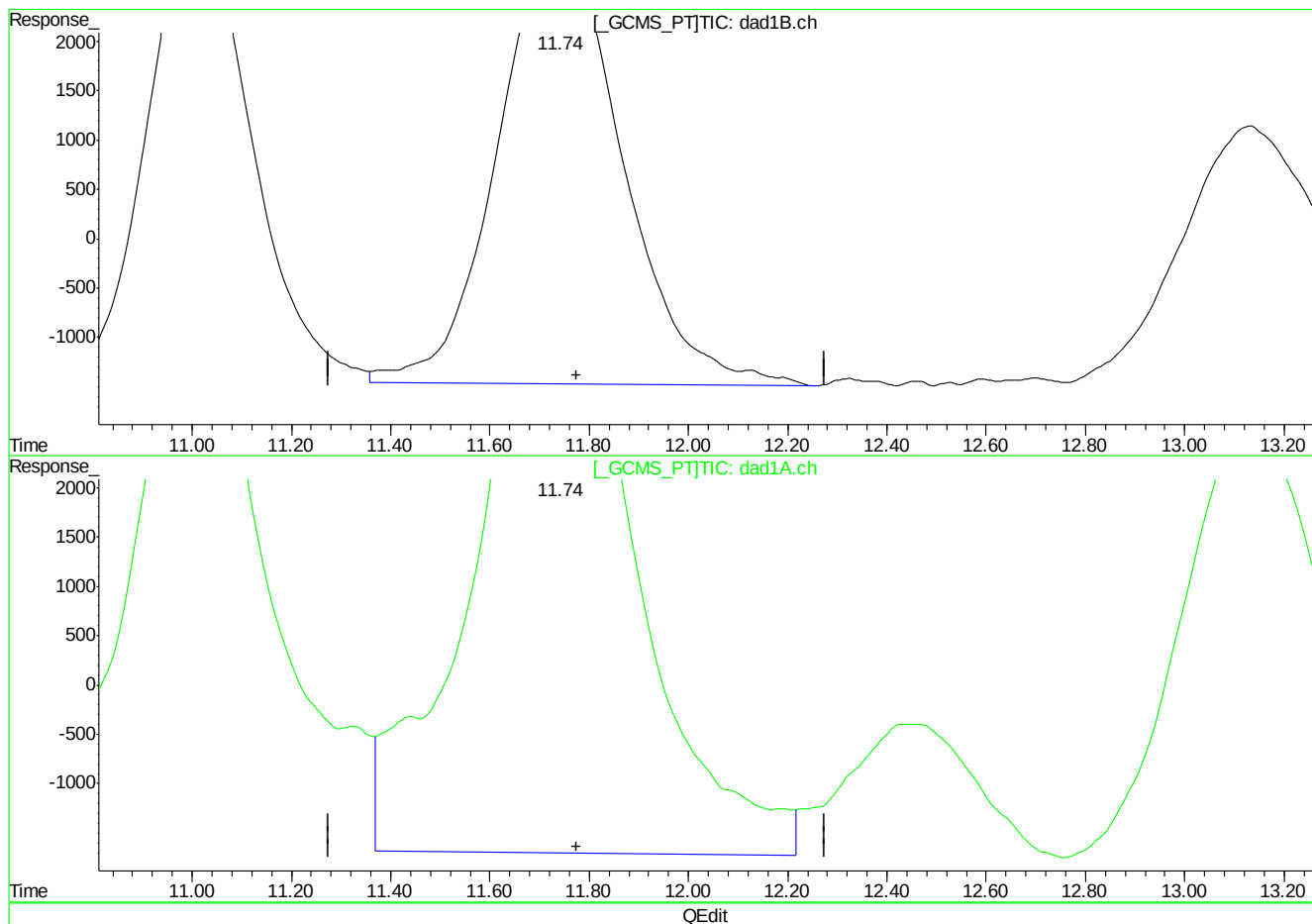
GG625700.D GGG3229_013023.M

Mon Jan 30 15:56:58 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(9) 2,4,6-Trinitrotoluene

11.74min 89.798ppb

response 785664

(9) 2,4,6-Trinitrotoluene #2

11.74min 128.757ppb

response 1440020

(+) = Expected Retention Time

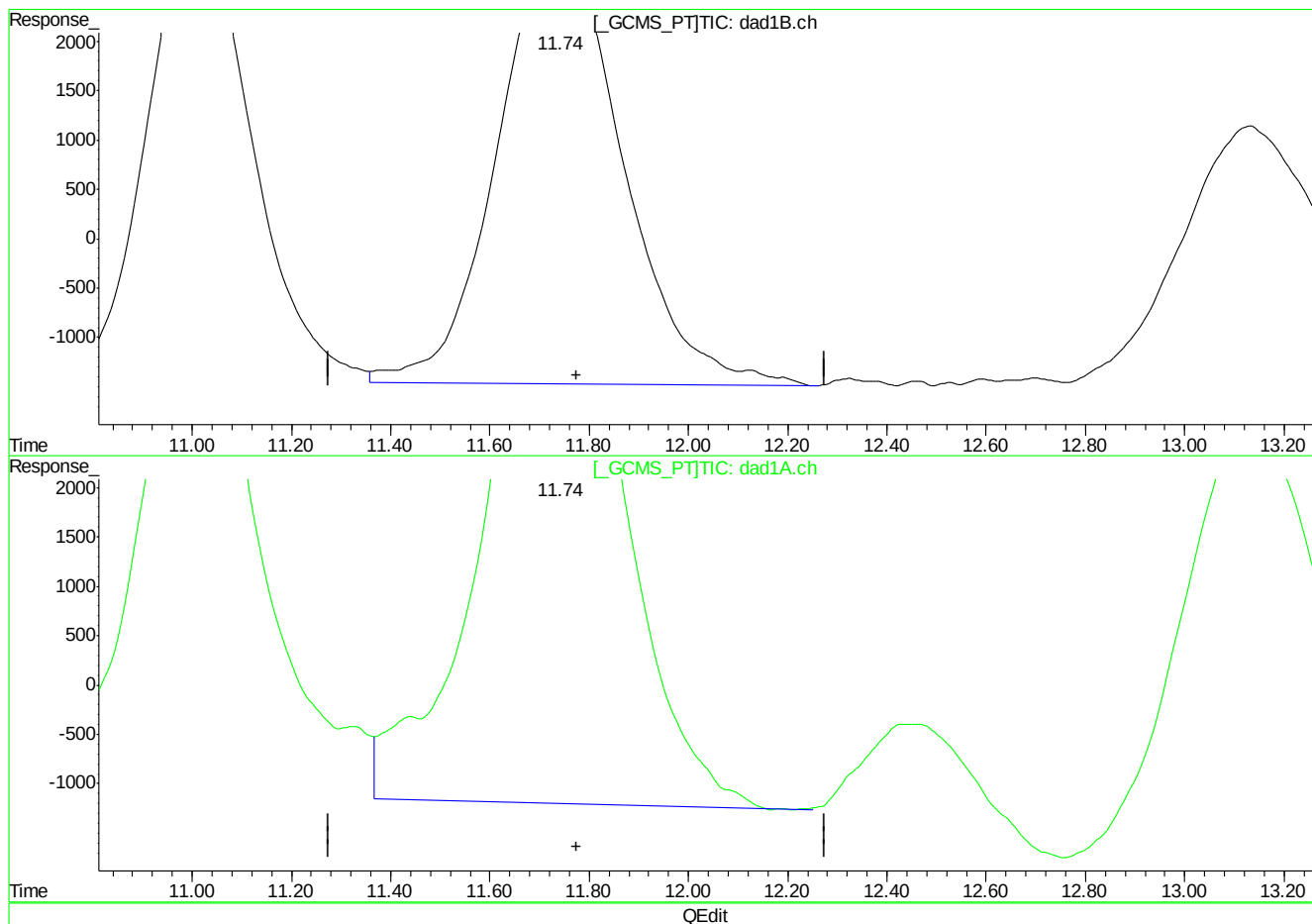
GG625700.D GGG3229_013023.M

Mon Jan 30 15:57:03 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(9) 2,4,6-Trinitrotoluene

11.74min 89.798ppb

response 785664

(9) 2,4,6-Trinitrotoluene #2

11.74min 106.047ppb m

response 1186038

(+) = Expected Retention Time

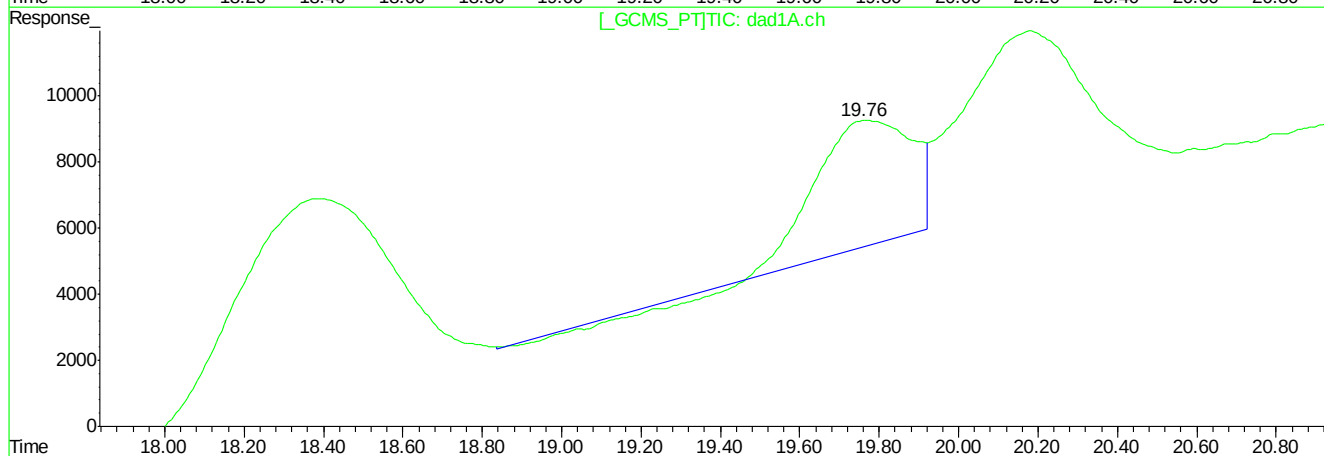
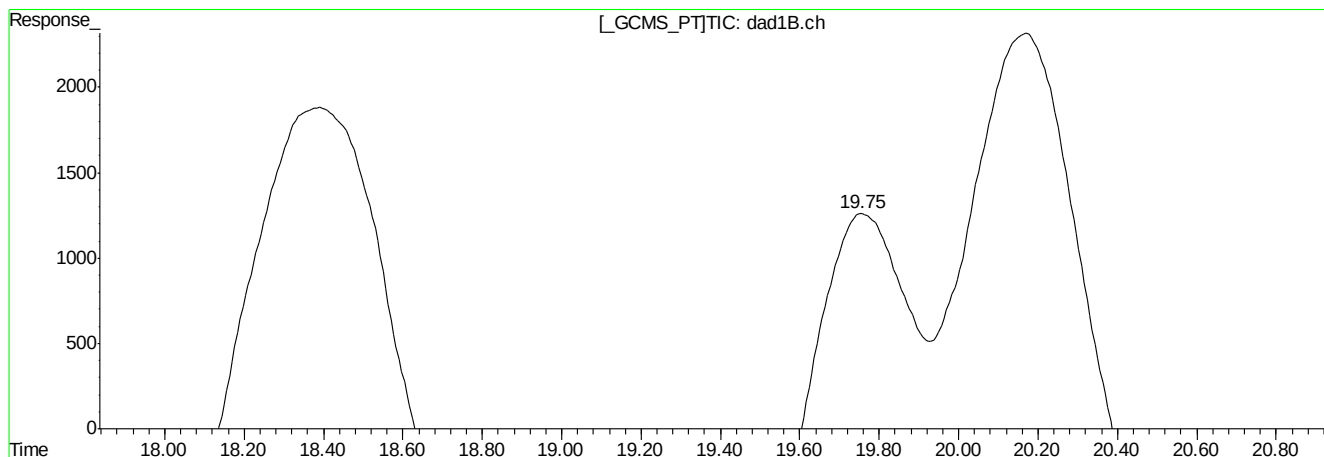
GG625700.D GGG3229_013023.M

Mon Jan 30 15:57:09 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(19) m-Nitrotoluene

19.76min 91.985ppb

response 463315

(19) m-Nitrotoluene #2

19.77min 75.788ppb

response 598703

(+) = Expected Retention Time

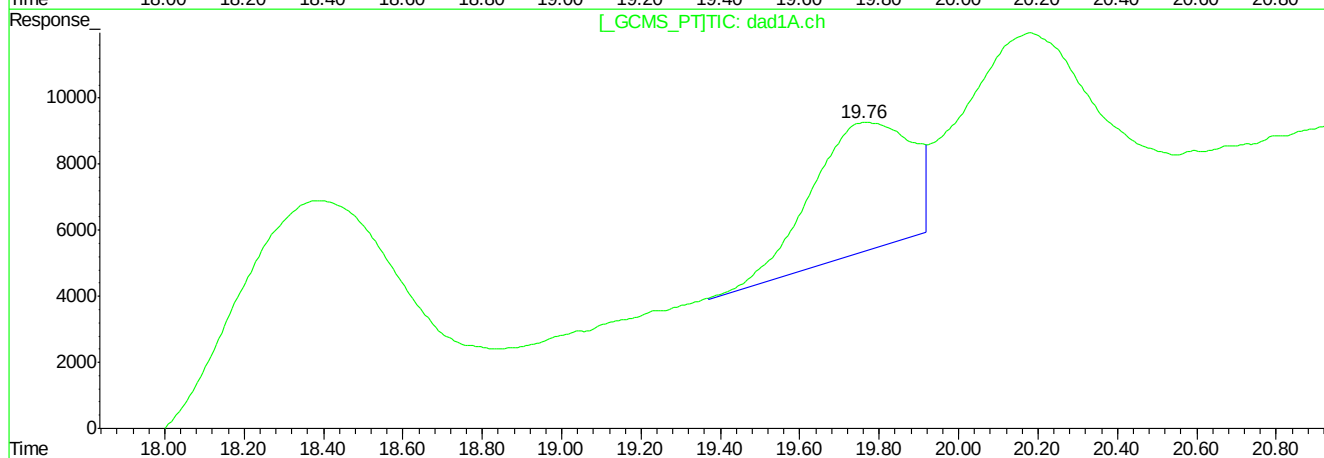
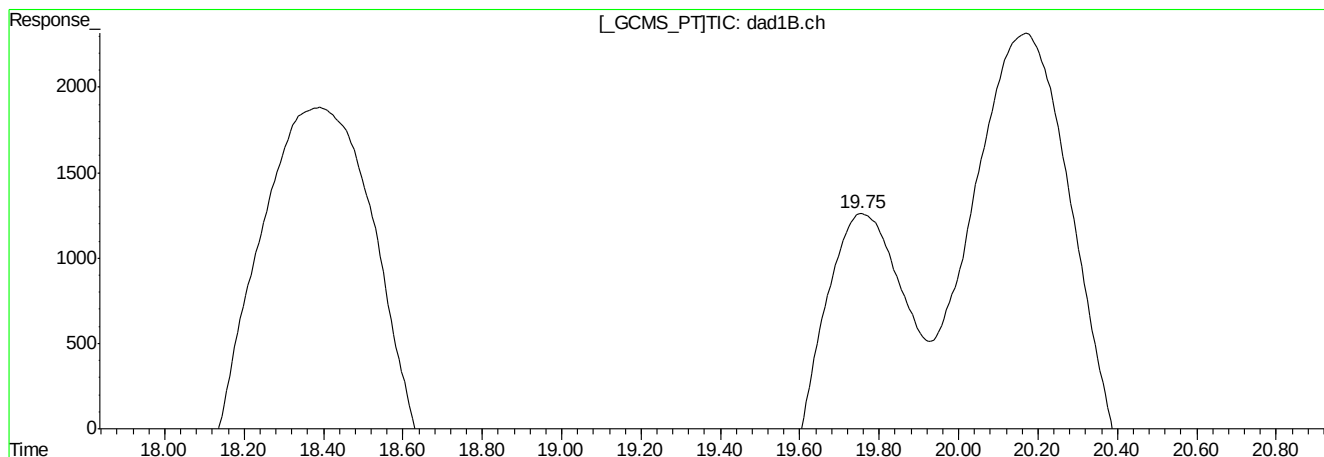
GG625700.D GGG3229_013023.M

Mon Jan 30 15:58:09 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(19) m-Nitrotoluene

19.76min 91.985ppb

response 463315

(19) m-Nitrotoluene #2

19.76min 85.364ppb m

response 674352

(+) = Expected Retention Time

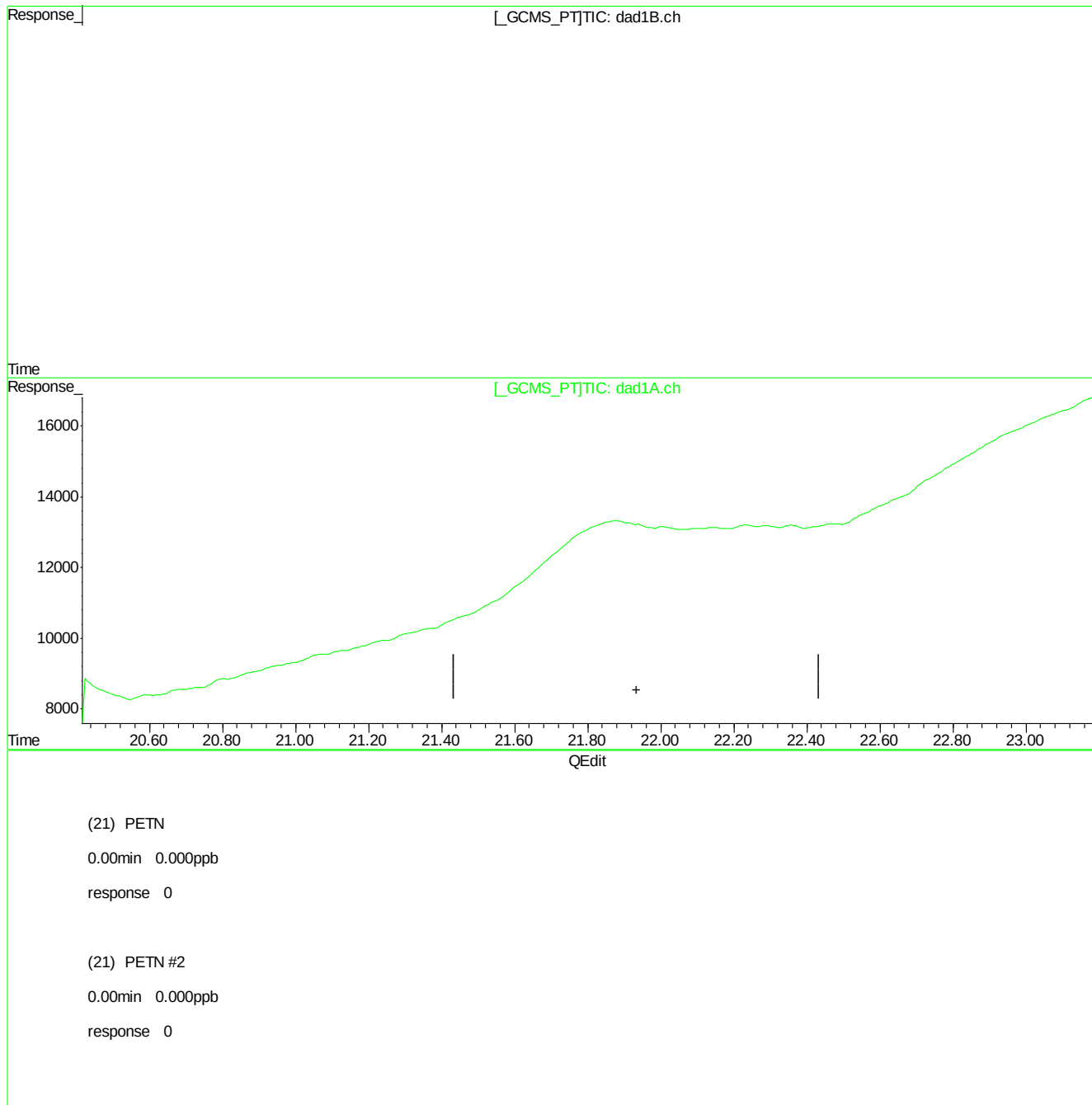
GG625700.D GGG3229_013023.M

Mon Jan 30 15:58:24 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(+) = Expected Retention Time

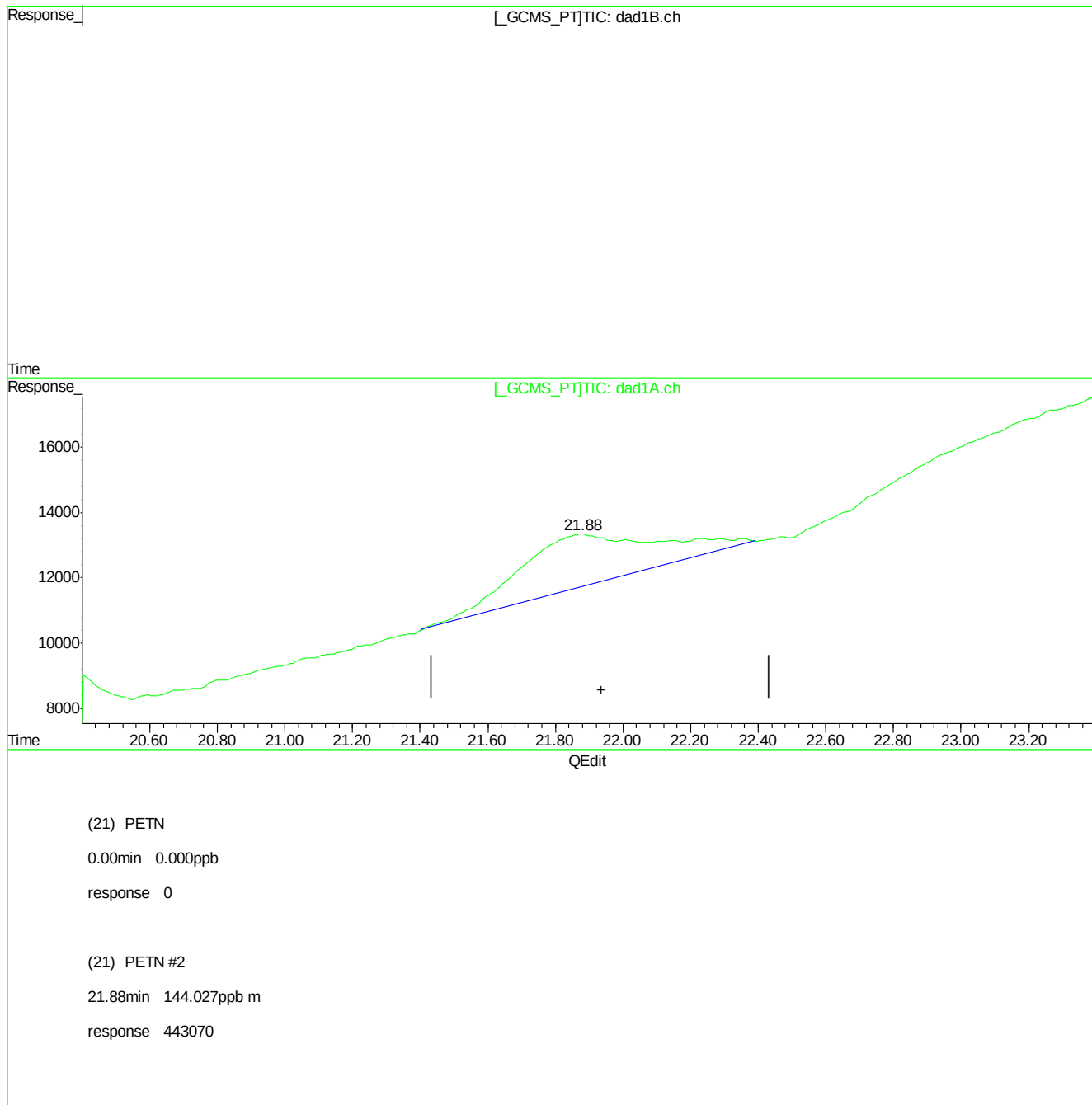
GG625700.D GGG3229_013023.M

Mon Jan 30 15:58:33 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(+) = Expected Retention Time

GG625700.D GGG3229_013023.M

Mon Jan 30 15:58:45 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
 Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
 Sample : ic3229-200 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 30 14:38:39 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Mon Jan 30 12:26:09 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.38	14.38	1078709	2124914	234.385	232.170
Spiked Amount	500.000	Range	70 - 136	Recovery	=	46.88%# 46.43%#
Target Compounds						
1) TNX	4.67	4.67	829539	818278	93.863m	91.051
2) HMX	5.05	5.05	563751	577221	202.440m	206.034
3) DNx	5.26	5.27	1425046	1445114	186.715m	186.475
4) MNX	6.41	6.41	1500001	1500278	224.504	224.550
5) 1,3,5-Trinitrobe	7.37	7.37	1747114	1740549	194.698	193.353
6) RDX	7.74	7.74	834991	831588	195.636	193.655
7) 1,3-Dinitrobenze	9.83	9.83	2409766	1955269	195.772	188.324
8) Nitrobenzene	10.98	10.98	1521784	1490359	193.469	205.773m
9) 2,4,6-Trinitroto	11.71	11.71	1694405	2300133	193.664	205.662m
10) Nitroglycerin	0.00	12.44	0	710141	N.D.	244.479 #
11) Tetryl	13.09	13.09	1255465	2334029	182.283	203.460
13) 2,6-Dinitrotolue	14.79	14.79	1161105	1477728	175.294	154.959
14) 2,4-Dinitrotolue	15.42	15.42	2170859	1363093	192.114	175.597
15) 3,5-Dinitroanili	16.22	16.23	1855234	3021153	196.839	195.163
16) o-Nitrotoluene	17.32	17.32	955217	1171806	185.313	162.690
17) p-Nitrotoluene	18.29	18.26	2013653	3575116	397.039	408.844
18) 4-Amino-2,6-Dini	18.29	18.26	2013653	3575116	404.718	411.336
19) m-Nitrotoluene	19.66	19.66	970524	1577296	192.685	199.665
20) 2-Amino-4,6-Dini	20.02	20.03	1685538	2350951	202.889	204.543
21) PETN	0.00	21.79	0	622611	N.D.	202.390m#

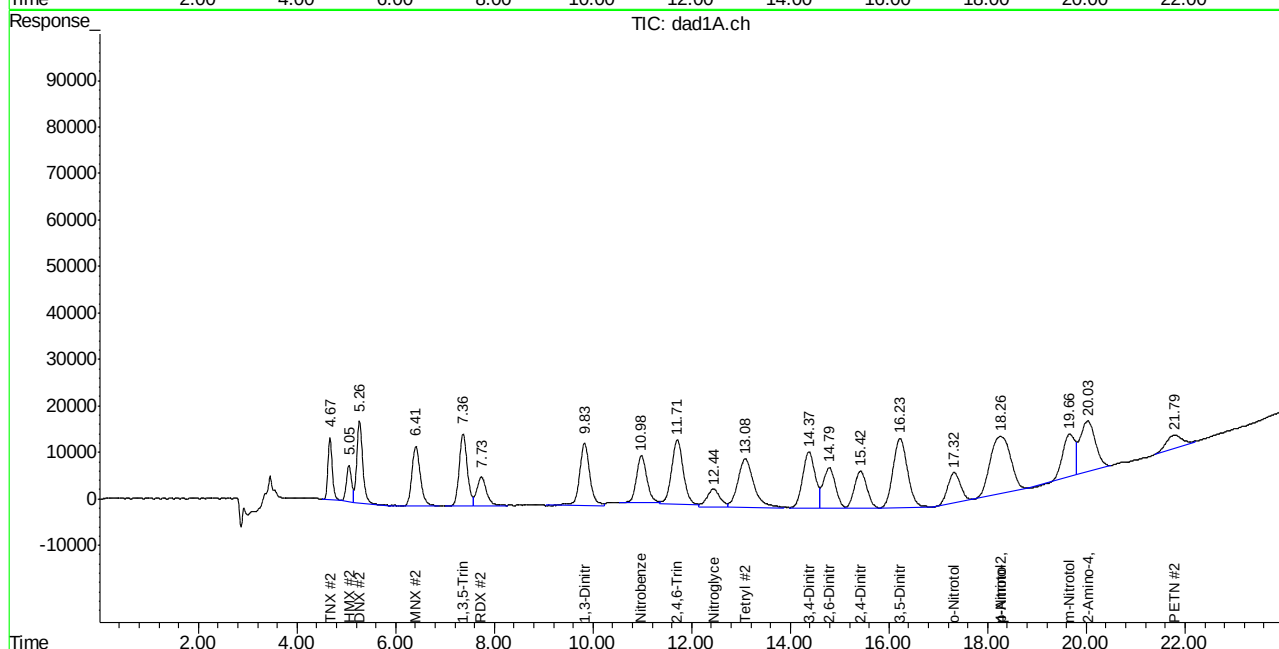
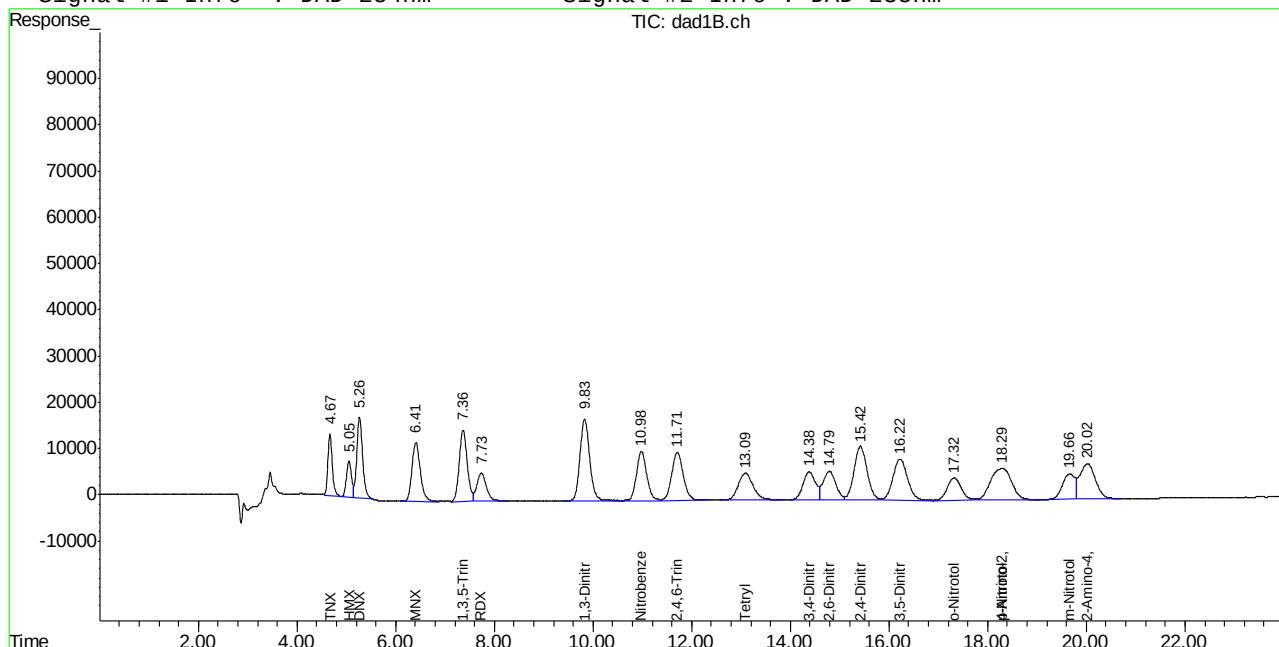
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625701.D GGG3229_013023.M Tue Jan 31 11:32:15 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 16:00 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Page 1 of 1

Sample Number: GGG3229-IC3229 **Method:** SW846 8330B
Lab FileID: GG625701.D **Analyst approved:** 01/31/23 11:38 Fouad Sekkar
Injection Time: 01/30/23 14:11 **Supervisor approved:** 01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.67	Missed peak
HMX	2691-41-0	1	5.05	Poor instrument integration
DNX		1	5.26	Poor instrument integration
Nitrobenzene	98-95-3	2	10.98	Poor instrument integration
2,4,6-Trinitrotoluene	118-96-7	2	11.71	Poor instrument integration
PETN	78-11-5	2	21.79	Poor instrument integration

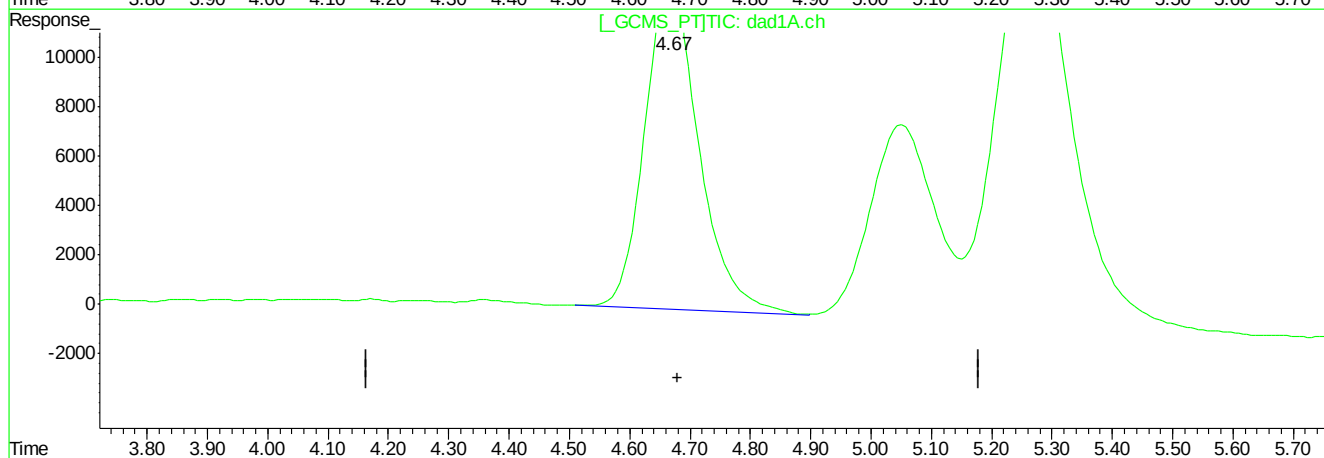
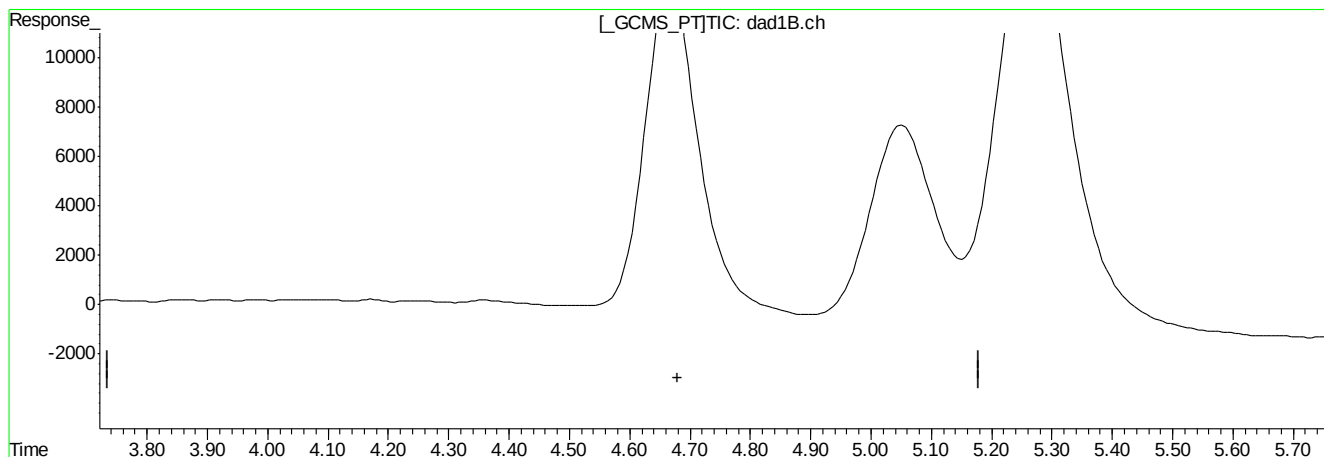
9.5.18.1

9

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.67min 91.051ppb

response 818278

(+) = Expected Retention Time

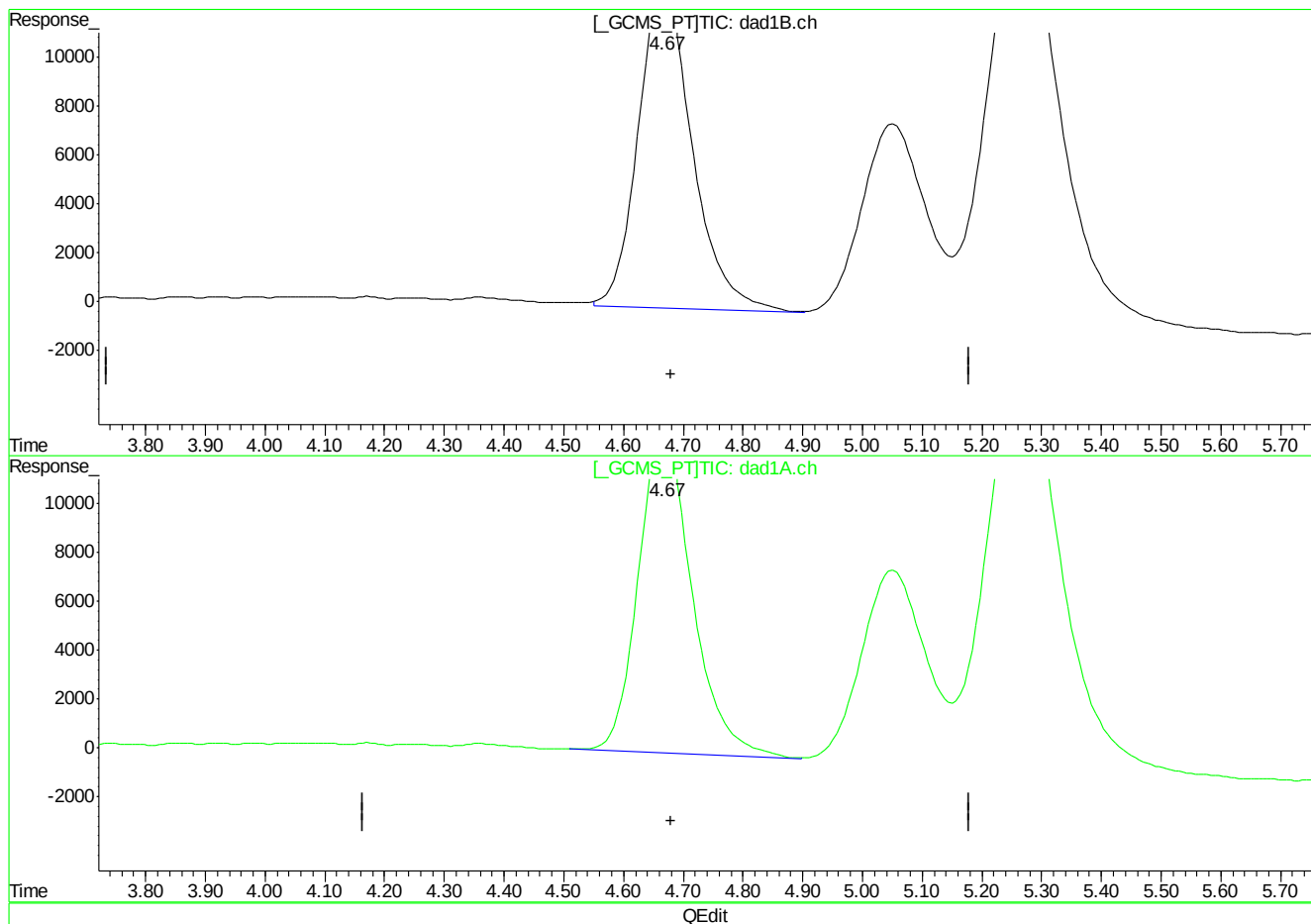
GG625701.D GGG3229_013023.M

Mon Jan 30 15:59:01 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(1) TNX

4.67min 93.863ppb m

response 829539

(1) TNX #2

4.67min 91.051ppb

response 818278

(+) = Expected Retention Time

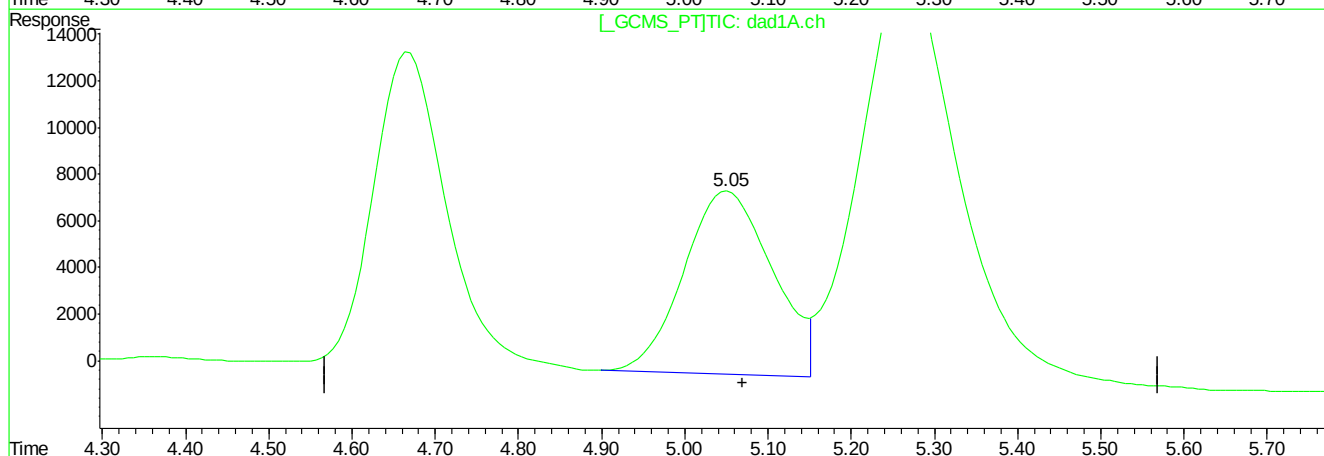
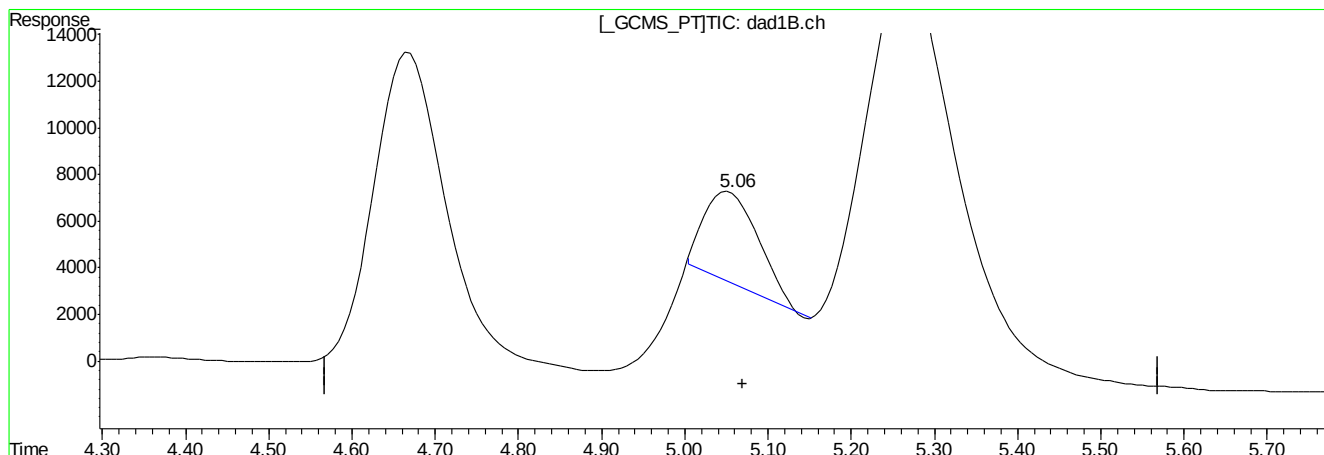
GG625701.D GGG3229_013023.M

Mon Jan 30 15:59:06 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(2) HMX

5.05min 63.900ppb

response 177946

(2) HMX #2

5.05min 206.034ppb

response 577221

(+) = Expected Retention Time

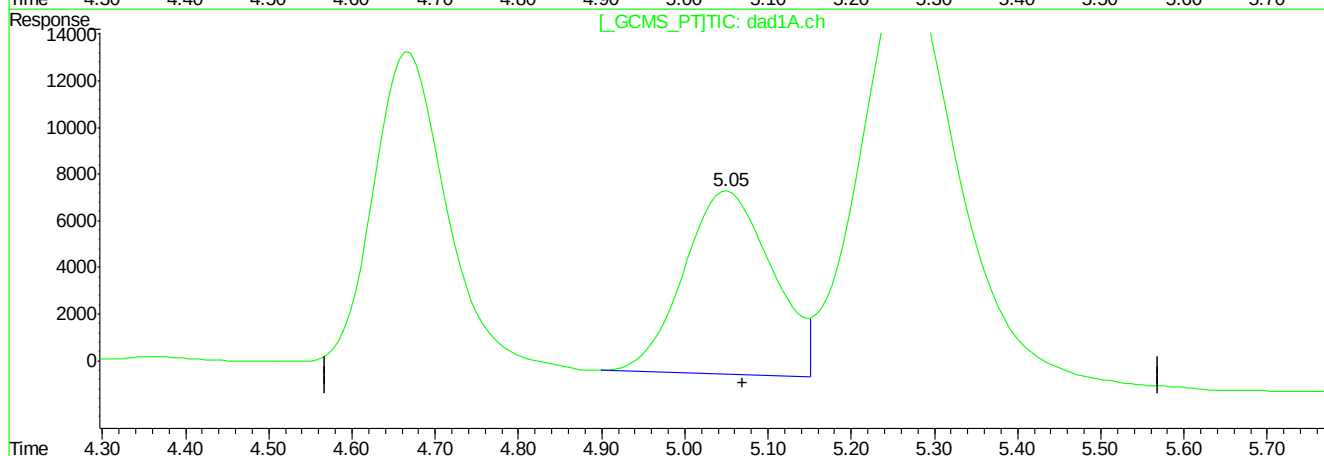
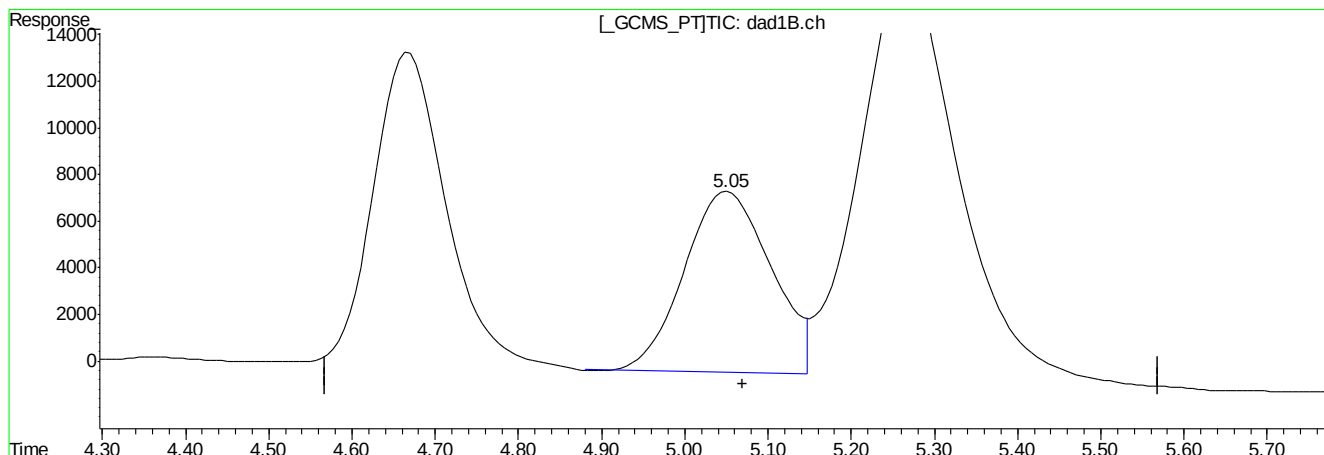
GG625701.D GGG3229_013023.M

Mon Jan 30 15:59:13 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(2) HMX

5.05min 202.440ppb m

response 563751

(2) HMX #2

5.05min 206.034ppb

response 577221

(+) = Expected Retention Time

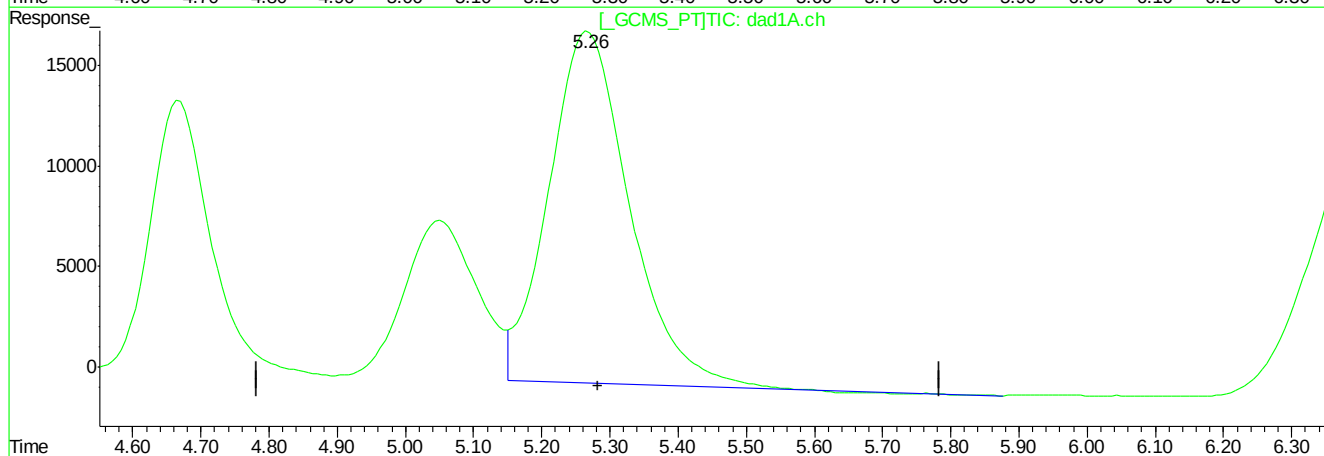
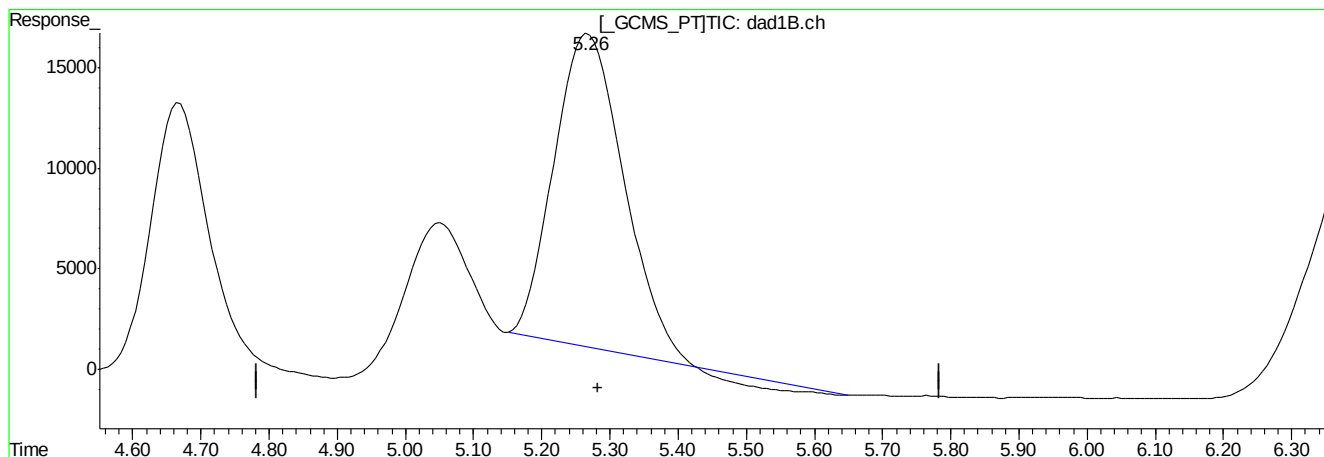
GG625701.D GGG3229_013023.M

Mon Jan 30 15:59:18 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.27min 142.096ppb

response 1084504

(3) DNX #2

5.27min 186.475ppb

response 1445114

(+) = Expected Retention Time

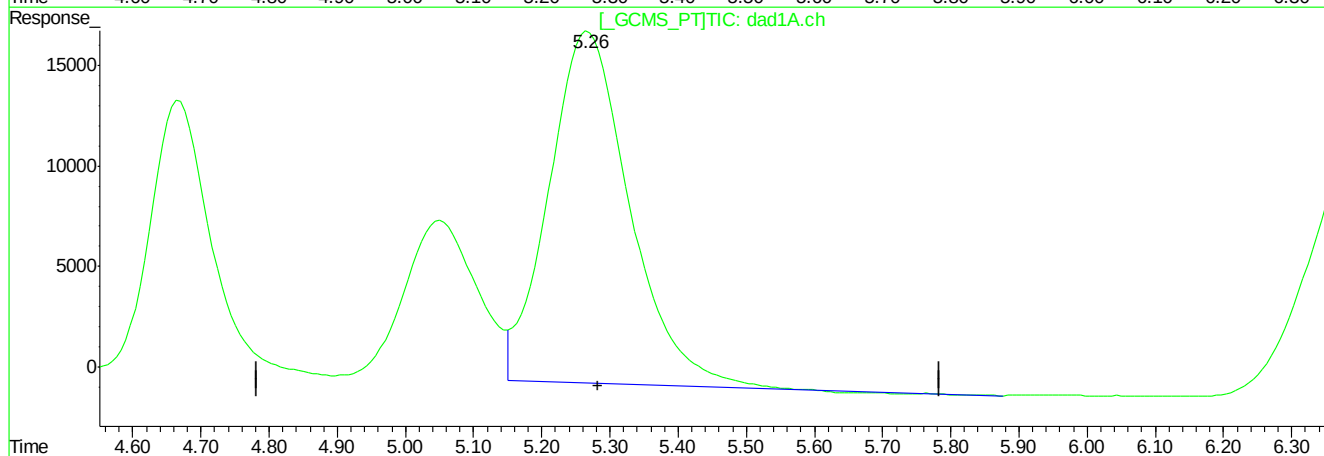
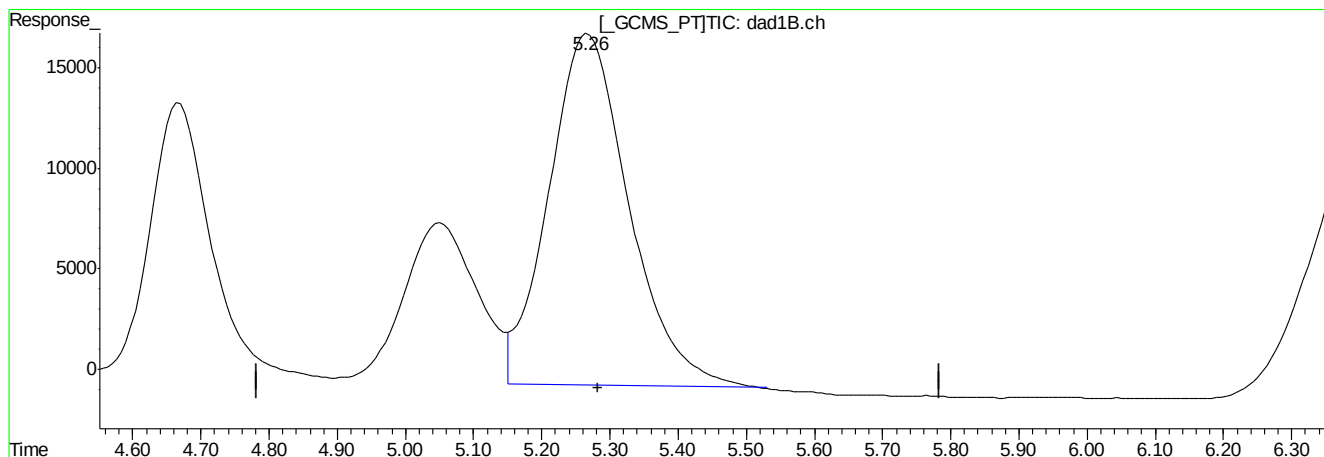
GG625701.D GGG3229_013023.M

Mon Jan 30 15:59:23 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.26min 186.715ppb m

response 1425046

(3) DNX #2

5.27min 186.475ppb

response 1445114

(+) = Expected Retention Time

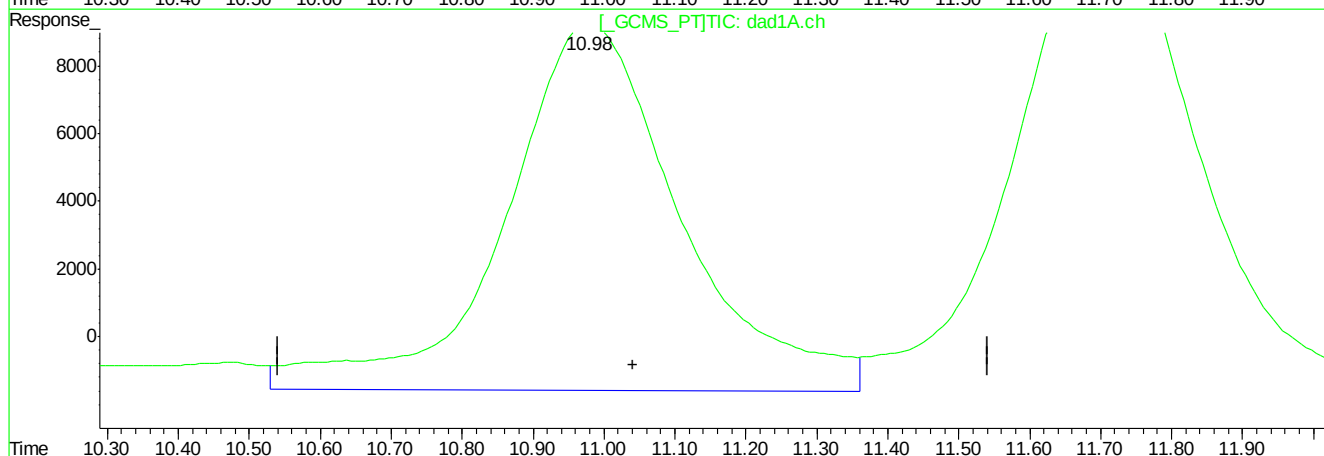
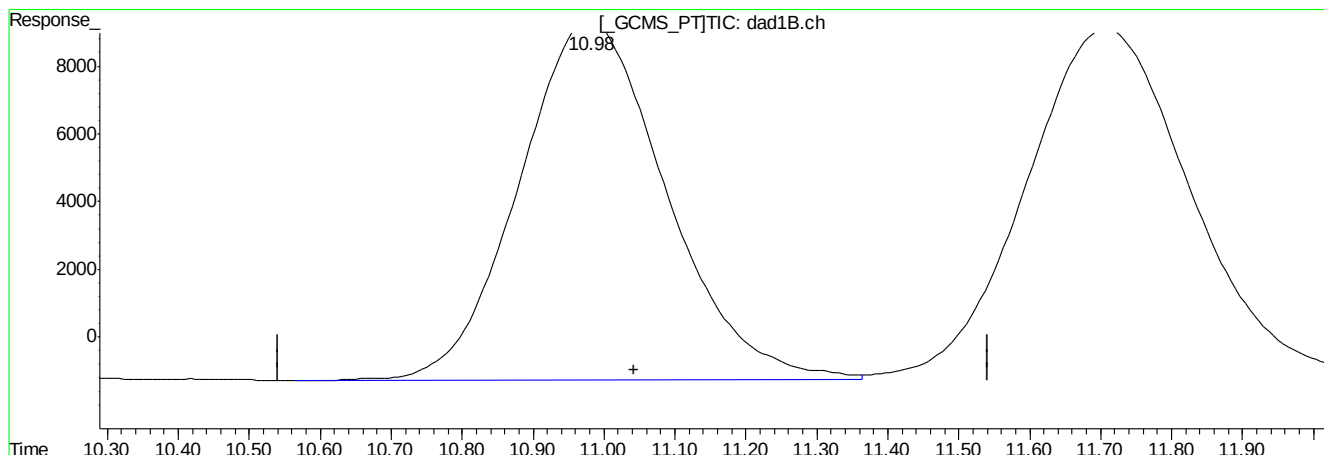
GG625701.D GGG3229_013023.M

Mon Jan 30 15:59:30 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene
10.98min 193.469ppb
response 1521784

(8) Nitrobenzene #2
10.98min 257.510ppb
response 1865077

(+) = Expected Retention Time

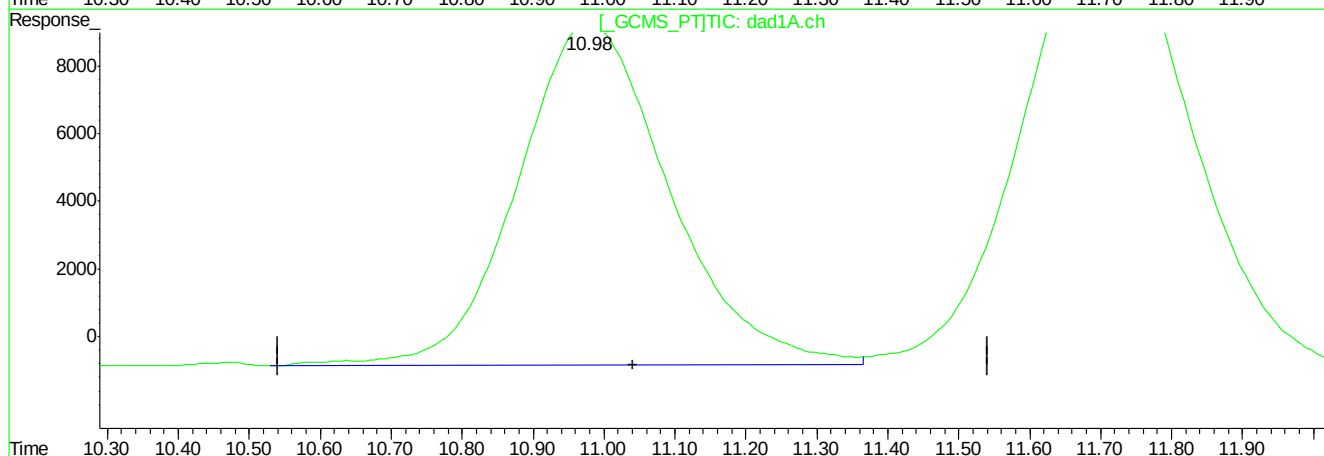
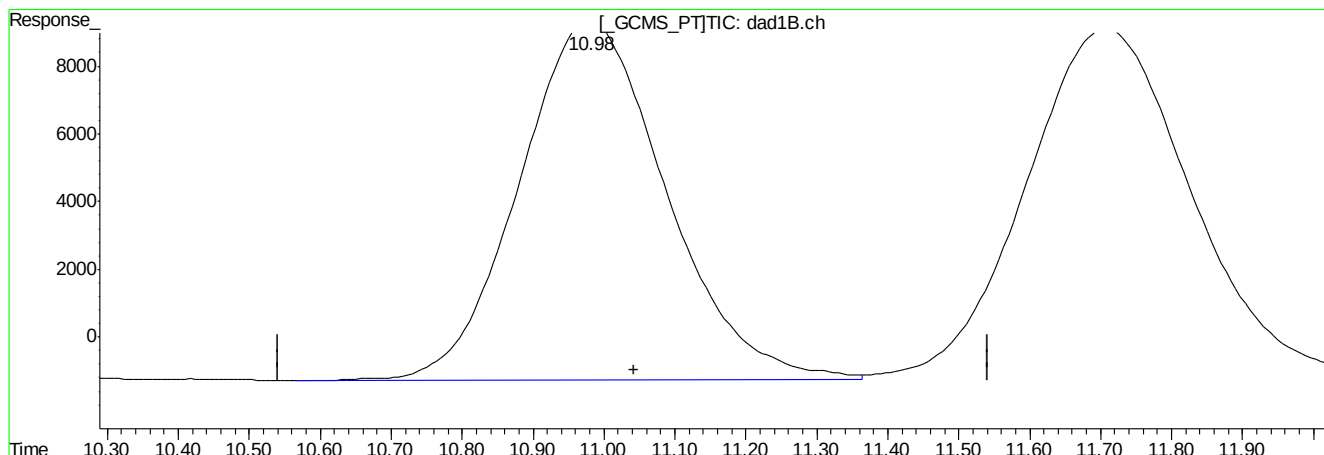
GG625701.D GGG3229_013023.M

Mon Jan 30 15:59:52 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene

10.98min 193.469ppb

response 1521784

(8) Nitrobenzene #2

10.98min 205.773ppb m

response 1490359

(+) = Expected Retention Time

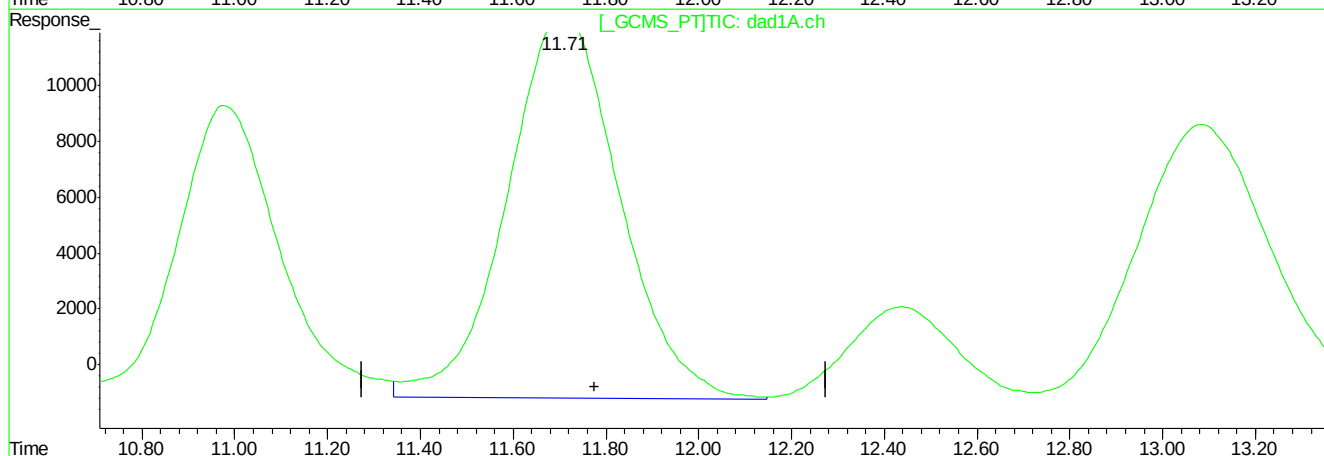
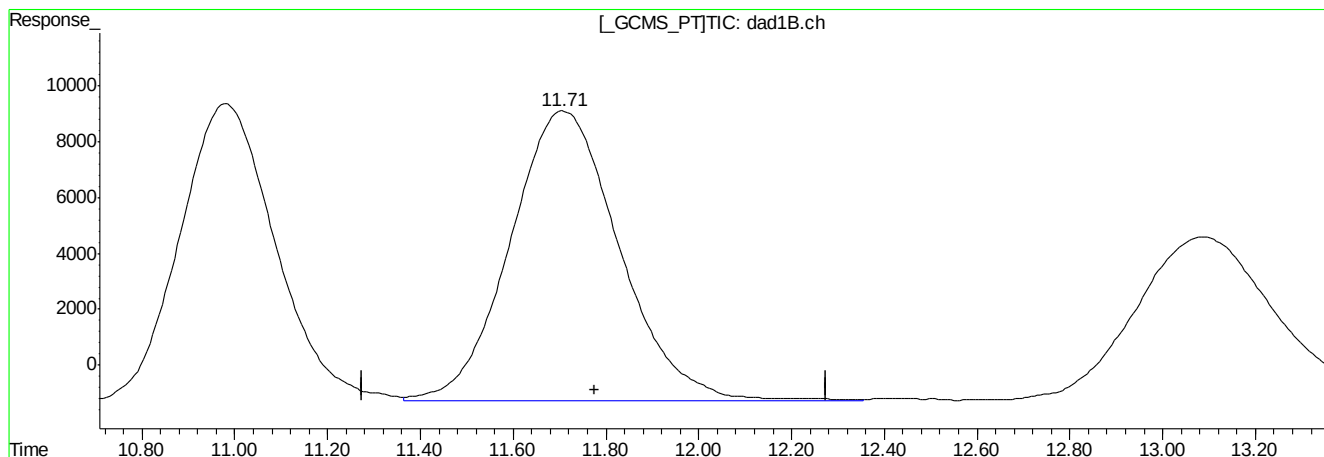
GG625701.D GGG3229_013023.M

Mon Jan 30 15:59:59 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(9) 2,4,6-Trinitrotoluene

11.71min 193.664ppb

response 1694405

(9) 2,4,6-Trinitrotoluene #2

11.71min 205.662ppb m

response 2300133

(+) = Expected Retention Time

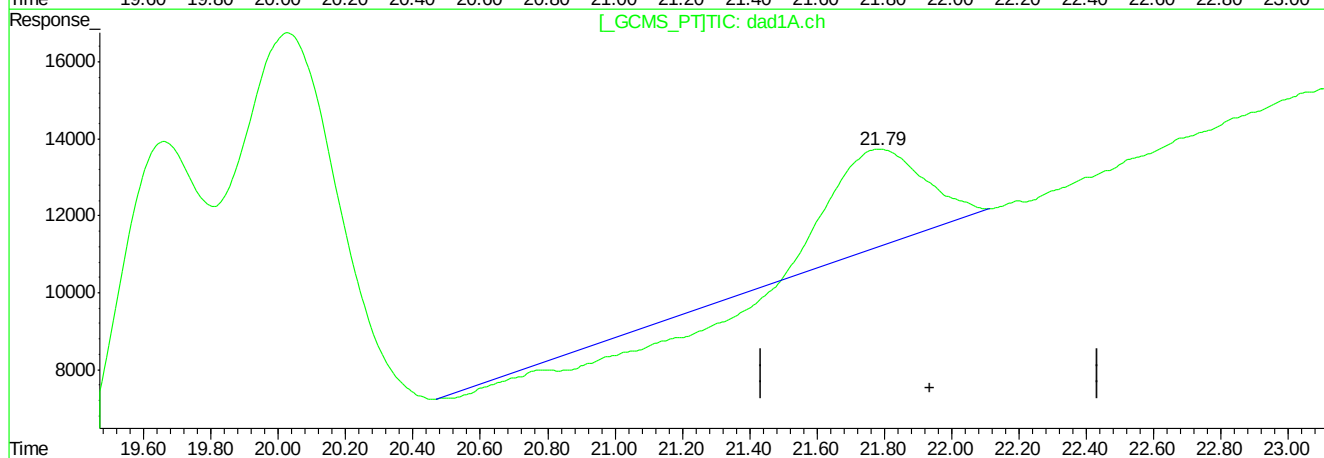
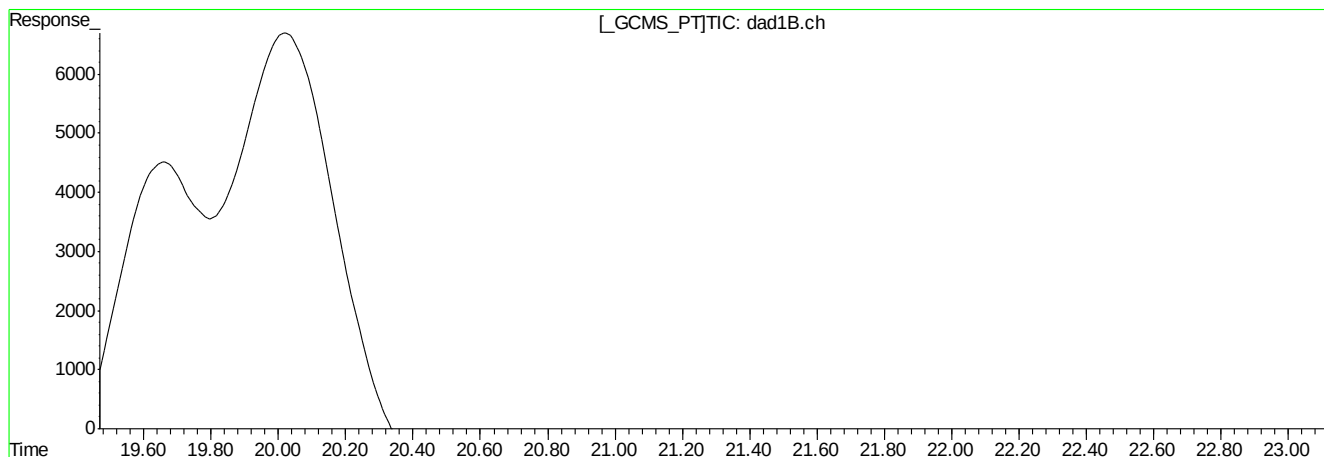
GG625701.D GGG3229_013023.M

Mon Jan 30 16:00:08 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

21.79min 90.217ppb

response 277534

QEdit

(+) = Expected Retention Time

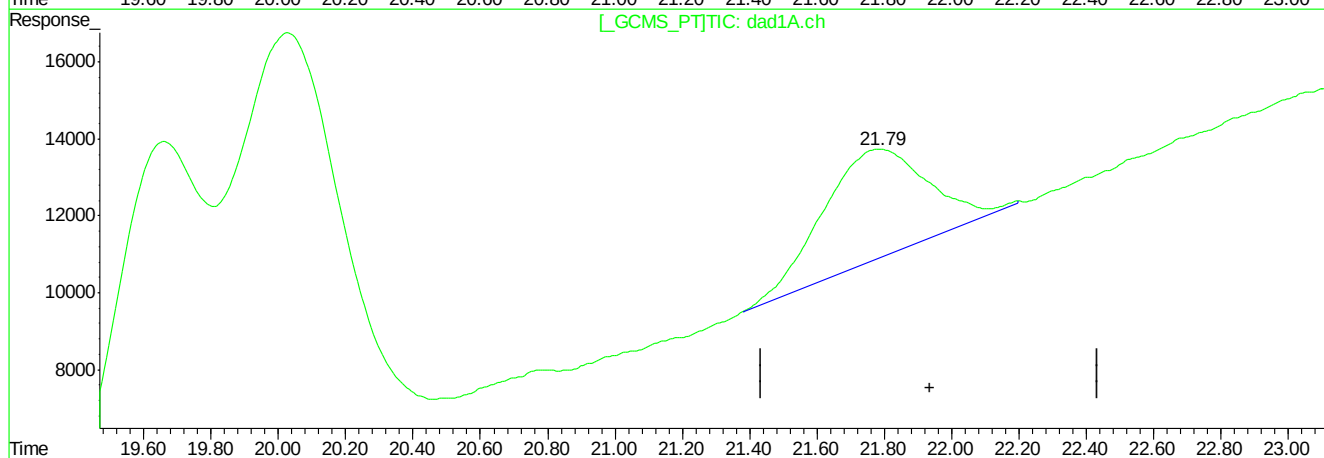
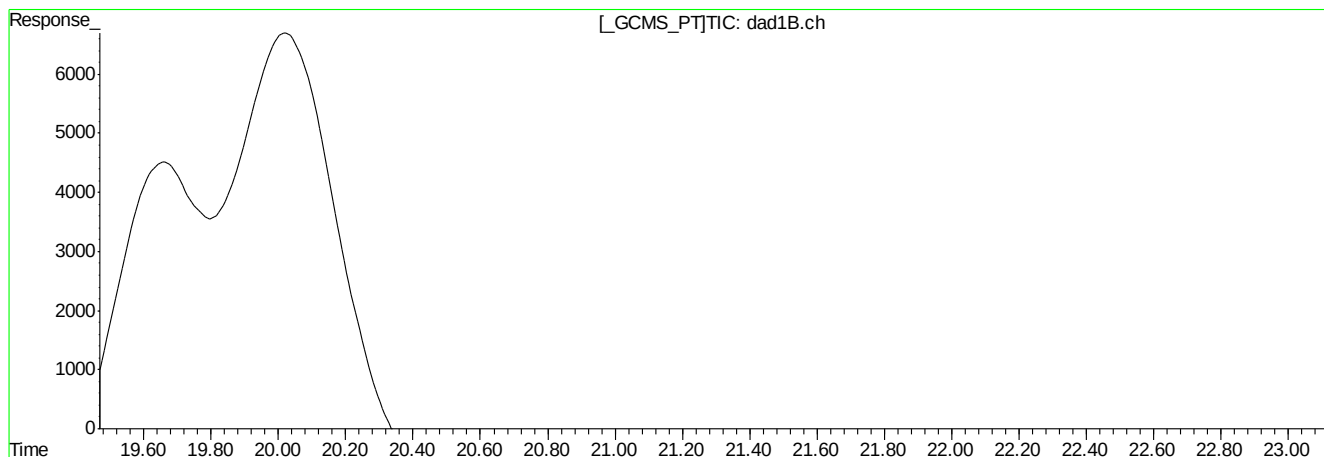
GG625701.D GGG3229_013023.M

Mon Jan 30 16:00:55 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

21.79min 202.390ppb m

response 622611

(+) = Expected Retention Time

GG625701.D GGG3229_013023.M

Mon Jan 30 16:01:02 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1B.ch Vial: 7
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1A.ch
 Acq On : 30-Jan-2023, 14:45:35 Operator: fouads
 Sample : icc3229-1000 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 30 15:41:06 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Mon Jan 30 12:26:09 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

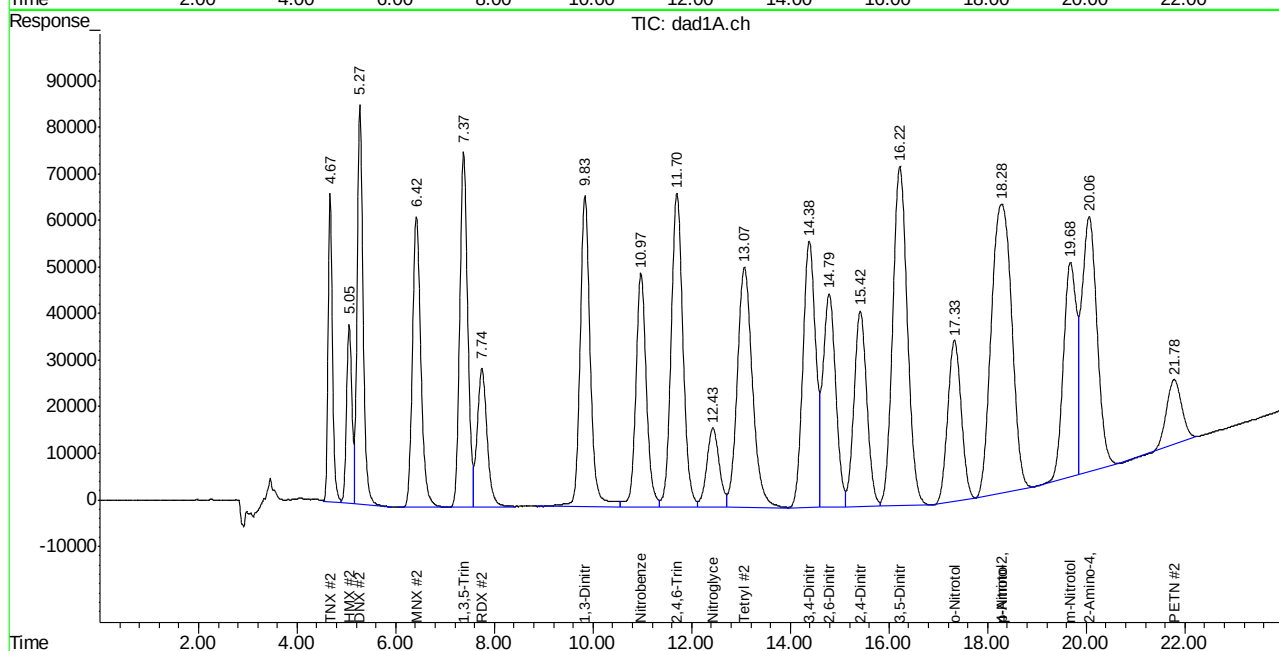
System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.39	14.39	5314003	10306693	1154.642	1126.119
Spiked Amount	500.000	Range	70 - 136	Recovery	= 230.93%#	225.22%#
Target Compounds						
1) TNX	4.67	4.67	3967262	4049026	448.899m	450.543
2) HMX	5.05	5.06	2752514	2885102	988.415m	1029.811
3) DNx	5.27	5.27	6940135	7154923	909.321m	923.259
4) MNX	6.42	6.42	7412537	7410832	1109.428	1109.197
5) 1,3,5-Trinitrobe	7.38	7.38	8591413	8592585	957.427	954.529
6) RDX	7.75	7.75	4114460	4113288	964.005	957.877
7) 1,3-Dinitrobenze	9.84	9.84	11777400	9537106	956.809	918.578
8) Nitrobenzene	10.97	10.97	7498260	7465508	953.275	1030.759
9) 2,4,6-Trinitroto	11.70	11.70	8294608	11157631	948.041	997.638
10) Nitroglycerin	0.00	12.43	0	2999623	N.D.	1032.677 #
11) Tetryl	13.07	13.07	6288775	11014909	913.076	960.182
13) 2,6-Dinitrotolue	14.79	14.79	5763065	8314754	870.060	871.912
14) 2,4-Dinitrotolue	15.42	15.42	10688271	7611820	945.878	980.573
15) 3,5-Dinitroanili	16.22	16.22	9075002	15014852	962.853	969.944
16) o-Nitrotoluene	17.33	17.33	4675981	6615082	907.143	918.420
17) p-Nitrotoluene	18.32	18.29	9827110	17873468	1937.647	2043.979
18) 4-Amino-2,6-Dini	18.32	18.29	9827110	17873468	1975.123	2056.438
19) m-Nitrotoluene	19.68	19.68	4819455	8441600	956.841	1068.594
20) 2-Amino-4,6-Dini	20.06	20.06	8209228	11965936	988.147	1041.089
21) PETN	0.00	21.79	0	2984607	N.D.	970.197 #

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625702.D GGG3229_013023.M Tue Jan 31 11:32:16 2023

9.5.19

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul



Manual Integration Approval Summary

Sample Number:

GGG3229-ICC3229

Method:

SW846 8330B

Lab FileID:

GG625702.D

Analyst approved:

01/31/23 11:38 Fouad Sekkar

Injection Time:

01/30/23 14:45

Supervisor approved:

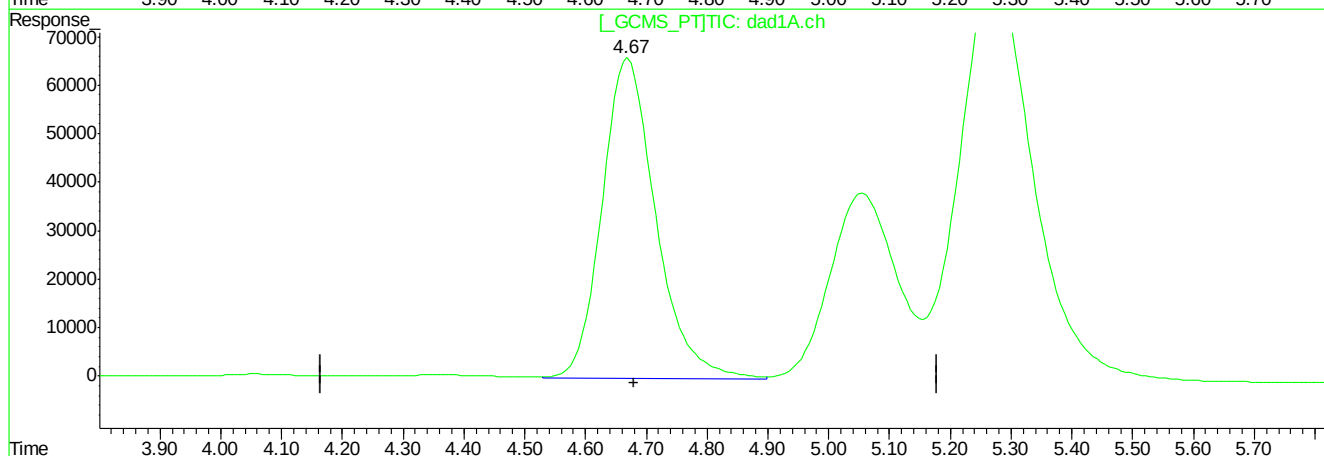
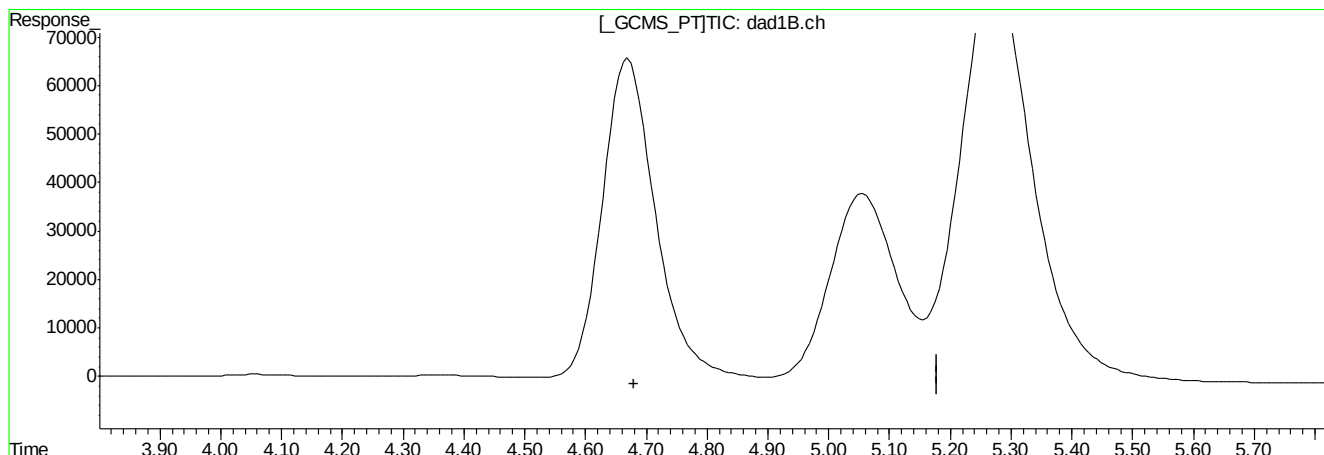
01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.67	Missed peak
HMX	2691-41-0	1	5.05	Poor instrument integration
DNX		1	5.27	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1A.ch
Acq On : 30-Jan-2023, 14:45:35 Operator: fouads
Sample : icc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:41 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.67min 450.543ppb

response 4049026

(+) = Expected Retention Time

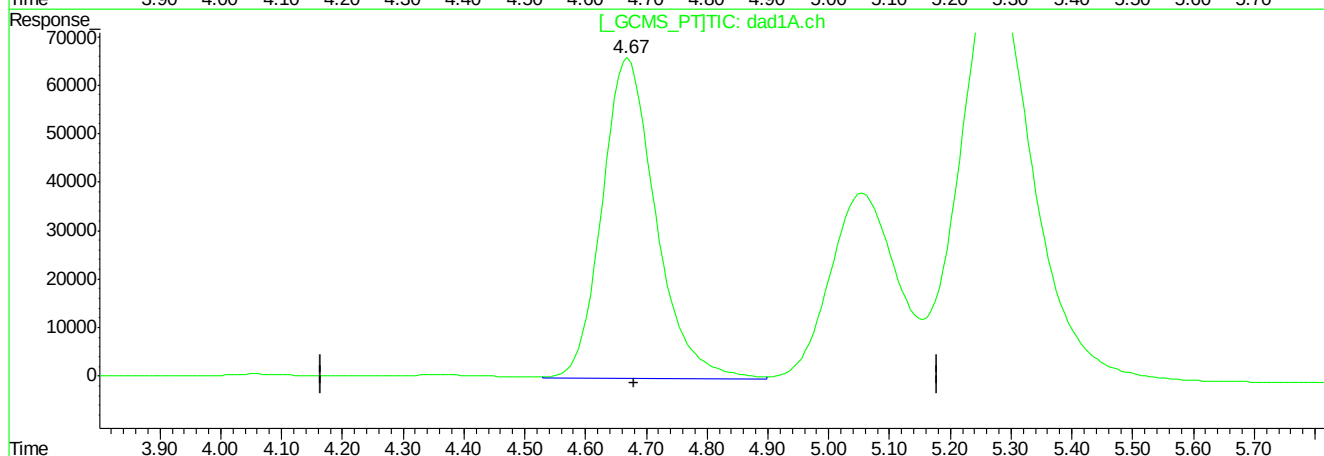
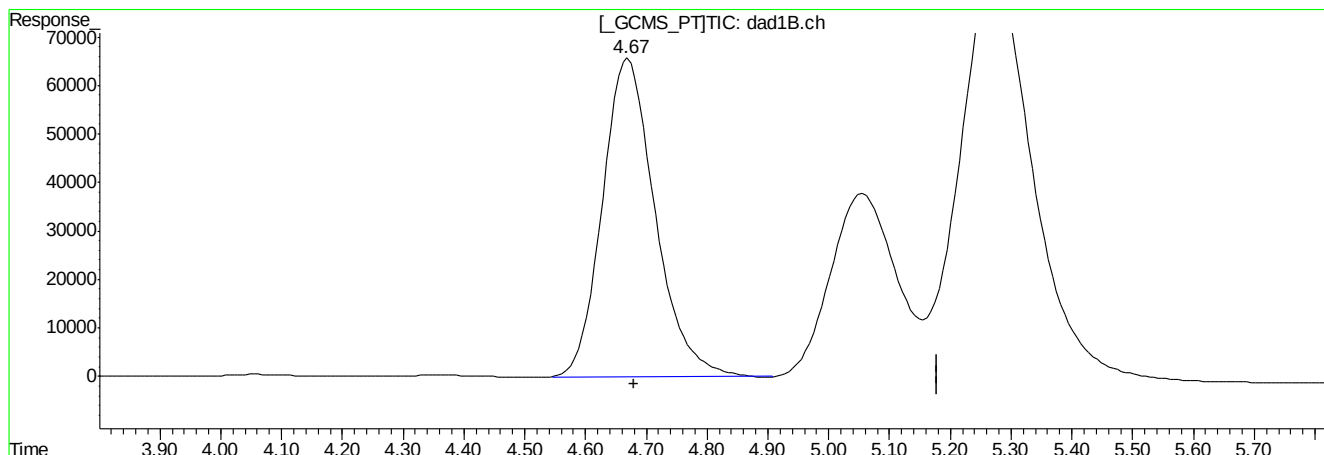
GG625702.D GGG3229_013023.M

Mon Jan 30 16:01:20 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1A.ch
Acq On : 30-Jan-2023, 14:45:35 Operator: fouads
Sample : icc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:41 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

4.67min 448.899ppb m

response 3967262

(1) TNX #2

4.67min 450.543ppb

response 4049026

(+) = Expected Retention Time

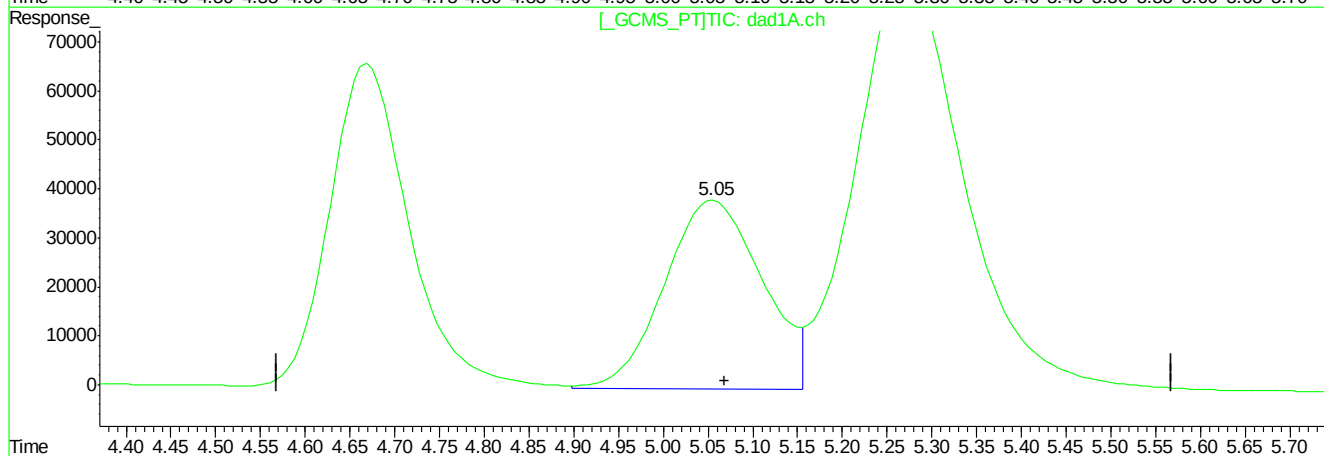
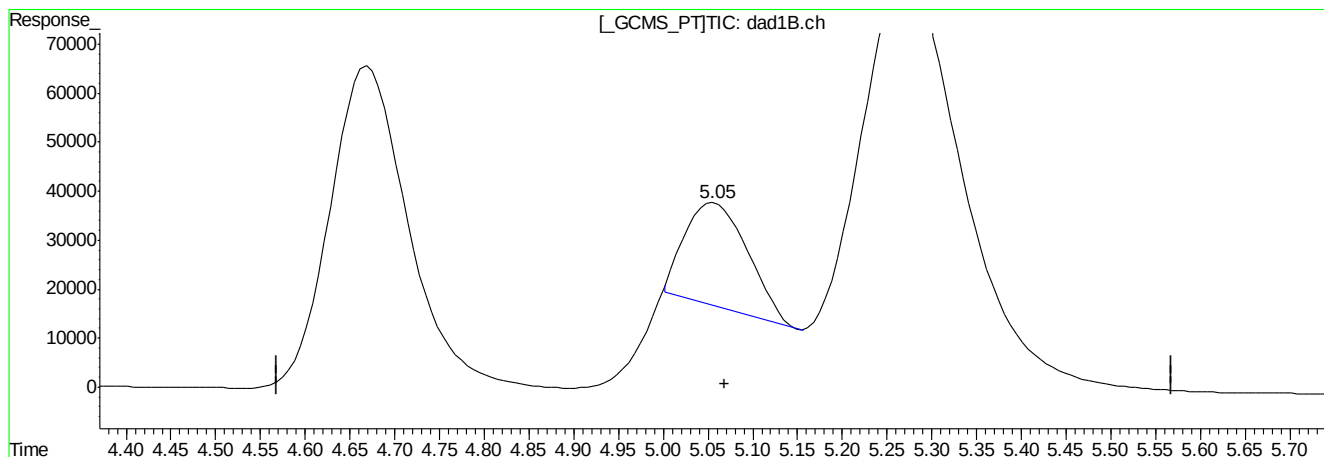
GG625702.D GGG3229_013023.M

Mon Jan 30 16:01:26 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1A.ch
Acq On : 30-Jan-2023, 14:45:35 Operator: fouads
Sample : icc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:41 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 368.191ppb

response 1025329

(2) HMX #2

5.06min 1029.811ppb

response 2885102

(+) = Expected Retention Time

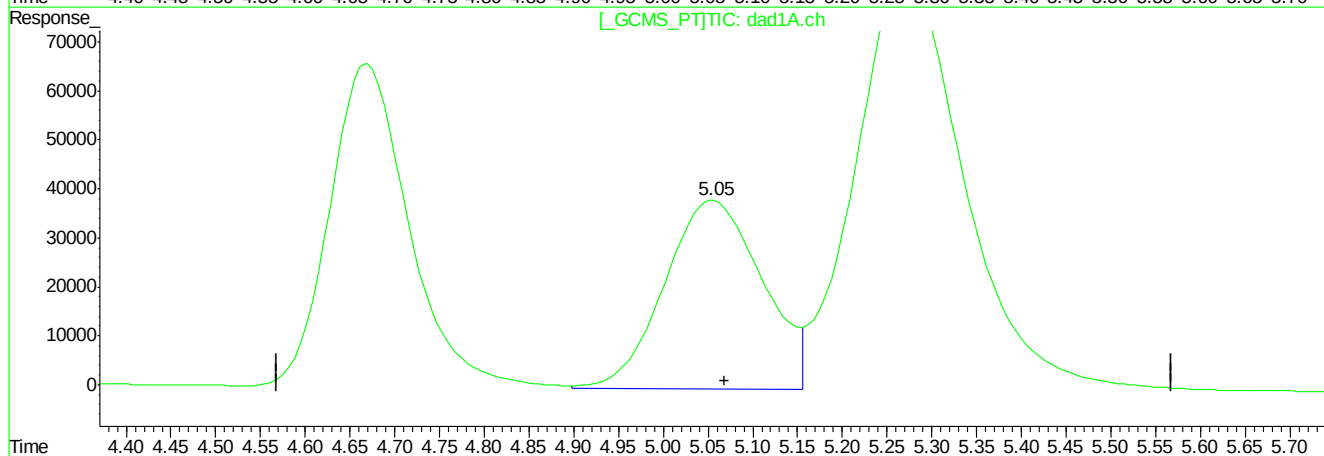
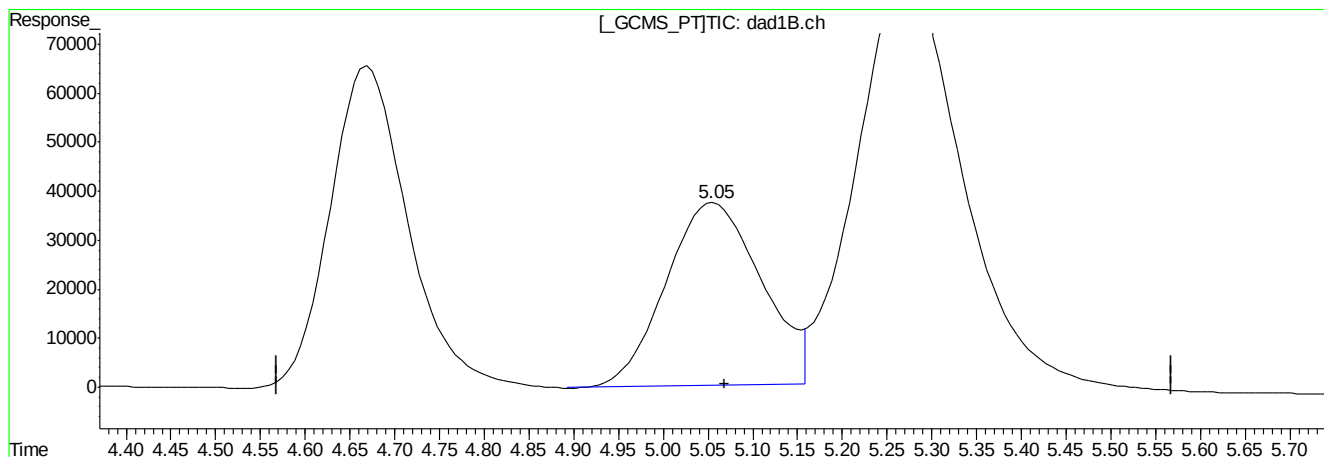
GG625702.D GGG3229_013023.M

Mon Jan 30 16:01:31 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1A.ch
Acq On : 30-Jan-2023, 14:45:35 Operator: fouads
Sample : icc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:41 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.05min 988.415ppb m

response 2752514

(2) HMX #2

5.06min 1029.811ppb

response 2885102

(+) = Expected Retention Time

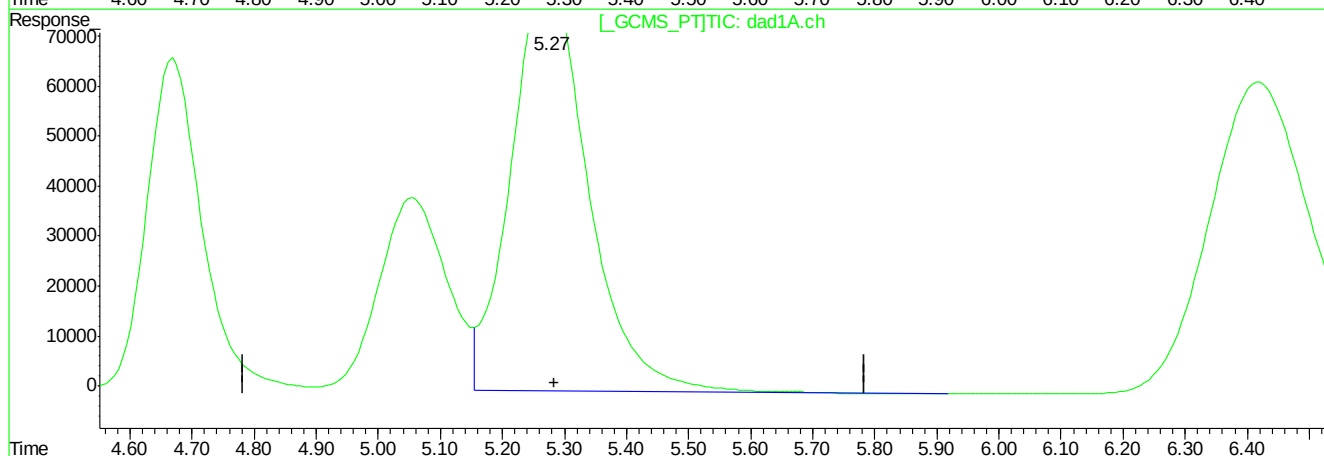
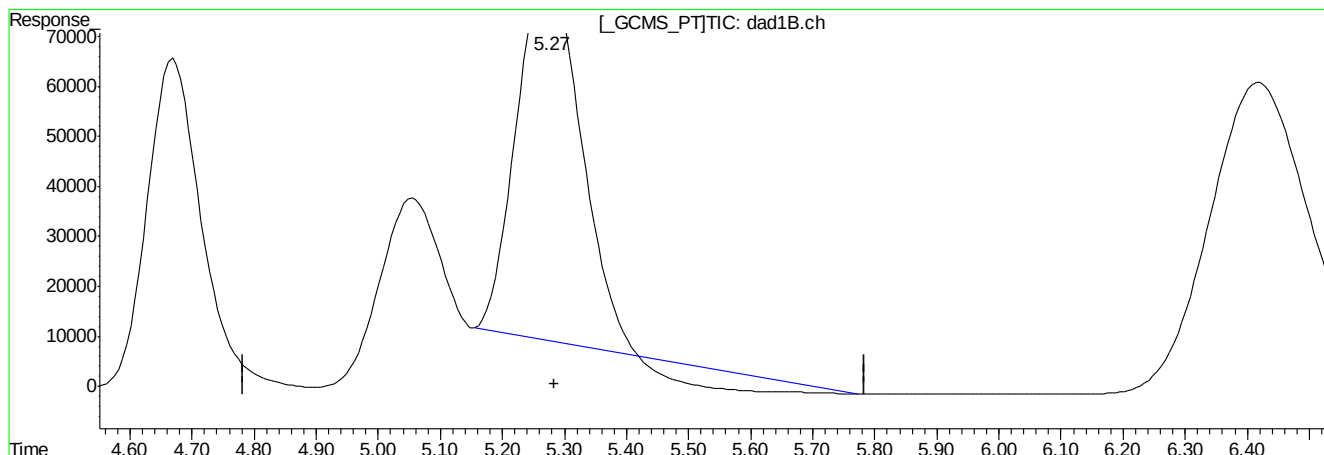
GG625702.D GGG3229_013023.M

Mon Jan 30 16:01:37 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1A.ch
Acq On : 30-Jan-2023, 14:45:35 Operator: fouads
Sample : icc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:41 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.27min 636.301ppb

response 4856389

(3) DNX #2

5.27min 923.259ppb

response 7154923

(+) = Expected Retention Time

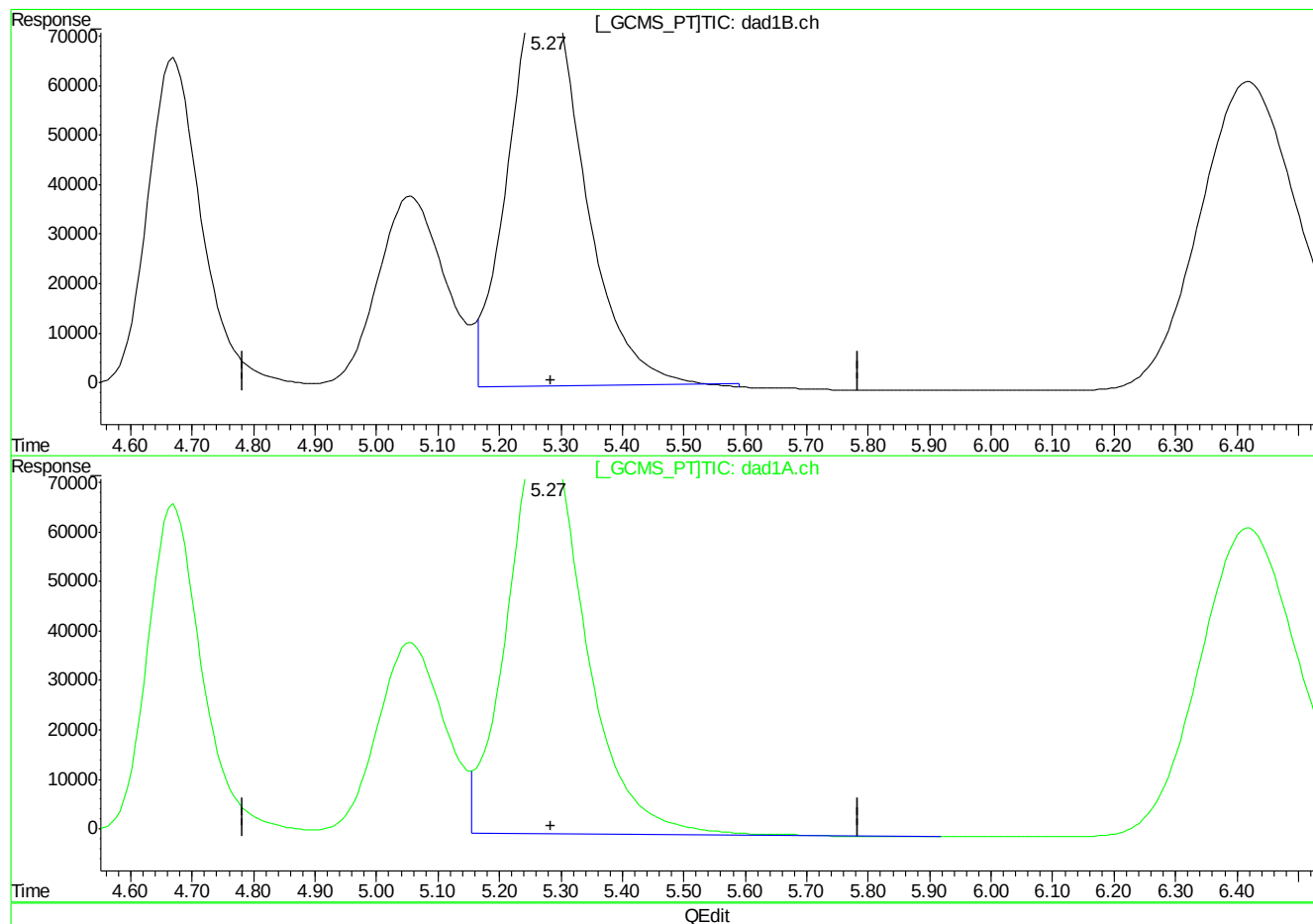
GG625702.D GGG3229_013023.M

Mon Jan 30 16:01:43 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1A.ch
Acq On : 30-Jan-2023, 14:45:35 Operator: fouads
Sample : icc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:41 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.27min 909.321ppb m

response 6940135

(3) DNX #2

5.27min 923.259ppb

response 7154923

(+) = Expected Retention Time

GG625702.D GGG3229_013023.M

Mon Jan 30 16:01:50 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1B.ch Vial: 8
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1A.ch
 Acq On : 30-Jan-2023, 15:17:00 Operator: fouads
 Sample : ic3229-2500 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 30 16:03:09 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Mon Jan 30 12:26:09 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.41	14.41	13162219	25765453	2859.925	2815.158
Spiked Amount	500.000	Range	70 - 136	Recovery	= 571.99%#	563.03%#
Target Compounds						
1) TNX	4.67	4.67	9885163	9929833	1118.516m	1104.913
2) HMX	5.06	5.06	6846729	7118408	2458.628m	2540.852
3) DNx	5.27	5.28	17446026	17584670	2285.841m	2269.097
4) MNX	6.42	6.42	18225388	18221169	2727.777	2727.207
5) 1,3,5-Trinitrobe	7.38	7.38	21131599	21141603	2354.906	2348.569
6) RDX	7.76	7.76	10037502	10088396	2351.755	2349.323
7) 1,3-Dinitrobenze	9.85	9.85	29080440	22615795	2362.527	2178.267
8) Nitrobenzene	11.00	11.00	18579564	17764759	2362.072	2452.772
9) 2,4,6-Trinitroto	11.72	11.72	20498201	27300487	2342.863	2441.020
10) Nitroglycerin	12.40	12.45	174388	7317200	NoCal	2519.083 #
11) Tetryl	13.11	13.11	15789665	27524526	2292.524	2399.344
13) 2,6-Dinitrotolue	14.82	14.82	14189103	20817908	2142.154	2183.033
14) 2,4-Dinitrotolue	15.45	15.45	26442268	18915705	2340.056	2436.768
15) 3,5-Dinitroanili	16.27	16.27	22426713	37403744	2379.463	2416.243
16) o-Nitrotoluene	17.34	17.34	11678344	17144239	2265.606	2380.259
17) p-Nitrotoluene	18.33	18.31	24328868	44808508	4797.011	5124.224
18) 4-Amino-2,6-Dini	18.33	18.31	24328868	44808508	4889.791	5155.458
19) m-Nitrotoluene	19.67	19.67	11938013	20705297	2370.138	2621.016
20) 2-Amino-4,6-Dini	20.05	20.05	20233898	29121207	2435.561	2533.673
21) PETN	21.74	21.73	120342	7375931	NoCal	2397.670 #

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625703.D GGG3229_013023.M Tue Jan 31 11:32:17 2023

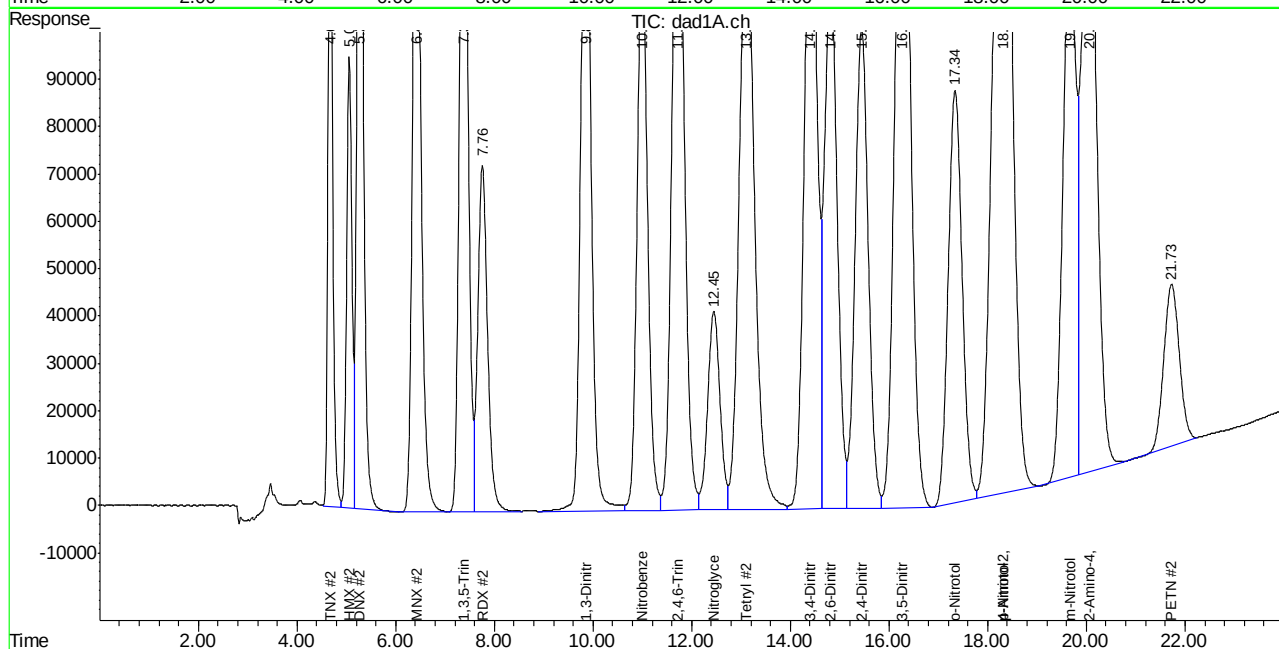
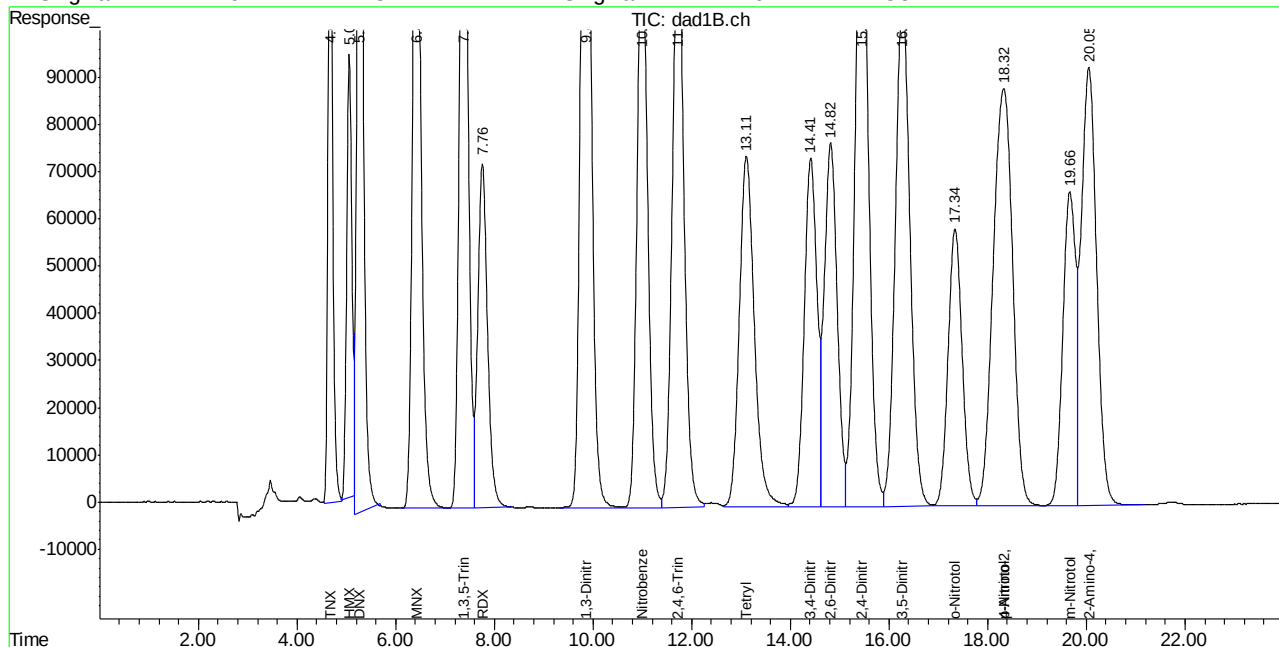
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1A.ch
Acq On : 30-Jan-2023, 15:17:00 Operator: fouads
Sample : ic3229-2500 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 16:03 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number:

GGG3229-IC3229

Method:

SW846 8330B

Lab FileID:

GG625703.D

Analyst approved:

01/31/23 11:38 Fouad Sekkar

Injection Time:

01/30/23 15:17

Supervisor approved:

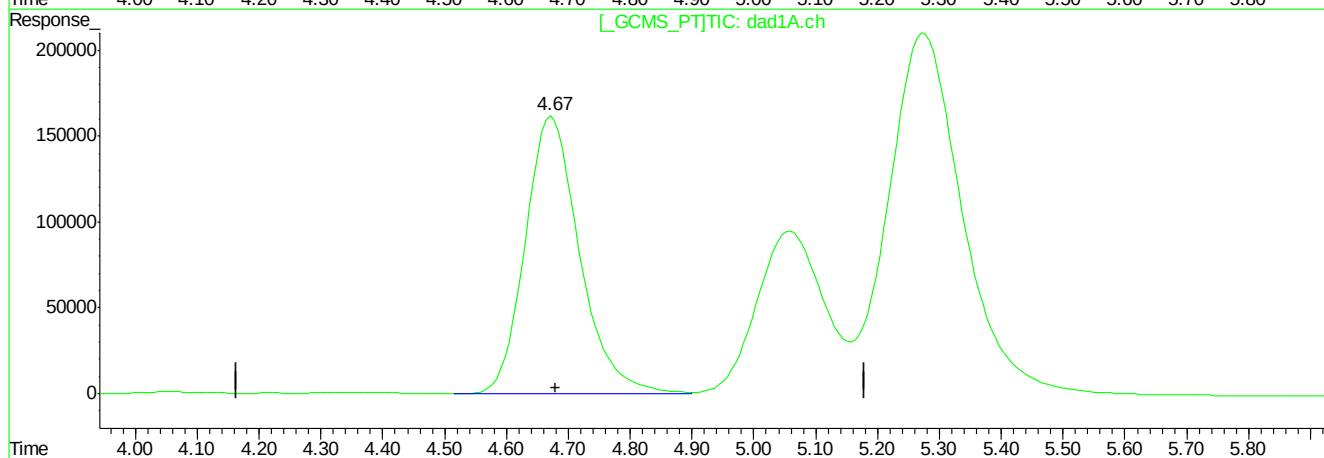
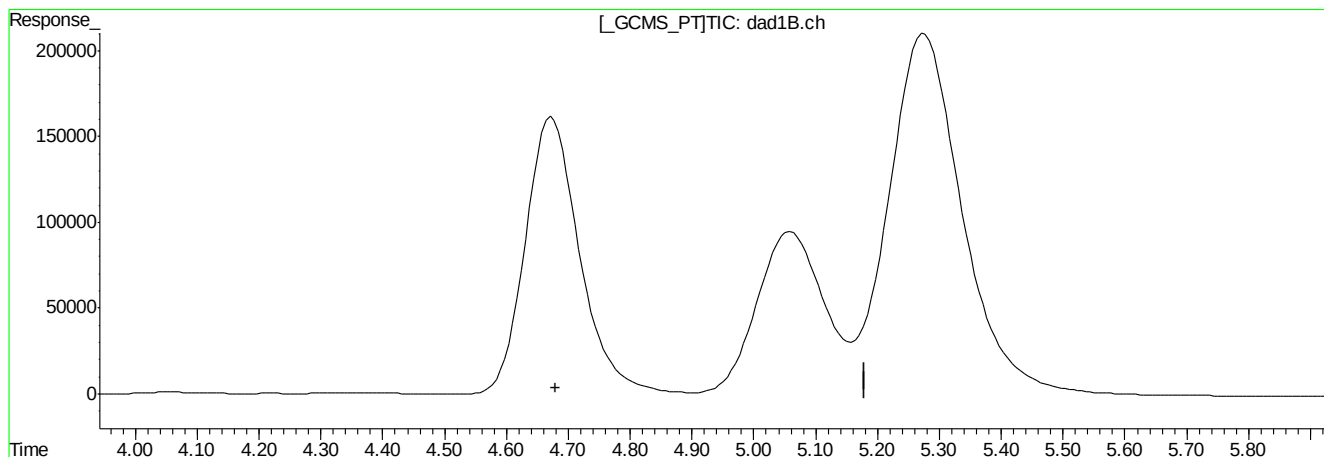
01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.67	Missed peak
HMX	2691-41-0	1	5.06	Poor instrument integration
DNX		1	5.27	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1A.ch
Acq On : 30-Jan-2023, 15:17:00 Operator: fouads
Sample : ic3229-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 16:03 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.67min 1104.913ppb

response 9929833

QEdit

(+) = Expected Retention Time

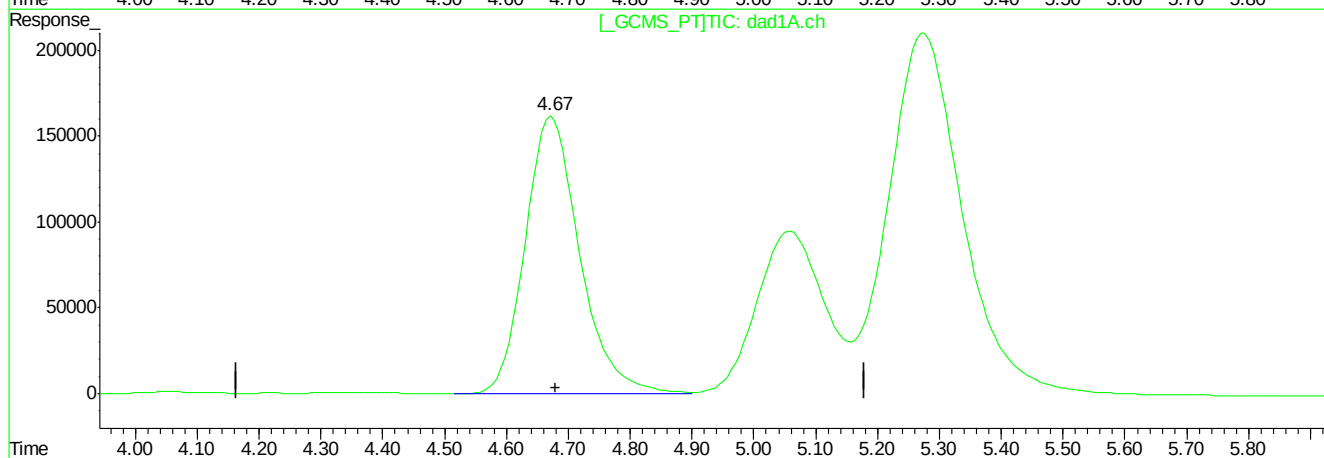
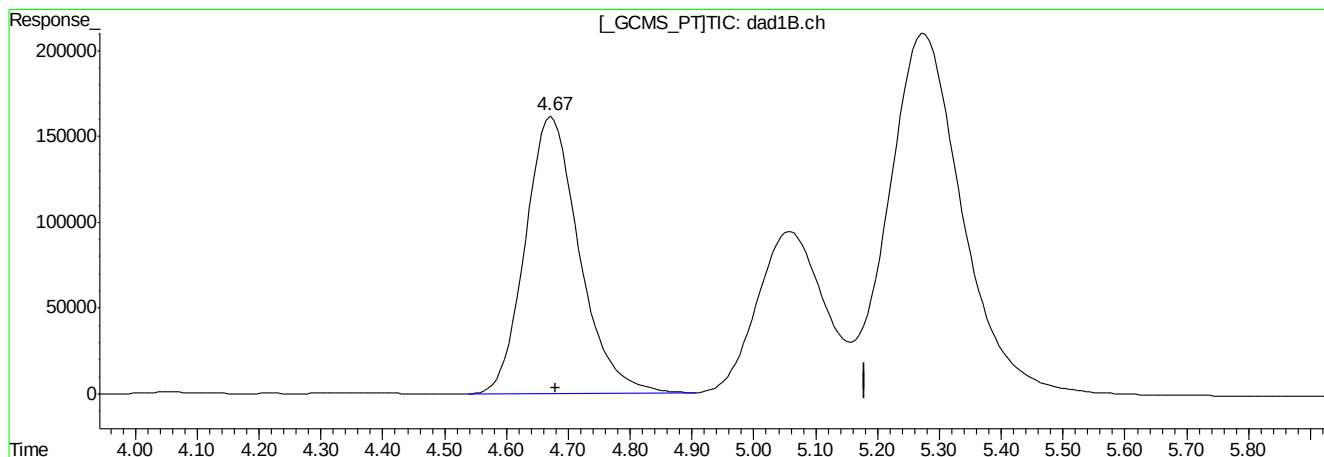
GG625703.D GGG3229_013023.M

Mon Jan 30 16:03:17 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1A.ch
Acq On : 30-Jan-2023, 15:17:00 Operator: fouads
Sample : ic3229-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 16:03 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

4.67min 1118.516ppb m

response 9885163

(1) TNX #2

4.67min 1104.913ppb

response 9929833

(+) = Expected Retention Time

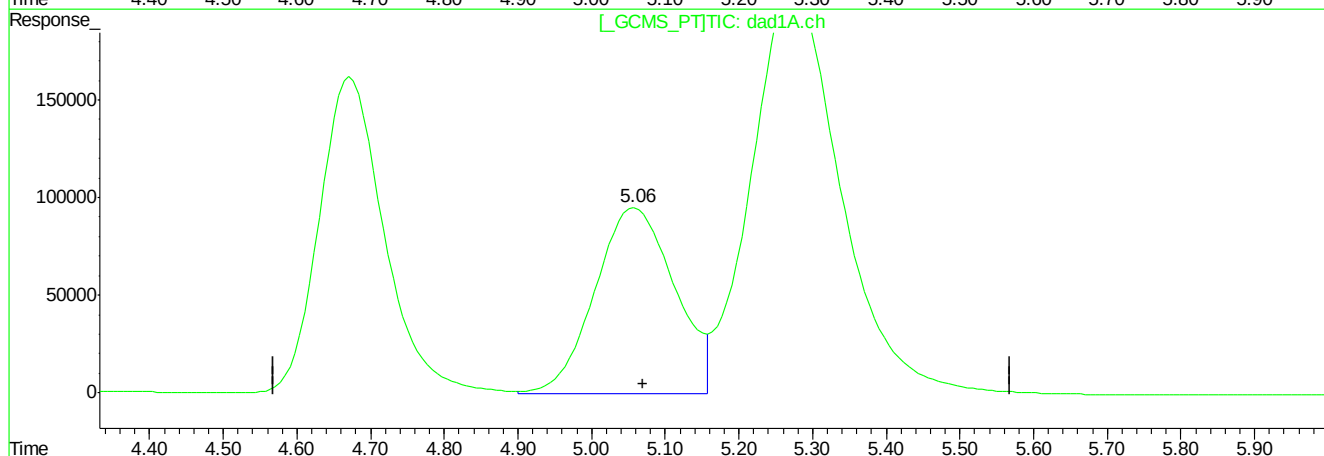
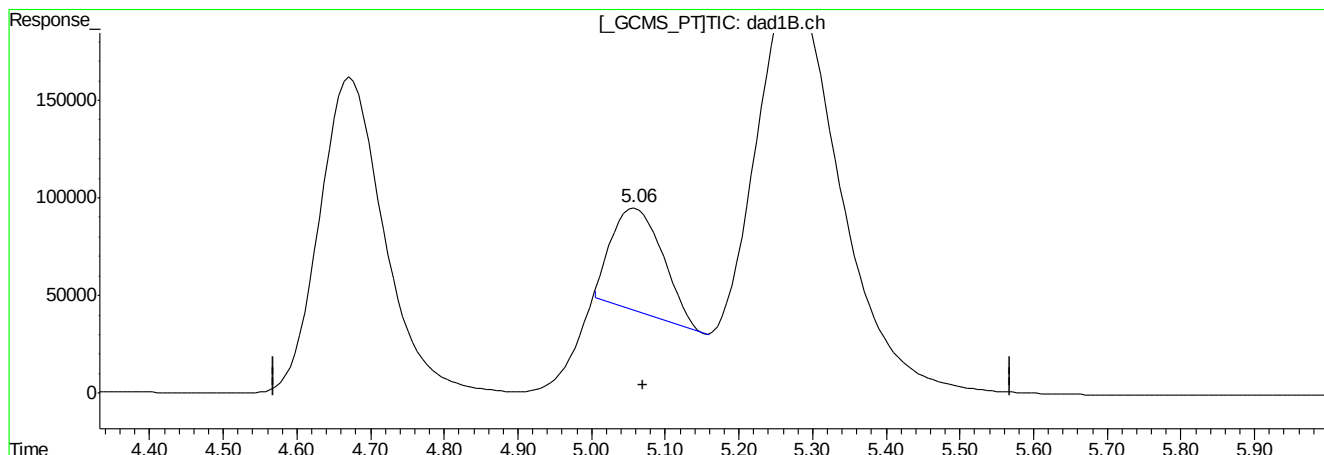
GG625703.D GGG3229_013023.M

Mon Jan 30 16:03:23 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1A.ch
Acq On : 30-Jan-2023, 15:17:00 Operator: fouads
Sample : ic3229-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 16:03 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(2) HMX

5.06min 923.821ppb

response 2572636

(2) HMX #2

5.06min 2540.852ppb

response 7118408

(+) = Expected Retention Time

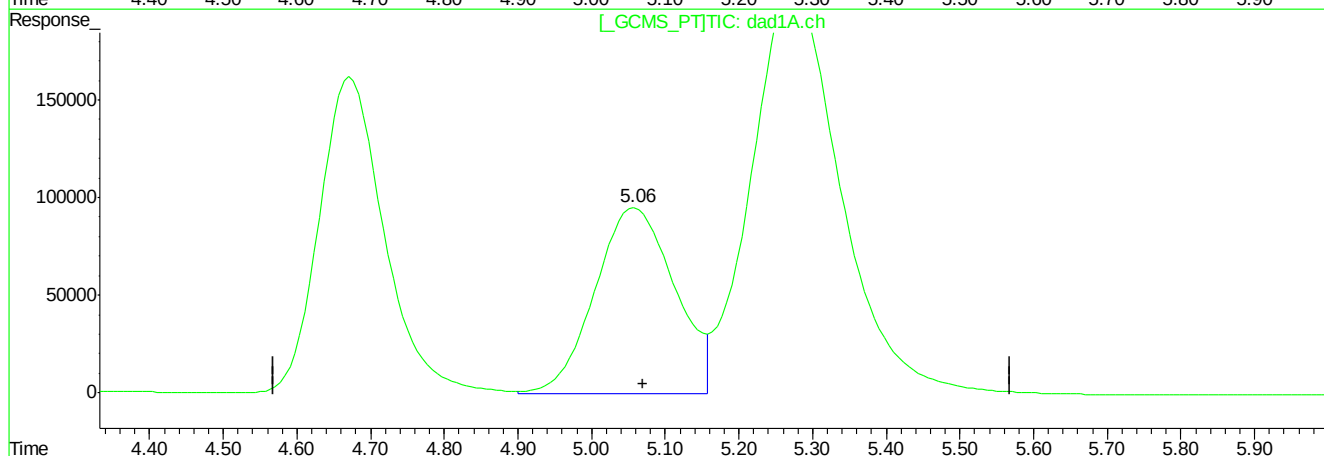
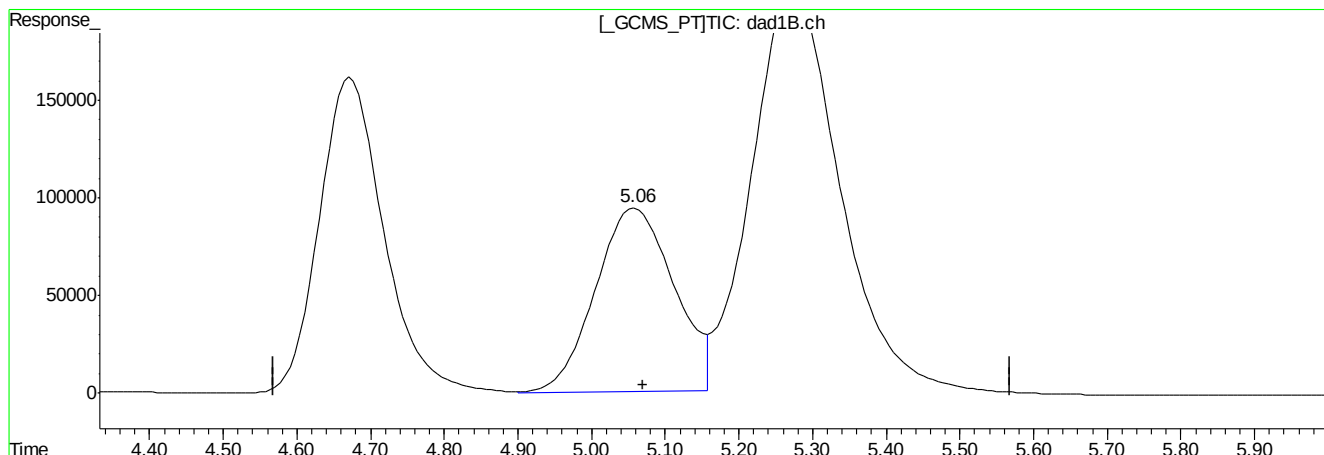
GG625703.D GGG3229_013023.M

Mon Jan 30 16:03:29 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1A.ch
Acq On : 30-Jan-2023, 15:17:00 Operator: fouads
Sample : ic3229-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 16:03 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 2458.628ppb m

response 6846729

(2) HMX #2

5.06min 2540.852ppb

response 7118408

(+) = Expected Retention Time

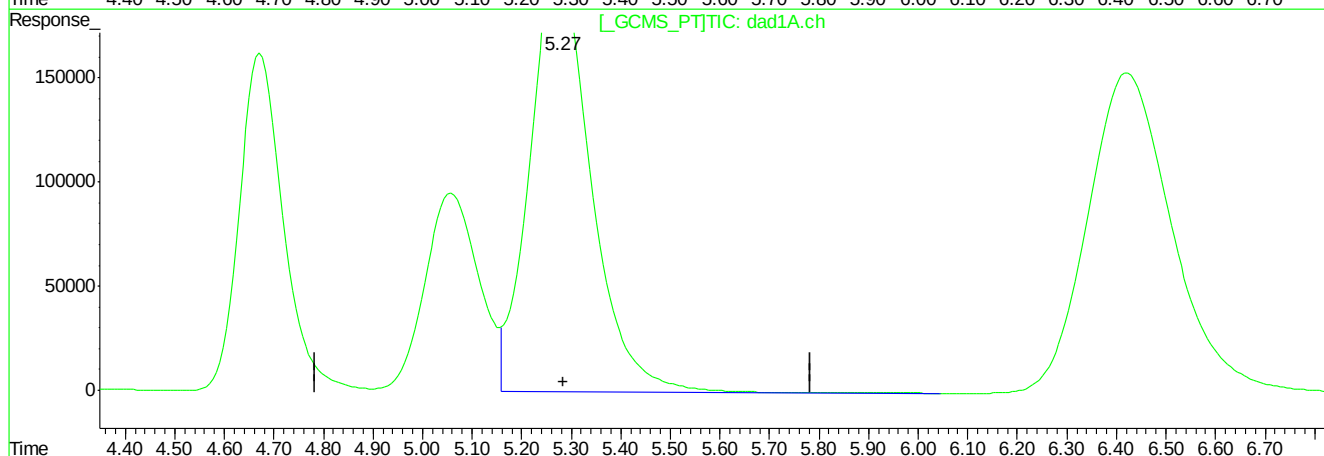
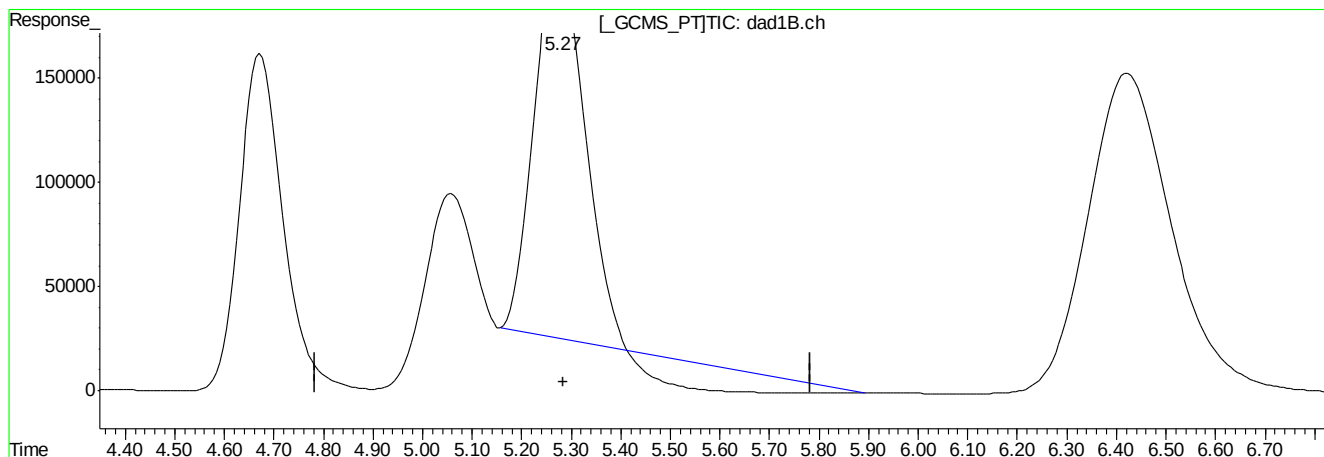
GG625703.D GGG3229_013023.M

Mon Jan 30 16:03:34 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1A.ch
Acq On : 30-Jan-2023, 15:17:00 Operator: fouads
Sample : ic3229-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 16:03 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(3) DNX

5.28min 1419.292ppb

response 10832341

(3) DNX #2

5.28min 2269.097ppb

response 17584670

(+) = Expected Retention Time

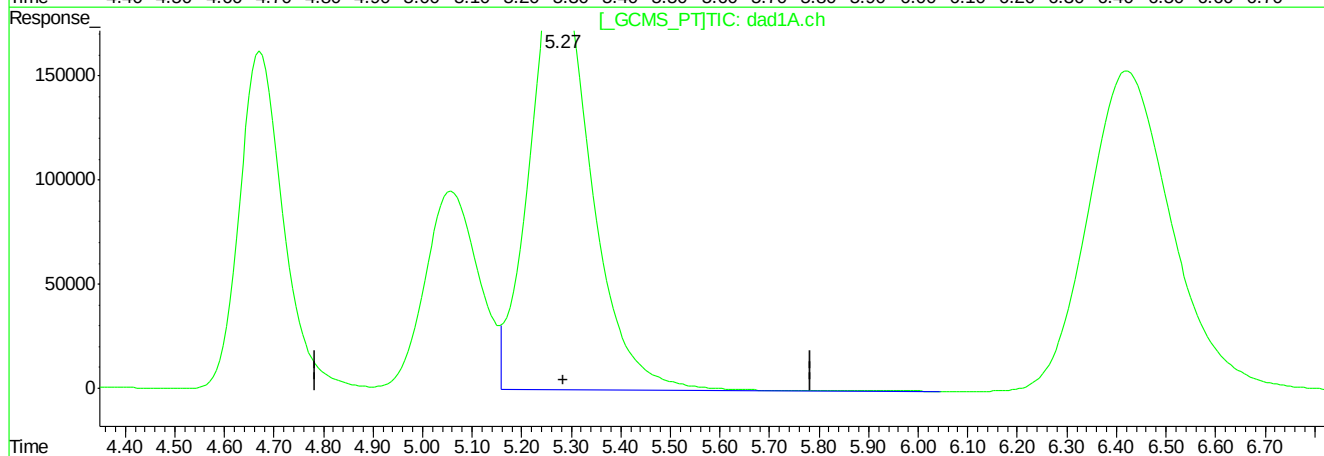
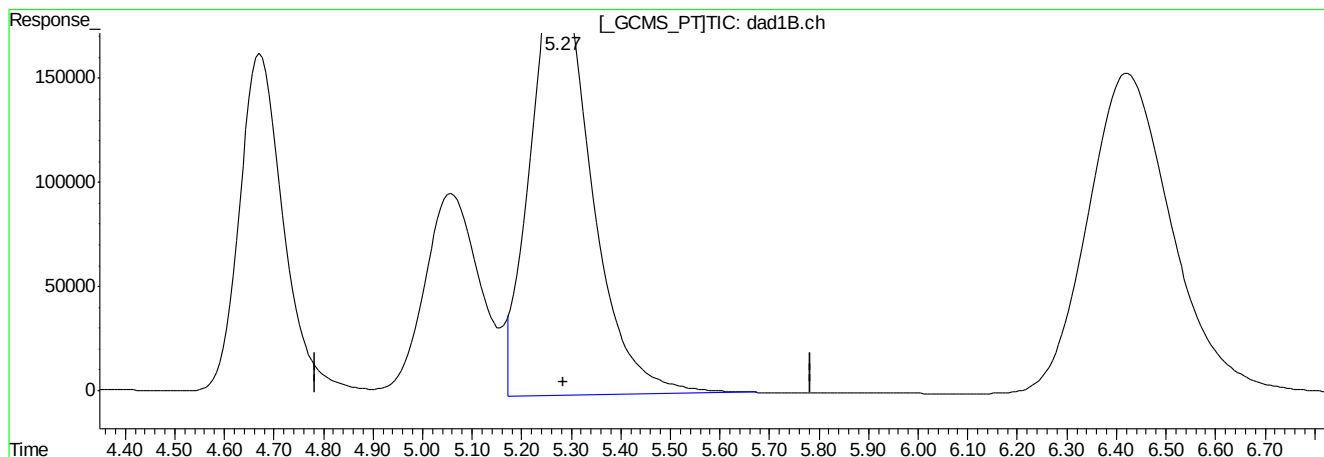
GG625703.D GGG3229_013023.M

Mon Jan 30 16:03:40 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1A.ch
Acq On : 30-Jan-2023, 15:17:00 Operator: fouads
Sample : ic3229-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 16:03 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(3) DNX

5.27min 2285.841ppb m

response 17446026

(3) DNX #2

5.28min 2269.097ppb

response 17584670

(+) = Expected Retention Time

GG625703.D GGG3229_013023.M

Mon Jan 30 16:03:47 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1B.ch Vial: 9
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1A.ch
 Acq On : 30-Jan-2023, 15:48:27 Operator: fouads
 Sample : ic3229-50000 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 08:24:13 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Mon Jan 30 12:26:09 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.43	14.43	26446434	51031863	5746.359	5575.790
Spiked Amount	500.000	Range	70 - 136	Recovery	= 1149.27%#	1115.16%#
Target Compounds						
1) TNX	4.67	4.67	20101494	19926520	2274.503m	2217.265
2) HMX	5.06	5.06	14112872	14295711	5067.866m	5102.725
3) DNx	5.27	5.28	34435123	35402372	4511.813m	4568.264
4) MNX	6.43	6.43	36652087	36656107	5485.684	5486.409
5) 1,3,5-Trinitrobe	7.38	7.38	42551618	42560991	4741.953	4727.996
6) RDX	7.76	7.76	20266058	20277790	4748.274	4722.166
7) 1,3-Dinitrobenze	9.85	9.85	58459824	43624959	4749.341	4201.790
8) Nitrobenzene	11.00	11.00	36906916	34199012	4692.080	4721.841
9) 2,4,6-Trinitroto	11.73	11.73	41281895	54008929	4718.357	4829.103
10) Nitroglycerin	12.39	12.45	321064	14331294	NoCal	4933.817 #
11) Tetryl	13.11	13.11	32021424	54711318	4649.236	4769.247
13) 2,6-Dinitrotolue	14.84	14.84	28578821	41511460	4314.596	4353.026
14) 2,4-Dinitrotolue	15.48	15.48	53232322	37554282	4710.889	4837.835
15) 3,5-Dinitroanili	16.32	16.32	45244650	74873671	4800.434	4836.760
16) o-Nitrotoluene	17.38	17.38	23321675	34260164	4524.420	4756.587
17) p-Nitrotoluene	18.38	18.37	48798399	89710359	9621.758	10259.123
18) 4-Amino-2,6-Dini	18.38	18.37	48798399	89710359	9807.854	10321.655
19) m-Nitrotoluene	19.72	19.72	24031426	41399511	4771.129	5240.628
20) 2-Amino-4,6-Dini	20.14	20.14	40364870	57877954	4858.732	5035.636
21) PETN	21.79	21.77	226430	15110444	NoCal	4911.903 #

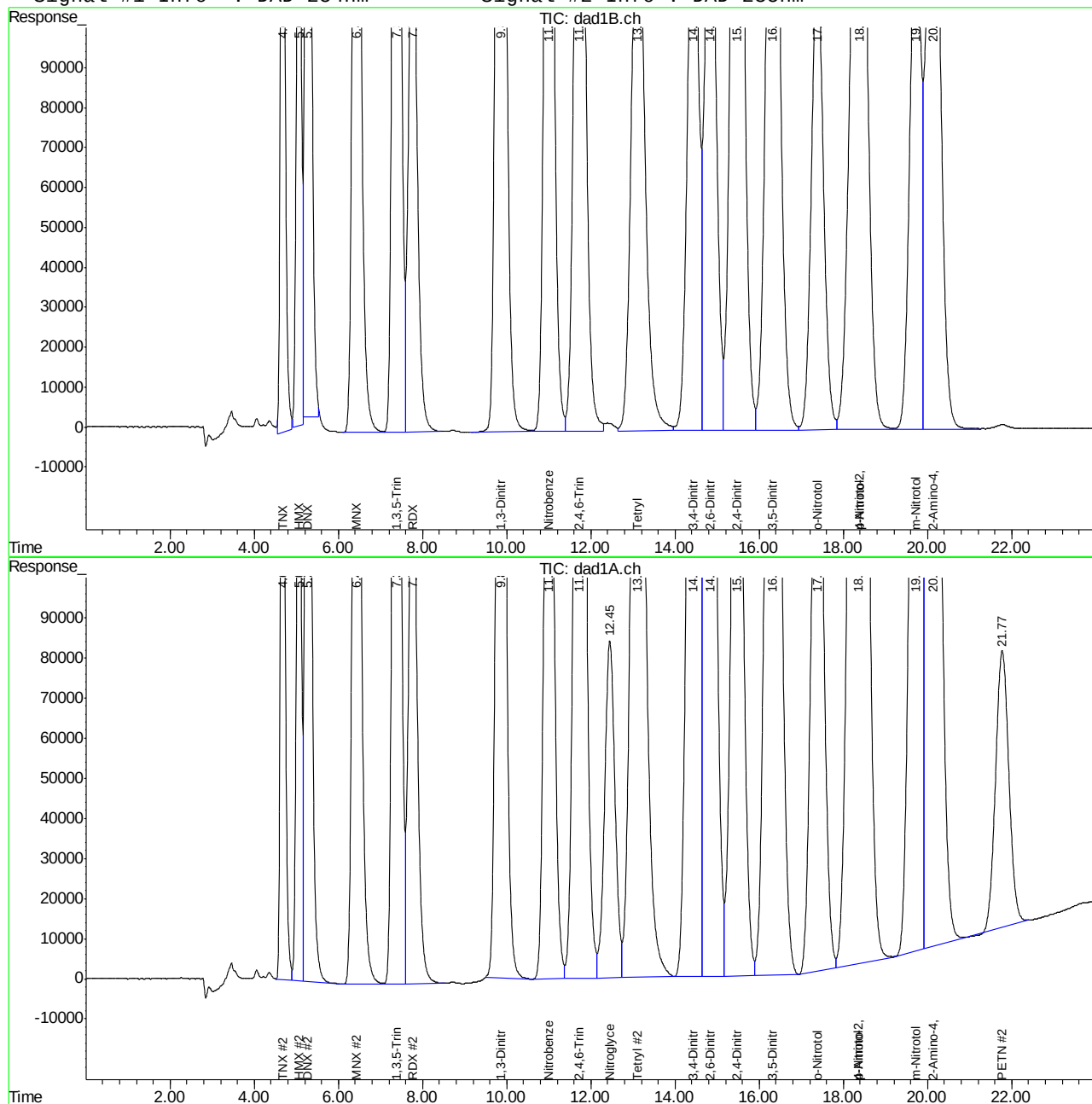
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625704.D GGG3229_013023.M Tue Jan 31 11:32:18 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1A.ch
Acq On : 30-Jan-2023, 15:48:27 Operator: fouads
Sample : ic3229-50000 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:24 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm
Signal #2 Phase : Bonus RP
Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number: GGG3229-IC3229

Method: SW846 8330B

Lab FileID: GG625704.D

Analyst approved: 01/31/23 11:38 Fouad Sekkar

Injection Time: 01/30/23 15:48

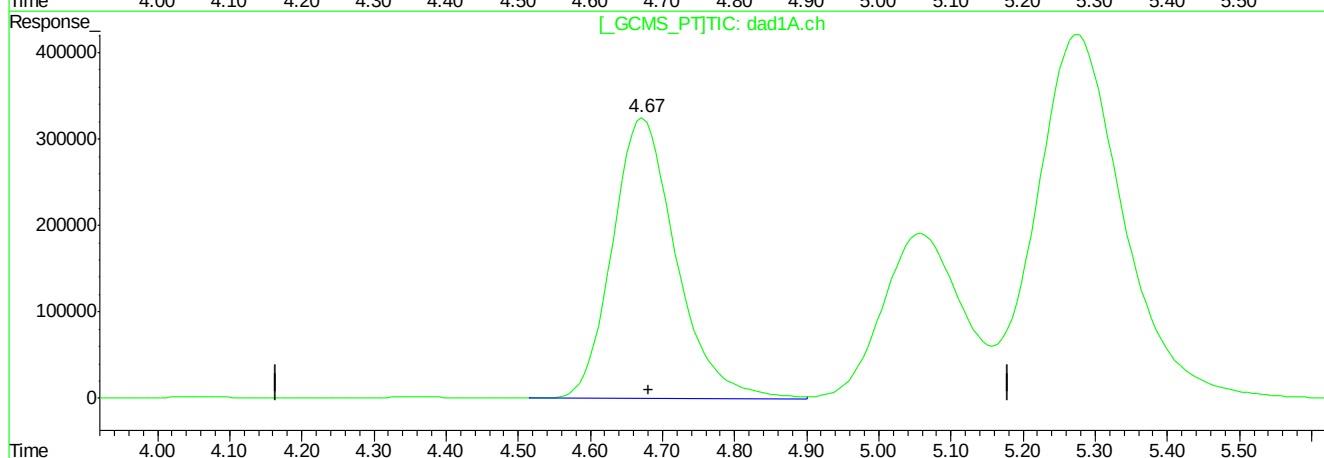
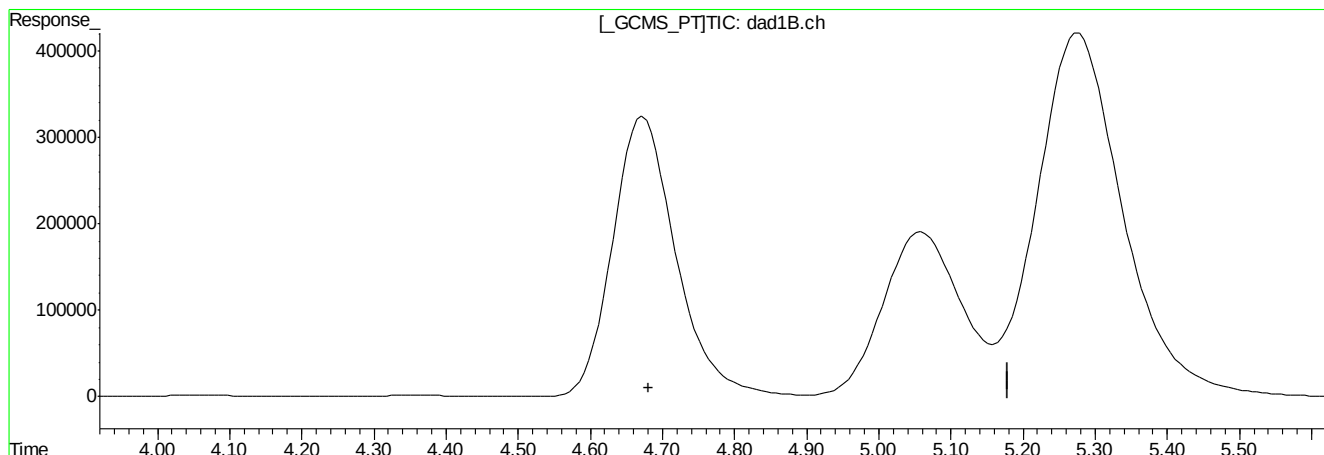
Supervisor approved: 01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.67	Missed peak
HMX	2691-41-0	1	5.06	Poor instrument integration
DNX		1	5.27	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1A.ch
Acq On : 30-Jan-2023, 15:48:27 Operator: fouads
Sample : ic3229-50000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:24 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.67min 2217.265ppb

response 19926520

(+) = Expected Retention Time

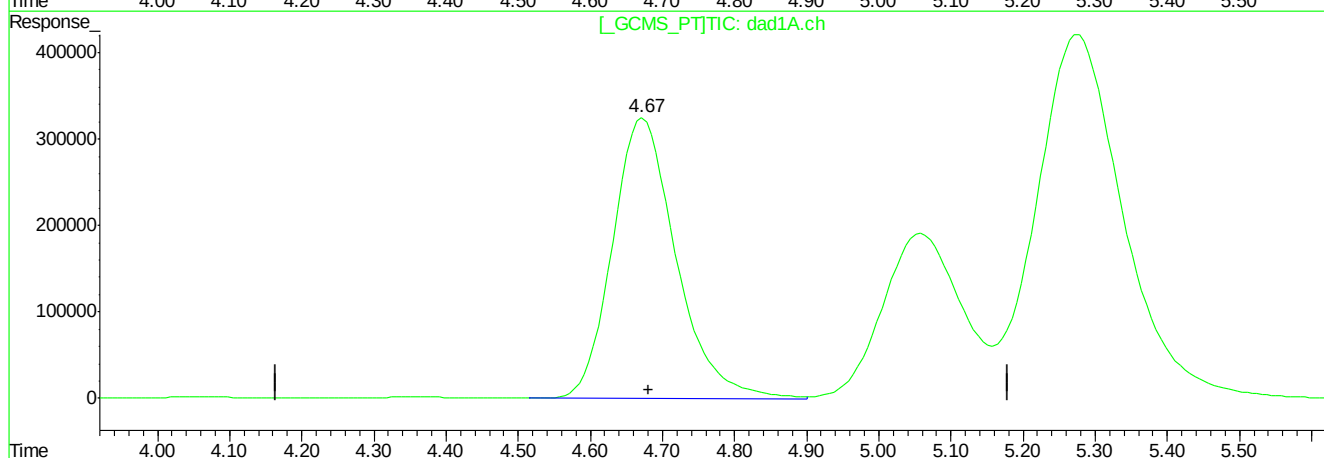
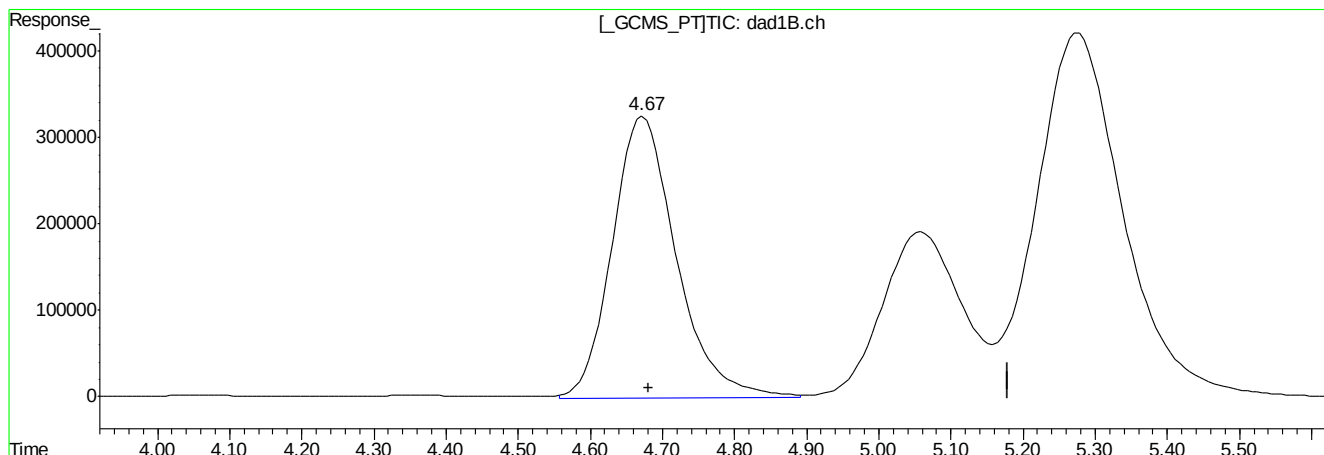
GG625704.D GGG3229_013023.M

Tue Jan 31 08:24:25 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1A.ch
Acq On : 30-Jan-2023, 15:48:27 Operator: fouads
Sample : ic3229-50000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:24 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

4.67min 2274.503ppb m

response 20101494

(1) TNX #2

4.67min 2217.265ppb

response 19926520

(+) = Expected Retention Time

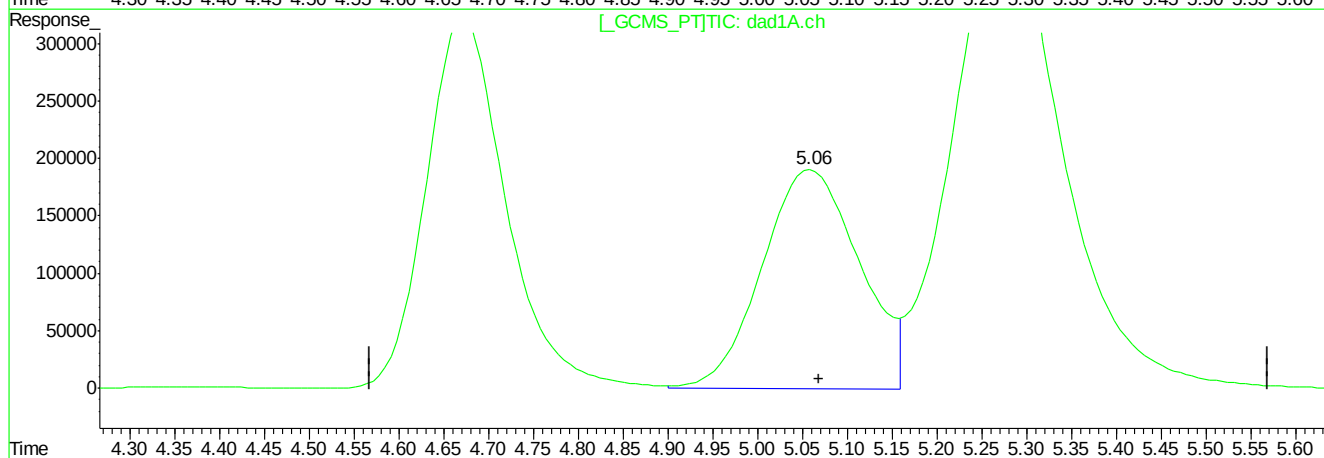
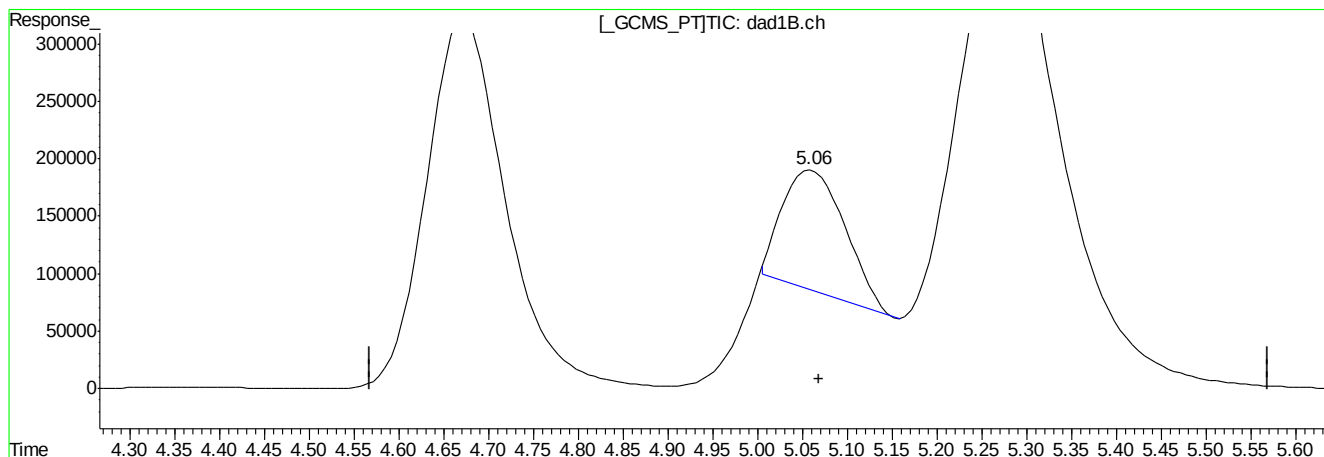
GG625704.D GGG3229_013023.M

Tue Jan 31 08:24:31 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1A.ch
Acq On : 30-Jan-2023, 15:48:27 Operator: fouads
Sample : ic3229-50000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:24 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 1845.533ppb

response 5139397

(2) HMX #2

5.06min 5102.725ppb

response 14295711

(+) = Expected Retention Time

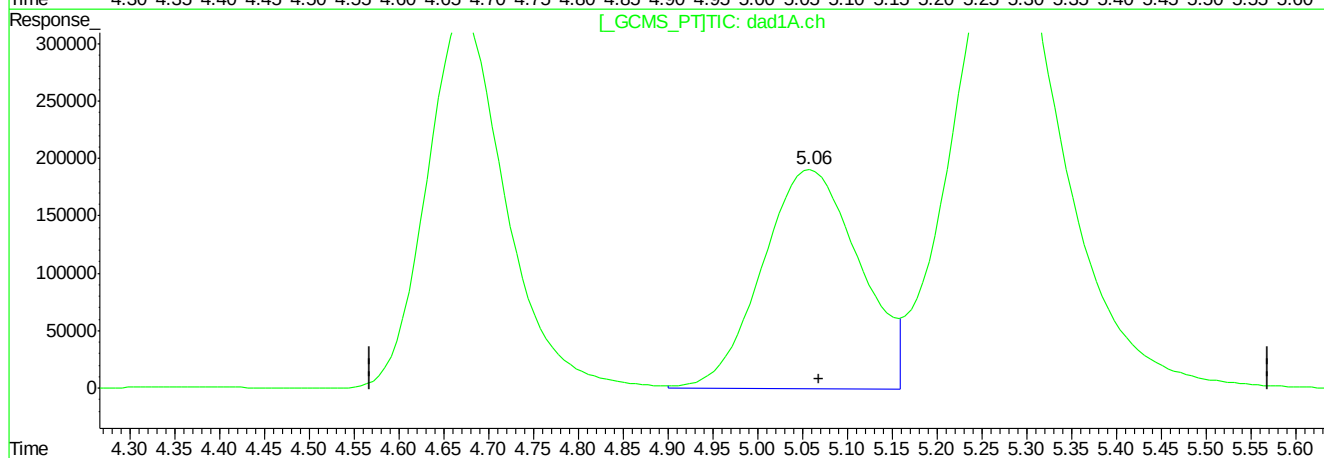
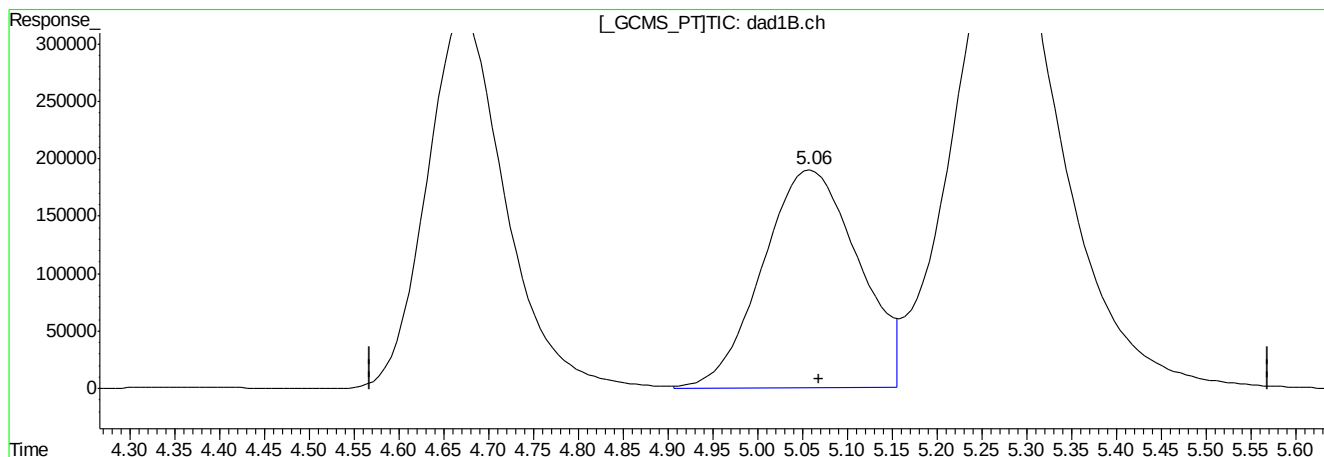
GG625704.D GGG3229_013023.M

Tue Jan 31 08:24:37 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1A.ch
Acq On : 30-Jan-2023, 15:48:27 Operator: fouads
Sample : ic3229-50000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:24 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 5067.866ppb m

response 14112872

(2) HMX #2

5.06min 5102.725ppb

response 14295711

(+) = Expected Retention Time

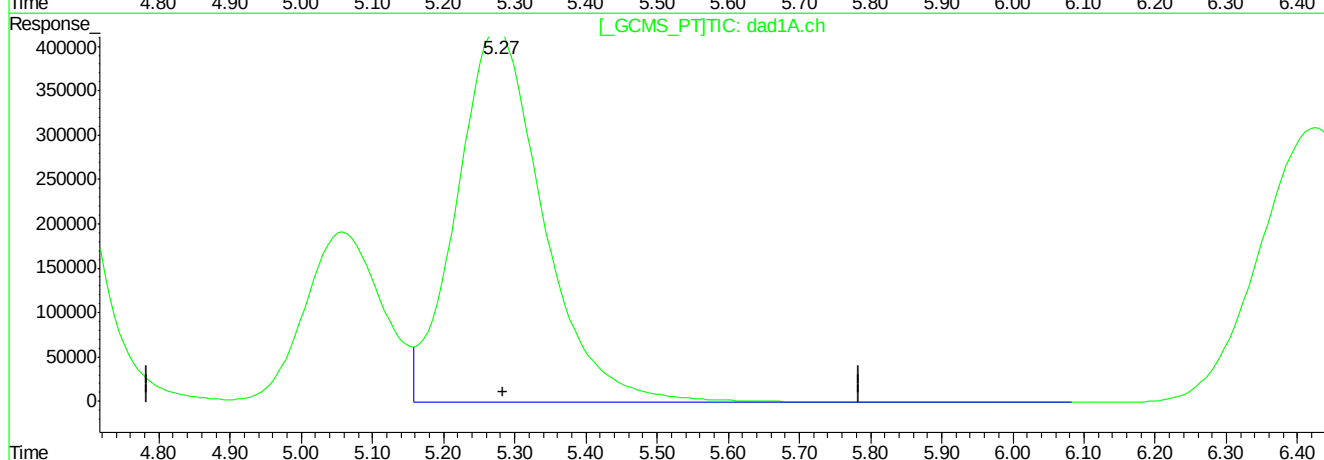
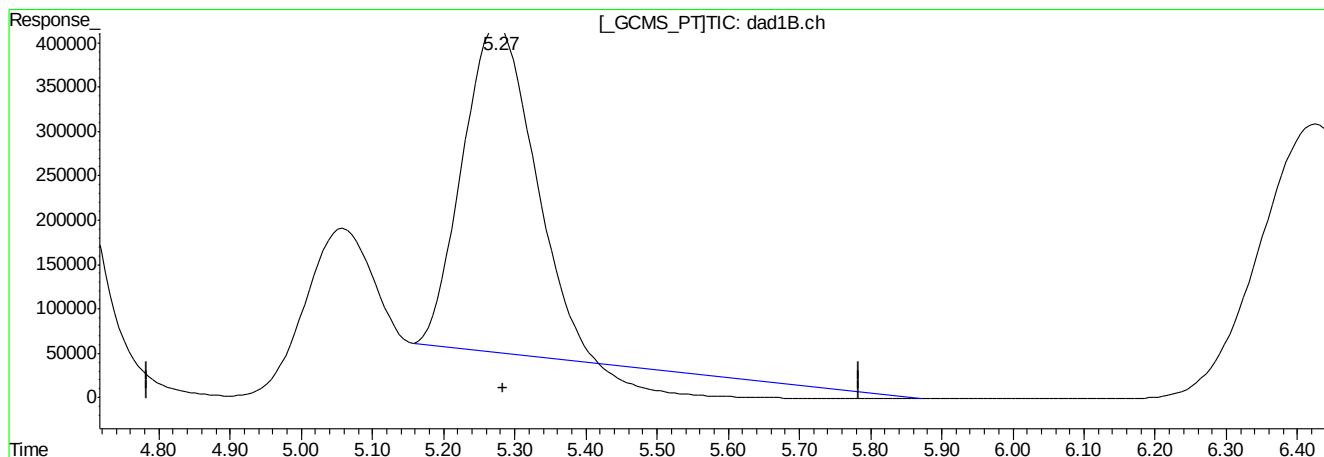
GG625704.D GGG3229_013023.M

Tue Jan 31 08:24:44 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1A.ch
Acq On : 30-Jan-2023, 15:48:27 Operator: fouads
Sample : ic3229-50000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:24 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(3) DNX

5.28min 2912.361ppb

response 22227764

(3) DNX #2

5.28min 4568.264ppb

response 35402372

(+) = Expected Retention Time

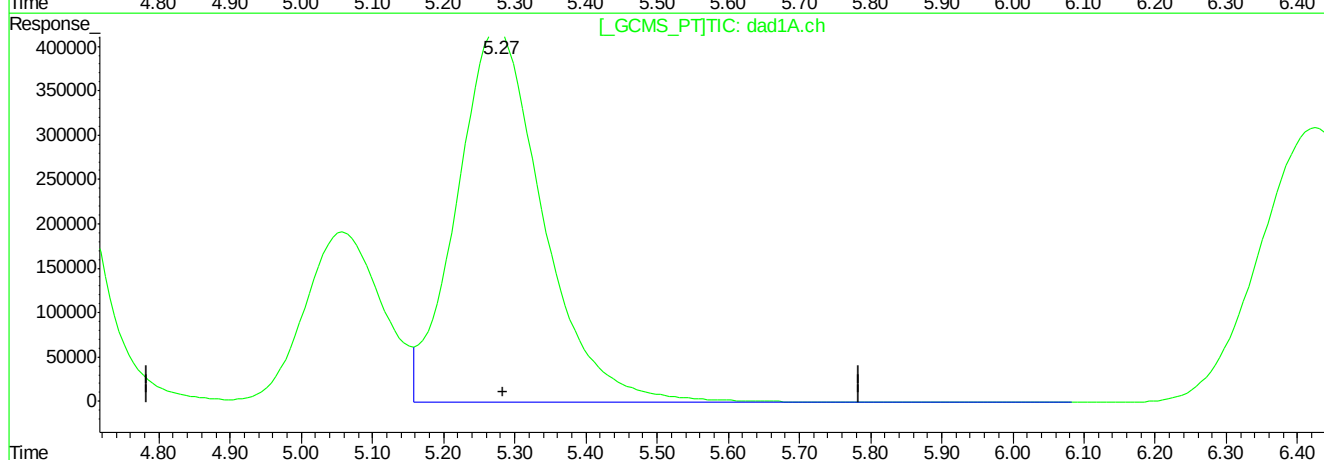
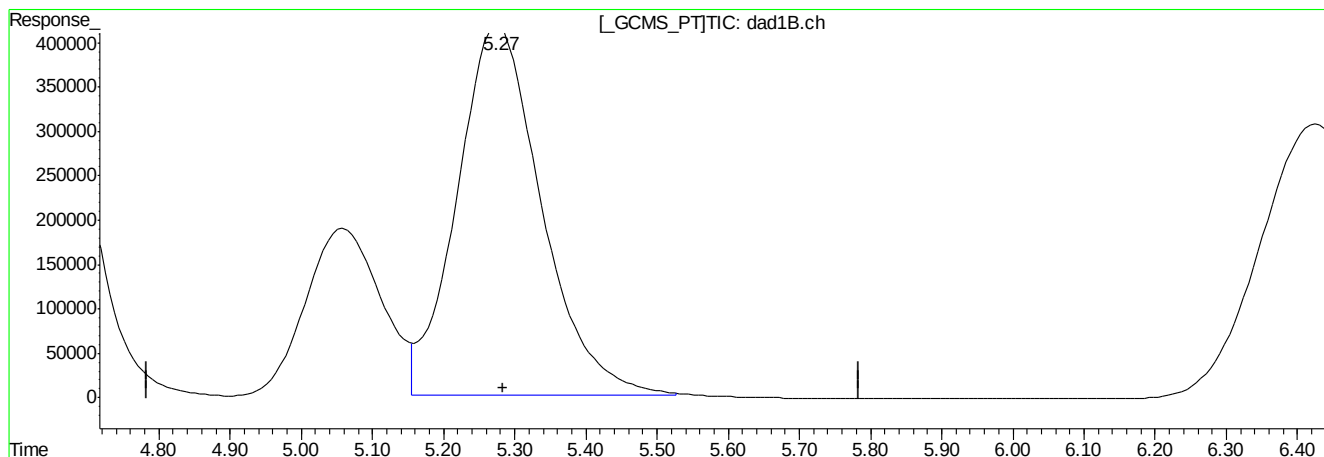
GG625704.D GGG3229_013023.M

Tue Jan 31 08:24:49 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1A.ch
Acq On : 30-Jan-2023, 15:48:27 Operator: fouads
Sample : ic3229-50000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:24 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.27min 4511.813ppb m

response 34435123

(3) DNX #2

5.28min 4568.264ppb

response 35402372

(+) = Expected Retention Time

GG625704.D GGG3229_013023.M

Tue Jan 31 08:24:55 2023

Mike Eger
01/31/23 12:29

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
 Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
 Sample : icv3229-1000 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 08:36:08 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
Spiked Amount	500.000	Range	70 - 136	Recovery	=	0.00%# 0.00%#
Target Compounds						
1) TNX	4.68	4.68	3991613	4032633	452.208m	476.755
2) HMX	5.06	5.06	3024242	3081290	1042.220m	1038.701
3) DNx	5.28	5.28	7226912	7030685	964.850m	947.561
4) MNX	6.43	6.43	7292432	7294728	1133.193	1113.801
5) 1,3,5-Trinitrobe	7.38	7.38	9040878	9041740	1019.868	1021.694
6) RDX	7.77	7.77	4296688	4295826	1003.691	1006.258
7) 1,3-Dinitrobenze	9.86	9.85	12450218	9386252	1018.683	1064.546m
8) Nitrobenzene	11.00	11.00	7897989	7871578	1013.251	1020.942
9) 2,4,6-Trinitroto	11.71	11.71	8523872	11562026	970.179	960.539
10) Nitroglycerin	0.00	12.43	0	3129729	N.D.	1084.658 #
11) Tetryl	13.08	13.08	6206859	10870158	986.124	1005.767
13) 2,6-Dinitrotolue	14.79	14.79	5743078	8361074	980.543m	1080.390m
14) 2,4-Dinitrotolue	15.42	15.42	11244412	7921340	1016.080	1051.017
15) 3,5-Dinitroanili	16.24	16.24	10067397	16797407	1066.198	1072.757
16) o-Nitrotoluene	17.32	17.32	4901302	7158733	1024.785	1046.172
17) p-Nitrotoluene	18.32	18.29	10197339	18638756	2090.417	2078.475
18) 4-Amino-2,6-Dini	18.32	18.29	10197339	18638756	2090.417	2078.475
19) m-Nitrotoluene	19.67	19.67	5090076	8679448	1031.944	1052.573
20) 2-Amino-4,6-Dini	20.05	20.06	8644428	12321619	1014.709	1090.721
21) PETN	0.00	21.74	0	3067548	N.D.	1020.922 #

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625705.D GGG3229_013023.M Tue Jan 31 11:32:19 2023

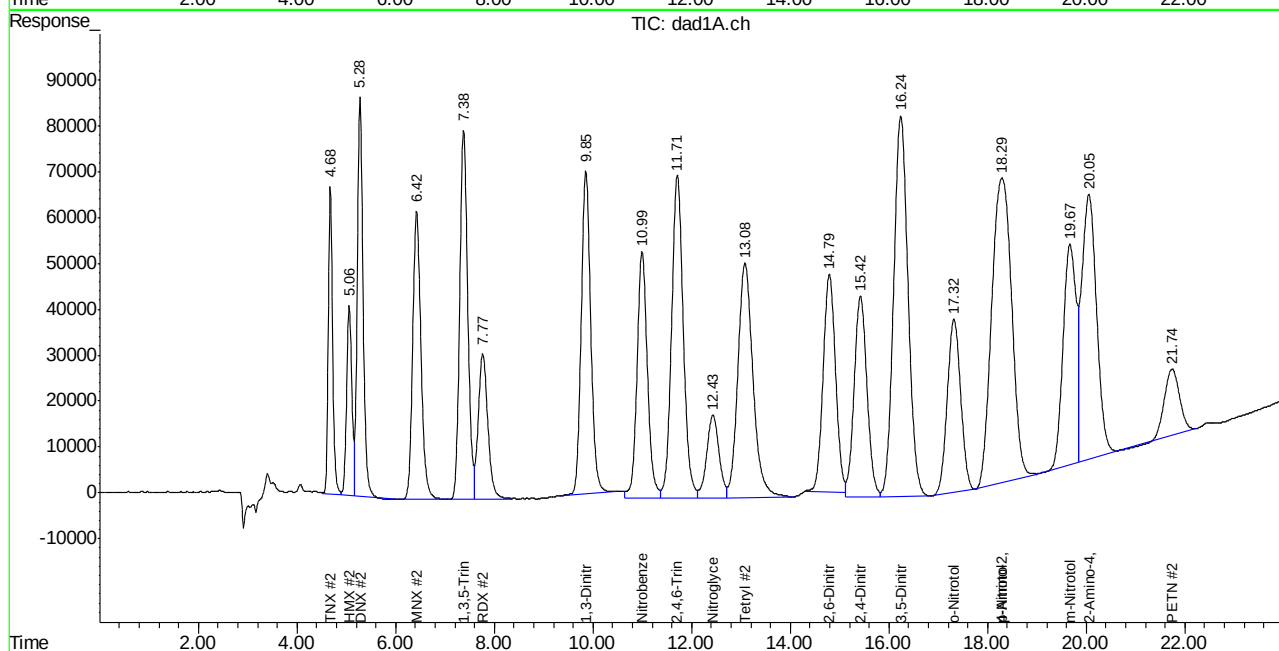
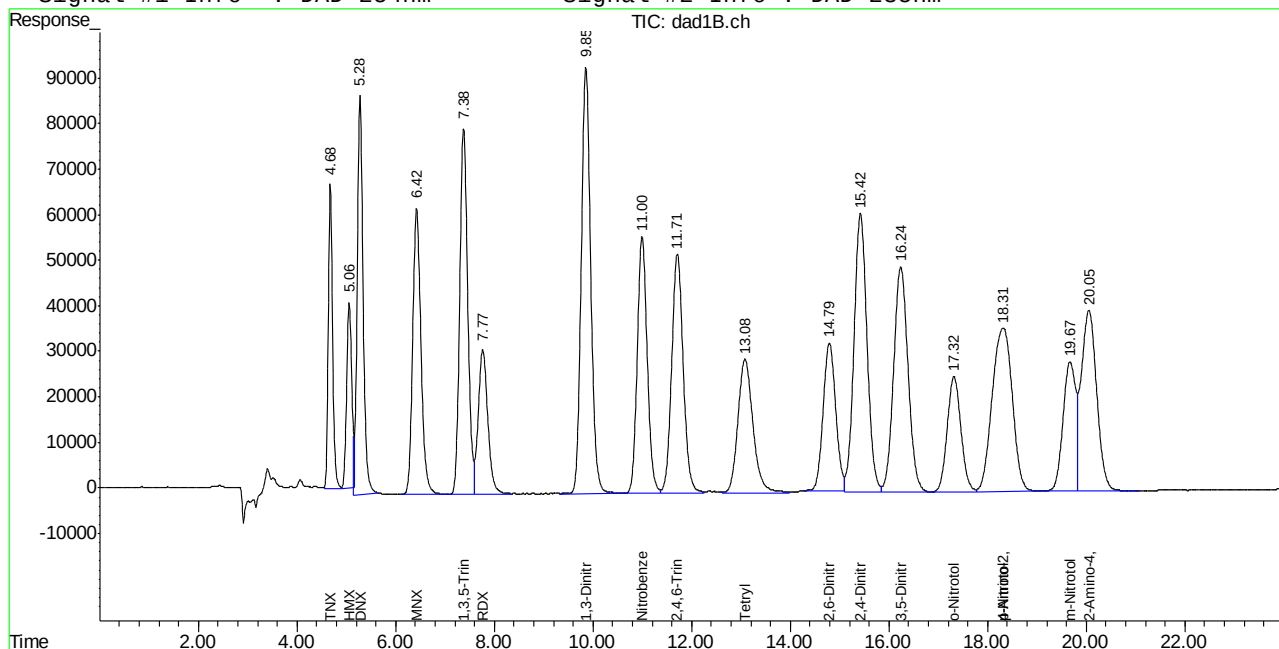
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:37 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number:GGG3229-ICV3229

Method:SW846 8330B

Lab FileID:GG625705.D

Analyst approved:01/31/23 11:38 Fouad Sekkar

Injection Time:01/30/23 16:19

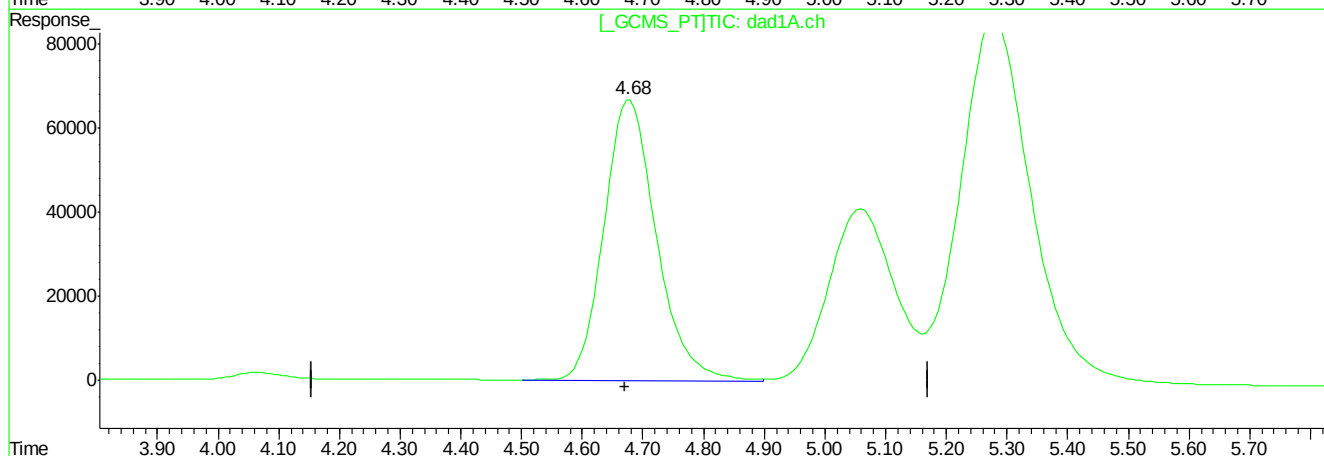
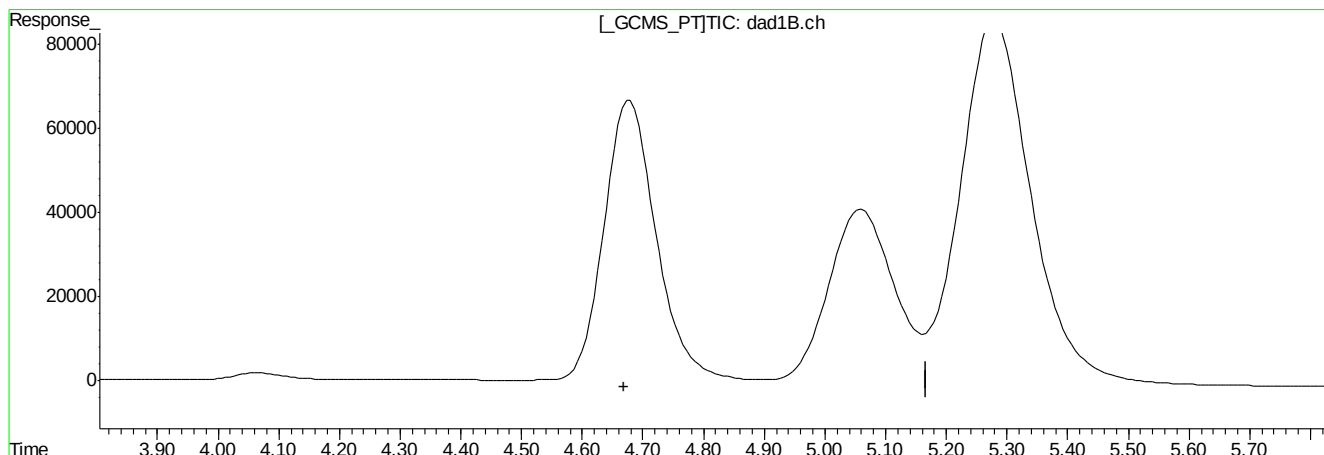
Supervisor approved:01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.68	Missed peak
HMX	2691-41-0	1	5.06	Poor instrument integration
DNX		1	5.28	Poor instrument integration
1,3-Dinitrobenzene	99-65-0	2	9.85	Poor instrument integration
2,6-Dinitrotoluene	606-20-2	1	14.79	Poor instrument integration
2,6-Dinitrotoluene	606-20-2	2	14.79	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:30 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.68min 476.755ppb

response 4032633

(+) = Expected Retention Time

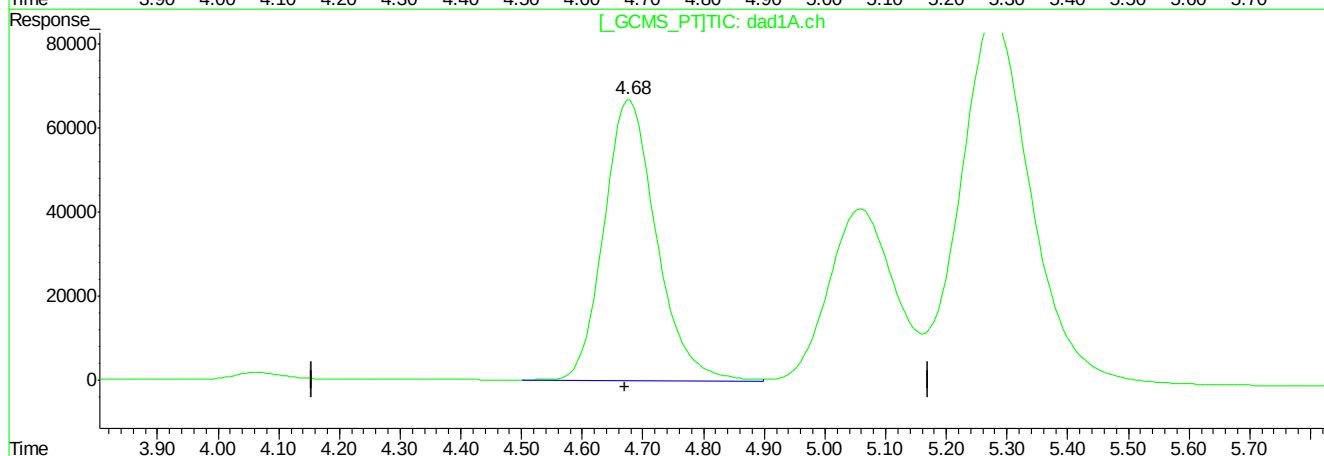
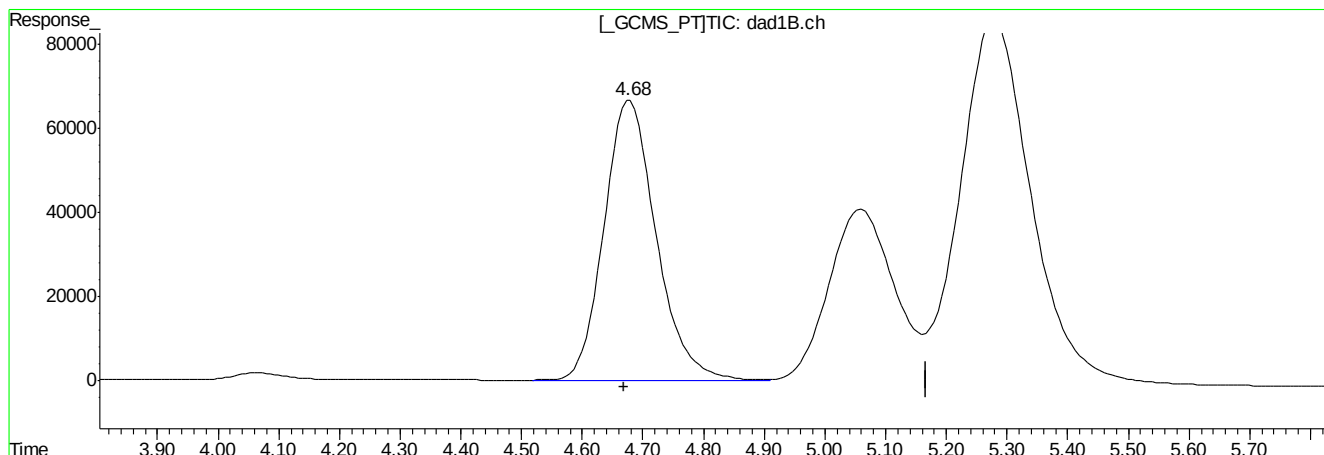
GG625705.D GGG3229_013023.M

Tue Jan 31 08:31:12 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:30 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

4.68min 454.480ppb m

response 4011672

(1) TNX #2

4.68min 476.755ppb

response 4032633

(+) = Expected Retention Time

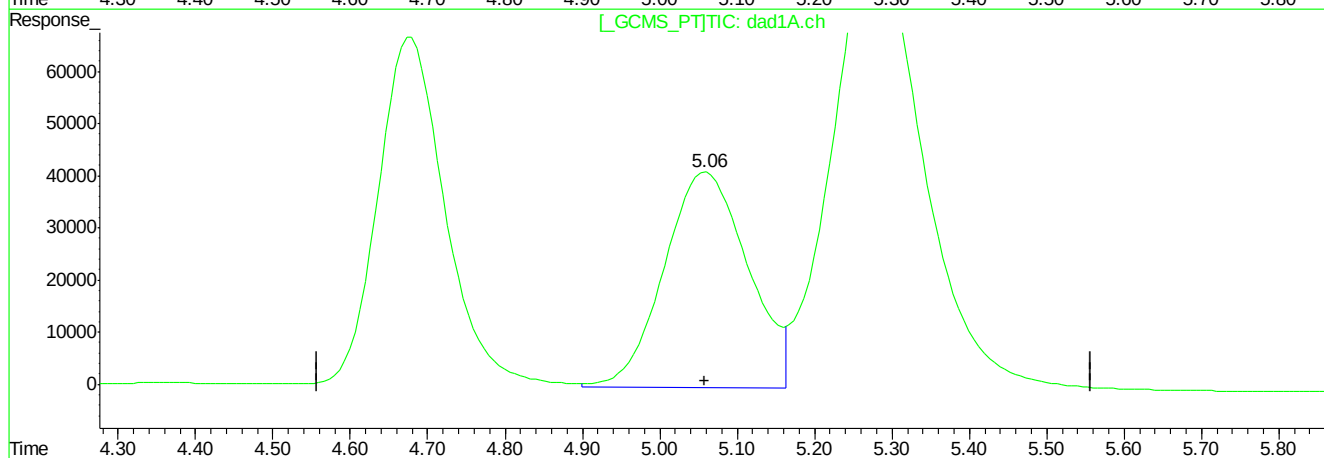
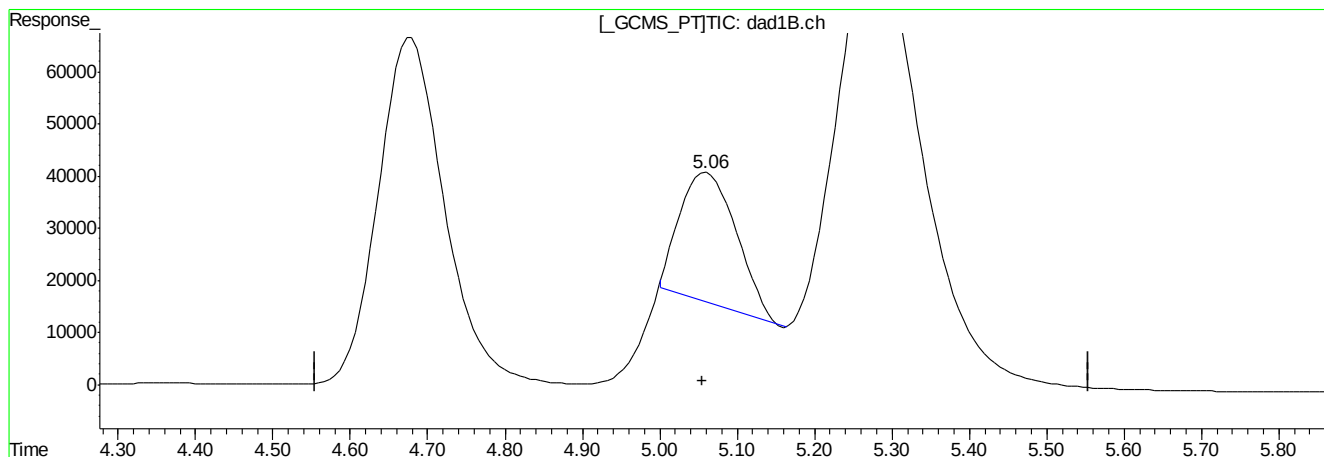
GG625705.D GGG3229_013023.M

Tue Jan 31 08:31:27 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:30 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 438.928ppb

response 1273651

(2) HMX #2

5.06min 1038.701ppb

response 3081290

(+) = Expected Retention Time

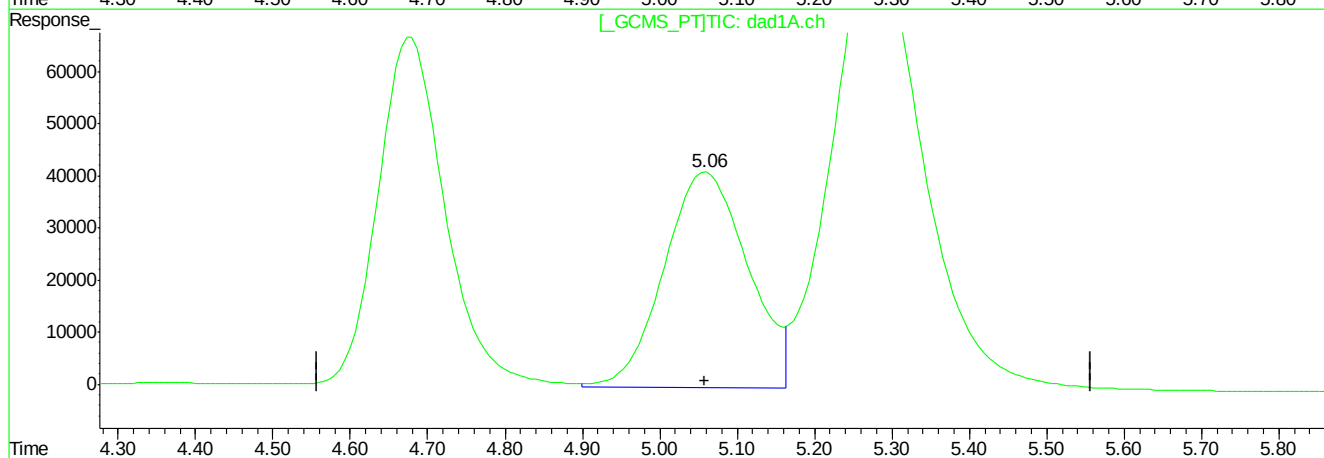
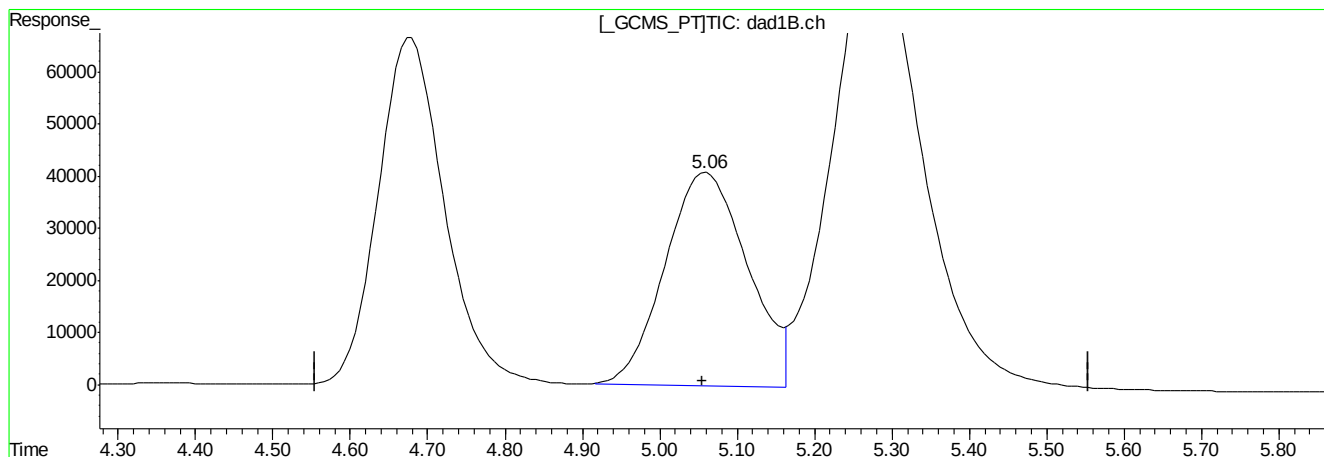
GG625705.D GGG3229_013023.M

Tue Jan 31 08:31:33 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:30 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 1050.766ppb m

response 3049040

(2) HMX #2

5.06min 1038.701ppb

response 3081290

(+) = Expected Retention Time

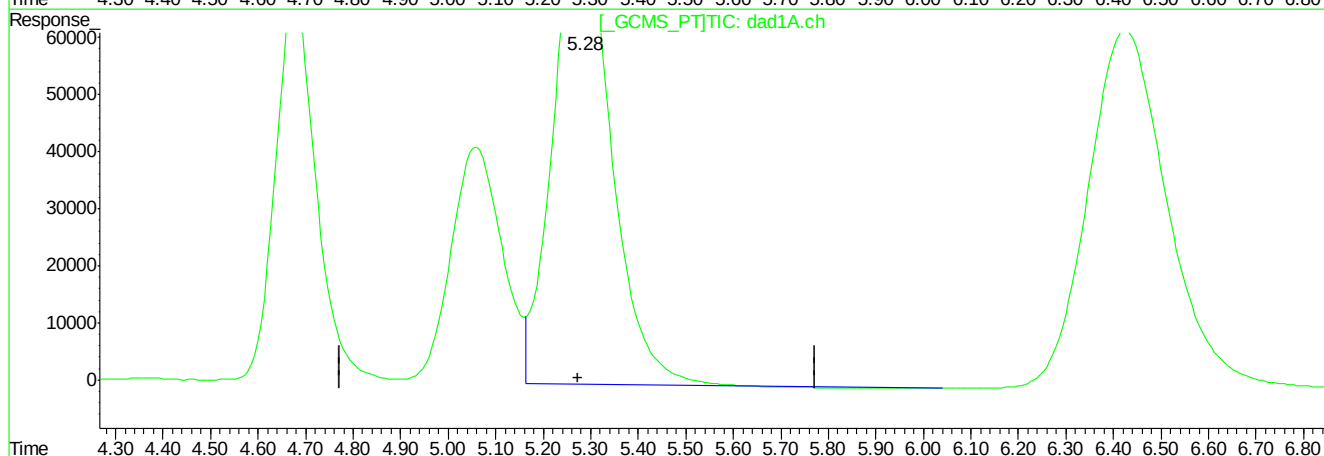
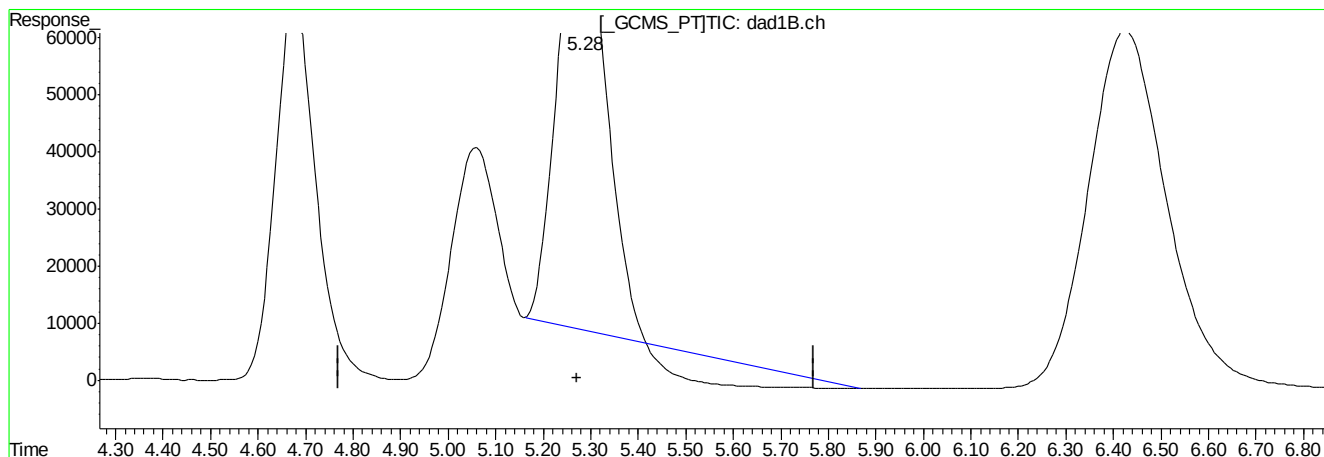
GG625705.D GGG3229_013023.M

Tue Jan 31 08:31:42 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:30 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



(3) DNX

5.28min 610.425ppb

response 4572204

(3) DNX #2

5.28min 947.561ppb

response 7030685

(+) = Expected Retention Time

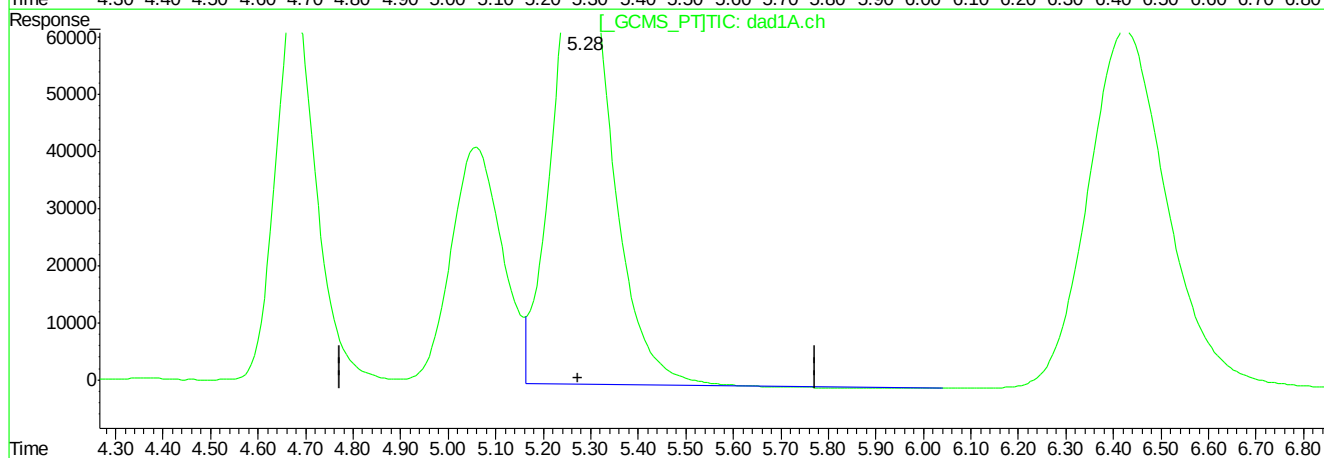
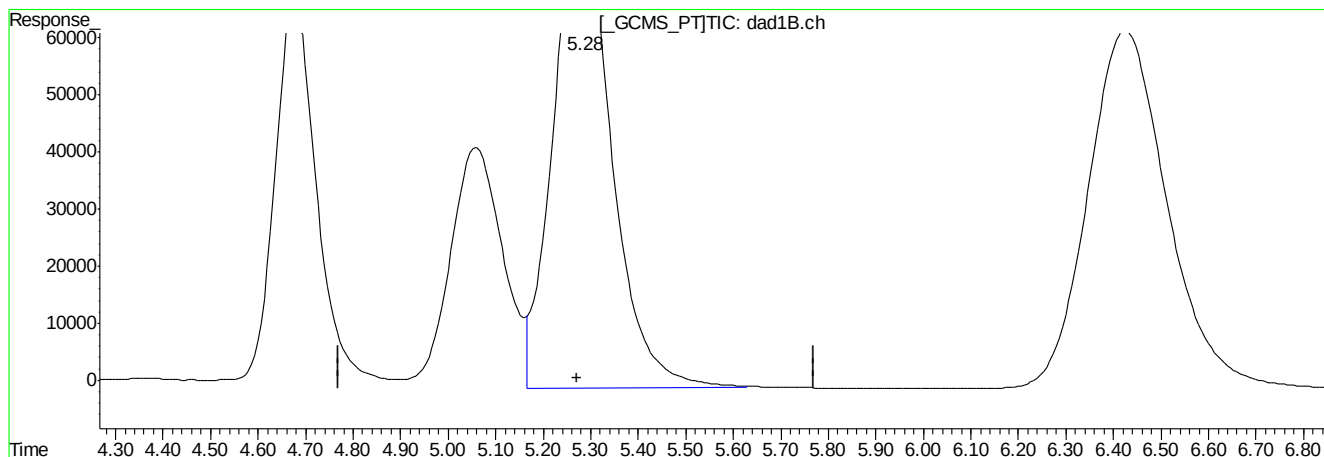
GG625705.D GGG3229_013023.M

Tue Jan 31 08:31:47 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:30 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



(3) DNX

5.28min 951.056ppb m

response 7123593

(3) DNX #2

5.28min 947.561ppb

response 7030685

(+) = Expected Retention Time

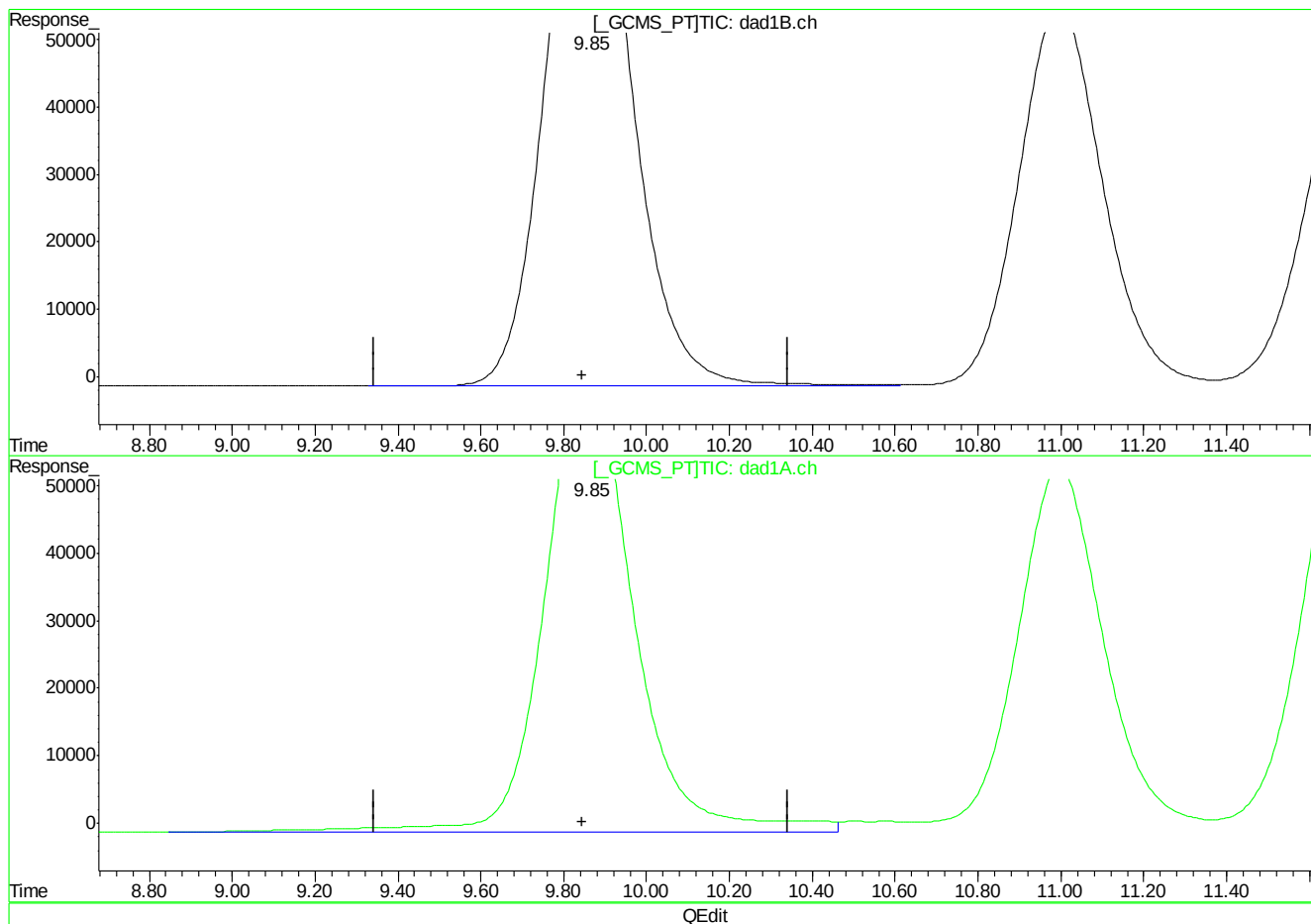
GG625705.D GGG3229_013023.M

Tue Jan 31 08:31:55 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:31 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

9.86min 1018.683ppb

response 12450218

(7) 1,3-Dinitrobenzene #2

9.86min 1150.863ppb

response 10147322

(+) = Expected Retention Time

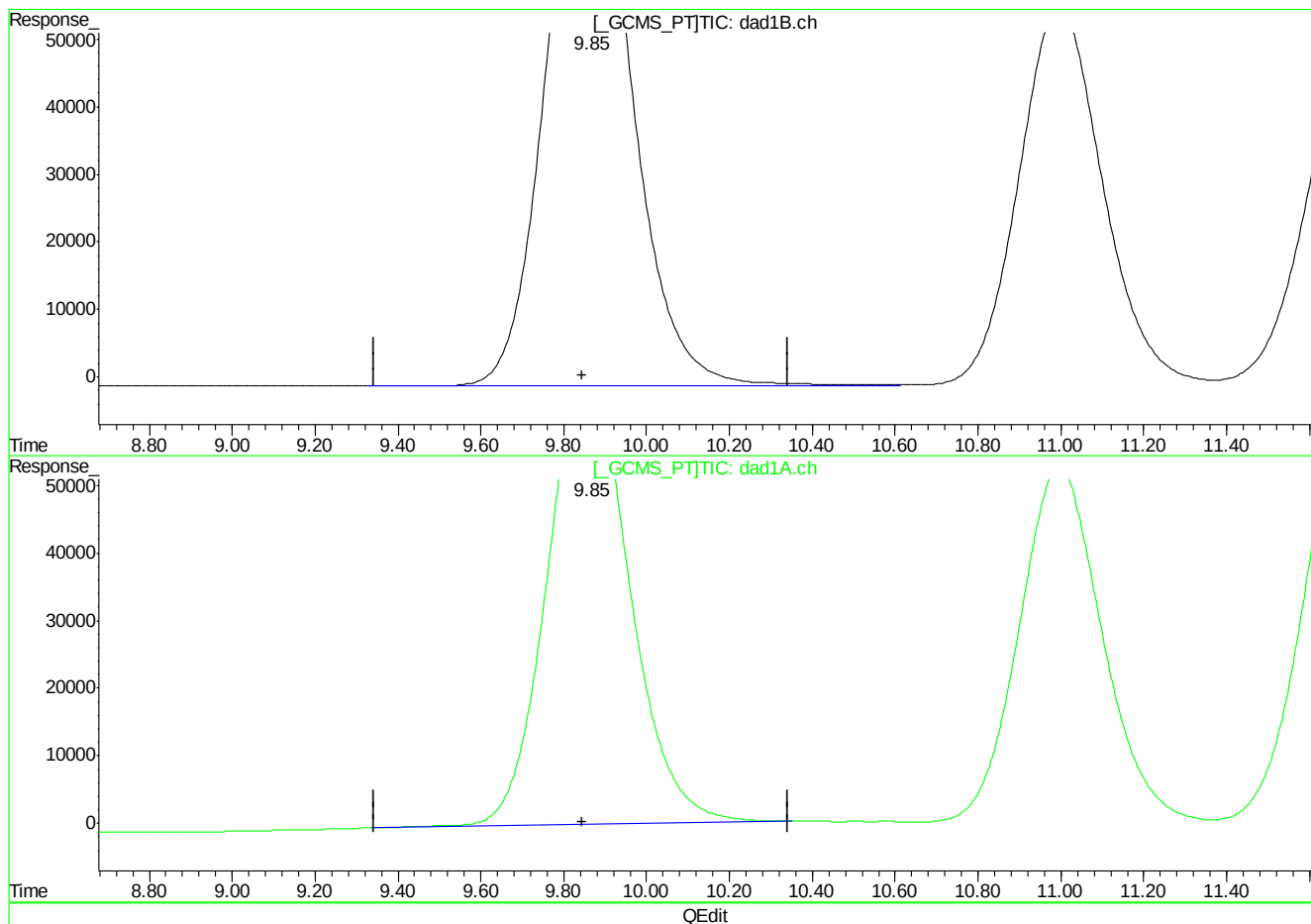
GG625705.D GGG3229_013023.M

Tue Jan 31 08:32:51 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:31 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

9.86min 1018.683ppb

response 12450218

(7) 1,3-Dinitrobenzene #2

9.85min 1052.434ppb m

response 9279461

(+) = Expected Retention Time

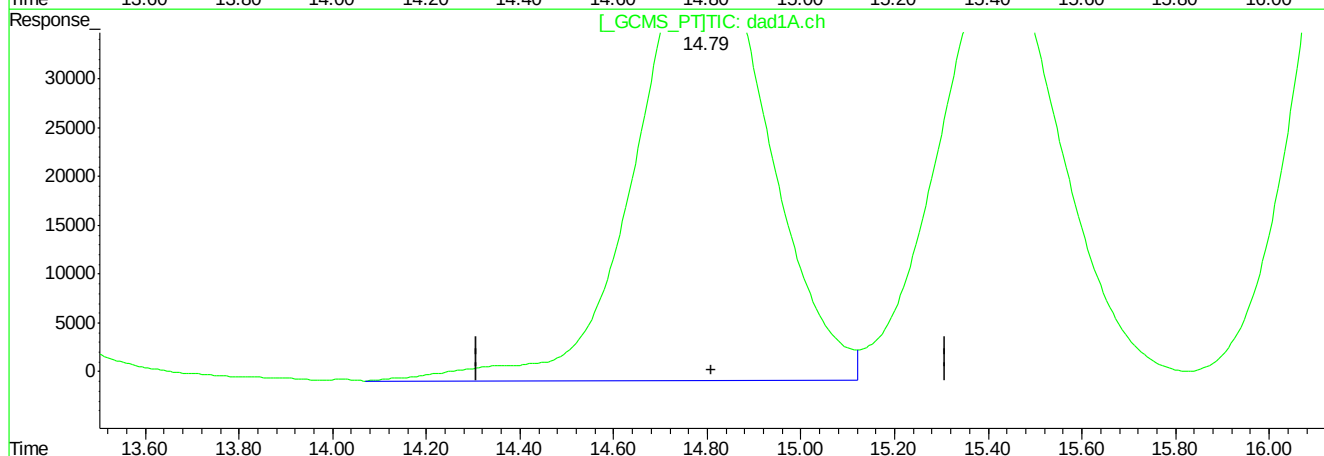
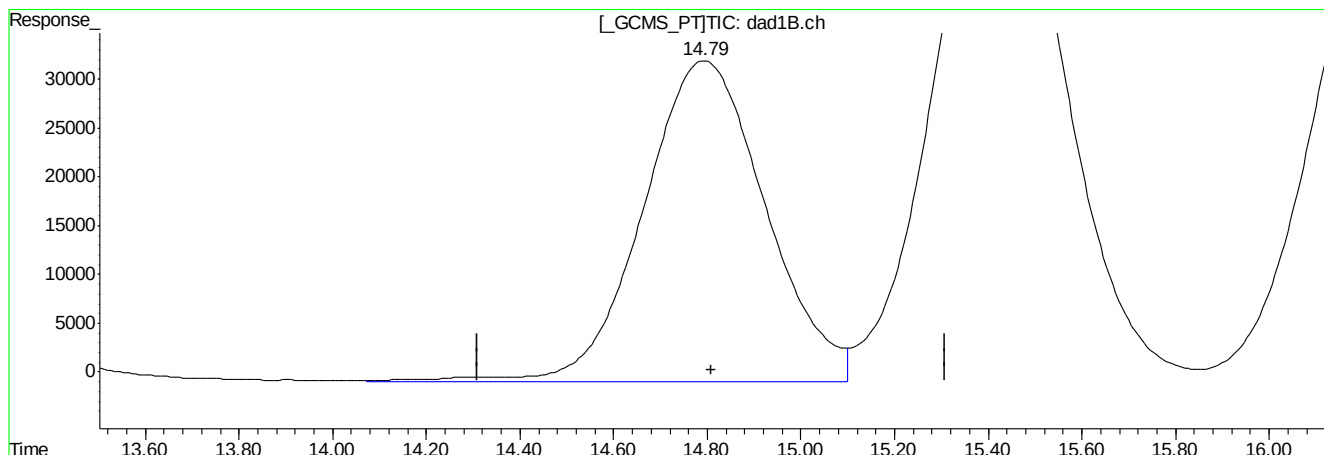
GG625705.D GGG3229_013023.M

Tue Jan 31 08:32:59 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:31 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



(13) 2,6-Dinitrotoluene

14.79min 1020.851ppb

response 5979160

(13) 2,6-Dinitrotoluene #2

14.79min 1154.773ppb

response 8936716

(+) = Expected Retention Time

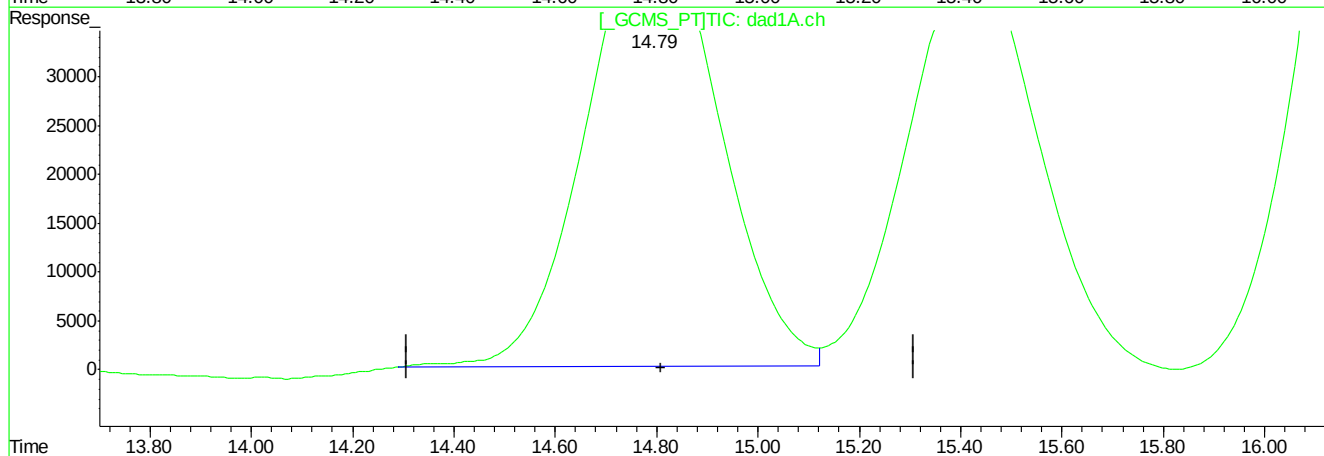
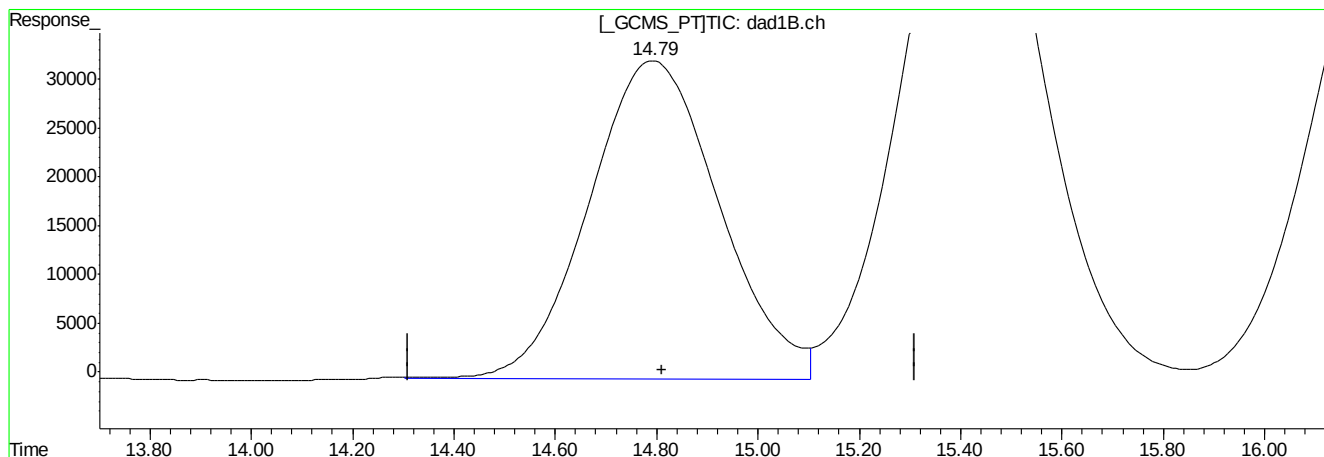
GG625705.D GGG3229_013023.M

Tue Jan 31 08:33:30 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:31 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



(13) 2,6-Dinitrotoluene

14.79min 989.235ppb m

response 5793984

(13) 2,6-Dinitrotoluene #2

14.79min 1067.475ppb m

response 8261123

(+) = Expected Retention Time

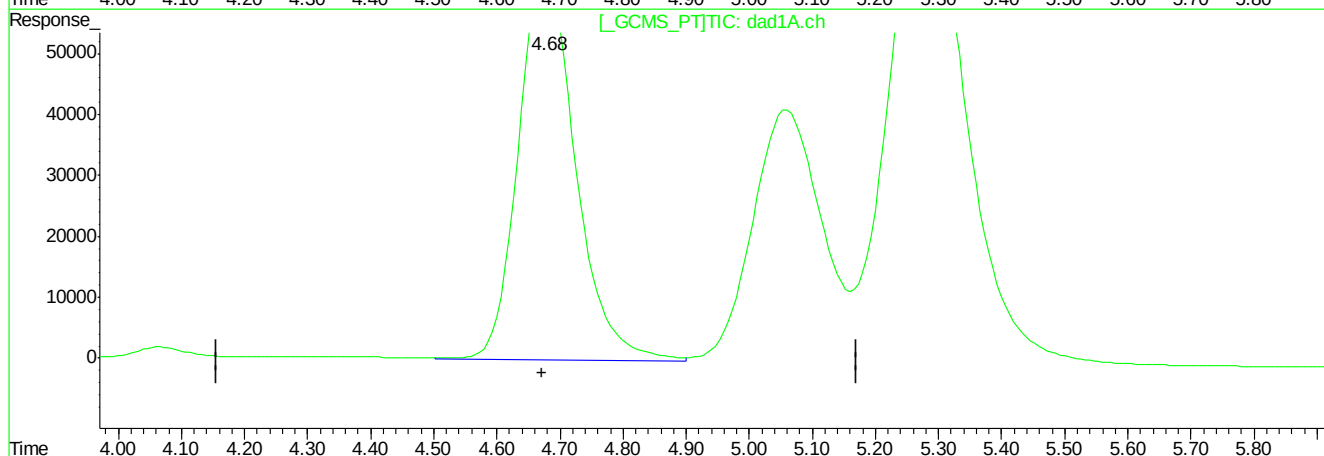
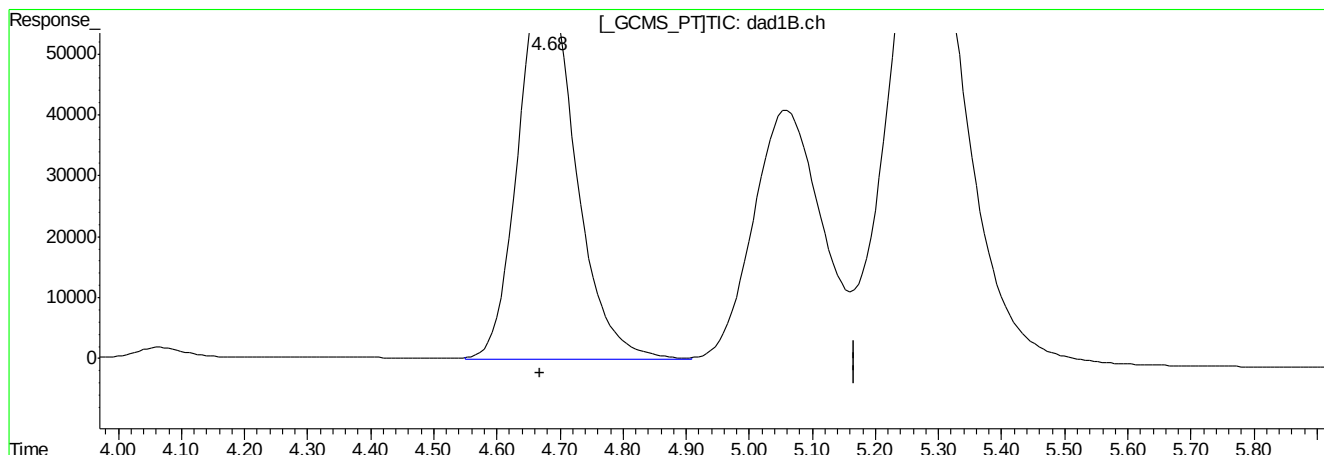
GG625705.D GGG3229_013023.M

Tue Jan 31 08:33:58 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:36 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



(1) TNX

4.68min 452.208ppb m

response 3991613

(1) TNX #2

4.68min 476.755ppb

response 4032633

(+) = Expected Retention Time

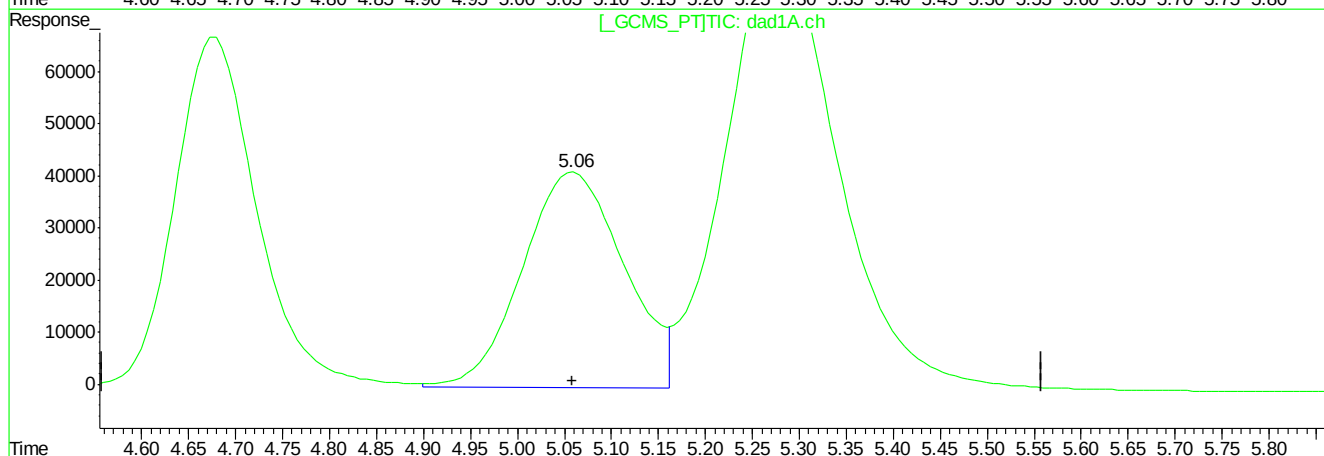
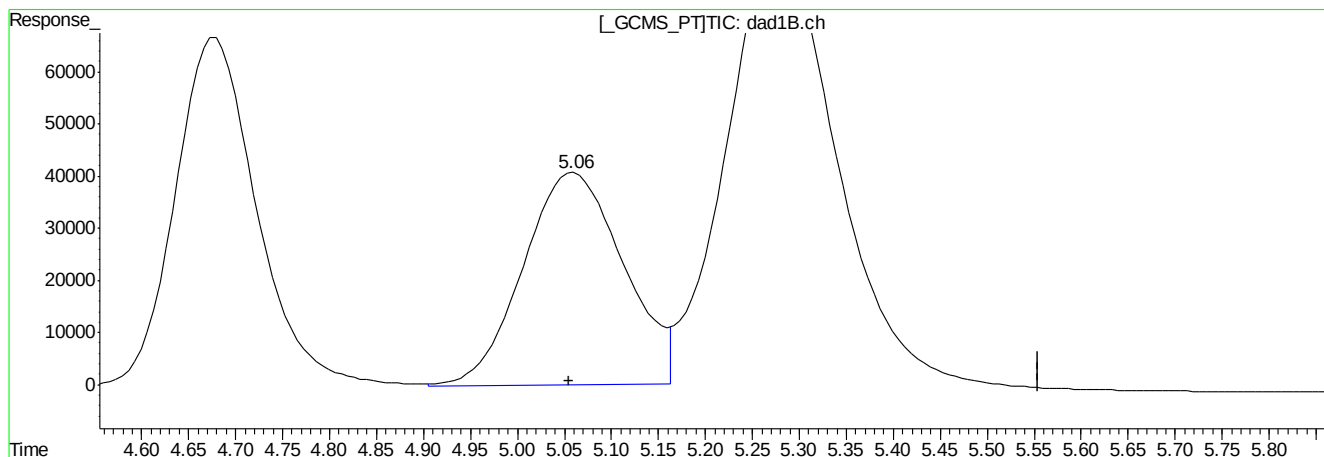
GG625705.D GGG3229_013023.M

Tue Jan 31 08:36:20 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:36 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 1042.220ppb m

response 3024242

(2) HMX #2

5.06min 1038.701ppb

response 3081290

(+) = Expected Retention Time

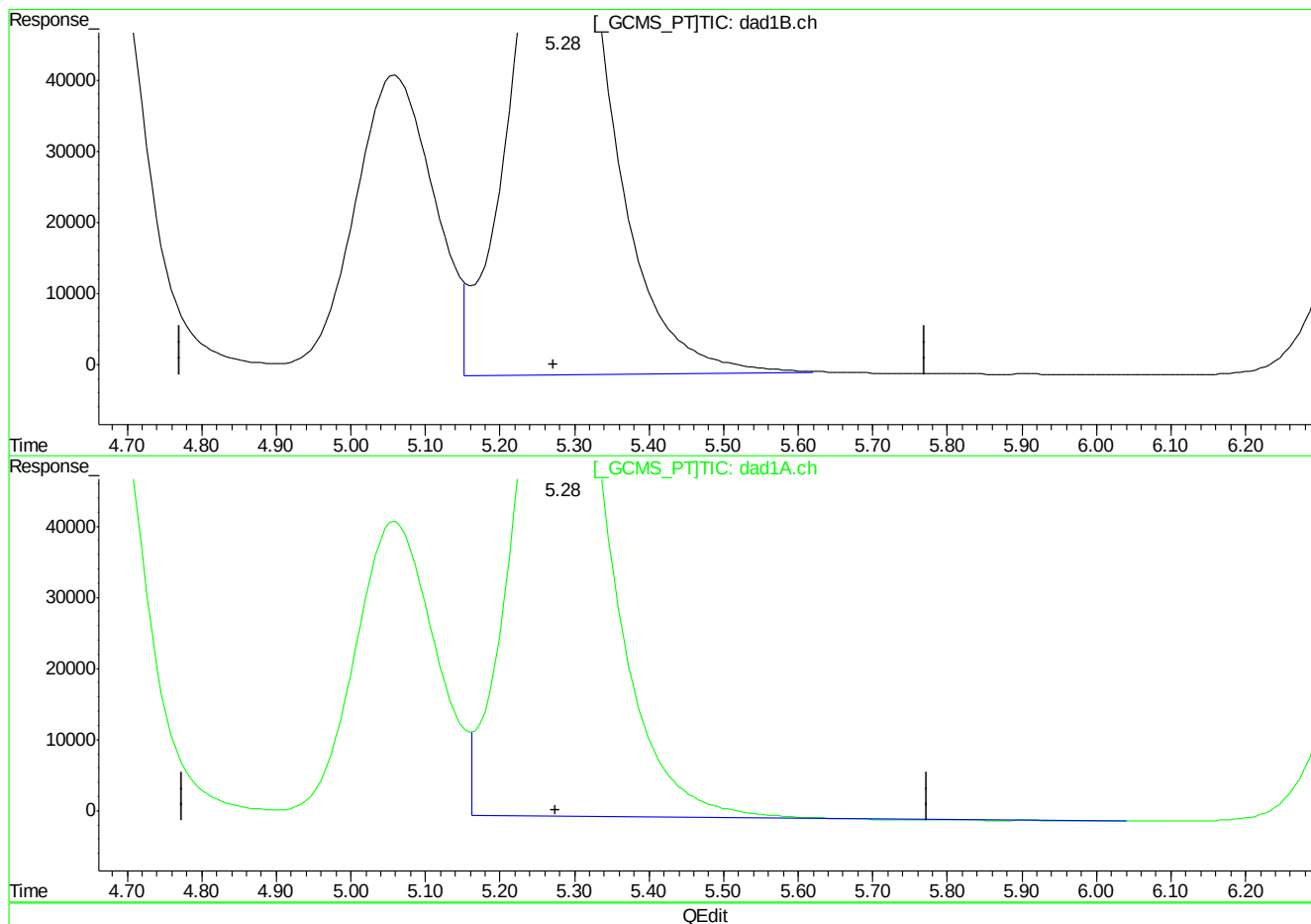
GG625705.D GGG3229_013023.M

Tue Jan 31 08:36:29 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:36 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



(3) DNX

5.28min 964.850ppb m

response 7226912

(3) DNX #2

5.28min 947.561ppb

response 7030685

(+) = Expected Retention Time

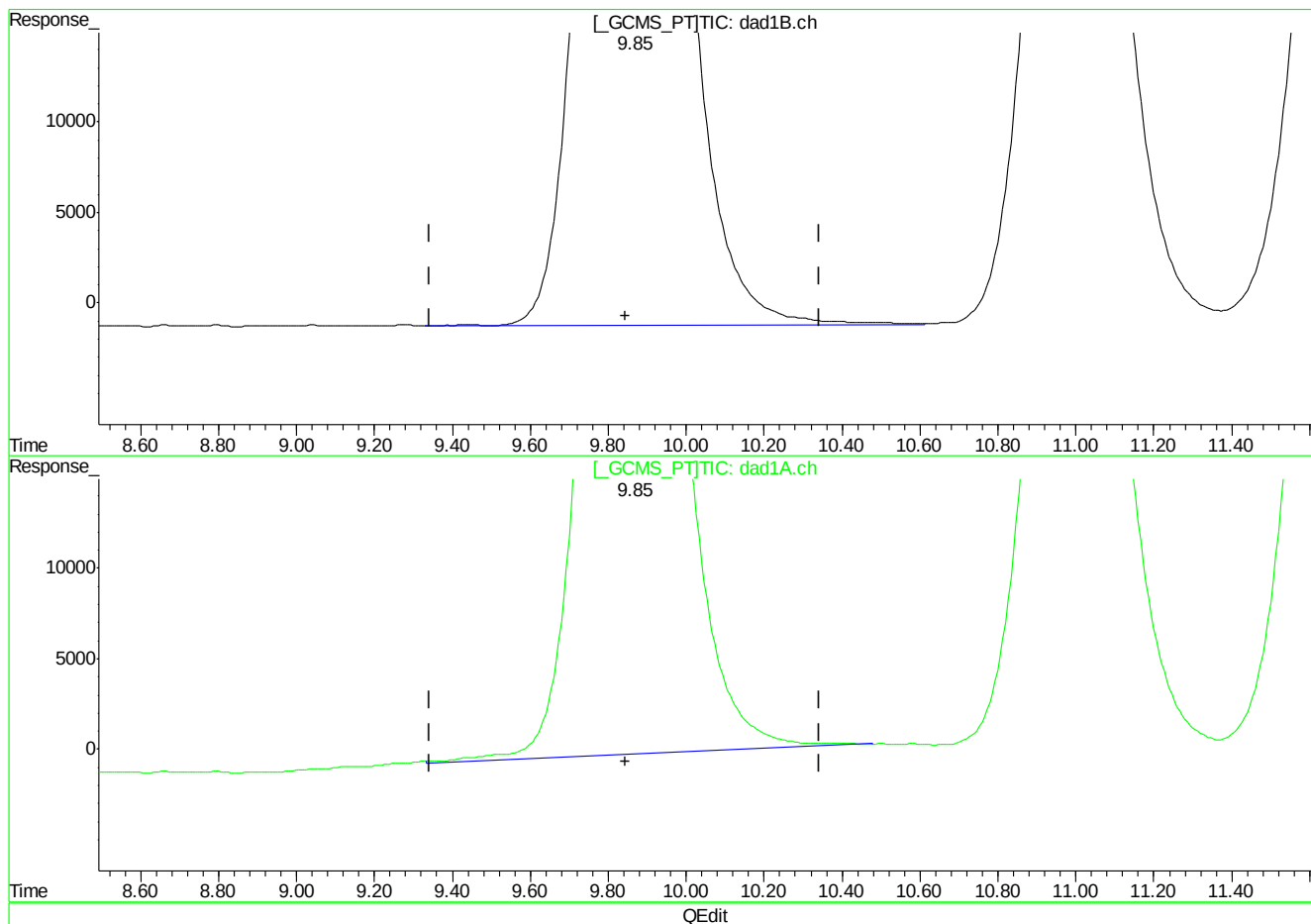
GG625705.D GGG3229_013023.M

Tue Jan 31 08:36:47 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:36 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

9.86min 1018.683ppb

response 12450218

(7) 1,3-Dinitrobenzene #2

9.85min 1064.546ppb m

response 9386252

(+) = Expected Retention Time

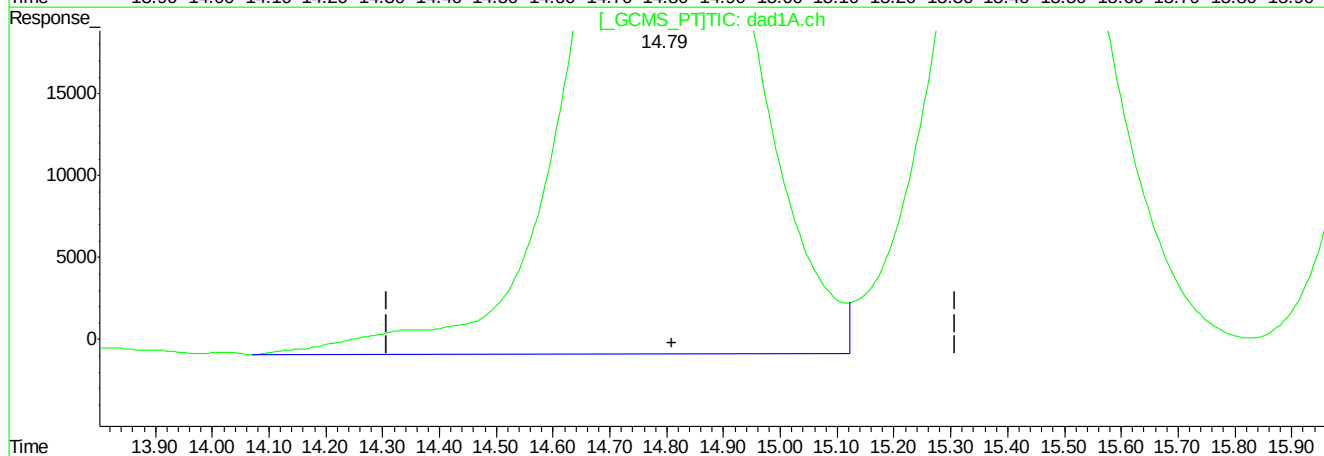
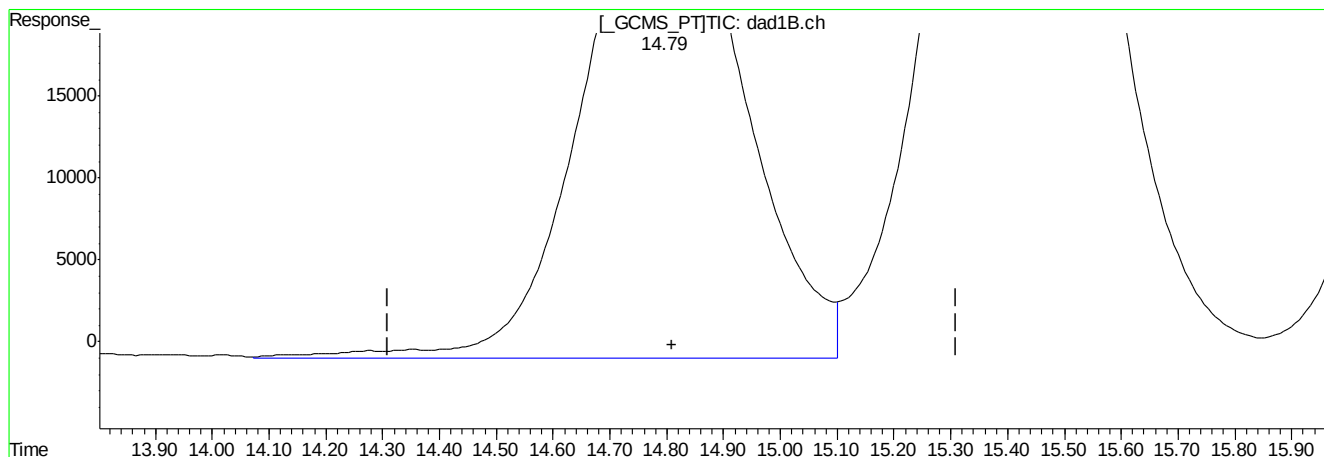
GG625705.D GGG3229_013023.M

Tue Jan 31 08:37:17 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:36 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(13) 2,6-Dinitrotoluene

14.79min 1020.851ppb

response 5979160

(13) 2,6-Dinitrotoluene #2

14.79min 1154.773ppb

response 8936716

(+) = Expected Retention Time

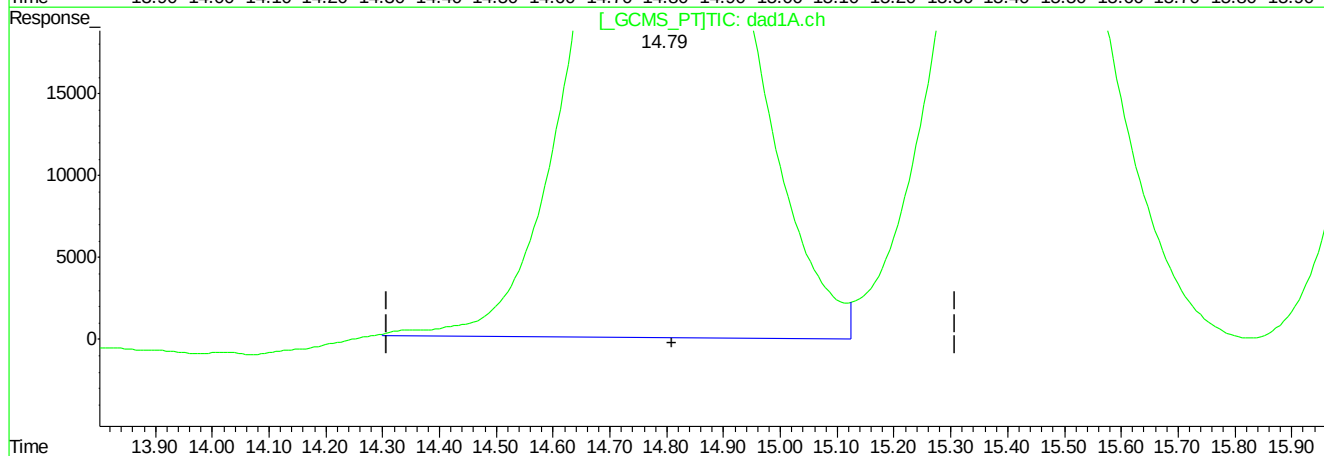
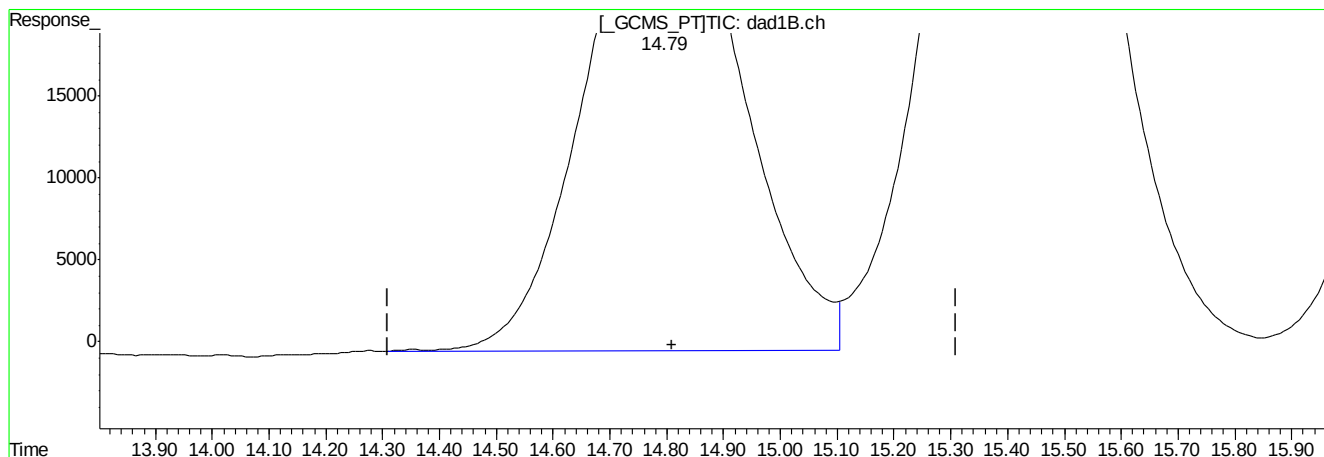
GG625705.D GGG3229_013023.M

Tue Jan 31 08:37:37 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:36 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(13) 2,6-Dinitrotoluene

14.79min 980.543ppb m

response 5743078

(13) 2,6-Dinitrotoluene #2

14.79min 1080.390ppb m

response 8361074

(+) = Expected Retention Time

GG625705.D GGG3229_013023.M

Tue Jan 31 08:37:52 2023

Mike Eger
01/31/23 12:29

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1B.ch Vial: 7
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1A.ch
 Acq On : 30-Jan-2023, 21:34:27 Operator: fouads
 Sample : cc3229-1000 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 09:10:35 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.44	14.44	5318430	10400811	990.156	1036.244
Spiked Amount	500.000	Range	70 - 136	Recovery	=	198.03%# 207.25%#
Target Compounds						
1) TNX	4.68	4.68	4009537	4081715	454.238m	482.561
2) HMX	5.07	5.07	2749368	2906962	947.493m	979.936
3) DNx	5.28	5.29	7179106	7090626	958.467m	955.639
4) MNX	6.44	6.44	7330927	7343434	1139.175	1121.237
5) 1,3,5-Trinitrobe	7.39	7.39	8530654	8531192	962.312	964.004
6) RDX	7.78	7.78	4061408	4060870	948.730	951.222
7) 1,3-Dinitrobenze	9.87	9.87	11746469	9569314	961.102	1085.308
8) Nitrobenzene	11.01	11.01	7307398	7428927	937.482	963.530
9) 2,4,6-Trinitroto	11.73	11.73	8186809	11547615	931.815	959.341
10) Nitroglycerin	0.00	12.46	0	3072001	N.D.	1064.652 #
11) Tetryl	13.12	13.12	6205877	11122433	985.968	1029.109
13) 2,6-Dinitrotolue	14.84	14.84	5688575	8334830	971.238	1076.999
14) 2,4-Dinitrotolue	15.47	15.47	10638904	7545467	961.365	1001.146
15) 3,5-Dinitroanili	16.29	16.29	8999823	14931238	953.136	953.575
16) o-Nitrotoluene	17.39	17.39	4590012	6676537	959.700	975.704
17) p-Nitrotoluene	18.37	18.35	9750257	17764103	1998.767	1980.939
18) 4-Amino-2,6-Dini	18.37	18.35	9750257	17764103	1998.767	1980.939
19) m-Nitrotoluene	19.75	19.75	4813630	8102286	975.899	982.580
20) 2-Amino-4,6-Dini	20.14	20.15	8087136	11617002	949.293	1028.348
21) PETN	0.00	21.82	0	2729487	N.D.	908.411 #

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625715.D GGG3229_013023.M Tue Jan 31 11:32:56 2023

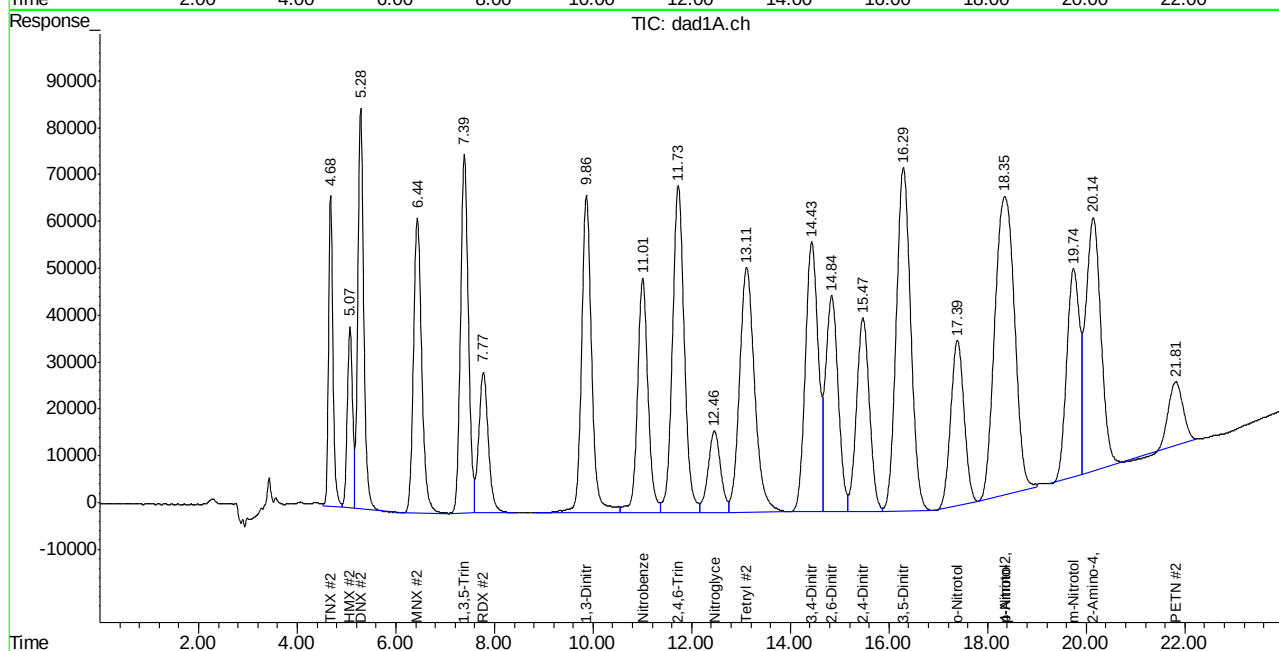
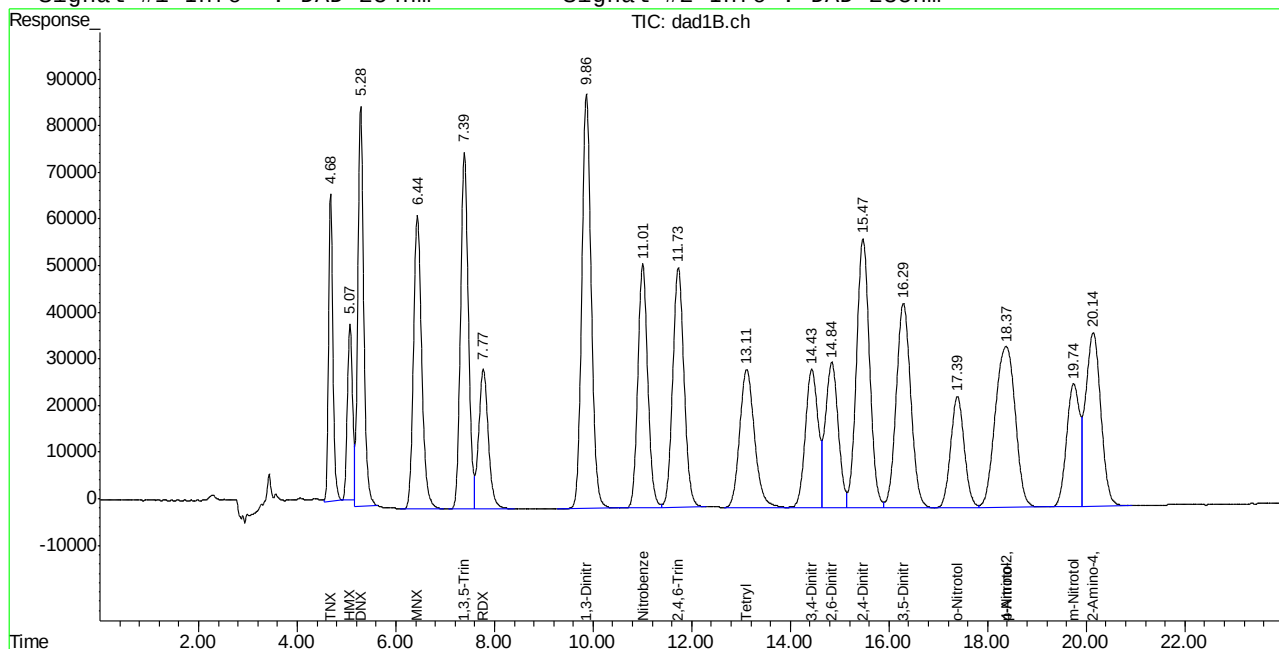
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1A.ch
Acq On : 30-Jan-2023, 21:34:27 Operator: fouads
Sample : cc3229-1000 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 9:11 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number: GGG3229-CC3229

Method: SW846 8330B

Lab FileID: GG625715.D

Analyst approved: 01/31/23 11:38 Fouad Sekkar

Injection Time: 01/30/23 21:34

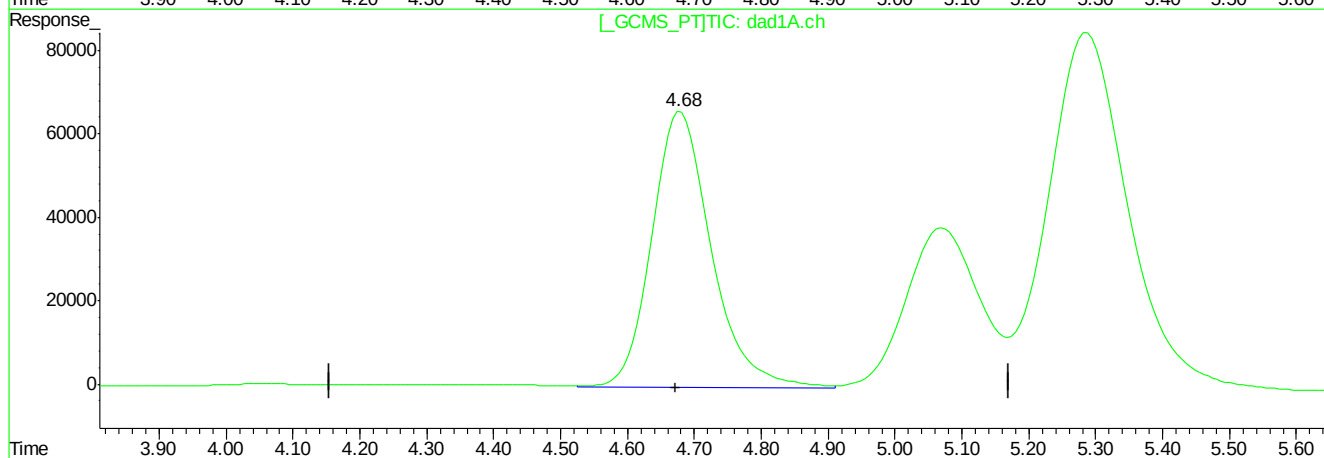
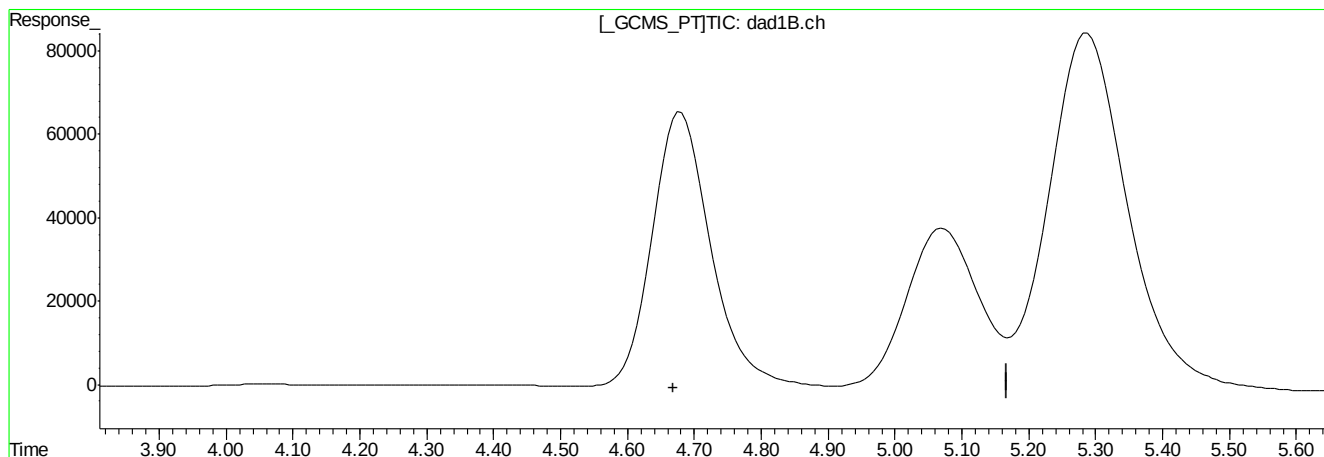
Supervisor approved: 01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.68	Missed peak
HMX	2691-41-0	1	5.07	Poor instrument integration
DNX		1	5.28	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1A.ch
Acq On : 30-Jan-2023, 21:34:27 Operator: fouads
Sample : cc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 9:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.68min 482.561ppb

response 4081715

(+) = Expected Retention Time

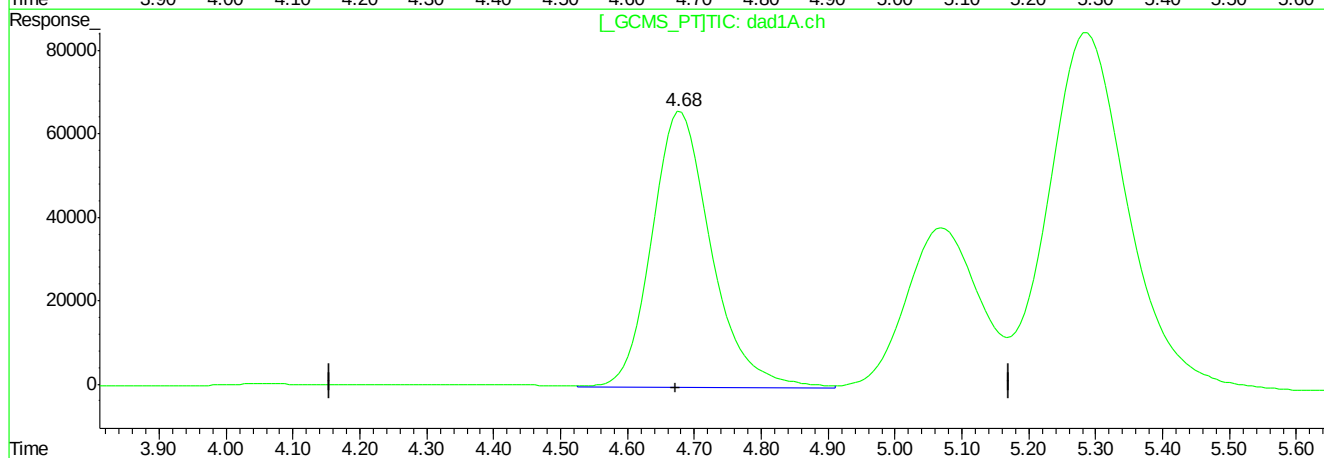
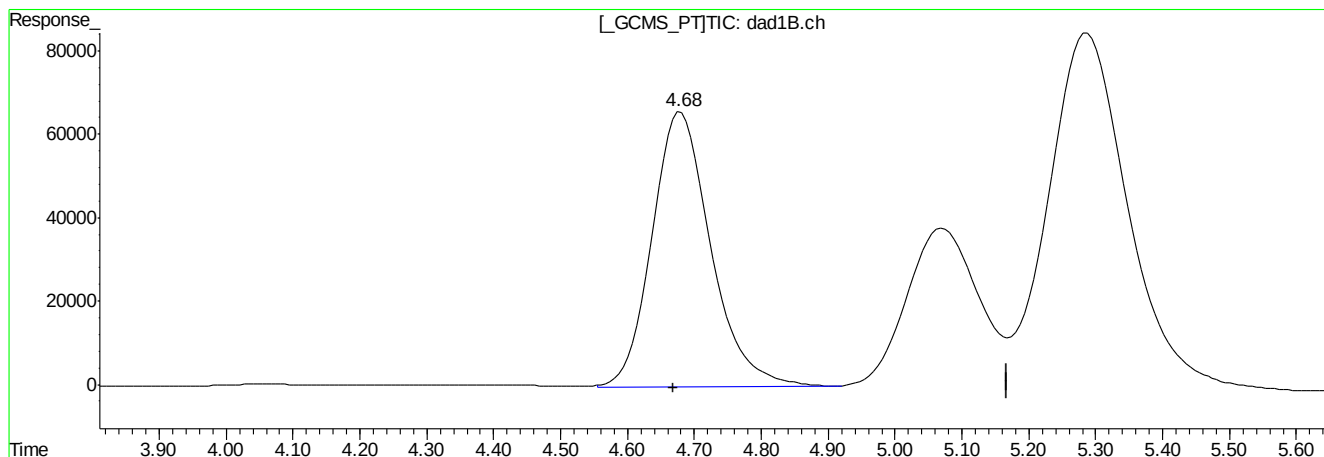
GG625715.D GGG3229_013023.M

Tue Jan 31 09:10:49 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1A.ch
Acq On : 30-Jan-2023, 21:34:27 Operator: fouads
Sample : cc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 9:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

4.68min 454.238ppb m

response 4009537

(1) TNX #2

4.68min 482.561ppb

response 4081715

(+) = Expected Retention Time

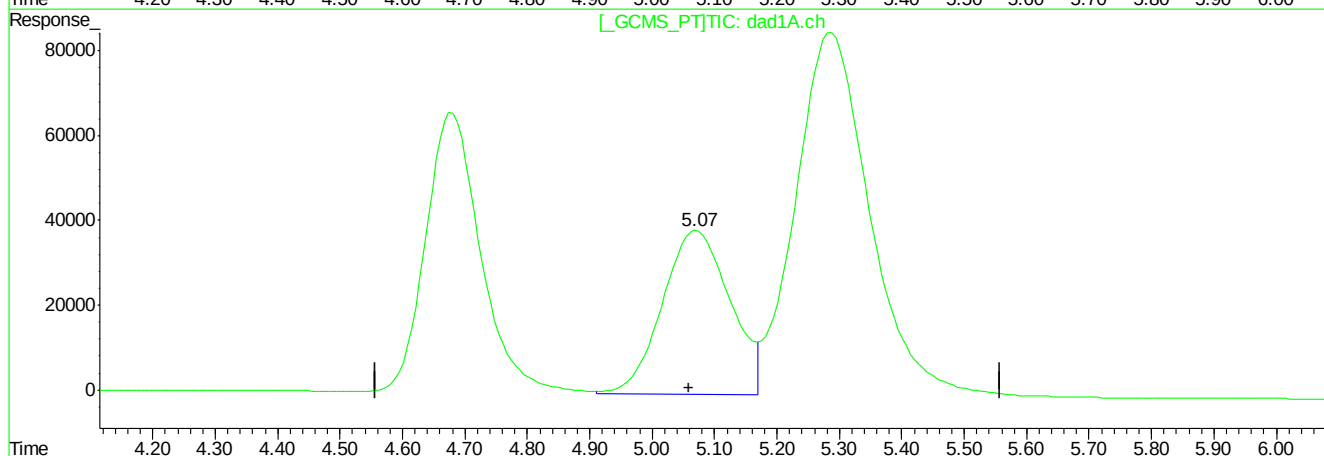
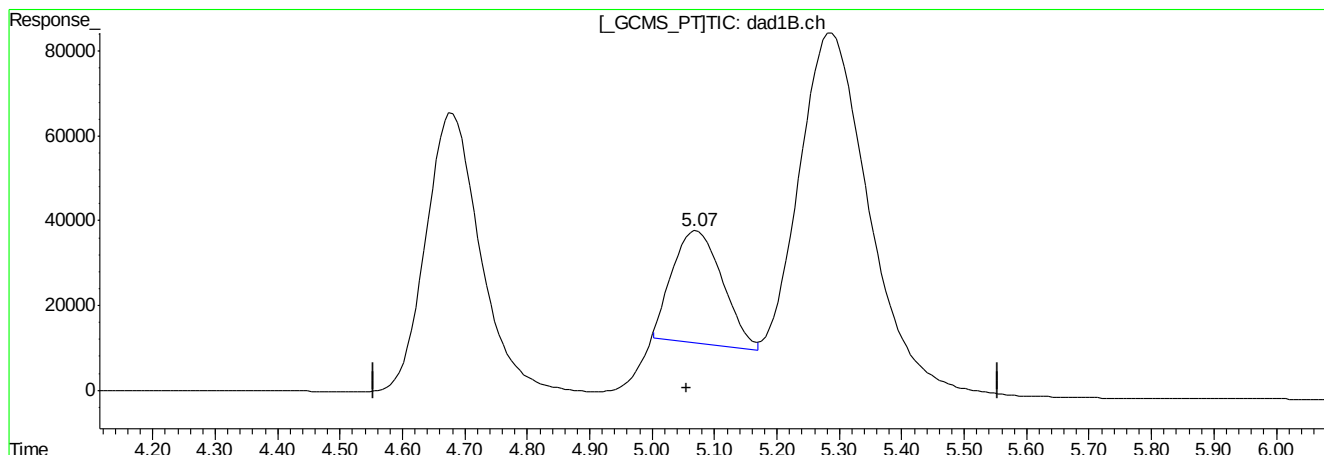
GG625715.D GGG3229_013023.M

Tue Jan 31 09:10:54 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1A.ch
Acq On : 30-Jan-2023, 21:34:27 Operator: fouads
Sample : cc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 9:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.07min 509.471ppb

response 1478347

(2) HMX #2

5.07min 979.936ppb

response 2906962

(+) = Expected Retention Time

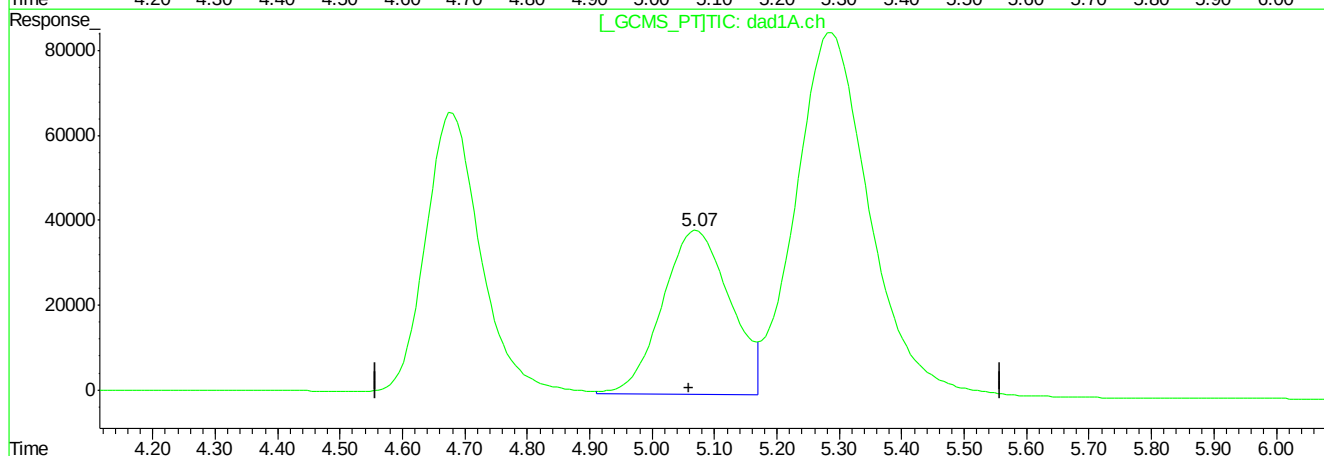
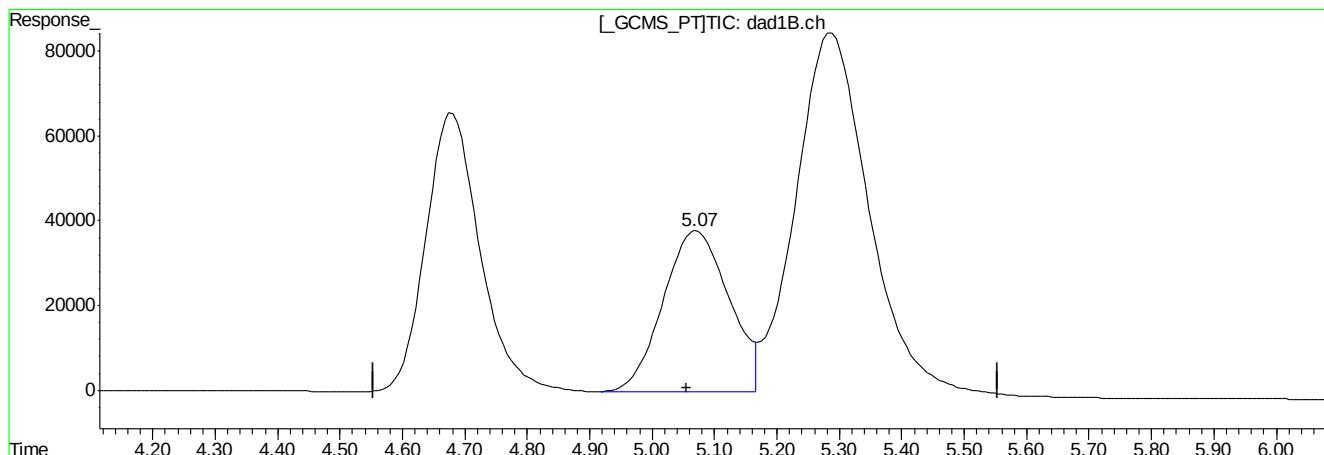
GG625715.D GGG3229_013023.M

Tue Jan 31 09:10:59 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1A.ch
Acq On : 30-Jan-2023, 21:34:27 Operator: fouads
Sample : cc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 9:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.07min 947.493ppb m

response 2749368

(2) HMX #2

5.07min 979.936ppb

response 2906962

(+) = Expected Retention Time

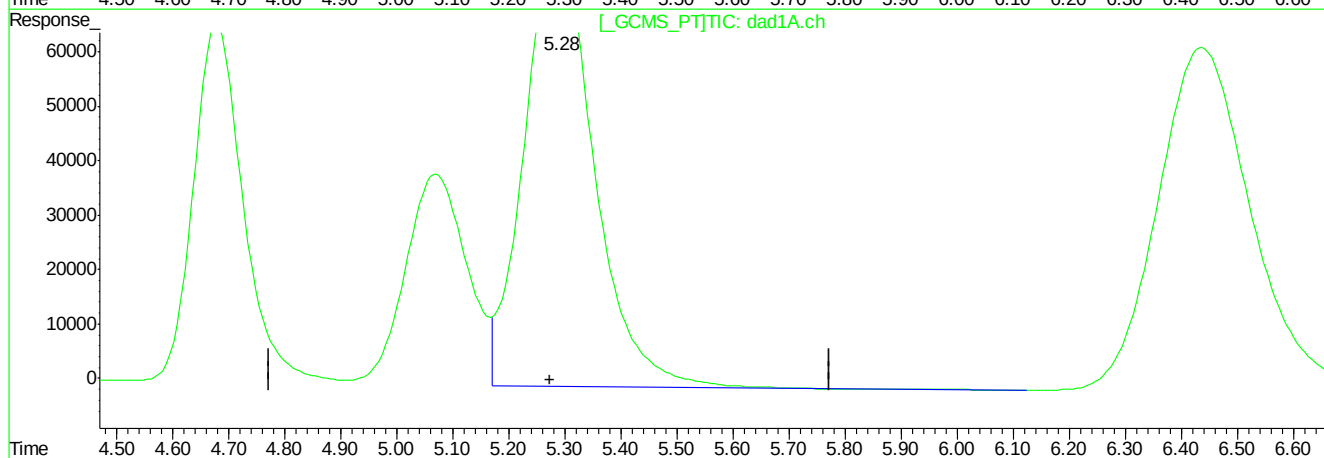
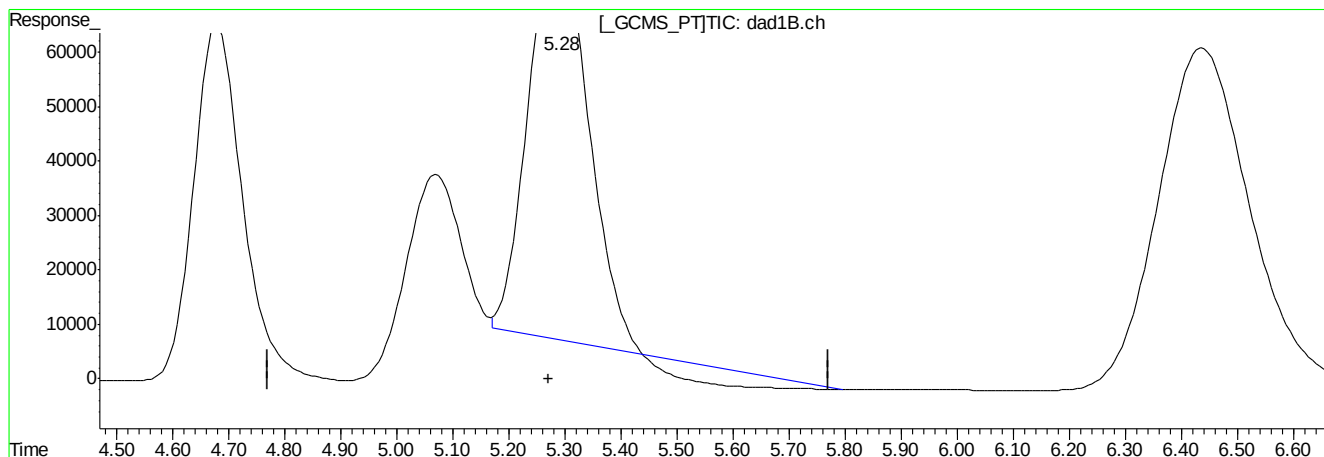
GG625715.D GGG3229_013023.M

Tue Jan 31 09:11:05 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1A.ch
Acq On : 30-Jan-2023, 21:34:27 Operator: fouads
Sample : cc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 9:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



(3) DNX

5.29min 683.671ppb

response 5120832

(3) DNX #2

5.29min 955.639ppb

response 7090626

(+) = Expected Retention Time

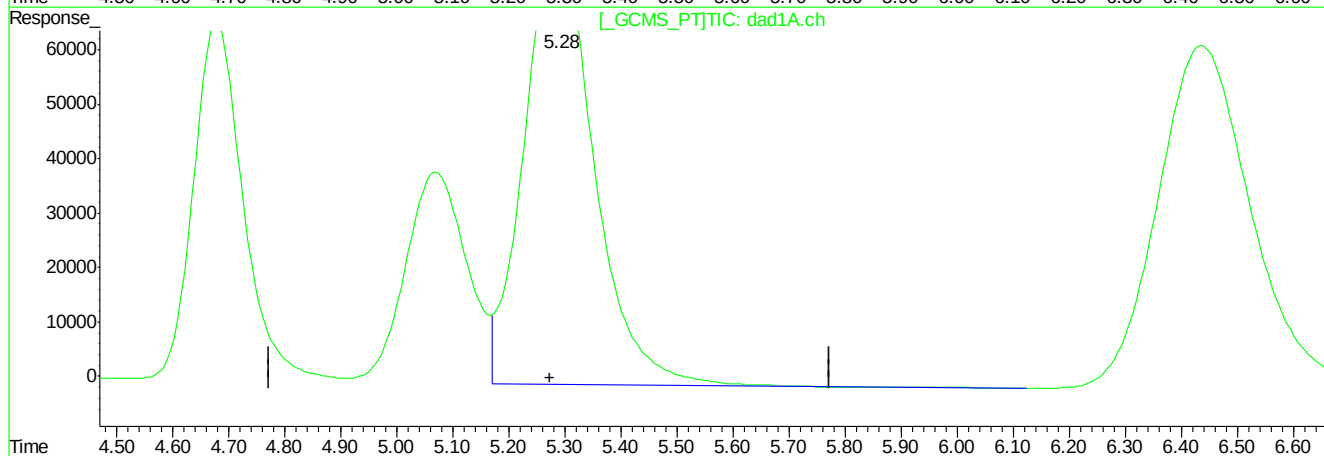
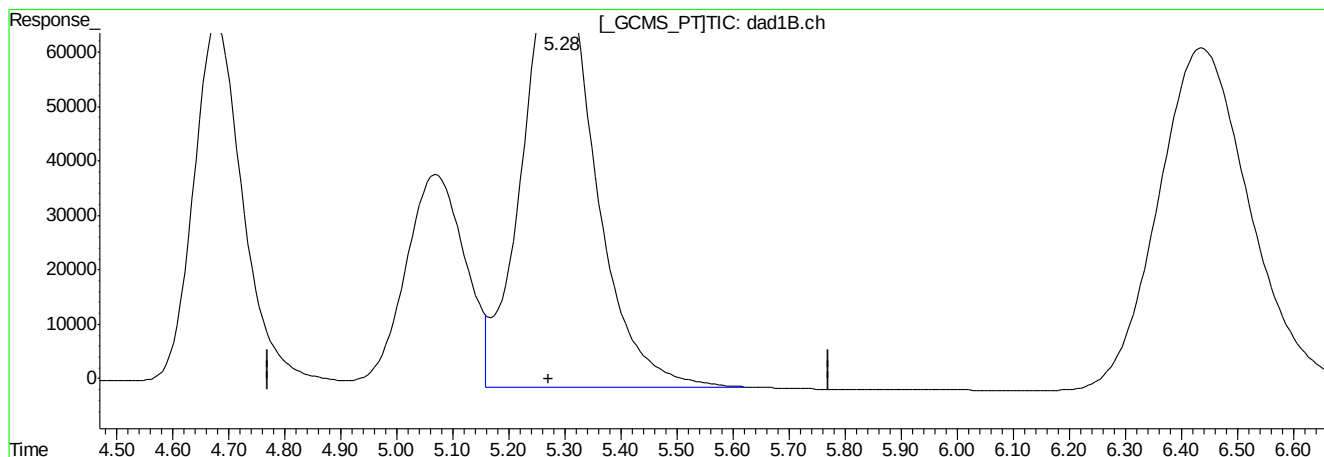
GG625715.D GGG3229_013023.M

Tue Jan 31 09:11:09 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1A.ch
Acq On : 30-Jan-2023, 21:34:27 Operator: fouads
Sample : cc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 9:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



(3) DNX

5.28min 958.467ppb m

response 7179106

(3) DNX #2

5.29min 955.639ppb

response 7090626

(+) = Expected Retention Time

GG625715.D GGG3229_013023.M

Tue Jan 31 09:11:16 2023

SGS-ORLANDO

HPLC-04 BB

ANALYSIS LOG

DATE		8/31/2022	METHODS		8330	IC/ICC STD LOT	LC1645
COLUMN TYPE		Extend C18	ACQ. METHOD		8330B	ICV STD LOT	LC1648
AMOUNT INJ		100ul	PROC. METHOD		BBB2230_083122.M	SOLVENT	222737
INSTRUMENT		HPLC05-BB	CALIB. DATE		8/31/2022	SOLVENT	258274
ANALYST		fs	RUN BATCH		GBB2232	HEAD PRESSURE	157
DATA FILE	ALS	SAMPLE NAME	METHOD	DF	MISC. INFO	COMMENTS	
BB073628	1	ccb	8330	200/1000	op90239,GBB2232,1000,,,10,1,water	nd	
BB073629	2	ic2232-20	8330	1	op92480,GBB2232,1000,,,10,1,water		
BB073630	3	ic2232-50	8330	1	op92480,GBB2232,1000,,,10,1,soil		
BB073631	4	ic2232-100	8330	1	op92480,GBB2232,1000,,,10,1,soil		
BB073632	5	ic2232-200	8330	1	op92480,GBB2232,1000,,,10,1,soil		
BB073633	6	ic2232-500	8330	1	op92480,GBB2232,1000,,,10,1,water	curve passed	
BB073634	7	icc2232-1000	8330	1	op92480,GBB2232,1000,,,10,1,water		
BB073635	8	ic2232-2500	8330	1	op92480,GBB2232,1000,,,10,1,water		
BB073636	9	ic2232-5000	8330	1	op92480,GBB2232,1000,,,10,1,water		
BB073637	10	icv2232-1000	8330	1	op92480,GBB2232,1000,,,10,1,water	icv faild low (tnx,dnx,mnx) rerun	

SGS-ORLANDO

HPLC-04 BB

ANALYSIS LOG

DATE		1/26/2023	METHODS		8330	IC/ICC STD LOT	LC1653,lc1655
COLUMN TYPE		Extend C18	ACQ. METHOD		8330B	ICV STD LOT	LC1671
AMOUNT INJ		100ul	PROC. METHOD		BBB2232_083122.m	SOLVENT	222737
INSTRUMENT		HPLC05-BB	CALIB. DATE		8/31/2022	SOLVENT	258274
ANALYST		fs	RUN BATCH		GBB2299	HEAD PRESSURE	252
DATA FILE	ALS	SAMPLE NAME	METHOD	DF	MISC. INFO	COMMENTS	
BB075406	1	ccb	8330	1	op93022,GBB2299,1040,,,10,1,water	/	
BB075407	2	cc2232-1000	8330	200/1000	op94879,GBB2299,1000,,,10,1,water	passed dod5	
BB075408	3	op95126-trpcf	8330	1	op95126,GBB2299,10.3,,,50,1,soil	conf low surrg	
BB075409	4	jd58805-3a	8330	1	op95127,GBB2299,10.5,,,50,1,soil	nd	
BB075410	5	op95127-msd	8330	1	op95127,GBB2299,10.1,,,50,1,soil	/	
BB075411	6	fc1992-1	8330	1	op95126,GBB2299,10.1,,,50,1,soil	nd	
BB075412	7	op95139-bs	8330	1	op95139,GBB2299,1000,,,10,1,water	/	
BB075413	8	op95139-mb	8330	1	op95139,GBB2299,1000,,,10,1,water	nd	
BB075414	9	fc2128-1	8330	1	op95139,GBB2299,1000,,,10,1,water	/	
BB075415	10	op95139-ms	8330	1	op95139,GBB2299,500,,,10,1,water	/	
BB075416	11	op95139-msd	8330	1	op95139,GBB2299,500,,,10,1,water	/	
BB075417	12	fc2128-2	8330	1	op95139,GBB2299,1030,,,10,1,water	low surrg ,rerun	
BB075418	1	ccb	8330	1	op93022,GBB2299,1040,,,50,1,soil	/	
BB075419	2	cc2232-1000	8330	200/1000	op94879,GBB2299,1000,,,10,1,water	passed dod5	
BB075420	13	fc2128-3	8330	1	op95139,GBB2299,1020,,,10,1,water	low surrg ,rerun	
BB075421	14	fc2057-1	8330	1	op95139,GBB2299,800,,,50,1,soil	nd?	
BB075422	15	fc2057-2	8330	1	op95139,GBB2299,550,,,50,1,soil	nitroglycerine ?	
BB075423	16	fc2057-3	8330	1	op95139,GBB2299,500,,,50,1,soil	nd?	
BB075424	17	fc2124-3	8330	1	op95139,GBB2299,800,,,50,1,soil	hmx,rdx,24?	
BB075425	18	fc2094-1	8330	1	op95139,GBB2299,640,,,50,1,soil	hmx,nitroglycerine ?	
BB075426	19	fc1994-7	8330	1	op95139,GBB2299,1000,,,50,1,soil	low surrg ,rerun	
BB075427	1	ccb	8330	1	op93022,GBB2299,1040,,,50,1,soil	/	
BB075428	2	ecc2232-1000	8330	200/1000	op94879,GBB2299,1000,,,10,1,water	passed dod5	

9.6.2
9

SGS-ORLANDO

HPLC-04 BB

ANALYSIS LOG

DATE	1/26/2023		METHODS		8330	IC/ICC STD LOT	LC1653,lc1655
COLUMN TYPE	Extend C18		ACQ. METHOD		8330B	ICV STD LOT	LC1671
AMOUNT INJ	100ul		PROC. METHOD		BBB2232_083122.m	SOLVENT	222737
INSTRUMENT	HPLC05-BB		CALIB. DATE		8/31/2022	SOLVENT	258274
ANALYST	fs		RUN BATCH		GBB2300	HEAD PRESSURE	252
DATA FILE	ALS	SAMPLE NAME	METHOD	DF	MISC. INFO	COMMENTS	
BB075429	1	ccb	8330	1	op93022,GBB2300,1040,,,10,1,water	/	
BB075430	2	cc2232-1000	8330	200/1000	op94879,GBB2300,1000,,,10,1,water	passed	
BB075431	3	fc2128-2	8330	1	op95139,GBB2300,1030,,,10,1,water	/	
BB075432	4	fc2128-3	8330	1	op95139,GBB2300,1020,,,10,1,water	/	
BB075433	5	fc1994-7	8330	1	op95139,GBB2300,1000,,,50,1,soil	/	
BB075434	6	ccb	8330	1	op95126,GBB2300,1040,,,10,1,water	/	
BB075435	7	ecc2232-1000	8330	200/1000	op95126,GBB2300,1000,,,10,1,water	passed	

9.6.3
6

DATE	1/30/2023	METHODS				
COLUMN TYPE	Bonus-RP	ACQ. METHOD				
AMOUNT INJ	100uL	PROC. METHOD				222742
INSTRUMENT	HPLC3-GG	CALIB. DATE				223231
ANALYST	fs	RUN BATCH				177
DATA FILE	ALS	SAMPLE NAME	METHOD	DF	MISC. INFO	COMMENTS
GG63692	1	ccb	8330	1	op93022,GGG3229,1000,,,10.1,water	nd
GG63693	2	ic3229-20	8330	1	op95139,GGG3229,1000,,,10.1,water	/
GG63694	3	ic3229-50	8330	1	op95139,GGG3229,1000,,,10.1,water	/
GG63695	4	ic3229-100	8330	1	op95139,GGG3229,1000,,,10.1,water	/
GG63696	5	ic3229-200	8330	1	op95139,GGG3229,1000,,,10.1,water	/
GG63697	6	ic3229-500	8330	50/500	op95139,GGG3229,1000,,,10.1,water	curve passed
GG63698	2	ic3229-20	8330	2/500	op95139,GGG3229,1000,,,10.1,water	curve passed
GG63699	3	ic3229-50	8330	5/500	op95139,GGG3229,1000,,,10.1,water	curve passed
GG63700	4	ic3229-100	8330	10/500	op95139,GGG3229,1000,,,10.1,water	curve passed
GG63701	5	ic3229-200	8330	20/500	op95139,GGG3229,1000,,,10.1,water	curve passed
GG63702	7	ic3229-1000	8330	100/500	op95139,GGG3229,1000,,,10.1,water	curve passed
GG63703	8	ic3229-2500	8330	250/500	op95139,GGG3229,1000,,,10.1,water	curve passed
GG63704	9	ic3229-5000	8330	500(1x)	op95139,GGG3229,1000,,,10.1,water	curve passed
GG63705	10	icv3229-1000	8330	1x	op95139,GGG3229,1000,,,10.1,water	icv passed
GG63706	11	op95139-mb	8330	1	op95139,GGG3229,1000,,,10.1,water	nd
GG63707	12	fc2128-1	8330	1	op95139,GGG3229,1000,,,10.1,water	confirmed
GG63708	13	fc2128-2	8330	1	op95139,GGG3229,1030,,,10.1,water	confirmed
GG63709	14	fc2128-3	8330	1	op95139,GGG3229,1020,,,10.1,water	confirmed
GG63710	15	fc1994-7	8330	1	op95139,GGG3229,1000,,,10.1,water	confirmed
GG63711	16	fc2057-2	8330	1	op95139,GGG3229,550,,,10.1,water	confirmed nd
GG63712	17	fc2094-1	8330	1	op95139,GGG3229,640,,,10.1,water	confirmed nd
GG63713	18	fc2124-3	8330	1	op95139,GGG3229,800,,,10.1,water	confirmed
GG63714	1	ccb	8330	1	op95139,GGG3229,1000,,,10.1,water	/
GG63715	7	cc3229-1000	8330	100/500	op95139,GGG3229,1000,,,10.1,water	passed
GG63716	19	op95195-mb	8330	1	op95195,GGG3229,1000,,,10.1,water	nd
GG63717	20	fc2161-1cf	8330	1	op95195,GGG3229,50,,,10.1,water	confirmed hmx.rdx
GG63718	21	fc2197-1cf	8330	1	op95195,GGG3229,1020,,,10.1,water	confirmed rdx
GG63719	22	fc2197-2cf	8330	1	op95195,GGG3229,1020,,,10.1,water	confirmed rdx
GG63720	23	fc2200-1cf	8330	1	op95195,GGG3229,1030,,,10.1,water	confirmed
GG63721	24	fc2200-2cf	8330	1	op95195,GGG3229,1030,,,10.1,water	confirmed nd
GG63722	1	ccb	8330	1	op95139,GGG3229,1000,,,10.1,water	/
GG63723	7	ecc3229-1000	8330	1	op95139,GGG3229,1000,,,10.1,water	passed

SPE LIQUID SAMPLE PREP REPORT

Prep Method: (3535A) or 537 or 537MOD (circle)

Analytical Method: 8330

Analytical Method:

Ext. By: JM

Conc. By: _____

Vialed By: Jim

Methanol Lot # <u> — </u>	SPE Lot # <u>5214-0130</u>	pH Paper # <u>22 6621</u>
Acetonitrile Lot # <u>219352</u>	Syringe filter Lot # <u> — </u>	Reagent # <u> — </u>
Water Lot# <u>224 856</u>	Pre-filter Lot# <u> — </u>	Reagent # <u> — </u>
Solvent# <u> — </u>	Carbon Lot# <u> — </u>	Other <u> — </u>

Am

Form

Date: 1/26/23

Date: 01/26/23

ORLD-EXT-0001-3-08-FORM-extwater spe.xls 032718

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Weston Solutions, Inc

Radford AAP; VA

SGS Job Number: FC2200

Sampling Date: 01/25/23

Report to:

Weston Solutions, Inc
2 Eaton St Suite 603
Hampton, VA 23669
pacea@westonsolutions.com

ATTN: Tony Pace

Total number of pages in report: **570**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.



Norm Farmer
Technical Director

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)
DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),
AL, AK, AR, CT, IA, KY, MA, MI, MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV
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Test results relate only to samples analyzed.

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Sample Summary

Weston Solutions, Inc
Radford AAP; VA

Job No: FC2200

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC2200-1	01/25/23	09:15	PTOM 01/26/23	AQ	Ground Water	54MW12
FC2200-1D	01/25/23	09:15	PTOM 01/26/23	AQ	Water Dup/MSD	54MW12
FC2200-1S	01/25/23	09:15	PTOM 01/26/23	AQ	Water Matrix Spike	54MW12
FC2200-2	01/25/23	11:15	PTOM 01/26/23	AQ	Ground Water	54MW1

SAMPLE DELIVERY GROUP CASE NARRATIVE

2

Client: Weston Solutions, Inc

Job No: FC2200

Site: Radford AAP; VA

Report Date: 2/8/2023 3:18:00 PM

On 01/26/2023, 2 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 2.6 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC2200 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method SW846 6850

Matrix: AQ

Batch ID: OP95334

Sample(s) FC2200-1MSD, FC2200-1MS were used as the QC samples indicated.

Matrix Spike Recovery(s) for Perchlorate are outside control limits. Outside control limits due to high level in sample relative to spike amount.

GC/LC Semi-volatiles By Method SW846 8330B

Matrix: AQ

Batch ID: OP95195

Sample(s) FC2200-1MS, FC2200-1MSD were used as the QC samples indicated.

Matrix Spike Duplicate Recovery(s) for 2,4-Dinitrotoluene are outside control limits. Probable cause is due to matrix interference.

FC2200-1: All hits confirmed by reanalysis on a dissimilar column.

FC2200-1: Confirmation run.

FC2200-1 for 3,5-Dinitroaniline: Primary and confirmation results differ by more than 40%.

FC2200-2: Confirmation run.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

Kim Benham, Client Services (*Signature on File*)

Summary of Hits

Page 1 of 1

Job Number: FC2200
Account: Weston Solutions, Inc
Project: Radford AAP; VA
Collected: 01/25/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
---------------	------------------	-----------------	-----	-----	-------	--------

FC2200-1 54MW12

Perchlorate	0.72	0.20	0.10	ug/l	SW846 6850
HMX ^a	7.3	0.19	0.097	ug/l	SW846 8330B
RDX ^a	0.75	0.19	0.097	ug/l	SW846 8330B
3,5-Dinitroaniline ^b	0.35	0.19	0.097	ug/l	SW846 8330B
2-amino-4,6-Dinitrotoluene ^a	2.6	0.19	0.097	ug/l	SW846 8330B
4-amino-2,6-Dinitrotoluene ^a	2.0	0.19	0.097	ug/l	SW846 8330B
1,3,5-Trinitrobenzene ^a	7.7	0.19	0.097	ug/l	SW846 8330B
2,4,6-Trinitrotoluene ^a	4.5	0.19	0.097	ug/l	SW846 8330B

FC2200-2 54MW1

No hits reported in this sample.

(a) All hits confirmed by reanalysis on a dissimilar column.

(b) All hits confirmed by reanalysis on a dissimilar column. Primary and confirmation results differ by more than 40%.



Orlando, FL

Section 4

4

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	54MW12	Date Sampled:	01/25/23
Lab Sample ID:	FC2200-1	Date Received:	01/26/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 6850 IN HOUSE		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q100175.D	1	02/06/23 21:08	AL	02/06/23 15:17	OP95334	SQ2133
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.72	0.20	0.10	0.050	ug/l	

U = Not detected

LOQ = Limit of Quantitation

E = Indicates value exceeds calibration range

LOD = Limit of Detection

DL = Detection Limit

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	54MW12	Date Sampled:	01/25/23
Lab Sample ID:	FC2200-1	Date Received:	01/26/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8330B SW846 3535A		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	BB075443.D	1	01/30/23 14:05	FS	01/27/23 12:30	OP95195	GBB2301
Run #2 ^b	GG625720.D	1	01/31/23 00:11	FS	01/27/23 12:30	OP95195	GGG3229

	Initial Volume	Final Volume
Run #1	1030 ml	10.0 ml
Run #2	1030 ml	10.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX	7.3	0.19	0.097	0.078	ug/l	
121-82-4	RDX	0.75	0.19	0.097	0.078	ug/l	
	DNX	0.097 U	0.19	0.097	0.078	ug/l	
	MNX	0.097 U	0.19	0.097	0.078	ug/l	
	TNX	0.097 U	0.19	0.097	0.078	ug/l	
618-87-1	3,5-Dinitroaniline ^c	0.35	0.19	0.097	0.078	ug/l	
99-65-0	1,3-Dinitrobenzene	0.097 U	0.19	0.097	0.078	ug/l	
606-20-2	2,6-Dinitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
121-14-2	2,4-Dinitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	2.6	0.19	0.097	0.078	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	2.0	0.19	0.097	0.078	ug/l	
98-95-3	Nitrobenzene	0.097 U	0.19	0.097	0.094	ug/l	
88-72-2	o-Nitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
99-08-1	m-Nitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
99-99-0	p-Nitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
479-45-8	Tetryl	0.097 U	0.19	0.097	0.078	ug/l	
99-35-4	1,3,5-Trinitrobenzene	7.7	0.19	0.097	0.096	ug/l	
118-96-7	2,4,6-Trinitrotoluene	4.5	0.19	0.097	0.078	ug/l	
55-63-0	Nitroglycerine	0.97 U	1.9	0.97	0.49	ug/l	
78-11-5	PETN	0.97 U	1.9	0.97	0.49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	94%	90%	70-136%

- (a) All hits confirmed by reanalysis on a dissimilar column.
(b) Confirmation run.
(c) Primary and confirmation results differ by more than 40%.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID: 54MW1		Date Sampled: 01/25/23	
Lab Sample ID: FC2200-2		Date Received: 01/26/23	
Matrix: AQ - Ground Water		Percent Solids: n/a	
Method: SW846 6850 IN HOUSE			
Project: Radford AAP; VA			

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q100178.D	1	02/06/23 21:33	AL	02/06/23 15:17	OP95334	SQ2133
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.10 U	0.20	0.10	0.050	ug/l	

U = Not detected

LOQ = Limit of Quantitation

E = Indicates value exceeds calibration range

LOD = Limit of Detection

DL = Detection Limit

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	54MW1	Date Sampled:	01/25/23
Lab Sample ID:	FC2200-2	Date Received:	01/26/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8330B SW846 3535A		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB075447.D	1	01/30/23 16:46	FS	01/27/23 12:30	OP95195	GBB2301
Run #2 ^a	GG625721.D	1	01/31/23 00:43	FS	01/27/23 12:30	OP95195	GGG3229

	Initial Volume	Final Volume
Run #1	1030 ml	10.0 ml
Run #2	1030 ml	10.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX	0.097 U	0.19	0.097	0.078	ug/l	
121-82-4	RDX	0.097 U	0.19	0.097	0.078	ug/l	
	DNX	0.097 U	0.19	0.097	0.078	ug/l	
	MNX	0.097 U	0.19	0.097	0.078	ug/l	
	TNX	0.097 U	0.19	0.097	0.078	ug/l	
618-87-1	3,5-Dinitroaniline	0.097 U	0.19	0.097	0.078	ug/l	
99-65-0	1,3-Dinitrobenzene	0.097 U	0.19	0.097	0.078	ug/l	
606-20-2	2,6-Dinitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
121-14-2	2,4-Dinitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
98-95-3	Nitrobenzene	0.097 U	0.19	0.097	0.094	ug/l	
88-72-2	o-Nitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
99-08-1	m-Nitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
99-99-0	p-Nitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
479-45-8	Tetryl	0.097 U	0.19	0.097	0.078	ug/l	
99-35-4	1,3,5-Trinitrobenzene	0.097 U	0.19	0.097	0.096	ug/l	
118-96-7	2,4,6-Trinitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
55-63-0	Nitroglycerine	0.97 U	1.9	0.97	0.49	ug/l	
78-11-5	PETN	0.97 U	1.9	0.97	0.49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	92%	87%	70-136%

(a) Confirmation run.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits



SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, FL 32811
TEL: 407-425-6700 FAX: 407-425-0707
www.sgs.com

FC2200

SGS - ORLANDO JOB #:

PAGE 1 OF 1

Client / Reporting Information			Project Information			Analytical Information													Matrix Codes
Company Name: <u>Weston Solutions</u>			Project Name: <u>Radford AAP SWMU 54</u>			Perchlorate LC6850 LC8300B XLC3MX 3 2 1													DW - Drinking Water
Address: <u>2 Eaton St. Ste. 403</u>			Street																GW - Ground Water
City: <u>Hampton</u> State: <u>VA</u> Zip: <u>23669</u>			City State																WW - Water
Project Contact: <u>Tony Pace</u> Email: <u>pacea@westonsolutions.com</u>			Project #																SW - Surface Water
Phone #: <u>(757) 819-5310</u>			Fax #																SO - Soil
Sampler(s) Name(s) (Printed)			Client Purchase Order #																SL - Sludge
Sampler 1:			Sampler 2:																OI - Oil
COLLECTION			CONTAINER INFORMATION													LIQ - Other Liquid			
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	PC	NH3	PHOS	NH4	NH2O4	NH4OH	NH4NO3	NH4NO2	LAB USE ONLY		
1	54MW12	1/25	0915	OM/PT	GW	139		X									M5/M5D		
2	54MW1	1/25	1115	OM/PT	GW	3		X											
Turnaround Time (Business days)			Data Deliverable Information			Comments / Remarks													
☒ 10 Day (Business)			Approved By: / Date:			☐ COMMERCIAL "A" (RESULTS ONLY)													
☐ 7 Day						☐ COMMERCIAL "B" (RESULTS PLUS QC)													
☐ 5 Day						☐ REDT1 (EPA LEVEL 3)													
☐ 3 Day RUSH						☒ FULLT1 (EPA LEVEL 4)													
☐ 2 Day RUSH						☐ EDD'S													
☐ 1 Day RUSH																			
☐ Other																			
Rush T/A Data Available VIA Email or Lablink																INITIAL ASSESSMENT			
																LABEL VERIFICATION			
Sample Custody must be documented below each time samples change possession, including courier delivery. GC 30																			
Relinquished by Sample/Affiliation		Date Time: <u>1/29/2013</u>		Received By/Affiliation		Relinquished By/Affiliation		Date Time: <u>1/26/13</u>		Received By/Affiliation									
1 <u>Weston</u>				2 <u>Fedex</u>		3				4 <u>Weston</u>									
5				6		7				8									
Lab Use Only : Cooler Temperature (s) Celsius (corrected): <u>2.4 IR1</u>																			

ORLD-SMT-0001-03-FORM-COC (4).xls Rev 031318

<http://www.sgs.com/en/terms-and-conditions>

FC2200: Chain of Custody

Page 1 of 2



SGS Sample Receipt Summary

Job Number: FC2200

Client: WESTON SOLUTIONS

Project: RADFORD AAP SWMU54

Date / Time Received: 1/26/2023 9:30:00 AM

Delivery Method: FEDEX

Airbill #s:

Therm ID: IR 1;

Therm CF: 0.2;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (2.4);

Cooler Temps (Corrected) °C: Cooler 1: (2.6);

Cooler Information

Y or N

1. Custody Seals Present ☒ ☐
2. Custody Seals Intact ☒ ☐
3. Temp criteria achieved ☒ ☐
4. Cooler temp verification IR Gun
5. Cooler media Ice (Bag)

Trip Blank Information

Y or N N/A

1. Trip Blank present / cooler ☐ ☐ ☒
 2. Trip Blank listed on COC ☐ ☐ ☒
- W or S N/A
3. Type Of TB Received ☐ ☐ ☒

Sample Information

Y or N N/A

1. Sample labels present on bottles ☒ ☐
2. Samples preserved properly ☒ ☐
3. Sufficient volume/containers recvd for analysis: ☒ ☐
4. Condition of sample Intact
5. Sample recvd within HT ☒ ☐
6. Dates/Times/IDs on COC match Sample Label ☒ ☐
7. VOCs have headspace ☐ ☐ ☒
8. Bottles received for unspecified tests ☐ ☒ ☐
9. Compositing instructions clear ☐ ☐ ☒
10. Voa Soil Kits/Jars received past 48hrs? ☐ ☐ ☒
11. % Solids Jar received? ☐ ☐ ☒
12. Residual Chlorine Present? ☐ ☐ ☒

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____

Number of 5035 Field Kits: _____

Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 _____ 230315 _____

pH 10-12 _____ 219813A _____

Other: (Specify) _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: CARLOSD

Date: 1/26/2023 9:30:00 AM

Reviewer: _____

Date: _____

FC2200: Chain of Custody

Page 2 of 2

QC Evaluation: DOD QSM5.x Limits

Page 1 of 4

Job Number: FC2200
Account: Weston Solutions, Inc
Project: Radford AAP; VA
Collected: 01/25/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP95334	SW846 6850						
OP95334-BS	14797-73-0	Perchlorate	BSP	REC	85	%	84-119
OP95334-MS	14797-73-0	Perchlorate	MS	REC	135 ^a	%	84-119
OP95334-MSD	14797-73-0	Perchlorate	MSD	REC	115	%	84-119
OP95334-MSD	14797-73-0	Perchlorate	MSD	RPD	4	%	15
OP95195	SW846 8330B						
OP95195-BS	2691-41-0	HMX	BSP	REC	104	%	65-135
OP95195-BS	121-82-4	RDX	BSP	REC	100	%	68-130
OP95195-BS		DNX	BSP	REC	90	%	66-119
OP95195-BS		MNX	BSP	REC	91	%	57-132
OP95195-BS	618-87-1	3,5-Dinitroaniline	BSP	REC	100	%	71-117
OP95195-BS	99-65-0	1,3-Dinitrobenzene	BSP	REC	102	%	78-120
OP95195-BS	606-20-2	2,6-Dinitrotoluene	BSP	REC	94	%	77-127
OP95195-BS	121-14-2	2,4-Dinitrotoluene	BSP	REC	94	%	78-120
OP95195-BS	35572-78-2	2-amino-4,6-Dinitrotoluene	BSP	REC	104	%	79-120
OP95195-BS	19406-51-0	4-amino-2,6-Dinitrotoluene	BSP	REC	106	%	76-125
OP95195-BS	98-95-3	Nitrobenzene	BSP	REC	94	%	65-134
OP95195-BS	88-72-2	o-Nitrotoluene	BSP	REC	92	%	70-127
OP95195-BS	99-08-1	m-Nitrotoluene	BSP	REC	92	%	73-125
OP95195-BS	99-99-0	p-Nitrotoluene	BSP	REC	92	%	71-127
OP95195-BS	479-45-8	Tetryl	BSP	REC	84	%	64-128
OP95195-BS	99-35-4	1,3,5-Trinitrobenzene	BSP	REC	96	%	73-125
OP95195-BS	118-96-7	2,4,6-Trinitrotoluene	BSP	REC	100	%	71-123
OP95195-BS	55-63-0	Nitroglycerine	BSP	REC	102	%	74-127
OP95195-BS	78-11-5	PETN	BSP	REC	98	%	73-127
OP95195-MS	2691-41-0	HMX	MS	REC	104	%	65-135
OP95195-MS	121-82-4	RDX	MS	REC	100	%	68-130
OP95195-MS		DNX	MS	REC	90	%	66-119
OP95195-MS		MNX	MS	REC	89	%	57-132
OP95195-MS	618-87-1	3,5-Dinitroaniline	MS	REC	98	%	71-117
OP95195-MS	99-65-0	1,3-Dinitrobenzene	MS	REC	101	%	78-120
OP95195-MS	606-20-2	2,6-Dinitrotoluene	MS	REC	99	%	77-127
OP95195-MS	121-14-2	2,4-Dinitrotoluene	MS	REC	81	%	78-120
OP95195-MS	35572-78-2	2-amino-4,6-Dinitrotoluene	MS	REC	107	%	79-120
OP95195-MS	19406-51-0	4-amino-2,6-Dinitrotoluene	MS	REC	108	%	76-125
OP95195-MS	98-95-3	Nitrobenzene	MS	REC	79	%	65-134
OP95195-MS	88-72-2	o-Nitrotoluene	MS	REC	94	%	70-127
OP95195-MS	99-08-1	m-Nitrotoluene	MS	REC	92	%	73-125
OP95195-MS	99-99-0	p-Nitrotoluene	MS	REC	90	%	71-127
OP95195-MS	479-45-8	Tetryl	MS	REC	91	%	64-128
OP95195-MS	99-35-4	1,3,5-Trinitrobenzene	MS	REC	93	%	73-125

* Sample used for QC is not from job FC2200

QC Evaluation: DOD QSM5.x Limits

Page 2 of 4

Job Number: FC2200
Account: Weston Solutions, Inc
Project: Radford AAP; VA
Collected: 01/25/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP95195-MS	118-96-7	2,4,6-Trinitrotoluene	MS	REC	102	%	71-123
OP95195-MS	55-63-0	Nitroglycerine	MS	REC	104	%	74-127
OP95195-MS	78-11-5	PETN	MS	REC	140	%	73-127
OP95195-MSD	2691-41-0	HMX	MSD	REC	105	%	65-135
OP95195-MSD	2691-41-0	HMX	MSD	RPD	1	%	20
OP95195-MSD	121-82-4	RDX	MSD	REC	98	%	68-130
OP95195-MSD	121-82-4	RDX	MSD	RPD	2	%	20
OP95195-MSD		DNX	MSD	REC	90	%	66-119
OP95195-MSD		DNX	MSD	RPD	0	%	20
OP95195-MSD		MNX	MSD	REC	88	%	57-132
OP95195-MSD		MNX	MSD	RPD	1	%	20
OP95195-MSD	618-87-1	3,5-Dinitroaniline	MSD	REC	97	%	71-117
OP95195-MSD	618-87-1	3,5-Dinitroaniline	MSD	RPD	1	%	20
OP95195-MSD	99-65-0	1,3-Dinitrobenzene	MSD	REC	101	%	78-120
OP95195-MSD	99-65-0	1,3-Dinitrobenzene	MSD	RPD	0	%	20
OP95195-MSD	606-20-2	2,6-Dinitrotoluene	MSD	REC	94	%	77-127
OP95195-MSD	606-20-2	2,6-Dinitrotoluene	MSD	RPD	5	%	20
OP95195-MSD	121-14-2	2,4-Dinitrotoluene	MSD	REC	78	%	78-120
OP95195-MSD	121-14-2	2,4-Dinitrotoluene	MSD	RPD	4	%	20
OP95195-MSD	35572-78-2	2-amino-4,6-Dinitrotoluene	MSD	REC	103	%	79-120
OP95195-MSD	35572-78-2	2-amino-4,6-Dinitrotoluene	MSD	RPD	3	%	20
OP95195-MSD	19406-51-0	4-amino-2,6-Dinitrotoluene	MSD	REC	104	%	76-125
OP95195-MSD	19406-51-0	4-amino-2,6-Dinitrotoluene	MSD	RPD	3	%	20
OP95195-MSD	98-95-3	Nitrobenzene	MSD	REC	84	%	65-134
OP95195-MSD	98-95-3	Nitrobenzene	MSD	RPD	6	%	20
OP95195-MSD	88-72-2	o-Nitrotoluene	MSD	REC	91	%	70-127
OP95195-MSD	88-72-2	o-Nitrotoluene	MSD	RPD	3	%	20
OP95195-MSD	99-08-1	m-Nitrotoluene	MSD	REC	98	%	73-125
OP95195-MSD	99-08-1	m-Nitrotoluene	MSD	RPD	6	%	20
OP95195-MSD	99-99-0	p-Nitrotoluene	MSD	REC	97	%	71-127
OP95195-MSD	99-99-0	p-Nitrotoluene	MSD	RPD	8	%	20
OP95195-MSD	479-45-8	Tetryl	MSD	REC	95	%	64-128
OP95195-MSD	479-45-8	Tetryl	MSD	RPD	4	%	20
OP95195-MSD	99-35-4	1,3,5-Trinitrobenzene	MSD	REC	98	%	73-125
OP95195-MSD	99-35-4	1,3,5-Trinitrobenzene	MSD	RPD	3	%	20
OP95195-MSD	118-96-7	2,4,6-Trinitrotoluene	MSD	REC	100	%	71-123
OP95195-MSD	118-96-7	2,4,6-Trinitrotoluene	MSD	RPD	1	%	20
OP95195-MSD	55-63-0	Nitroglycerine	MSD	REC	106	%	74-127
OP95195-MSD	55-63-0	Nitroglycerine	MSD	RPD	2	%	20
OP95195-MSD	78-11-5	PETN	MSD	REC	120	%	73-127
OP95195-MSD	78-11-5	PETN	MSD	RPD	15	%	20
OP95195	SW846 8330A						
OP95195-BS	2691-41-0	HMX	BSP	REC	104	%	65-135

* Sample used for QC is not from job FC2200

QC Evaluation: DOD QSM5.x Limits

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Job Number: FC2200
Account: Weston Solutions, Inc
Project: Radford AAP; VA
Collected: 01/25/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP95195-BS	121-82-4	RDX	BSP	REC	100	%	68-130
OP95195-BS		DNX	BSP	REC	90	%	66-119
OP95195-BS		MNX	BSP	REC	91	%	57-132
OP95195-BS	618-87-1	3,5-Dinitroaniline	BSP	REC	100	%	71-117
OP95195-BS	99-65-0	1,3-Dinitrobenzene	BSP	REC	102	%	78-120
OP95195-BS	606-20-2	2,6-Dinitrotoluene	BSP	REC	94	%	77-127
OP95195-BS	121-14-2	2,4-Dinitrotoluene	BSP	REC	94	%	78-120
OP95195-BS	35572-78-2	2-amino-4,6-Dinitrotoluene	BSP	REC	104	%	79-120
OP95195-BS	19406-51-0	4-amino-2,6-Dinitrotoluene	BSP	REC	106	%	76-125
OP95195-BS	98-95-3	Nitrobenzene	BSP	REC	94	%	65-134
OP95195-BS	88-72-2	o-Nitrotoluene	BSP	REC	92	%	70-127
OP95195-BS	99-08-1	m-Nitrotoluene	BSP	REC	92	%	73-125
OP95195-BS	99-99-0	p-Nitrotoluene	BSP	REC	92	%	71-127
OP95195-BS	479-45-8	Tetryl	BSP	REC	84	%	64-128
OP95195-BS	99-35-4	1,3,5-Trinitrobenzene	BSP	REC	96	%	73-125
OP95195-BS	118-96-7	2,4,6-Trinitrotoluene	BSP	REC	100	%	71-123
OP95195-BS	55-63-0	Nitroglycerine	BSP	REC	102	%	74-127
OP95195-BS	78-11-5	PETN	BSP	REC	98	%	73-127
OP95195-MS	2691-41-0	HMX	MS	REC	104	%	65-135
OP95195-MS	121-82-4	RDX	MS	REC	100	%	68-130
OP95195-MS		DNX	MS	REC	90	%	66-119
OP95195-MS		MNX	MS	REC	89	%	57-132
OP95195-MS	618-87-1	3,5-Dinitroaniline	MS	REC	98	%	71-117
OP95195-MS	99-65-0	1,3-Dinitrobenzene	MS	REC	101	%	78-120
OP95195-MS	606-20-2	2,6-Dinitrotoluene	MS	REC	99	%	77-127
OP95195-MS	121-14-2	2,4-Dinitrotoluene	MS	REC	91	%	78-120
OP95195-MS	35572-78-2	2-amino-4,6-Dinitrotoluene	MS	REC	107	%	79-120
OP95195-MS	19406-51-0	4-amino-2,6-Dinitrotoluene	MS	REC	108	%	76-125
OP95195-MS	98-95-3	Nitrobenzene	MS	REC	79	%	65-134
OP95195-MS	88-72-2	o-Nitrotoluene	MS	REC	94	%	70-127
OP95195-MS	99-08-1	m-Nitrotoluene	MS	REC	92	%	73-125
OP95195-MS	99-99-0	p-Nitrotoluene	MS	REC	90	%	71-127
OP95195-MS	479-45-8	Tetryl	MS	REC	91	%	64-128
OP95195-MS	99-35-4	1,3,5-Trinitrobenzene	MS	REC	93	%	73-125
OP95195-MS	118-96-7	2,4,6-Trinitrotoluene	MS	REC	102	%	71-123
OP95195-MS	55-63-0	Nitroglycerine	MS	REC	104	%	74-127
OP95195-MS	78-11-5	PETN	MS	REC	140	%	73-127
OP95195-MSD	2691-41-0	HMX	MSD	REC	105	%	65-135
OP95195-MSD	2691-41-0	HMX	MSD	RPD	1	%	30
OP95195-MSD	121-82-4	RDX	MSD	REC	98	%	68-130
OP95195-MSD	121-82-4	RDX	MSD	RPD	2	%	30
OP95195-MSD		DNX	MSD	REC	90	%	66-119
OP95195-MSD		DNX	MSD	RPD	0	%	30
OP95195-MSD		MNX	MSD	REC	88	%	57-132
OP95195-MSD		MNX	MSD	RPD	1	%	30

* Sample used for QC is not from job FC2200

QC Evaluation: DOD QSM5.x Limits

Page 4 of 4

Job Number: FC2200
Account: Weston Solutions, Inc
Project: Radford AAP; VA
Collected: 01/25/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP95195-MSD	618-87-1	3,5-Dinitroaniline	MSD	REC	97	%	71-117
OP95195-MSD	618-87-1	3,5-Dinitroaniline	MSD	RPD	1	%	30
OP95195-MSD	99-65-0	1,3-Dinitrobenzene	MSD	REC	101	%	78-120
OP95195-MSD	99-65-0	1,3-Dinitrobenzene	MSD	RPD	0	%	30
OP95195-MSD	606-20-2	2,6-Dinitrotoluene	MSD	REC	94	%	77-127
OP95195-MSD	606-20-2	2,6-Dinitrotoluene	MSD	RPD	5	%	30
OP95195-MSD	121-14-2	2,4-Dinitrotoluene	MSD	REC	89	%	78-120
OP95195-MSD	121-14-2	2,4-Dinitrotoluene	MSD	RPD	2	%	30
OP95195-MSD	35572-78-2	2-amino-4,6-Dinitrotoluene	MSD	REC	103	%	79-120
OP95195-MSD	35572-78-2	2-amino-4,6-Dinitrotoluene	MSD	RPD	3	%	30
OP95195-MSD	19406-51-0	4-amino-2,6-Dinitrotoluene	MSD	REC	104	%	76-125
OP95195-MSD	19406-51-0	4-amino-2,6-Dinitrotoluene	MSD	RPD	3	%	30
OP95195-MSD	98-95-3	Nitrobenzene	MSD	REC	84	%	65-134
OP95195-MSD	98-95-3	Nitrobenzene	MSD	RPD	6	%	30
OP95195-MSD	88-72-2	o-Nitrotoluene	MSD	REC	91	%	70-127
OP95195-MSD	88-72-2	o-Nitrotoluene	MSD	RPD	3	%	30
OP95195-MSD	99-08-1	m-Nitrotoluene	MSD	REC	98	%	73-125
OP95195-MSD	99-08-1	m-Nitrotoluene	MSD	RPD	6	%	30
OP95195-MSD	99-99-0	p-Nitrotoluene	MSD	REC	97	%	71-127
OP95195-MSD	99-99-0	p-Nitrotoluene	MSD	RPD	8	%	30
OP95195-MSD	479-45-8	Tetryl	MSD	REC	95	%	64-128
OP95195-MSD	479-45-8	Tetryl	MSD	RPD	4	%	30
OP95195-MSD	99-35-4	1,3,5-Trinitrobenzene	MSD	REC	98	%	73-125
OP95195-MSD	99-35-4	1,3,5-Trinitrobenzene	MSD	RPD	3	%	30
OP95195-MSD	118-96-7	2,4,6-Trinitrotoluene	MSD	REC	100	%	71-123
OP95195-MSD	118-96-7	2,4,6-Trinitrotoluene	MSD	RPD	1	%	30
OP95195-MSD	55-63-0	Nitroglycerine	MSD	REC	106	%	74-127
OP95195-MSD	55-63-0	Nitroglycerine	MSD	RPD	2	%	30
OP95195-MSD	78-11-5	PETN	MSD	REC	120	%	73-127
OP95195-MSD	78-11-5	PETN	MSD	RPD	15	%	30

(a) Outside control limits due to high level in sample relative to spike amount.

* Sample used for QC is not from job FC2200

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Instrument Blank

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
SQ2133-IBLK	Q100188.D	1	02/06/23	AL	n/a	n/a	SQ2133

The QC reported here applies to the following samples: Method: SW846 6850
FC2200-1, FC2200-2

CAS No.	Compound	Result	RL	MDL	Units	Q
14797-73-0	Perchlorate	ND	0.20	0.050	ug/l	

6.1.1
6

Method Blank Summary

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95334-MB	Q100171.D	1	02/06/23	AL	02/06/23	OP95334	SQ2133

The QC reported here applies to the following samples: Method: SW846 6850
FC2200-1, FC2200-2

CAS No.	Compound	Result	RL	MDL	Units	Q
14797-73-0	Perchlorate	ND	0.20	0.050	ug/l	

6.1.2
6

Blank Spike Summary

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95334-BS	Q100170.D	1	02/06/23	AL	02/06/23	OP95334	SQ2133

The QC reported here applies to the following samples: Method: SW846 6850
FC2200-1, FC2200-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
14797-73-0	Perchlorate	0.2	0.17	85	80-120

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95334-MS	Q100176.D	1	02/06/23	AL	02/06/23	OP95334	SQ2133
OP95334-MSD	Q100177.D	1	02/06/23	AL	02/06/23	OP95334	SQ2133
FC2200-1	Q100175.D	1	02/06/23	AL	02/06/23	OP95334	SQ2133

The QC reported here applies to the following samples: Method: SW846 6850

FC2200-1, FC2200-2

CAS No.	Compound	FC2200-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
14797-73-0	Perchlorate	0.72		0.2	0.99	135* a	0.2	0.95	115	4	80-120/15

(a) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

Internal Standard Area Summary

Page 1 of 1

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Check Std: SQ2133-CC2133	Injection Date: 02/06/23
Lab File ID: Q100167.D	Injection Time: 20:00
Instrument ID: GCMSQ	Method: SW846 6850

IS 1 AREA RT

Initial Cal ^a	265991	5.01
Check Std ^b	297366	5.01
Upper Limit ^c	398987	7.01
Lower Limit ^d	132996	3.01

Lab Sample ID	IS 1 AREA	RT
OP95334-BS	313235	5.00
OP95334-MB	318757	5.01
ZZZZZZ	318925	4.96
ZZZZZZ	254757	4.90
ZZZZZZ	205238	4.71
FC2200-1	219658	4.86
OP95334-MS	226920	4.86
OP95334-MSD	227756	4.86
FC2200-2	232738	4.88

IS 1 = Cl18O4 (ISTD)

(a) Initial Cal is: SQ2133-ICC2133 Q100152.D 02/06/23 17:54. Area is AVERAGE of initial cal points.

(b) Check Std Limit = -50 to + 50% of initial cal area.

(c) Upper Limit = + 50% of initial standard area; Retention time + 2 minutes of check standard.

(d) Lower Limit = -50% of initial standard area; Retention time -2 minutes of check standard.

Initial Calibration Summary

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: SQ2133-ICC2133
Lab FileID: Q100152.D

Initial Calibration Report																			
Method Path	D:\MassHunter\Methods																		
Method File	6850_020623_SQ2133.quantmethod.xml																		
Batch Name	D:\MassHunter\Data\020623_6850_SQ2133\QuantResults\sq2133.batch.bin																		
Last Calib Update	2/7/2023 9:52:57 AM																		
Level Name	Calibration Files																		
1	D:\MassHunter\Data\020623_6850_SQ2133\Q100149.d	Acq. Date-Time	Level Last Update Time																
2	D:\MassHunter\Data\020623_6850_SQ2133\Q100150.d	2/6/2023 5:29:15 PM	2/7/2023 9:52:57 AM																
3	D:\MassHunter\Data\020623_6850_SQ2133\Q100150.d	2/6/2023 5:37:41 PM	2/7/2023 9:52:57 AM																
4	D:\MassHunter\Data\020623_6850_SQ2133\Q100151.d	2/6/2023 5:46:05 PM	2/7/2023 9:52:57 AM																
5	D:\MassHunter\Data\020623_6850_SQ2133\Q100152.d	2/6/2023 5:54:29 PM	2/7/2023 9:52:57 AM																
6	D:\MassHunter\Data\020623_6850_SQ2133\Q100153.d	2/6/2023 6:02:53 PM	2/7/2023 9:52:57 AM																
7	D:\MassHunter\Data\020623_6850_SQ2133\Q100154.d	2/6/2023 6:11:17 PM	2/7/2023 9:52:57 AM																
8	D:\MassHunter\Data\020623_6850_SQ2133\Q100155.d	2/6/2023 6:19:43 PM	2/7/2023 9:52:57 AM																
	D:\MassHunter\Data\020623_6850_SQ2133\Q100156.d	2/6/2023 6:28:08 PM	2/7/2023 9:52:57 AM																
Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF									
I CH1804	Quadratic	0.7082	0.6852	0.7009	0.7342	0.7394	0.8192	0.9249	0.9086	0.7776									
T Perchlorate																			
ISTD -----																			
(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike																			
%RSD																			
12.217																			

Generated at 9:53 AM on 2/7/2023

Page 1 of 2

Initial Calibration Summary

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: SQ2133-ICC2133
Lab FileID: Q100152.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
T Perchlorate	Quadratic	$y = 0.024631 * x^2 + 0.715982 * x$	0.996331
(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike			

Initial Calibration Verification

Page 1 of 1

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: SQ2133-ICV2133
Lab FileID: Q100157.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\020623_6850_SQ2133\sq2133.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\020623_6850_SQ2133\Q100149.d
2:D:\MassHunter\Data\020623_6850_SQ2133\Q100150.d
3:D:\MassHunter\Data\020623_6850_SQ2133\Q100151.d
4:D:\MassHunter\Data\020623_6850_SQ2133\Q100152.d
5:D:\MassHunter\Data\020623_6850_SQ2133\Q100153.d
6:D:\MassHunter\Data\020623_6850_SQ2133\Q100154.d
7:D:\MassHunter\Data\020623_6850_SQ2133\Q100155.d
8:D:\MassHunter\Data\020623_6850_SQ2133\Q100156.d

Data File: Q100157

Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
=====	=====	=====	=====	=====
Cl1804	---	--ISTD--		
Perchlorate	2.000	2.138	6.9	106.9

CC Criteria: +/- 15%

Continuing Calibration Summary

Page 1 of 1

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: SQ2133-CC2133
Lab FileID: Q100167.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\020623_6850_SQ2133\sq2133.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\020623_6850_SQ2133\Q100149.d
2:D:\MassHunter\Data\020623_6850_SQ2133\Q100150.d
3:D:\MassHunter\Data\020623_6850_SQ2133\Q100151.d
4:D:\MassHunter\Data\020623_6850_SQ2133\Q100152.d
5:D:\MassHunter\Data\020623_6850_SQ2133\Q100153.d
6:D:\MassHunter\Data\020623_6850_SQ2133\Q100154.d
7:D:\MassHunter\Data\020623_6850_SQ2133\Q100155.d
8:D:\MassHunter\Data\020623_6850_SQ2133\Q100156.d

Data File: Q100167

Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
Cl1804	---	--ISTD--		
Perchlorate	2.000	2.018	0.9	100.9

CC Criteria: +/- 15%

Continuing Calibration Summary

Page 1 of 1

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: SQ2133-CC2133
Lab FileID: Q100168.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\020623_6850_SQ2133\sq2133.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\020623_6850_SQ2133\Q100149.d
2:D:\MassHunter\Data\020623_6850_SQ2133\Q100150.d
3:D:\MassHunter\Data\020623_6850_SQ2133\Q100151.d
4:D:\MassHunter\Data\020623_6850_SQ2133\Q100152.d
5:D:\MassHunter\Data\020623_6850_SQ2133\Q100153.d
6:D:\MassHunter\Data\020623_6850_SQ2133\Q100154.d
7:D:\MassHunter\Data\020623_6850_SQ2133\Q100155.d
8:D:\MassHunter\Data\020623_6850_SQ2133\Q100156.d

Data File: Q100168
Type : QC
Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
Cl1804	---	--ISTD--		
Perchlorate	0.200	0.183	-8.5	91.5

CC Criteria: +/- 15%

Continuing Calibration Summary

Page 1 of 1

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: SQ2133-CC2133
Lab FileID: Q100179.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\020623_6850_SQ2133\sq2133.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\020623_6850_SQ2133\Q100149.d
2:D:\MassHunter\Data\020623_6850_SQ2133\Q100150.d
3:D:\MassHunter\Data\020623_6850_SQ2133\Q100151.d
4:D:\MassHunter\Data\020623_6850_SQ2133\Q100152.d
5:D:\MassHunter\Data\020623_6850_SQ2133\Q100153.d
6:D:\MassHunter\Data\020623_6850_SQ2133\Q100154.d
7:D:\MassHunter\Data\020623_6850_SQ2133\Q100155.d
8:D:\MassHunter\Data\020623_6850_SQ2133\Q100156.d

Data File: Q100179

Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
Cl1804	---	--ISTD--		
Perchlorate	2.000	2.246	12.3	112.3

CC Criteria: +/- 15%

Continuing Calibration Summary

Page 1 of 1

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: SQ2133-CC2133
Lab FileID: Q100180.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\020623_6850_SQ2133\sq2133.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\020623_6850_SQ2133\Q100149.d
2:D:\MassHunter\Data\020623_6850_SQ2133\Q100150.d
3:D:\MassHunter\Data\020623_6850_SQ2133\Q100151.d
4:D:\MassHunter\Data\020623_6850_SQ2133\Q100152.d
5:D:\MassHunter\Data\020623_6850_SQ2133\Q100153.d
6:D:\MassHunter\Data\020623_6850_SQ2133\Q100154.d
7:D:\MassHunter\Data\020623_6850_SQ2133\Q100155.d
8:D:\MassHunter\Data\020623_6850_SQ2133\Q100156.d

Data File: Q100180
Type : QC
Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
Cl1804	---	--ISTD--		
Perchlorate	0.200	0.189	-5.5	94.5

CC Criteria: +/- 15%

Run Sequence Report

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Run ID: SQ2133	Method: SW846 6850	Instrument ID: GCMSQ
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
SQ2133-IC2133	Q100148.D	02/06/23 17:20	n/a	Mass Calibration Verification
SQ2133-IC2133	Q100149.D	02/06/23 17:29	n/a	Initial cal 0.2
SQ2133-IC2133	Q100150.D	02/06/23 17:37	n/a	Initial cal 0.5
SQ2133-IC2133	Q100151.D	02/06/23 17:46	n/a	Initial cal 1
SQ2133-ICC2133	Q100152.D	02/06/23 17:54	n/a	Initial cal 2
SQ2133-IC2133	Q100153.D	02/06/23 18:02	n/a	Initial cal 5
SQ2133-IC2133	Q100154.D	02/06/23 18:11	n/a	Initial cal 10
SQ2133-IC2133	Q100155.D	02/06/23 18:19	n/a	Initial cal 25
SQ2133-IC2133	Q100156.D	02/06/23 18:28	n/a	Initial cal 50
SQ2133-ICV2133	Q100157.D	02/06/23 18:36	n/a	Initial cal verification 2
OP95335-BS	Q100160.D	02/06/23 19:01	OP95335	Blank Spike
OP95335-MB	Q100161.D	02/06/23 19:10	OP95335	Method Blank
JD58805-1A	Q100162.D	02/06/23 19:18	OP95335	(used for QC only; not part of job FC2200)
OP95335-MS	Q100163.D	02/06/23 19:27	OP95335	Matrix Spike
OP95335-MSD	Q100164.D	02/06/23 19:35	OP95335	Matrix Spike Duplicate
ZZZZZZ	Q100165.D	02/06/23 19:43	OP95335	(unrelated sample)
ZZZZZZ	Q100166.D	02/06/23 19:52	OP95335	(unrelated sample)
SQ2133-CC2133	Q100167.D	02/06/23 20:00	n/a	Continuing cal 2
SQ2133-CC2133	Q100168.D	02/06/23 20:09	n/a	Continuing cal 0.2
OP95334-BS	Q100170.D	02/06/23 20:26	OP95334	Blank Spike
OP95334-MB	Q100171.D	02/06/23 20:34	OP95334	Method Blank
ZZZZZZ	Q100172.D	02/06/23 20:42	OP95334	(unrelated sample)
ZZZZZZ	Q100173.D	02/06/23 20:51	OP95334	(unrelated sample)
ZZZZZZ	Q100174.D	02/06/23 20:59	OP95334	(unrelated sample)
FC2200-1	Q100175.D	02/06/23 21:08	OP95334	54MW12
OP95334-MS	Q100176.D	02/06/23 21:16	OP95334	Matrix Spike
OP95334-MSD	Q100177.D	02/06/23 21:25	OP95334	Matrix Spike Duplicate
FC2200-2	Q100178.D	02/06/23 21:33	OP95334	54MW1
SQ2133-CC2133	Q100179.D	02/06/23 21:41	n/a	Continuing cal 2
SQ2133-CC2133	Q100180.D	02/06/23 21:50	n/a	Continuing cal 0.2
ZZZZZZ	Q100182.D	02/06/23 22:07	OP95334	(unrelated sample)
ZZZZZZ	Q100183.D	02/06/23 22:15	OP95334	(unrelated sample)
SQ2133-CC2133	Q100186.D	02/06/23 22:40	n/a	Continuing cal 2
SQ2133-ECC2133	Q100187.D	02/06/23 22:49	n/a	Ending cal 0.2
SQ2133-IBLK	Q100188.D	02/06/23 22:57	n/a	Instrument Blank
SQ2133-IBLK	Q100188.D	02/06/23 22:57	n/a	Instrument Blank



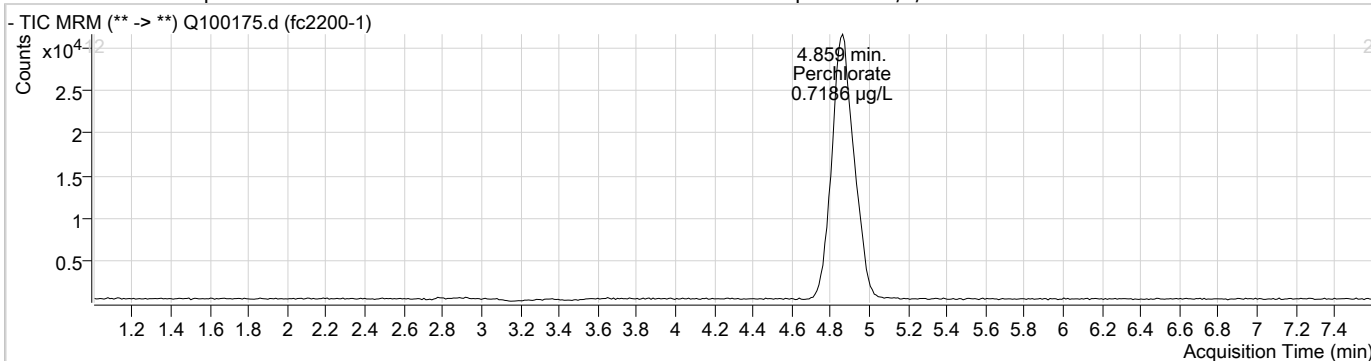
MS Semi-volatiles

Raw Data

7

Quantitative Analysis Report for Perchlorate by 6850

Data File : Q100175.d	Operator : annal
Acq. Method : Perchlorate2.m	Acq. Date-Time : 2/6/2023 9:08:14 PM
Sample Name : fc2200-1	Instrument : Instrument 1
Vial : P2-B5	Sample Information : OP95334,SQ2133,10,,,10,1,water
DA Method File : 6850_020623_SQ2133.quantmethod.xml	Comment :
Batch Name : sq2133.batch.bin	Last Calib Update : 2/7/2023 11:20:42 AM

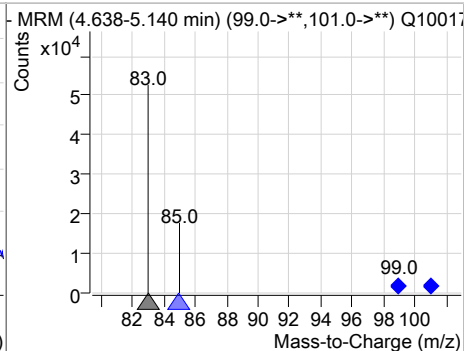
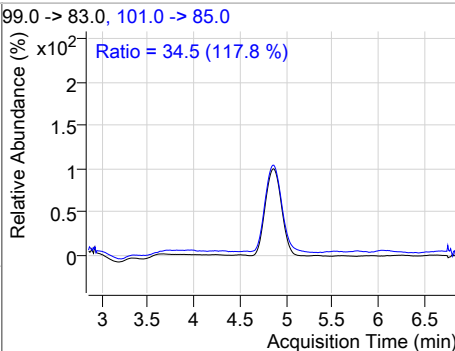
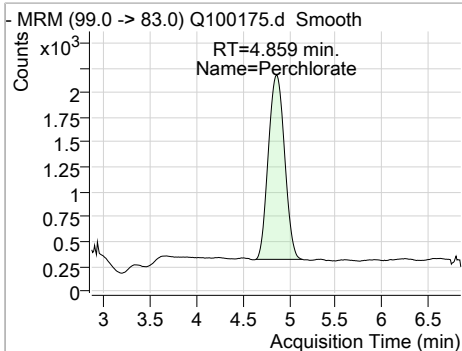


Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.862	107.0 -> 89.0	219658	NoQ	5.00 µg/L	-0.153
System Monitoring Compounds						
Target Compounds						
Perchlorate	4.859	99.0 -> 83.0	22715	2.9	0.72 µg/L	90

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
Perchlorate	0.72	4.86	-0.15	22715	101.0 -> 85.0	2.9	1.6	

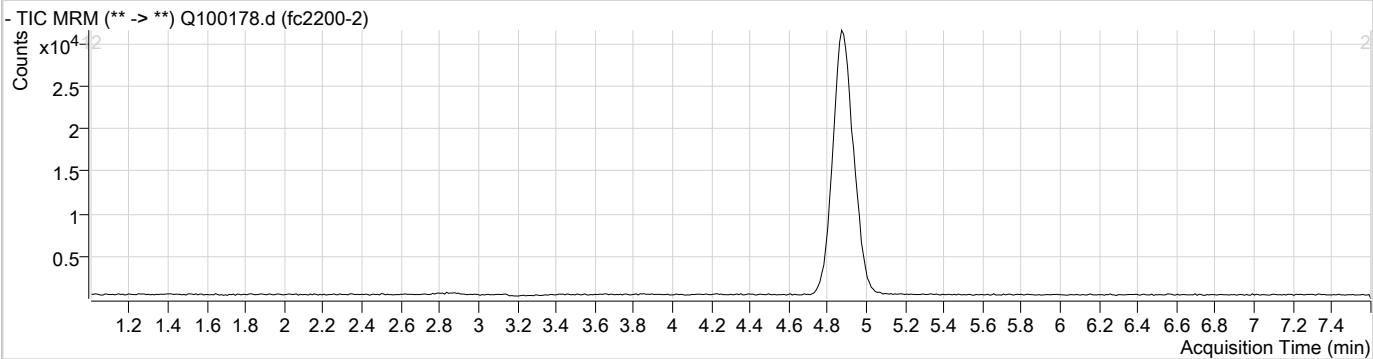


7.1.1

7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100178.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 9:33:34 PM
Sample Name	fc2200-2	Instrument	Instrument 1
Vial	P2-B8	Sample Information	OP95334,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



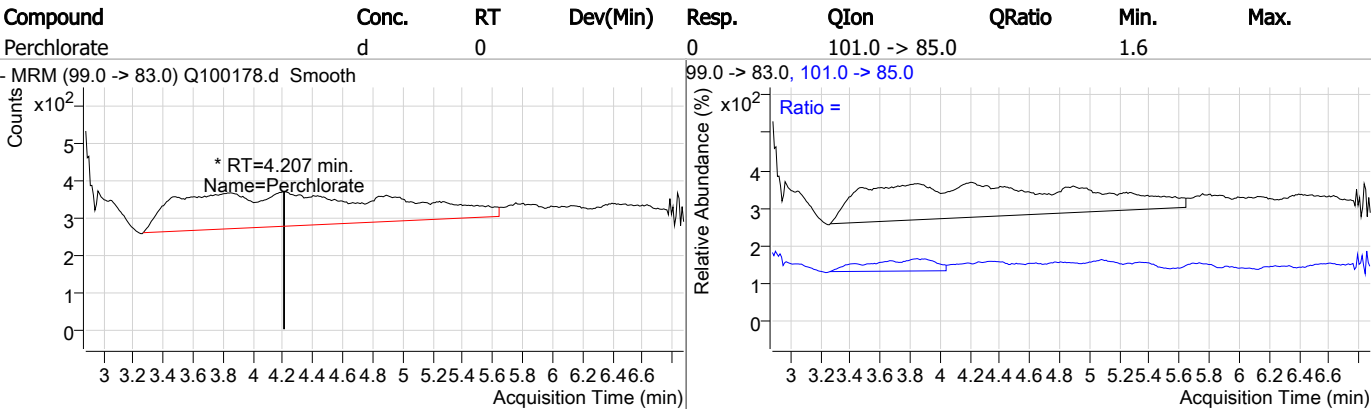
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.883	107.0 -> 89.0	232738	NoQ	5.00 µg/L	-0.132

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	md	QValue
Perchlorate	4.207	99.0 -> 83.0	0		0.00 µg/L	md	1

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

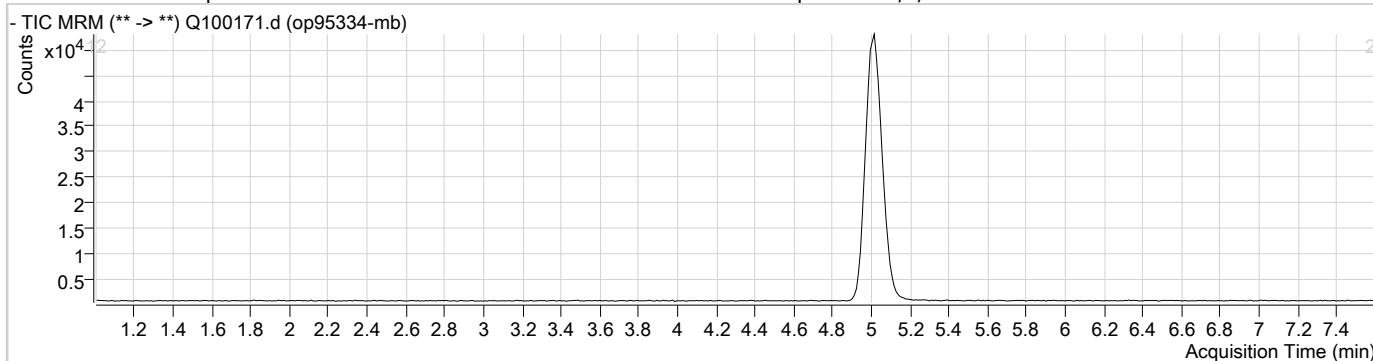
Quantitative Analysis Report for Perchlorate by 6850



7.1.2
7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100171.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 8:34:29 PM
Sample Name	op95334-mb	Instrument	Instrument 1
Vial	P2-B1	Sample Information	OP95334,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	318757	NoQ	5.00 µg/L	0.000

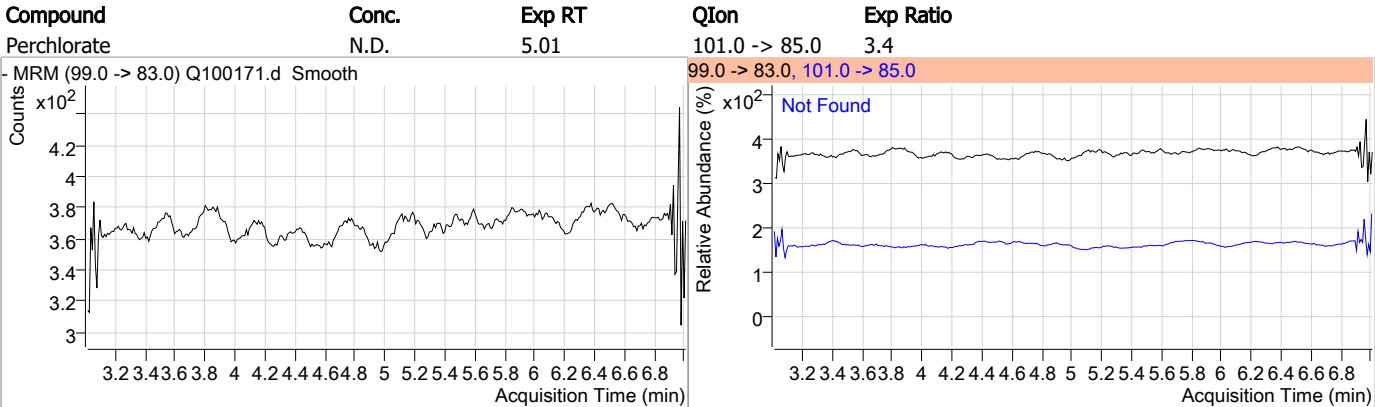
System Monitoring Compounds

Target Compounds

						QValue
Perchlorate	-	99.0 -> 83.0	-	-	N.D.	

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

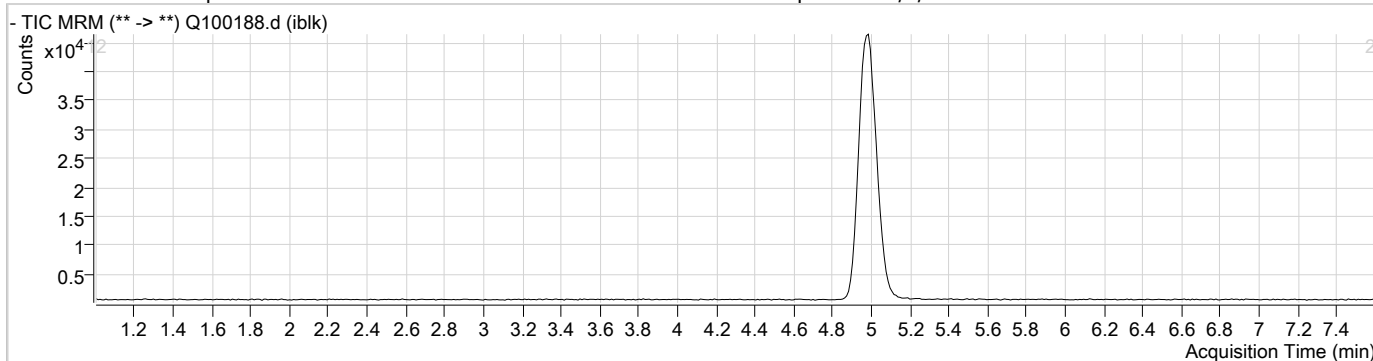
Quantitative Analysis Report for Perchlorate by 6850



7.2.1
7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100188.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 10:57:44 PM
Sample Name	iblk	Instrument	Instrument 1
Vial	Vial 1	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



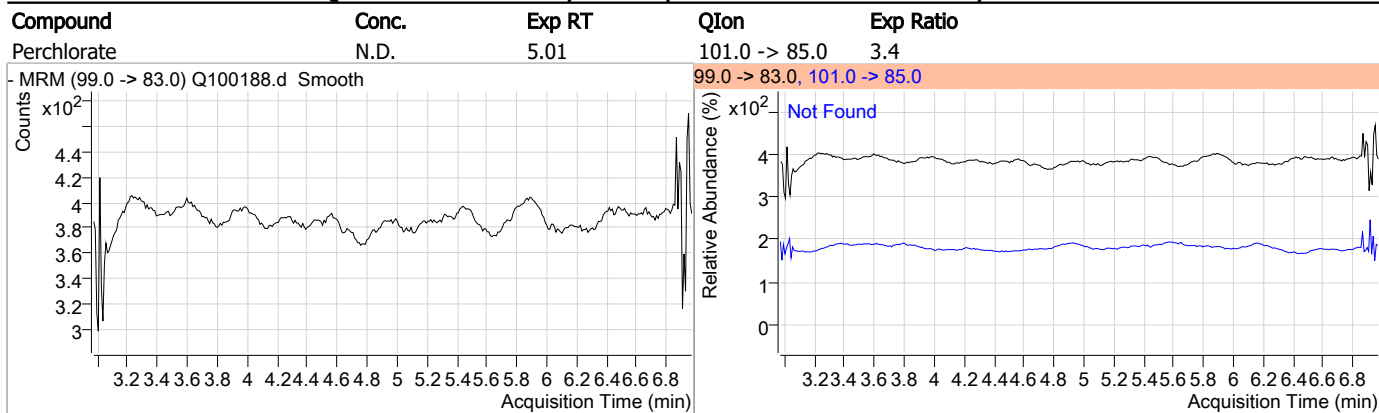
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.974	107.0 -> 89.0	297487	NoQ	5.00 µg/L	-0.041

System Monitoring Compounds**Target Compounds**

Perchlorate						QValue
	-	99.0 -> 83.0		-	N.D.	

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

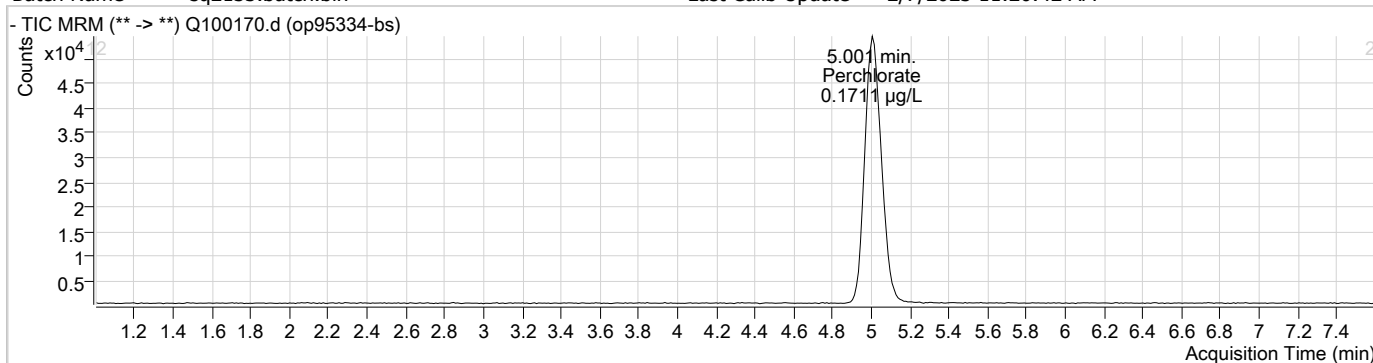
Quantitative Analysis Report for Perchlorate by 6850



7.2.2
7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100170.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 8:26:02 PM
Sample Name	op95334-bs	Instrument	Instrument 1
Vial	P2-A9	Sample Information	OP95334,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



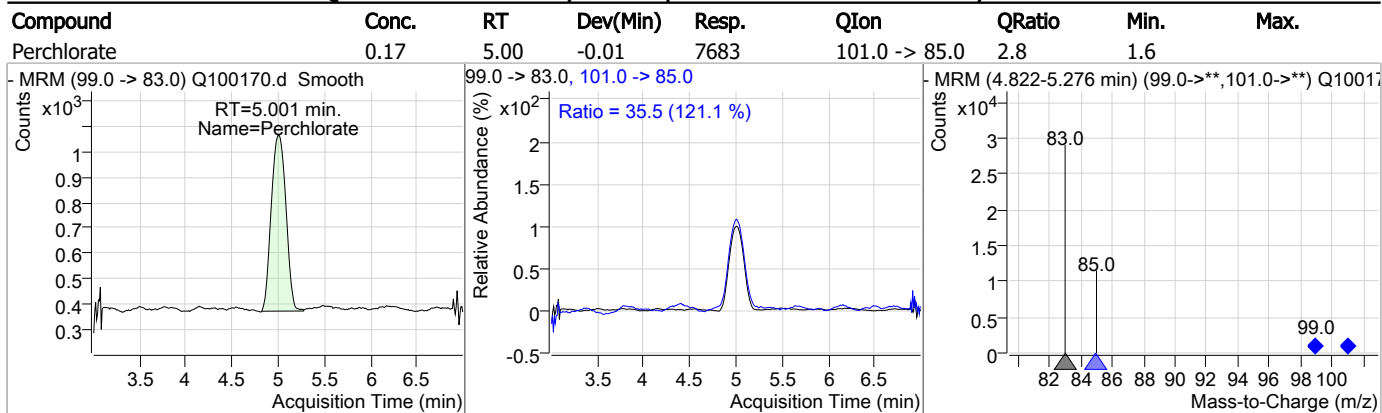
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.005	107.0 -> 89.0	313235	NoQ	5.00 µg/L	-0.010

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	5.001	99.0 -> 83.0	7683	2.8	0.17 µg/L	88

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

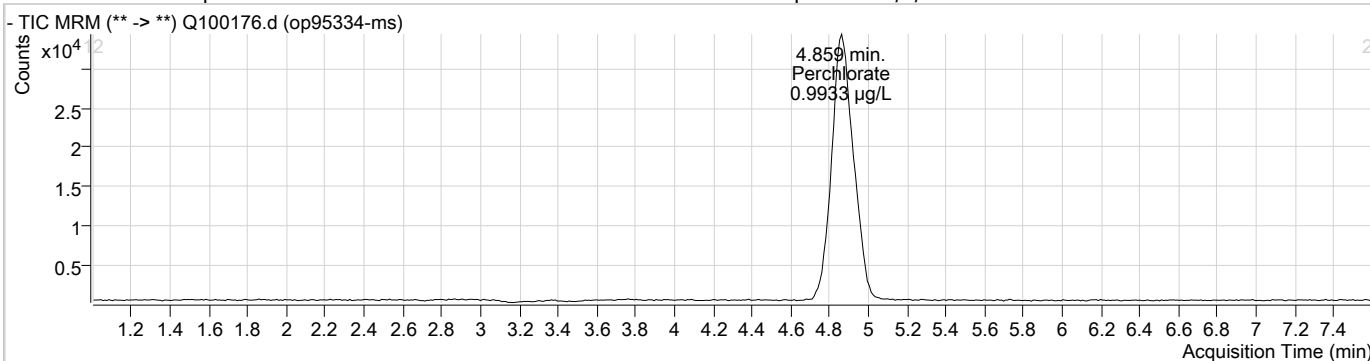


7.3.1
7

Natasha Gumtie
02/07/23 12:13

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100176.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 9:16:41 PM
Sample Name	op95334-ms	Instrument	Instrument 1
Vial	P2-B6	Sample Information	OP95334,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



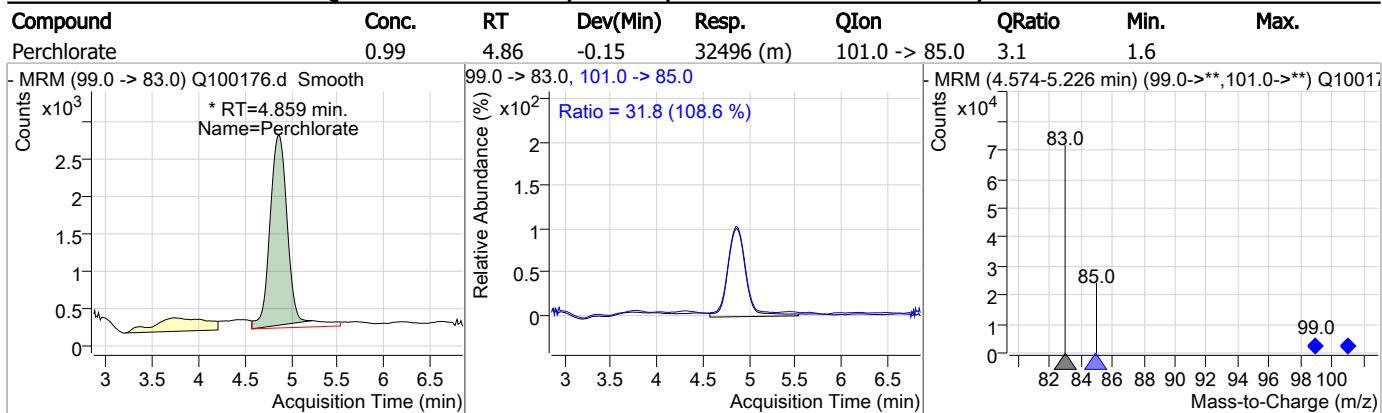
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.862	107.0 -> 89.0	226920	NoQ	5.00 µg/L	-0.153

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	m	QValue
Perchlorate	4.859	99.0 -> 83.0	32496	3.1	0.99 µg/L	m	95

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



7.4.1
7

Manual Integration Approval Summary

Sample Number: OP95334-MS

Method: SW846 6850

Lab FileID: Q100176.D

Analyst approved: 02/07/23 11:39 Anna Ludwig

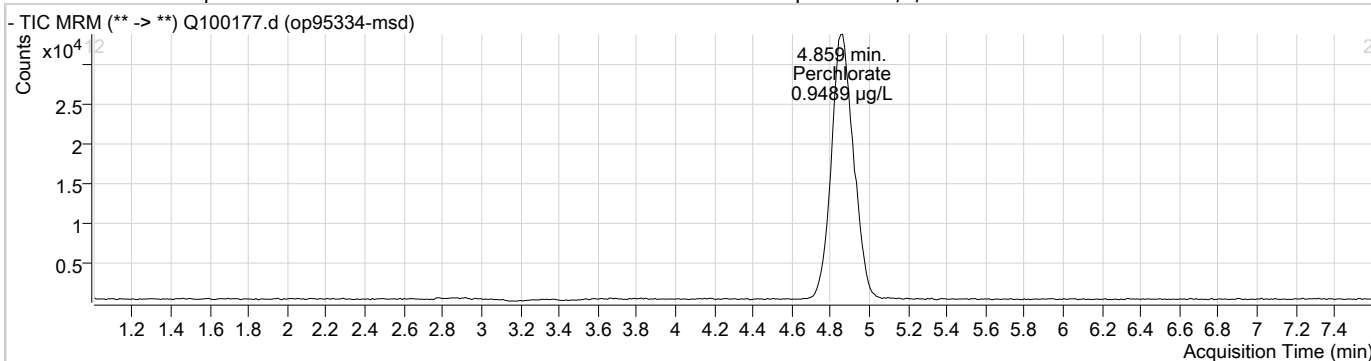
Injection Time: 02/06/23 21:16

Supervisor approved: 02/07/23 12:13 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perchlorate	14797-73-0		4.86	Poor instrument integration

Quantitative Analysis Report for Perchlorate by 6850

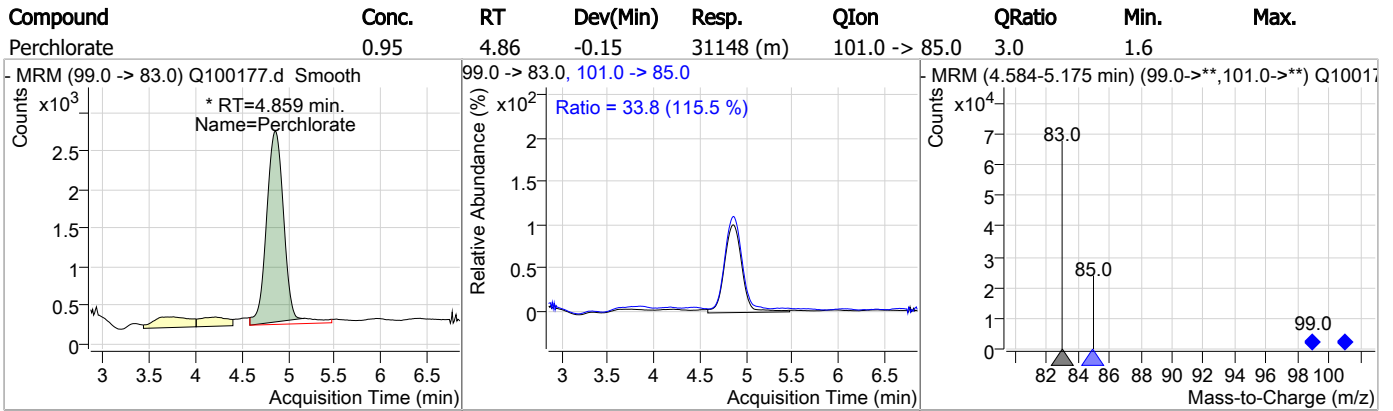
Data File	: Q100177.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 9:25:08 PM
Sample Name	op95334-msd	Instrument	Instrument 1
Vial	P2-B7	Sample Information	OP95334,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.862	107.0 -> 89.0	227756	NoQ	5.00 µg/L	-0.153
System Monitoring Compounds						
Target Compounds						
Perchlorate	4.859	99.0 -> 83.0	31148	3.0	0.95 µg/L m	QValue 92

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



7.4.2

7

Manual Integration Approval Summary

Sample Number: OP95334-MSD

Method: SW846 6850

Lab FileID: Q100177.D

Analyst approved: 02/07/23 11:39 Anna Ludwig

Injection Time: 02/06/23 21:25

Supervisor approved: 02/07/23 12:13 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perchlorate	14797-73-0		4.86	Poor instrument integration

7.4.2.1
7

QQQ Check Tune Report



Instrument Name	Instrument 1
MS Model	G6460A
MS Instrument Serial	SG10447001
Software_Firmware Version	B.08.02.B8260.0, FW: A.00.08.62
Tune Date & Time	06 February 2023 12:00:01
Data Path	D:\MassHunter\Tune\QQQ\G6460A\atunes.TUNE.XML
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.60E+0[R]; 2.39E-5[H]

Source Parameters

Parameter	Value
Gas Temp	300
Gas Flow	10
Nebulizer	15
Capillary	4000
Nozzle Voltage	1500
Sheath Gas Temp	250
Sheath Gas Flow	7

7.5.1

7

QQQ Check Tune Report



Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.00	0.01	Pass	0.70	0.67	-0.03	Pass	82262
302.00	302.01	0.01	Pass	0.70	0.68	-0.02	Pass	11583
601.98	602.03	0.05	Pass	0.70	0.66	-0.04	Pass	47475
1033.99	1034.06	0.07	Pass	0.70	0.66	-0.04	Pass	93868
1633.95	1634.03	0.08	Pass	0.70	0.66	-0.04	Pass	170977
2233.91	2233.98	0.07	Pass	0.70	0.74	0.04	Pass	101111

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.04	0.04	Pass	0.70	0.76	0.06	Pass	29689
112.99	112.96	-0.03	Pass	0.70	0.78	0.08	Pass	228557
302.00	301.99	-0.01	Pass	0.70	0.72	0.02	Pass	27123
601.98	602.00	0.02	Pass	0.70	0.70	0.00	Pass	100990
1033.99	1034.00	0.01	Pass	0.70	0.70	0.00	Pass	257825
1633.95	1634.00	0.05	Pass	0.70	0.70	0.00	Pass	365397
2233.91	2233.92	0.01	Pass	0.70	0.74	0.04	Pass	223603

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.97	-0.02	Pass	1.20	1.13	-0.07	Pass	128071
302.00	301.99	-0.01	Pass	1.20	1.22	0.02	Pass	18174
601.98	602.01	0.03	Pass	1.20	1.31	0.11	Pass	82319
1033.99	1034.02	0.03	Pass	1.20	1.37	0.17	Pass	197521
1633.95	1633.96	0.01	Pass	1.20	1.30	0.10	Pass	479994
2233.91	2233.98	0.07	Pass	1.20	1.26	0.06	Pass	315735

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.05	0.05	Pass	1.20	1.21	0.01	Pass	37982
112.99	112.97	-0.02	Pass	1.20	1.29	0.09	Pass	269812
302.00	301.94	-0.06	Pass	1.20	1.41	0.21	Pass	42371
601.98	601.93	-0.05	Pass	1.20	1.35	0.15	Pass	160250
1033.99	1033.96	-0.03	Pass	1.20	1.14	-0.06	Pass	493599
1633.95	1633.95	0.00	Pass	1.20	1.17	-0.03	Pass	1122808
2233.91	2233.85	-0.06	Pass	1.20	1.37	0.17	Pass	865457

Analyzer: MS1 Polarity: Negative Width: Widest

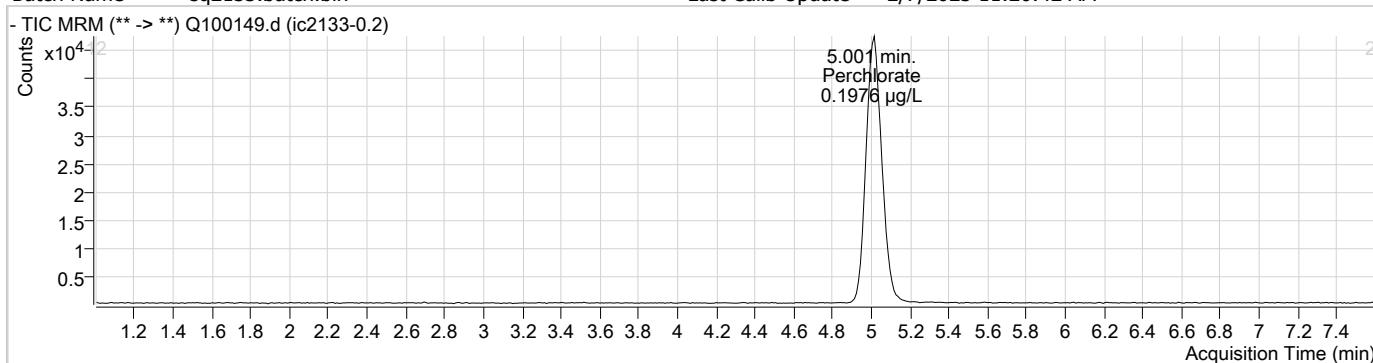
m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.66	-0.33	Pass	2.50	2.50	0.00	Pass	195027
302.00	301.99	-0.01	Pass	2.50	2.64	0.14	Pass	27169
601.98	602.01	0.03	Pass	2.50	2.65	0.15	Pass	131174
1033.99	1034.03	0.04	Pass	2.50	2.68	0.18	Pass	328997
1633.95	1634.00	0.05	Pass	2.50	2.55	0.05	Pass	861797
2233.91	2233.93	0.02	Pass	2.50	2.40	-0.10	Pass	687126

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.01	0.01	Pass	2.50	2.53	0.03	Pass	45773
112.99	112.93	-0.06	Pass	2.50	2.63	0.13	Pass	312933
302.00	301.92	-0.08	Pass	2.50	2.76	0.26	Pass	52690
601.98	601.92	-0.06	Pass	2.50	2.73	0.23	Pass	229458
1033.99	1033.95	-0.04	Pass	2.50	2.51	0.01	Pass	895517
1633.95	1633.93	-0.02	Pass	2.50	2.59	0.09	Pass	2592714
2233.91	2233.72	-0.19	Pass	2.50	2.82	0.32	Pass	2049948

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100149.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 5:29:15 PM
Sample Name	ic2133-0.2	Instrument	Instrument 1
Vial	Vial 2	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



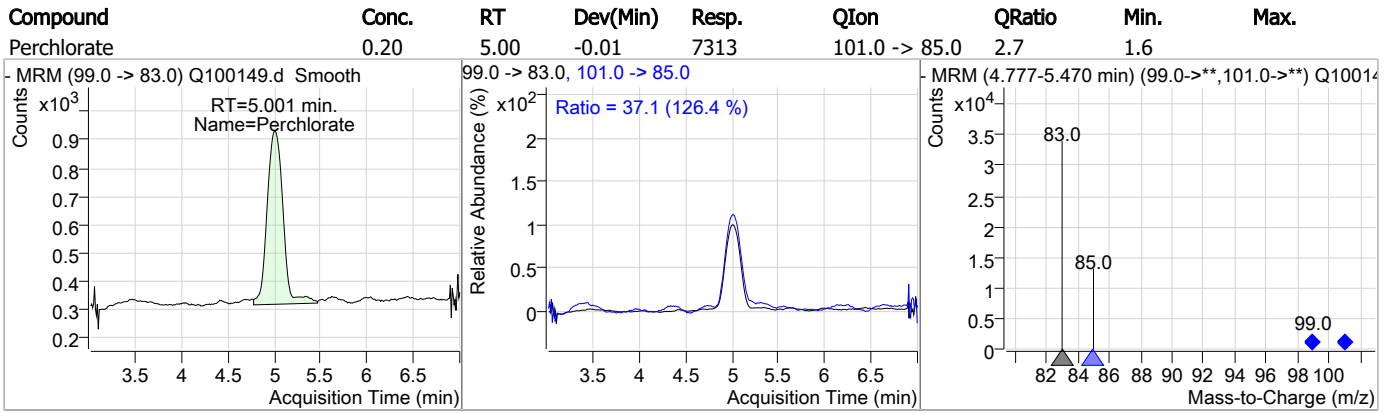
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	258147	NoQ	5.00 µg/L	0.000

System Monitoring Compounds

Target Compounds						QValue
Perchlorate	5.001	99.0 -> 83.0	7313	2.7	0.20 µg/L	86

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

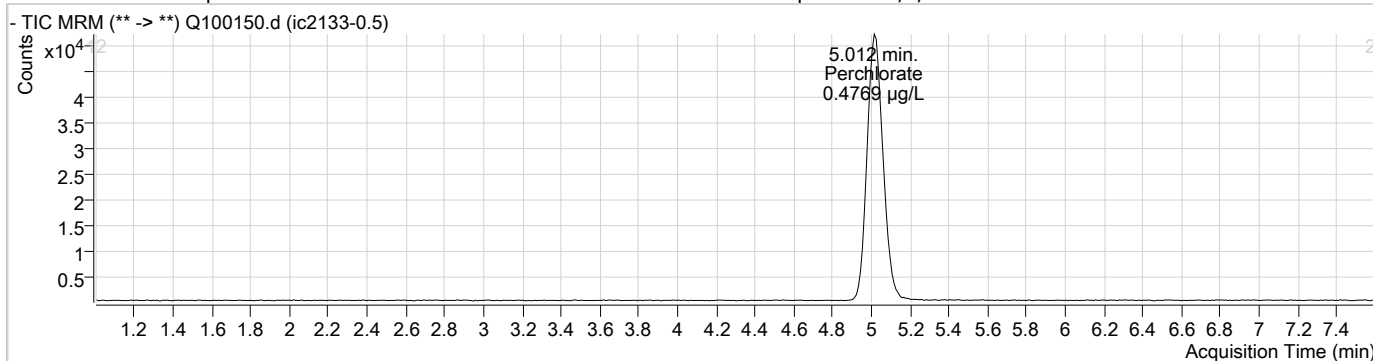


7.5.2

7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100150.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 5:37:41 PM
Sample Name	ic2133-0.5	Instrument	Instrument 1
Vial	Vial 3	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



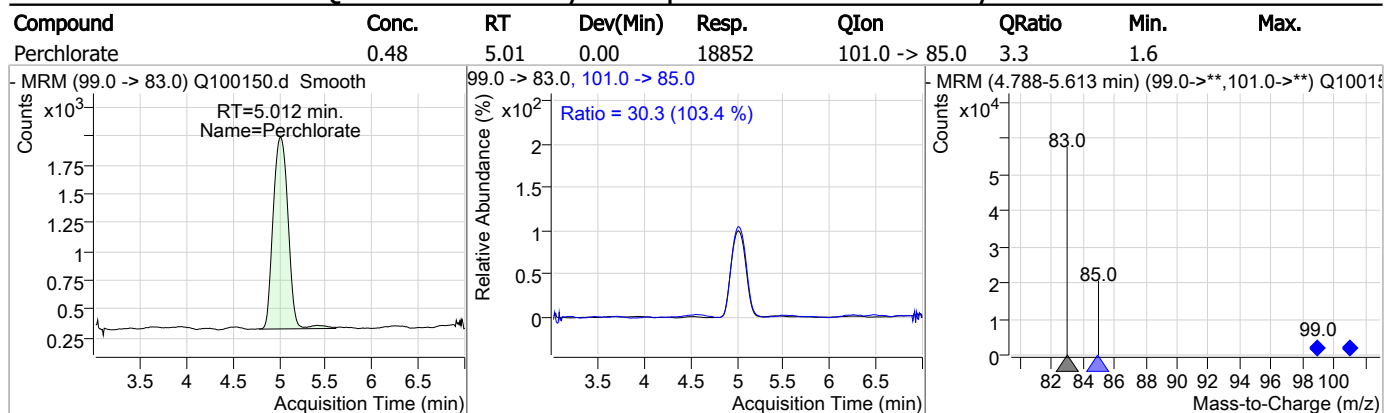
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	275130	NoQ	5.00 µg/L	0.000

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	5.012	99.0 -> 83.0	18852	3.3	0.48 µg/L	98

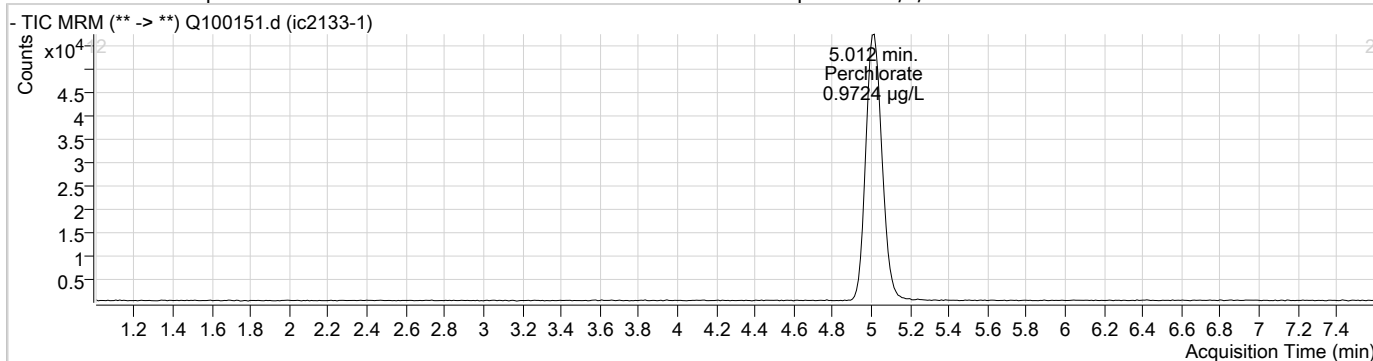
(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100151.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 5:46:05 PM
Sample Name	ic2133-1	Instrument	Instrument 1
Vial	Vial 4	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



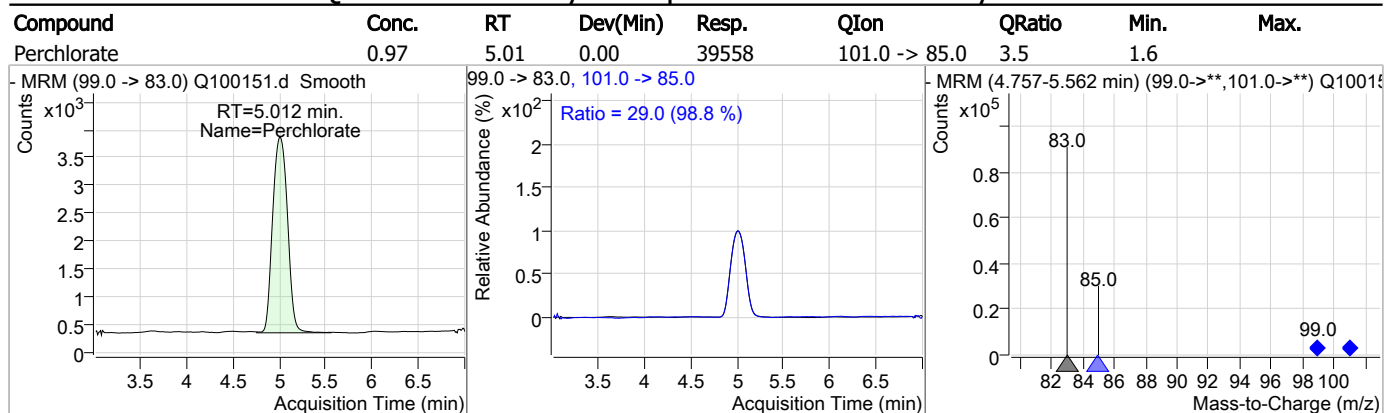
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	282188	NoQ	5.00 µg/L	0.000

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	5.012	99.0 -> 83.0	39558	3.5	0.97 µg/L	99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

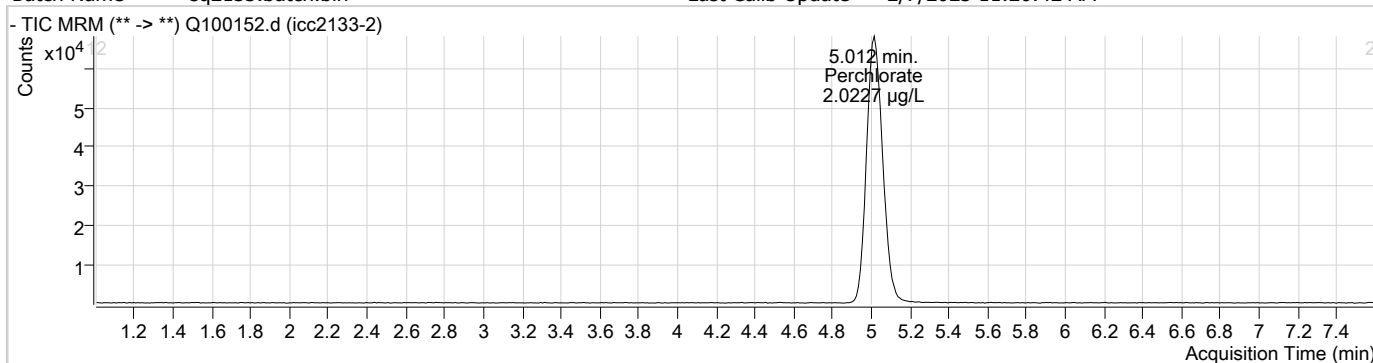


7.5.4

7

Quantitative Analysis Report for Perchlorate by 6850

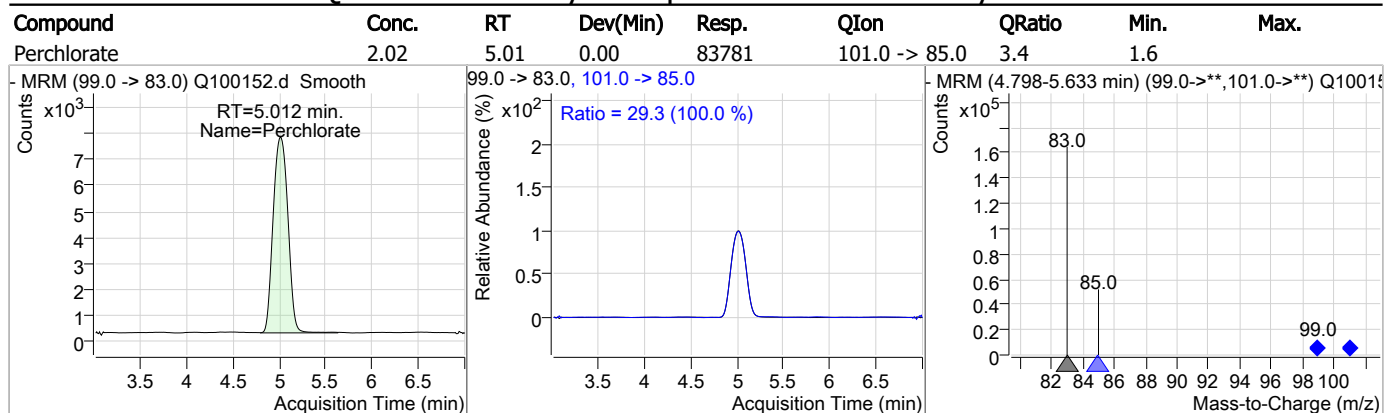
Data File	: Q100152.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 5:54:29 PM
Sample Name	icc2133-2	Instrument	Instrument 1
Vial	Vial 5	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	285283	NoQ	5.00 µg/L	0.000
System Monitoring Compounds						
Target Compounds						
Perchlorate	5.012	99.0 -> 83.0	83781	3.4	2.02 µg/L	100

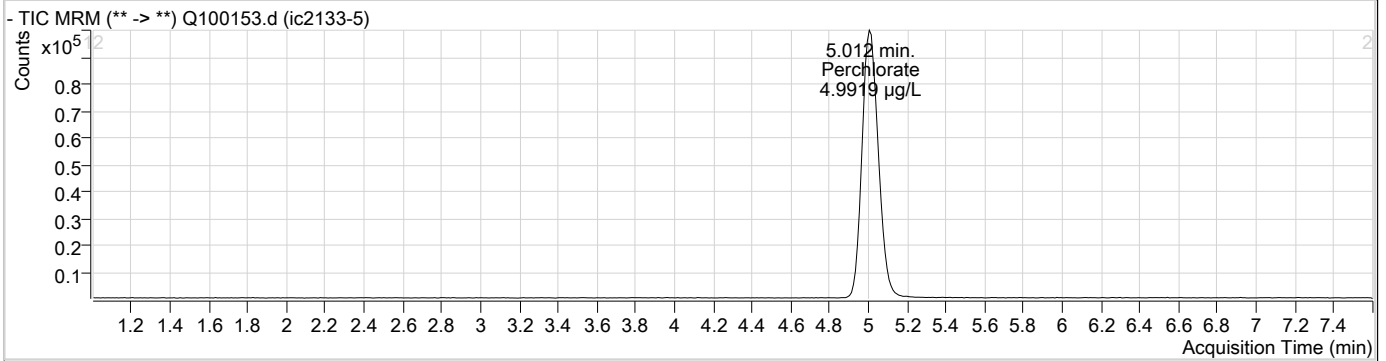
(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100153.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 6:02:53 PM
Sample Name	ic2133-5	Instrument	Instrument 1
Vial	Vial 6	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



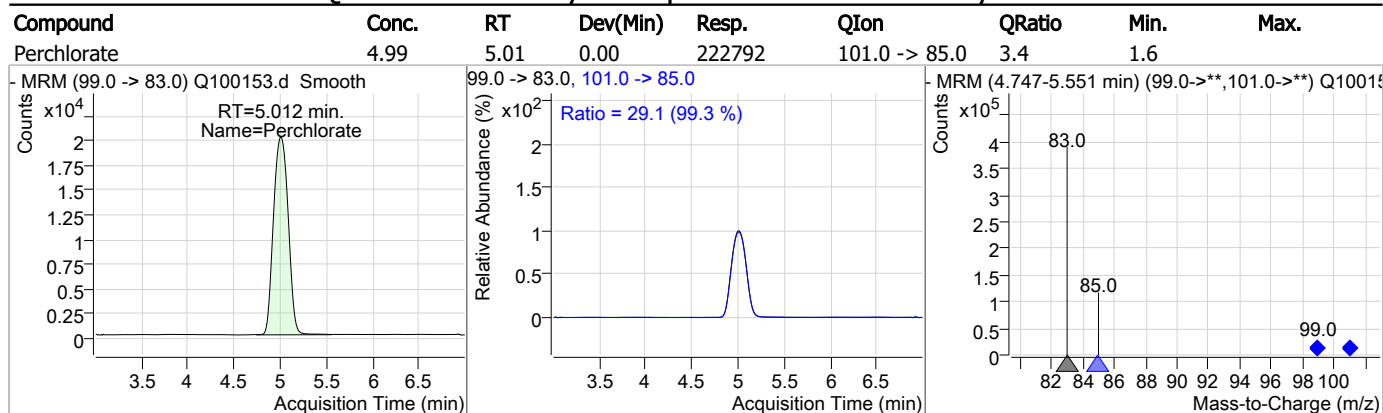
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.005	107.0 -> 89.0	301326	NoQ	5.00 µg/L	-0.010

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	5.012	99.0 -> 83.0	222792	3.4	4.99 µg/L	100

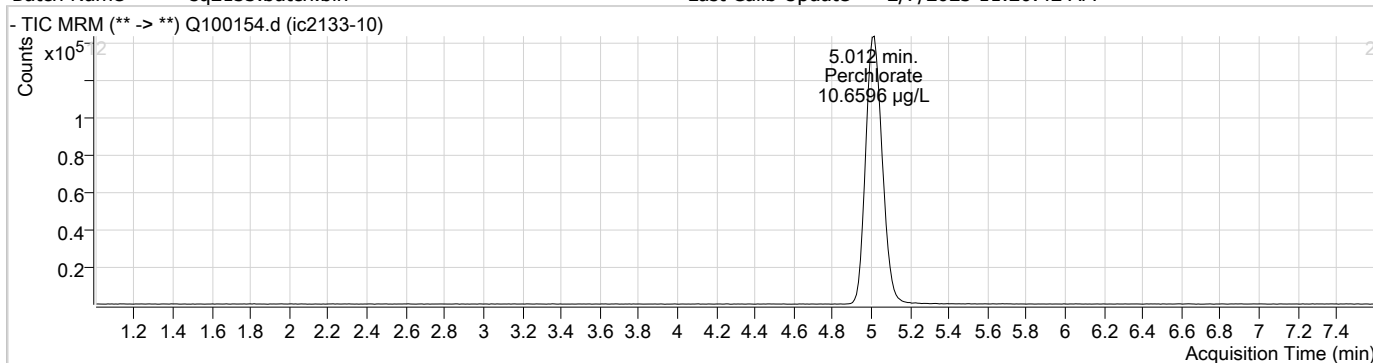
(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100154.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 6:11:17 PM
Sample Name	ic2133-10	Instrument	Instrument 1
Vial	Vial 7	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



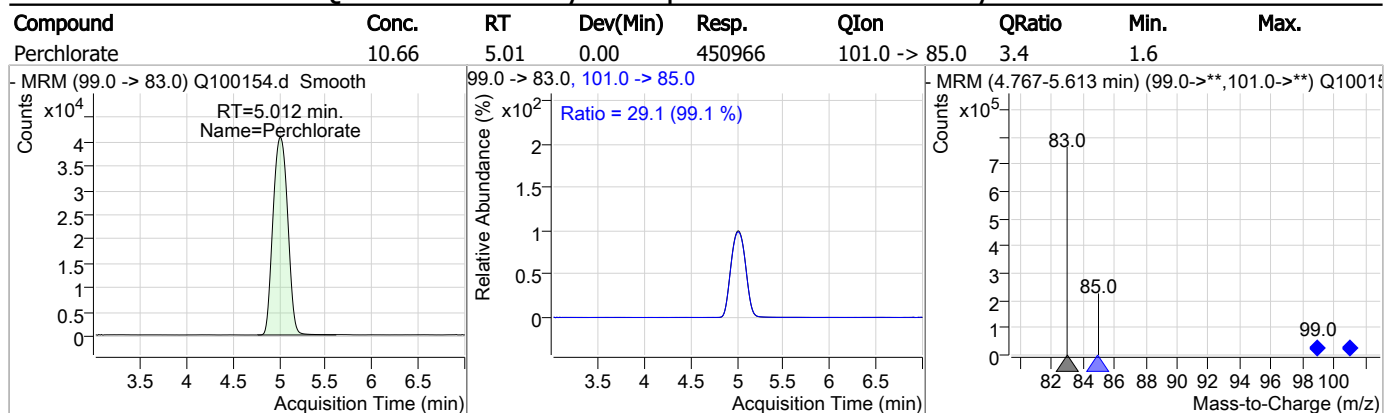
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	275255	NoQ	5.00 µg/L	0.000

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	5.012	99.0 -> 83.0	450966	3.4	10.66 µg/L	100

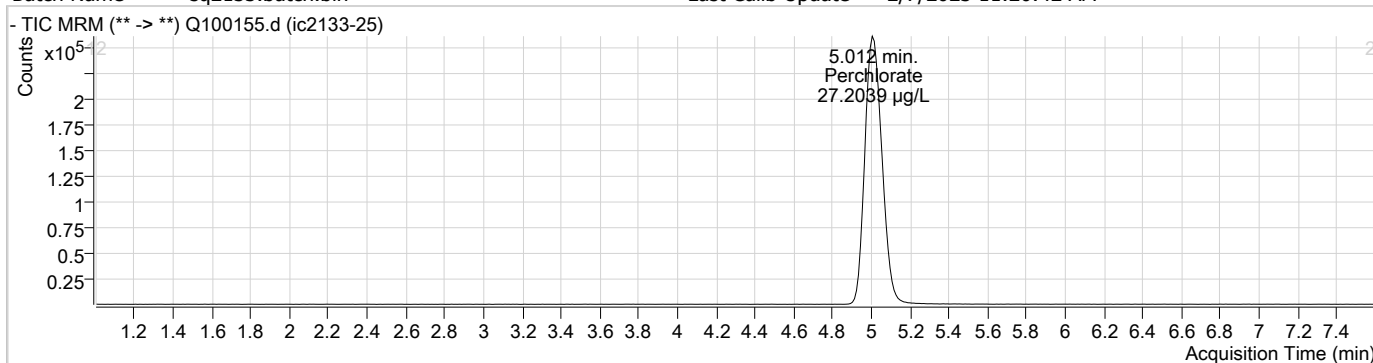
(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



Quantitative Analysis Report for Perchlorate by 6850

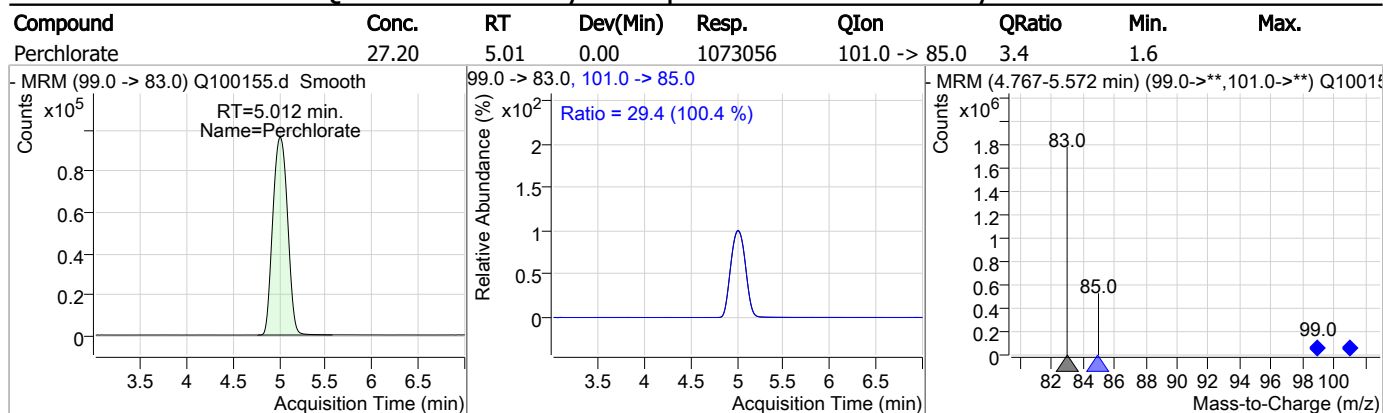
Data File	: Q100155.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 6:19:43 PM
Sample Name	ic2133-25	Instrument	Instrument 1
Vial	Vial 8	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	232032	NoQ	5.00 µg/L	0.000
System Monitoring Compounds						
Target Compounds						
Perchlorate	5.012	99.0 -> 83.0	1073056	3.4	27.20 µg/L	100

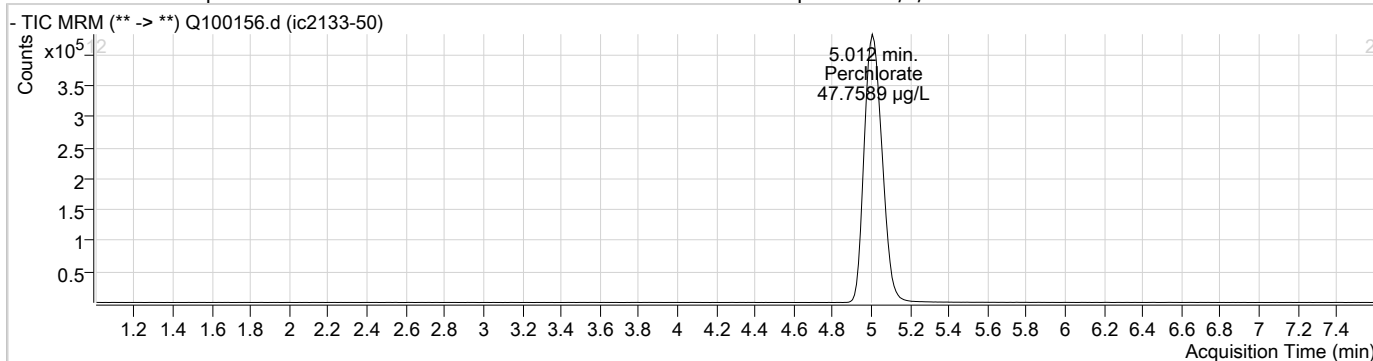
(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100156.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 6:28:08 PM
Sample Name	ic2133-50	Instrument	Instrument 1
Vial	Vial 9	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



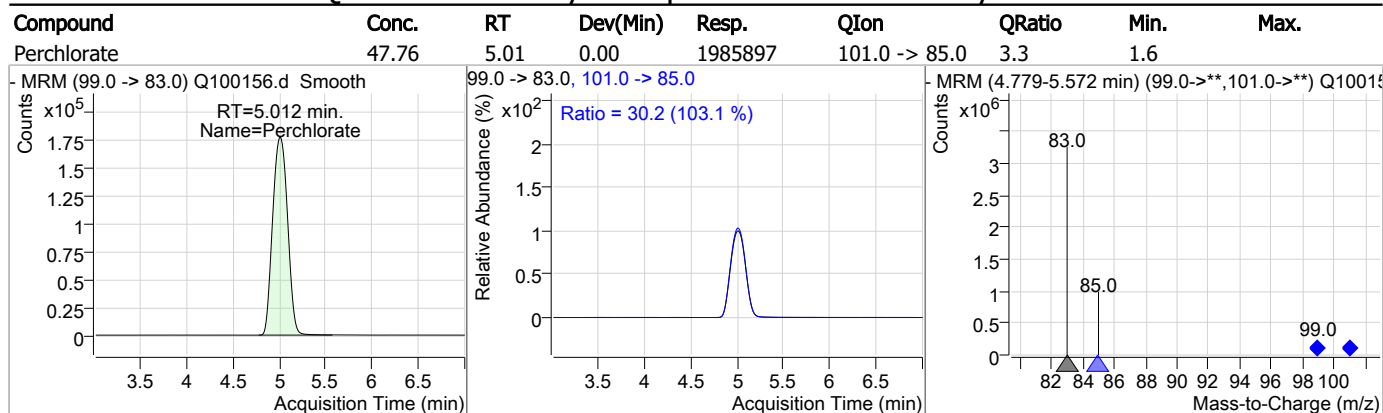
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	218564	NoQ	5.00 µg/L	0.000

System Monitoring Compounds

Target Compounds						QValue
Perchlorate	5.012	99.0 -> 83.0	1985897	3.3	47.76 µg/L	98

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

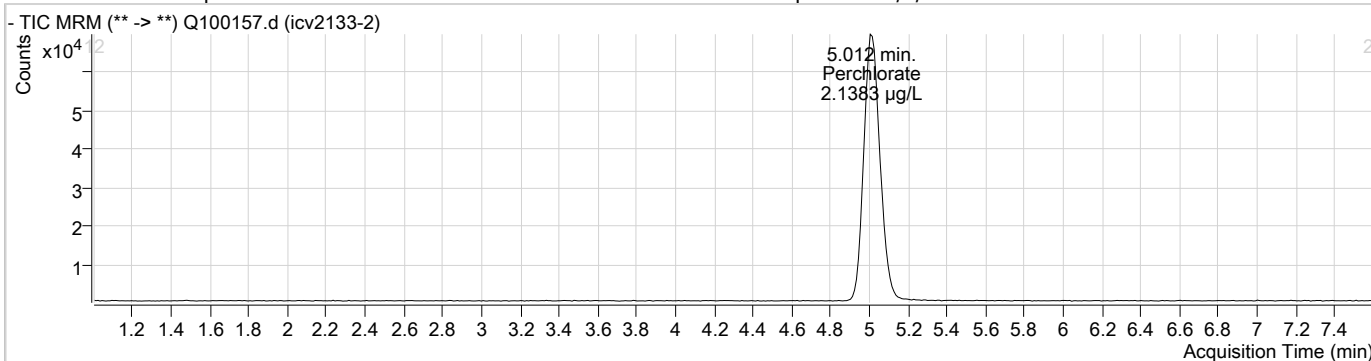


7.5.9

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Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100157.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 6:36:33 PM
Sample Name	icv2133-2	Instrument	Instrument 1
Vial	Vial 10	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



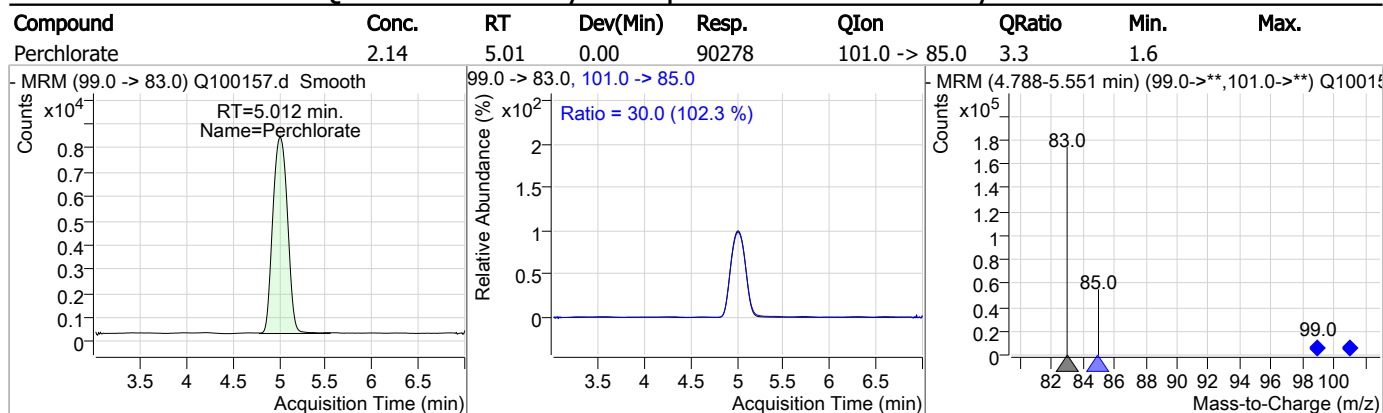
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	290557	NoQ	5.00 µg/L	0.000

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	5.012	99.0 -> 83.0	90278	3.3	2.14 µg/L	99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

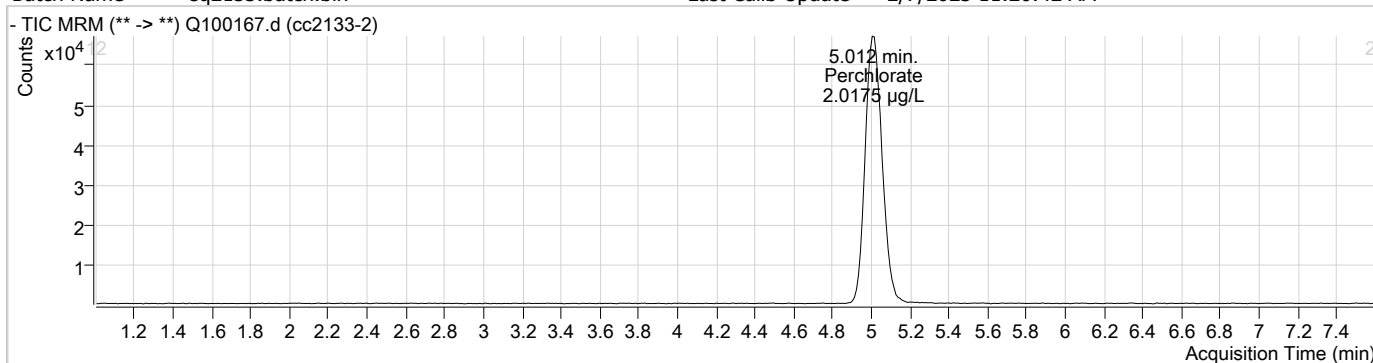


7.5.10

7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100167.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 8:00:48 PM
Sample Name	cc2133-2	Instrument	Instrument 1
Vial	Vial 5	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



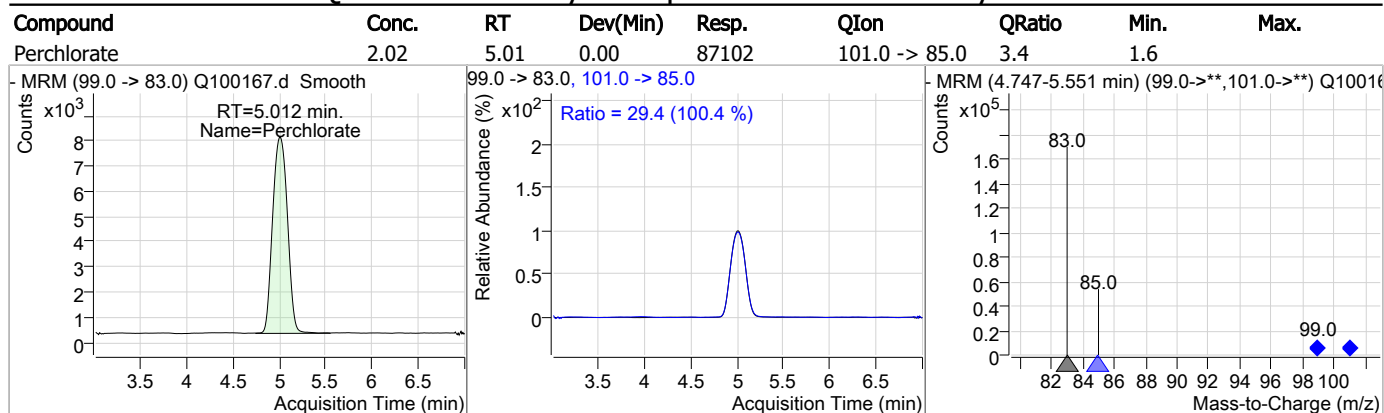
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	297366	NoQ	5.00 µg/L	0.000

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	5.012	99.0 -> 83.0	87102	3.4	2.02 µg/L	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

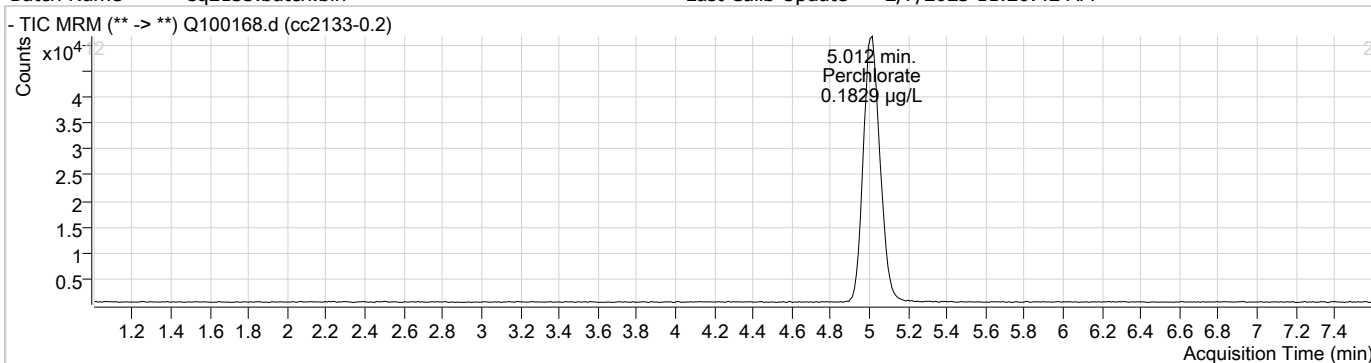


7.5.11

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Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100168.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 8:09:13 PM
Sample Name	cc2133-0.2	Instrument	Instrument 1
Vial	Vial 2	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



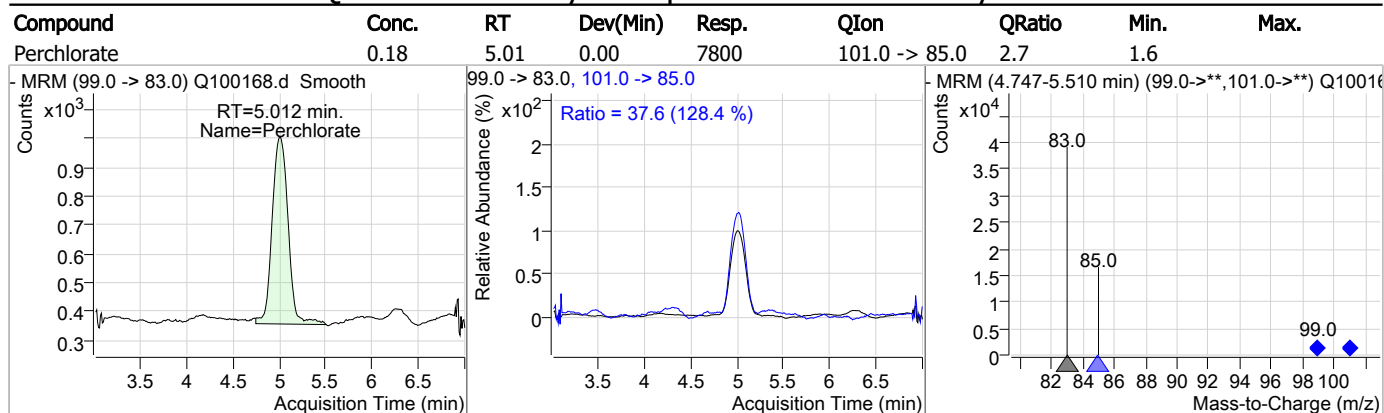
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	5.015	107.0 -> 89.0	297397	NoQ	5.00 µg/L	0.000

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	5.012	99.0 -> 83.0	7800	2.7	0.18 µg/L	84

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

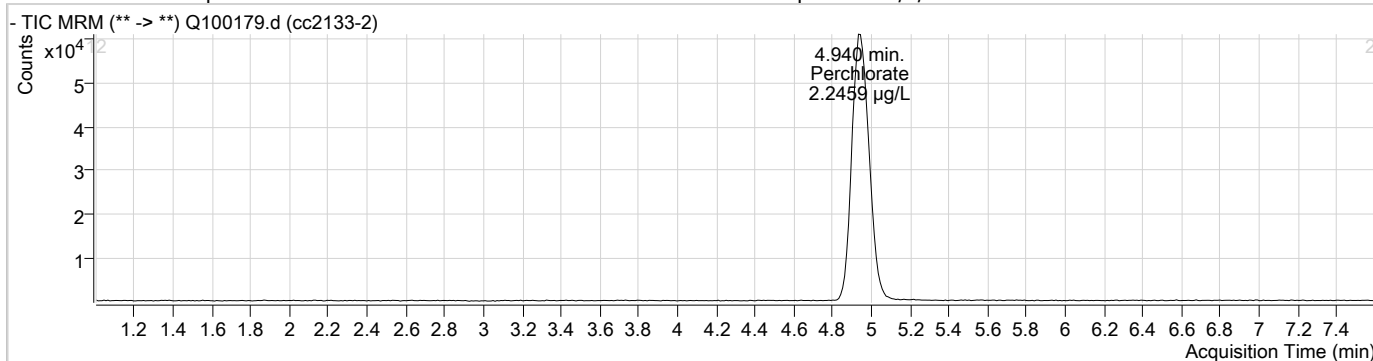


7.5.12

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Quantitative Analysis Report for Perchlorate by 6850

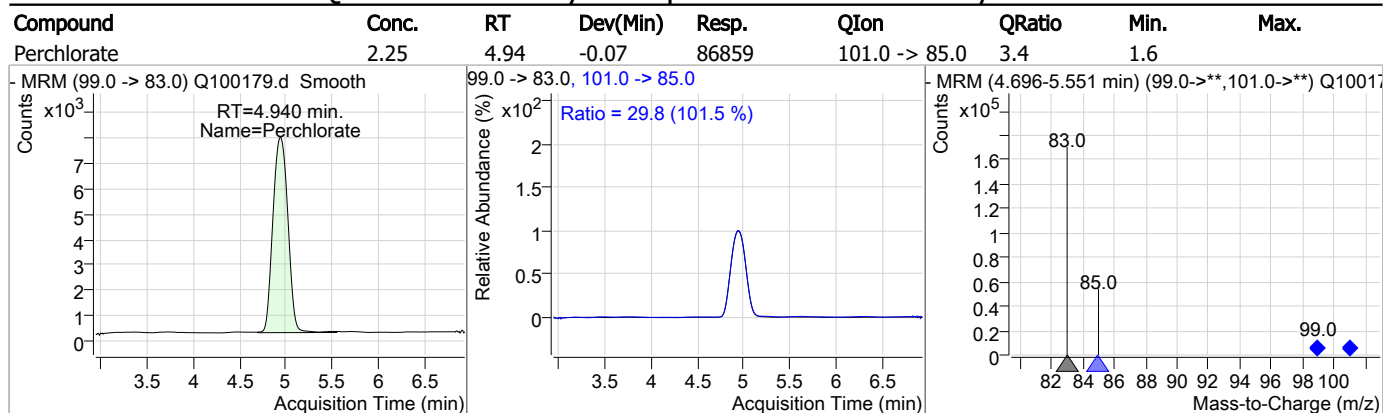
Data File	: Q100179.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 9:41:59 PM
Sample Name	cc2133-2	Instrument	Instrument 1
Vial	Vial 5	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.944	107.0 -> 89.0	265970	NoQ	5.00 µg/L	-0.071
System Monitoring Compounds						
Target Compounds						
Perchlorate	4.940	99.0 -> 83.0	86859	3.4	2.25 µg/L	99

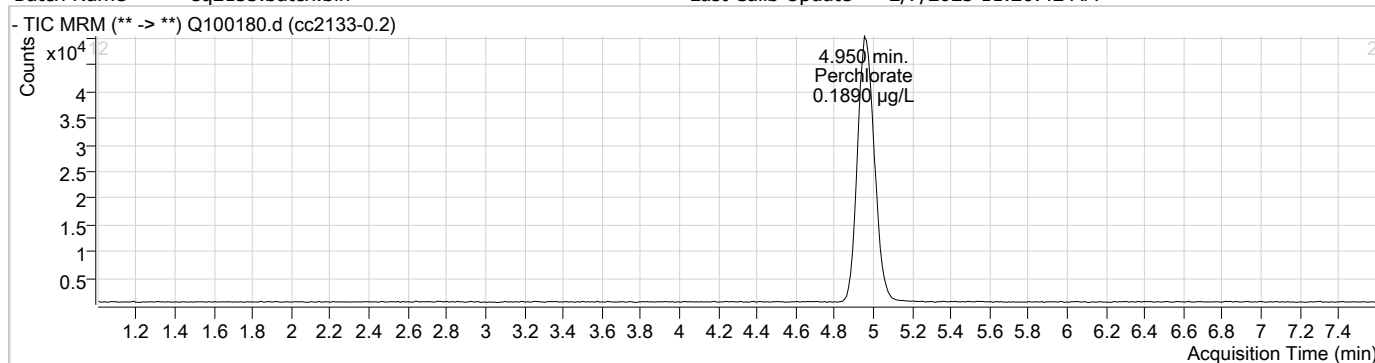
(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q100180.d	Operator	annal
Acq. Method	Perchlorate2.m	Acq. Date-Time	2/6/2023 9:50:23 PM
Sample Name	cc2133-0.2	Instrument	Instrument 1
Vial	Vial 2	Sample Information	OP94204,SQ2133,10,,,10,1,water
DA Method File	6850_020623_SQ2133.quantmethod.xml	Comment	
Batch Name	sq2133.batch.bin	Last Calib Update	2/7/2023 11:20:42 AM



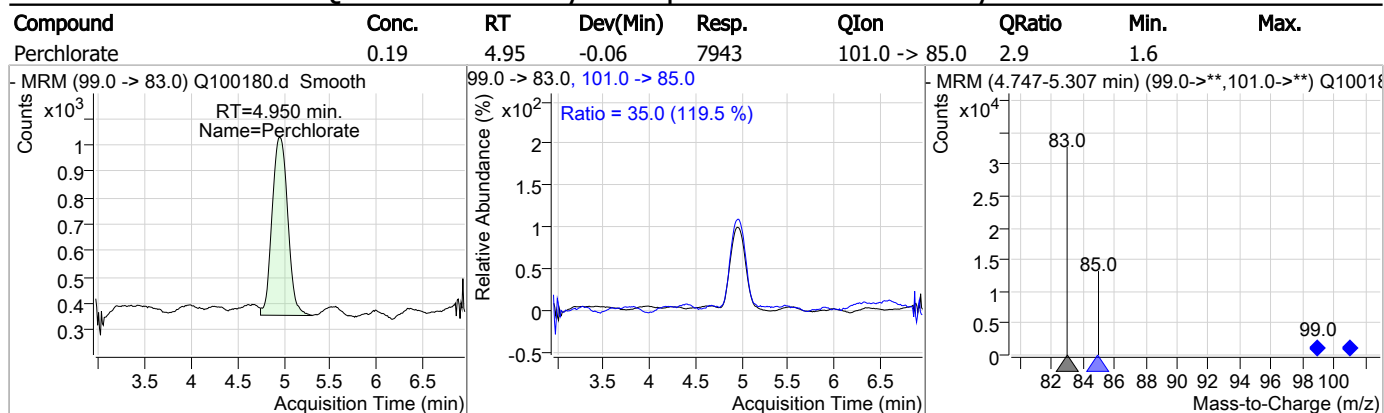
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.964	107.0 -> 89.0	293161	NoQ	5.00 µg/L	-0.051

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	4.950	99.0 -> 83.0	7943	2.9	0.19 µg/L	89

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



7.5.14

7

SGS ORLANDO

DATE:	02/06/23
COLUMN TYPE:	K-Prime
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS1-Q

LCMS1-Q ANALYSIS LOG

METHODS:	6850
PROC. METH:	6850_020623_SQ2133
CAL DATE:	02/06/23
ANALYST:	AL
RUN BATCH:	SQ2133

ELUENT A LOT #:	214324 W/0.1% AA 194003
ELUENT B LOT #:	216522 W/0.1% AA 194003
IC/CC STD LOT #:	LCMS 1981
ICV STD LOT #:	LCMS1982
ISTD/ID STD LOT #:	LCMS 1982

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	Q100145.d	Vial 1	ccb	Perchlorate2.m	Sample		OP94204, SQ2133,10,,10,1,water	nd
2	Q100146.d	Vial 1	ccb	Perchlorate2.m	Sample		OP94204, SQ2133,10,,10,1,water	nd
3	Q100147.d	Vial 1	ccb	Perchlorate2.m	Sample		OP94204, SQ2133,10,,10,1,water	nd
4	Q100148.d	Vial 1	ic2133-0	Perchlorate2.m	Sample		OP94204, SQ2133,10,,10,1,water	check tune file
5	Q100149.d	Vial 2	ic2133-0.2	Perchlorate2.m	Calibration	500x	OP94204, SQ2133,10,,10,1,water	pass
6	Q100150.d	Vial 3	ic2133-0.5	Perchlorate2.m	Calibration	200x	OP94204, SQ2133,10,,10,1,water	pass
7	Q100151.d	Vial 4	ic2133-1	Perchlorate2.m	Calibration	100x	OP94204, SQ2133,10,,10,1,water	pass
8	Q100152.d	Vial 5	icc2133-2	Perchlorate2.m	Calibration	50x	OP94204, SQ2133,10,,10,1,water	pass
9	Q100153.d	Vial 6	ic2133-5	Perchlorate2.m	Calibration	20x	OP94204, SQ2133,10,,10,1,water	pass
10	Q100154.d	Vial 7	ic2133-10	Perchlorate2.m	Calibration	10x	OP94204, SQ2133,10,,10,1,water	pass
11	Q100155.d	Vial 8	ic2133-25	Perchlorate2.m	Calibration	4x	OP94204, SQ2133,10,,10,1,water	pass
12	Q100156.d	Vial 9	ic2133-50	Perchlorate2.m	Calibration	2x	OP94204, SQ2133,10,,10,1,water	pass
13	Q100157.d	Vial 10	icv2133-2	Perchlorate2.m	QC	50x	OP94204, SQ2133,10,,10,1,water	pass
14	Q100158.d	P2-A1	ics	Perchlorate2.m	Sample	500x	OP94204, SQ2133,10,,10,1,water	pass
15	Q100159.d	Vial 1	ccb	Perchlorate2.m	Sample		OP94204, SQ2133,10,,10,1,water	nd
16	Q100160.d	P2-A2	op95335-bs	Perchlorate2.m	Sample		OP95335, SQ2133,1.00,,10,1,soil	✓
17	Q100161.d	P2-A3	op95335-mb	Perchlorate2.m	Sample		OP95335, SQ2133,1.00,,10,1,soil	✓
18	Q100162.d	P2-A4	jd58805-1A	Perchlorate2.m	Sample		OP95335, SQ2133,1.06,,10,1,soil	✓
19	Q100163.d	P2-A5	op95335-ms	Perchlorate2.m	Sample		OP95335, SQ2133,0.99,,10,1,soil	✓
20	Q100164.d	P2-A6	op95335-msd	Perchlorate2.m	Sample		OP95335, SQ2133,0.97,,10,1,soil	✓
21	Q100165.d	P2-A7	jd58805-2A	Perchlorate2.m	Sample		OP95335, SQ2133,1.06,,10,1,soil	✓
22	Q100166.d	P2-A8	jd58805-3A	Perchlorate2.m	Sample		OP95335, SQ2133,0.99,,10,1,soil	✓
23	Q100167.d	Vial 5	cc2133-2	Perchlorate2.m	QC	50x	OP94204, SQ2133,10,,10,1,water	pass
24	Q100168.d	Vial 2	cc2133-0.2	Perchlorate2.m	QC	500x	OP94204, SQ2133,10,,10,1,water	pass
25	Q100169.d	Vial 1	ccb	Perchlorate2.m	Sample		OP94204, SQ2133,10,,10,1,water	nd
26	Q100170.d	P2-A9	op95334-bs	Perchlorate2.m	Sample		OP95334, SQ2133,10,,10,1,water	✓
27	Q100171.d	P2-B1	op95334-mb	Perchlorate2.m	Sample		OP95334, SQ2133,10,,10,1,water	✓
28	Q100172.d	P2-B2	fc2128-1	Perchlorate2.m	Sample		OP95334, SQ2133,10,,10,1,water	✓

LCMS1-Q ANALYSIS LOG

SGS ORLANDO

29	Q100173.d	P2-B3	fc2128-2	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	✓
30	Q100174.d	P2-B4	fc2128-3	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	✓
31	Q100175.d	P2-B5	fc2200-1	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	✓
32	Q100176.d	P2-B6	op95334-ms	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	✓
33	Q100177.d	P2-B7	op95334-msd	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	✓
34	Q100178.d	P2-B8	fc2200-2	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	✓
35	Q100179.d	Vial 5	cc2133-2	Perchlorate2.m	QC	OP94204, SQ2133.10,,,10.1,water	pass
36	Q100180.d	Vial 2	cc2133-0.2	Perchlorate2.m	QC	OP94204, SQ2133.10,,,10.1,water	pass
37	Q100181.d	Vial 1	ccb	Perchlorate2.m	Sample	OP94204, SQ2133.10,,,10.1,water	nd
38	Q100182.d	P2-B9	fc2057-1	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	✓
39	Q100183.d	P2-C1	fc2057-2	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	✓
40	Q100184.d	P2-C2	fc2057-3	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	rr 2x e flag
41	Q100185.d	P2-C3	fc2094-1	Perchlorate2.m	Sample	OP95334, SQ2133.10,,,10.1,water	rr 1x co check
42	Q100186.d	Vial 5	cc2133-2	Perchlorate2.m	QC	OP94204, SQ2133.10,,,10.1,water	pass
43	Q100187.d	Vial 2	ecc2133-0.2	Perchlorate2.m	QC	OP94204, SQ2133.10,,,10.1,water	pass
44	Q100188.d	Vial 1	iblk	Perchlorate2.m	Sample	OP94204, SQ2133.10,,,10.1,water	nd

GC/LC Semi-volatiles

QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- GC Identification Summaries (Explosives)
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Method Blank Summary

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95195-MB	BB075438.D	1	01/30/23	FS	01/27/23	OP95195	GBB2301

The QC reported here applies to the following samples: Method: SW846 8330A

FC2200-1, FC2200-2

CAS No.	Compound	Result	RL	MDL	Units	Q
2691-41-0	HMX	ND	0.20	0.080	ug/l	
121-82-4	RDX	ND	0.20	0.080	ug/l	
	DNX	ND	0.20	0.080	ug/l	
	MNX	ND	0.20	0.080	ug/l	
	TNX	ND	0.20	0.080	ug/l	
618-87-1	3,5-Dinitroaniline	ND	0.20	0.080	ug/l	
99-65-0	1,3-Dinitrobenzene	ND	0.20	0.080	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.20	0.080	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
98-95-3	Nitrobenzene	ND	0.20	0.097	ug/l	
88-72-2	o-Nitrotoluene	ND	0.20	0.080	ug/l	
99-08-1	m-Nitrotoluene	ND	0.20	0.080	ug/l	
99-99-0	p-Nitrotoluene	ND	0.20	0.080	ug/l	
479-45-8	Tetryl	ND	0.20	0.080	ug/l	
99-35-4	1,3,5-Trinitrobenzene	ND	0.20	0.099	ug/l	
118-96-7	2,4,6-Trinitrotoluene	ND	0.20	0.080	ug/l	
55-63-0	Nitroglycerine	ND	2.0	0.50	ug/l	
78-11-5	PETN	ND	2.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Limits
610-39-9	3,4-Dinitrotoluene	94% 70-136%

8.1.1
8

Method Blank Summary

Page 1 of 1

Job Number: FC2200

Account: WESTVAH Weston Solutions, Inc

Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95195-MB	GG625716.D	1	01/30/23	FS	01/27/23	OP95195	GGG3229

The QC reported here applies to the following samples:

Method: SW846 8330A

FC2200-1, FC2200-2

CAS No.	Compound	Result	RL	MDL	Units	Q
2691-41-0	HMX	ND	0.20	0.080	ug/l	
121-82-4	RDX	ND	0.20	0.080	ug/l	
	DNX	ND	0.20	0.080	ug/l	
	MNX	ND	0.20	0.080	ug/l	
	TNX	ND	0.20	0.080	ug/l	
618-87-1	3,5-Dinitroaniline	ND	0.20	0.080	ug/l	
99-65-0	1,3-Dinitrobenzene	ND	0.20	0.080	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.20	0.080	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
98-95-3	Nitrobenzene	ND	0.20	0.097	ug/l	
88-72-2	o-Nitrotoluene	ND	0.20	0.080	ug/l	
99-08-1	m-Nitrotoluene	ND	0.20	0.080	ug/l	
99-99-0	p-Nitrotoluene	ND	0.20	0.080	ug/l	
479-45-8	Tetryl	ND	0.20	0.080	ug/l	
99-35-4	1,3,5-Trinitrobenzene	ND	0.20	0.099	ug/l	
118-96-7	2,4,6-Trinitrotoluene	ND	0.20	0.080	ug/l	
55-63-0	Nitroglycerine	ND	2.0	0.50	ug/l	
78-11-5	PETN	ND	2.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Limits
610-39-9	3,4-Dinitrotoluene	88% 70-136%

8.1.2

8

Method Blank Summary

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95195-MB	BB075438.D	1	01/30/23	FS	01/27/23	OP95195	GBB2301

The QC reported here applies to the following samples: Method: SW846 8330B

FC2200-1, FC2200-2

CAS No.	Compound	Result	RL	MDL	Units	Q
2691-41-0	HMX	ND	0.20	0.080	ug/l	
121-82-4	RDX	ND	0.20	0.080	ug/l	
	DNX	ND	0.20	0.080	ug/l	
	MNX	ND	0.20	0.080	ug/l	
	TNX	ND	0.20	0.080	ug/l	
618-87-1	3,5-Dinitroaniline	ND	0.20	0.080	ug/l	
99-65-0	1,3-Dinitrobenzene	ND	0.20	0.080	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.20	0.080	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
98-95-3	Nitrobenzene	ND	0.20	0.097	ug/l	
88-72-2	o-Nitrotoluene	ND	0.20	0.080	ug/l	
99-08-1	m-Nitrotoluene	ND	0.20	0.080	ug/l	
99-99-0	p-Nitrotoluene	ND	0.20	0.080	ug/l	
479-45-8	Tetryl	ND	0.20	0.080	ug/l	
99-35-4	1,3,5-Trinitrobenzene	ND	0.20	0.099	ug/l	
118-96-7	2,4,6-Trinitrotoluene	ND	0.20	0.080	ug/l	
55-63-0	Nitroglycerine	ND	2.0	0.50	ug/l	
78-11-5	PETN	ND	2.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Limits
610-39-9	3,4-Dinitrotoluene	94% 70-136%

Method Blank Summary

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95195-MB	GG625716.D	1	01/30/23	FS	01/27/23	OP95195	GGG3229

The QC reported here applies to the following samples: Method: SW846 8330B

FC2200-1, FC2200-2

CAS No.	Compound	Result	RL	MDL	Units	Q
2691-41-0	HMX	ND	0.20	0.080	ug/l	
121-82-4	RDX	ND	0.20	0.080	ug/l	
	DNX	ND	0.20	0.080	ug/l	
	MNX	ND	0.20	0.080	ug/l	
	TNX	ND	0.20	0.080	ug/l	
618-87-1	3,5-Dinitroaniline	ND	0.20	0.080	ug/l	
99-65-0	1,3-Dinitrobenzene	ND	0.20	0.080	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.20	0.080	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
98-95-3	Nitrobenzene	ND	0.20	0.097	ug/l	
88-72-2	o-Nitrotoluene	ND	0.20	0.080	ug/l	
99-08-1	m-Nitrotoluene	ND	0.20	0.080	ug/l	
99-99-0	p-Nitrotoluene	ND	0.20	0.080	ug/l	
479-45-8	Tetryl	ND	0.20	0.080	ug/l	
99-35-4	1,3,5-Trinitrobenzene	ND	0.20	0.099	ug/l	
118-96-7	2,4,6-Trinitrotoluene	ND	0.20	0.080	ug/l	
55-63-0	Nitroglycerine	ND	2.0	0.50	ug/l	
78-11-5	PETN	ND	2.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Limits
610-39-9	3,4-Dinitrotoluene	88% 70-136%

8.1.4
8

Blank Spike Summary

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95195-BS	BB075439.D	1	01/30/23	FS	01/27/23	OP95195	GBB2301

The QC reported here applies to the following samples: Method: SW846 8330A

FC2200-1, FC2200-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
2691-41-0	HMX	5	5.2	104	77-144
121-82-4	RDX	5	5.0	100	77-125
	DNX	5	4.5	90	66-127
	MNX	5.8	5.3	91	71-137
	TNX	2.35	2.0	85	60-126
618-87-1	3,5-Dinitroaniline	5	5.0	100	77-115
99-65-0	1,3-Dinitrobenzene	5	5.1	102	79-122
606-20-2	2,6-Dinitrotoluene	5	4.7	94	81-131
121-14-2	2,4-Dinitrotoluene	5	4.7	94	80-123
35572-78-2	2-amino-4,6-Dinitrotoluene	5	5.2	104	81-120
19406-51-0	4-amino-2,6-Dinitrotoluene	5	5.3	106	79-119
98-95-3	Nitrobenzene	5	4.7	94	78-130
88-72-2	o-Nitrotoluene	5	4.6	92	76-131
99-08-1	m-Nitrotoluene	5	4.6	92	78-122
99-99-0	p-Nitrotoluene	5	4.6	92	79-124
479-45-8	Tetryl	5	4.2	84	65-124
99-35-4	1,3,5-Trinitrobenzene	5	4.8	96	79-128
118-96-7	2,4,6-Trinitrotoluene	5	5.0	100	72-112
55-63-0	Nitroglycerine	5	5.1	102	69-123
78-11-5	PETN	5	4.9	98	73-145

CAS No.	Surrogate Recoveries	BSP	Limits
610-39-9	3,4-Dinitrotoluene	94%	70-136%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95195-BS	BB075439.D	1	01/30/23	FS	01/27/23	OP95195	GBB2301

The QC reported here applies to the following samples: Method: SW846 8330B

FC2200-1, FC2200-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
2691-41-0	HMX	5	5.2	104	77-144
121-82-4	RDX	5	5.0	100	77-125
	DNX	5	4.5	90	66-127
	MNX	5.8	5.3	91	71-137
	TNX	2.35	2.0	85	60-126
618-87-1	3,5-Dinitroaniline	5	5.0	100	77-115
99-65-0	1,3-Dinitrobenzene	5	5.1	102	79-122
606-20-2	2,6-Dinitrotoluene	5	4.7	94	81-131
121-14-2	2,4-Dinitrotoluene	5	3.9	94	80-123
35572-78-2	2-amino-4,6-Dinitrotoluene	5	5.2	104	81-120
19406-51-0	4-amino-2,6-Dinitrotoluene	5	5.3	106	79-119
98-95-3	Nitrobenzene	5	4.7	94	78-130
88-72-2	o-Nitrotoluene	5	4.6	92	76-131
99-08-1	m-Nitrotoluene	5	4.6	92	78-122
99-99-0	p-Nitrotoluene	5	4.6	92	79-124
479-45-8	Tetryl	5	4.2	84	65-124
99-35-4	1,3,5-Trinitrobenzene	5	4.8	96	79-128
118-96-7	2,4,6-Trinitrotoluene	5	5.0	100	72-112
55-63-0	Nitroglycerine	5	5.1	102	69-123
78-11-5	PETN	5	4.9	98	73-145

CAS No.	Surrogate Recoveries	BSP	Limits
610-39-9	3,4-Dinitrotoluene	94%	70-136%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95195-MS	BB075453.D	1	01/31/23	FS	01/27/23	OP95195	GBB2302
OP95195-MSD	BB075446.D	1	01/30/23	FS	01/27/23	OP95195	GBB2301
FC2200-1 ^a	BB075443.D	1	01/30/23	FS	01/27/23	OP95195	GBB2301
FC2200-1 ^b	GG625720.D	1	01/31/23	FS	01/27/23	OP95195	GGG3229

The QC reported here applies to the following samples: Method: SW846 8330A

FC2200-1, FC2200-2

CAS No.	Compound	FC2200-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
2691-41-0	HMX	7.3	9.8	17.5	104	9.8	17.6	105	1	77-144/21
121-82-4	RDX	0.75	9.8	10.6	100	9.8	10.4	98	2	77-125/19
	DNX	0.19 U	9.8	8.8	90	9.8	8.8	90	0	66-127/25
	MXN	0.19 U	11.4	10.1	89	11.4	10.0	88	1	71-137/20
	TNX	0.19 U	4.61	4.1	89	4.61	4.1	89	0	60-126/18
618-87-1	3,5-Dinitroaniline	0.35	9.8	10.0	98	9.8	9.9	97	1	77-115/19
99-65-0	1,3-Dinitrobenzene	0.19 U	9.8	9.9	101	9.8	9.9	101	0	79-122/17
606-20-2	2,6-Dinitrotoluene	0.19 U	9.8	9.7	99	9.8	9.2	94	5	81-131/17
121-14-2	2,4-Dinitrotoluene	0.19 U	9.8	8.9	91	9.8	8.7	89	2	80-123/19
35572-78-2	2-amino-4,6-Dinitrotoluene	2.6	9.8	13.1	107	9.8	12.7	103	3	81-120/19
19406-51-0	4-amino-2,6-Dinitrotoluene	2.0	9.8	12.6	108	9.8	12.2	104	3	79-119/20
98-95-3	Nitrobenzene	0.19 U	9.8	7.7	79	9.8	8.2	84	6	78-130/19
88-72-2	o-Nitrotoluene	0.19 U	9.8	9.2	94	9.8	8.9	91	3	76-131/20
99-08-1	m-Nitrotoluene	0.19 U	9.8	9.0	92	9.8	9.6	98	6	78-122/18
99-99-0	p-Nitrotoluene	0.19 U	9.8	8.8	90	9.8	9.5	97	8	79-124/18
479-45-8	Tetryl	0.19 U	9.8	8.9	91	9.8	9.3	95	4	65-124/20
99-35-4	1,3,5-Trinitrobenzene	7.7	9.8	16.8	93	9.8	17.3	98	3	79-128/16
118-96-7	2,4,6-Trinitrotoluene	4.5	9.8	14.5	102	9.8	14.3	100	1	72-112/16
55-63-0	Nitroglycerine	1.9 U	9.8	10.2	104	9.8	10.4	106	2	69-123/18
78-11-5	PETN	1.9 U	9.8	13.7	140	9.8	11.8	120	15	73-145/18

CAS No.	Surrogate Recoveries	MS	MSD	FC2200-1	FC2200-1	Limits
610-39-9	3,4-Dinitrotoluene	100%	97%	94%	90%	70-136%

(a) All hits confirmed by reanalysis on a dissimilar column.
(b) Confirmation run.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95195-MS	BB075453.D	1	01/31/23	FS	01/27/23	OP95195	GBB2302
OP95195-MSD	BB075446.D	1	01/30/23	FS	01/27/23	OP95195	GBB2301
FC2200-1 ^a	BB075443.D	1	01/30/23	FS	01/27/23	OP95195	GBB2301
FC2200-1 ^b	GG625720.D	1	01/31/23	FS	01/27/23	OP95195	GGG3229

The QC reported here applies to the following samples: Method: SW846 8330B

FC2200-1, FC2200-2

CAS No.	Compound	FC2200-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
2691-41-0	HMX	7.3	9.8	17.5	104	9.8	17.6	105	1	77-144/21
121-82-4	RDX	0.75	9.8	10.6	100	9.8	10.4	98	2	77-125/19
	DNX	0.19 U	9.8	8.8	90	9.8	8.8	90	0	66-127/25
	MXN	0.19 U	11.4	10.1	89	11.4	10.0	88	1	71-137/20
	TNX	0.19 U	4.61	4.1	89	4.61	4.1	89	0	60-126/18
618-87-1	3,5-Dinitroaniline	0.35	9.8	10.0	98	9.8	9.9	97	1	77-115/19
99-65-0	1,3-Dinitrobenzene	0.19 U	9.8	9.9	101	9.8	9.9	101	0	79-122/17
606-20-2	2,6-Dinitrotoluene	0.19 U	9.8	9.7	99	9.8	9.2	94	5	81-131/17
121-14-2	2,4-Dinitrotoluene	0.19 U	9.8	8.9	91	9.8	7.6	78*	4	80-123/19
35572-78-2	2-amino-4,6-Dinitrotoluene	2.6	9.8	13.1	107	9.8	12.7	103	3	81-120/19
19406-51-0	4-amino-2,6-Dinitrotoluene	2.0	9.8	12.6	108	9.8	12.2	104	3	79-119/20
98-95-3	Nitrobenzene	0.19 U	9.8	7.7	79	9.8	8.2	84	6	78-130/19
88-72-2	o-Nitrotoluene	0.19 U	9.8	9.2	94	9.8	8.9	91	3	76-131/20
99-08-1	m-Nitrotoluene	0.19 U	9.8	9.0	92	9.8	9.6	98	6	78-122/18
99-99-0	p-Nitrotoluene	0.19 U	9.8	8.8	90	9.8	9.5	97	8	79-124/18
479-45-8	Tetryl	0.19 U	9.8	8.9	91	9.8	9.3	95	4	65-124/20
99-35-4	1,3,5-Trinitrobenzene	7.7	9.8	16.8	93	9.8	17.3	98	3	79-128/16
118-96-7	2,4,6-Trinitrotoluene	4.5	9.8	14.5	102	9.8	14.3	100	1	72-112/16
55-63-0	Nitroglycerine	1.9 U	9.8	10.2	104	9.8	10.4	106	2	69-123/18
78-11-5	PETN	1.9 U	9.8	13.7	140	9.8	11.8	120	15	73-145/18

CAS No.	Surrogate Recoveries	MS	MSD	FC2200-1	FC2200-1	Limits
610-39-9	3,4-Dinitrotoluene	100%	97%	94%	90%	70-136%

(a) All hits confirmed by reanalysis on a dissimilar column.
(b) Confirmation run.

* = Outside of Control Limits.

GC Identification Summary (Explosives)

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample ID:	FC2200-1	Method:	SW846 8330B
Client ID:	54MW12		

Injection Type	Lab File ID	Dilution	Prep Batch	Inst Batch	Injection Time	Inst ID
Reportable	BB075443.D	1	OP95195	GBB2301	01/30/23 14:05	GCBB
Confirmation	GG625720.D	1	OP95195	GGG3229	01/31/23 00:11	GCGG

Compound	Lab File ID	Dilution	Sig#	Conc	Q	Units	RPD Conc
HMX	BB075443.D	1	1	7.3		ug/l	1.4
HMX	GG625720.D	1	1	7.4		ug/l	
RDX	BB075443.D	1	1	.75		ug/l	5.5
RDX	GG625720.D	1	1	.71		ug/l	
3,5-Dinitroaniline ^a	BB075443.D	1	1	.35		ug/l	83.3
3,5-Dinitroaniline	GG625720.D	1	1	.85		ug/l	
2-amino-4,6-Dinitrotoluene	BB075443.D	1	1	2.6		ug/l	3.9
2-amino-4,6-Dinitrotoluene	GG625720.D	1	1	2.5		ug/l	
4-amino-2,6-Dinitrotoluene	BB075443.D	1	1	2		ug/l	0.0
4-amino-2,6-Dinitrotoluene	GG625720.D	1	1	2		ug/l	
1,3,5-Trinitrobenzene	BB075443.D	1	1	7.7		ug/l	4.0
1,3,5-Trinitrobenzene	GG625720.D	1	1	7.4		ug/l	
2,4,6-Trinitrotoluene	BB075443.D	1	1	4.5		ug/l	14.3
2,4,6-Trinitrotoluene	GG625720.D	1	1	3.9		ug/l	

(a) Primary and confirmation results differ by more than 40%.

8.4.1
8

Surrogate Recovery Summary

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Method: SW846 8330B	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 ^a
FC2200-1	BB075443.D	94
FC2200-1	GG625720.D	90
FC2200-2	BB075447.D	92
FC2200-2	GG625721.D	87
OP95195-BS	BB075439.D	94
OP95195-MB	GG625716.D	88
OP95195-MB	BB075438.D	94
OP95195-MS	BB075453.D	100
OP95195-MSD	BB075446.D	97

Surrogate Compounds	Recovery Limits
S1 = 3,4-Dinitrotoluene	70-136%

(a) Recovery from GC signal #1

8.5.1
8

GC Surrogate Retention Time Summary

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Check Std:	GBB2301-CC2232	Injection Date:	01/30/23
Lab File ID:	BB075437.D	Injection Time:	09:45
Instrument ID:	GCBB	Method:	SW846 8330B

S1^a S1^b
RT RT

Check Std	13.25	13.25
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Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT	S1 ^b RT
OP95195-MB	BB075438.D	01/30/23	11:30		13.25
OP95195-MB	BB075438.D	01/30/23	11:30		13.25
OP95195-BS	BB075439.D	01/30/23	12:01		13.25
OP95195-BS	BB075439.D	01/30/23	12:01		13.25
ZZZZZZ	BB075441.D	01/30/23	13:03		13.21
ZZZZZZ	BB075442.D	01/30/23	13:34		13.19
FC2200-1	BB075443.D	01/30/23	14:05		13.23
OP95195-MSD	BB075446.D	01/30/23	16:15		13.21
OP95195-MSD	BB075446.D	01/30/23	16:15		13.21
FC2200-2	BB075447.D	01/30/23	16:46		13.25
GBB2301-ECC2232	BB075449.D	01/30/23	17:48	13.27	13.27

Surrogate Compounds

S1 = 3,4-Dinitrotoluene

(a) Retention time from GC signal #2
(b) Retention time from GC signal #1

8.6.1
8

GC Surrogate Retention Time Summary

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Check Std:	GBB2302-CC2232	Injection Date:	01/31/23
Lab File ID:	BB075451.D	Injection Time:	11:17
Instrument ID:	GCBB	Method:	SW846 8330B

S1^a S1^b
RT RT

Check Std	13.21	13.21
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Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT	S1 ^b RT
ZZZZZZ	BB075452.D	01/31/23	11:57		13.18
OP95195-MS	BB075453.D	01/31/23	14:08		13.17
OP95195-MS	BB075453.D	01/31/23	14:08		13.17
GBB2302-ECC2232	BB075455.D	01/31/23	15:10	13.22	13.22

Surrogate Compounds

S1 = 3,4-Dinitrotoluene

- (a) Retention time from GC signal #2
- (b) Retention time from GC signal #1

8.6.2
8

GC Surrogate Retention Time Summary

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Check Std:	GGG3229-CC3229	Injection Date:	01/30/23
Lab File ID:	GG625715.D	Injection Time:	21:34
Instrument ID:	GCGG	Method:	SW846 8330B

	S1 ^a	S1 ^b
	RT	RT
Check Std	14.44	14.44

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT	S1 ^b RT
OP95195-MB	GG625716.D	01/30/23	22:05		14.44
OP95195-MB	GG625716.D	01/30/23	22:05		14.44
ZZZZZZ	GG625717.D	01/30/23	22:37		14.35
ZZZZZZ	GG625718.D	01/30/23	23:08		14.36
ZZZZZZ	GG625719.D	01/30/23	23:40		14.43
FC2200-1	GG625720.D	01/31/23	00:11		14.29
FC2200-2	GG625721.D	01/31/23	00:43		14.30
GGG3229-ECC3229	GG625723.D	01/31/23	10:13	14.39	14.39

Surrogate Compounds

S1 = 3,4-Dinitrotoluene

- (a) Retention time from GC signal #2
- (b) Retention time from GC signal #1

8.6.3
8

Initial Calibration Summary

Page 1 of 3

Job Number: FC2200
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GBB2232-ICC2232
 Lab FileID: BB073634.D

Response Factor Report G1315B

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Thu Sep 01 08:04:52 2022
 Response via : Initial Calibration

Calibration Files

20 =BB073629.D 50 =BB073630.D 100 =BB073631.D 200 =BB073632.D
 500 =BB073633.D 1000=BB073634.D 2500=BB073635.D 5000=BB073636.D

Compound	20	50	100	200	500	1000	2500	5000	Avg	%RSD
1) TNX	6.780	4.910	6.119	4.100	3.776	3.831	3.737	3.752	4.626	E3 26.01
---- Linear regr., Force(0,0)	---- Coefficient = 0.9999									
Response Ratio = 0.00000 + 3753.20753 *A										
2) HMX	3.313	2.075	1.847	1.476	1.517	1.519	1.481	1.479	1.838	E3 34.56
---- Linear regr., Force(0,0)	---- Coefficient = 1.0000									
Response Ratio = 0.00000 + 1480.64878 *A										
3) DNX	5.905	4.171	5.218	3.433	2.916	3.179	3.054	3.078	3.869	E3 29.17
---- Linear regr., Force(0,0)	---- Coefficient = 0.9997									
Response Ratio = 0.00000 + 3076.33729 *A										
4) MNX	5.413	3.818	5.082	3.172	2.835	2.935	2.856	2.870	3.622	E3 29.18
---- Linear regr., Force(0,0)	---- Coefficient = 0.9998									
Response Ratio = 0.00000 + 2869.93858 *A										
5) RDX	3.387	2.387	2.065	1.780	1.841	1.895	1.847	1.856	2.132	E3 25.49
---- Linear regr., Force(0,0)	---- Coefficient = 1.0000									
Response Ratio = 0.00000 + 1854.96692 *A										
6) 1,3,5-Trinit	6.693	4.736	4.260	3.741	3.919	4.034	3.948	3.981	4.414	E3 21.95
---- Linear regr., Force(0,0)	---- Coefficient = 1.0000									
Response Ratio = 0.00000 + 3975.62222 *A										
7) 1,3-Dinitrob	9.132	6.469	5.738	5.027	5.184	5.317	5.183	5.213	5.908	E3 23.41
---- Linear regr., Force(0,0)	---- Coefficient = 1.0000									
Response Ratio = 0.00000 + 5210.64116 *A										
8) 3,5-Dinitroa	6.792	4.872	4.319	3.763	3.901	4.009	3.917	3.938	4.439	E3 22.84
---- Linear regr., Force(0,0)	---- Coefficient = 1.0000									
Response Ratio = 0.00000 + 3935.82430 *A										
9) Nitrobenzene	5.147	3.542	3.266	2.849	2.980	3.054	2.998	2.997	3.354	E3 22.53
---- Linear regr., Force(0,0)	---- Coefficient = 1.0000									
Response Ratio = 0.00000 + 2998.60435 *A										
10) Nitroglyceri						2.148		2.148	E1	0.00
11) Tetryl	5.100	3.533	3.035	2.696	2.790	2.871	2.806	2.829	3.207	E3 25.20
---- Linear regr., Force(0,0)	---- Coefficient = 1.0000									
Response Ratio = 0.00000 + 2825.64692 *A										
12) 2,4,6-Trinit	6.203	4.462	3.940	3.489	3.614	3.719	3.634	3.658	4.090	E3 22.15
---- Linear regr., Force(0,0)	---- Coefficient = 1.0000									
Response Ratio = 0.00000 + 3655.22572 *A										
13) 2-Amino-4,6-	5.279	3.818	3.361	2.985	3.092	3.206	3.138	3.165	3.506	E3 21.69
---- Linear regr., Force(0,0)	---- Coefficient = 0.9999									

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Initial Calibration Summary

Page 2 of 3

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GBB2232-ICC2232
Lab FileID: BB073634.D

Response Ratio = 0.00000 + 3160.56365 *A												
14)	4-Amino-2,6-	4.020	2.809	2.464	2.189	2.250	2.331	2.281	2.300	2.580	E3	23.77
	----	Linear regr., Force(0,0) ---- Coefficient = 0.9999										
		Response Ratio = 0.00000 + 2296.58390 *A										
15)	3,4-Dinitrot	3.686	2.622	2.313	2.053	2.095	2.166	2.124	2.147	2.401	E3	22.91
	----	Linear regr., Force(0,0) ---- Coefficient = 0.9999										
		Response Ratio = 0.00000 + 2142.42370 *A										
16)	2,4-Dinitrot	7.673	5.494	4.954	4.319	4.553	4.654	4.587	4.711	5.118	E3	21.30
	----	Linear regr., Force(0,0) ---- Coefficient = 0.9998										
		Response Ratio = 0.00000 + 4683.74804 *A										
17)	2,6-Dinitrot	2.536	1.688	1.507	1.394	1.380	1.463	1.449	1.539	1.620	E3	23.64
	----	Linear regr., Force(0,0) ---- Coefficient = 0.9991										
		Response Ratio = 0.00000 + 1518.30476 *A										
18)	o-Nitrotolue	3.322	2.421	2.337	2.055	2.115	2.168	2.151	2.162	2.342	E3	17.68
	----	Linear regr., Force(0,0) ---- Coefficient = 1.0000										
		Response Ratio = 0.00000 + 2159.38682 *A										
19)	p-Nitrotolue	5.648	3.952	3.629	3.166	3.279	3.386	3.334	3.347	3.718	E3	22.00
	----	Linear regr., Force(0,0) ---- Coefficient = 1.0000										
		Response Ratio = 0.00000 + 3345.37743 *A										
20)	m-Nitrotolue	5.670	3.637	3.413	2.898	3.046	3.131	3.097	3.117	3.501	E3	25.89
	----	Linear regr., Force(0,0) ---- Coefficient = 1.0000										
		Response Ratio = 0.00000 + 3113.22098 *A										
21)	PETN										0.000	-1.00
Signal #2												
1)	TNX	1.013	0.745	0.953	0.638	0.592	0.589	0.576	0.574	0.710	E4	25.10
	----	Linear regr., Force(0,0) ---- Coefficient = 0.9999										
		Response Ratio = 0.00000 + 5754.99937 *A										
2)	HMX	1.407	0.658	0.601	0.425	0.435	0.422	0.410	0.408	0.596	E4	57.34
	----	Linear regr., Force(0,0) ---- Coefficient = 0.9999										
		Response Ratio = 0.00000 + 4090.24163 *A										
3)	DNX	1.039	0.677	0.841	0.549	0.467	0.504	0.485	0.486	0.631	E4	33.07
	----	Linear regr., Force(0,0) ---- Coefficient = 0.9968										
		Response Ratio = 0.00000 + 4937.62561 *A										
4)	MNX	8.263	5.886	7.812	4.871	4.380	4.508	4.369	4.398	5.561	E3	29.02
	----	Linear regr., Force(0,0) ---- Coefficient = 0.9998										
		Response Ratio = 0.00000 + 4397.53933 *A										
5)	RDX	5.097	3.706	3.263	2.827	2.922	2.989	2.915	2.931	3.331	E3	23.07
	----	Linear regr., Force(0,0) ---- Coefficient = 1.0000										
		Response Ratio = 0.00000 + 2929.41405 *A										
6)	1,3,5-Trinit	1.010	0.745	0.660	0.582	0.628	0.636	0.622	0.622	0.688	E4	20.07
	----	Linear regr., Force(0,0) ---- Coefficient = 1.0000										
		Response Ratio = 0.00000 + 6224.71312 *A										
7)	1,3-Dinitrob	6.349	4.251	3.873	3.342	3.467	3.707	3.452	3.422	3.983	E3	25.17
	----	Linear regr., Force(0,0) ---- Coefficient = 0.9998										

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Initial Calibration Summary

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Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GBB2232-ICC2232
Lab FileID: BB073634.D

Response Ratio = 0.00000 + 3436.76369 *A

8) 3,5-Dinitroa 1.115 0.796 0.713 0.632 0.648 0.660 0.649 0.655 0.733 E4 22.23
---- Linear regr., Force(0,0) ---- Coefficient = 1.0000
Response Ratio = 0.00000 + 6535.38234 *A

9) Nitrobenzene 5.161 3.763 3.253 2.827 2.953 3.015 2.955 2.965 3.362 E3 23.33
---- Linear regr., Force(0,0) ---- Coefficient = 1.0000
Response Ratio = 0.00000 + 2964.55380 *A

10) Nitroglyceri 2.368 1.598 1.459 1.221 1.266 1.304 1.262 1.271 1.468 E3 26.20
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 1270.23860 *A

11) Tetryl 7.358 5.545 4.372 4.037 4.402 4.619 4.563 4.619 4.939 E3 21.63
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 4605.90098 *A

12) 2,4,6-Trinit 5.695 4.428 4.152 3.762 4.205 4.459 4.432 4.491 4.453 E3 12.52
13) 2-Amino-4,6- 7.082 5.182 4.589 4.084 4.572 4.901 4.886 4.958 5.032 E3 17.74
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 4938.30281 *A

14) 4-Amino-2,6- 7.401 5.428 4.820 4.257 4.624 4.903 4.870 4.930 5.154 E3 18.71
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 4914.55640 *A

15) 3,4-Dinitrot 6.550 4.845 4.248 3.759 3.979 4.226 4.207 4.263 4.510 E3 19.52
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 4248.67100 *A

16) 2,4-Dinitrot 4.742 3.350 3.079 2.742 2.887 3.077 3.081 3.127 3.261 E3 19.15
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 3114.07320 *A

17) 2,6-Dinitrot 5.116 3.832 3.629 3.196 3.350 3.502 3.474 3.517 3.702 E3 16.24
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 3506.47159 *A

18) o-Nitrotolue 4.070 3.360 3.169 2.895 3.287 3.343 3.100 3.063 3.286 E3 10.75
19) p-Nitrotolue 3.850 2.857 2.465 2.390 2.688 2.808 2.779 2.841 2.835 E3 15.73
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 2826.22786 *A

20) m-Nitrotolue 4.626 4.307 3.878 3.413 3.553 3.739 3.746 3.786 3.881 E3 10.26
21) PETN 2.872 1.776 1.512 1.414 1.364 1.397 1.339 1.343 1.627 E3 32.17
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999
Response Ratio = 0.00000 + 1343.99257 *A

(#) = Out of Range ### Number of calibration levels exceeded format ###

BBB2232_083122.M

Fri Sep 02 08:46:07 2022

Initial Calibration Verification

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Job Number: FC2200
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GBB2232-ICV2232
 Lab FileID: BB073641.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1B.ch Vial: 11
 Signal #2 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1A.ch
 Acq On : 01-Sep-2022, 11:59:24 Operator: FOUADS
 Sample : icv2232-1000 Inst : G1315B
 Misc : op92417, GBB2232, 1000,,, 10, 1, water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A, 8330B, 8332
 Last Update : Fri Sep 02 08:57:41 2022
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT	Window

	Amount	Calc.	%Drift	-----			
1 TNX	472.000	473.292	-0.3	98	0.00	1.16	1.76
2 HMX	1000.000	1052.933	-5.3	103	0.00	1.35	1.95
3 DNX	1000.000	1015.390	-1.5	98	0.00	1.60	2.20
4 MNX	1166.000	1165.828	0.0	98	0.00	2.29	2.89
5 RDX	1000.000	1032.828	-3.3	101	-0.02	2.89	3.69
6 1,3,5-Trinitrobenzene	1000.000	1032.352	-3.2	102	-0.03	4.88	5.68
7 1,3-Dinitrobenzene	1000.000	1036.865	-3.7	102	-0.03	6.15	6.95
8 3,5-Dinitroaniline	1000.000	1097.506	-9.8	108	-0.04	6.63	7.43
9 Nitrobenzene	1000.000	1048.817	-4.9	103	-0.01	7.87	8.67

10 Nitroglycerin	Amount	Calc.	%Drift	-----			
	Amount	Calc.	%Drift	-----			
11 Tetryl	1000.000	1052.052	-5.2	104	-0.03	10.55	11.35
12 2,4,6-Trinitrotoluene	1000.000	1050.880	-5.1	103	-0.02	10.90	11.70
13 2-Amino-4,6-Dinitrotol	1000.000	1071.801	-7.2	106	-0.04	11.41	12.21
14 4-Amino-2,6-Dinitrotol	1000.000	1100.014	-10.0	108	-0.04	11.95	12.75
15 S 3,4-Dinitrotoluene	-----NA-----						
16 2,4-Dinitrotoluene	1000.000	1000.701	-0.1	101	-0.03	12.96	13.76
17 2,6-Dinitrotoluene	1000.000	1013.932	-1.4	105	-0.03	13.42	14.22
18 o-Nitrotoluene	1000.000	1052.477	-5.2	105	-0.03	16.37	17.25
19 p-Nitrotoluene	1000.000	1055.075	-5.5	104	-0.02	16.72	17.72
20 m-Nitrotoluene	1000.000	1058.502	-5.9	105	-0.02	17.34	18.34

21 PETN	Amount	Calc.	%Drift	-----			
	Amount	Calc.	%Drift	-----			

***** Signal #2 *****

	Amount	Calc.	%Drift	-----			
1 TNX	472.000	479.293	-1.5	99	0.00	1.16	1.76
2 HMX	1000.000	1065.499	-6.5	103	0.00	1.35	1.95
3 DNX	1000.000	1004.753	-0.5	98	0.00	1.60	2.20
4 MNX	1166.000	1170.656	-0.4	98	0.00	2.29	2.89
5 RDX	1000.000	1034.048	-3.4	101	-0.02	2.89	3.69
6 1,3,5-Trinitrobenzene	1000.000	1030.523	-3.1	101	-0.03	4.88	5.68
7 1,3-Dinitrobenzene	1000.000	1083.554	-8.4	100	-0.03	6.15	6.95

Initial Calibration Verification

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Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GBB2232-ICV2232
Lab FileID: BB073641.D

8	3,5-Dinitroaniline								
9	Nitrobenzene	1000.000	1044.237	-4.4	103	-0.01	7.87-	8.67	
10	Nitroglycerin	1000.000	1020.238	-2.0	99	-0.01	9.58-	10.58	
11	Tetryl	1000.000	1023.751	-2.4	102	-0.03	10.55-	11.35	
		Amount	Calc.	%Drift					
12	2,4,6-Trinitrotoluene	1000.000	1020.964	-2.1	102	-0.02	10.90-	11.70	
		Amount	Calc.	%Drift					
13	2-Amino-4,6-Dinitrotol	1000.000	1020.765	-2.1	103	-0.04	11.41-	12.21	
14	4-Amino-2,6-Dinitrotol	1000.000	1030.991	-3.1	103	-0.04	11.95-	12.75	
15 S	3,4-Dinitrotoluene								
16	2,4-Dinitrotoluene	1000.000	1018.948	-1.9	103	-0.03	12.96-	13.76	
17	2,6-Dinitrotoluene	1000.000	1040.757	-4.1	104	-0.03	13.43-	14.23	
		Amount	Calc.	%Drift					
18	o-Nitrotoluene	1000.000	1024.193	-2.4	101	-0.03	16.25-	17.25	
		Amount	Calc.	%Drift					
19	p-Nitrotoluene	1000.000	1031.613	-3.2	104	-0.02	16.72-	17.72	
		Amount	Calc.	%Drift					
20	m-Nitrotoluene	1000.000	1011.429	-1.1	105	-0.02	17.34-	18.34	
		Amount	Calc.	%Drift					
21	PETN	1000.000	1109.024	-10.9	107	-0.02	18.66-	19.86	

(#) = Out of Range
BB073634.D BBB2232_083122.M

SPCC's out = 0 CCC's out = 0
Fri Sep 02 08:58:00 2022

8.7.2
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Continuing Calibration Summary

Page 1 of 2

Job Number: FC2200
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GBB2301-CC2232
 Lab FileID: BB075437.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1A.ch
 Acq On : 30-Jan-2023, 09:45:34 Operator: fouads
 Sample : cc2232-1000 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 12:18:29 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT	Window

		Amount	Calc.	%Drift				
1	TNX	472.000	493.647	-4.6	102	0.00	1.17	1.77
2	HMX	1000.000	1039.887	-4.0	101	0.00	1.38	1.98
3	DNX	1000.000	1046.227	-4.6	101	0.00	1.62	2.22
4	MNX	1166.000	1210.061	-3.8	101	0.00	2.33	2.93
5	RDX	1000.000	1026.676	-2.7	101	0.00	2.95	3.75
6	1,3,5-Trinitrobenzene	1000.000	1032.426	-3.2	102	0.00	5.02	5.82
7	1,3-Dinitrobenzene	1000.000	1034.795	-3.5	101	0.00	6.31	7.11
8	3,5-Dinitroaniline	1000.000	1034.417	-3.4	102	-0.01	6.77	7.57
9	Nitrobenzene	1000.000	1033.246	-3.3	101	0.00	8.14	8.94

		Amount	Calc.	%Drift				
10	Nitroglycerin			NA				

		Amount	Calc.	%Drift				
11	Tetryl	1000.000	1044.970	-4.5	103	-0.01	10.99	11.79
12	2,4,6-Trinitrotoluene	1000.000	1057.378	-5.7	104	0.00	11.36	12.16
13	2-Amino-4,6-Dinitrotol	1000.000	1070.481	-7.0	106	-0.01	11.77	12.57
14	4-Amino-2,6-Dinitrotol	1000.000	1087.904	-8.8	107	-0.01	12.32	13.12
15	3,4-Dinitrotoluene	1000.000	1116.201	-11.6	110	0.00	12.85	13.65
16	2,4-Dinitrotoluene	1000.000	803.070	19.7#	81	0.00	13.41	14.21
17	2,6-Dinitrotoluene	1000.000	972.450	2.8	101	0.00	13.88	14.68
18	o-Nitrotoluene	1000.000	1046.313	-4.6	104	0.00	16.77	17.65
19	p-Nitrotoluene	1000.000	1048.447	-4.8	104	0.00	17.06	18.06
20	m-Nitrotoluene	1000.000	1041.929	-4.2	104	0.00	17.64	18.64

		Amount	Calc.	%Drift				
21	PETN			NA				

***** Signal #2 *****

----- Amount Calc. %Drift -----							
1 TNX	472.000	507.457	-7.5	105	0.00	1.17	1.77
2 HMX	1000.000	1053.560	-5.4	102	0.00	1.38	1.98
3 DNX	1000.000	1031.300	-3.1	101	0.00	1.62	2.22
4 MNX	1166.000	1214.047	-4.1	102	0.00	2.33	2.93
5 RDX	1000.000	1032.486	-3.2	101	0.00	2.95	3.75
6 1,3,5-Trinitrobenzene	1000.000	988.127	1.2	97	0.00	5.02	5.82
7 1,3-Dinitrobenzene	1000.000	1025.660	-2.6	95	0.00	6.31	7.11

Continuing Calibration Summary

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GBB2301-CC2232
Lab FileID: BB075437.D

8	3,5-Dinitroaniline	1000.000	1028.467	-2.8	102	-0.01	6.77- 7.57
9	Nitrobenzene	1000.000	1028.490	-2.8	101	0.00	8.14- 8.94
10	Nitroglycerin	1000.000	1054.685	-5.5	103	0.00	9.90-10.90
11	Tetryl	1000.000	1020.720	-2.1	102	-0.01	10.99-11.79
----- Amount Calc. %Drift -----							
12	2,4,6-Trinitrotoluene	1000.000	1037.390	-3.7	104	0.00	11.36-12.16
----- Amount Calc. %Drift -----							
13	2-Amino-4,6-Dinitrotol	1000.000	1021.606	-2.2	103	-0.01	11.77-12.57
14	4-Amino-2,6-Dinitrotol	1000.000	1011.781	-1.2	101	-0.01	12.32-13.12
15 S	3,4-Dinitrotoluene	1000.000	993.818	0.6	100	0.00	12.85-13.65
16	2,4-Dinitrotoluene	1000.000	949.620	5.0	96	0.00	13.41-14.21
17	2,6-Dinitrotoluene	1000.000	1017.964	-1.8	102	0.00	13.88-14.68
----- Amount Calc. %Drift -----							
18	o-Nitrotoluene	1000.000	997.032	0.3	98	0.00	16.65-17.65
----- Amount Calc. %Drift -----							
19	p-Nitrotoluene	1000.000	1019.702	-2.0	103	0.00	17.06-18.06
----- Amount Calc. %Drift -----							
20	m-Nitrotoluene	1000.000	998.981	0.1	104	0.00	17.64-18.64
----- Amount Calc. %Drift -----							
21	PETN	1000.000	1113.000	-11.3	107	0.00	18.88-20.08

(#) = Out of Range
BB073634.D BBB2232_083122.M

SPCC's out = 0 CCC's out = 0
Tue Jan 31 12:19:38 2023

8.7.3
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Continuing Calibration Summary

Page 1 of 2

Job Number: FC2200
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GBB2301-ECC2232
 Lab FileID: BB075449.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075449.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075449.D\dad1A.ch
 Acq On : 30-Jan-2023, 17:48:09 Operator: fouads
 Sample : ecc2232-1000 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 12:18:29 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT	Window

		Amount	Calc.	%Drift				
1	TNX	472.000	504.096	-6.8	105	0.00	1.17	1.77
2	HMX	1000.000	1059.189	-5.9	103	0.00	1.38	1.98
3	DNX	1000.000	1073.962	-7.4	104	0.00	1.62	2.22
4	MNX	1166.000	1240.403	-6.4	104	0.00	2.33	2.93
5	RDX	1000.000	1054.457	-5.4	103	0.00	2.95	3.75
6	1,3,5-Trinitrobenzene	1000.000	1047.570	-4.8	103	0.00	5.02	5.82
7	1,3-Dinitrobenzene	1000.000	1060.666	-6.1	104	0.01	6.31	7.11
8	3,5-Dinitroaniline	1000.000	1053.157	-5.3	103	0.01	6.77	7.57
9	Nitrobenzene	1000.000	1057.471	-5.7	104	0.00	8.14	8.94

		Amount	Calc.	%Drift				
10	Nitroglycerin			NA				

		Amount	Calc.	%Drift				
11	Tetryl	1000.000	1061.030	-6.1	104	0.01	10.99	11.79
12	2,4,6-Trinitrotoluene	1000.000	1078.517	-7.9	106	0.01	11.36	12.16
13	2-Amino-4,6-Dinitrotol	1000.000	1091.389	-9.1	108	0.02	11.77	12.57
14	4-Amino-2,6-Dinitrotol	1000.000	1108.800	-10.9	109	0.01	12.32	13.12
15 S	3,4-Dinitrotoluene	1000.000	1129.923	-13.0	112	0.01	12.85	13.65
16	2,4-Dinitrotoluene	1000.000	828.844	17.1#	83	0.01	13.41	14.21
17	2,6-Dinitrotoluene	1000.000	1022.863	-2.3	106	0.01	13.88	14.68
18	o-Nitrotoluene	1000.000	1071.643	-7.2	107	0.00	16.77	17.65
19	p-Nitrotoluene	1000.000	1076.760	-7.7	106	0.00	17.06	18.06
20	m-Nitrotoluene	1000.000	1067.511	-6.8	106	0.00	17.64	18.64

		Amount	Calc.	%Drift				
21	PETN			NA				

***** Signal #2 *****

----- Amount Calc. %Drift -----							
1 TNX	472.000	512.570	-8.6	106	0.00	1.17	1.77
2 HMX	1000.000	1066.557	-6.7	103	0.00	1.38	1.98
3 DNX	1000.000	1056.081	-5.6	103	0.00	1.62	2.22
4 MNX	1166.000	1244.620	-6.7	104	0.00	2.33	2.93
5 RDX	1000.000	1057.607	-5.8	104	0.00	2.95	3.75
6 1,3,5-Trinitrobenzene	1000.000	1076.003	-7.6	105	0.00	5.02	5.82
7 1,3-Dinitrobenzene	1000.000	1116.387	-11.6	104	0.01	6.31	7.11

Continuing Calibration Summary

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GBB2301-ECC2232
Lab FileID: BB075449.D

8	3,5-Dinitroaniline	1000.000	1037.562	-3.8	103	0.01	6.77- 7.57
9	Nitrobenzene	1000.000	1054.476	-5.4	104	0.00	8.14- 8.94
10	Nitroglycerin	1000.000	1093.368	-9.3	107	0.01	9.90-10.90
11	Tetryl	1000.000	1025.464	-2.5	102	0.01	10.99-11.79
----- Amount Calc. %Drift -----							
12	2,4,6-Trinitrotoluene	1000.000	1053.777	-5.4	105	0.01	11.36-12.16
----- Amount Calc. %Drift -----							
13	2-Amino-4,6-Dinitrotol	1000.000	1038.988	-3.9	105	0.02	11.77-12.57
14	4-Amino-2,6-Dinitrotol	1000.000	1026.767	-2.7	103	0.01	12.32-13.12
15 S	3,4-Dinitrotoluene	1000.000	1003.112	-0.3	101	0.01	12.85-13.65
16	2,4-Dinitrotoluene	1000.000	954.794	4.5	97	0.01	13.41-14.21
17	2,6-Dinitrotoluene	1000.000	1025.373	-2.5	103	0.00	13.88-14.68
----- Amount Calc. %Drift -----							
18	o-Nitrotoluene	1000.000	1071.131	-7.1	105	0.00	16.65-17.65
----- Amount Calc. %Drift -----							
19	p-Nitrotoluene	1000.000	1043.969	-4.4	105	0.00	17.06-18.06
----- Amount Calc. %Drift -----							
20	m-Nitrotoluene	1000.000	1022.220	-2.2	106	0.00	17.64-18.64
----- Amount Calc. %Drift -----							
21	PETN	1000.000	1133.189	-13.3	109	0.00	18.88-20.08

(#) = Out of Range
BB073634.D BBB2232_083122.M

SPCC's out = 0 CCC's out = 0
Tue Jan 31 12:19:39 2023

8.7.4
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Continuing Calibration Summary

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Job Number: FC2200
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GBB2302-CC2232
 Lab FileID: BB075451.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1A.ch
 Acq On : 31-Jan-2023, 11:17:49 Operator: fouads
 Sample : cc2232-1000 Inst : G1315B
 Misc : op95139,GBB2302,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 12:18:29 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT	Window

		Amount	Calc.	%Drift				
1	TNX	472.000	499.144	-5.8	104	0.00	1.17	1.77
2	HMX	1000.000	1045.963	-4.6	102	0.00	1.38	1.98
3	DNX	1000.000	1059.715	-6.0	103	0.00	1.62	2.22
4	MNX	1166.000	1230.878	-5.6	103	0.00	2.33	2.93
5	RDX	1000.000	1045.625	-4.6	102	-0.01	2.95	3.75
6	1,3,5-Trinitrobenzene	1000.000	1034.163	-3.4	102	-0.02	5.02	5.82
7	1,3-Dinitrobenzene	1000.000	1050.168	-5.0	103	-0.02	6.31	7.11
8	3,5-Dinitroaniline	1000.000	1047.430	-4.7	103	-0.03	6.77	7.57
9	Nitrobenzene	1000.000	1044.544	-4.5	103	-0.03	8.14	8.94

		Amount	Calc.	%Drift				
10	Nitroglycerin			NA				

		Amount	Calc.	%Drift				
11	Tetryl	1000.000	1060.447	-6.0	104	-0.05	10.99	11.79
12	2,4,6-Trinitrotoluene	1000.000	1069.233	-6.9	105	-0.04	11.36	12.16
13	2-Amino-4,6-Dinitrotol	1000.000	1087.300	-8.7	107	-0.05	11.77	12.57
14	4-Amino-2,6-Dinitrotol	1000.000	1109.809	-11.0	109	-0.05	12.32	13.12
15	3,4-Dinitrotoluene	1000.000	1133.049	-13.3	112	-0.05	12.85	13.65
16	2,4-Dinitrotoluene	1000.000	812.879	18.7#	82	-0.04	13.41	14.21
17	2,6-Dinitrotoluene	1000.000	981.586	1.8	102	-0.04	13.88	14.68
18	o-Nitrotoluene	1000.000	1053.221	-5.3	105	-0.03	16.77	17.65
19	p-Nitrotoluene	1000.000	1054.651	-5.5	104	-0.03	17.06	18.06
20	m-Nitrotoluene	1000.000	1044.978	-4.5	104	-0.02	17.64	18.64

		Amount	Calc.	%Drift				
21	PETN			NA				

***** Signal #2 *****

----- Amount Calc. %Drift -----							
1 TNX	472.000	505.173	-7.0	105	0.00	1.17	1.77
2 HMX	1000.000	1062.993	-6.3	103	0.00	1.38	1.98
3 DNX	1000.000	1043.414	-4.3	102	0.00	1.62	2.22
4 MNX	1166.000	1232.646	-5.7	103	0.00	2.33	2.93
5 RDX	1000.000	1048.165	-4.8	103	-0.01	2.95	3.75
6 1,3,5-Trinitrobenzene	1000.000	1046.525	-4.7	102	-0.02	5.02	5.82
7 1,3-Dinitrobenzene	1000.000	1043.555	-4.4	97	-0.02	6.31	7.11

Continuing Calibration Summary

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GBB2302-CC2232
Lab FileID: BB075451.D

8	3,5-Dinitroaniline	1000.000	1056.687	-5.7	105	-0.03	6.77- 7.57
9	Nitrobenzene	1000.000	1037.602	-3.8	102	-0.03	8.14- 8.94
10	Nitroglycerin	1000.000	1073.755	-7.4	105	-0.03	9.90-10.90
11	Tetryl	1000.000	1039.724	-4.0	104	-0.05	10.99-11.79
----- Amount Calc. %Drift -----							
12	2,4,6-Trinitrotoluene	1000.000	1050.375	-5.0	105	-0.04	11.36-12.16
----- Amount Calc. %Drift -----							
13	2-Amino-4,6-Dinitrotol	1000.000	1042.604	-4.3	105	-0.05	11.77-12.57
14	4-Amino-2,6-Dinitrotol	1000.000	1034.460	-3.4	104	-0.05	12.32-13.12
15 S	3,4-Dinitrotoluene	1000.000	1013.644	-1.4	102	-0.05	12.85-13.65
16	2,4-Dinitrotoluene	1000.000	995.669	0.4	101	-0.04	13.41-14.21
17	2,6-Dinitrotoluene	1000.000	1037.111	-3.7	104	-0.05	13.88-14.68
----- Amount Calc. %Drift -----							
18	o-Nitrotoluene	1000.000	1050.547	-5.1	103	-0.03	16.65-17.65
----- Amount Calc. %Drift -----							
19	p-Nitrotoluene	1000.000	1027.974	-2.8	103	-0.03	17.06-18.06
----- Amount Calc. %Drift -----							
20	m-Nitrotoluene	1000.000	1005.627	-0.6	104	-0.02	17.64-18.64
----- Amount Calc. %Drift -----							
21	PETN	1000.000	1134.860	-13.5	109	-0.02	18.88-20.08

(#) = Out of Range
BB073634.D BBB2232_083122.M

SPCC's out = 0 CCC's out = 0
Wed Feb 01 09:37:29 2023

8.7.5
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Continuing Calibration Summary

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Job Number: FC2200
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GBB2302-ECC2232
 Lab FileID: BB075455.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075455.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075455.D\dad1A.ch
 Acq On : 31-Jan-2023, 15:10:26 Operator: fouads
 Sample : ECC2232-1000 Inst : G1315B
 Misc : op95139,GBB2302,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 12:18:29 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT	Window

		Amount	Calc.	%Drift				
1	TNX	472.000	495.515	-5.0	103	0.00	1.17	1.77
2	HMX	1000.000	1037.156	-3.7	101	0.00	1.38	1.98
3	DNX	1000.000	1057.589	-5.8	102	0.00	1.62	2.22
4	MNX	1166.000	1224.996	-5.1	103	0.00	2.33	2.93
5	RDX	1000.000	1042.144	-4.2	102	0.00	2.95	3.75
6	1,3,5-Trinitrobenzene	1000.000	1031.271	-3.1	102	0.00	5.02	5.82
7	1,3-Dinitrobenzene	1000.000	1042.302	-4.2	102	0.00	6.31	7.11
8	3,5-Dinitroaniline	1000.000	1039.600	-4.0	102	-0.01	6.77	7.57
9	Nitrobenzene	1000.000	1036.507	-3.7	102	-0.02	8.14	8.94

		Amount	Calc.	%Drift				
10	Nitroglycerin			NA				

		Amount	Calc.	%Drift				
11	Tetryl	1000.000	1046.412	-4.6	103	-0.03	10.99	11.79
12	2,4,6-Trinitrotoluene	1000.000	1063.450	-6.3	105	-0.03	11.36	12.16
13	2-Amino-4,6-Dinitrotol	1000.000	1080.556	-8.1	107	-0.03	11.77	12.57
14	4-Amino-2,6-Dinitrotol	1000.000	1101.116	-10.1	108	-0.03	12.32	13.12
15	3,4-Dinitrotoluene	1000.000	1126.012	-12.6	111	-0.03	12.85	13.65
16	2,4-Dinitrotoluene	1000.000	809.590	19.0#	81	-0.03	13.41	14.21
17	2,6-Dinitrotoluene	1000.000	984.919	1.5	102	-0.03	13.88	14.68
18	o-Nitrotoluene	1000.000	1050.005	-5.0	105	-0.02	16.77	17.65
19	p-Nitrotoluene	1000.000	1057.433	-5.7	104	-0.02	17.06	18.06
20	m-Nitrotoluene	1000.000	1049.377	-4.9	104	-0.01	17.64	18.64

		Amount	Calc.	%Drift				
21	PETN			NA				

***** Signal #2 *****

----- Amount Calc. %Drift -----							
1 TNX	472.000	503.341	-6.6	104	0.00	1.17	1.77
2 HMX	1000.000	1056.122	-5.6	102	0.00	1.38	1.98
3 DNX	1000.000	1041.665	-4.2	102	0.00	1.62	2.22
4 MNX	1166.000	1227.408	-5.3	103	0.00	2.33	2.93
5 RDX	1000.000	1043.633	-4.4	102	0.00	2.95	3.75
6 1,3,5-Trinitrobenzene	1000.000	1042.533	-4.3	102	0.00	5.02	5.82
7 1,3-Dinitrobenzene	1000.000	1071.319	-7.1	99	0.00	6.31	7.11

Continuing Calibration Summary

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Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GBB2302-ECC2232
Lab FileID: BB075455.D

8	3,5-Dinitroaniline	1000.000	1034.975	-3.5	103	-0.02	6.77- 7.57
9	Nitrobenzene	1000.000	1032.130	-3.2	101	-0.02	8.14- 8.94
10	Nitroglycerin	1000.000	1079.094	-7.9	105	-0.02	9.90-10.90
11	Tetryl	1000.000	1024.201	-2.4	102	-0.03	10.99-11.79
----- Amount Calc. %Drift -----							
12	2,4,6-Trinitrotoluene	1000.000	1042.423	-4.2	104	-0.03	11.36-12.16
----- Amount Calc. %Drift -----							
13	2-Amino-4,6-Dinitrotol	1000.000	1030.341	-3.0	104	-0.03	11.77-12.57
14	4-Amino-2,6-Dinitrotol	1000.000	1018.003	-1.8	102	-0.04	12.32-13.12
15 S	3,4-Dinitrotoluene	1000.000	995.672	0.4	100	-0.03	12.85-13.65
16	2,4-Dinitrotoluene	1000.000	968.410	3.2	98	-0.03	13.41-14.21
17	2,6-Dinitrotoluene	1000.000	962.829	3.7	96	-0.03	13.88-14.68
----- Amount Calc. %Drift -----							
18	o-Nitrotoluene	1000.000	1042.460	-4.2	102	-0.02	16.65-17.65
----- Amount Calc. %Drift -----							
19	p-Nitrotoluene	1000.000	1026.121	-2.6	103	-0.02	17.06-18.06
----- Amount Calc. %Drift -----							
20	m-Nitrotoluene	1000.000	1001.647	-0.2	104	-0.01	17.64-18.64
----- Amount Calc. %Drift -----							
21	PETN	1000.000	1098.179	-9.8	106	0.00	18.88-20.08

(#) = Out of Range
BB073634.D BBB2232_083122.M

SPCC's out = 0 CCC's out = 0
Wed Feb 01 09:37:30 2023

8.7.6
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Initial Calibration Summary

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Job Number: FC2200
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GGG3229-ICC3229
 Lab FileID: GG625702.D

Response Factor Report G1315B

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Initial Calibration

Calibration Files

20 =GG625698.D 50 =GG625699.D 100 =GG625700.D 200 =GG625701.D
 500 =GG625697.D 1000=GG625702.D 2500=GG625703.D 5000=GG625704.D

Compound	20	50	100	200	500	1000	2500	5000	Avg	%RSD	
1) TNX	1.094	0.928	0.785	0.882	0.841	0.841	0.838	0.852	0.883	E4	10.74
2) HMX	3.639	3.128	2.492	2.819	2.822	2.753	2.739	2.823	2.902	E3	11.88
3) DNX	8.940	8.514	7.355	7.125	7.182	6.940	6.978	6.887	7.490	E3	10.50
4) MNX	7.199	6.973	5.718	6.438	6.259	6.357	6.252	6.287	6.435	E3	7.14
5) 1,3,5-Trinit	1.102	0.935	0.781	0.874	0.845	0.859	0.845	0.851	0.886	E4	10.91
6) RDX	5.354	4.805	3.700	4.175	4.030	4.114	4.015	4.053	4.281	E3	12.45
7) 1,3-Dinitrob	1.548	1.266	1.086	1.205	1.162	1.178	1.163	1.169	1.222	E4	11.52
8) Nitrobenzene	9.829	8.246	6.906	7.609	7.457	7.498	7.432	7.381	7.795	E3	11.54
9) 2,4,6-Trinit	1.188	0.924	0.786	0.847	0.809	0.829	0.820	0.826	0.879	E4	14.95
10) Nitroglyceri							6.976	6.421	6.698	E1	5.85
11) Tetryl	6.988	6.414	5.716	6.277	5.949	6.289	6.316	6.404	6.294	E3	5.89
12) 3,4-Dinitrot	5.654	5.955	4.945	5.394	5.155	5.314	5.265	5.289	5.371	E3	5.77
13) 2,6-Dinitrot	6.544	6.407	5.321	5.806	5.624	5.763	5.676	5.716	5.857	E3	7.01
14) 2,4-Dinitrot	1.346	1.199	0.985	1.085	1.047	1.069	1.058	1.065	1.107	E4	10.25
15) 3,5-Dinitroa	1.146	1.027	0.854	0.928	0.890	0.908	0.897	0.905	0.944	E4	10.13
16) o-Nitrotolue	5.280	5.247	4.306	4.776	4.642	4.676	4.671	4.664	4.783	E3	6.84
17) p-Nitrotolue	7.021	5.340	4.516	5.034	4.857	4.914	4.866	4.880	5.178	E3	15.03
---- Linear regr., Force(0,0) ---- Coefficient = 1.0000											
Response Ratio = 0.00000 + 4878.13579 *A											
18) 4-Amino-2,6-	7.021	5.340	4.516	5.034	4.857	4.914	4.866	4.880	5.178	E3	15.03
---- Linear regr., Force(0,0) ---- Coefficient = 1.0000											
Response Ratio = 0.00000 + 4878.13579 *A											
19) m-Nitrotolue	5.905	4.829	4.633	4.853	4.839	4.819	4.775	4.806	4.933	E3	8.09
20) 2-Amino-4,6-	1.033	0.926	0.770	0.843	0.806	0.821	0.809	0.807	0.852	E4	10.10
21) PETN							4.814	4.529	4.671	E1	4.32

Signal #2

1) TNX	1.283	0.934	0.795	0.871	0.850	0.858	0.842	0.844	0.910	E4	17.12
---- Quadratic regr., Force(0,0) ---- Coefficient = 1.0000											
Response Ratio = 0.00000 + 8463.21382 *A + -0.00988 *A^2											
2) HMX	3.848	3.021	2.523	2.886	2.862	2.885	2.847	2.859	2.966	E3	12.91
3) DNX	9.438	7.905	6.499	7.226	7.021	7.155	7.034	7.080	7.420	E3	12.15
4) MNX	8.271	6.898	5.655	6.439	6.239	6.356	6.251	6.287	6.549	E3	11.81
5) 1,3,5-Trinit	1.077	0.947	0.783	0.870	0.846	0.859	0.846	0.851	0.885	E4	10.13
6) RDX	5.203	4.846	3.711	4.158	4.031	4.113	4.035	4.056	4.269	E3	11.58
7) 1,3-Dinitrob	1.393	1.021	0.789	0.978	0.928	0.954	0.905	0.872	0.980	E4	18.48
---- Linear regr., Force(0,0) ---- Coefficient = 0.9995											
Response Ratio = 0.00000 + 8817.14222 *A											
8) Nitrobenzene	9.290	8.012	7.184	7.452	8.331	7.466	7.106	6.840	7.710	E3	10.40
9) 2,4,6-Trinit	1.542	1.315	1.186	1.150	1.149	1.116	1.092	1.080	1.204	E4	12.88
10) Nitroglyceri	4.083	3.134	2.448	3.551	3.219	3.000	2.927	2.866	3.153	E3	15.54
---- Linear regr., Force(0,0) ---- Coefficient = 0.9997											

Initial Calibration Summary

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Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GGG3229-ICC3229
Lab FileID: GG625702.D

Response Ratio = 0.00000 + 2885.45205 *A

11)	Tetryl	1.134	1.015	0.926	1.167	1.108	1.101	1.101	1.094	1.081	E4	7.03
12)	3,4-Dinitrot	0.985	1.024	0.850	1.062	1.027	1.031	1.031	1.021	1.004	E4	6.55
13)	2,6-Dinitrot	7.595	7.790	6.154	7.389	8.041	8.315	8.327	8.302	7.739	E3	9.45
14)	2,4-Dinitrot	9.588	7.874	6.040	6.815	7.287	7.612	7.566	7.511	7.537	E3	13.41
15)	3,5-Dinitroa	1.917	1.584	1.523	1.511	1.497	1.501	1.496	1.497	1.566	E4	9.25
16)	o-Nitrotolue	9.754	8.401	6.509	5.859	6.607	6.615	6.858	6.852	7.182	E3	17.59

---- Linear regr., Force(0,0) ---- Coefficient = 0.9999

Response Ratio = 0.00000 + 6842.78978 *A

17)	p-Nitrotolue	2.013	0.785	0.811	0.894	0.892	0.894	0.896	0.897	1.010	E4	40.36
-----	--------------	-------	-------	-------	-------	-------	-------	-------	-------	-------	----	-------

---- Linear regr., Force(0,0) ---- Coefficient = 1.0000

Response Ratio = 0.00000 + 8967.51685 *A

18)	4-Amino-2,6-	2.013	0.785	0.811	0.894	0.892	0.894	0.896	0.897	1.010	E4	40.36
-----	--------------	-------	-------	-------	-------	-------	-------	-------	-------	-------	----	-------

---- Linear regr., Force(0,0) ---- Coefficient = 1.0000

Response Ratio = 0.00000 + 8967.51685 *A

19)	m-Nitrotolue	9.824	5.795	6.744	7.886	7.960	8.442	8.282	8.280	7.902	E3	15.17
-----	--------------	-------	-------	-------	-------	-------	-------	-------	-------	-------	----	-------

---- Linear regr., Force(0,0) ---- Coefficient = 0.9990

Response Ratio = 0.00000 + 8245.93207 *A

20)	2-Amino-4,6-	0.942	1.117	1.137	1.175	1.148	1.197	1.165	1.158	1.130	E4	7.05
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21)	PETN	3.358	2.926	4.431	3.113	2.628	2.985	2.950	3.022	3.177	E3	17.18
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---- Linear regr., Force(0,0) ---- Coefficient = 0.9996

Response Ratio = 0.00000 + 3004.68317 *A

(#) = Out of Range ### Number of calibration levels exceeded format ###

GGG3229_013023.M

Tue Jan 31 11:34:17 2023

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Initial Calibration Verification

Page 1 of 2

Job Number: FC2200
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GGG3229-ICV3229
 Lab FileID: GG625705.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
 Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
 Sample : icv3229-1000 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT Window
1	TNX	472.000	452.208	4.2	101	0.00	3.72- 5.17
2	HMX	1000.000	1042.220	-4.2	110	0.00	4.56- 5.56
3	DNX	1000.000	964.850	3.5	104	0.00	4.77- 5.77
4	MXN	1166.000	1133.193	2.8	98	0.00	5.92- 6.92
5	1,3,5-Trinitrobenzene	1000.000	1019.868	-2.0	105	0.00	6.88- 7.88
6	RDX	1000.000	1003.691	-0.4	104	0.02	7.25- 8.25
7	1,3-Dinitrobenzene	1000.000	1018.683	-1.9	106	0.01	9.34-10.34
8	Nitrobenzene	1000.000	1013.251	-1.3	105	0.01	10.49-11.49
9	2,4,6-Trinitrotoluene	1000.000	970.179	3.0	103	0.00	11.21-12.21
10	Nitroglycerin			-----NA-----			
11	Tetryl	1000.000	986.124	1.4	99	0.00	12.59-13.59
12 S	3,4-Dinitrotoluene			-----NA-----			
13	2,6-Dinitrotoluene	1000.000	980.543	1.9	100	-0.02	14.31-15.31
14	2,4-Dinitrotoluene	1000.000	1016.080	-1.6	105	-0.02	14.94-15.94
15	3,5-Dinitroaniline	1000.000	1066.198	-6.6	111	-0.02	15.76-16.76
16	o-Nitrotoluene	1000.000	1024.785	-2.5	105	-0.02	16.84-17.84
----- Amount Calc. %Drift -----							
17	p-Nitrotoluene	2000.000	2090.417	-4.5	104	-0.02	17.83-18.83
18	4-Amino-2,6-Dinitrotol	2000.000	2090.417	-4.5	104	-0.02	17.83-18.83
----- Amount Calc. %Drift -----							
19	m-Nitrotoluene	1000.000	1031.944	-3.2	106	-0.02	19.19-20.19
20	2-Amino-4,6-Dinitrotol	1000.000	1014.709	-1.5	105	-0.02	19.58-20.58
21	PETN			-----NA-----			

***** Signal #2 *****

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT Window
1	TNX	472.000	476.755	-1.0	100	0.00	4.16- 5.17
----- Amount Calc. %Drift -----							
2	HMX	1000.000	1038.701	-3.9	107	0.00	4.56- 5.56
3	DNX	1000.000	947.561	5.2	98	0.00	4.77- 5.77
4	MXN	1166.000	1113.801	4.5	98	0.00	5.92- 6.92
5	1,3,5-Trinitrobenzene	1000.000	1021.694	-2.2	105	0.00	6.88- 7.88
6	RDX	1000.000	1006.258	-0.6	104	0.02	7.25- 8.25
----- Amount Calc. %Drift -----							
7	1,3-Dinitrobenzene	1000.000	1064.546	-6.5	98	0.01	9.34-10.34

Initial Calibration Verification

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Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GGG3229-ICV3229
Lab FileID: GG625705.D

		Amount	Calc.	%Drift			
8	Nitrobenzene	1000.000	1020.942	-2.1	105	0.01	10.48-11.48
9	2,4,6-Trinitrotoluene	1000.000	960.539	3.9	104	0.00	11.21-12.21
		Amount	Calc.	%Drift			
10	Nitroglycerin	1000.000	1084.658	-8.5	104	0.00	11.94-12.94
		Amount	Calc.	%Drift			
11	Tetryl	1000.000	1005.767	-0.6	99	0.00	12.59-13.59
12 S	3,4-Dinitrotoluene			NA			
13	2,6-Dinitrotoluene	1000.000	1080.390	-8.0	101	-0.02	14.31-15.31
14	2,4-Dinitrotoluene	1000.000	1051.017	-5.1	104	-0.01	14.94-15.94
15	3,5-Dinitroaniline	1000.000	1072.757	-7.3	112	-0.02	15.76-16.76
		Amount	Calc.	%Drift			
16	o-Nitrotoluene	1000.000	1046.172	-4.6	108	-0.02	16.84-17.84
17	p-Nitrotoluene	2000.000	2078.475	-3.9	104	-0.02	17.81-18.81
18	4-Amino-2,6-Dinitrotol	2000.000	2078.475	-3.9	104	-0.02	17.81-18.81
19	m-Nitrotoluene	1000.000	1052.573	-5.3	103	-0.02	19.19-20.19
		Amount	Calc.	%Drift			
20	2-Amino-4,6-Dinitrotol	1000.000	1090.721	-9.1	103	-0.02	19.58-20.58
		Amount	Calc.	%Drift			
21	PETN	1000.000	1020.922	-2.1	103	-0.03	21.27-22.27

(#) = Out of Range
GG625702.D GGG3229_013023.M

SPCC's out = 0 CCC's out = 0
Tue Jan 31 11:33:35 2023

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Continuing Calibration Summary

Page 1 of 2

Job Number: FC2200
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GGG3229-CC3229
 Lab FileID: GG625715.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1B.ch Vial: 7
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1A.ch
 Acq On : 30-Jan-2023, 21:34:27 Operator: fouads
 Sample : cc3229-1000 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT	Window
1	TNX	472.000	454.238	3.8	101	0.00	3.72	5.17
2	HMX	1000.000	947.493	5.3	100	0.01	4.56	5.56
3	DNX	1000.000	958.467	4.2	103	0.01	4.77	5.77
4	MXN	1166.000	1139.175	2.3	99	0.02	5.92	6.92
5	1,3,5-Trinitrobenzene	1000.000	962.312	3.8	99	0.01	6.88	7.88
6	RDX	1000.000	948.730	5.1	99	0.02	7.25	8.25
7	1,3-Dinitrobenzene	1000.000	961.102	3.9	100	0.02	9.34	10.34
8	Nitrobenzene	1000.000	937.482	6.3	97	0.02	10.49	11.49
9	2,4,6-Trinitrotoluene	1000.000	931.815	6.8	99	0.02	11.21	12.21
10	Nitroglycerin	-----NA-----						
11	Tetryl	1000.000	985.968	1.4	99	0.03	12.59	13.59
12 S	3,4-Dinitrotoluene	1000.000	990.156	1.0	100	0.03	13.90	14.90
13	2,6-Dinitrotoluene	1000.000	971.238	2.9	99	0.03	14.31	15.31
14	2,4-Dinitrotoluene	1000.000	961.365	3.9	100	0.04	14.94	15.94
15	3,5-Dinitroaniline	1000.000	953.136	4.7	99	0.04	15.76	16.76
16	o-Nitrotoluene	1000.000	959.700	4.0	98	0.04	16.84	17.84
----- Amount Calc. %Drift -----								
17	p-Nitrotoluene	2000.000	1998.767	0.1	99	0.04	17.83	18.83
18	4-Amino-2,6-Dinitrotol	2000.000	1998.767	0.1	99	0.04	17.83	18.83
----- Amount Calc. %Drift -----								
19	m-Nitrotoluene	1000.000	975.899	2.4	100	0.06	19.19	20.19
20	2-Amino-4,6-Dinitrotol	1000.000	949.293	5.1	99	0.07	19.58	20.58
21	PETN	-----NA-----						

***** Signal #2 *****

----- Amount Calc. %Drift -----								
1	TNX	472.000	482.561	-2.2	101	0.00	4.16	5.17
----- Amount Calc. %Drift -----								
2	HMX	1000.000	979.936	2.0	101	0.01	4.56	5.56
3	DNX	1000.000	955.639	4.4	99	0.01	4.77	5.77
4	MXN	1166.000	1121.237	3.8	99	0.02	5.92	6.92
5	1,3,5-Trinitrobenzene	1000.000	964.004	3.6	99	0.01	6.88	7.88
6	RDX	1000.000	951.222	4.9	99	0.02	7.25	8.25
----- Amount Calc. %Drift -----								
7	1,3-Dinitrobenzene	1000.000	1085.308	-8.5	100	0.02	9.34	10.34

Continuing Calibration Summary

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Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GGG3229-CC3229
Lab FileID: GG625715.D

		Amount	Calc.	%Drift			
8	Nitrobenzene	1000.000	963.530	3.6	100	0.02	10.48-11.48
9	2,4,6-Trinitrotoluene	1000.000	959.341	4.1	103	0.02	11.21-12.21
		Amount	Calc.	%Drift			
10	Nitroglycerin	1000.000	1064.652	-6.5	102	0.02	11.94-12.94
		Amount	Calc.	%Drift			
11	Tetryl	1000.000	1029.109	-2.9	101	0.03	12.59-13.59
12 S	3,4-Dinitrotoluene	1000.000	1036.244	-3.6	101	0.03	13.90-14.90
13	2,6-Dinitrotoluene	1000.000	1076.999	-7.7	100	0.03	14.31-15.31
14	2,4-Dinitrotoluene	1000.000	1001.146	-0.1	99	0.04	14.94-15.94
15	3,5-Dinitroaniline	1000.000	953.575	4.6	99	0.04	15.76-16.76
		Amount	Calc.	%Drift			
16	o-Nitrotoluene	1000.000	975.704	2.4	101	0.04	16.84-17.84
17	p-Nitrotoluene	2000.000	1980.939	1.0	99	0.04	17.81-18.81
18	4-Amino-2,6-Dinitrotol	2000.000	1980.939	1.0	99	0.04	17.81-18.81
19	m-Nitrotoluene	1000.000	982.580	1.7	96	0.06	19.19-20.19
		Amount	Calc.	%Drift			
20	2-Amino-4,6-Dinitrotol	1000.000	1028.348	-2.8	97	0.07	19.58-20.58
		Amount	Calc.	%Drift			
21	PETN	1000.000	908.411	9.2	91	0.04	21.27-22.27

(#) = Out of Range
GG625702.D GGG3229_013023.M

SPCC's out = 0 CCC's out = 0
Tue Jan 31 11:33:36 2023

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Continuing Calibration Summary

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Job Number: FC2200
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GGG3229-ECC3229
 Lab FileID: GG625723.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625723.D\dad1B.ch Vial: 7
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625723.D\dad1A.ch
 Acq On : 31-Jan-2023, 10:13:10 Operator: fouads
 Sample : ecc3229-1000 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT Window
1	TNX	472.000	471.443	0.1	105	0.00	3.72- 5.17
2	HMX	1000.000	1011.312	-1.1	107	0.00	4.56- 5.56
3	DNX	1000.000	976.134	2.4	105	0.00	4.77- 5.77
4	MXN	1166.000	1209.363	-3.7	105	0.00	5.92- 6.92
5	1,3,5-Trinitrobenzene	1000.000	1020.882	-2.1	105	0.00	6.88- 7.88
6	RDX	1000.000	1004.702	-0.5	105	0.00	7.25- 8.25
7	1,3-Dinitrobenzene	1000.000	1012.873	-1.3	105	0.00	9.34-10.34
8	Nitrobenzene	1000.000	1002.304	-0.2	104	0.00	10.49-11.49
9	2,4,6-Trinitrotoluene	1000.000	985.573	1.4	104	-0.02	11.21-12.21
10	Nitroglycerin	-----NA-----					
11	Tetryl	1000.000	1040.215	-4.0	104	-0.01	12.59-13.59
12 S	3,4-Dinitrotoluene	1000.000	1038.603	-3.9	105	0.00	13.90-14.90
13	2,6-Dinitrotoluene	1000.000	1022.797	-2.3	104	-0.01	14.31-15.31
14	2,4-Dinitrotoluene	1000.000	1009.410	-0.9	105	-0.02	14.94-15.94
15	3,5-Dinitroaniline	1000.000	1002.996	-0.3	104	-0.02	15.76-16.76
16	o-Nitrotoluene	1000.000	1020.187	-2.0	104	-0.02	16.84-17.84
----- Amount Calc. %Drift -----							
17	p-Nitrotoluene	2000.000	2111.419	-5.6	105	-0.04	17.83-18.83
18	4-Amino-2,6-Dinitrotol	2000.000	2111.419	-5.6	105	-0.04	17.83-18.83
----- Amount Calc. %Drift -----							
19	m-Nitrotoluene	1000.000	1024.092	-2.4	105	-0.03	19.19-20.19
20	2-Amino-4,6-Dinitrotol	1000.000	1003.690	-0.4	104	-0.03	19.58-20.58
21	PETN	-----NA-----					

***** Signal #2 *****

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT Window
1	TNX	472.000	500.696	-6.1	105	0.00	4.16- 5.17
----- Amount Calc. %Drift -----							
2	HMX	1000.000	1011.358	-1.1	104	0.00	4.56- 5.56
3	DNX	1000.000	1002.094	-0.2	104	0.00	4.77- 5.77
4	MXN	1166.000	1188.337	-1.9	105	0.00	5.92- 6.92
5	1,3,5-Trinitrobenzene	1000.000	1022.613	-2.3	105	0.00	6.88- 7.88
6	RDX	1000.000	1007.474	-0.7	105	0.00	7.25- 8.25
----- Amount Calc. %Drift -----							
7	1,3-Dinitrobenzene	1000.000	1178.049	-17.8#	109	0.00	9.34-10.34

Continuing Calibration Summary

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Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GGG3229-ECC3229
Lab FileID: GG625723.D

		Amount	Calc.	%Drift			
8	Nitrobenzene	1000.000	1086.764	-8.7	112	0.00	10.48-11.48
9	2,4,6-Trinitrotoluene	1000.000	1025.314	-2.5	111	-0.02	11.21-12.21
		Amount	Calc.	%Drift			
10	Nitroglycerin	1000.000	1201.858	-20.2#	116	-0.02	11.94-12.94
		Amount	Calc.	%Drift			
11	Tetryl	1000.000	1128.929	-12.9	111	-0.01	12.59-13.59
12 S	3,4-Dinitrotoluene	1000.000	1116.304	-11.6	109	0.00	13.90-14.90
13	2,6-Dinitrotoluene	1000.000	1147.962	-14.8	107	-0.01	14.31-15.31
14	2,4-Dinitrotoluene	1000.000	1068.480	-6.8	106	-0.02	14.94-15.94
15	3,5-Dinitroaniline	1000.000	1020.719	-2.1	106	-0.01	15.76-16.76
		Amount	Calc.	%Drift			
16	o-Nitrotoluene	1000.000	1029.021	-2.9	106	-0.02	16.84-17.84
17	p-Nitrotoluene	2000.000	2104.363	-5.2	106	-0.03	17.81-18.81
18	4-Amino-2,6-Dinitrotol	2000.000	2104.363	-5.2	106	-0.03	17.81-18.81
19	m-Nitrotoluene	1000.000	1060.572	-6.1	104	-0.03	19.19-20.19
		Amount	Calc.	%Drift			
20	2-Amino-4,6-Dinitrotol	1000.000	1090.740	-9.1	103	-0.03	19.58-20.58
		Amount	Calc.	%Drift			
21	PETN	1000.000	1035.447	-3.5	104	-0.04	21.27-22.27

(#) = Out of Range
GG625702.D GGG3229_013023.M

SPCC's out = 0 CCC's out = 0
Tue Jan 31 11:33:37 2023

8.7.10

8

Run Sequence Report

Page 1 of 1

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Run ID: GBB2232	Method: SW846 8330A	Instrument ID: GCBB
------------------------	----------------------------	----------------------------

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
GBB2232-IC2232	BB073629.D	08/31/22 09:43	n/a	Initial cal 20
GBB2232-IC2232	BB073630.D	08/31/22 10:14	n/a	Initial cal 50
GBB2232-IC2232	BB073631.D	08/31/22 10:45	n/a	Initial cal 100
GBB2232-IC2232	BB073632.D	08/31/22 11:16	n/a	Initial cal 200
GBB2232-IC2232	BB073633.D	08/31/22 11:58	n/a	Initial cal 500
GBB2232-ICC2232	BB073634.D	08/31/22 12:29	n/a	Initial cal 1000
GBB2232-IC2232	BB073635.D	08/31/22 13:00	n/a	Initial cal 2500
GBB2232-IC2232	BB073636.D	08/31/22 13:31	n/a	Initial cal 5000
GBB2232-ICV2232	BB073641.D	09/01/22 11:59	n/a	Initial cal verification 1000

8.8.1

8

Run Sequence Report

Page 1 of 1

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Run ID: GBB2301	Method: SW846 8330B	Instrument ID: GCBB
------------------------	----------------------------	----------------------------

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
GBB2301-CC2232	BB075437.D	01/30/23 09:45	n/a	Continuing cal 1000
OP95195-MB	BB075438.D	01/30/23 11:30	OP95195	Method Blank
OP95195-MB	BB075438.D	01/30/23 11:30	OP95195	Method Blank
OP95195-BS	BB075439.D	01/30/23 12:01	OP95195	Blank Spike
OP95195-BS	BB075439.D	01/30/23 12:01	OP95195	Blank Spike
ZZZZZZ	BB075441.D	01/30/23 13:03	OP95195	(unrelated sample)
ZZZZZZ	BB075442.D	01/30/23 13:34	OP95195	(unrelated sample)
FC2200-1	BB075443.D	01/30/23 14:05	OP95195	54MW12
OP95195-MSD	BB075446.D	01/30/23 16:15	OP95195	Matrix Spike Duplicate
OP95195-MSD	BB075446.D	01/30/23 16:15	OP95195	Matrix Spike Duplicate
FC2200-2	BB075447.D	01/30/23 16:46	OP95195	54MW1
GBB2301-ECC2232	BB075449.D	01/30/23 17:48	n/a	Ending cal 1000

8.8.2

8

Run Sequence Report

Page 1 of 1

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Run ID: GBB2302	Method: SW846 8330B	Instrument ID: GCBB
------------------------	----------------------------	----------------------------

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
GBB2302-CC2232	BB075451.D	01/31/23 11:17	n/a	Continuing cal 1000
ZZZZZZ	BB075452.D	01/31/23 11:57	OP95195	(unrelated sample)
OP95195-MS	BB075453.D	01/31/23 14:08	OP95195	Matrix Spike
OP95195-MS	BB075453.D	01/31/23 14:08	OP95195	Matrix Spike
GBB2302-ECC2232	BB075455.D	01/31/23 15:10	n/a	Ending cal 1000

8.8.3

8

Run Sequence Report

Job Number: FC2200
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Run ID: GGG3229	Method: SW846 8330B	Instrument ID: GCGG
------------------------	----------------------------	----------------------------

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
GGG3229-IC3229	GG625697.D	01/30/23 11:54	n/a	Initial cal 500
GGG3229-IC3229	GG625698.D	01/30/23 12:37	n/a	Initial cal 20
GGG3229-IC3229	GG625699.D	01/30/23 13:08	n/a	Initial cal 50
GGG3229-IC3229	GG625700.D	01/30/23 13:40	n/a	Initial cal 100
GGG3229-IC3229	GG625701.D	01/30/23 14:11	n/a	Initial cal 200
GGG3229-ICC3229	GG625702.D	01/30/23 14:45	n/a	Initial cal 1000
GGG3229-IC3229	GG625703.D	01/30/23 15:17	n/a	Initial cal 2500
GGG3229-IC3229	GG625704.D	01/30/23 15:48	n/a	Initial cal 50000
GGG3229-ICV3229	GG625705.D	01/30/23 16:19	n/a	Initial cal verification 1000
OP95139-MB	GG625706.D	01/30/23 16:51	OP95139	Method Blank
FC2128-1	GG625707.D	01/30/23 17:22	OP95139	(used for QC only; not part of job FC2200)
ZZZZZZ	GG625708.D	01/30/23 17:54	OP95139	(unrelated sample)
ZZZZZZ	GG625709.D	01/30/23 18:25	OP95139	(unrelated sample)
ZZZZZZ	GG625710.D	01/30/23 18:57	OP95139	(unrelated sample)
ZZZZZZ	GG625711.D	01/30/23 19:28	OP95139	(unrelated sample)
ZZZZZZ	GG625712.D	01/30/23 20:00	OP95139	(unrelated sample)
ZZZZZZ	GG625713.D	01/30/23 20:31	OP95139	(unrelated sample)
GGG3229-CC3229	GG625715.D	01/30/23 21:34	n/a	Continuing cal 1000
OP95195-MB	GG625716.D	01/30/23 22:05	OP95195	Method Blank
OP95195-MB	GG625716.D	01/30/23 22:05	OP95195	Method Blank
ZZZZZZ	GG625717.D	01/30/23 22:37	OP95195	(unrelated sample)
ZZZZZZ	GG625718.D	01/30/23 23:08	OP95195	(unrelated sample)
ZZZZZZ	GG625719.D	01/30/23 23:40	OP95195	(unrelated sample)
FC2200-1	GG625720.D	01/31/23 00:11	OP95195	54MW12
FC2200-2	GG625721.D	01/31/23 00:43	OP95195	54MW1
GGG3229-ECC3229	GG625723.D	01/31/23 10:13	n/a	Ending cal 1000



Orlando, FL

Section 9

GC/LC Semi-volatiles

Raw Data

6

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075443.D\dad1B.ch Vial: 8
 Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075443.D\dad1A.ch
 Acq On : 30-Jan-2023, 14:05:11 Operator: fouads
 Sample : fc2200-1 Inst : G1315B
 Misc : op95195,GBB2301,1030,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 30 14:29:34 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.23	13.23	1001974	1794158	467.682m	422.287
Spiked Amount	500.000	Range	70 - 136	Recovery	=	93.54% 84.46%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	1.68	1.68	1108995	3125249	748.993	764.074
3) DNX	0.00	0.00	0	0	N.D. d	N.D. d
4) MNX	0.00	0.00	0	0	N.D.	N.D.
5) RDX	3.35	3.35	143134	232588	77.163	79.398
6) 1,3,5-Trinitrobe	5.40	5.40	3153555	5148899	793.223	827.171
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
8) 3,5-Dinitroanili	7.15	7.15	142573	187367	36.224m	28.670m
9) Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
12) 2,4,6-Trinitroto	11.73	11.73	1686290	2152322	461.337	483.367m
13) 2-Amino-4,6-Dini	12.13	12.14	852388	1263397	269.695	255.836
14) 4-Amino-2,6-Dini	12.69	12.69	468130	818963	203.837	166.640
16) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
17) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
18) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
19) p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
21) PETN	0.00	0.00	0	0	N.D. d	N.D. d

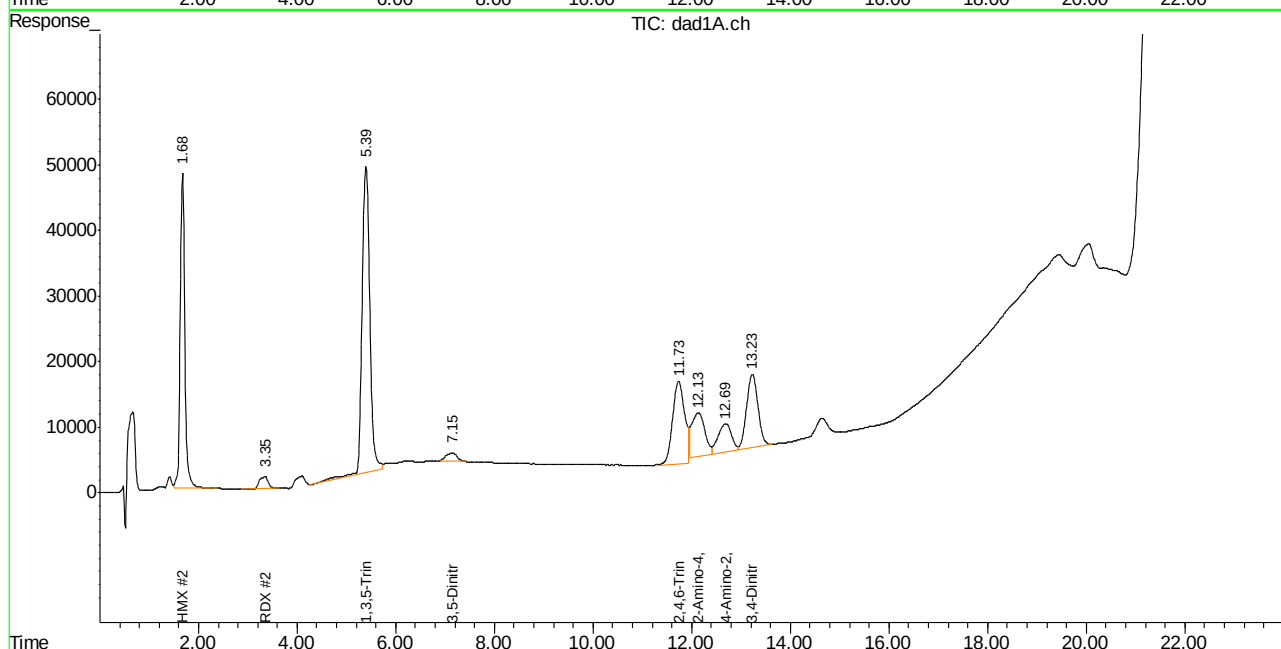
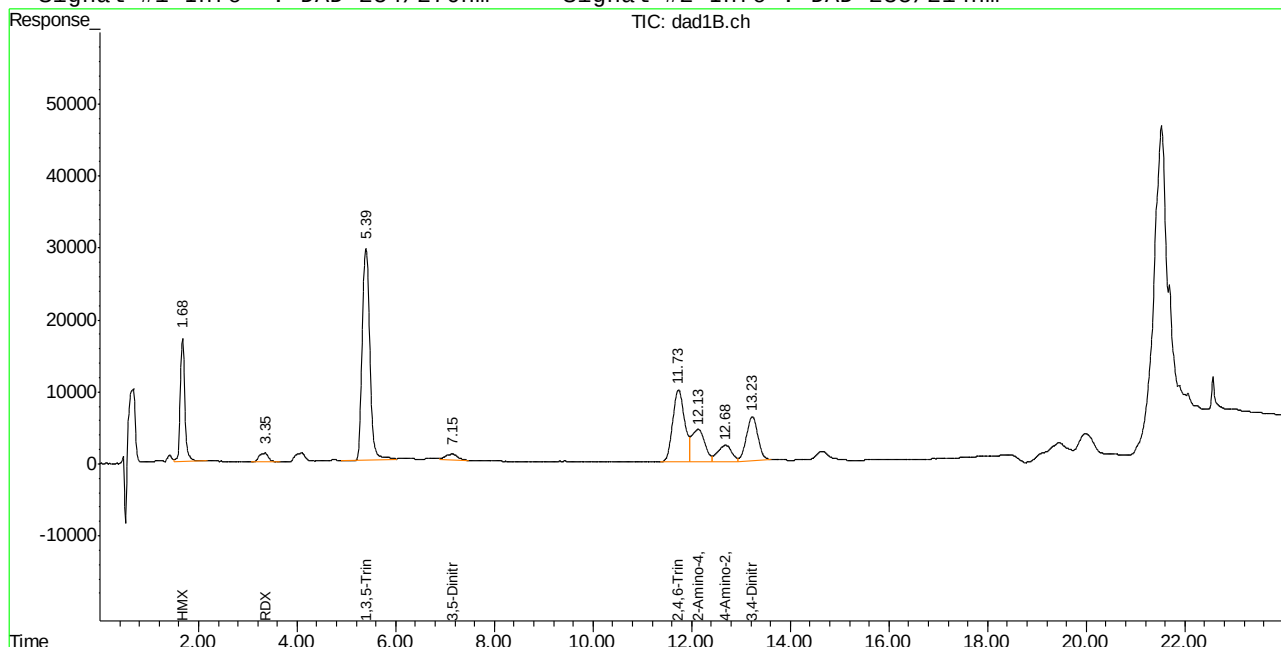
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075443.D BBB2232_083122.M Wed Feb 01 08:43:59 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075443.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075443.D\dad1A.ch
Acq On : 30-Jan-2023, 14:05:11 Operator: fouads
Sample : fc2200-1 Inst : G1315B
Misc : op95195,GBB2301,1030,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:15 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: FC2200-1

Method: SW846 8330B

Lab FileID: BB075443.D

Analyst approved: 02/01/23 09:33 Fouad Sekkar

Injection Time: 01/30/23 14:05

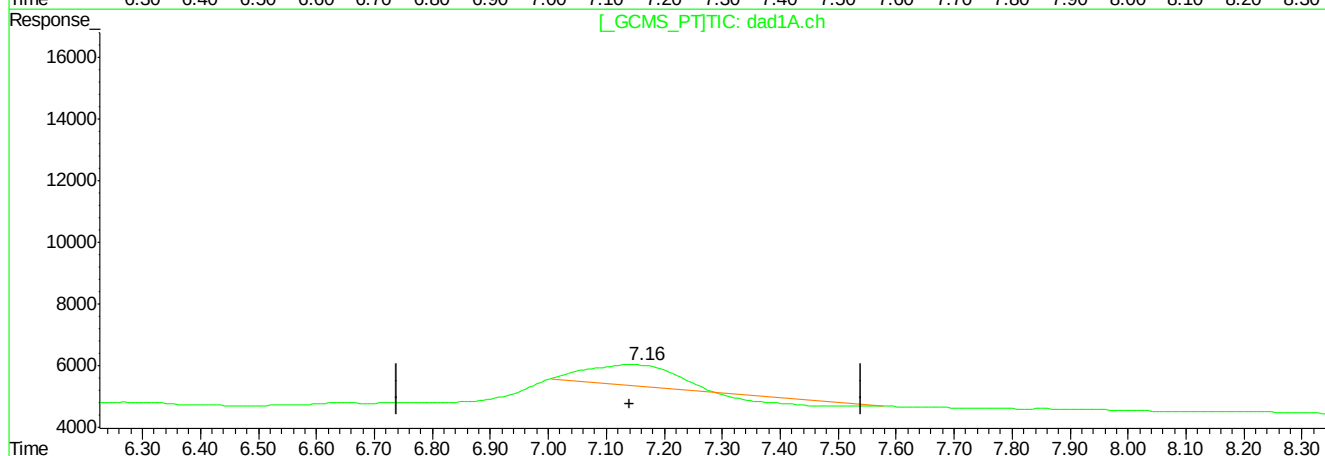
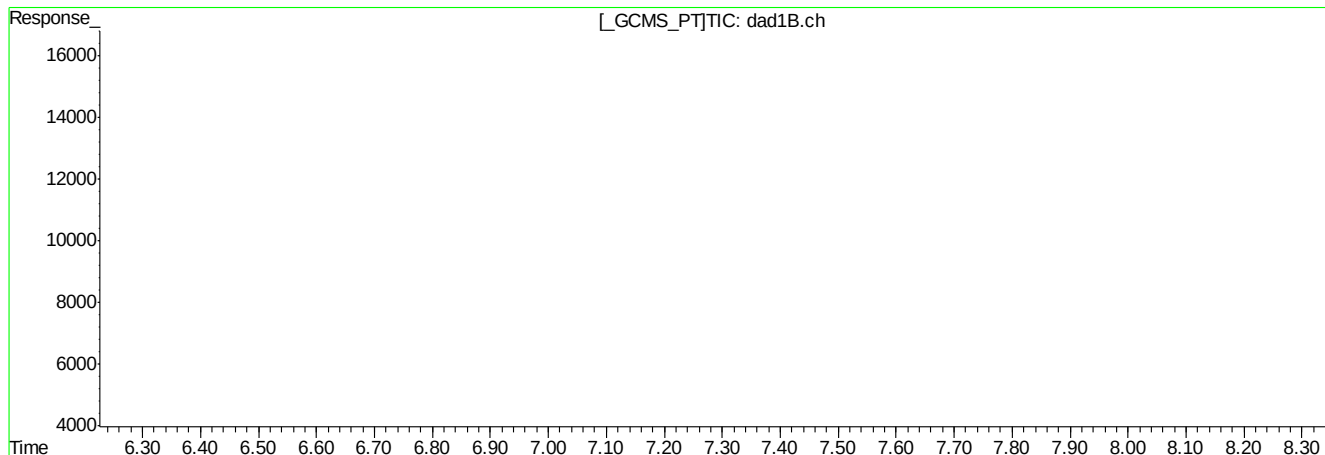
Supervisor approved: 02/08/23 09:42 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	1	7.15	Poor instrument integration
3,5-Dinitroaniline	618-87-1	2	7.15	Poor instrument integration
2,4,6-Trinitrotoluene	118-96-7	2	11.73	Poor instrument integration
3,4-Dinitrotoluene	610-39-9	1	13.23	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075443.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075443.D\dad1A.ch
Acq On : 30-Jan-2023, 14:05:11 Operator: fouads
Sample : fc2200-1 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 14:29 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.15min 46.524ppb

response 183112

(8) 3,5-Dinitroaniline #2

7.15min 7.903ppb

response 51650

(+) = Expected Retention Time

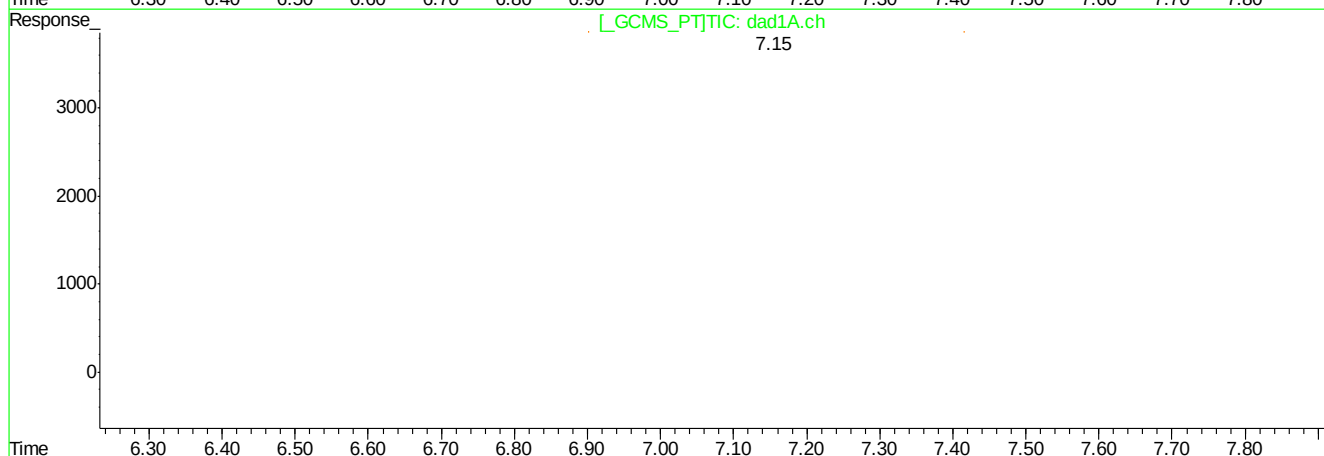
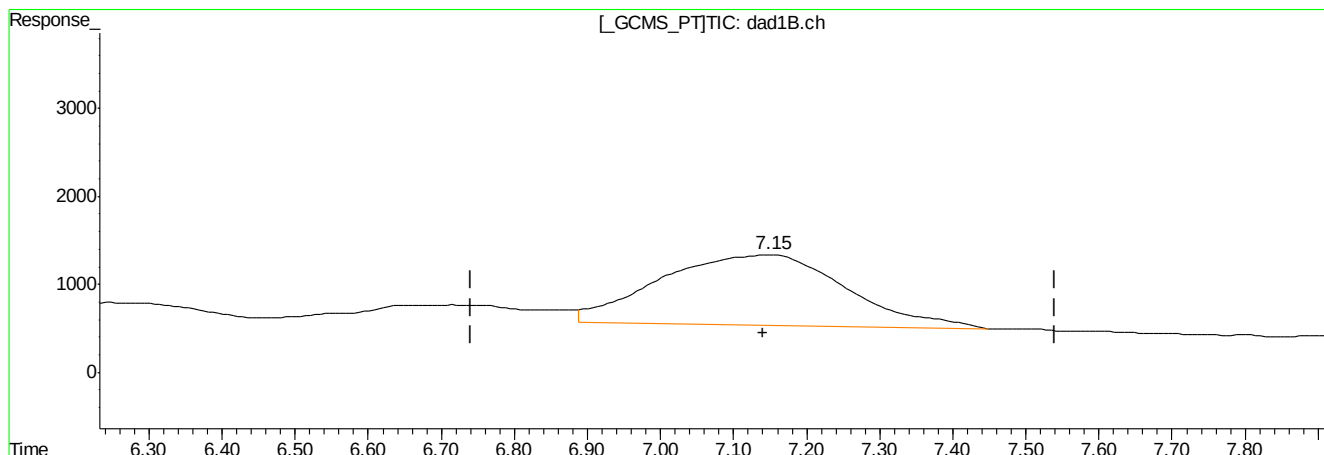
BB075443.D BBB2232_083122.M

Tue Jan 31 10:14:23 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075443.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075443.D\dad1A.ch
Acq On : 30-Jan-2023, 14:05:11 Operator: fouads
Sample : fc2200-1 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 14:29 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline
7.15min 36.224ppb m
response 142573

(8) 3,5-Dinitroaniline #2
7.15min 28.670ppb m
response 187367

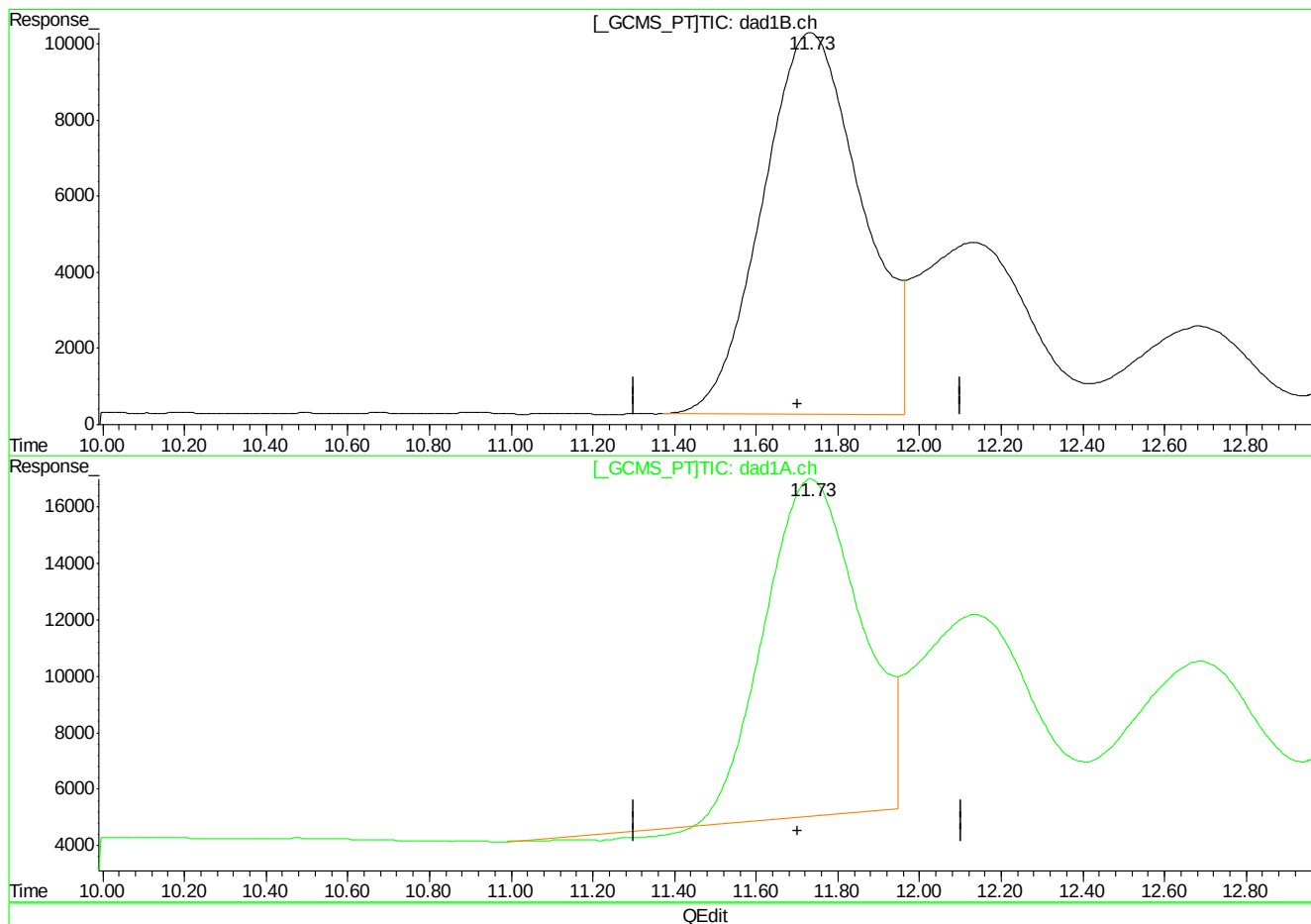
(+) = Expected Retention Time
BB075443.D BBB2232_083122.M

Tue Jan 31 10:14:37 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075443.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075443.D\dad1A.ch
Acq On : 30-Jan-2023, 14:05:11 Operator: fouads
Sample : fc2200-1 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 14:29 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(12) 2,4,6-Trinitrotoluene

11.73min 461.337ppb

response 1686290

(12) 2,4,6-Trinitrotoluene #2

11.74min 429.395ppb

response 1912000

(+) = Expected Retention Time

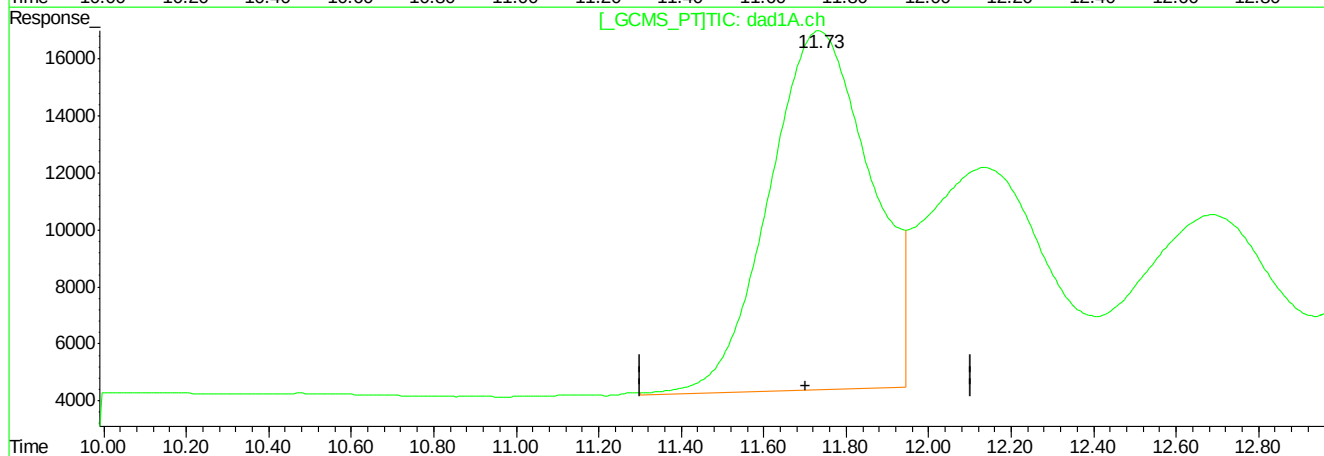
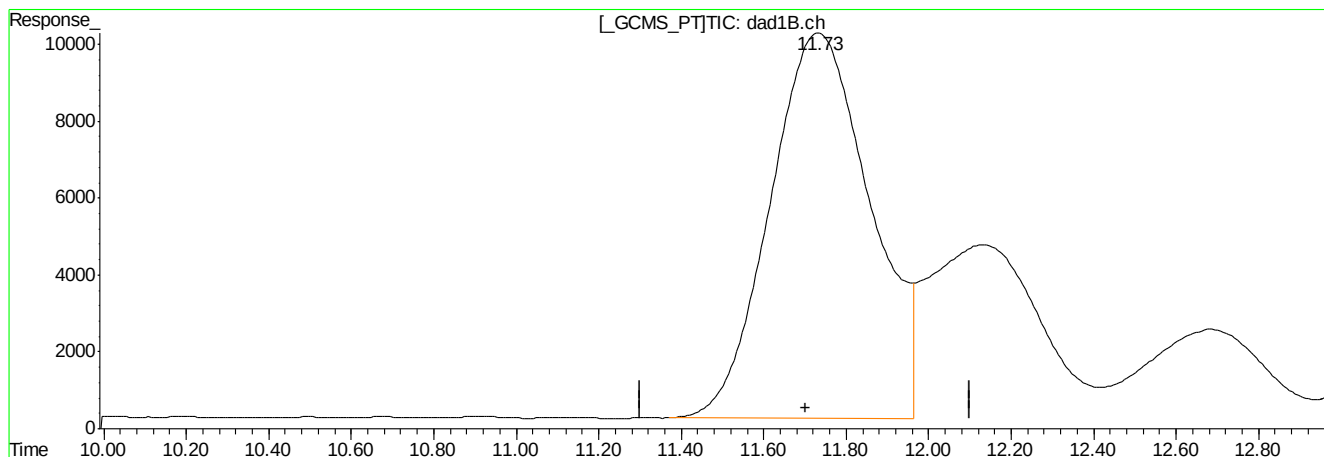
BB075443.D BBB2232_083122.M

Tue Jan 31 10:14:43 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075443.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075443.D\dad1A.ch
Acq On : 30-Jan-2023, 14:05:11 Operator: fouads
Sample : fc2200-1 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 14:29 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(12) 2,4,6-Trinitrotoluene

11.73min 461.337ppb

response 1686290

(12) 2,4,6-Trinitrotoluene #2

11.73min 483.367ppb m

response 2152322

(+) = Expected Retention Time

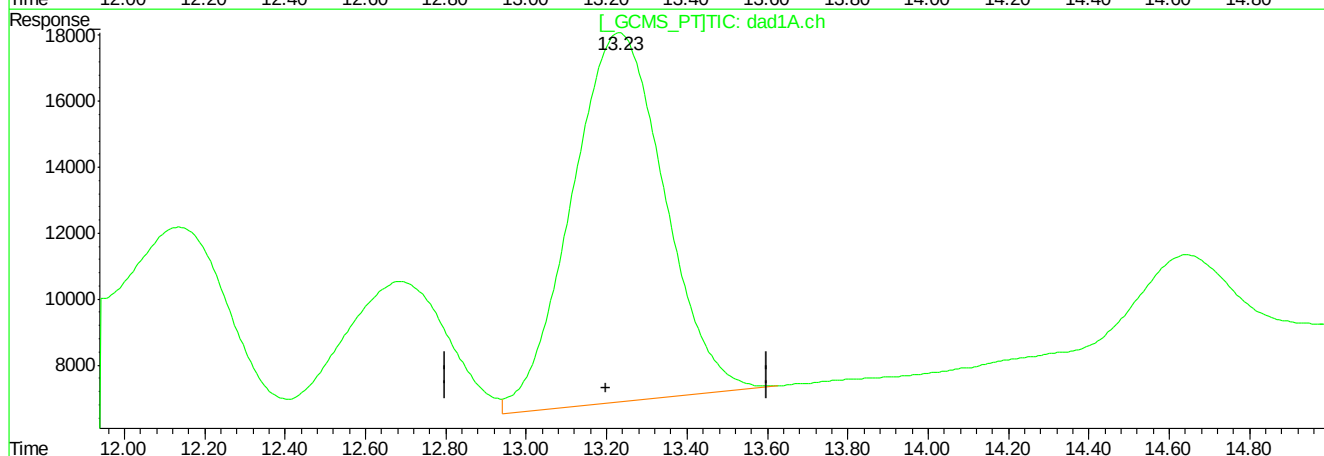
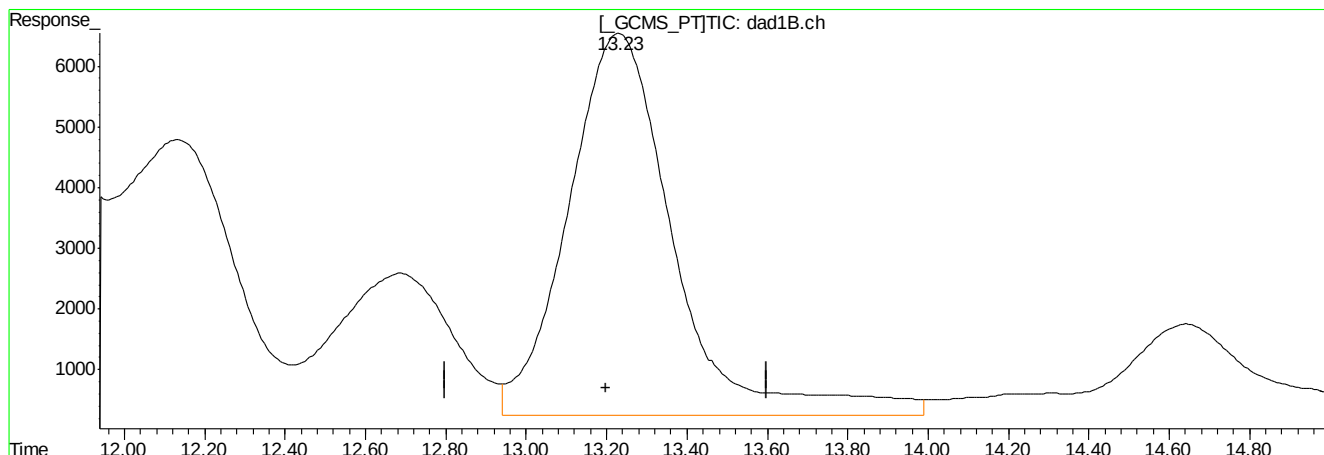
BB075443.D BBB2232_083122.M

Tue Jan 31 10:14:50 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075443.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075443.D\dad1A.ch
Acq On : 30-Jan-2023, 14:05:11 Operator: fouads
Sample : fc2200-1 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 14:29 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(15) 3,4-Dinitrotoluene (S)

13.23min 538.802ppb

response 1154343

(15) 3,4-Dinitrotoluene #2 (S)

13.23min 422.287ppb

response 1794158

QEdit

(+) = Expected Retention Time

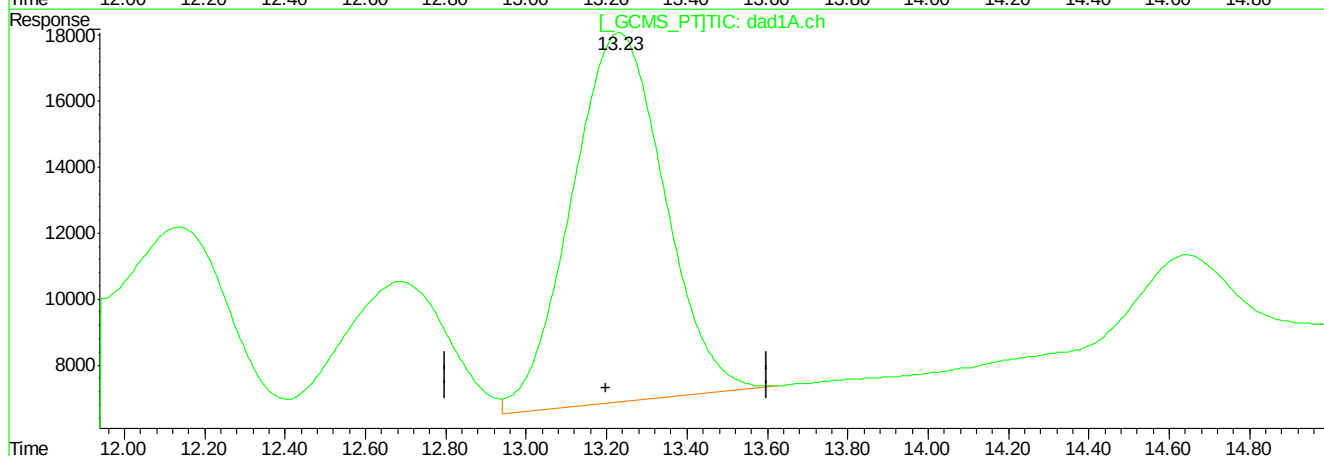
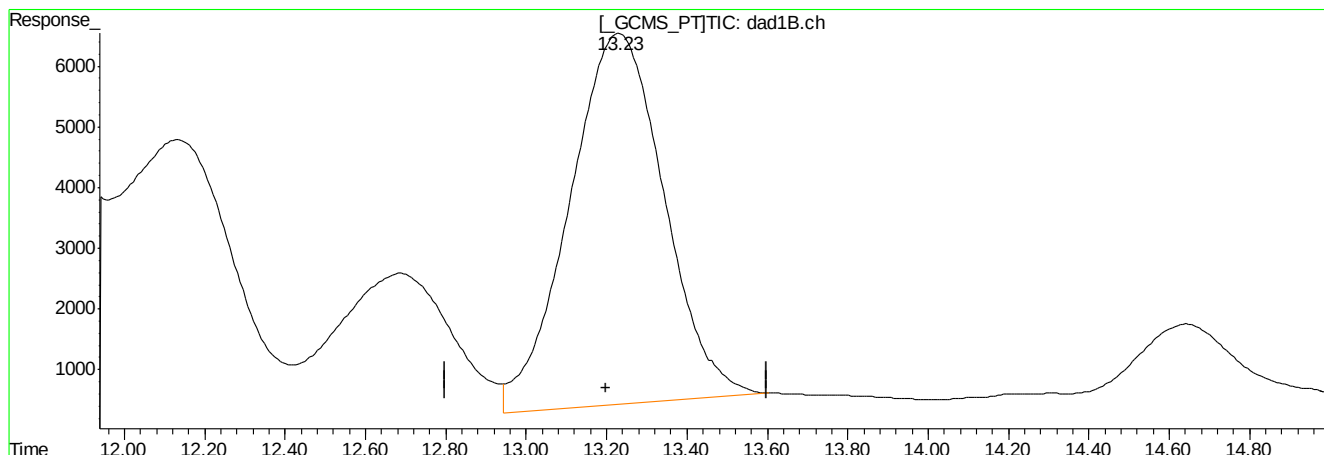
BB075443.D BBB2232_083122.M

Tue Jan 31 10:15:00 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075443.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075443.D\dad1A.ch
Acq On : 30-Jan-2023, 14:05:11 Operator: fouads
Sample : fc2200-1 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 14:29 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(15) 3,4-Dinitrotoluene (S)

13.23min 467.682ppb m

response 1001974

(15) 3,4-Dinitrotoluene #2 (S)

13.23min 422.287ppb

response 1794158

QEdit

(+) = Expected Retention Time

BB075443.D BBB2232_083122.M

Tue Jan 31 10:15:08 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625720.D\dad1B.ch Vial: 23
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625720.D\dad1A.ch
 Acq On : 31-Jan-2023, 00:11:47 Operator: fouads
 Sample : fc2200-1cf Inst : G1315B
 Misc : op95195,GGG3229,1030,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 08:38:44 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.29	14.29	2430333	4889649	452.466	487.161
Spiked Amount	500.000	Range	70 - 136	Recovery	=	90.49% 97.43%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	5.01	5.01	2199429	2110603	757.972m	711.483
3) DNX	0.00	0.00	0	0	N.D.	N.D.
4) MNX	0.00	0.00	0	0	N.D.	N.D.
5) 1,3,5-Trinitrobe	7.32	7.32	6729763	6746383	759.160m	762.325m
6) RDX	7.57	7.56	311076	359881	72.666m	84.299m
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D. d	N.D. d
8) Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
9) 2,4,6-Trinitroto	11.64	11.64	3570821	4958664	406.427	411.951
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D. d	N.D. d
13) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
14) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D. d	N.D. d
15) 3,5-Dinitroanili	16.19	16.19	825301	1536170	87.404	98.107m
16) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
17) p-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
18) 4-Amino-2,6-Dini	18.12	18.13	1010213	1898875	207.090	211.750
19) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20) 2-Amino-4,6-Dini	19.99	20.00	2161497	3021085	253.723	267.429
21) PETN	0.00	0.00	0	0	N.D. d	N.D. d

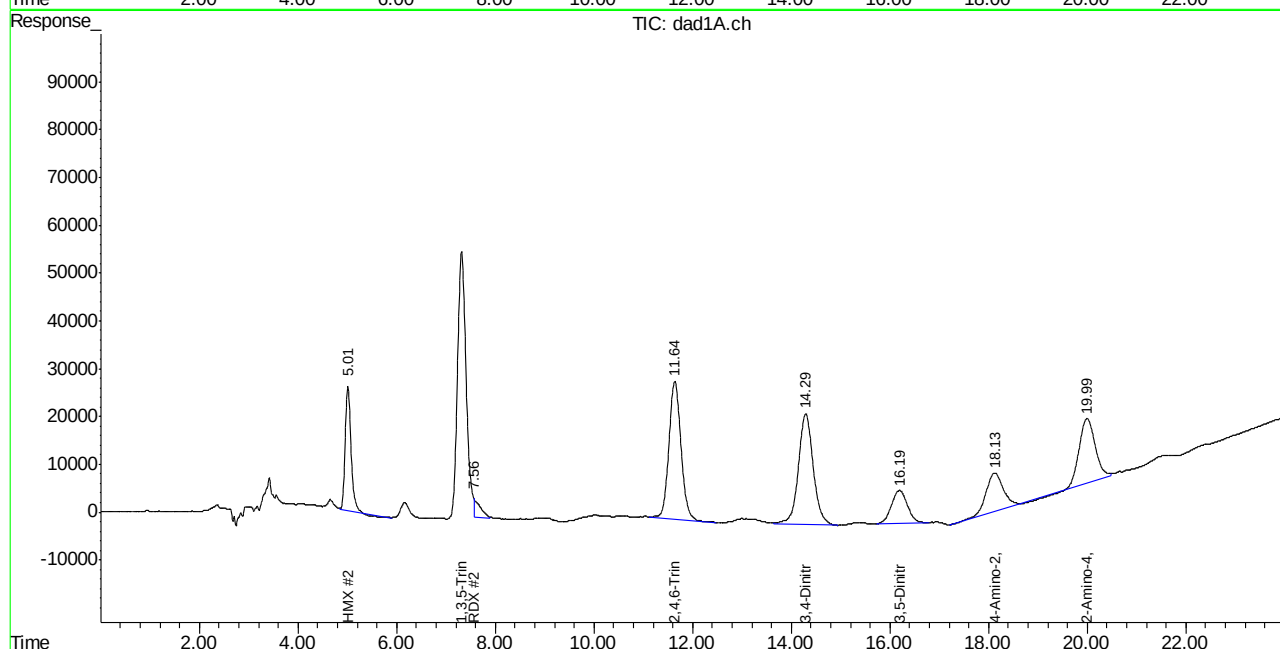
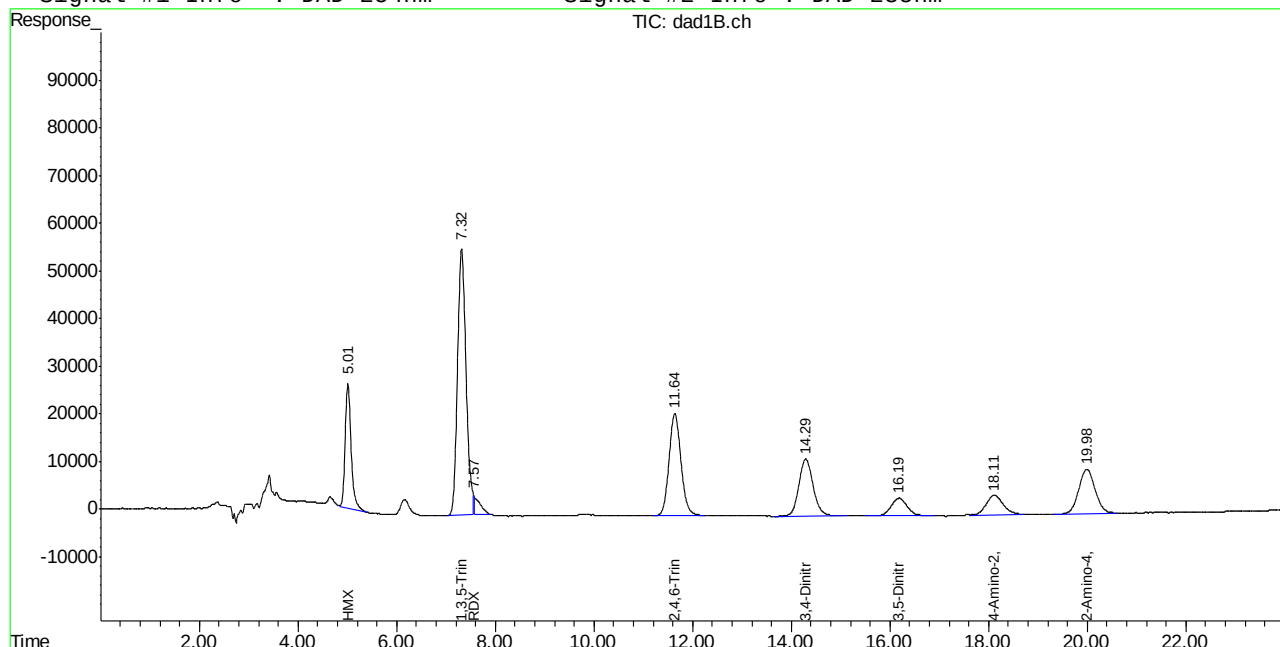
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625720.D GGG3229_013023.M Tue Jan 31 11:33:01 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625720.D\dad1B.ch Vial: 23
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625720.D\dad1A.ch
Acq On : 31-Jan-2023, 00:11:47 Operator: fouads
Sample : fc2200-1cf Inst : G1315B
Misc : op95195,GGG3229,1030,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 10:36 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number:

FC2200-1

Method:

SW846 8330B

Lab FileID:

GG625720.D

Analyst approved:

01/31/23 11:42 Fouad Sekkar

Injection Time:

01/31/23 00:11

Supervisor approved:

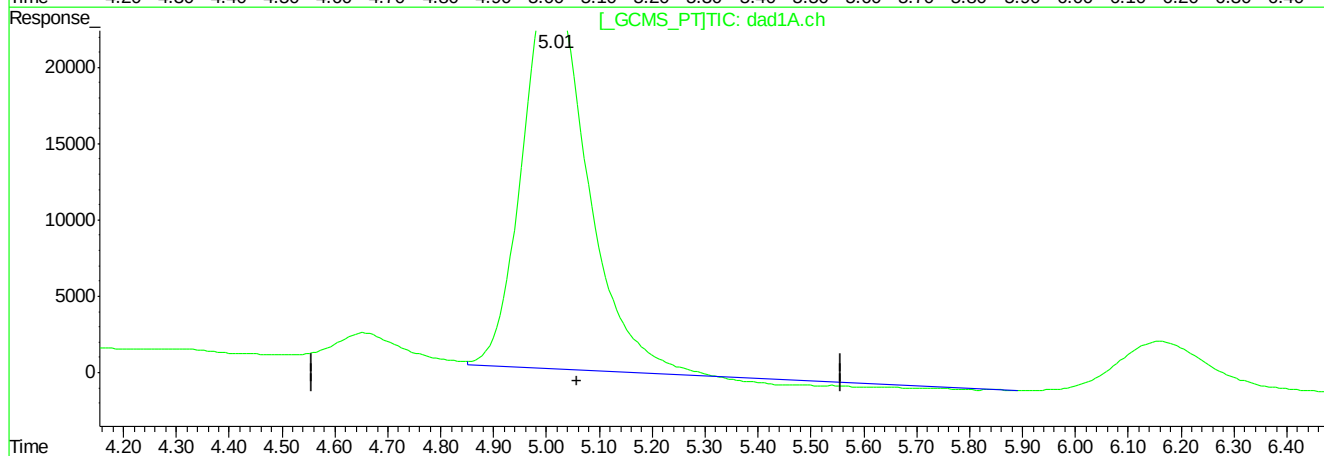
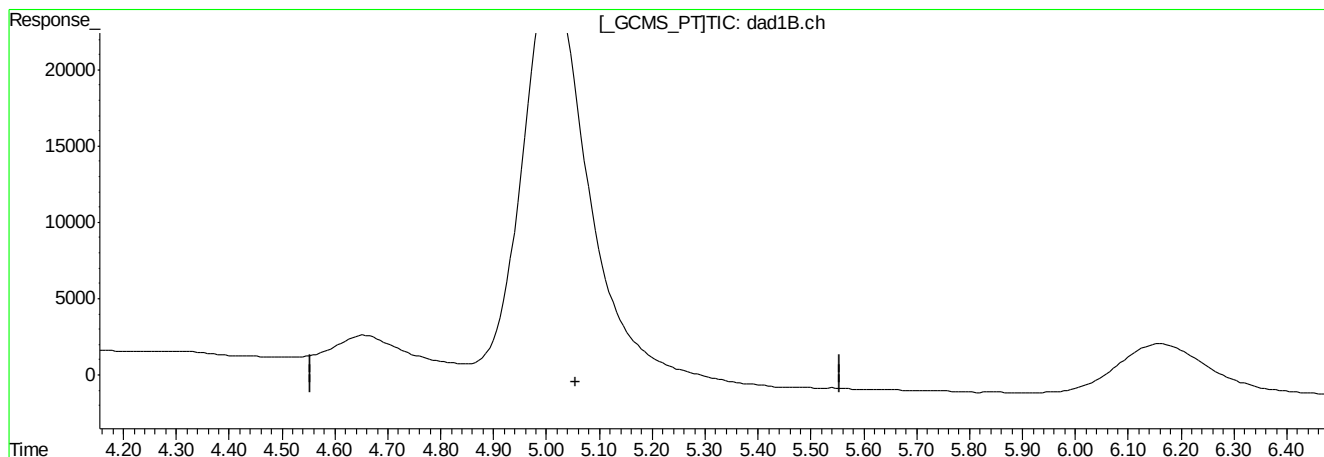
01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
HMX	2691-41-0	1	5.01	Poor instrument integration
1,3,5-Trinitrobenzene	99-35-4	1	7.32	Poor instrument integration
1,3,5-Trinitrobenzene	99-35-4	2	7.32	Poor instrument integration
RDX	121-82-4	2	7.56	Poor instrument integration
RDX	121-82-4	1	7.57	Poor instrument integration
3,5-Dinitroaniline	618-87-1	2	16.19	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625720.D\dad1B.ch Vial: 23
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625720.D\dad1A.ch
Acq On : 31-Jan-2023, 00:11:47 Operator: fouads
Sample : fc2200-1cf Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



(2) HMX

0.00min 0.000ppb

response 0

(2) HMX #2

5.01min 711.483ppb

response 2110603

QEdit

(+) = Expected Retention Time

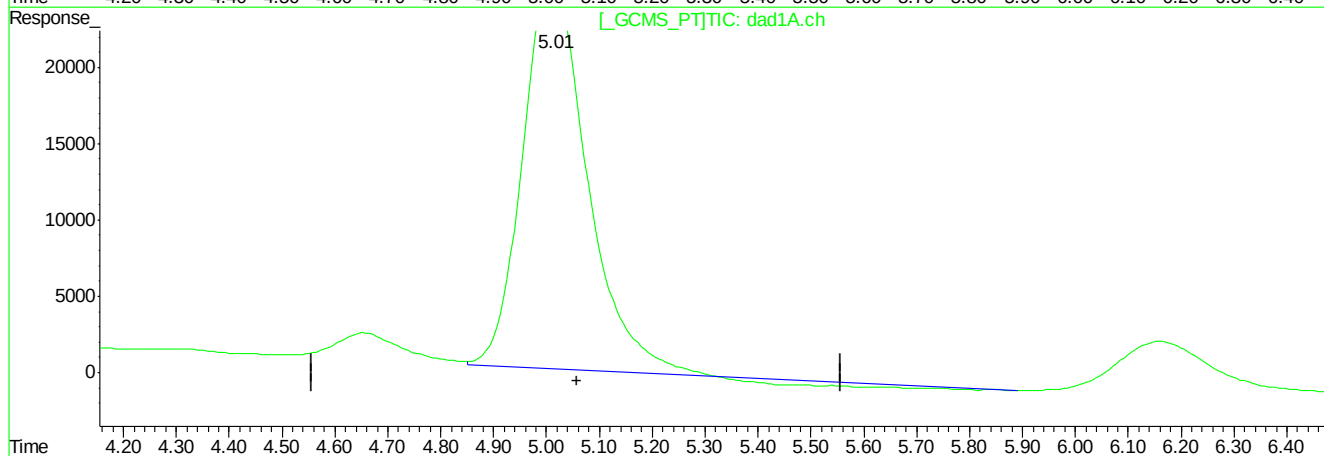
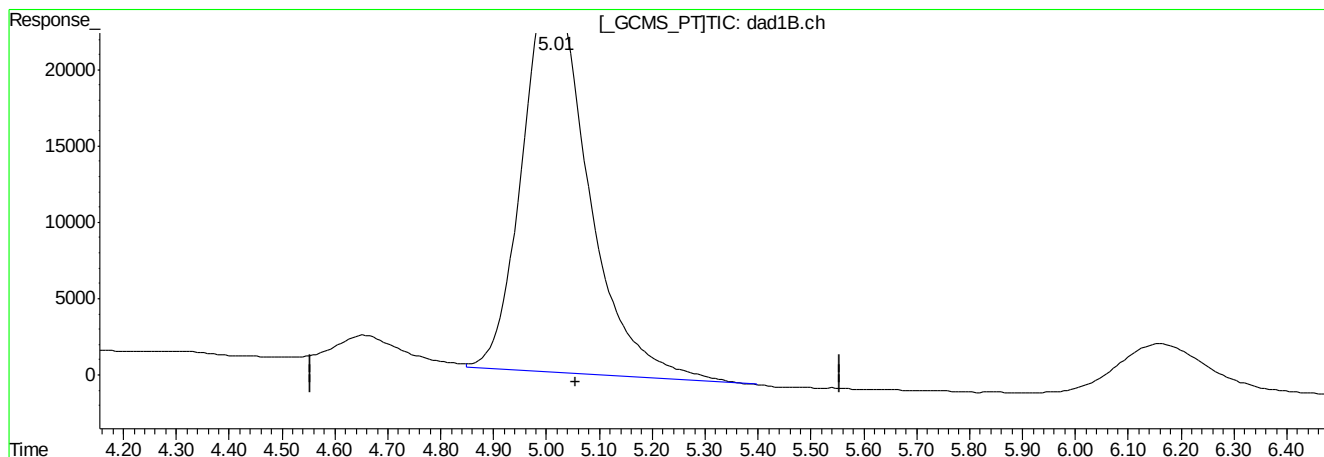
GG625720.D GGG3229_013023.M

Tue Jan 31 10:34:53 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625720.D\dad1B.ch Vial: 23
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625720.D\dad1A.ch
Acq On : 31-Jan-2023, 00:11:47 Operator: fouads
Sample : fc2200-1cf Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.01min 757.972ppb m

response 2199429

(2) HMX #2

5.01min 711.483ppb

response 2110603

(+) = Expected Retention Time

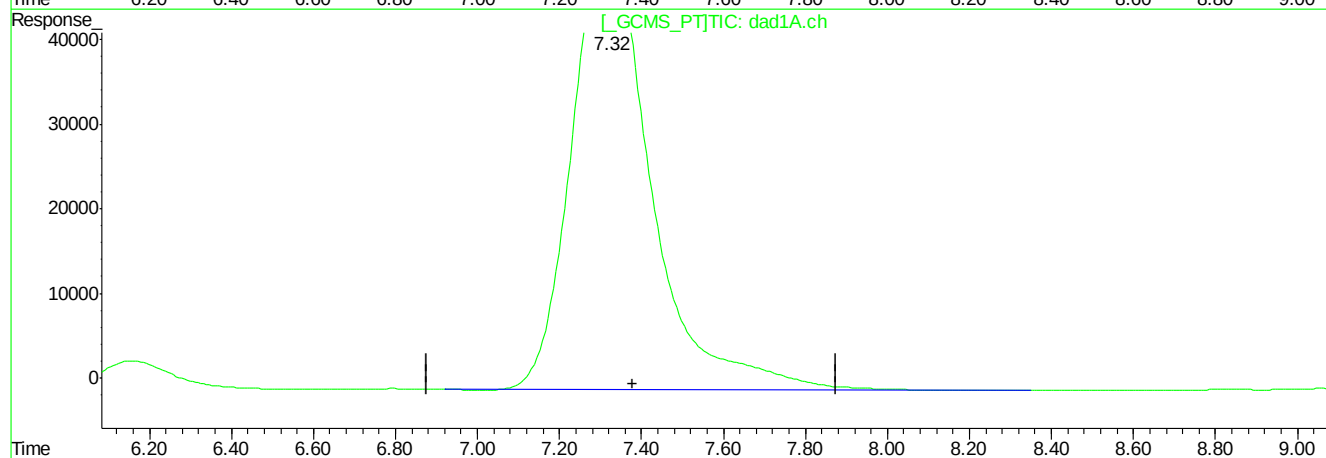
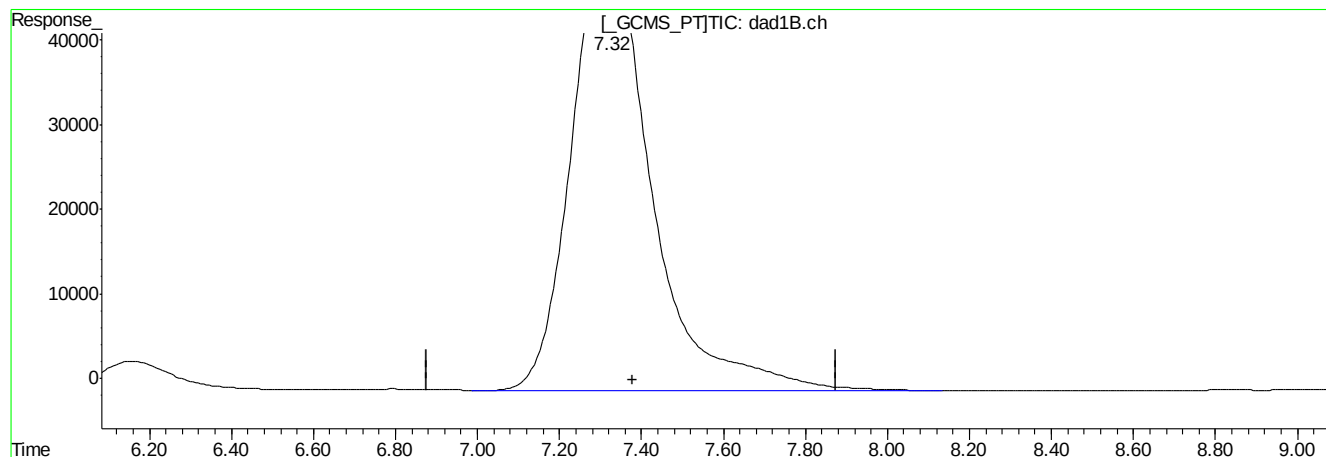
GG625720.D GGG3229_013023.M

Tue Jan 31 10:34:57 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625720.D\dad1B.ch Vial: 23
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625720.D\dad1A.ch
Acq On : 31-Jan-2023, 00:11:47 Operator: fouads
Sample : fc2200-1cf Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(5) 1,3,5-Trinitrobenzene

7.32min 812.491ppb

response 7202526

(5) 1,3,5-Trinitrobenzene #2

7.32min 813.332ppb

response 7197786

(+) = Expected Retention Time

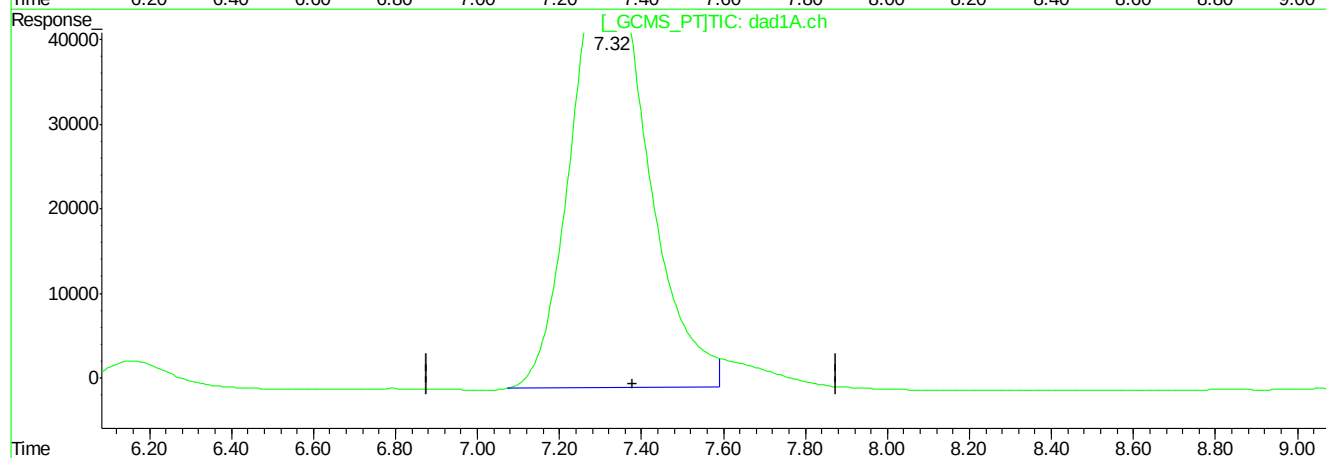
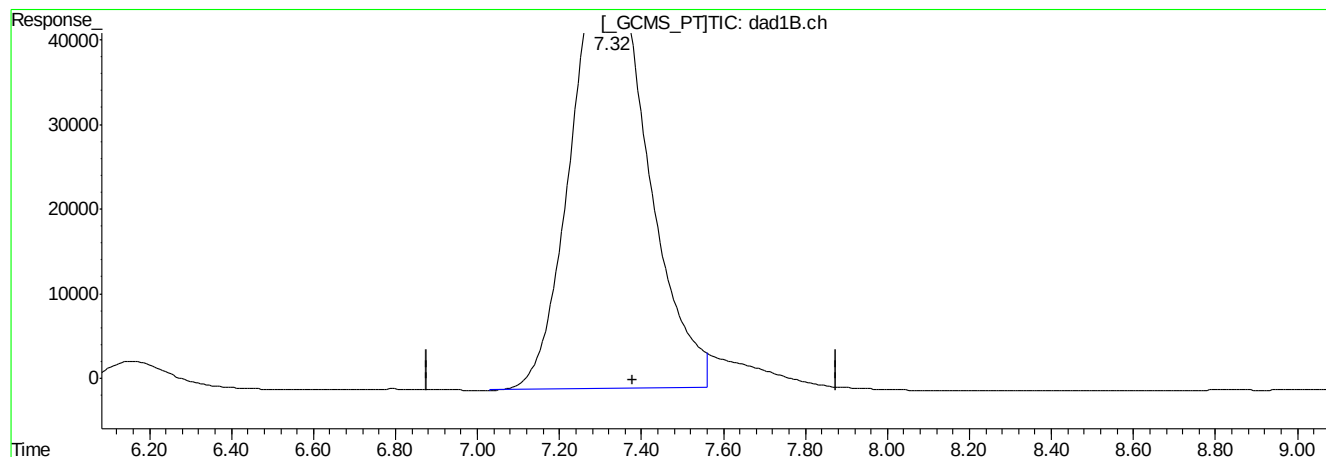
GG625720.D GGG3229_013023.M

Tue Jan 31 10:35:13 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625720.D\dad1B.ch Vial: 23
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625720.D\dad1A.ch
Acq On : 31-Jan-2023, 00:11:47 Operator: fouads
Sample : fc2200-1cf Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(5) 1,3,5-Trinitrobenzene

7.32min 759.160ppb m

response 6729763

(5) 1,3,5-Trinitrobenzene #2

7.32min 762.325ppb m

response 6746383

(+) = Expected Retention Time

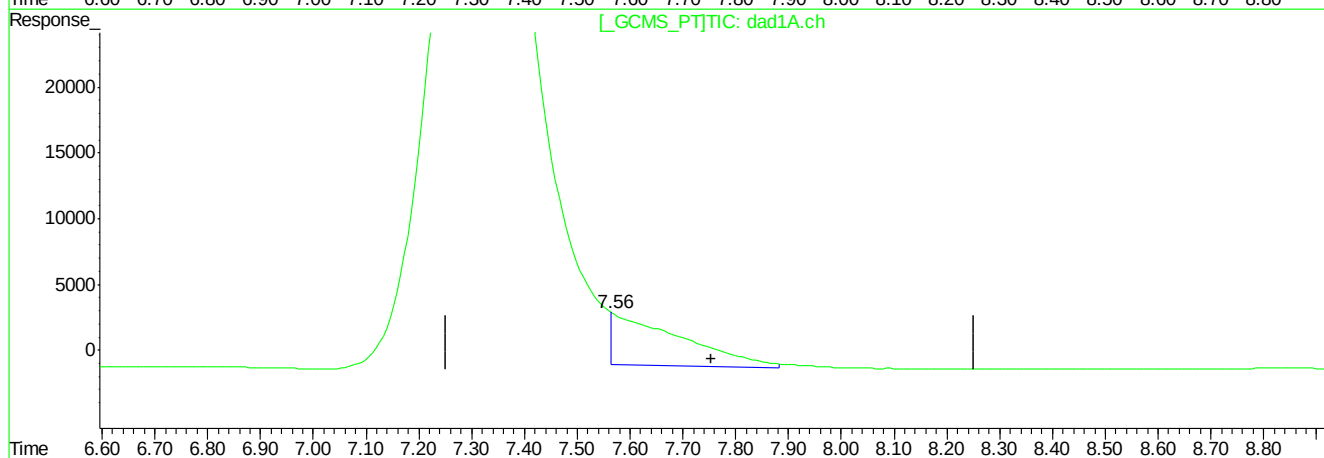
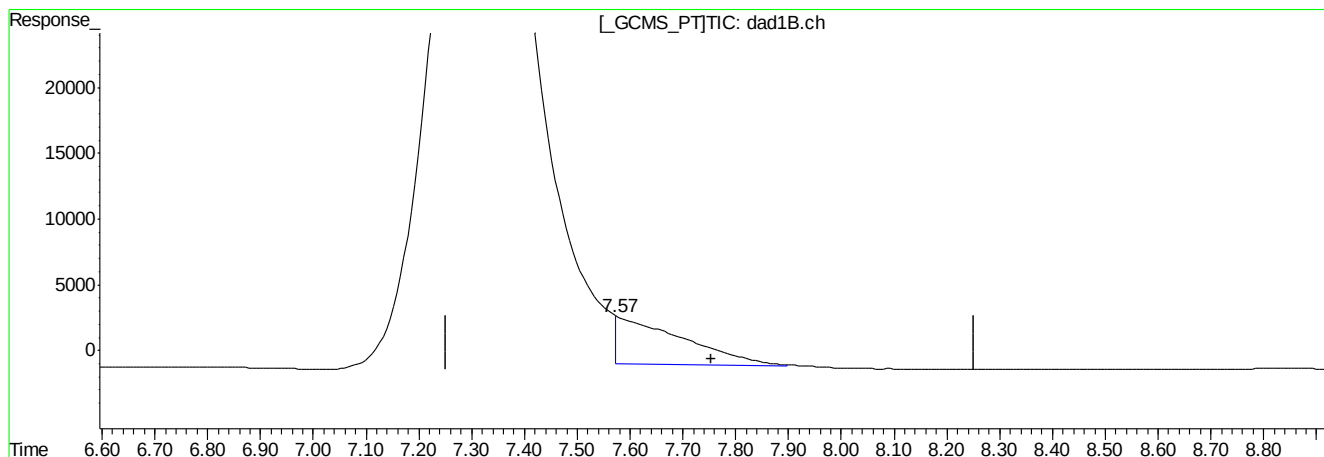
GG625720.D GGG3229_013023.M

Tue Jan 31 10:35:22 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625720.D\dad1B.ch Vial: 23
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625720.D\dad1A.ch
 Acq On : 31-Jan-2023, 00:11:47 Operator: fouads
 Sample : fc2200-1cf Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration



QEdit

(6) RDX

7.57min 72.666ppb m

response 311076

(6) RDX #2

7.56min 84.299ppb m

response 359881

(+) = Expected Retention Time

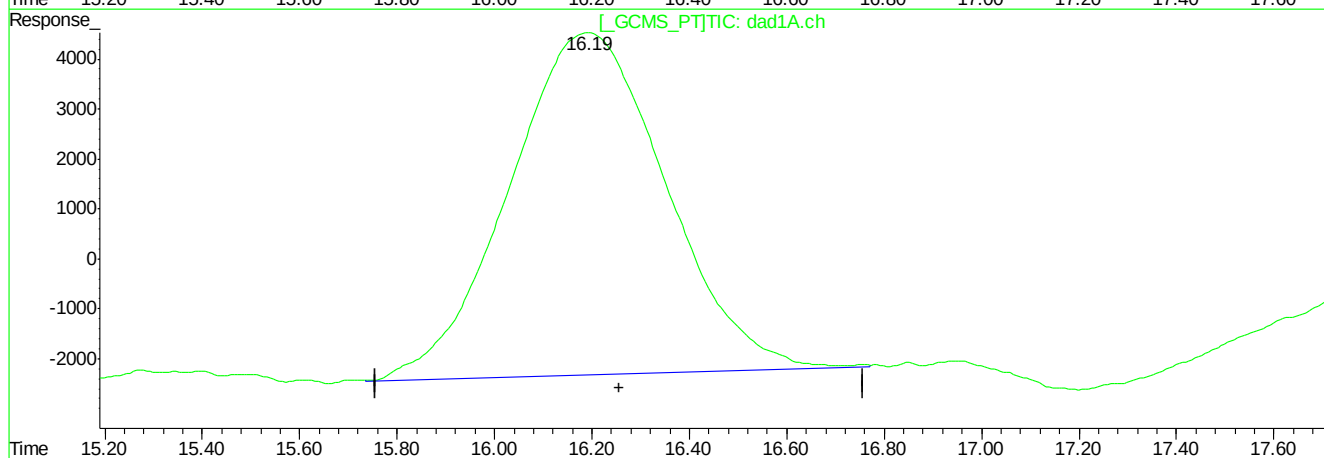
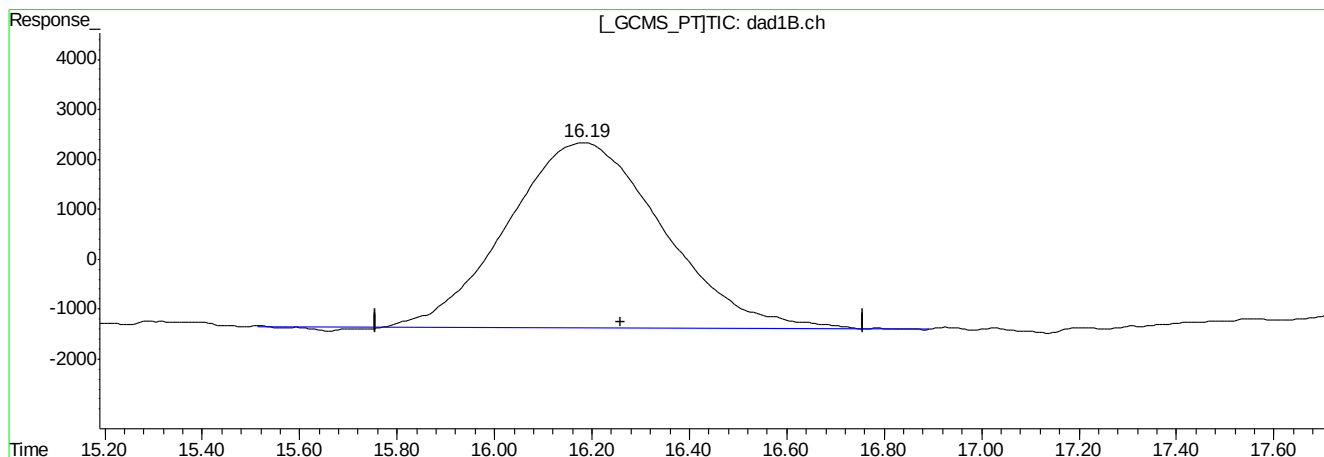
GG625720.D GGG3229_013023.M

Tue Jan 31 10:35:33 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625720.D\dad1B.ch Vial: 23
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625720.D\dad1A.ch
 Acq On : 31-Jan-2023, 00:11:47 Operator: fouads
 Sample : fc2200-1cf Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 8:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Multiple Level Calibration



QEdit

(15) 3,5-Dinitroaniline

16.19min 87.404ppb

response 825301

(15) 3,5-Dinitroaniline #2

16.19min 98.107ppb m

response 1536170

(+) = Expected Retention Time

GG625720.D GGG3229_013023.M

Tue Jan 31 10:35:54 2023

Naresh Jiawan
02/08/23 09:42

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075447.D\dad1B.ch Vial: 11
 Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075447.D\dad1A.ch
 Acq On : 30-Jan-2023, 16:46:15 Operator: fouads
 Sample : fc2200-2 Inst : G1315B
 Misc : op95195,GBB2301,1030,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 31 10:20:19 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.25	13.24	984708	1817522	459.623	427.786m
Spiked Amount	500.000	Range	70 - 136	Recovery	=	91.92% 85.56%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	0.00	0.00	0	0	N.D. d	N.D. d
3) DNX	0.00	0.00	0	0	N.D.	N.D.
4) MNX	0.00	0.00	0	0	N.D.	N.D.
5) RDX	0.00	0.00	0	0	N.D.	N.D.
6) 1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
8) 3,5-Dinitroanili	0.00	0.00	0	0	N.D.	N.D.
9) Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
10) Nitroglycerin	0.00	0.00	0	0	N.D. d	N.D. d
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
12) 2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
13) 2-Amino-4,6-Dini	0.00	0.00	0	0	N.D.	N.D.
14) 4-Amino-2,6-Dini	0.00	0.00	0	0	N.D.	N.D.
16) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
17) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
18) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
19) p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
21) PETN	0.00	0.00	0	0	N.D. d	N.D. d

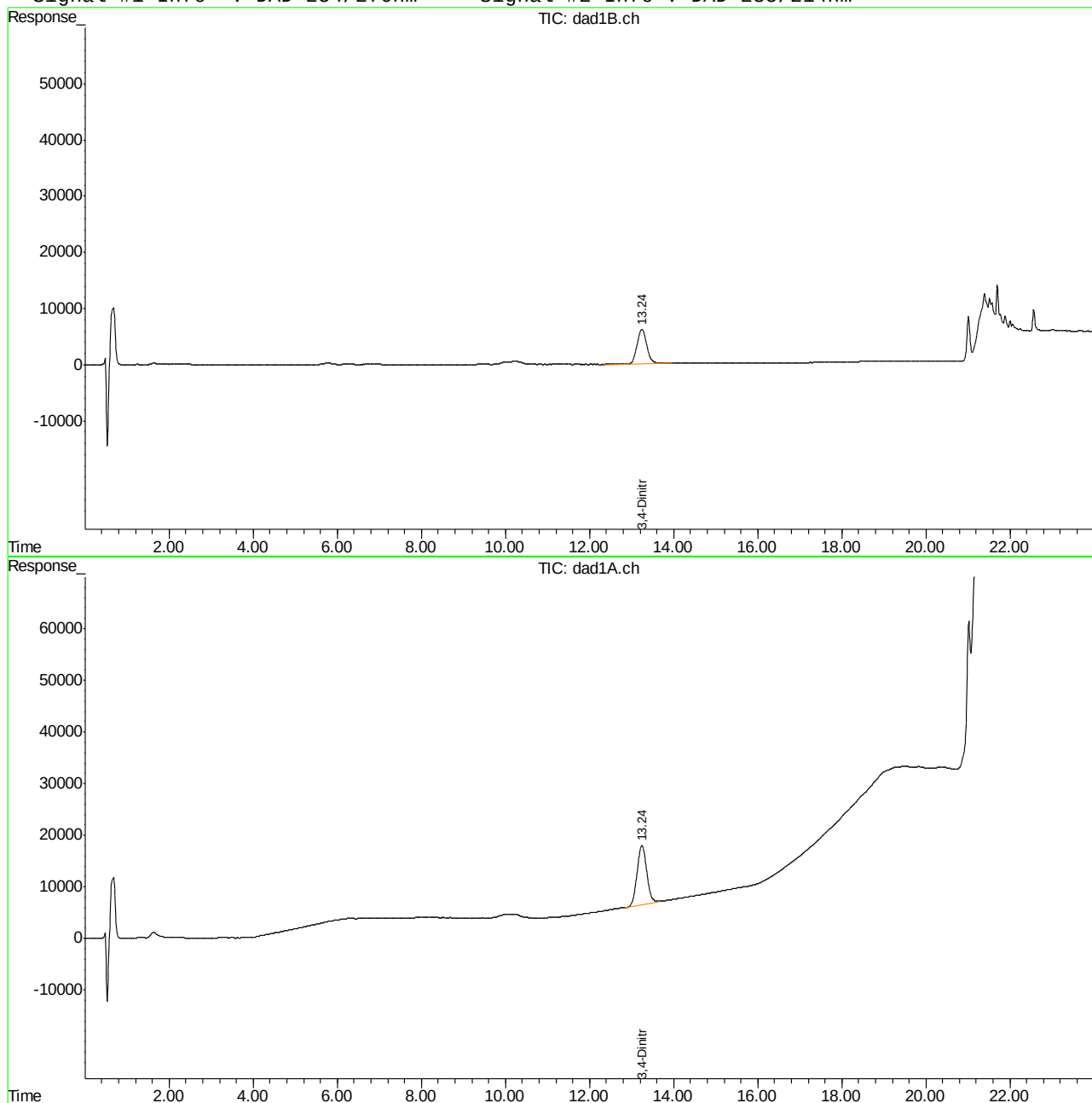
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075447.D BBB2232_083122.M Wed Feb 01 08:44:01 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075447.D\dad1B.ch Vial: 11
 Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075447.D\dad1A.ch
 Acq On : 30-Jan-2023, 16:46:15 Operator: fouads
 Sample : fc2200-2 Inst : G1315B
 Misc : op95195,GBB2301,1030,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 31 10:35 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Multiple Level Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

FC2200-2

Method:

SW846 8330B

Lab FileID:

BB075447.D

Analyst approved:

02/01/23 09:33 Fouad Sekkar

Injection Time:

01/30/23 16:46

Supervisor approved:

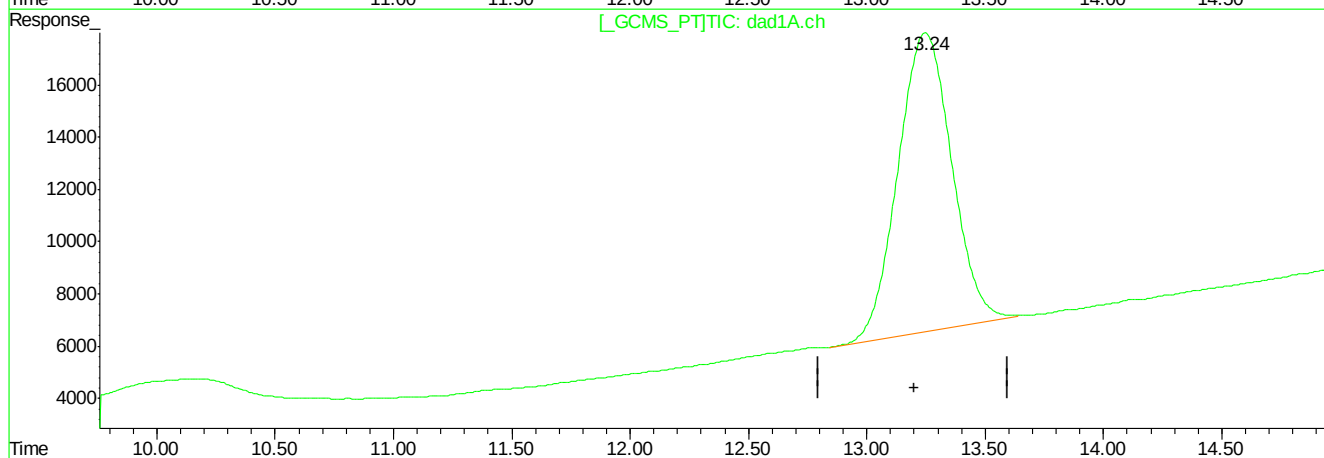
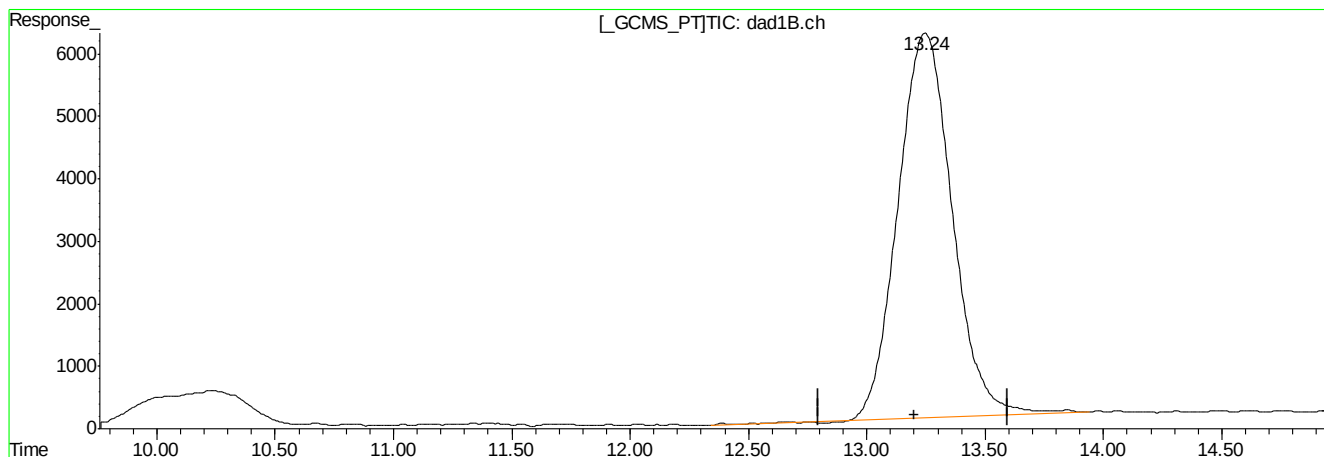
02/08/23 09:42 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,4-Dinitrotoluene	610-39-9	2	13.24	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075447.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075447.D\dad1A.ch
Acq On : 30-Jan-2023, 16:46:15 Operator: fouads
Sample : fc2200-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:20 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(15) 3,4-Dinitrotoluene (S)

13.25min 459.623ppb

response 984708

(15) 3,4-Dinitrotoluene #2 (S)

13.24min 427.786ppb m

response 1817522

(+) = Expected Retention Time

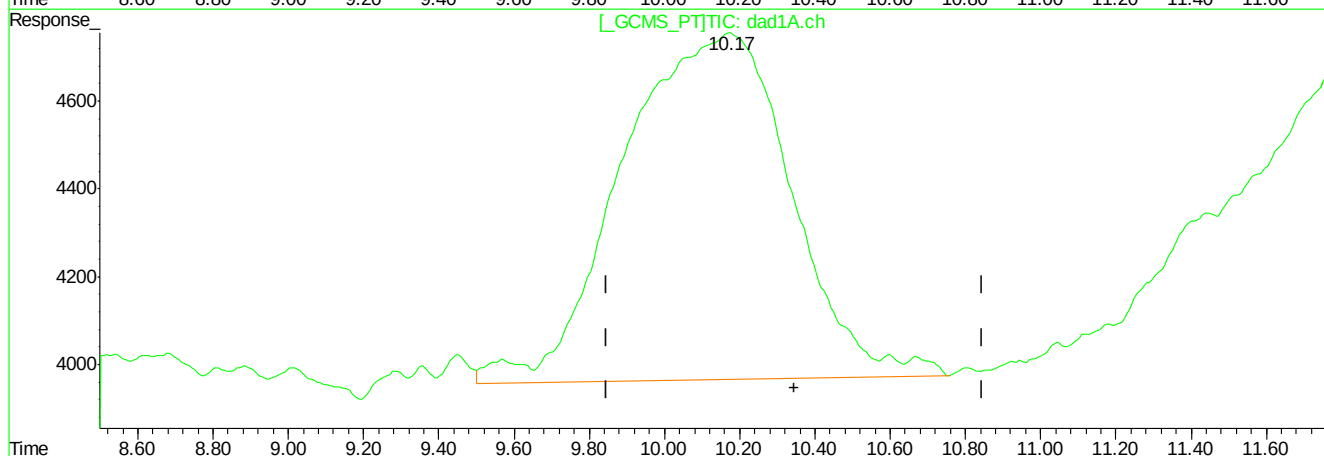
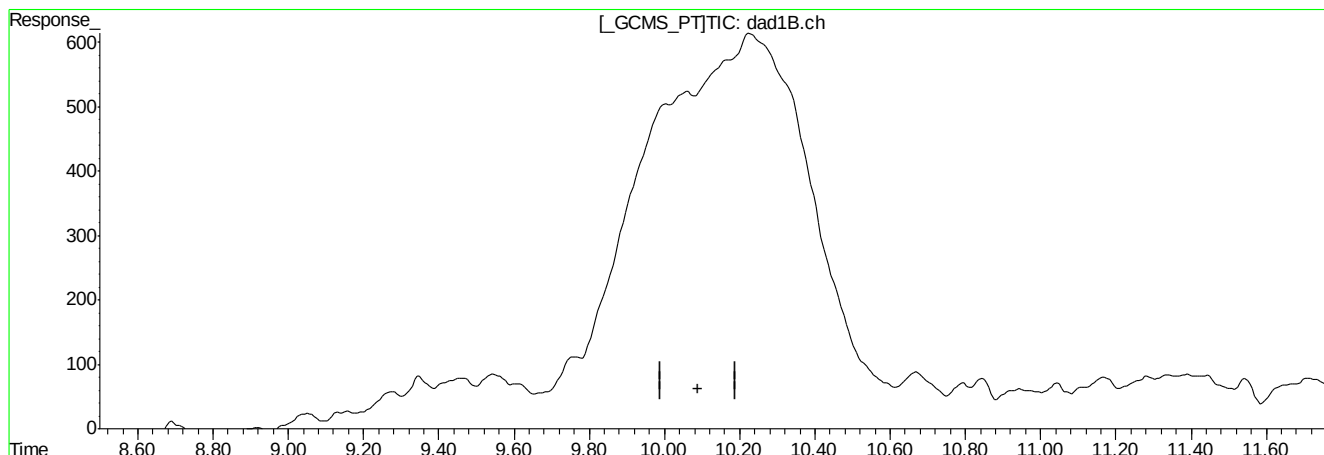
BB075447.D BBB2232_083122.M

Tue Jan 31 10:21:03 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075447.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075447.D\dad1A.ch
Acq On : 30-Jan-2023, 16:46:15 Operator: fouads
Sample : fc2200-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:20 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(10) Nitroglycerin

0.00min 0.000ppb

response 0

(10) Nitroglycerin #2

10.18min 194.119ppb

response 246578

(+) = Expected Retention Time

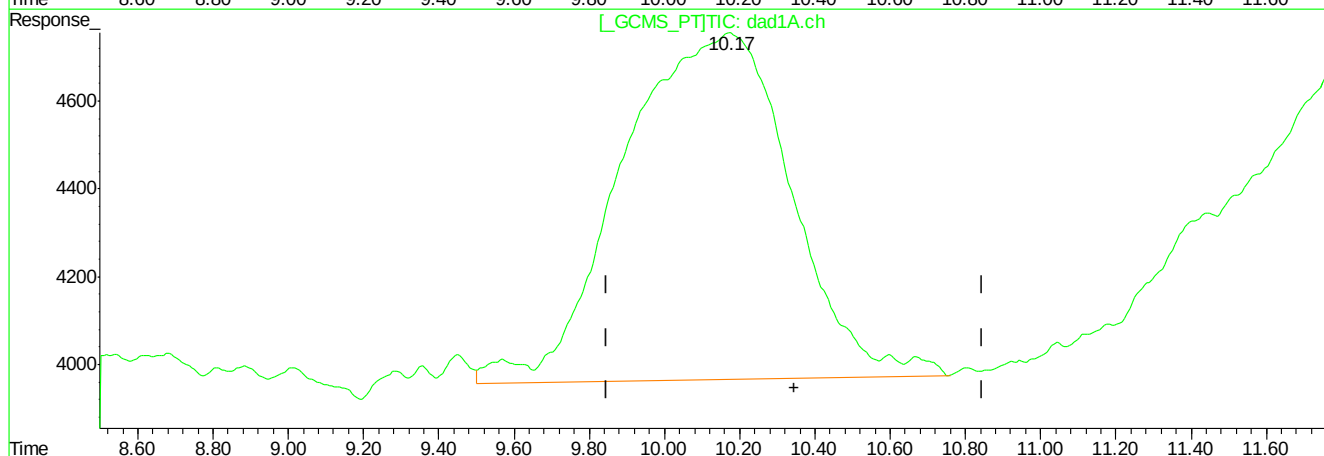
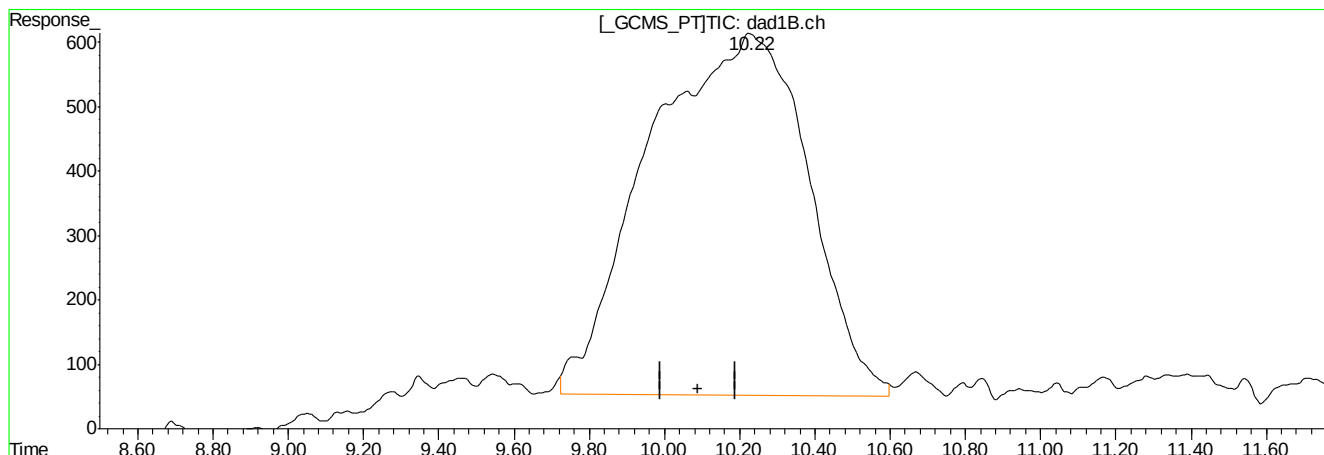
BB075447.D BBB2232_083122.M

Tue Jan 31 10:21:14 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075447.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075447.D\dad1A.ch
Acq On : 30-Jan-2023, 16:46:15 Operator: fouads
Sample : fc2200-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:20 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(10) Nitroglycerin
10.22min 7704.647ppb m
response 165500

(10) Nitroglycerin #2
10.18min 194.119ppb
response 246578

(+) = Expected Retention Time

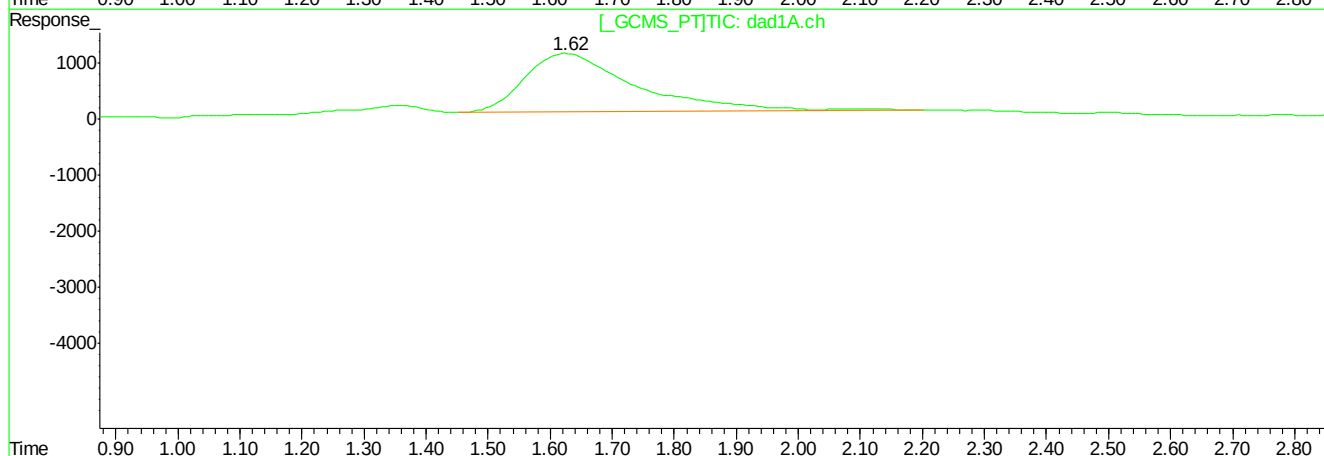
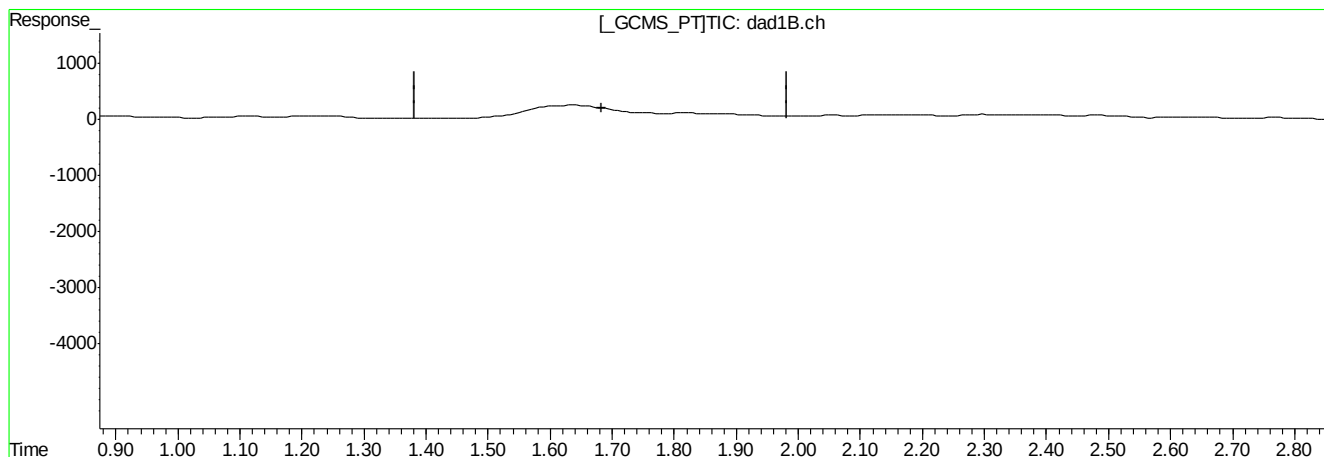
BB075447.D BBB2232_083122.M

Tue Jan 31 10:21:24 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075447.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075447.D\dad1A.ch
Acq On : 30-Jan-2023, 16:46:15 Operator: fouads
Sample : fc2200-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:20 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

0.00min 0.000ppb

response 0

(2) HMX #2

1.63min 31.967ppb

response 130752

(+) = Expected Retention Time

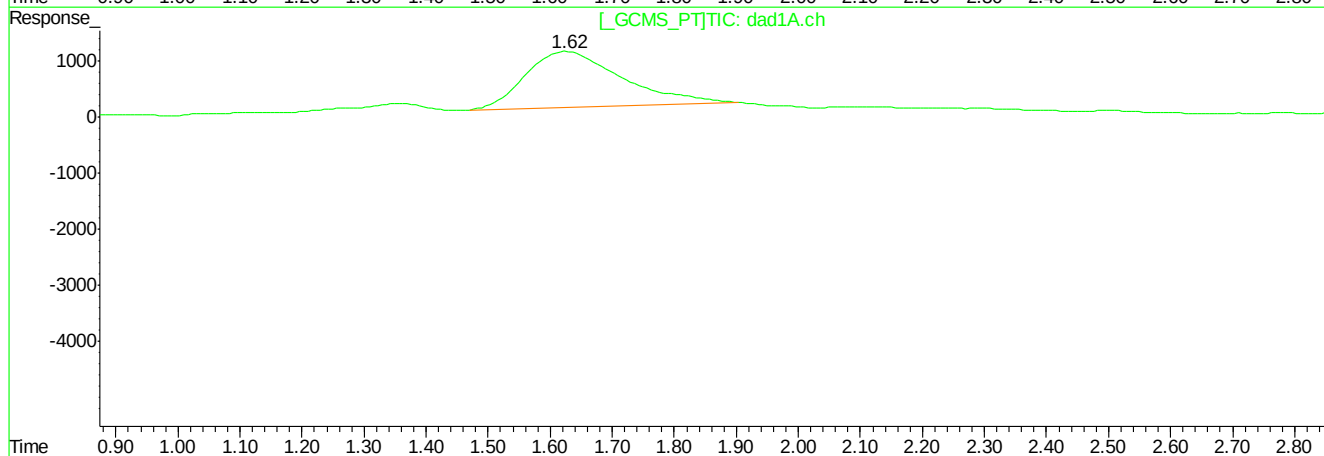
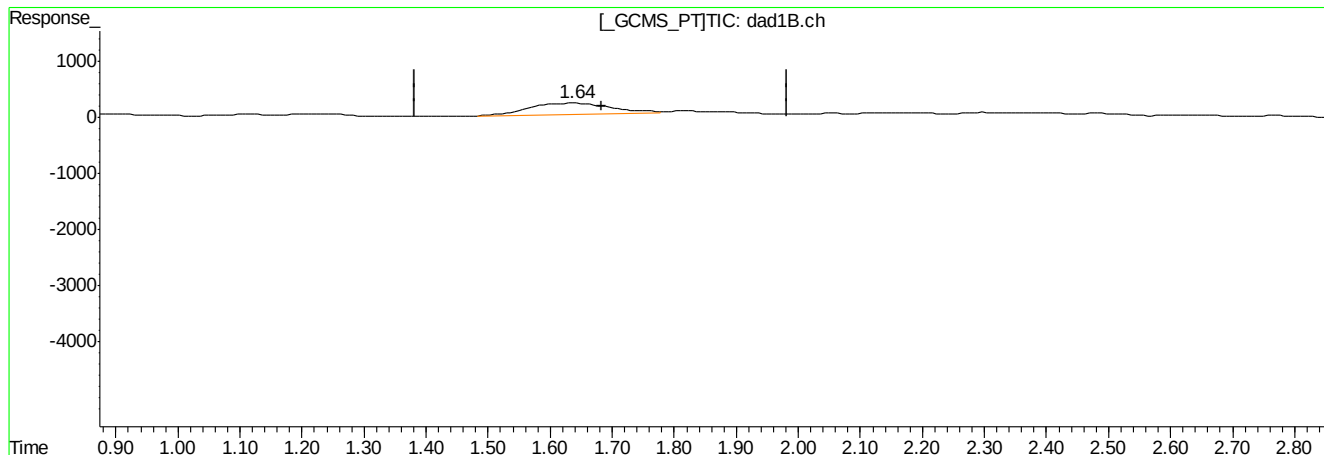
BB075447.D BBB2232_083122.M

Tue Jan 31 10:22:04 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075447.D\dad1B.ch Vial: 11
 Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075447.D\dad1A.ch
 Acq On : 30-Jan-2023, 16:46:15 Operator: fouads
 Sample : fc2200-2 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 31 10:20 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Multiple Level Calibration



QEdit		
(2) HMX		
1.64min	13.294ppb m	
response	19683	
(2) HMX #2		
1.62min	26.751ppb m	
response	109420	

(+) = Expected Retention Time

BB075447.D BBB2232_083122.M

Tue Jan 31 10:22:16 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625721.D\dad1B.ch Vial: 24
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625721.D\dad1A.ch
 Acq On : 31-Jan-2023, 00:43:11 Operator: fouads
 Sample : fc2200-2cf Inst : G1315B
 Misc : op95195,GGG3229,1030,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 08:38:45 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.30	14.30	2324560	4478206	432.774	446.168
Spiked Amount	500.000	Range	70 - 136	Recovery	=	86.55% 89.23%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D.	N.D.
2) HMX	0.00	0.00	0	0	N.D.	N.D.
3) DNX	0.00	0.00	0	0	N.D.	N.D.
4) MNX	0.00	0.00	0	0	N.D.	N.D.
5) 1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
6) RDX	0.00	0.00	0	0	N.D.	N.D.
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
8) Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
9) 2,4,6-Trinitroto	0.00	0.00	0	0	N.D. d	N.D. d
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
13) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
14) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
15) 3,5-Dinitroanili	0.00	0.00	0	0	N.D.	N.D.
16) o-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
17) p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
18) 4-Amino-2,6-Dini	0.00	0.00	0	0	N.D.	N.D.
19) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20) 2-Amino-4,6-Dini	0.00	0.00	0	0	N.D. d	N.D. d
21) PETN	0.00	0.00	0	0	N.D.	N.D.

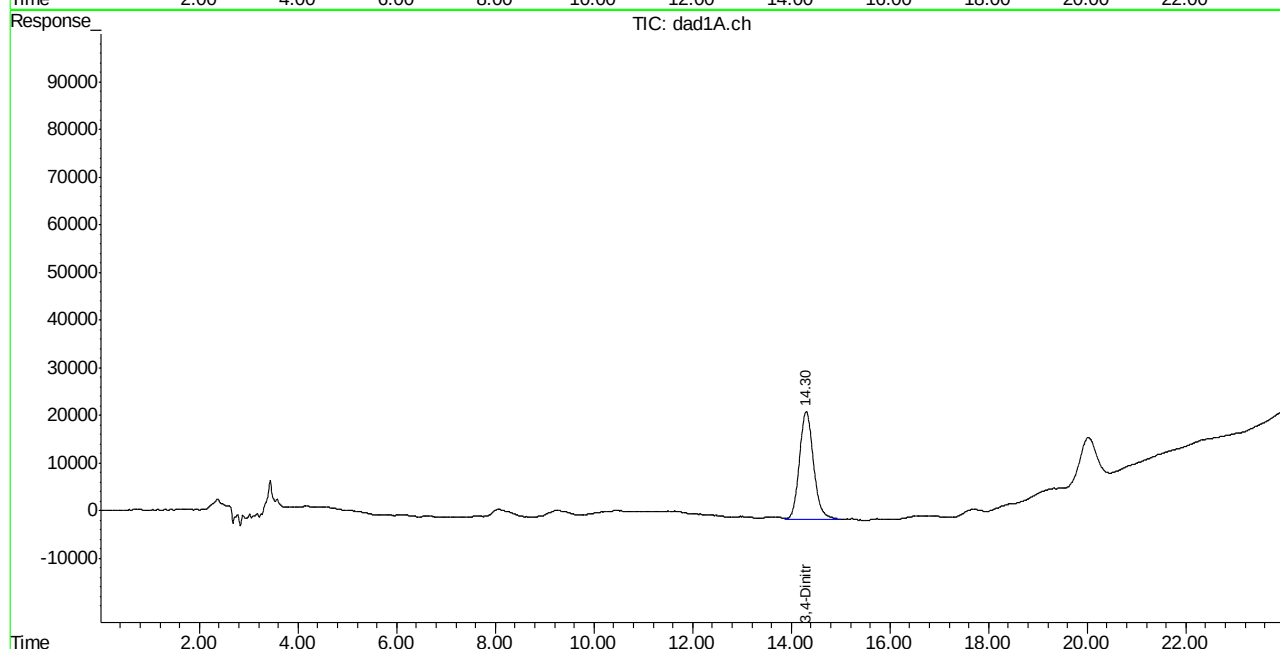
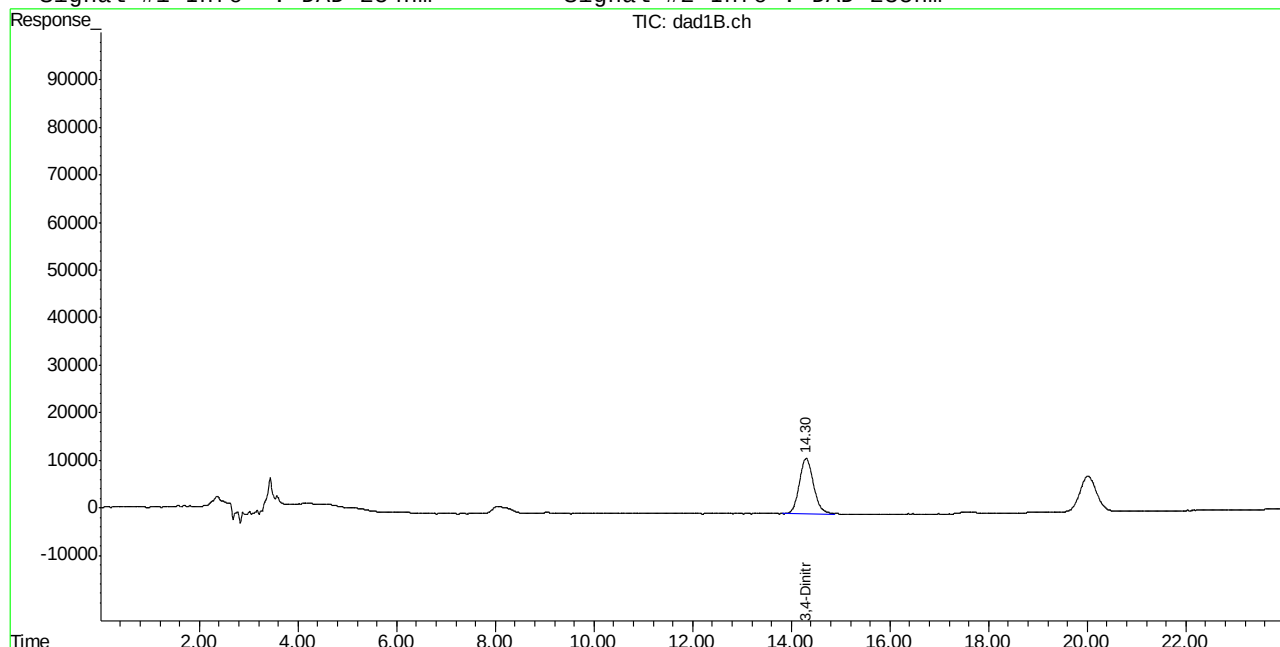
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625721.D GGG3229_013023.M Tue Jan 31 11:33:02 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625721.D\dad1B.ch Vial: 24
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625721.D\dad1A.ch
Acq On : 31-Jan-2023, 00:43:11 Operator: fouads
Sample : fc2200-2cf Inst : G1315B
Misc : op95195,GGG3229,1030,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 10:38 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm



Naresh Jiawan
02/08/23 09:42

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075438.D\dad1B.ch Vial: 3
 Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075438.D\dad1A.ch
 Acq On : 30-Jan-2023, 11:30:24 Operator: fouads
 Sample : op95195-mb Inst : G1315B
 Misc : op95195,GBB2301,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 30 11:55:09 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.25	13.25	1004888	1894246	469.043	445.844m
Spiked Amount	500.000	Range	70 - 136	Recovery	=	93.81% 89.17%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	0.00	0.00	0	0	N.D. d	N.D. d
3) DNX	0.00	0.00	0	0	N.D. d	N.D. d
4) MNX	0.00	0.00	0	0	N.D. d	N.D. d
5) RDX	0.00	0.00	0	0	N.D. d	N.D. d
6) 1,3,5-Trinitrobe	0.00	0.00	0	0	N.D. d	N.D. d
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D. d	N.D. d
8) 3,5-Dinitroanili	0.00	0.00	0	0	N.D. d	N.D. d
9) Nitrobenzene	0.00	0.00	0	0	N.D. d	N.D. d
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
12) 2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
13) 2-Amino-4,6-Dini	0.00	0.00	0	0	N.D.	N.D.
14) 4-Amino-2,6-Dini	0.00	0.00	0	0	N.D.	N.D.
16) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
17) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
18) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
19) p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
21) PETN	0.00	0.00	0	0	N.D. d	N.D. d

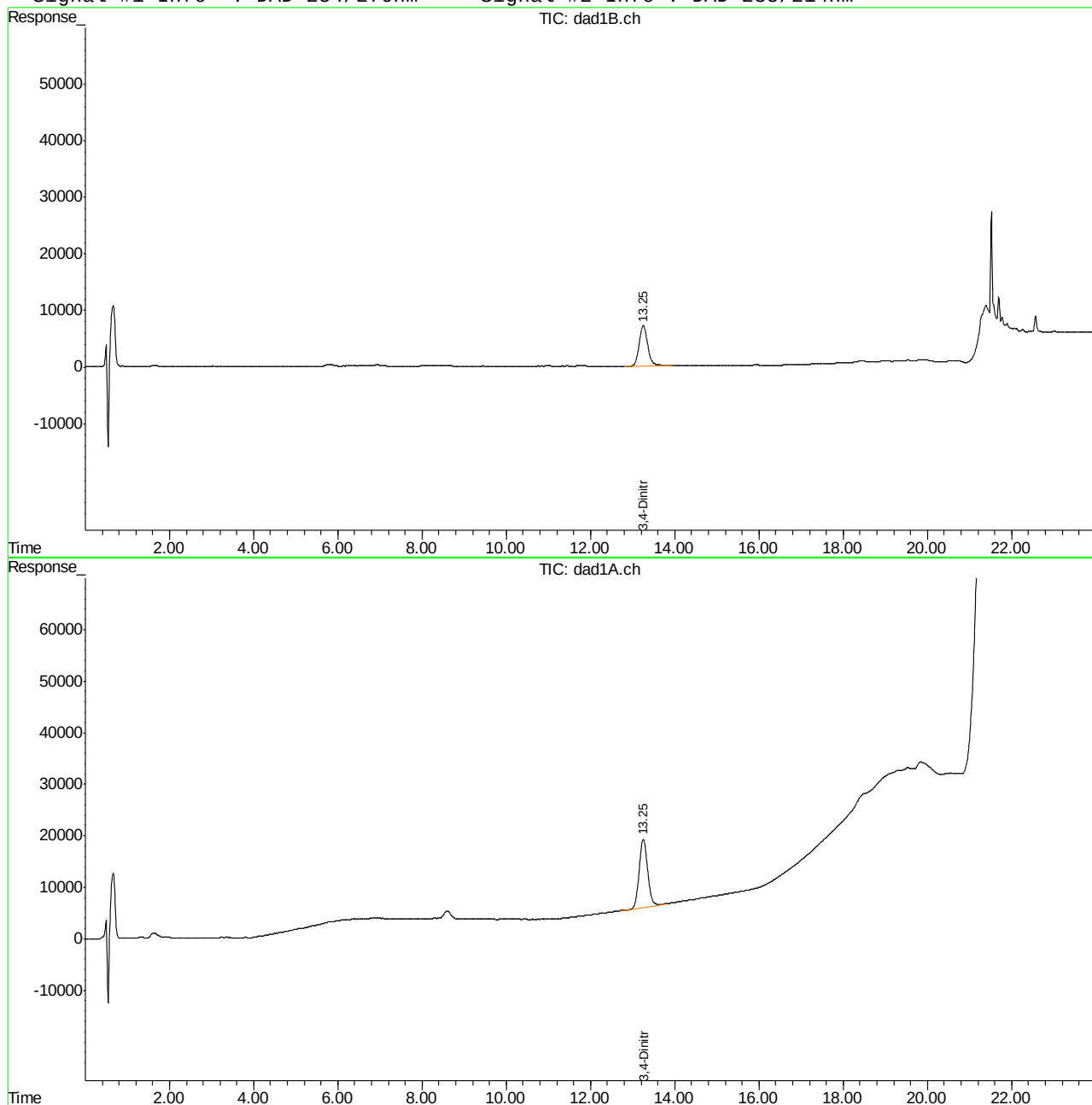
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075438.D BBB2232_083122.M Wed Feb 01 08:43:55 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075438.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075438.D\dad1A.ch
Acq On : 30-Jan-2023, 11:30:24 Operator: fouads
Sample : op95195-mb Inst : G1315B
Misc : op95195,GBB2301,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:07 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: OP95195-MB

Method: SW846 8330B

Lab FileID: BB075438.D

Analyst approved: 02/01/23 09:33 Fouad Sekkar

Injection Time: 01/30/23 11:30

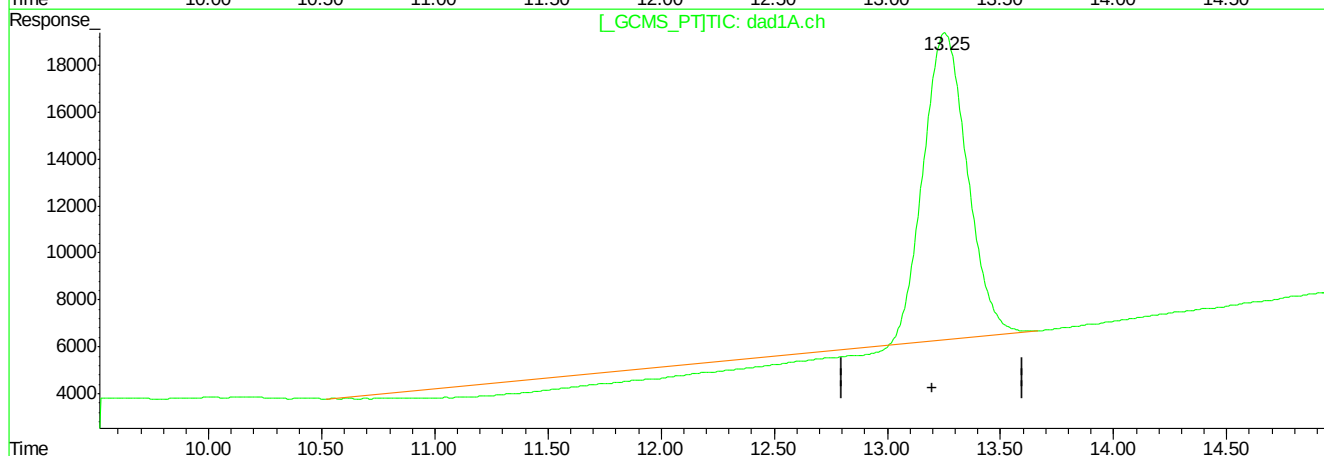
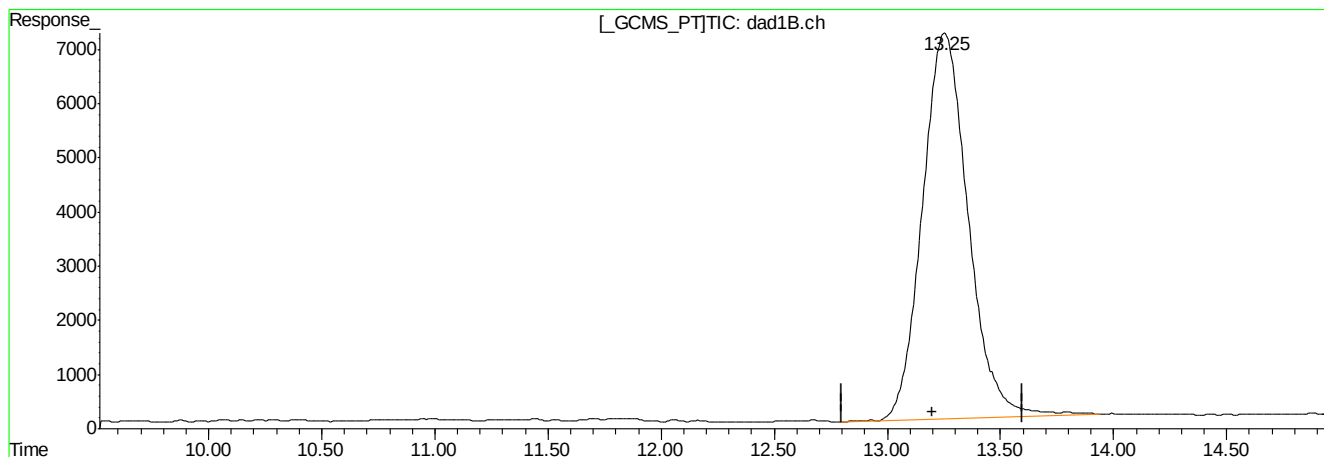
Supervisor approved: 02/08/23 09:42 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,4-Dinitrotoluene	610-39-9	2	13.25	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075438.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075438.D\dad1A.ch
Acq On : 30-Jan-2023, 11:30:24 Operator: fouads
Sample : op95195-mb Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 11:55 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(15) 3,4-Dinitrotoluene (S)

13.25min 469.043ppb

response 1004888

(15) 3,4-Dinitrotoluene #2 (S)

13.25min 280.659ppb

response 1192430

(+) = Expected Retention Time

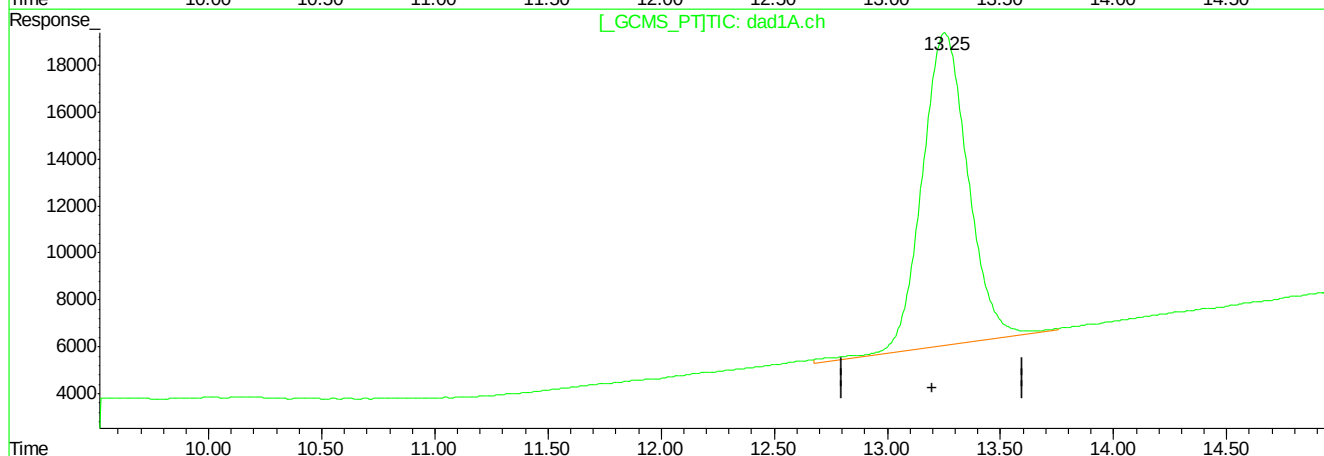
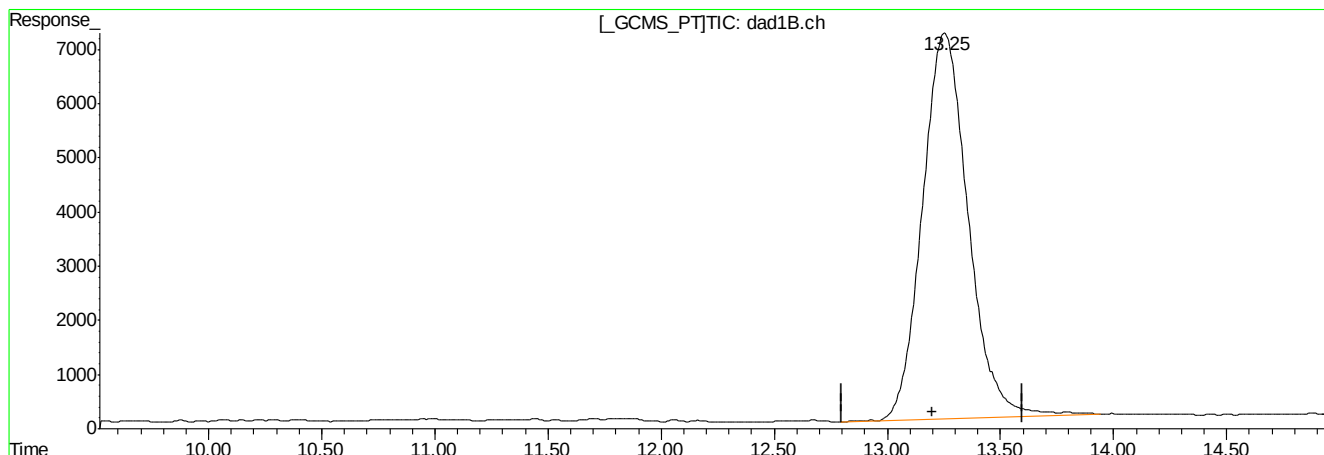
BB075438.D BBB2232_083122.M

Tue Jan 31 10:07:40 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075438.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075438.D\dad1A.ch
Acq On : 30-Jan-2023, 11:30:24 Operator: fouads
Sample : op95195-mb Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 11:55 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(15) 3,4-Dinitrotoluene (S)

13.25min 469.043ppb

response 1004888

(15) 3,4-Dinitrotoluene #2 (S)

13.25min 445.844ppb m

response 1894246

(+) = Expected Retention Time

BB075438.D BBB2232_083122.M

Tue Jan 31 10:07:47 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625716.D\dad1B.ch Vial: 19
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625716.D\dad1A.ch
 Acq On : 30-Jan-2023, 22:05:56 Operator: fouads
 Sample : op95195-mb Inst : G1315B
 Misc : op95195,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 08:38:40 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.44	14.44	2376763	4667599	442.493	465.038
Spiked Amount	500.000	Range	70 - 136	Recovery	=	88.50% 93.01%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D.	N.D.
2) HMX	0.00	0.00	0	0	N.D.	N.D.
3) DNX	0.00	0.00	0	0	N.D.	N.D.
4) MNX	0.00	0.00	0	0	N.D.	N.D.
5) 1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
6) RDX	0.00	0.00	0	0	N.D. d	N.D. d
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D. d	N.D. d
8) Nitrobenzene	0.00	0.00	0	0	N.D. d	N.D. d
9) 2,4,6-Trinitroto	0.00	0.00	0	0	N.D. d	N.D. d
10) Nitroglycerin	0.00	0.00	0	0	N.D. d	N.D. d
11) Tetryl	0.00	0.00	0	0	N.D. d	N.D. d
13) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
14) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
15) 3,5-Dinitroanili	0.00	0.00	0	0	N.D.	N.D.
16) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
17) p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
18) 4-Amino-2,6-Dini	0.00	0.00	0	0	N.D.	N.D.
19) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20) 2-Amino-4,6-Dini	0.00	0.00	0	0	N.D.	N.D.
21) PETN	0.00	0.00	0	0	N.D.	N.D.

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625716.D GGG3229_013023.M Tue Jan 31 11:32:57 2023

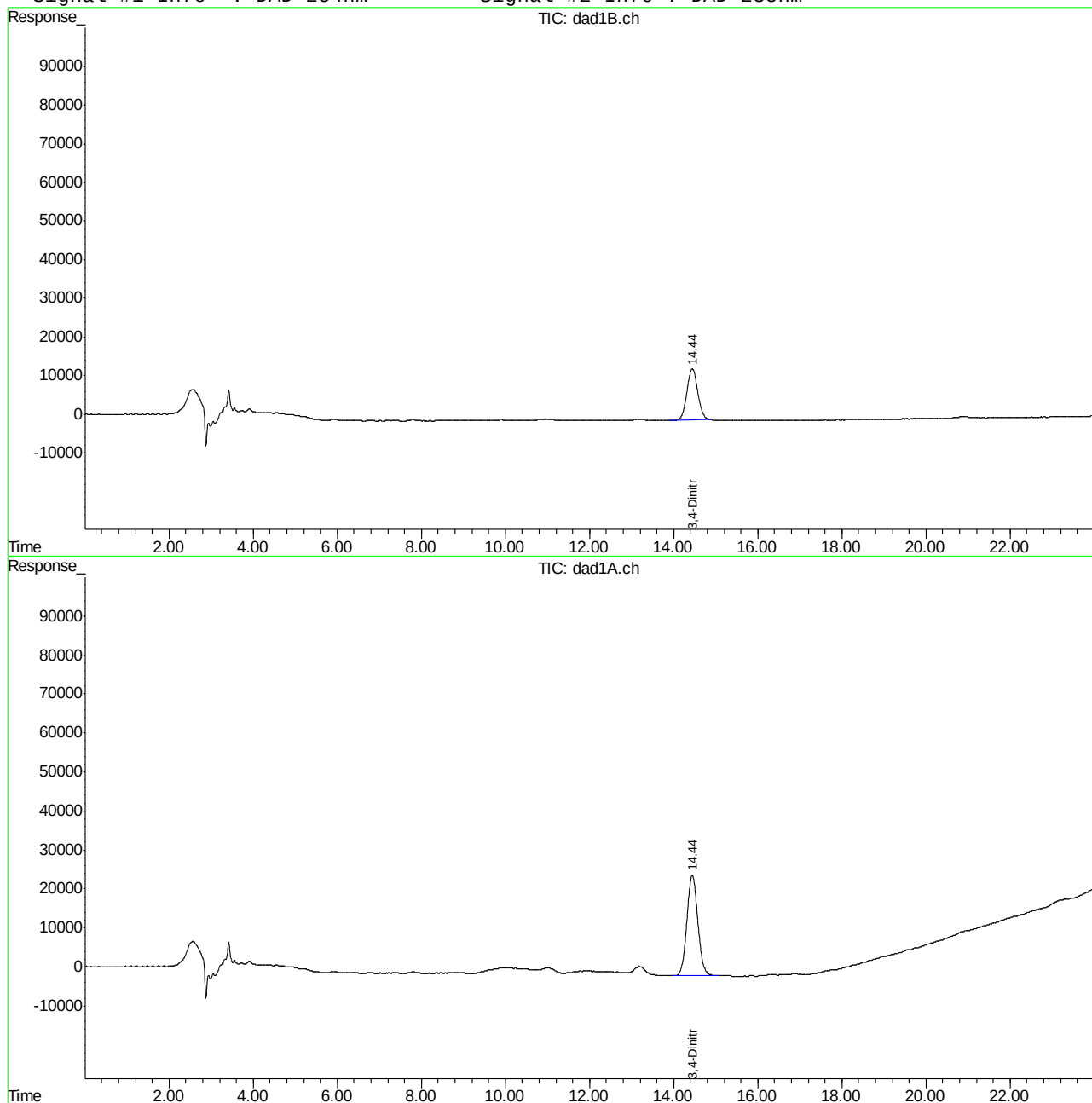
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625716.D\dad1B.ch Vial: 19
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625716.D\dad1A.ch
Acq On : 30-Jan-2023, 22:05:56 Operator: fouads
Sample : op95195-mb Inst : G1315B
Misc : op95195,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 10:07 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Naresh Jiawan
02/08/23 09:42

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075438.D\dad1B.ch Vial: 3
 Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075438.D\dad1A.ch
 Acq On : 30-Jan-2023, 11:30:24 Operator: fouads
 Sample : op95195-mb Inst : G1315B
 Misc : op95195,GBB2301,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 30 11:55:09 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.25	13.25	1004888	1894246	469.043	445.844m
Spiked Amount	500.000	Range	70 - 136	Recovery	=	93.81% 89.17%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	0.00	0.00	0	0	N.D. d	N.D. d
3) DNX	0.00	0.00	0	0	N.D. d	N.D. d
4) MNX	0.00	0.00	0	0	N.D. d	N.D. d
5) RDX	0.00	0.00	0	0	N.D. d	N.D. d
6) 1,3,5-Trinitrobe	0.00	0.00	0	0	N.D. d	N.D. d
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D. d	N.D. d
8) 3,5-Dinitroanili	0.00	0.00	0	0	N.D. d	N.D. d
9) Nitrobenzene	0.00	0.00	0	0	N.D. d	N.D. d
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
12) 2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
13) 2-Amino-4,6-Dini	0.00	0.00	0	0	N.D.	N.D.
14) 4-Amino-2,6-Dini	0.00	0.00	0	0	N.D.	N.D.
16) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
17) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
18) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
19) p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
21) PETN	0.00	0.00	0	0	N.D. d	N.D. d

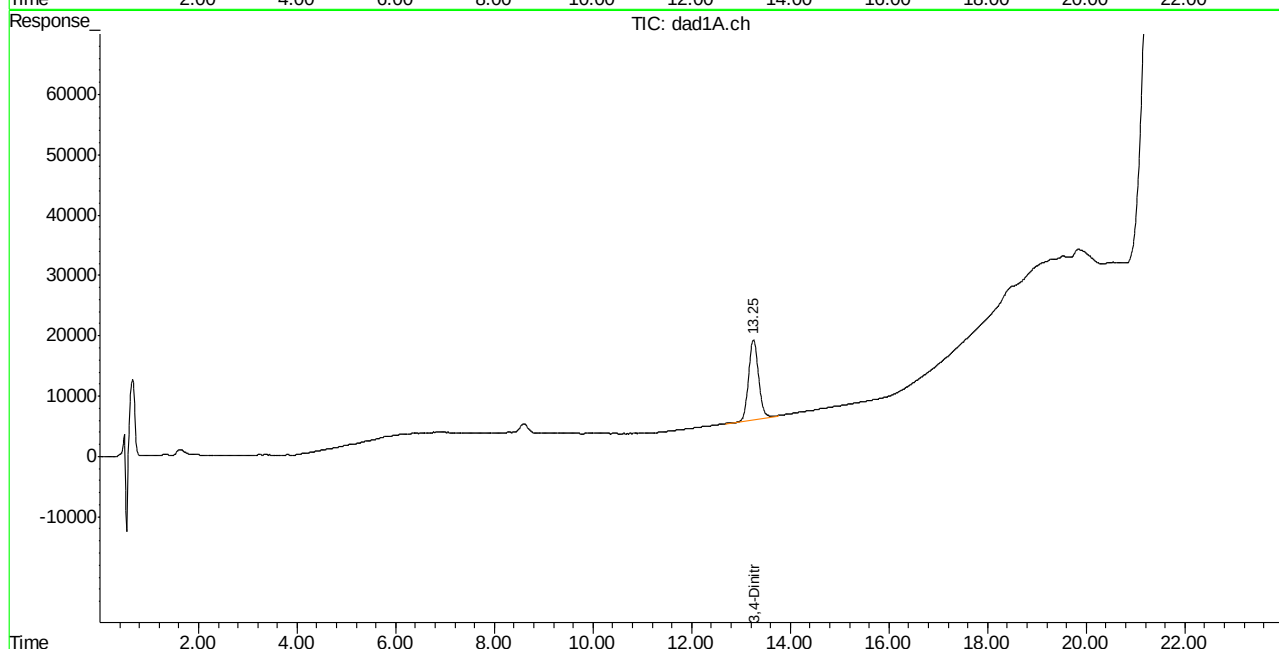
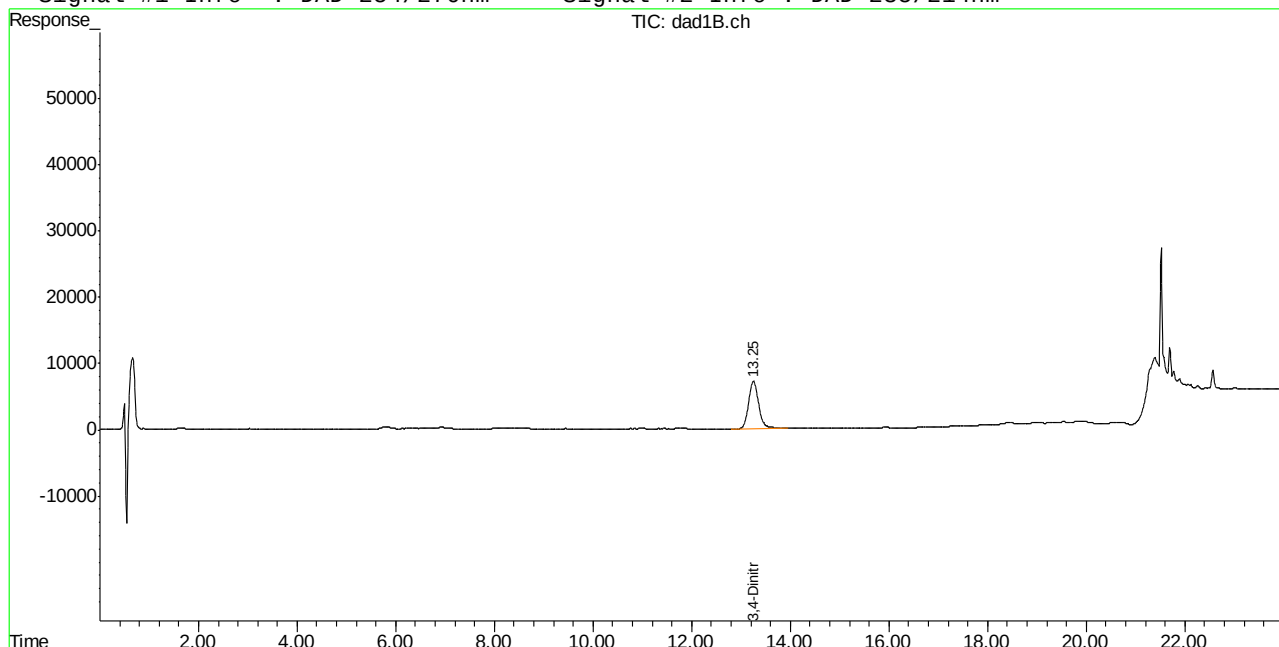
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075438.D BBB2232_083122.M Wed Feb 01 08:43:55 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075438.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075438.D\dad1A.ch
Acq On : 30-Jan-2023, 11:30:24 Operator: fouads
Sample : op95195-mb Inst : G1315B
Misc : op95195,GBB2301,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:07 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: OP95195-MB

Method: SW846 8330B

Lab FileID: BB075438.D

Analyst approved: 02/01/23 09:33 Fouad Sekkar

Injection Time: 01/30/23 11:30

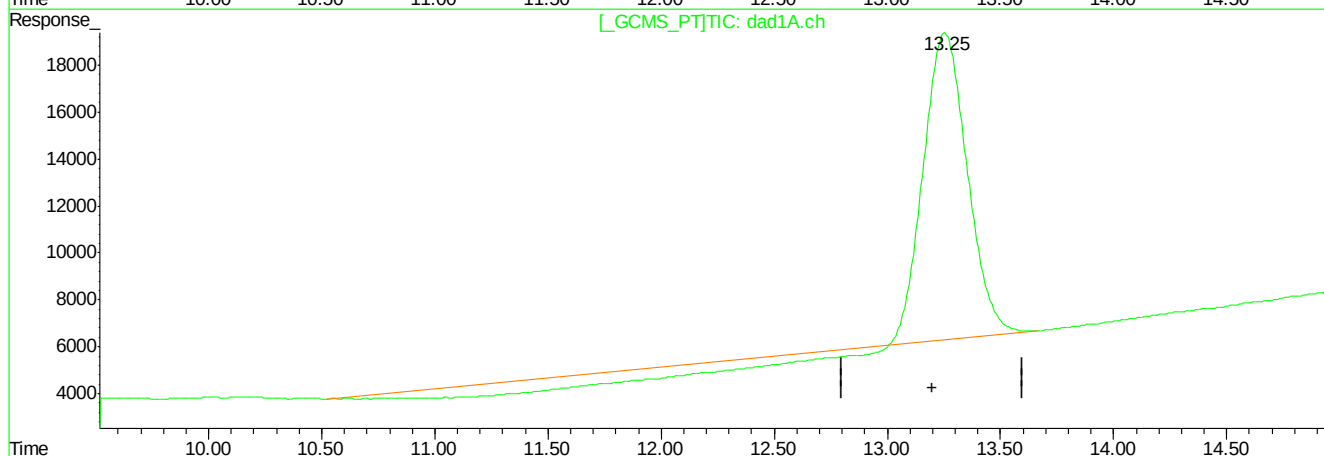
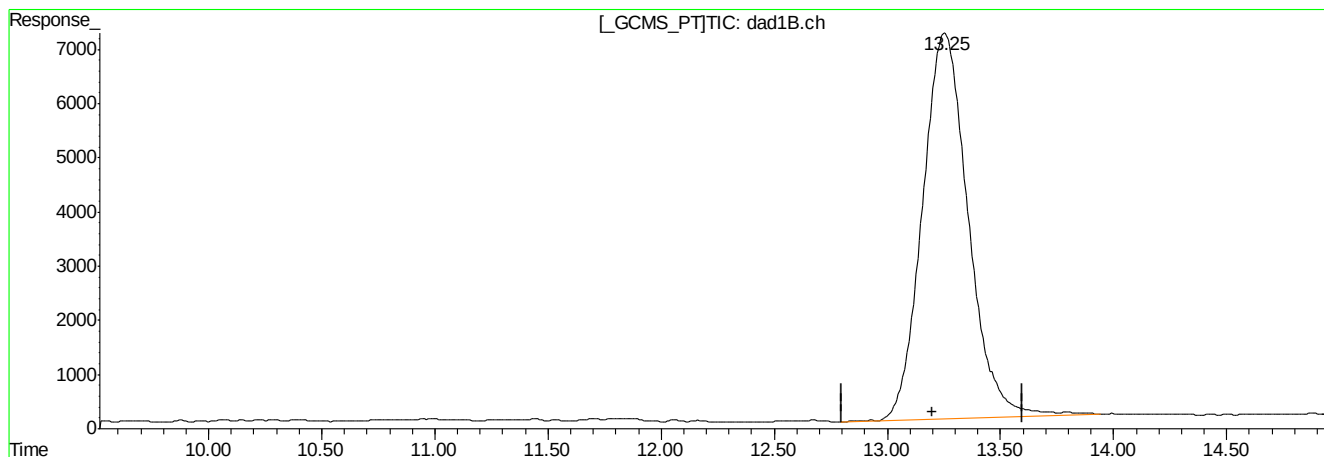
Supervisor approved: 02/08/23 09:42 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,4-Dinitrotoluene	610-39-9	2	13.25	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075438.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075438.D\dad1A.ch
Acq On : 30-Jan-2023, 11:30:24 Operator: fouads
Sample : op95195-mb Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 11:55 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(15) 3,4-Dinitrotoluene (S)

13.25min 469.043ppb

response 1004888

(15) 3,4-Dinitrotoluene #2 (S)

13.25min 280.659ppb

response 1192430

(+) = Expected Retention Time

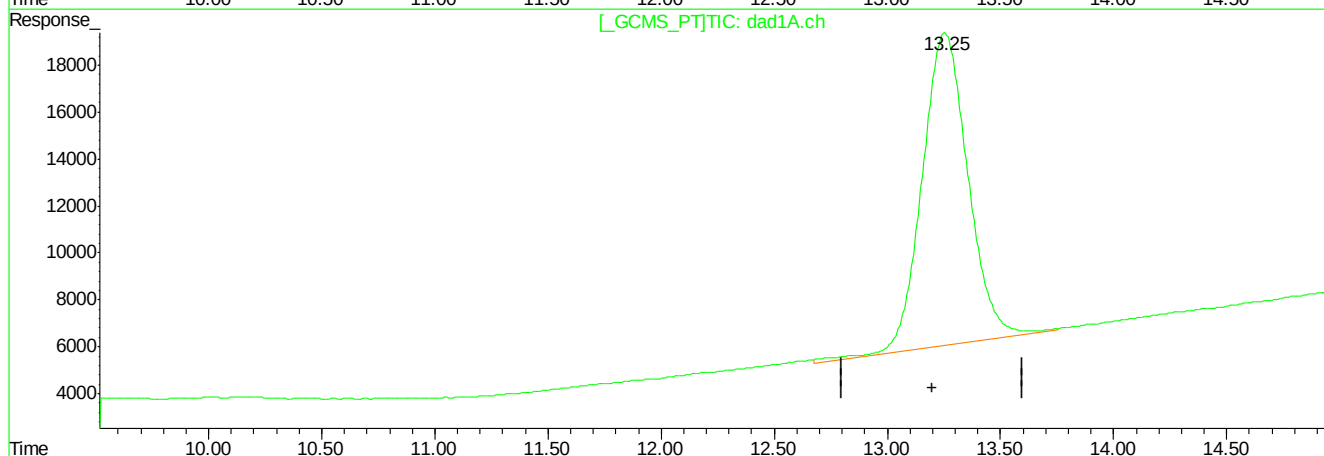
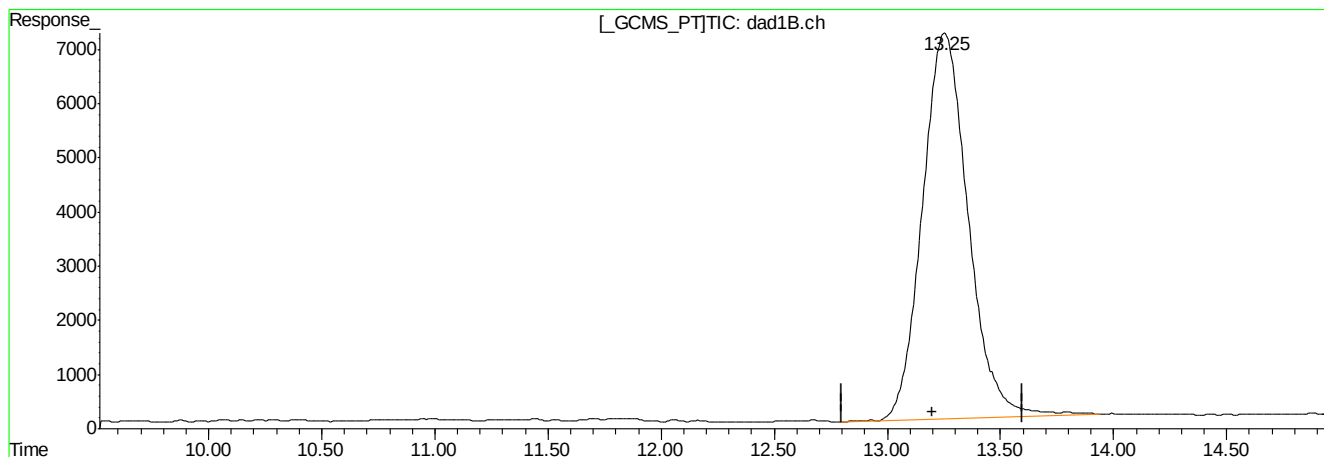
BB075438.D BBB2232_083122.M

Tue Jan 31 10:07:40 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075438.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075438.D\dad1A.ch
Acq On : 30-Jan-2023, 11:30:24 Operator: fouads
Sample : op95195-mb Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 11:55 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(15) 3,4-Dinitrotoluene (S)

13.25min 469.043ppb

response 1004888

(15) 3,4-Dinitrotoluene #2 (S)

13.25min 445.844ppb m

response 1894246

QEdit

(+) = Expected Retention Time

BB075438.D BBB2232_083122.M

Tue Jan 31 10:07:47 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625716.D\dad1B.ch Vial: 19
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625716.D\dad1A.ch
 Acq On : 30-Jan-2023, 22:05:56 Operator: fouads
 Sample : op95195-mb Inst : G1315B
 Misc : op95195,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 08:38:40 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.44	14.44	2376763	4667599	442.493	465.038
Spiked Amount	500.000	Range	70 - 136	Recovery	=	88.50% 93.01%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D.	N.D.
2) HMX	0.00	0.00	0	0	N.D.	N.D.
3) DNX	0.00	0.00	0	0	N.D.	N.D.
4) MNX	0.00	0.00	0	0	N.D.	N.D.
5) 1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
6) RDX	0.00	0.00	0	0	N.D. d	N.D. d
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D. d	N.D. d
8) Nitrobenzene	0.00	0.00	0	0	N.D. d	N.D. d
9) 2,4,6-Trinitroto	0.00	0.00	0	0	N.D. d	N.D. d
10) Nitroglycerin	0.00	0.00	0	0	N.D. d	N.D. d
11) Tetryl	0.00	0.00	0	0	N.D. d	N.D. d
13) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
14) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
15) 3,5-Dinitroanili	0.00	0.00	0	0	N.D.	N.D.
16) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
17) p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
18) 4-Amino-2,6-Dini	0.00	0.00	0	0	N.D.	N.D.
19) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20) 2-Amino-4,6-Dini	0.00	0.00	0	0	N.D.	N.D.
21) PETN	0.00	0.00	0	0	N.D.	N.D.

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625716.D GGG3229_013023.M Tue Jan 31 11:32:57 2023

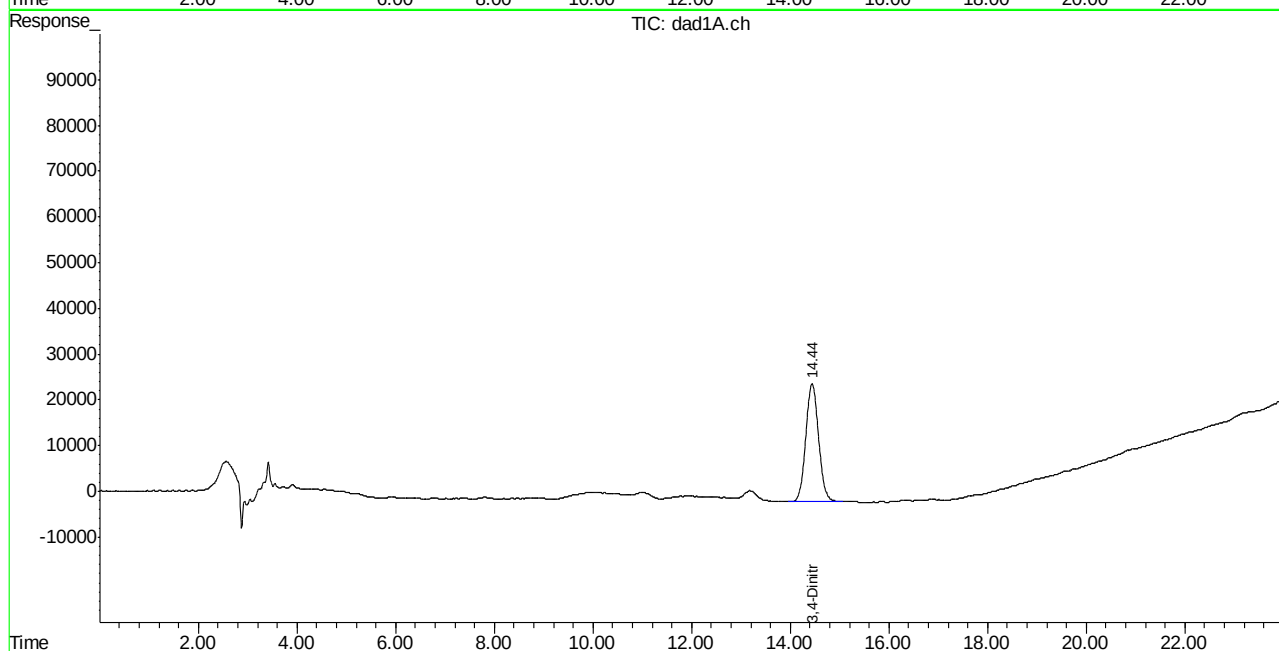
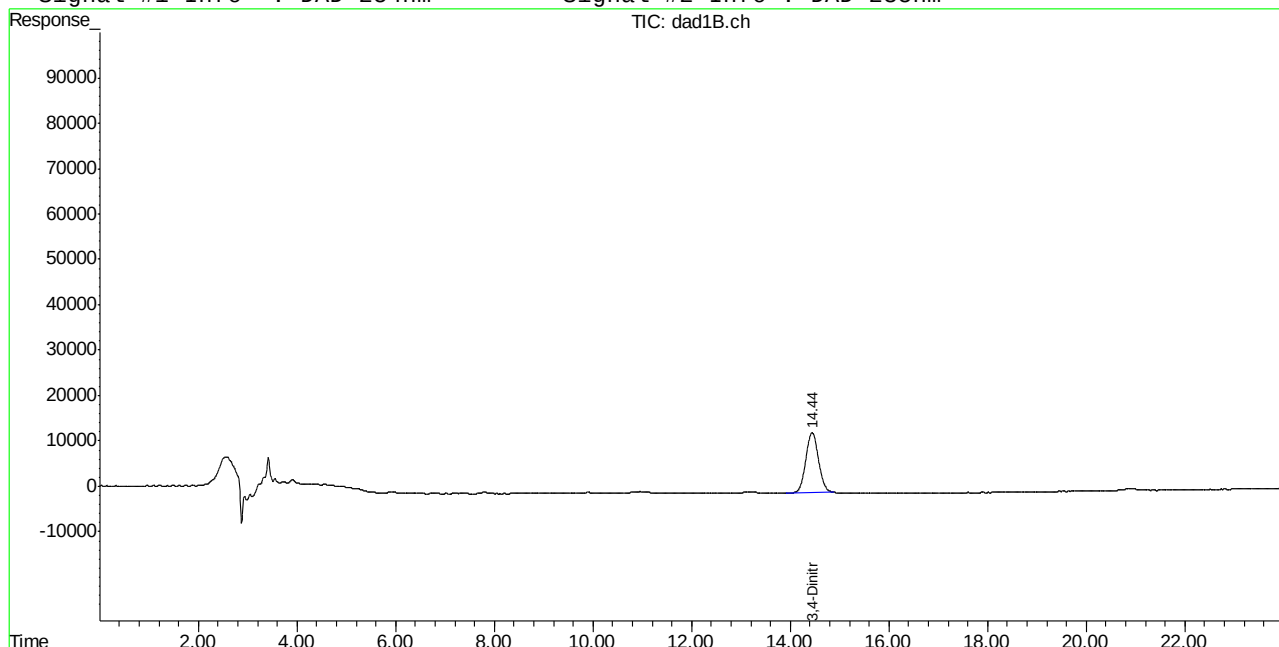
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625716.D\dad1B.ch Vial: 19
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625716.D\dad1A.ch
Acq On : 30-Jan-2023, 22:05:56 Operator: fouads
Sample : op95195-mb Inst : G1315B
Misc : op95195,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 10:07 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Naresh Jiawan
02/08/23 09:42

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1B.ch Vial: 4
 Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1A.ch
 Acq On : 30-Jan-2023, 12:01:22 Operator: fouads
 Sample : op95195-bs Inst : G1315B
 Misc : op95195,GBB2301,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 30 12:28:54 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.25	13.25	1011416	1778332	472.090	418.562
Spiked Amount	500.000	Range	70 - 136	Recovery	= 94.42%	83.71%
Target Compounds						
1) TNX	1.48	1.48	760286	1184433	202.570	205.809
2) HMX	1.69	1.69	769223	2207150	519.517	539.613
3) DNX	1.93	1.93	1390177	2211053	451.893	447.797
4) MNX	2.64	2.64	1516461	2323189	528.395	528.293
5) RDX	3.35	3.35	933313	1482917	503.143	506.216
6) 1,3,5-Trinitrobe	5.42	5.42	1896440	3226732	477.017	518.374
7) 1,3-Dinitrobenze	6.71	6.71	2640793	1790108	506.808	520.870
8) 3,5-Dinitroanili	7.17	7.17	1967373	3266863	499.863	499.873m
9) Nitrobenzene	8.55	8.55	1420185	1439851	473.615	485.689
10) Nitroglycerin	0.00	10.38	0	646884	N.D.	509.262 #
11) Tetryl	11.38	11.38	1185088	1867182	419.404	405.389
12) 2,4,6-Trinitroto	11.74	11.75	1809740	2159139	495.110	484.897
13) 2-Amino-4,6-Dini	12.16	12.16	1650029	2451316	522.068	496.388
14) 4-Amino-2,6-Dini	12.71	12.71	1217205	2405348	530.007	489.433
16) 2,4-Dinitrotolue	13.81	13.81	1838643	1472462	392.558	472.841
17) 2,6-Dinitrotolue	14.27	14.27	717093	1630823	472.298	465.090
18) o-Nitrotoluene	17.16	17.16	999712	1508286	462.961	458.989m
19) p-Nitrotoluene	17.58	17.58	1526172	1248340	456.203	441.698
20) m-Nitrotoluene	18.15	18.16	1417127	1652794	455.196	425.870
21) PETN	0.00	19.49	0	652228	N.D.	485.291m#

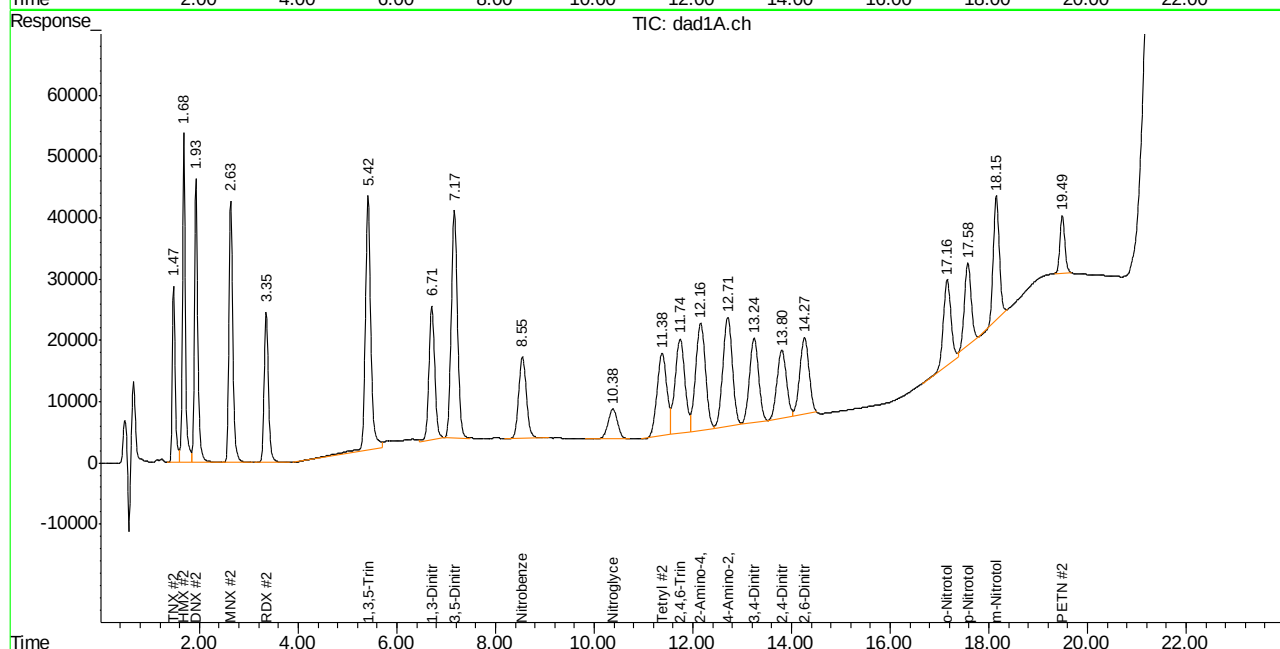
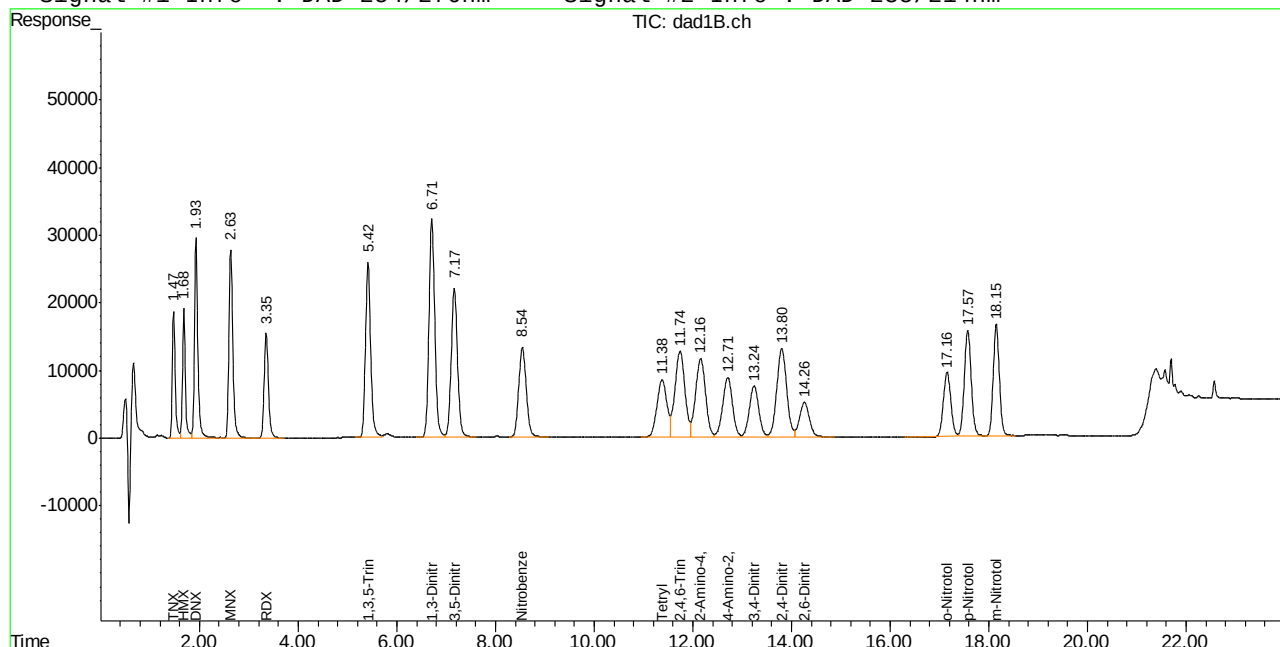
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075439.D BBB2232_083122.M Wed Feb 01 08:43:56 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1A.ch
Acq On : 30-Jan-2023, 12:01:22 Operator: fouads
Sample : op95195-bs Inst : G1315B
Misc : op95195,GBB2301,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:09 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: OP95195-BS

Method: SW846 8330B

Lab FileID: BB075439.D

Analyst approved: 02/01/23 09:33 Fouad Sekkar

Injection Time: 01/30/23 12:01

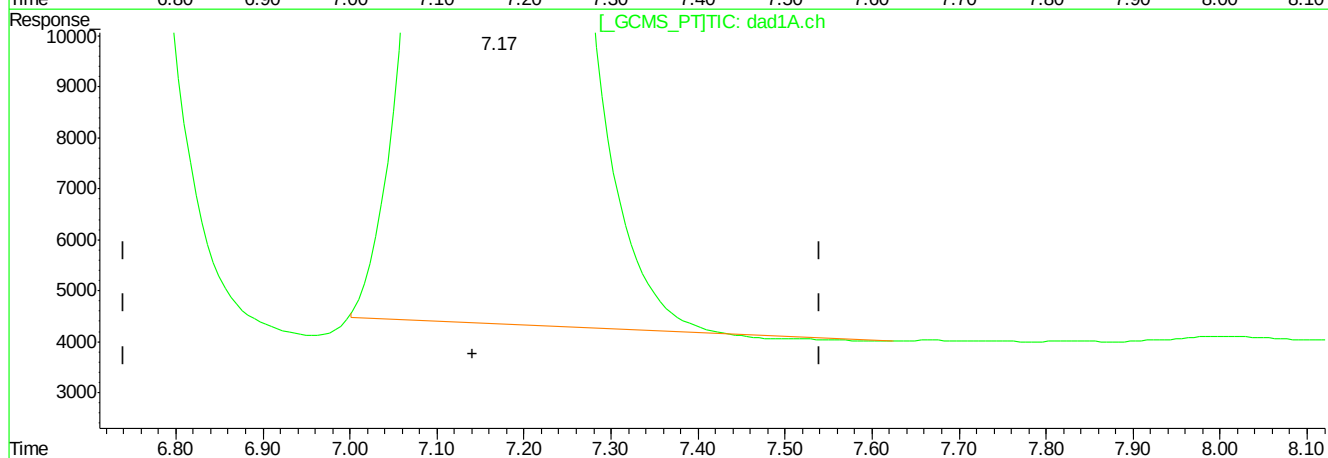
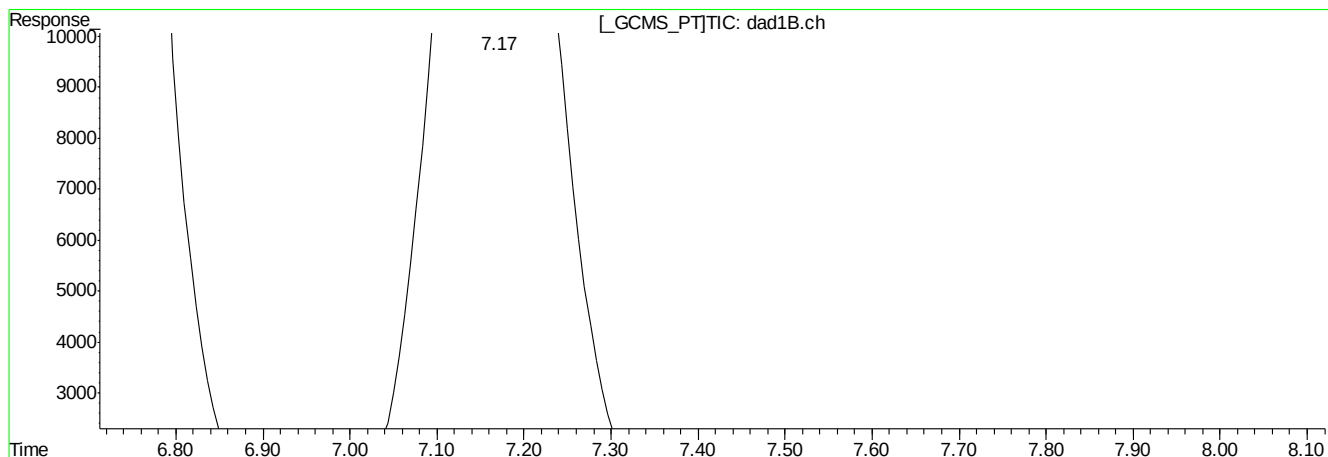
Supervisor approved: 02/08/23 09:42 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	2	7.17	Poor instrument integration
o-Nitrotoluene	88-72-2	2	17.16	Missed peak
PETN	78-11-5	2	19.49	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1A.ch
Acq On : 30-Jan-2023, 12:01:22 Operator: fouads
Sample : op95195-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 12:28 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.17min 499.863ppb

response 1967373

(8) 3,5-Dinitroaniline #2

7.17min 487.865ppb

response 3188387

(+) = Expected Retention Time

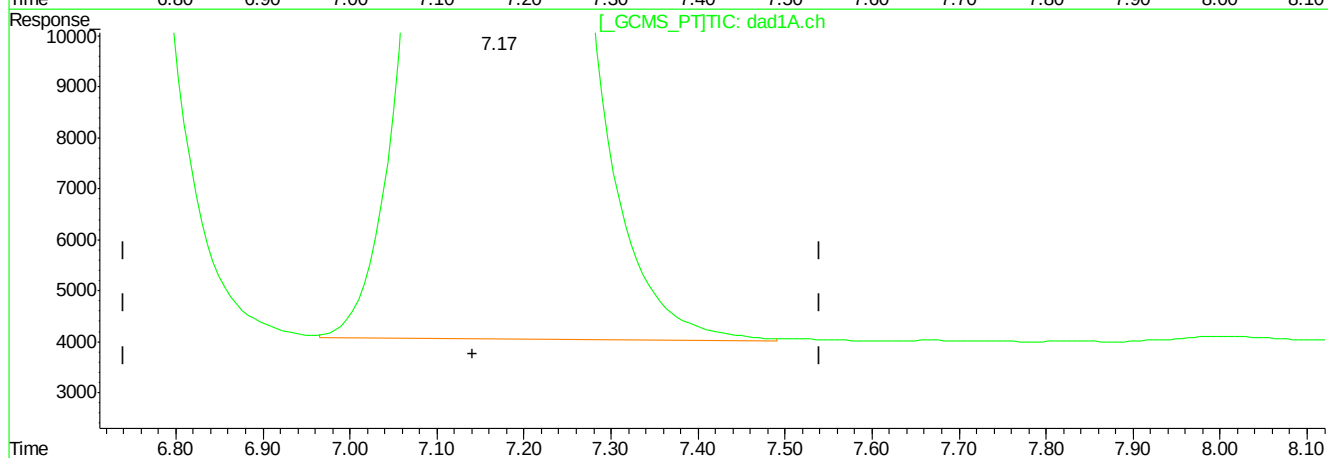
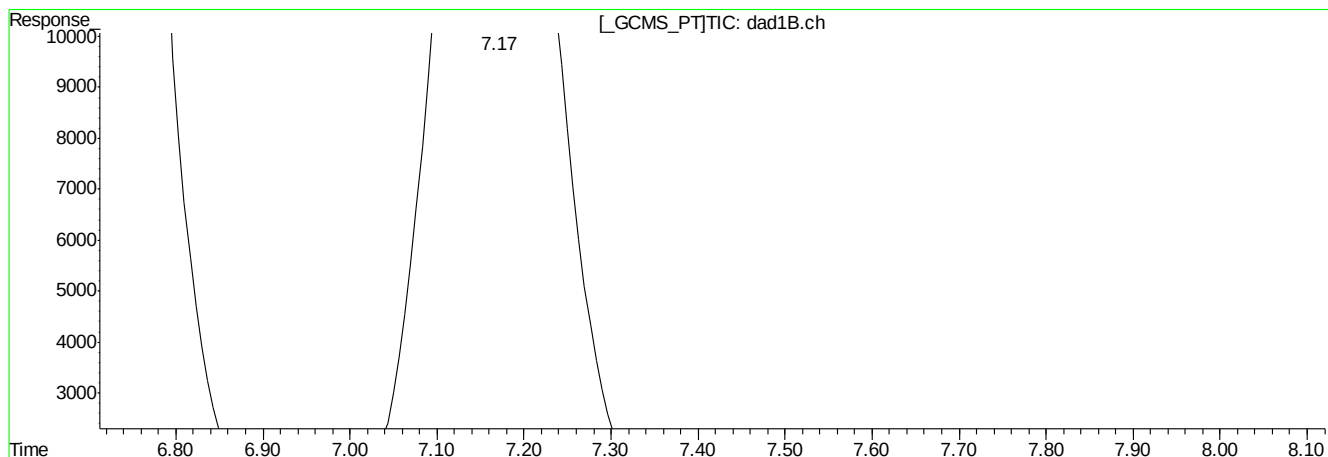
BB075439.D BBB2232_083122.M

Tue Jan 31 10:08:15 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1A.ch
Acq On : 30-Jan-2023, 12:01:22 Operator: fouads
Sample : op95195-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 12:28 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.17min 499.863ppb

response 1967373

(8) 3,5-Dinitroaniline #2

7.17min 499.873ppb m

response 3266863

(+) = Expected Retention Time

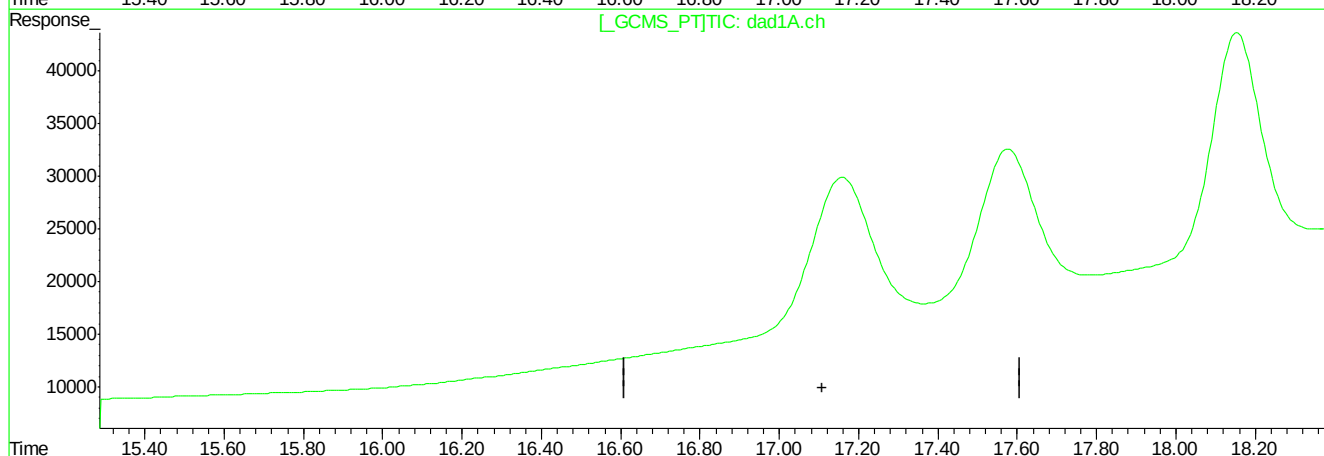
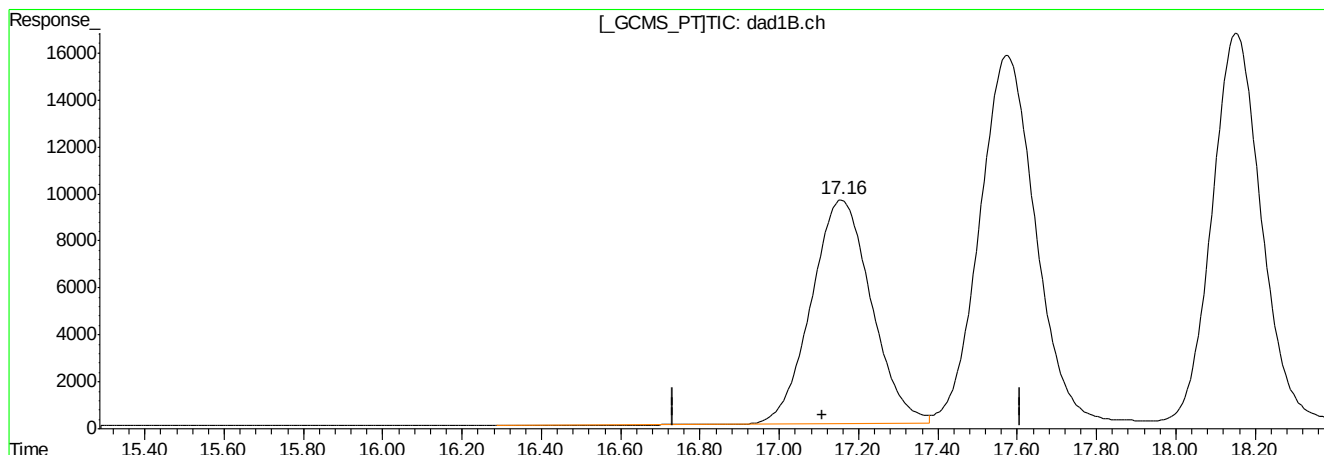
BB075439.D BBB2232_083122.M

Tue Jan 31 10:08:21 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1A.ch
Acq On : 30-Jan-2023, 12:01:22 Operator: fouads
Sample : op95195-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 12:28 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
17.16min 462.961ppb
response 999712

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

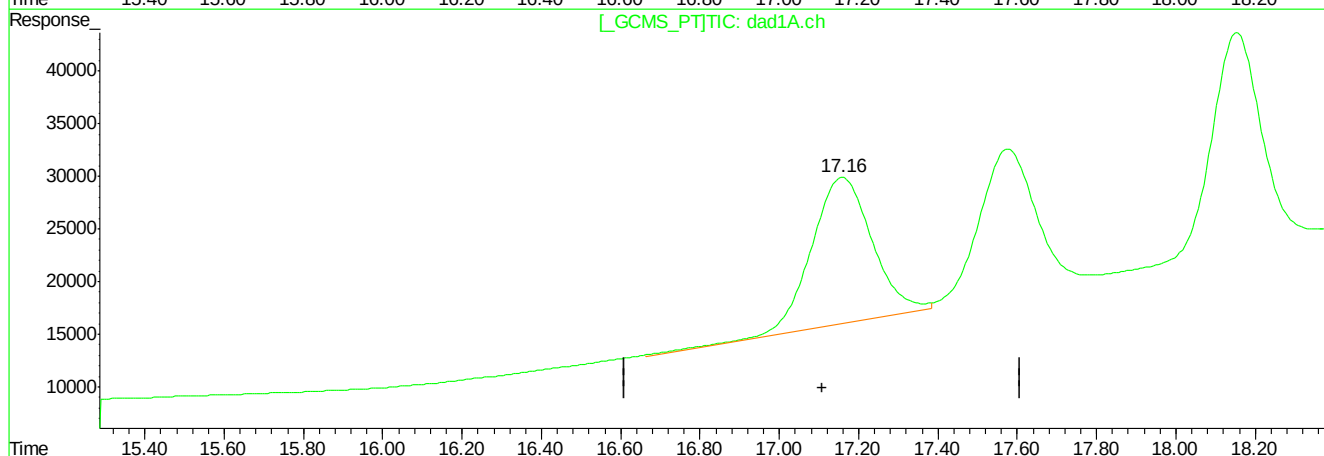
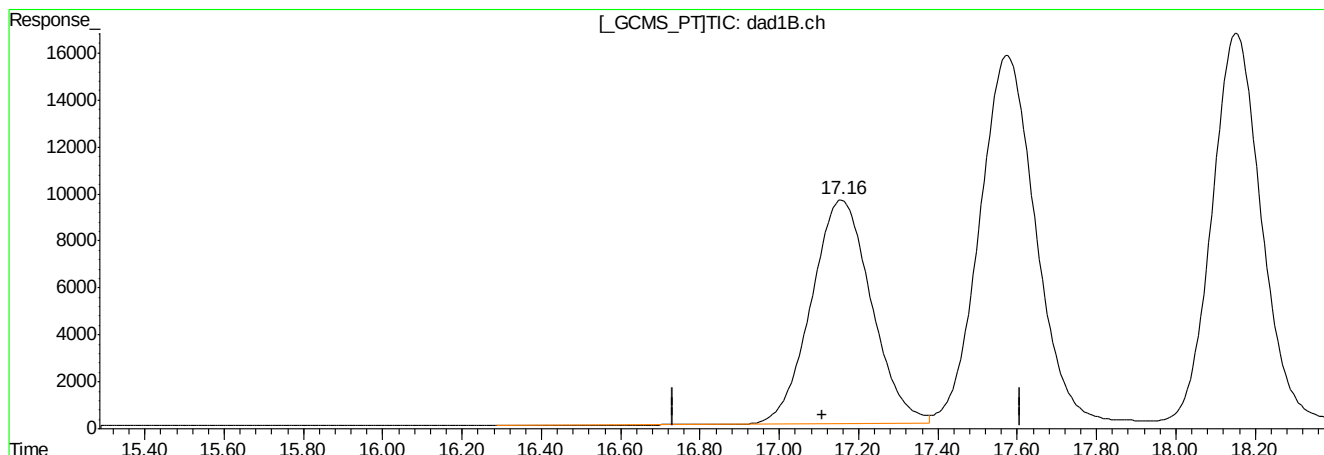
BB075439.D BBB2232_083122.M

Tue Jan 31 10:08:44 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1A.ch
Acq On : 30-Jan-2023, 12:01:22 Operator: fouads
Sample : op95195-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 12:28 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
17.16min 462.961ppb
response 999712

(18) o-Nitrotoluene #2
17.16min 458.989ppb m
response 1508286

(+) = Expected Retention Time

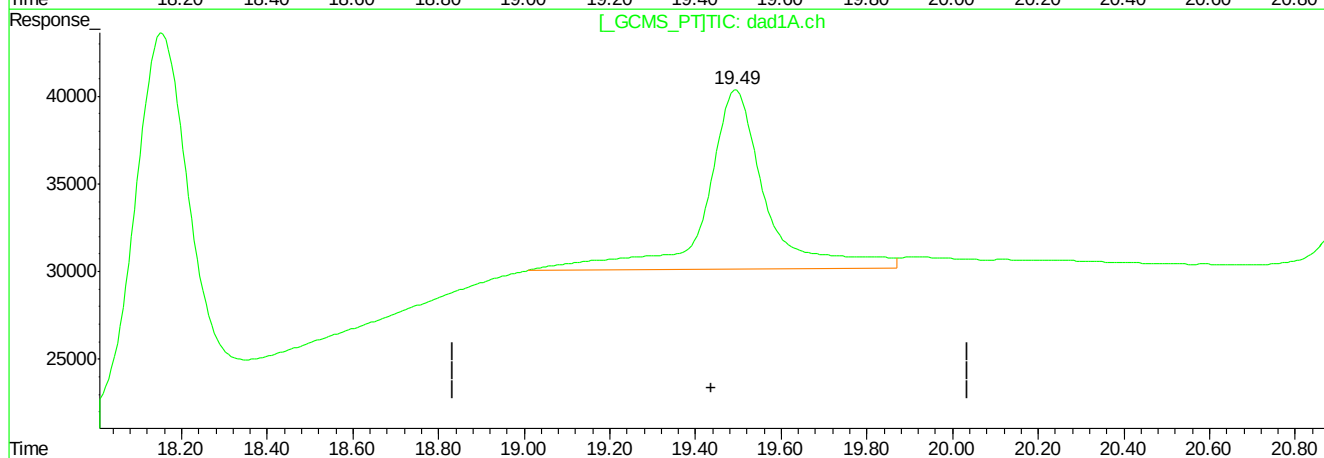
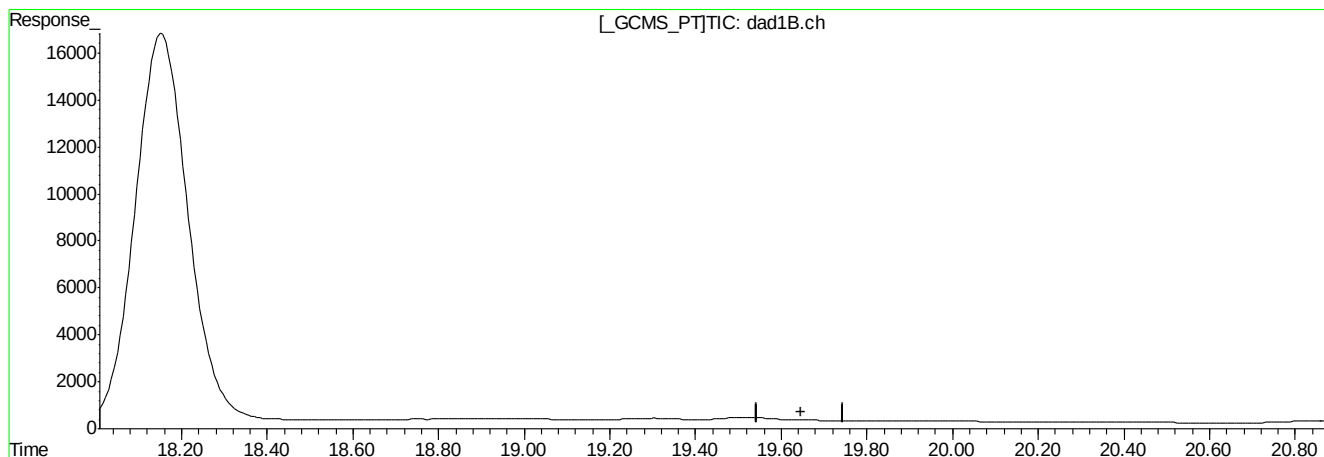
BB075439.D BBB2232_083122.M

Tue Jan 31 10:08:49 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1A.ch
Acq On : 30-Jan-2023, 12:01:22 Operator: fouads
Sample : op95195-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 12:28 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.50min 741.989ppb

response 997228

(+) = Expected Retention Time

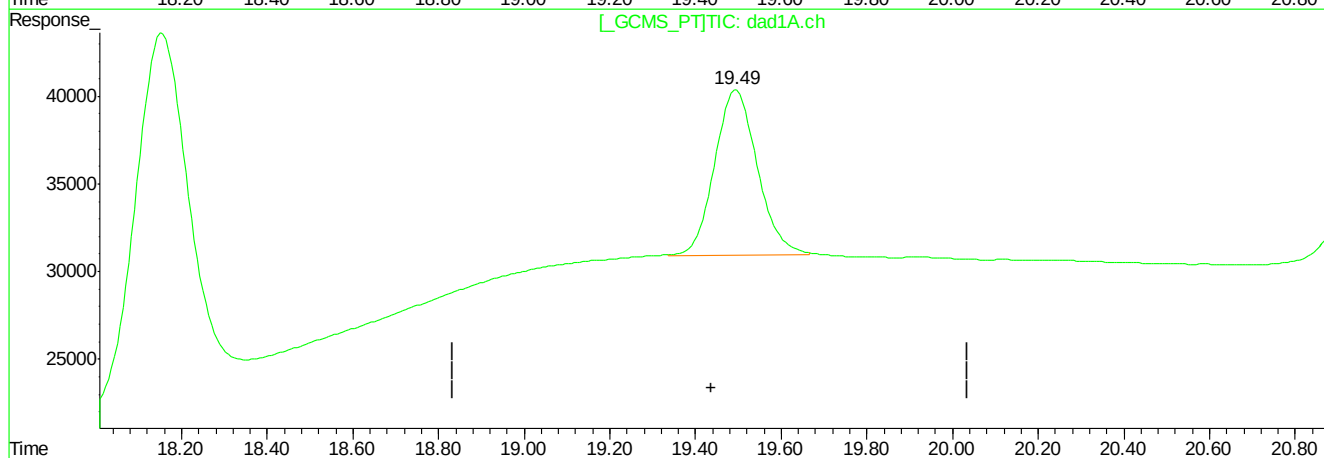
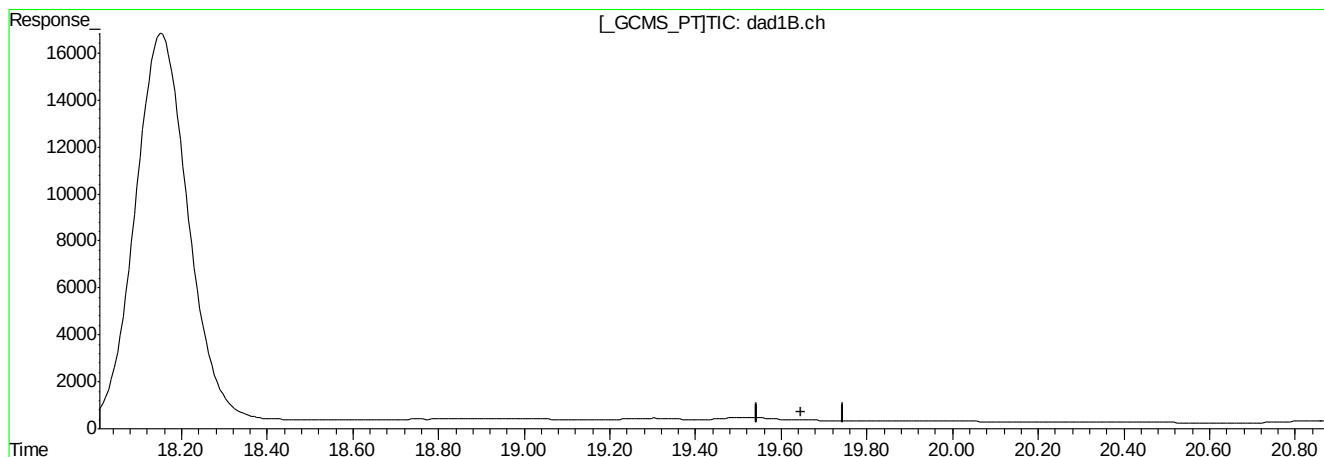
BB075439.D BBB2232_083122.M

Tue Jan 31 10:08:57 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1A.ch
Acq On : 30-Jan-2023, 12:01:22 Operator: fouads
Sample : op95195-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 12:28 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.49min 485.291ppb m

response 652228

QEdit

(+) = Expected Retention Time

BB075439.D BBB2232_083122.M

Tue Jan 31 10:09:03 2023

Naresh Jiawan
02/08/23 09:42

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1B.ch Vial: 4
 Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1A.ch
 Acq On : 30-Jan-2023, 12:01:22 Operator: fouads
 Sample : op95195-bs Inst : G1315B
 Misc : op95195,GBB2301,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 30 12:28:54 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.25	13.25	1011416	1778332	472.090	418.562
Spiked Amount	500.000	Range	70 - 136	Recovery	= 94.42%	83.71%
Target Compounds						
1) TNX	1.48	1.48	760286	1184433	202.570	205.809
2) HMX	1.69	1.69	769223	2207150	519.517	539.613
3) DNX	1.93	1.93	1390177	2211053	451.893	447.797
4) MNX	2.64	2.64	1516461	2323189	528.395	528.293
5) RDX	3.35	3.35	933313	1482917	503.143	506.216
6) 1,3,5-Trinitrobe	5.42	5.42	1896440	3226732	477.017	518.374
7) 1,3-Dinitrobenze	6.71	6.71	2640793	1790108	506.808	520.870
8) 3,5-Dinitroanili	7.17	7.17	1967373	3266863	499.863	499.873m
9) Nitrobenzene	8.55	8.55	1420185	1439851	473.615	485.689
10) Nitroglycerin	0.00	10.38	0	646884	N.D.	509.262 #
11) Tetryl	11.38	11.38	1185088	1867182	419.404	405.389
12) 2,4,6-Trinitroto	11.74	11.75	1809740	2159139	495.110	484.897
13) 2-Amino-4,6-Dini	12.16	12.16	1650029	2451316	522.068	496.388
14) 4-Amino-2,6-Dini	12.71	12.71	1217205	2405348	530.007	489.433
16) 2,4-Dinitrotolue	13.81	13.81	1838643	1472462	392.558	472.841
17) 2,6-Dinitrotolue	14.27	14.27	717093	1630823	472.298	465.090
18) o-Nitrotoluene	17.16	17.16	999712	1508286	462.961	458.989m
19) p-Nitrotoluene	17.58	17.58	1526172	1248340	456.203	441.698
20) m-Nitrotoluene	18.15	18.16	1417127	1652794	455.196	425.870
21) PETN	0.00	19.49	0	652228	N.D.	485.291m#

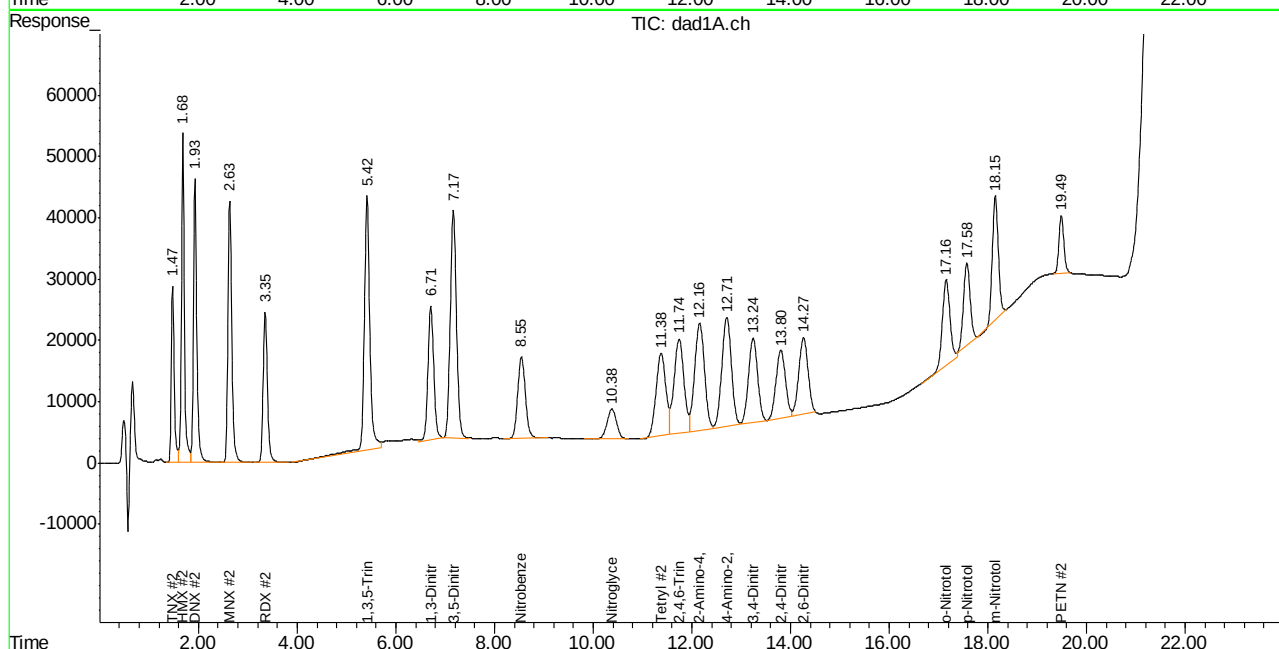
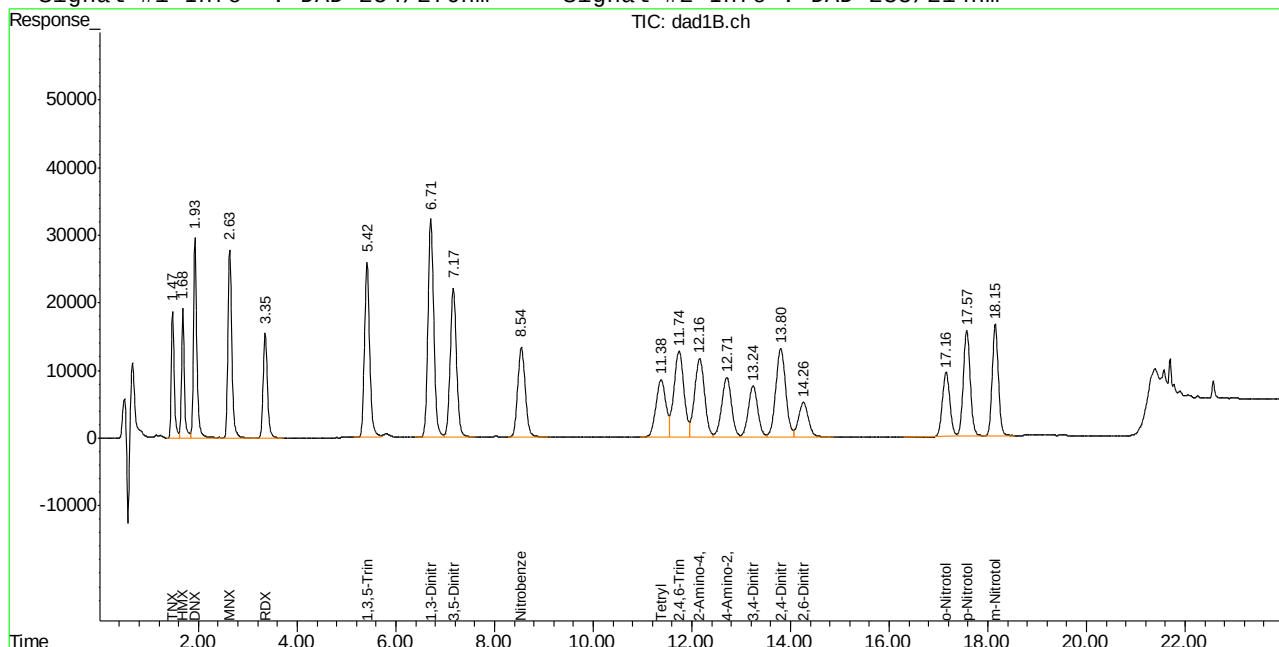
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075439.D BBB2232_083122.M Wed Feb 01 08:43:56 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1A.ch
Acq On : 30-Jan-2023, 12:01:22 Operator: fouads
Sample : op95195-bs Inst : G1315B
Misc : op95195,GBB2301,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:09 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: OP95195-BS

Method: SW846 8330B

Lab FileID: BB075439.D

Analyst approved: 02/01/23 09:33 Fouad Sekkar

Injection Time: 01/30/23 12:01

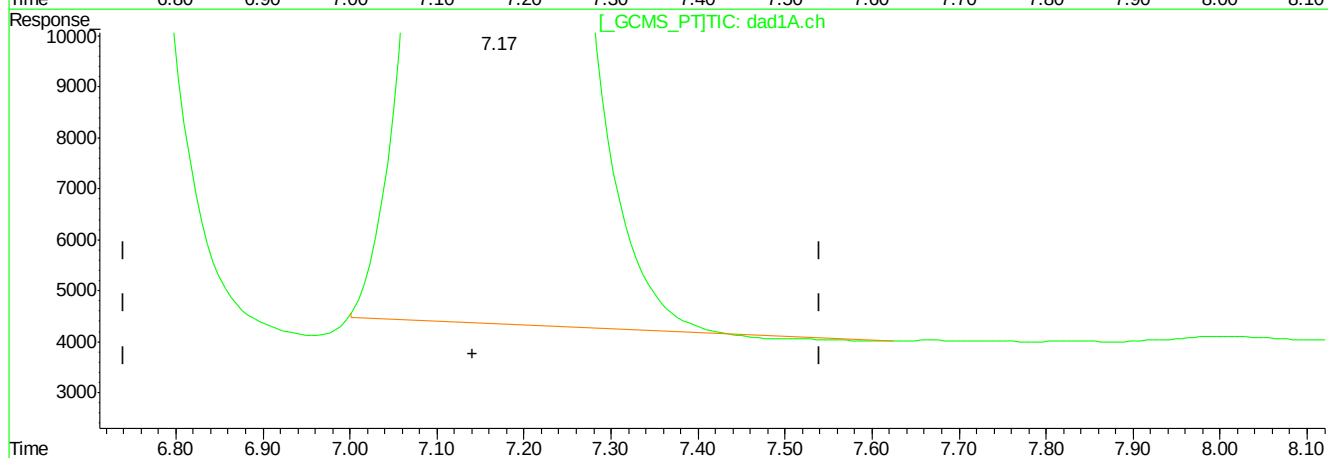
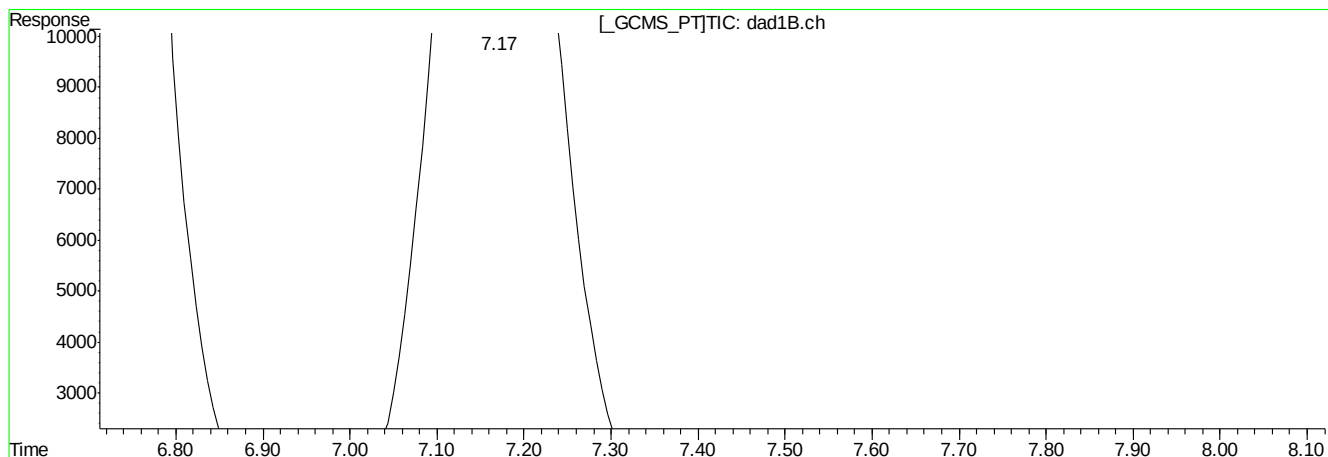
Supervisor approved: 02/08/23 09:42 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	2	7.17	Poor instrument integration
o-Nitrotoluene	88-72-2	2	17.16	Missed peak
PETN	78-11-5	2	19.49	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1A.ch
Acq On : 30-Jan-2023, 12:01:22 Operator: fouads
Sample : op95195-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 12:28 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.17min 499.863ppb

response 1967373

(8) 3,5-Dinitroaniline #2

7.17min 487.865ppb

response 3188387

(+) = Expected Retention Time

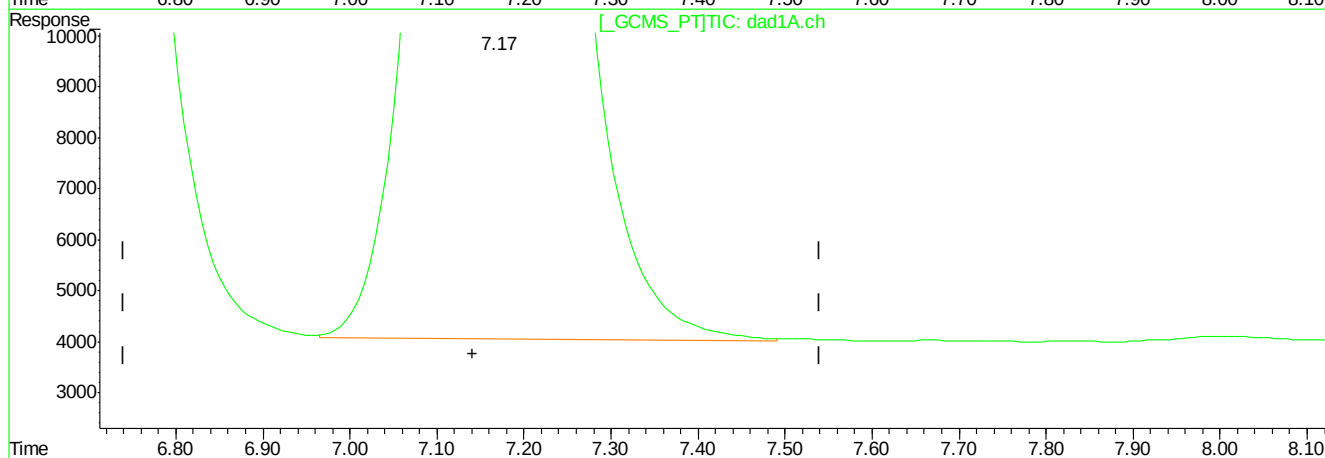
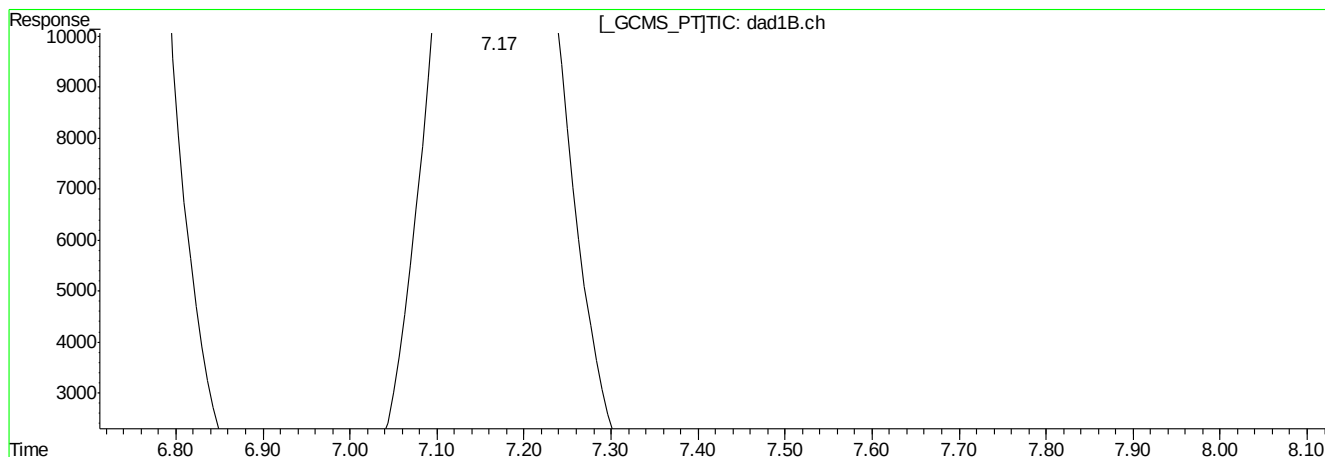
BB075439.D BBB2232_083122.M

Tue Jan 31 10:08:15 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1A.ch
Acq On : 30-Jan-2023, 12:01:22 Operator: fouads
Sample : op95195-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 12:28 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.17min 499.863ppb

response 1967373

(8) 3,5-Dinitroaniline #2

7.17min 499.873ppb m

response 3266863

QEdit

(+) = Expected Retention Time

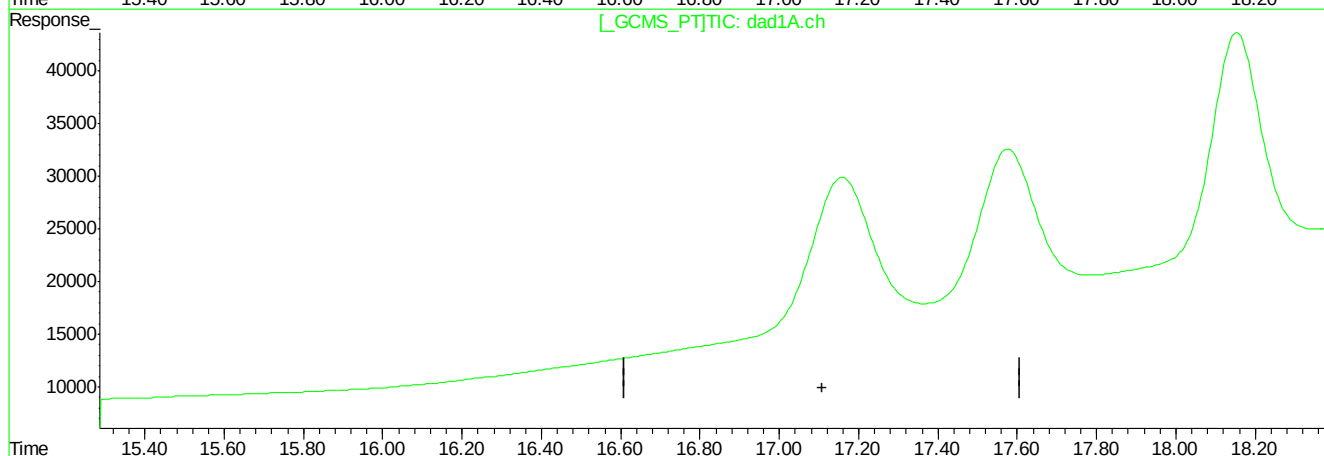
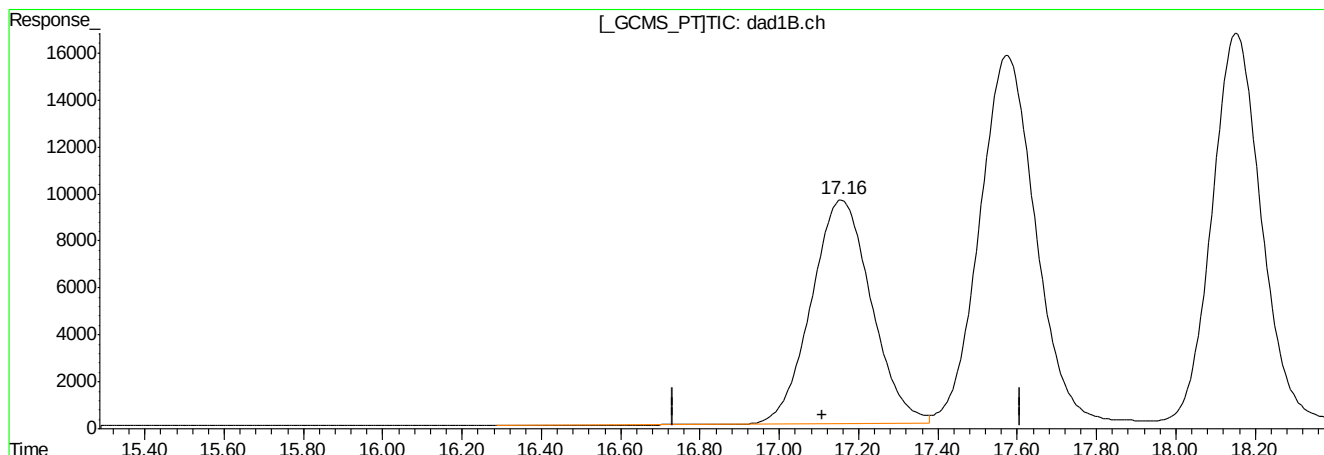
BB075439.D BBB2232_083122.M

Tue Jan 31 10:08:21 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1A.ch
Acq On : 30-Jan-2023, 12:01:22 Operator: fouads
Sample : op95195-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 12:28 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
17.16min 462.961ppb
response 999712

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

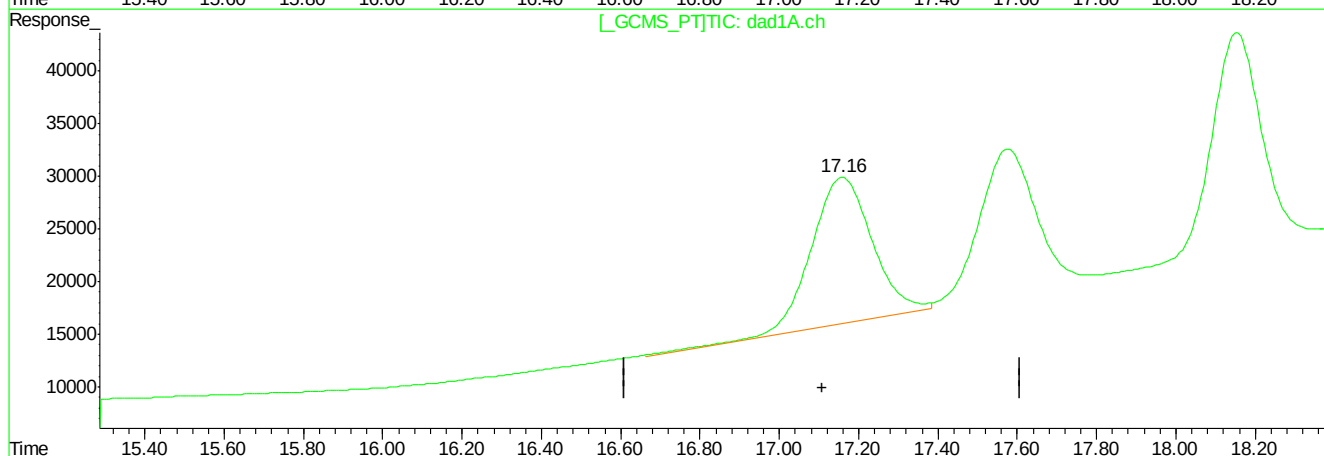
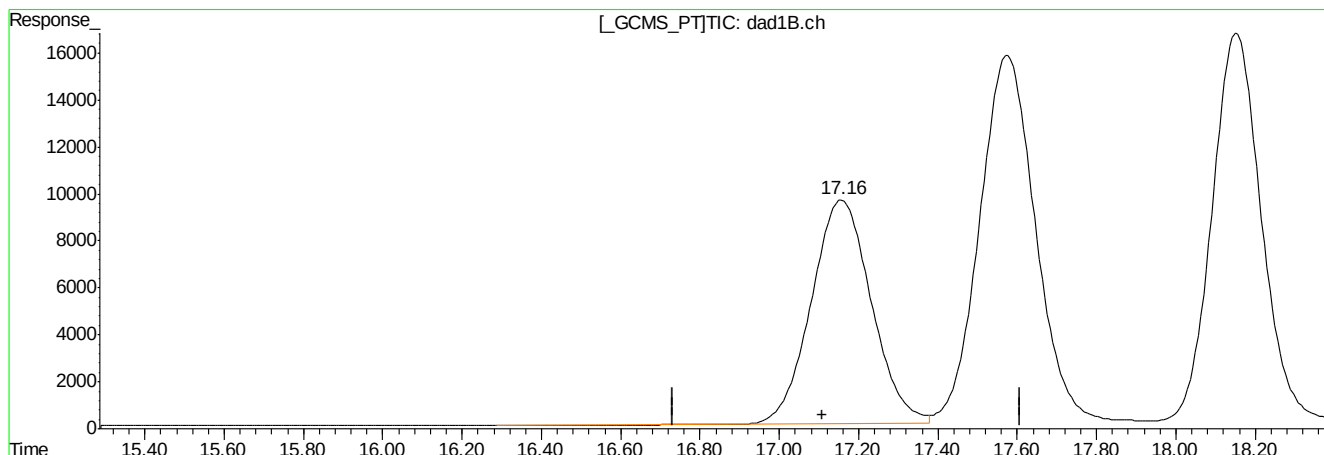
BB075439.D BBB2232_083122.M

Tue Jan 31 10:08:44 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1A.ch
Acq On : 30-Jan-2023, 12:01:22 Operator: fouads
Sample : op95195-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 12:28 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

17.16min 462.961ppb

response 999712

(18) o-Nitrotoluene #2

17.16min 458.989ppb m

response 1508286

(+) = Expected Retention Time

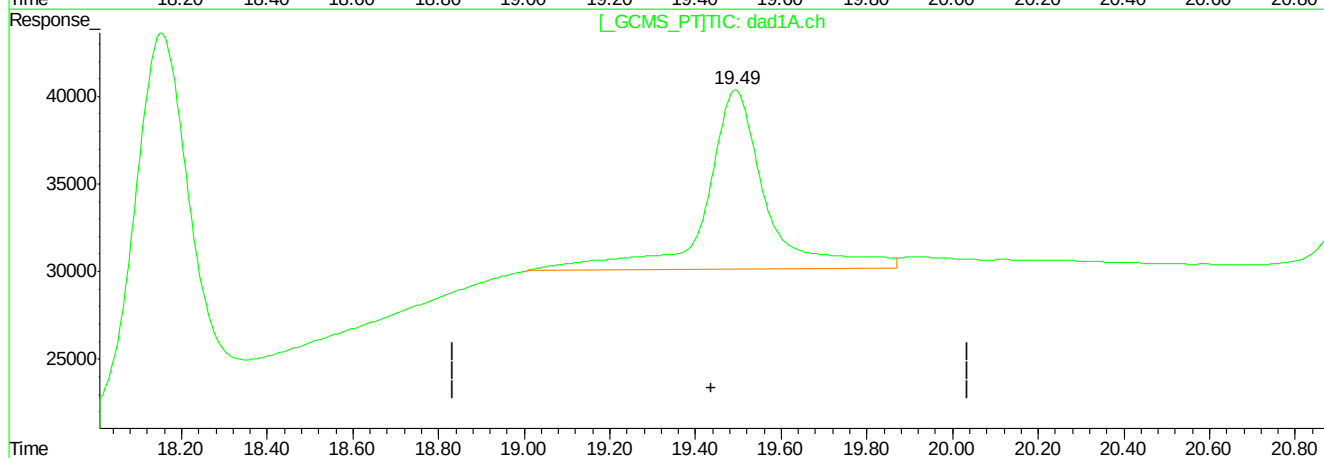
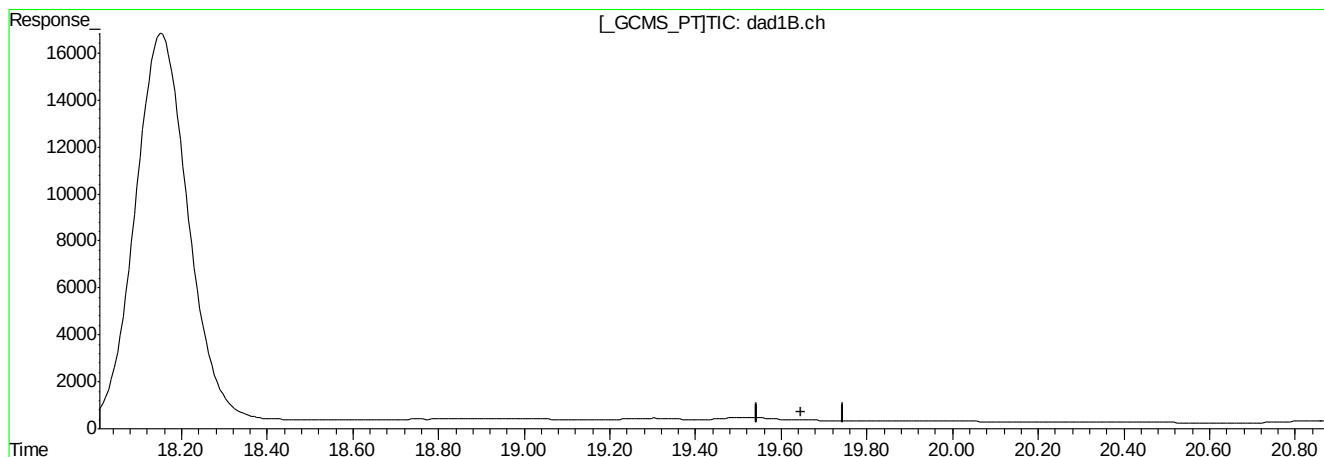
BB075439.D BBB2232_083122.M

Tue Jan 31 10:08:49 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1A.ch
Acq On : 30-Jan-2023, 12:01:22 Operator: fouads
Sample : op95195-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 12:28 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.50min 741.989ppb

response 997228

(+) = Expected Retention Time

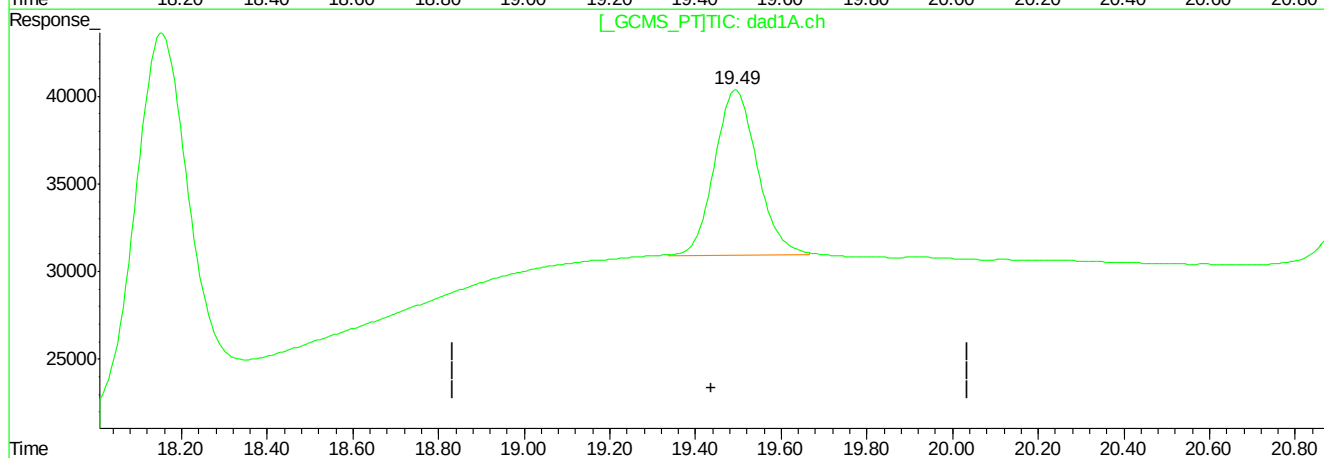
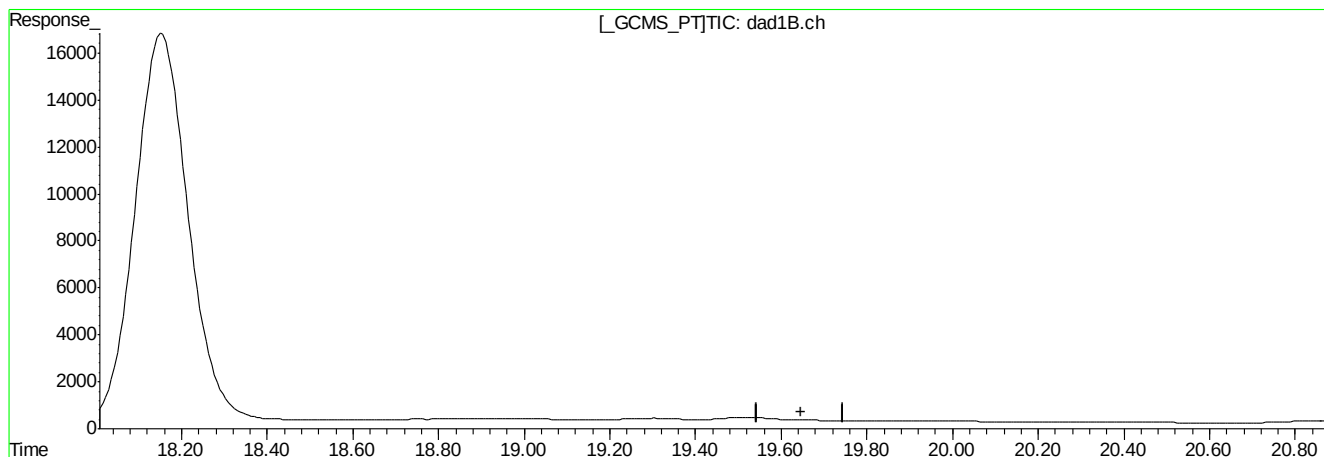
BB075439.D BBB2232_083122.M

Tue Jan 31 10:08:57 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075439.D\dad1A.ch
Acq On : 30-Jan-2023, 12:01:22 Operator: fouads
Sample : op95195-bs Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 12:28 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.49min 485.291ppb m

response 652228

QEdit

(+) = Expected Retention Time

BB075439.D BBB2232_083122.M

Tue Jan 31 10:09:03 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1B.ch Vial: 10
 Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1A.ch
 Acq On : 30-Jan-2023, 16:15:16 Operator: fouads
 Sample : op95195-msd Inst : G1315B
 Misc : op95195,GBB2301,510,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 31 10:18:47 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.21	13.21	1039327	1724369	485.117	405.861
Spiked Amount	500.000	Range	70 - 136	Recovery	=	97.02% 81.17%
Target Compounds						
1) TNX	1.47	1.47	781414	1215821	208.199	211.263
2) HMX	1.68	1.68	1326048	3754195	895.585	917.842
3) DNX	1.93	1.93	1386169	2246744	450.591	455.025
4) MNX	2.63	2.63	1470044	2268218	512.221	515.792
5) RDX	3.34	3.34	982481	1571768	529.649	536.547
6) 1,3,5-Trinitrobe	5.40	5.40	3515153	5697083	884.177	915.236
7) 1,3-Dinitrobenze	6.69	6.69	2618507	1742925	502.531	507.141
8) 3,5-Dinitroanili	7.15	7.14	1996892	3206546	507.363	490.644m
9) Nitrobenzene	8.53	8.53	1249507	1223328	416.696	412.652
10) Nitroglycerin	0.00	10.34	0	672978	N.D.	529.805 #
11) Tetryl	11.34	11.34	1336902	2024043	473.131	439.446
12) 2,4,6-Trinitroto	11.70	11.70	2668814	3098011	730.137	695.749
13) 2-Amino-4,6-Dini	12.12	12.12	2043463	2980221	646.550	603.491
14) 4-Amino-2,6-Dini	12.67	12.67	1427226	2724639	621.456	554.402
16) 2,4-Dinitrotolue	13.77	13.77	1822820	1376035	389.180	441.876
17) 2,6-Dinitrotolue	14.23	14.23	714252	1519342	470.427	433.296
18) o-Nitrotoluene	17.15	17.15	976547	1422937	452.234	433.017m
19) p-Nitrotoluene	17.57	17.57	1627181	1240293	486.397	438.851
20) m-Nitrotoluene	18.15	18.15	1530236	1565288	491.528	403.323
21) PETN	0.00	19.49	0	809383	N.D.	602.223m#

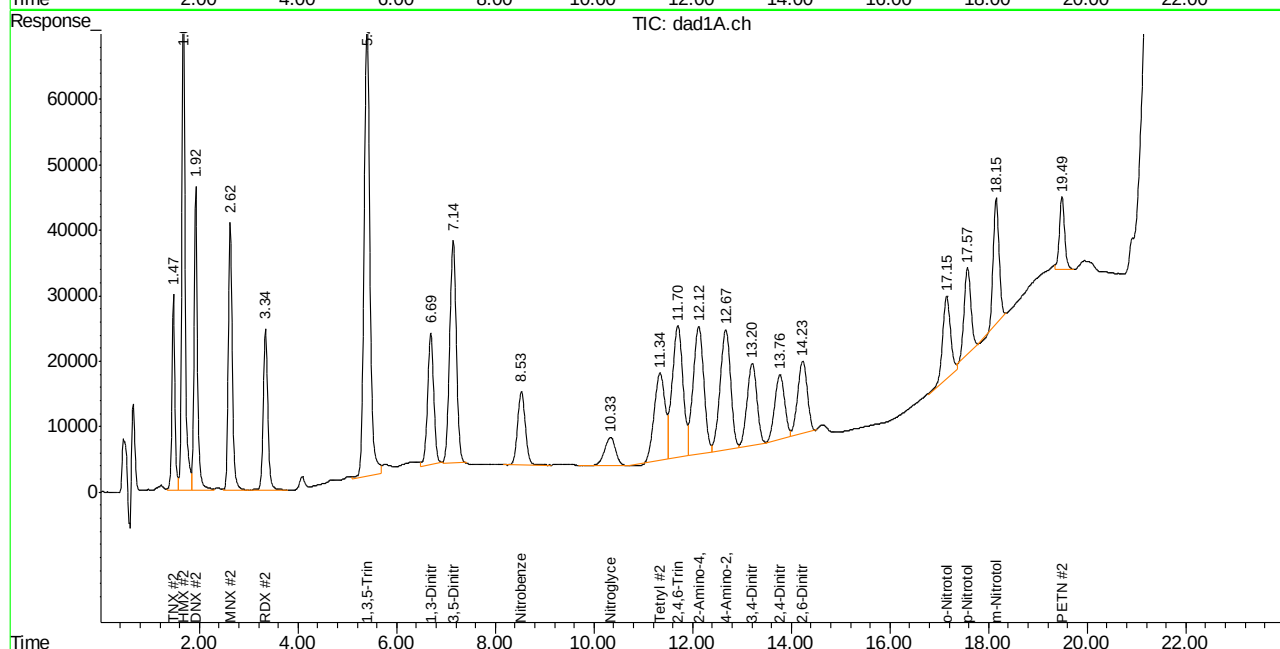
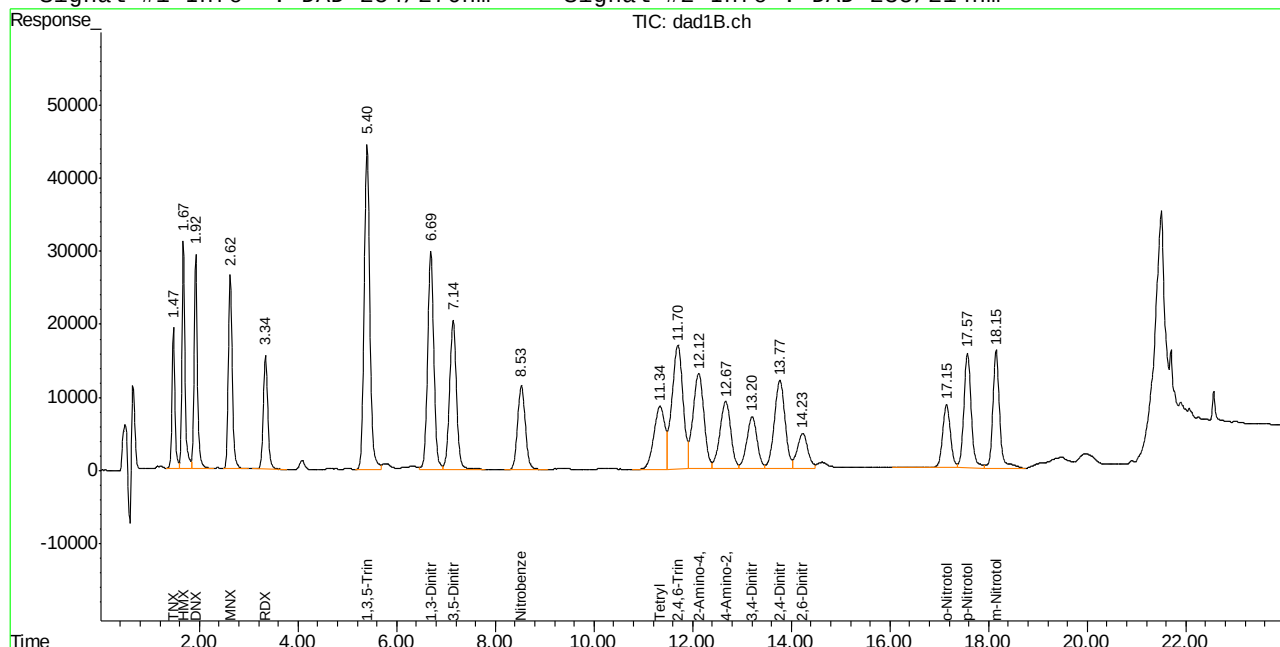
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075446.D BBB2232_083122.M Wed Feb 01 08:44:00 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1A.ch
Acq On : 30-Jan-2023, 16:15:16 Operator: fouads
Sample : op95195-msd Inst : G1315B
Misc : op95195, GBB2301, 510,,, 10, 1, water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:19 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: OP95195-MSD

Method: SW846 8330B

Lab FileID: BB075446.D

Analyst approved: 02/01/23 09:33 Fouad Sekkar

Injection Time: 01/30/23 16:15

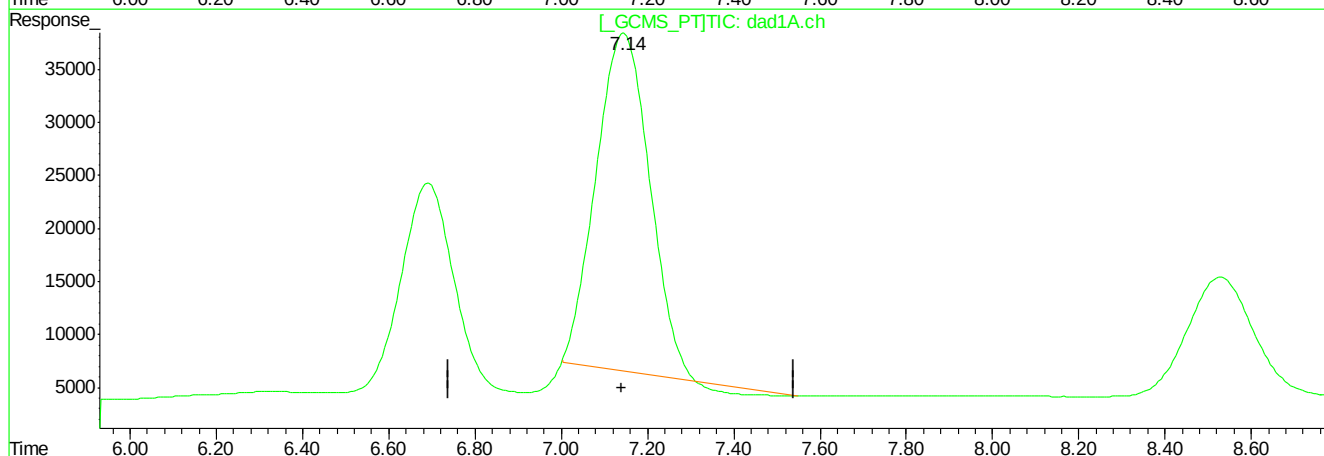
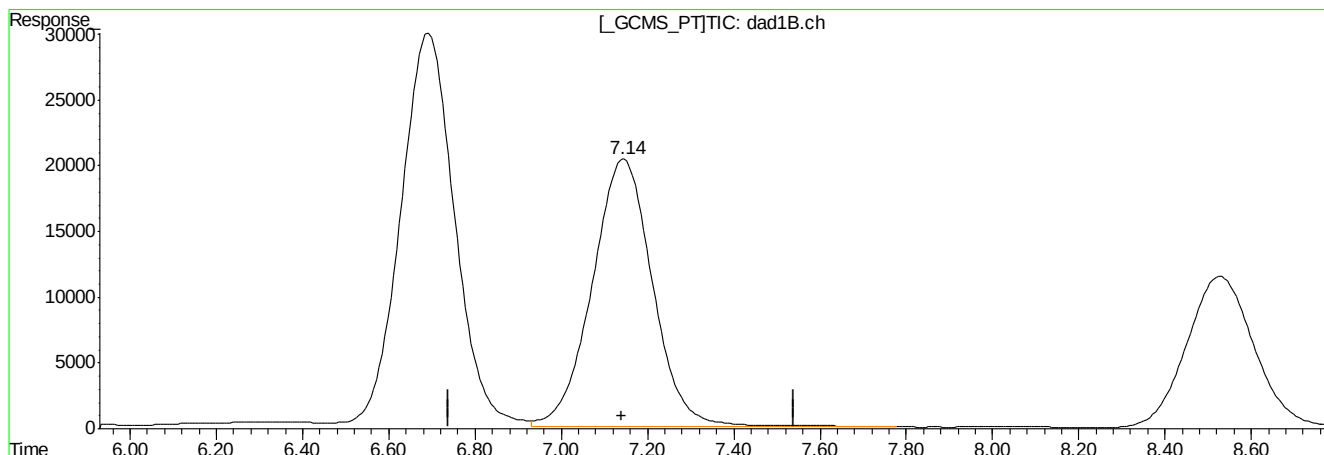
Supervisor approved: 02/08/23 09:44 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	2	7.14	Poor instrument integration
o-Nitrotoluene	88-72-2	2	17.15	Missed peak
PETN	78-11-5	2	19.49	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1A.ch
Acq On : 30-Jan-2023, 16:15:16 Operator: fouads
Sample : op95195-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:18 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.15min 507.363ppb

response 1996892

(8) 3,5-Dinitroaniline #2

7.15min 414.630ppb

response 2709766

QEdit

(+) = Expected Retention Time

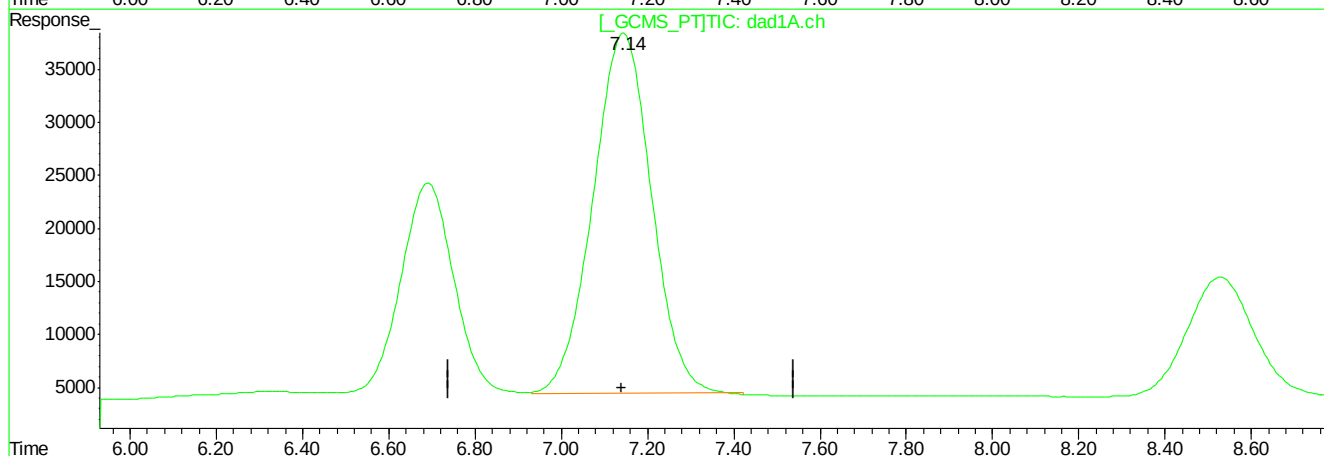
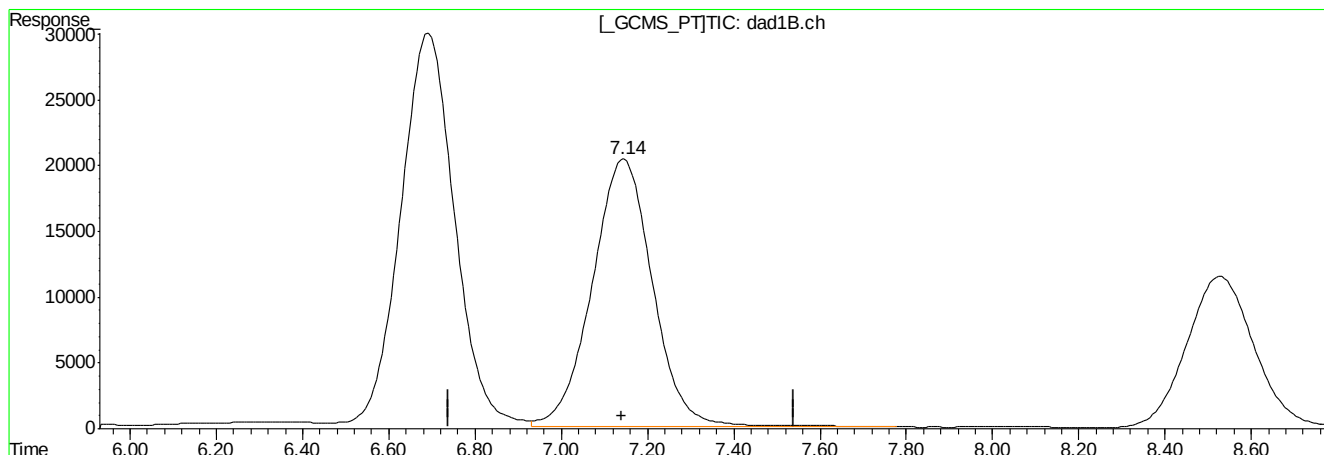
BB075446.D BBB2232_083122.M

Tue Jan 31 10:19:02 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1A.ch
Acq On : 30-Jan-2023, 16:15:16 Operator: fouads
Sample : op95195-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:18 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.15min 507.363ppb

response 1996892

(8) 3,5-Dinitroaniline #2

7.14min 490.644ppb m

response 3206546

(+) = Expected Retention Time

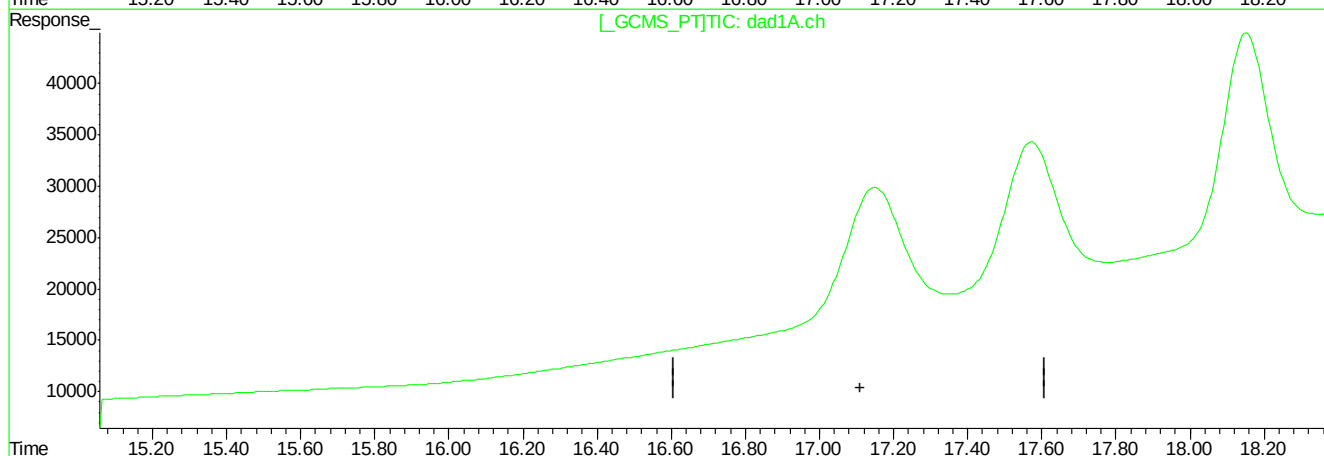
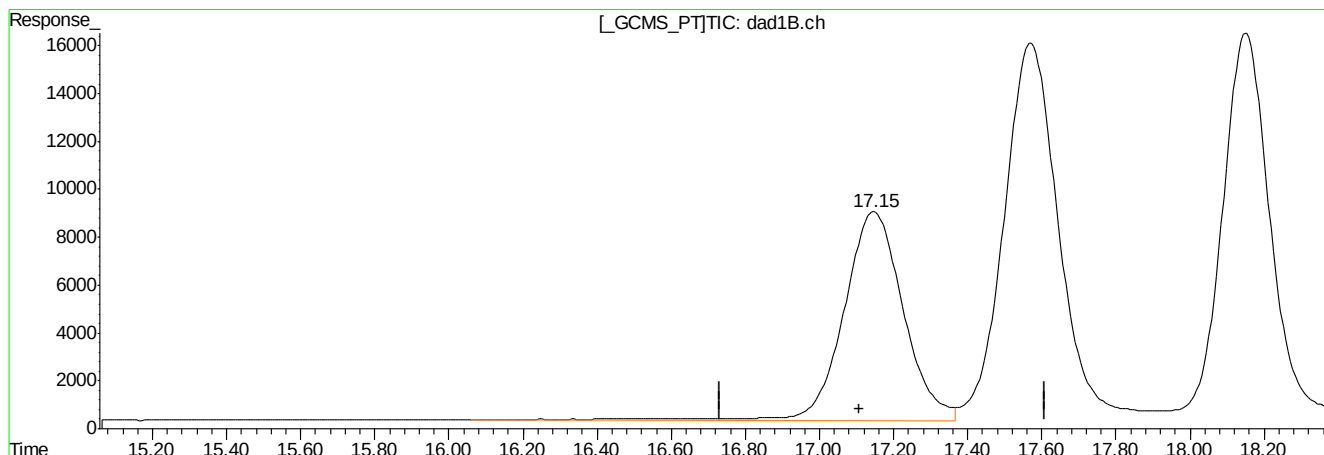
BB075446.D BBB2232_083122.M

Tue Jan 31 10:19:08 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1A.ch
Acq On : 30-Jan-2023, 16:15:16 Operator: fouads
Sample : op95195-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:18 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
17.15min 452.234ppb
response 976547

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

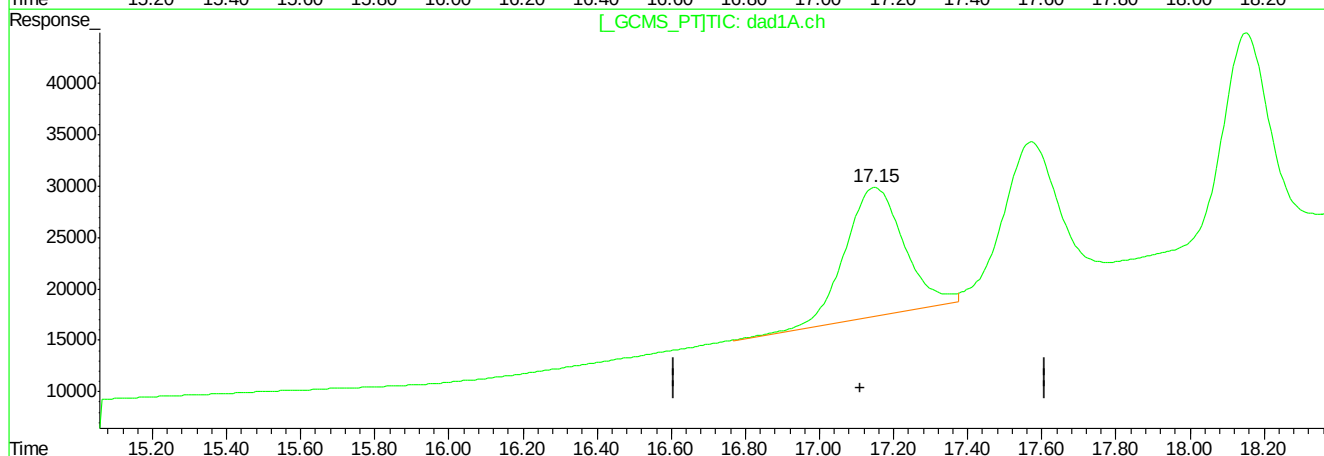
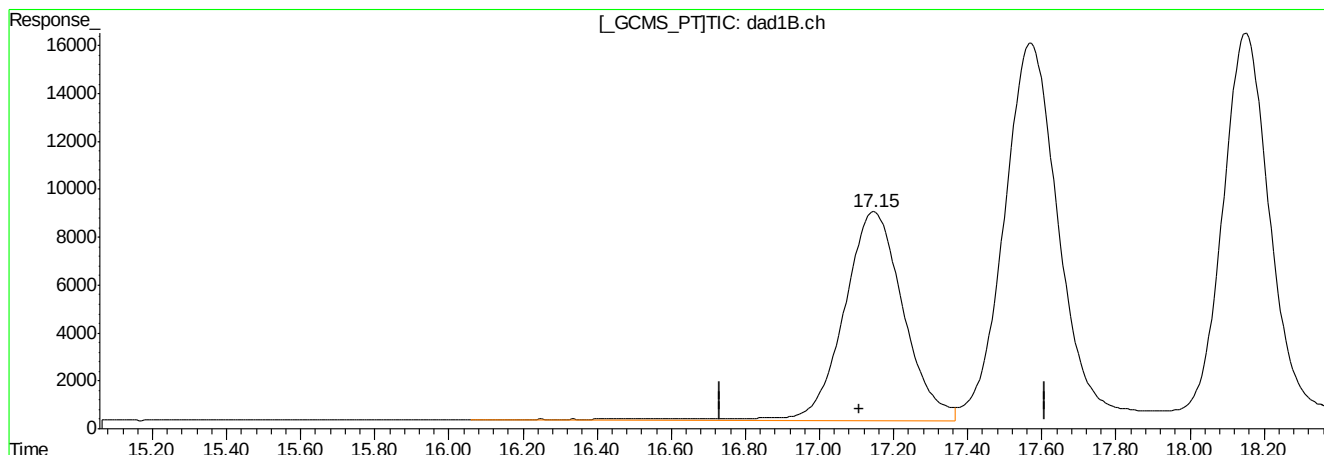
BB075446.D BBB2232_083122.M

Tue Jan 31 10:19:25 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1A.ch
Acq On : 30-Jan-2023, 16:15:16 Operator: fouads
Sample : op95195-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:18 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

17.15min 452.234ppb

response 976547

(18) o-Nitrotoluene #2

17.15min 433.017ppb m

response 1422937

(+) = Expected Retention Time

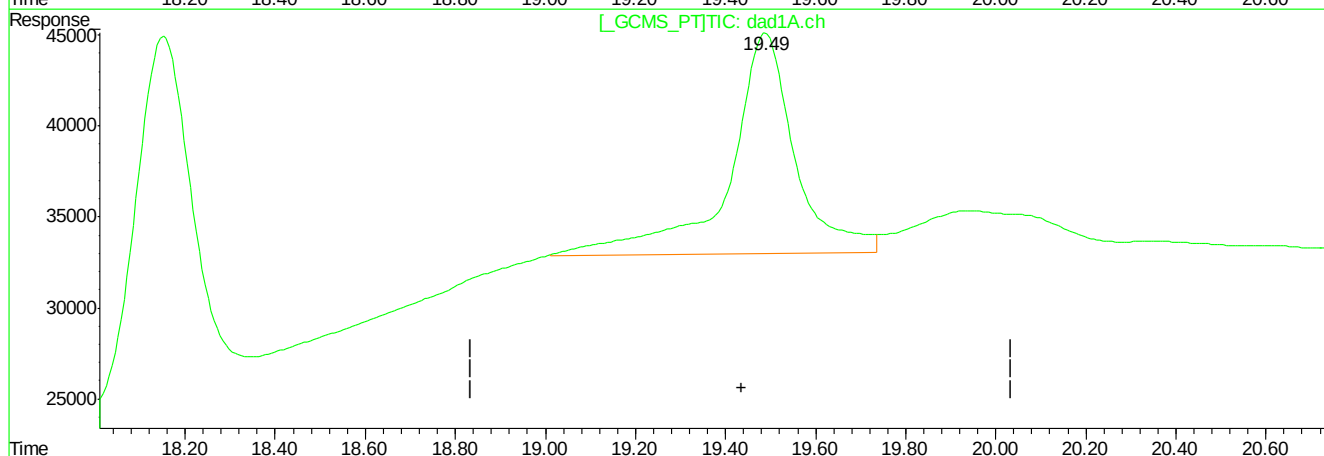
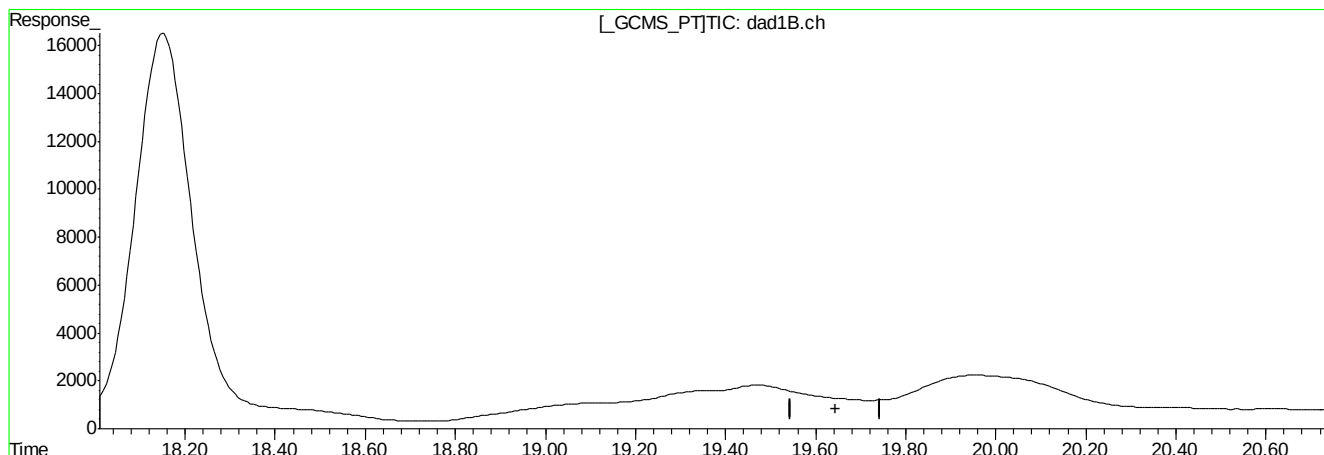
BB075446.D BBB2232_083122.M

Tue Jan 31 10:19:32 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1A.ch
Acq On : 30-Jan-2023, 16:15:16 Operator: fouads
Sample : op95195-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:18 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.49min 912.526ppb

response 1226428

QEdit

(+) = Expected Retention Time

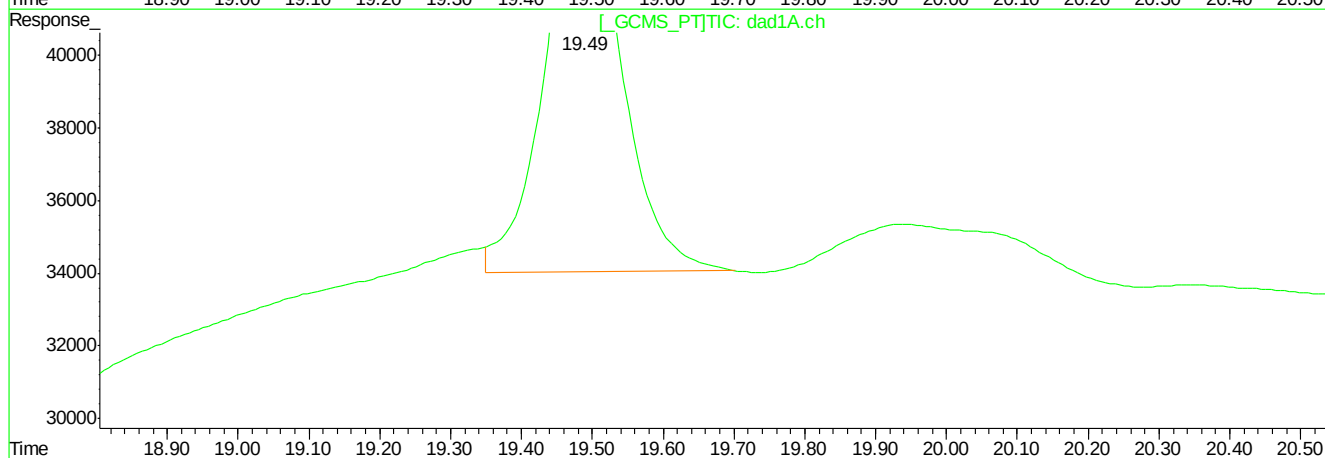
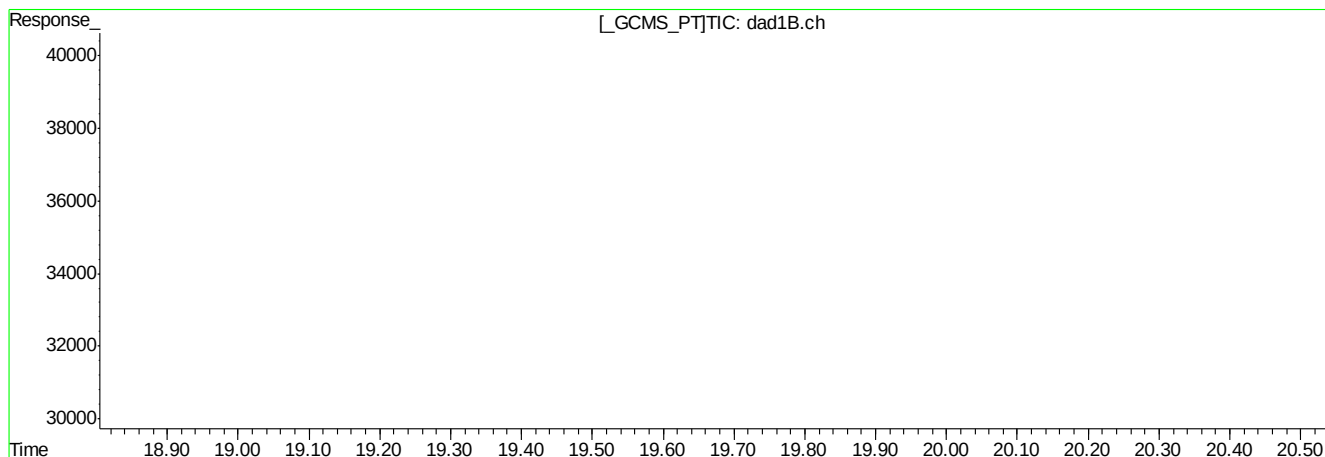
BB075446.D BBB2232_083122.M

Tue Jan 31 10:19:42 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1A.ch
Acq On : 30-Jan-2023, 16:15:16 Operator: fouads
Sample : op95195-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:18 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.49min 602.223ppb m

response 809383

(+) = Expected Retention Time

BB075446.D BBB2232_083122.M

Tue Jan 31 10:19:49 2023

Naresh Jiawan
02/08/23 09:44

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
Sample : op95195-ms Inst : G1315B
Misc : op95195,GBB2302,510,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 14:32:35 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Initial Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.17	13.17	1076525	1800208	502.480	423.711
Spiked Amount	500.000	Range 70 - 136	Recovery	=	100.50%	84.74%
Target Compounds						
1) TNX	1.47	1.47	788599	1230592	210.113	213.830
2) HMX	1.68	1.68	1321546	3663035	892.545	895.555
3) DNX	1.92	1.92	1388358	2217138	451.302	449.029
4) MNX	2.62	2.62	1482549	2287192	516.579	520.107
5) RDX	3.33	3.33	1000988	1621330	539.626	553.466
6) 1,3,5-Trinitrobe	5.39	5.39	3405114	5468828	856.498	878.567
7) 1,3-Dinitrobenze	6.67	6.67	2640939	1752070	506.836	509.802m
8) 3,5-Dinitroanili	7.12	7.12	2014599	3439611	511.862	526.306m
9) Nitrobenzene	8.50	8.50	1170052	1143032	390.199	385.566
10) Nitroglycerin	0.00	10.31	0	662124	N.D.	521.260 #
11) Tetryl	11.29	11.29	1287149	2004108	455.524	435.117
12) 2,4,6-Trinitroto	11.66	11.66	2696952	3165672	737.835	710.944
13) 2-Amino-4,6-Dini	12.08	12.08	2104661	3106985	665.913	629.161
14) 4-Amino-2,6-Dini	12.63	12.63	1474518	2837372	642.048	577.340
16) 2,4-Dinitrotolue	13.73	13.73	1879891	1421311	401.365	456.415
17) 2,6-Dinitrotolue	14.19	14.20	748948	1546056	493.279	440.915
18) o-Nitrotoluene	17.12	17.12	1014769	1246304	469.934	379.265m
19) p-Nitrotoluene	17.54	17.55	1506126	1127050	450.211	398.782
20) m-Nitrotoluene	18.13	18.13	1427156	1357064	458.418	349.671
21) PETN	0.00	19.47	0	937342	N.D.	697.431m#

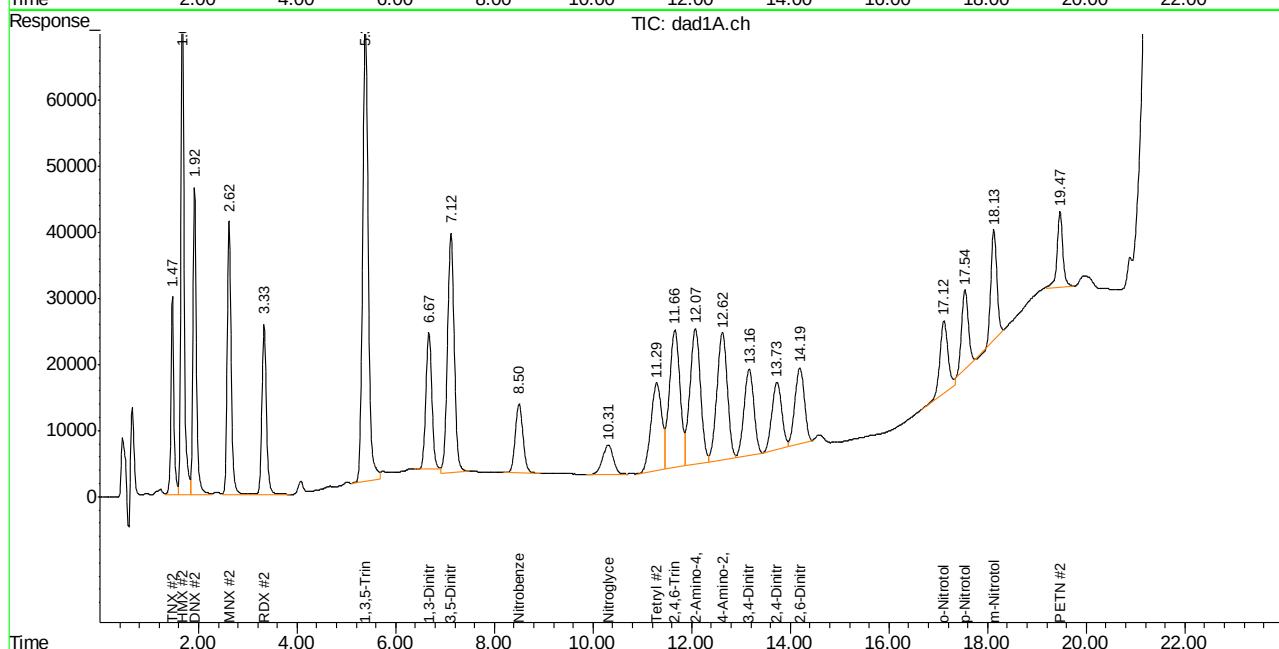
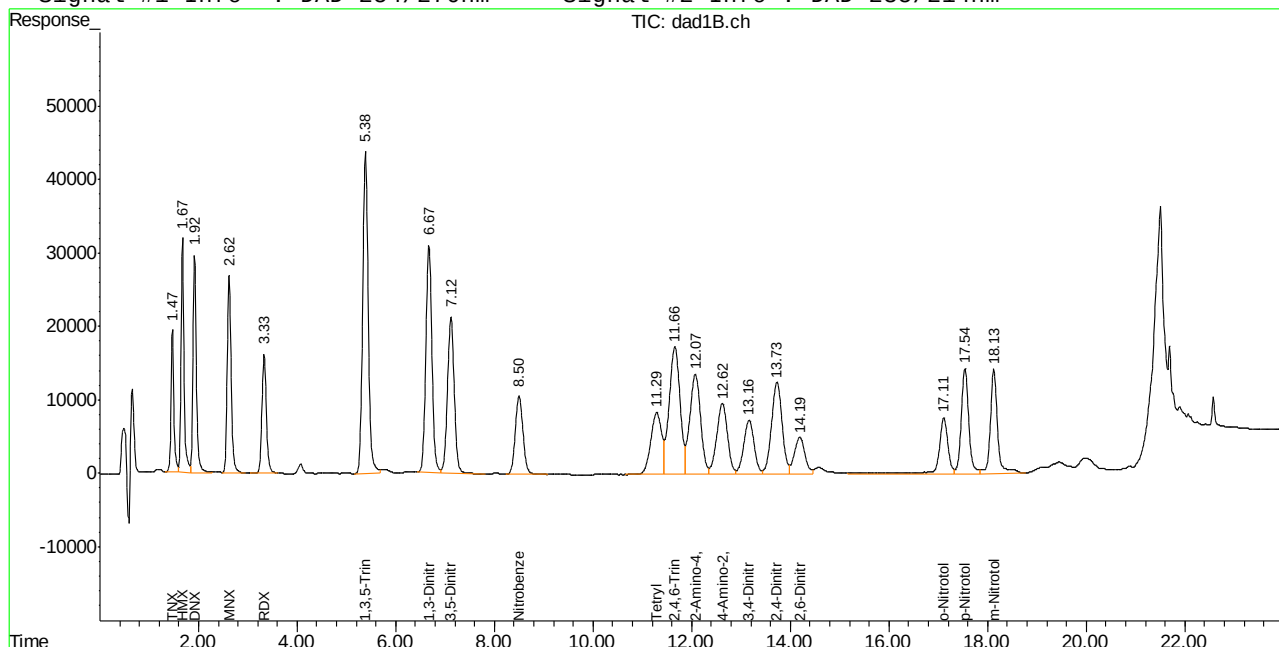
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
BB075453.D BBB2232_083122.M Wed Feb 01 09:37:12 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
Sample : op95195-ms Inst : G1315B
Misc : op95195, GBB2302, 510,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Feb 1 8:24 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

OP95195-MS

Method:

SW846 8330B

Lab FileID:

BB075453.D

Analyst approved:

02/01/23 09:42 Fouad Sekkar

Injection Time:

01/31/23 14:08

Supervisor approved:

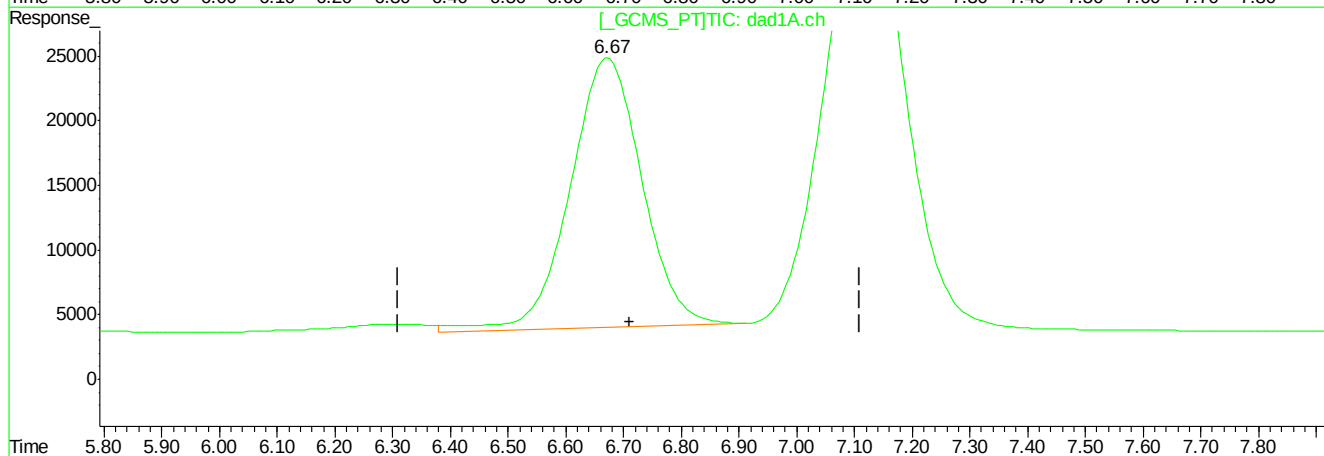
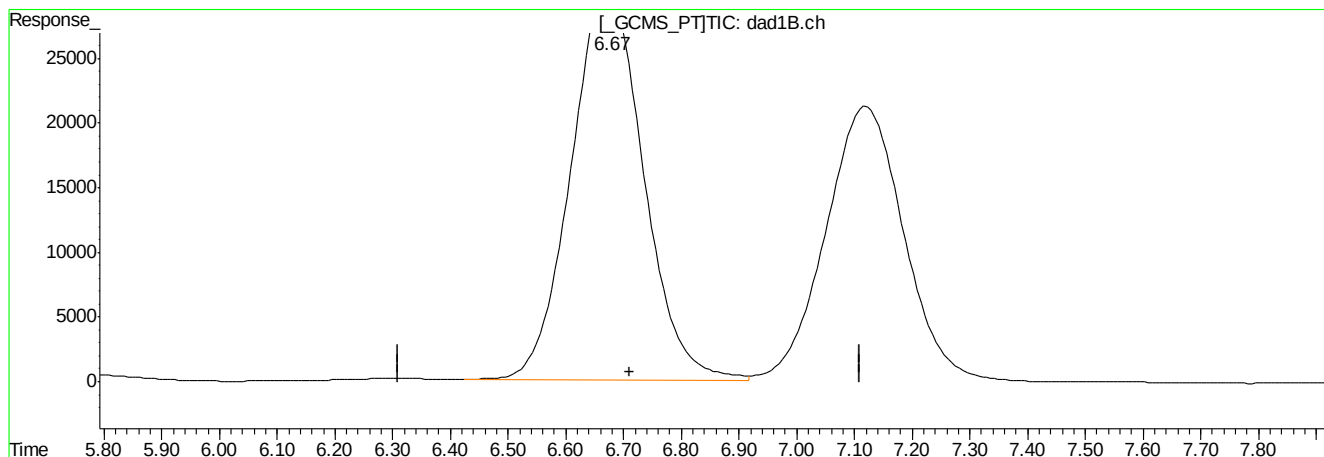
02/08/23 09:44 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3-Dinitrobenzene	99-65-0	2	6.67	Poor instrument integration
3,5-Dinitroaniline	618-87-1	2	7.12	Poor instrument integration
o-Nitrotoluene	88-72-2	2	17.12	Missed peak
PETN	78-11-5	2	19.47	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
Sample : op95195-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 14:32 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

6.67min 506.836ppb

response 2640939

(7) 1,3-Dinitrobenzene #2

6.67min 526.484ppb

response 1809399

(+) = Expected Retention Time

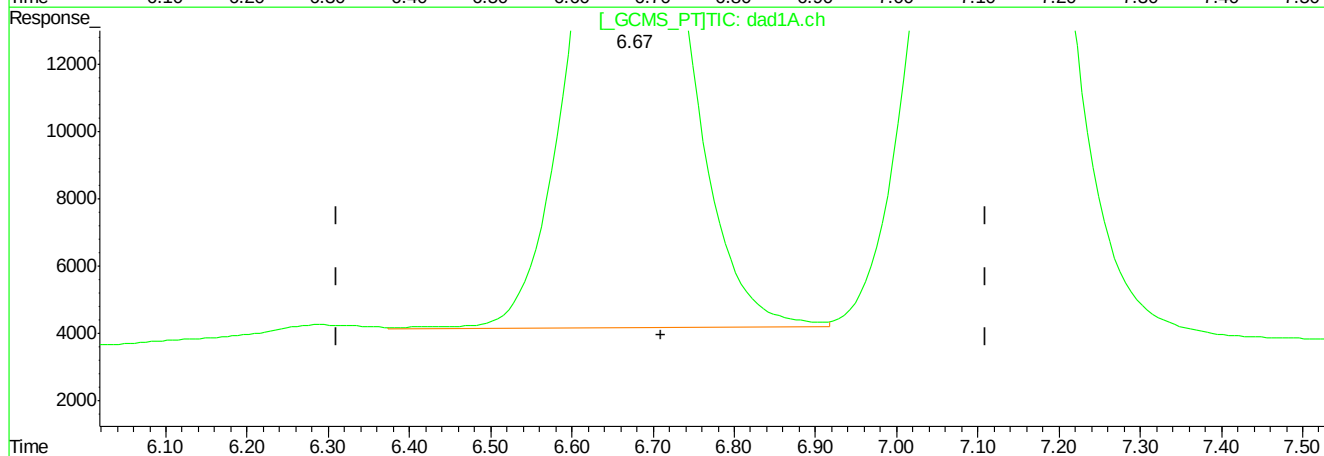
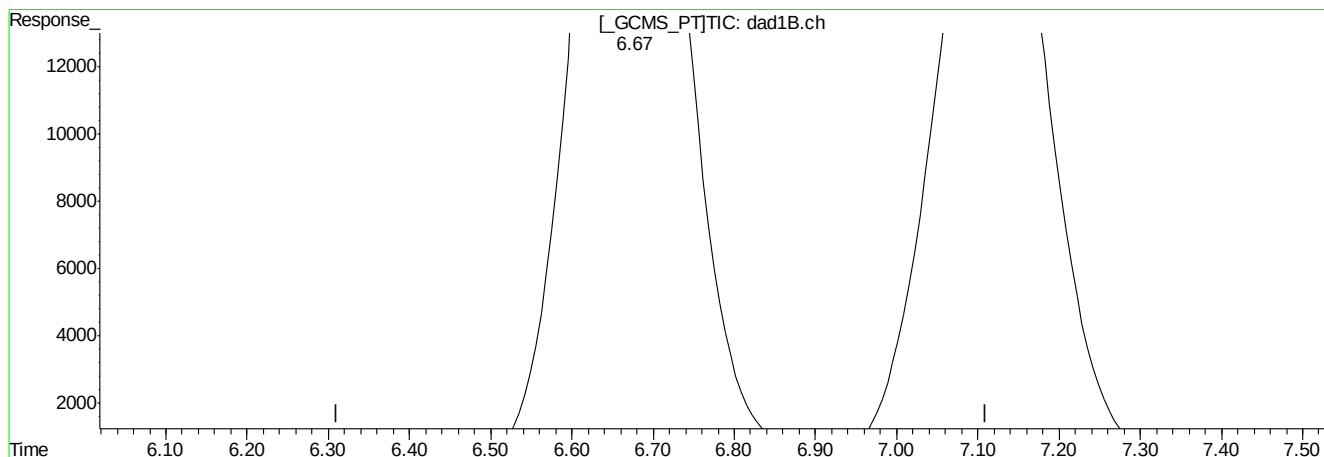
BB075453.D BBB2232_083122.M

Wed Feb 01 08:23:33 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
Sample : op95195-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 14:32 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

6.67min 506.836ppb

response 2640939

(7) 1,3-Dinitrobenzene #2

6.67min 509.802ppb m

response 1752070

(+) = Expected Retention Time

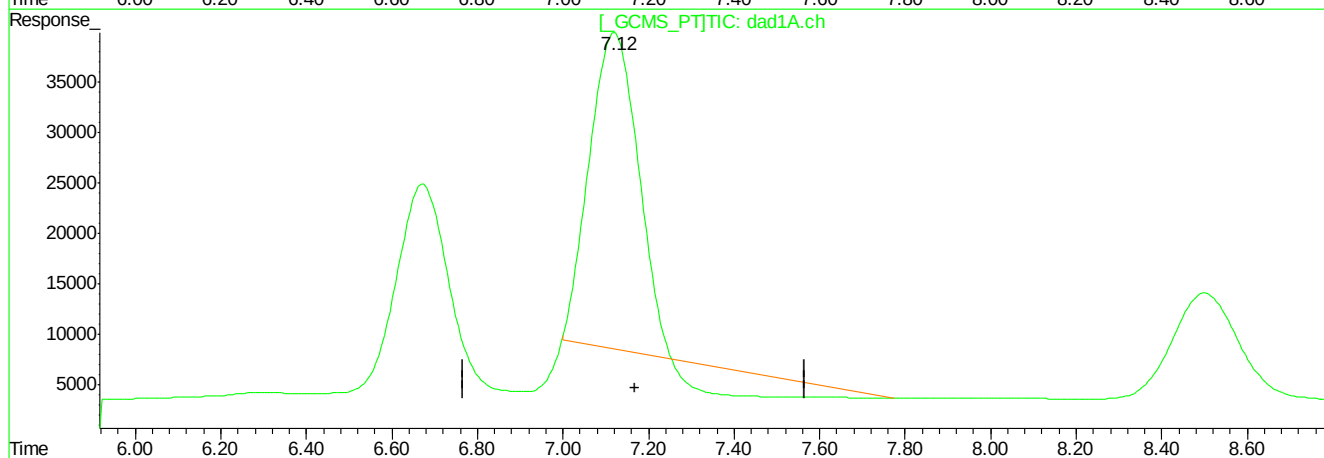
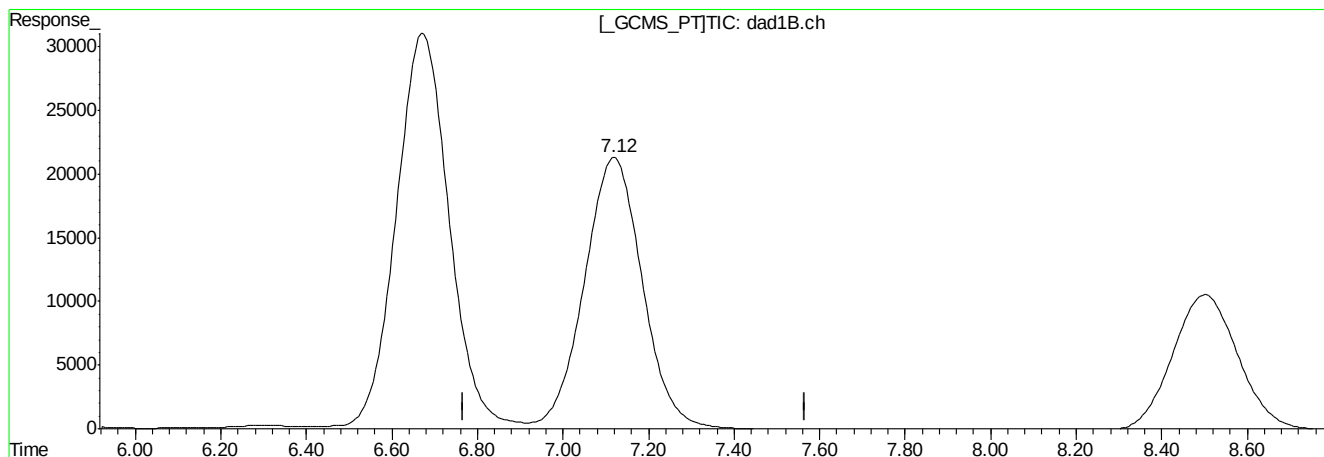
BB075453.D BBB2232_083122.M

Wed Feb 01 08:23:41 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
Sample : op95195-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 14:32 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.12min 511.862ppb

response 2014599

(8) 3,5-Dinitroaniline #2

7.12min 305.975ppb

response 1999662

(+) = Expected Retention Time

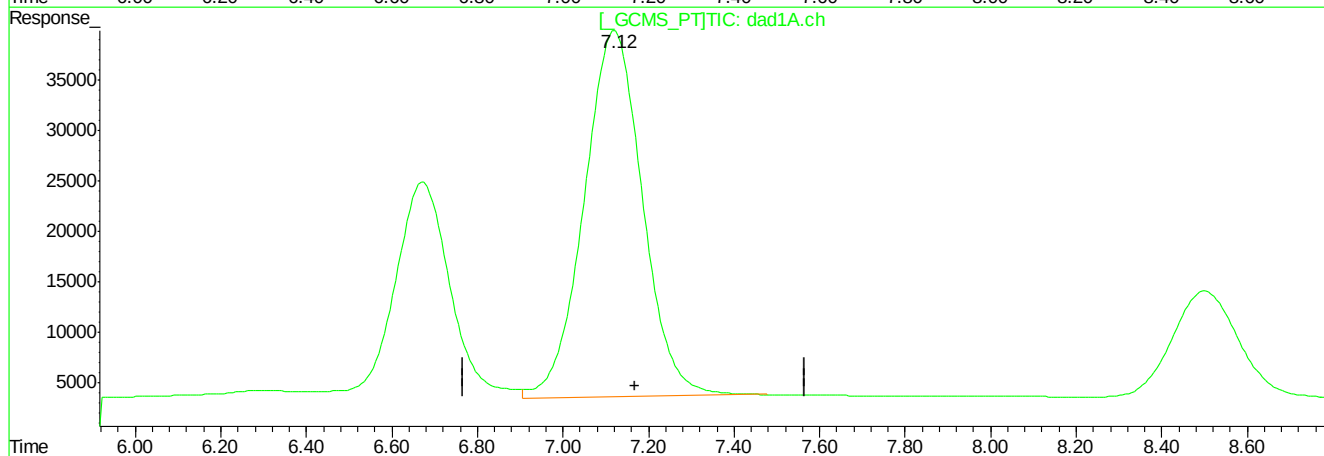
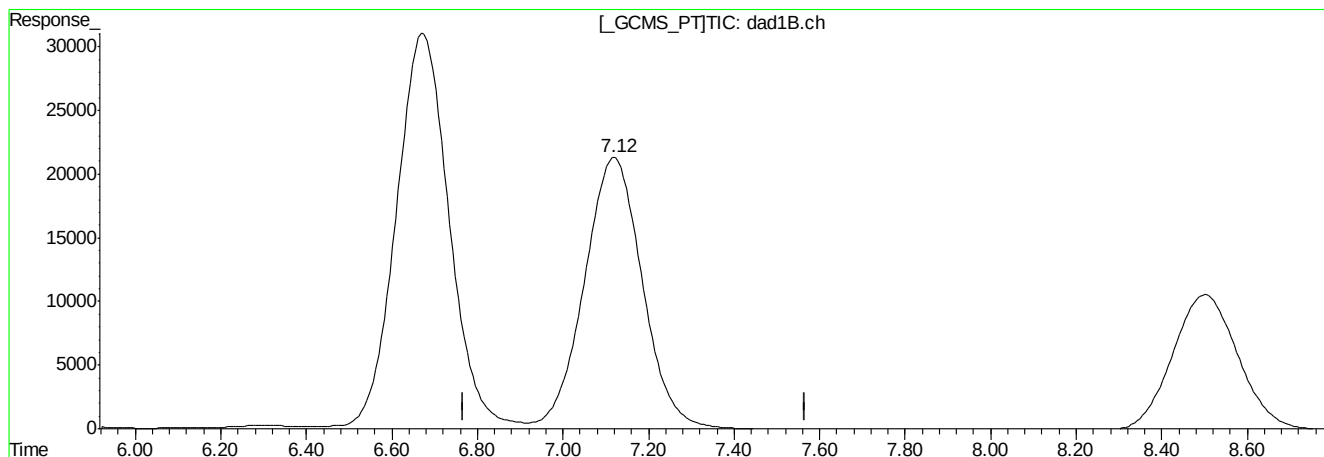
BB075453.D BBB2232_083122.M

Wed Feb 01 08:23:46 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
Sample : op95195-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 14:32 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.12min 511.862ppb

response 2014599

(8) 3,5-Dinitroaniline #2

7.12min 526.306ppb m

response 3439611

QEdit

(+) = Expected Retention Time

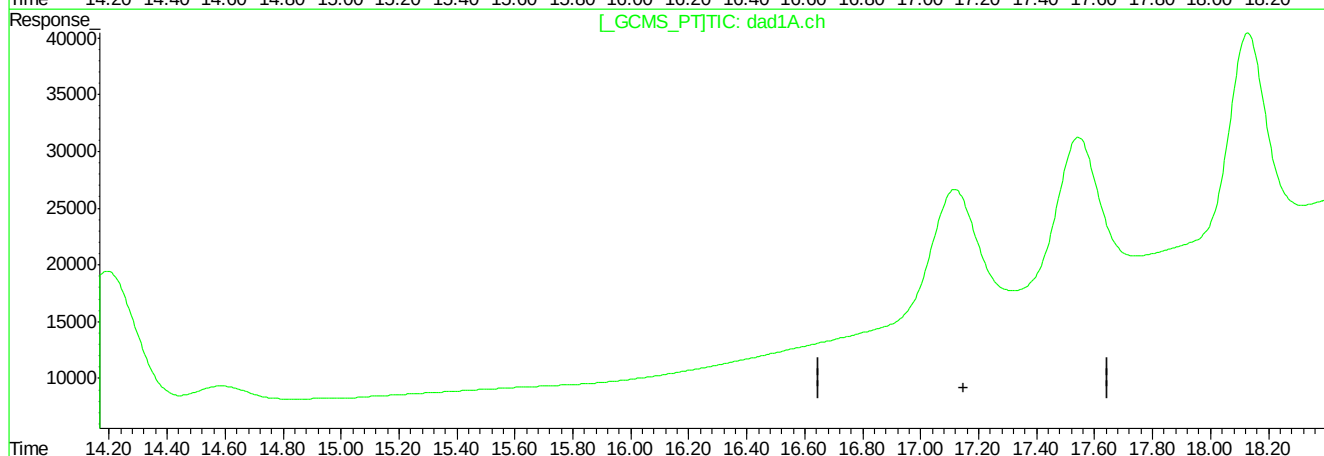
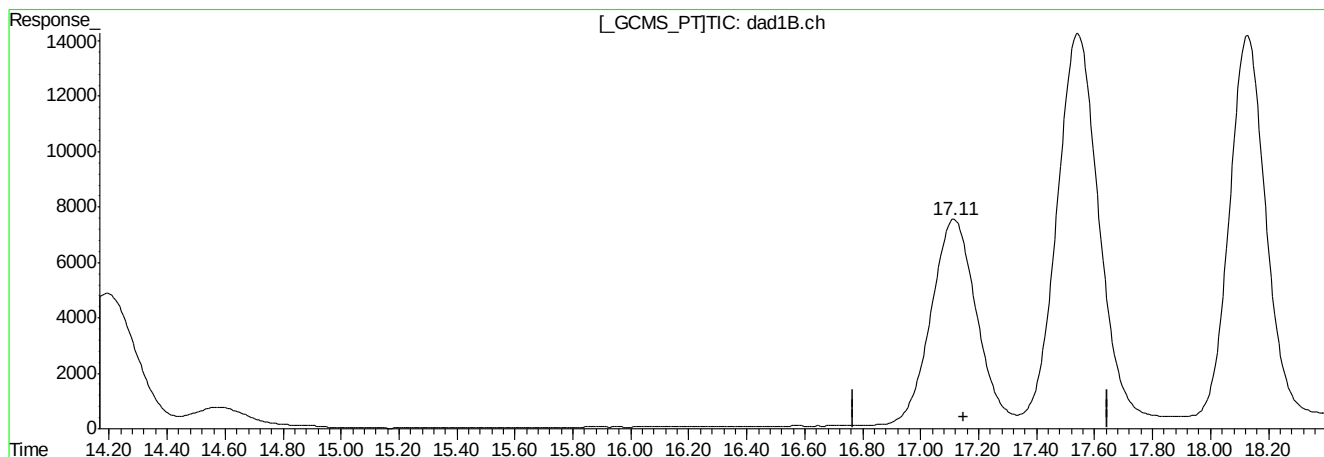
BB075453.D BBB2232_083122.M

Wed Feb 01 08:23:52 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
Sample : op95195-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 14:32 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



(18) o-Nitrotoluene
17.12min 469.934ppb
response 1014769

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

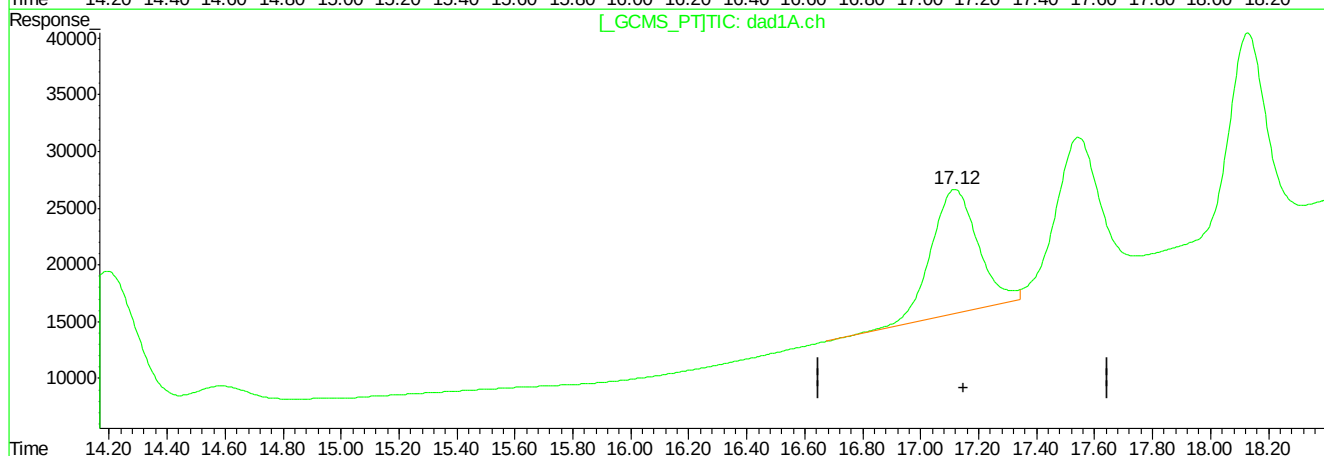
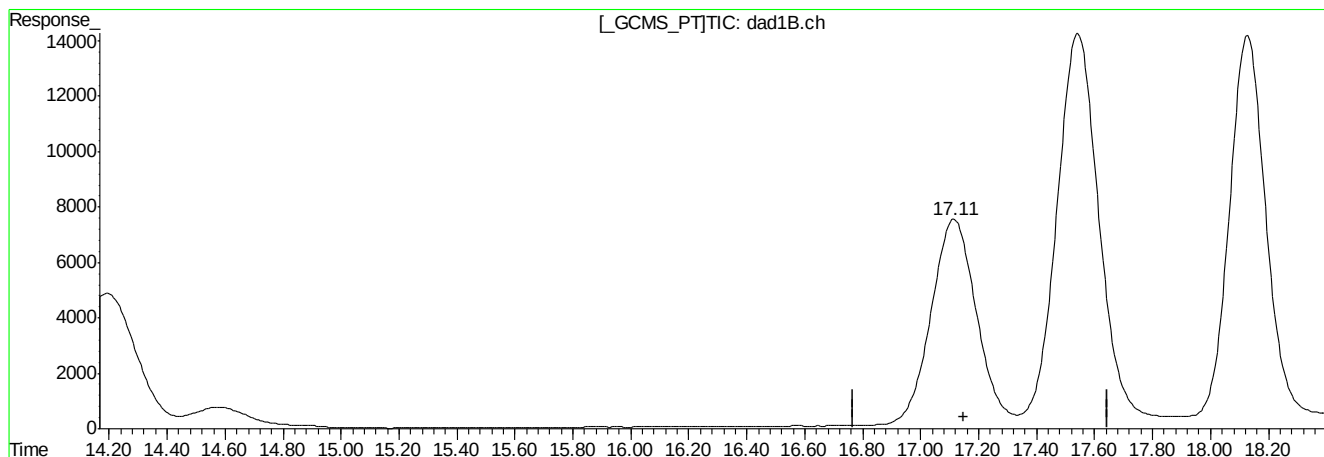
BB075453.D BBB2232_083122.M

Wed Feb 01 08:24:11 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
Sample : op95195-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 14:32 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



(18) o-Nitrotoluene
17.12min 469.934ppb
response 1014769

(18) o-Nitrotoluene #2
17.12min 379.265ppb m
response 1246304

(+) = Expected Retention Time

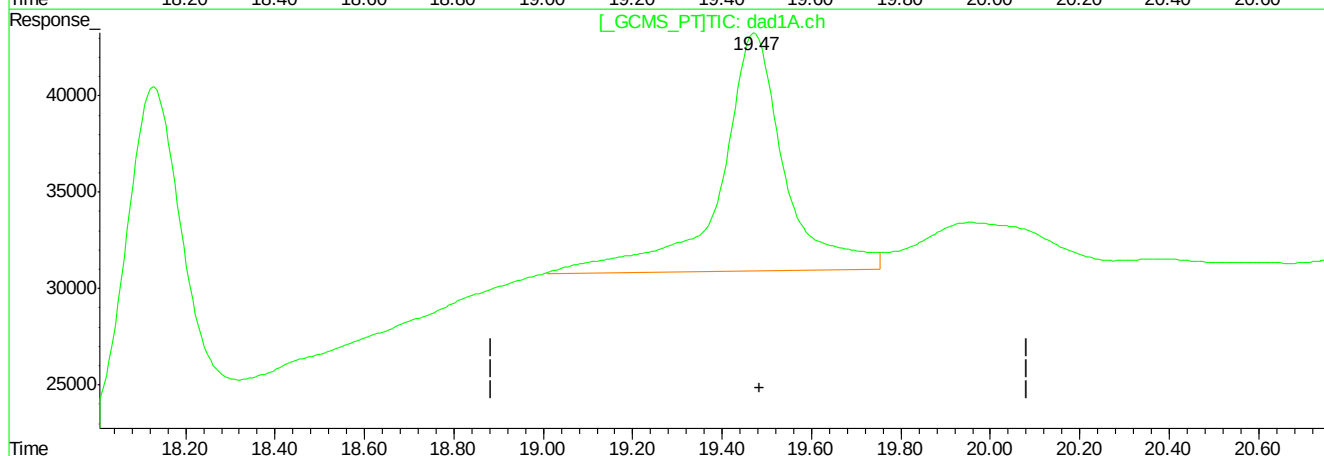
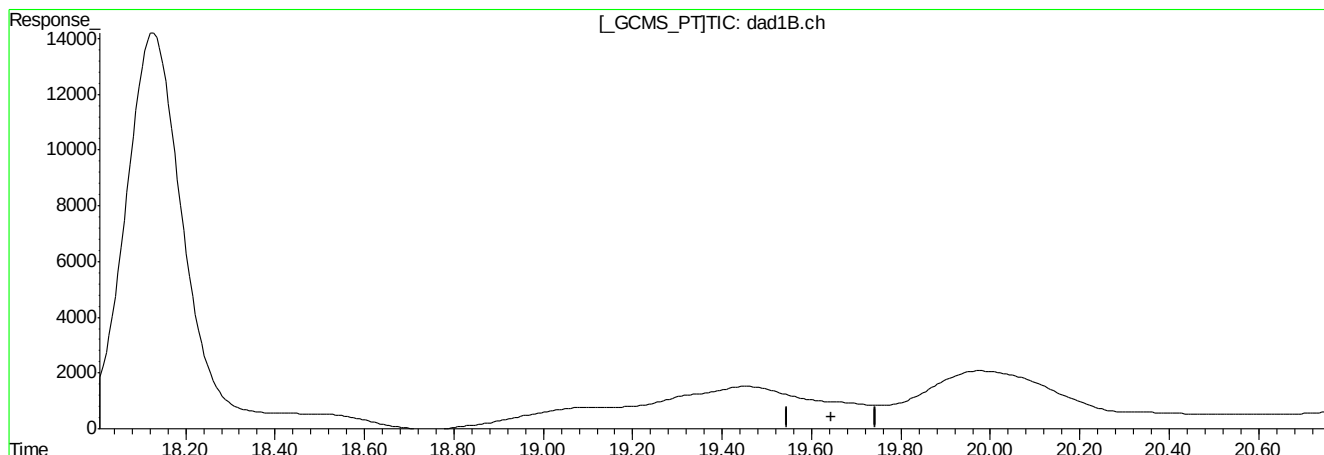
BB075453.D BBB2232_083122.M

Wed Feb 01 08:24:29 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
Sample : op95195-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 14:32 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.47min 919.778ppb

response 1236174

(+) = Expected Retention Time

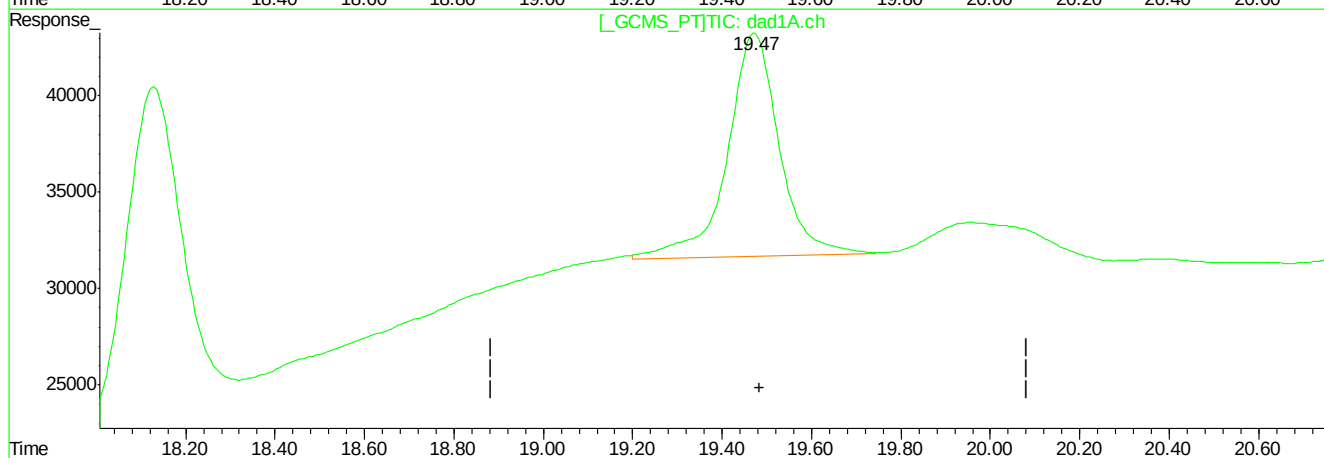
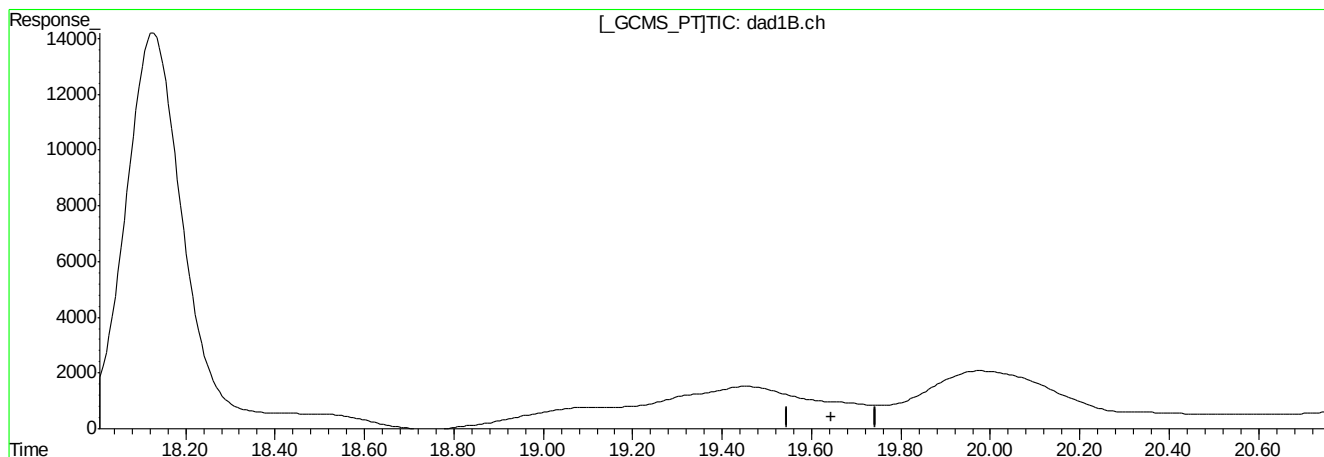
BB075453.D BBB2232_083122.M

Wed Feb 01 08:24:36 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
Sample : op95195-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 14:32 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.47min 697.431ppb m

response 937342

(+) = Expected Retention Time

BB075453.D BBB2232_083122.M

Wed Feb 01 08:24:46 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1B.ch Vial: 10
 Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1A.ch
 Acq On : 30-Jan-2023, 16:15:16 Operator: fouads
 Sample : op95195-msd Inst : G1315B
 Misc : op95195, GBB2301, 510,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 31 10:18:47 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.21	13.21	1039327	1724369	485.117	405.861
Spiked Amount	500.000	Range	70 - 136	Recovery	=	97.02% 81.17%
Target Compounds						
1) TNX	1.47	1.47	781414	1215821	208.199	211.263
2) HMX	1.68	1.68	1326048	3754195	895.585	917.842
3) DNX	1.93	1.93	1386169	2246744	450.591	455.025
4) MNX	2.63	2.63	1470044	2268218	512.221	515.792
5) RDX	3.34	3.34	982481	1571768	529.649	536.547
6) 1,3,5-Trinitrobe	5.40	5.40	3515153	5697083	884.177	915.236
7) 1,3-Dinitrobenze	6.69	6.69	2618507	1742925	502.531	507.141
8) 3,5-Dinitroanili	7.15	7.14	1996892	3206546	507.363	490.644m
9) Nitrobenzene	8.53	8.53	1249507	1223328	416.696	412.652
10) Nitroglycerin	0.00	10.34	0	672978	N.D.	529.805 #
11) Tetryl	11.34	11.34	1336902	2024043	473.131	439.446
12) 2,4,6-Trinitroto	11.70	11.70	2668814	3098011	730.137	695.749
13) 2-Amino-4,6-Dini	12.12	12.12	2043463	2980221	646.550	603.491
14) 4-Amino-2,6-Dini	12.67	12.67	1427226	2724639	621.456	554.402
16) 2,4-Dinitrotolue	13.77	13.77	1822820	1376035	389.180	441.876
17) 2,6-Dinitrotolue	14.23	14.23	714252	1519342	470.427	433.296
18) o-Nitrotoluene	17.15	17.15	976547	1422937	452.234	433.017m
19) p-Nitrotoluene	17.57	17.57	1627181	1240293	486.397	438.851
20) m-Nitrotoluene	18.15	18.15	1530236	1565288	491.528	403.323
21) PETN	0.00	19.49	0	809383	N.D.	602.223m#

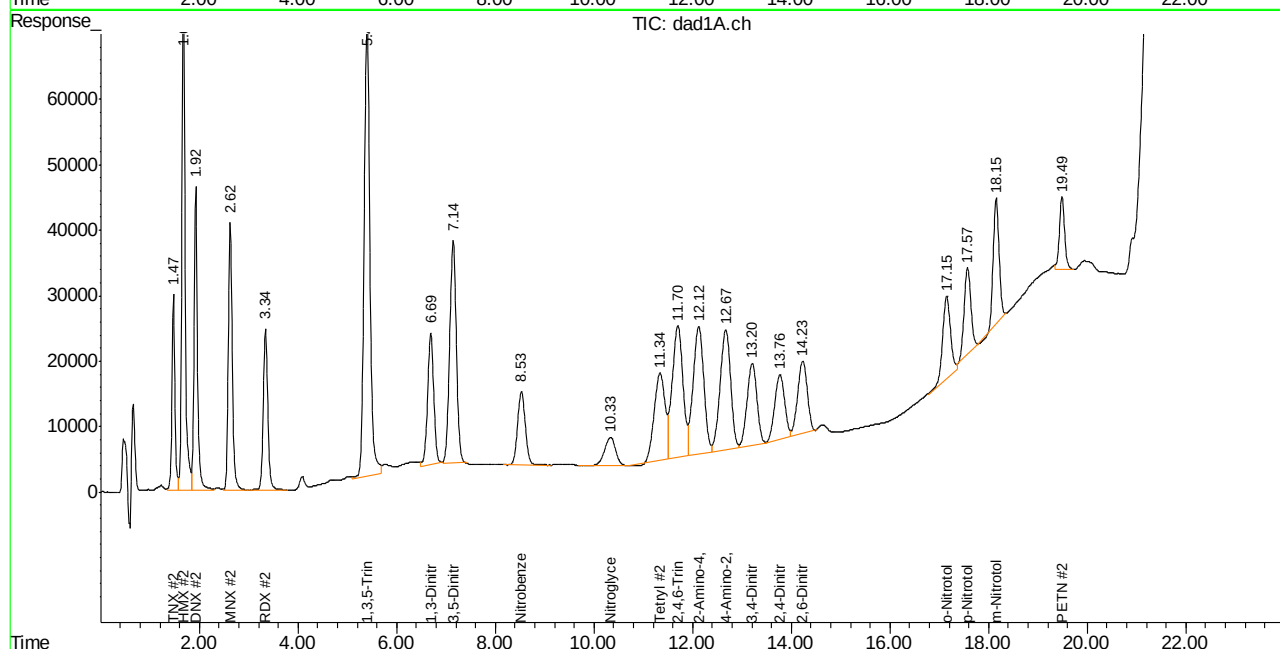
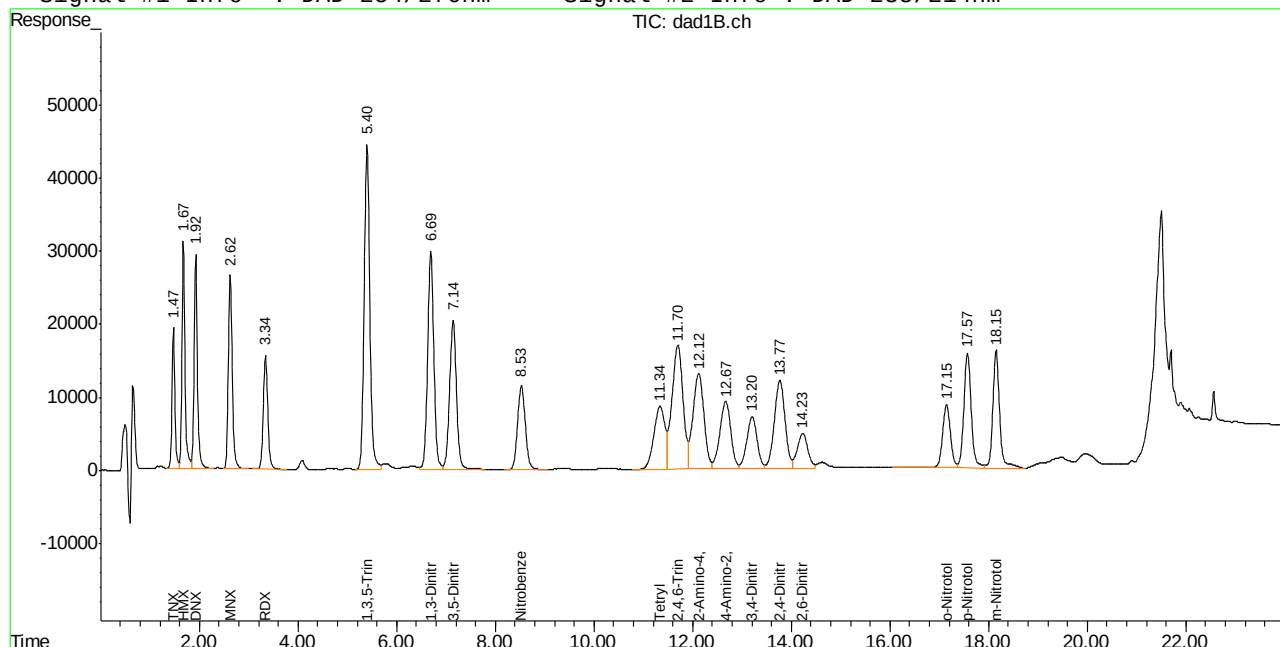
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075446.D BBB2232_083122.M Wed Feb 01 08:44:00 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1A.ch
Acq On : 30-Jan-2023, 16:15:16 Operator: fouads
Sample : op95195-msd Inst : G1315B
Misc : op95195, GBB2301, 510,,, 10, 1, water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:19 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: OP95195-MSD

Method: SW846 8330B

Lab FileID: BB075446.D

Analyst approved: 02/01/23 09:33 Fouad Sekkar

Injection Time: 01/30/23 16:15

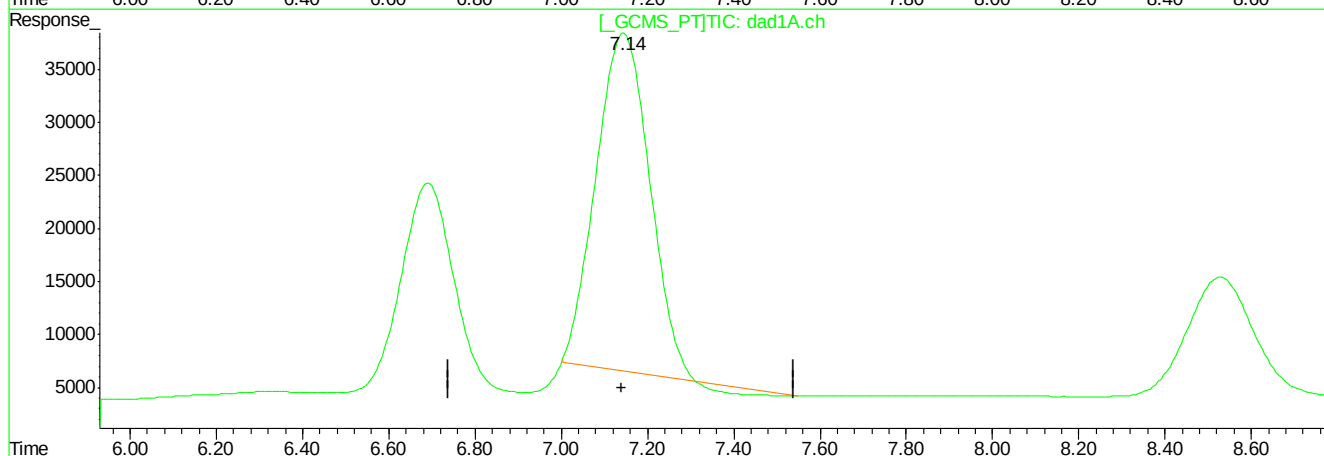
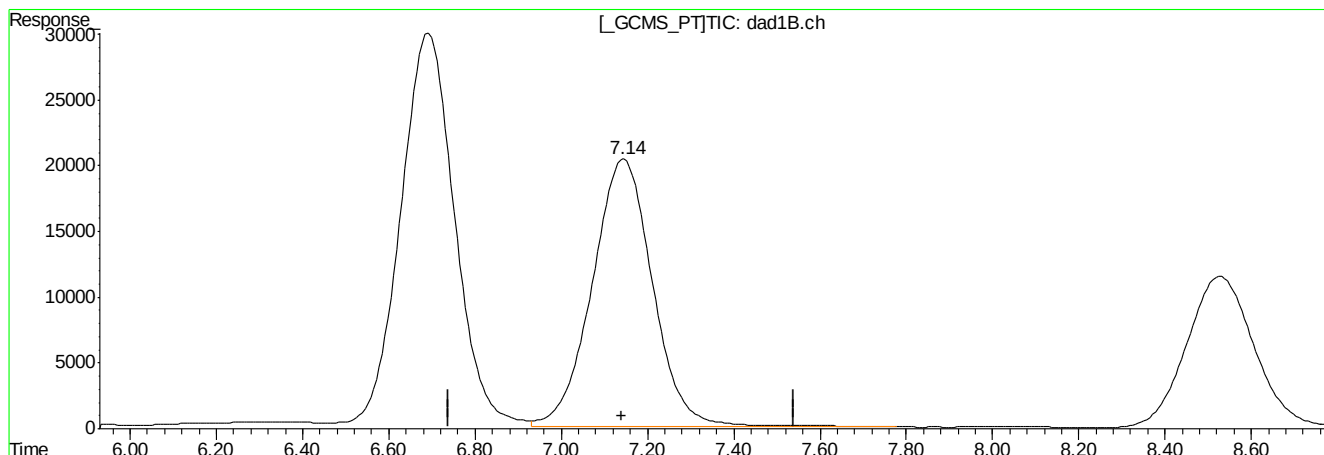
Supervisor approved: 02/08/23 09:44 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	2	7.14	Poor instrument integration
o-Nitrotoluene	88-72-2	2	17.15	Missed peak
PETN	78-11-5	2	19.49	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1A.ch
Acq On : 30-Jan-2023, 16:15:16 Operator: fouads
Sample : op95195-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:18 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.15min 507.363ppb

response 1996892

(8) 3,5-Dinitroaniline #2

7.15min 414.630ppb

response 2709766

(+) = Expected Retention Time

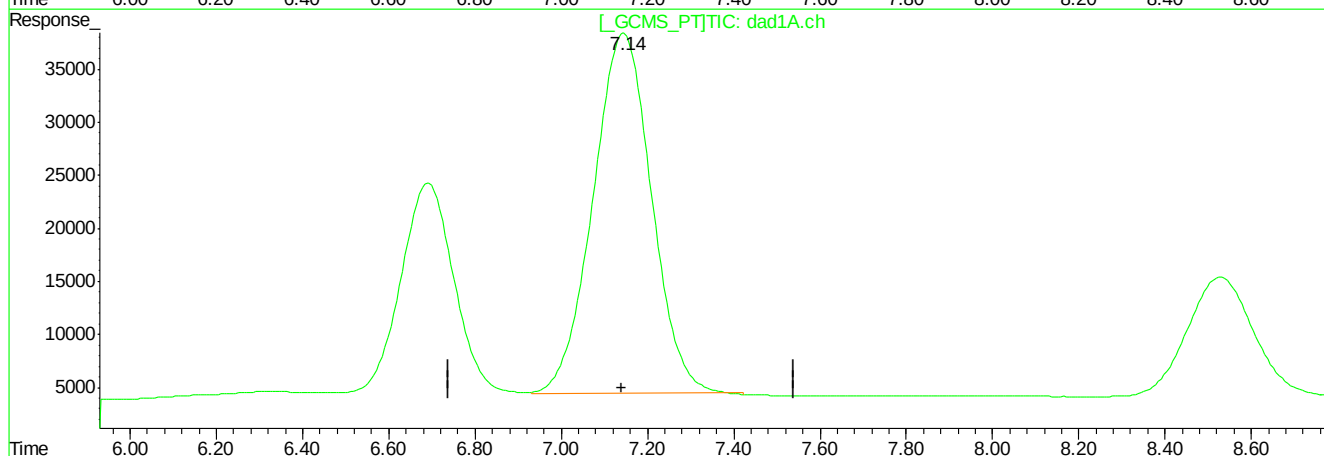
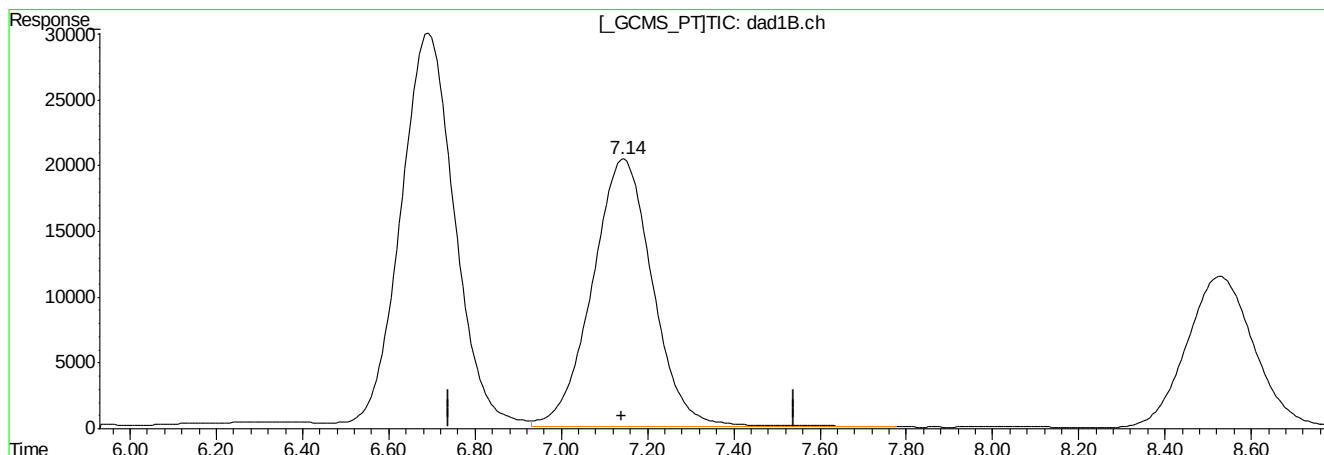
BB075446.D BBB2232_083122.M

Tue Jan 31 10:19:02 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1A.ch
Acq On : 30-Jan-2023, 16:15:16 Operator: fouads
Sample : op95195-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:18 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.15min 507.363ppb

response 1996892

(8) 3,5-Dinitroaniline #2

7.14min 490.644ppb m

response 3206546

(+) = Expected Retention Time

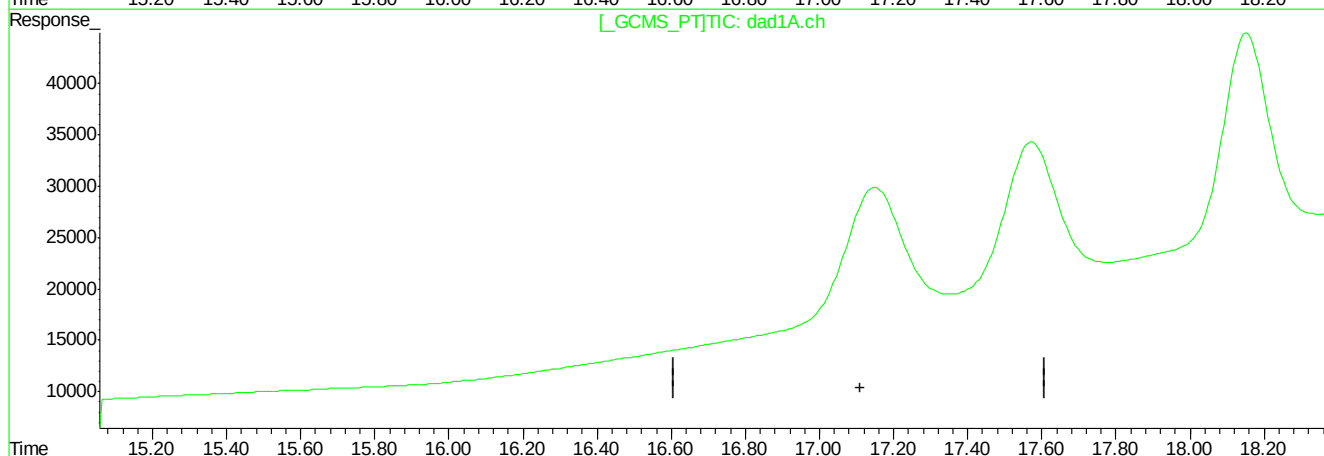
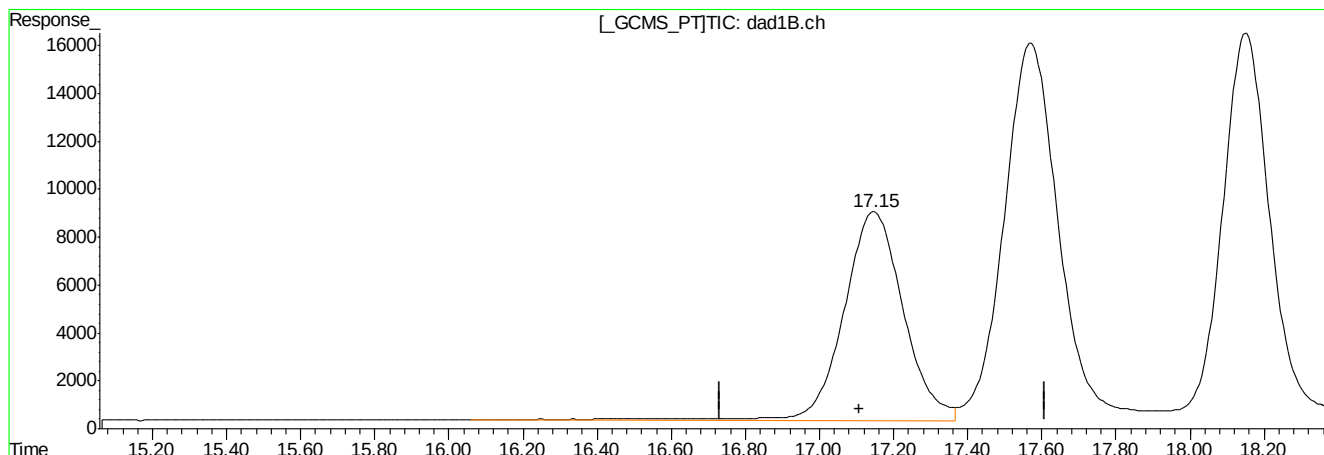
BB075446.D BBB2232_083122.M

Tue Jan 31 10:19:08 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1A.ch
Acq On : 30-Jan-2023, 16:15:16 Operator: fouads
Sample : op95195-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:18 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
17.15min 452.234ppb
response 976547

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

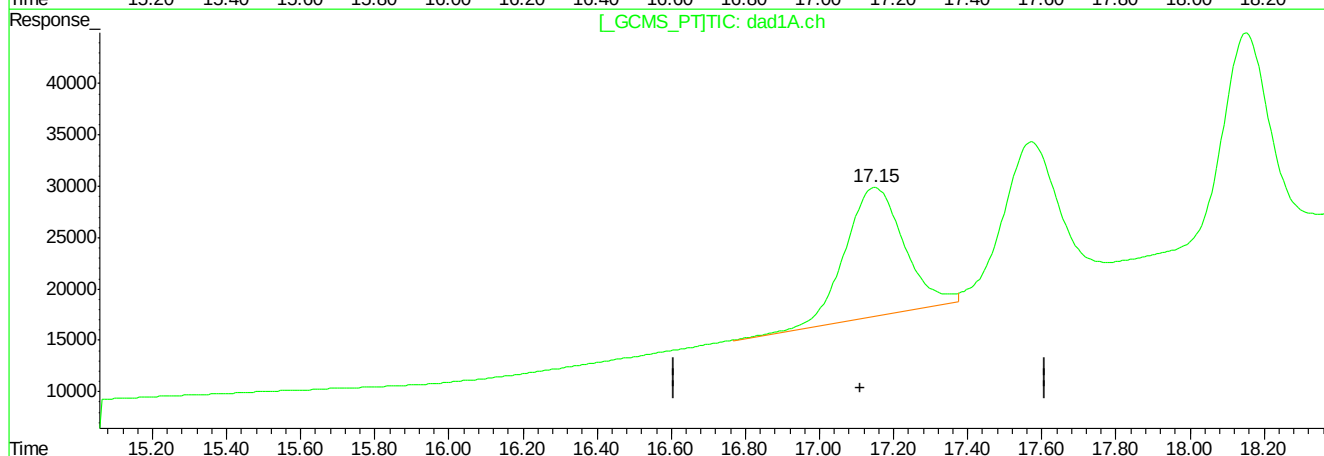
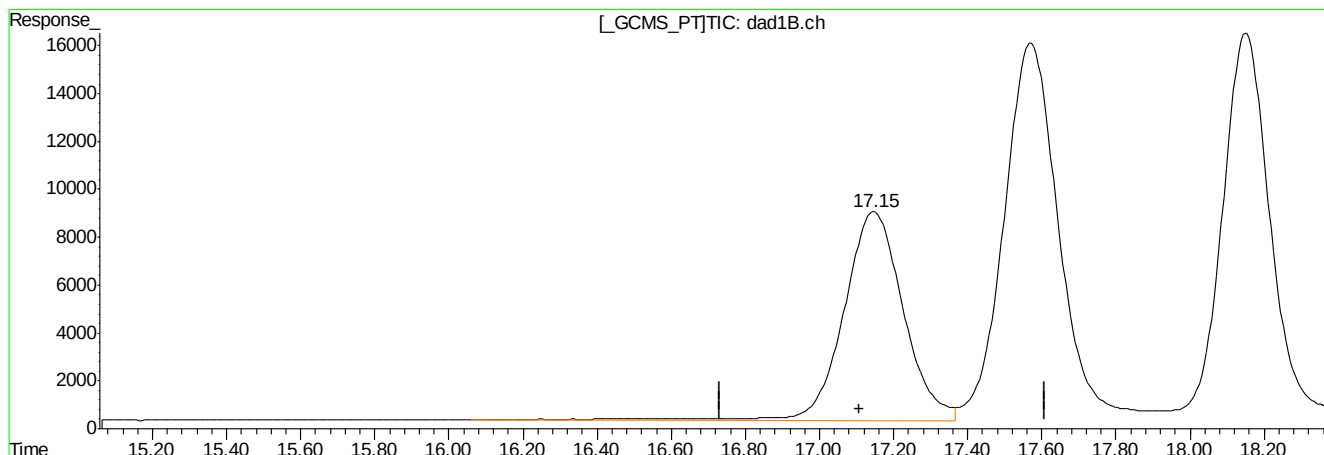
BB075446.D BBB2232_083122.M

Tue Jan 31 10:19:25 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1A.ch
Acq On : 30-Jan-2023, 16:15:16 Operator: fouads
Sample : op95195-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:18 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

17.15min 452.234ppb

response 976547

(18) o-Nitrotoluene #2

17.15min 433.017ppb m

response 1422937

(+) = Expected Retention Time

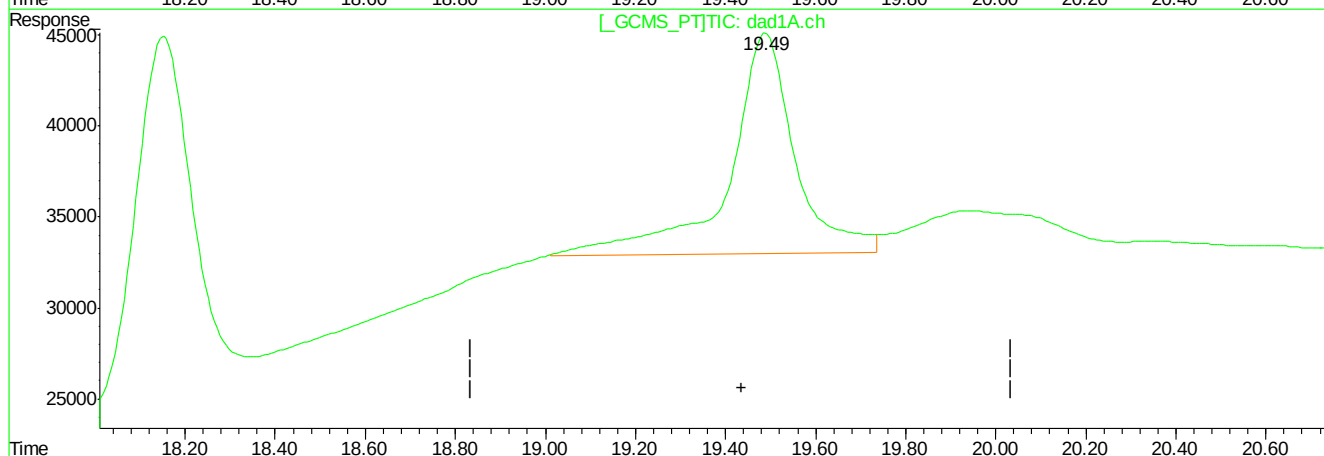
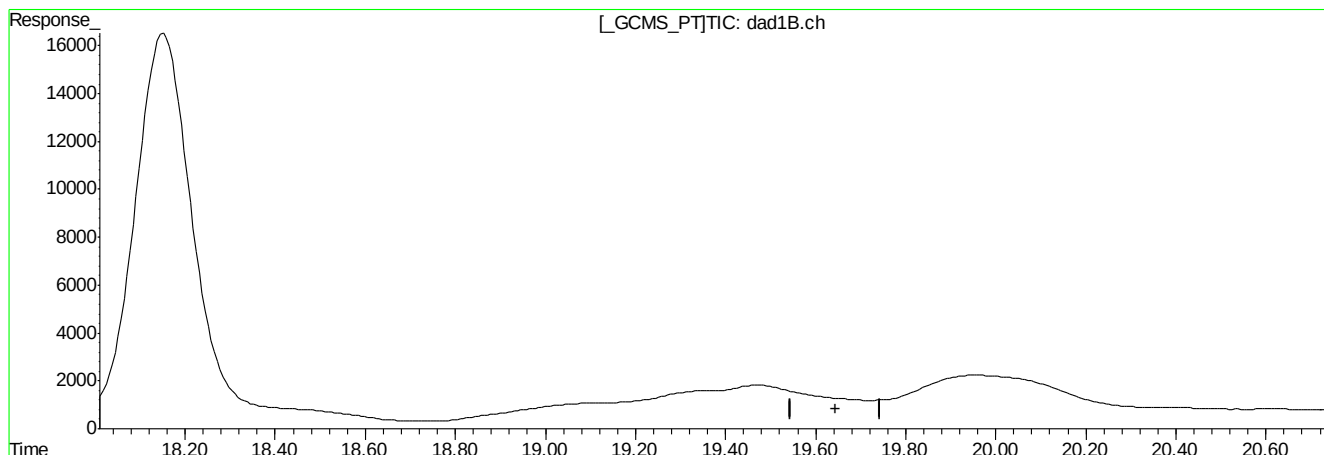
BB075446.D BBB2232_083122.M

Tue Jan 31 10:19:32 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1A.ch
Acq On : 30-Jan-2023, 16:15:16 Operator: fouads
Sample : op95195-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:18 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.49min 912.526ppb

response 1226428

QEdit

(+) = Expected Retention Time

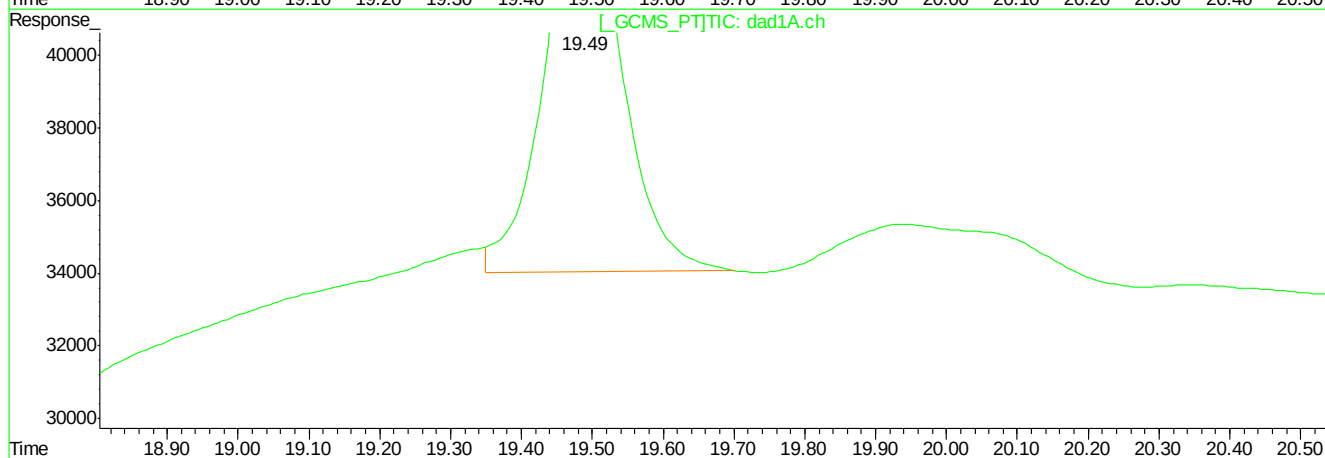
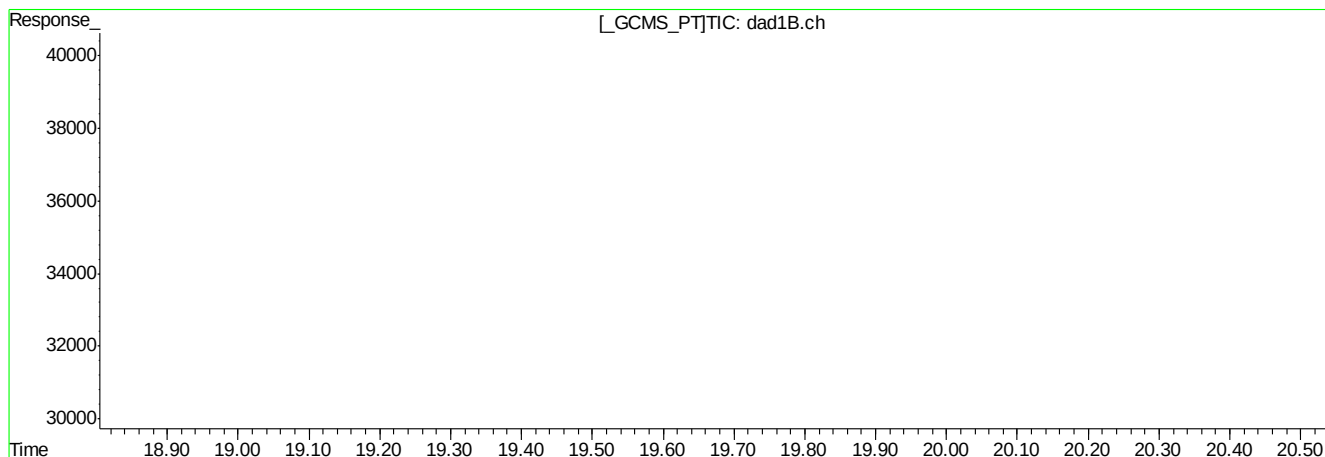
BB075446.D BBB2232_083122.M

Tue Jan 31 10:19:42 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075446.D\dad1A.ch
Acq On : 30-Jan-2023, 16:15:16 Operator: fouads
Sample : op95195-msd Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:18 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.49min 602.223ppb m

response 809383

(+) = Expected Retention Time

BB075446.D BBB2232_083122.M

Tue Jan 31 10:19:49 2023

Naresh Jiawan
02/08/23 09:44

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
 Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
 Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
 Sample : op95195-ms Inst : G1315B
 Misc : op95195,GBB2302,510,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 31 14:32:35 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 12:18:29 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.17	13.17	1076525	1800208	502.480	423.711
Spiked Amount	500.000	Range	70 - 136	Recovery	=	100.50% 84.74%
Target Compounds						
1) TNX	1.47	1.47	788599	1230592	210.113	213.830
2) HMX	1.68	1.68	1321546	3663035	892.545	895.555
3) DNx	1.92	1.92	1388358	2217138	451.302	449.029
4) MNX	2.62	2.62	1482549	2287192	516.579	520.107
5) RDX	3.33	3.33	1000988	1621330	539.626	553.466
6) 1,3,5-Trinitrobe	5.39	5.39	3405114	5468828	856.498	878.567
7) 1,3-Dinitrobenze	6.67	6.67	2640939	1752070	506.836	509.802m
8) 3,5-Dinitroanili	7.12	7.12	2014599	3439611	511.862	526.306m
9) Nitrobenzene	8.50	8.50	1170052	1143032	390.199	385.566
10) Nitroglycerin	0.00	10.31	0	662124	N.D.	521.260 #
11) Tetryl	11.29	11.29	1287149	2004108	455.524	435.117
12) 2,4,6-Trinitroto	11.66	11.66	2696952	3165672	737.835	710.944
13) 2-Amino-4,6-Dini	12.08	12.08	2104661	3106985	665.913	629.161
14) 4-Amino-2,6-Dini	12.63	12.63	1474518	2837372	642.048	577.340
16) 2,4-Dinitrotolue	13.73	13.73	1879891	1421311	401.365	456.415
17) 2,6-Dinitrotolue	14.19	14.20	748948	1546056	493.279	440.915
18) o-Nitrotoluene	17.12	17.12	1014769	1246304	469.934	379.265m
19) p-Nitrotoluene	17.54	17.55	1506126	1127050	450.211	398.782
20) m-Nitrotoluene	18.13	18.13	1427156	1357064	458.418	349.671
21) PETN	0.00	19.47	0	937342	N.D.	697.431m#

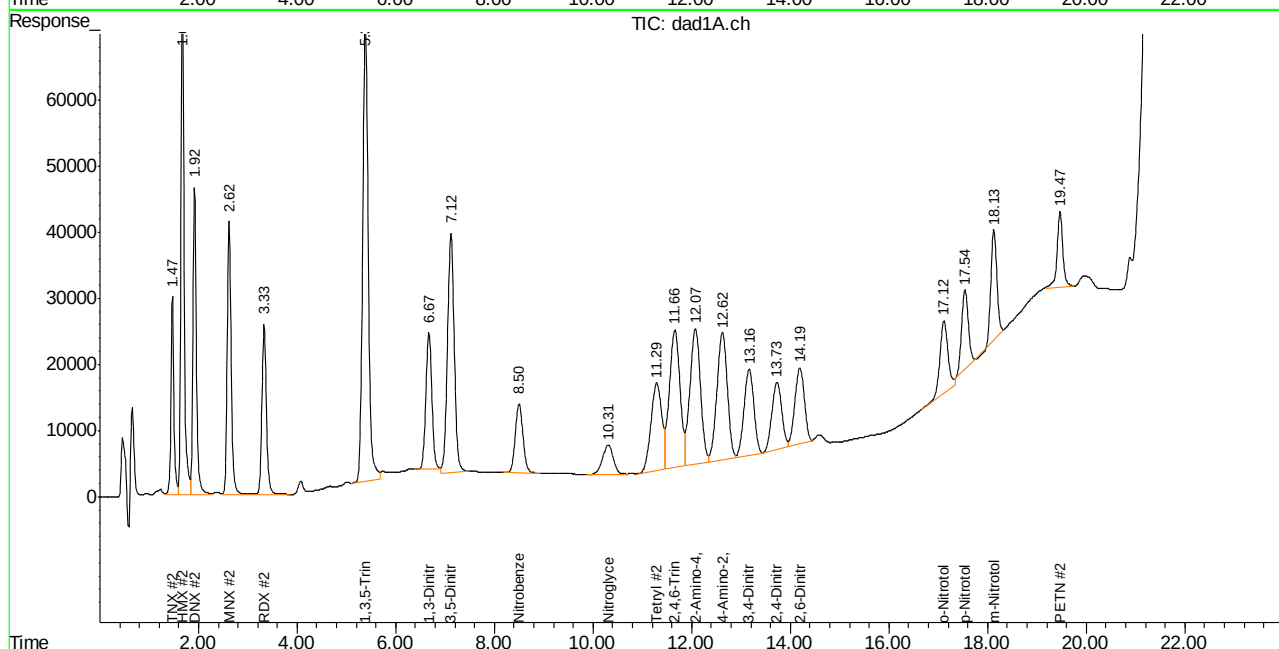
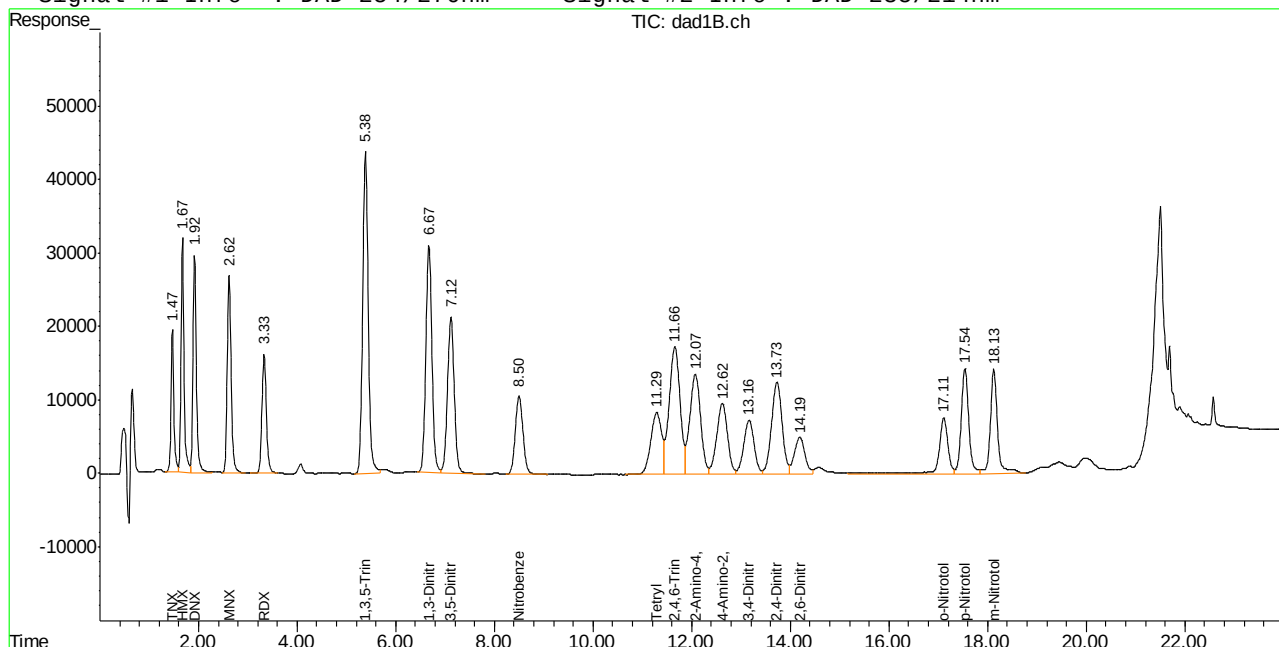
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075453.D BBB2232_083122.M Wed Feb 01 09:37:12 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
Sample : op95195-ms Inst : G1315B
Misc : op95195, GBB2302, 510,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Feb 1 8:24 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

OP95195-MS

Method:

SW846 8330B

Lab FileID:

BB075453.D

Analyst approved:

02/01/23 09:42 Fouad Sekkar

Injection Time:

01/31/23 14:08

Supervisor approved:

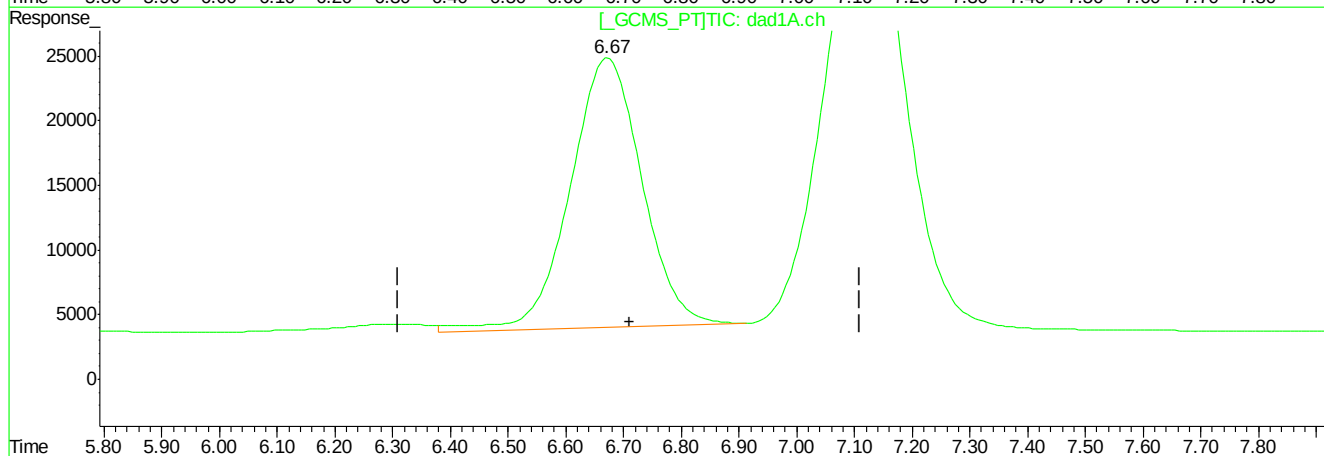
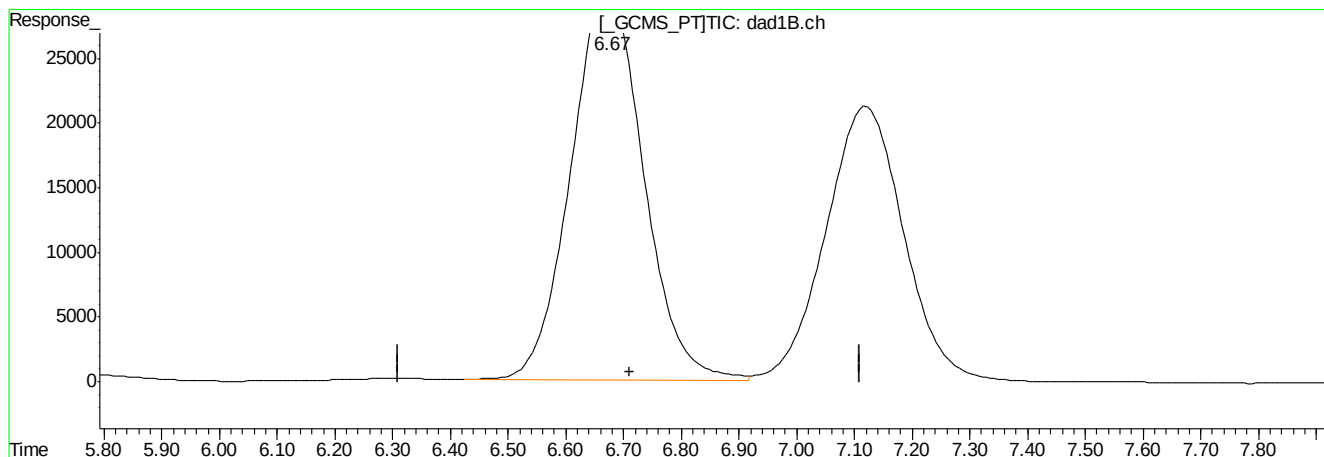
02/08/23 09:44 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3-Dinitrobenzene	99-65-0	2	6.67	Poor instrument integration
3,5-Dinitroaniline	618-87-1	2	7.12	Poor instrument integration
o-Nitrotoluene	88-72-2	2	17.12	Missed peak
PETN	78-11-5	2	19.47	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
Sample : op95195-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 14:32 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

6.67min 506.836ppb

response 2640939

(7) 1,3-Dinitrobenzene #2

6.67min 526.484ppb

response 1809399

(+) = Expected Retention Time

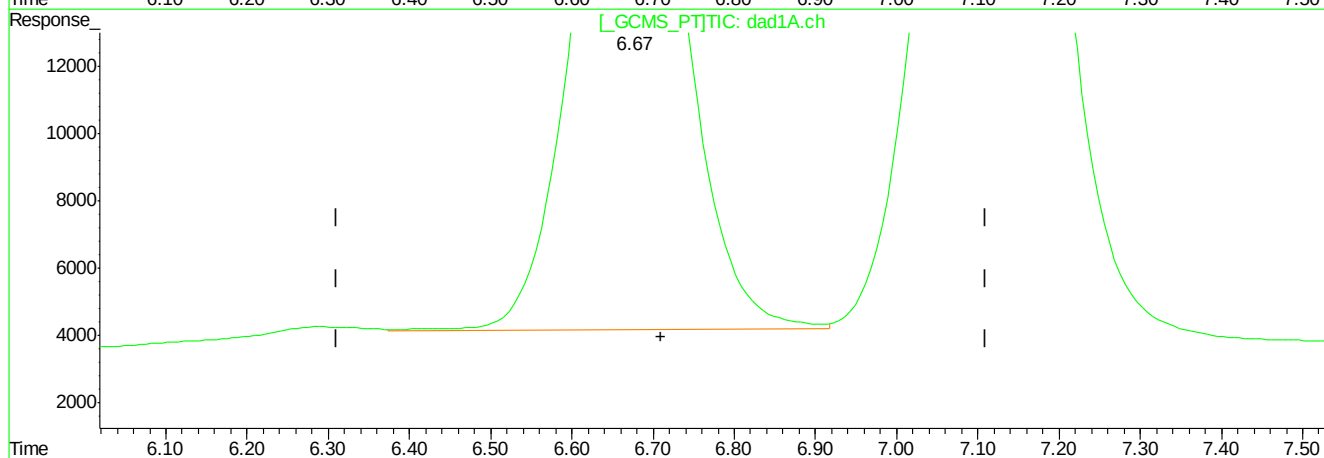
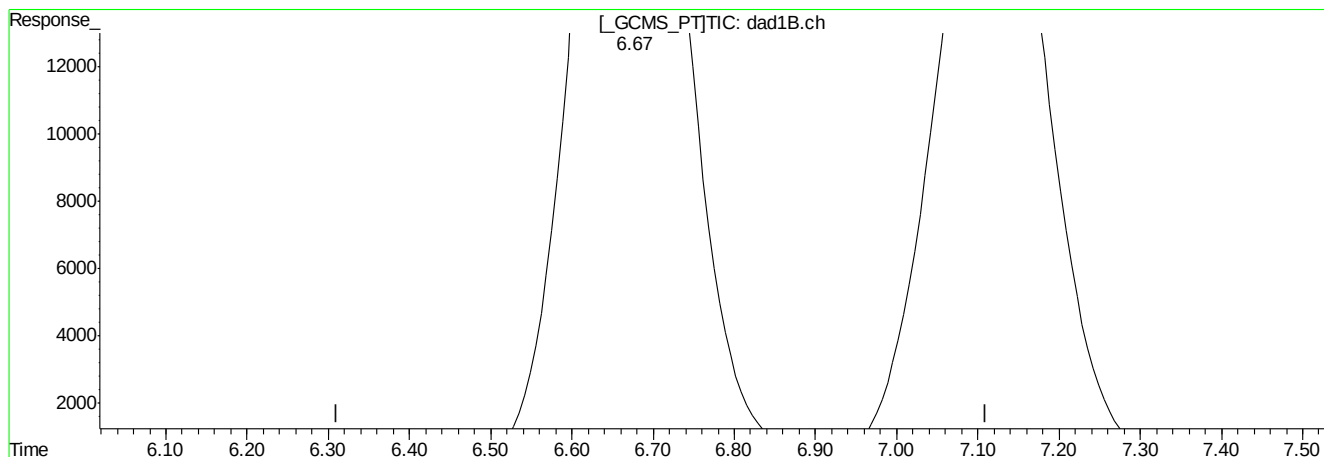
BB075453.D BBB2232_083122.M

Wed Feb 01 08:23:33 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
Sample : op95195-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 14:32 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

6.67min 506.836ppb

response 2640939

(7) 1,3-Dinitrobenzene #2

6.67min 509.802ppb m

response 1752070

(+) = Expected Retention Time

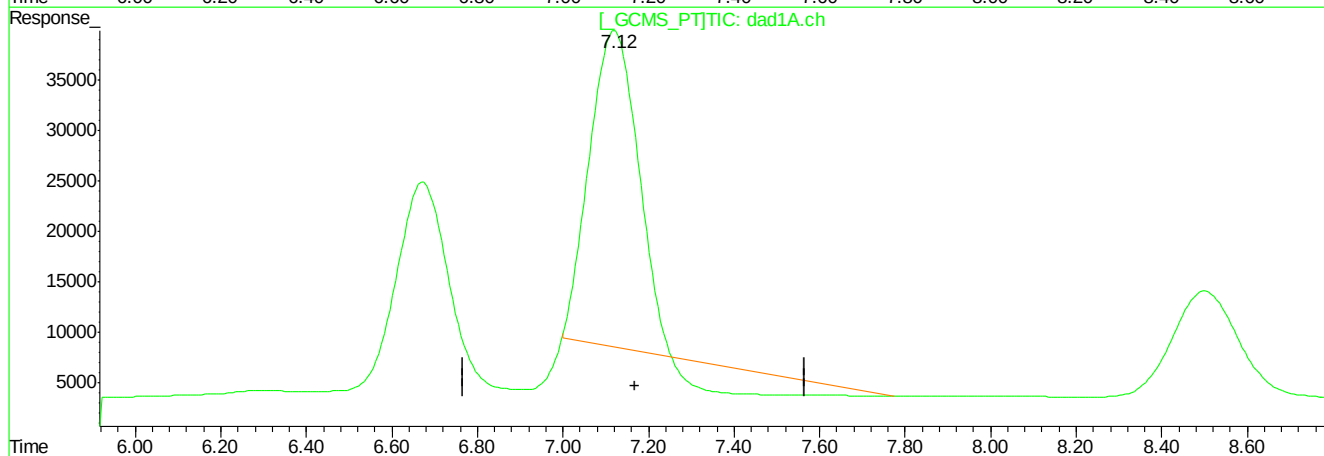
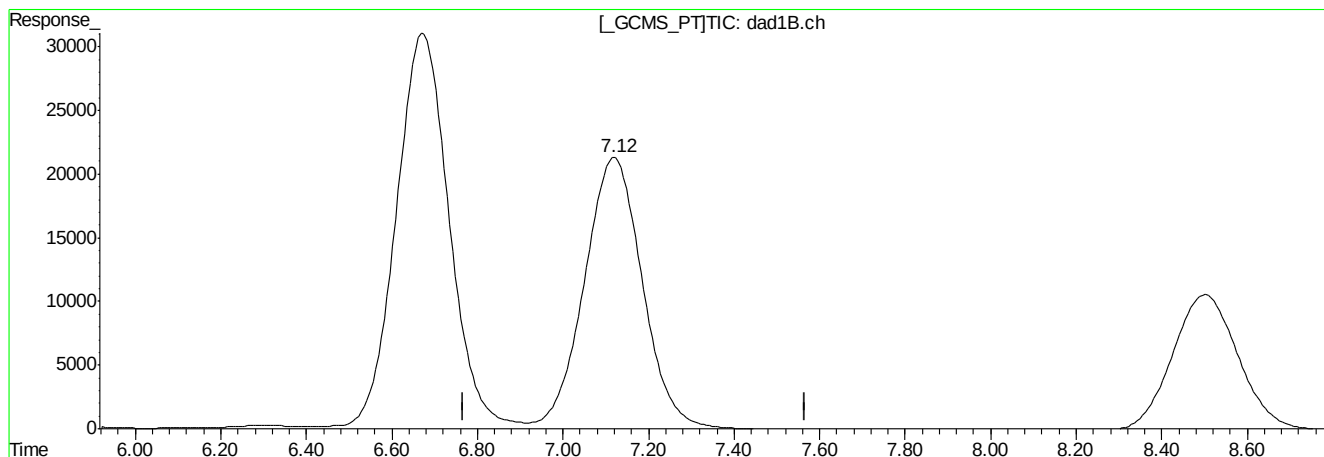
BB075453.D BBB2232_083122.M

Wed Feb 01 08:23:41 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
Sample : op95195-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 14:32 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.12min 511.862ppb

response 2014599

(8) 3,5-Dinitroaniline #2

7.12min 305.975ppb

response 1999662

(+) = Expected Retention Time

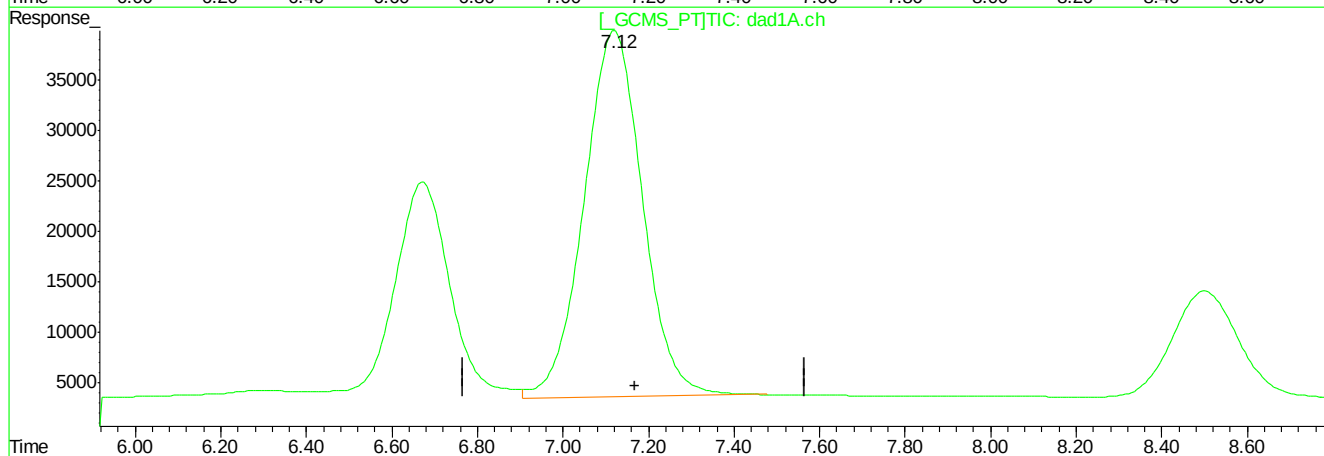
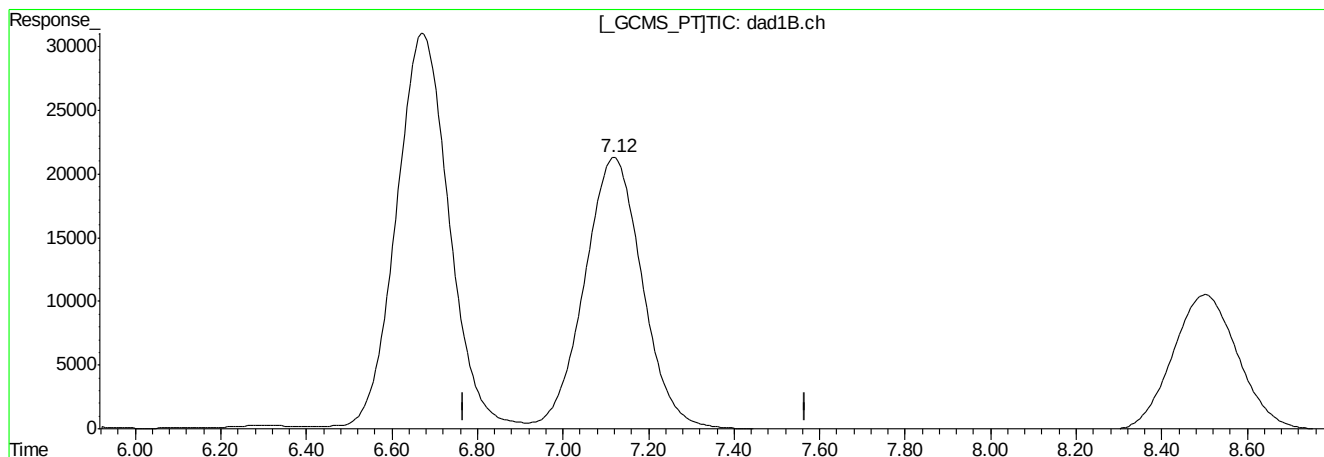
BB075453.D BBB2232_083122.M

Wed Feb 01 08:23:46 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
Sample : op95195-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 14:32 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.12min 511.862ppb

response 2014599

(8) 3,5-Dinitroaniline #2

7.12min 526.306ppb m

response 3439611

QEdit

(+) = Expected Retention Time

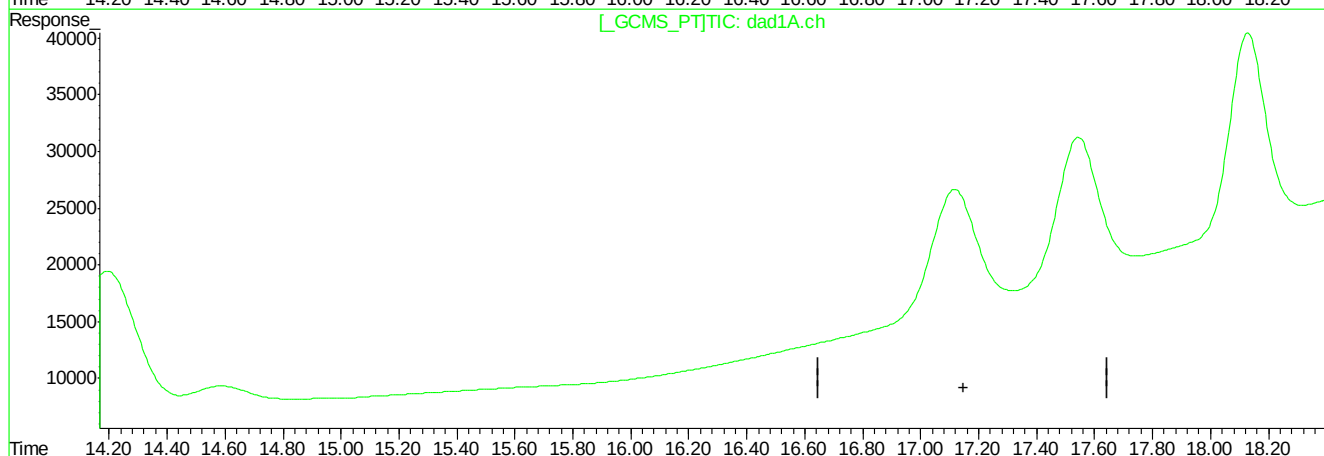
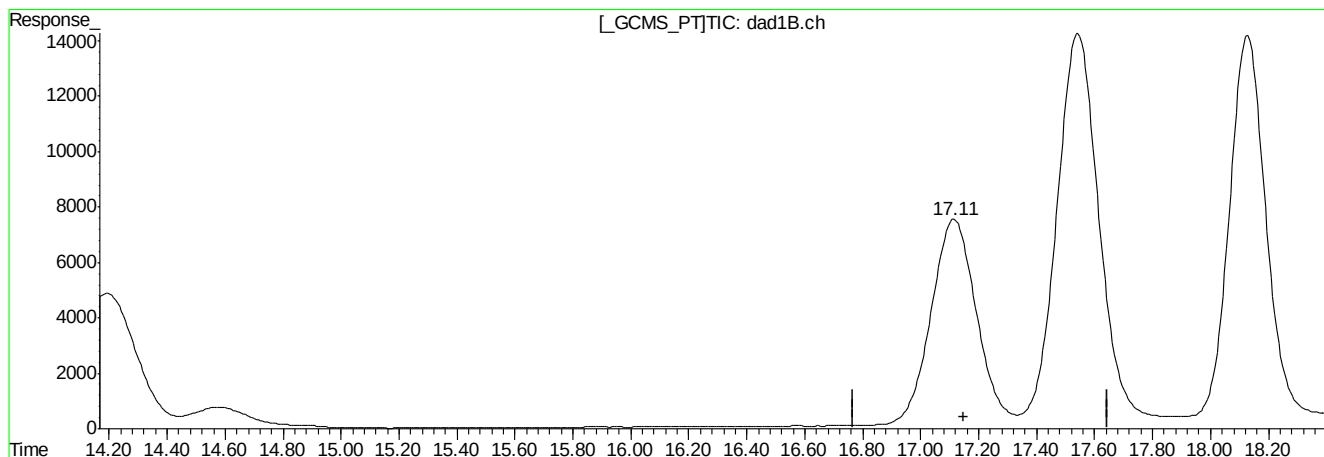
BB075453.D BBB2232_083122.M

Wed Feb 01 08:23:52 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
Sample : op95195-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 14:32 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
17.12min 469.934ppb
response 1014769

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

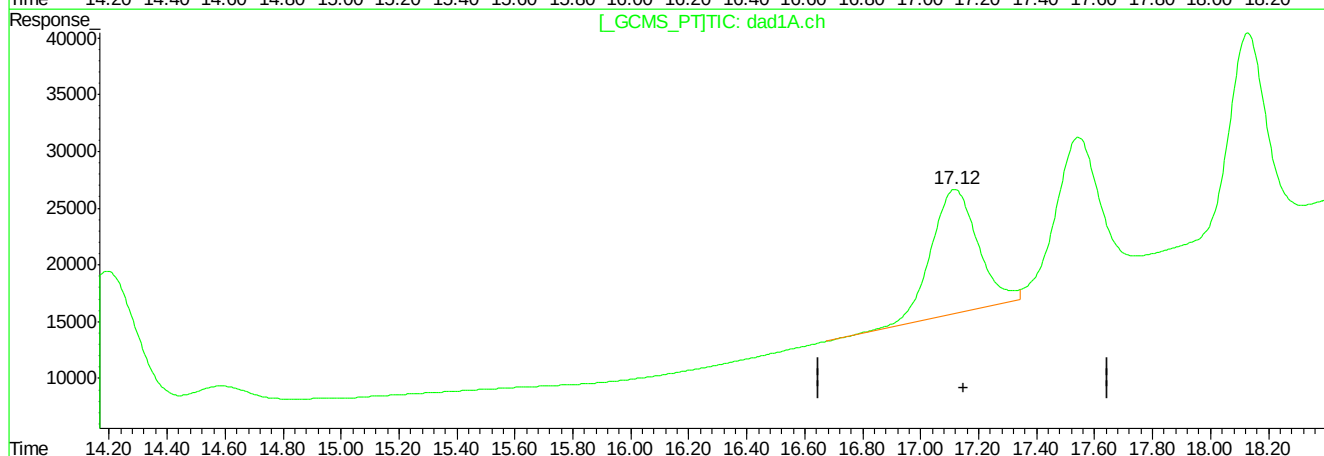
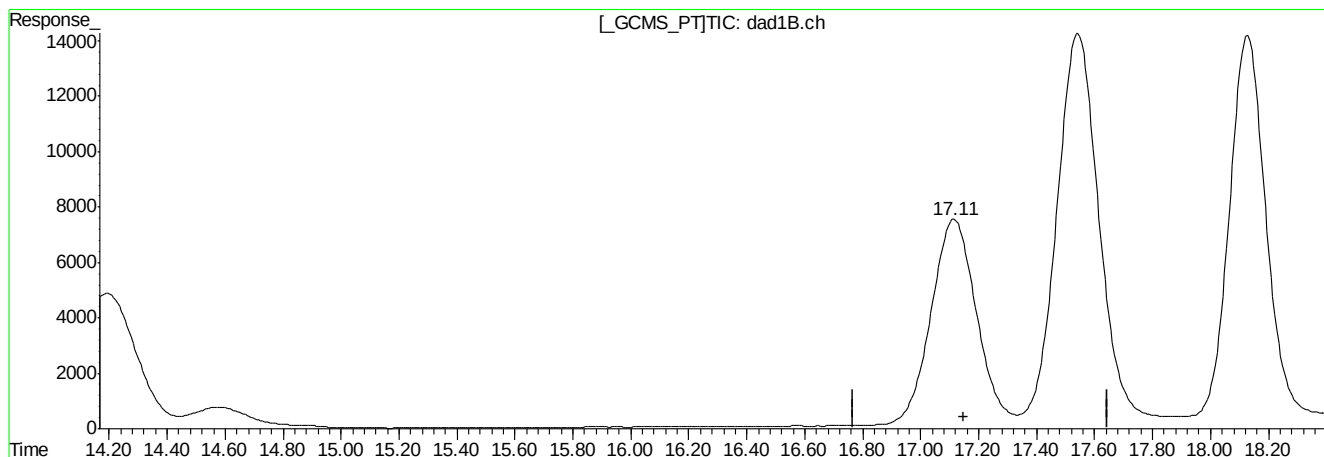
BB075453.D BBB2232_083122.M

Wed Feb 01 08:24:11 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
Sample : op95195-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 14:32 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



(18) o-Nitrotoluene

17.12min 469.934ppb

response 1014769

(18) o-Nitrotoluene #2

17.12min 379.265ppb m

response 1246304

(+) = Expected Retention Time

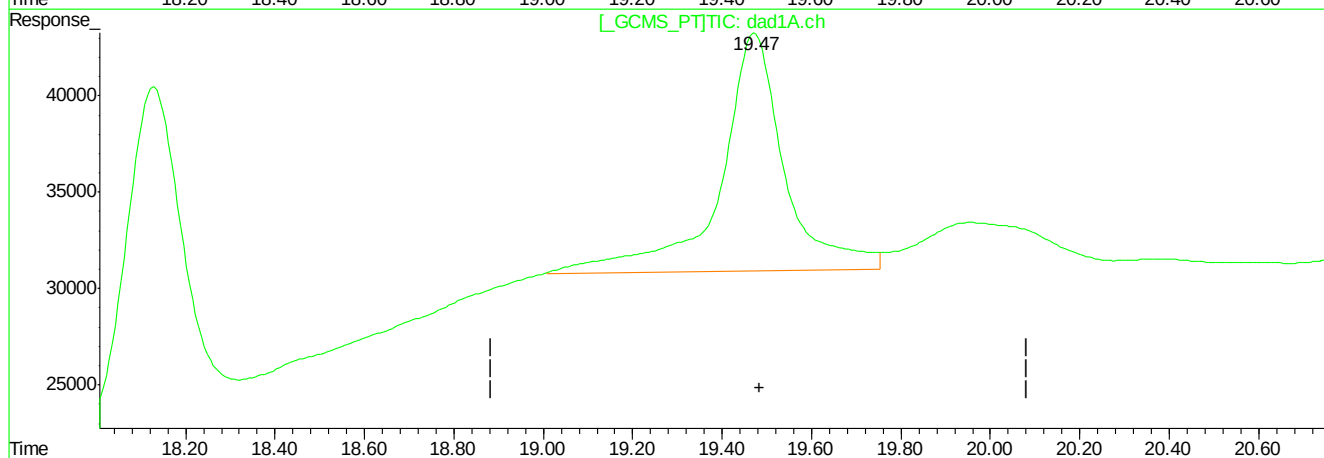
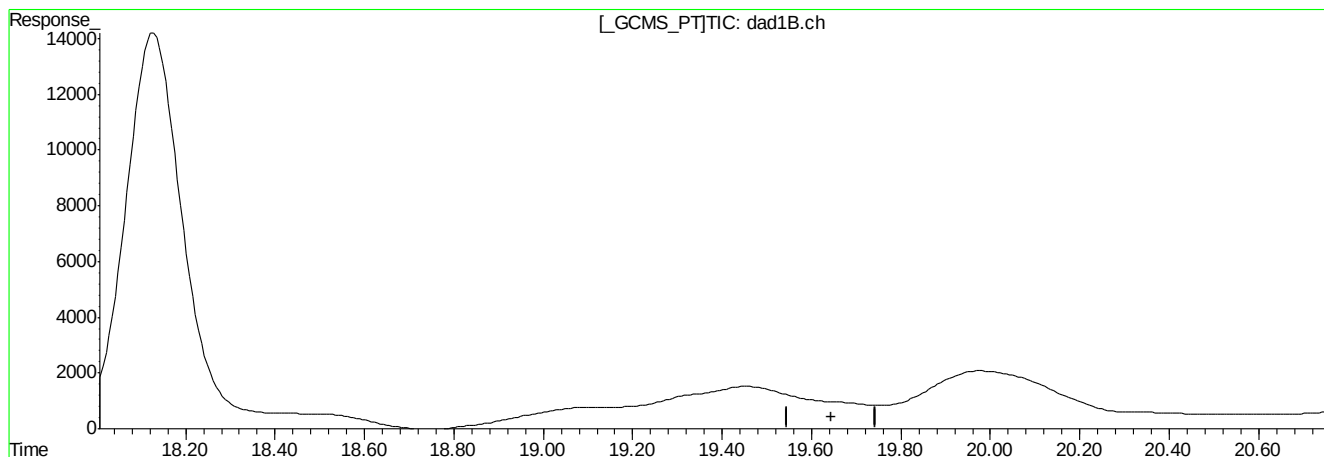
BB075453.D BBB2232_083122.M

Wed Feb 01 08:24:29 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
Sample : op95195-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 14:32 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.47min 919.778ppb

response 1236174

(+) = Expected Retention Time

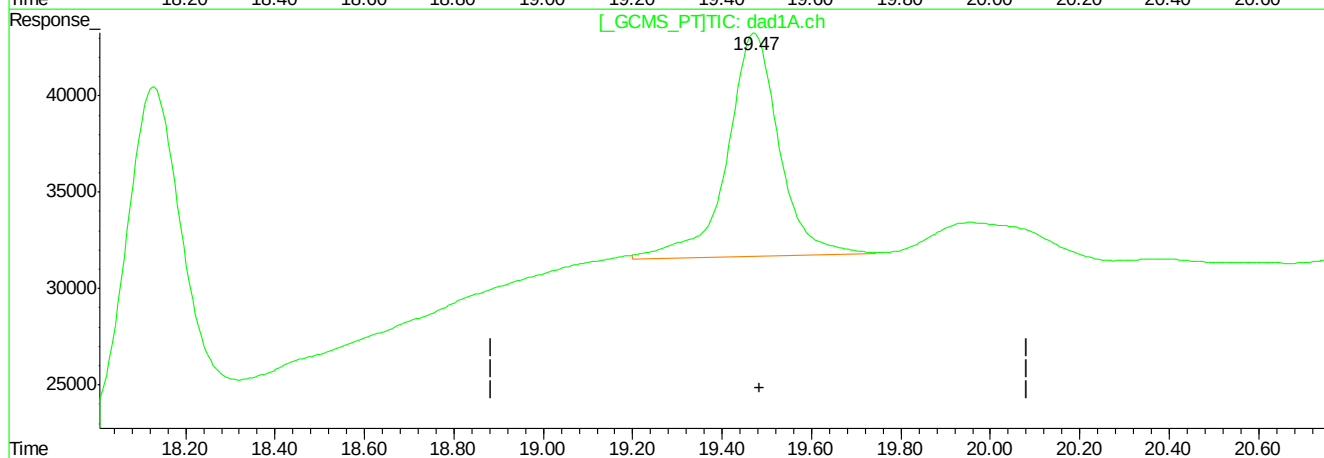
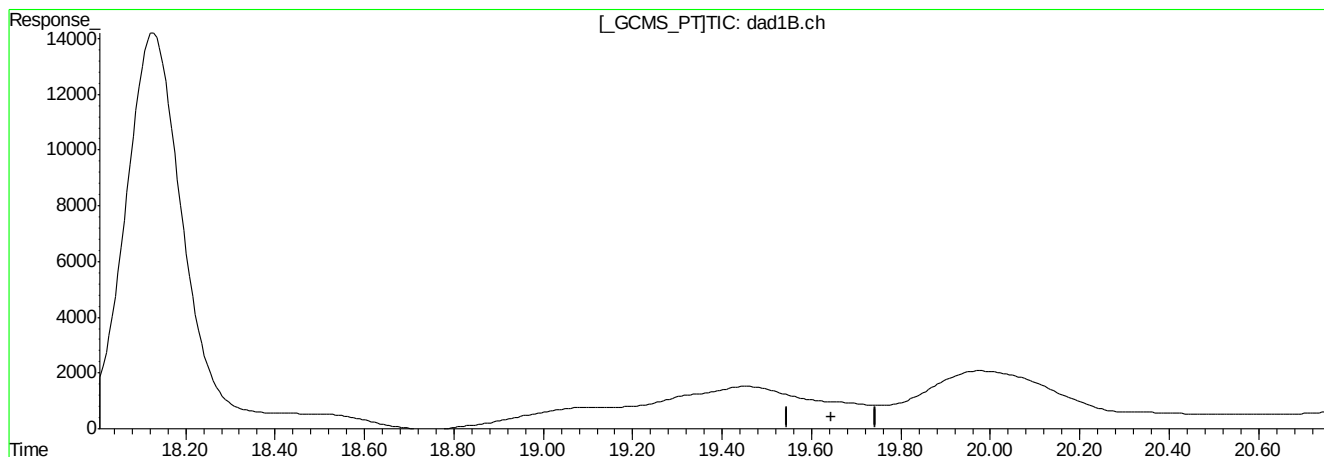
BB075453.D BBB2232_083122.M

Wed Feb 01 08:24:36 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075453.D\dad1A.ch
Acq On : 31-Jan-2023, 14:08:11 Operator: fouads
Sample : op95195-ms Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 14:32 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.47min 697.431ppb m

response 937342

(+) = Expected Retention Time

BB075453.D BBB2232_083122.M

Wed Feb 01 08:24:46 2023

Naresh Jiawan
09/02/22 15:07

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
 Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
 Sample : ic2232-20 Inst : G1315B
 Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Aug 31 10:11:55 2022 Quant Results File: BBB2230_080822.RES

Quant Method : C:\MSDCHEM\2...\BBB2230_080822.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Aug 31 08:15:37 2022
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	12.84	12.86	73715	131006	29.941	28.164
Spiked Amount	500.000	Range	70 - 136	Recovery =	5.99%#	5.63%#
Target Compounds						
1) TNX	1.46	1.46	64413	96236	15.939	15.665
2) HMX	1.65	1.65	66266	281403	35.432m	54.956m#
3) DNX	1.91	1.90	118097	207737	33.225	37.161
4) MNX	2.60	2.60	124494	190049	38.594	38.351
5) RDX	3.30	3.30	67737	101940	30.587	28.593
6) 1,3,5-Trinitrobe	5.28	5.28	133864	201921	29.065	27.234m
7) 1,3-Dinitrobenze	6.56	6.56	182635	126985	29.748	29.740m
8) 3,5-Dinitroanili	7.04	7.04	135842	222924	29.800	28.860m
9) Nitrobenzene	8.31	8.31	102941	103211	33.723	32.210
10) Nitroglycerin	0.00	10.13	0	47352	N.D.	30.891 #
11) Tetryl	11.00	11.00	102005	147152	29.435	25.805m
12) 2,4,6-Trinitroto	11.36	11.36	124064	113899	28.688	22.245
13) 2-Amino-4,6-Dini	11.87	11.88	105580	141644	28.036	24.873
14) 4-Amino-2,6-Dini	12.42	12.43	80408	148013	29.004	26.297
16) 2,4-Dinitrotolue	13.42	13.43	153453	94850	29.783	26.822m
17) 2,6-Dinitrotolue	13.88	13.89	50723	102329	16.992m	25.635 #
18) o-Nitrotoluene	16.79	16.84	66446	81402	32.194	22.086m
19) p-Nitrotoluene	17.26	17.29	112968	76996	33.949	28.427m
20) m-Nitrotoluene	17.87	17.88	113405	92524	37.319	26.032m
21) PETN	0.00	19.28	0	57447	N.D. d	36.189m

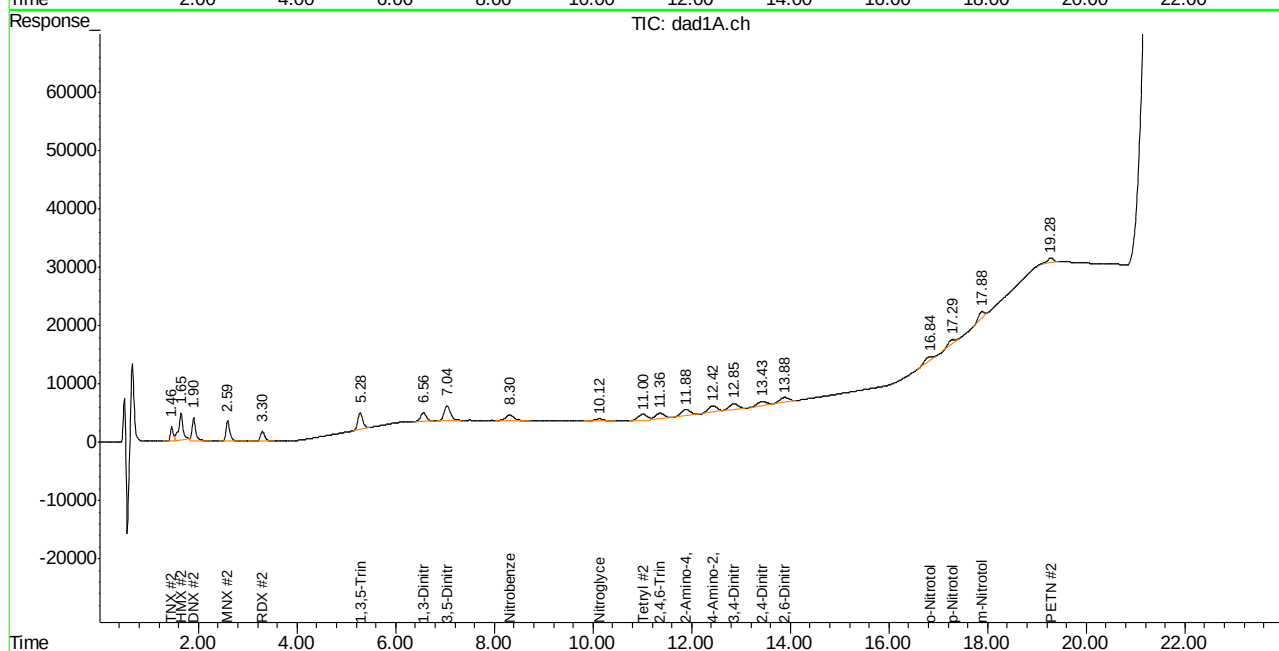
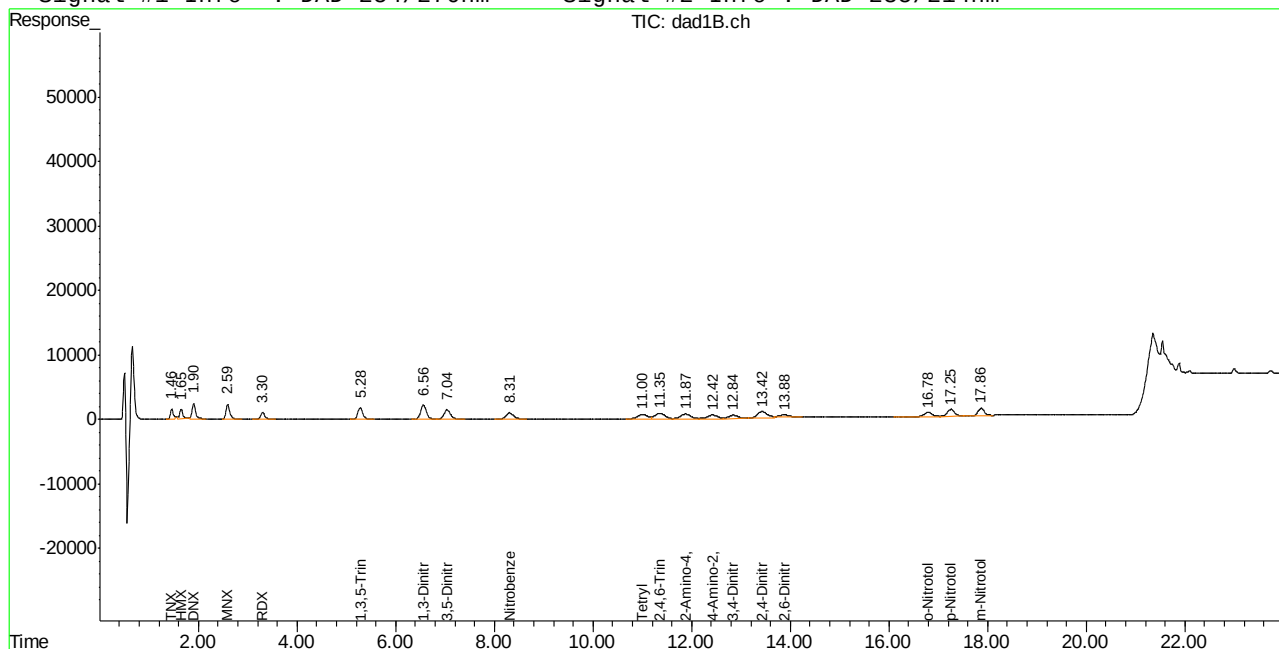
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB073629.D BBB2232_083122.M Thu Sep 01 14:21:44 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:54 2022 Quant Results File: BBB2230_080822.RES

Quant Method : C:\MSDCHEM\2...\BBB2230_080822.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Page 1 of 1

Sample Number: GBB2232-IC2232 **Method:** SW846 8330A
Lab FileID: BB073629.D **Analyst approved:** 09/02/22 08:50 Fouad Sekkar
Injection Time: 08/31/22 09:43 **Supervisor approved:** 09/02/22 15:07 Naresh Jiawan

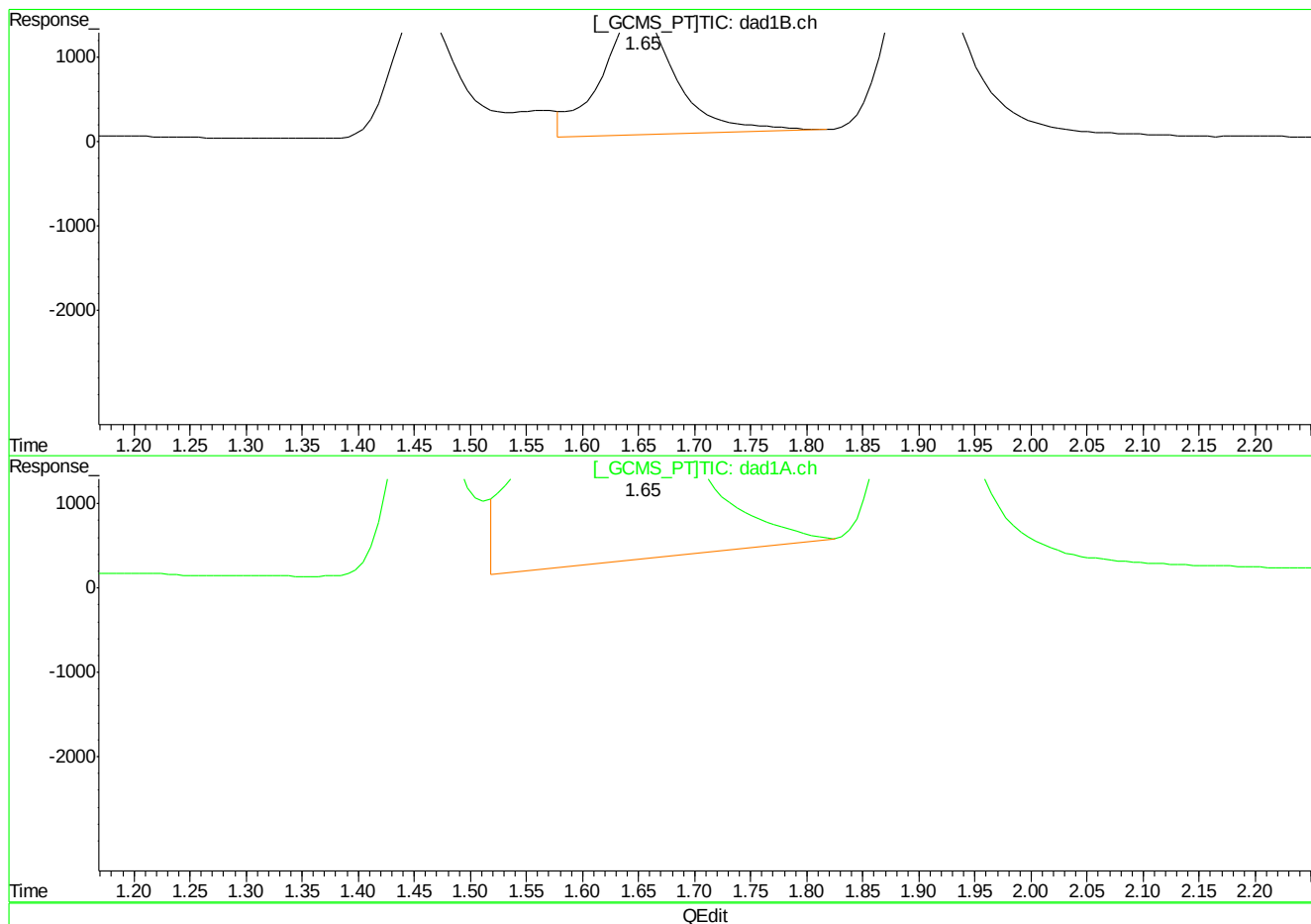
Parameter	CAS	Sig#	R.T. (min.)	Reason
HMX	2691-41-0	1	1.65	Missed peak
HMX	2691-41-0	2	1.65	Missed peak
1,3,5-Trinitrobenzene	99-35-4	2	5.28	Missed peak
1,3-Dinitrobenzene	99-65-0	2	6.56	Missed peak
3,5-Dinitroaniline	618-87-1	2	7.04	Missed peak
Tetryl	479-45-8	2	11.00	Missed peak
2,4-Dinitrotoluene	121-14-2	2	13.43	Missed peak
2,6-Dinitrotoluene	606-20-2	1	13.88	Missed peak
o-Nitrotoluene	88-72-2	2	16.84	Missed peak
p-Nitrotoluene	99-99-0	2	17.29	Missed peak
m-Nitrotoluene	99-08-1	2	17.88	Missed peak
PETN	78-11-5	2	19.28	Missed peak

9.5.1.1
9

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(2) HMX

1.65min 35.432ppb m

response 66266

(2) HMX #2

1.65min 54.956ppb m

response 281403

(+) = Expected Retention Time

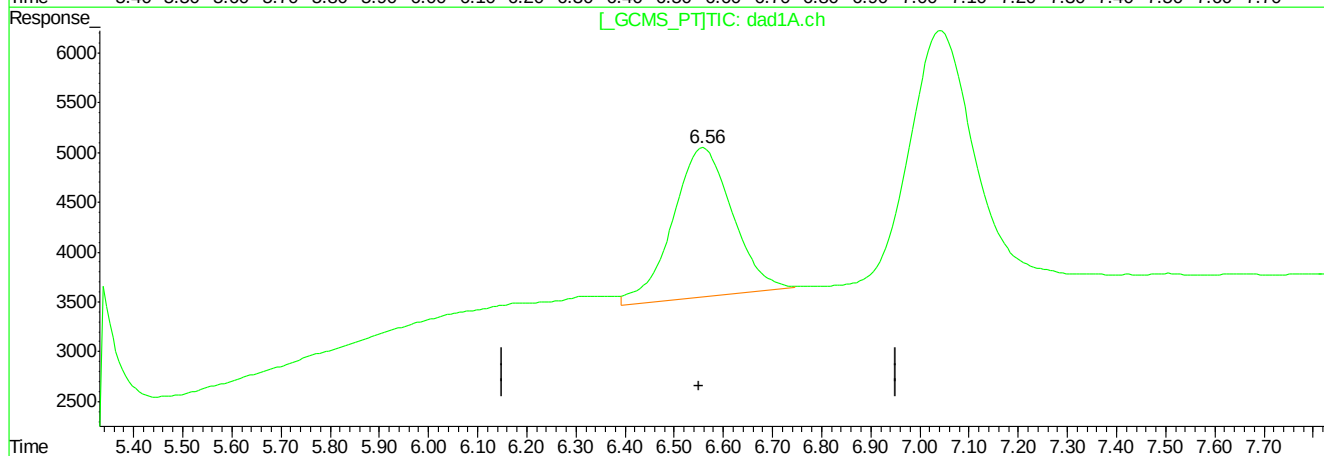
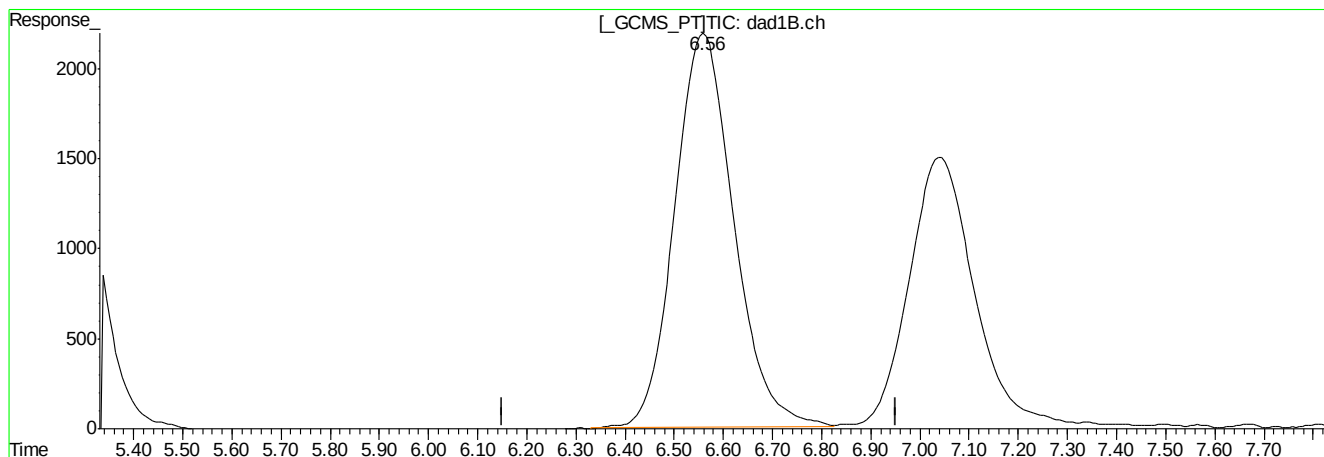
BB073629.D BBB2232_083122.M

Wed Aug 31 11:51:10 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

6.56min 29.748ppb

response 182635

(7) 1,3-Dinitrobenzene #2

6.56min 29.740ppb m

response 126985

(+) = Expected Retention Time

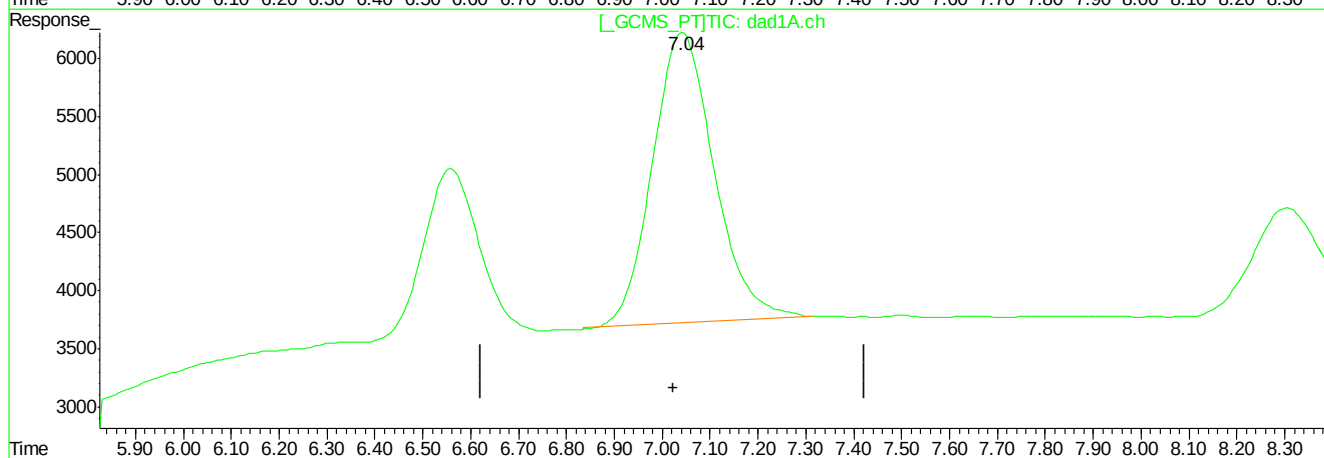
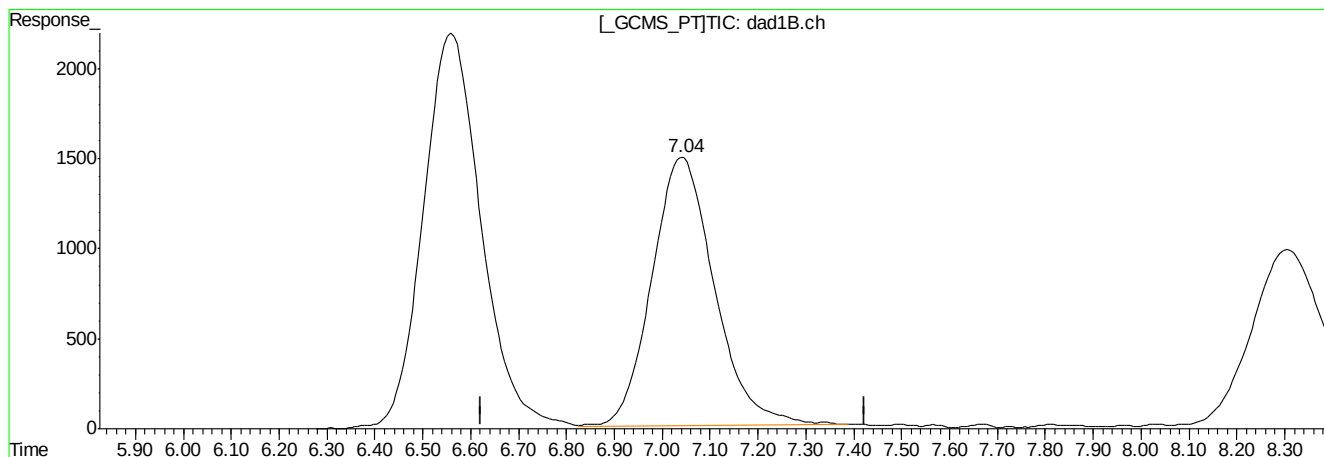
BB073629.D BBB2232_083122.M

Wed Aug 31 11:51:22 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.04min 29.800ppb

response 135842

(8) 3,5-Dinitroaniline #2

7.04min 28.860ppb m

response 222924

QEdit

(+) = Expected Retention Time

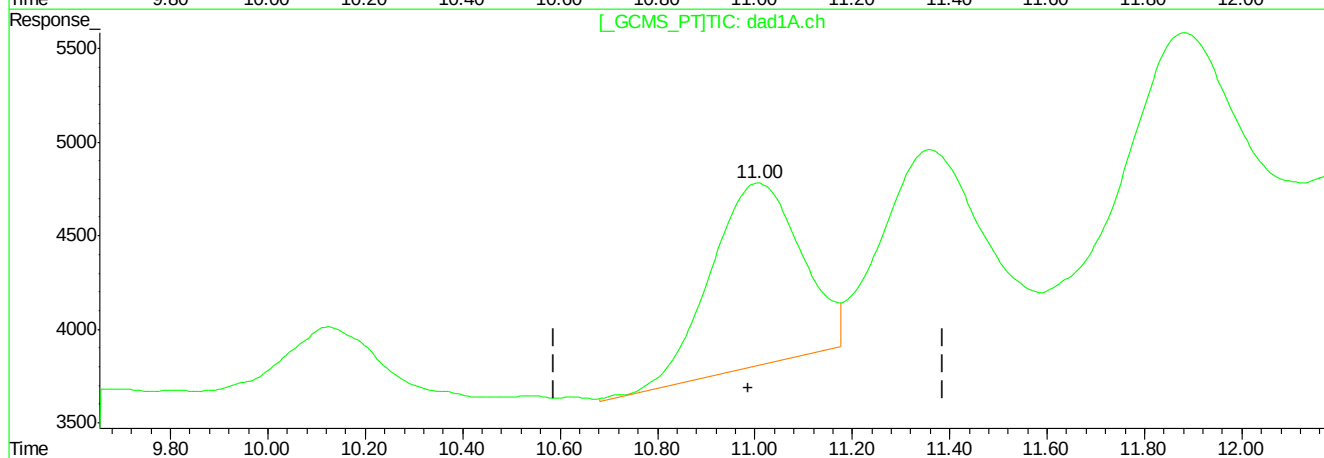
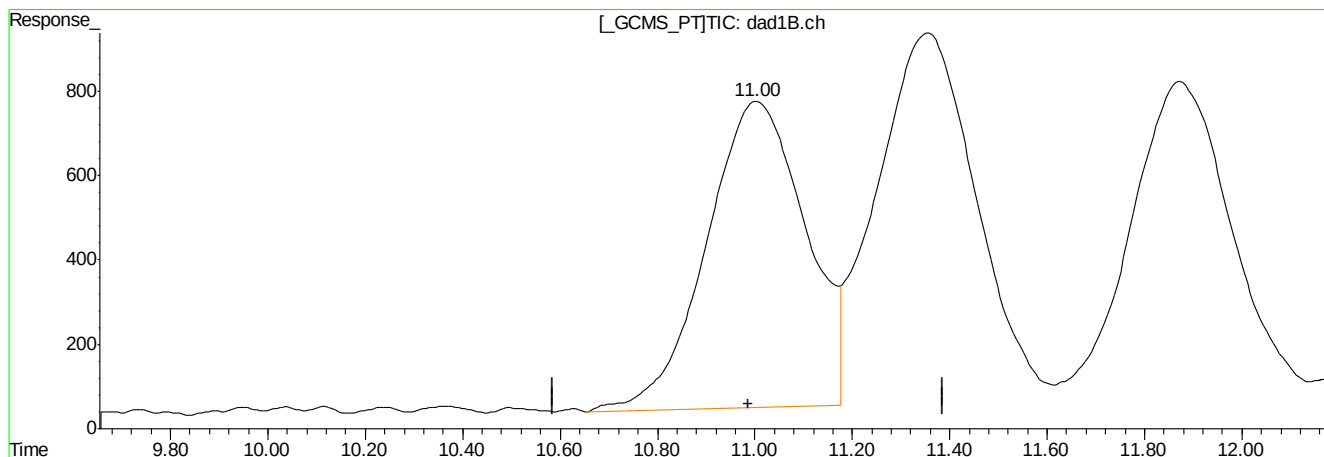
BB073629.D BBB2232_083122.M

Wed Aug 31 11:51:28 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(11) Tetryl

11.00min 29.435ppb

response 102005

(11) Tetryl #2

11.00min 22.138ppb m

response 126240

(+) = Expected Retention Time

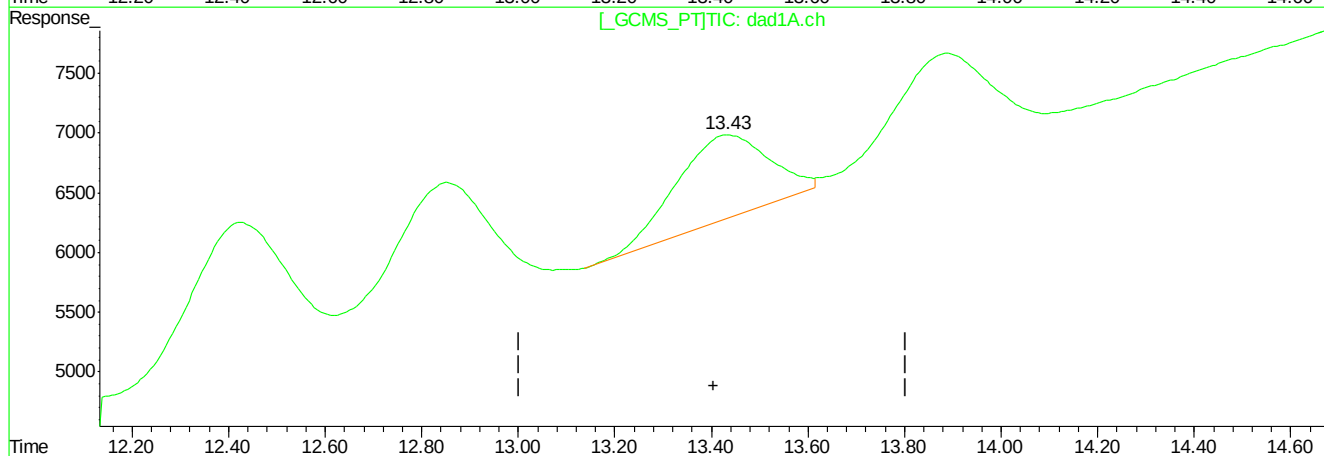
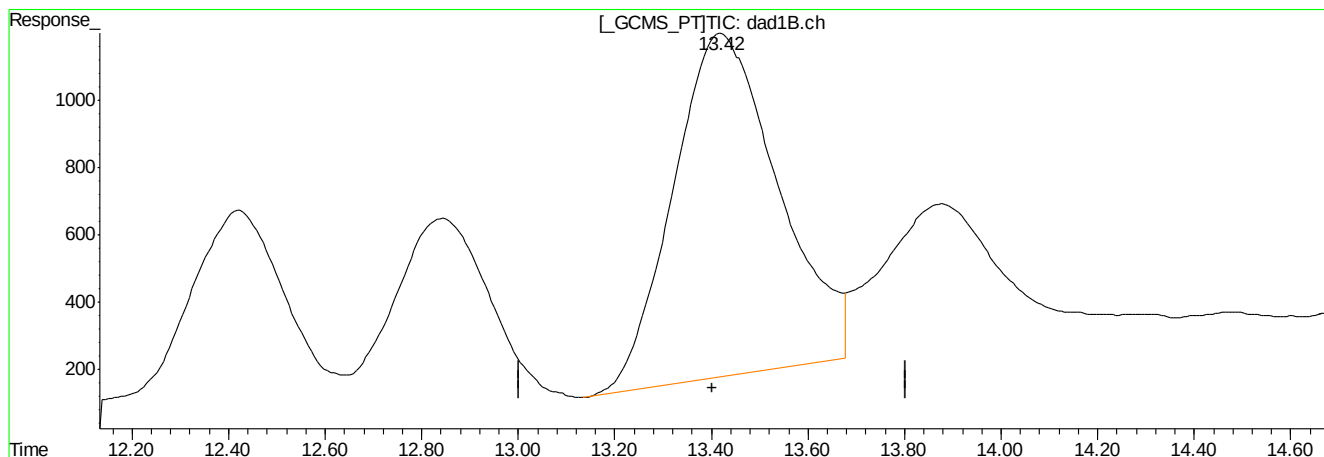
BB073629.D BBB2232_083122.M

Wed Aug 31 11:51:36 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(16) 2,4-Dinitrotoluene

13.42min 29.783ppb

response 153453

(16) 2,4-Dinitrotoluene #2

13.43min 26.822ppb m

response 94850

(+) = Expected Retention Time

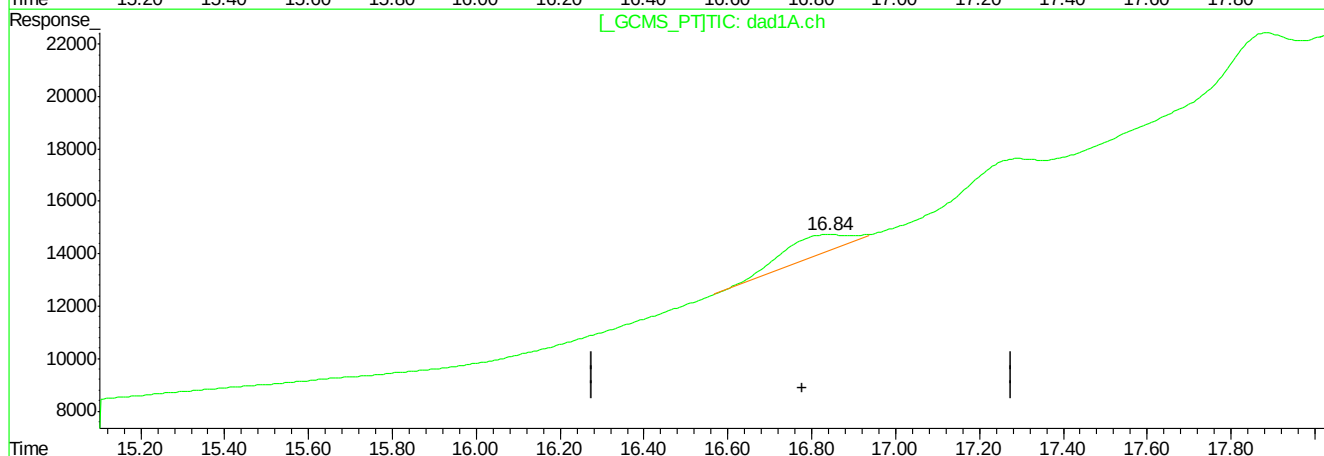
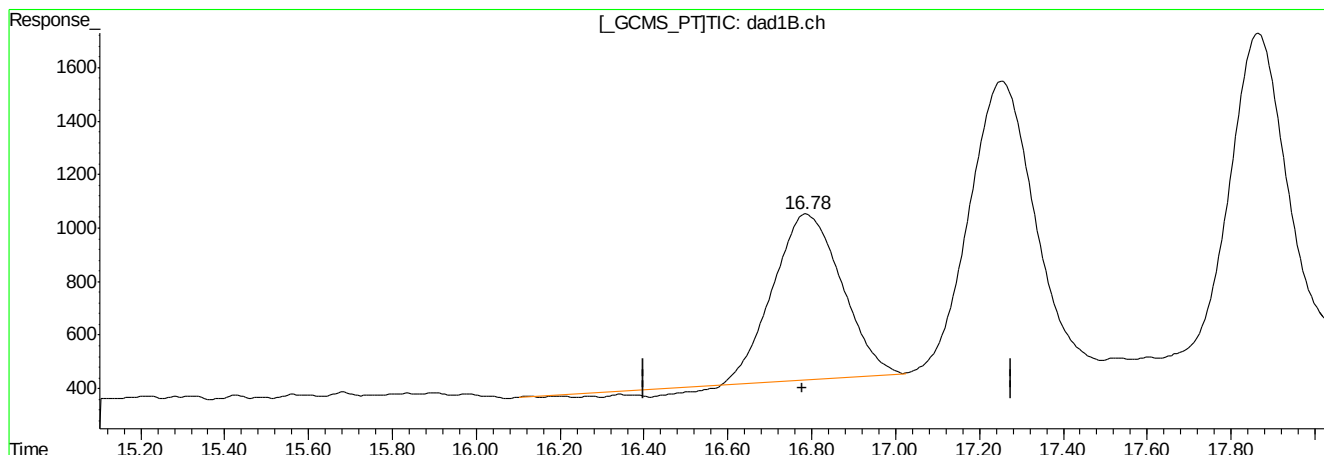
BB073629.D BBB2232_083122.M

Wed Aug 31 11:51:45 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(18) o-Nitrotoluene

16.79min 32.194ppb

response 66446

(18) o-Nitrotoluene #2

16.84min 22.086ppb m

response 81402

(+) = Expected Retention Time

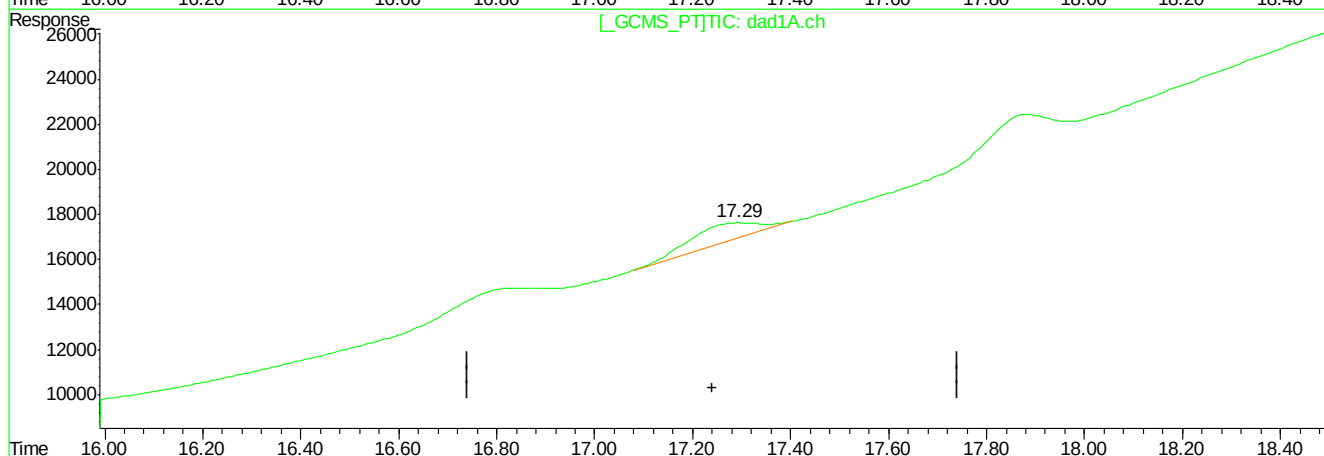
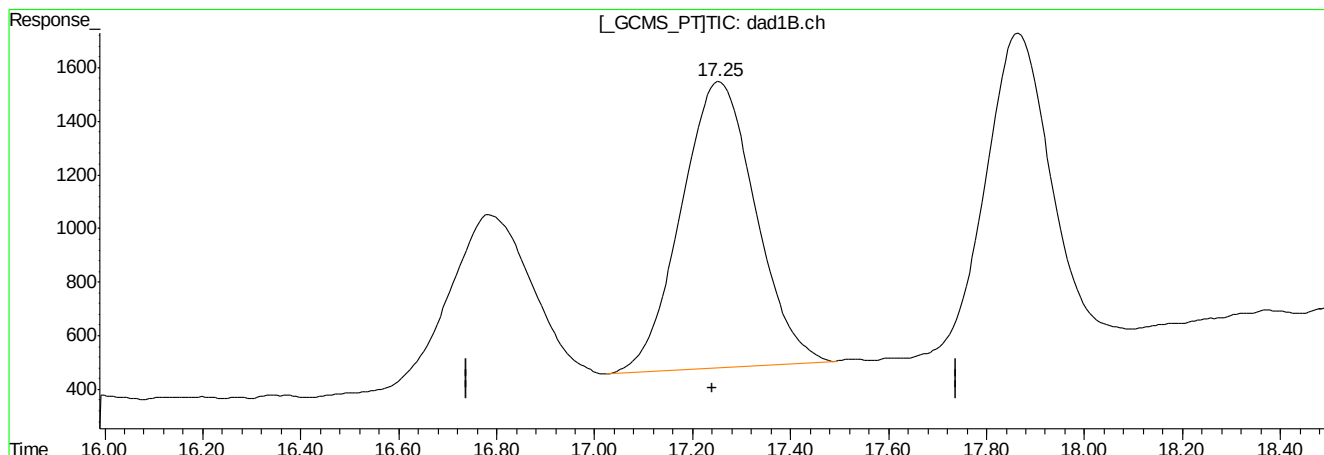
BB073629.D BBB2232_083122.M

Wed Aug 31 11:51:53 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(19) p-Nitrotoluene

17.26min 33.949ppb

response 112968

(19) p-Nitrotoluene #2

17.29min 28.427ppb m

response 76996

(+) = Expected Retention Time

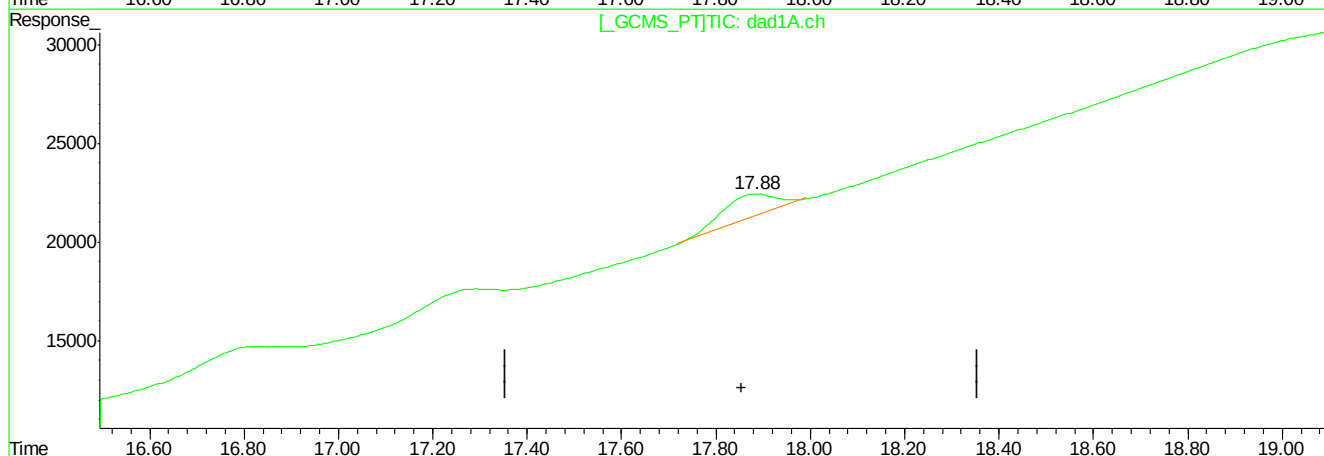
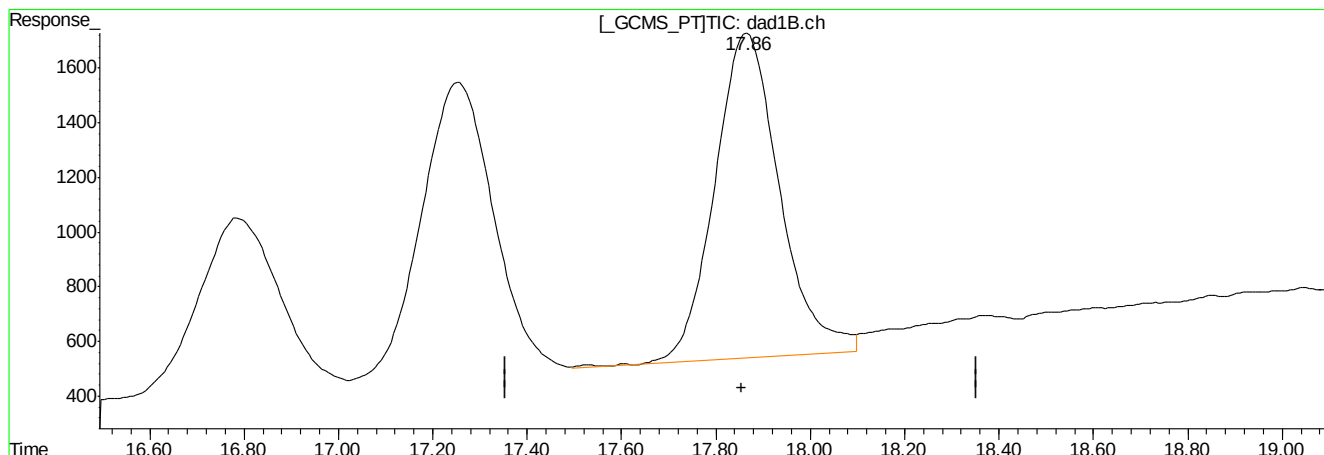
BB073629.D BBB2232_083122.M

Wed Aug 31 11:51:58 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(20) m-Nitrotoluene

17.87min 37.319ppb

response 113405

(20) m-Nitrotoluene #2

17.88min 26.032ppb m

response 92524

(+) = Expected Retention Time

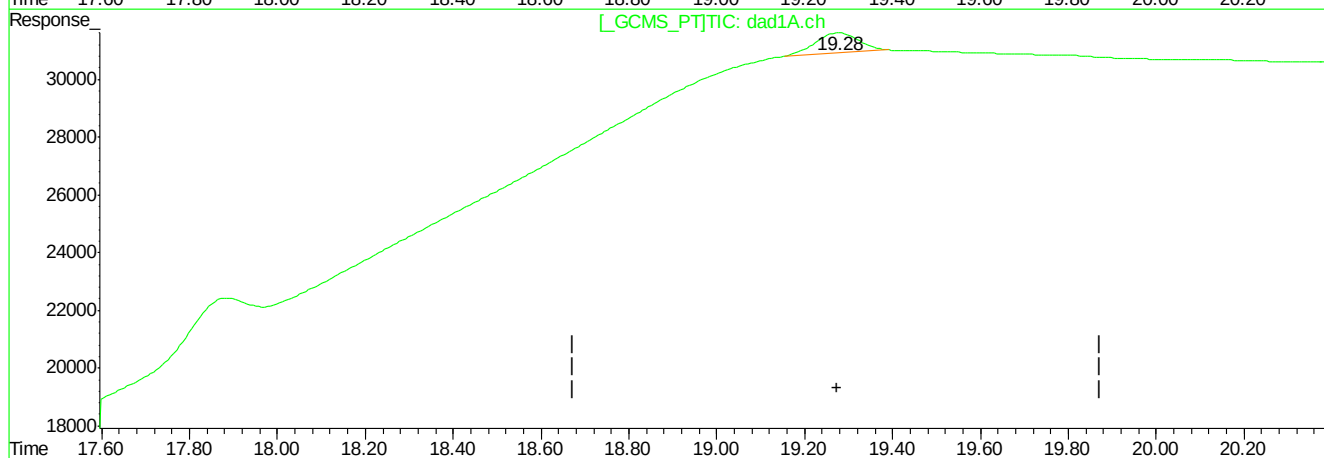
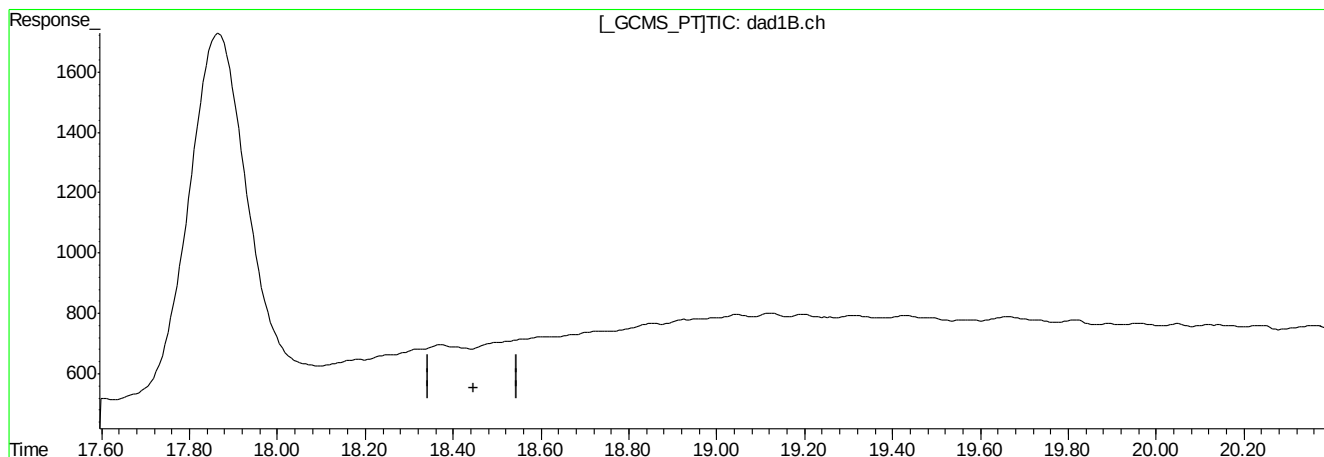
BB073629.D BBB2232_083122.M

Wed Aug 31 11:52:02 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb d

response 0

(21) PETN #2

19.28min 29.285ppb m

response 46488

(+) = Expected Retention Time

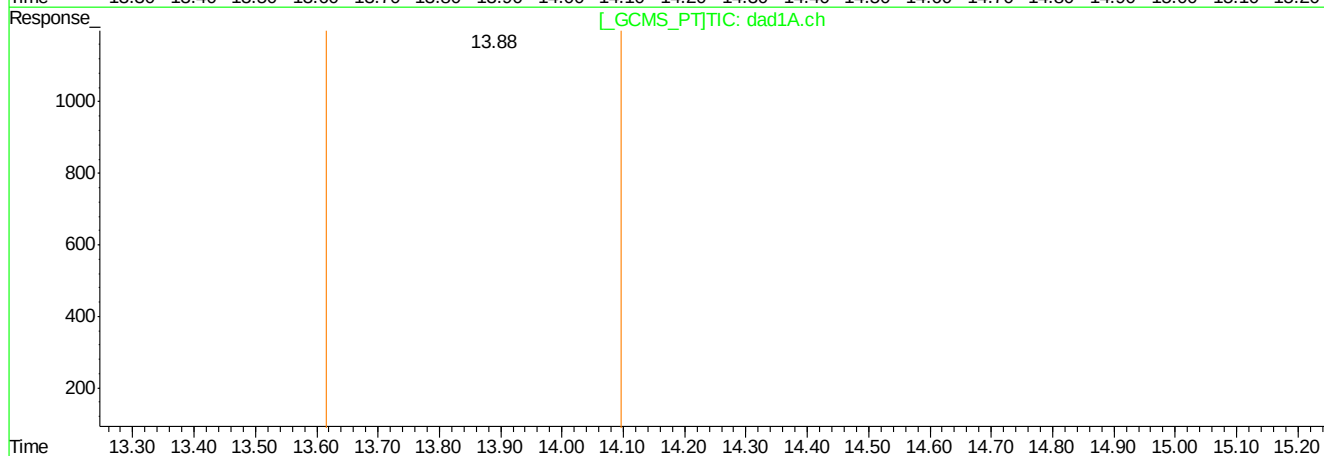
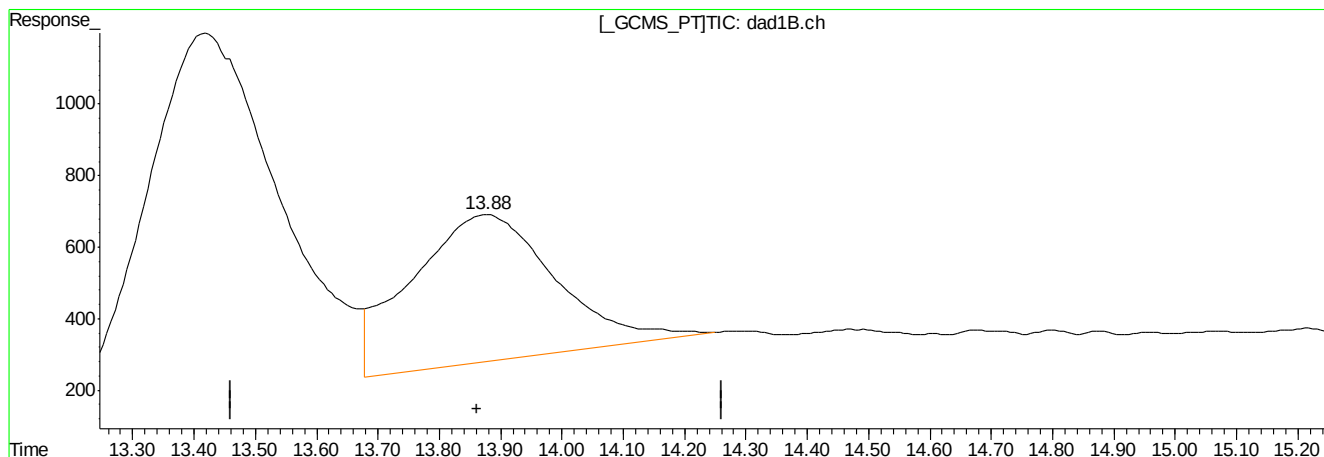
BB073629.D BBB2232_083122.M

Wed Aug 31 11:52:07 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.88min 22.734ppb

response 67862

(17) 2,6-Dinitrotoluene #2

13.89min 25.635ppb

response 102329

(+) = Expected Retention Time

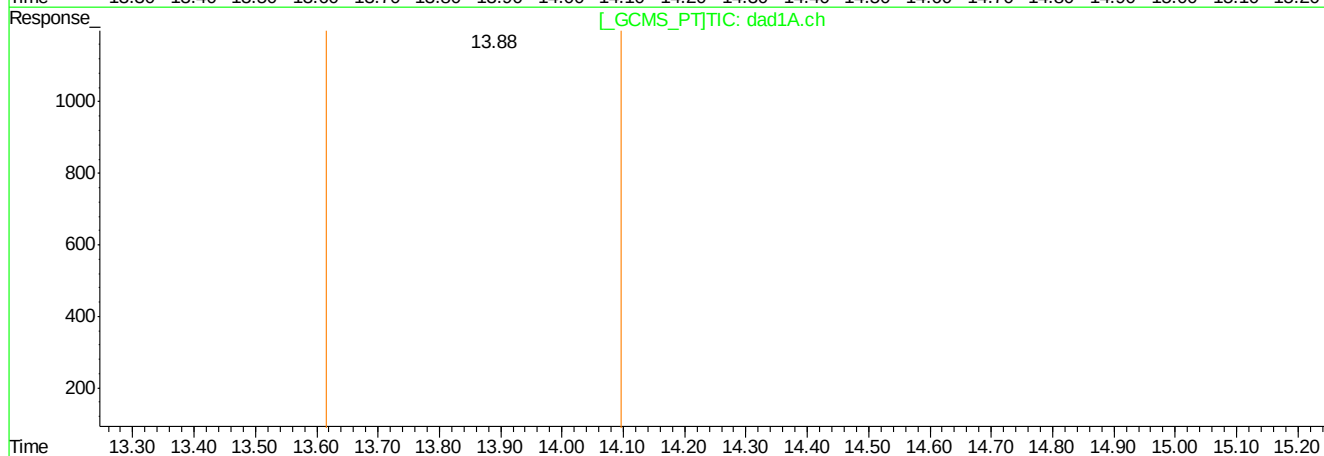
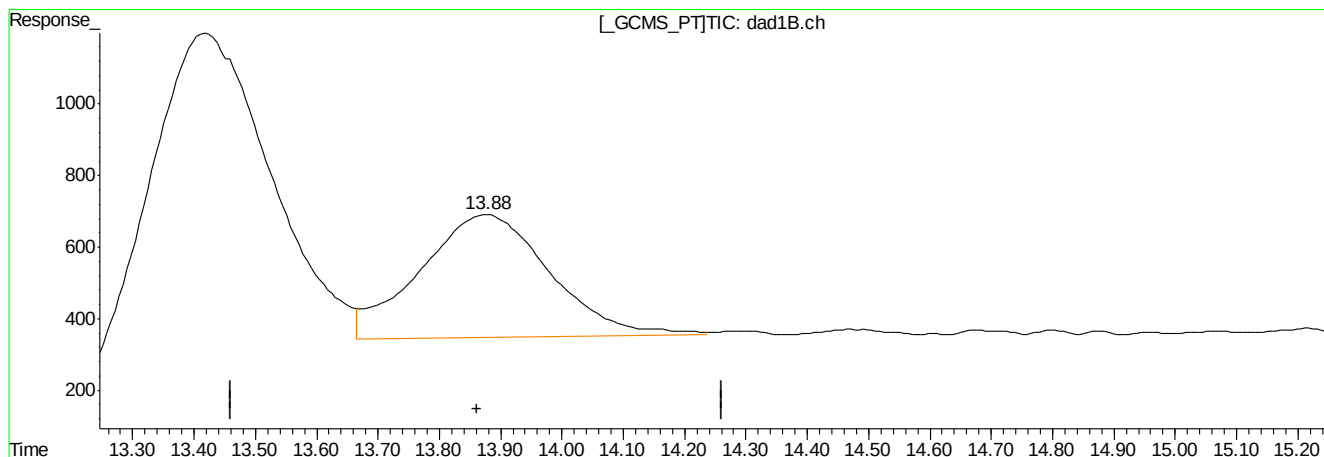
BB073629.D BBB2232_083122.M

Wed Aug 31 13:59:26 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 10:18 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.88min 16.992ppb m

response 50723

(17) 2,6-Dinitrotoluene #2

13.89min 25.635ppb

response 102329

(+) = Expected Retention Time

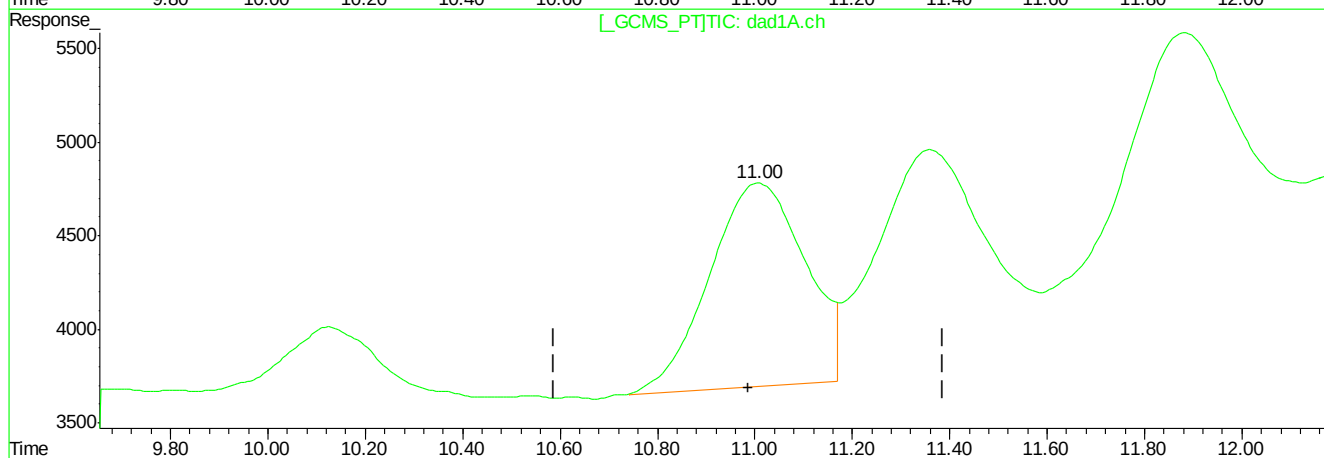
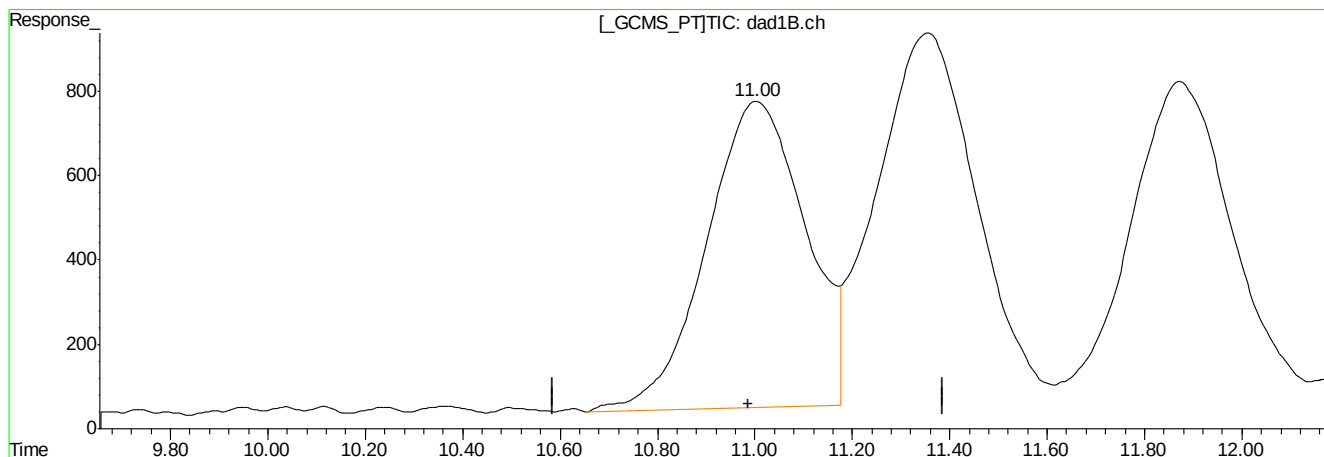
BB073629.D BBB2232_083122.M

Wed Aug 31 13:59:37 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:59 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



QEdit

(11) Tetryl

11.00min 29.435ppb

response 102005

(11) Tetryl #2

11.00min 25.805ppb m

response 147152

(+) = Expected Retention Time

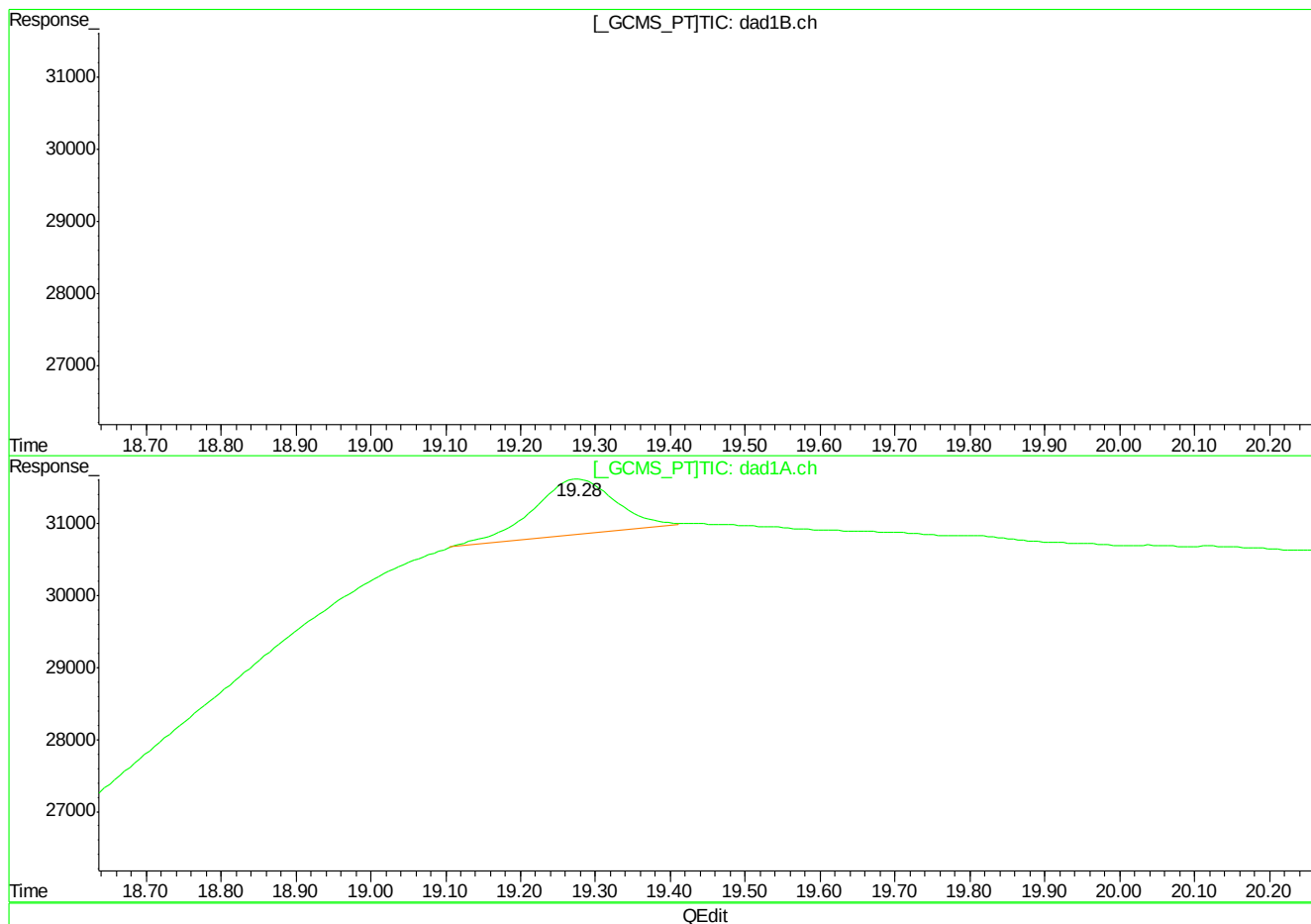
BB073629.D BBB2232_083122.M

Thu Sep 01 07:54:04 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073629.D\dad1A.ch
Acq On : 31-Aug-2022, 09:43:58 Operator: FOUADS
Sample : ic2232-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:59 2022 Quant Results File: BBB2230_080822.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb d

response 0

(21) PETN #2

19.28min 36.189ppb m

response 57447

(+) = Expected Retention Time

BB073629.D BBB2232_083122.M

Thu Sep 01 07:54:48 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
 Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
 Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
 Sample : ic2232-50 Inst : G1315B
 Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Aug 31 11:52:18 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Aug 31 08:15:37 2022
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	12.85	12.86	131119	242225	53.257	52.075
Spiked Amount	500.000	Range	70 - 136	Recovery	=	10.65%# 10.42%#
Target Compounds						
1) TNX	1.46	1.46	117832	178819	29.158	29.108
2) HMX	1.66	1.66	103730	329099	55.464	64.271
3) DNX	1.91	1.91	208549	338449	58.672	60.544
4) MNX	2.60	2.60	221457	341376	68.653	68.888
5) RDX	3.31	3.31	119366	185317	53.900	51.980
6) 1,3,5-Trinitrobe	5.29	5.29	236780	372540	51.410	50.246m
7) 1,3-Dinitrobenze	6.57	6.56	323442	212568	52.683	49.785m
8) 3,5-Dinitroanili	7.05	7.05	243609	397923	53.441	51.516m
9) Nitrobenzene	8.32	8.32	177082	188170	58.011	58.725
10) Nitroglycerin	0.00	10.14	0	79883	N.D.	52.113 #
11) Tetryl	11.01	11.01	176638	277249	50.972	48.620m
12) 2,4,6-Trinitroto	11.37	11.37	223087	221382	51.585	43.236
13) 2-Amino-4,6-Dini	11.89	11.89	190922	259096	50.697	45.499
14) 4-Amino-2,6-Dini	12.43	12.43	140472	271376	50.670	48.215
16) 2,4-Dinitrotolue	13.43	13.44	274701	167496	53.316	47.365
17) 2,6-Dinitrotolue	13.88	13.90	84383	191581	28.268m	47.993 #
18) o-Nitrotoluene	16.80	16.82	121072	168010	58.660	45.657m
19) p-Nitrotoluene	17.26	17.28	197599	142844	59.382	52.737m
20) m-Nitrotoluene	17.87	17.88	181853	215354	59.844	60.592m
21) PETN	0.00	19.28	0	88792	N.D.	55.935m#

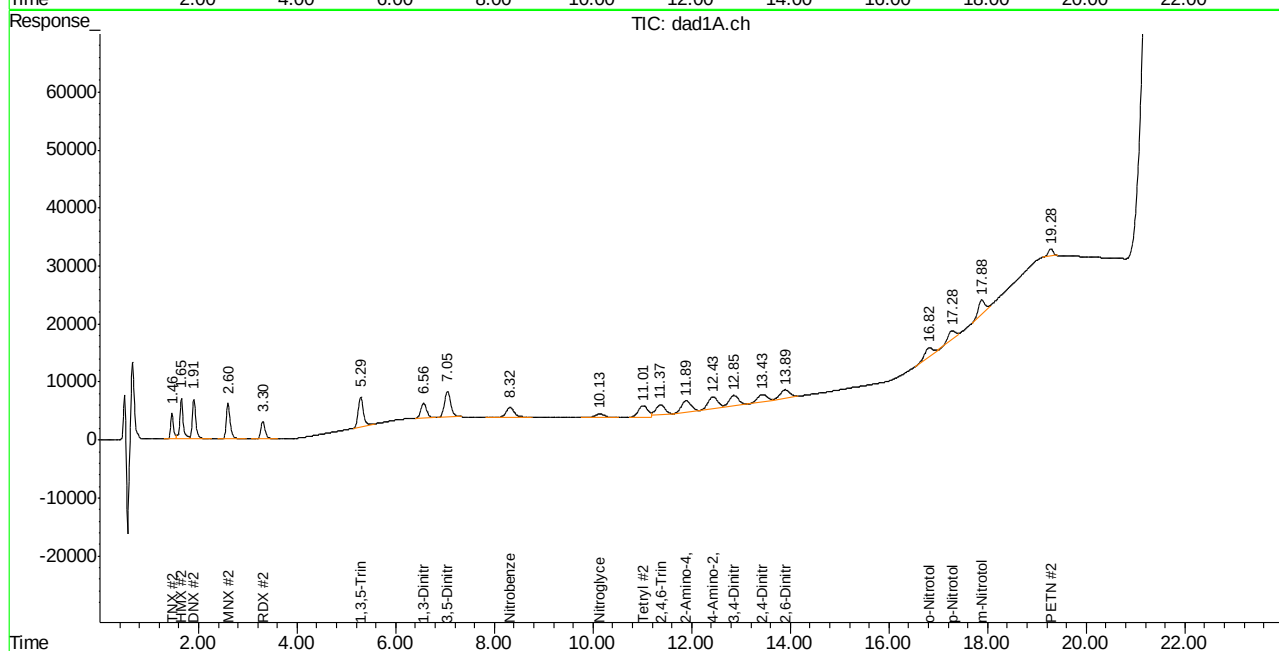
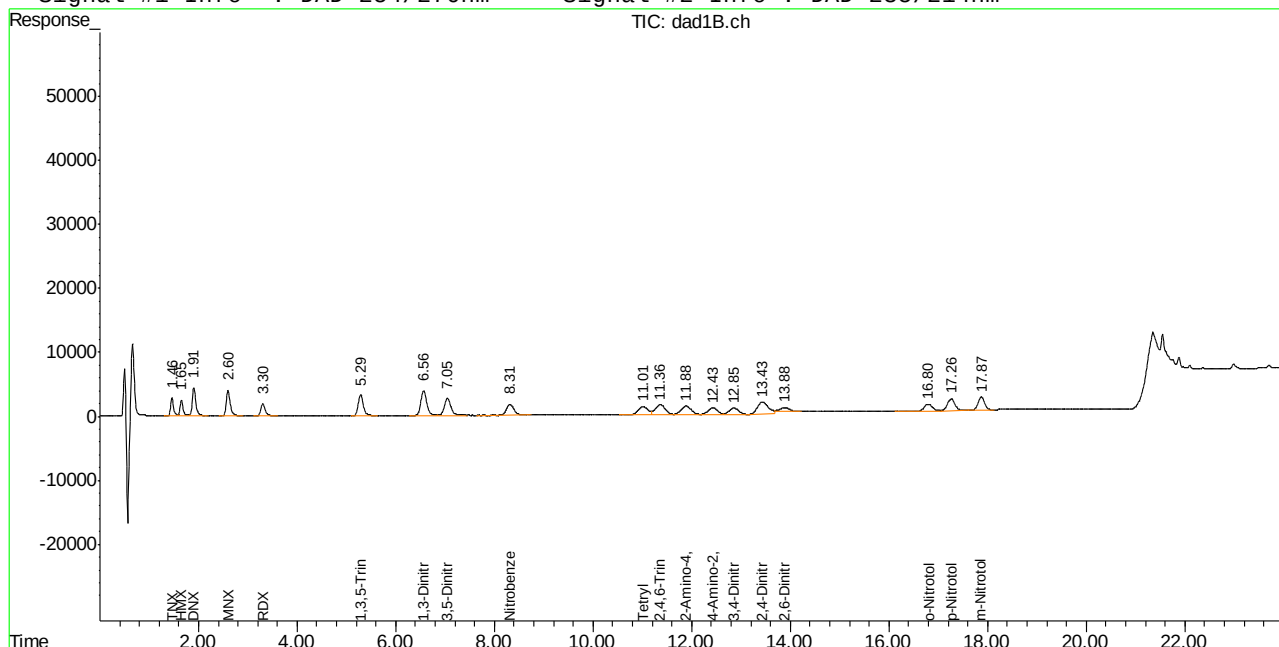
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB073630.D BBB2232_083122.M Thu Sep 01 14:19:28 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 8:00 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2232-IC2232

Method:

SW846 8330A

Lab FileID:

BB073630.D

Analyst approved:

09/02/22 08:50 Fouad Sekkar

Injection Time:

08/31/22 10:14

Supervisor approved:

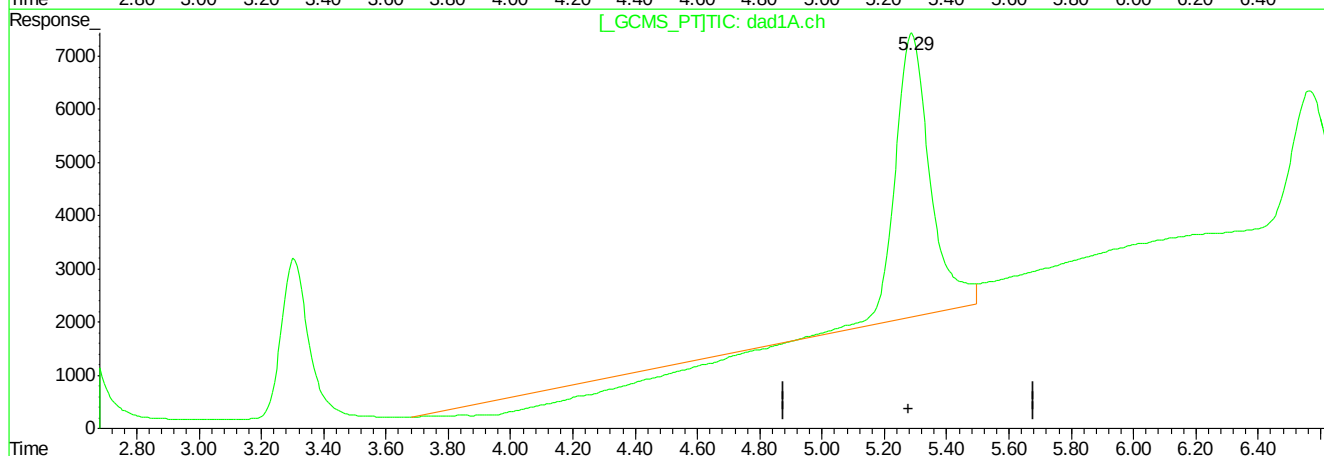
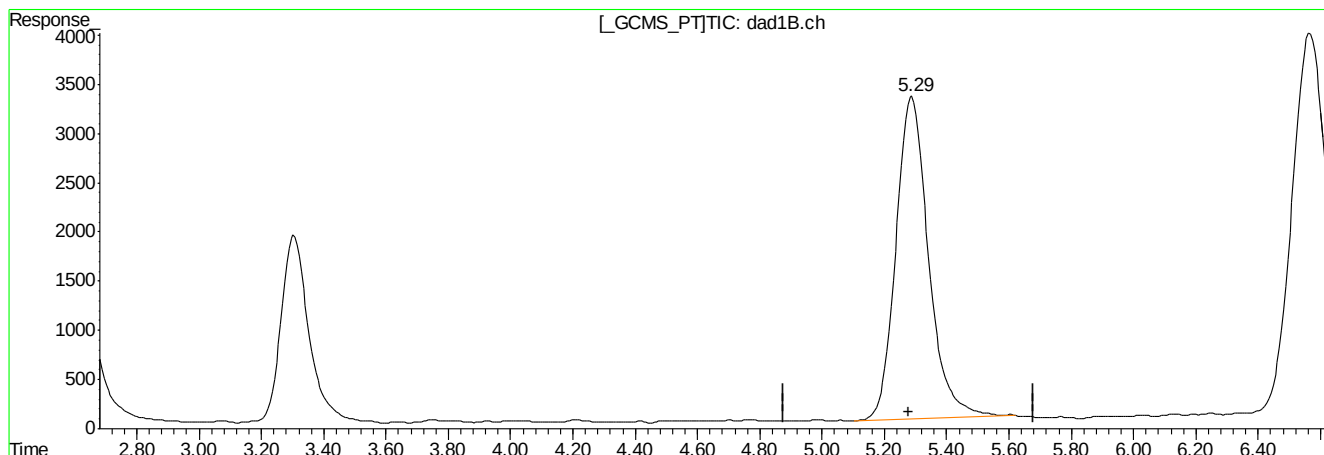
09/02/22 15:07 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3,5-Trinitrobenzene	99-35-4	2	5.29	Missed peak
1,3-Dinitrobenzene	99-65-0	2	6.56	Missed peak
3,5-Dinitroaniline	618-87-1	2	7.05	Missed peak
Tetryl	479-45-8	2	11.01	Missed peak
2,6-Dinitrotoluene	606-20-2	1	13.88	Missed peak
o-Nitrotoluene	88-72-2	2	16.82	Missed peak
p-Nitrotoluene	99-99-0	2	17.28	Missed peak
m-Nitrotoluene	99-08-1	2	17.88	Missed peak
PETN	78-11-5	2	19.28	Missed peak

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

5.29min 51.410ppb

response 236780

(6) 1,3,5-Trinitrobenzene #2

5.29min 40.937ppb

response 303523

(+) = Expected Retention Time

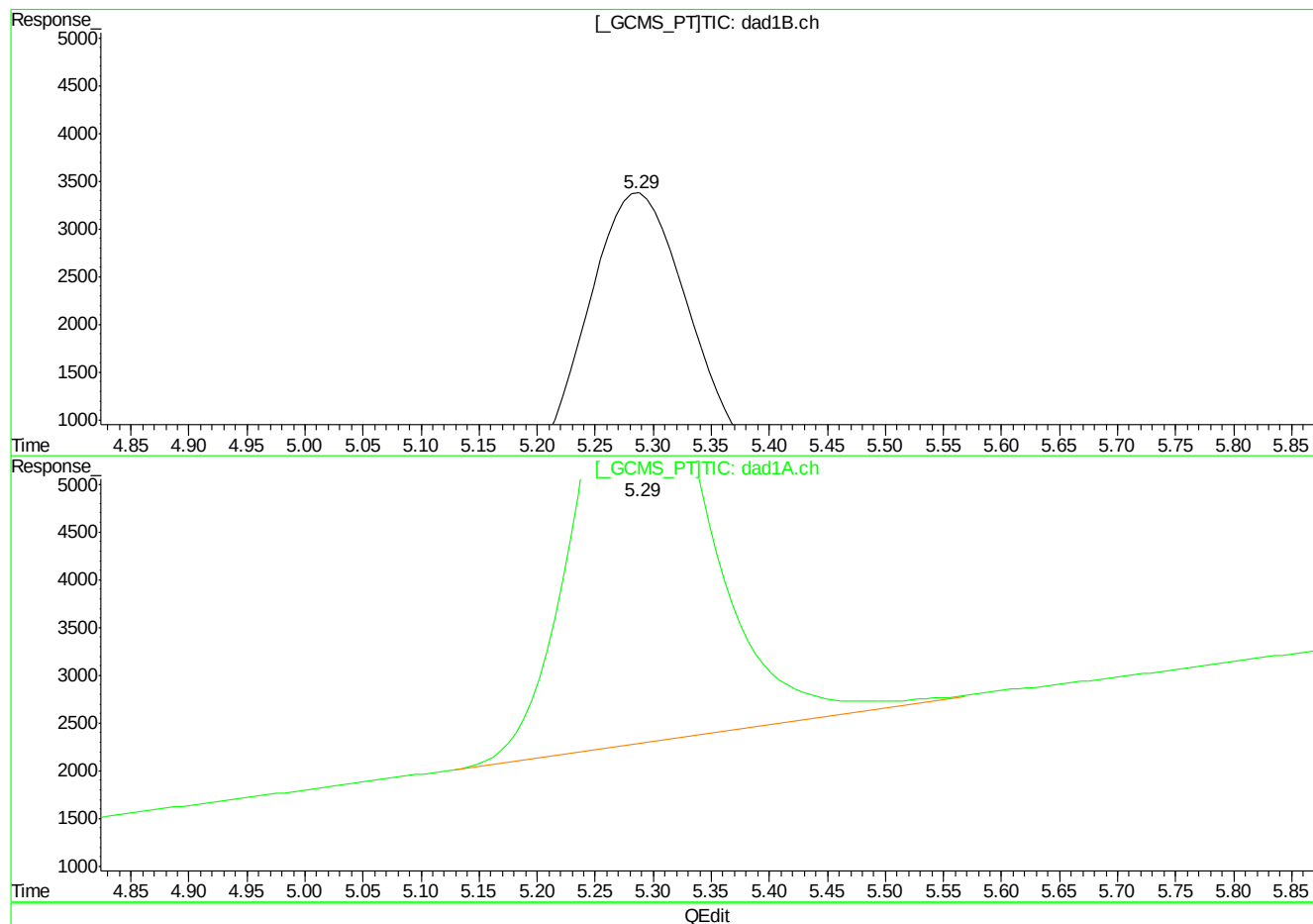
BB073630.D BBB2232_083122.M

Wed Aug 31 11:52:51 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

5.29min 51.410ppb

response 236780

(6) 1,3,5-Trinitrobenzene #2

5.29min 50.246ppb m

response 372540

(+) = Expected Retention Time

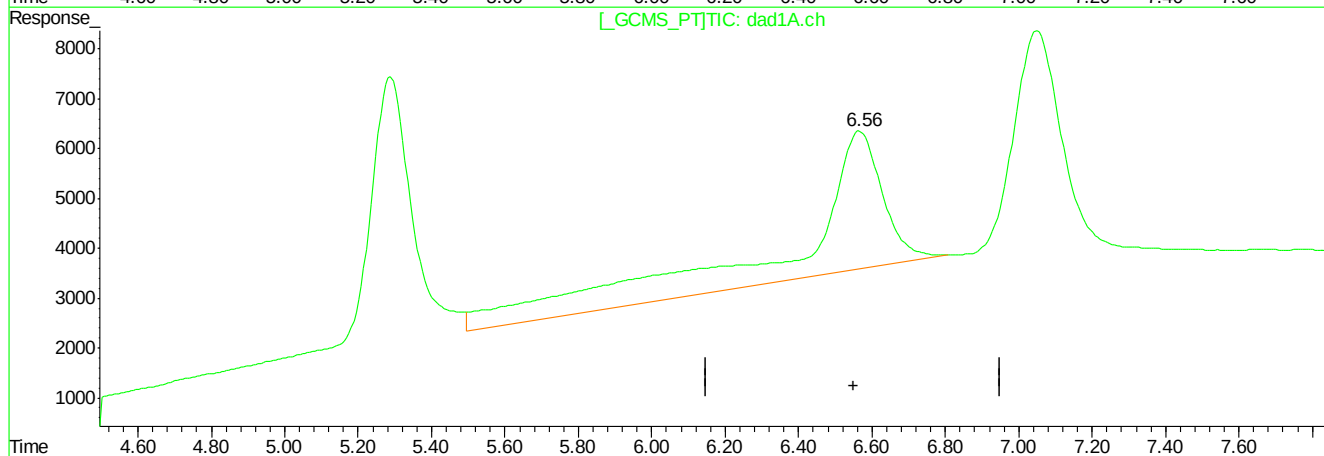
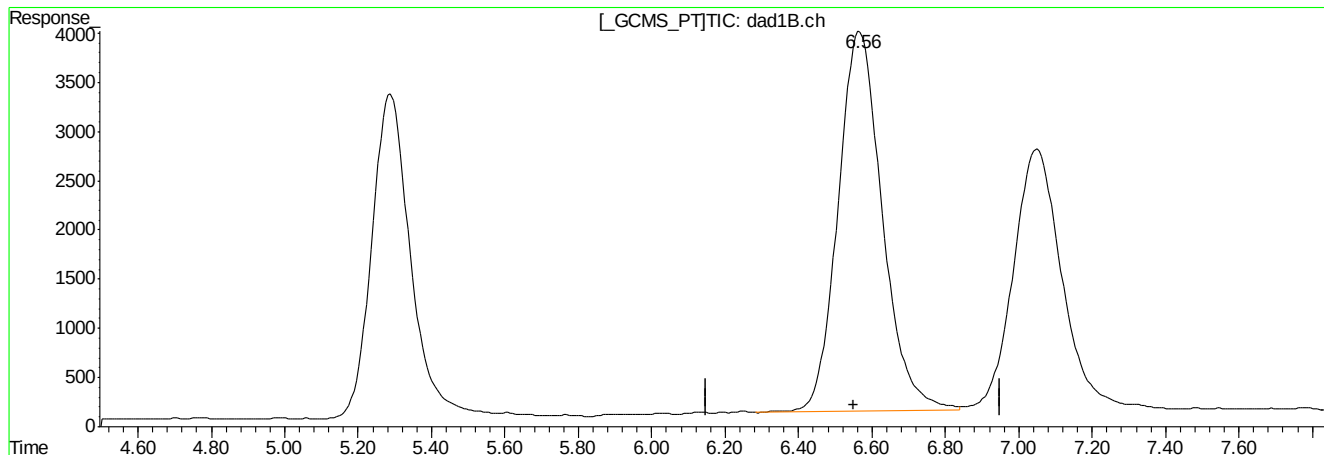
BB073630.D BBB2232_083122.M

Wed Aug 31 11:53:09 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

6.57min 52.683ppb

response 323442

(7) 1,3-Dinitrobenzene #2

6.57min 115.986ppb

response 495233

(+) = Expected Retention Time

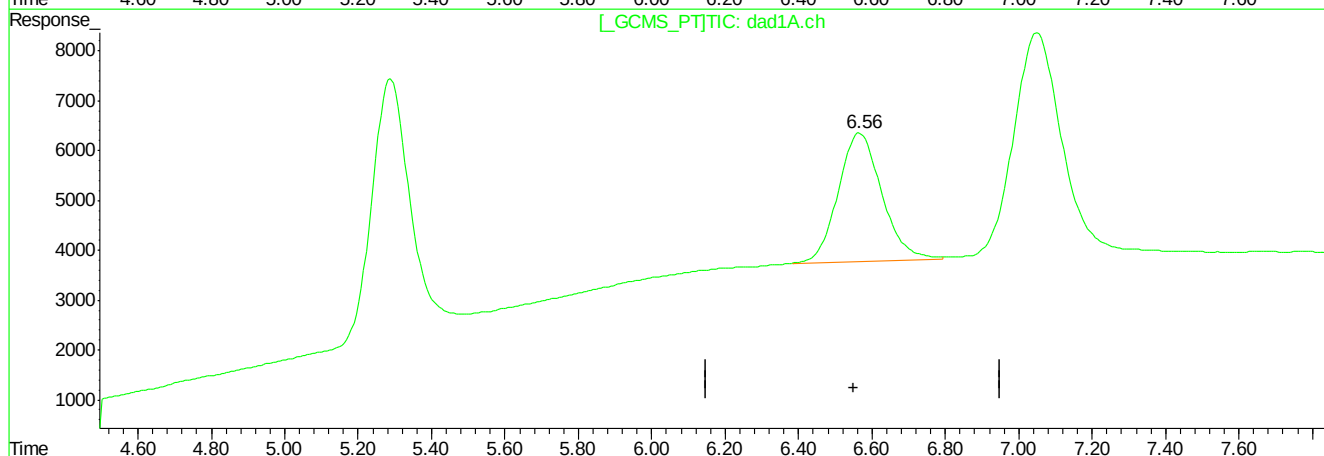
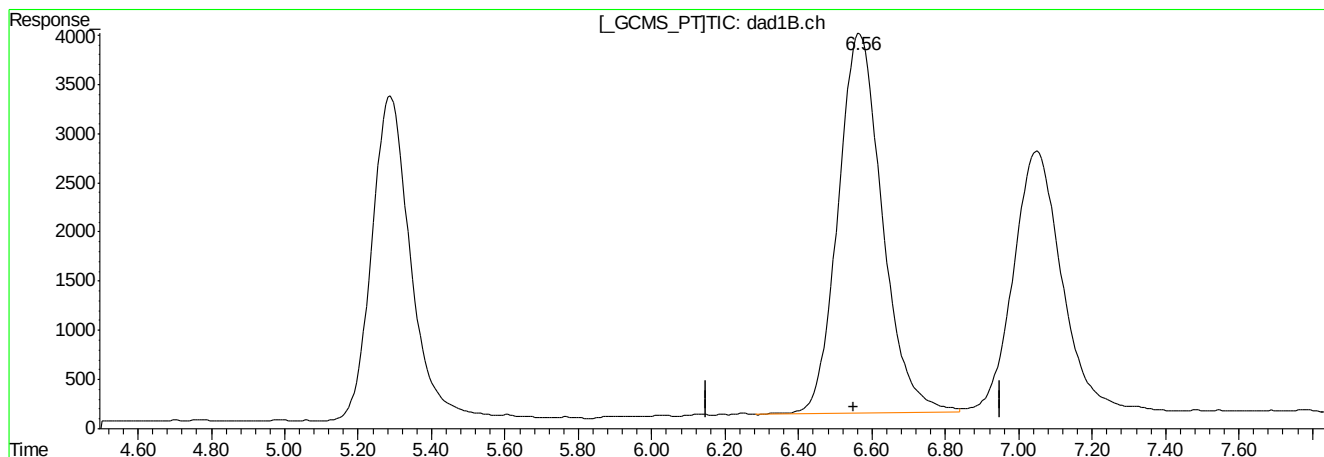
BB073630.D BBB2232_083122.M

Wed Aug 31 11:53:15 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

6.57min 52.683ppb

response 323442

(7) 1,3-Dinitrobenzene #2

6.56min 49.785ppb m

response 212568

(+) = Expected Retention Time

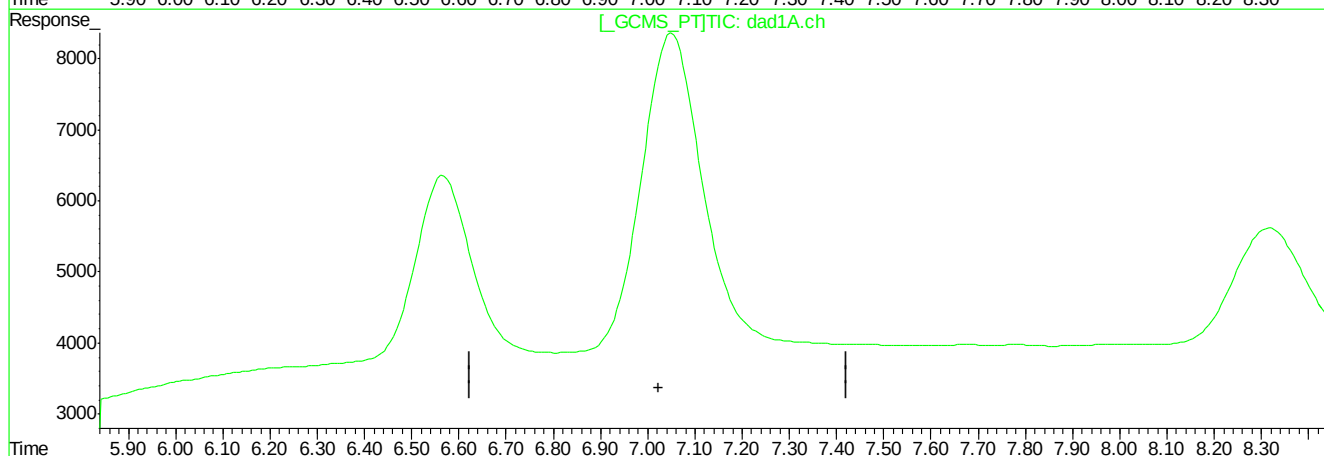
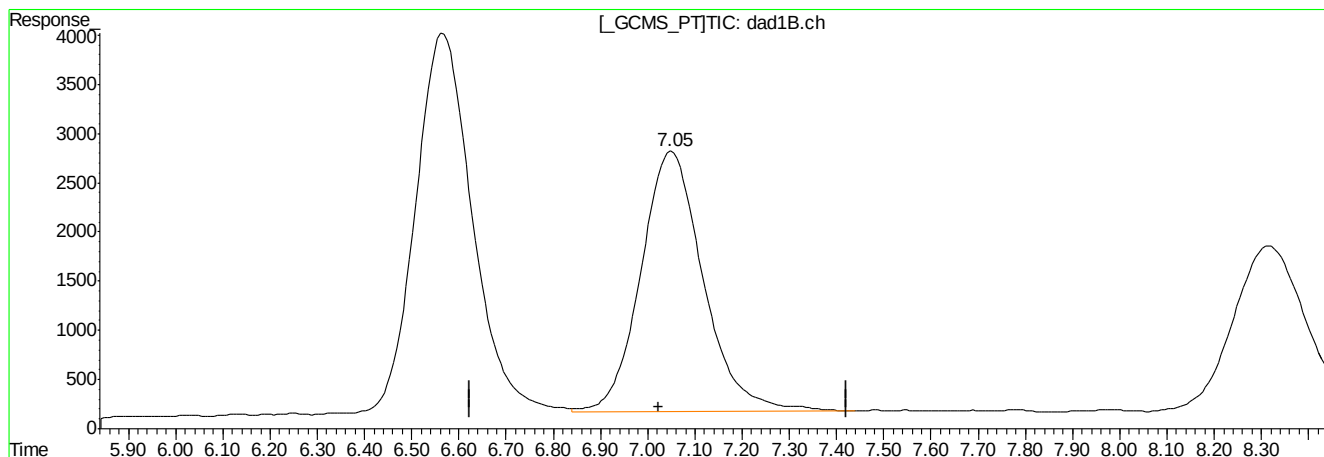
BB073630.D BBB2232_083122.M

Wed Aug 31 11:53:23 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.05min 53.441ppb

response 243609

(8) 3,5-Dinitroaniline #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

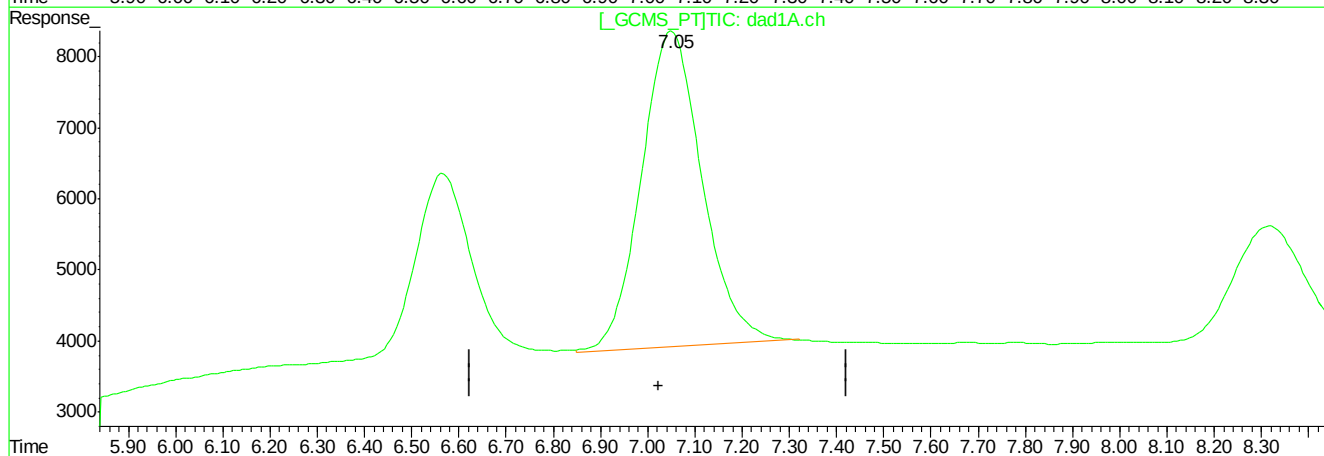
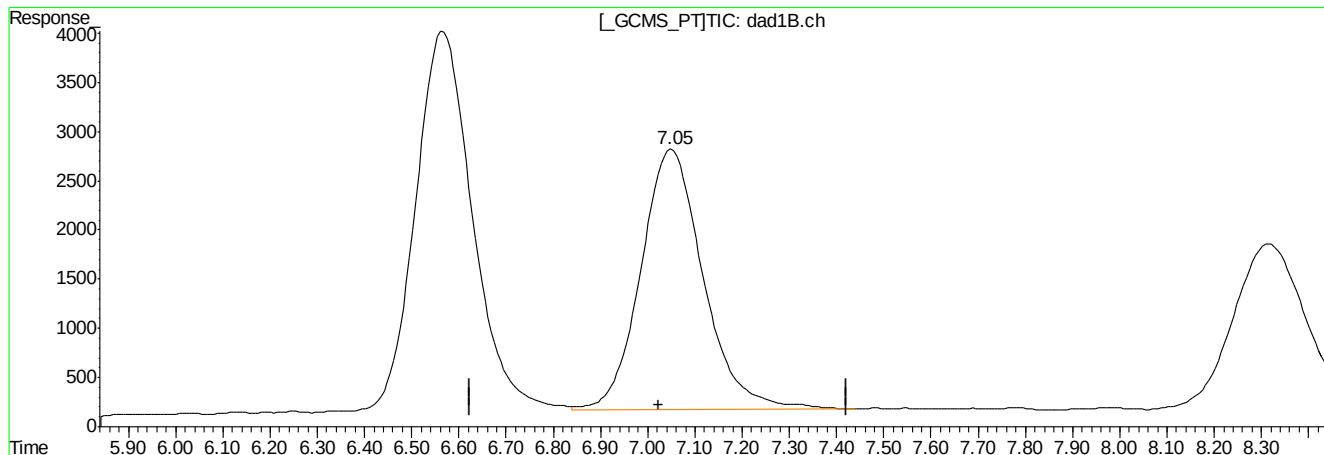
BB073630.D BBB2232_083122.M

Wed Aug 31 11:53:28 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.05min 53.441ppb

response 243609

(8) 3,5-Dinitroaniline #2

7.05min 51.516ppb m

response 397923

(+) = Expected Retention Time

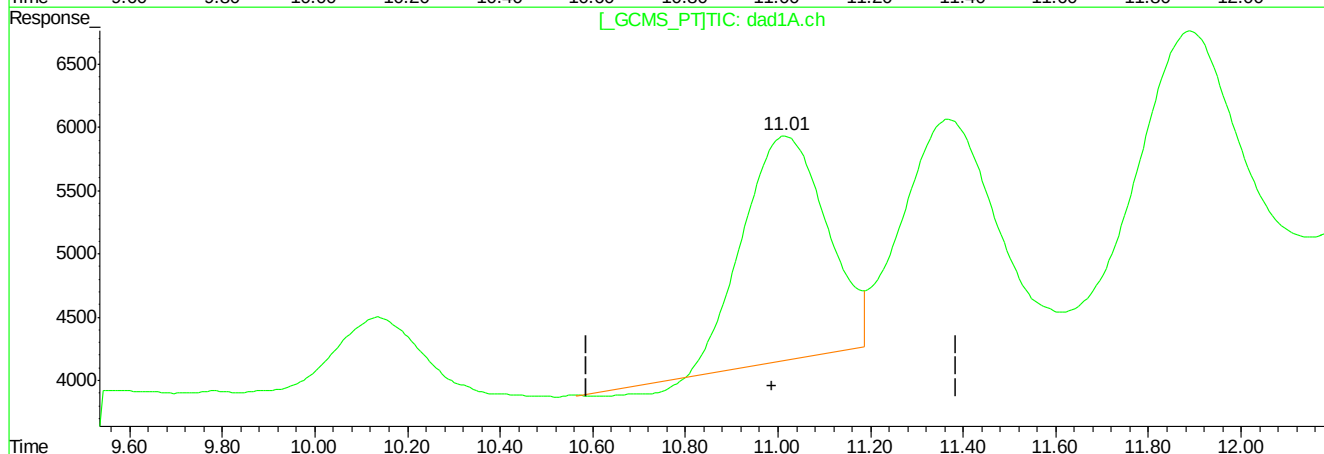
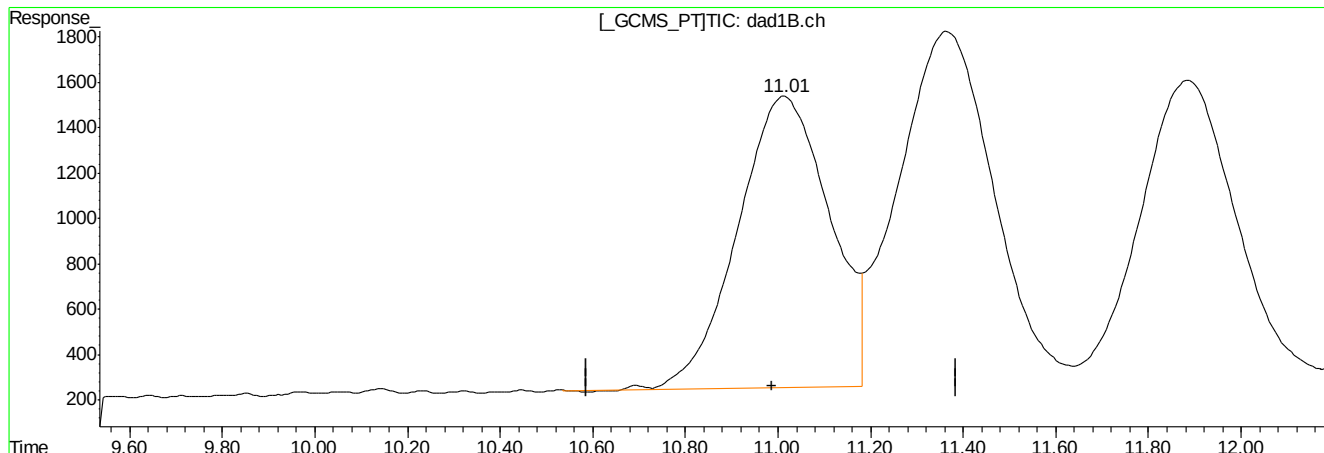
BB073630.D BBB2232_083122.M

Wed Aug 31 11:53:34 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(11) Tetryl

11.01min 50.972ppb

response 176638

(11) Tetryl #2

11.02min 38.075ppb

response 217116

(+) = Expected Retention Time

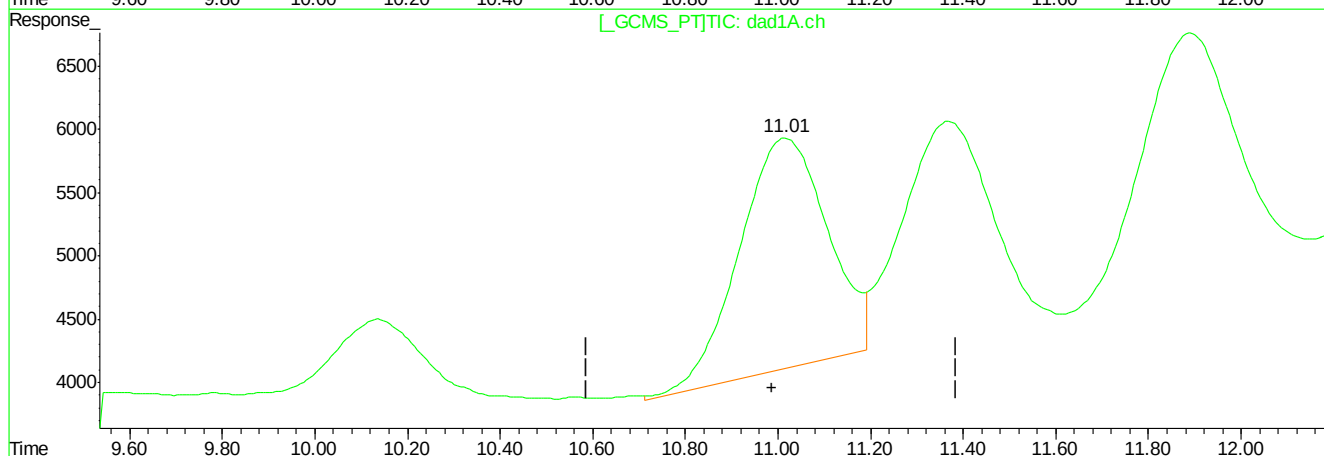
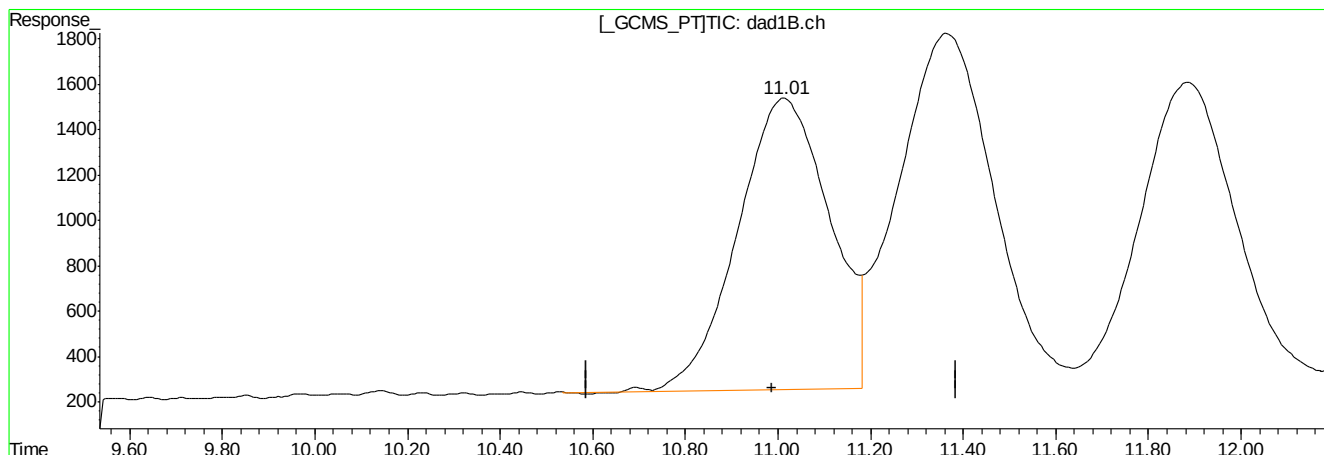
BB073630.D BBB2232_083122.M

Wed Aug 31 11:53:44 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(11) Tetryl

11.01min 50.972ppb

response 176638

(11) Tetryl #2

11.01min 42.402ppb m

response 241792

(+) = Expected Retention Time

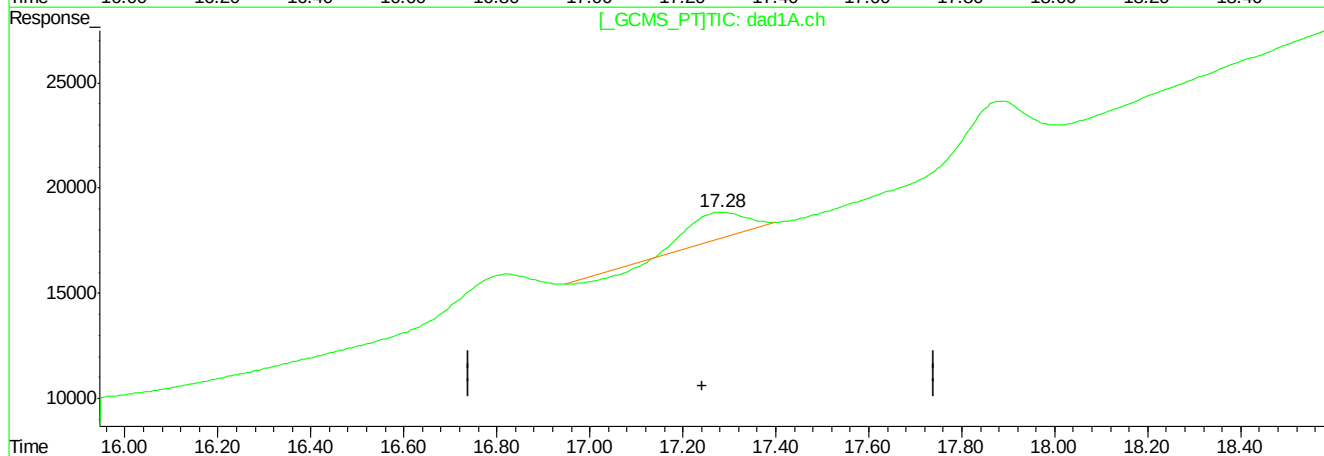
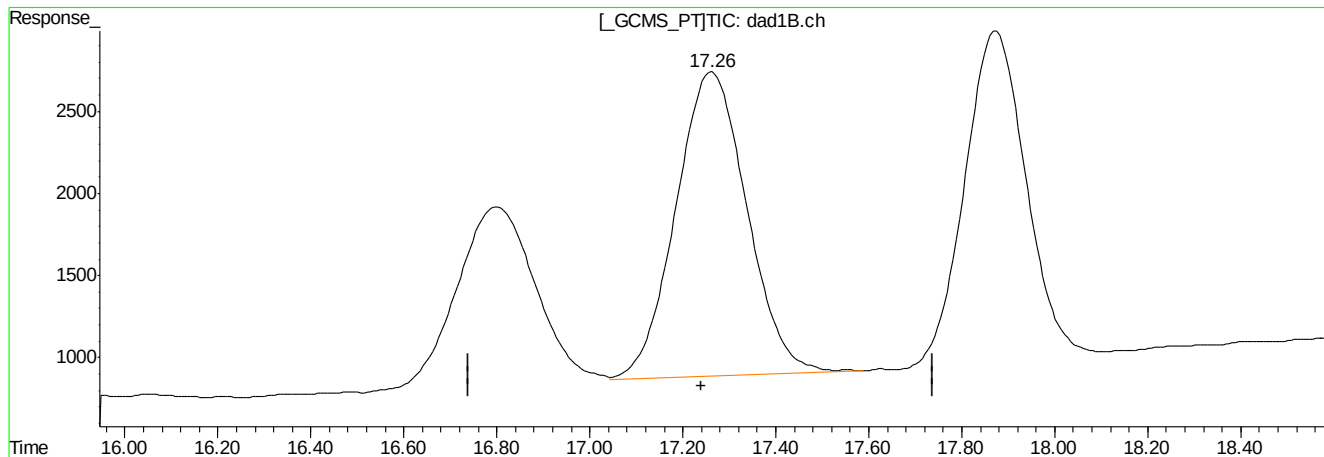
BB073630.D BBB2232_083122.M

Wed Aug 31 11:53:54 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(19) p-Nitrotoluene
17.26min 59.382ppb
response 197599

(19) p-Nitrotoluene #2
17.29min 31.547ppb
response 85448

(+) = Expected Retention Time

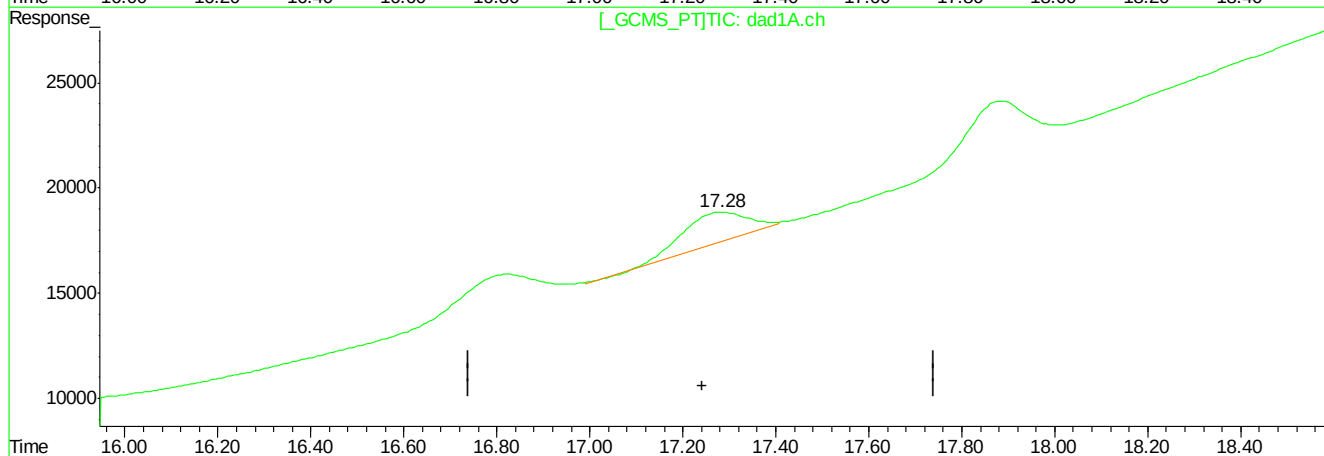
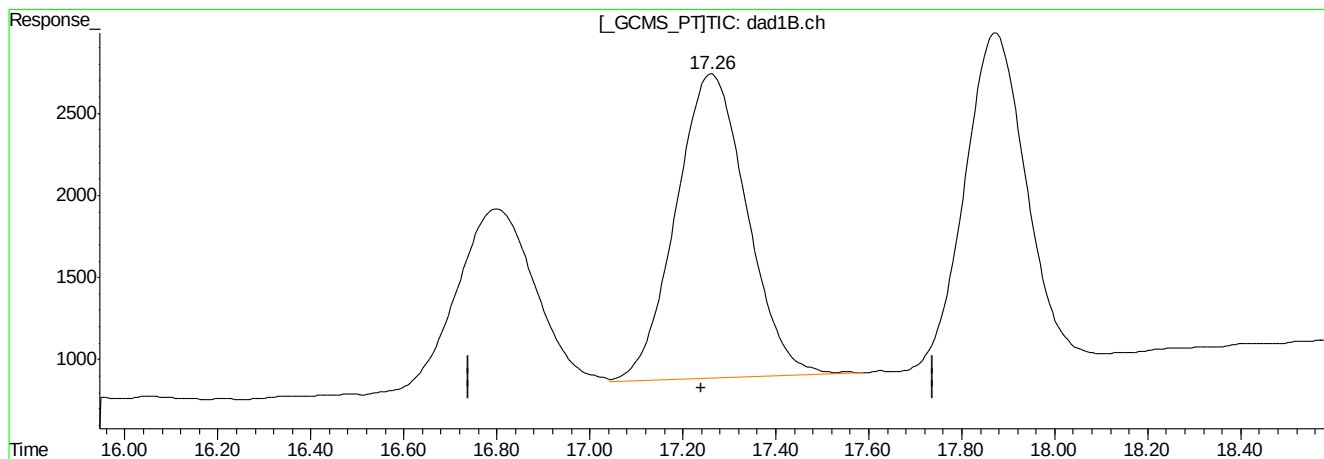
BB073630.D BBB2232_083122.M

Wed Aug 31 11:54:14 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(19) p-Nitrotoluene

17.26min 59.382ppb

response 197599

(19) p-Nitrotoluene #2

17.28min 52.737ppb m

response 142844

(+) = Expected Retention Time

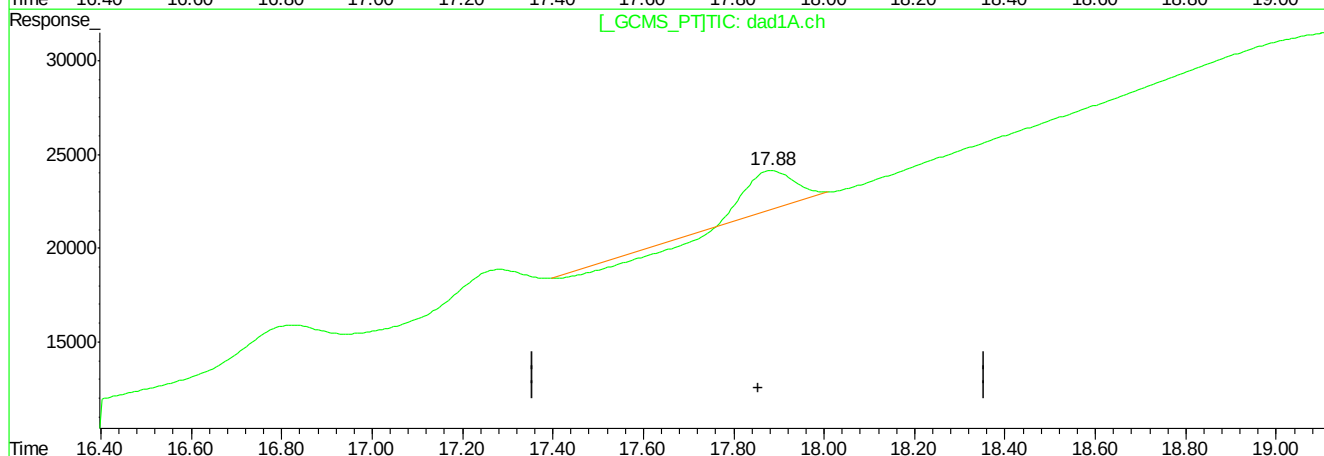
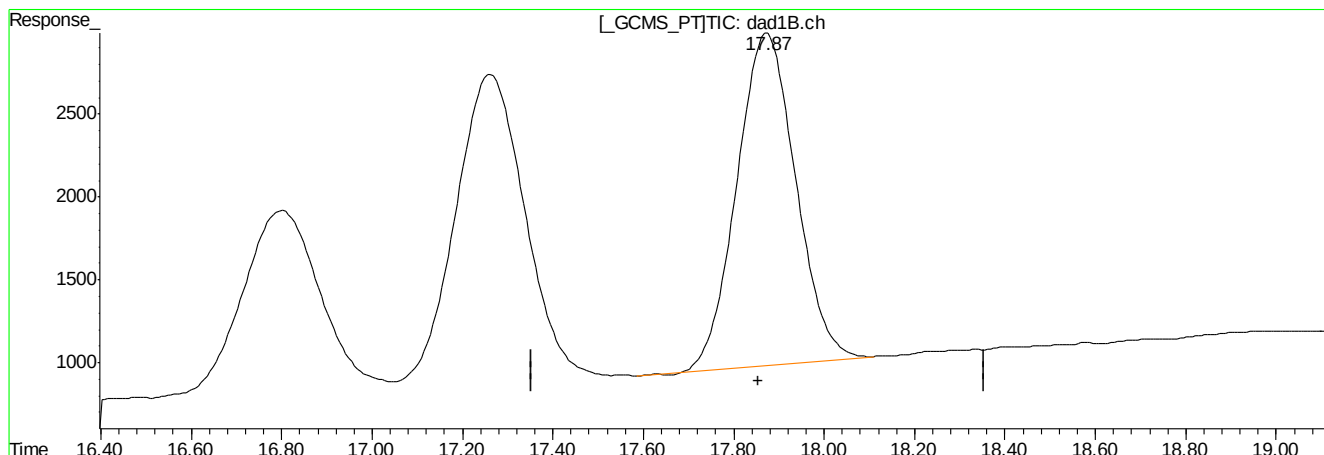
BB073630.D BBB2232_083122.M

Wed Aug 31 11:54:22 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(20) m-Nitrotoluene

17.87min 59.844ppb

response 181853

(20) m-Nitrotoluene #2

17.89min 26.156ppb

response 92962

(+) = Expected Retention Time

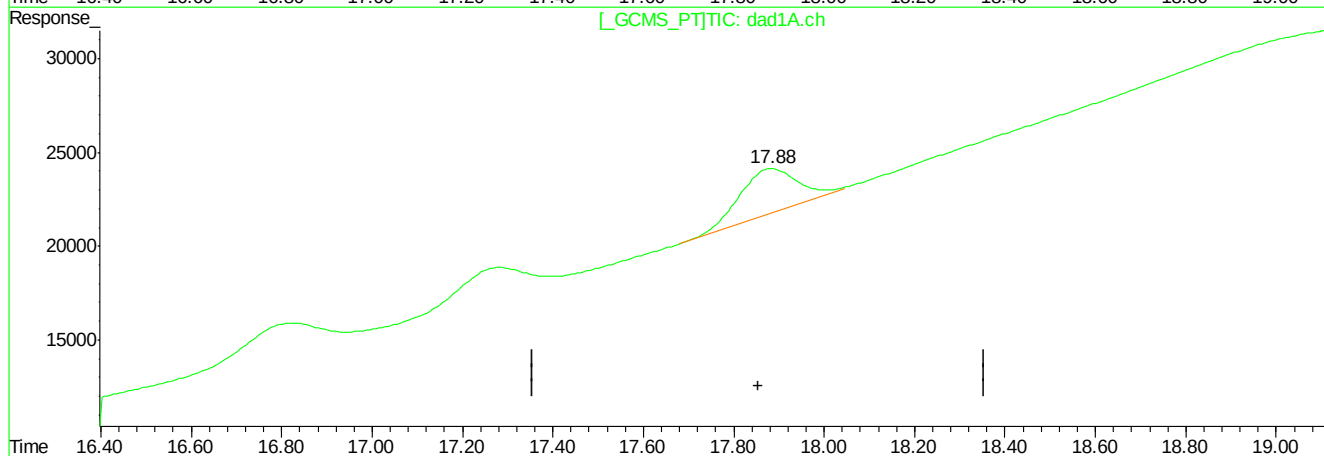
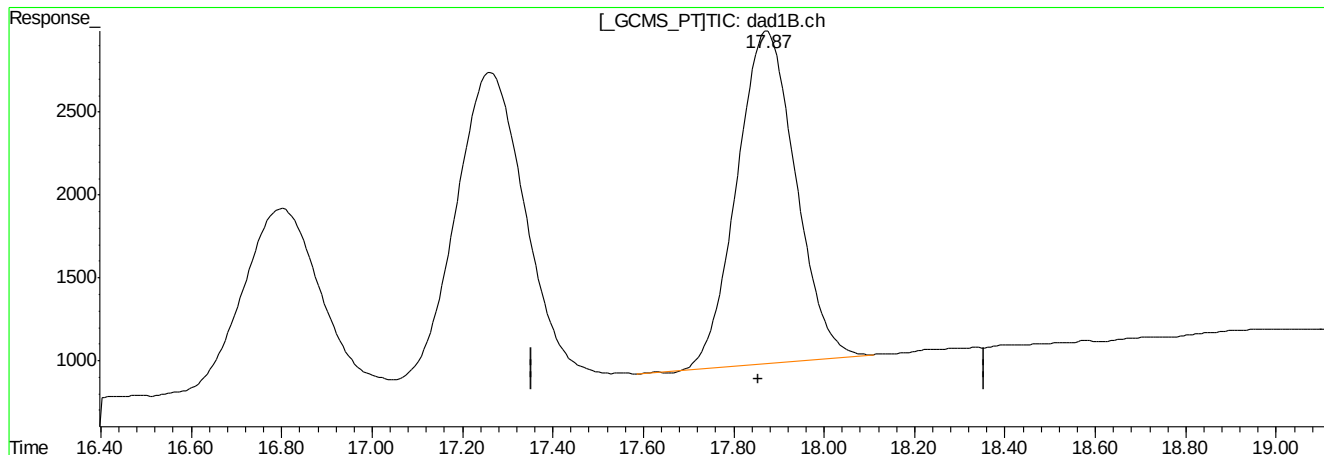
BB073630.D BBB2232_083122.M

Wed Aug 31 11:54:26 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(20) m-Nitrotoluene

17.87min 59.844ppb

response 181853

(20) m-Nitrotoluene #2

17.88min 60.592ppb m

response 215354

(+) = Expected Retention Time

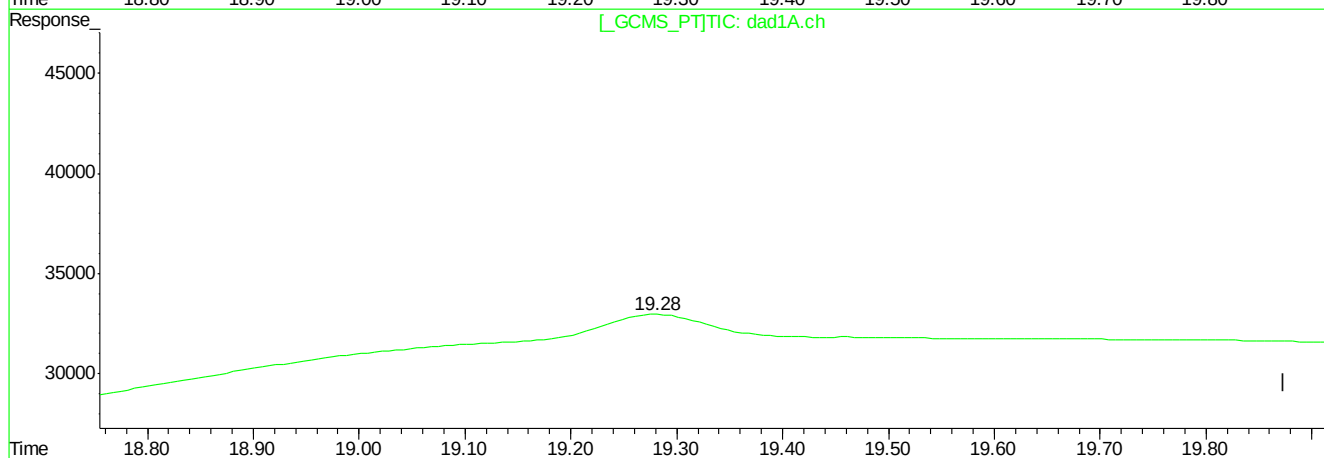
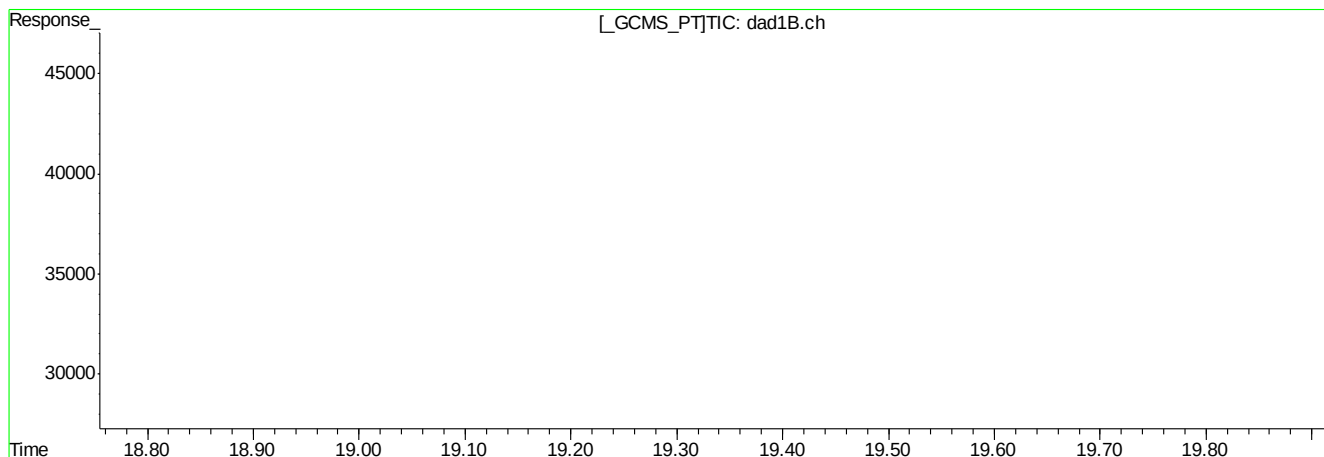
BB073630.D BBB2232_083122.M

Wed Aug 31 11:54:42 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 315.072ppb

response 500148

(+) = Expected Retention Time

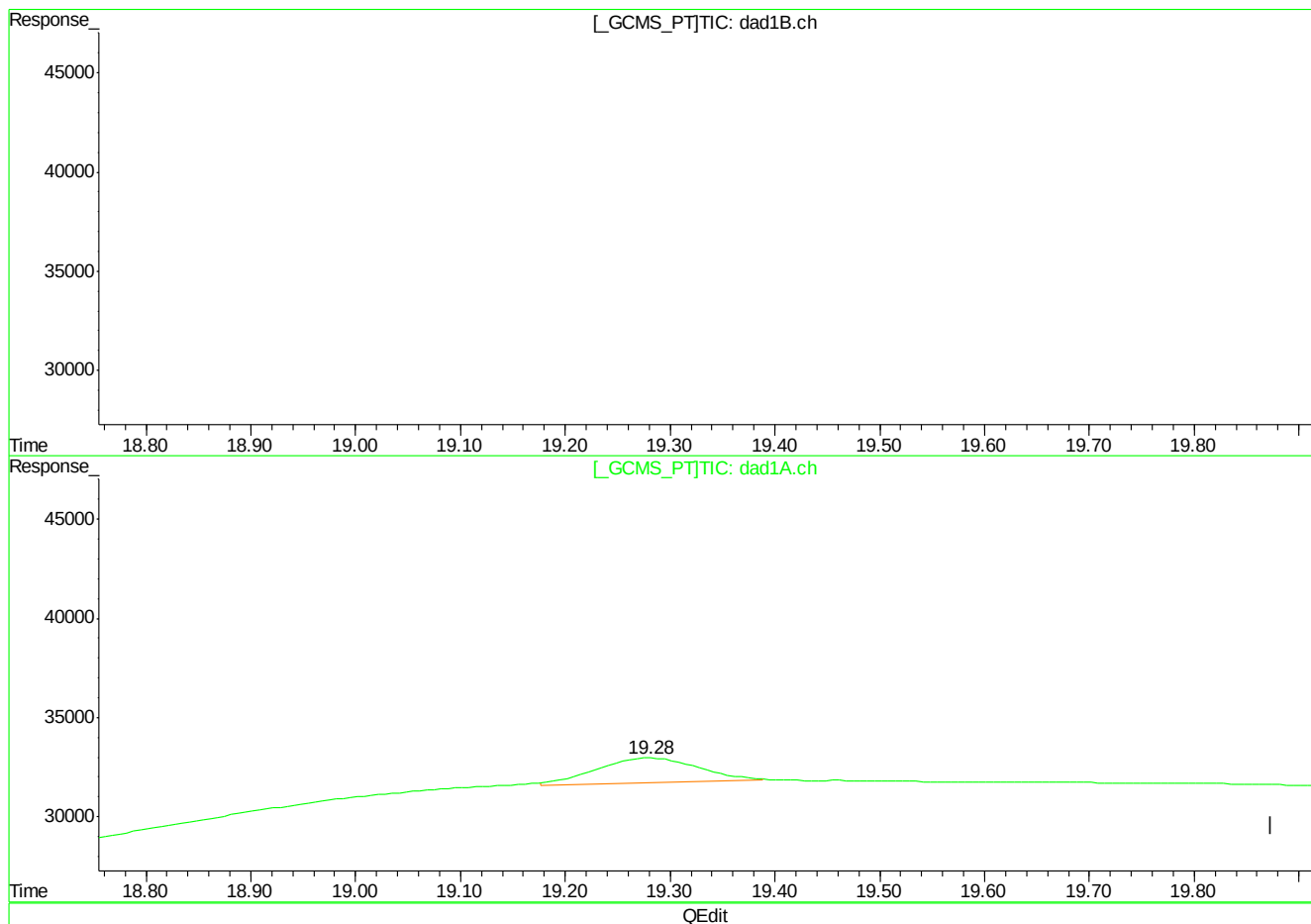
BB073630.D BBB2232_083122.M

Wed Aug 31 11:54:52 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 52.519ppb m

response 83370

(+) = Expected Retention Time

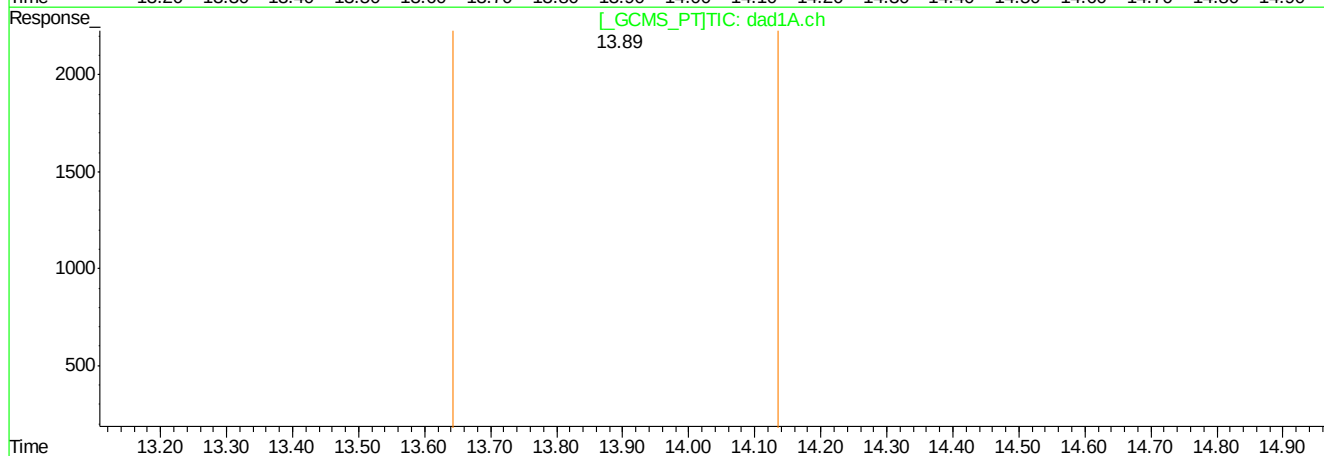
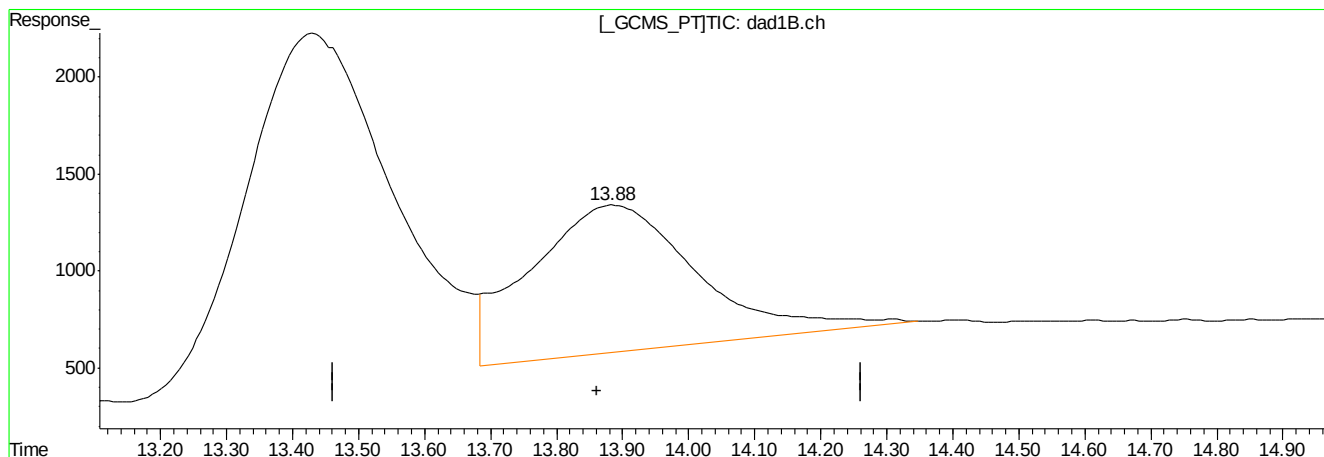
BB073630.D BBB2232_083122.M

Wed Aug 31 11:55:00 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.89min 44.751ppb

response 133585

(17) 2,6-Dinitrotoluene #2

13.90min 47.993ppb

response 191581

(+) = Expected Retention Time

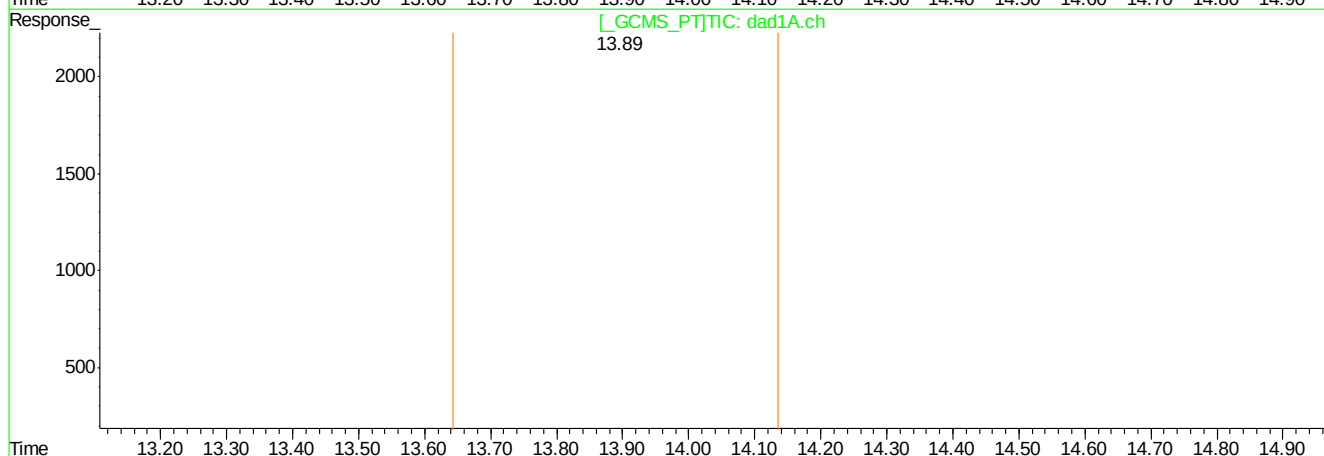
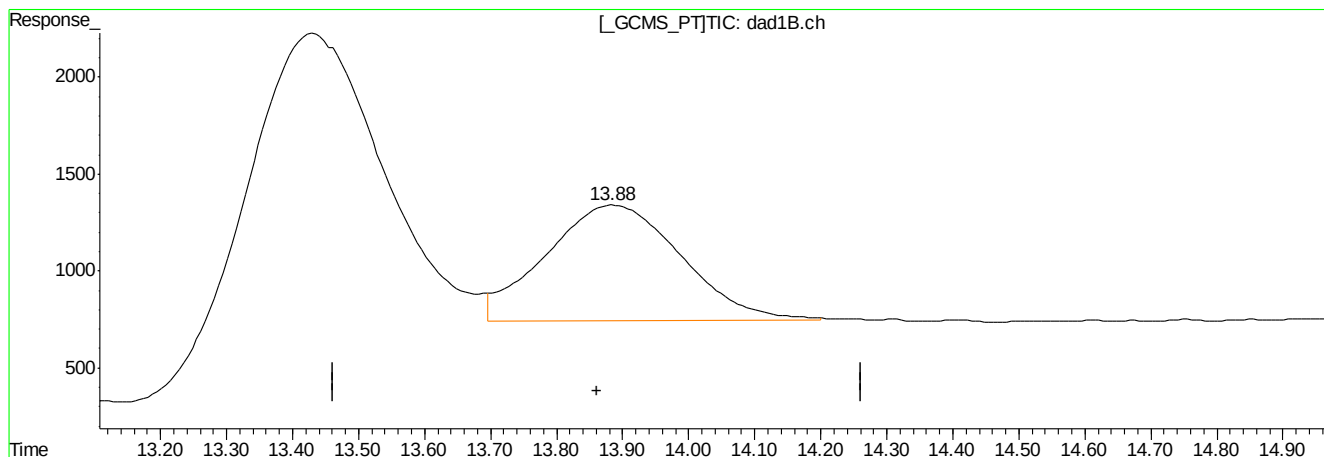
BB073630.D BBB2232_083122.M

Wed Aug 31 13:59:48 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.88min 28.268ppb m

response 84383

(17) 2,6-Dinitrotoluene #2

13.90min 47.993ppb

response 191581

(+) = Expected Retention Time

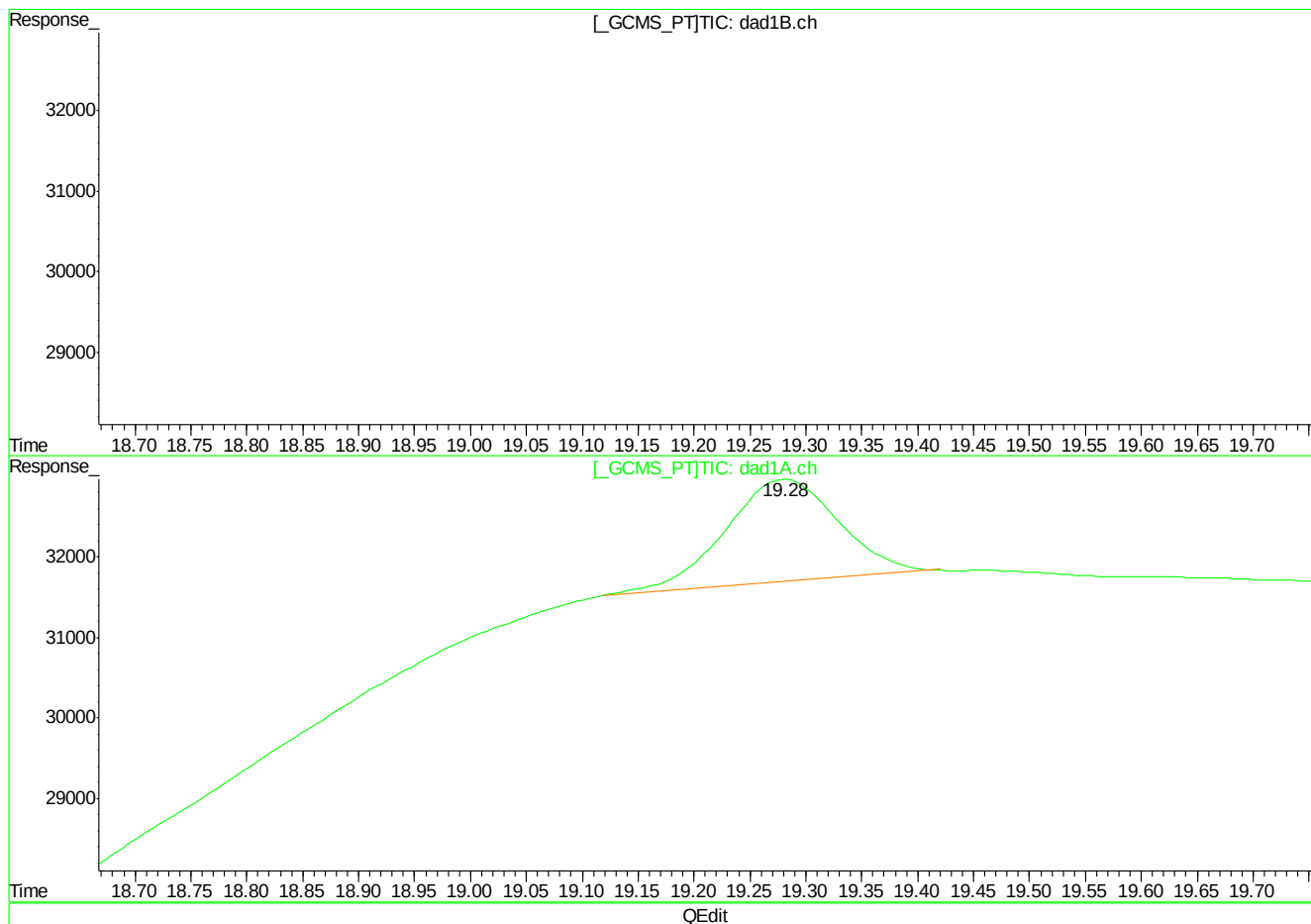
BB073630.D BBB2232_083122.M

Wed Aug 31 13:59:55 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:59 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 55.935ppb m

response 88792

(+) = Expected Retention Time

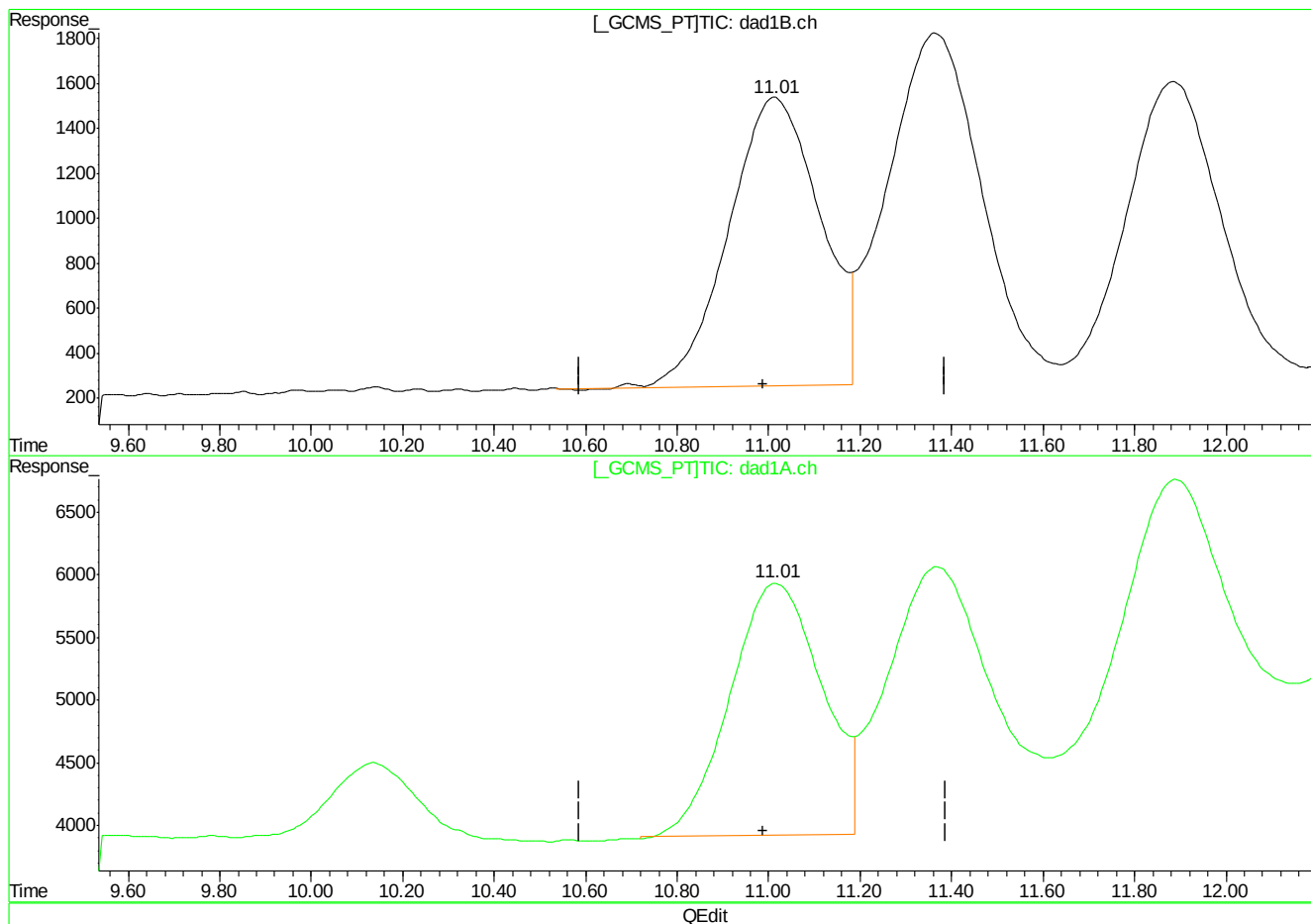
BB073630.D BBB2232_083122.M

Thu Sep 01 07:55:15 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Thu Sep 01 07:58:42 2022
Response via : Multiple Level Calibration



(11) Tetryl

11.01min 50.972ppb

response 176638

(11) Tetryl #2

11.01min 48.620ppb m

response 277249

(+) = Expected Retention Time

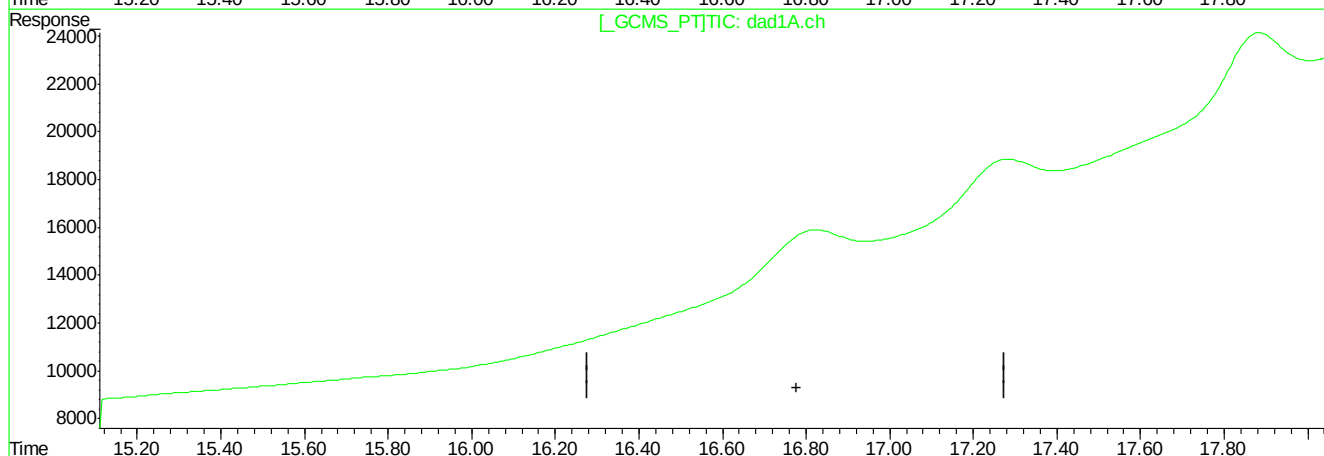
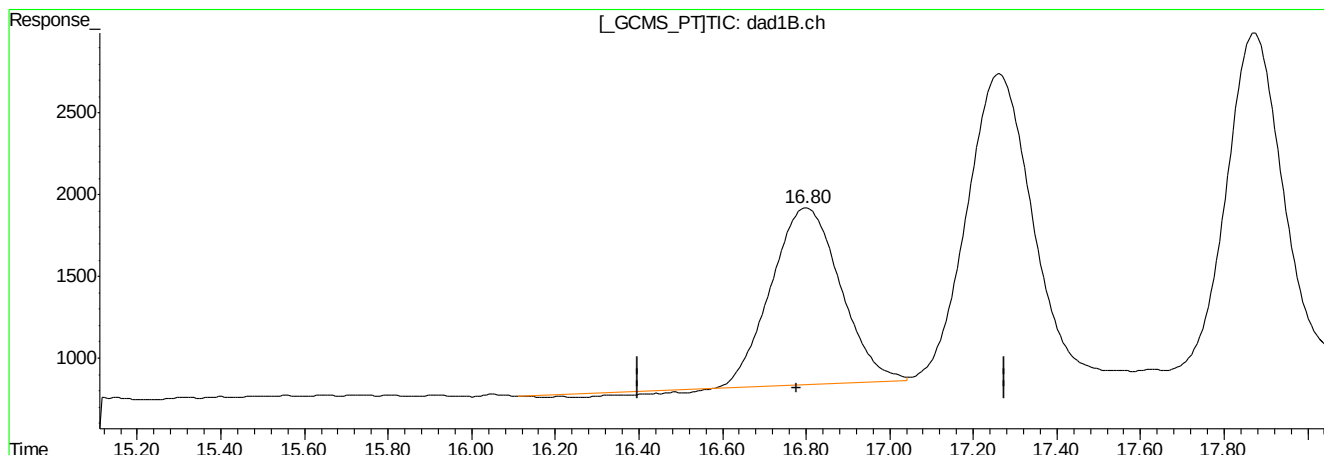
BB073630.D BBB2232_083122.M

Thu Sep 01 07:59:39 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:59 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Thu Sep 01 07:58:42 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
16.80min 58.660ppb
response 121072

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

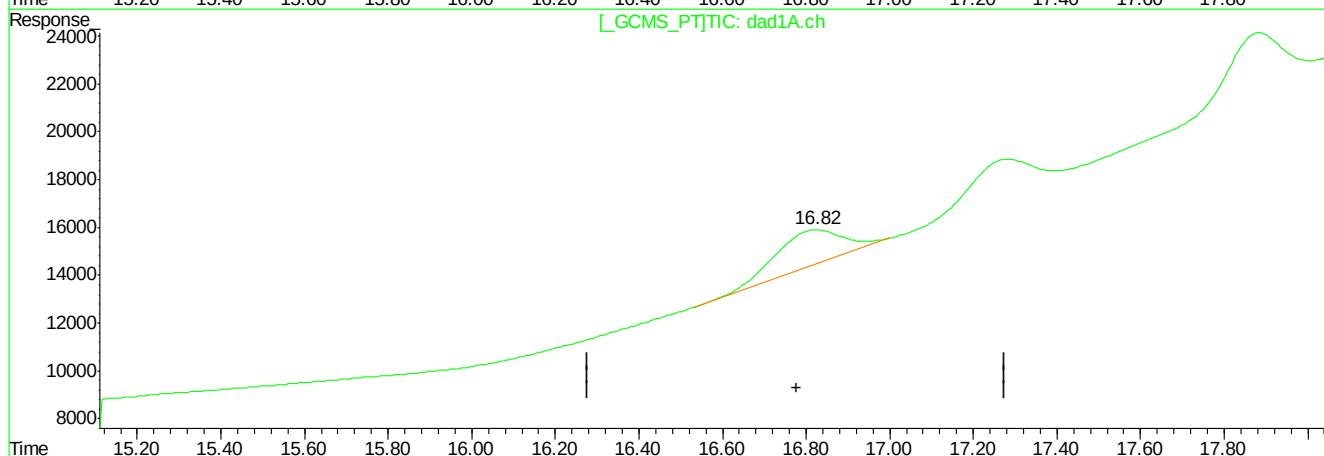
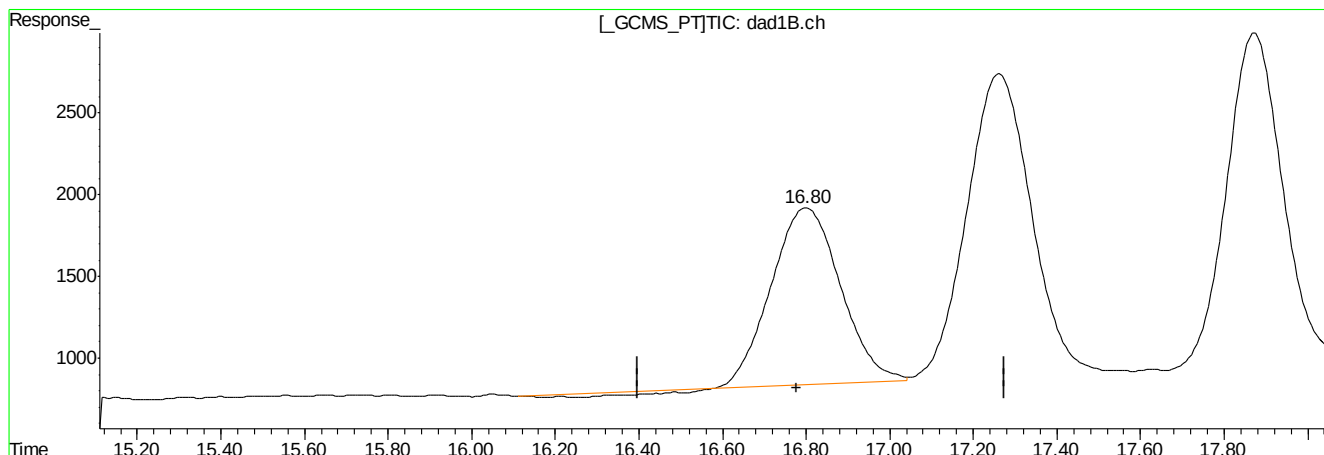
BB073630.D BBB2232_083122.M

Thu Sep 01 08:00:21 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073630.D\dad1A.ch
Acq On : 31-Aug-2022, 10:14:57 Operator: FOUADS
Sample : ic2232-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:59 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Thu Sep 01 07:58:42 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

16.80min 58.660ppb

response 121072

(18) o-Nitrotoluene #2

16.82min 45.657ppb m

response 168010

(+) = Expected Retention Time

BB073630.D BBB2232_083122.M

Thu Sep 01 08:00:30 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
 Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
 Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
 Sample : ic2232-100 Inst : G1315B
 Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Aug 31 11:55:11 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Aug 31 08:15:37 2022
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	12.85	12.86	231315	424805	93.954	91.327
Spiked Amount	500.000	Range	70 - 136	Recovery	=	18.79%# 18.27%#
Target Compounds						
1) TNX	1.46	1.46	287602	447956	71.168	72.918
2) HMX	1.65	1.65	184734	601496	98.776	117.468
3) DNX	1.90	1.90	521752	841209	146.787m	150.482m
4) MNX	2.59	2.59	594555	914056	184.315m	184.452m
5) RDX	3.30	3.30	206547	326280	93.267	91.519
6) 1,3,5-Trinitrobe	5.29	5.28	425977	660195	92.489	89.043m
7) 1,3-Dinitrobenze	6.56	6.56	573818	387316	93.465	90.711m
8) 3,5-Dinitroanili	7.05	7.04	431864	713400	94.739	92.359m
9) Nitrobenzene	8.31	8.31	326620	325342	106.999	101.534
10) Nitroglycerin	0.00	10.14	0	145889	N.D.	95.172 #
11) Tetryl	11.02	11.02	303476	437204	87.573	76.670
12) 2,4,6-Trinitroto	11.37	11.37	393958	415167	91.097	81.083
13) 2-Amino-4,6-Dini	11.88	11.89	336060	458936	89.237	80.592
14) 4-Amino-2,6-Dini	12.43	12.43	246369	482043	88.868	85.644
16) 2,4-Dinitrotolue	13.43	13.44	495368	307872	96.144	87.062
17) 2,6-Dinitrotolue	13.89	13.90	150737	362928	50.497m	90.918 #
18) o-Nitrotoluene	16.80	16.81	233721	316939	113.240	86.365m
19) p-Nitrotoluene	17.27	17.28	362921	246496	109.065	91.006
20) m-Nitrotoluene	17.88	17.88	341272	387787	112.306	109.108m
21) PETN	0.00	19.28	0	151208	N.D.	95.255m#

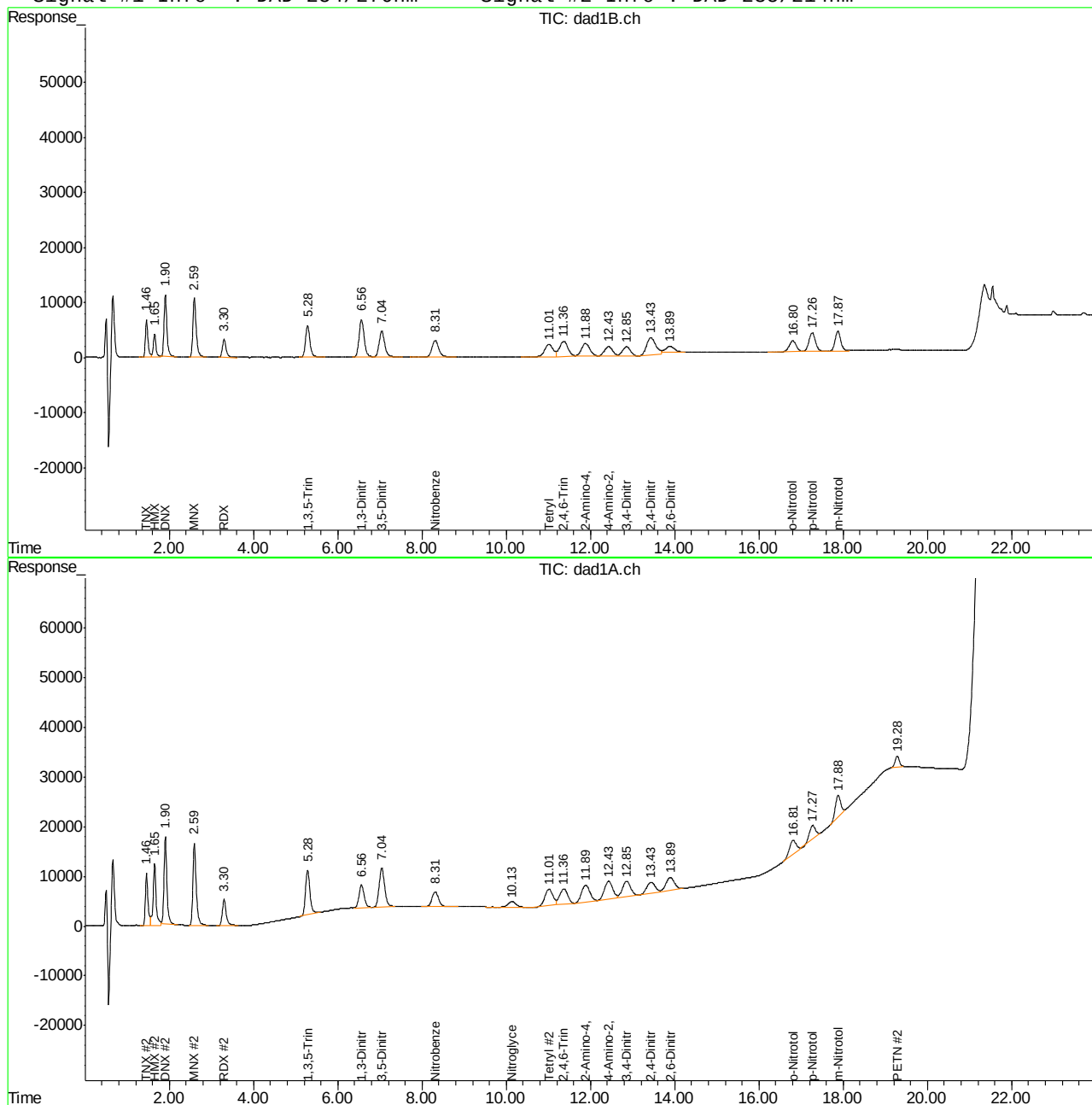
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB073631.D BBB2232_083122.M Thu Sep 01 14:19:29 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:55 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2232-IC2232

Lab FileID:

BB073631.D

Injection Time:

08/31/22 10:45

Method:

SW846 8330A

Analyst approved:

09/02/22 08:50 Fouad Sekkar

Supervisor approved:

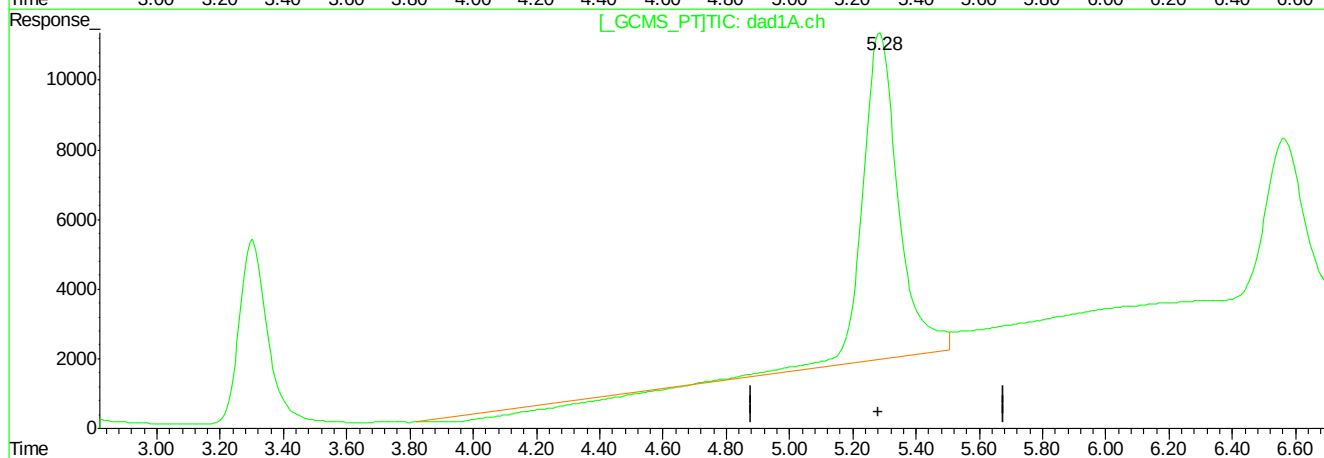
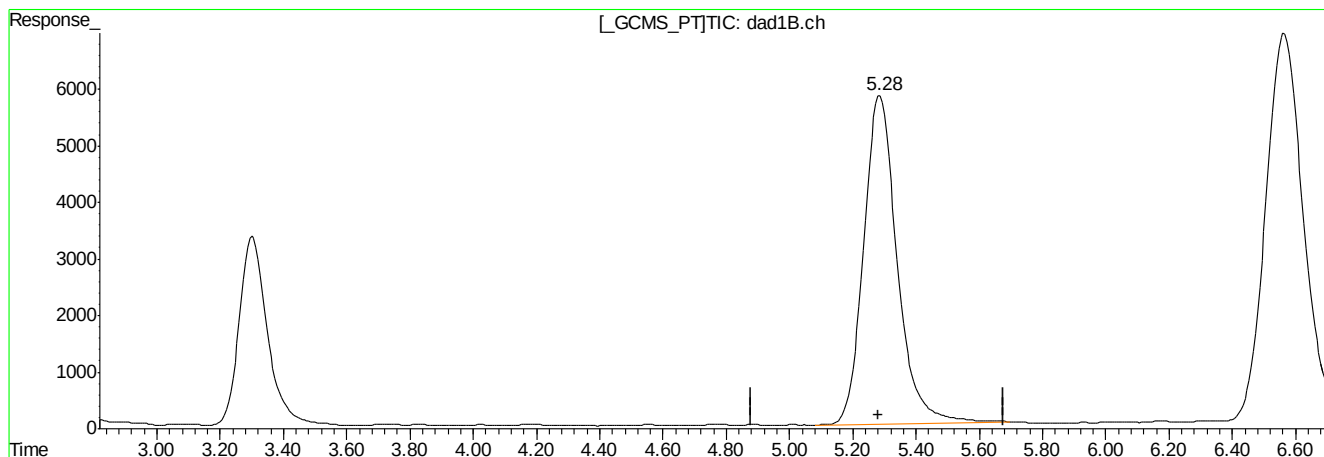
09/02/22 15:07 Naresh Jiawan

Parameter	CAS	Sig#	R. T. (min.)	Reason
DNX		1	1.90	Missed peak
DNX		2	1.90	Missed peak
MNX		1	2.59	Missed peak
MNX		2	2.59	Missed peak
1,3,5-Trinitrobenzene	99-35-4	2	5.28	Missed peak
1,3-Dinitrobenzene	99-65-0	2	6.56	Missed peak
3,5-Dinitroaniline	618-87-1	2	7.04	Missed peak
2,6-Dinitrotoluene	606-20-2	1	13.89	Missed peak
o-Nitrotoluene	88-72-2	2	16.81	Missed peak
m-Nitrotoluene	99-08-1	2	17.88	Missed peak
PETN	78-11-5	2	19.28	Missed peak

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

5.29min 92.489ppb

response 425977

(6) 1,3,5-Trinitrobenzene #2

5.29min 94.818ppb

response 703012

(+) = Expected Retention Time

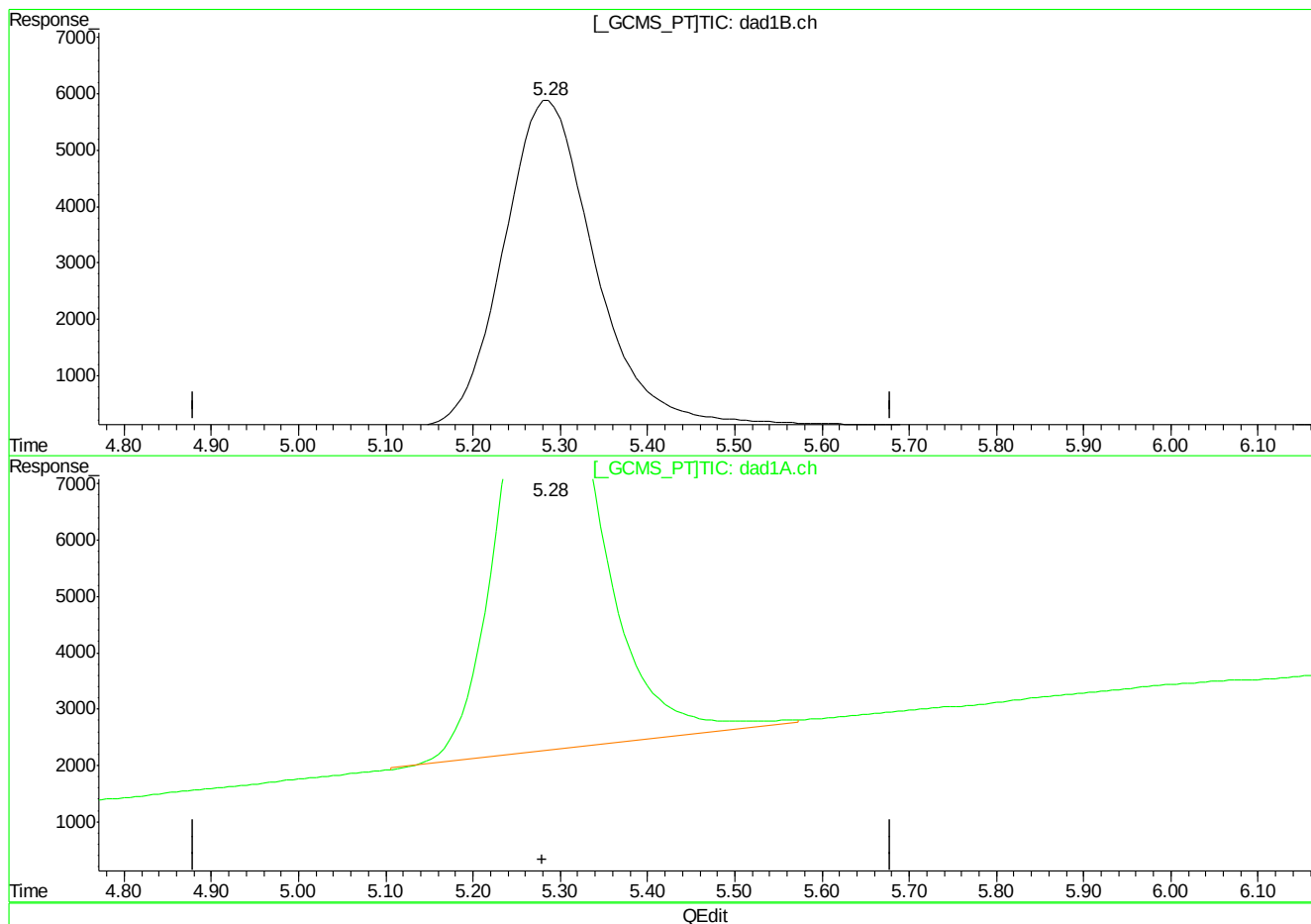
BB073631.D BBB2232_083122.M

Wed Aug 31 11:55:41 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

5.29min 92.489ppb

response 425977

(6) 1,3,5-Trinitrobenzene #2

5.28min 89.043ppb m

response 660195

(+) = Expected Retention Time

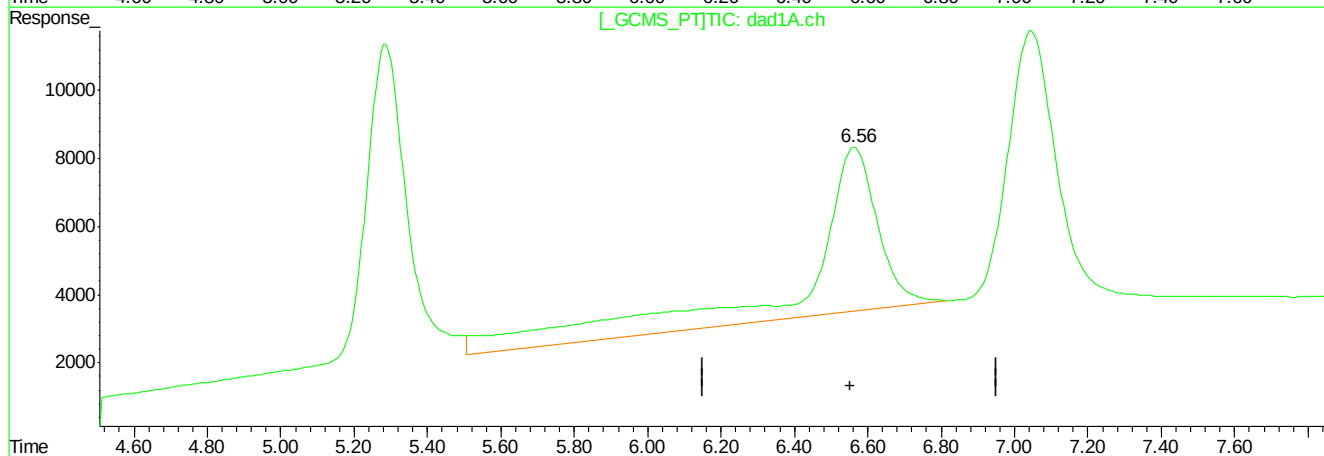
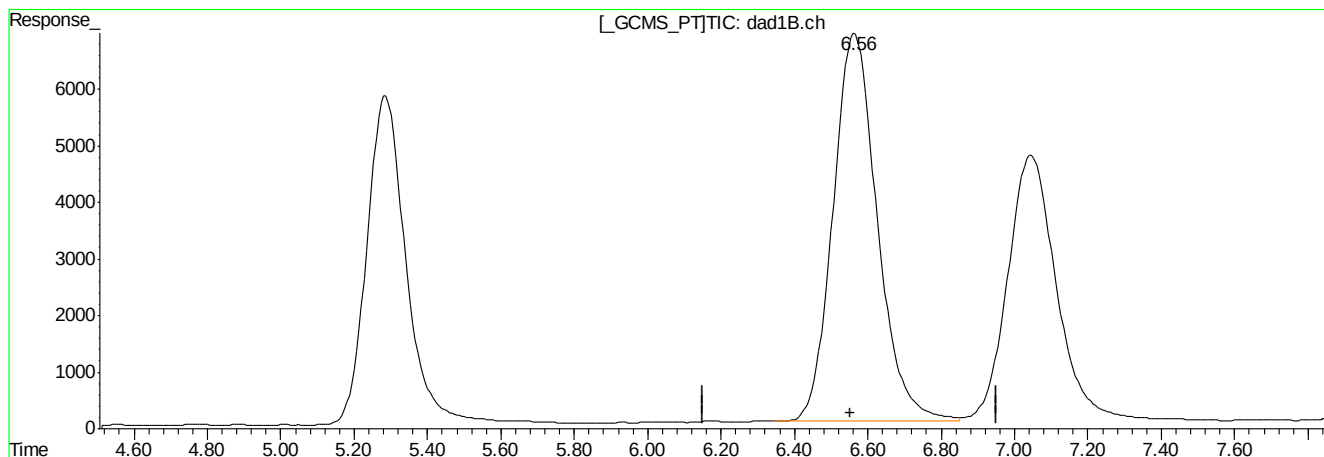
BB073631.D BBB2232_083122.M

Wed Aug 31 11:55:53 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

6.56min 93.465ppb

response 573818

(7) 1,3-Dinitrobenzene #2

6.56min 163.216ppb

response 696892

(+) = Expected Retention Time

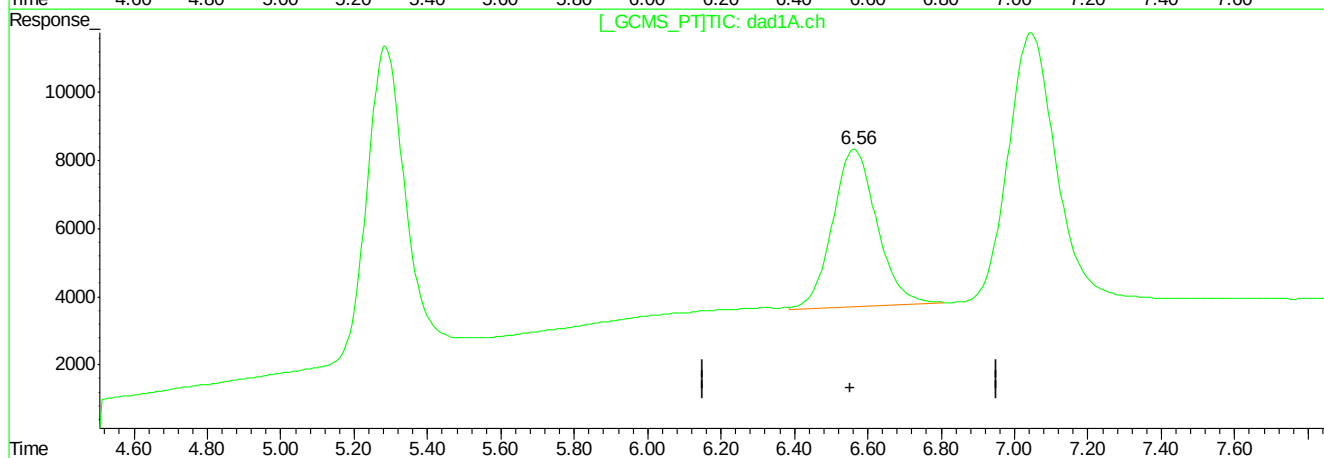
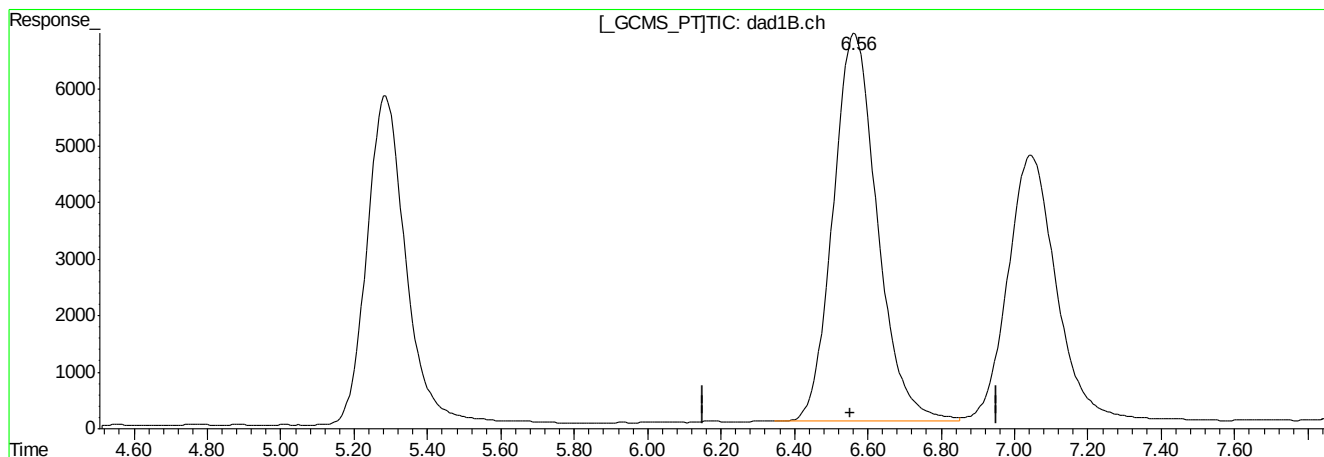
BB073631.D BBB2232_083122.M

Wed Aug 31 11:56:00 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

6.56min 93.465ppb

response 573818

(7) 1,3-Dinitrobenzene #2

6.56min 90.711ppb m

response 387316

(+) = Expected Retention Time

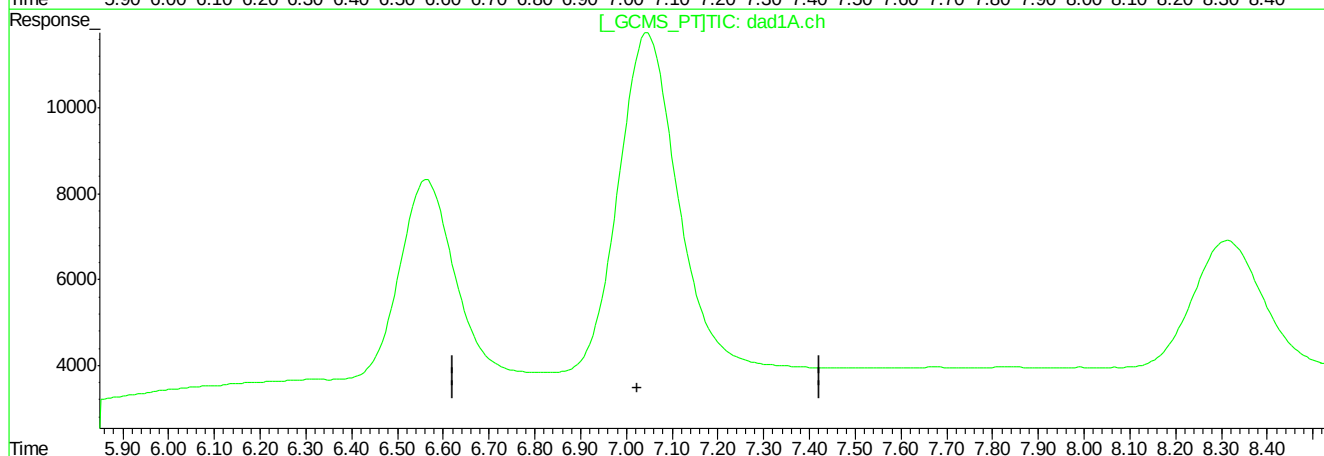
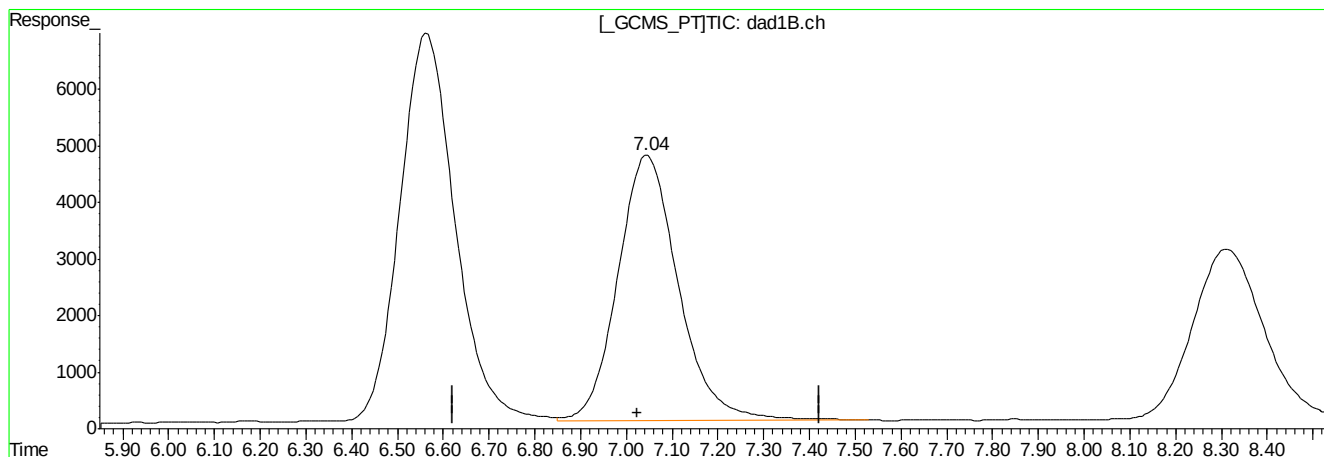
BB073631.D BBB2232_083122.M

Wed Aug 31 11:56:07 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.05min 94.739ppb

response 431864

(8) 3,5-Dinitroaniline #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

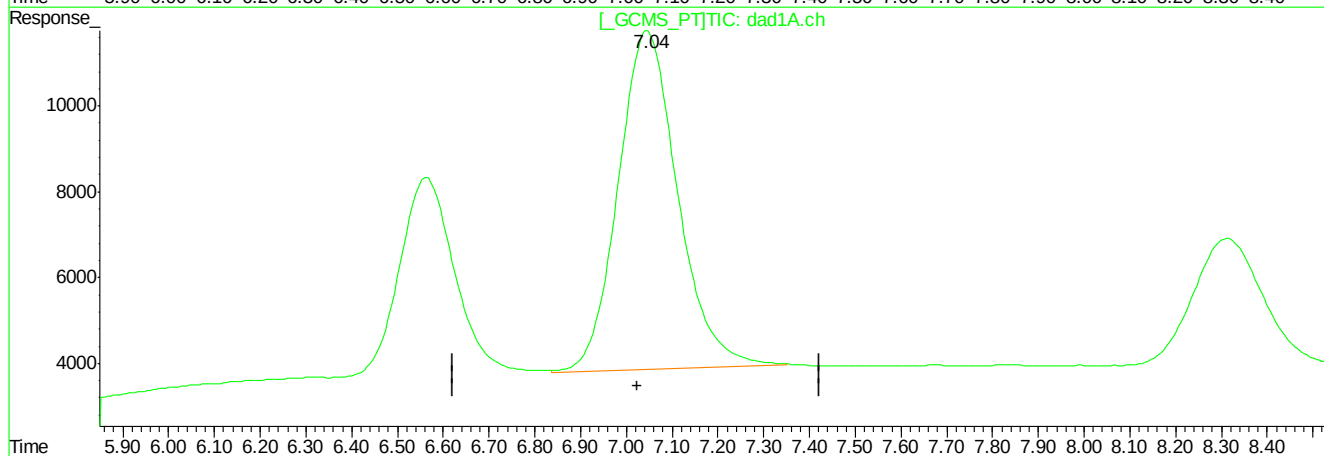
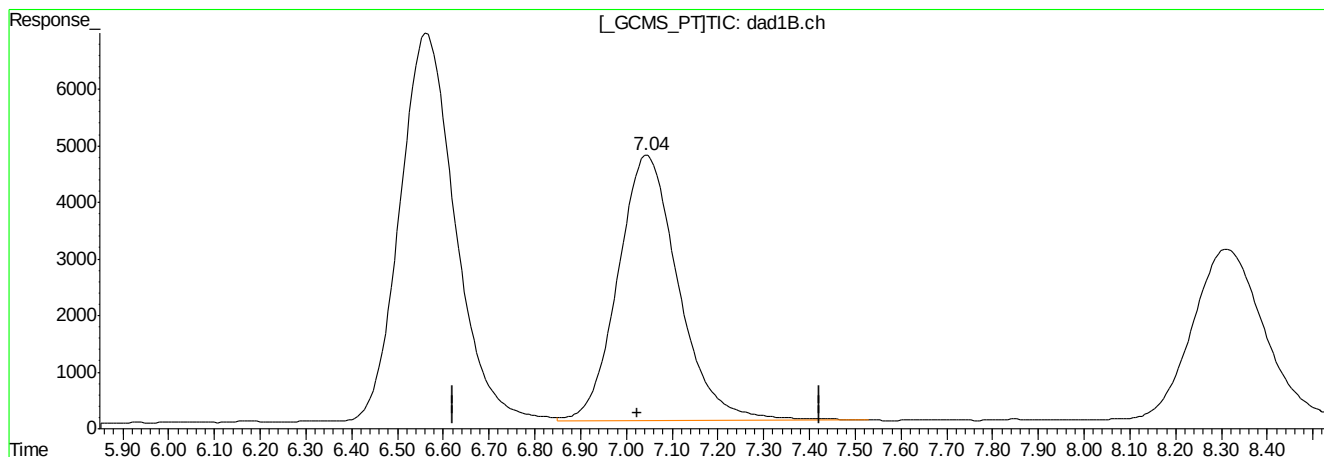
BB073631.D BBB2232_083122.M

Wed Aug 31 11:56:14 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.05min 94.739ppb

response 431864

(8) 3,5-Dinitroaniline #2

7.04min 92.359ppb m

response 713400

(+) = Expected Retention Time

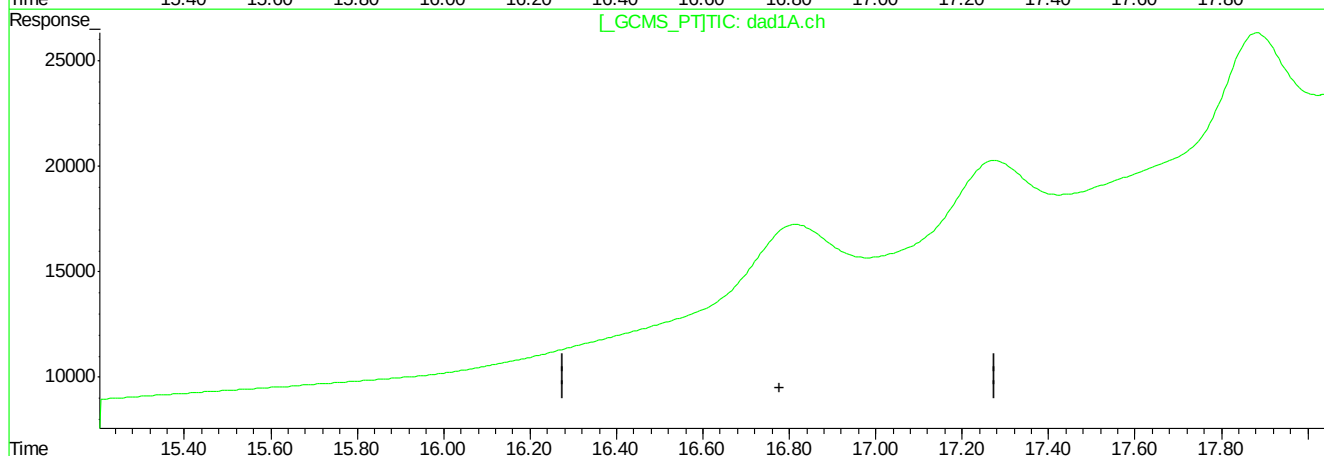
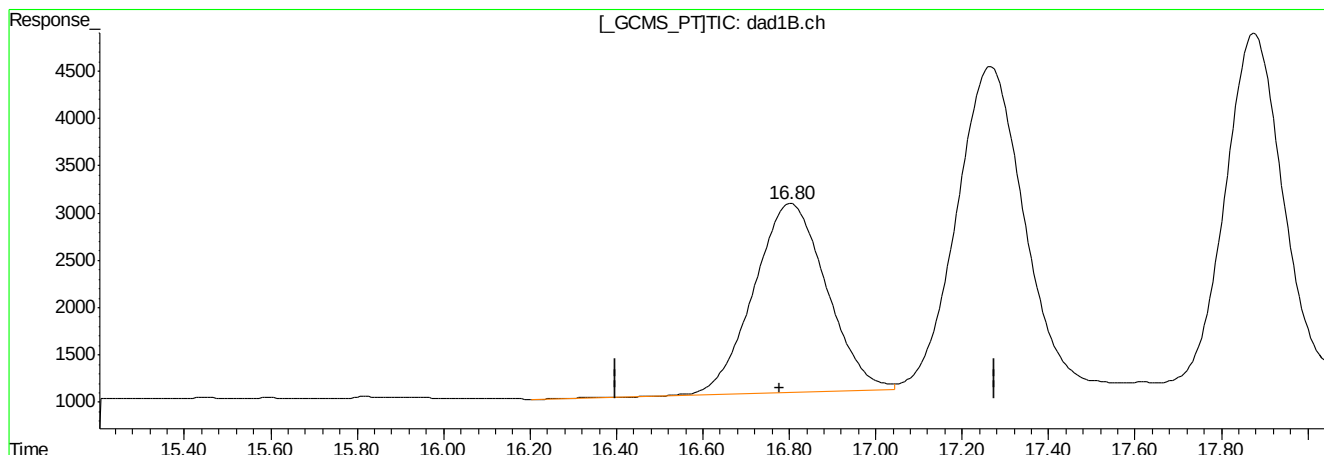
BB073631.D BBB2232_083122.M

Wed Aug 31 11:56:20 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(18) o-Nitrotoluene
16.80min 113.240ppb
response 233721

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

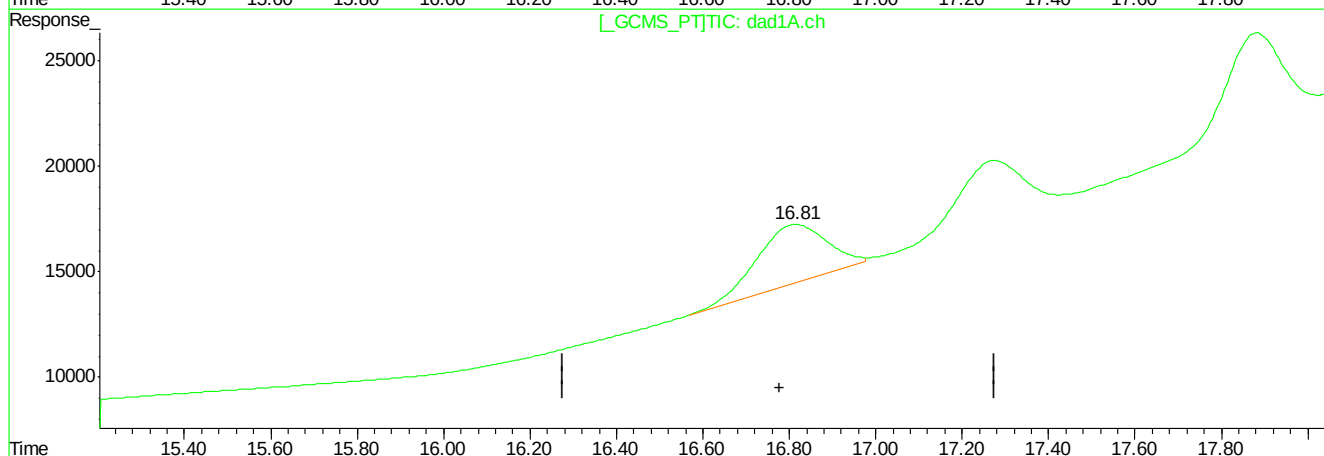
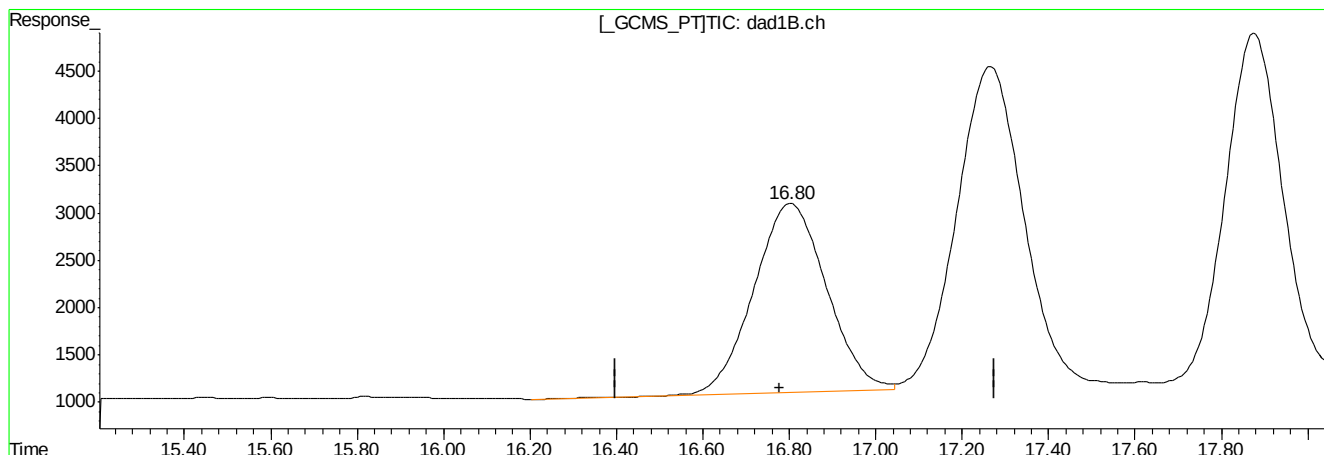
BB073631.D BBB2232_083122.M

Wed Aug 31 11:56:36 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

16.80min 113.240ppb

response 233721

(18) o-Nitrotoluene #2

16.81min 86.365ppb m

response 316939

(+) = Expected Retention Time

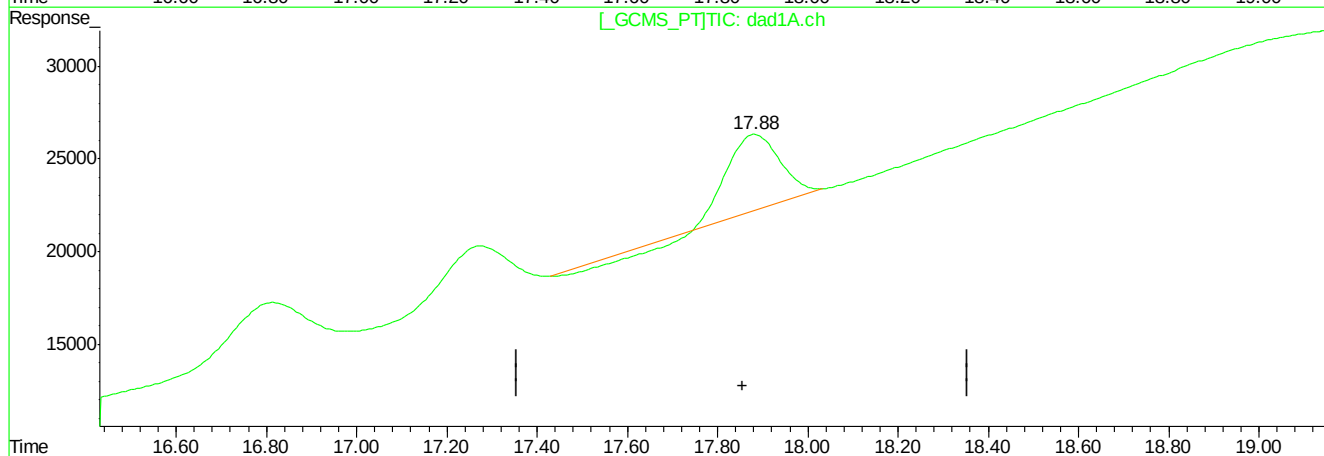
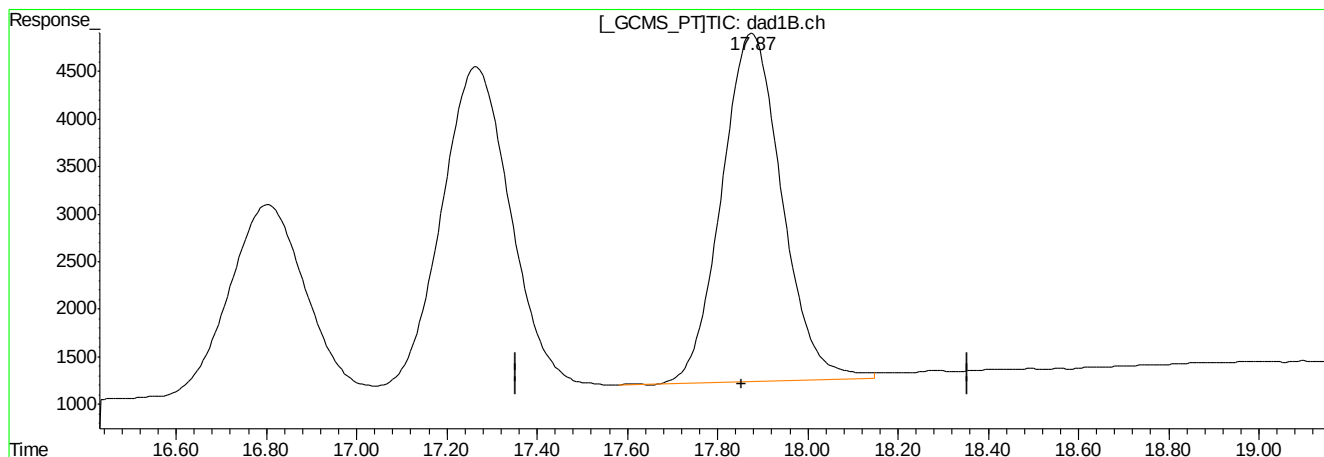
BB073631.D BBB2232_083122.M

Wed Aug 31 11:56:41 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(20) m-Nitrotoluene
17.88min 112.306ppb
response 341272

(20) m-Nitrotoluene #2
17.88min 80.032ppb
response 284447

(+) = Expected Retention Time

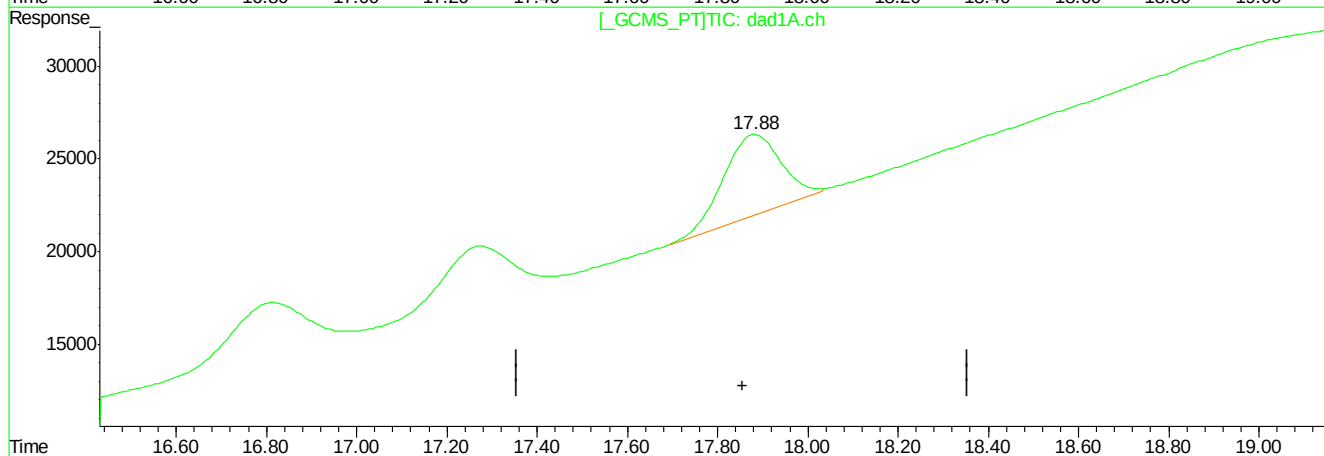
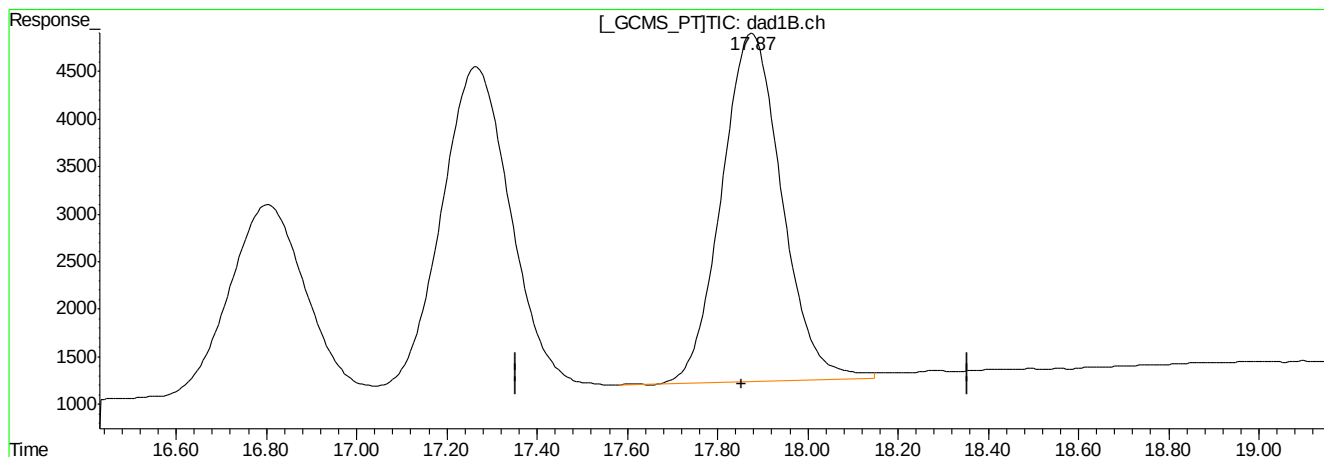
BB073631.D BBB2232_083122.M

Wed Aug 31 11:56:49 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(20) m-Nitrotoluene
17.88min 112.306ppb
response 341272

(20) m-Nitrotoluene #2
17.88min 109.108ppb m
response 387787

(+) = Expected Retention Time

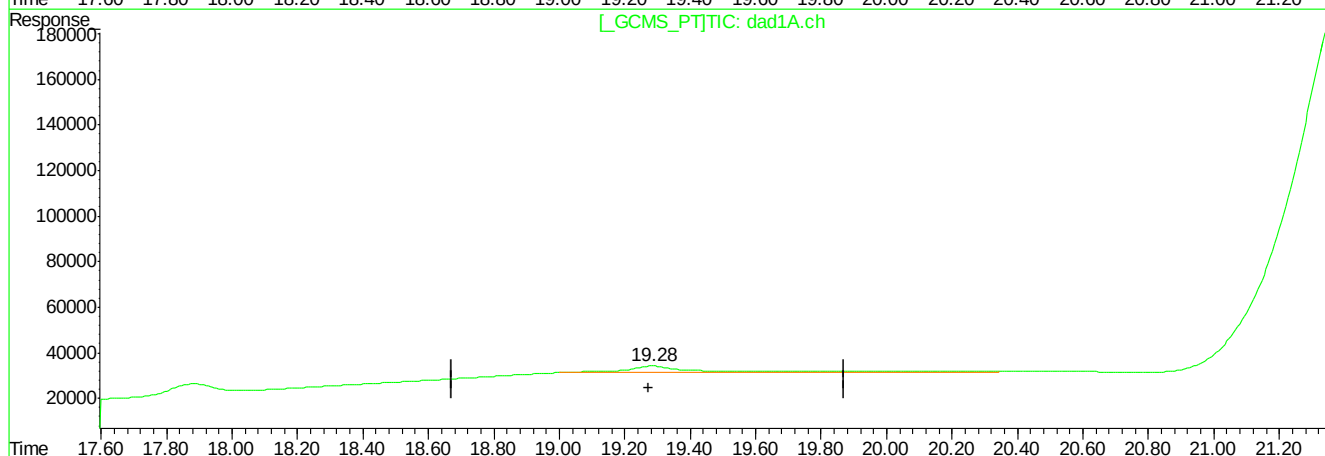
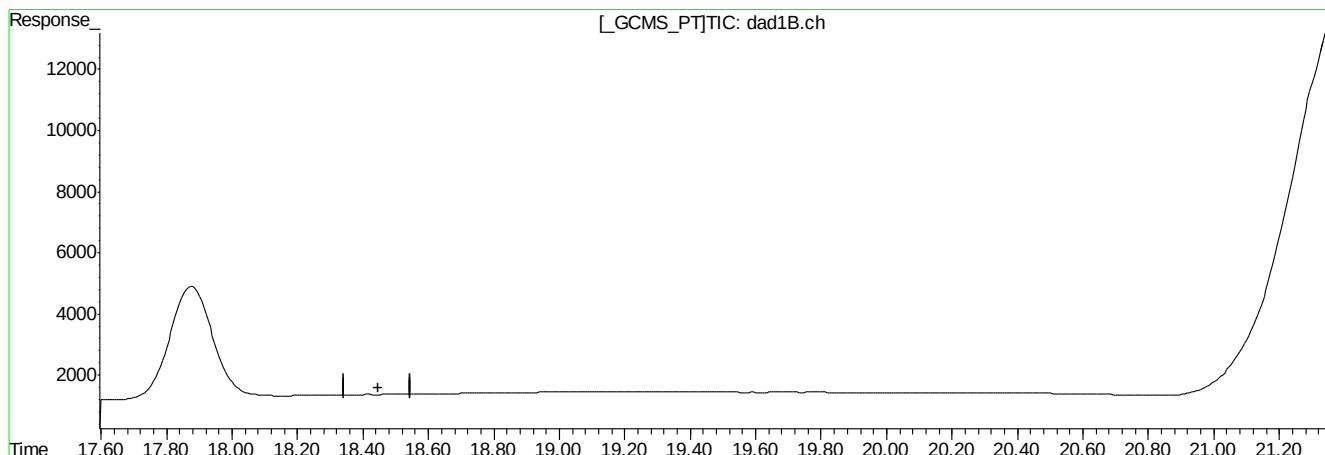
BB073631.D BBB2232_083122.M

Wed Aug 31 11:57:04 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.29min 367.945ppb

response 584079

(+) = Expected Retention Time

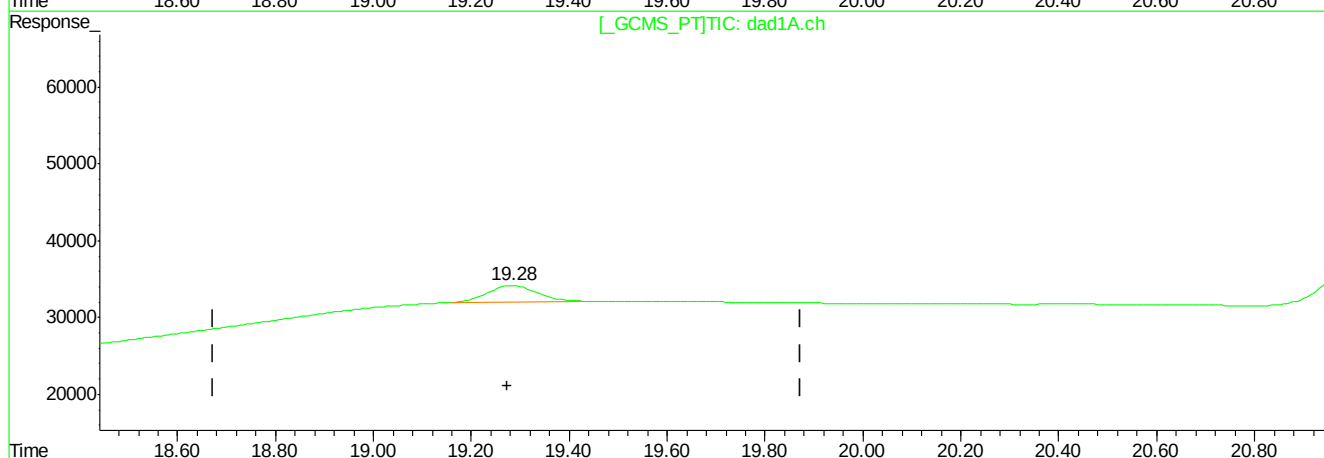
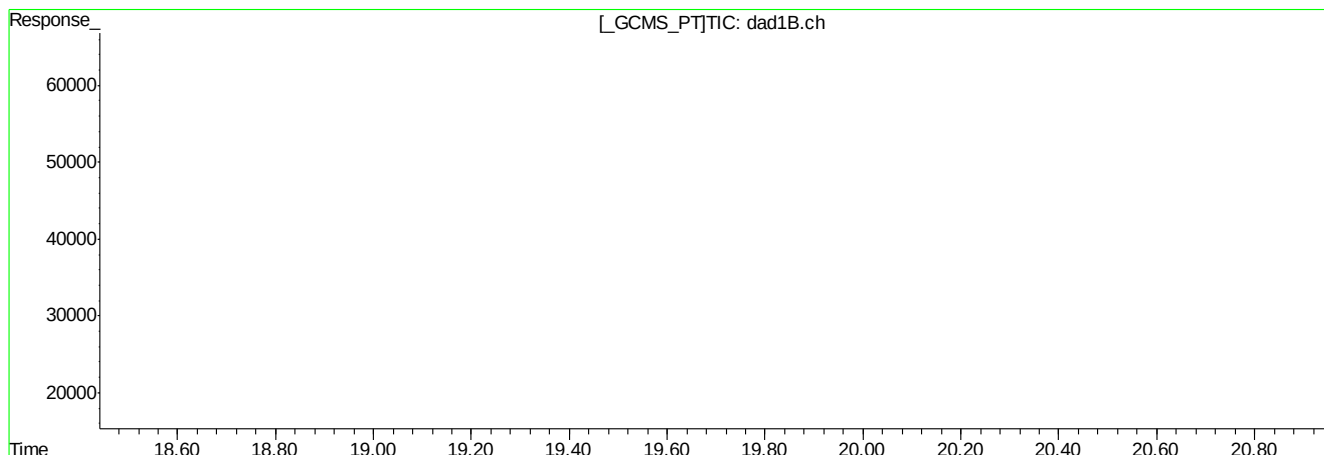
BB073631.D BBB2232_083122.M

Wed Aug 31 11:57:11 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 93.699ppb m

response 148739

(+) = Expected Retention Time

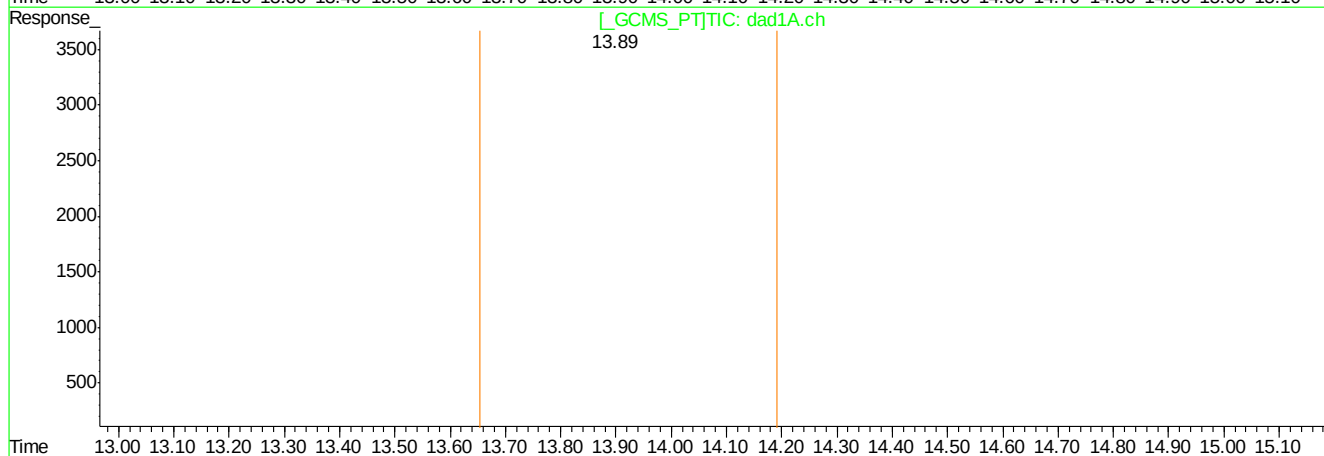
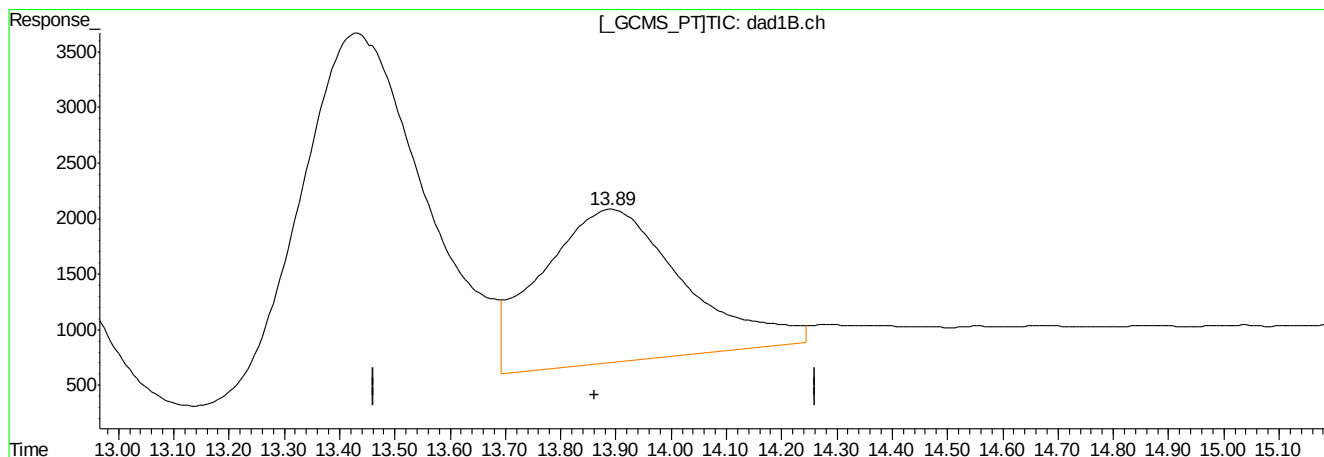
BB073631.D BBB2232_083122.M

Wed Aug 31 11:57:23 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.89min 82.863ppb

response 247353

(17) 2,6-Dinitrotoluene #2

13.90min 90.918ppb

response 362928

(+) = Expected Retention Time

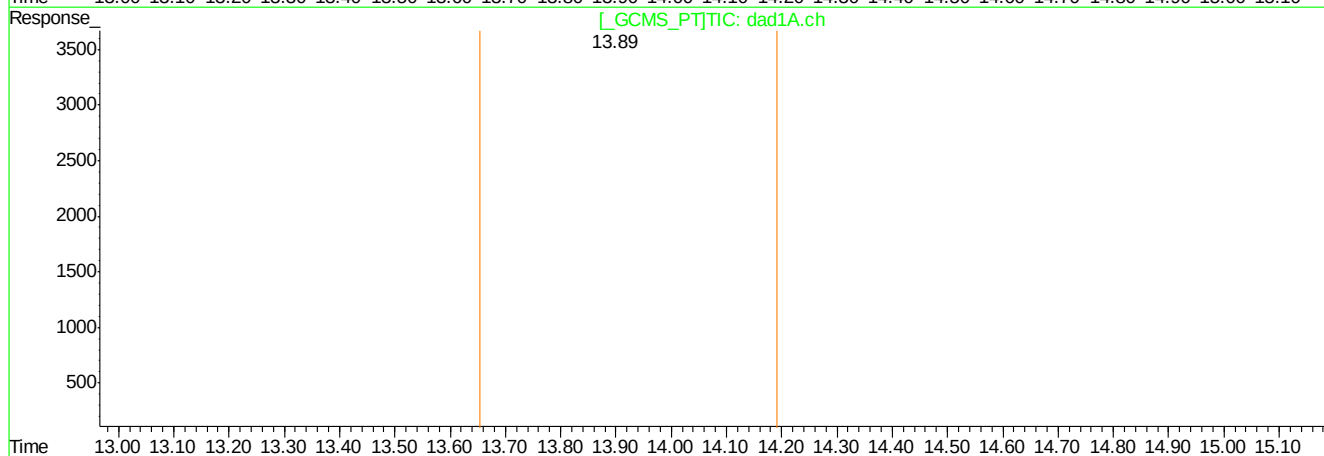
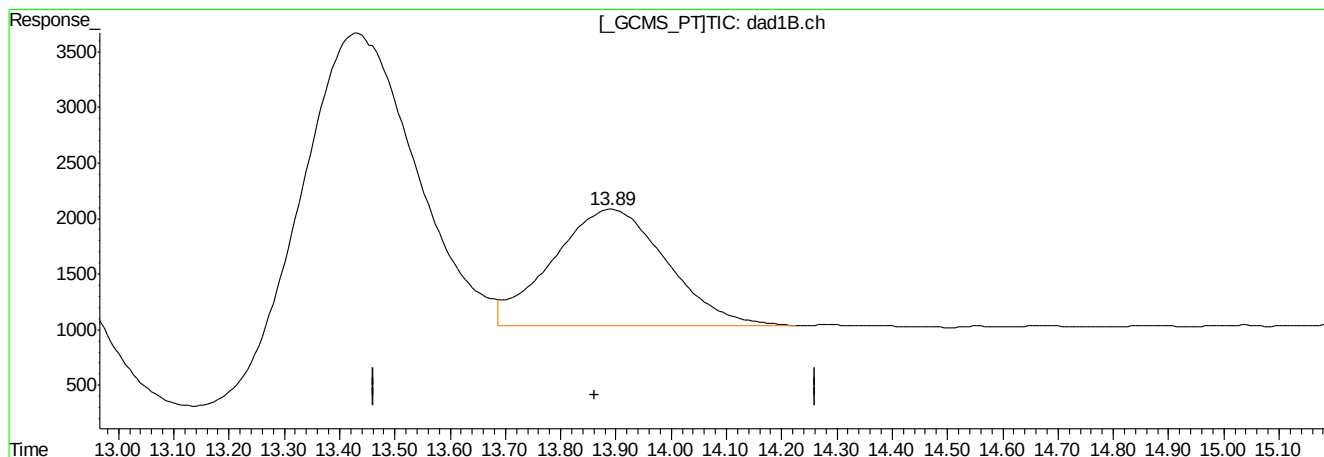
BB073631.D BBB2232_083122.M

Wed Aug 31 14:00:08 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.89min 50.497ppb m

response 150737

(17) 2,6-Dinitrotoluene #2

13.90min 90.918ppb

response 362928

(+) = Expected Retention Time

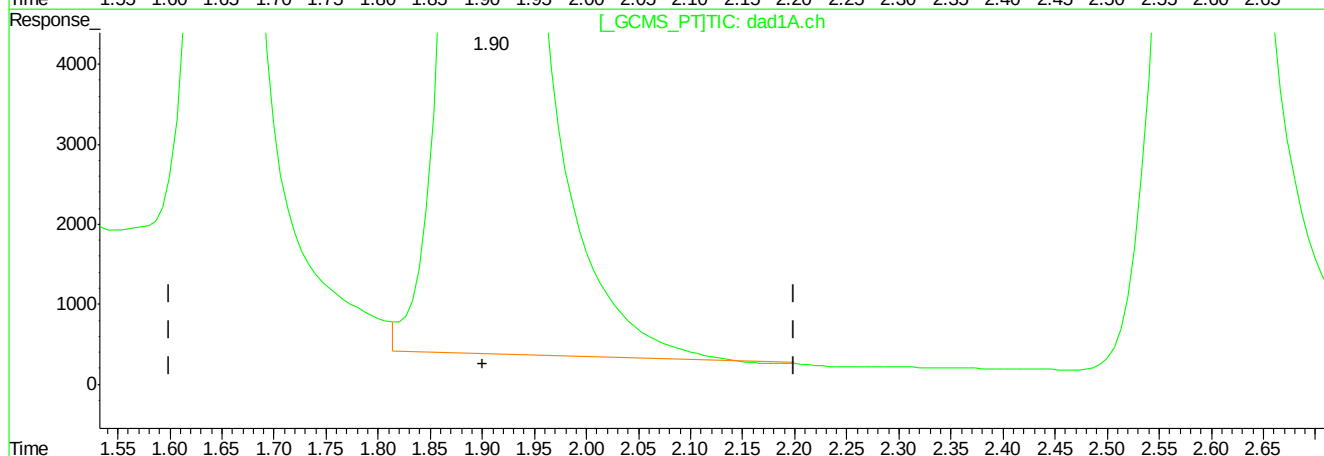
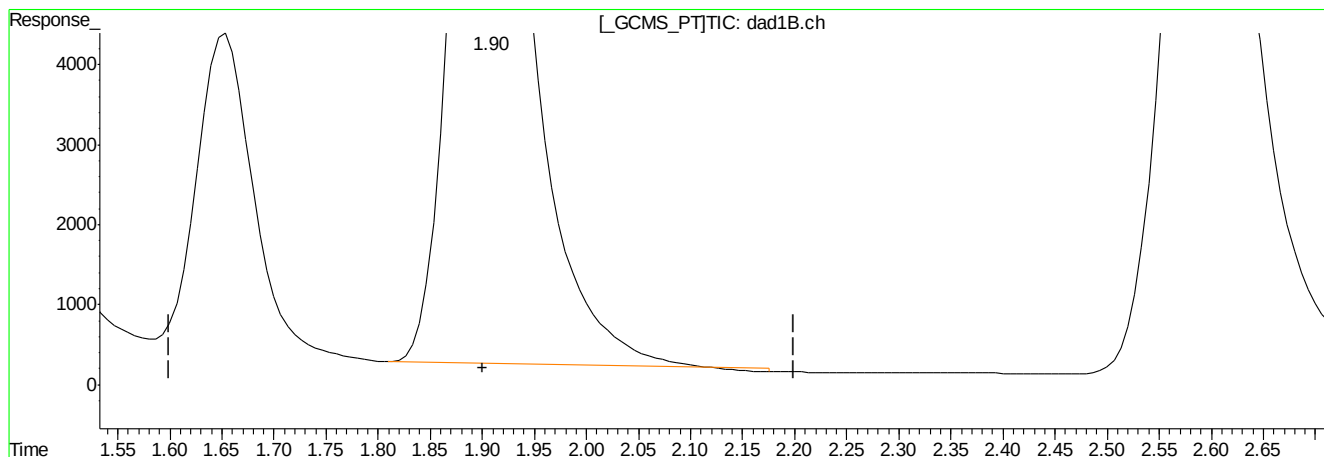
BB073631.D BBB2232_083122.M

Wed Aug 31 14:00:14 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:00 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(3) DNX

1.90min 146.787ppb m

response 521752

(3) DNX #2

1.90min 150.482ppb m

response 841209

QEdit

(+) = Expected Retention Time

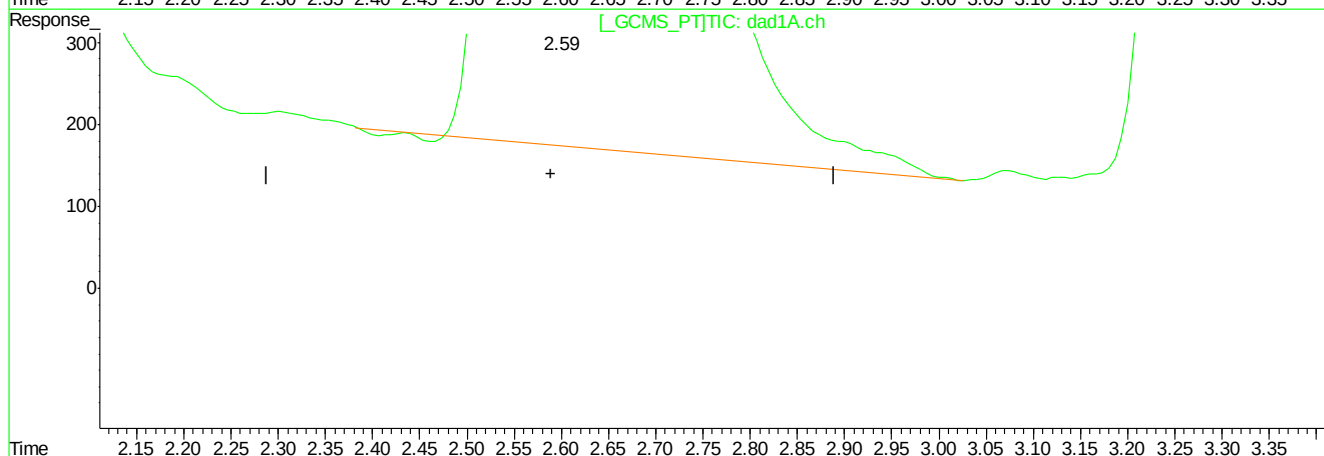
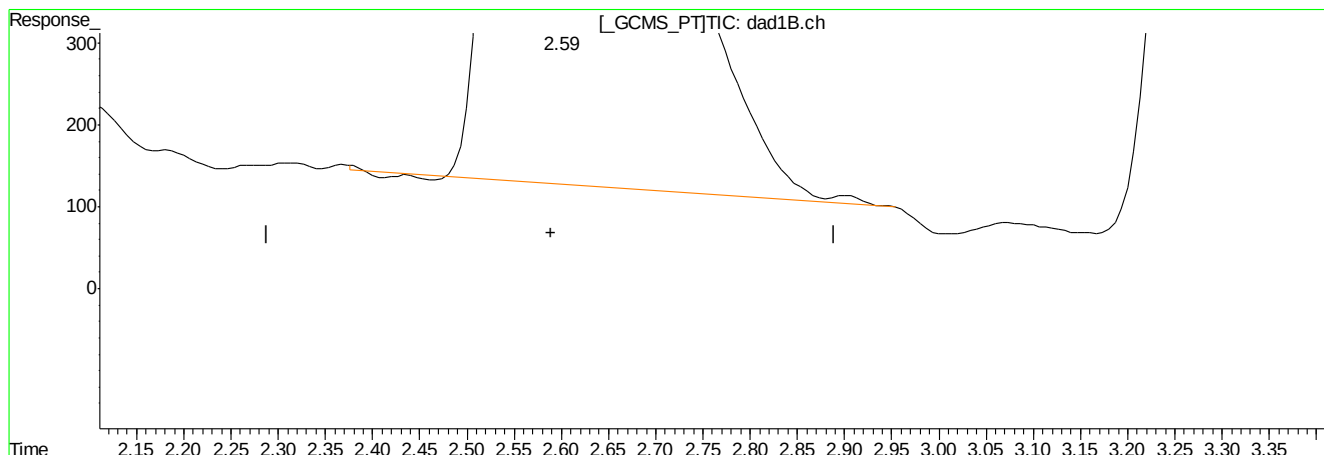
BB073631.D BBB2232_083122.M

Thu Sep 01 07:48:18 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:00 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



QEdit

(4) MNX

2.60min 184.290ppb

response 594473

(4) MNX #2

2.60min 185.073ppb

response 917136

(+) = Expected Retention Time

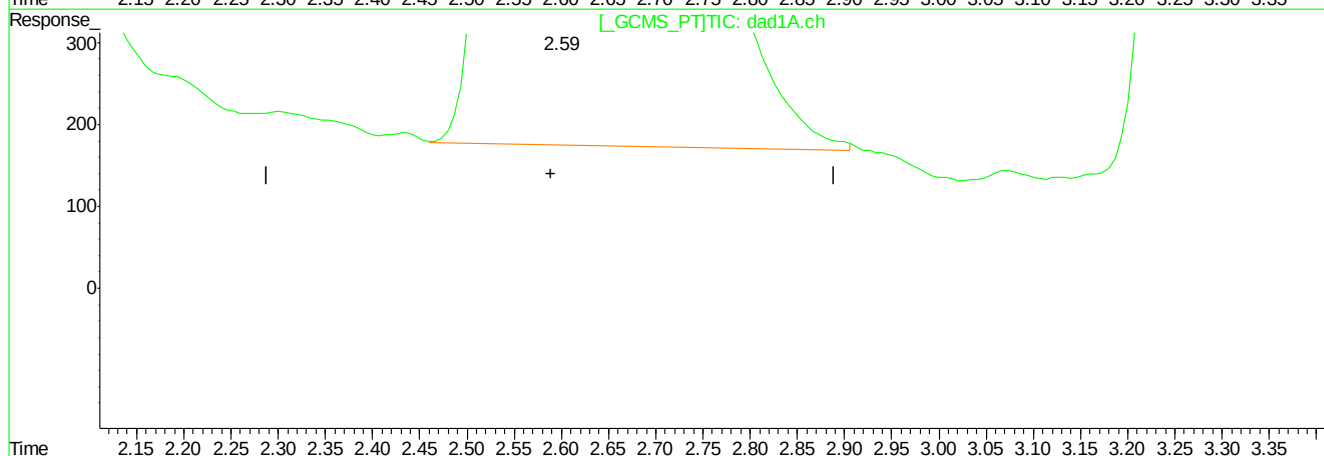
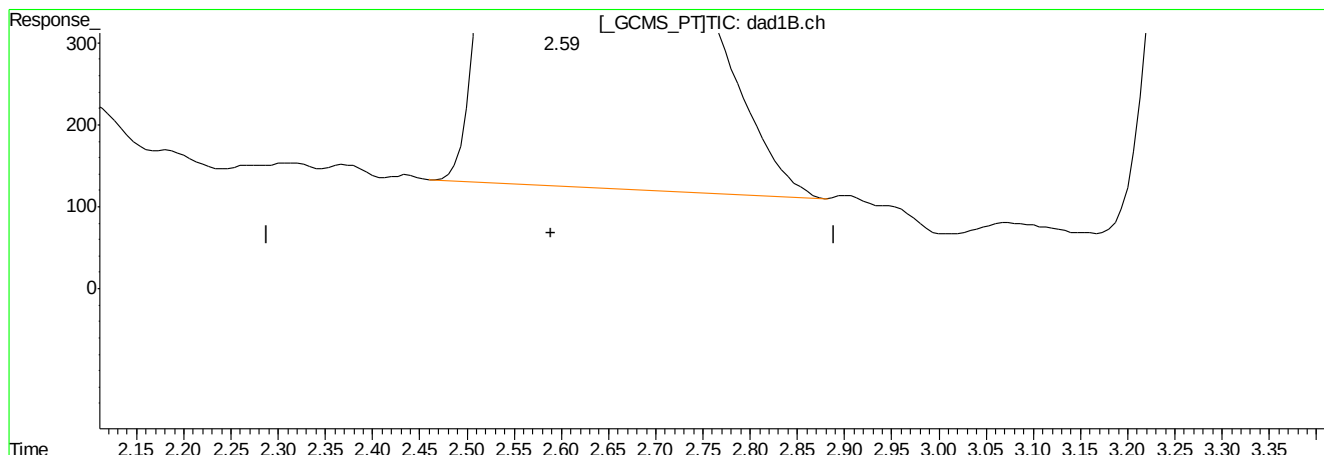
BB073631.D BBB2232_083122.M

Thu Sep 01 07:48:28 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:00 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



QEdit

(4) MNX

2.59min 184.315ppb m

response 594555

(4) MNX #2

2.59min 184.452ppb m

response 914056

(+) = Expected Retention Time

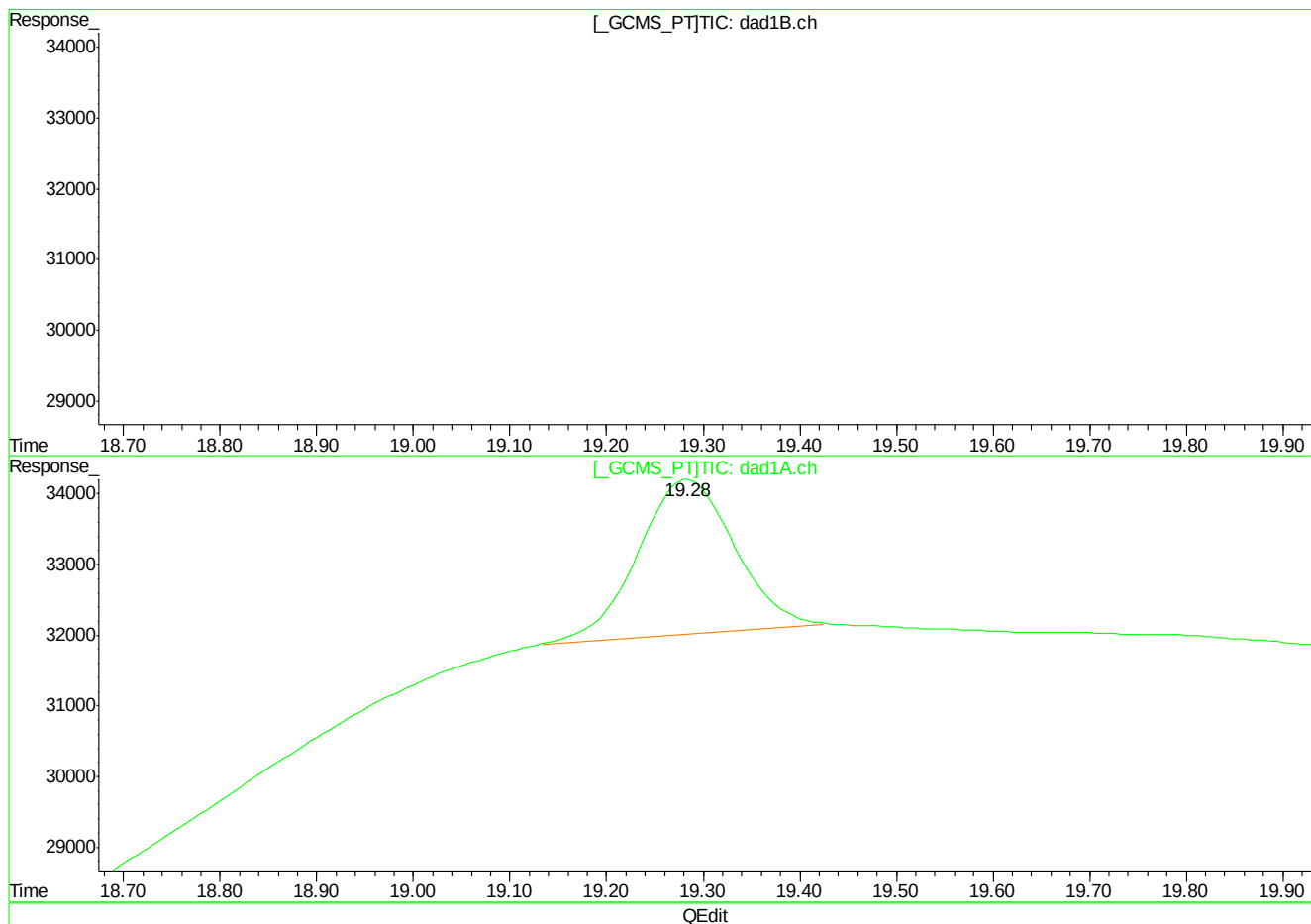
BB073631.D BBB2232_083122.M

Thu Sep 01 07:48:36 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073631.D\dad1A.ch
Acq On : 31-Aug-2022, 10:45:52 Operator: FOUADS
Sample : ic2232-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:48 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 95.255ppb m

response 151208

(+) = Expected Retention Time

BB073631.D BBB2232_083122.M

Thu Sep 01 07:55:52 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
 Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
 Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
 Sample : ic2232-200 Inst : G1315B
 Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Aug 31 11:57:33 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Aug 31 08:15:37 2022
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	12.84	12.85	410589	751741	166.771	161.614
Spiked Amount	500.000	Range	70 - 136	Recovery	= 33.35%#	32.32%#
Target Compounds						
1) TNX	1.46	1.46	385433	599618	95.377	97.605
2) HMX	1.65	1.65	295234	850946	157.859	166.184
3) DNX	1.91	1.91	686665	1097907	193.183	196.402
4) MNX	2.60	2.60	738974	1134903	229.086	229.018
5) RDX	3.30	3.30	355934	565364	160.724	158.580
6) 1,3,5-Trinitrobe	5.28	5.28	748243	1164958	162.460	157.122m
7) 1,3-Dinitrobenze	6.56	6.56	1005338	668343	163.753	156.529m
8) 3,5-Dinitroanili	7.04	7.04	752642	1264957	165.109	163.766m
9) Nitrobenzene	8.31	8.31	569818	565488	186.669	176.480
10) Nitroglycerin	0.00	10.13	0	244170	N.D.	159.287 #
11) Tetryl	11.01	11.01	539105	807316	155.567	141.575
12) 2,4,6-Trinitroto	11.36	11.36	697856	752382	161.368	146.941
13) 2-Amino-4,6-Dini	11.87	11.87	596958	816865	158.516	143.446
14) 4-Amino-2,6-Dini	12.42	12.42	437739	851382	157.898	151.263
16) 2,4-Dinitrotolue	13.42	13.42	863707	548466	167.634	155.098
17) 2,6-Dinitrotolue	13.88	13.88	278774	639198	93.389m	160.127 #
18) o-Nitrotoluene	16.80	16.80	411077	579069	199.169	158.569m
19) p-Nitrotoluene	17.26	17.27	633153	478013	190.274	176.481
20) m-Nitrotoluene	17.87	17.87	579575	682607	190.727	192.058m
21) PETN	0.00	19.28	0	282803	N.D.	178.154m#

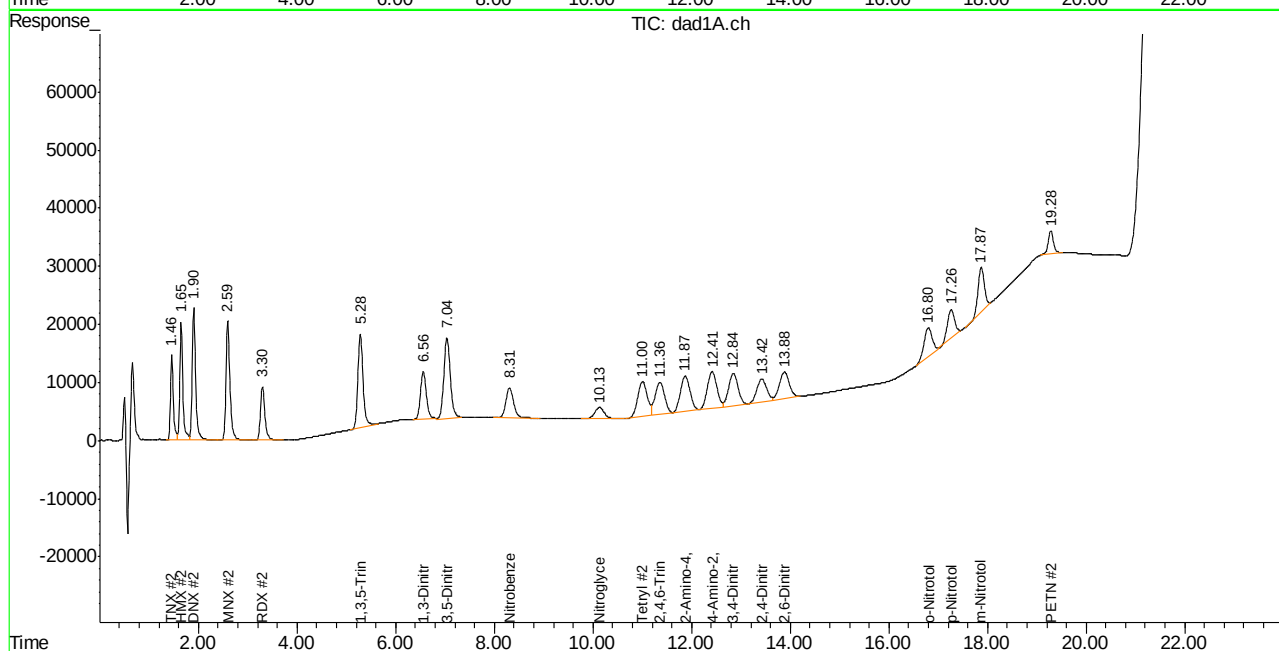
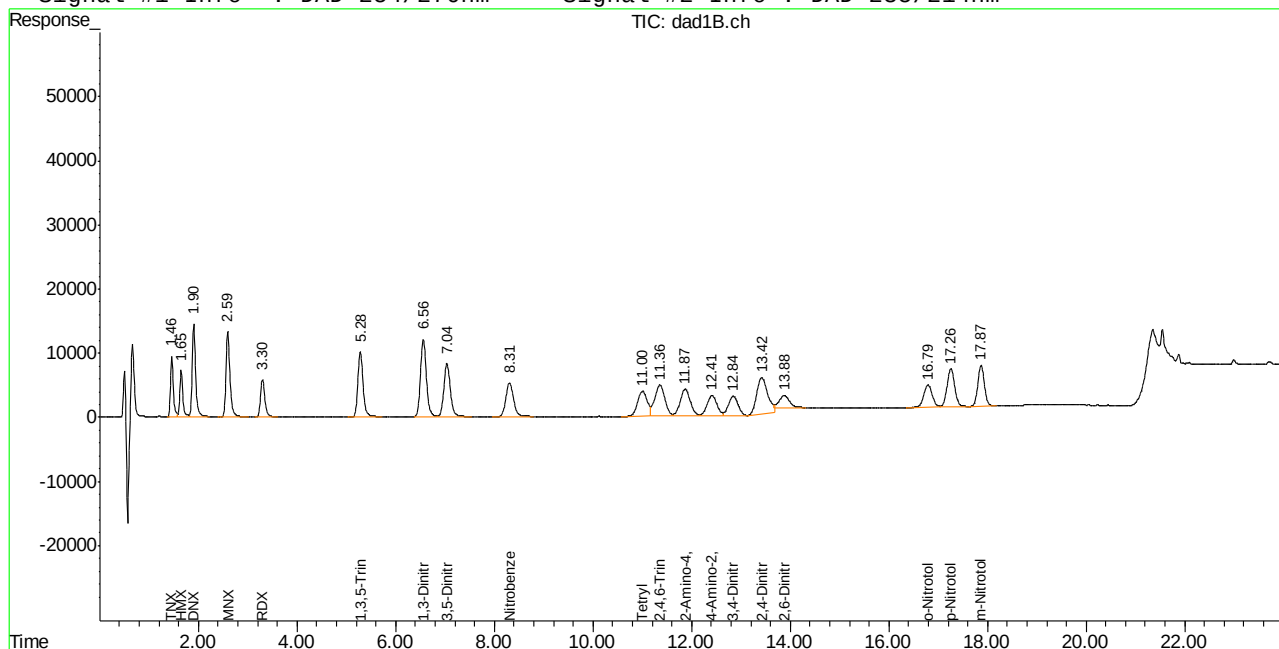
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB073632.D BBB2232_083122.M Thu Sep 01 14:19:30 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : op92480, GBB2232, 1000,,, 10, 1, water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:56 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: GBB2232-IC2232

Method: SW846 8330A

Lab FileID: BB073632.D

Analyst approved: 09/02/22 08:50 Fouad Sekkar

Injection Time: 08/31/22 11:16

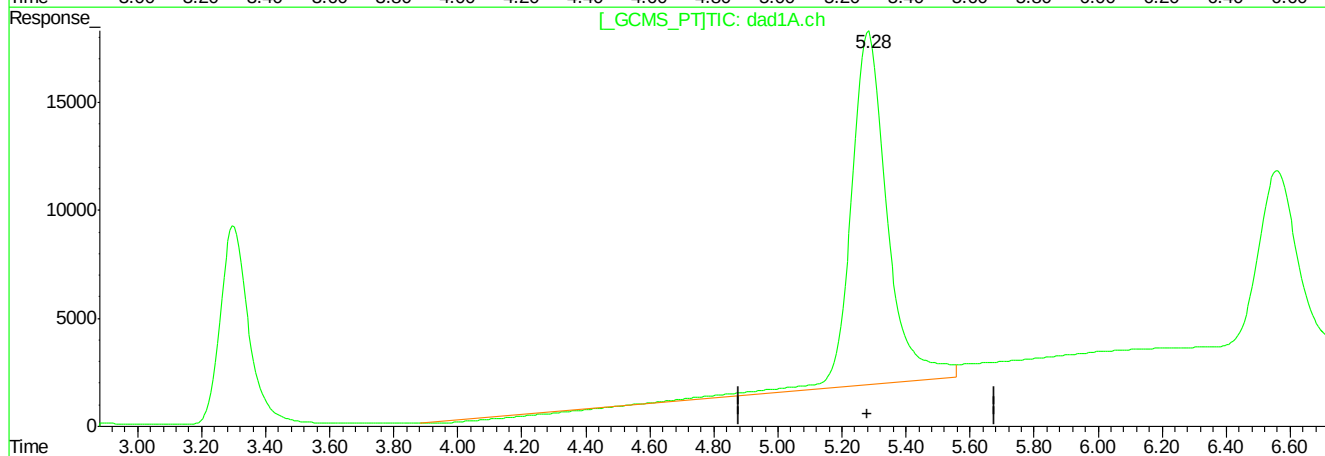
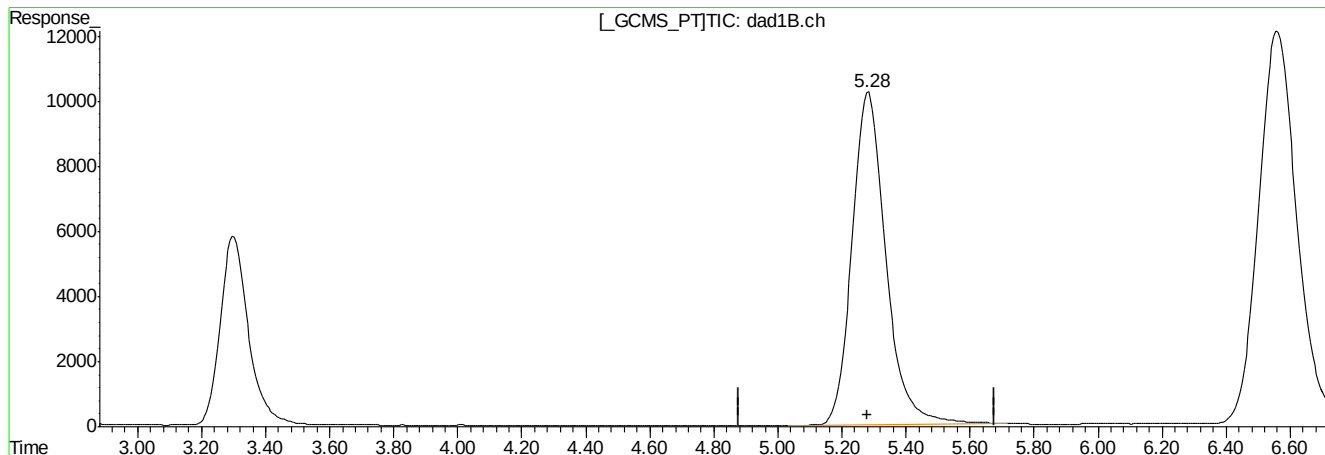
Supervisor approved: 09/02/22 15:07 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3,5-Trinitrobenzene	99-35-4	2	5.28	Missed peak
1,3-Dinitrobenzene	99-65-0	2	6.56	Missed peak
3,5-Dinitroaniline	618-87-1	2	7.04	Missed peak
2,6-Dinitrotoluene	606-20-2	1	13.88	Missed peak
o-Nitrotoluene	88-72-2	2	16.80	Missed peak
m-Nitrotoluene	99-08-1	2	17.87	Missed peak
PETN	78-11-5	2	19.28	Missed peak

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

5.28min 162.460ppb

response 748243

(6) 1,3,5-Trinitrobenzene #2

5.28min 172.288ppb

response 1277401

(+) = Expected Retention Time

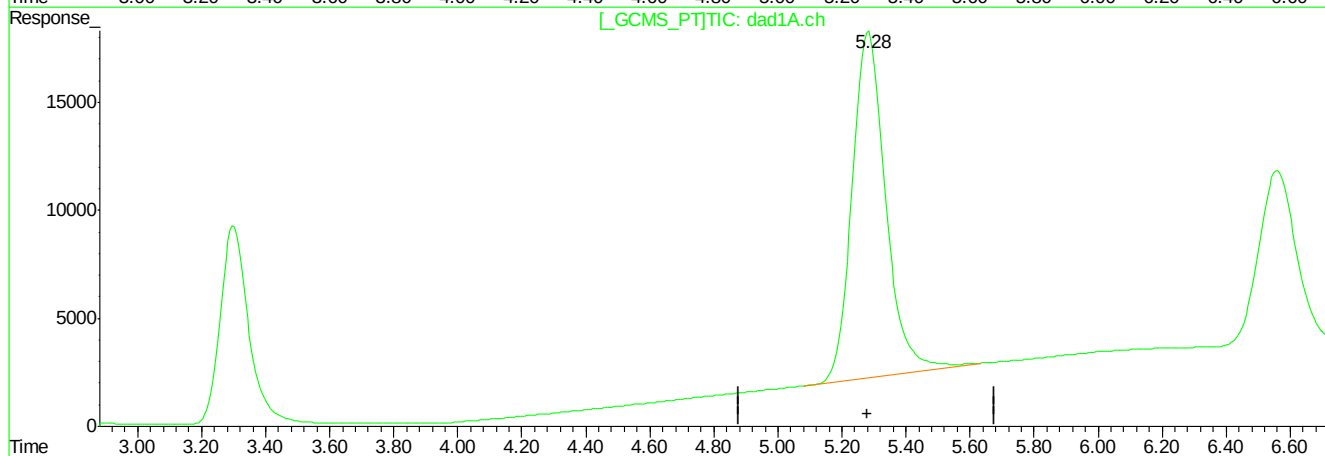
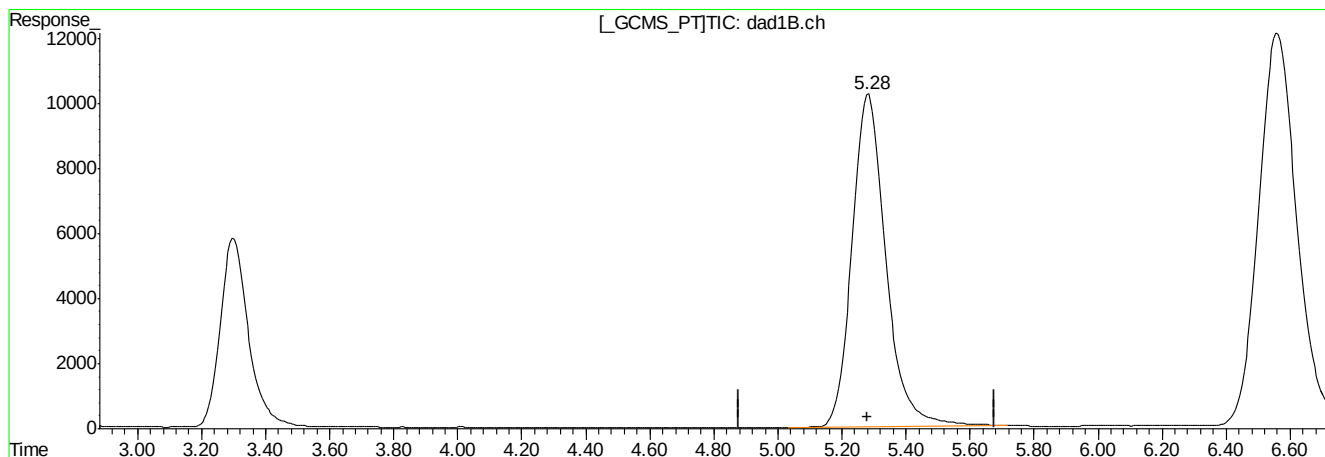
BB073632.D BBB2232_083122.M

Wed Aug 31 11:57:52 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

5.28min 162.460ppb

response 748243

(6) 1,3,5-Trinitrobenzene #2

5.28min 157.122ppb m

response 1164958

(+) = Expected Retention Time

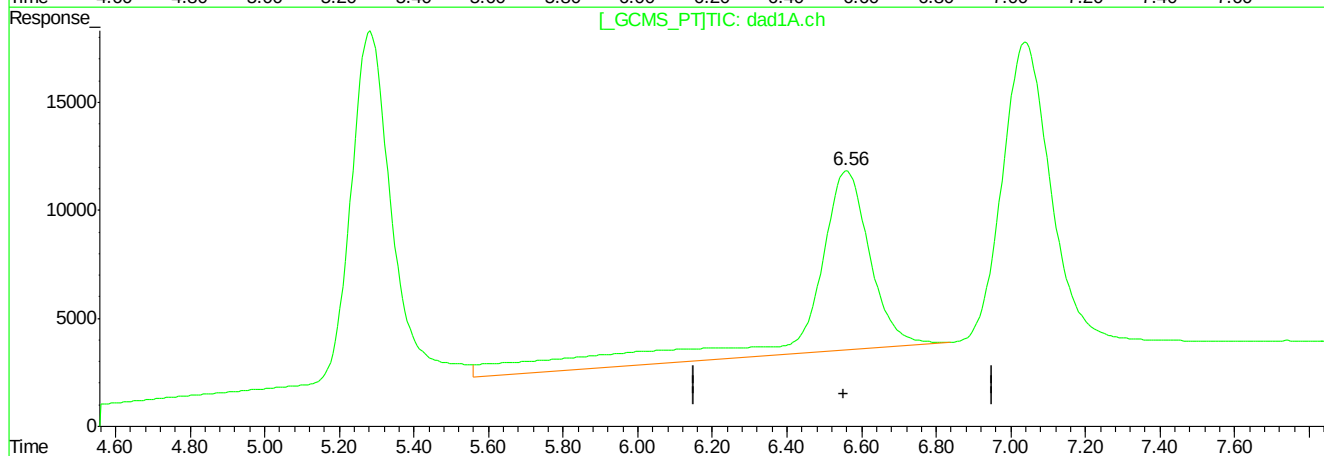
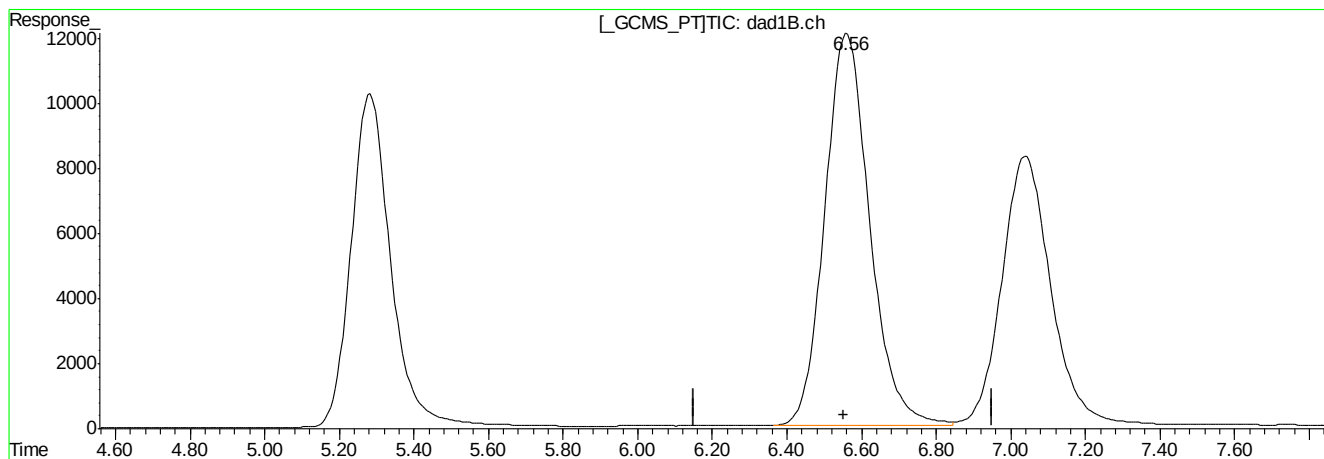
BB073632.D BBB2232_083122.M

Wed Aug 31 11:58:01 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

6.56min 163.753ppb

response 1005338

(7) 1,3-Dinitrobenzene #2

6.56min 231.565ppb

response 988727

(+) = Expected Retention Time

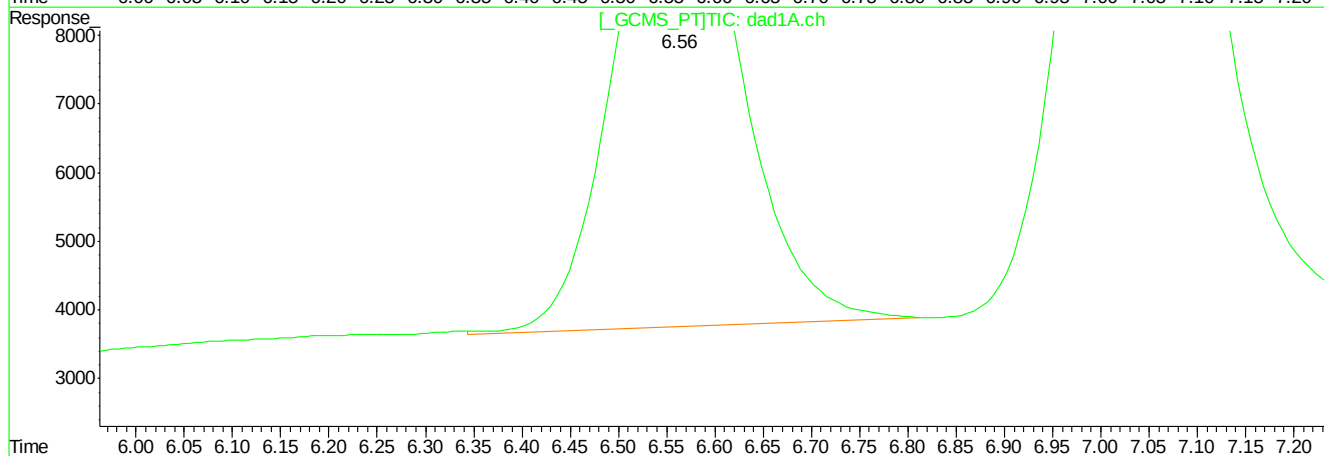
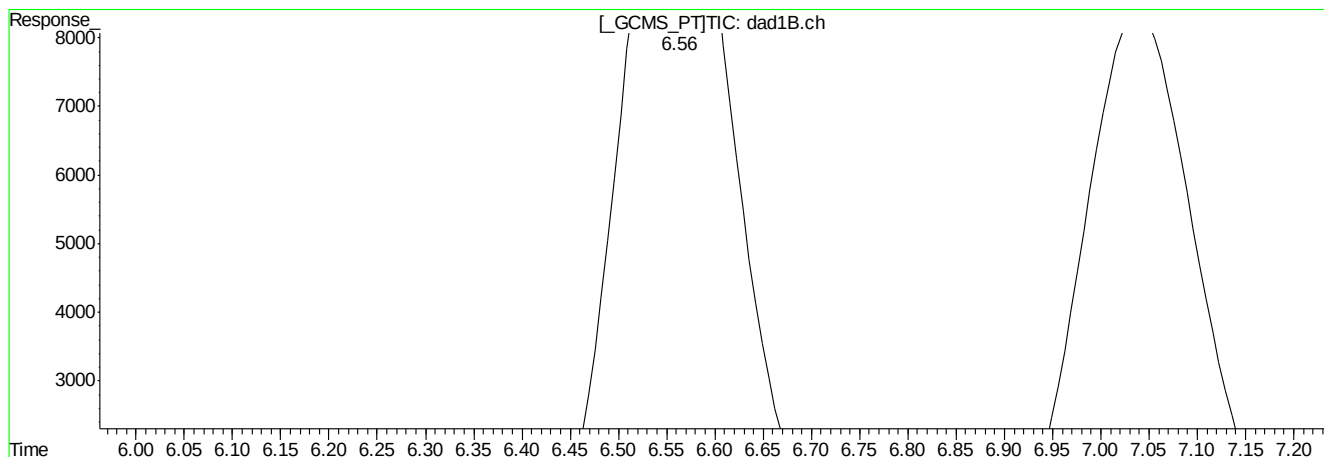
BB073632.D BBB2232_083122.M

Wed Aug 31 11:58:08 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

6.56min 163.753ppb

response 1005338

(7) 1,3-Dinitrobenzene #2

6.56min 156.529ppb m

response 668343

(+) = Expected Retention Time

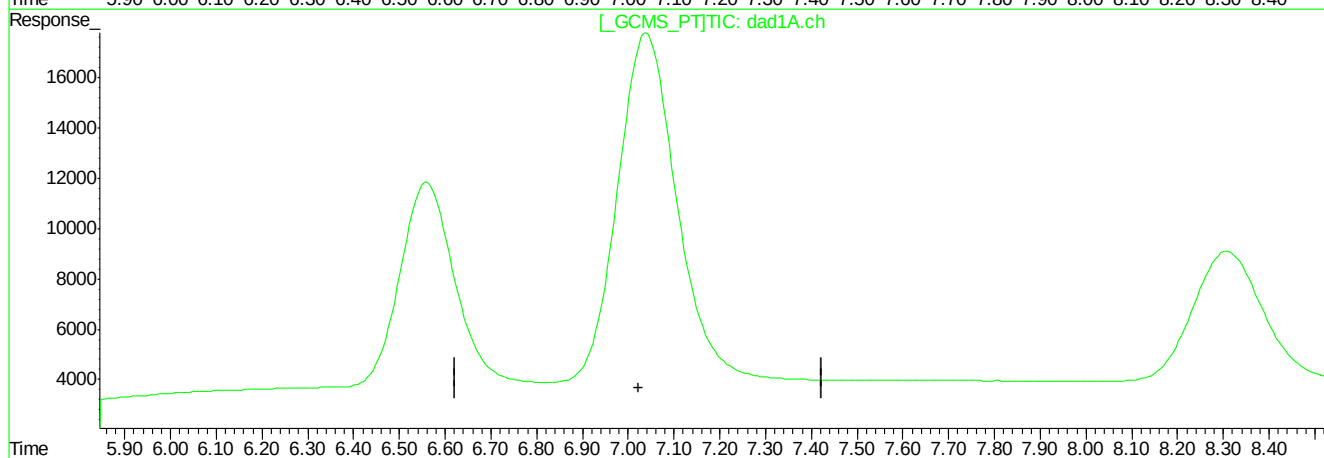
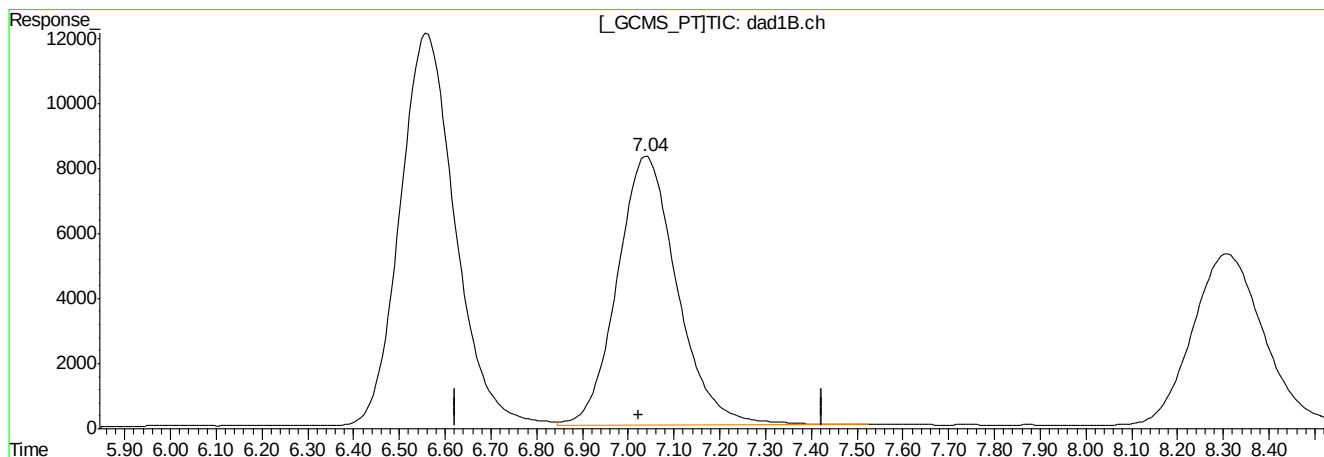
BB073632.D BBB2232_083122.M

Wed Aug 31 11:58:19 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.04min 165.109ppb

response 752642

(8) 3,5-Dinitroaniline #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

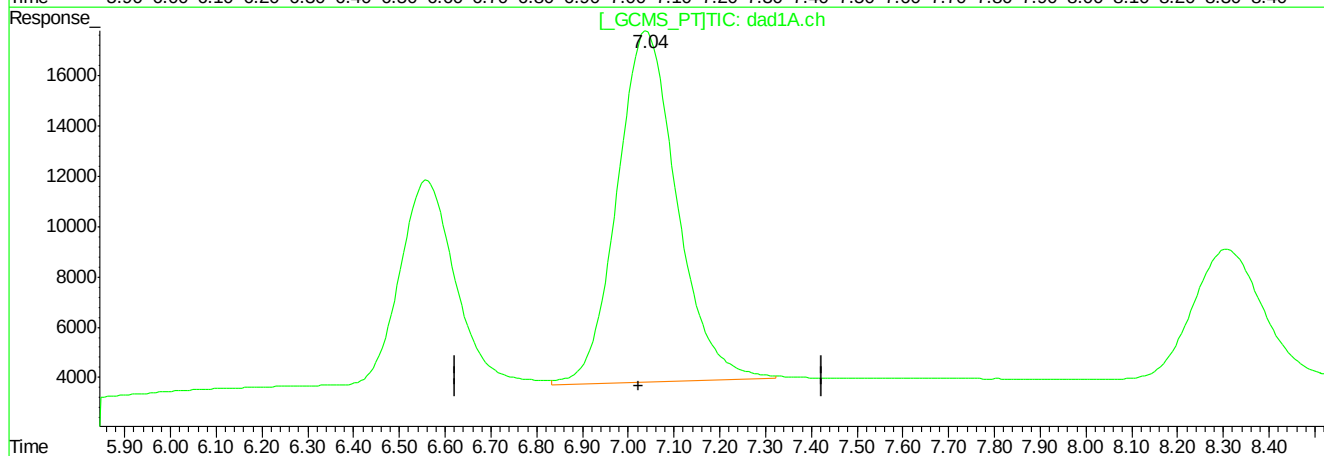
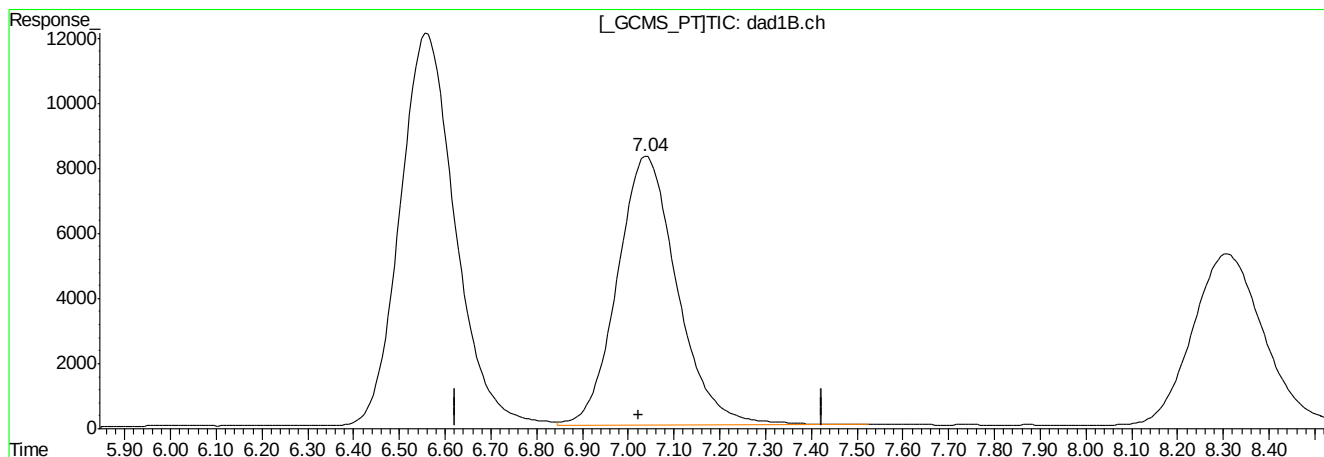
BB073632.D BBB2232_083122.M

Wed Aug 31 11:58:24 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.04min 165.109ppb

response 752642

(8) 3,5-Dinitroaniline #2

7.04min 163.766ppb m

response 1264957

(+) = Expected Retention Time

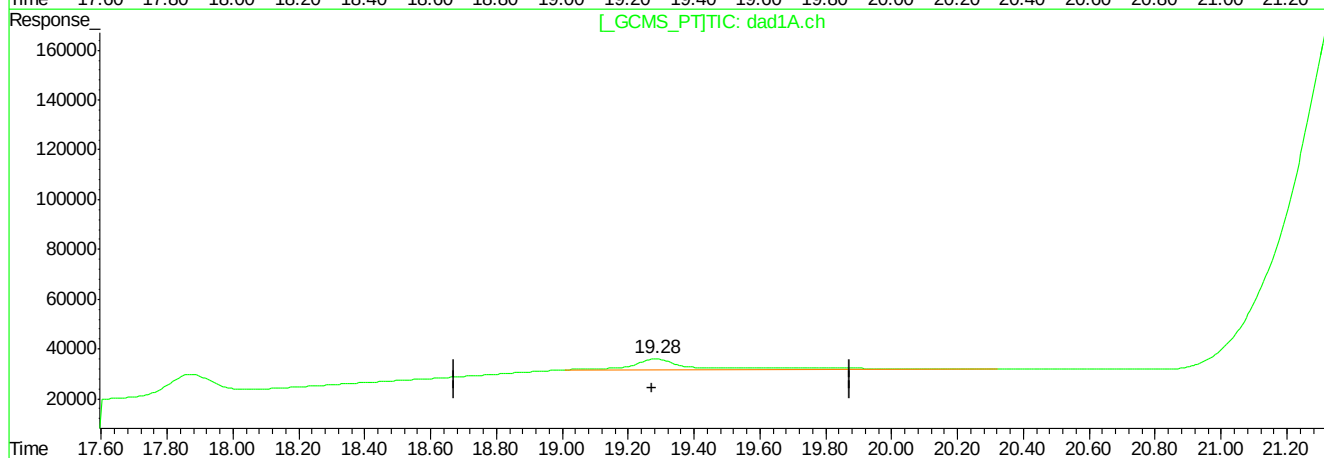
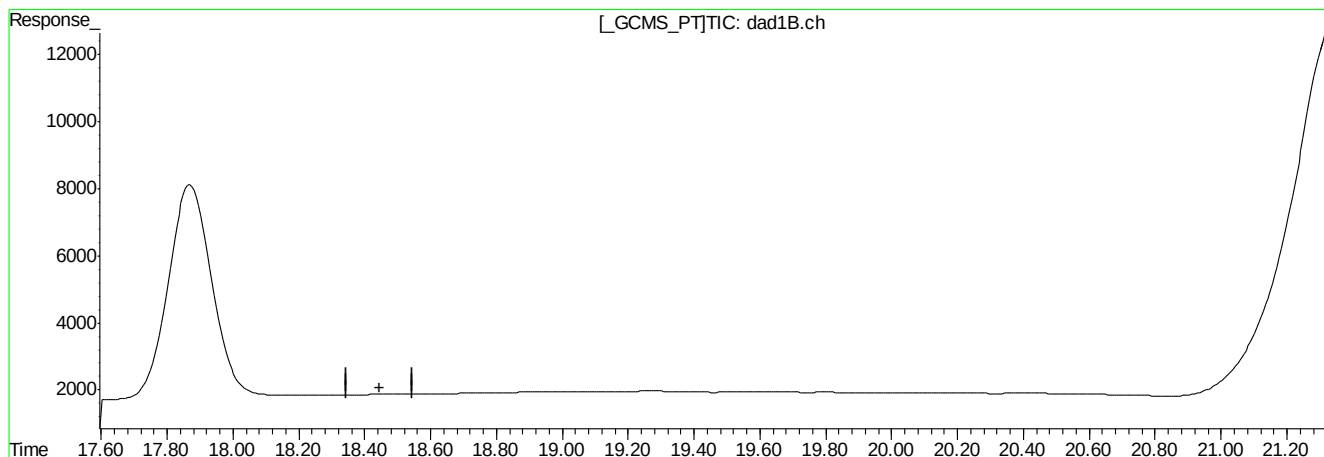
BB073632.D BBB2232_083122.M

Wed Aug 31 11:58:32 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.29min 424.404ppb

response 673702

(+) = Expected Retention Time

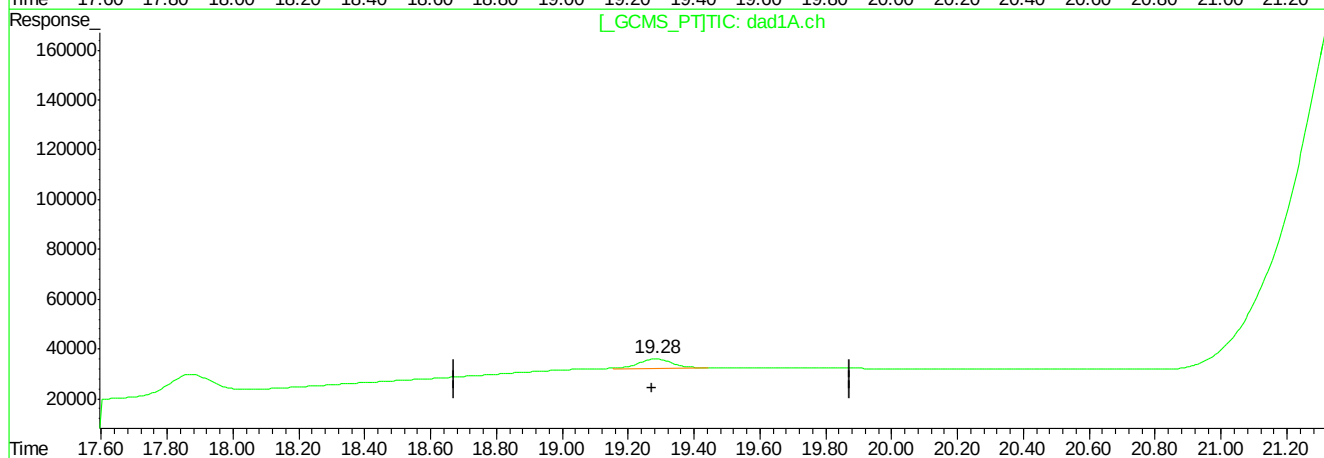
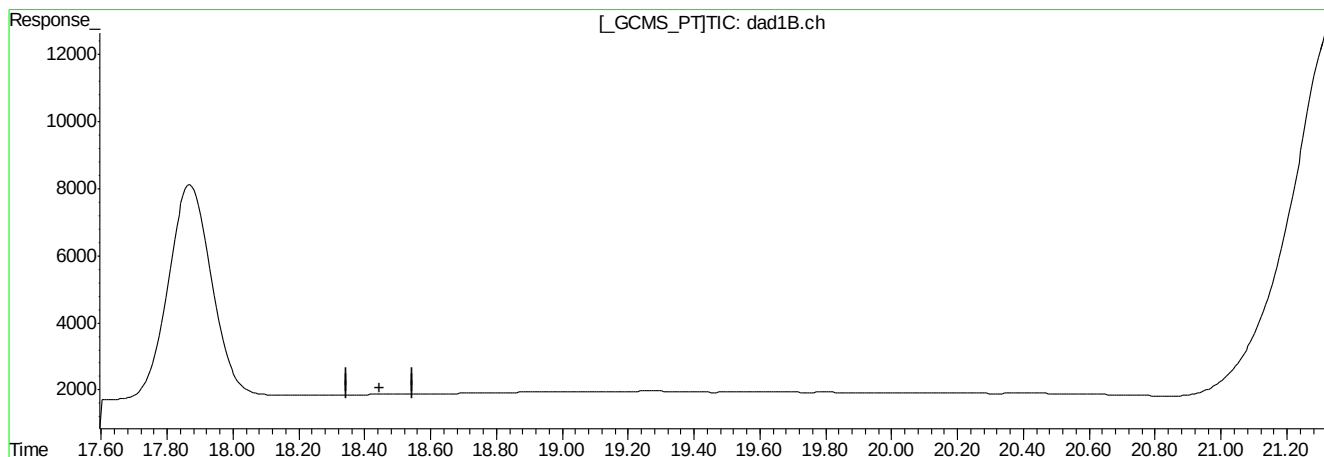
BB073632.D BBB2232_083122.M

Wed Aug 31 11:58:59 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 164.305ppb m

response 260819

(+) = Expected Retention Time

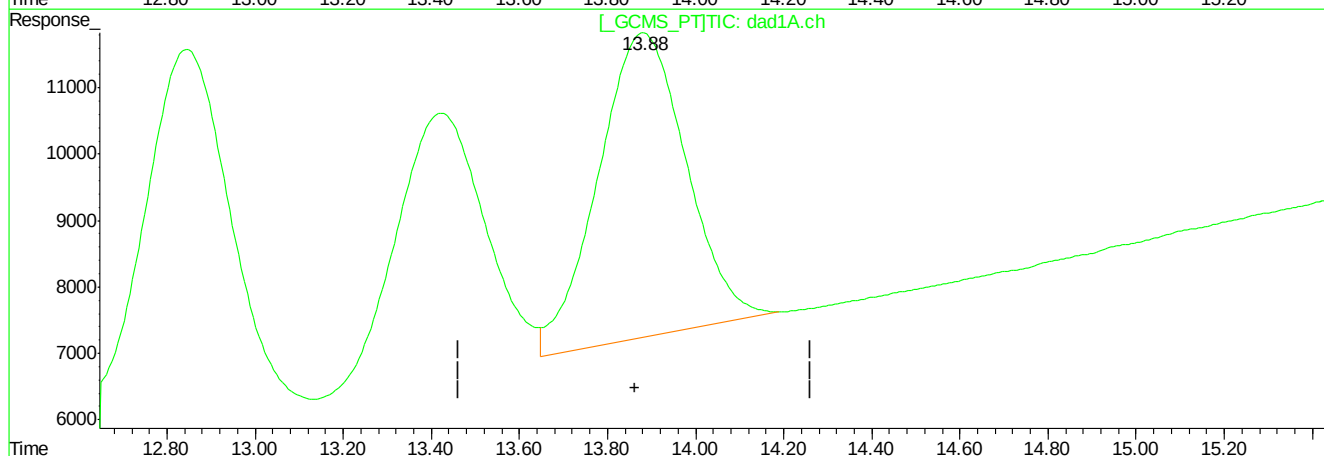
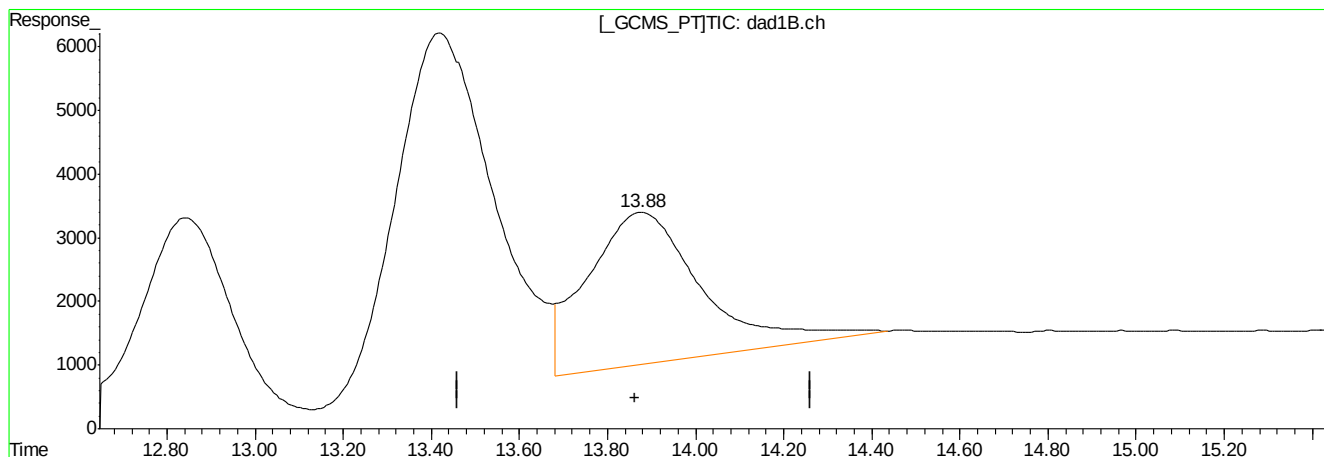
BB073632.D BBB2232_083122.M

Wed Aug 31 11:59:09 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:59 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

13.88min 145.116ppb

response 433183

(17) 2,6-Dinitrotoluene #2

13.88min 160.127ppb

response 639198

QEdit

(+) = Expected Retention Time

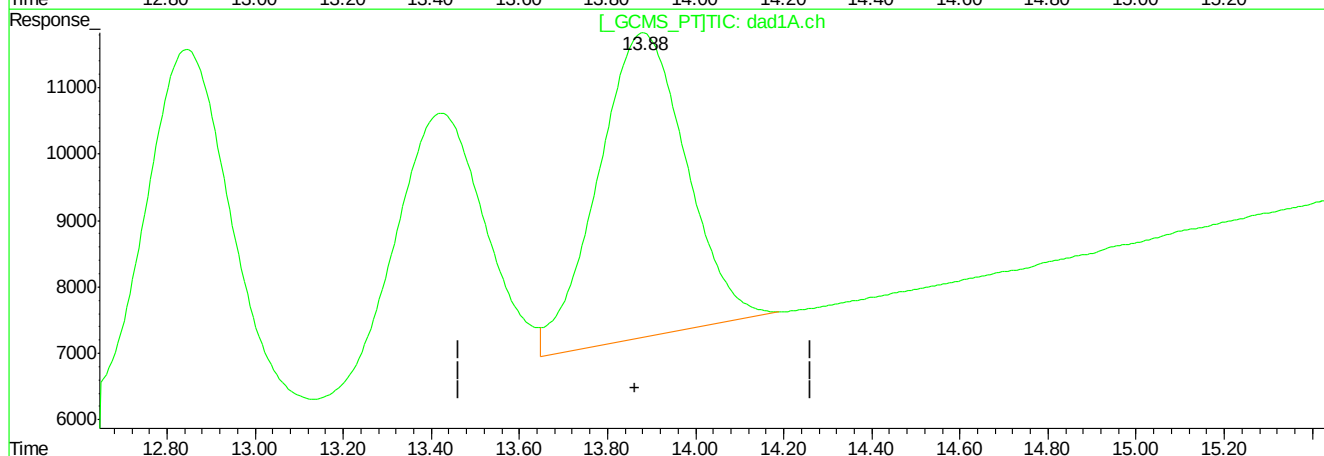
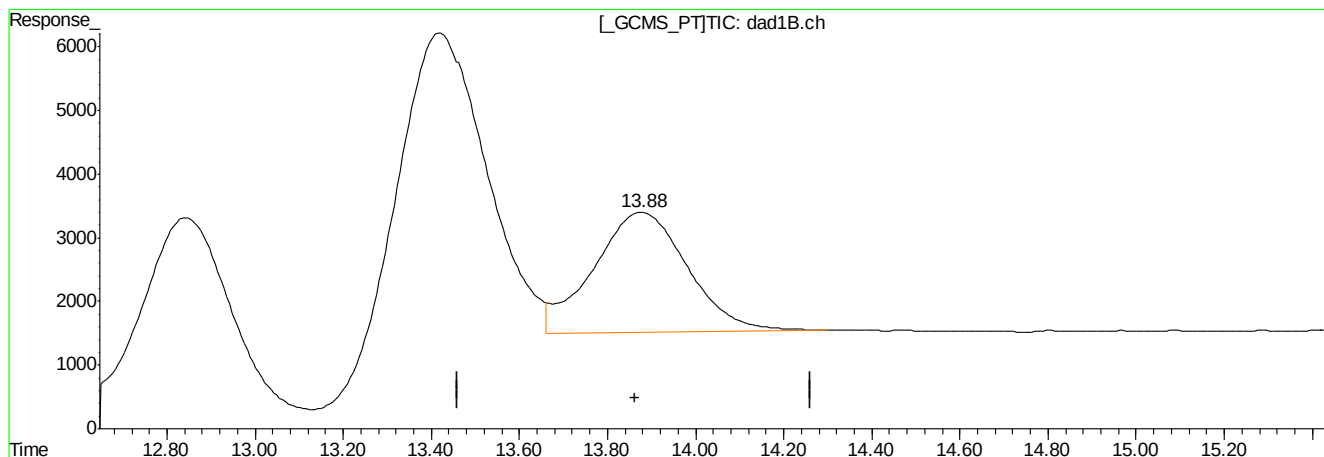
BB073632.D BBB2232_083122.M

Wed Aug 31 14:00:25 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:59 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

13.88min 93.389ppb m

response 278774

(17) 2,6-Dinitrotoluene #2

13.88min 160.127ppb

response 639198

QEdit

(+) = Expected Retention Time

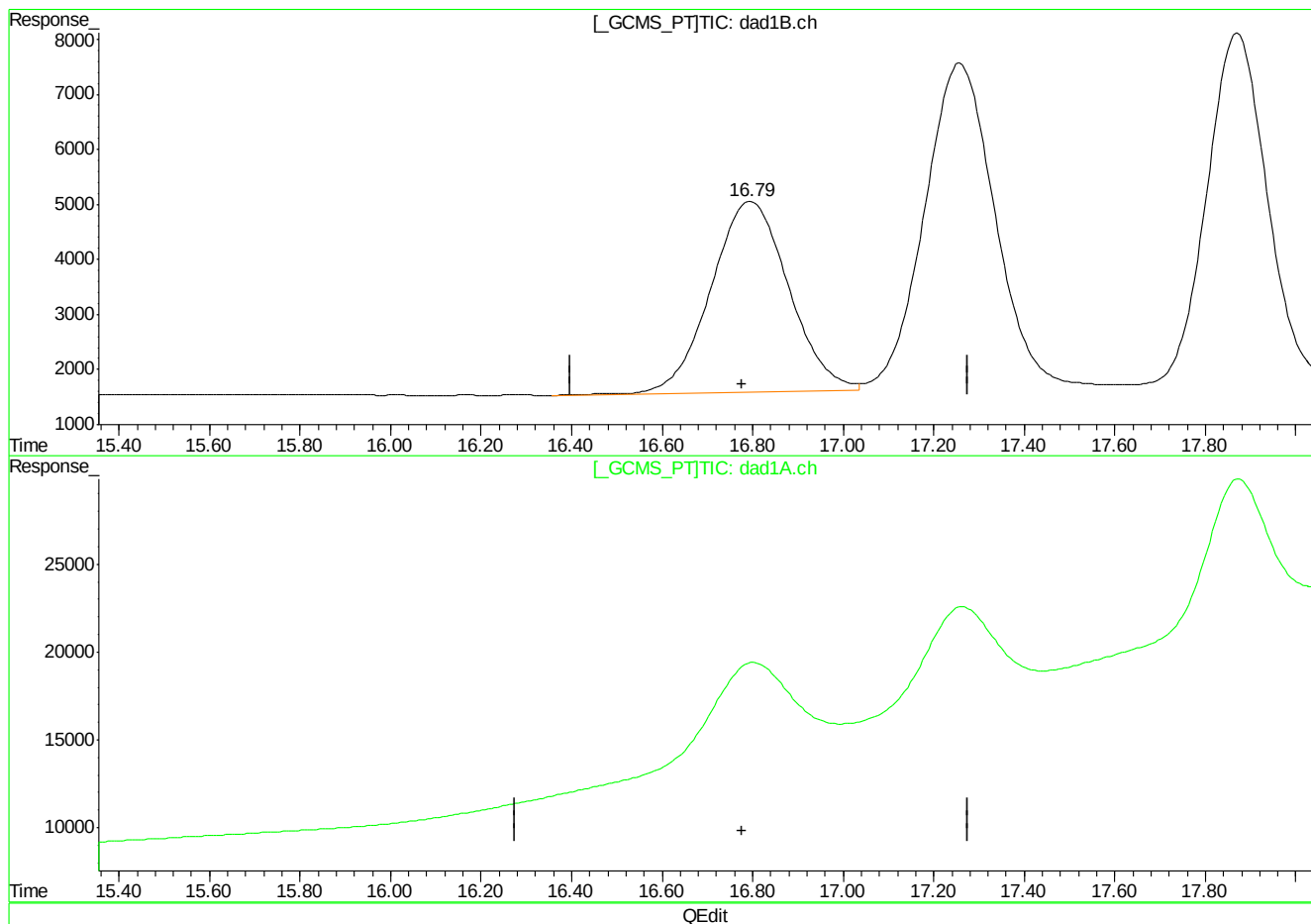
BB073632.D BBB2232_083122.M

Wed Aug 31 14:00:40 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:59 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(18) o-Nitrotoluene
16.80min 199.169ppb
response 411077

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

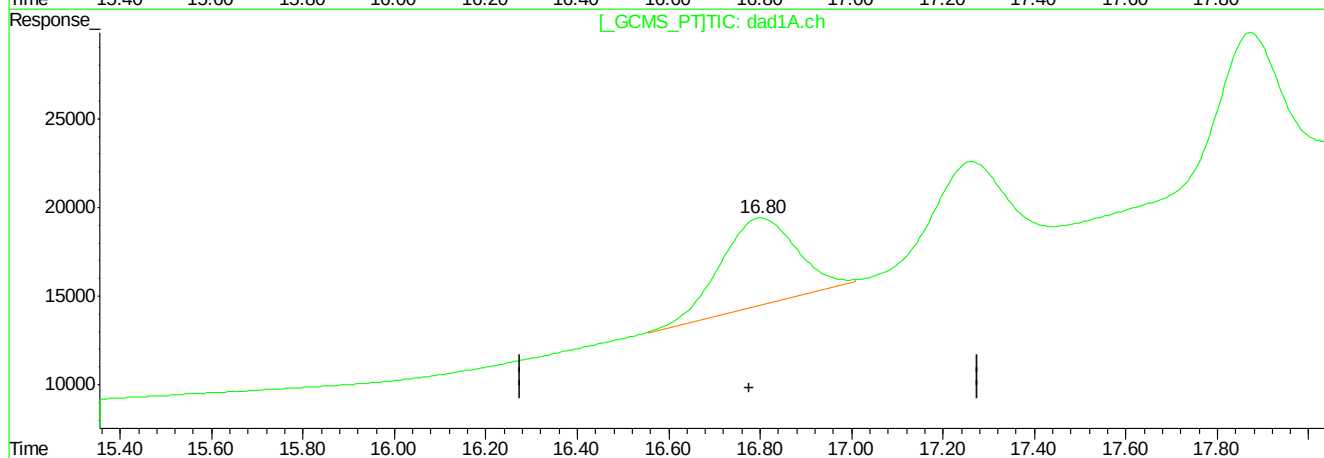
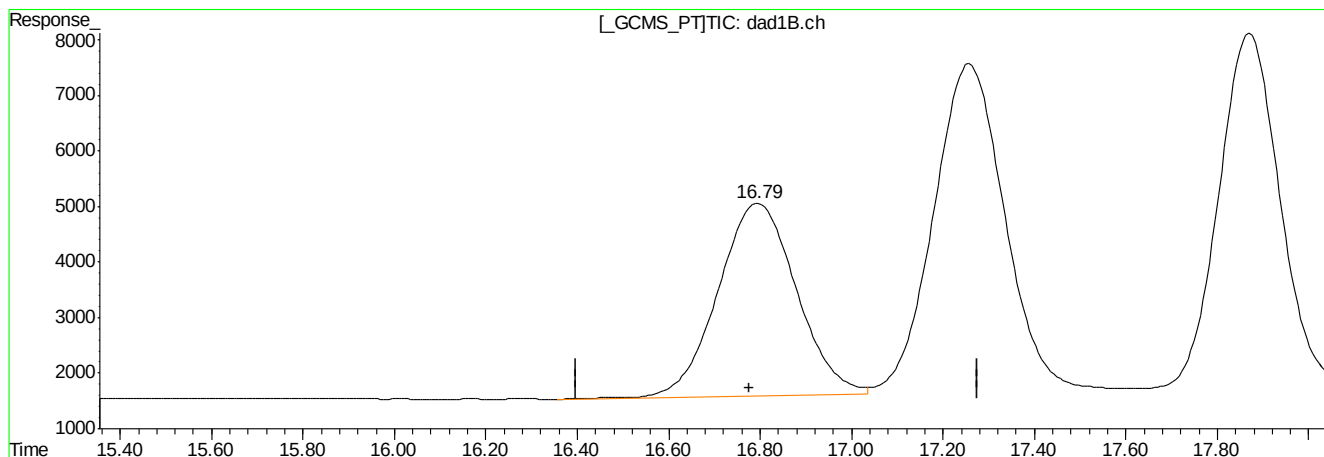
BB073632.D BBB2232_083122.M

Wed Aug 31 14:00:47 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:59 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
16.80min 199.169ppb
response 411077

(18) o-Nitrotoluene #2
16.80min 158.569ppb m
response 579069

(+) = Expected Retention Time

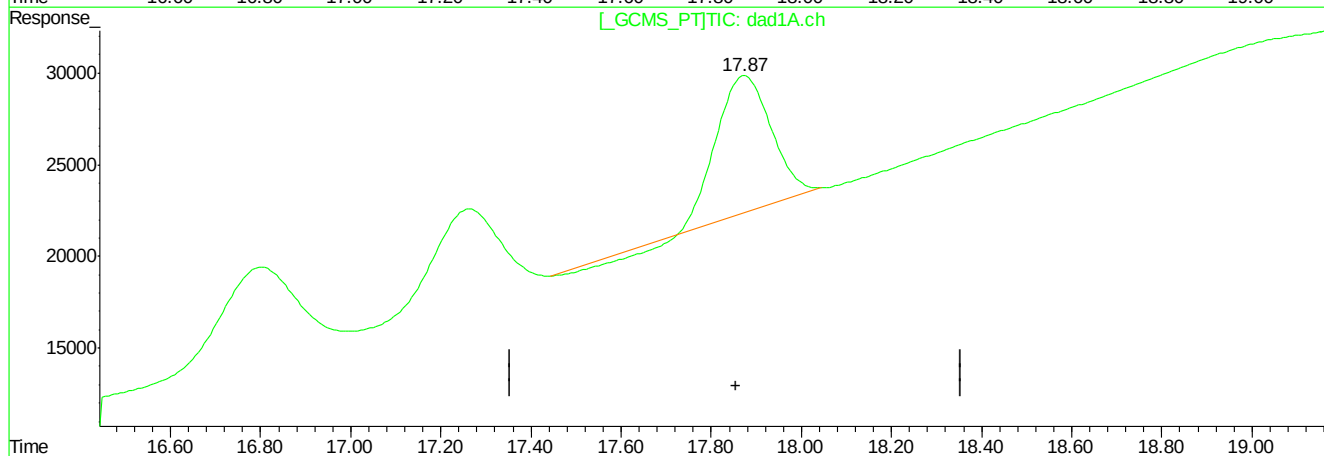
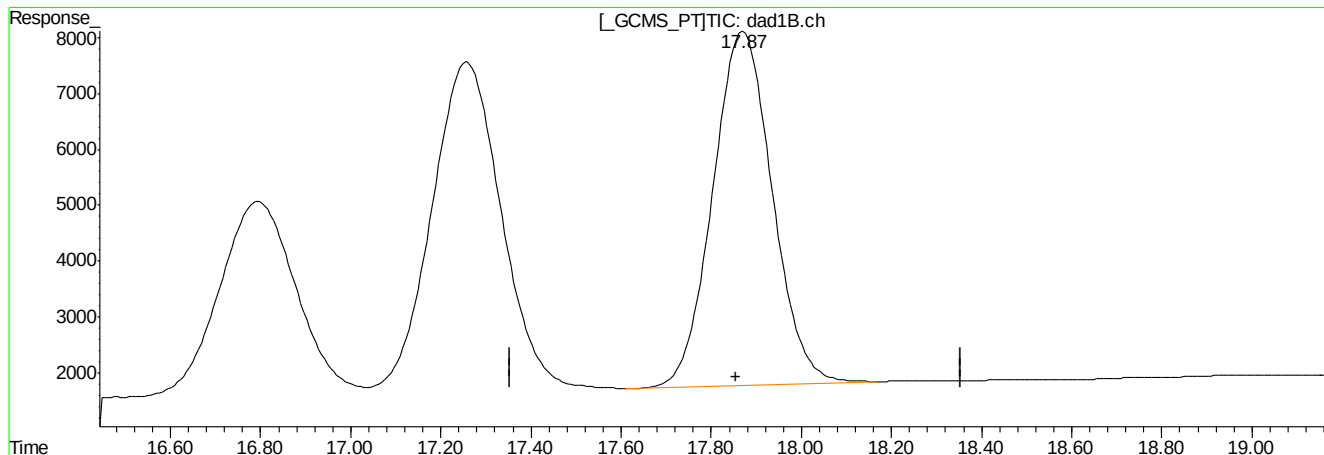
BB073632.D BBB2232_083122.M

Wed Aug 31 14:00:53 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:59 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(20) m-Nitrotoluene
17.87min 190.727ppb
response 579575

(20) m-Nitrotoluene #2
17.88min 167.126ppb
response 593992

(+) = Expected Retention Time

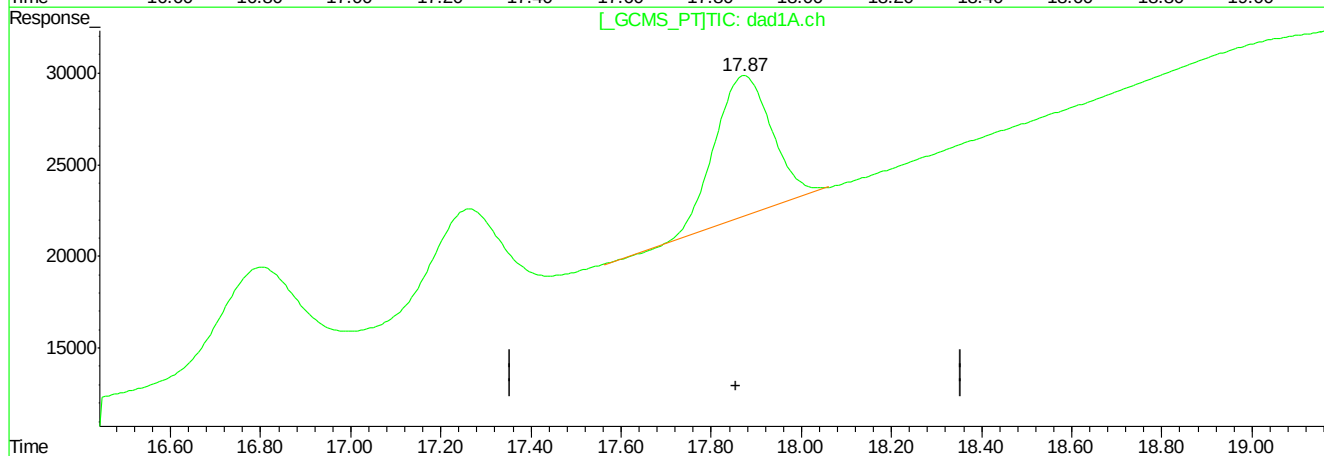
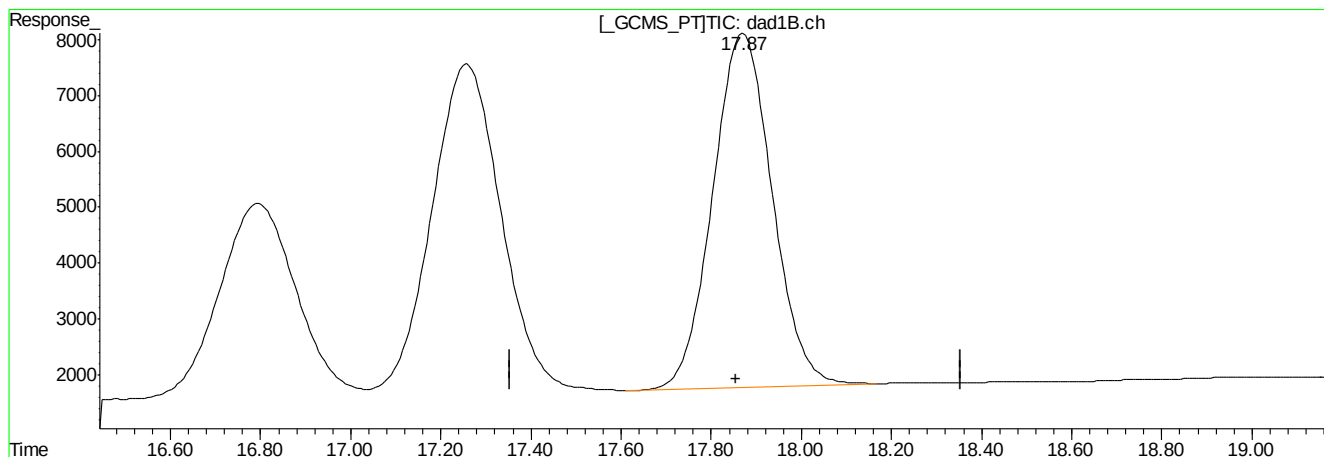
BB073632.D BBB2232_083122.M

Wed Aug 31 14:01:03 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 11:59 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(20) m-Nitrotoluene
17.87min 190.727ppb
response 579575

(20) m-Nitrotoluene #2
17.87min 192.058ppb m
response 682607

(+) = Expected Retention Time

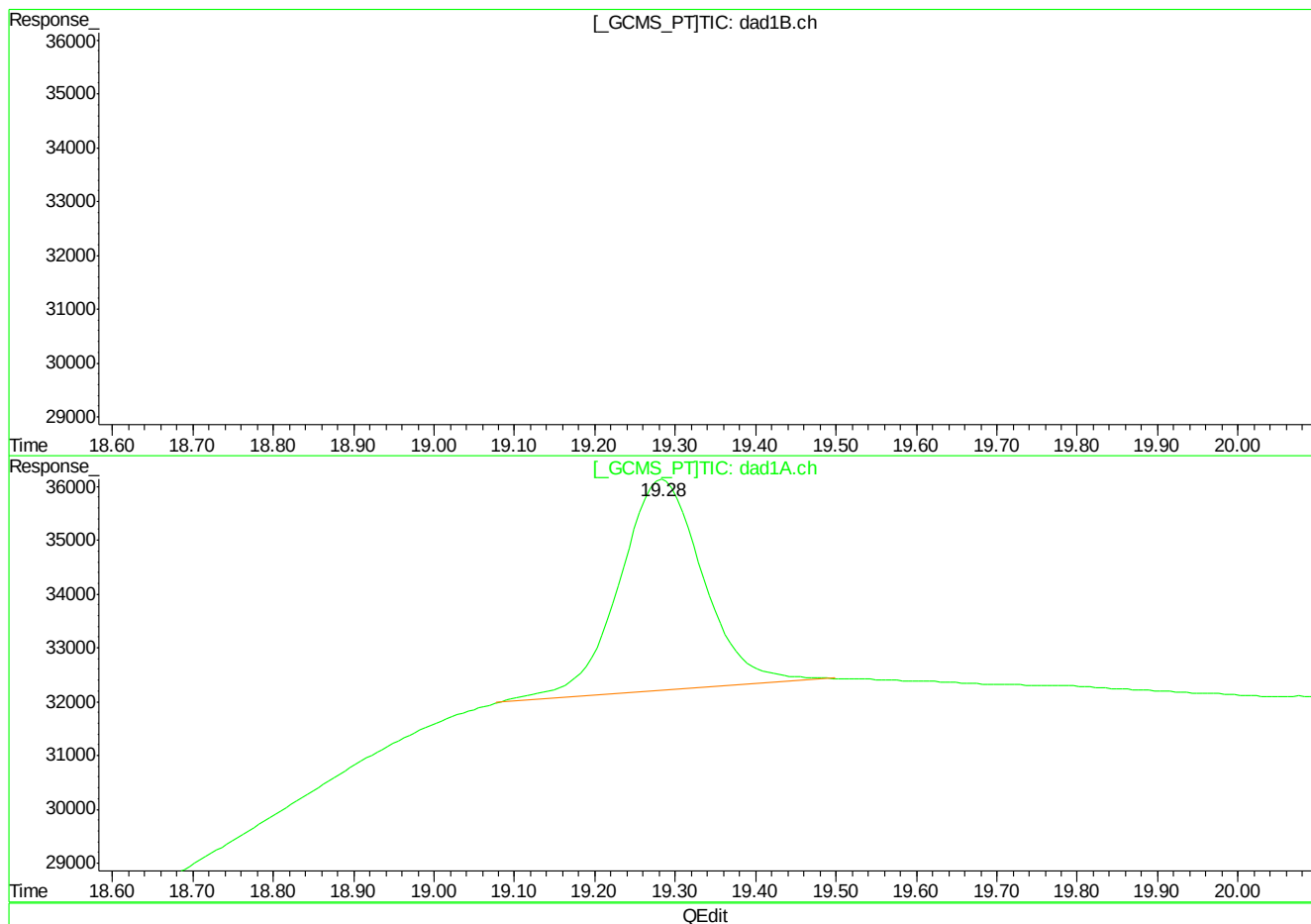
BB073632.D BBB2232_083122.M

Wed Aug 31 14:01:09 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073632.D\dad1A.ch
Acq On : 31-Aug-2022, 11:16:51 Operator: FOUADS
Sample : ic2232-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:01 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 178.154ppb m

response 282803

(+) = Expected Retention Time

BB073632.D BBB2232_083122.M

Thu Sep 01 07:56:25 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
 Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
 Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
 Sample : ic2232-500 Inst : G1315B
 Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Aug 31 13:54:11 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Aug 31 08:15:37 2022
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	12.87	12.87	1047692	1989748	425.545	427.768
Spiked Amount	500.000	Range	70 - 136	Recovery	= 85.11%	85.55%
Target Compounds						
1) TNX	1.46	1.46	891049	1396043	220.495	227.246
2) HMX	1.66	1.66	758576	2175228	405.604	424.807
3) DNX	1.91	1.91	1458226	2335743	410.250m	417.835m
4) MNX	2.60	2.60	1652648	2553728	512.330m	515.329m
5) RDX	3.31	3.31	920631	1461089	415.717	409.825
6) 1,3,5-Trinitrobe	5.30	5.30	1959721	3140744	425.499	423.604
7) 1,3-Dinitrobenze	6.57	6.57	2591847	1733679	422.168	406.036m
8) 3,5-Dinitroanili	7.05	7.05	1950542	3239193	427.895	419.357m
9) Nitrobenzene	8.32	8.32	1489981	1476273	488.110	460.722
10) Nitroglycerin	0.00	10.15	0	633032	N.D.	412.966 #
11) Tetryl	11.03	11.03	1395001	2201230	402.550	386.018
12) 2,4,6-Trinitroto	11.38	11.38	1806761	2102674	417.785	410.655
13) 2-Amino-4,6-Dini	11.89	11.89	1546158	2286041	410.567	401.440
14) 4-Amino-2,6-Dini	12.44	12.44	1124872	2312144	405.756	410.794
16) 2,4-Dinitrotolue	13.44	13.44	2276525	1443515	441.843	408.204
17) 2,6-Dinitrotolue	13.90	13.90	689964	1674989	231.137m	419.605 #
18) o-Nitrotoluene	16.81	16.81	1057585	1643609	512.407	459.461m
19) p-Nitrotoluene	17.27	17.27	1639633	1343834	492.741	496.140
20) m-Nitrotoluene	17.88	17.88	1523242	1776605	501.270	499.866
21) PETN	0.00	19.29	0	681847	N.D.	429.535m#

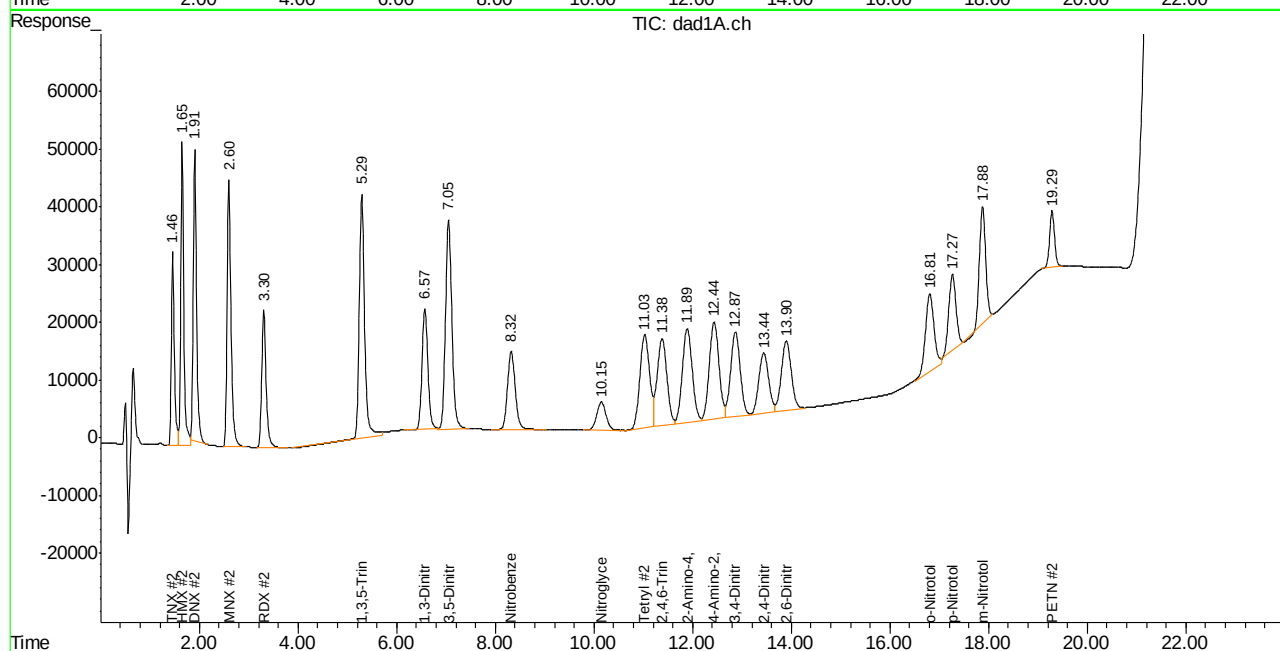
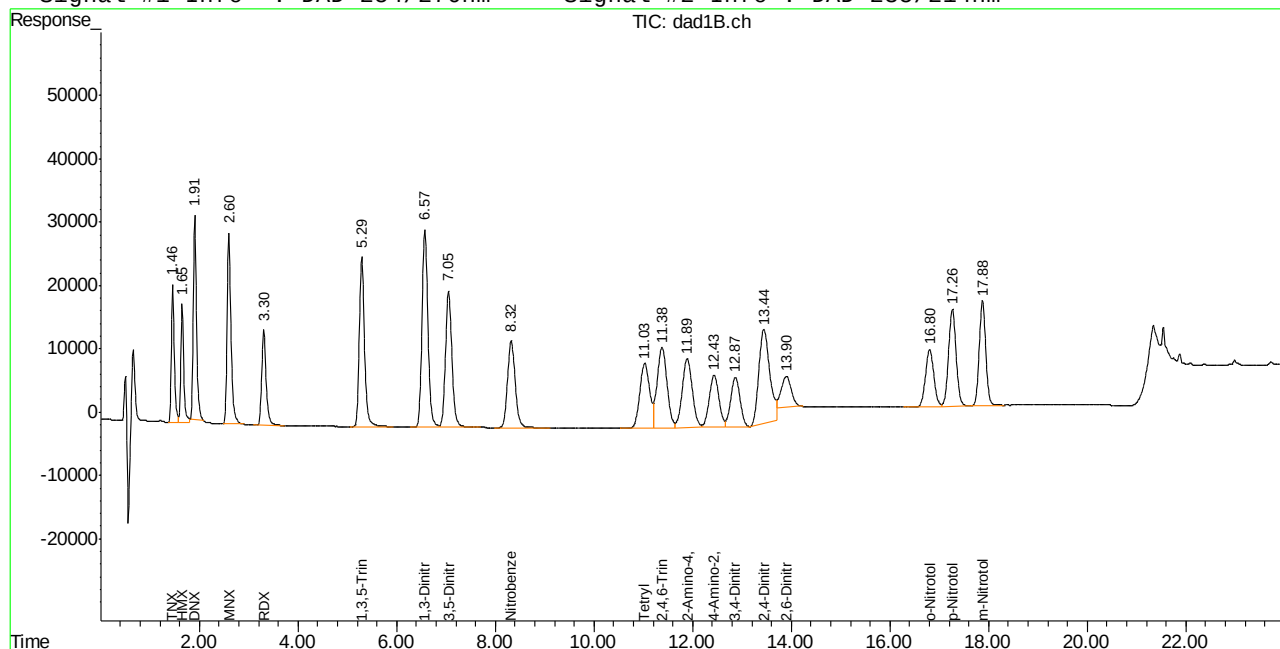
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB073633.D BBB2232_083122.M Thu Sep 01 14:19:31 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:56 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2232-IC2232

Lab FileID:

BB073633.D

Injection Time:

08/31/22 11:58

Method:

SW846 8330A

Analyst approved:

09/02/22 08:50 Fouad Sekkar

Supervisor approved:

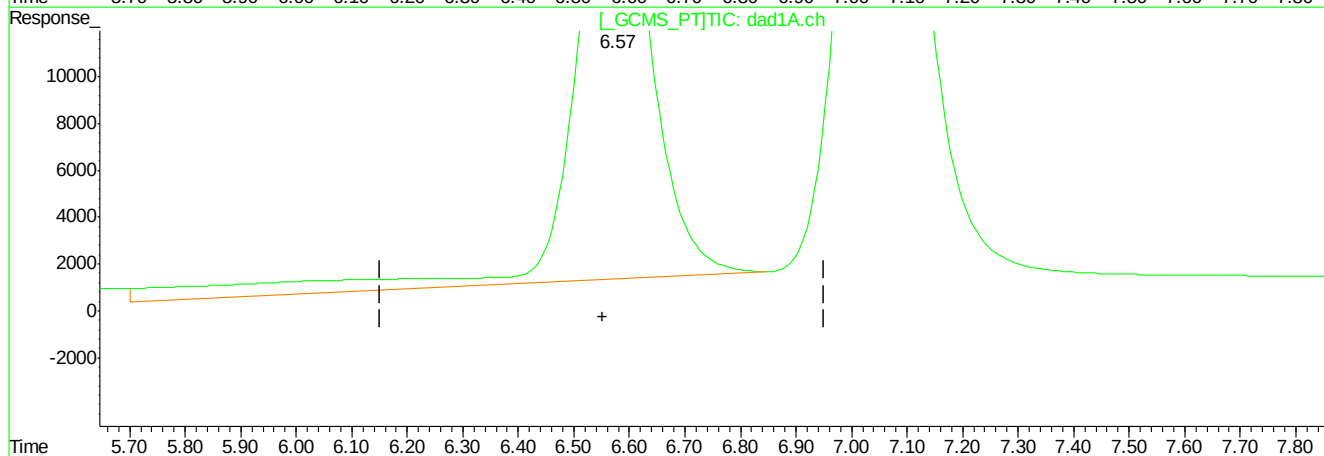
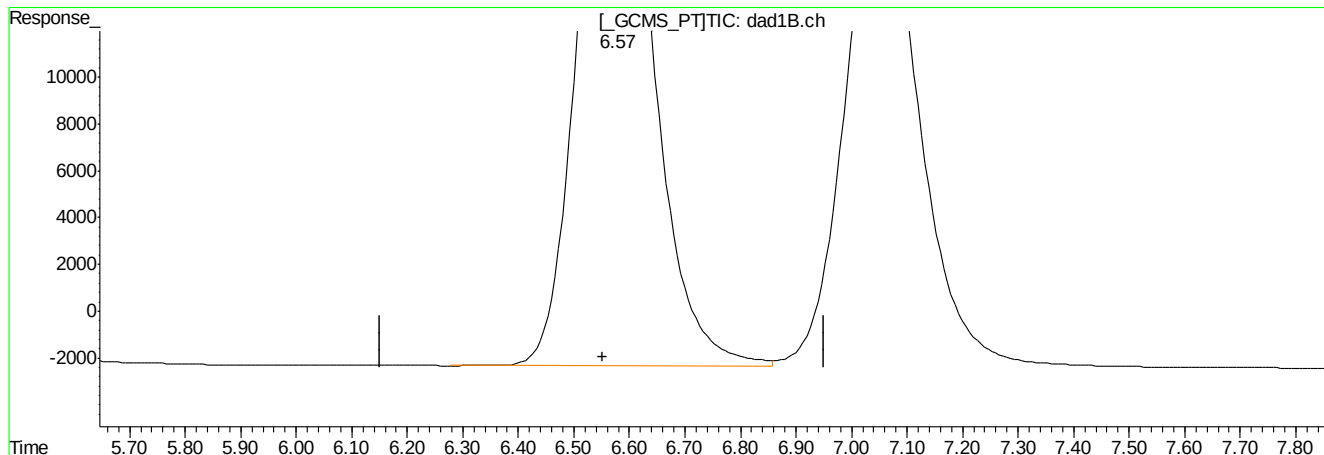
09/02/22 15:07 Naresh Jiawan

Parameter	CAS	Sig#	R. T. (min.)	Reason
DNX		1	1.91	Missed peak
DNX		2	1.91	Missed peak
MNX		1	2.60	Missed peak
MNX		2	2.60	Missed peak
1,3-Dinitrobenzene	99-65-0	2	6.57	Missed peak
3,5-Dinitroaniline	618-87-1	2	7.05	Missed peak
2,6-Dinitrotoluene	606-20-2	1	13.90	Missed peak
o-Nitrotoluene	88-72-2	2	16.81	Missed peak
PETN	78-11-5	2	19.29	Missed peak

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

6.57min 422.168ppb

response 2591847

(7) 1,3-Dinitrobenzene #2

6.57min 456.178ppb

response 1947771

(+) = Expected Retention Time

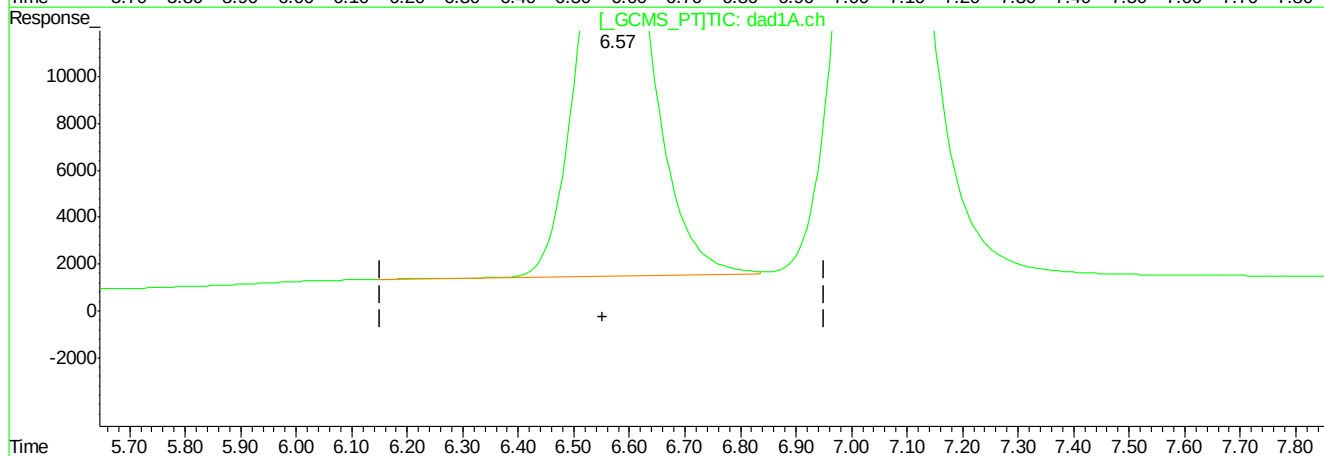
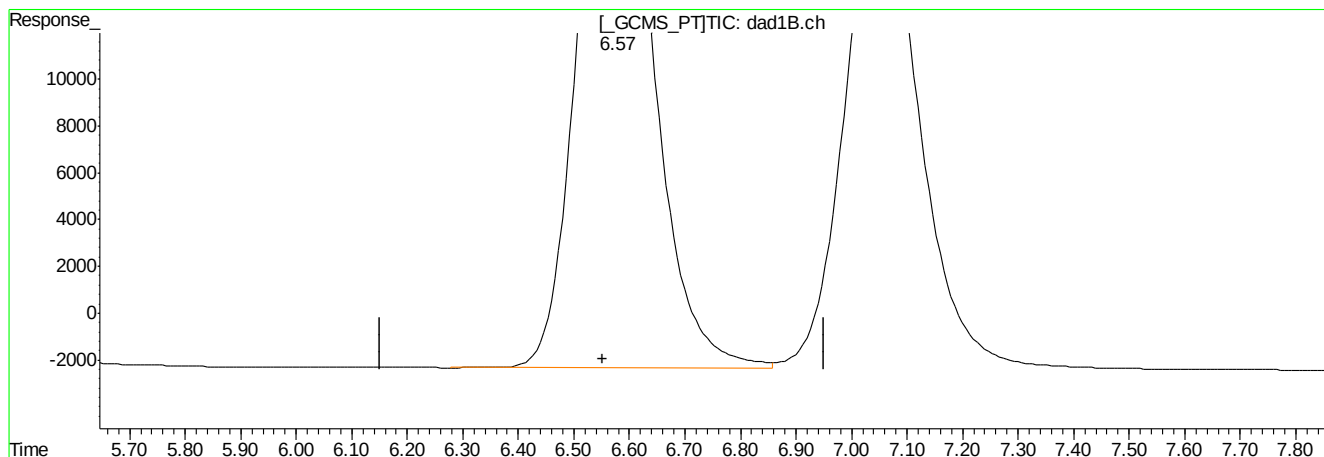
BB073633.D BBB2232_083122.M

Wed Aug 31 13:54:41 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

6.57min 422.168ppb

response 2591847

(7) 1,3-Dinitrobenzene #2

6.57min 406.036ppb m

response 1733679

(+) = Expected Retention Time

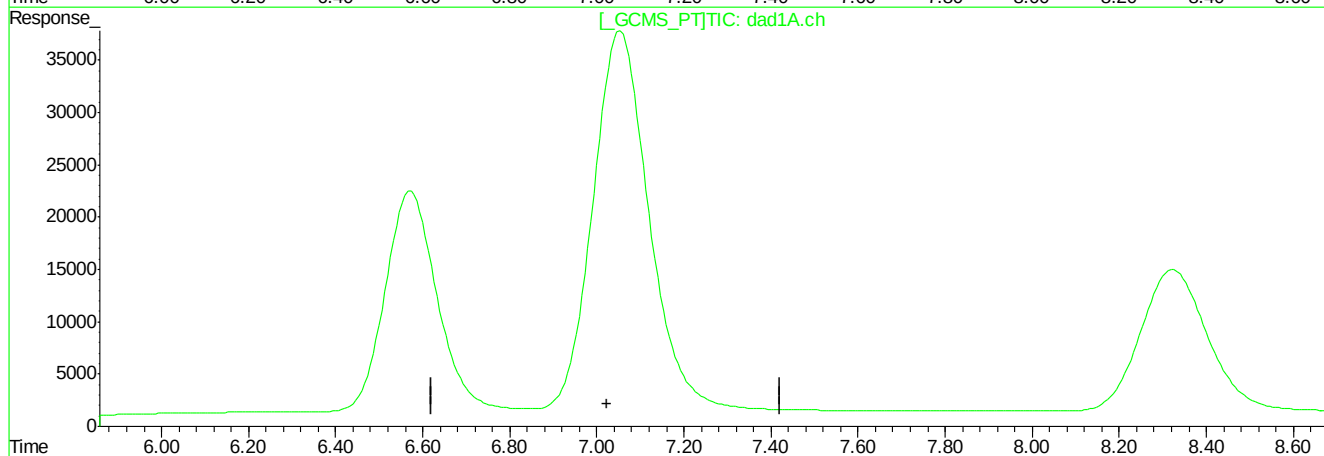
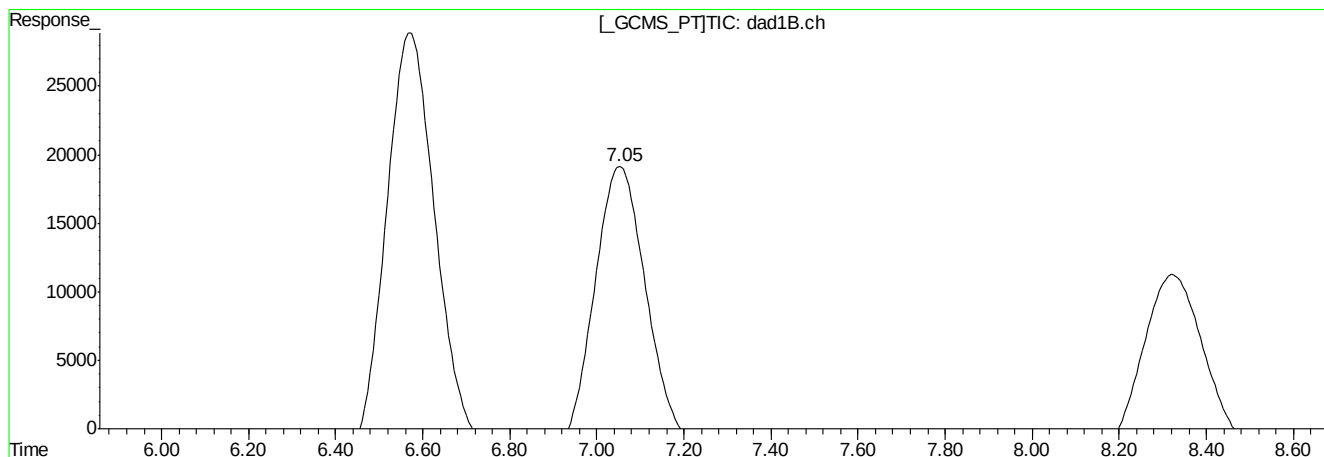
BB073633.D BBB2232_083122.M

Wed Aug 31 13:54:49 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.05min 427.895ppb

response 1950542

(8) 3,5-Dinitroaniline #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

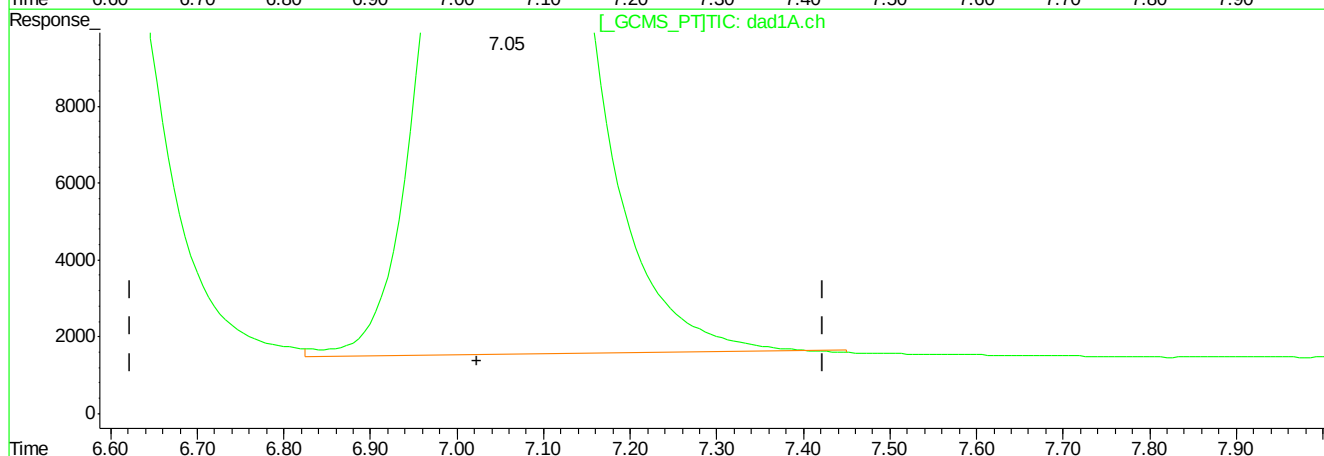
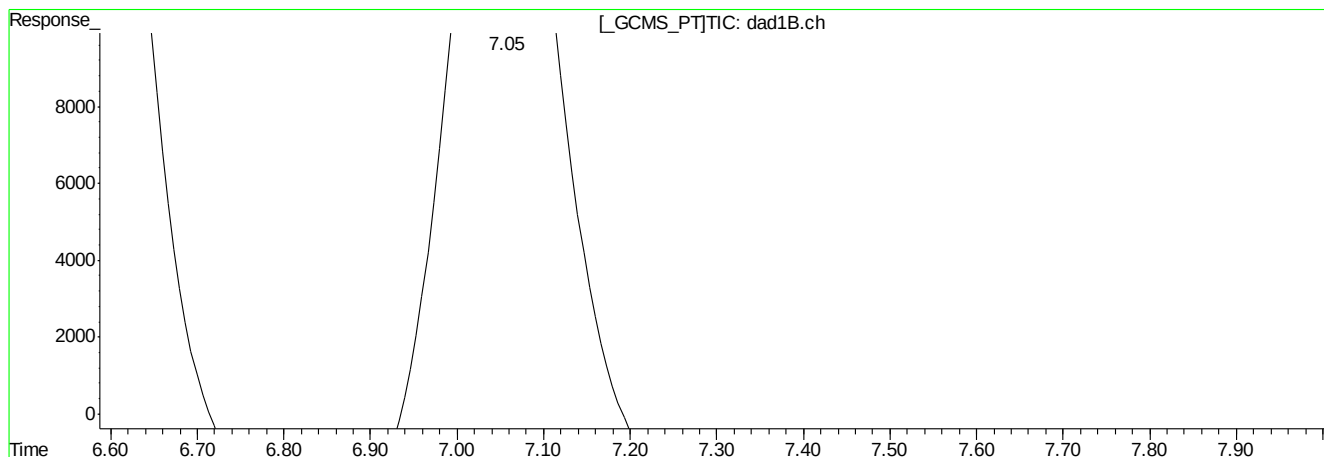
BB073633.D BBB2232_083122.M

Wed Aug 31 13:54:56 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.05min 427.895ppb

response 1950542

(8) 3,5-Dinitroaniline #2

7.05min 419.357ppb m

response 3239193

(+) = Expected Retention Time

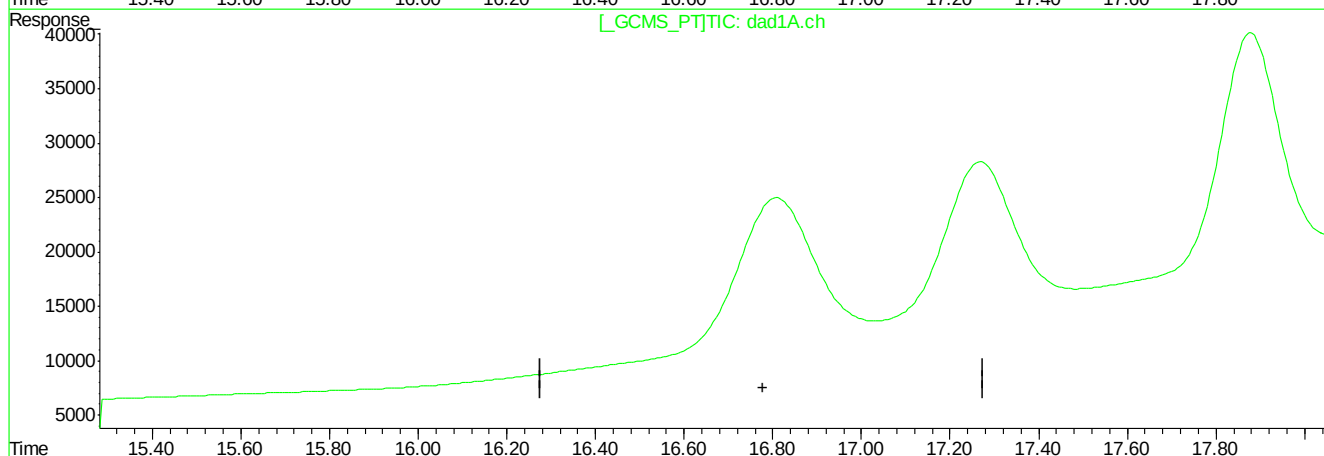
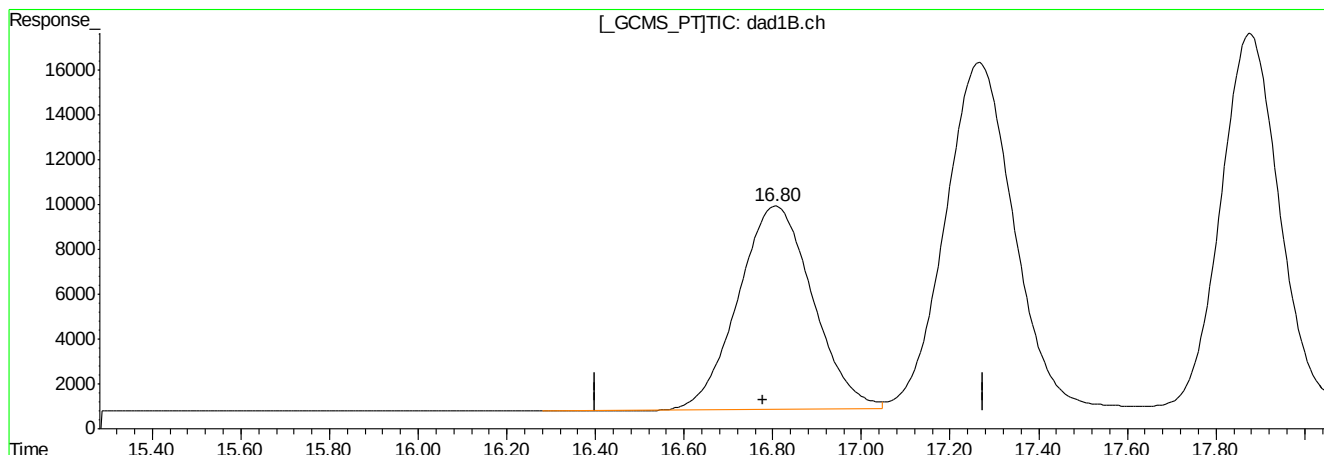
BB073633.D BBB2232_083122.M

Wed Aug 31 13:55:07 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
16.81min 512.407ppb
response 1057585

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

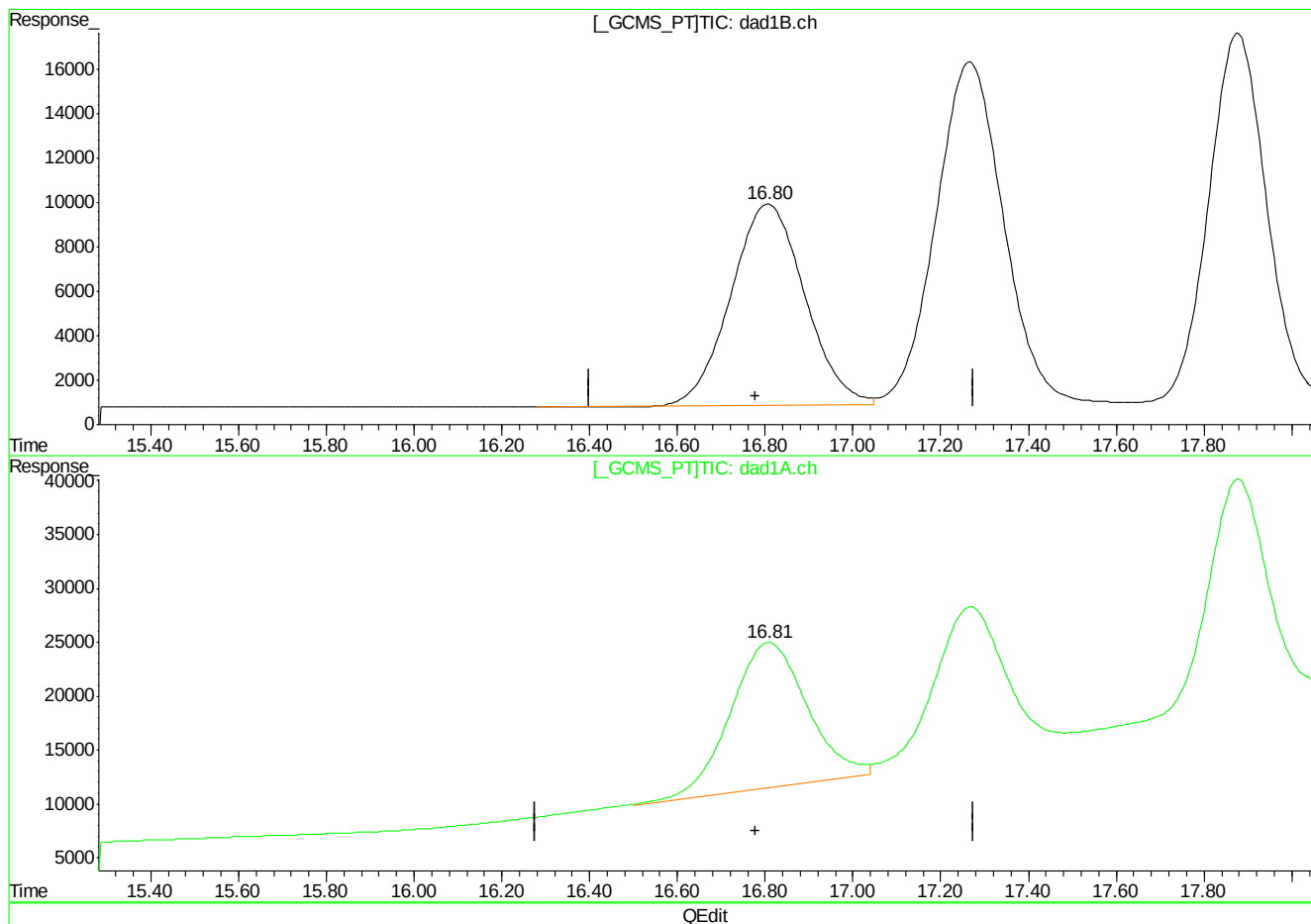
BB073633.D BBB2232_083122.M

Wed Aug 31 13:55:26 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(18) o-Nitrotoluene
16.81min 512.407ppb
response 1057585

(18) o-Nitrotoluene #2
16.81min 459.461ppb m
response 1643609

(+) = Expected Retention Time

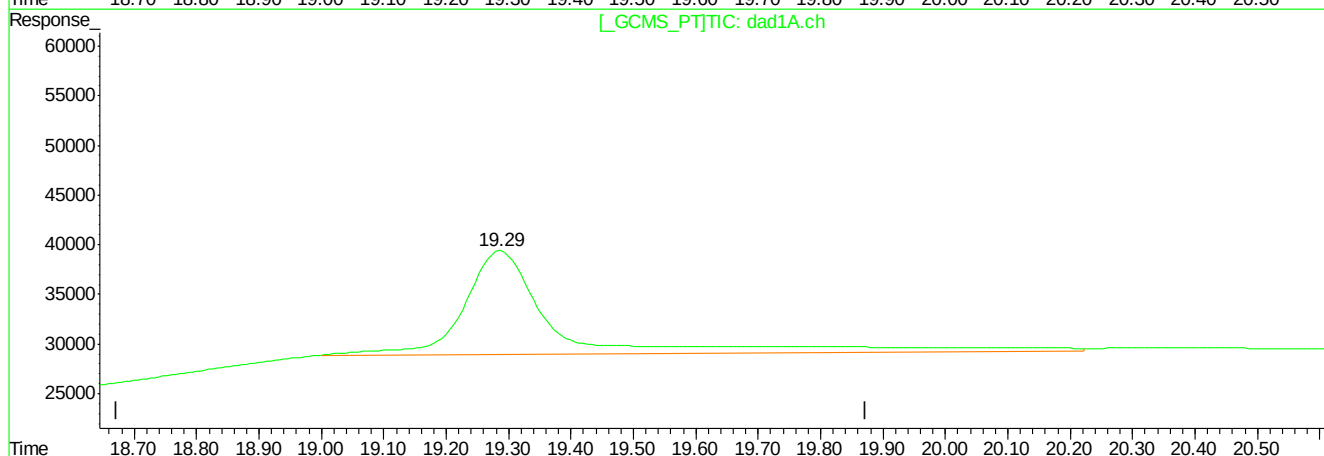
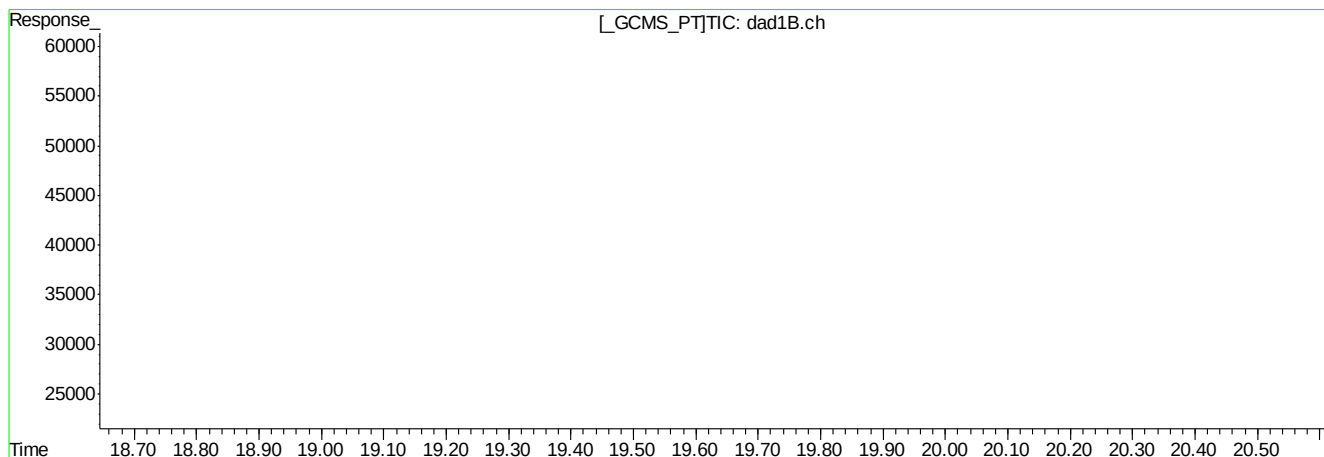
BB073633.D BBB2232_083122.M

Wed Aug 31 13:55:36 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.29min 677.205ppb

response 1075001

(+) = Expected Retention Time

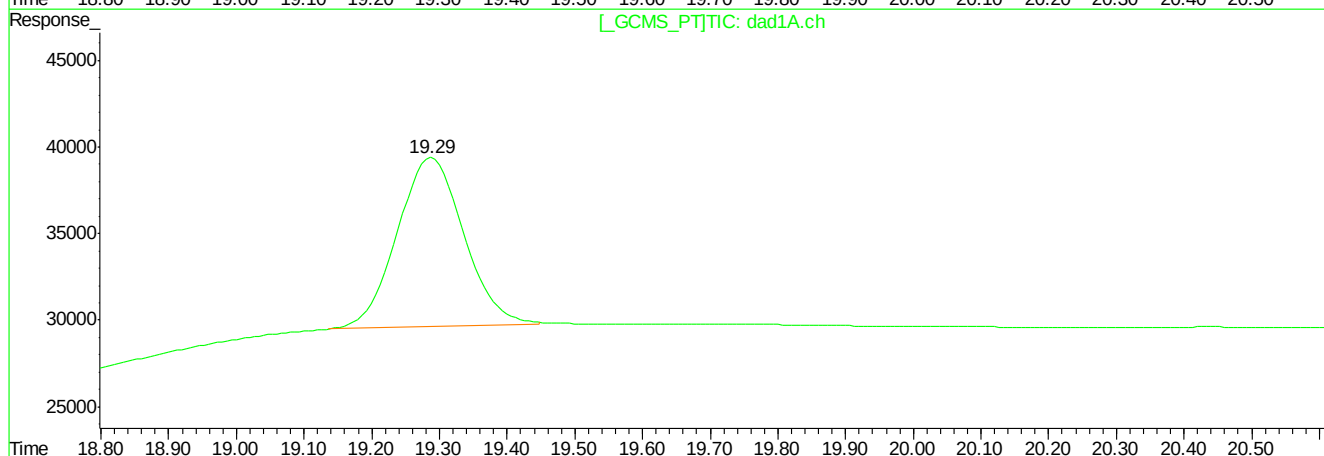
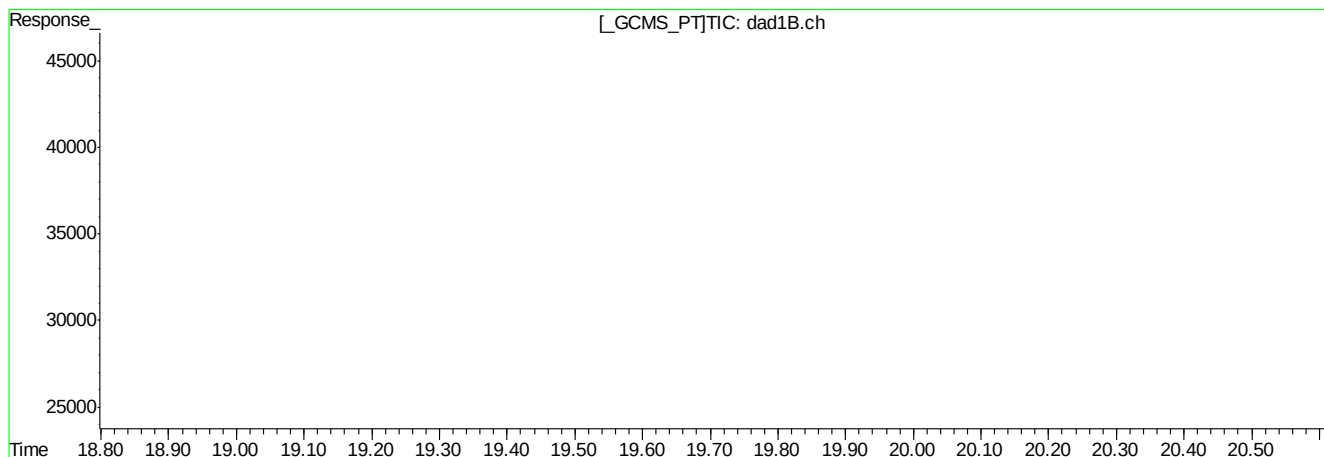
BB073633.D BBB2232_083122.M

Wed Aug 31 13:55:52 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.29min 416.318ppb m

response 660866

(+) = Expected Retention Time

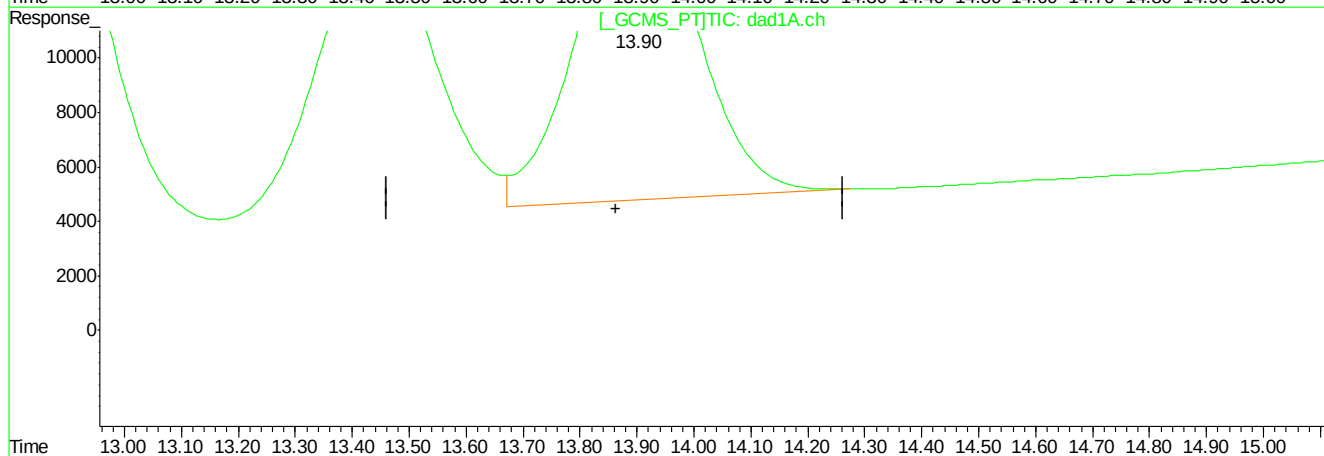
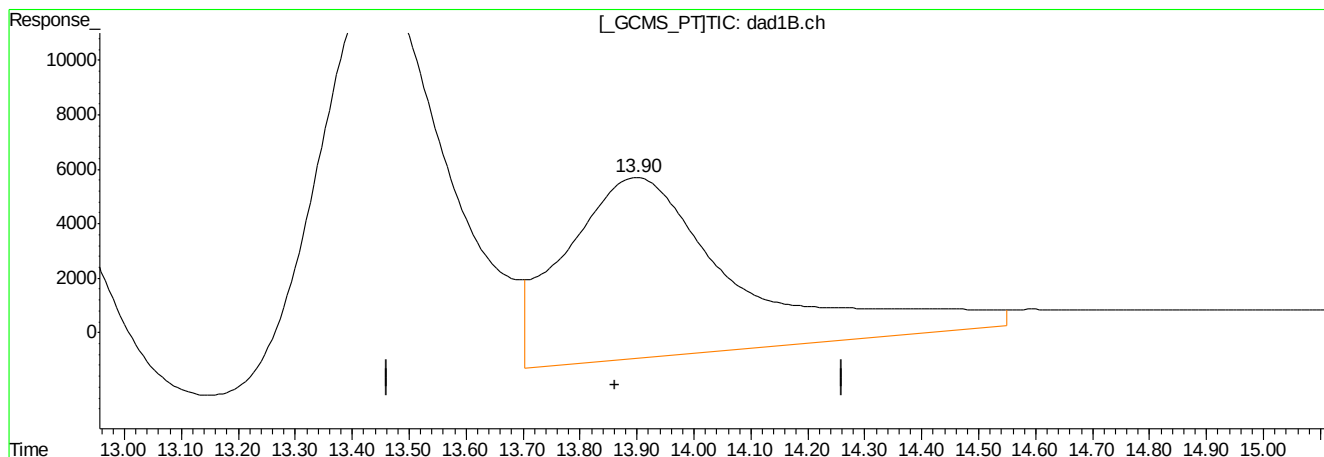
BB073633.D BBB2232_083122.M

Wed Aug 31 13:56:03 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.90min 468.060ppb

response 1397197

(17) 2,6-Dinitrotoluene #2

13.90min 419.605ppb

response 1674989

(+) = Expected Retention Time

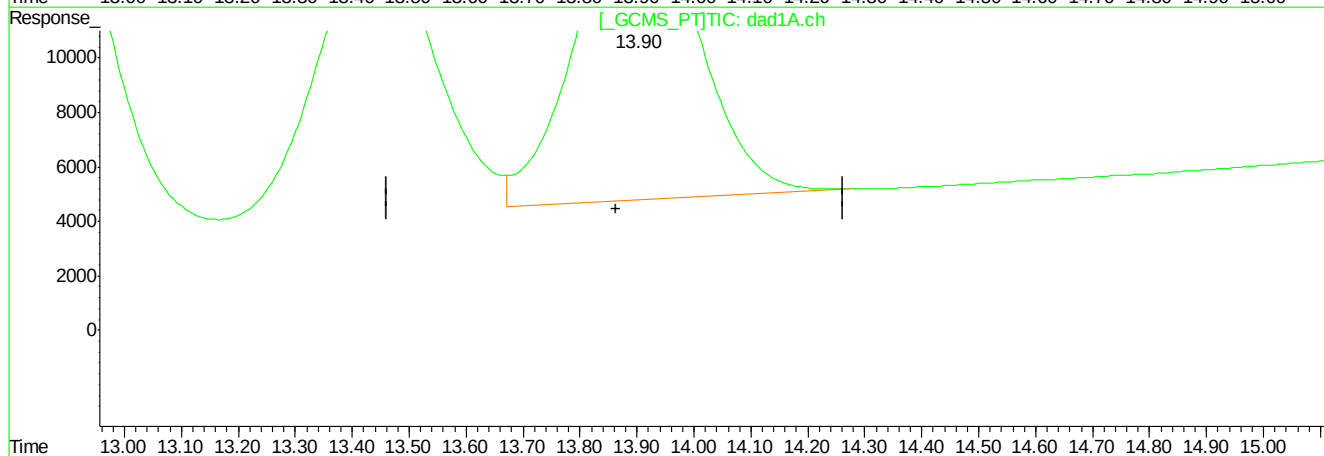
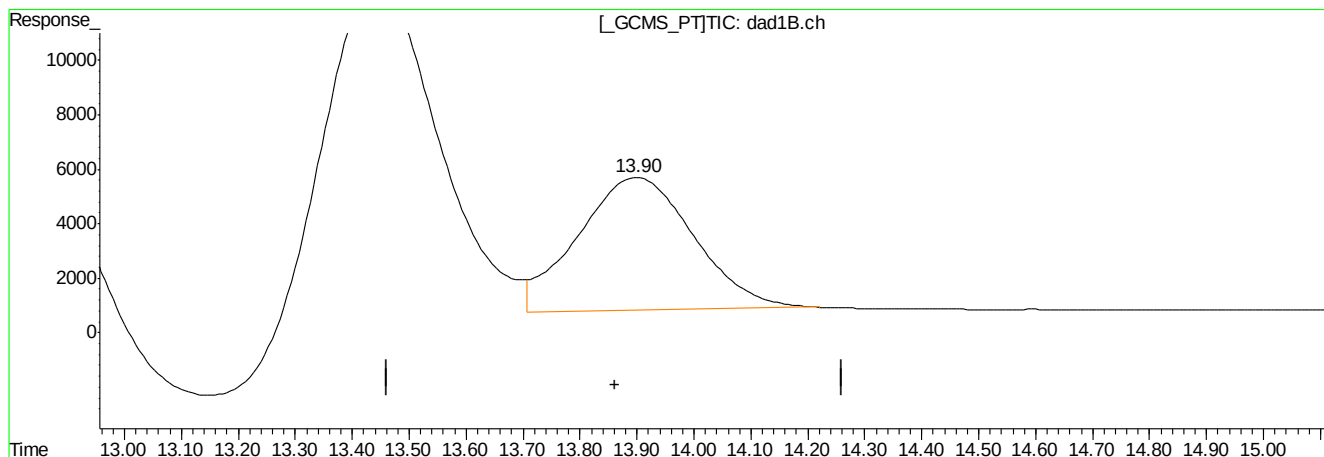
BB073633.D BBB2232_083122.M

Wed Aug 31 13:57:32 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:55 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.90min 231.137ppb m

response 689964

(17) 2,6-Dinitrotoluene #2

13.90min 419.605ppb

response 1674989

(+) = Expected Retention Time

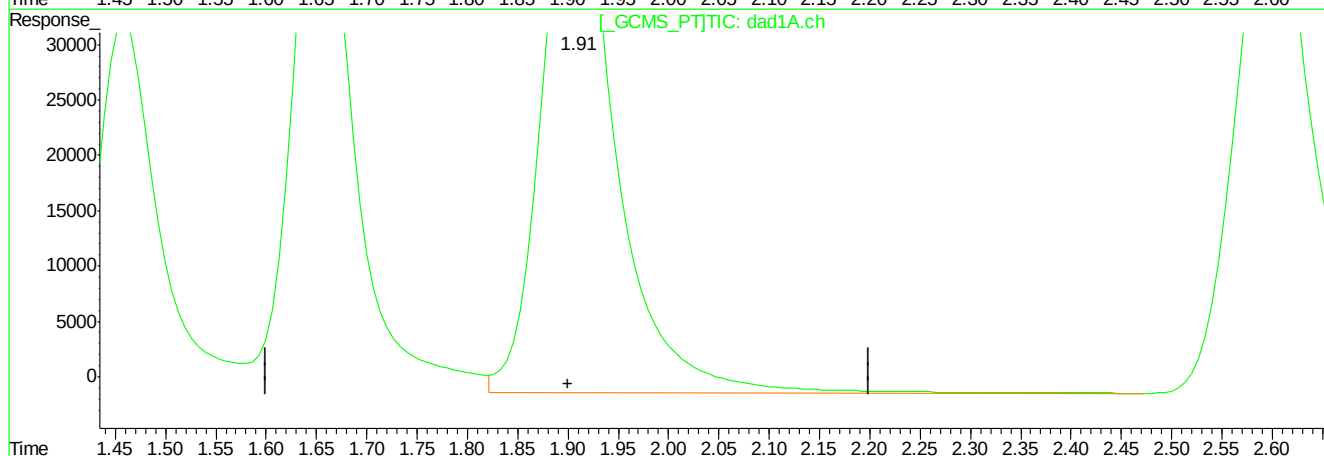
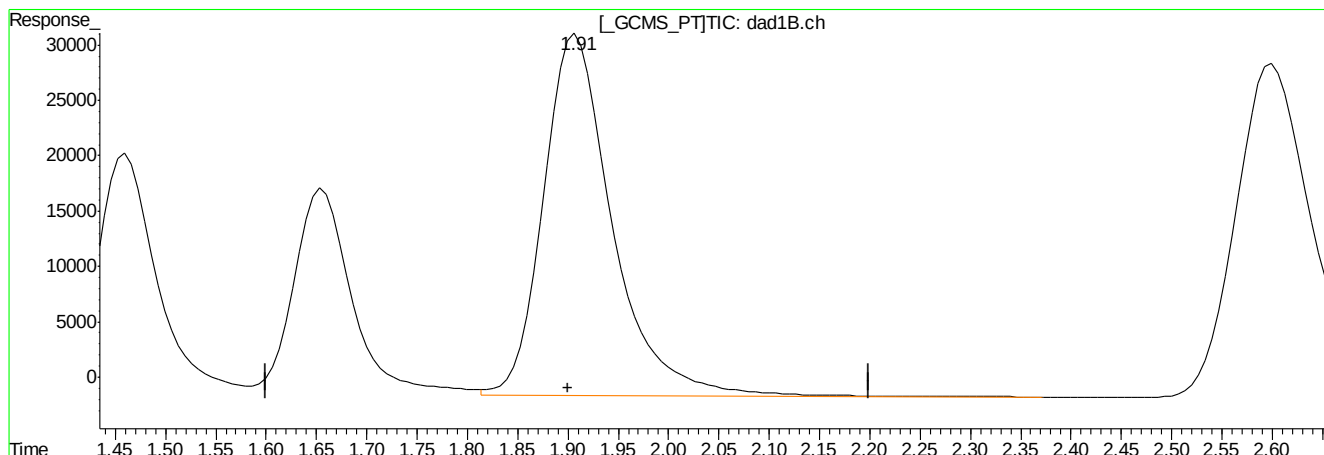
BB073633.D BBB2232_083122.M

Wed Aug 31 13:57:40 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(3) DNX

1.91min 439.087ppb

response 1560726

(3) DNX #2

1.91min 446.410ppb

response 2495480

(+) = Expected Retention Time

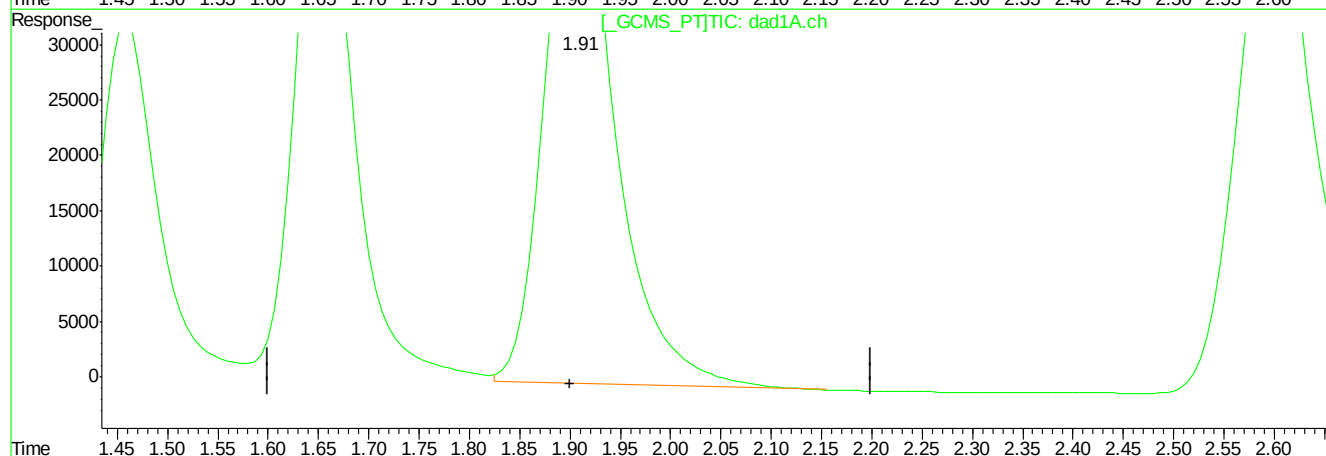
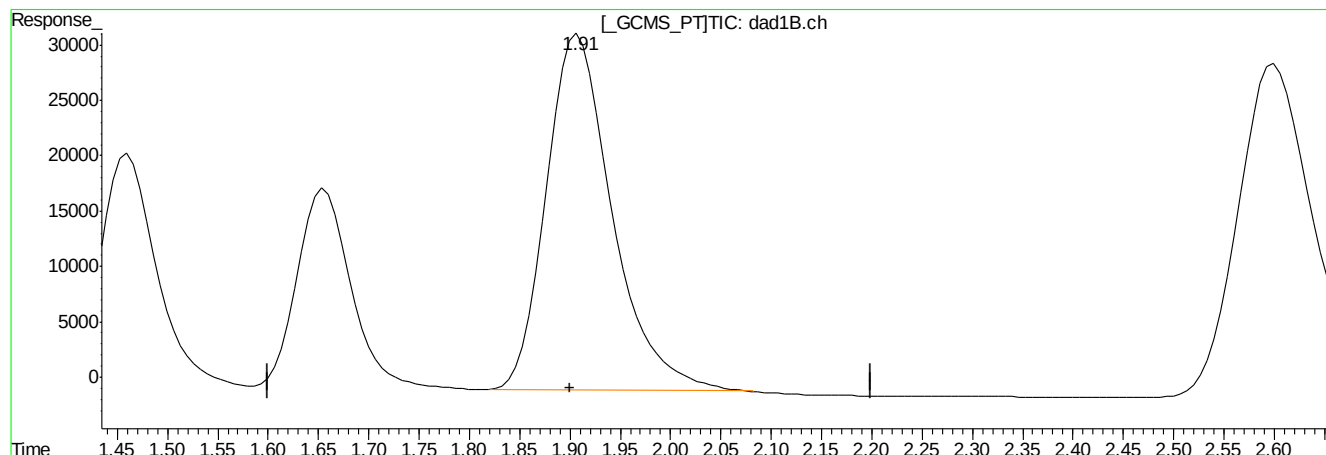
BB073633.D BBB2232_083122.M

Thu Sep 01 07:49:53 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(3) DNX

1.91min 410.250ppb m

response 1458226

(3) DNX #2

1.91min 417.835ppb m

response 2335743

(+) = Expected Retention Time

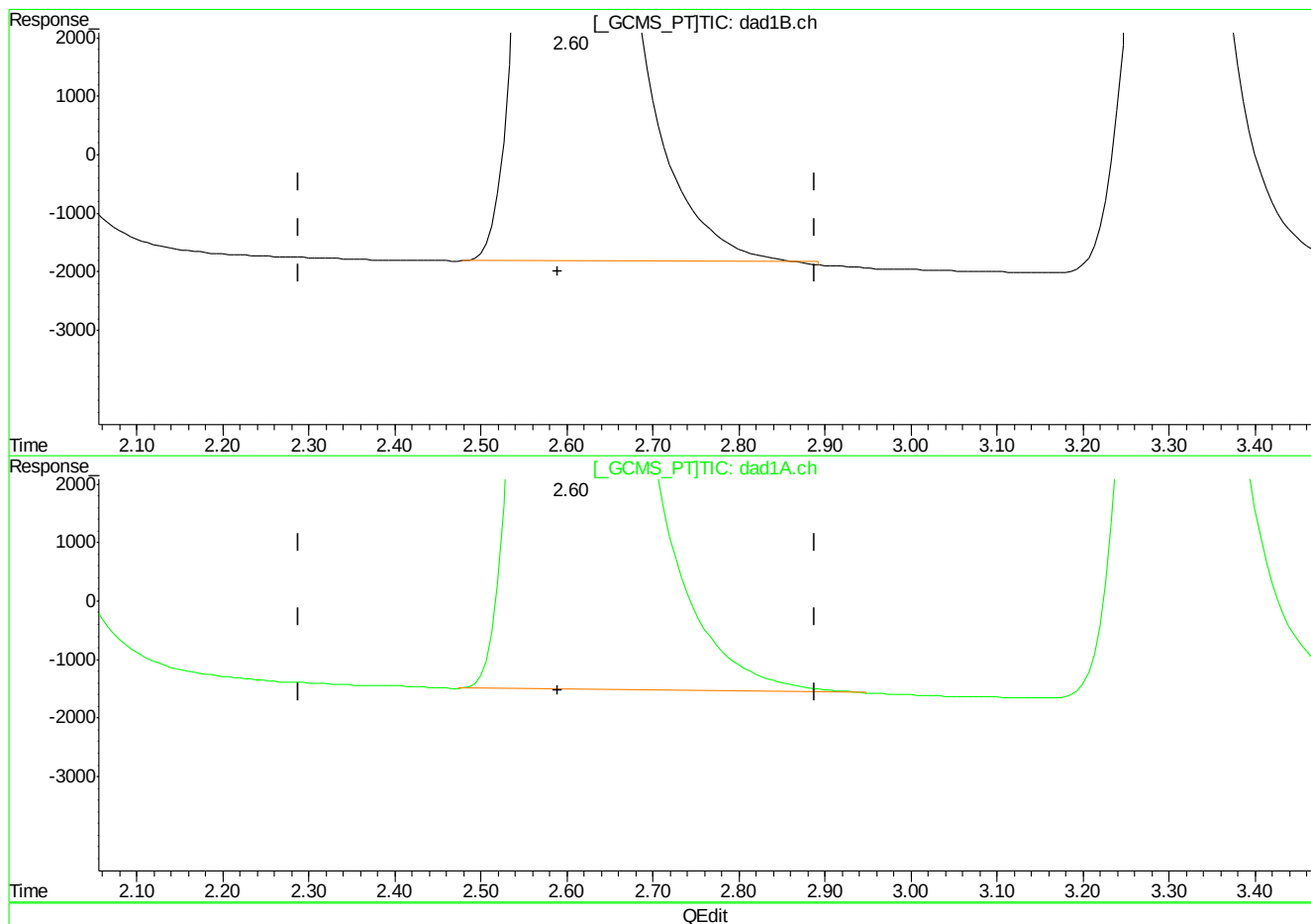
BB073633.D BBB2232_083122.M

Thu Sep 01 07:50:05 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:57 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(4) MNX

2.60min 512.330ppb m

response 1652648

(4) MNX #2

2.60min 515.329ppb m

response 2553728

(+) = Expected Retention Time

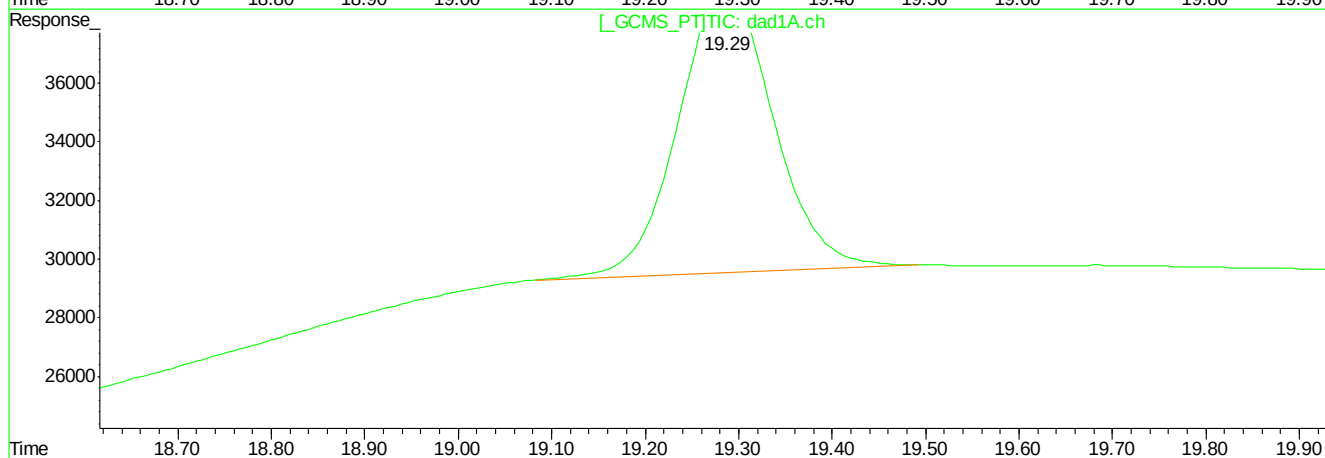
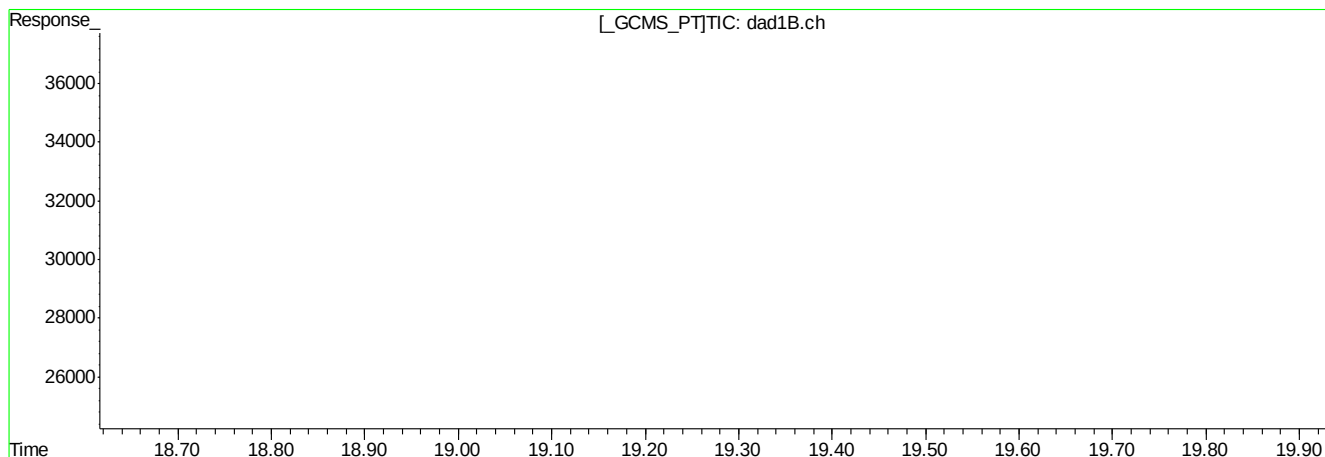
BB073633.D BBB2232_083122.M

Thu Sep 01 07:50:25 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073633.D\dad1A.ch
Acq On : 31-Aug-2022, 11:58:10 Operator: FOUADS
Sample : ic2232-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:50 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.29min 429.535ppb m

response 681847

(+) = Expected Retention Time

BB073633.D BBB2232_083122.M

Thu Sep 01 07:56:47 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
 Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
 Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
 Sample : icc2232-1000 Inst : G1315B
 Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Aug 31 13:54:12 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Aug 31 08:15:37 2022
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	12.84	12.84	2166318	4226446	879.902	908.627
Spiked Amount	500.000	Range	70 - 136	Recovery	=	175.98%# 181.73%#
Target Compounds						
1) TNX	1.46	1.46	1808438	2778604	447.507	452.297
2) HMX	1.65	1.65	1518605	4220641	811.985	824.262
3) DNX	1.90	1.90	3178687	5039002	894.276	901.414
4) MNX	2.59	2.59	3421780	5256224	1060.770	1060.680
5) RDX	3.30	3.30	1894875	2988890	855.643	838.361
6) 1,3,5-Trinitrobe	5.28	5.28	4034180	6364871	875.911	858.455
7) 1,3-Dinitrobenze	6.56	6.56	5317280	3706513	866.095	868.084
8) 3,5-Dinitroanili	7.03	7.03	4009314	6596851	879.532	854.050m
9) Nitrobenzene	8.30	8.30	3054276	3015166	1000.565	940.986
10) Nitroglycerin	0.00	10.13	0	1303660	N.D.	850.457 #
11) Tetryl	11.00	11.00	2870904	4618520	828.445	809.926
12) 2,4,6-Trinitroto	11.35	11.35	3719461	4458590	860.068	870.769
13) 2-Amino-4,6-Dini	11.85	11.85	3206018	4901177	851.326	860.671
14) 4-Amino-2,6-Dini	12.40	12.40	2331185	4902950	840.889	871.097
16) 2,4-Dinitrotolue	13.41	13.41	4654270	3077462	903.331	870.260
17) 2,6-Dinitrotolue	13.87	13.87	1462981	3502077	490.098m	877.313 #
18) o-Nitrotoluene	16.79	16.79	2168190	3343437	1050.502	968.839m
19) p-Nitrotoluene	17.25	17.25	3386010	2807957	1017.560	1036.690
20) m-Nitrotoluene	17.87	17.87	3130845	3738809	1030.302	1051.952
21) PETN	0.00	19.28	0	1396516	N.D.	879.746m#

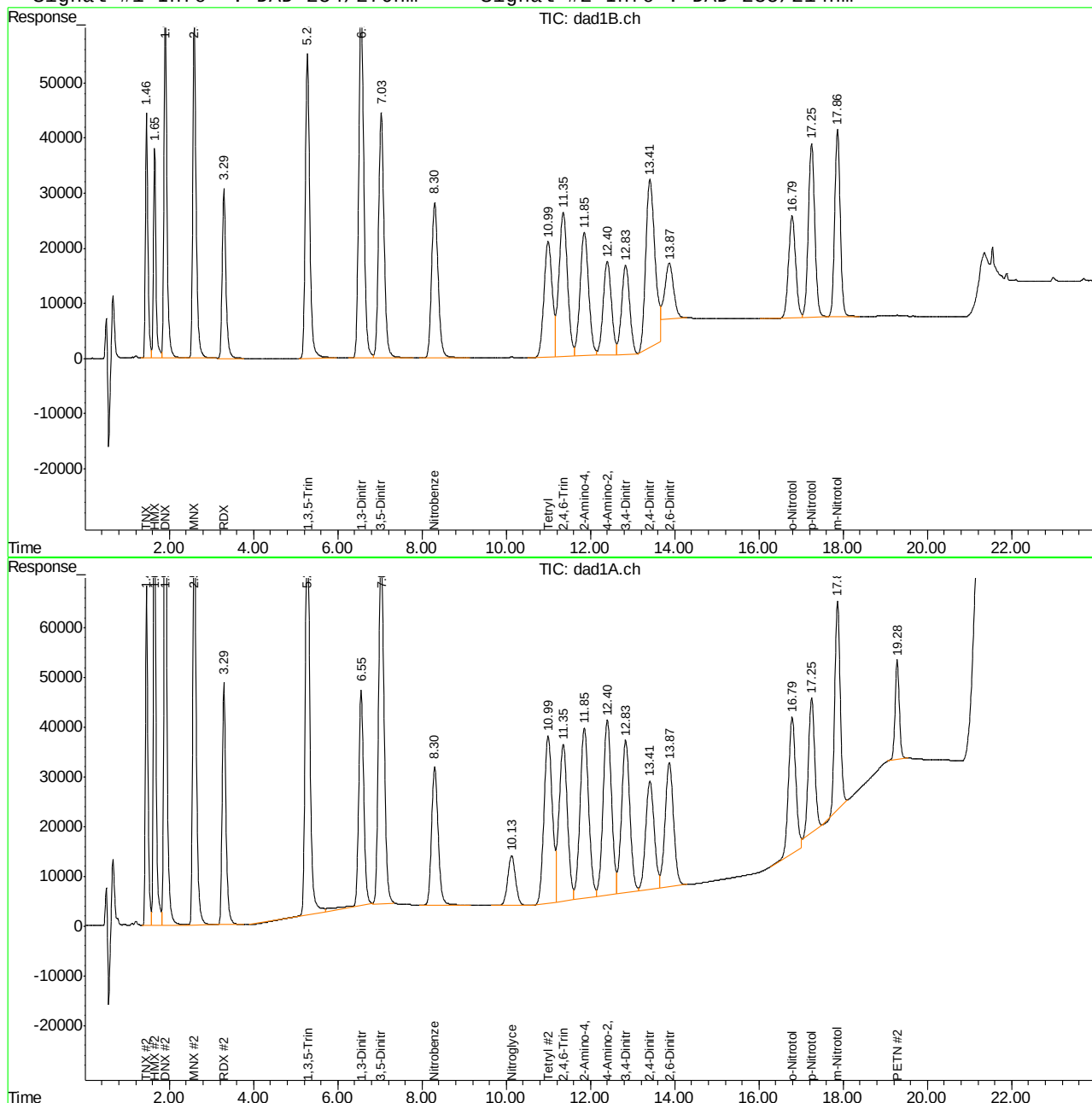
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB073634.D BBB2232_083122.M Thu Sep 01 14:19:32 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : icc2232-1000 Inst : G1315B
Misc : op92480, GBB2232, 1000,,, 10, 1, water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:57 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2232-ICC2232

Method:

SW846 8330A

Lab FileID:

BB073634.D

Analyst approved:

09/02/22 08:50 Fouad Sekkar

Injection Time:

08/31/22 12:29

Supervisor approved:

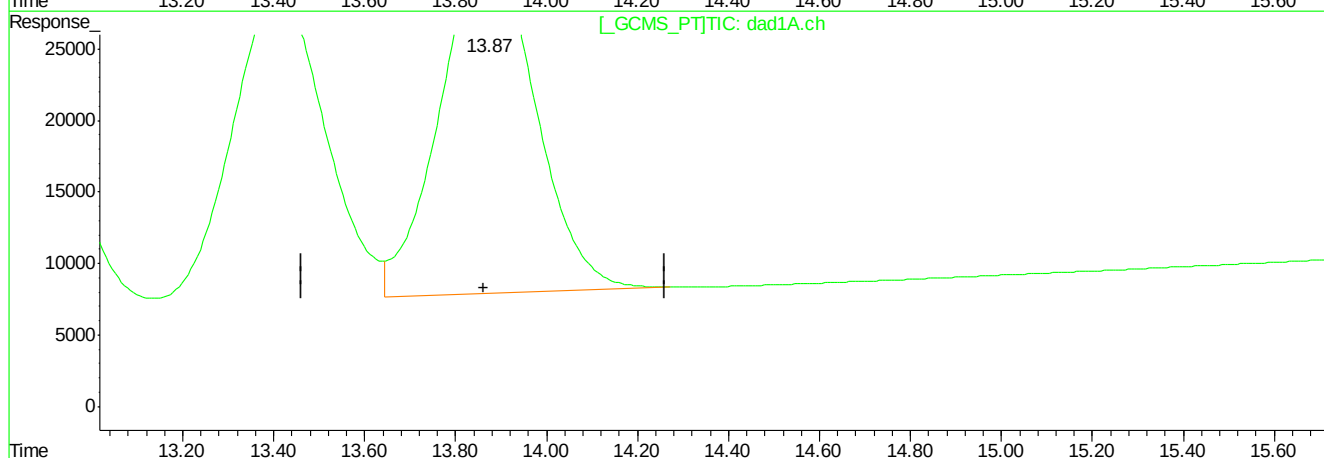
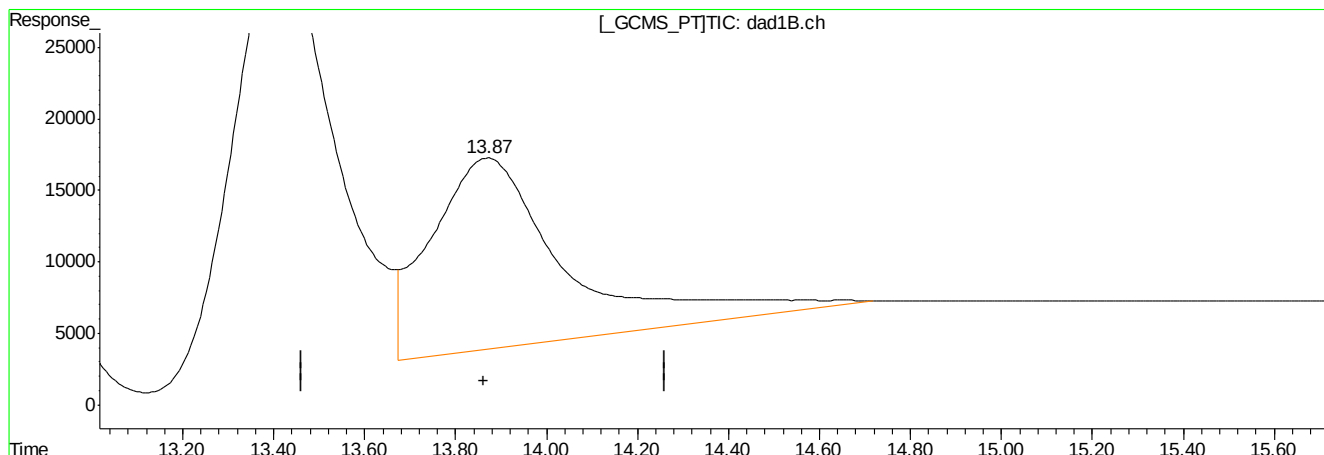
09/02/22 15:07 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	2	7.03	Missed peak
2,6-Dinitrotoluene	606-20-2	1	13.87	Missed peak
o-Nitrotoluene	88-72-2	2	16.79	Missed peak
PETN	78-11-5	2	19.28	Missed peak

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : ic2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.87min 924.004ppb

response 2758226

(17) 2,6-Dinitrotoluene #2

13.87min 877.313ppb

response 3502077

(+) = Expected Retention Time

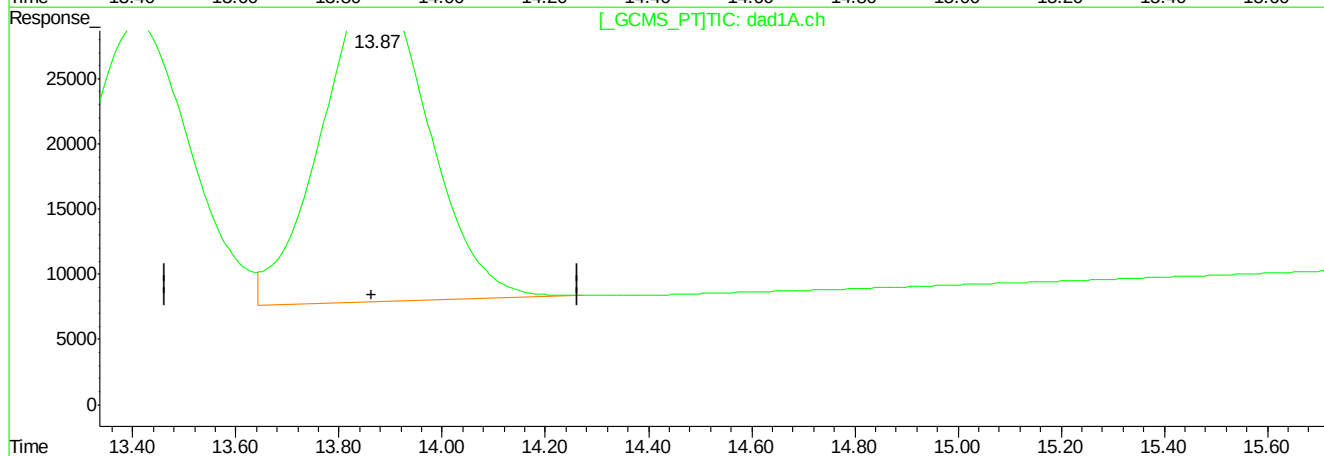
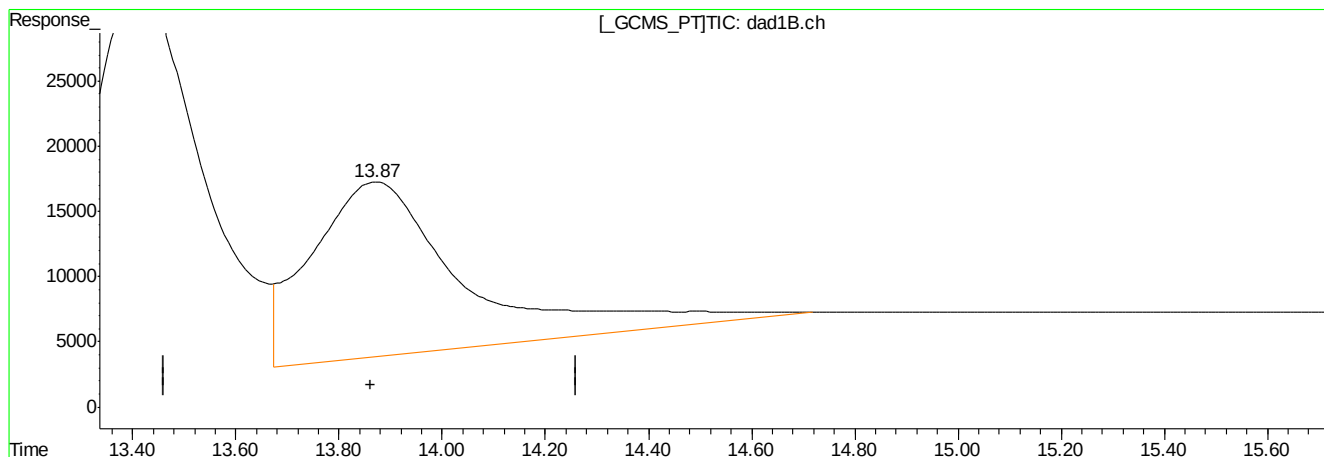
BB073634.D BBB2232_083122.M

Wed Aug 31 13:56:54 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : ic2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.87min 924.004ppb

response 2758226

(17) 2,6-Dinitrotoluene #2

13.87min 877.313ppb

response 3502077

(+) = Expected Retention Time

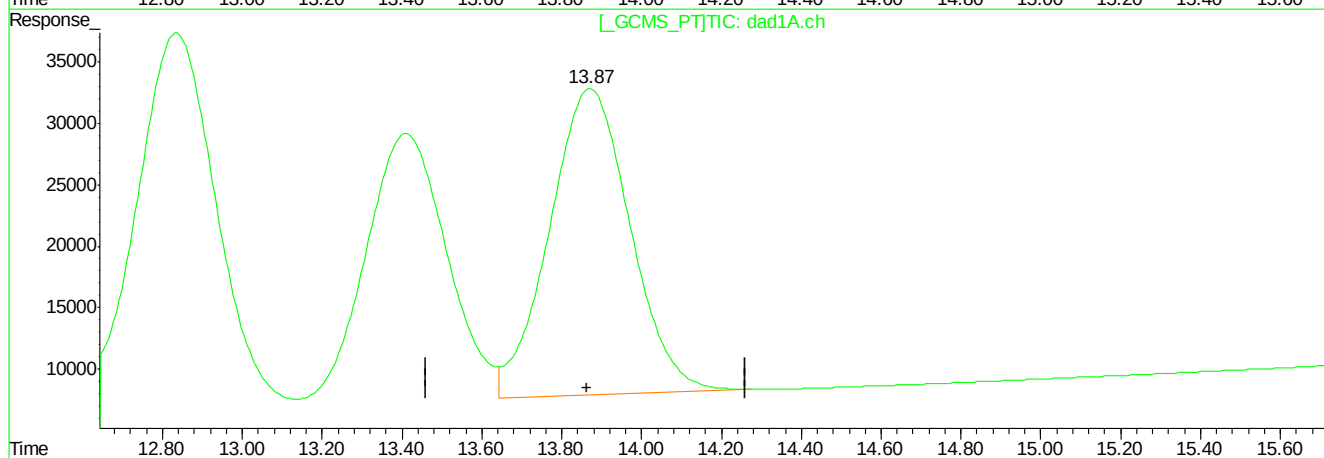
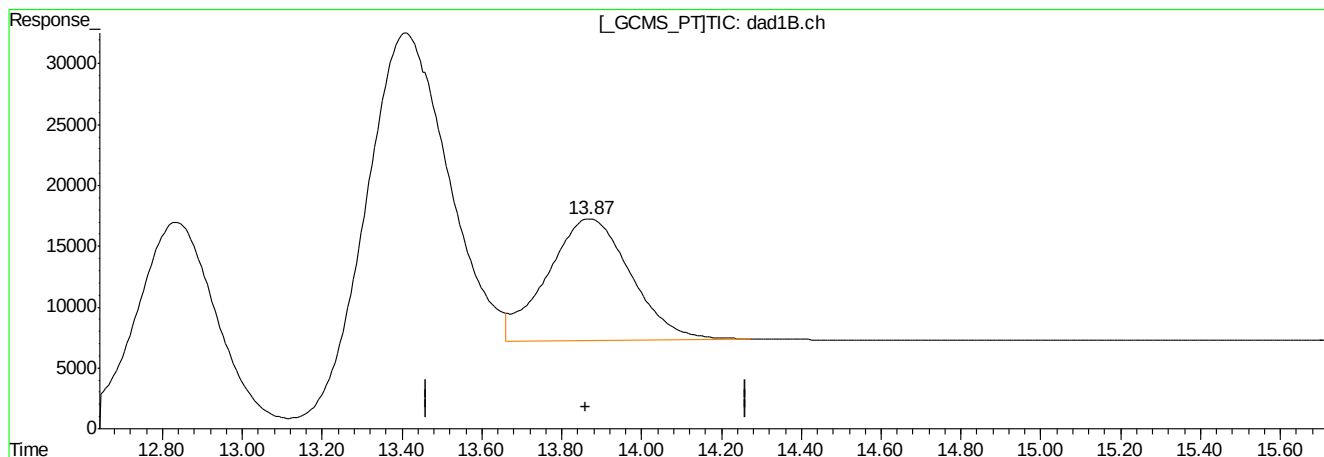
BB073634.D BBB2232_083122.M

Wed Aug 31 13:58:00 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : ic2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

13.87min 490.098ppb m

response 1462981

(17) 2,6-Dinitrotoluene #2

13.87min 877.313ppb

response 3502077

QEdit

(+) = Expected Retention Time

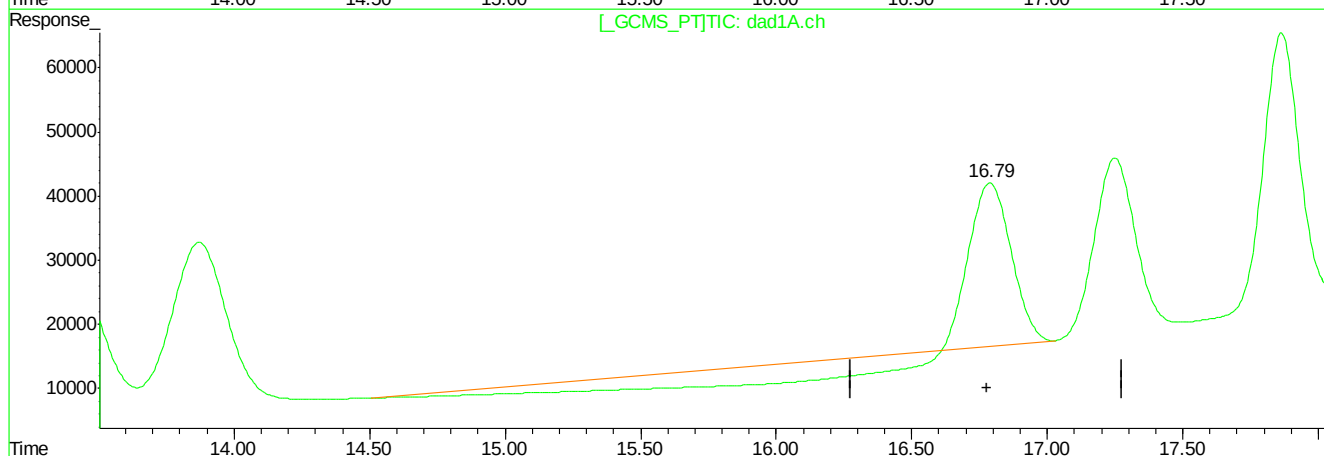
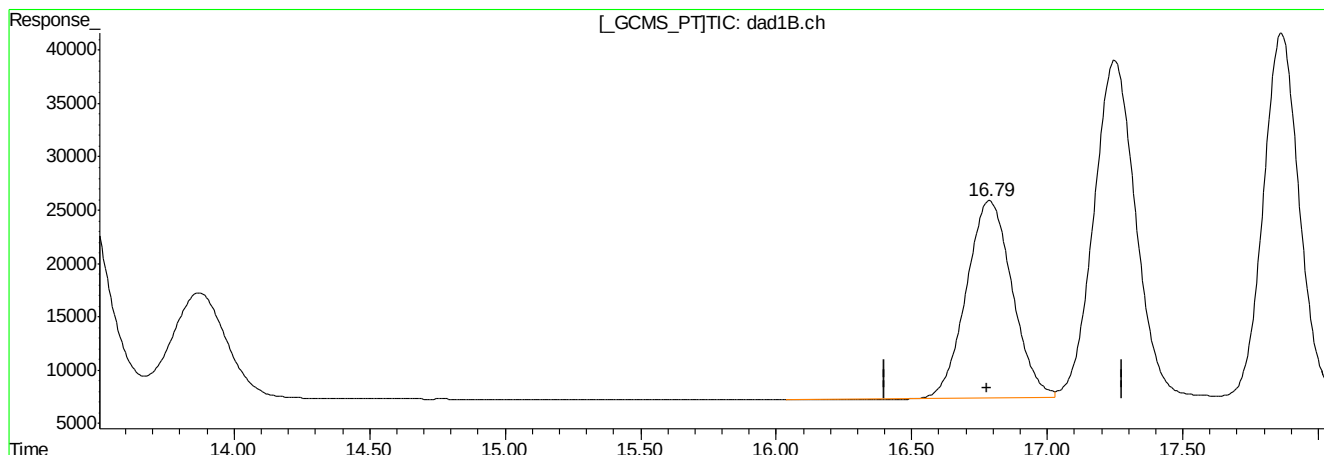
BB073634.D BBB2232_083122.M

Wed Aug 31 13:58:19 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : ic2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
16.79min 1050.502ppb
response 2168190

(18) o-Nitrotoluene #2
16.79min 109.154ppb
response 399950

(+) = Expected Retention Time

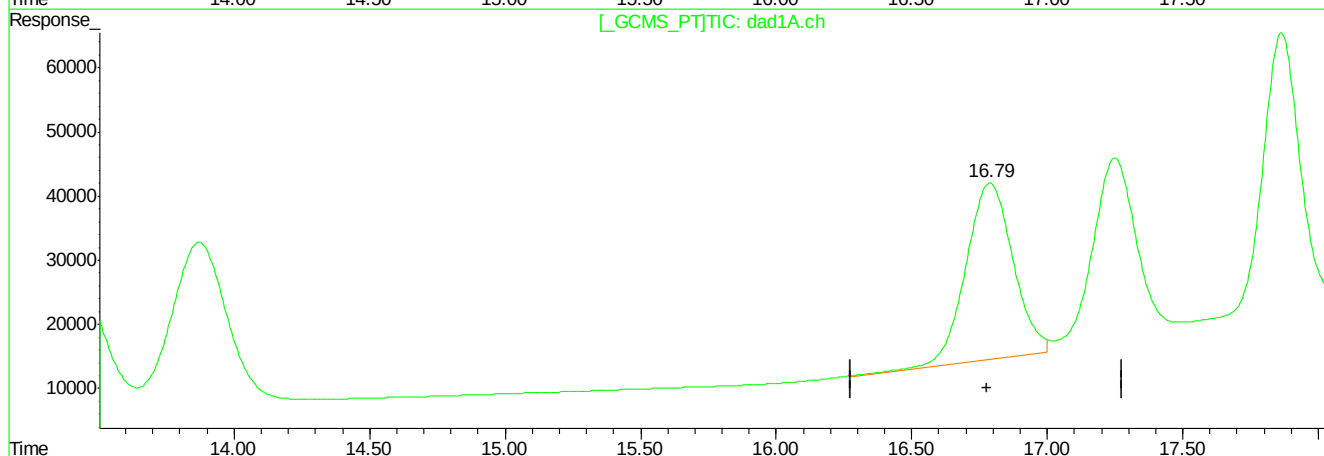
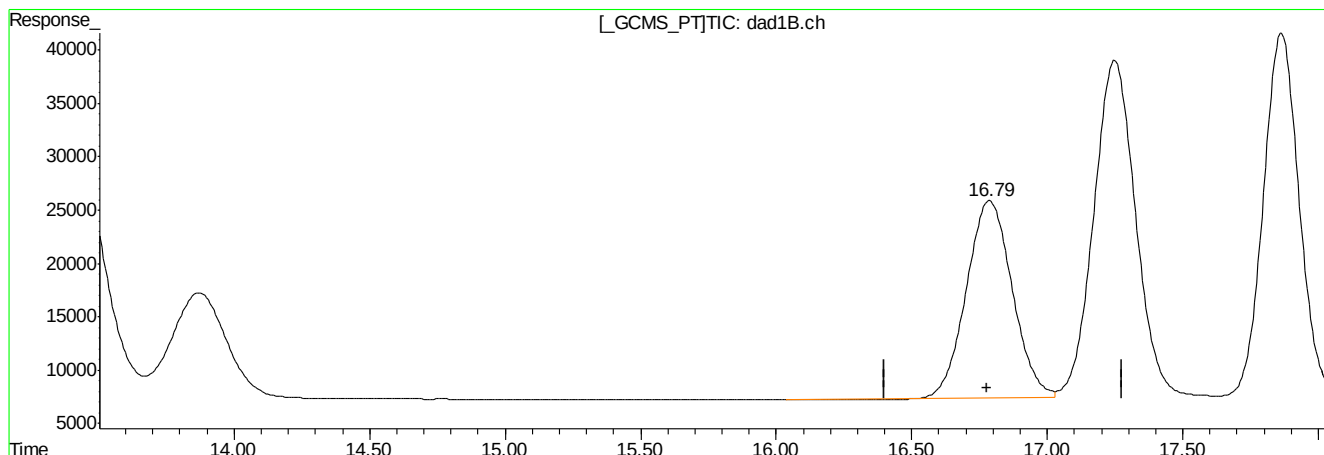
BB073634.D BBB2232_083122.M

Wed Aug 31 13:58:25 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : ic2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

16.79min 1050.502ppb

response 2168190

(18) o-Nitrotoluene #2

16.79min 968.839ppb m

response 3343437

(+) = Expected Retention Time

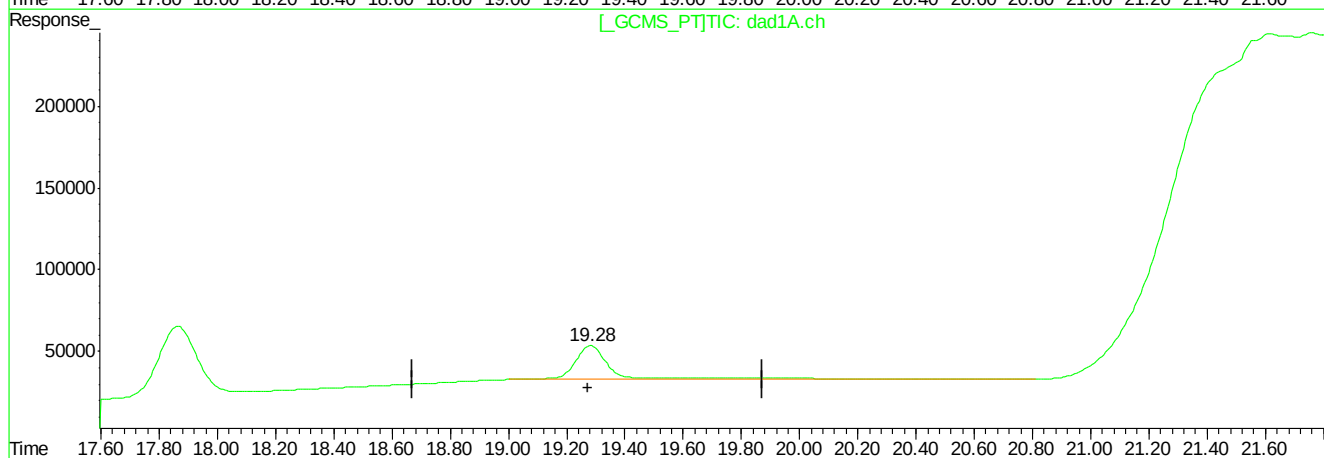
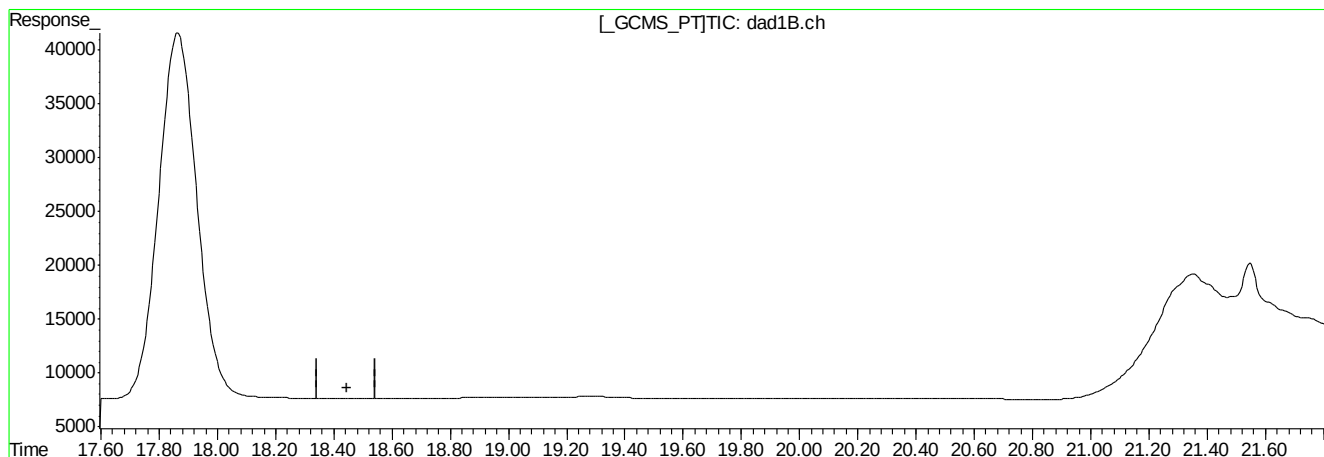
BB073634.D BBB2232_083122.M

Wed Aug 31 13:58:33 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : ic2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 1171.229ppb

response 1859219

(+) = Expected Retention Time

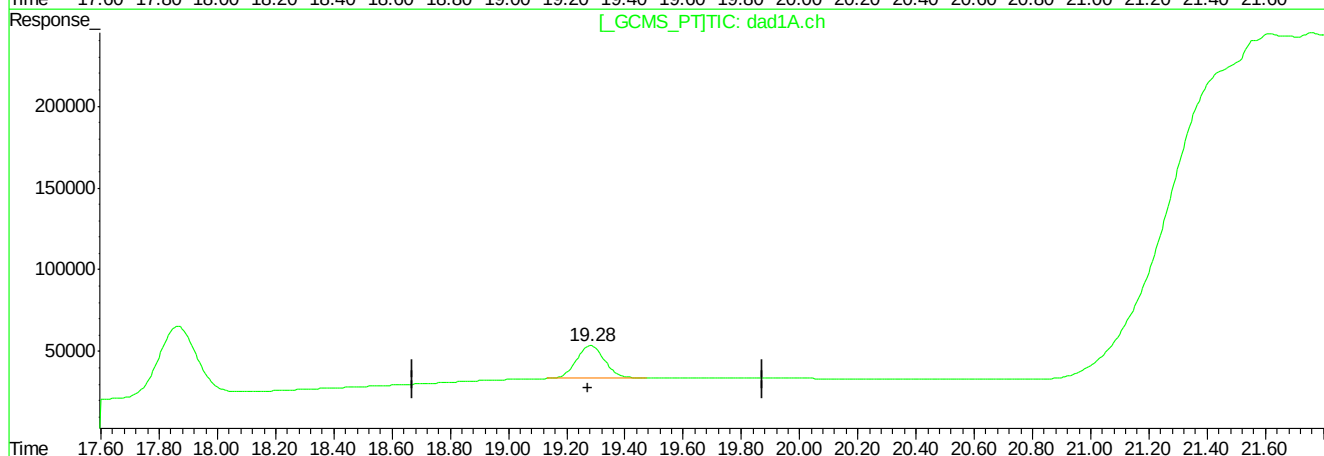
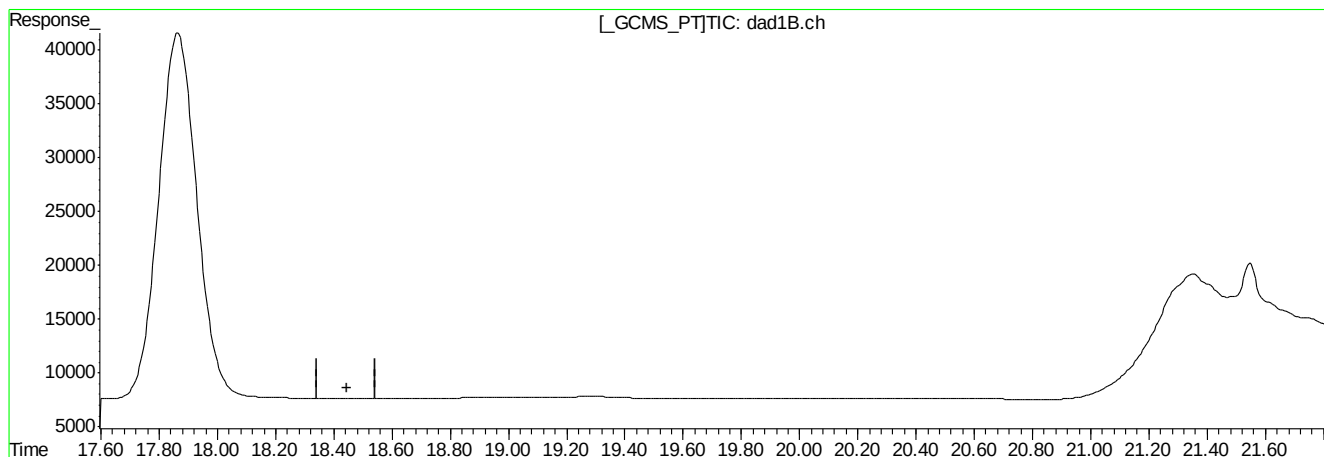
BB073634.D BBB2232_083122.M

Wed Aug 31 13:58:42 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : ic2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 851.141ppb m

response 1351108

(+) = Expected Retention Time

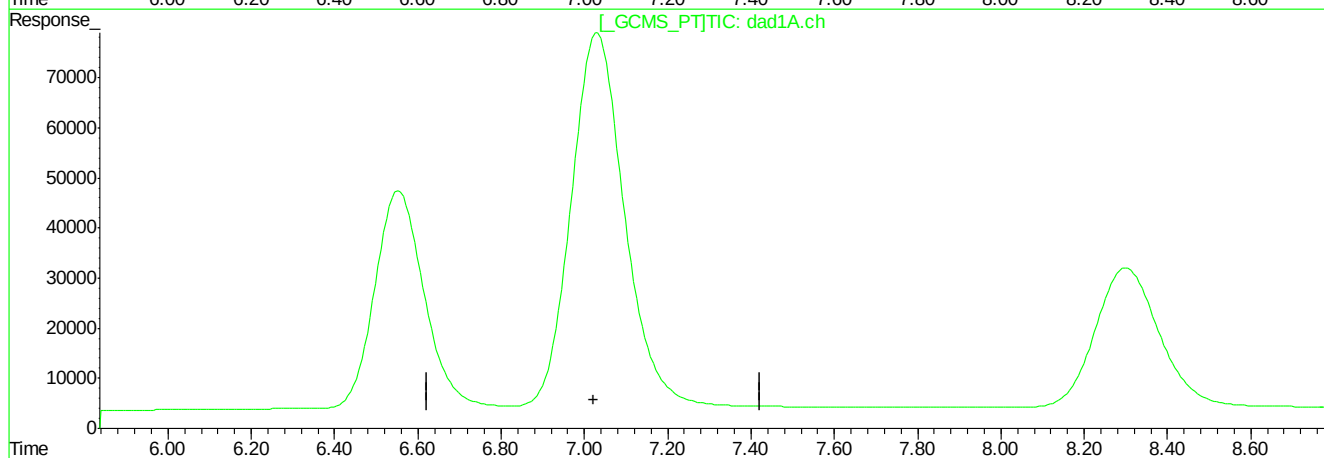
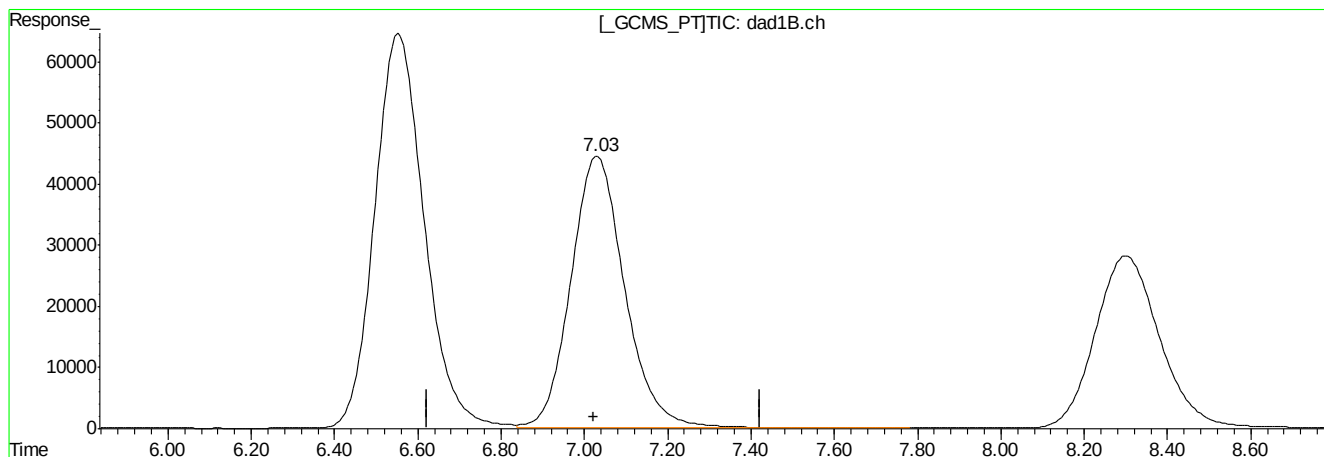
BB073634.D BBB2232_083122.M

Wed Aug 31 13:59:04 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : icc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:58 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:09:17 2022
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.03min 879.532ppb

response 4009314

(8) 3,5-Dinitroaniline #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

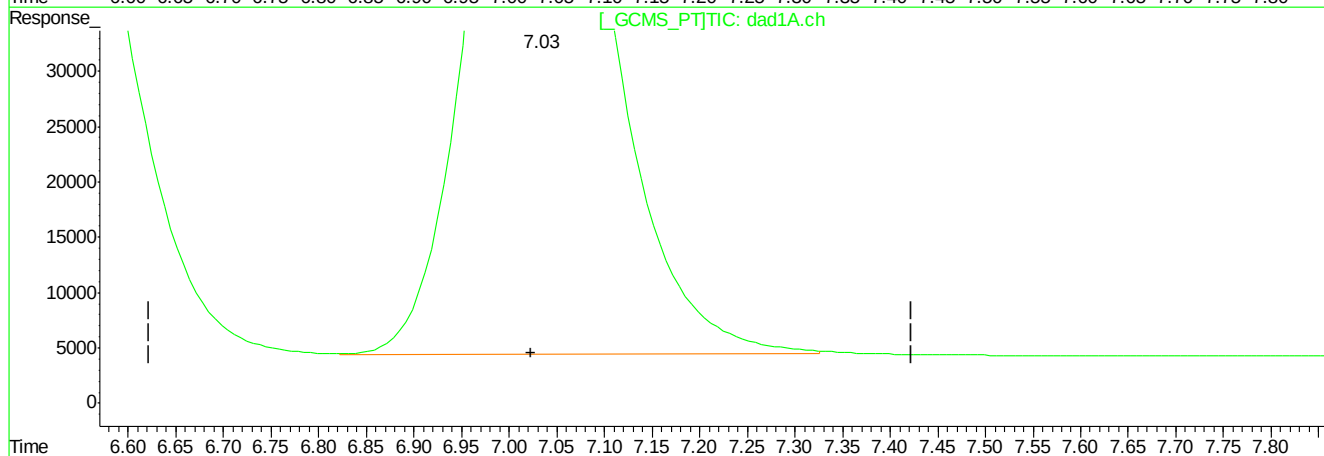
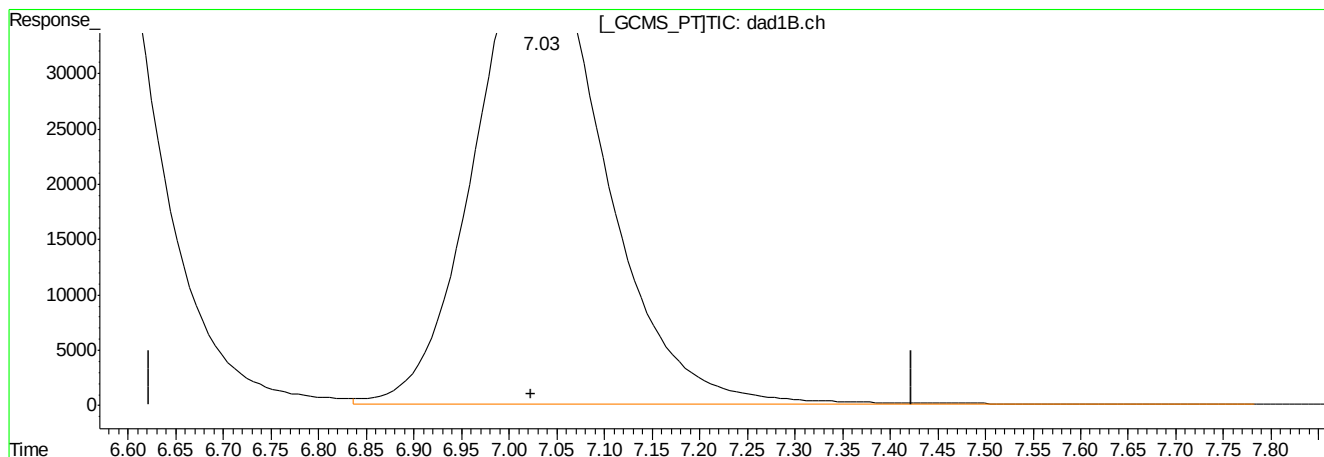
BB073634.D BBB2232_083122.M

Wed Aug 31 14:09:44 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : icc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:58 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:09:17 2022
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.03min 879.532ppb

response 4009314

(8) 3,5-Dinitroaniline #2

7.03min 854.050ppb m

response 6596851

QEdit

(+) = Expected Retention Time

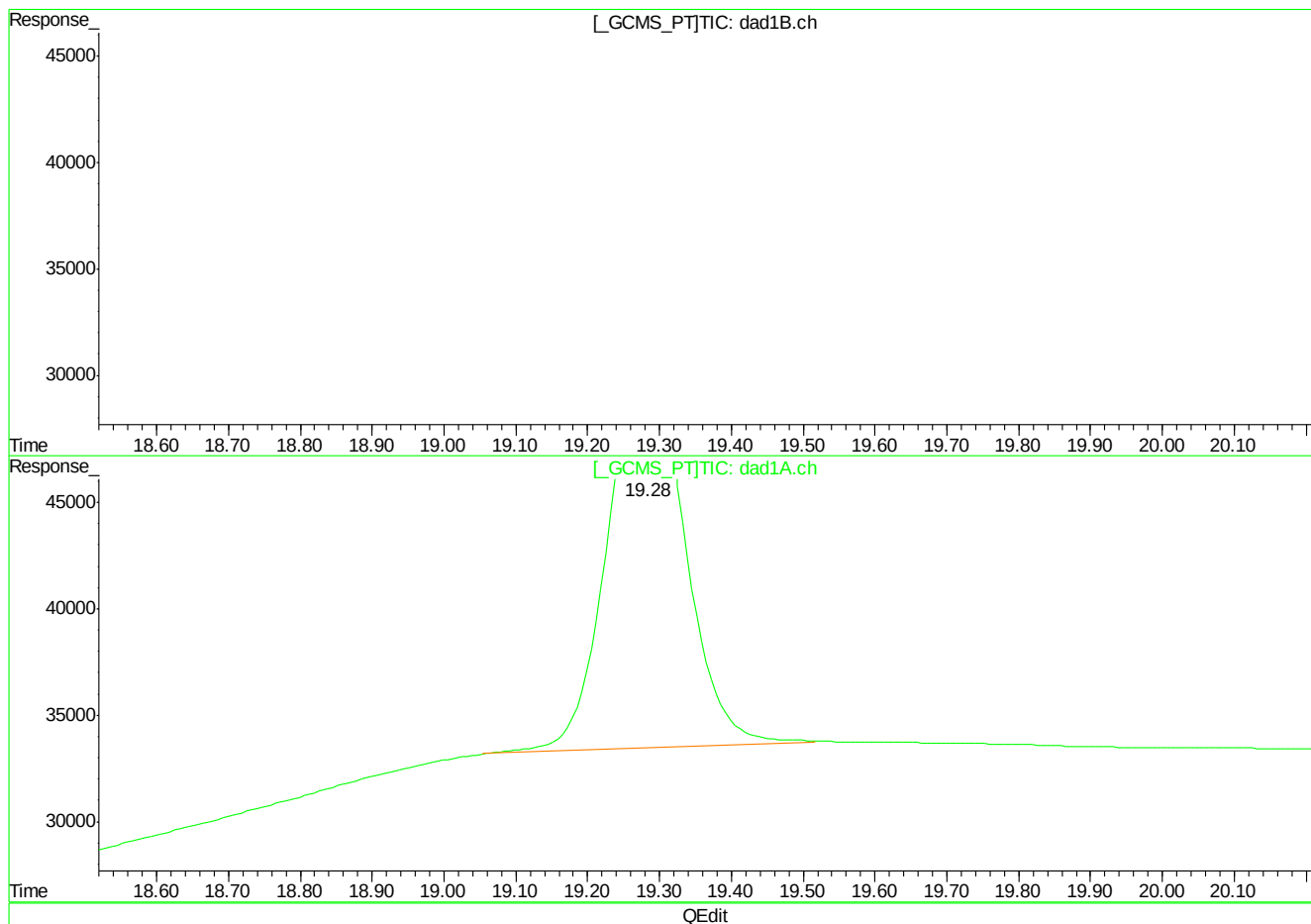
BB073634.D BBB2232_083122.M

Wed Aug 31 14:09:54 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073634.D\dad1A.ch
Acq On : 31-Aug-2022, 12:29:06 Operator: FOUADS
Sample : icc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:09 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 879.746ppb m

response 1396516

(+) = Expected Retention Time

BB073634.D BBB2232_083122.M

Thu Sep 01 07:57:07 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
 Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
 Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
 Sample : ic2232-2500 Inst : G1315B
 Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Aug 31 13:54:13 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Aug 31 08:15:37 2022
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	12.84	12.84	5309919	10517724	2156.752	2261.164
Spiked Amount	500.000	Range	70 - 136	Recovery	= 431.35%#	452.23%#
Target Compounds						
1) TNX	1.46	1.46	4409283	6800461	1091.100	1106.969
2) HMX	1.65	1.65	3701798	10238074	1979.319	1999.425
3) DNx	1.90	1.90	7635665	12124946	2148.179m	2169.001m
4) MNx	2.59	2.59	8325882	12736376	2581.069m	2570.136m
5) RDX	3.30	3.30	4616846	7287666	2084.766	2044.136
6) 1,3,5-Trinitrobe	5.28	5.28	9870127	15550253	2143.026	2097.322
7) 1,3-Dinitrobenze	6.55	6.55	12957736	8630306	2110.595	2021.262
8) 3,5-Dinitroanili	7.03	7.03	9791506	16213870	2147.984	2099.101m
9) Nitrobenzene	8.30	8.30	7495861	7387674	2455.605	2305.577
10) Nitroglycerin	0.00	10.13	0	3154953	N.D. d	2058.168
11) Tetryl	11.00	11.00	7016057	11406481	2024.595	2000.297
12) 2,4,6-Trinitroto	11.36	11.36	9085999	11078795	2100.996	2163.704
13) 2-Amino-4,6-Dini	11.85	11.85	7845053	12214514	2083.176	2144.931
14) 4-Amino-2,6-Dini	12.40	12.40	5701607	12175181	2056.644	2163.138
16) 2,4-Dinitrotolue	13.41	13.41	11467609	7701445	2225.707	2177.854
17) 2,6-Dinitrotolue	13.87	13.88	3622774	8686078	1213.627m	2175.970 #
18) o-Nitrotoluene	16.79	16.79	5377433	7749343	2605.401	2529.003m
19) p-Nitrotoluene	17.25	17.25	8334265	6946475	2504.604	2564.620
20) m-Nitrotoluene	17.86	17.86	7742523	9364646	2547.919	2634.838
21) PETN	0.00	19.28	0	3347273	N.D.	2108.640m#

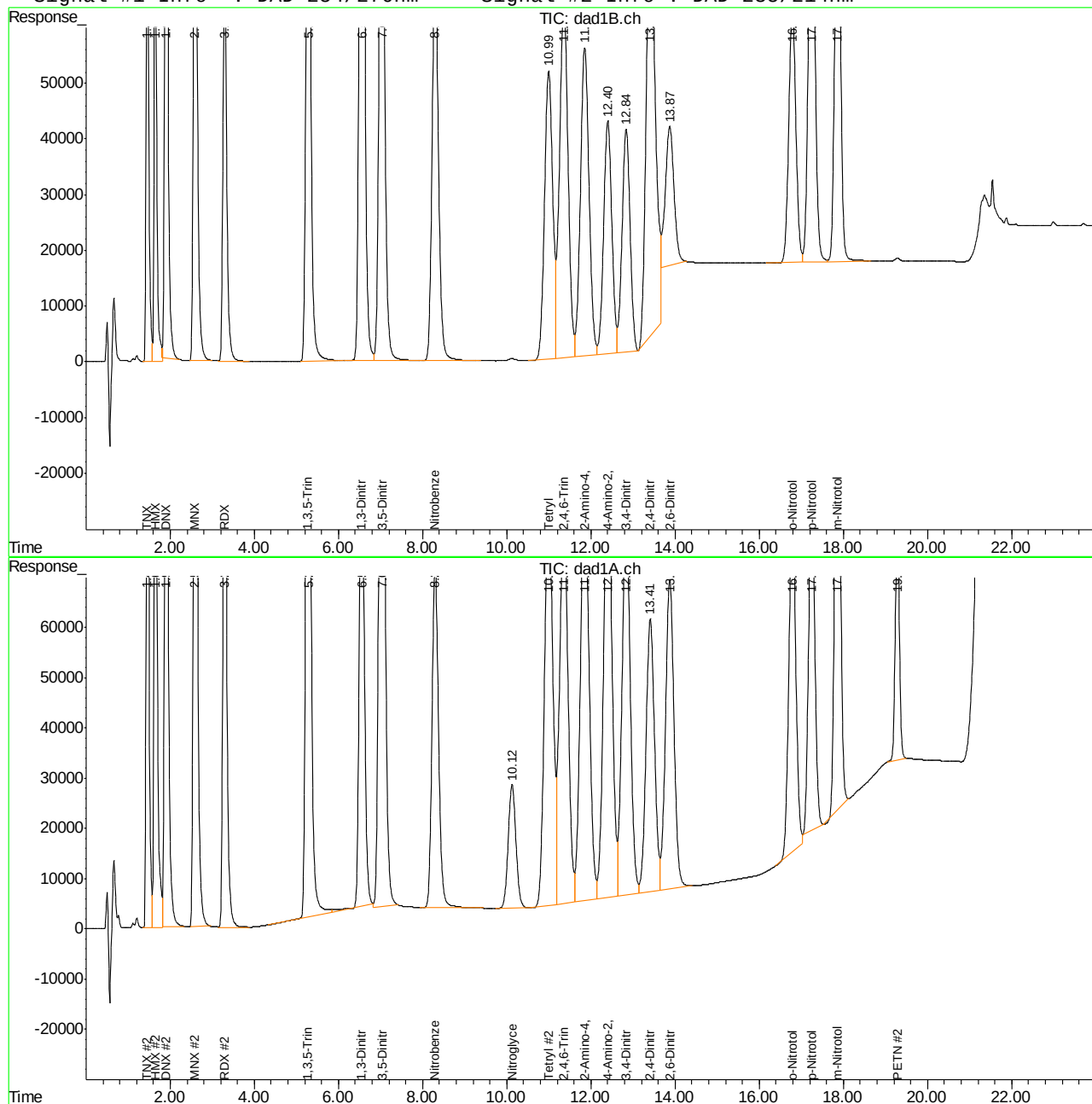
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB073635.D BBB2232_083122.M Thu Sep 01 14:19:33 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 8:02 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: GBB2232-IC2232

Method: SW846 8330A

Lab FileID: BB073635.D

Analyst approved: 09/02/22 08:50 Fouad Sekkar

Injection Time: 08/31/22 13:00

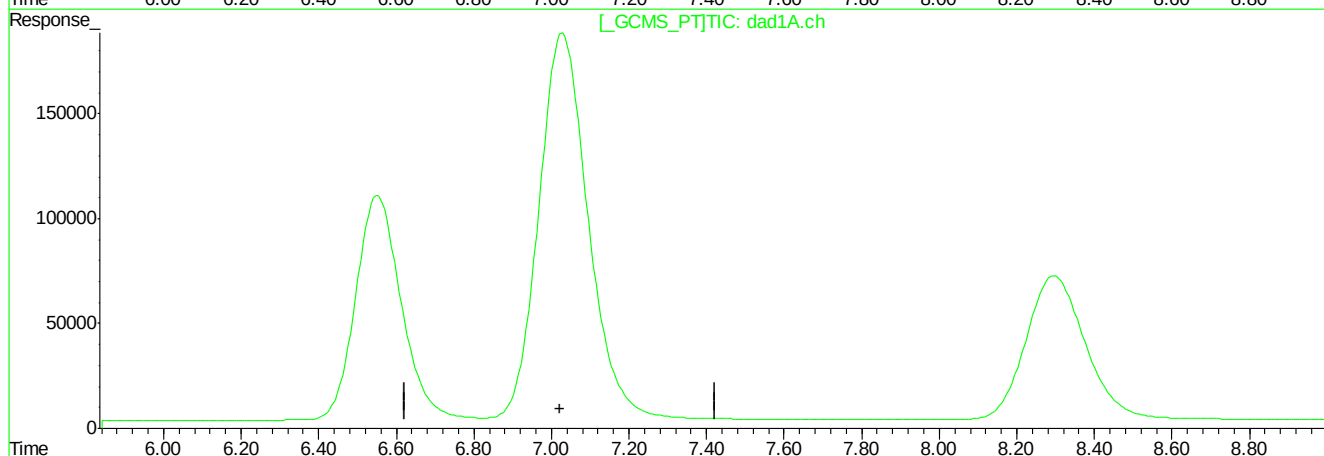
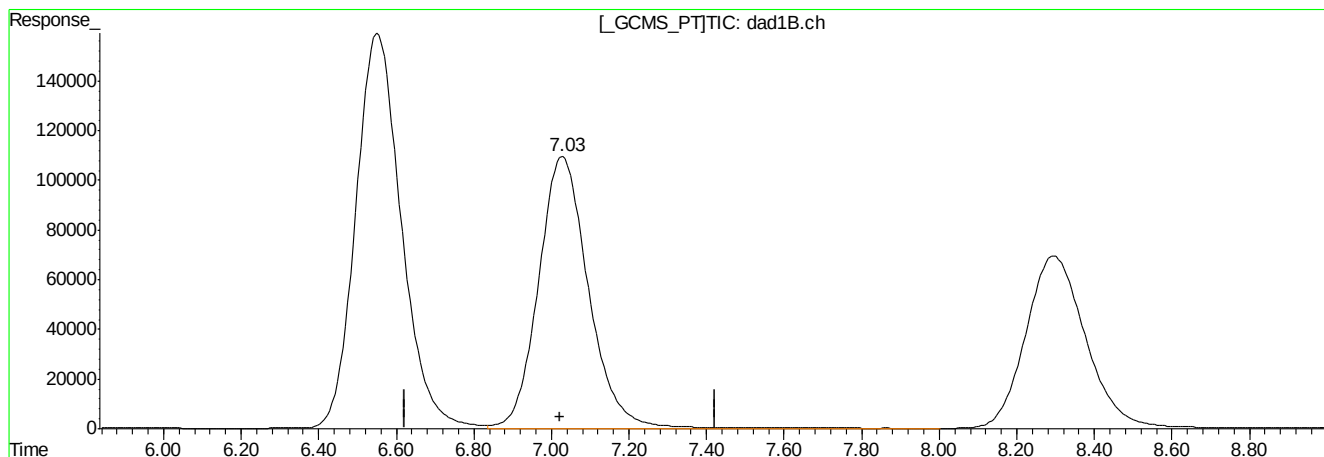
Supervisor approved: 09/02/22 15:07 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
DNX		1	1.90	Poor instrument integration
DNX		2	1.90	Poor instrument integration
MNX		1	2.59	Poor instrument integration
MNX		2	2.59	Poor instrument integration
3,5-Dinitroaniline	618-87-1	2	7.03	Poor instrument integration
2,6-Dinitrotoluene	606-20-2	1	13.87	Poor instrument integration
o-Nitrotoluene	88-72-2	2	16.79	Poor instrument integration
PETN	78-11-5	2	19.28	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline
7.03min 2147.984ppb
response 9791506

(8) 3,5-Dinitroaniline #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

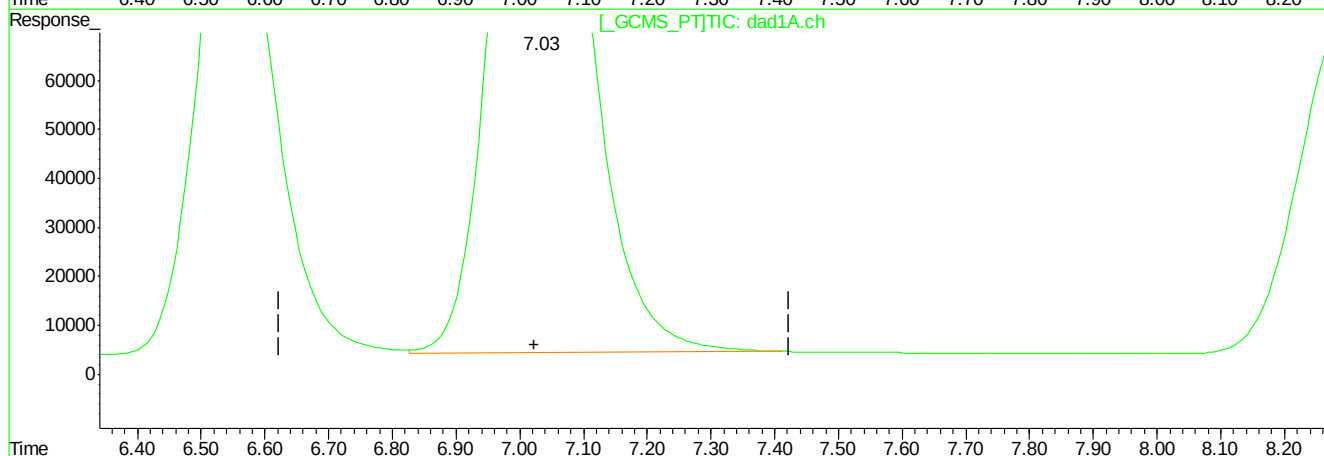
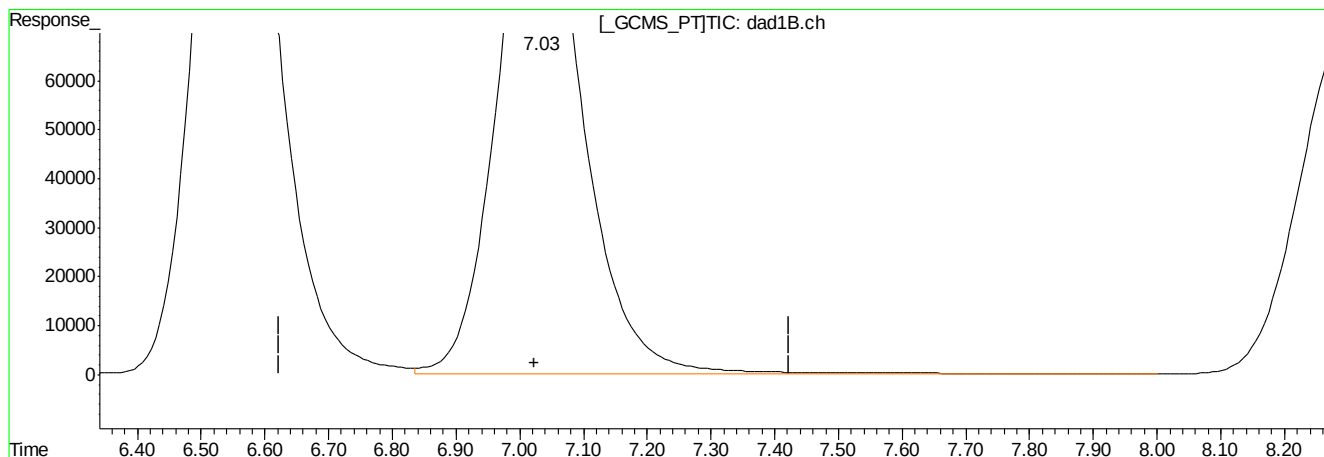
BB073635.D BBB2232_083122.M

Wed Aug 31 14:02:21 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.03min 2147.984ppb

response 9791506

(8) 3,5-Dinitroaniline #2

7.03min 2099.101ppb m

response 16213870

(+) = Expected Retention Time

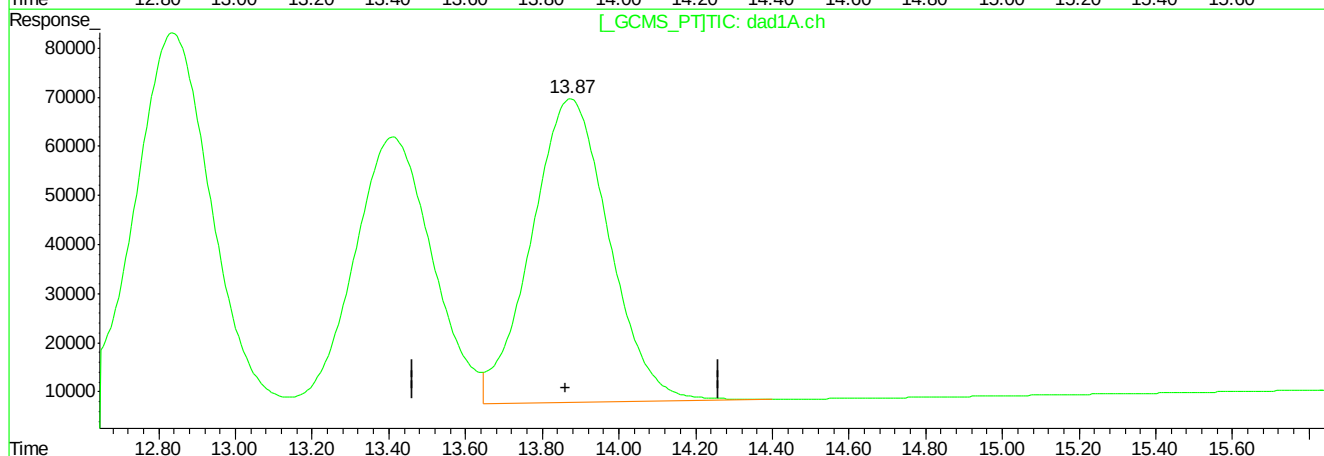
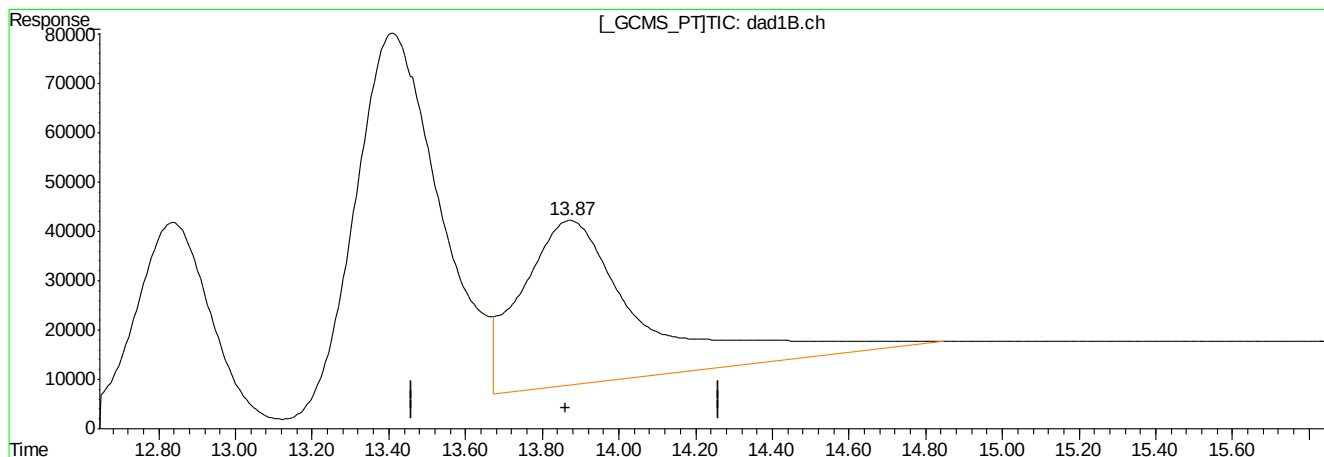
BB073635.D BBB2232_083122.M

Wed Aug 31 14:02:31 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

13.87min 2447.368ppb

response 7305590

(17) 2,6-Dinitrotoluene #2

13.88min 2175.970ppb

response 8686078

QEdit

(+) = Expected Retention Time

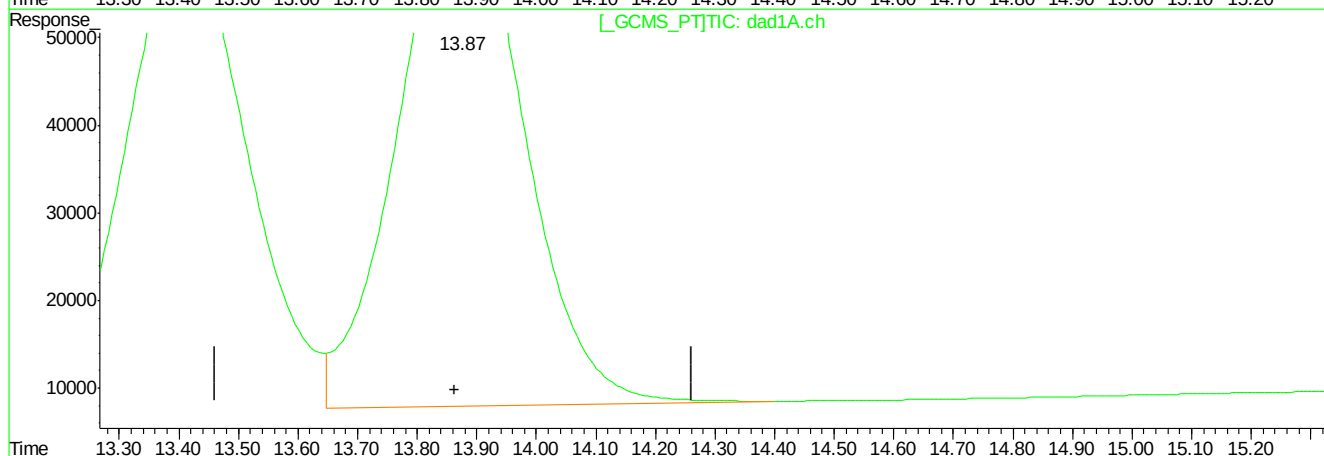
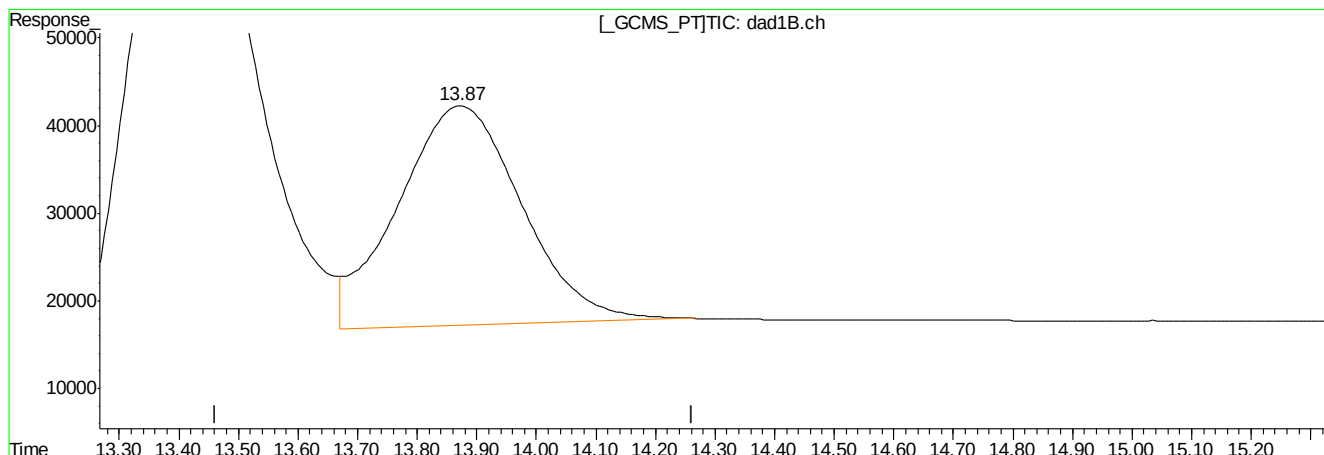
BB073635.D BBB2232_083122.M

Wed Aug 31 14:02:42 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene
13.87min 1213.627ppb m
response 3622774

(17) 2,6-Dinitrotoluene #2
13.88min 2175.970ppb
response 8686078

(+) = Expected Retention Time

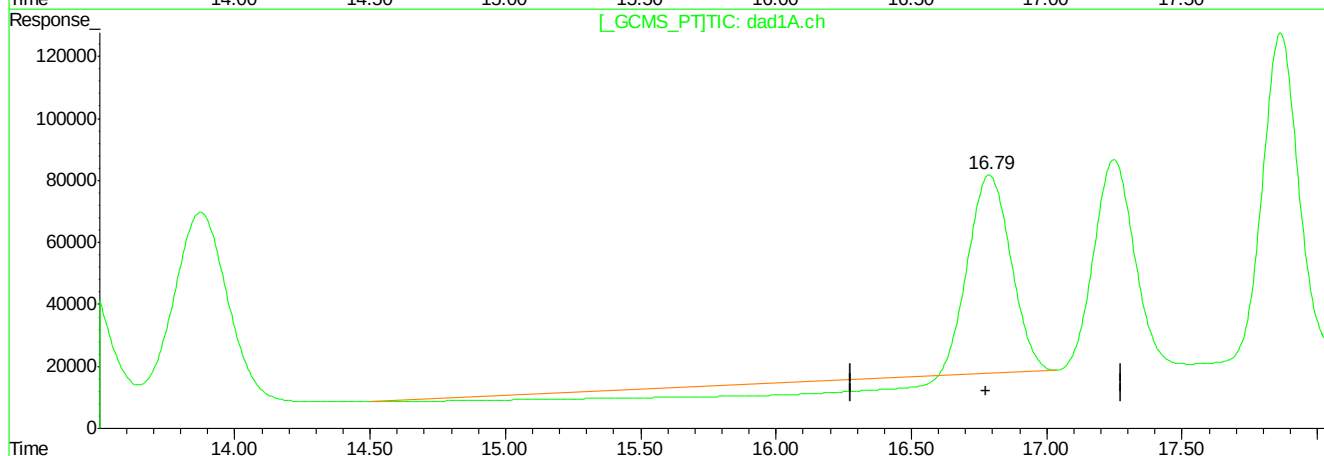
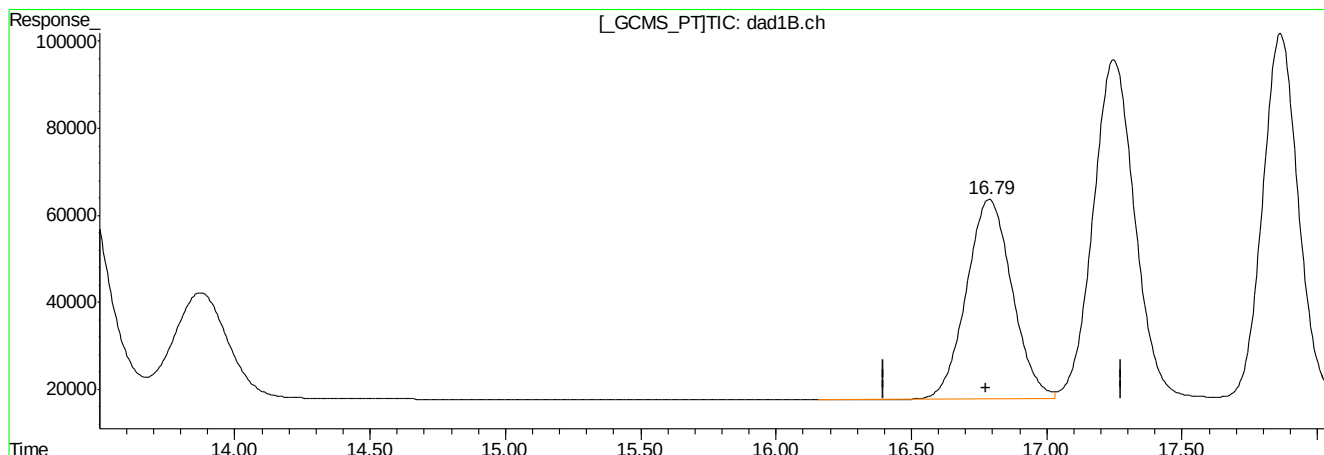
BB073635.D BBB2232_083122.M

Wed Aug 31 14:02:51 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(18) o-Nitrotoluene
16.79min 2605.401ppb
response 5377433

(18) o-Nitrotoluene #2
16.79min 1202.241ppb
response 4079336

(+) = Expected Retention Time

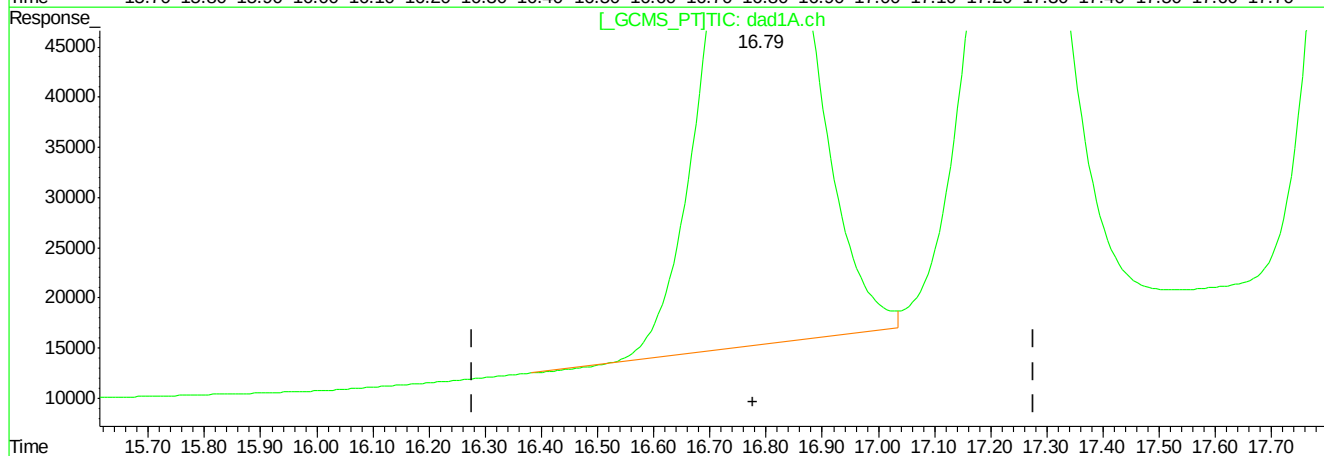
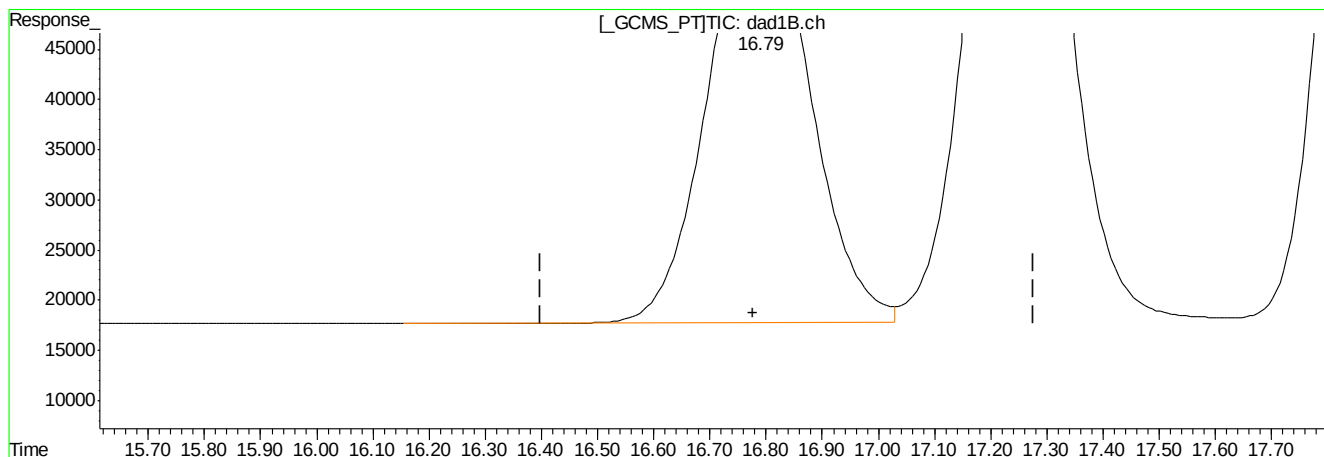
BB073635.D BBB2232_083122.M

Wed Aug 31 14:02:56 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(18) o-Nitrotoluene

16.79min 2605.401ppb

response 5377433

(18) o-Nitrotoluene #2

16.79min 2529.003ppb m

response 7749343

(+) = Expected Retention Time

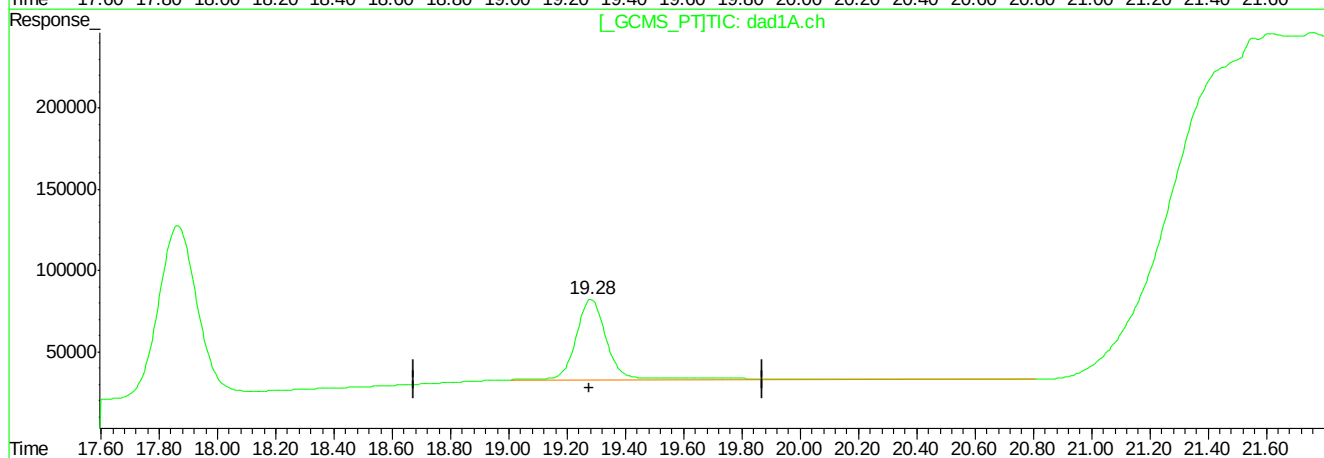
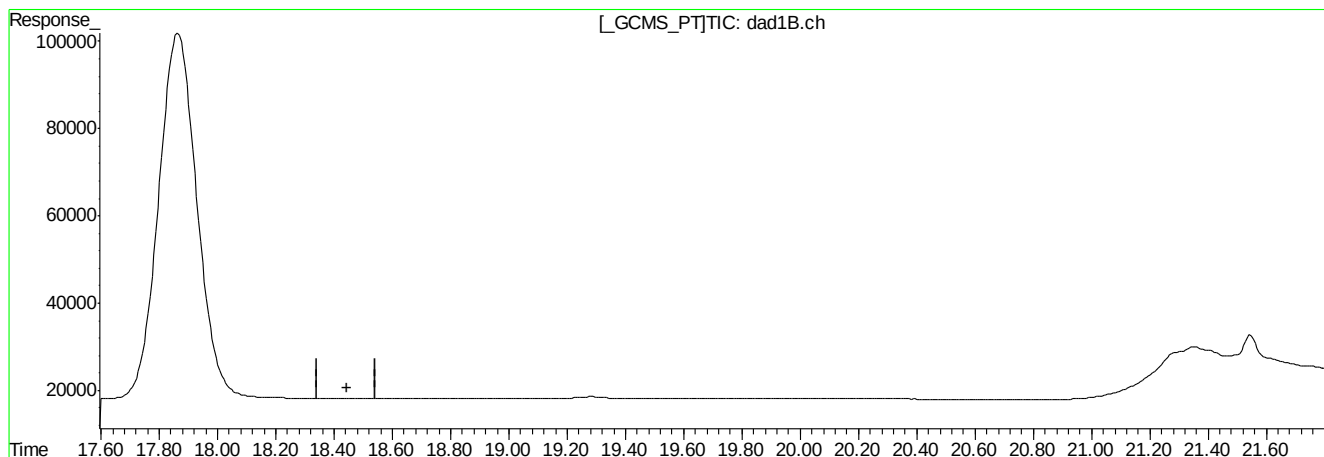
BB073635.D BBB2232_083122.M

Wed Aug 31 14:03:21 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 2385.592ppb

response 3786909

(+) = Expected Retention Time

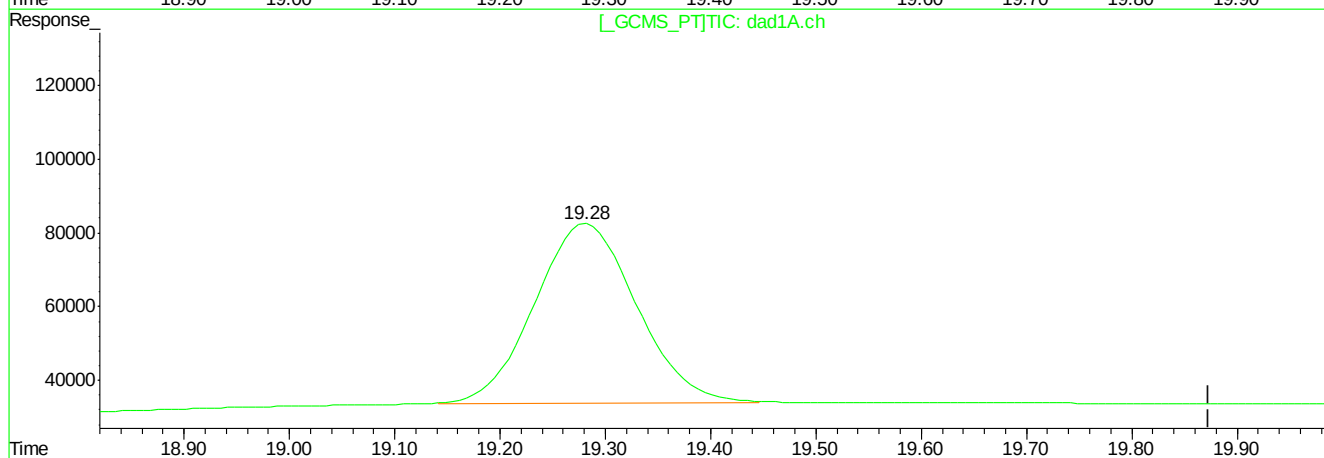
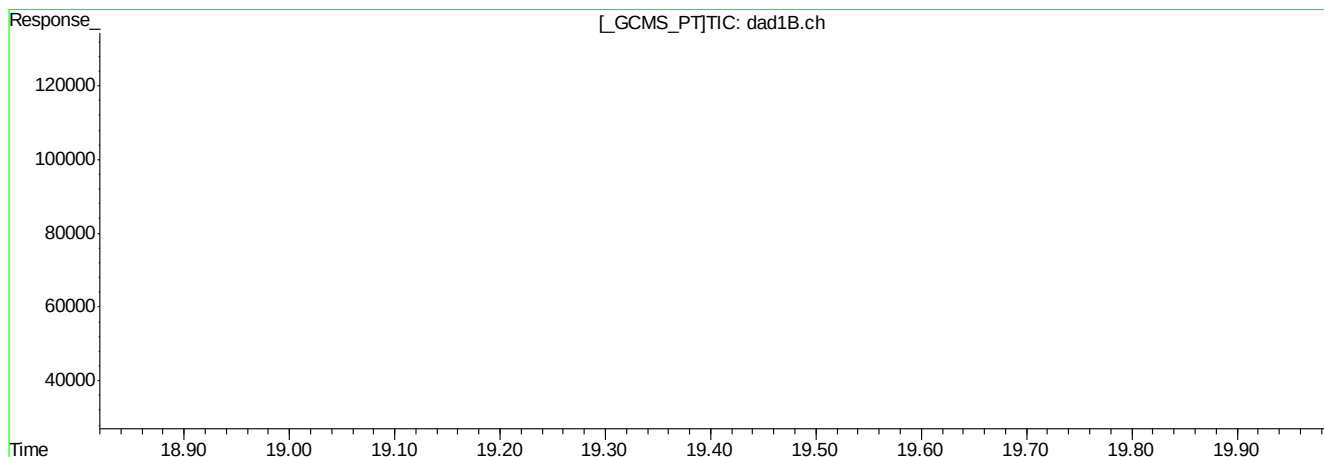
BB073635.D BBB2232_083122.M

Wed Aug 31 14:03:38 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 13:54 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 2068.162ppb m

response 3283018

(+) = Expected Retention Time

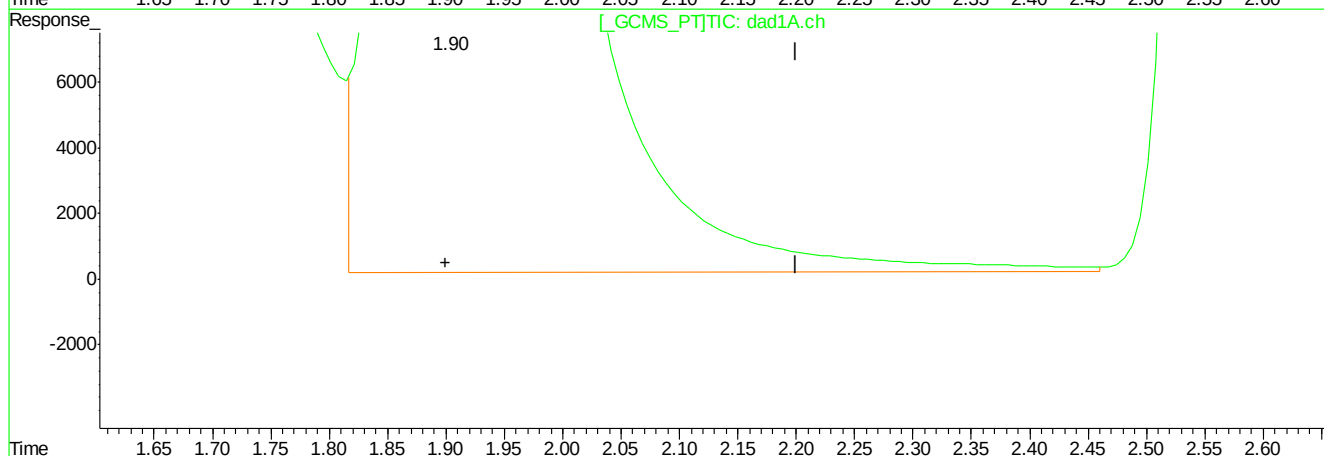
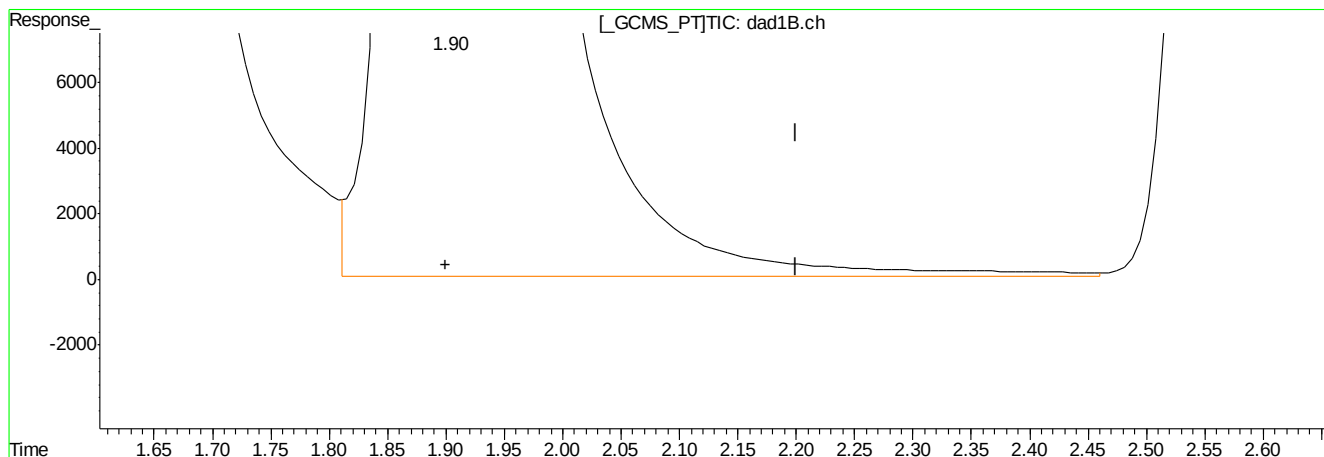
BB073635.D BBB2232_083122.M

Wed Aug 31 14:03:54 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:03 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



QEdit

(3) DNX

1.90min 2188.428ppb

response 7778728

(3) DNX #2

1.90min 2186.249ppb

response 12221360

(+) = Expected Retention Time

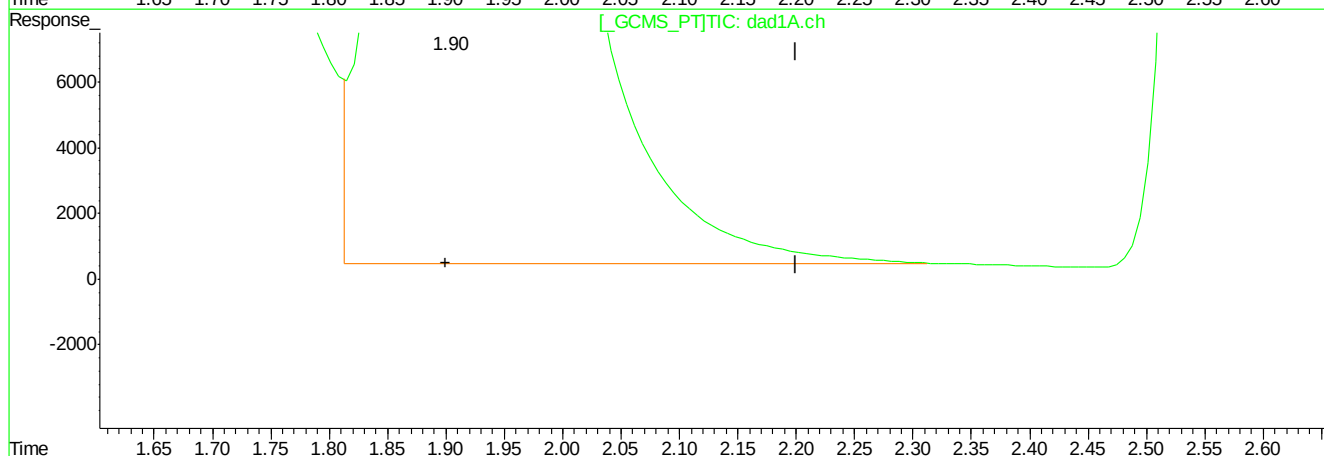
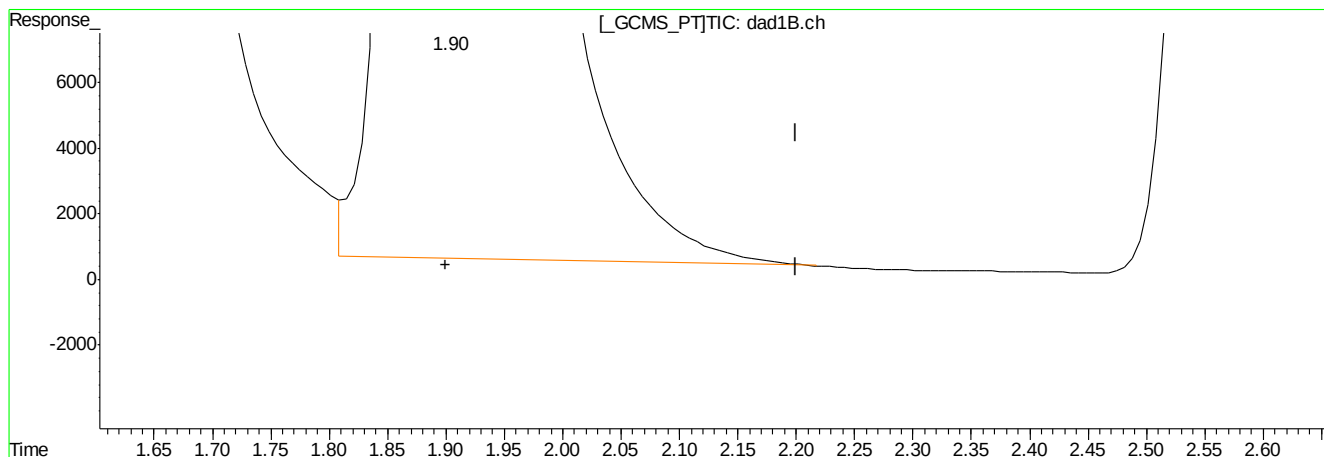
BB073635.D BBB2232_083122.M

Thu Sep 01 07:51:29 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:03 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(3) DNX

1.90min 2148.179ppb m

response 7635665

(3) DNX #2

1.90min 2169.001ppb m

response 12124946

(+) = Expected Retention Time

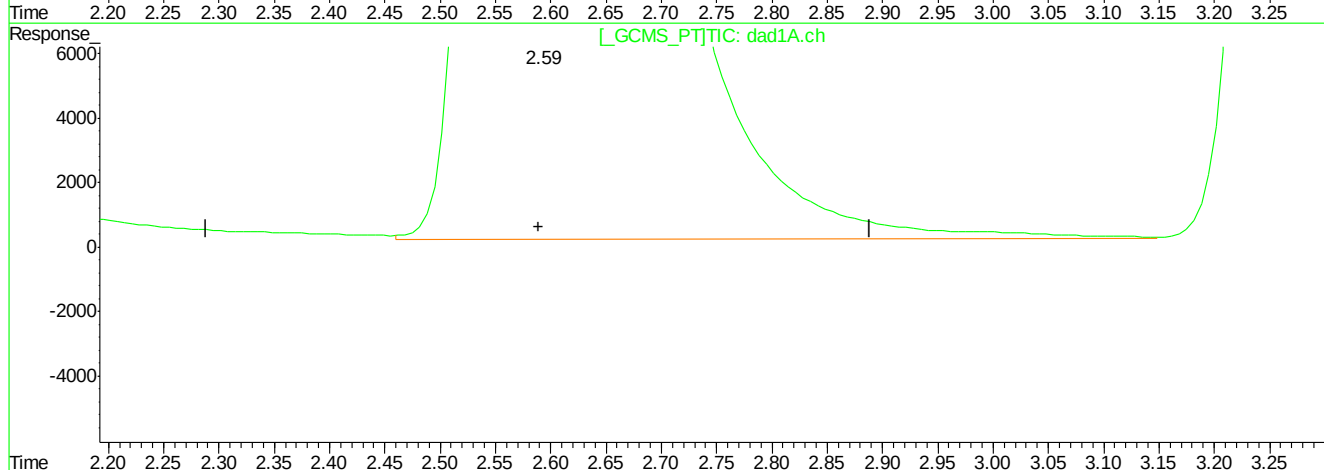
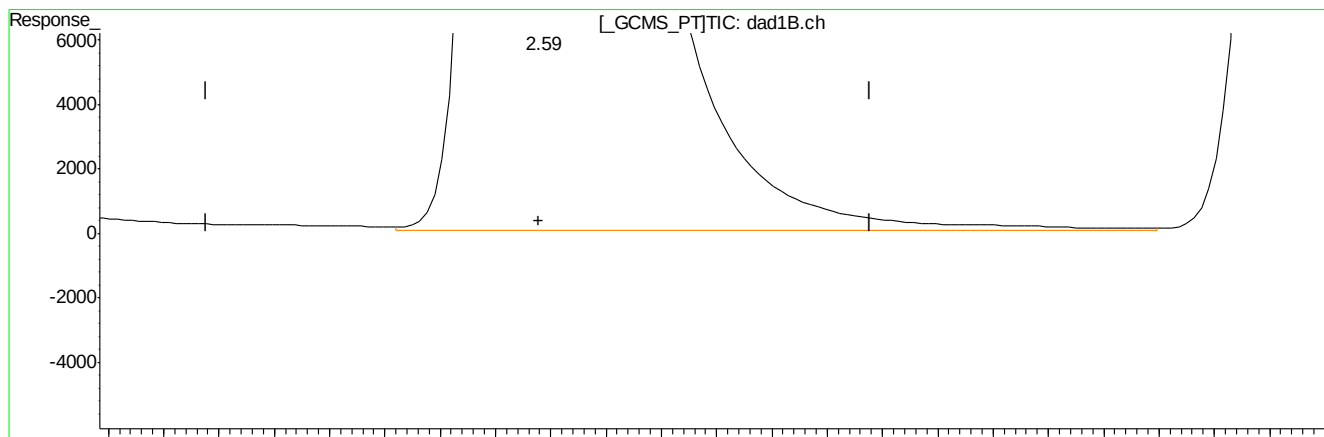
BB073635.D BBB2232_083122.M

Thu Sep 01 07:51:39 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:03 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



QEdit

(4) MNX

2.59min 2595.472ppb

response 8372346

(4) MNX #2

2.59min 2586.084ppb

response 12815407

(+) = Expected Retention Time

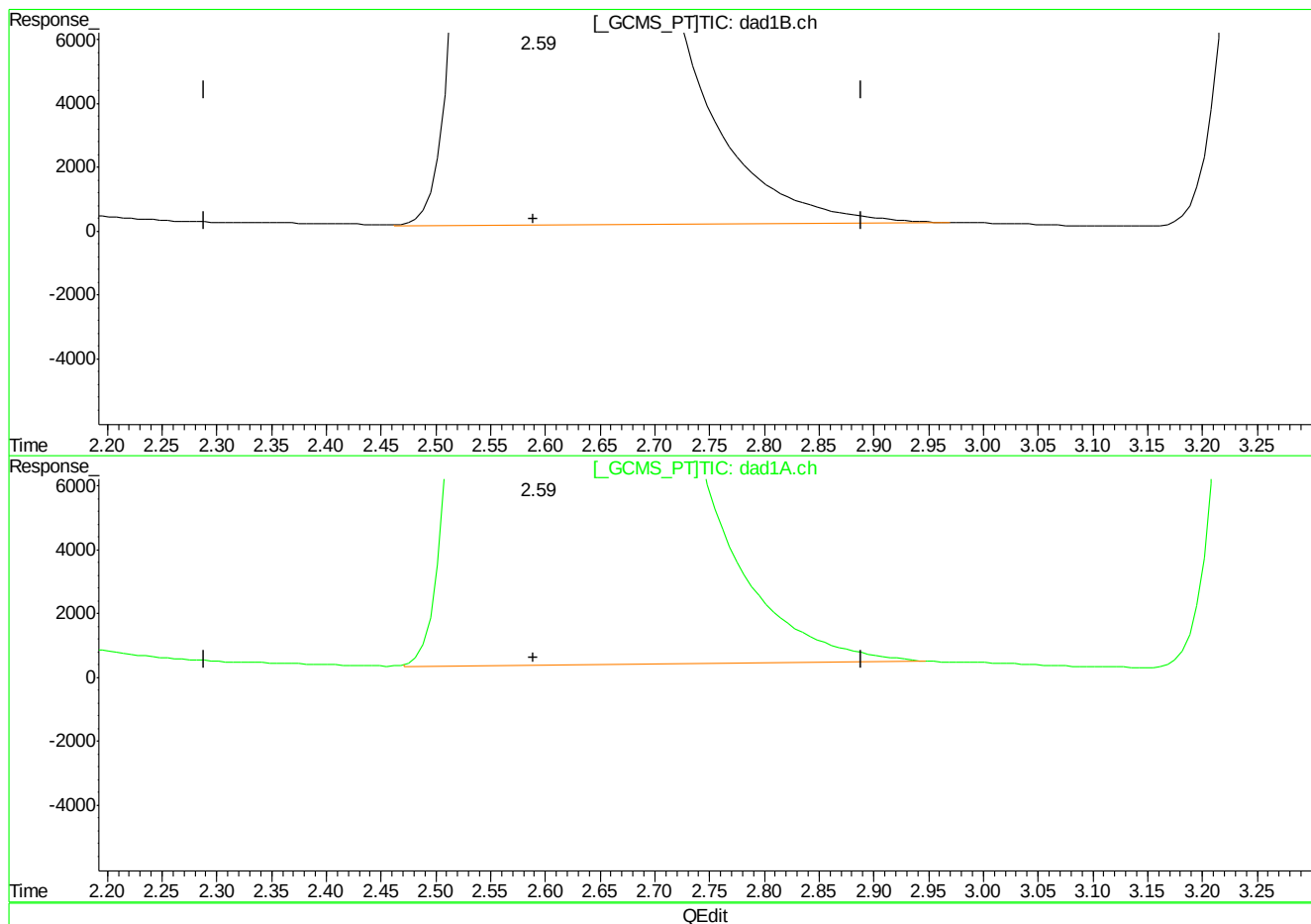
BB073635.D BBB2232_083122.M

Thu Sep 01 07:51:50 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:03 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(4) MNX

2.59min 2581.069ppb m

response 8325882

(4) MNX #2

2.59min 2570.136ppb m

response 12736376

(+) = Expected Retention Time

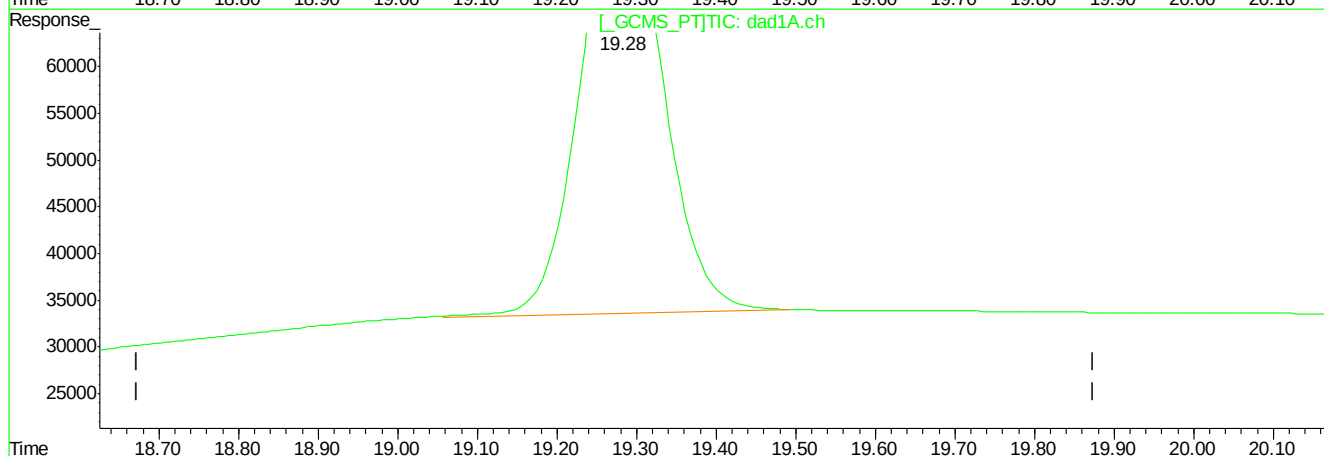
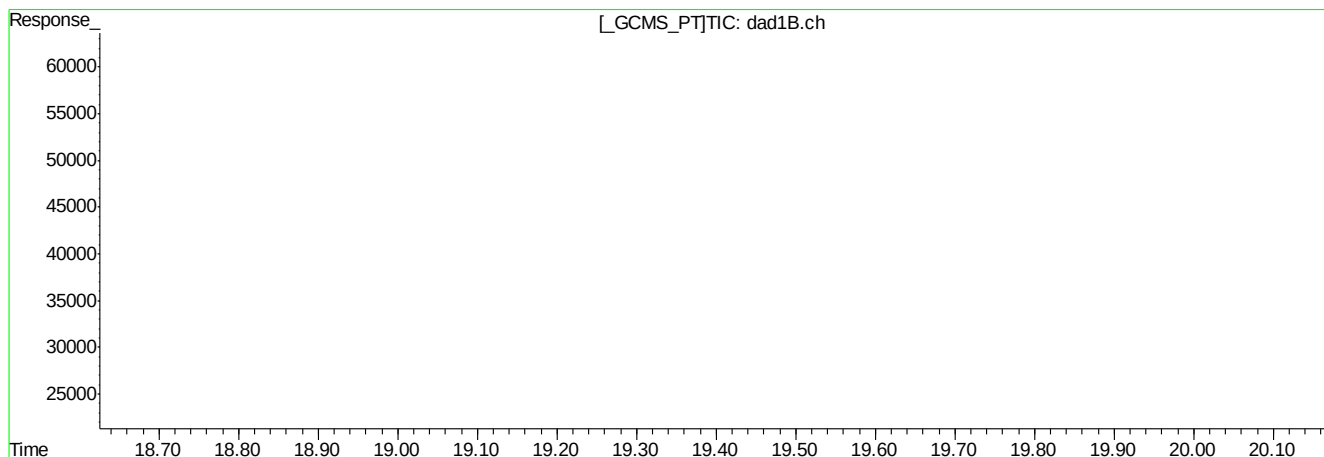
BB073635.D BBB2232_083122.M

Thu Sep 01 07:52:01 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073635.D\dad1A.ch
Acq On : 31-Aug-2022, 13:00:07 Operator: FOUADS
Sample : ic2232-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:51 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 2108.640ppb m

response 3347273

(+) = Expected Retention Time

BB073635.D BBB2232_083122.M

Thu Sep 01 07:57:28 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
 Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
 Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
 Sample : ic2232-5000 Inst : G1315B
 Misc : op92480,GBB2232,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Aug 31 14:06:17 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Aug 31 14:06:08 2022
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	12.84	12.84	10732773	21316674	4359.375	4582.788
Spiked Amount	500.000	Range	70 - 136	Recovery	= 871.88%#	916.56%#
Target Compounds						
1) TNX	1.46	1.46	8855494	13554331	2191.338	2206.353
2) HMX	1.65	1.65	7392598	20398673	3952.757	3983.720
3) DNX	1.90	1.90	15388888	24280558	4329.432m	4343.488m
4) MNX	2.59	2.59	16729923	25640510	5186.366m	5174.125m
5) RDX	3.29	3.29	9277617	14653063	4189.365	4110.075
6) 1,3,5-Trinitrobe	5.28	5.28	19904383	31099983	4321.688	4194.574
7) 1,3-Dinitrobenze	6.55	6.55	26067133	17108388	4245.894	4006.872
8) 3,5-Dinitroanili	7.03	7.02	19690106	32729168	4319.462	4237.226m
9) Nitrobenzene	8.29	8.29	14983362	14825046	4908.471	4626.665
10) Nitroglycerin	0.00	10.12	0	6354805	N.D. d	4145.628
11) Tetryl	10.99	10.99	14145083	23095622	4081.790	4050.162
12) 2,4,6-Trinitroto	11.36	11.36	18291551	22452818	4229.638	4385.066
13) 2-Amino-4,6-Dini	11.85	11.85	15825826	24790108	4202.391	4353.269
14) 4-Amino-2,6-Dini	12.40	12.40	11498402	24650215	4147.623	4379.550
16) 2,4-Dinitrotolue	13.41	13.41	23553789	15633706	4571.470	4420.979
17) 2,6-Dinitrotolue	13.87	13.88	7696853	17583059	2578.440m	4404.773 #
18) o-Nitrotoluene	16.79	16.78	10808154	15316847	5236.621	5697.542m
19) p-Nitrotoluene	17.25	17.25	16737037	14205383	5029.796	5244.589
20) m-Nitrotoluene	17.86	17.86	15586839	18928929	5129.336	5325.846
21) PETN	0.00	19.28	0	6713593	N.D.	4229.279m#

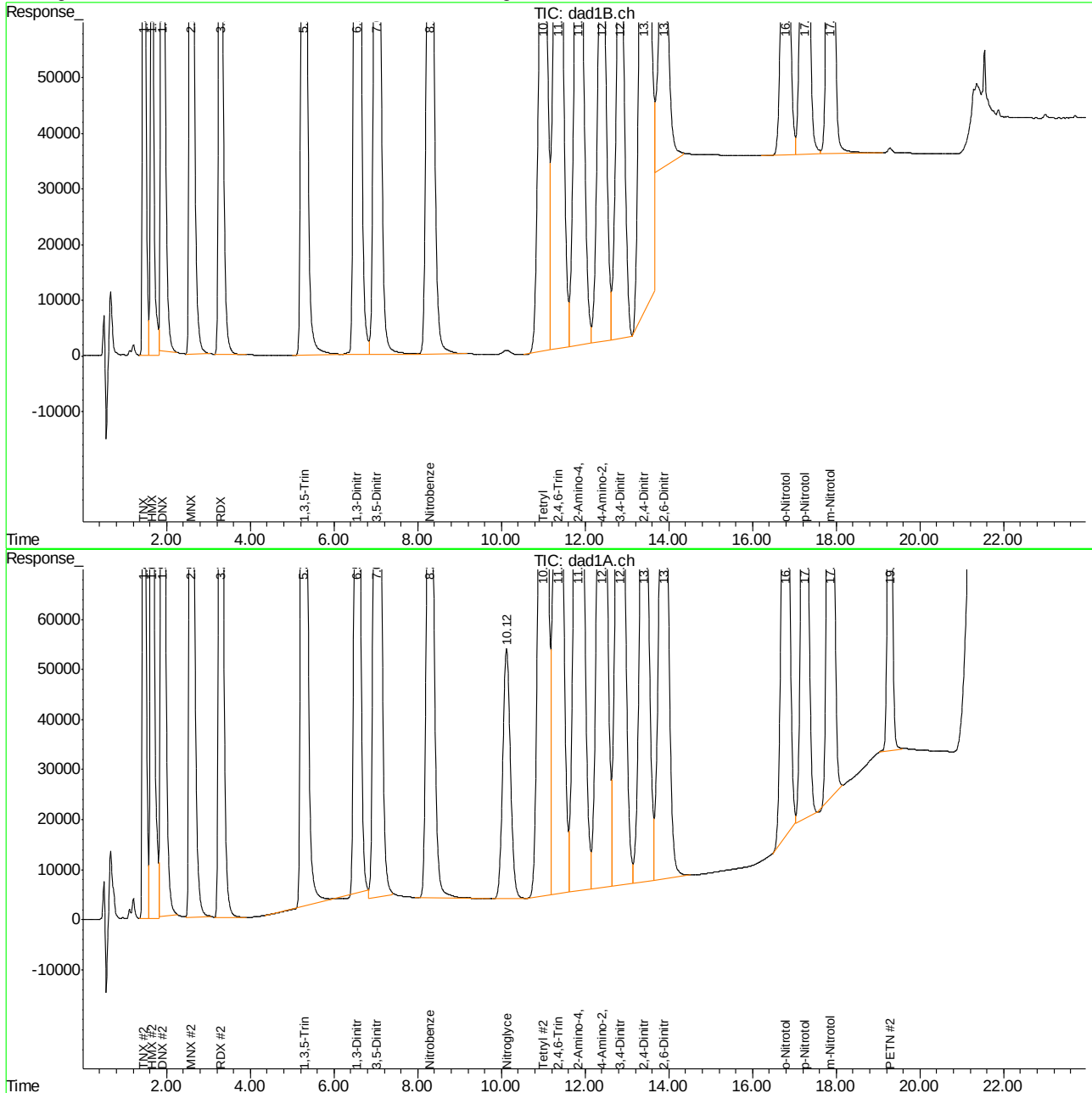
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB073636.D BBB2232_083122.M Thu Sep 01 14:19:34 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : op92480, GBB2232, 1000,,, 10, 1, water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:57 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Wed Aug 31 14:06:08 2022
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Page 1 of 1

Sample Number: GBB2232-IC2232 **Method:** SW846 8330A
Lab FileID: BB073636.D **Analyst approved:** 09/02/22 08:50 Fouad Sekkar
Injection Time: 08/31/22 13:31 **Supervisor approved:** 09/02/22 15:07 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
DNX		1	1.90	Poor instrument integration
DNX		2	1.90	Poor instrument integration
MNX		1	2.59	Poor instrument integration
MNX		2	2.59	Poor instrument integration
3,5-Dinitroaniline	618-87-1	2	7.02	Poor instrument integration
2,6-Dinitrotoluene	606-20-2	1	13.87	Poor instrument integration
o-Nitrotoluene	88-72-2	2	16.78	Poor instrument integration
PETN	78-11-5	2	19.28	Poor instrument integration

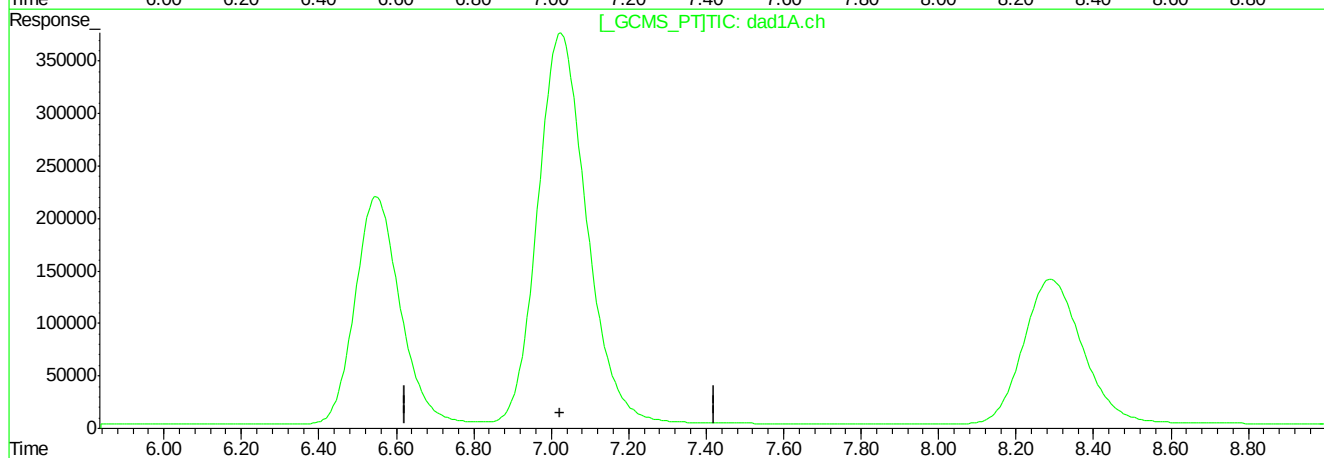
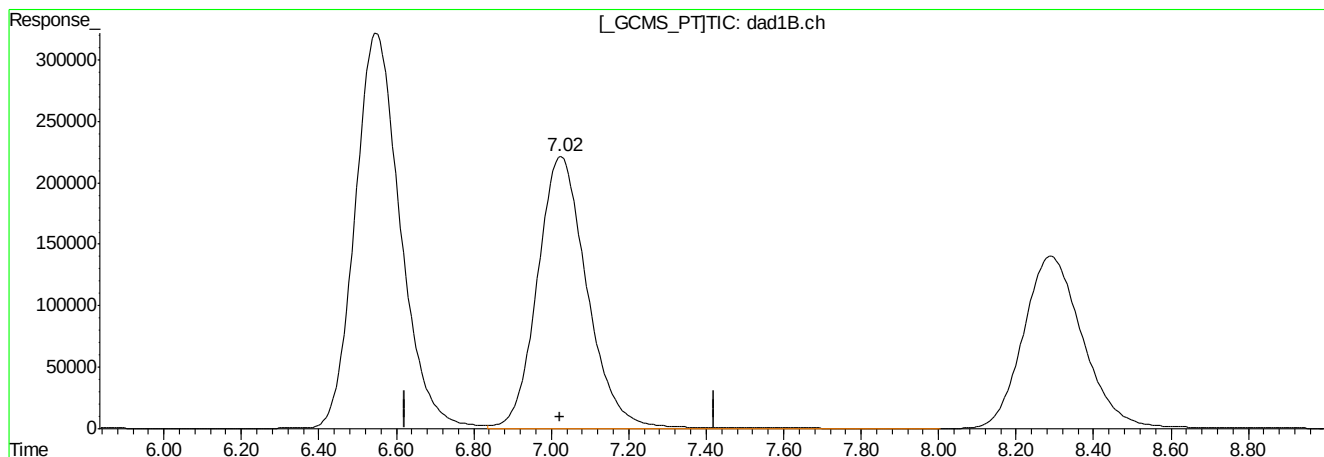
9.5.8.1

9

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:04 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.03min 4319.462ppb

response 19690106

(8) 3,5-Dinitroaniline #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

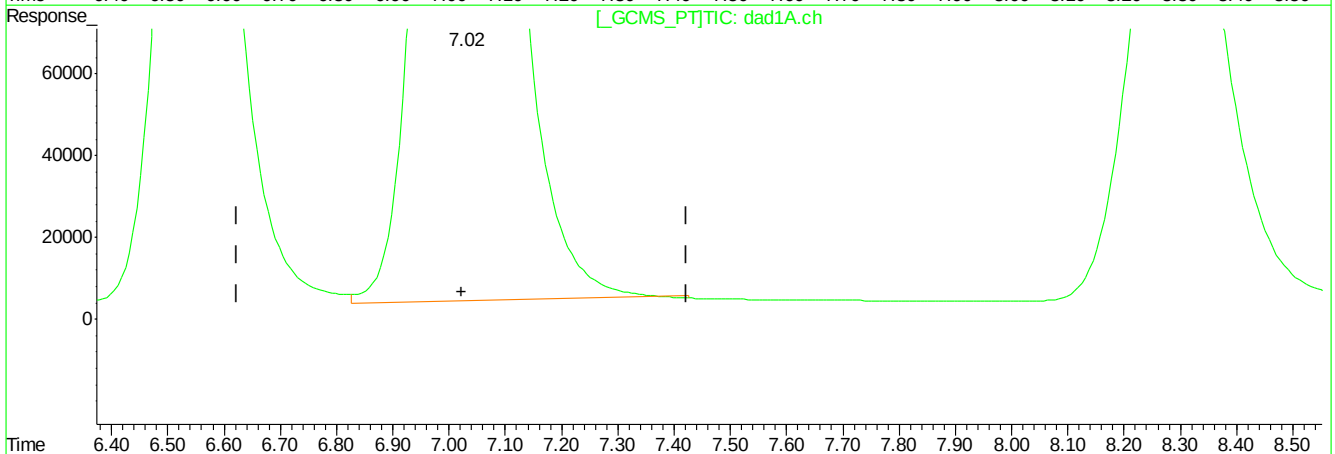
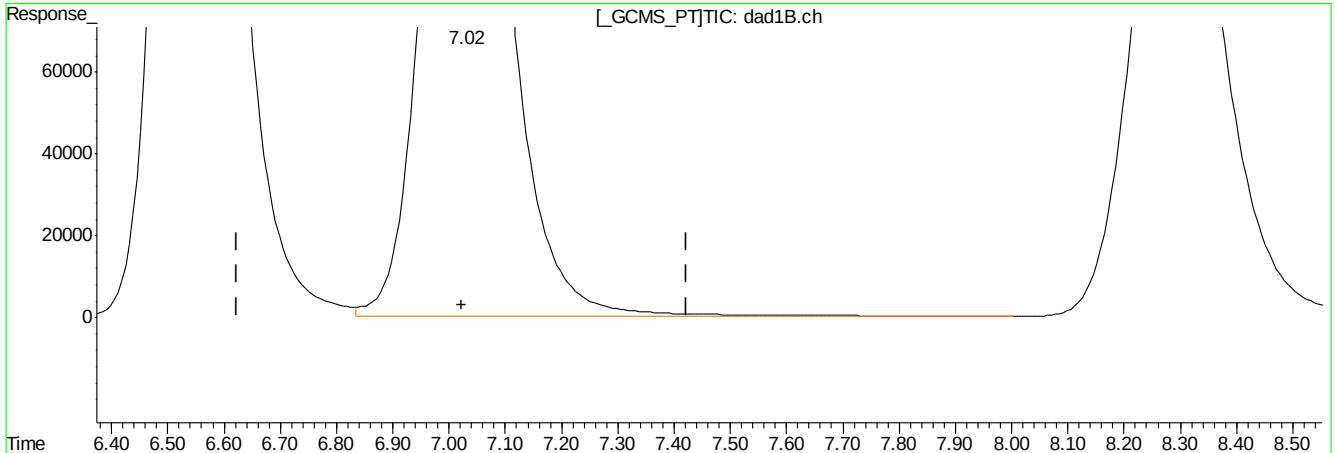
BB073636.D BBB2232_083122.M

Wed Aug 31 14:04:28 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:04 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.03min 4319.462ppb

response 19690106

(8) 3,5-Dinitroaniline #2

7.02min 4226.472ppb m

response 32646107

(+) = Expected Retention Time

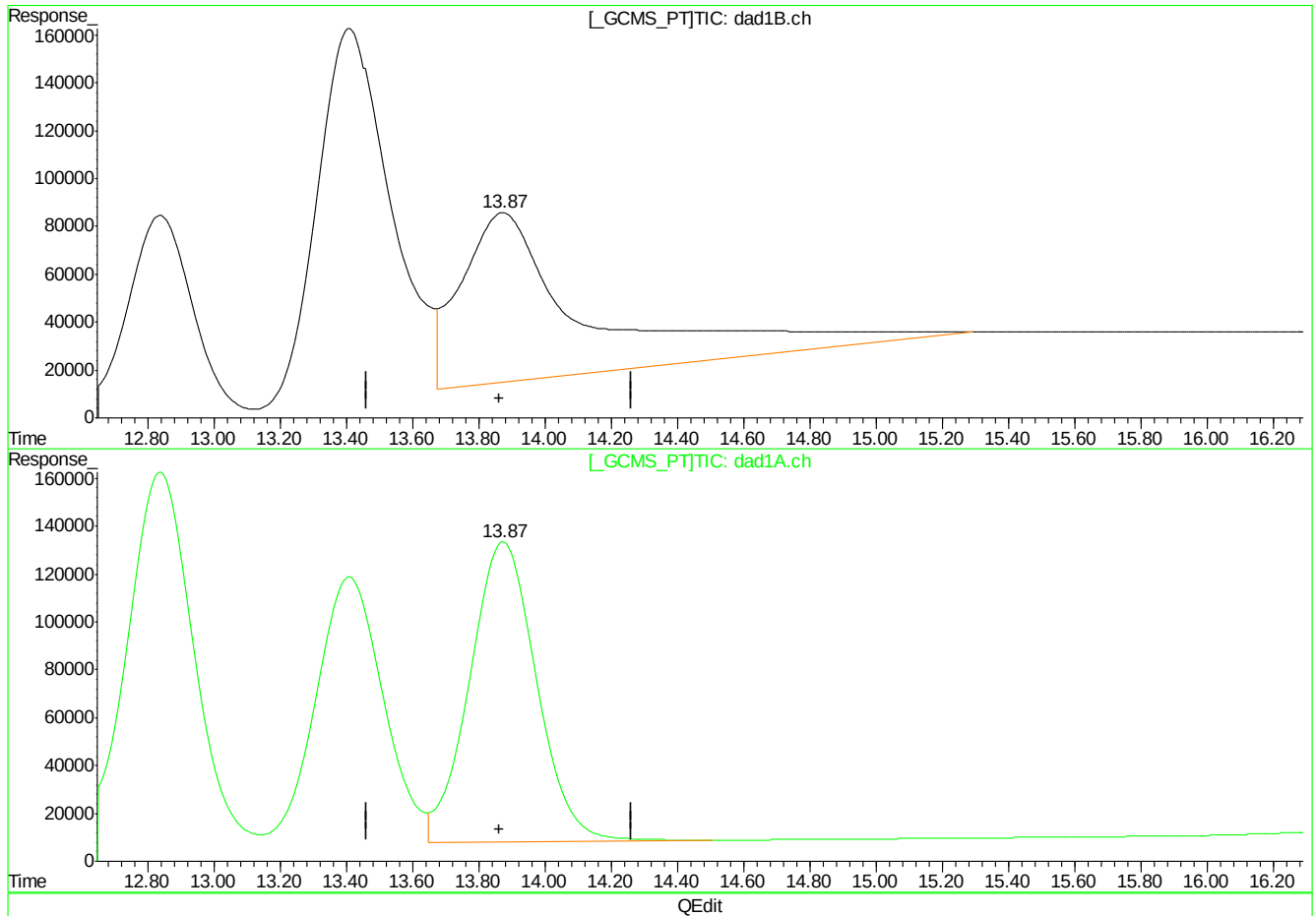
BB073636.D BBB2232_083122.M

Wed Aug 31 14:04:37 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:04 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

13.87min 6339.111ppb

response 18922758

(17) 2,6-Dinitrotoluene #2

13.88min 4404.773ppb

response 17583059

(+) = Expected Retention Time

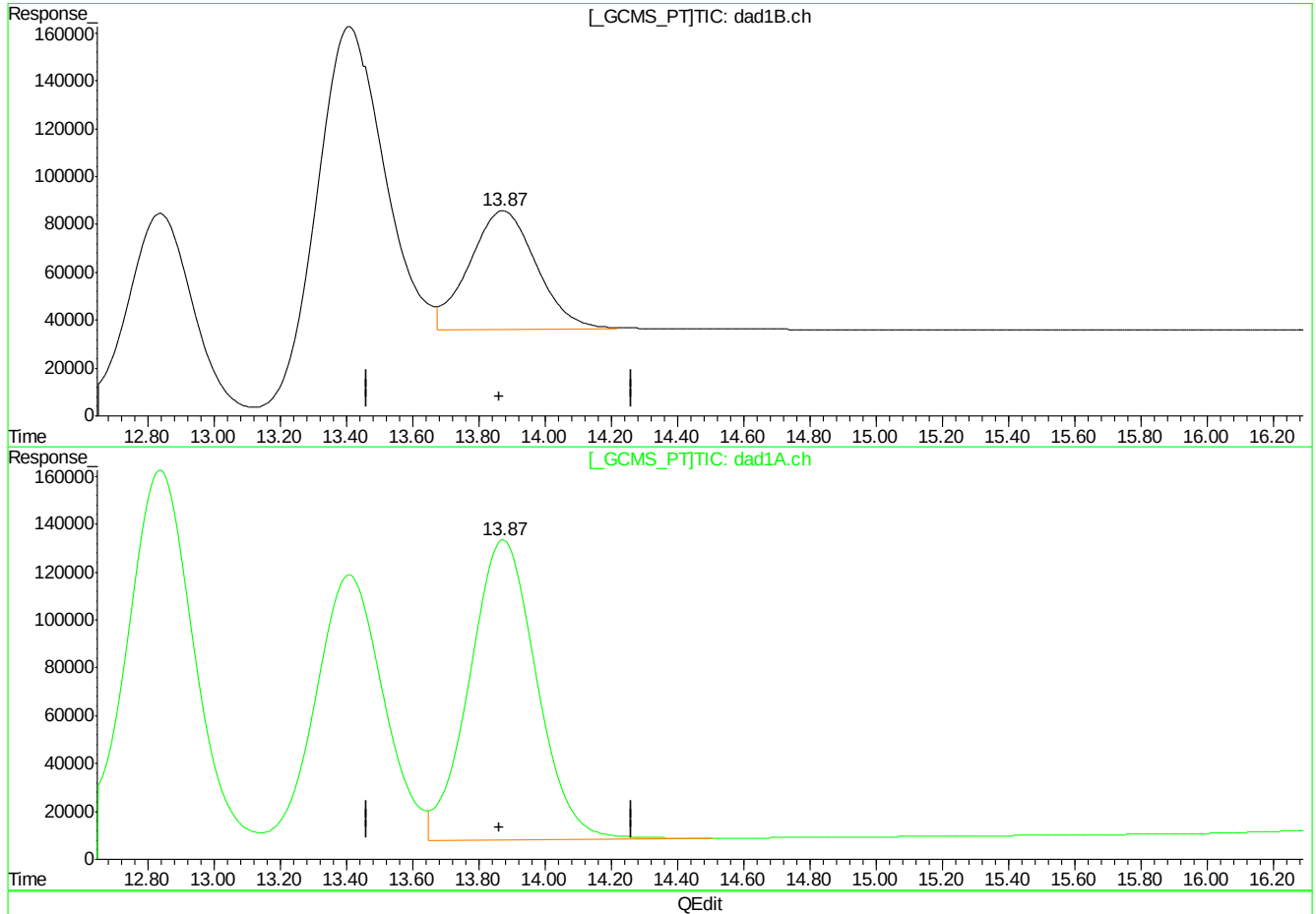
BB073636.D BBB2232_083122.M

Wed Aug 31 14:04:53 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:04 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene
13.87min 2341.594ppb m
response 6989846

(17) 2,6-Dinitrotoluene #2
13.88min 4404.773ppb
response 17583059

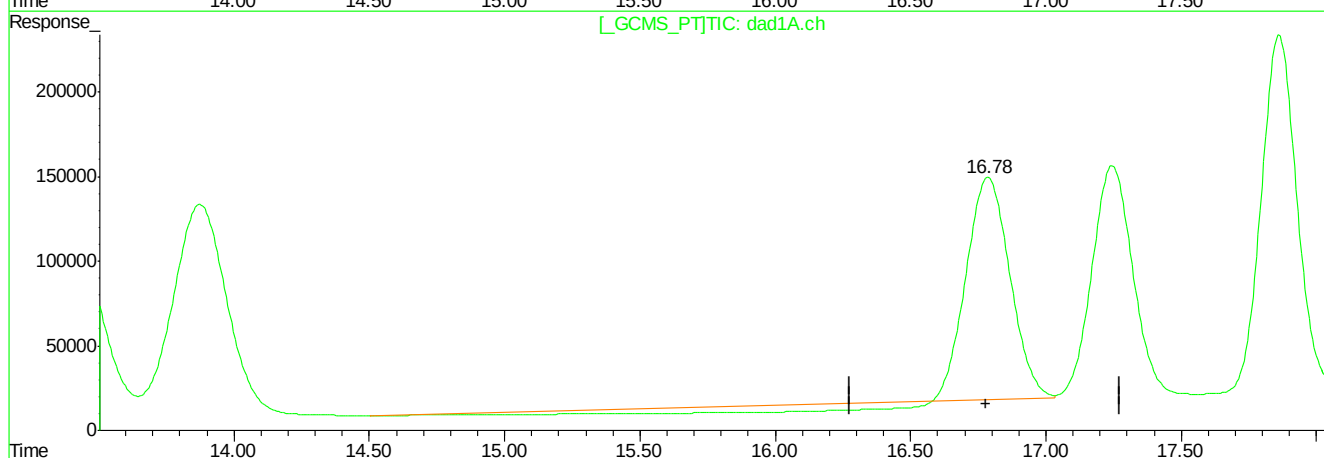
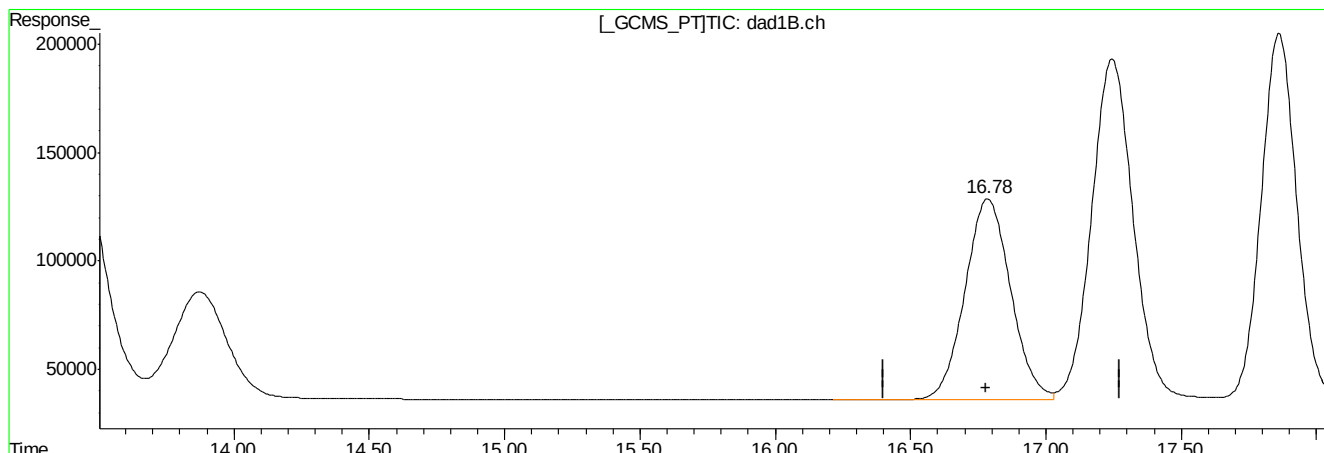
(+) = Expected Retention Time
BB073636.D BBB2232_083122.M

Wed Aug 31 14:05:04 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:04 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 08:15:37 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

16.79min 5236.621ppb

response 10808154

(18) o-Nitrotoluene #2

16.79min 4421.993ppb

response 11474606

(+) = Expected Retention Time

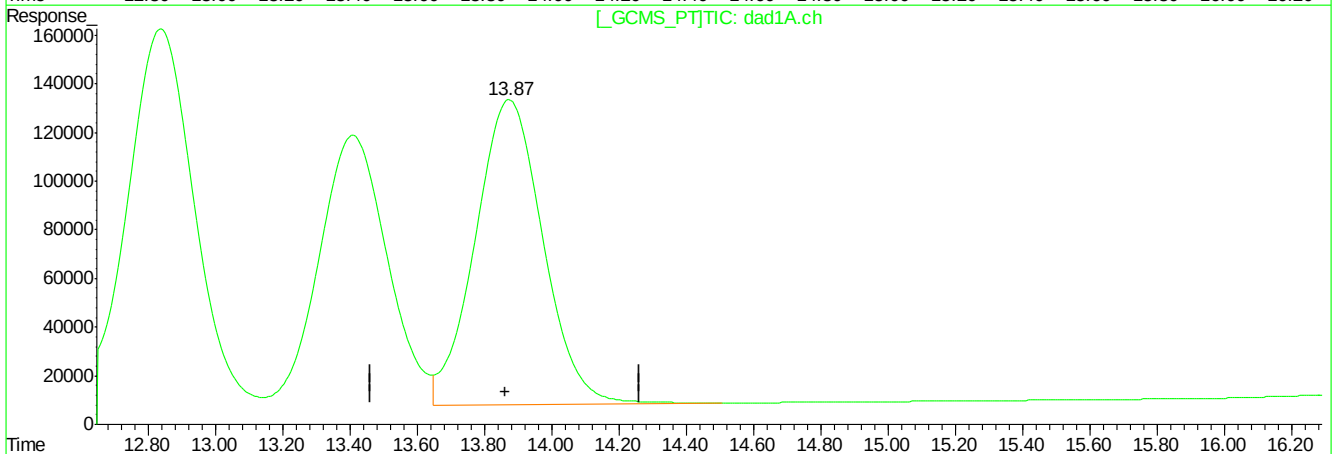
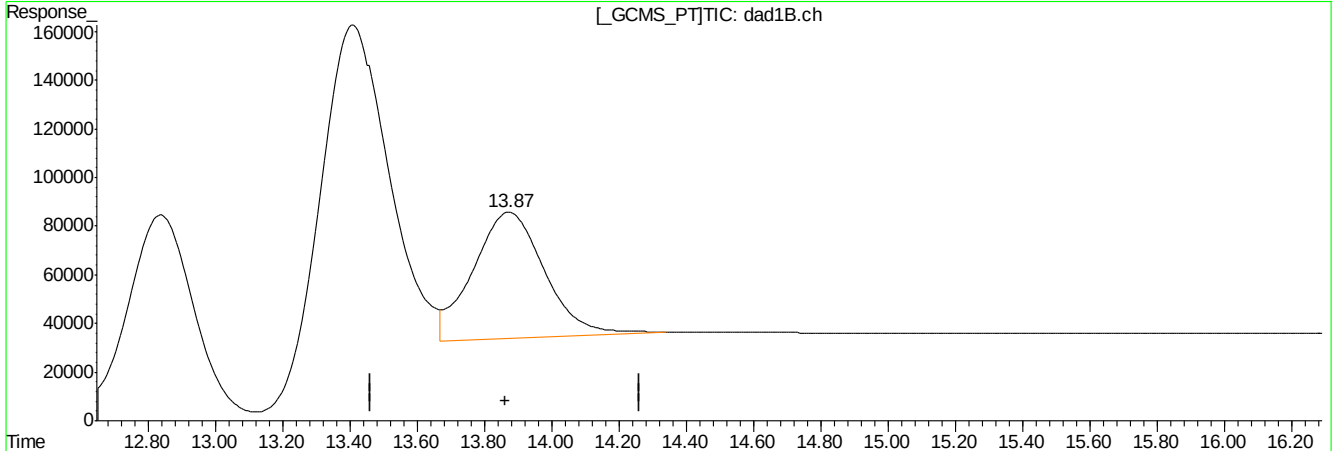
BB073636.D BBB2232_083122.M

Wed Aug 31 14:05:09 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:06 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:06:08 2022
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

13.87min 2578.440ppb m

response 7696853

(17) 2,6-Dinitrotoluene #2

13.88min 4404.773ppb

response 17583059

(+) = Expected Retention Time

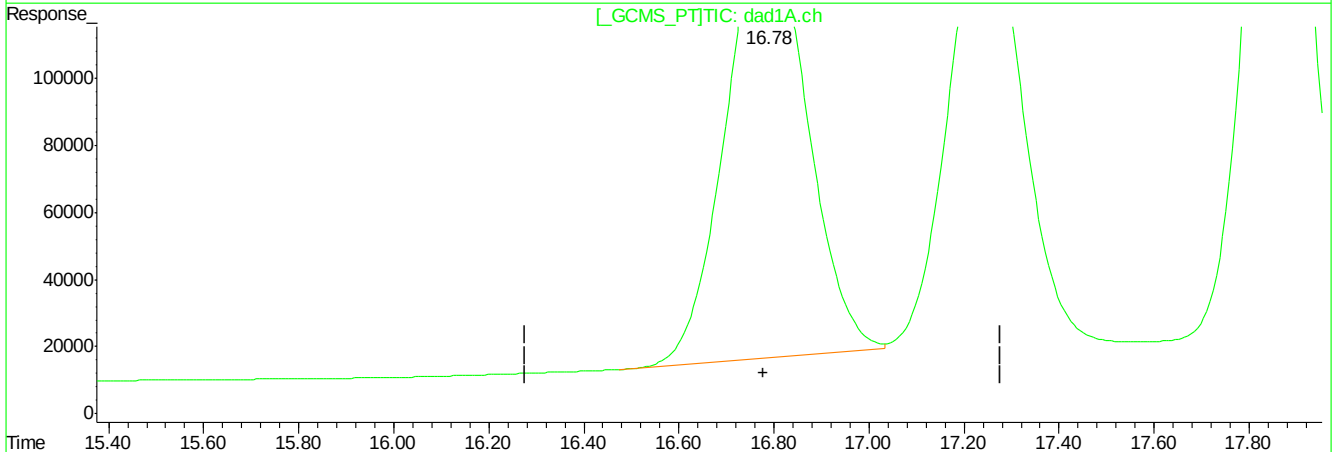
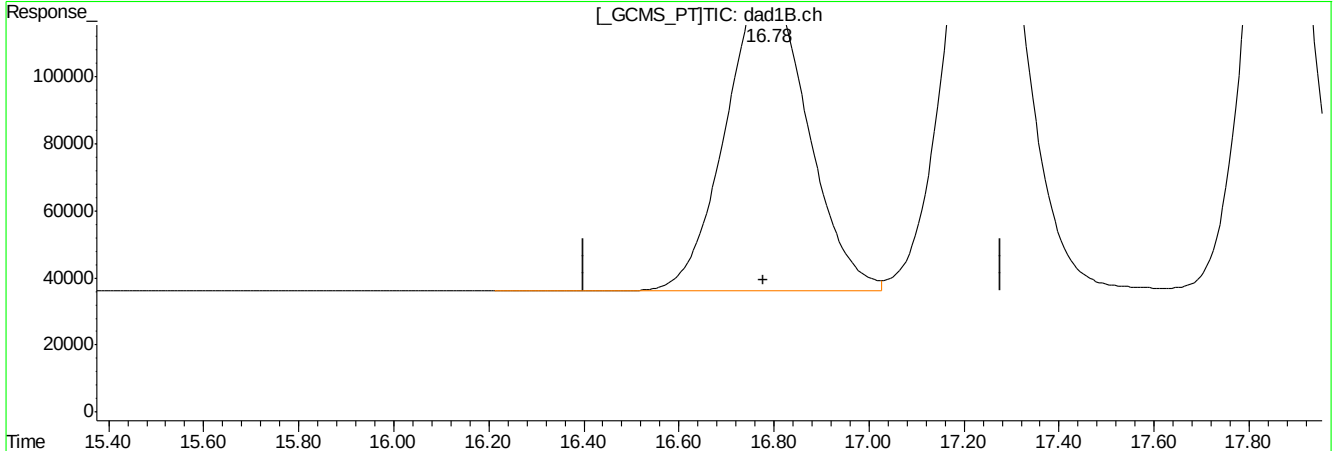
BB073636.D BBB2232_083122.M

Wed Aug 31 14:06:40 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:06 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:06:08 2022
Response via : Multiple Level Calibration



(18) o-Nitrotoluene

16.79min 5236.621ppb

response 10808154

(18) o-Nitrotoluene #2

16.78min 5697.542ppb m

response 15316847

(+) = Expected Retention Time

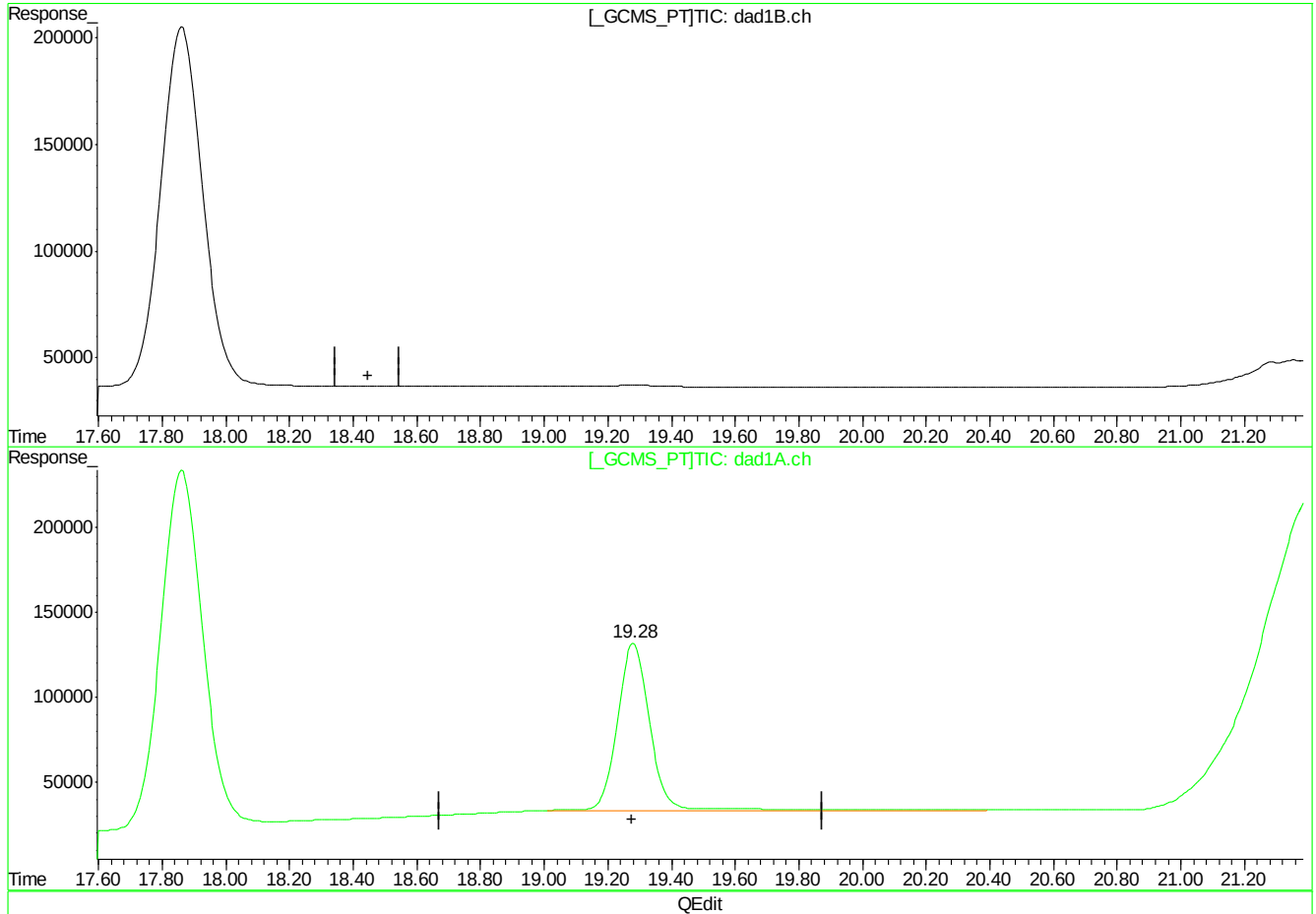
BB073636.D BBB2232_083122.M

Wed Aug 31 14:07:04 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:06 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:06:08 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 4440.875ppb

response 7049483

(+) = Expected Retention Time

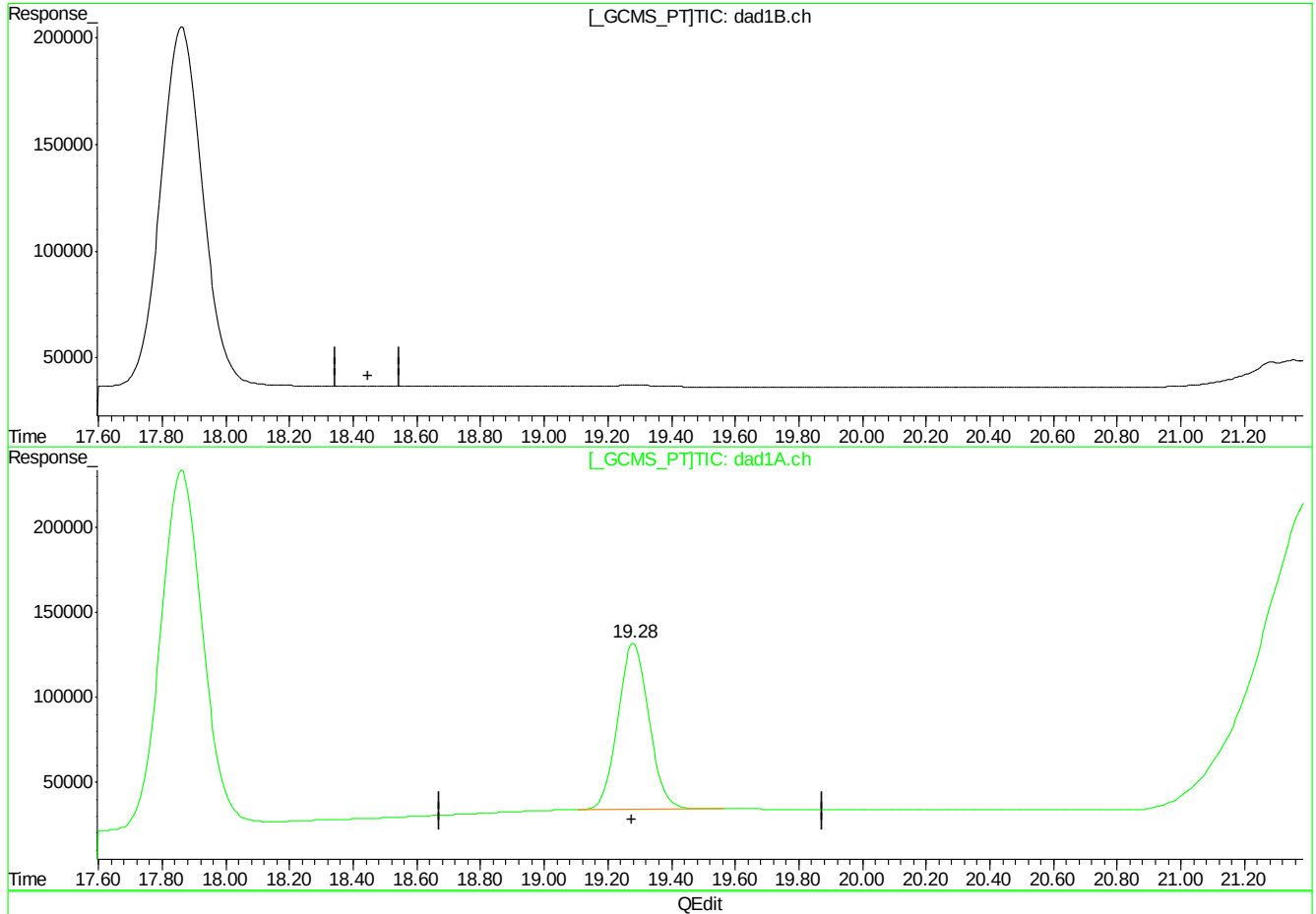
BB073636.D BBB2232_083122.M

Wed Aug 31 14:07:15 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:06 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:06:08 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 4177.269ppb m

response 6631032

(+) = Expected Retention Time

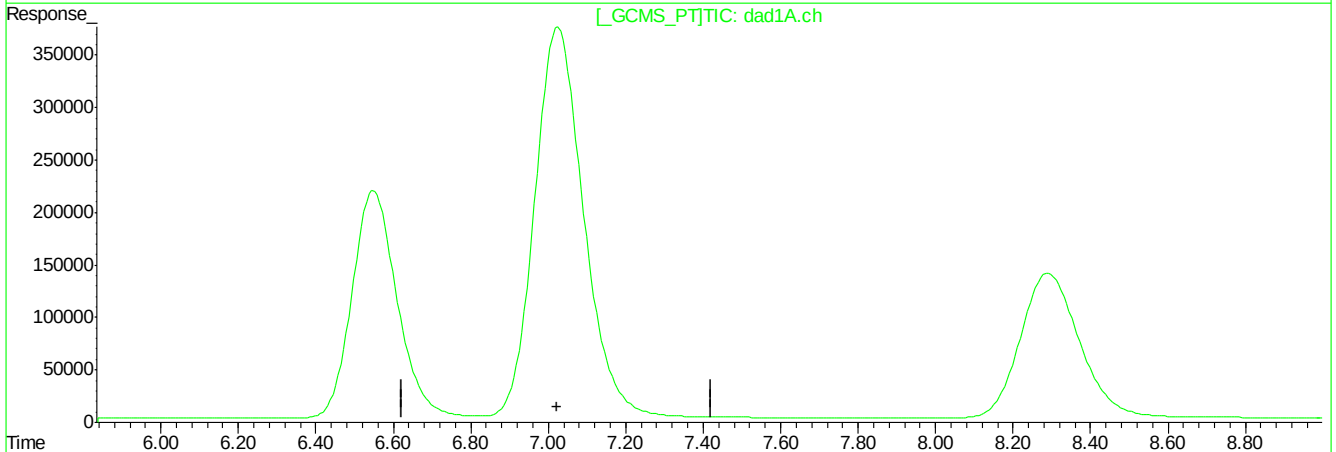
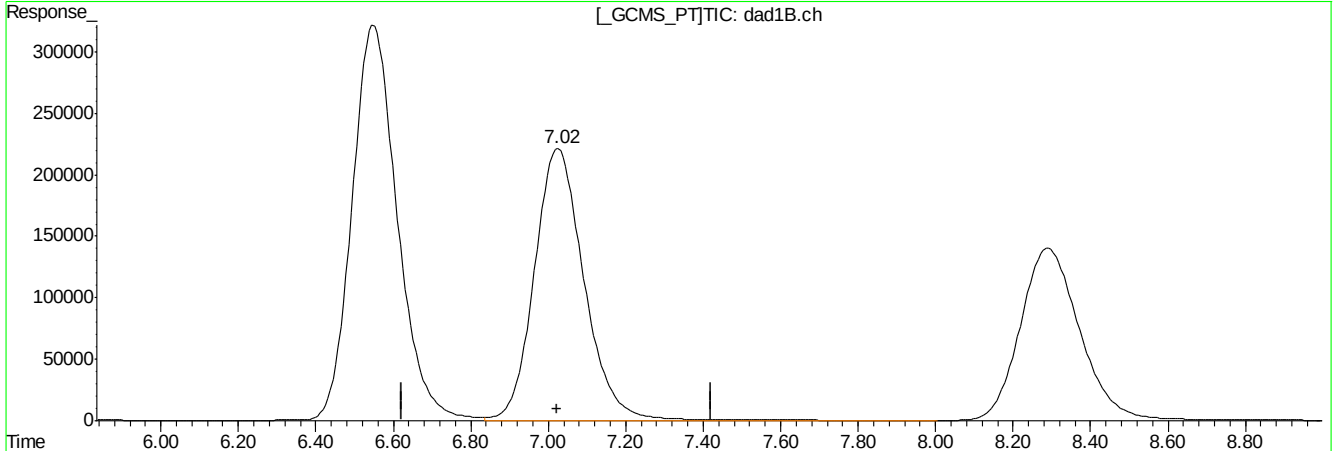
BB073636.D BBB2232_083122.M

Wed Aug 31 14:07:26 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:07 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:10:20 2022
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.03min 4319.462ppb

response 19690106

(8) 3,5-Dinitroaniline #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

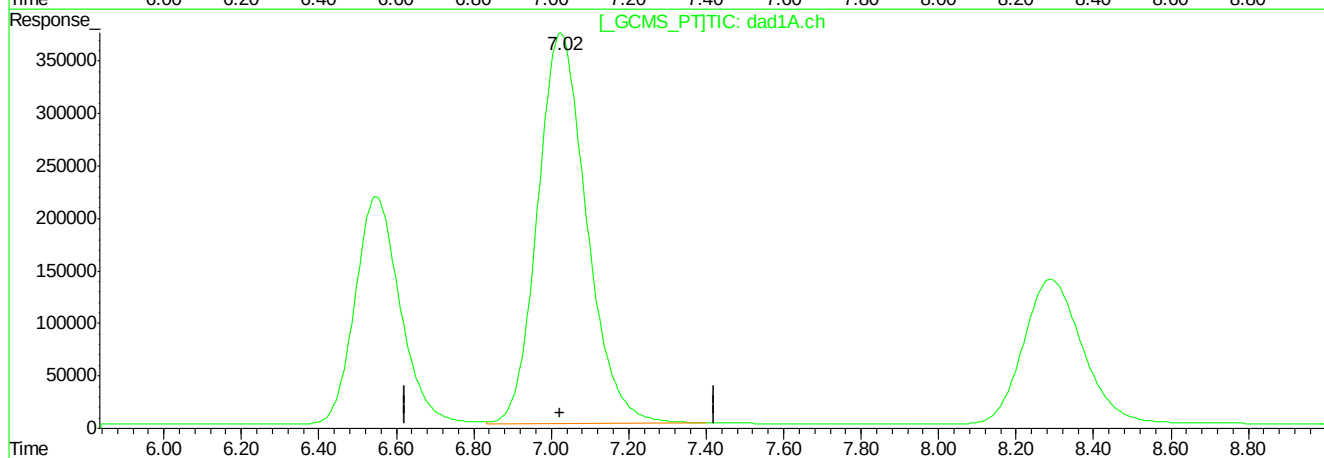
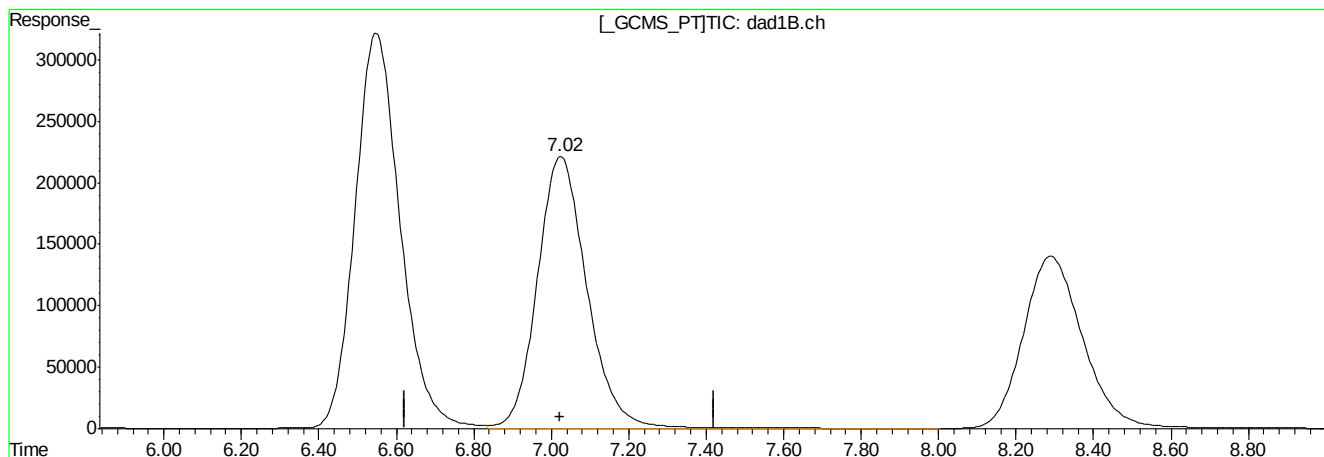
BB073636.D BBB2232_083122.M

Wed Aug 31 14:11:13 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:07 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:10:20 2022
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.03min 4319.462ppb

response 19690106

(8) 3,5-Dinitroaniline #2

7.02min 4237.226ppb m

response 32729168

QEdit

(+) = Expected Retention Time

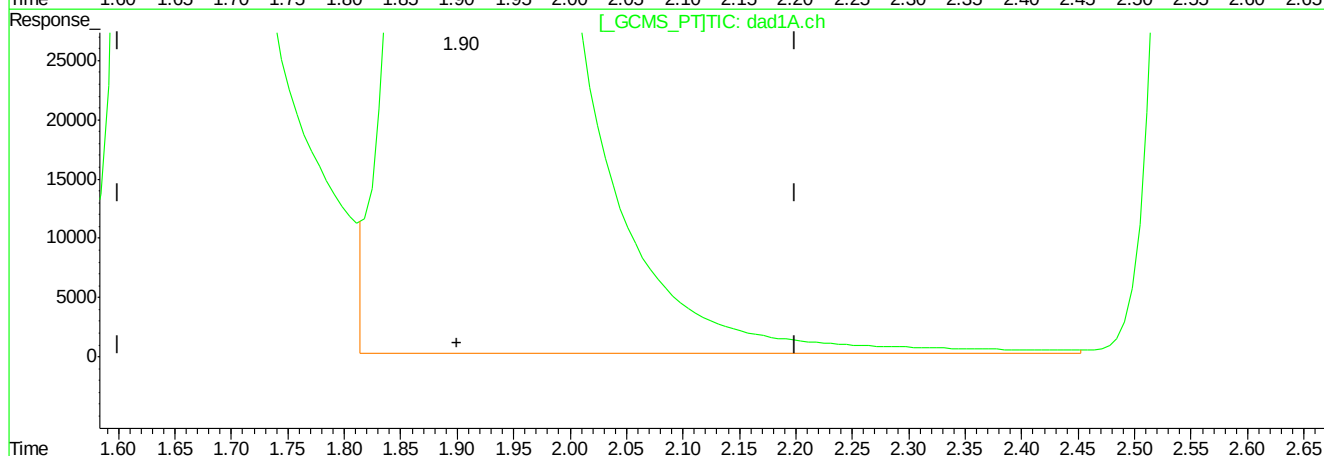
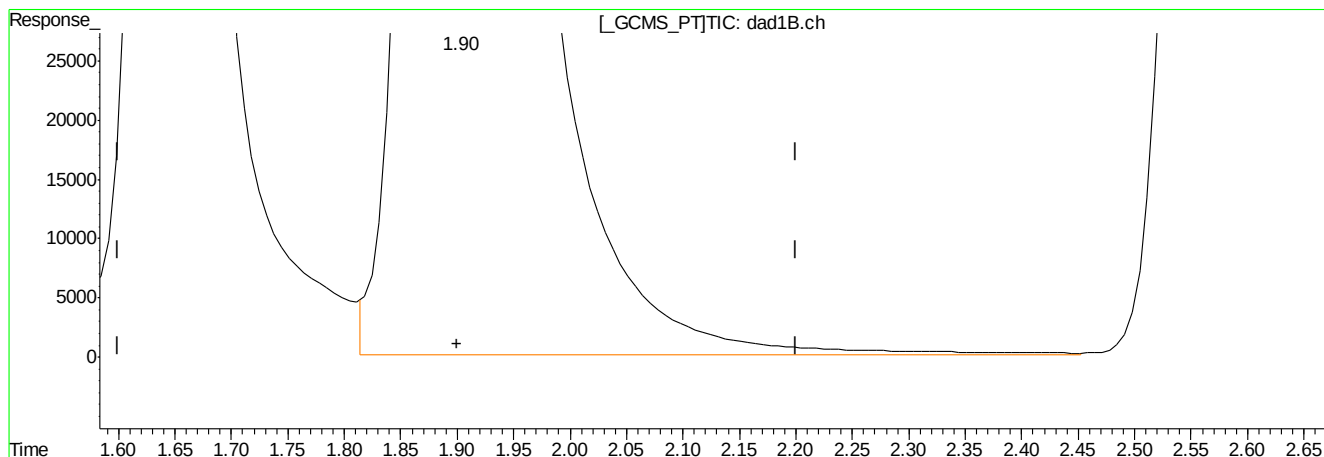
BB073636.D BBB2232_083122.M

Wed Aug 31 14:11:23 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:12 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



QEdit

(3) DNX

1.90min 4382.120ppb

response 15576166

(3) DNX #2

1.90min 4378.035ppb

response 24473676

(+) = Expected Retention Time

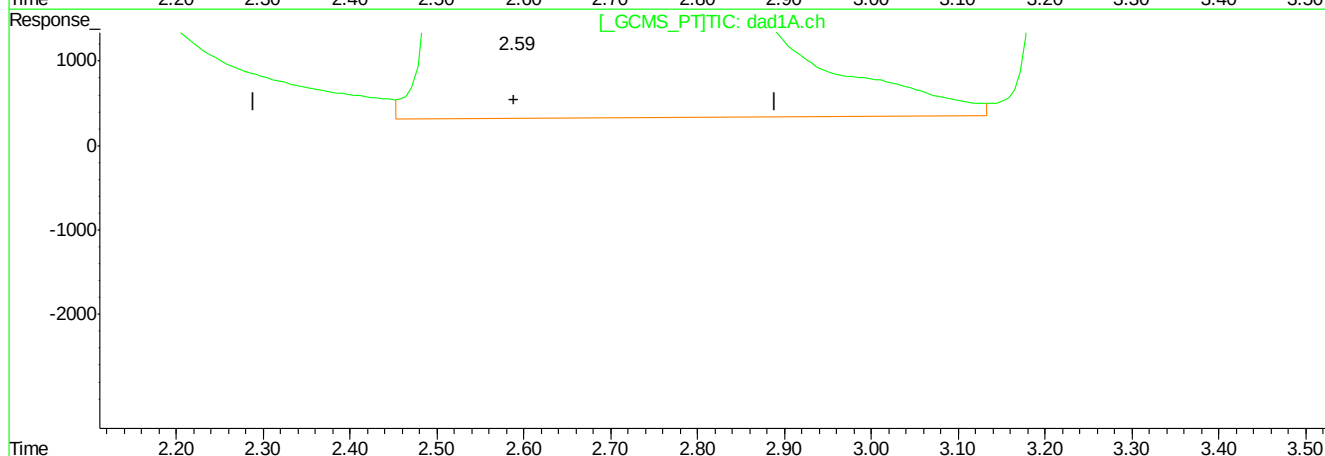
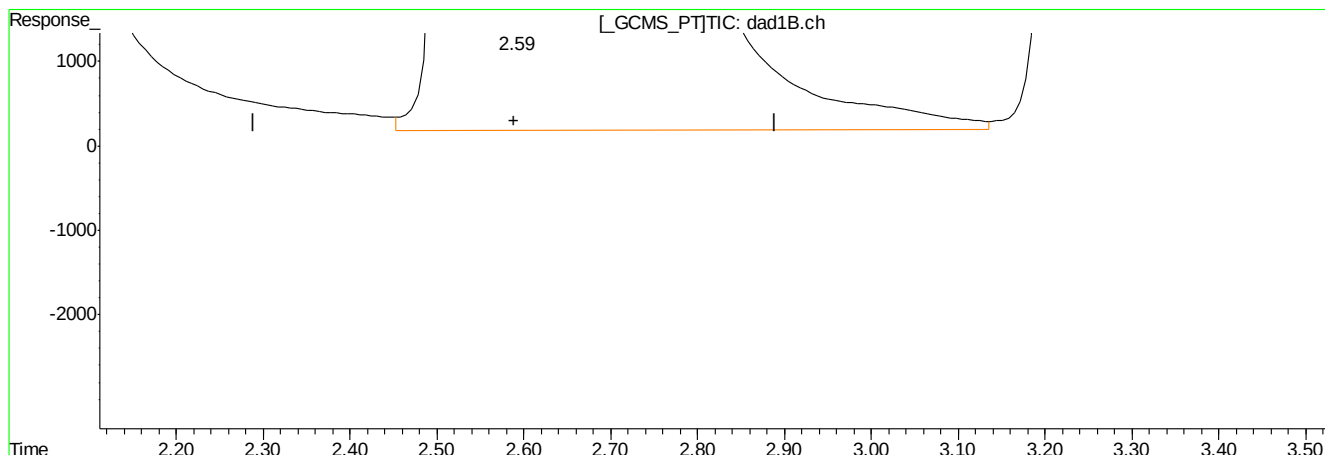
BB073636.D BBB2232_083122.M

Thu Sep 01 07:52:26 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:12 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



QEdit

(4) MNX

2.59min 5208.884ppb

response 16802559

(4) MNX #2

2.59min 5194.853ppb

response 25743226

(+) = Expected Retention Time

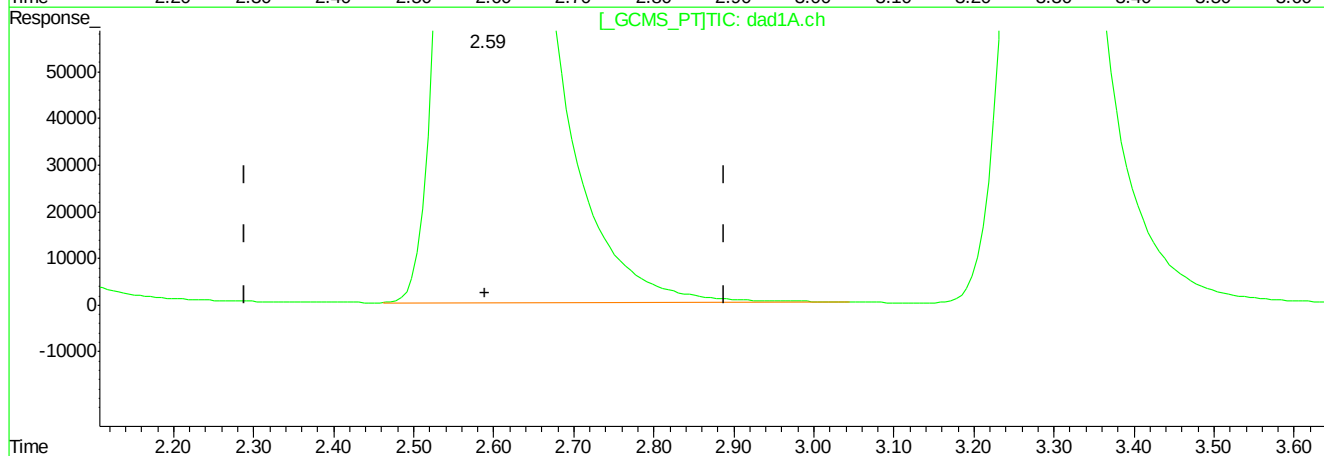
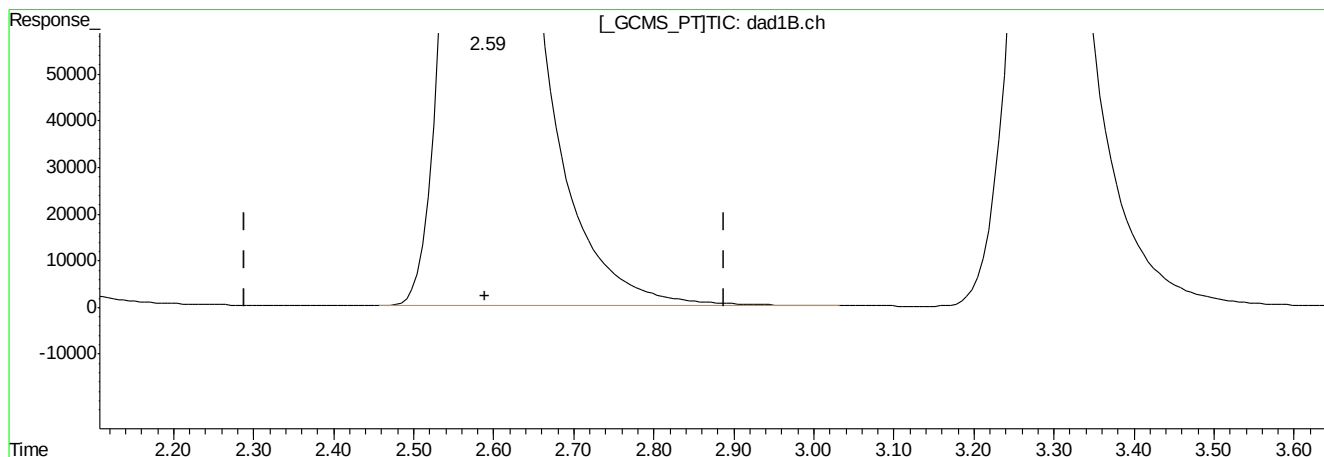
BB073636.D BBB2232_083122.M

Thu Sep 01 07:52:45 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Aug 31 14:12 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(4) MNX

2.59min 5186.366ppb m

response 16729923

(4) MNX #2

2.59min 5174.125ppb m

response 25640510

(+) = Expected Retention Time

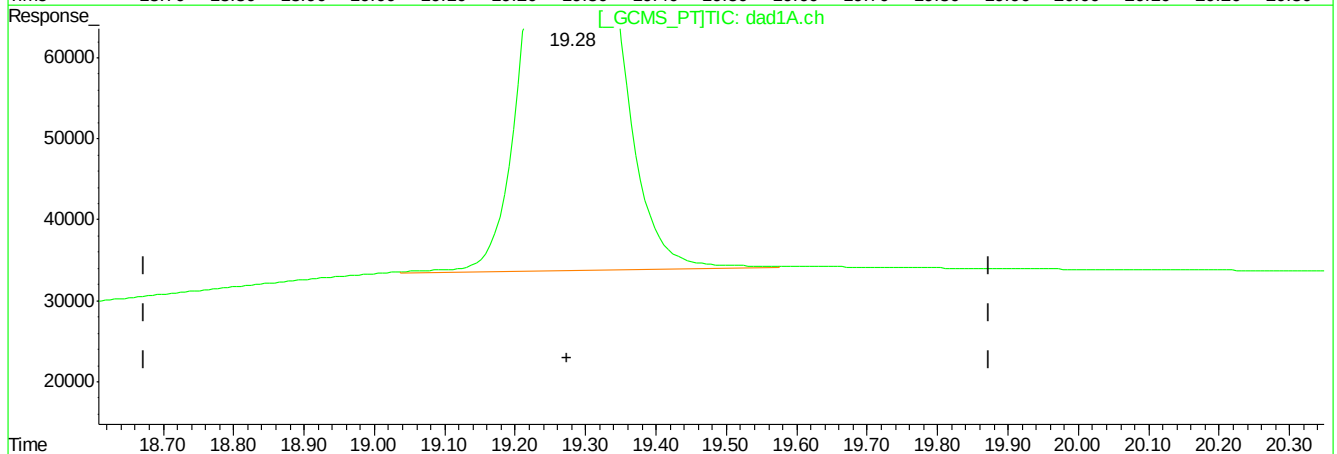
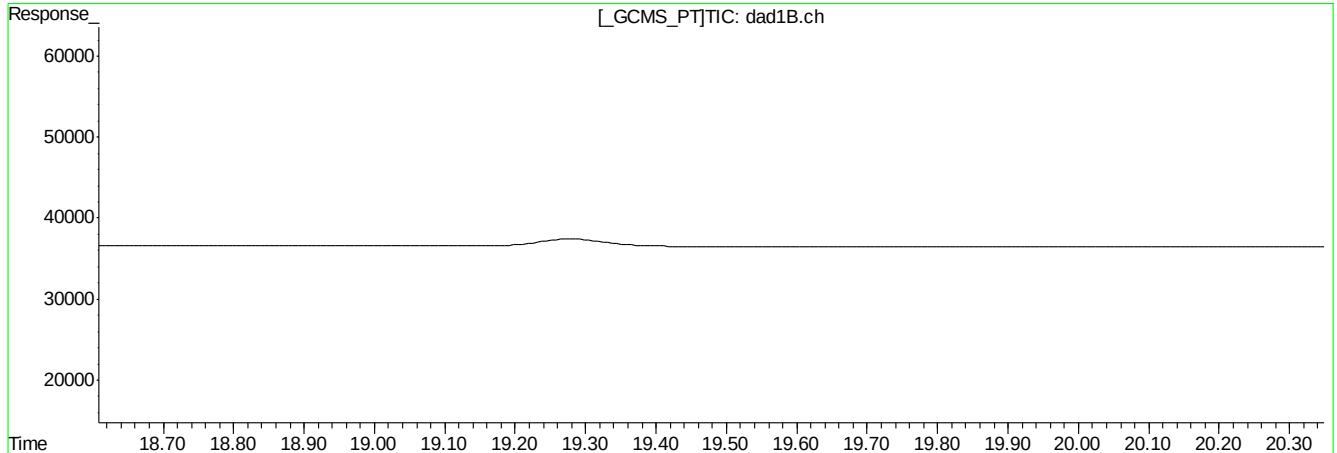
BB073636.D BBB2232_083122.M

Thu Sep 01 07:52:58 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2232\BB073636.D\dad1A.ch
Acq On : 31-Aug-2022, 13:31:04 Operator: FOUADS
Sample : ic2232-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 7:52 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Aug 31 14:17:00 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.28min 4229.279ppb m

response 6713593

(+) = Expected Retention Time

BB073636.D BBB2232_083122.M

Thu Sep 01 07:57:46 2022

Naresh Jiawan
09/02/22 15:07

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1B.ch Vial: 11
 Signal #2 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1A.ch
 Acq On : 01-Sep-2022, 11:59:24 Operator: FOUADS
 Sample : icv2232-1000 Inst : G1315B
 Misc : op92417,GBB2232,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Sep 01 12:29:21 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Thu Sep 01 08:04:52 2022
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
Spiked Amount	500.000	Range	70 - 136	Recovery	=	0.00%# 0.00%#
Target Compounds						
1) TNX	1.45	1.45	1776363	2758329	473.292	479.293
2) HMX	1.64	1.64	1559024	4358148	1052.933	1065.499
3) DNX	1.89	1.89	3123683	4961093	1015.390	1004.753
4) MNX	2.58	2.58	3345856	5148004	1165.828	1170.656
5) RDX	3.28	3.28	1915862	3029156	1032.828	1034.048
6) 1,3,5-Trinitrobe	5.25	5.25	4104243	6414711	1032.352	1030.523
7) 1,3-Dinitrobenze	6.52	6.52	5402733	3723918	1036.865	1083.554
8) 3,5-Dinitroanili	6.99	0.00	4319590	0	1097.506	N.D. #
9) Nitrobenzene	8.26	8.26	3144988	3095698	1048.817	1044.237
10) Nitroglycerin	0.00	10.07	0	1295945	N.D.	1020.238 #
11) Tetryl	10.91	10.91	2972729	4715297	1052.052	1023.751
12) 2,4,6-Trinitroto	11.28	11.28	3841203	4546121	1050.880	1020.964
13) 2-Amino-4,6-Dini	11.77	11.77	3387495	5040845	1071.801	1020.765
14) 4-Amino-2,6-Dini	12.32	12.32	2526275	5066864	1100.014	1030.991
16) 2,4-Dinitrotolue	13.33	13.33	4687031	3173080	1000.701	1018.948
17) 2,6-Dinitrotolue	13.79	13.79	1539458	3649386	1013.932m	1040.757
18) o-Nitrotoluene	16.72	16.72	2272705	3365603	1052.477	1024.193m
19) p-Nitrotoluene	17.19	17.19	3529623	2915575	1055.075	1031.613
20) m-Nitrotoluene	17.82	17.82	3295351	3925334	1058.502	1011.429
21) PETN	0.00	19.24	0	1490521	N.D.	1109.024m#

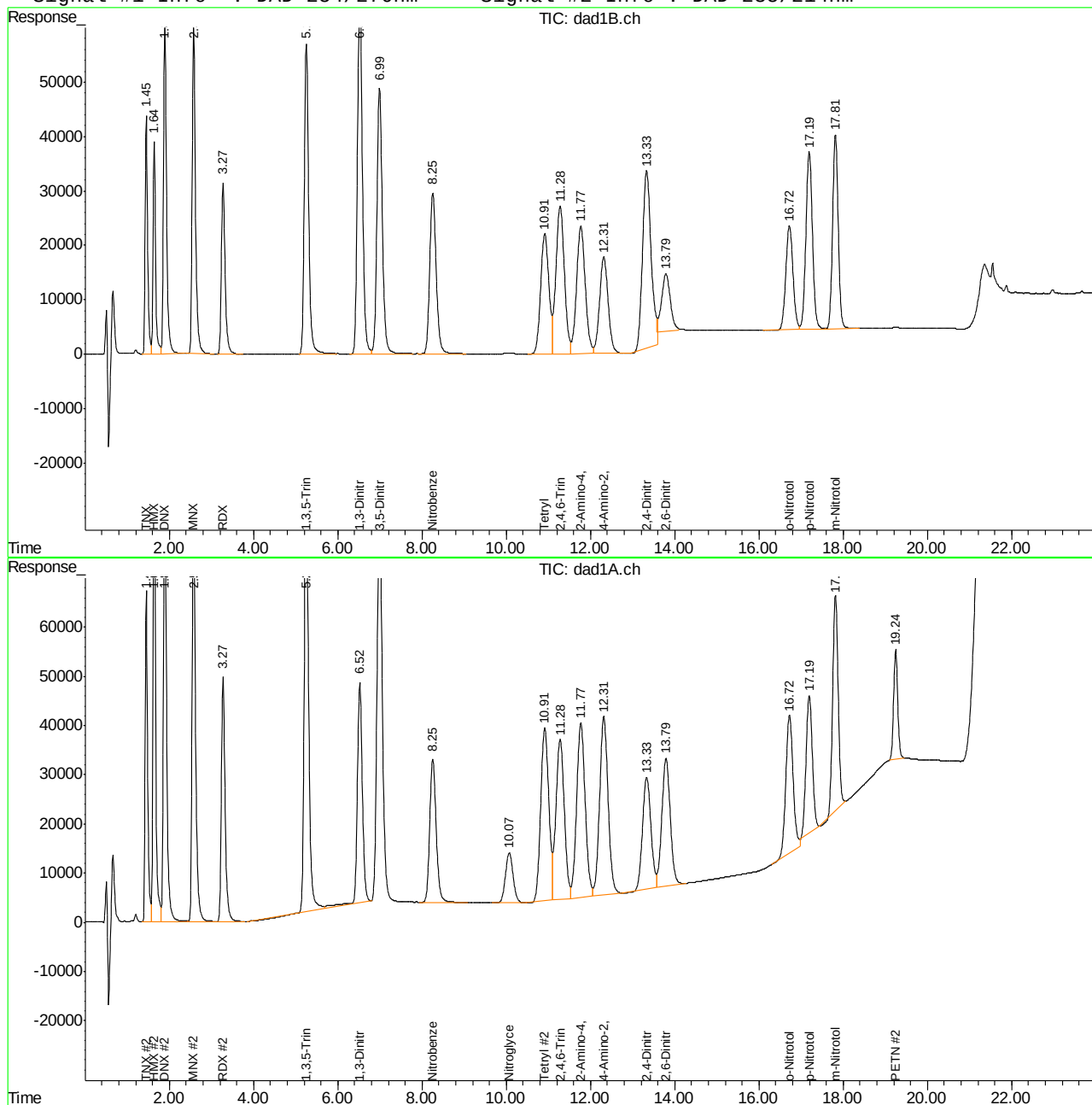
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB073641.D BBB2232_083122.M Fri Sep 02 08:51:10 2022

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1A.ch
Acq On : 01-Sep-2022, 11:59:24 Operator: FOUADS
Sample : icv2232-1000 Inst : G1315B
Misc : op92417, GBB2232, 1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 12:30 2022 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Thu Sep 01 08:04:52 2022
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Page 1 of 1

Sample Number: GBB2232-ICV2232 **Method:** SW846 8330B
Lab FileID: BB073641.D **Analyst approved:** 09/02/22 08:54 Fouad Sekkar
Injection Time: 09/01/22 11:59 **Supervisor approved:** 09/02/22 15:07 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
2,6-Dinitrotoluene	606-20-2	1	13.79	Poor instrument integration
o-Nitrotoluene	88-72-2	2	16.72	Poor instrument integration
PETN	78-11-5	2	19.24	Poor instrument integration

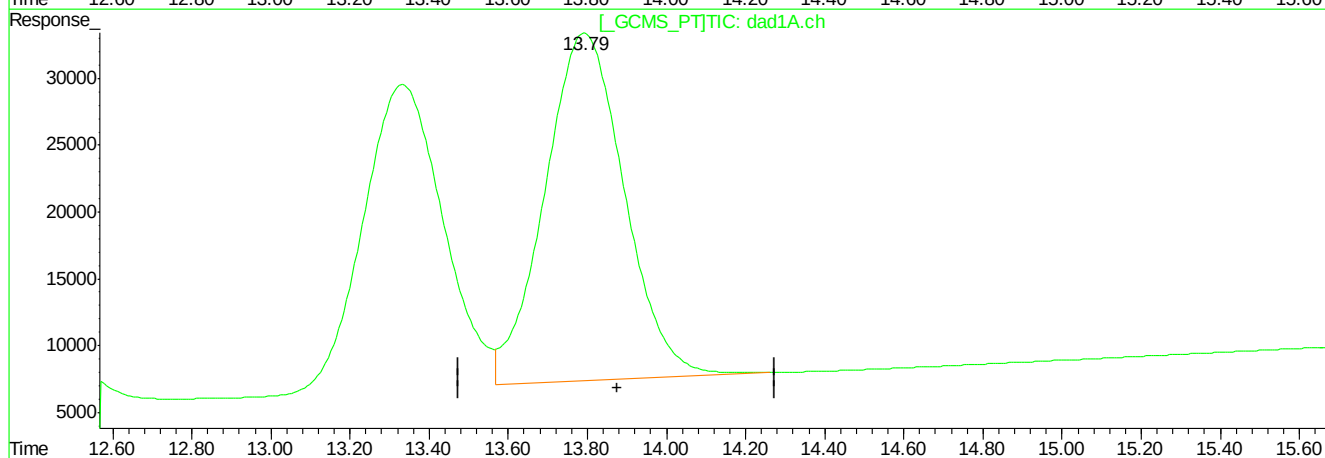
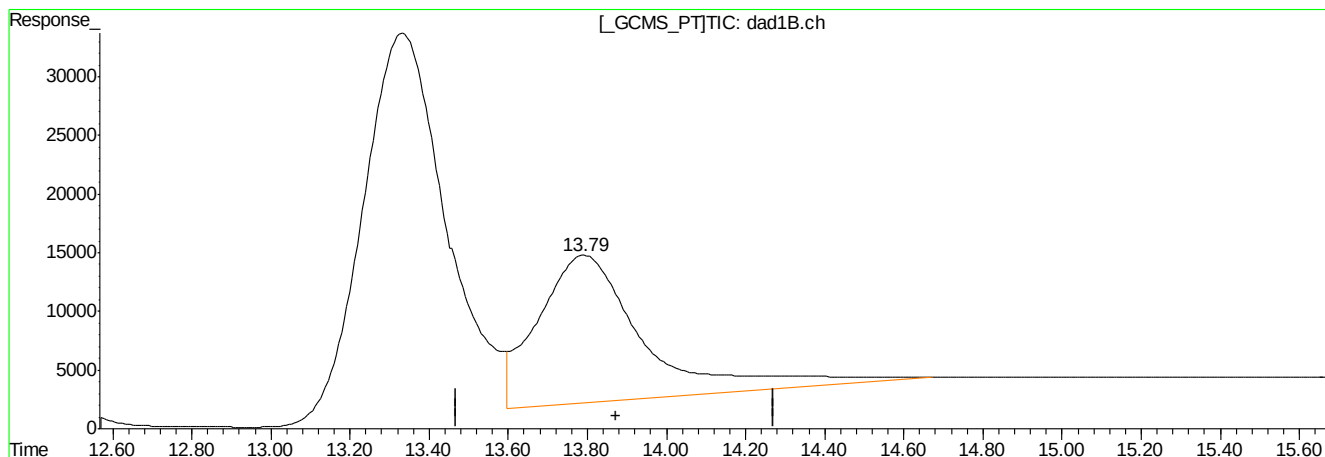
9.5.9.1

9

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1A.ch
Acq On : 01-Sep-2022, 11:59:24 Operator: FOUADS
Sample : icv2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 12:29 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Thu Sep 01 08:04:52 2022
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

13.79min 1551.446ppb

response 2355568

(17) 2,6-Dinitrotoluene #2

13.79min 1040.757ppb

response 3649386

(+) = Expected Retention Time

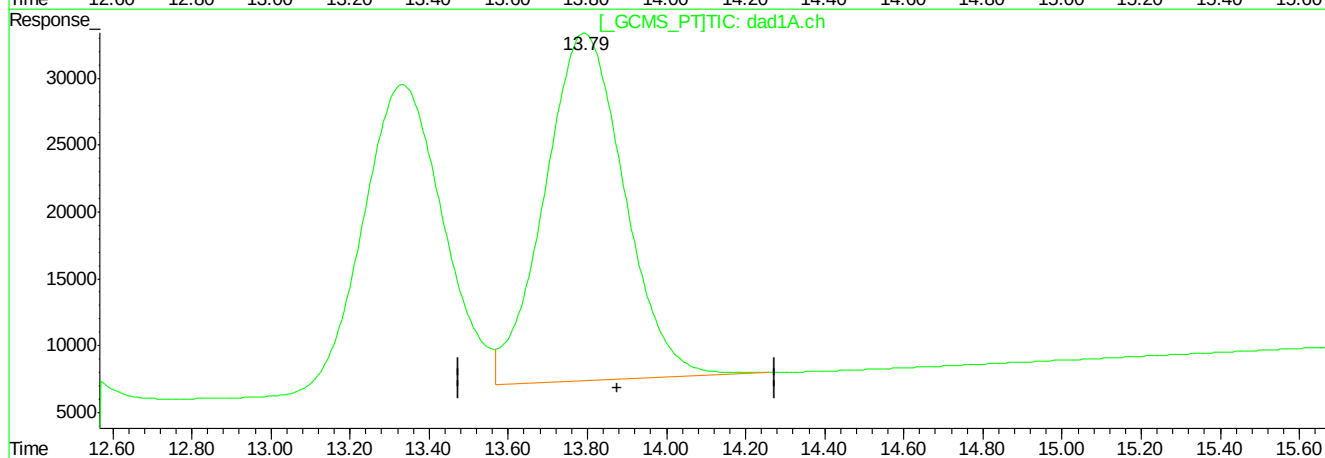
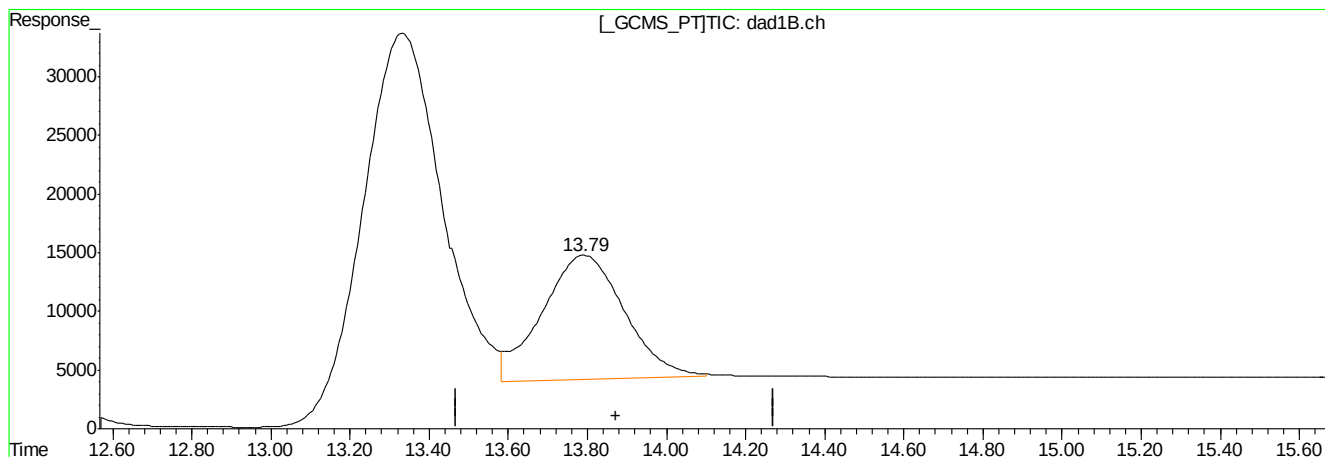
BB073641.D BBB2232_083122.M

Thu Sep 01 12:29:48 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1A.ch
Acq On : 01-Sep-2022, 11:59:24 Operator: FOUADS
Sample : icv2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 12:29 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Thu Sep 01 08:04:52 2022
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene
13.79min 1013.932ppb m
response 1539458

(17) 2,6-Dinitrotoluene #2
13.79min 1040.757ppb
response 3649386

(+) = Expected Retention Time

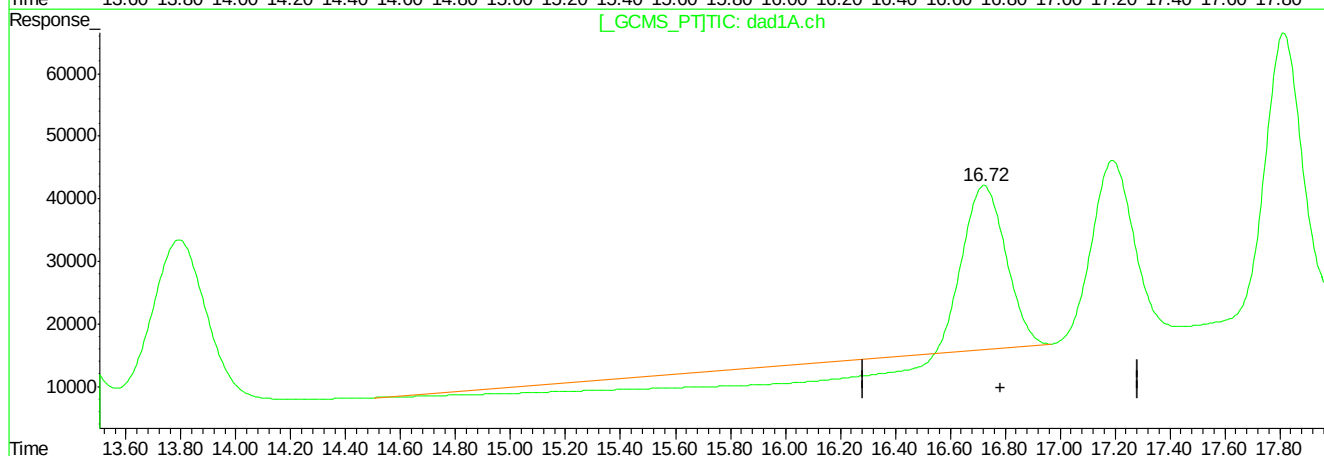
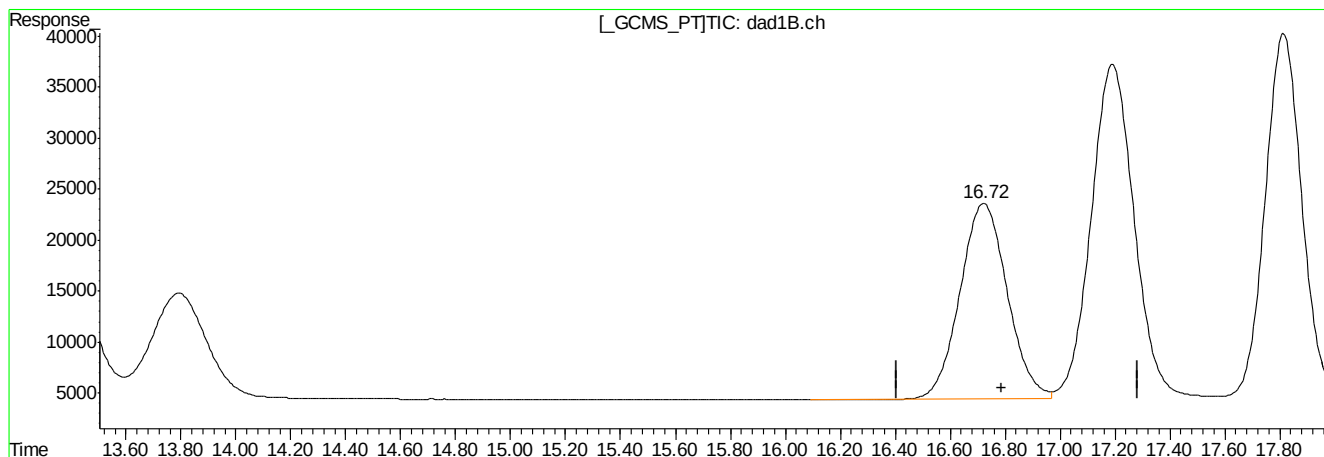
BB073641.D BBB2232_083122.M

Thu Sep 01 12:30:00 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1A.ch
Acq On : 01-Sep-2022, 11:59:24 Operator: FOUADS
Sample : icv2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 12:29 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Thu Sep 01 08:04:52 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
16.72min 1052.477ppb
response 2272705

(18) o-Nitrotoluene #2
16.73min 201.853ppb
response 663311

(+) = Expected Retention Time

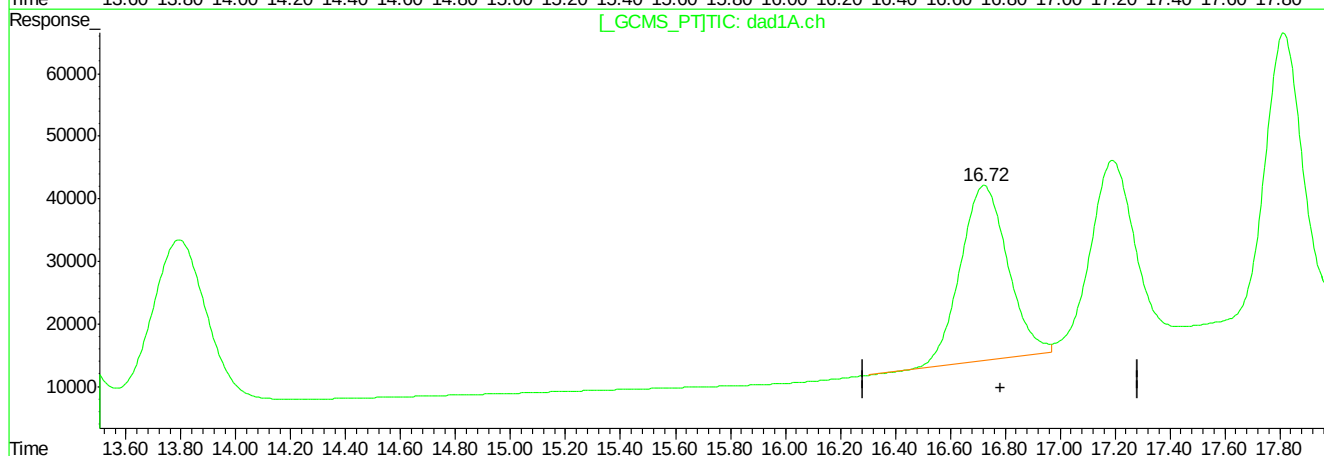
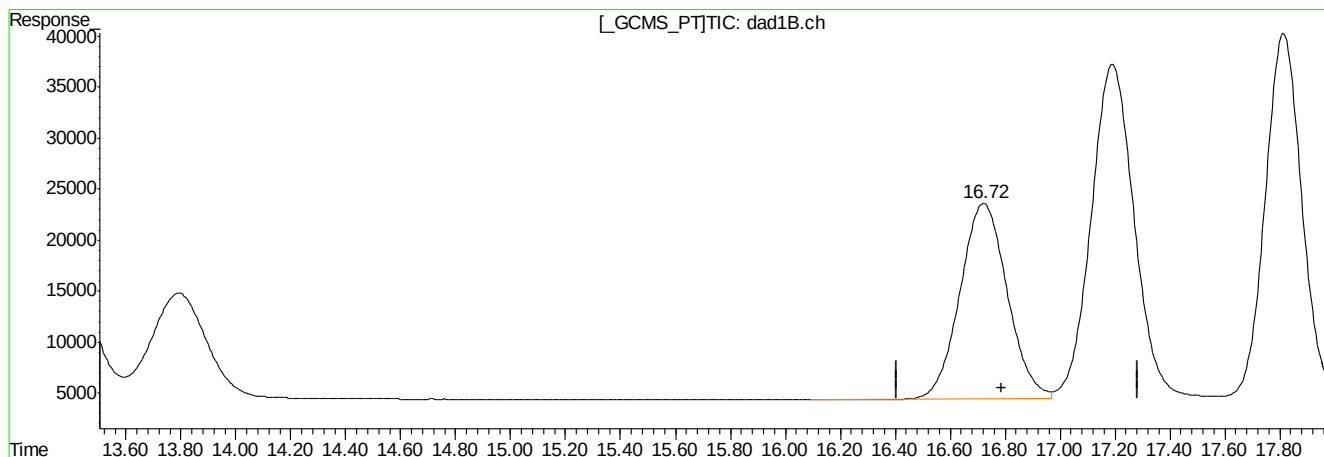
BB073641.D BBB2232_083122.M

Thu Sep 01 12:30:06 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1A.ch
Acq On : 01-Sep-2022, 11:59:24 Operator: FOUADS
Sample : icv2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 12:29 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Thu Sep 01 08:04:52 2022
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

16.72min 1052.477ppb

response 2272705

(18) o-Nitrotoluene #2

16.72min 1024.193ppb m

response 3365603

(+) = Expected Retention Time

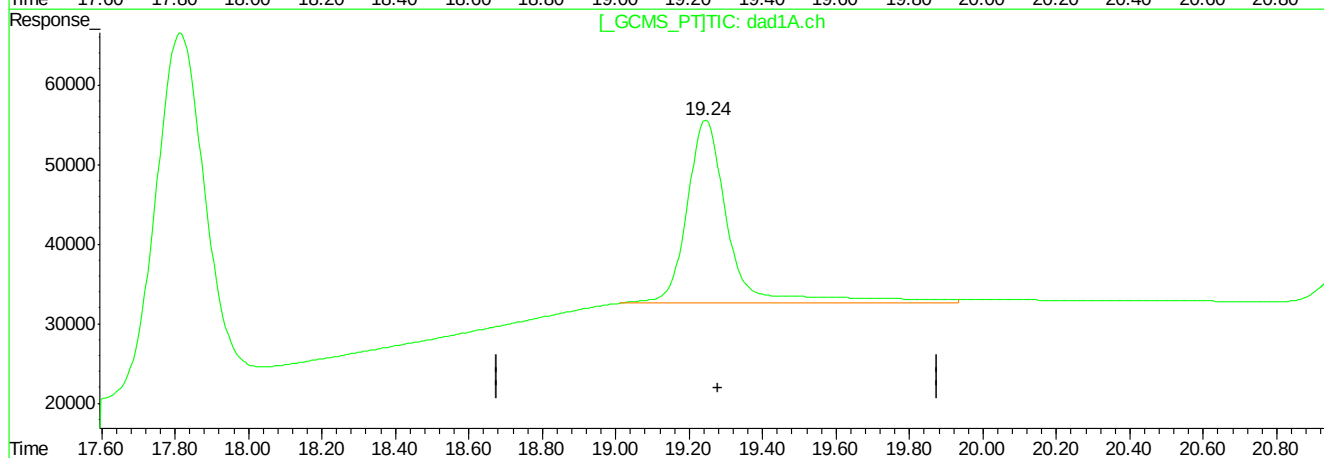
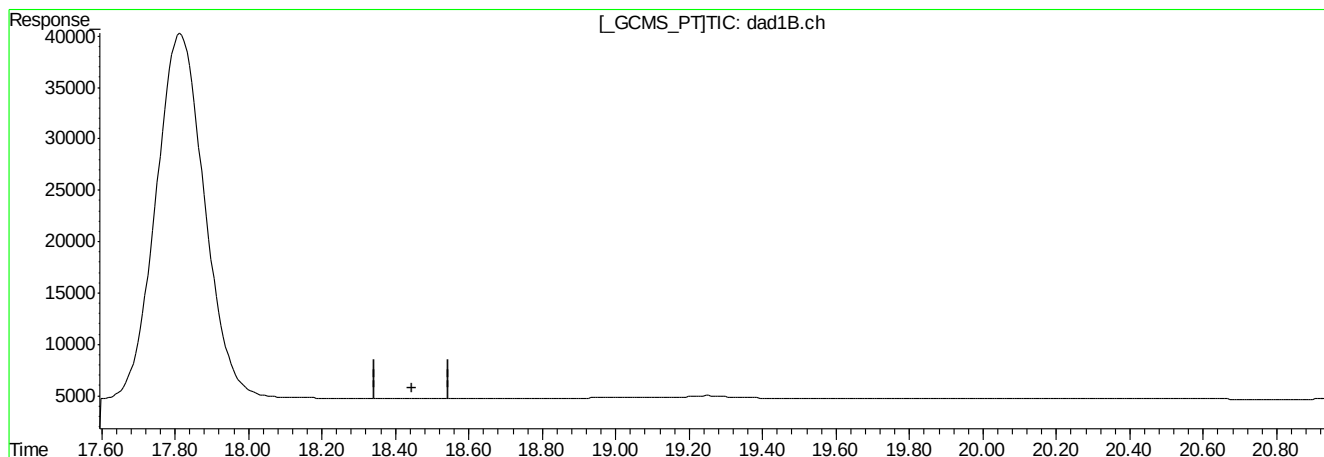
BB073641.D BBB2232_083122.M

Thu Sep 01 12:30:20 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1A.ch
Acq On : 01-Sep-2022, 11:59:24 Operator: FOUADS
Sample : icv2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 12:29 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Thu Sep 01 08:04:52 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.25min 1356.130ppb

response 1822628

(+) = Expected Retention Time

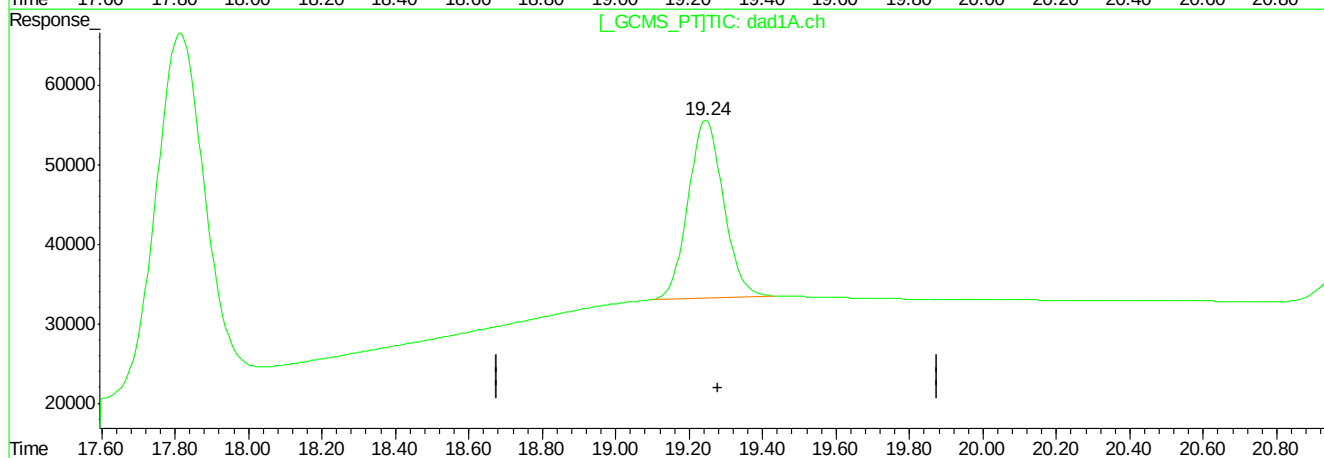
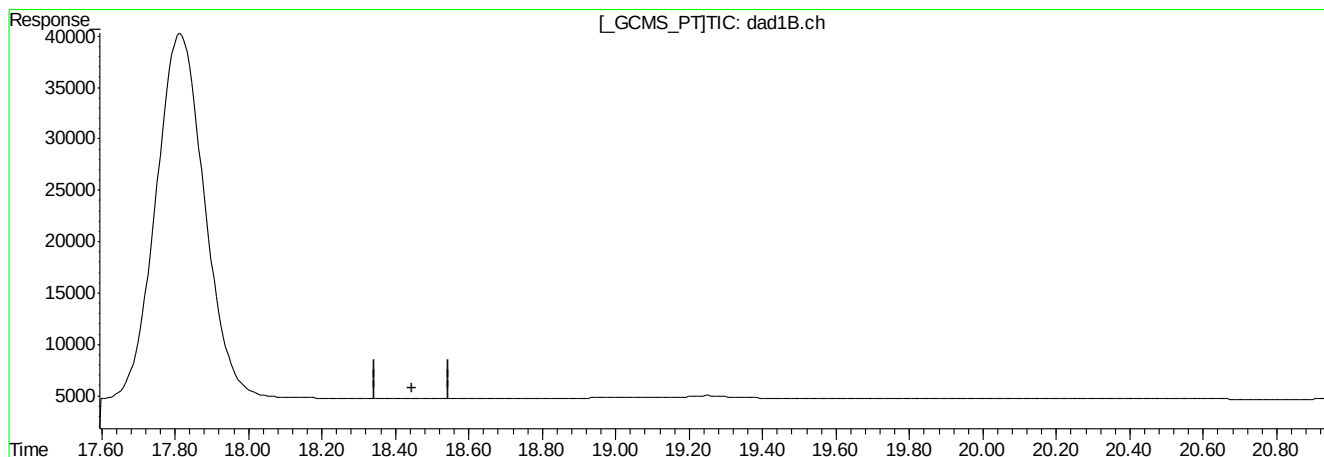
BB073641.D BBB2232_083122.M

Thu Sep 01 12:30:30 2022

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2233\BB073641.D\dad1A.ch
Acq On : 01-Sep-2022, 11:59:24 Operator: FOUADS
Sample : icv2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Sep 1 12:29 2022 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Thu Sep 01 08:04:52 2022
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.24min 1109.024ppb m

response 1490521

(+) = Expected Retention Time

BB073641.D BBB2232_083122.M

Thu Sep 01 12:30:43 2022

Naresh Jiawan
02/08/23 09:39

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1A.ch
 Acq On : 30-Jan-2023, 09:45:34 Operator: fouads
 Sample : cc2232-1000 Inst : G1315B
 Misc : op95139,GBB2301,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 30 10:16:05 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.25	13.25	2391375	4222406	1116.201	993.818
Spiked Amount	500.000	Range	70 - 136	Recovery	= 223.24%#	198.76%#
Target Compounds						
1) TNX	1.47	1.47	1852761	2920417	493.647	507.457
2) HMX	1.69	1.69	1539708	4309315	1039.887	1053.560
3) DNX	1.93	1.93	3218548	5092172	1046.227	1031.300
4) MNX	2.63	2.63	3472802	5338819	1210.061	1214.047
5) RDX	3.35	3.35	1904450	3024579	1026.676	1032.486
6) 1,3,5-Trinitrobe	5.41	5.41	4104534	6150808	1032.426	988.127
7) 1,3-Dinitrobenze	6.70	6.70	5391944	3524951	1034.795	1025.660
8) 3,5-Dinitroanili	7.16	7.16	4071285	6721424	1034.417	1028.467m
9) Nitrobenzene	8.54	8.54	3098297	3049014	1033.246	1028.490
10) Nitroglycerin	0.00	10.39	0	1339702	N.D.	1054.685 #
11) Tetryl	11.38	11.38	2952716	4701336	1044.970	1020.720
12) 2,4,6-Trinitroto	11.75	11.75	3864955	4619261	1057.378	1037.390
13) 2-Amino-4,6-Dini	12.15	12.15	3383323	5044999	1070.481	1021.606
14) 4-Amino-2,6-Dini	12.71	12.71	2498463	4972455	1087.904	1011.781
16) 2,4-Dinitrotolue	13.81	13.81	3761375	2957187	803.070	949.620
17) 2,6-Dinitrotolue	14.27	14.27	1476475	3569463	972.450	1017.964m
18) o-Nitrotoluene	17.15	17.14	2259394	3276349	1046.313	997.032m
19) p-Nitrotoluene	17.56	17.56	3507452	2881909	1048.447	1019.702
20) m-Nitrotoluene	18.14	18.14	3243756	3877025	1041.929	998.981
21) PETN	0.00	19.48	0	1495863	N.D.	1113.000m#

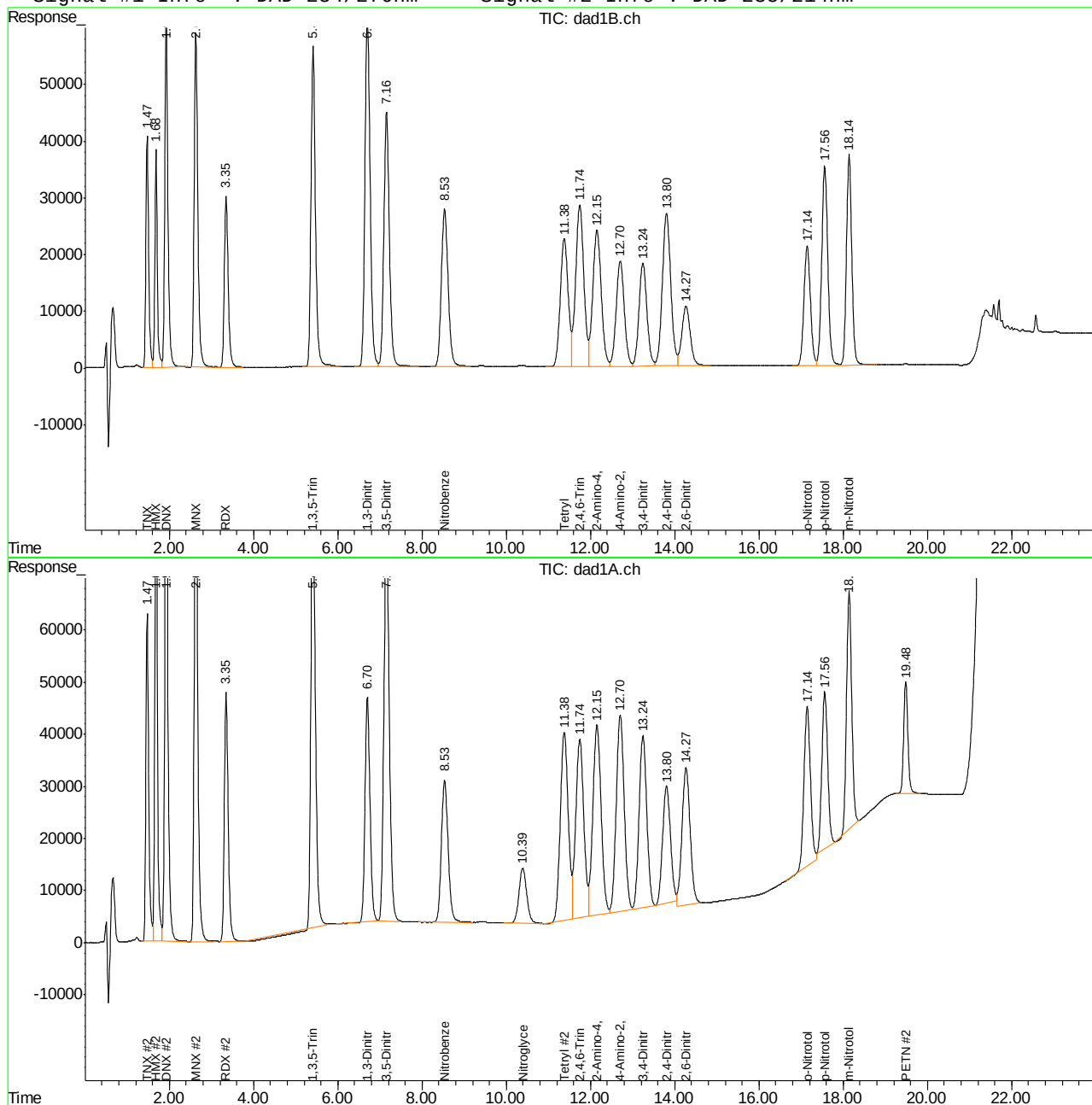
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075437.D BBB2232_083122.M Wed Feb 01 08:43:54 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1A.ch
Acq On : 30-Jan-2023, 09:45:34 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : op95139, GBB2301, 1000,,, 10, 1, water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:07 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2301-CC2232

Method:

SW846 8330B

Lab FileID:

BB075437.D

Analyst approved:

02/01/23 09:33 Fouad Sekkar

Injection Time:

01/30/23 09:45

Supervisor approved:

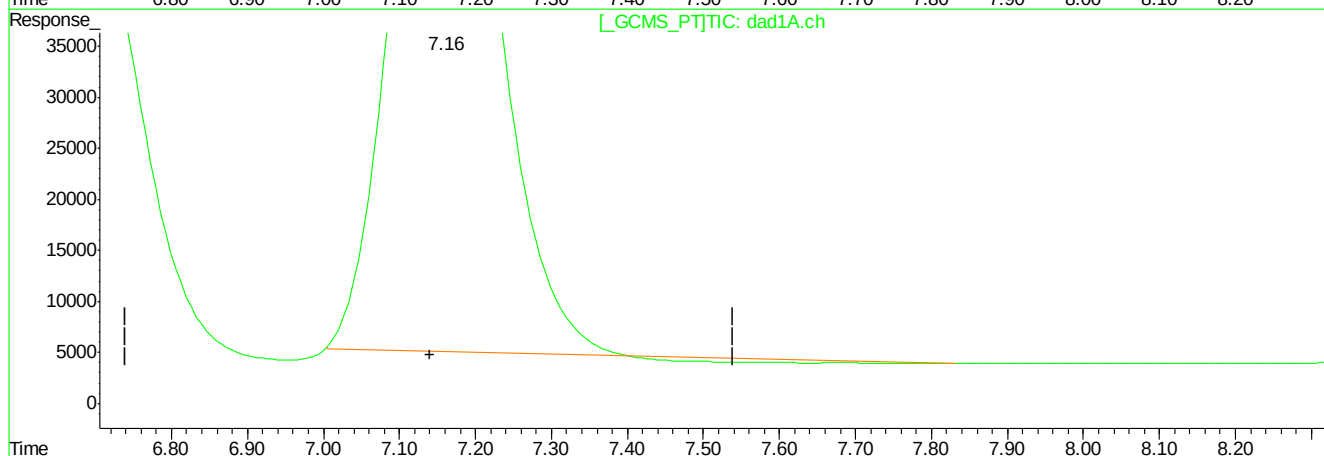
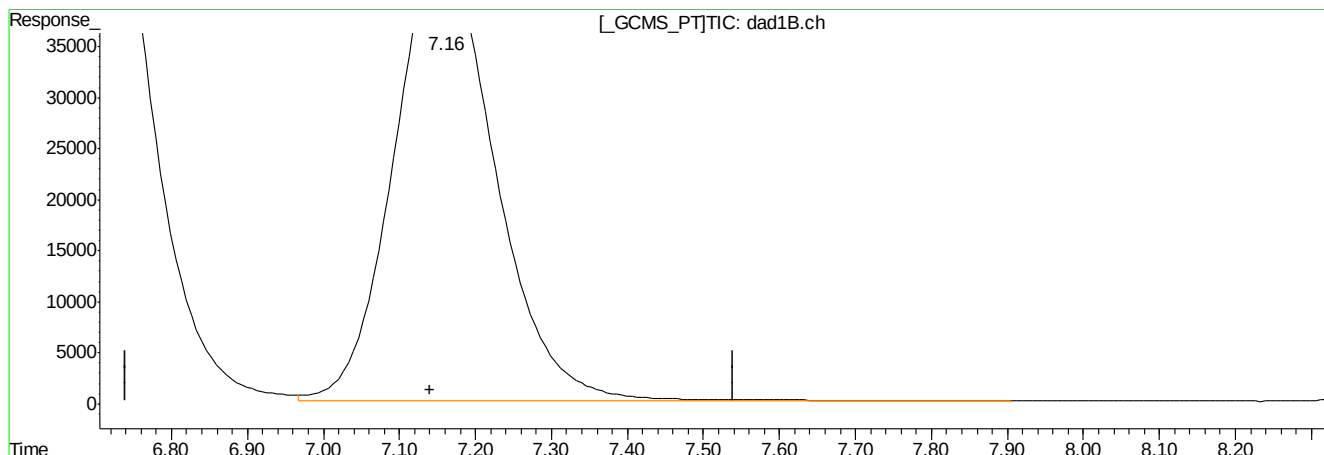
02/08/23 09:39 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	2	7.16	Poor instrument integration
2,6-Dinitrotoluene	606-20-2	2	14.27	Poor instrument integration
o-Nitrotoluene	88-72-2	2	17.14	Poor instrument integration
PETN	78-11-5	2	19.48	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1A.ch
Acq On : 30-Jan-2023, 09:45:34 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 10:16 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.16min 1034.417ppb

response 4071285

(8) 3,5-Dinitroaniline #2

7.16min 982.729ppb

response 6422511

(+) = Expected Retention Time

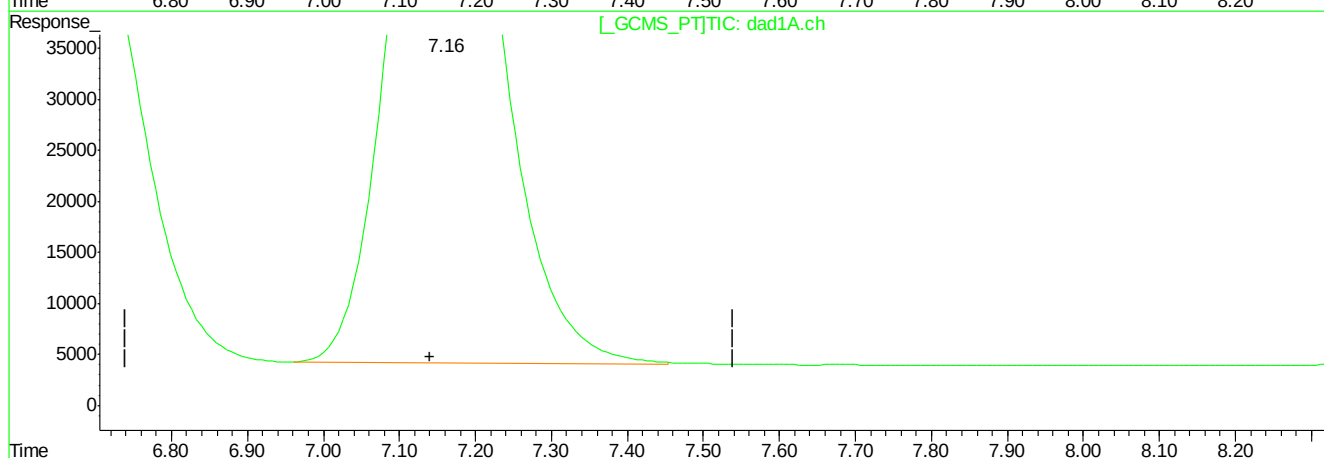
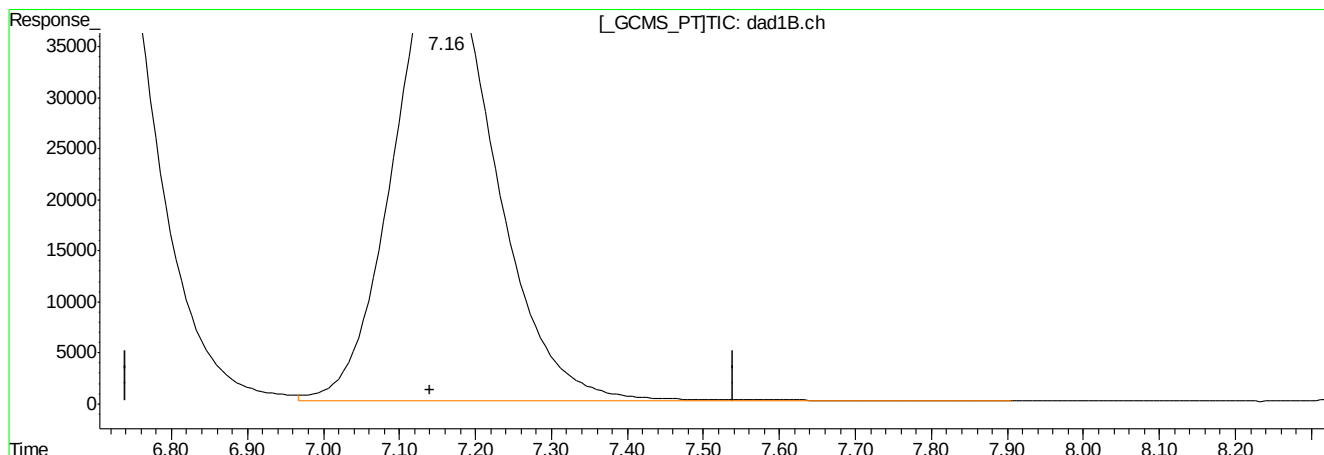
BB075437.D BBB2232_083122.M

Tue Jan 31 10:06:14 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1A.ch
Acq On : 30-Jan-2023, 09:45:34 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 10:16 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.16min 1034.417ppb

response 4071285

(8) 3,5-Dinitroaniline #2

7.16min 1028.467ppb m

response 6721424

(+) = Expected Retention Time

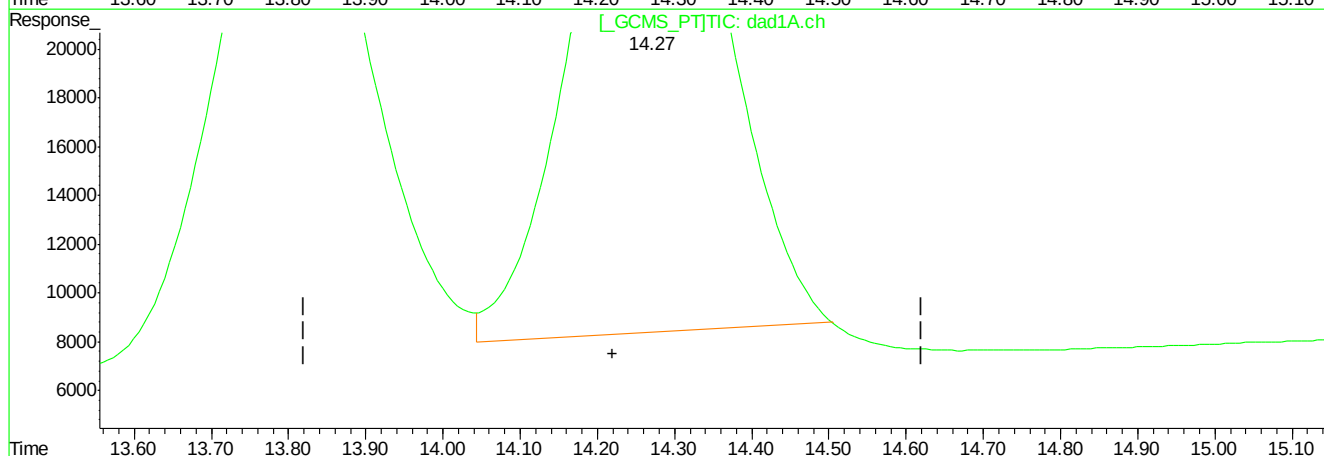
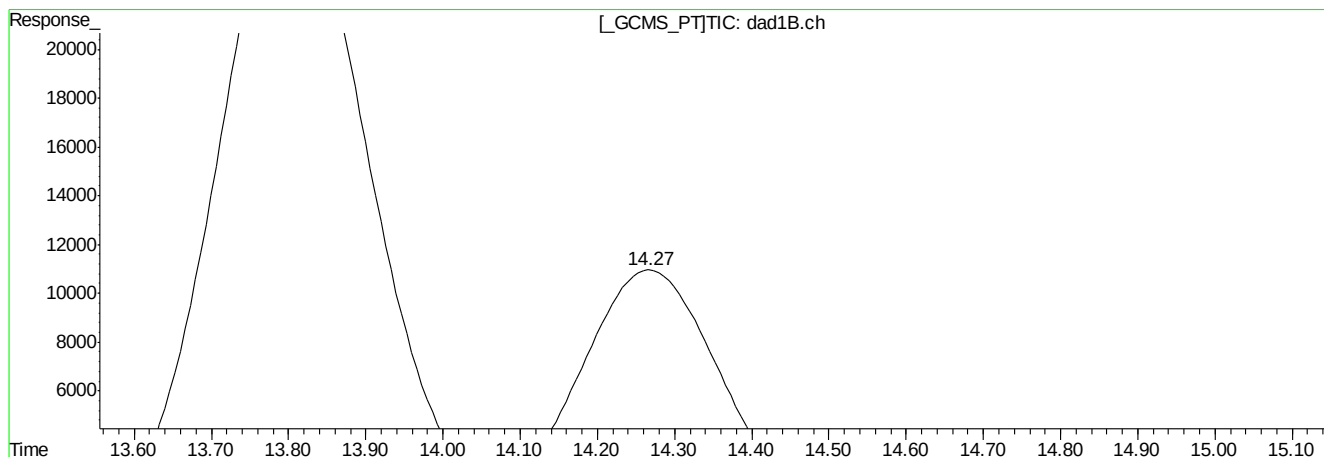
BB075437.D BBB2232_083122.M

Tue Jan 31 10:06:21 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1A.ch
Acq On : 30-Jan-2023, 09:45:34 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 10:16 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

14.27min 972.450ppb

response 1476475

(17) 2,6-Dinitrotoluene #2

14.27min 925.410ppb

response 3244922

(+) = Expected Retention Time

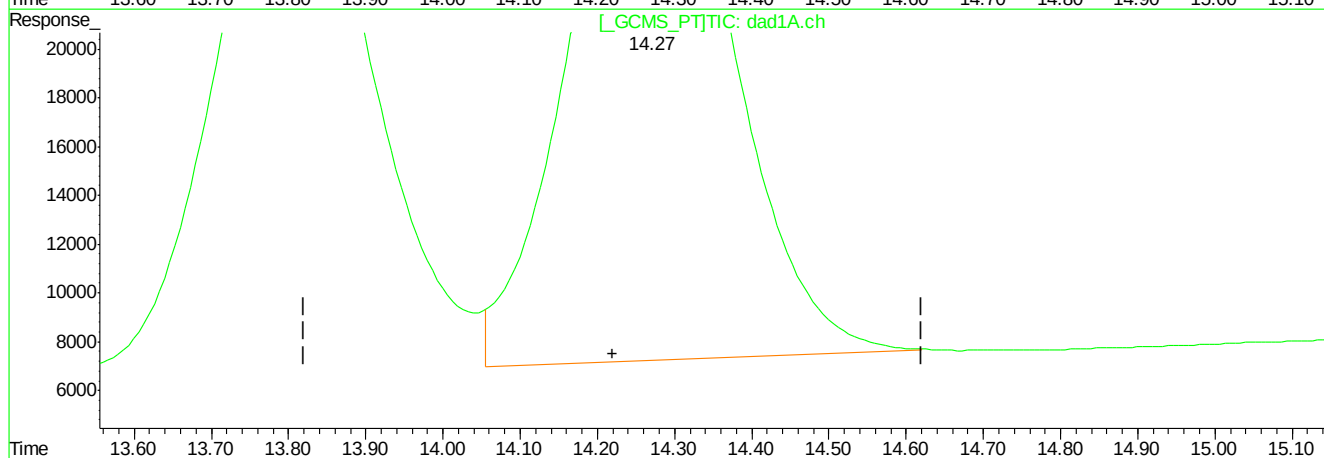
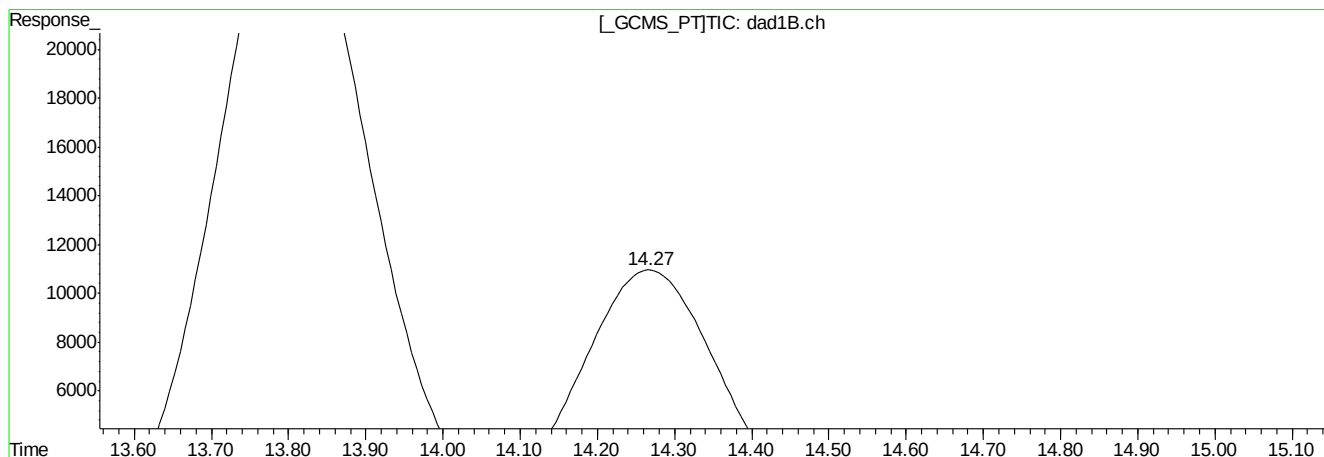
BB075437.D BBB2232_083122.M

Tue Jan 31 10:06:39 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1A.ch
Acq On : 30-Jan-2023, 09:45:34 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 10:16 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

14.27min 972.450ppb

response 1476475

(17) 2,6-Dinitrotoluene #2

14.27min 1017.964ppb m

response 3569463

(+) = Expected Retention Time

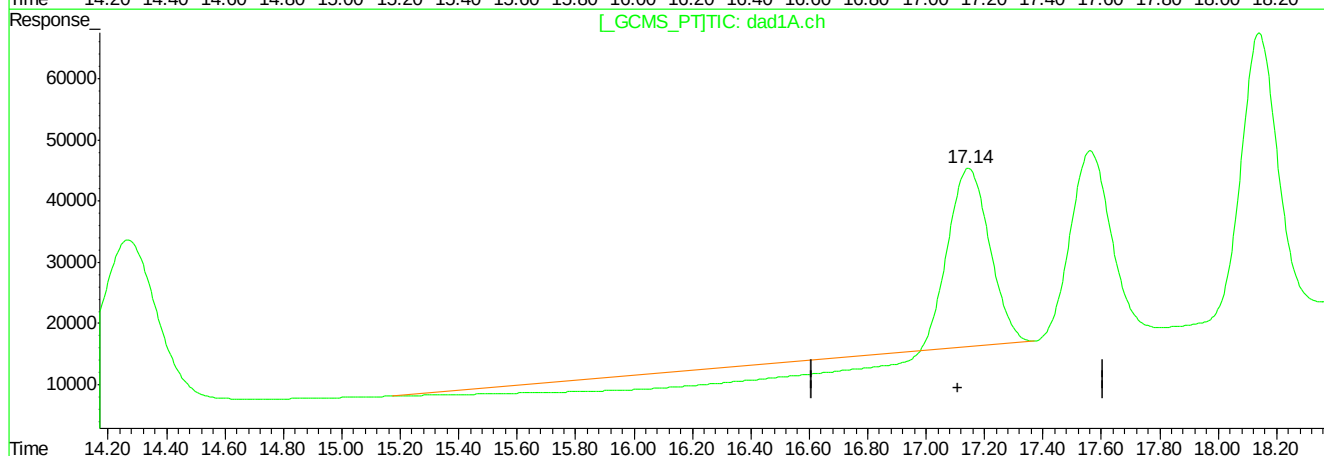
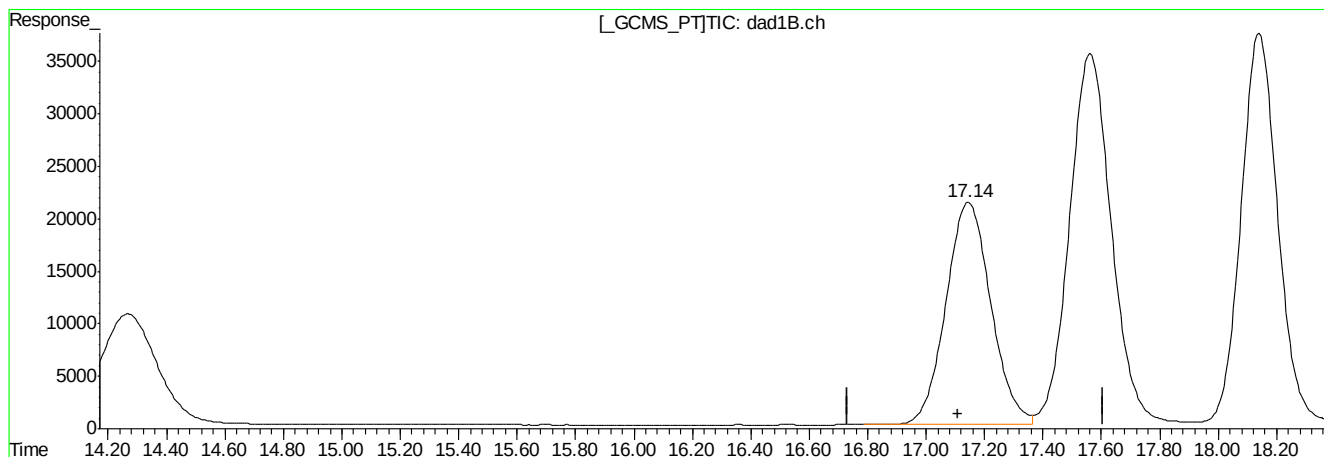
BB075437.D BBB2232_083122.M

Tue Jan 31 10:06:44 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1A.ch
Acq On : 30-Jan-2023, 09:45:34 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 10:16 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
17.15min 1046.313ppb
response 2259394

(18) o-Nitrotoluene #2
17.15min 305.549ppb
response 1004066

(+) = Expected Retention Time

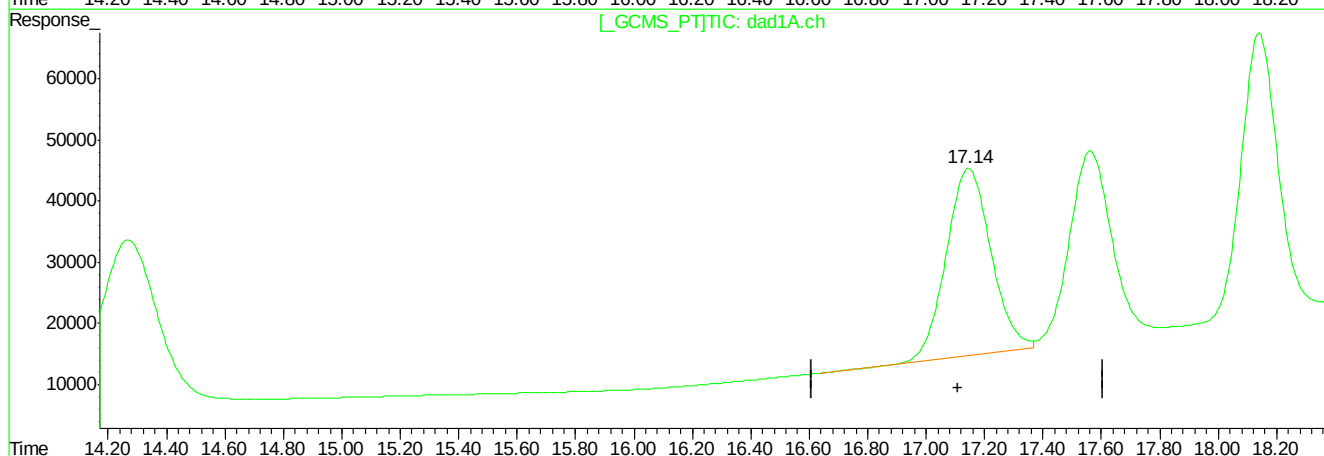
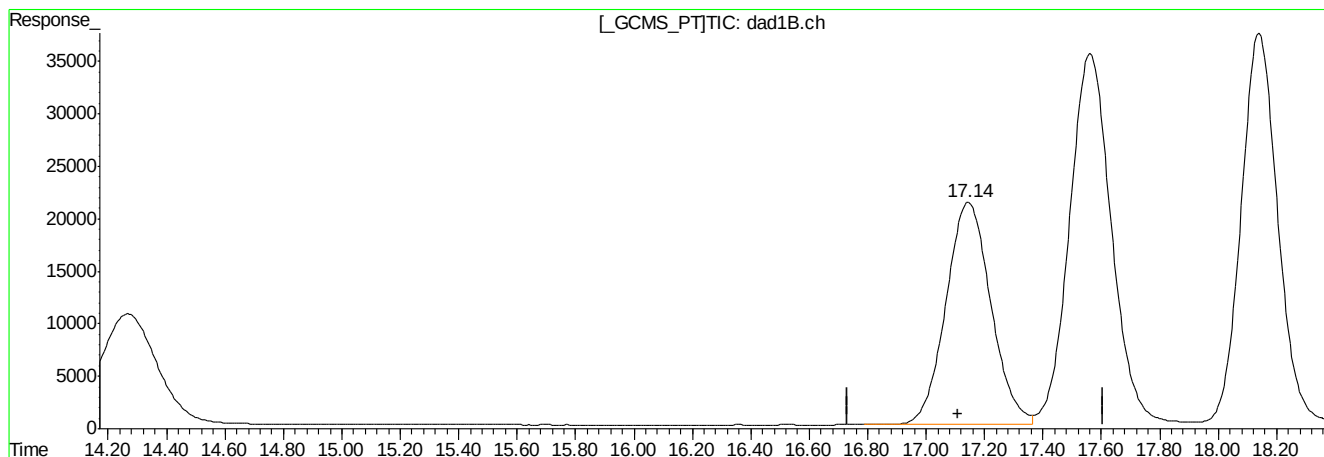
BB075437.D BBB2232_083122.M

Tue Jan 31 10:06:49 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1A.ch
Acq On : 30-Jan-2023, 09:45:34 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 10:16 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

17.15min 1046.313ppb

response 2259394

(18) o-Nitrotoluene #2

17.14min 997.032ppb m

response 3276349

(+) = Expected Retention Time

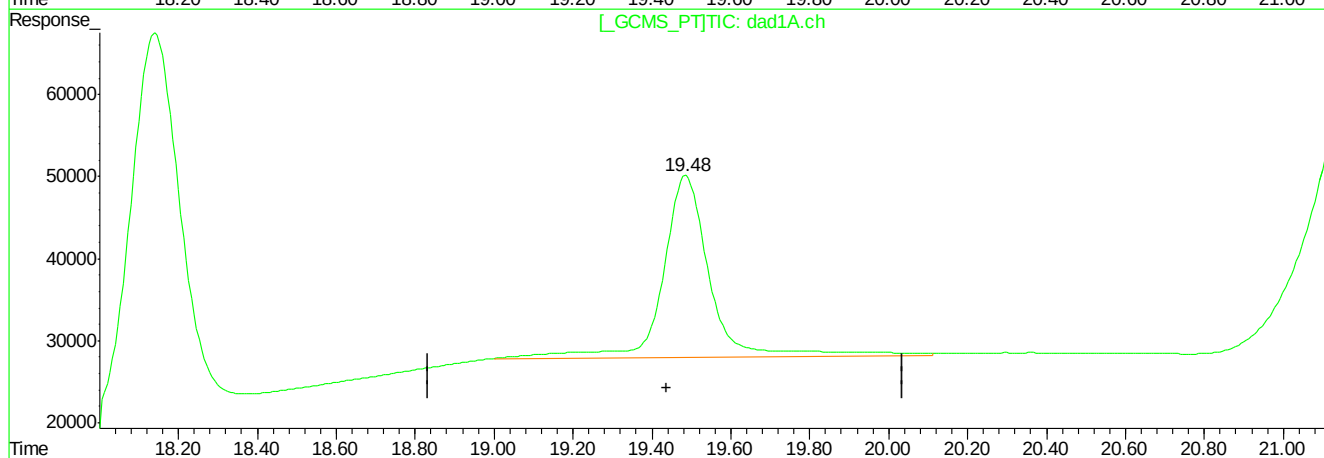
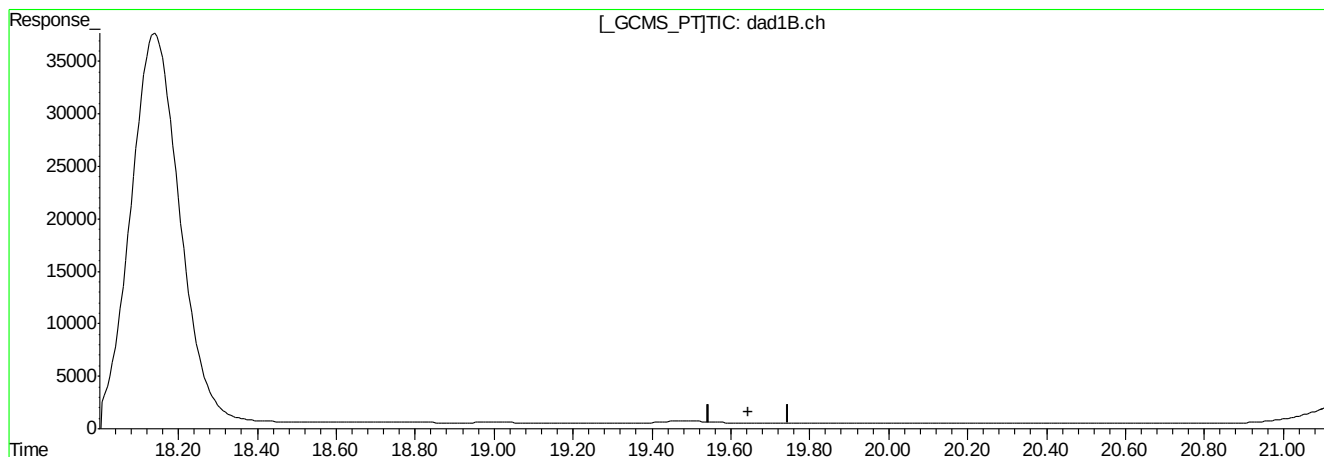
BB075437.D BBB2232_083122.M

Tue Jan 31 10:06:57 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1A.ch
Acq On : 30-Jan-2023, 09:45:34 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 10:16 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.49min 1382.570ppb

response 1858164

QEdit

(+) = Expected Retention Time

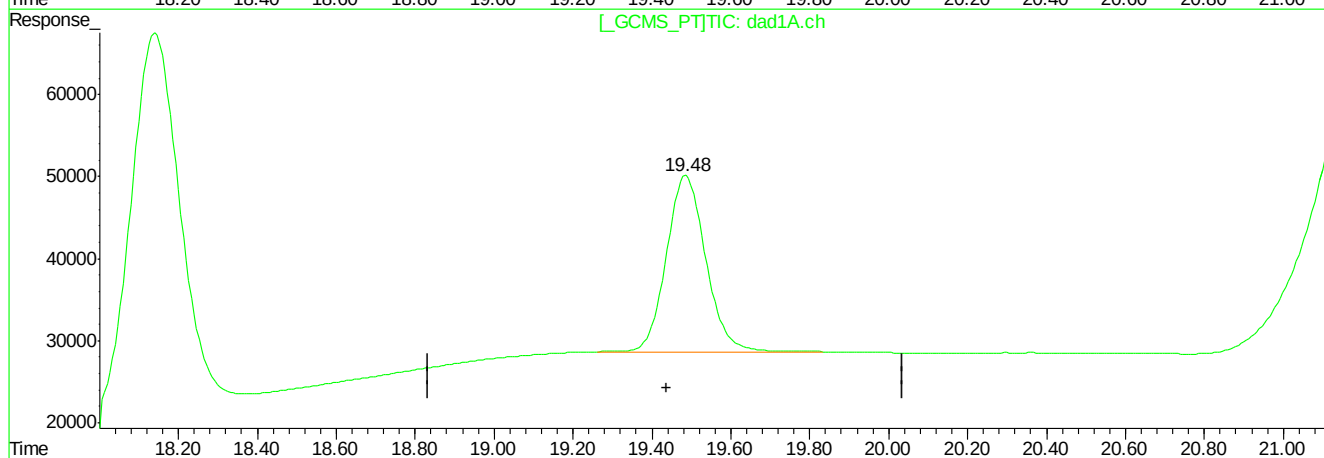
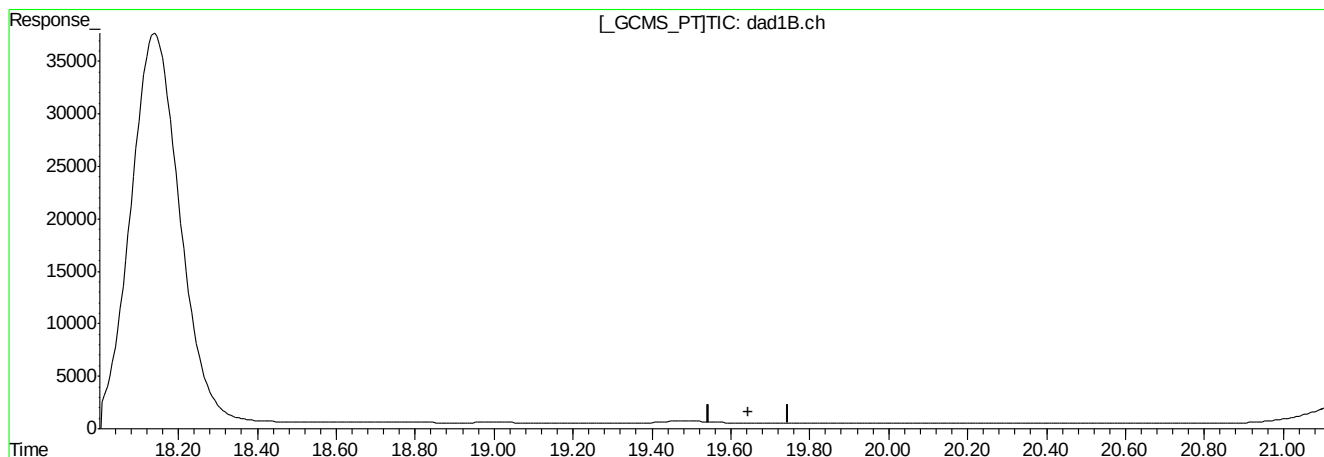
BB075437.D BBB2232_083122.M

Tue Jan 31 10:07:05 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075437.D\dad1A.ch
Acq On : 30-Jan-2023, 09:45:34 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 30 10:16 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.48min 1113.000ppb m

response 1495863

QEdit

(+) = Expected Retention Time

BB075437.D BBB2232_083122.M

Tue Jan 31 10:07:16 2023

Naresh Jiawan
02/08/23 09:39

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075449.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075449.D\dad1A.ch
 Acq On : 30-Jan-2023, 17:48:09 Operator: fouads
 Sample : ecc2232-1000 Inst : G1315B
 Misc : op95139,GBB2301,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 31 08:41:55 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.27	13.27	2420775	4261891	1129.923	1003.112
Spiked Amount	500.000	Range	70 - 136	Recovery	= 225.98%#	200.62%#
Target Compounds						
1) TNX	1.48	1.48	1891976	2949842	504.096	512.570
2) HMX	1.69	1.69	1568287	4362475	1059.189	1066.557
3) DNX	1.93	1.93	3303871	5214532	1073.962	1056.081
4) MNX	2.64	2.64	3559880	5473265	1240.403	1244.620
5) RDX	3.36	3.36	1955982	3098168	1054.457	1057.607
6) 1,3,5-Trinitrobe	5.43	5.43	4164742	6697810	1047.570	1076.003
7) 1,3-Dinitrobenze	6.72	6.72	5526748	3836757	1060.666	1116.387
8) 3,5-Dinitroanili	7.18	7.18	4145041	6780864	1053.157	1037.562
9) Nitrobenzene	8.55	8.55	3170936	3126051	1057.471	1054.476
10) Nitroglycerin	0.00	10.41	0	1388838	N.D.	1093.368 #
11) Tetryl	11.40	11.40	2998097	4723187	1061.030	1025.464
12) 2,4,6-Trinitroto	11.77	11.77	3942222	4692232	1078.517	1053.777
13) 2-Amino-4,6-Dini	12.18	12.18	3449405	5130839	1091.389	1038.988
14) 4-Amino-2,6-Dini	12.73	12.73	2546452	5046105	1108.800	1026.767
16) 2,4-Dinitrotolue	13.83	13.83	3882095	2973299	828.844	954.794
17) 2,6-Dinitrotolue	14.29	14.29	1553017	3595442	1022.863	1025.373m
18) o-Nitrotoluene	17.15	17.15	2314092	3519846	1071.643	1071.131m
19) p-Nitrotoluene	17.57	17.57	3602169	2950493	1076.760	1043.969
20) m-Nitrotoluene	18.14	18.15	3323396	3967216	1067.511	1022.220
21) PETN	0.00	19.49	0	1522997	N.D.	1133.189m#

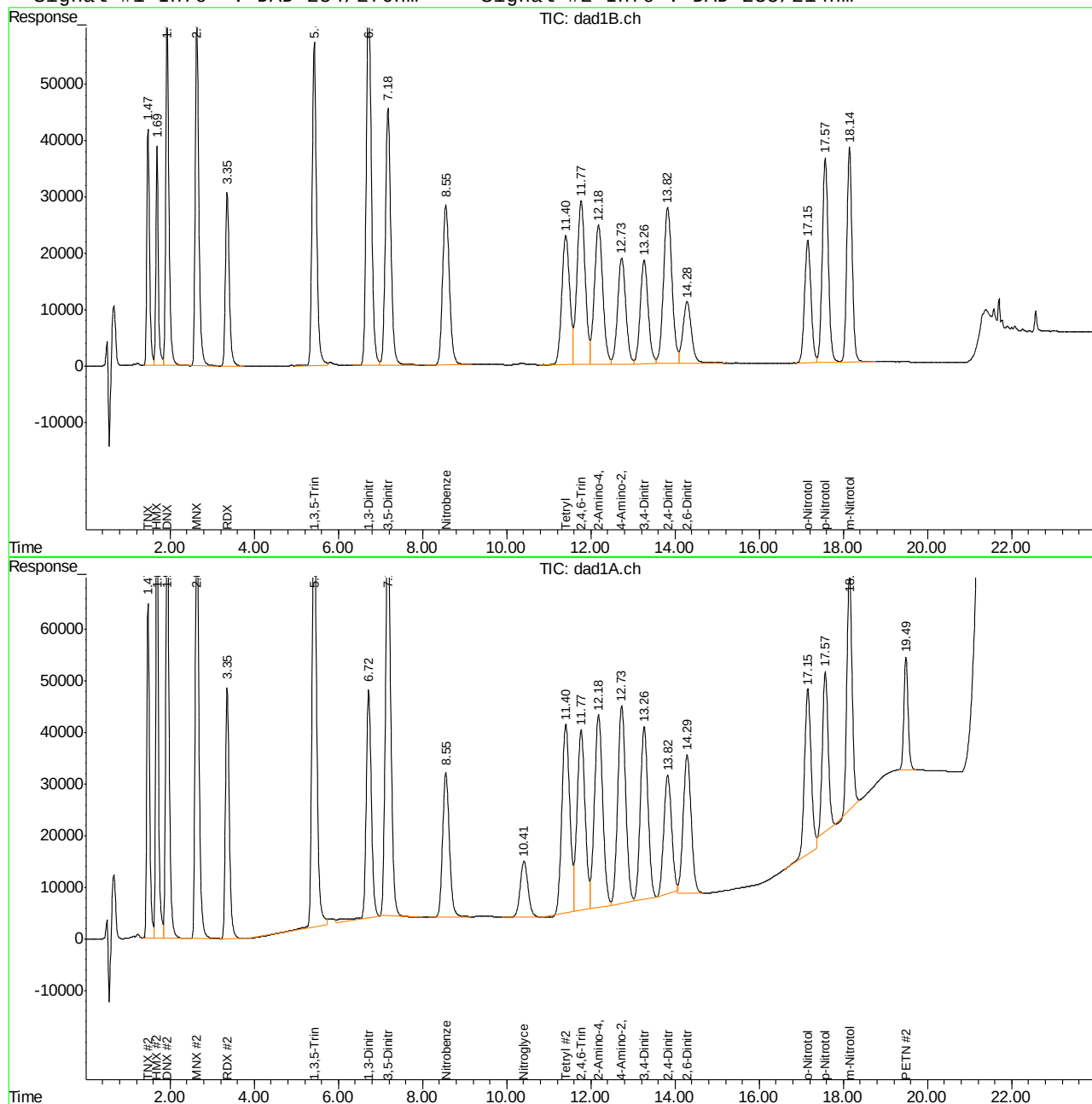
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075449.D BBB2232_083122.M Wed Feb 01 08:44:02 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075449.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075449.D\dad1A.ch
Acq On : 30-Jan-2023, 17:48:09 Operator: fouads
Sample : ecc2232-1000 Inst : G1315B
Misc : op95139, GBB2301, 1000,,, 10, 1, water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 10:24 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: GBB2301-ECC2232

Method: SW846 8330B

Lab FileID: BB075449.D

Analyst approved: 02/01/23 09:33 Fouad Sekkar

Injection Time: 01/30/23 17:48

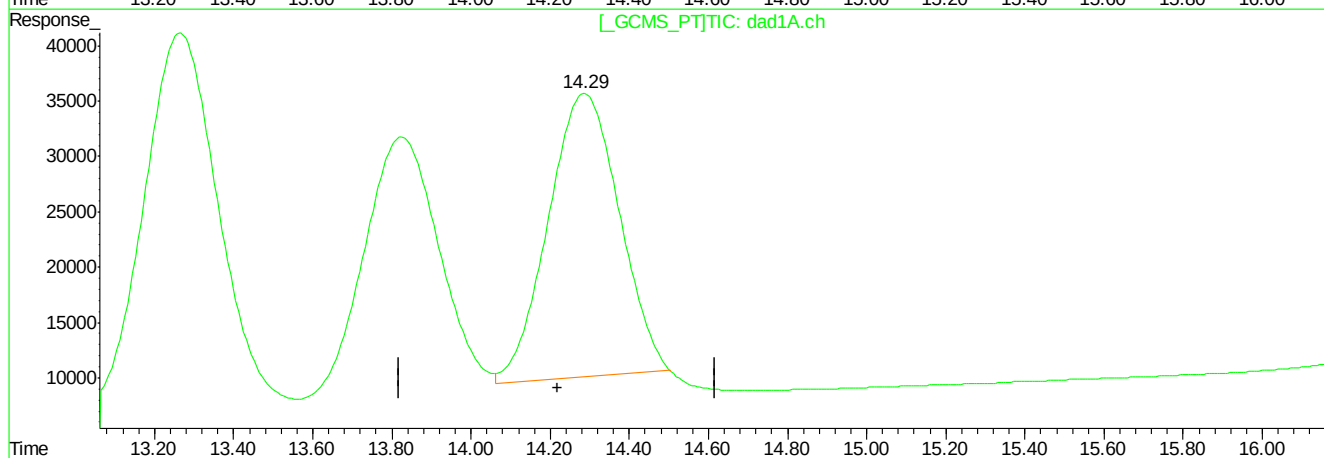
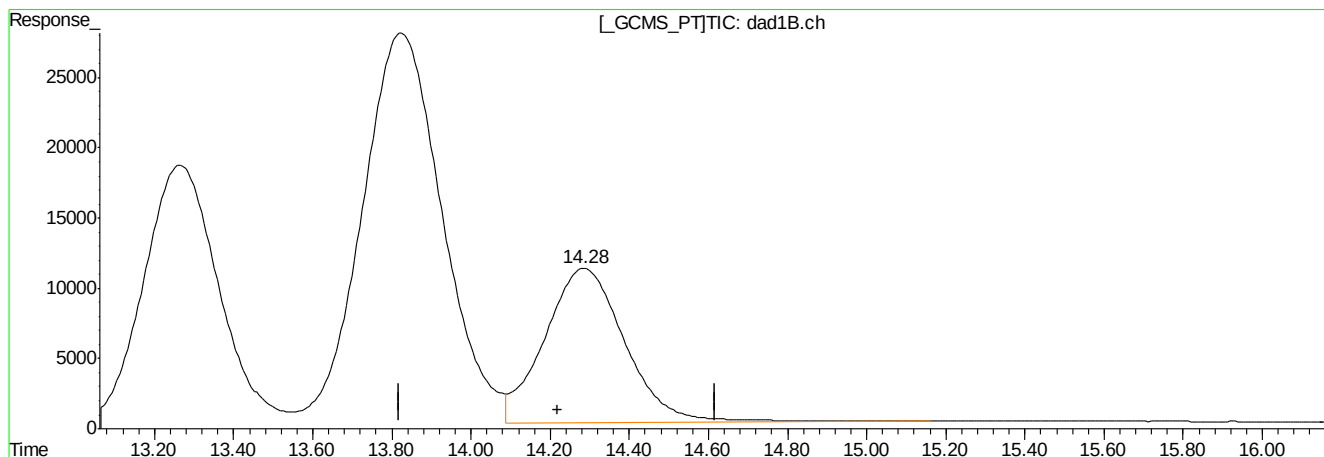
Supervisor approved: 02/08/23 09:39 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
2,6-Dinitrotoluene	606-20-2	2	14.29	Poor instrument integration
o-Nitrotoluene	88-72-2	2	17.15	Missed peak
PETN	78-11-5	2	19.49	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075449.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075449.D\dad1A.ch
Acq On : 30-Jan-2023, 17:48:09 Operator: fouads
Sample : ecc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 8:41 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

14.29min 1022.863ppb

response 1553017

(17) 2,6-Dinitrotoluene #2

14.29min 914.123ppb

response 3205346

(+) = Expected Retention Time

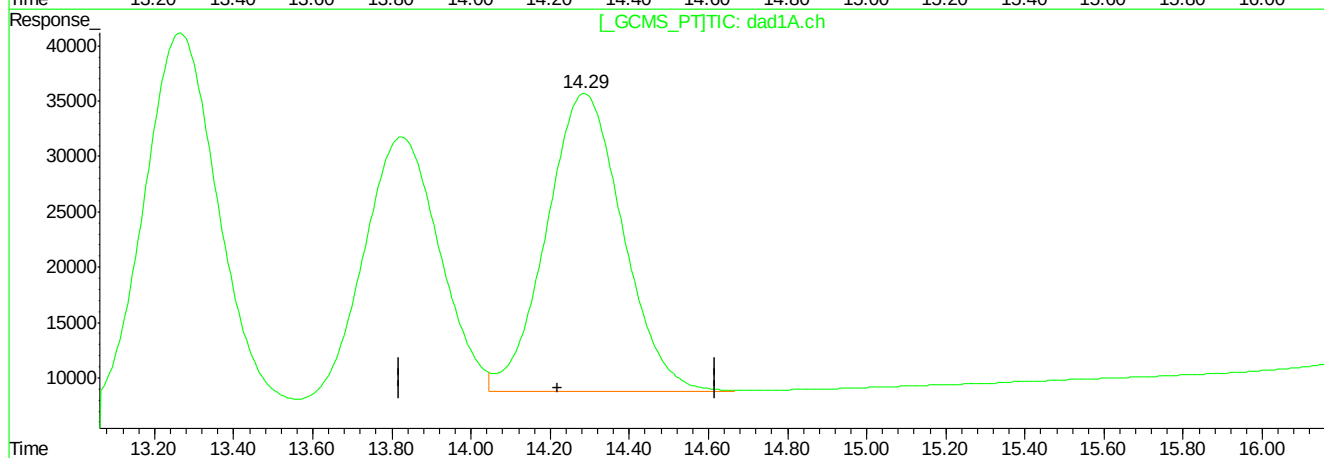
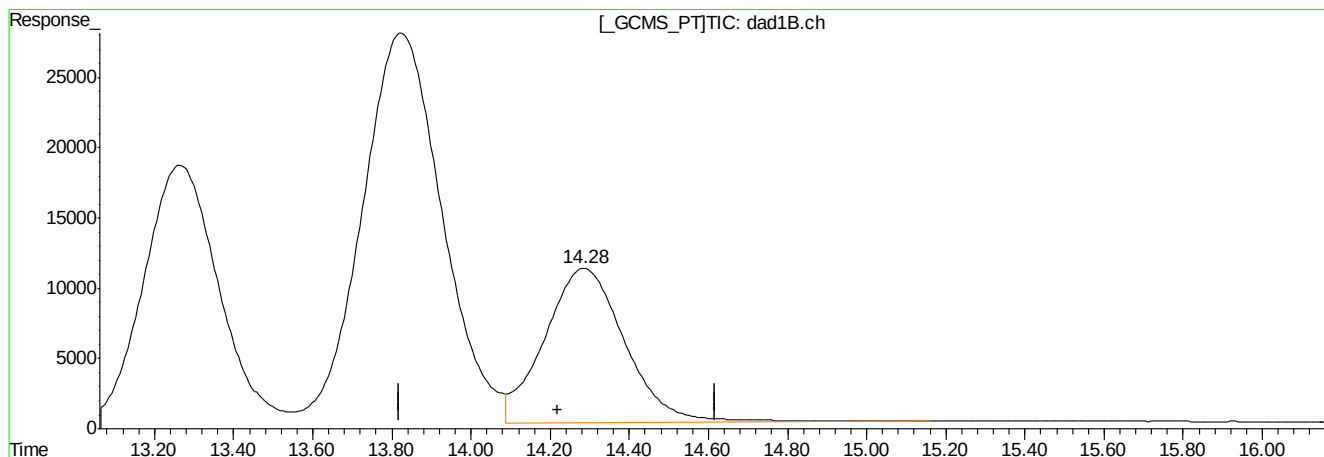
BB075449.D BBB2232_083122.M

Tue Jan 31 10:23:39 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075449.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075449.D\dad1A.ch
Acq On : 30-Jan-2023, 17:48:09 Operator: fouads
Sample : ecc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 8:41 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

14.29min 1022.863ppb

response 1553017

(17) 2,6-Dinitrotoluene #2

14.29min 1025.373ppb m

response 3595442

(+) = Expected Retention Time

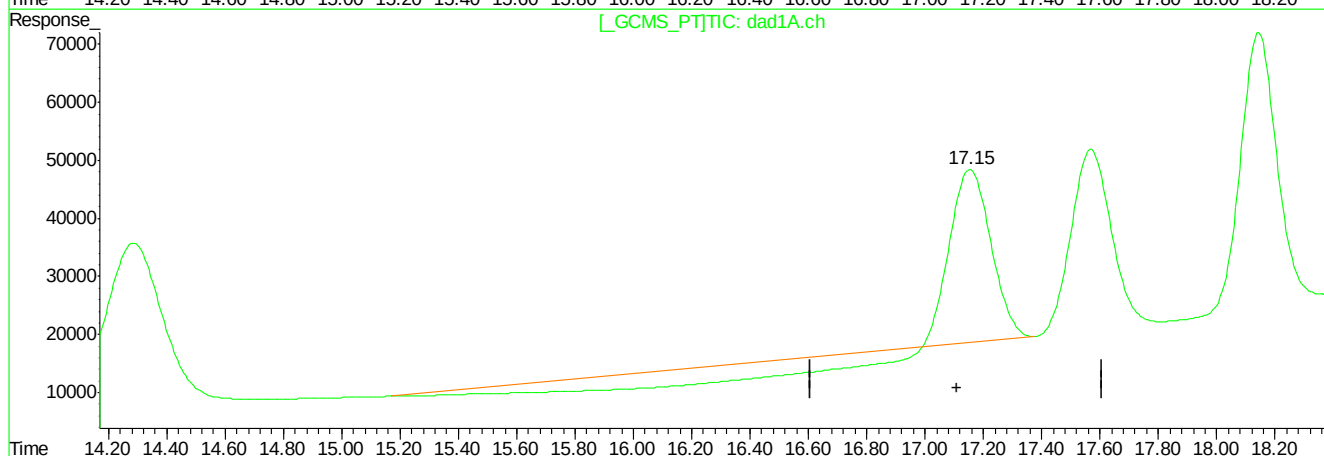
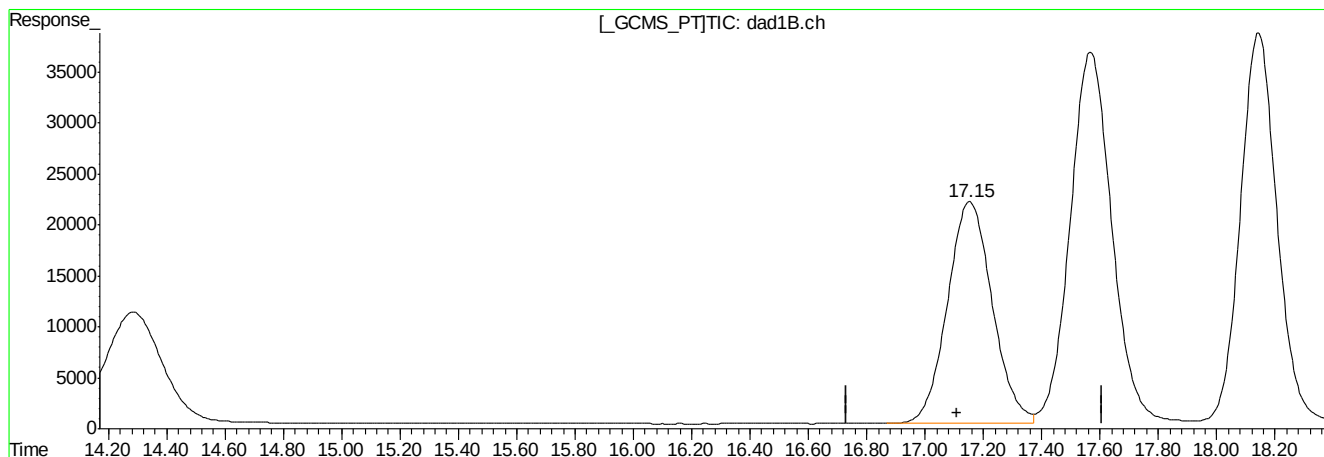
BB075449.D BBB2232_083122.M

Tue Jan 31 10:23:47 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075449.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075449.D\dad1A.ch
Acq On : 30-Jan-2023, 17:48:09 Operator: fouads
Sample : ecc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 8:41 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene
17.15min 1071.643ppb
response 2314092

(18) o-Nitrotoluene #2
17.16min 254.316ppb
response 835709

(+) = Expected Retention Time

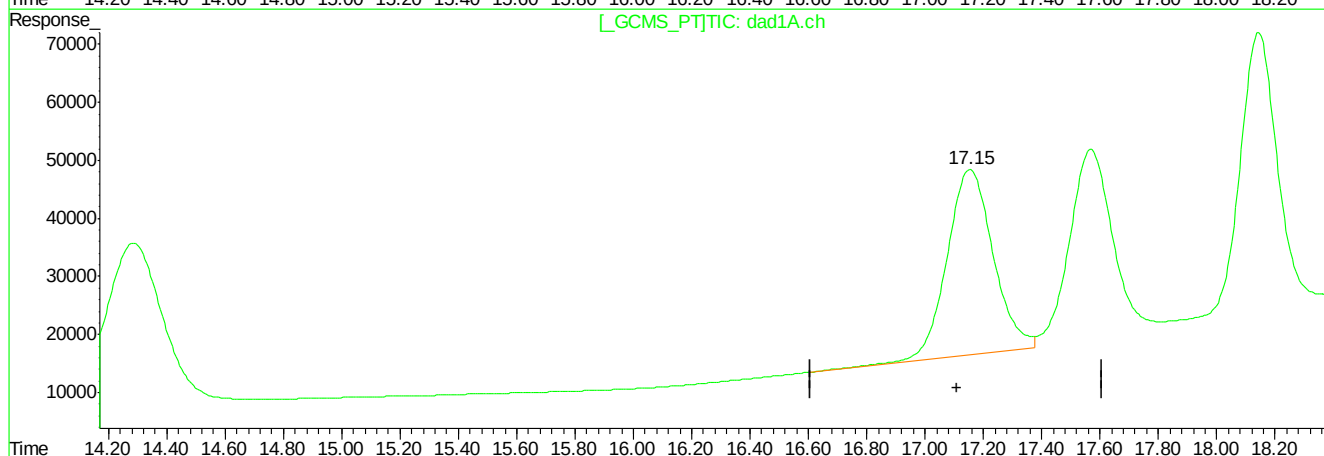
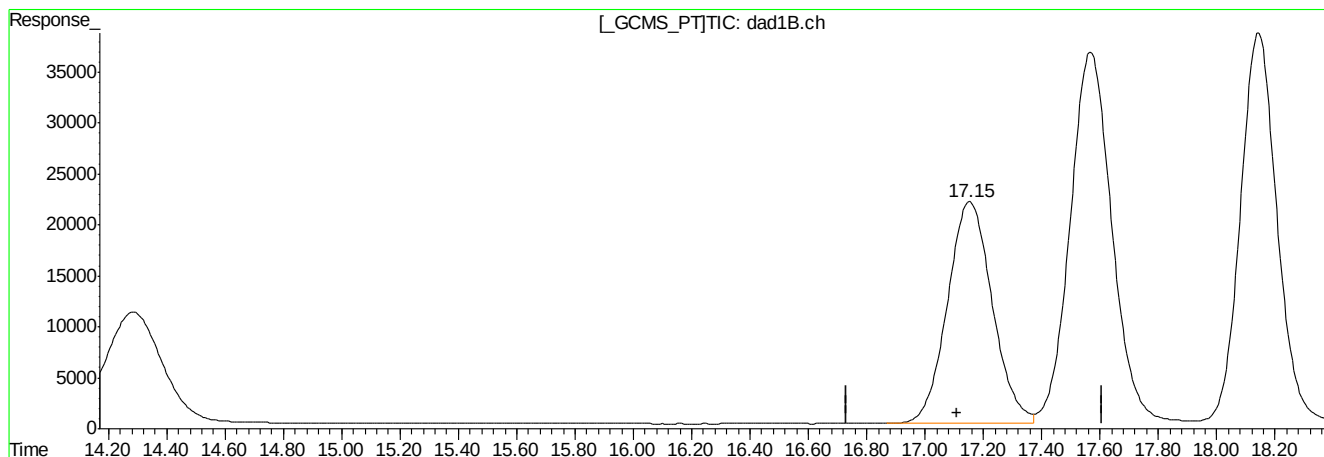
BB075449.D BBB2232_083122.M

Tue Jan 31 10:24:02 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075449.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075449.D\dad1A.ch
Acq On : 30-Jan-2023, 17:48:09 Operator: fouads
Sample : ecc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 8:41 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

17.15min 1071.643ppb

response 2314092

(18) o-Nitrotoluene #2

17.15min 1071.131ppb m

response 3519846

(+) = Expected Retention Time

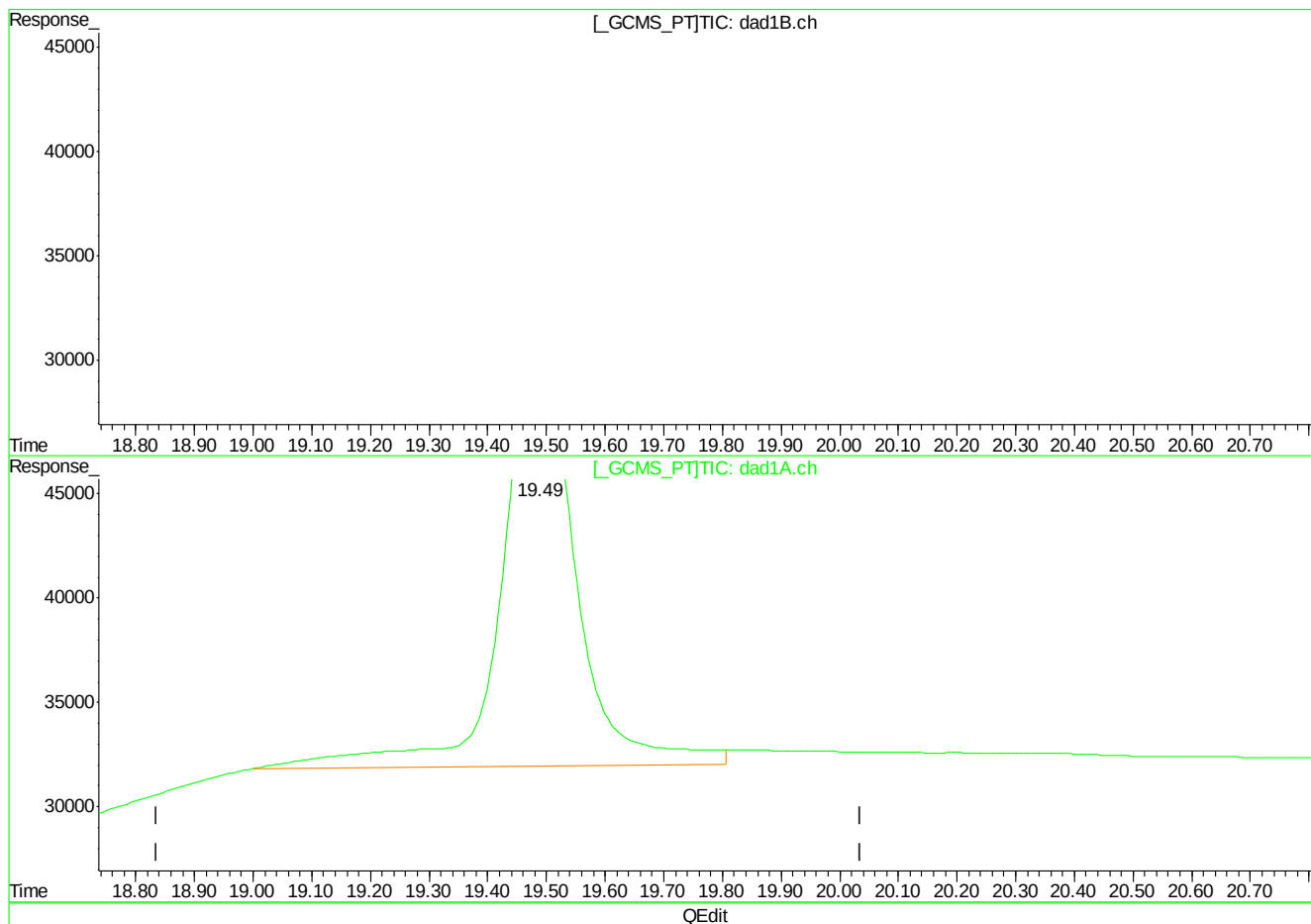
BB075449.D BBB2232_083122.M

Tue Jan 31 10:24:08 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075449.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075449.D\dad1A.ch
Acq On : 30-Jan-2023, 17:48:09 Operator: fouads
Sample : ecc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 8:41 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.49min 1368.231ppb

response 1838893

(+) = Expected Retention Time

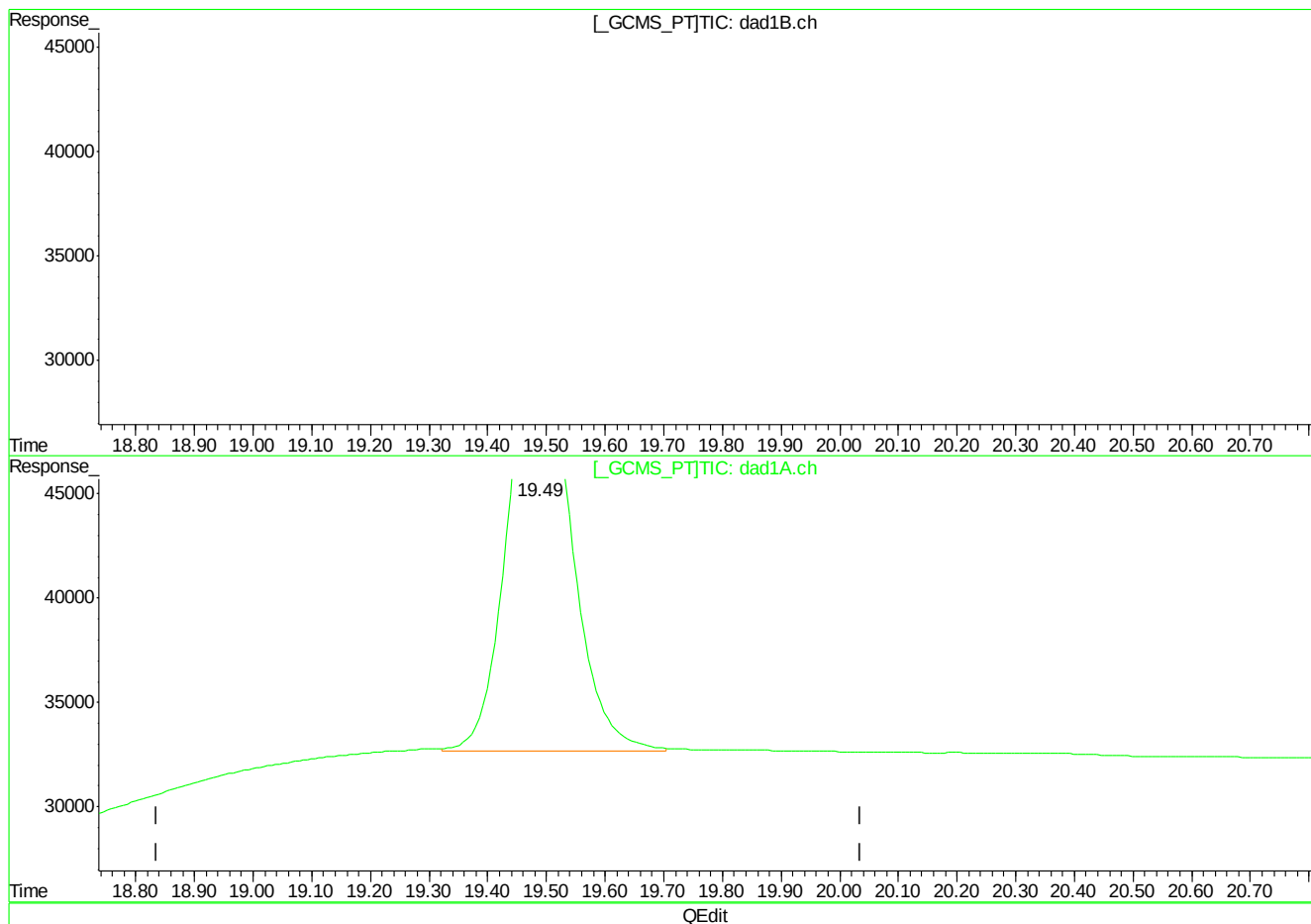
BB075449.D BBB2232_083122.M

Tue Jan 31 10:24:16 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2301\BB075449.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2301\BB075449.D\dad1A.ch
Acq On : 30-Jan-2023, 17:48:09 Operator: fouads
Sample : ecc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 8:41 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.49min 1133.189ppb m

response 1522997

(+) = Expected Retention Time

BB075449.D BBB2232_083122.M

Tue Jan 31 10:24:21 2023

Naresh Jiawan
02/08/23 09:44

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1A.ch
 Acq On : 31-Jan-2023, 11:17:49 Operator: fouads
 Sample : cc2232-1000 Inst : G1315B
 Misc : op95139,GBB2302,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 31 11:49:14 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 17 08:47:36 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.21	13.21	2427472	4306642	1133.049	1013.644
Spiked Amount	500.000	Range	70 - 136	Recovery	= 226.61%#	202.73%#
Target Compounds						
1) TNX	1.47	1.47	1873391	2907269	499.144	505.173
2) HMX	1.68	1.68	1548704	4347899	1045.963	1062.993
3) DNX	1.92	1.92	3260042	5151987	1059.715	1043.414
4) MNX	2.62	2.62	3532544	5420609	1230.878	1232.646
5) RDX	3.34	3.34	1939599	3070508	1045.625	1048.165
6) 1,3,5-Trinitrobe	5.40	5.40	4111441	6514321	1034.163	1046.525m
7) 1,3-Dinitrobenze	6.69	6.69	5472048	3586453	1050.168	1043.555
8) 3,5-Dinitroanili	7.14	7.13	4122500	6905851	1047.430	1056.687m
9) Nitrobenzene	8.51	8.51	3132173	3076026	1044.544	1037.602
10) Nitroglycerin	0.00	10.37	0	1363925	N.D.	1073.755 #
11) Tetryl	11.34	11.34	2996449	4788864	1060.447	1039.724
12) 2,4,6-Trinitroto	11.71	11.71	3908288	4677084	1069.233	1050.375
13) 2-Amino-4,6-Dini	12.11	12.11	3436482	5148697	1087.300	1042.604
14) 4-Amino-2,6-Dini	12.66	12.66	2548769	5083911	1109.809	1034.460
16) 2,4-Dinitrotolue	13.77	13.77	3807323	3100585	812.879	995.669
17) 2,6-Dinitrotolue	14.23	14.23	1490347	3636602	981.586	1037.111m
18) o-Nitrotoluene	17.12	17.11	2274311	3452205	1053.221	1050.547m
19) p-Nitrotoluene	17.54	17.54	3528205	2905289	1054.651	1027.974
20) m-Nitrotoluene	18.12	18.12	3253249	3902819	1044.978	1005.627
21) PETN	0.00	19.46	0	1525244	N.D.	1134.860m#

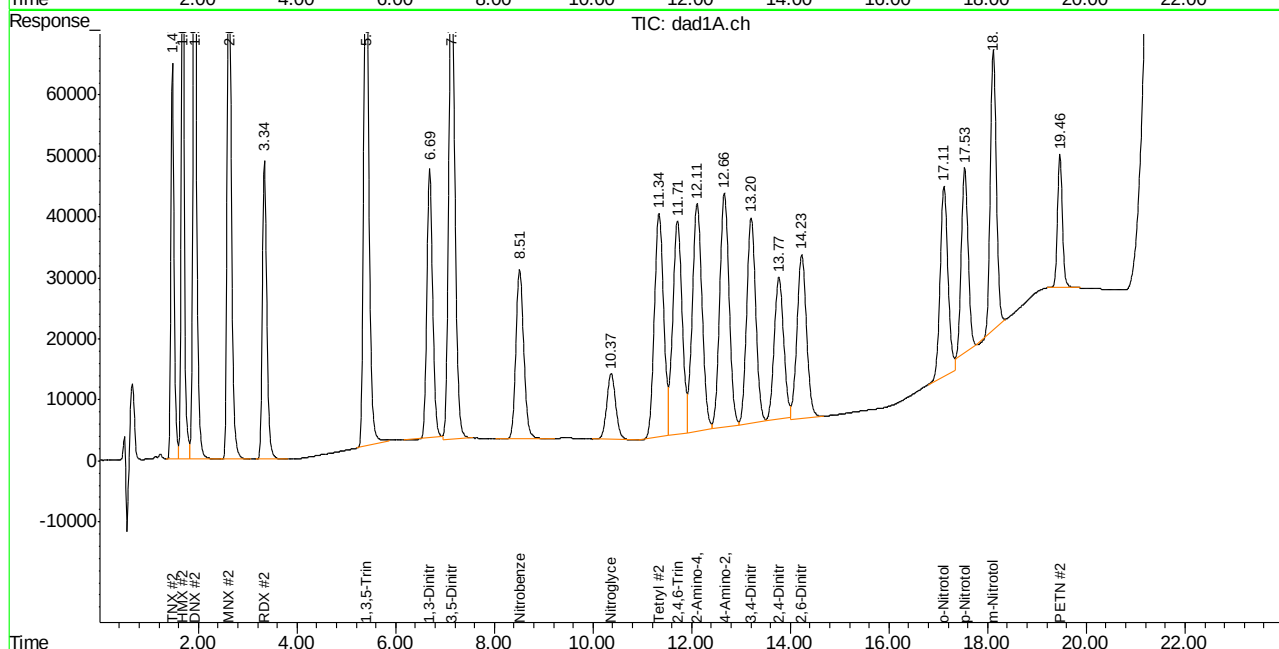
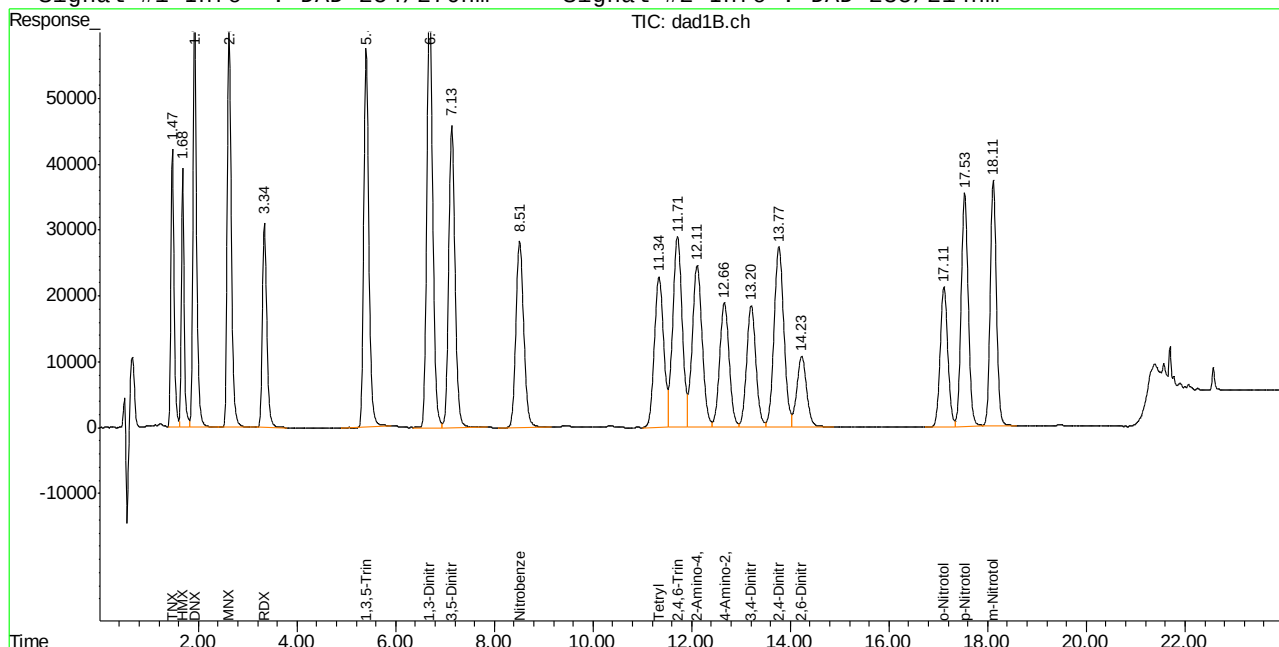
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075451.D BBB2232_083122.M Wed Feb 01 09:37:10 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1A.ch
Acq On : 31-Jan-2023, 11:17:49 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : op95139, GBB2302, 1000,,, 10, 1, water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Feb 1 8:19 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Tue Jan 17 08:47:36 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: GBB2302-CC2232

Method: SW846 8330B

Lab FileID: BB075451.D

Analyst approved: 02/01/23 09:42 Fouad Sekkar

Injection Time: 01/31/23 11:17

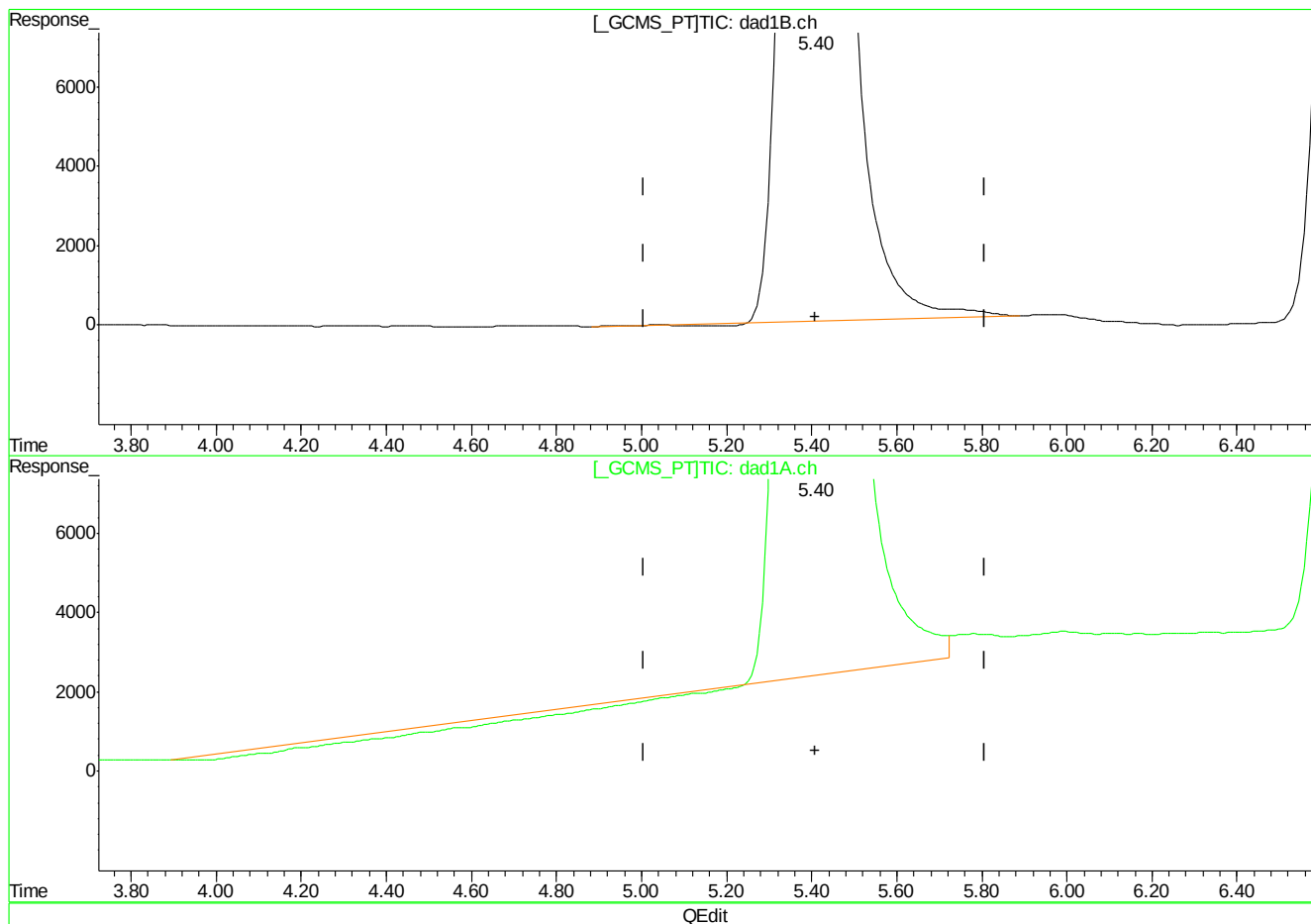
Supervisor approved: 02/08/23 09:44 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3,5-Trinitrobenzene	99-35-4	2	5.40	Poor instrument integration
3,5-Dinitroaniline	618-87-1	2	7.13	Poor instrument integration
2,6-Dinitrotoluene	606-20-2	2	14.23	Poor instrument integration
o-Nitrotoluene	88-72-2	2	17.11	Missed peak
PETN	78-11-5	2	19.46	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1A.ch
Acq On : 31-Jan-2023, 11:17:49 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 11:49 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

5.40min 1034.163ppb

response 4111441

(6) 1,3,5-Trinitrobenzene #2

5.40min 1032.607ppb

response 6427684

(+) = Expected Retention Time

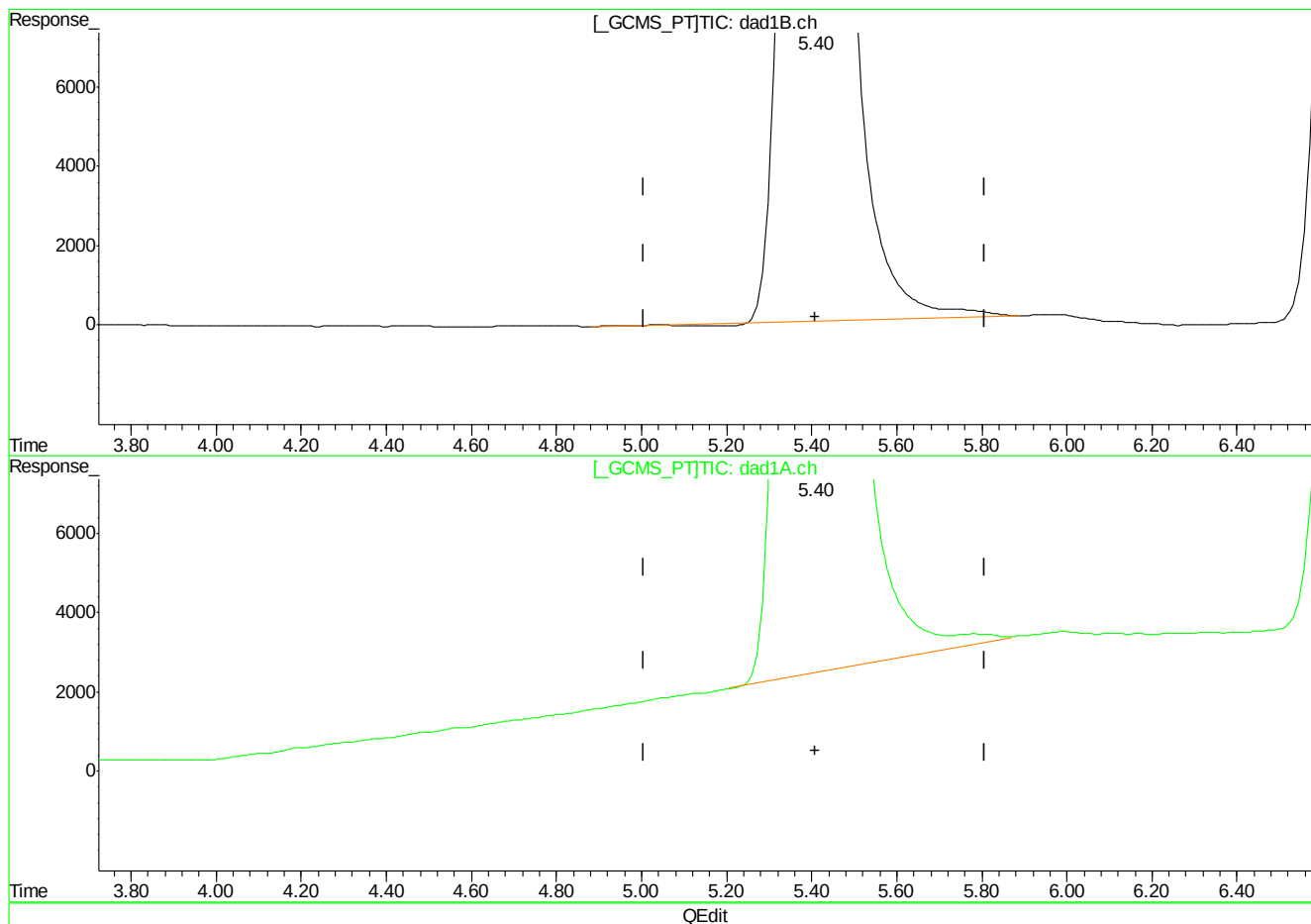
BB075451.D BBB2232_083122.M

Wed Feb 01 08:18:37 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1A.ch
Acq On : 31-Jan-2023, 11:17:49 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 11:49 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

5.40min 1034.163ppb

response 4111441

(6) 1,3,5-Trinitrobenzene #2

5.40min 1046.525ppb m

response 6514321

(+) = Expected Retention Time

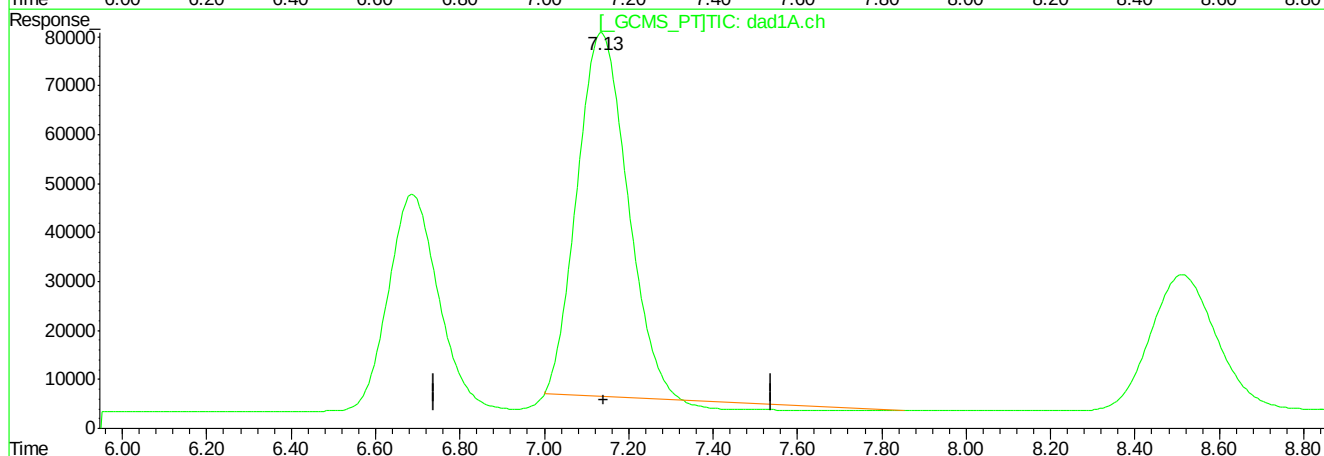
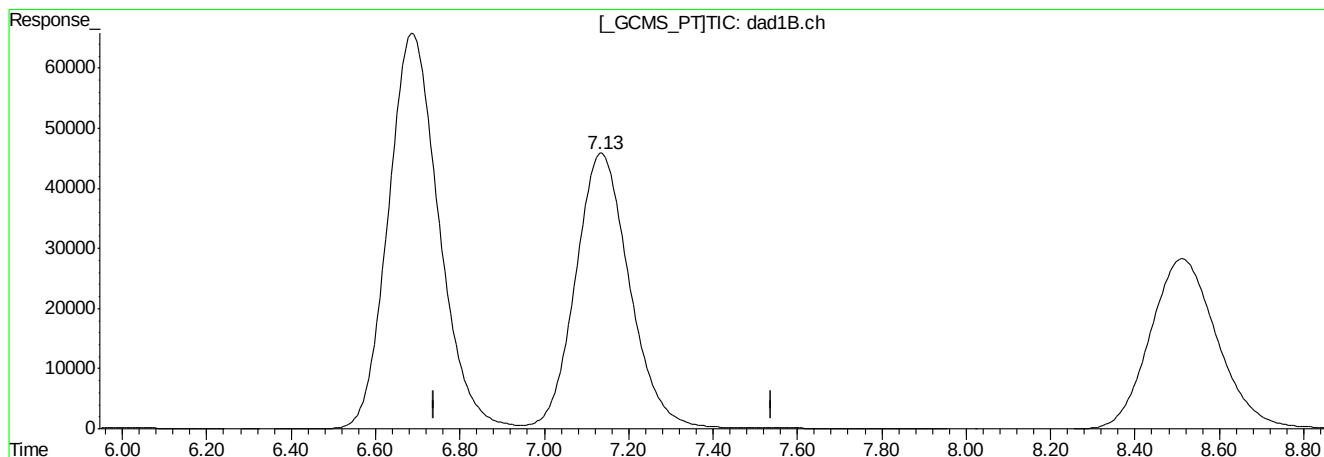
BB075451.D BBB2232_083122.M

Wed Feb 01 08:18:45 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1A.ch
Acq On : 31-Jan-2023, 11:17:49 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 11:49 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.14min 1047.430ppb

response 4122500

(8) 3,5-Dinitroaniline #2

7.14min 911.447ppb

response 5956657

(+) = Expected Retention Time

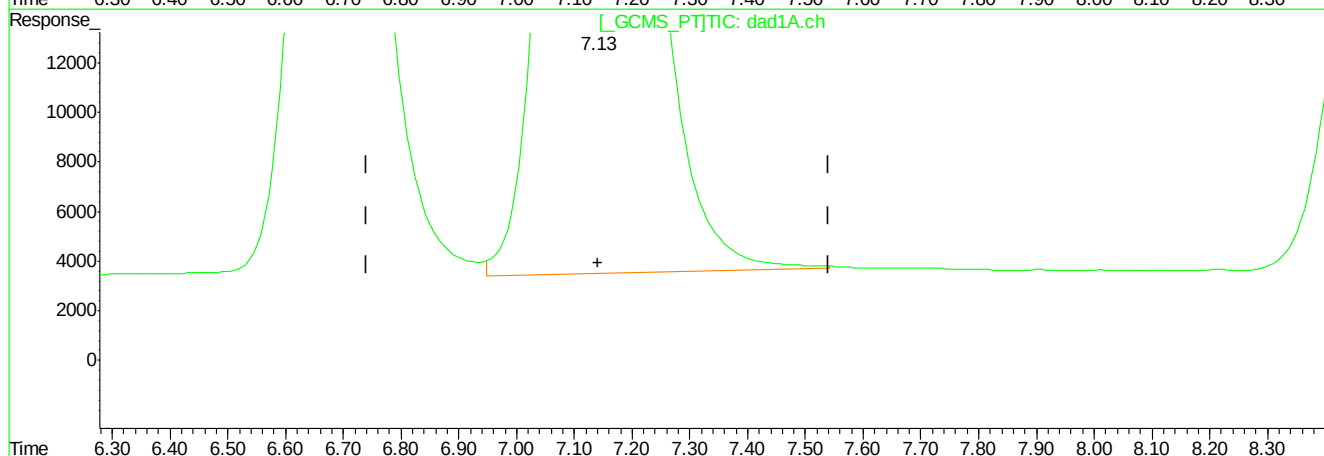
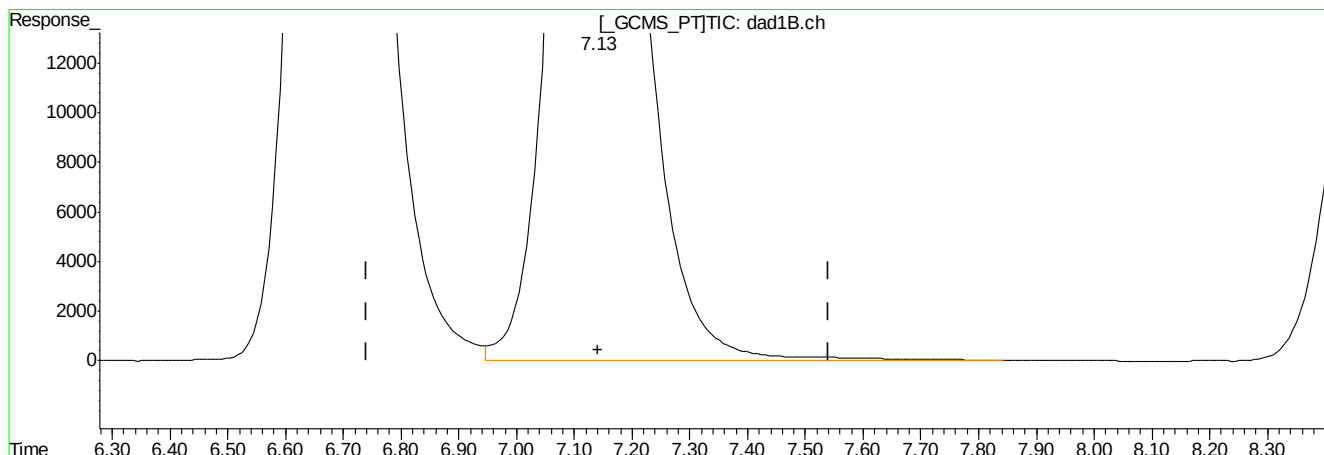
BB075451.D BBB2232_083122.M

Wed Feb 01 08:18:54 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1A.ch
Acq On : 31-Jan-2023, 11:17:49 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 11:49 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.14min 1047.430ppb

response 4122500

(8) 3,5-Dinitroaniline #2

7.13min 1056.687ppb m

response 6905851

(+) = Expected Retention Time

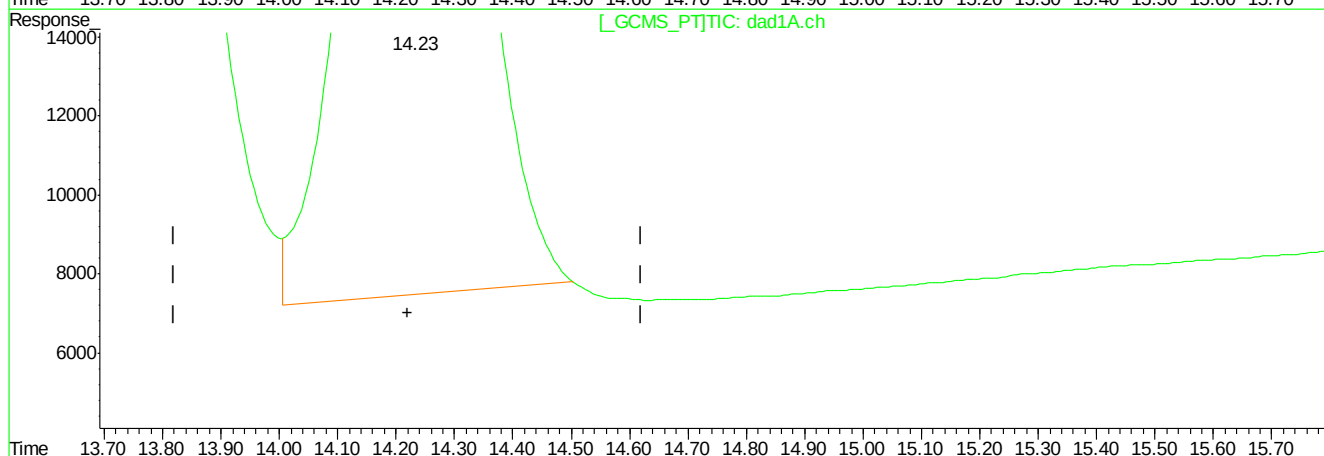
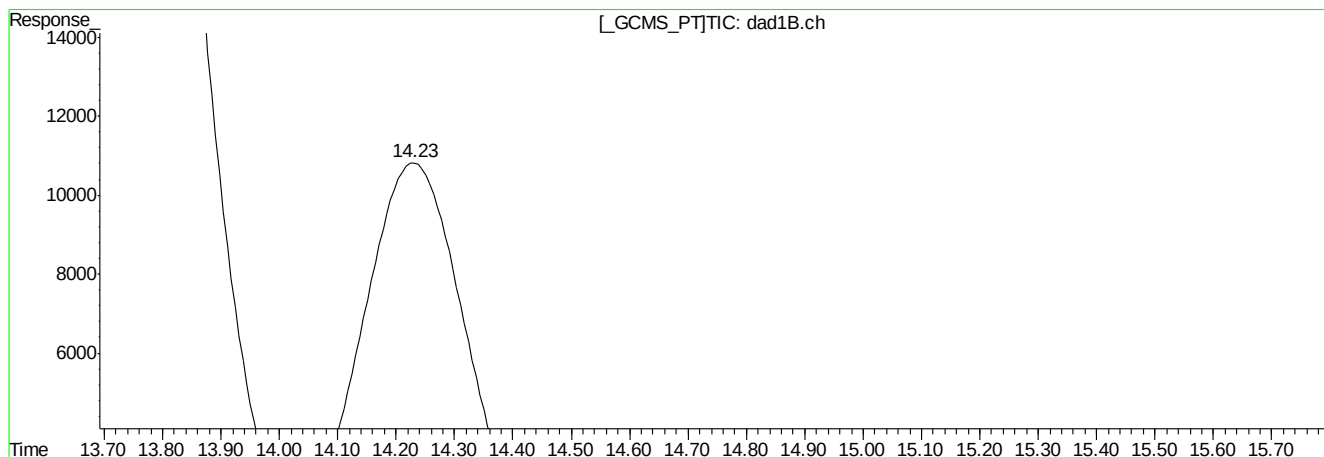
BB075451.D BBB2232_083122.M

Wed Feb 01 08:19:03 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1A.ch
Acq On : 31-Jan-2023, 11:17:49 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 11:49 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

14.23min 981.586ppb

response 1490347

(17) 2,6-Dinitrotoluene #2

14.23min 988.784ppb

response 3467142

(+) = Expected Retention Time

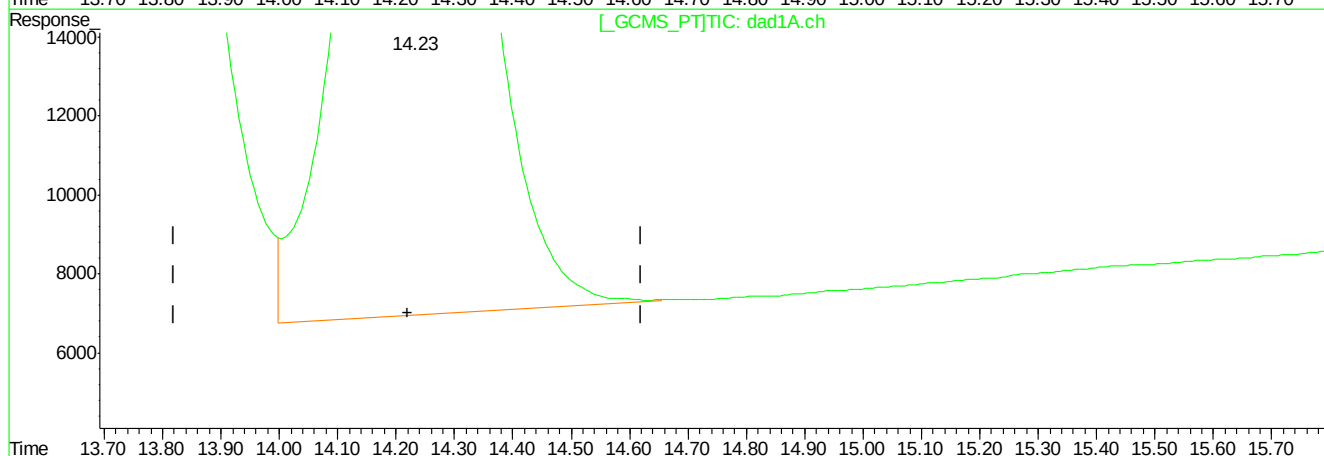
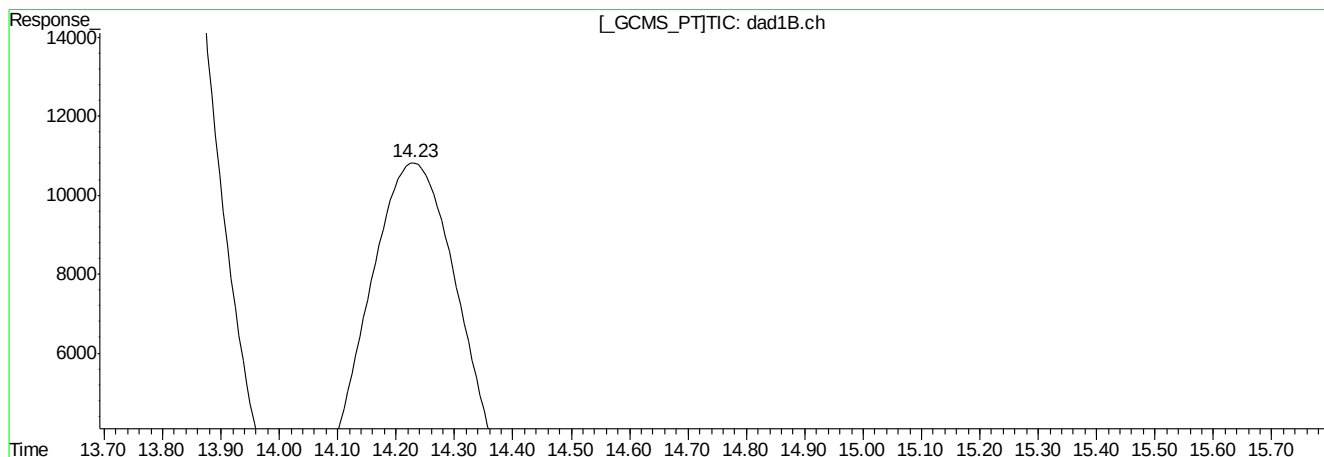
BB075451.D BBB2232_083122.M

Wed Feb 01 08:19:21 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1A.ch
Acq On : 31-Jan-2023, 11:17:49 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 11:49 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

14.23min 981.586ppb

response 1490347

(17) 2,6-Dinitrotoluene #2

14.23min 1037.111ppb m

response 3636602

(+) = Expected Retention Time

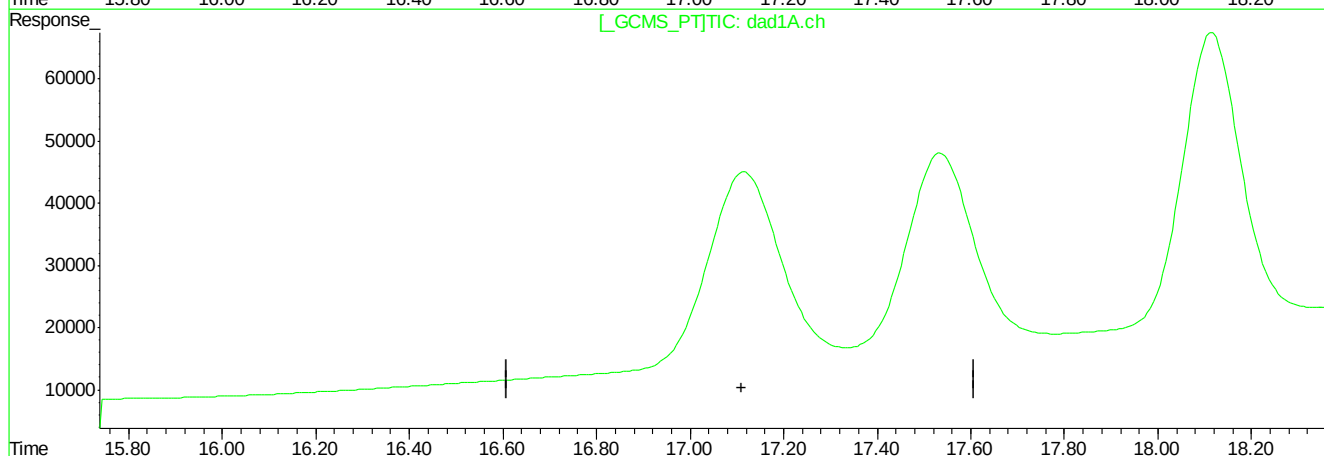
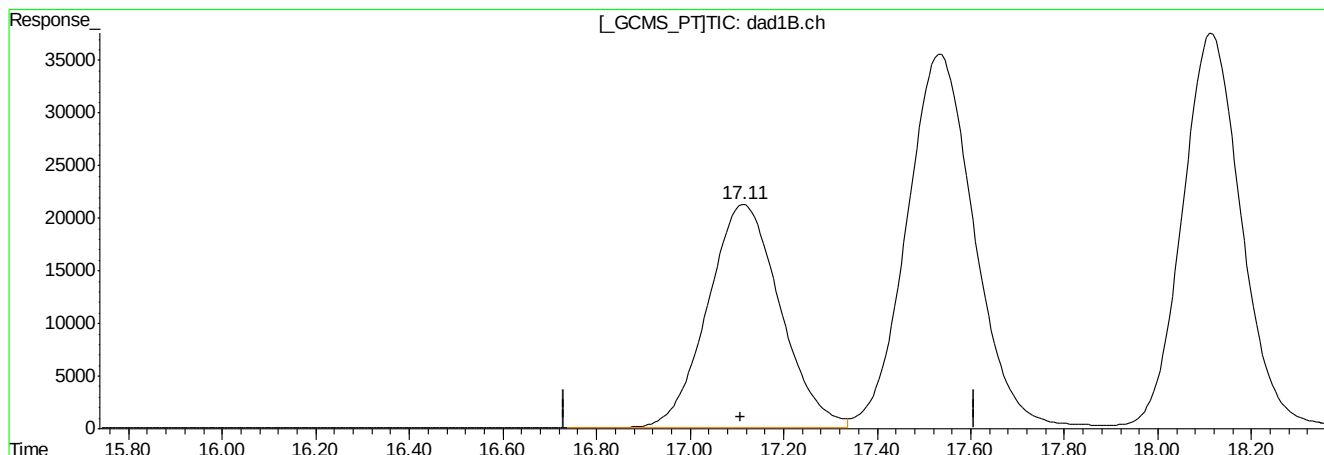
BB075451.D BBB2232_083122.M

Wed Feb 01 08:19:26 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1A.ch
Acq On : 31-Jan-2023, 11:17:49 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 11:49 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



(18) o-Nitrotoluene
17.12min 1053.221ppb
response 2274311

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

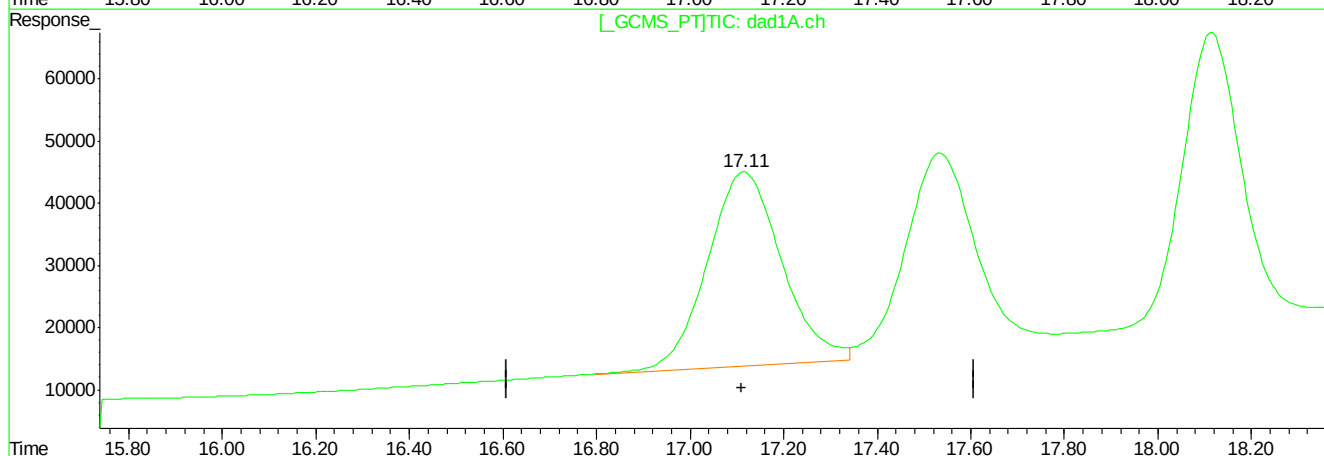
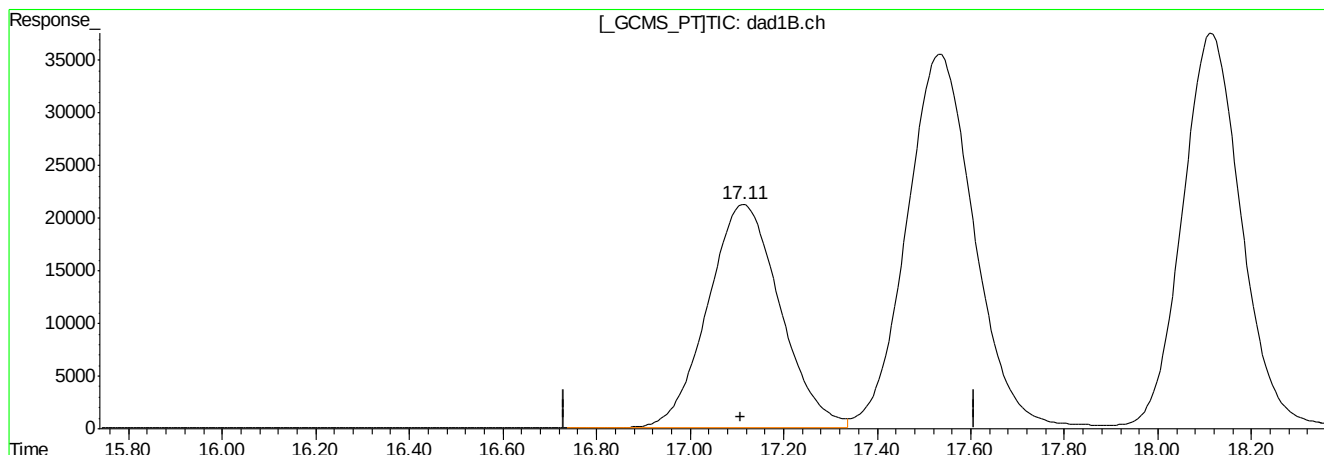
BB075451.D BBB2232_083122.M

Wed Feb 01 08:19:34 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1A.ch
Acq On : 31-Jan-2023, 11:17:49 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 11:49 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



(18) o-Nitrotoluene

17.12min 1053.221ppb

response 2274311

(18) o-Nitrotoluene #2

17.11min 1050.547ppb m

response 3452205

(+) = Expected Retention Time

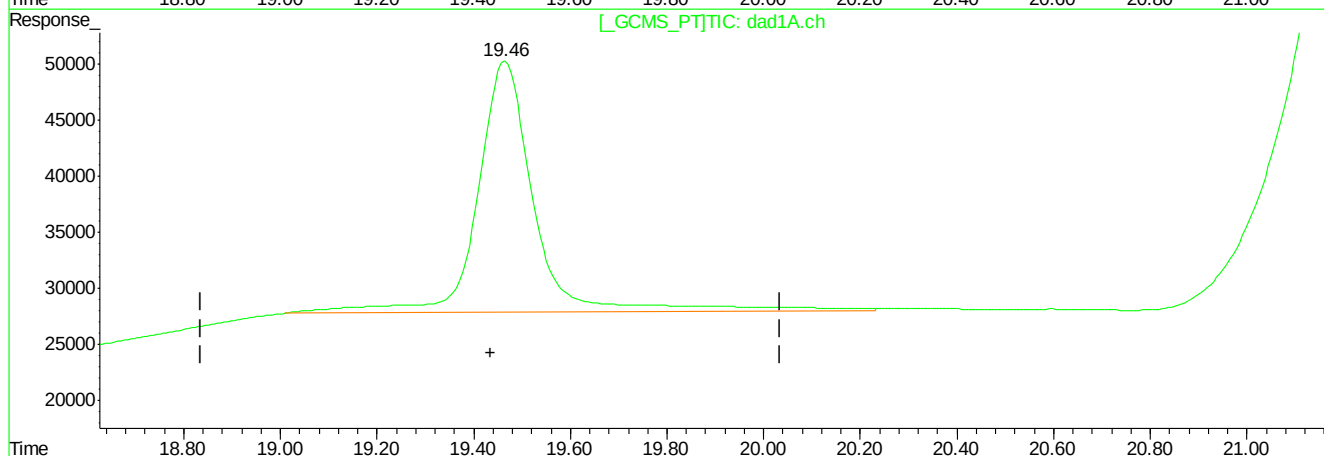
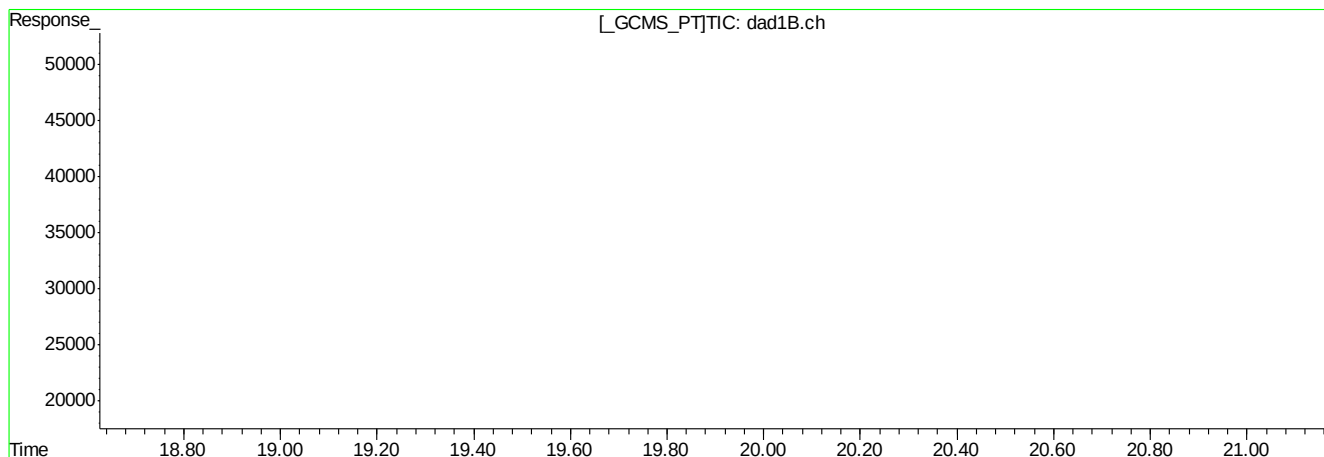
BB075451.D BBB2232_083122.M

Wed Feb 01 08:19:41 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1A.ch
Acq On : 31-Jan-2023, 11:17:49 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 11:49 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.47min 1391.256ppb

response 1869838

(+) = Expected Retention Time

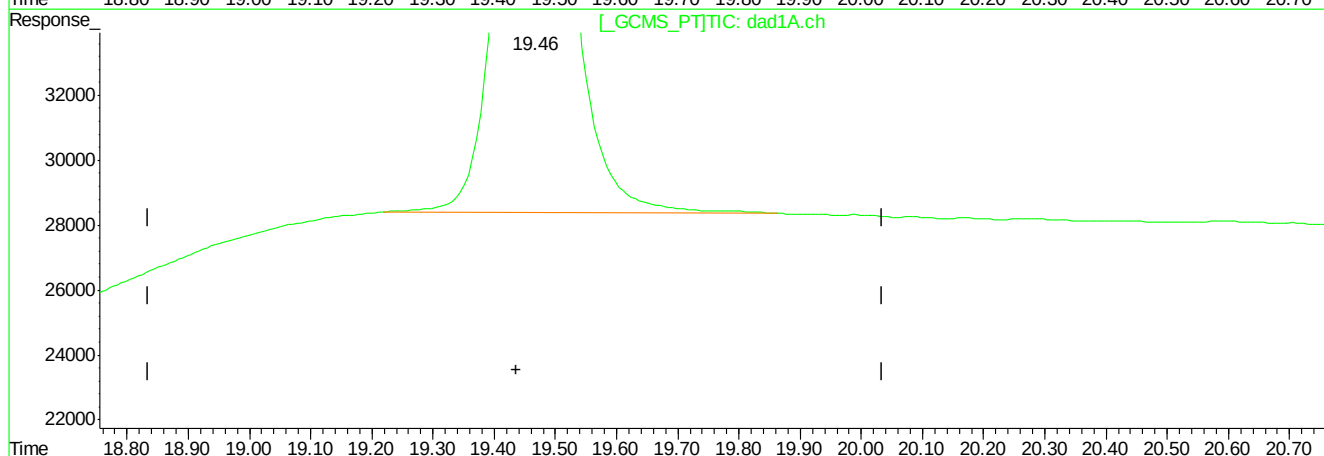
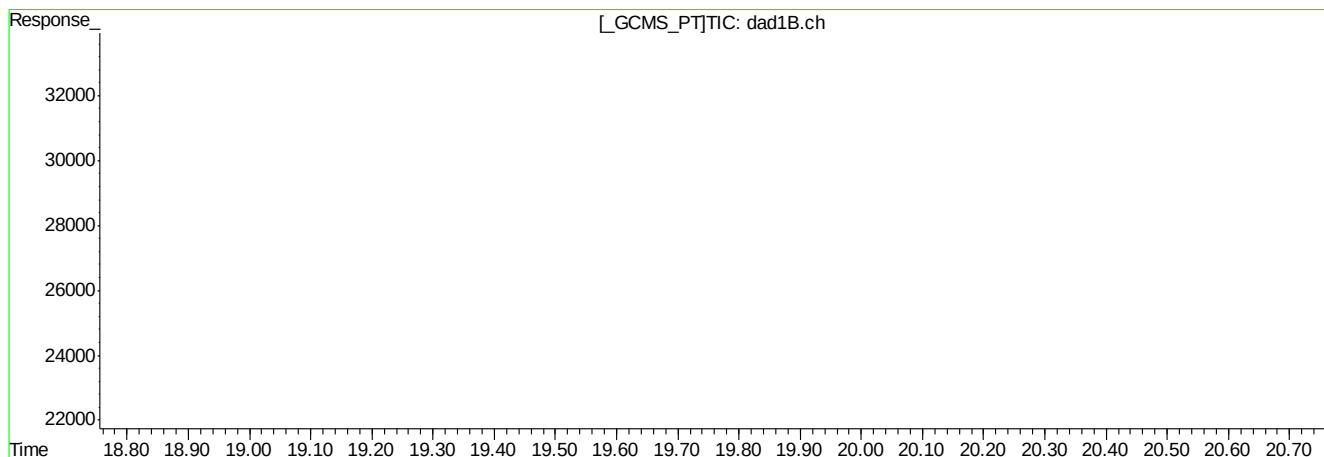
BB075451.D BBB2232_083122.M

Wed Feb 01 08:19:49 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075451.D\dad1A.ch
Acq On : 31-Jan-2023, 11:17:49 Operator: fouads
Sample : cc2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 11:49 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.46min 1134.860ppb m

response 1525244

(+) = Expected Retention Time

BB075451.D BBB2232_083122.M

Wed Feb 01 08:19:58 2023

Naresh Jiawan
02/08/23 09:44

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075455.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075455.D\dad1A.ch
 Acq On : 31-Jan-2023, 15:10:26 Operator: fouads
 Sample : ECC2232-1000 Inst : G1315B
 Misc : op95139,GBB2302,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jan 31 15:46:45 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 12:18:29 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	13.22	13.22	2412396	4230284	1126.012	995.672
Spiked Amount	500.000	Range	70 - 136	Recovery	= 225.20%#	199.13%#
Target Compounds						
1) TNX	1.47	1.47	1859770	2896724	495.515	503.341
2) HMX	1.69	1.69	1535663	4319793	1037.156	1056.122
3) DNX	1.93	1.93	3253499	5143351	1057.589	1041.665
4) MNX	2.63	2.63	3515662	5397574	1224.996	1227.408
5) RDX	3.35	3.35	1933143	3057232	1042.144	1043.633
6) 1,3,5-Trinitrobe	5.41	5.41	4099943	6489468	1031.271	1042.533
7) 1,3-Dinitrobenze	6.70	6.70	5431063	3681871	1042.302	1071.319
8) 3,5-Dinitroanili	7.15	7.15	4091684	6763959	1039.600	1034.975m
9) Nitrobenzene	8.53	8.53	3108075	3059805	1036.507	1032.130
10) Nitroglycerin	0.00	10.38	0	1370706	N.D.	1079.094 #
11) Tetryl	11.36	11.36	2956791	4717370	1046.412	1024.201
12) 2,4,6-Trinitroto	11.73	11.73	3887151	4641675	1063.450	1042.423
13) 2-Amino-4,6-Dini	12.13	12.13	3415167	5088134	1080.556	1030.341
14) 4-Amino-2,6-Dini	12.68	12.68	2528806	5003031	1101.116	1018.003
16) 2,4-Dinitrotolue	13.78	13.78	3791914	3015698	809.590	968.410
17) 2,6-Dinitrotolue	14.25	14.25	1495407	3376131	984.919	962.829
18) o-Nitrotoluene	17.13	17.12	2267366	3425631	1050.005	1042.460m
19) p-Nitrotoluene	17.55	17.55	3537512	2900053	1057.433	1026.121
20) m-Nitrotoluene	18.13	18.13	3266942	3887370	1049.377	1001.647
21) PETN	0.00	19.48	0	1475944	N.D.	1098.179m#

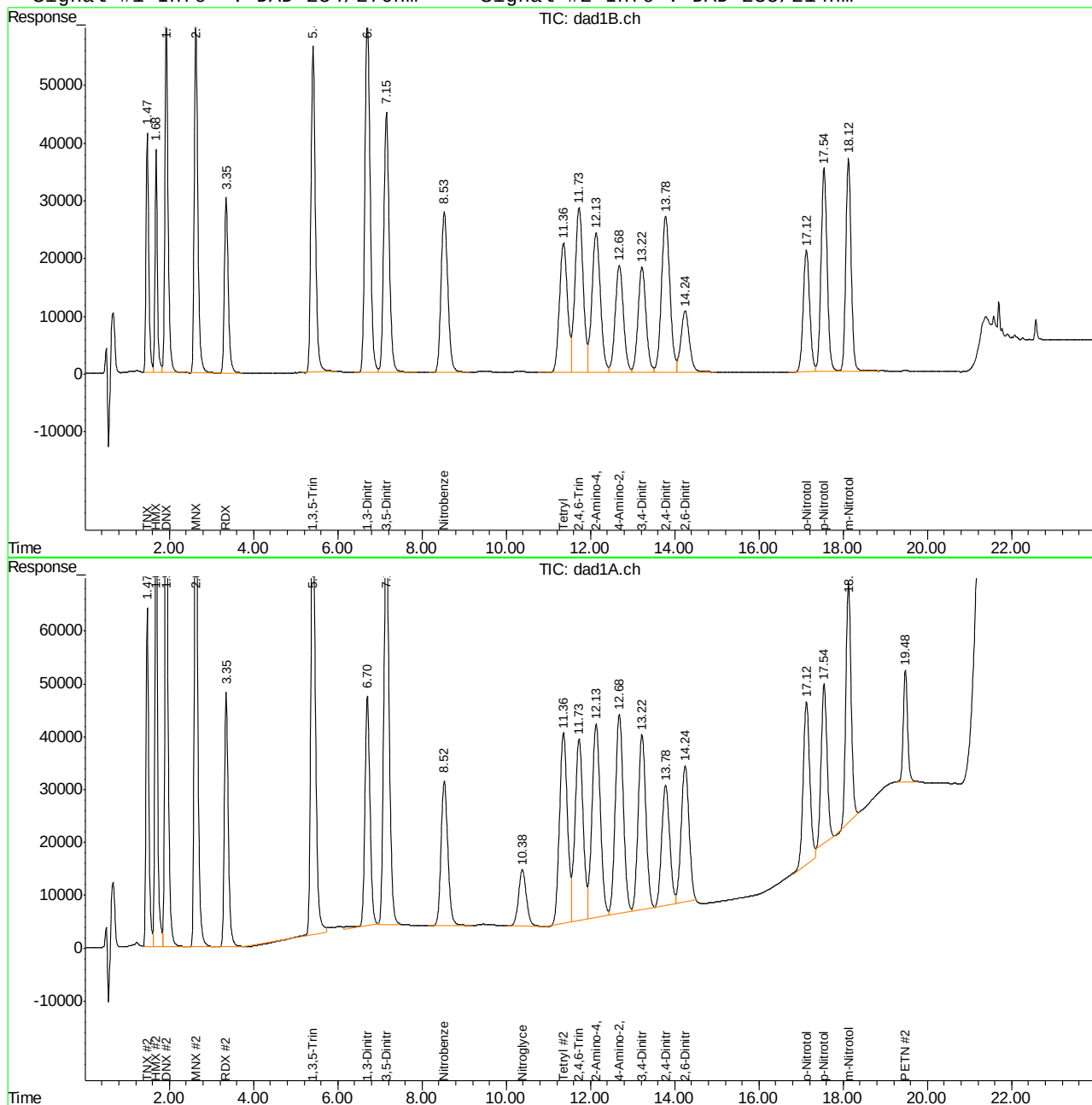
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB075455.D BBB2232_083122.M Wed Feb 01 09:37:13 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075455.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075455.D\dad1A.ch
Acq On : 31-Jan-2023, 15:10:26 Operator: fouads
Sample : ECC2232-1000 Inst : G1315B
Misc : op95139, GBB2302, 1000,,, 10, 1, water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Feb 1 8:26 2023 Quant Results File: BBB2232_083122.RES

Quant Method : C:\MSDCHEM\2...\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2302-ECC2232

Method:

SW846 8330B

Lab FileID:

BB075455.D

Analyst approved:

02/01/23 09:42 Fouad Sekkar

Injection Time:

01/31/23 15:10

Supervisor approved:

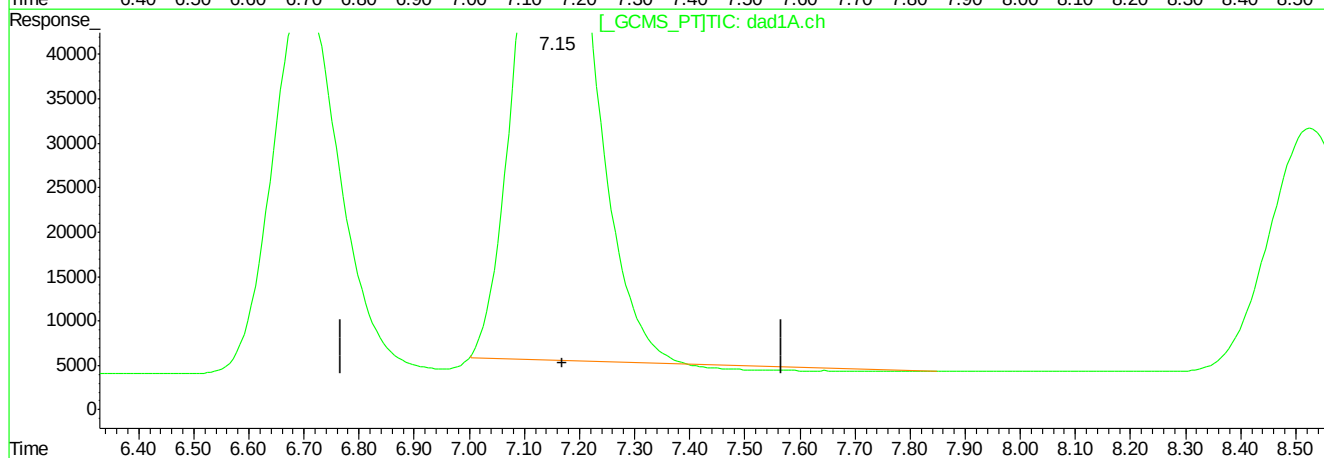
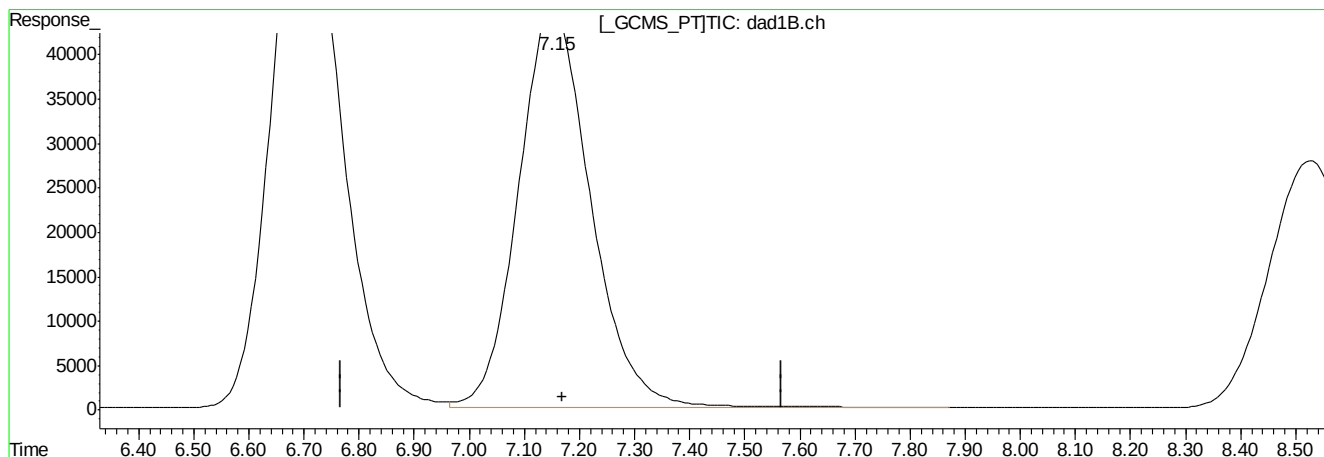
02/08/23 09:44 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	2	7.15	Poor instrument integration
o-Nitrotoluene	88-72-2	2	17.12	Missed peak
PETN	78-11-5	2	19.48	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075455.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075455.D\dad1A.ch
Acq On : 31-Jan-2023, 15:10:26 Operator: fouads
Sample : ECC2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 15:46 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

7.15min 1039.600ppb

response 4091684

(8) 3,5-Dinitroaniline #2

7.15min 980.934ppb

response 6410780

(+) = Expected Retention Time

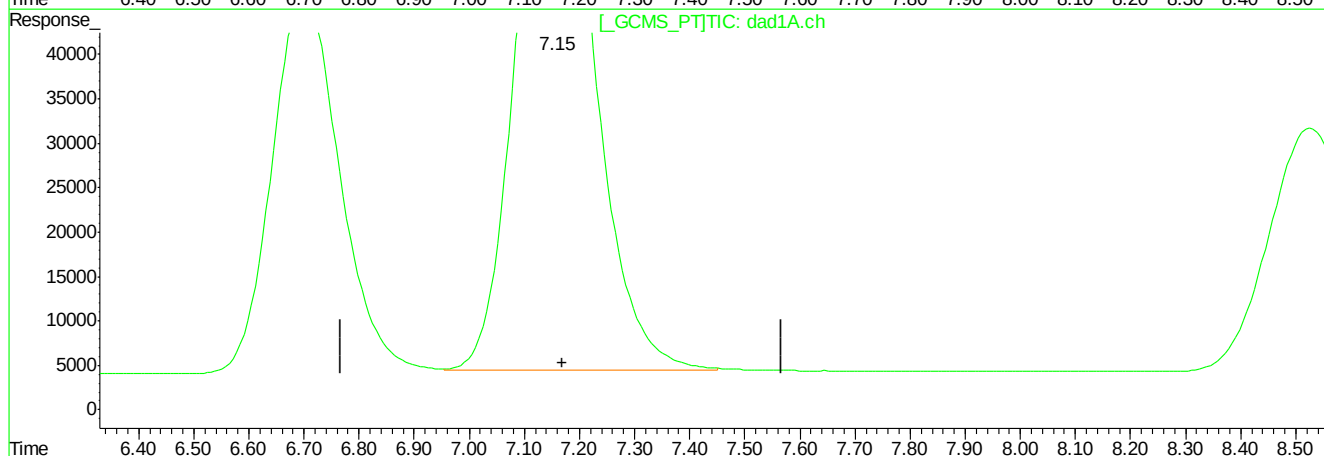
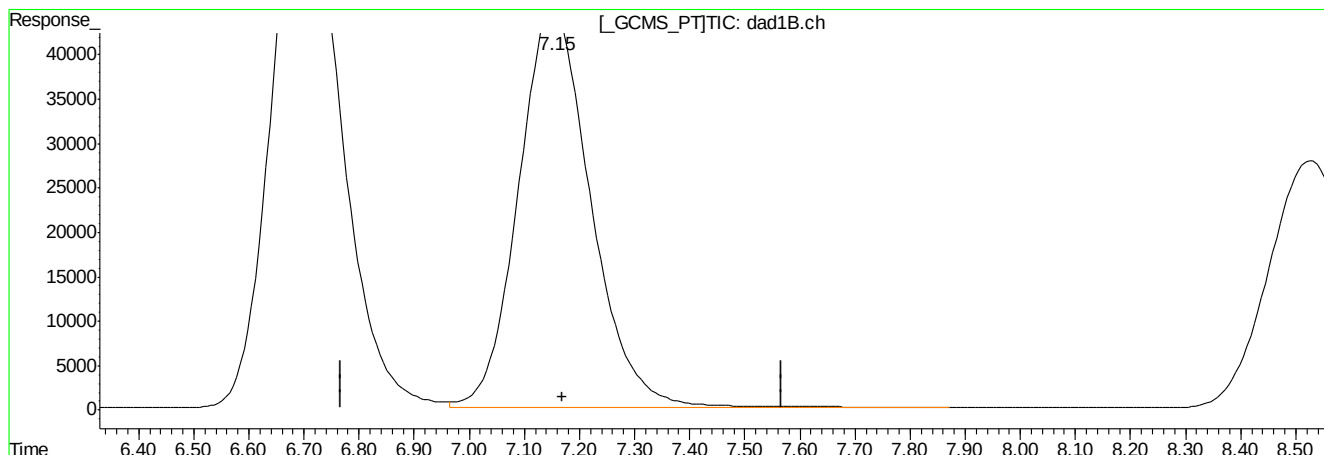
BB075455.D BBB2232_083122.M

Wed Feb 01 08:25:52 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075455.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075455.D\dad1A.ch
Acq On : 31-Jan-2023, 15:10:26 Operator: fouads
Sample : ECC2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 15:46 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

7.15min 1039.600ppb

response 4091684

(8) 3,5-Dinitroaniline #2

7.15min 1034.975ppb m

response 6763959

(+) = Expected Retention Time

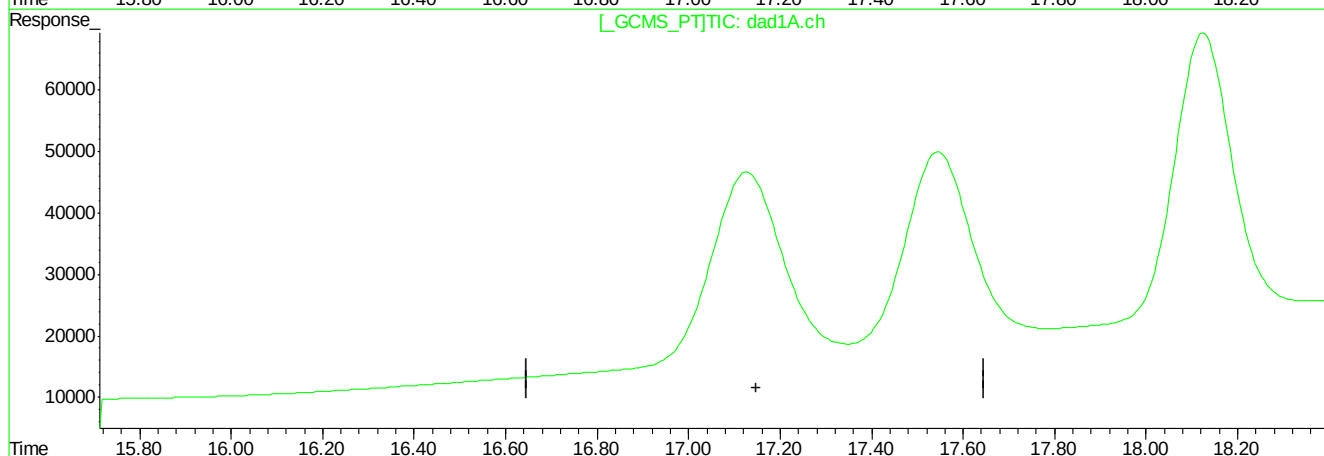
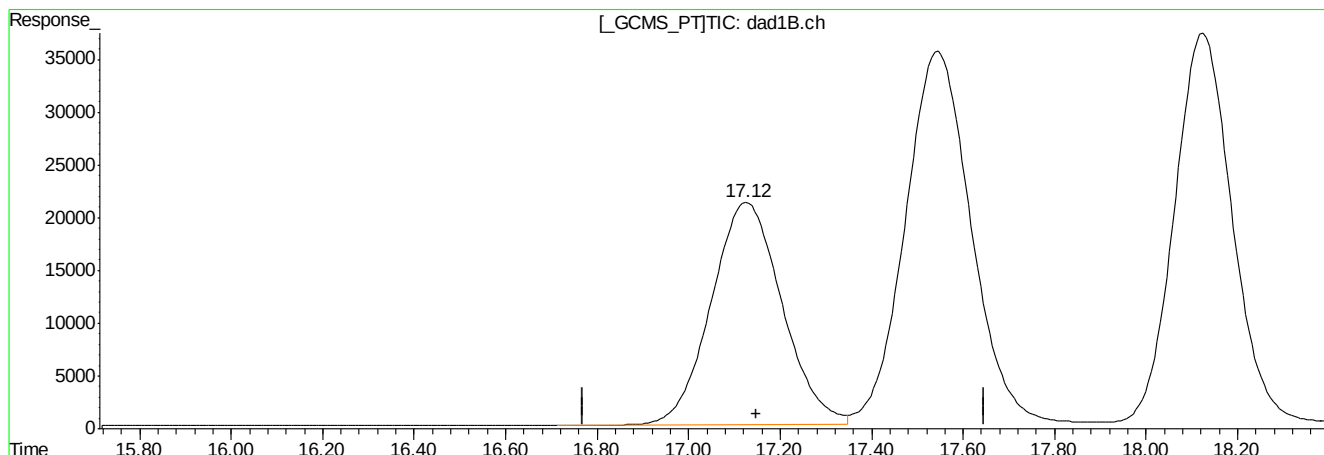
BB075455.D BBB2232_083122.M

Wed Feb 01 08:25:59 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075455.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075455.D\dad1A.ch
Acq On : 31-Jan-2023, 15:10:26 Operator: fouads
Sample : ECC2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 15:46 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



(18) o-Nitrotoluene
17.13min 1050.005ppb
response 2267366

(18) o-Nitrotoluene #2
0.00min 0.000ppb
response 0

(+) = Expected Retention Time

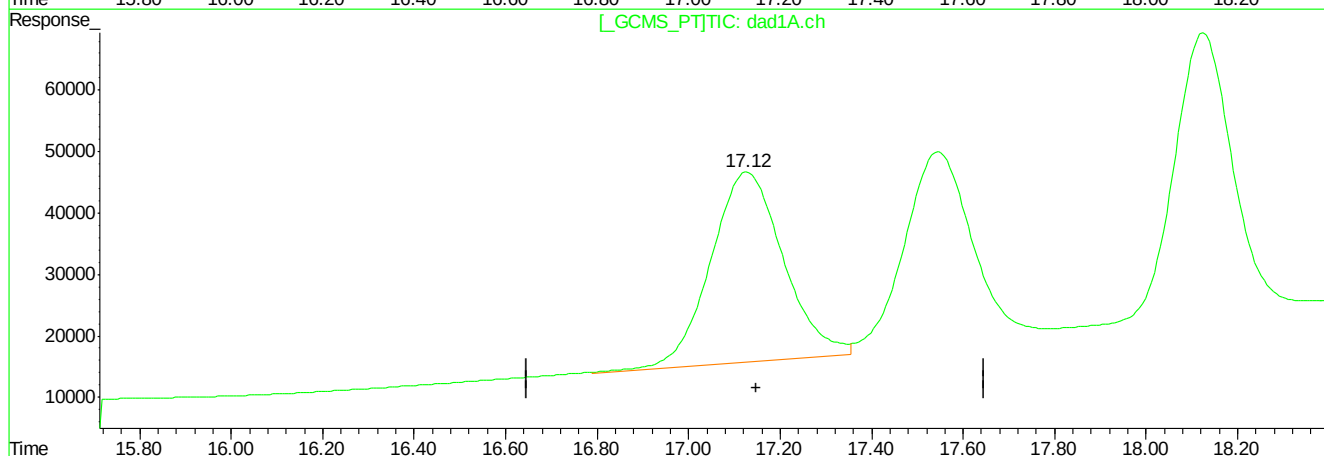
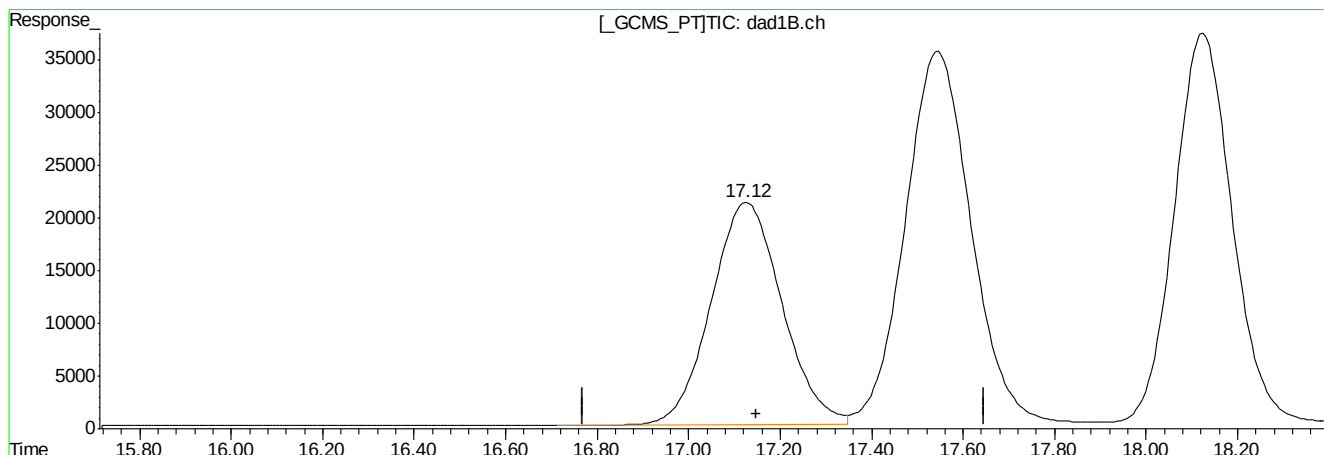
BB075455.D BBB2232_083122.M

Wed Feb 01 08:26:16 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075455.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075455.D\dad1A.ch
Acq On : 31-Jan-2023, 15:10:26 Operator: fouads
Sample : ECC2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 15:46 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



QEdit

(18) o-Nitrotoluene

17.13min 1050.005ppb

response 2267366

(18) o-Nitrotoluene #2

17.12min 1042.460ppb m

response 3425631

(+) = Expected Retention Time

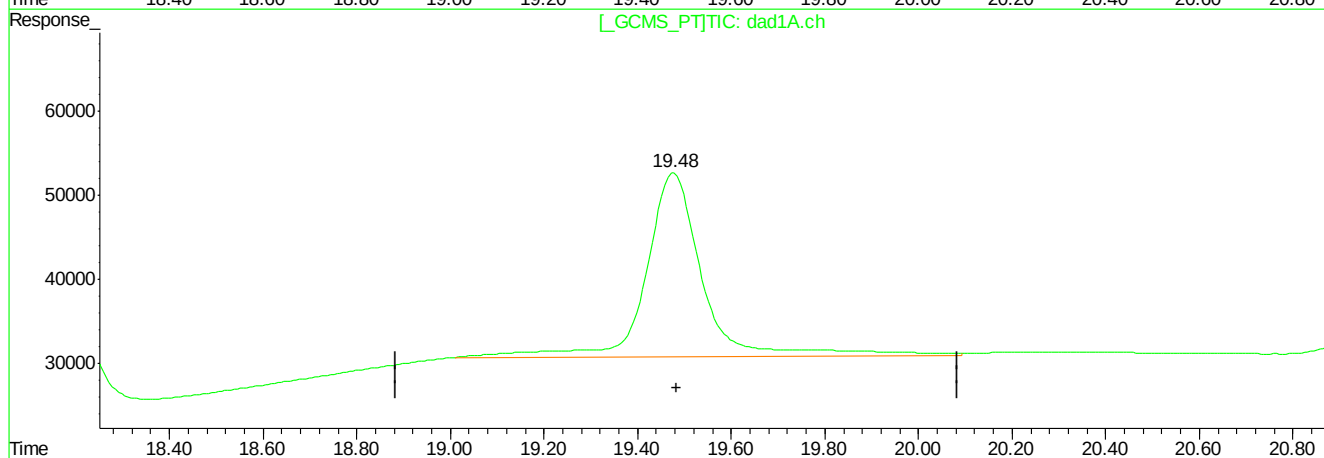
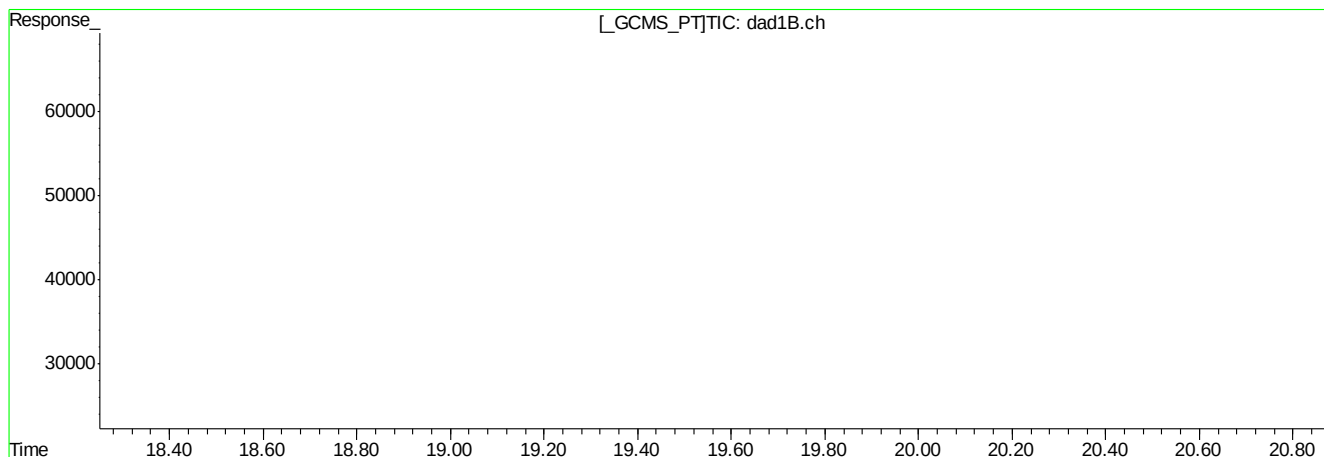
BB075455.D BBB2232_083122.M

Wed Feb 01 08:26:22 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075455.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075455.D\dad1A.ch
Acq On : 31-Jan-2023, 15:10:26 Operator: fouads
Sample : ECC2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 15:46 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.48min 1377.416ppb

response 1851237

(+) = Expected Retention Time

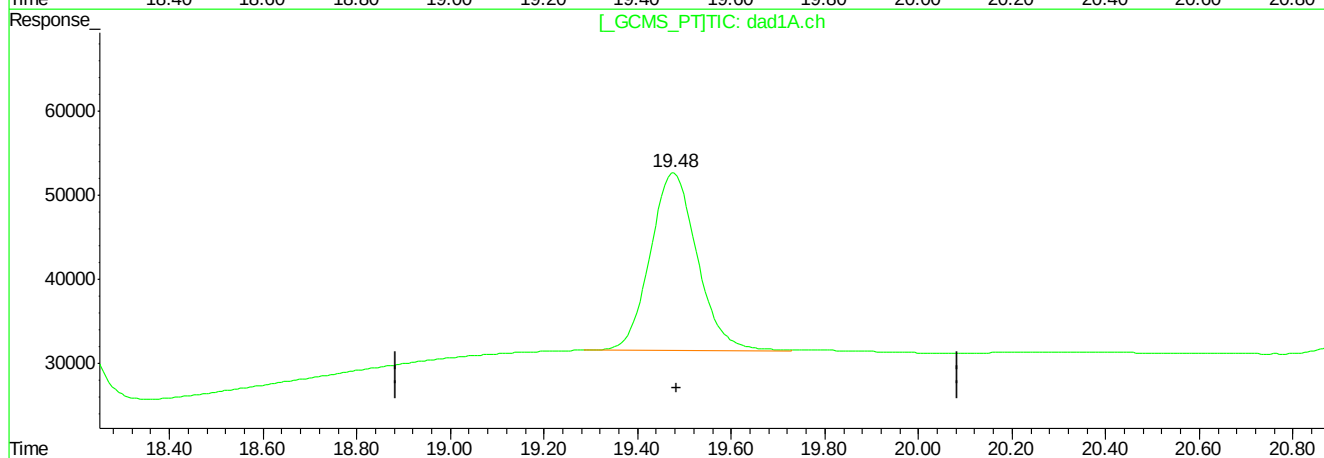
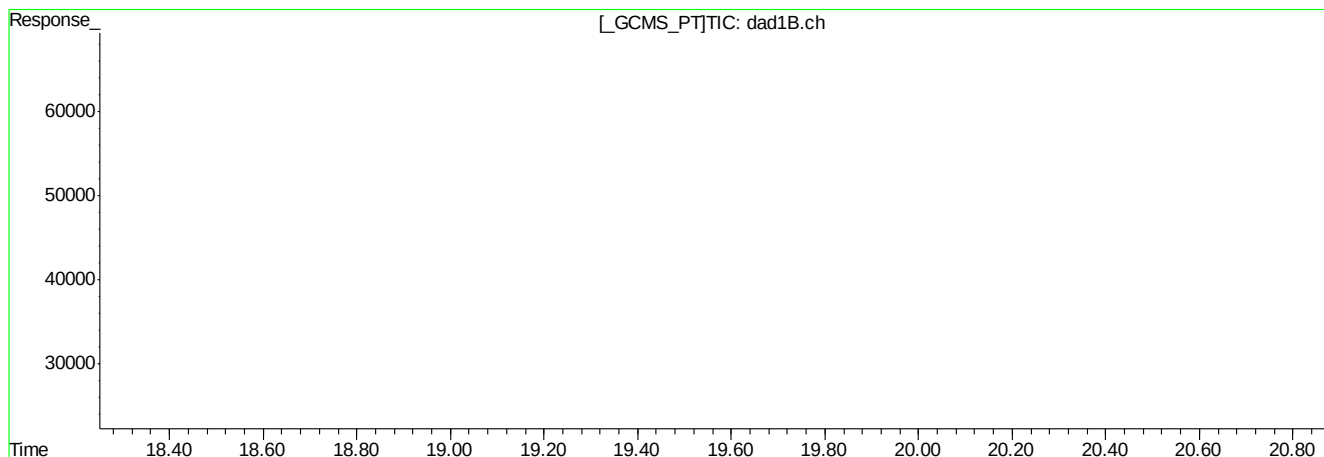
BB075455.D BBB2232_083122.M

Wed Feb 01 08:26:31 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2302\BB075455.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2302\BB075455.D\dad1A.ch
Acq On : 31-Jan-2023, 15:10:26 Operator: fouads
Sample : ECC2232-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jan 31 15:46 2023 Quant Results File: BBB2232_083122.RES

Method : C:\MSDCHEM\2\METHODS\BBB2232_083122.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 12:18:29 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

19.48min 1098.179ppb m

response 1475944

(+) = Expected Retention Time

BB075455.D BBB2232_083122.M

Wed Feb 01 08:26:40 2023

Mike Eger
01/31/23 12:29

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
 Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
 Sample : ic3229-500 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 30 12:26:34 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Mon Jan 30 12:26:09 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.49	14.49	2577265	5135329	559.996	561.091
Spiked Amount	500.000	Range	70 - 136	Recovery	=	112.00% 112.22%
Target Compounds						
1) TNX	4.68	4.68	1984157	2006912	224.509m	223.313
2) HMX	5.07	5.07	1411050	1431062	506.702m	510.805
3) DNx	5.28	5.29	3590869	3510665	470.489m	453.010
4) MNX	6.44	6.44	3649025	3637518	546.146	544.436
5) 1,3,5-Trinitrobe	7.41	7.41	4227391	4229921	471.101	469.892
6) RDX	7.79	7.79	2014903	2015666	472.086	469.396
7) 1,3-Dinitrobenze	9.89	9.89	5810051	4642171	472.015	447.116
8) Nitrobenzene	11.04	11.04	3728304	4165545	473.990	575.135
9) 2,4,6-Trinitroto	11.78	11.78	4045457	5746058	462.380	513.773
10) Nitroglycerin	0.00	12.51	0	1609522	N.D.	554.108 #
11) Tetryl	13.17	13.18	2974614	5539878	431.888	482.917
13) 2,6-Dinitrotolue	14.90	14.90	2811946	4020271	424.524	421.579
14) 2,4-Dinitrotolue	15.54	15.54	5234476	3643586	463.234	469.376
15) 3,5-Dinitroanili	16.37	16.37	4449966	7486019	472.139	483.589
16) o-Nitrotoluene	17.47	17.47	2320870	3303589	450.250	458.661
17) p-Nitrotoluene	18.46	18.43	4856562	8916462	957.586	1019.671
18) 4-Amino-2,6-Dini	18.46	18.43	4856562	8916462	976.107	1025.887
19) m-Nitrotoluene	19.83	19.83	2419304	3980105	480.322	503.828
20) 2-Amino-4,6-Dini	20.23	20.23	4028949	5738357	484.966	499.262
21) PETN	0.00	21.93	0	1314017	N.D.	427.143m#

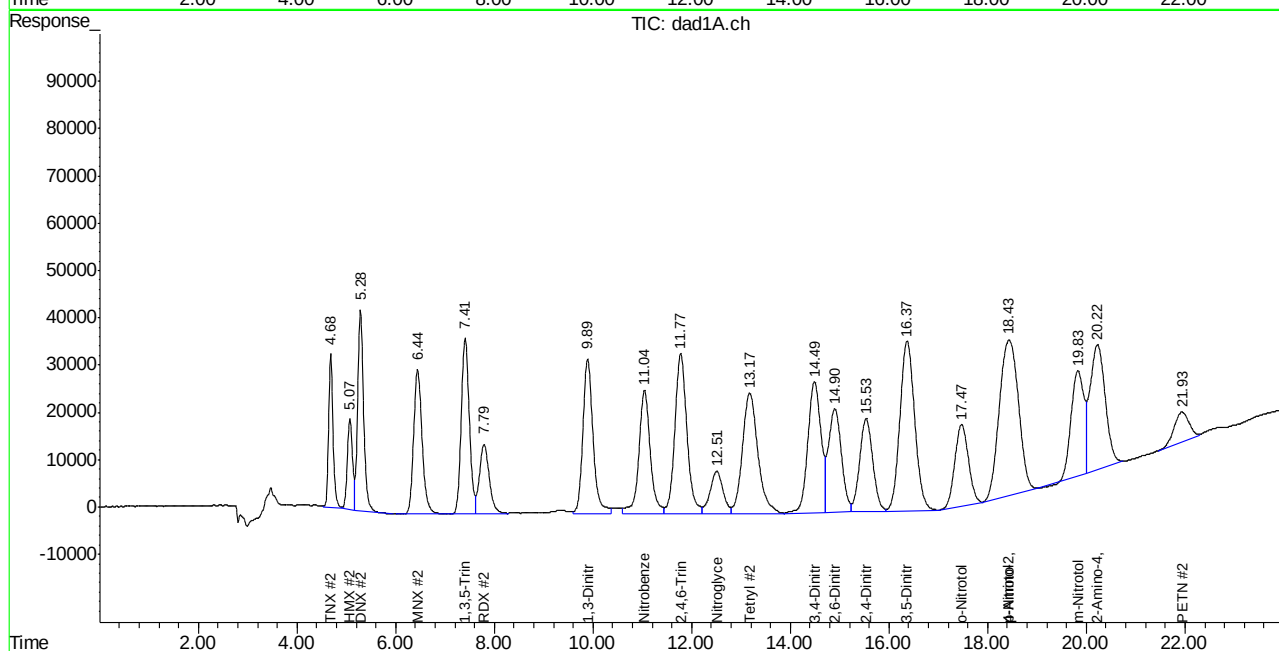
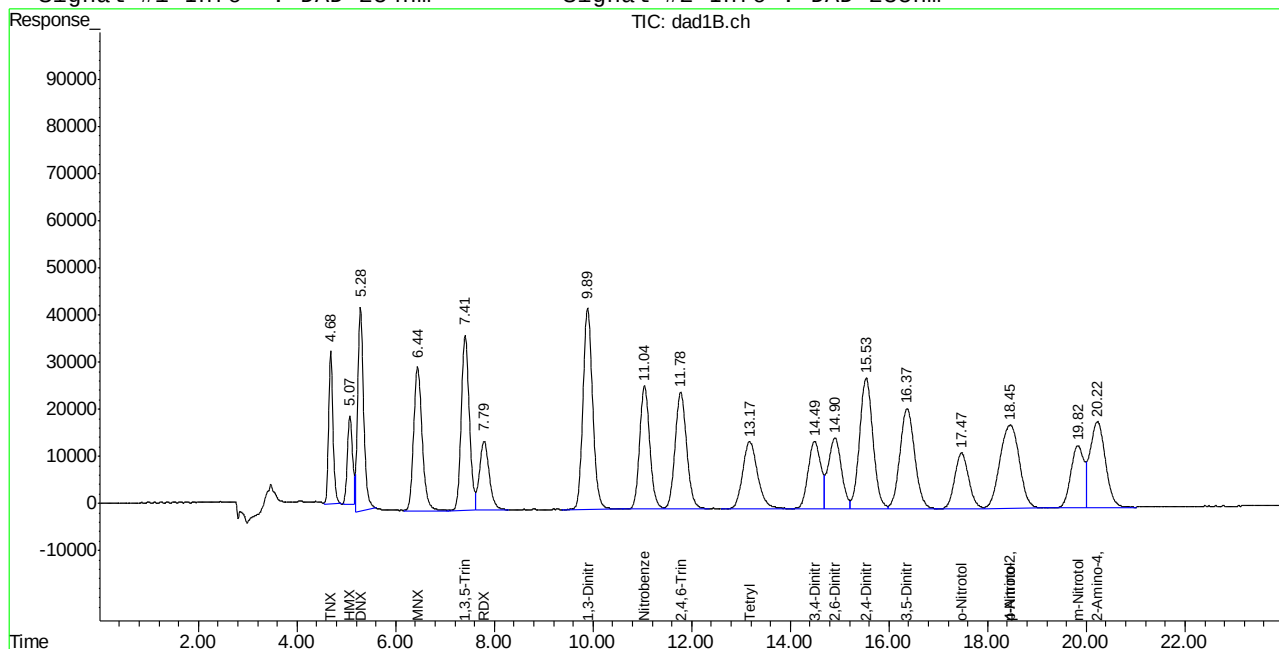
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625697.D GGG3229_013023.M Tue Jan 31 11:32:11 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
Sample : ic3229-500 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:43 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number: GGG3229-IC3229

Method: SW846 8330B

Lab FileID: GG625697.D

Analyst approved: 01/31/23 11:38 Fouad Sekkar

Injection Time: 01/30/23 11:54

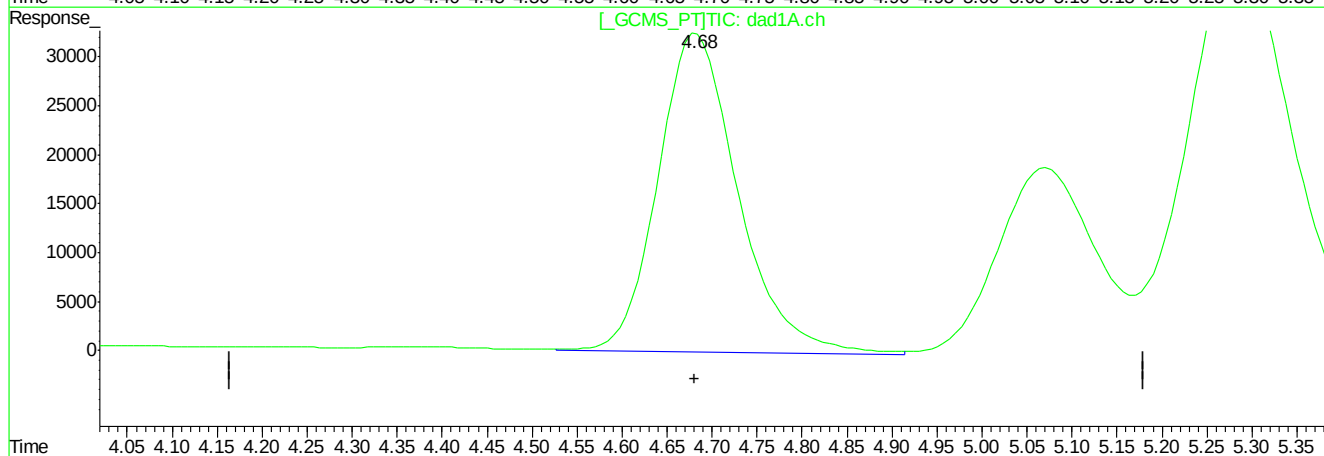
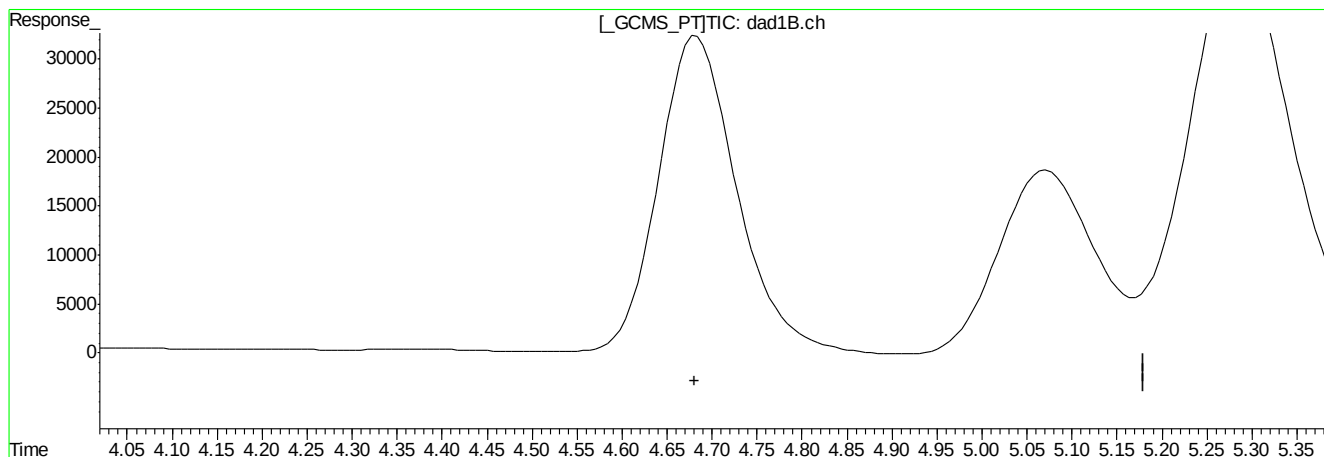
Supervisor approved: 01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.68	Missed peak
HMX	2691-41-0	1	5.07	Poor instrument integration
DNX		1	5.28	Poor instrument integration
PETN	78-11-5	2	21.93	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
Sample : ic3229-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 12:26 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.68min 223.313ppb

response 2006912

(+) = Expected Retention Time

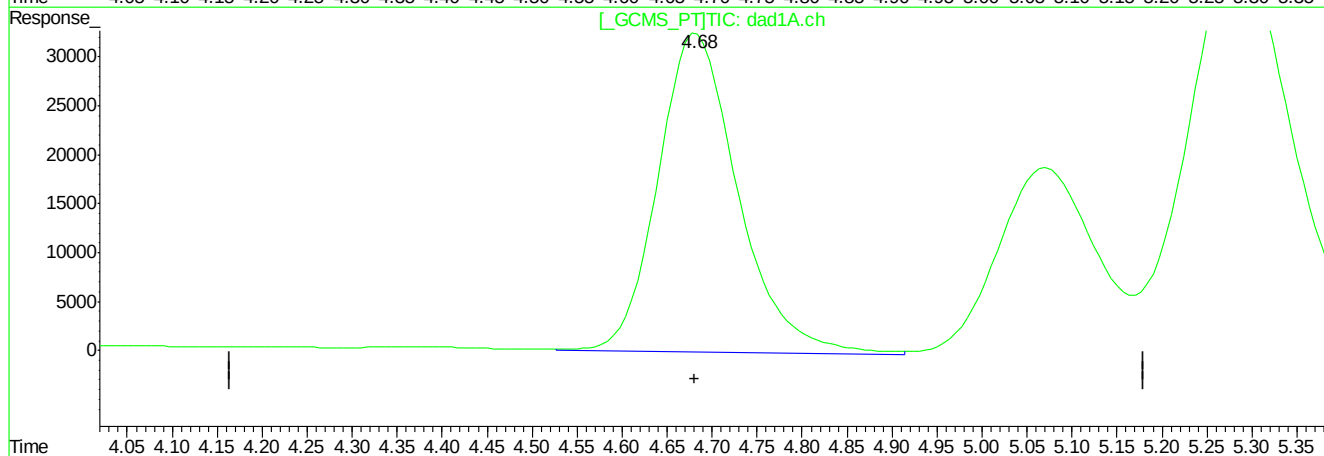
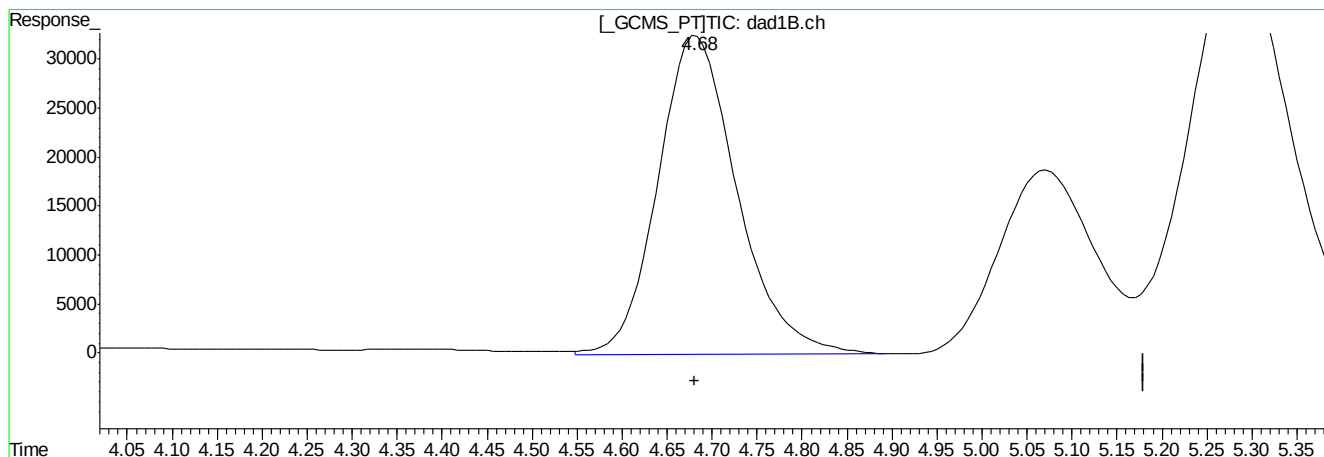
GG625697.D GGG3229_013023.M

Mon Jan 30 15:41:50 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
Sample : ic3229-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 12:26 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

4.68min 224.509ppb m

response 1984157

(1) TNX #2

4.68min 223.313ppb

response 2006912

(+) = Expected Retention Time

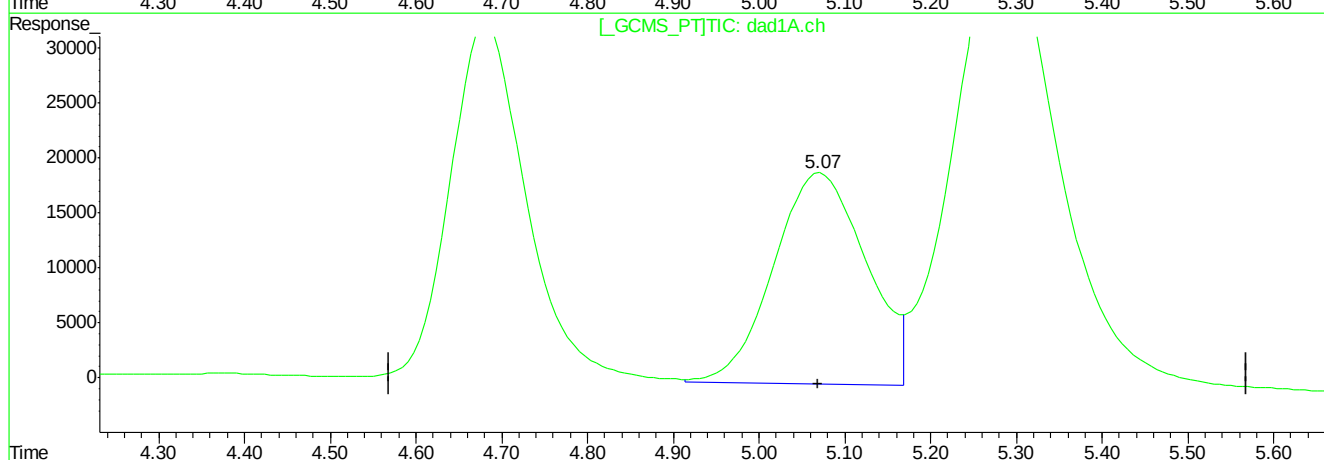
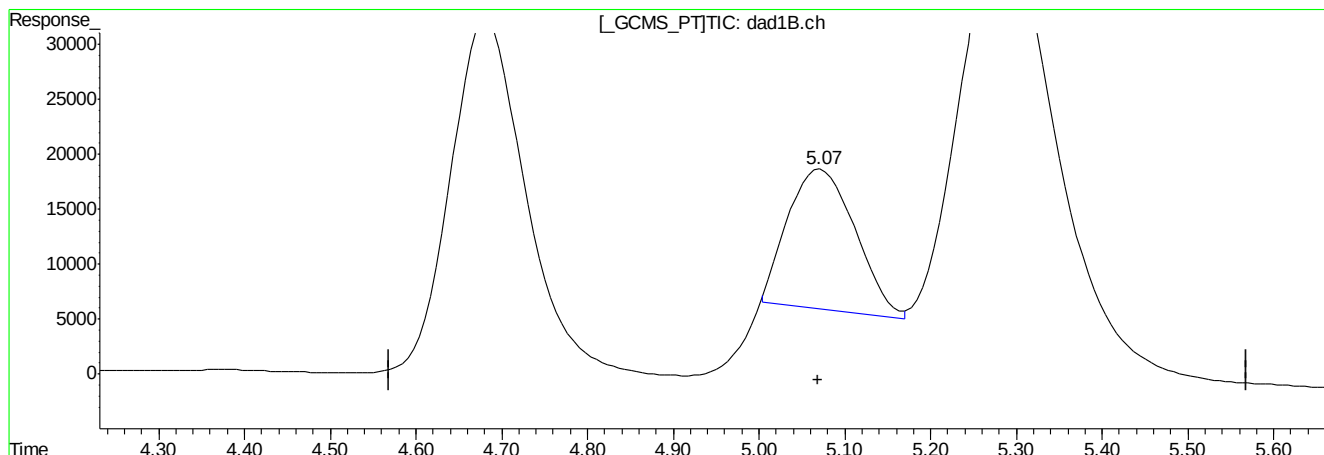
GG625697.D GGG3229_013023.M

Mon Jan 30 15:41:59 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
Sample : ic3229-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 12:26 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.07min 250.297ppb

response 697021

(2) HMX #2

5.07min 510.805ppb

response 1431062

(+) = Expected Retention Time

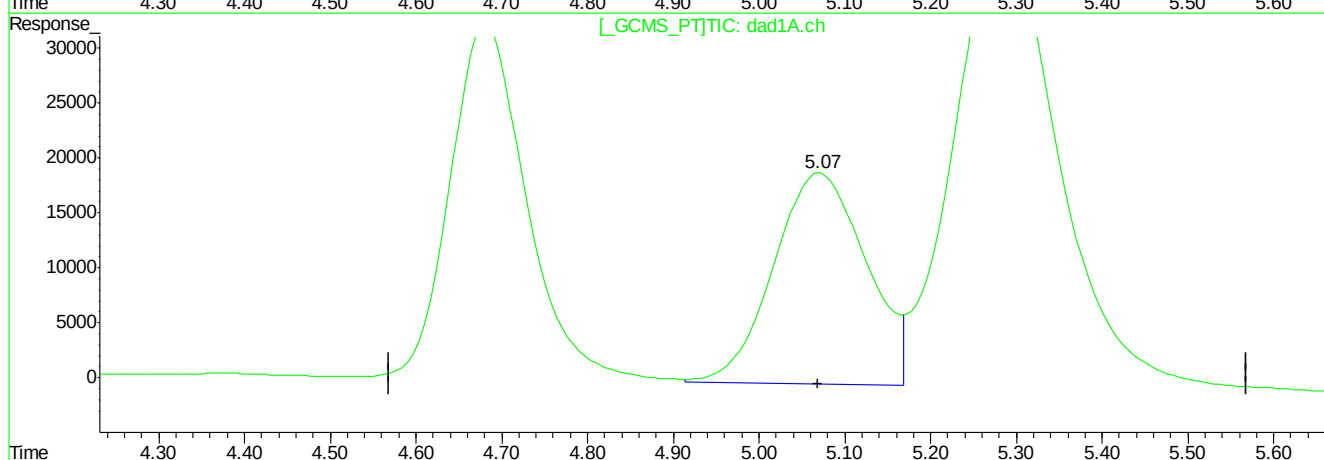
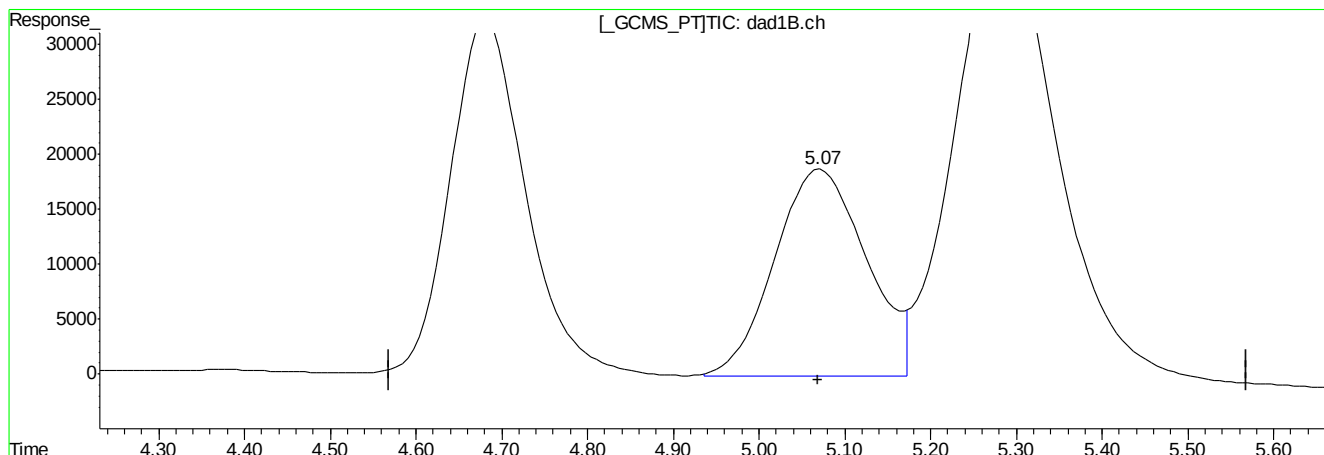
GG625697.D GGG3229_013023.M

Mon Jan 30 15:42:04 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
Sample : ic3229-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 12:26 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.07min 506.702ppb m

response 1411050

(2) HMX #2

5.07min 510.805ppb

response 1431062

(+) = Expected Retention Time

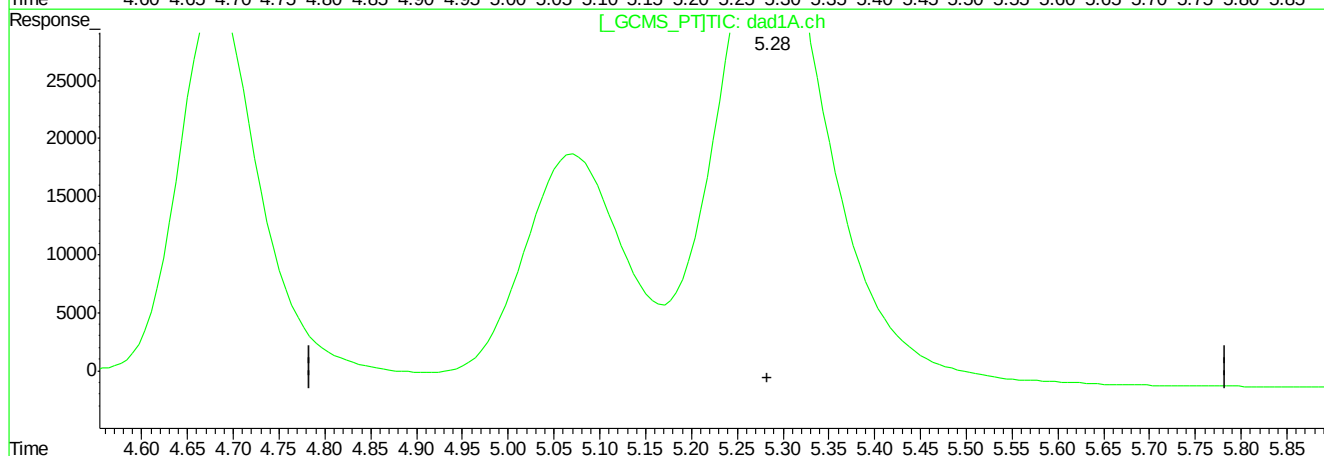
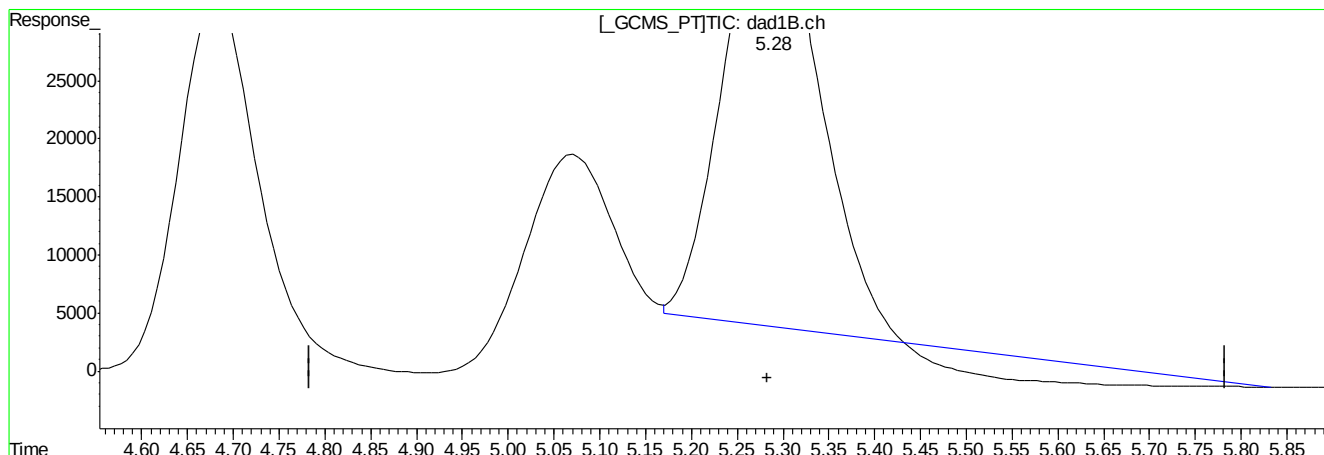
GG625697.D GGG3229_013023.M

Mon Jan 30 15:42:10 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
Sample : ic3229-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 12:26 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.29min 315.862ppb

response 2410725

(3) DNX #2

5.29min 453.010ppb

response 3510665

(+) = Expected Retention Time

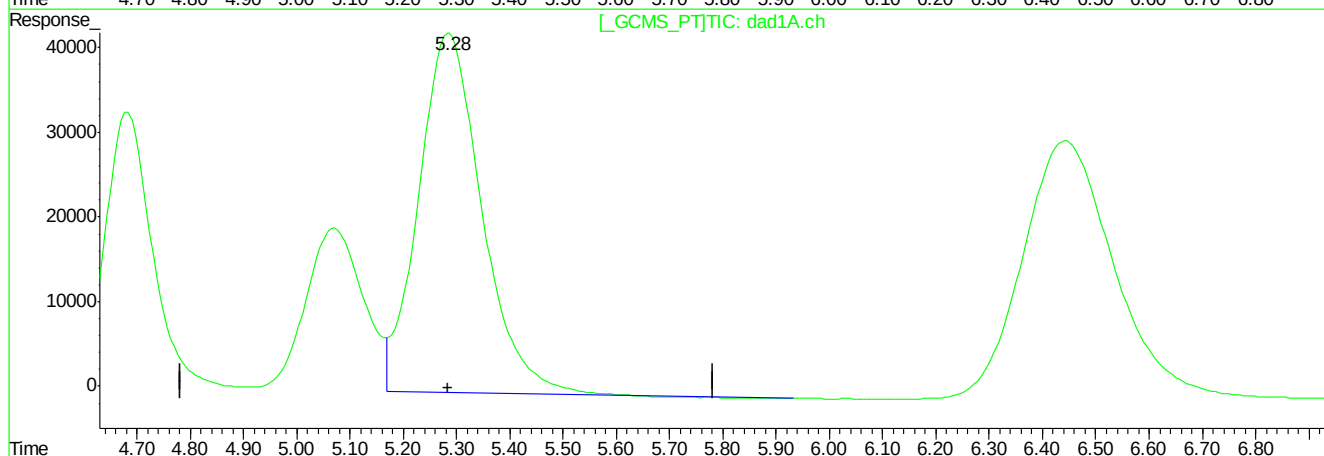
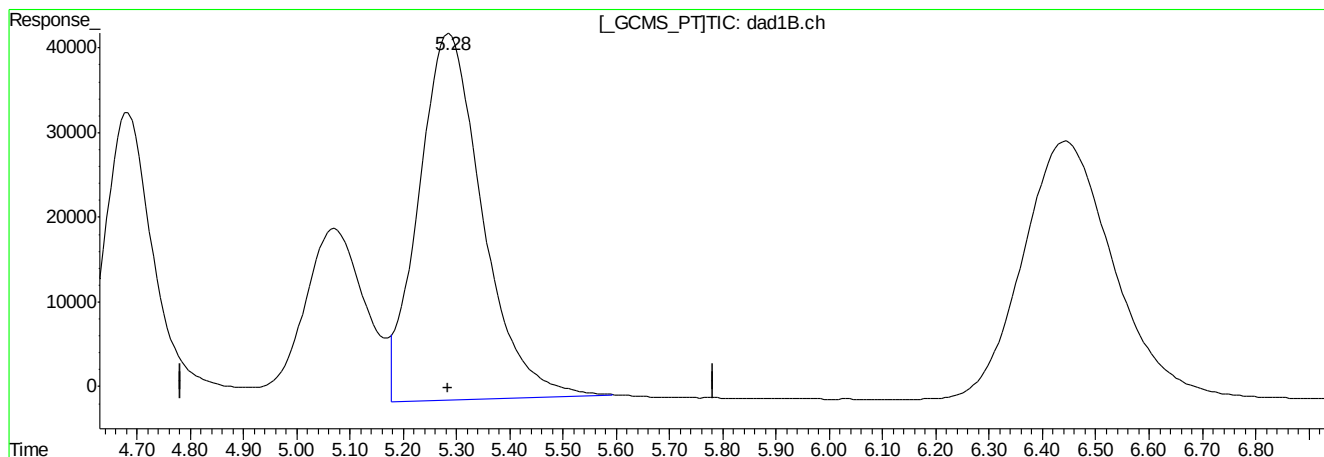
GG625697.D GGG3229_013023.M

Mon Jan 30 15:42:17 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
Sample : ic3229-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 12:26 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.28min 470.489ppb m

response 3590869

(3) DNX #2

5.29min 453.010ppb

response 3510665

QEdit

(+) = Expected Retention Time

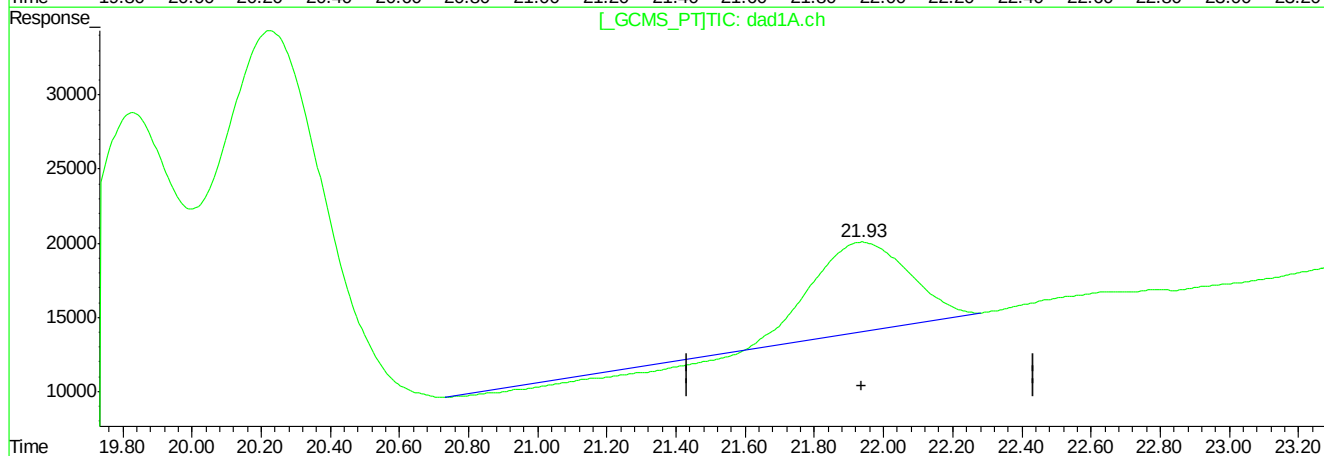
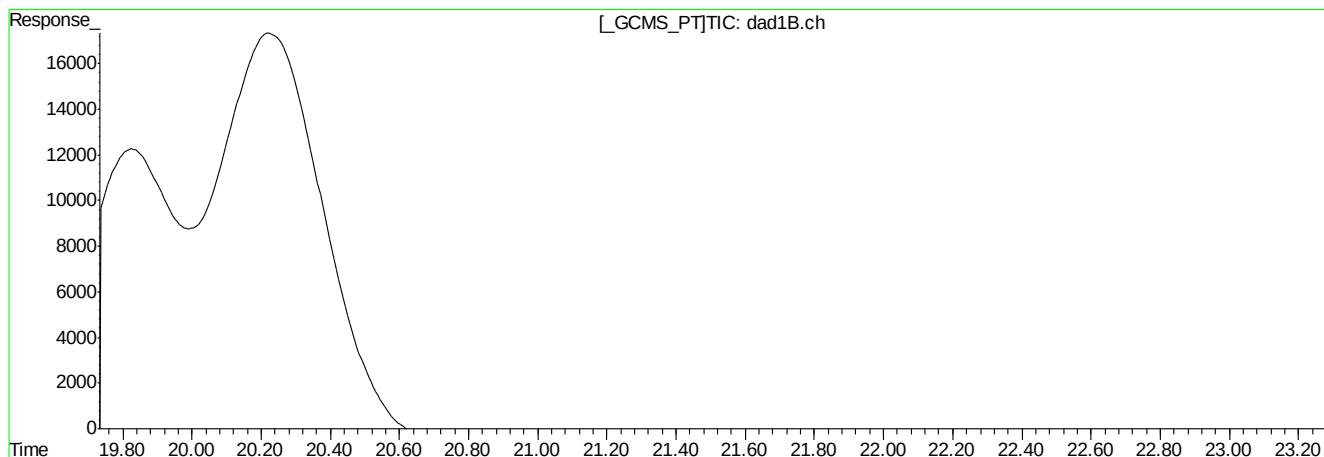
GG625697.D GGG3229_013023.M

Mon Jan 30 15:42:30 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
Sample : ic3229-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 12:26 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

21.94min 335.298ppb

response 1031474

QEdit

(+) = Expected Retention Time

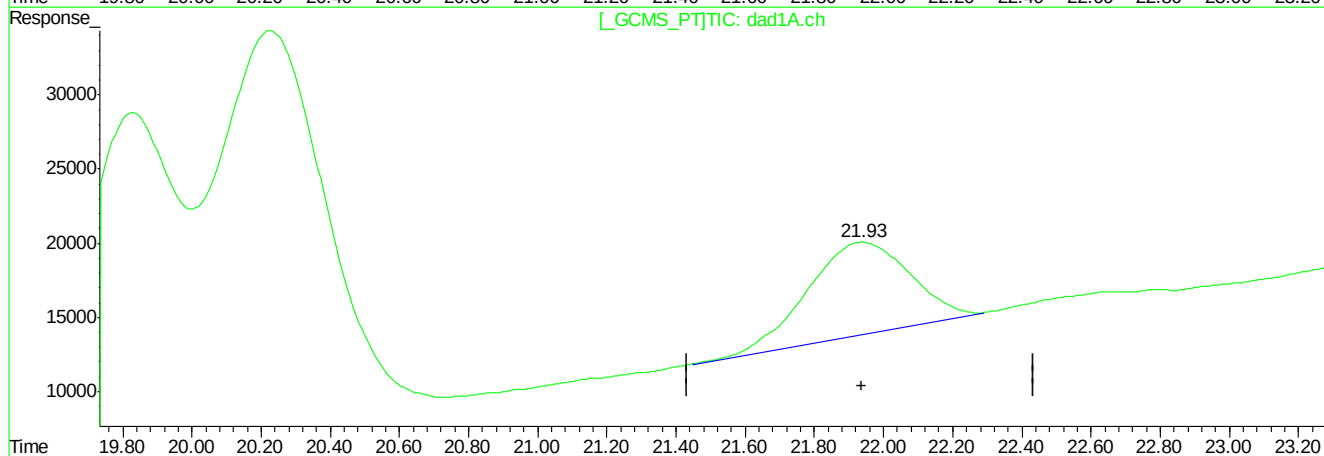
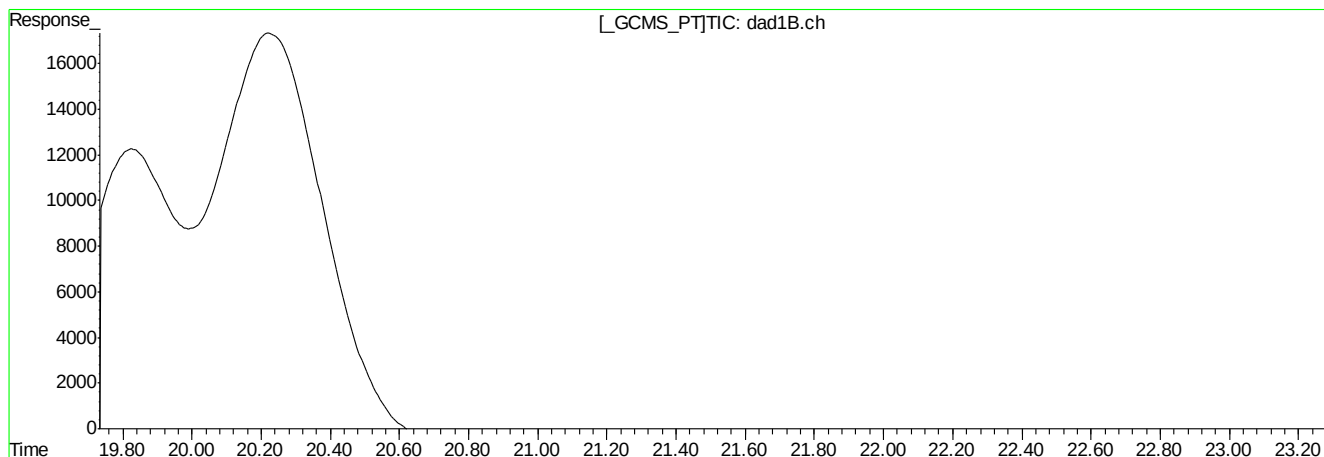
GG625697.D GGG3229_013023.M

Mon Jan 30 15:43:45 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625697.D\dad1A.ch
Acq On : 30-Jan-2023, 11:54:29 Operator: fouads
Sample : ic3229-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 12:26 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

21.93min 427.143ppb m

response 1314017

(+) = Expected Retention Time

GG625697.D GGG3229_013023.M

Mon Jan 30 15:43:52 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
 Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
 Sample : ic3229-20 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 30 13:32:59 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Mon Jan 30 12:26:09 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.45	14.45	113079	196978	24.570	21.522m
Spiked Amount	500.000	Range	70 - 136	Recovery	=	4.91%# 4.30%#
Target Compounds						
1) TNX	4.69	4.69	103973	121903	11.765m	13.564
2) HMX	5.08	5.08	72786	76960	26.137m	27.470
3) DNx	5.30	5.30	178810	188762	23.428m	24.358m
4) MNX	6.47	6.47	165566	190222	24.780	28.471m
5) 1,3,5-Trinitrobe	7.42	7.42	220381	215483	24.559	23.937
6) RDX	7.81	7.81	107083	104058	25.089	24.232
7) 1,3-Dinitrobenze	9.90	9.89	309647	278691	25.156	26.842m
8) Nitrobenzene	11.05	11.05	196574	185807	24.991	25.654m
9) 2,4,6-Trinitroto	11.79	11.78	237572	308344	27.154	27.570m
10) Nitroglycerin	0.00	12.47	0	81663	N.D.	28.114m#
11) Tetryl	13.19	13.12	139767	226761	20.293	19.767m
13) 2,6-Dinitrotolue	14.86	14.86	130890	151891	19.761	15.928m
14) 2,4-Dinitrotolue	15.50	15.50	269187	191769	23.822	24.704
15) 3,5-Dinitroanili	16.31	16.30	229227	383340	24.321	24.763
16) o-Nitrotoluene	17.44	17.46	105593	195087	20.485	27.085m
17) p-Nitrotoluene	18.39	18.42	280840	805248	55.374	92.087 #
18) 4-Amino-2,6-Dini	18.39	18.42	280840	805248	56.445	92.648 #
19) m-Nitrotoluene	19.78	19.80	118109	196481	23.449	24.872m
20) 2-Amino-4,6-Dini	20.16	20.20	206546	188374	24.862	16.389m
21) PETN	0.00	21.93	0	67166	N.D.	21.834m#

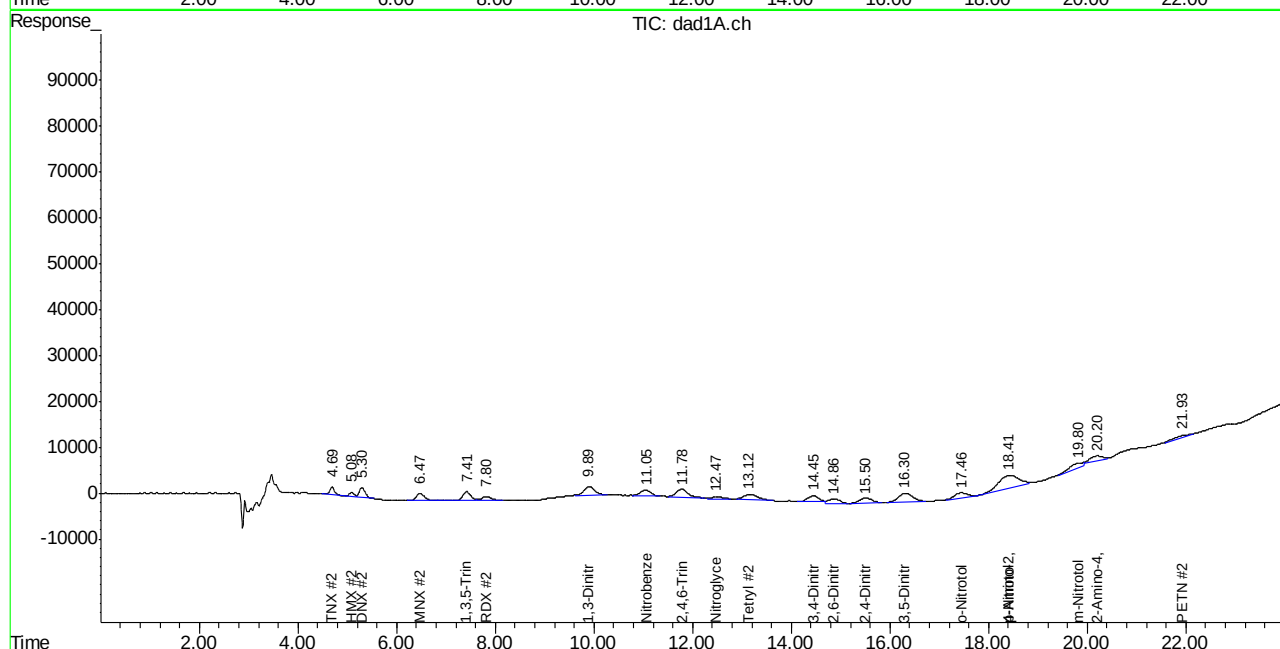
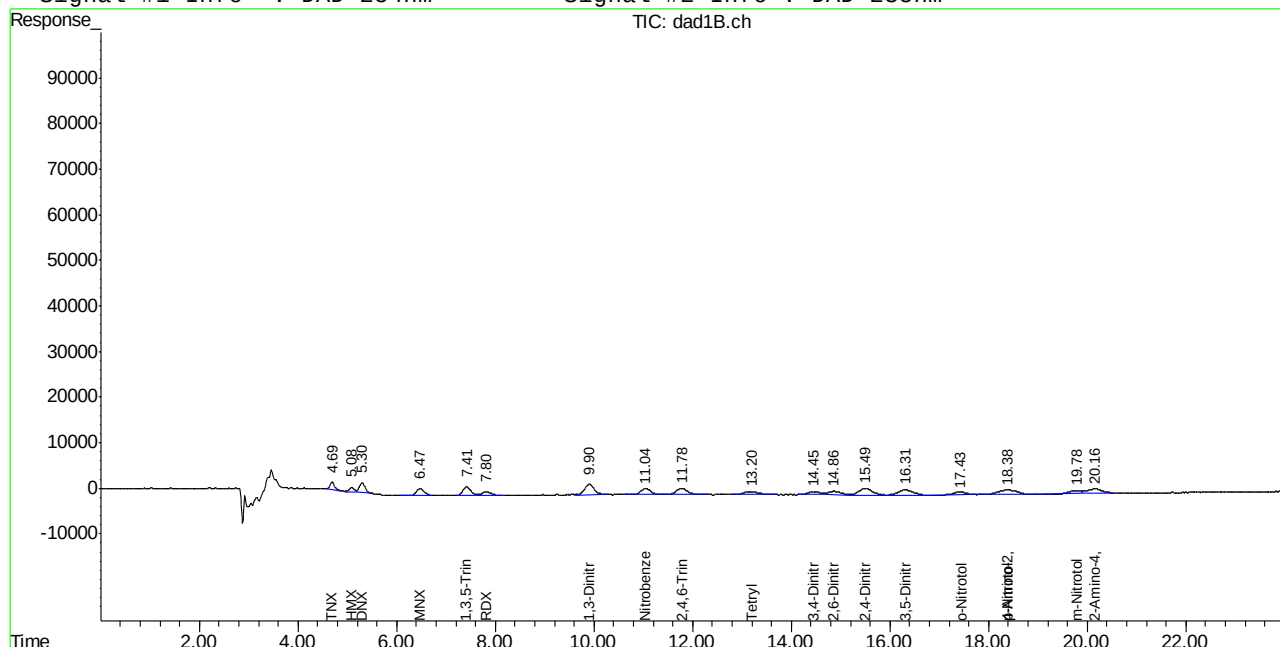
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625698.D GGG3229_013023.M Tue Jan 31 11:32:12 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:50 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Page 1 of 1

Sample Number: GGG3229-IC3229 **Method:** SW846 8330B
Lab FileID: GG625698.D **Analyst approved:** 01/31/23 11:38 Fouad Sekkar
Injection Time: 01/30/23 12:37 **Supervisor approved:** 01/31/23 12:29 Mike Eger

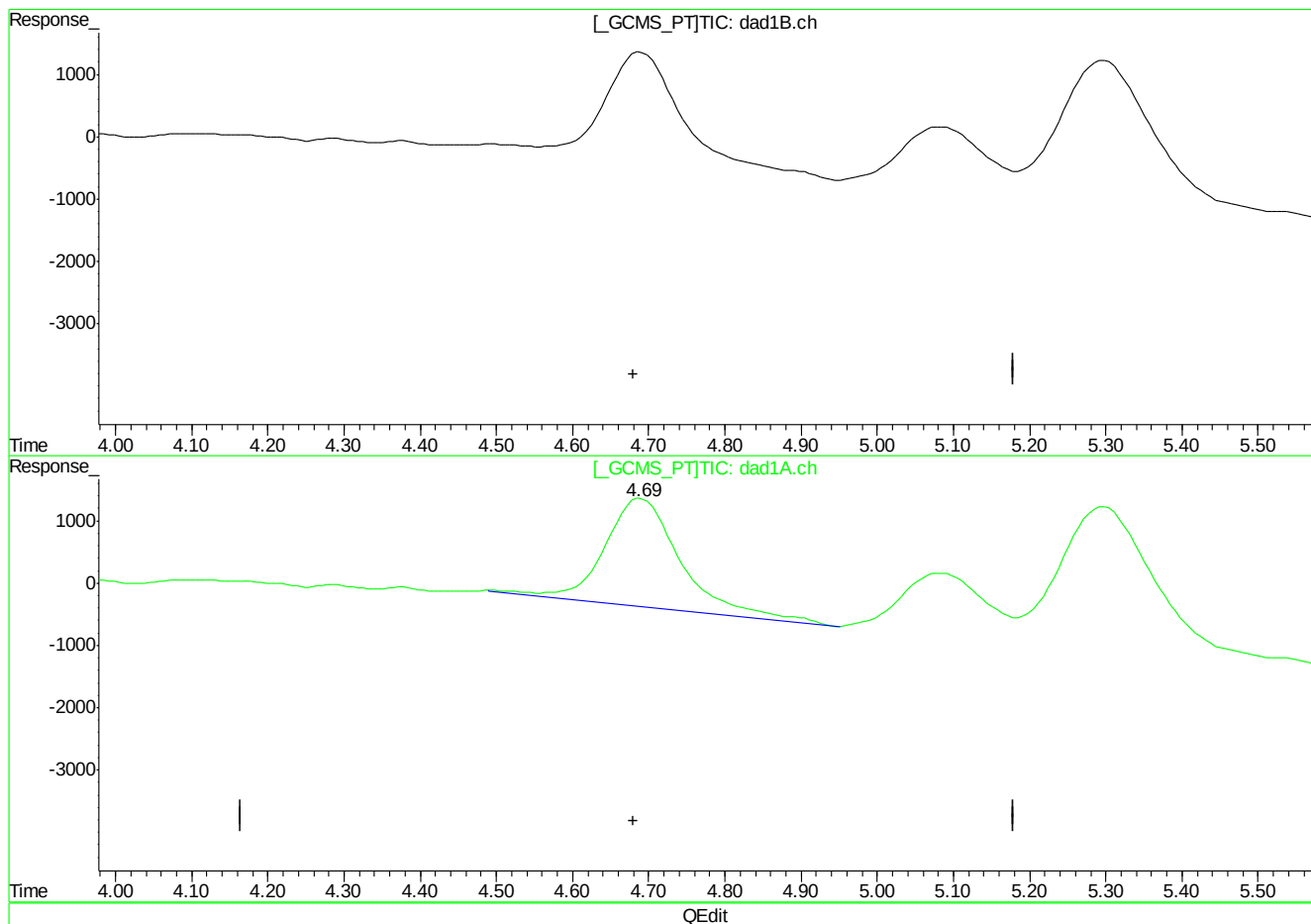
Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.69	Missed peak
HMX	2691-41-0	1	5.08	Poor instrument integration
DNX		1	5.30	Poor instrument integration
DNX		2	5.30	Poor instrument integration
MNX		2	6.47	Poor instrument integration
1,3-Dinitrobenzene	99-65-0	2	9.89	Poor instrument integration
Nitrobenzene	98-95-3	2	11.05	Poor instrument integration
2,4,6-Trinitrotoluene	118-96-7	2	11.78	Poor instrument integration
Nitroglycerine	55-63-0	2	12.47	Poor instrument integration
Tetryl	479-45-8	2	13.12	Poor instrument integration
3,4-Dinitrotoluene	610-39-9	2	14.45	Poor instrument integration
2,6-Dinitrotoluene	606-20-2	2	14.86	Poor instrument integration
o-Nitrotoluene	88-72-2	2	17.46	Poor instrument integration
m-Nitrotoluene	99-08-1	2	19.80	Poor instrument integration
2-amino-4,6-Dinitrotoluene	35572-78-2	2	20.20	Poor instrument integration
PETN	78-11-5	2	21.93	Poor instrument integration

9.5.15.1
9

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.69min 13.564ppb

response 121903

(+) = Expected Retention Time

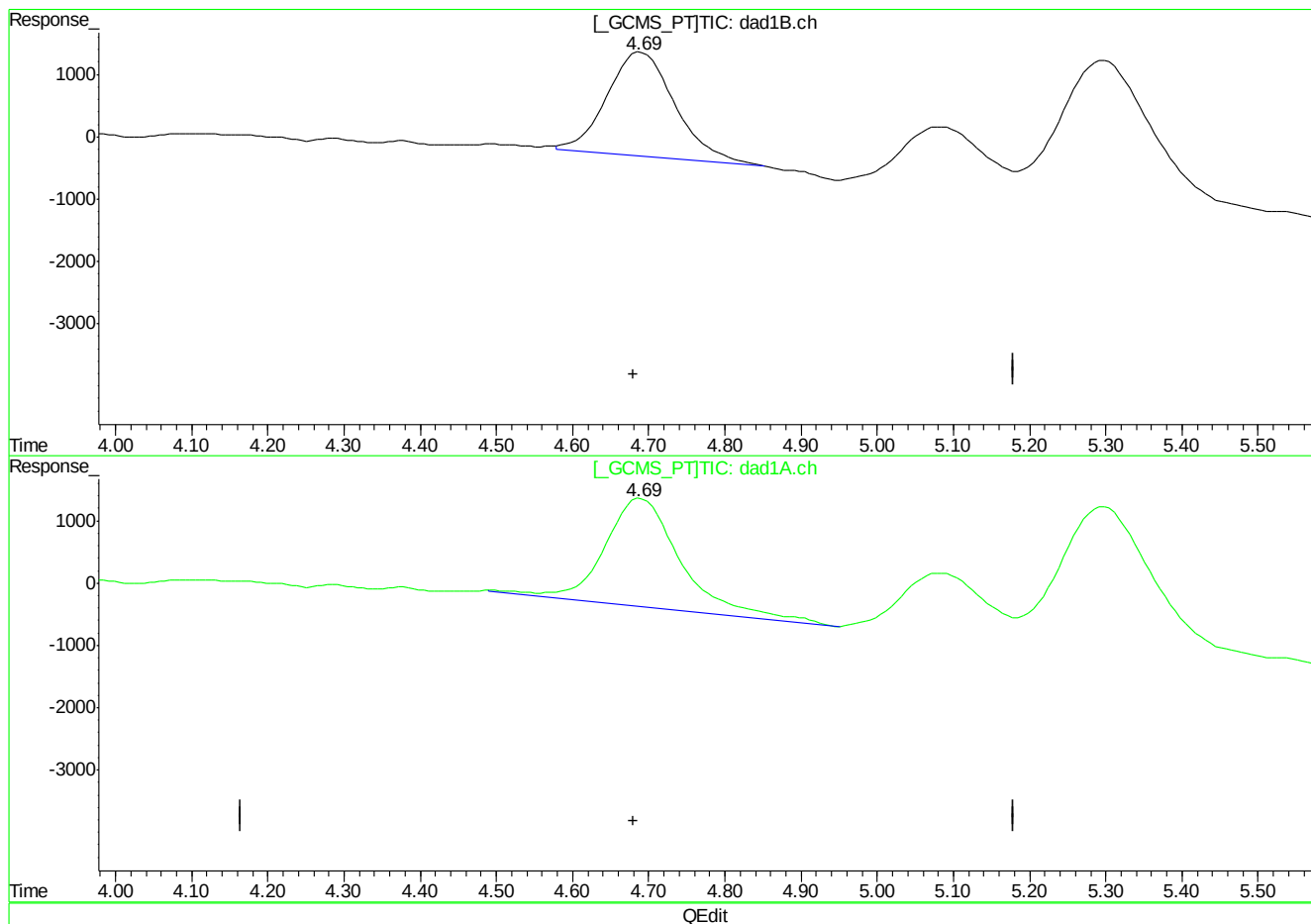
GG625698.D GGG3229_013023.M

Mon Jan 30 15:44:27 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(1) TNX

4.69min 11.765ppb m

response 103973

(1) TNX #2

4.69min 13.564ppb

response 121903

(+) = Expected Retention Time

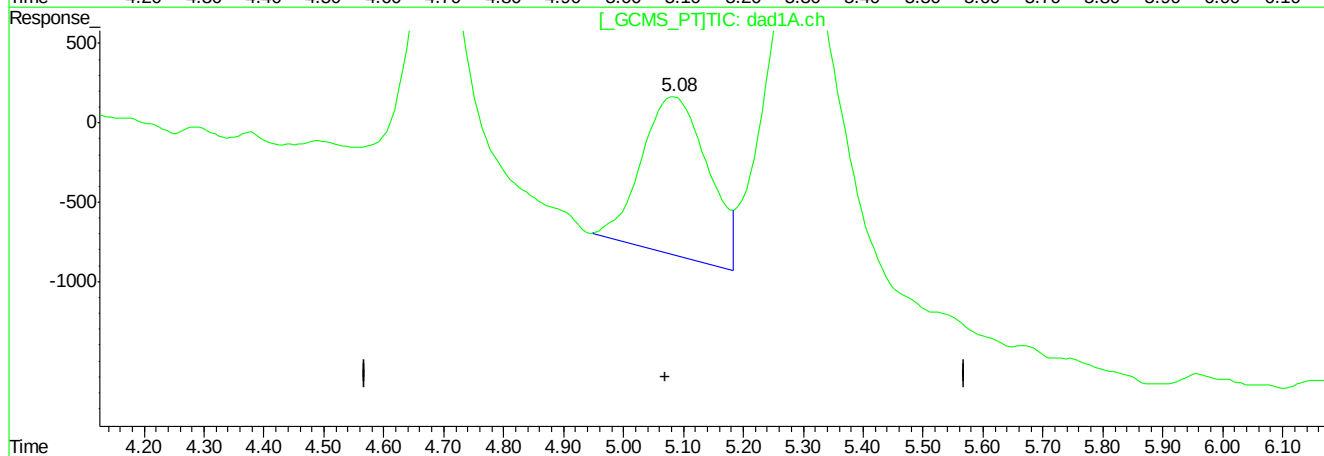
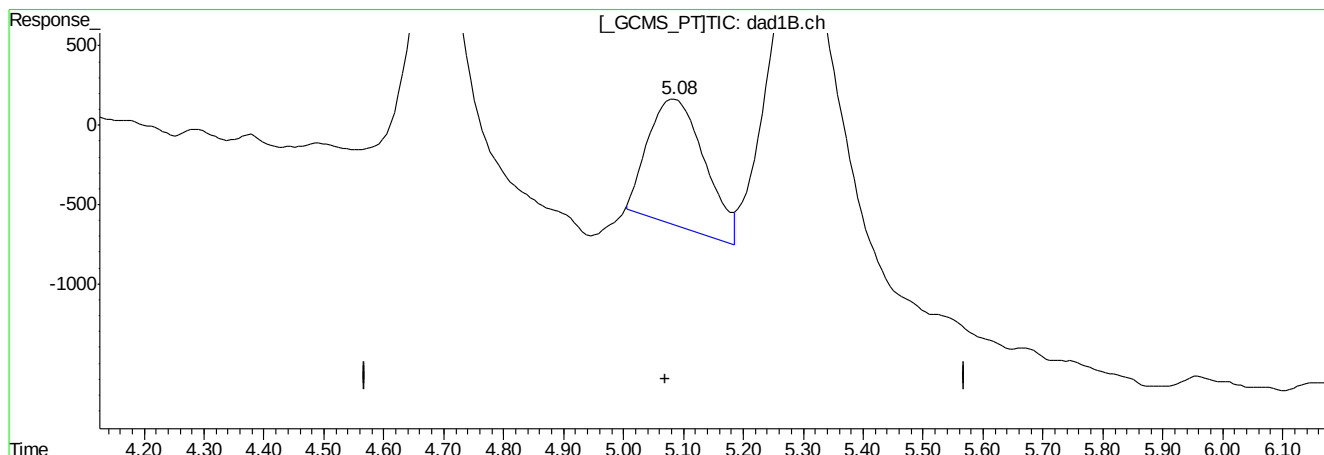
GG625698.D GGG3229_013023.M

Mon Jan 30 15:44:34 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(2) HMX

5.08min 18.793ppb

response 52335

(2) HMX #2

5.08min 27.470ppb

response 76960

(+) = Expected Retention Time

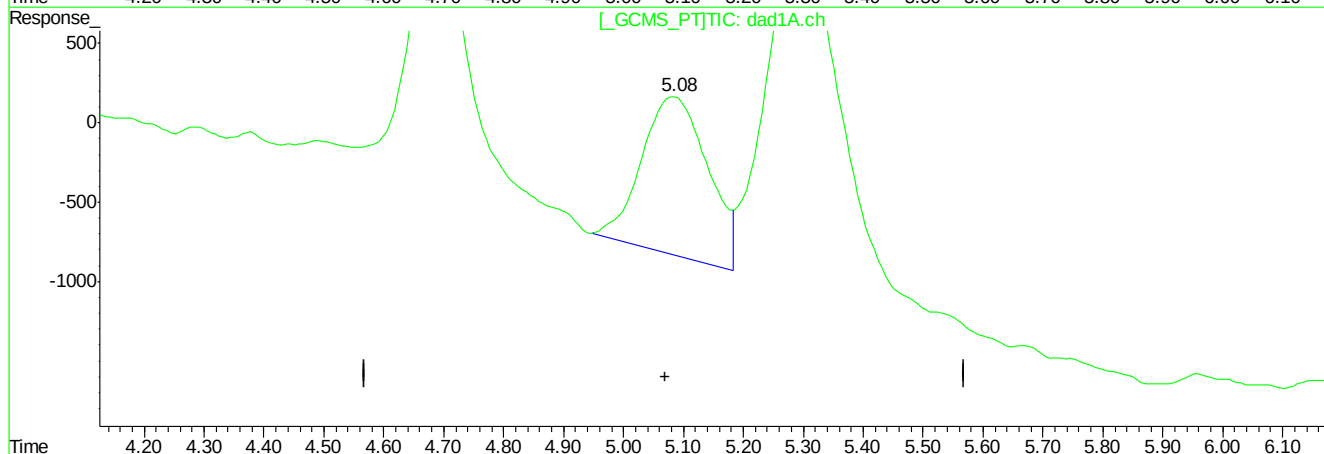
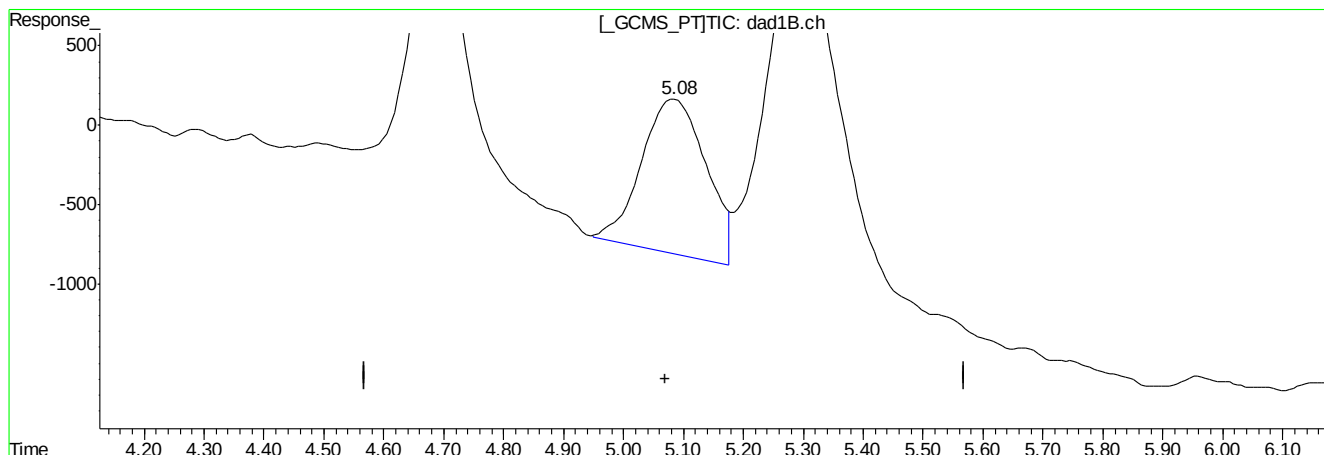
GG625698.D GGG3229_013023.M

Mon Jan 30 15:44:41 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(2) HMX

5.08min 26.137ppb m

response 72786

(2) HMX #2

5.08min 27.470ppb

response 76960

(+) = Expected Retention Time

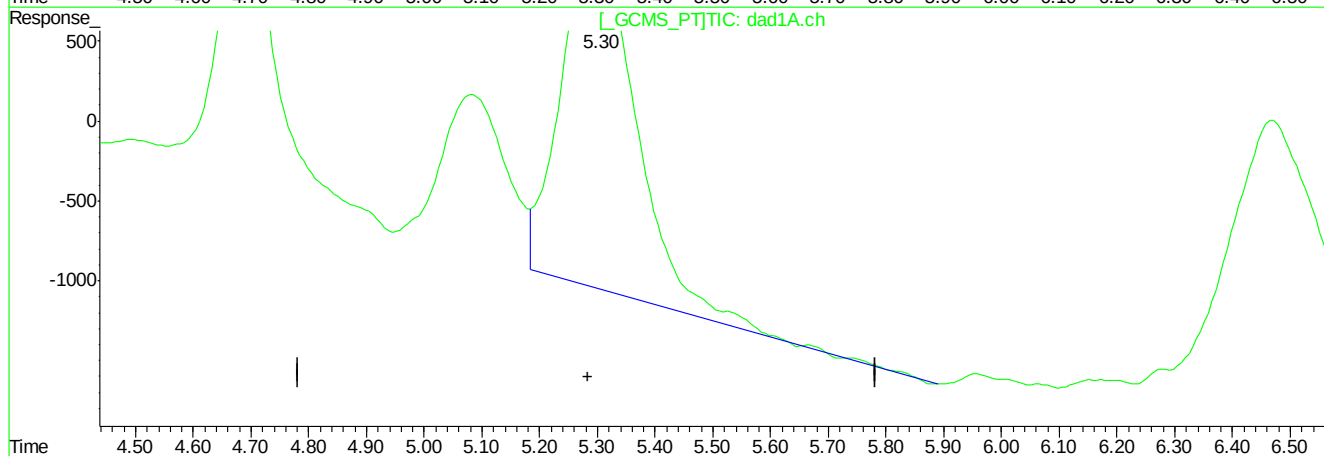
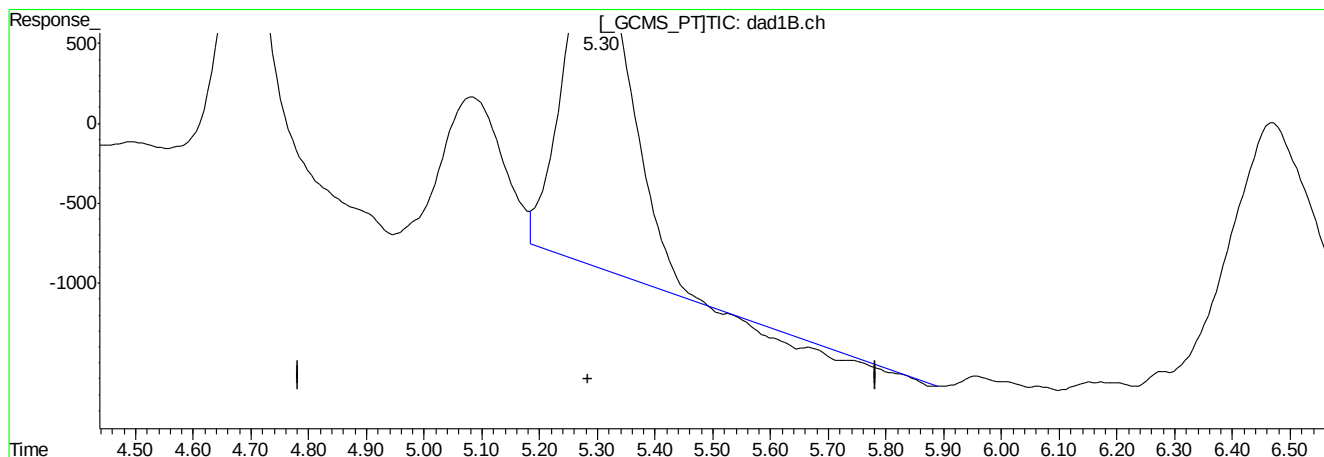
GG625698.D GGG3229_013023.M

Mon Jan 30 15:44:47 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(3) DNX

5.30min 21.475ppb

response 163904

(3) DNX #2

5.30min 26.031ppb

response 201728

(+) = Expected Retention Time

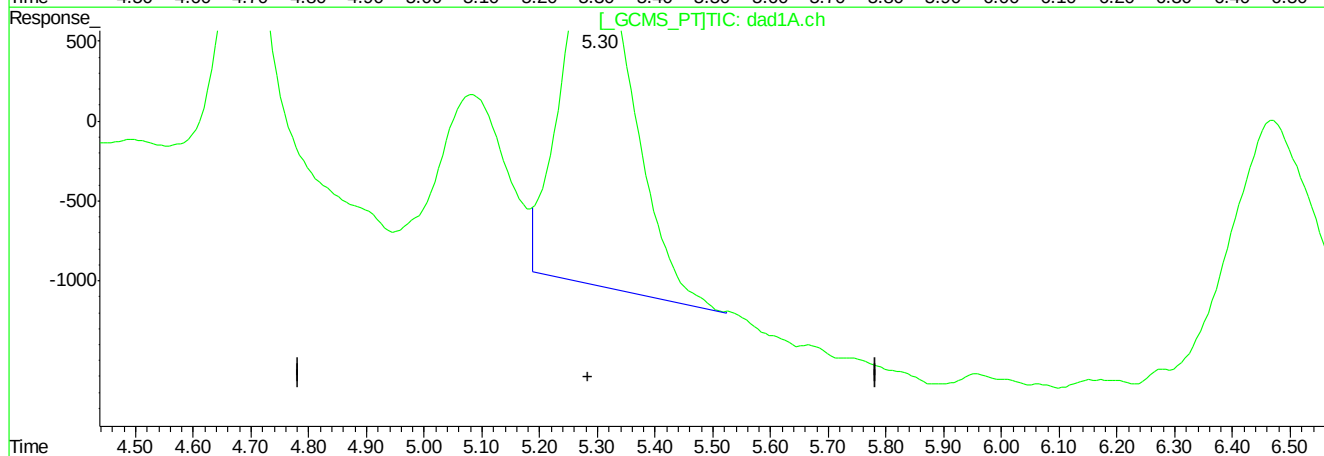
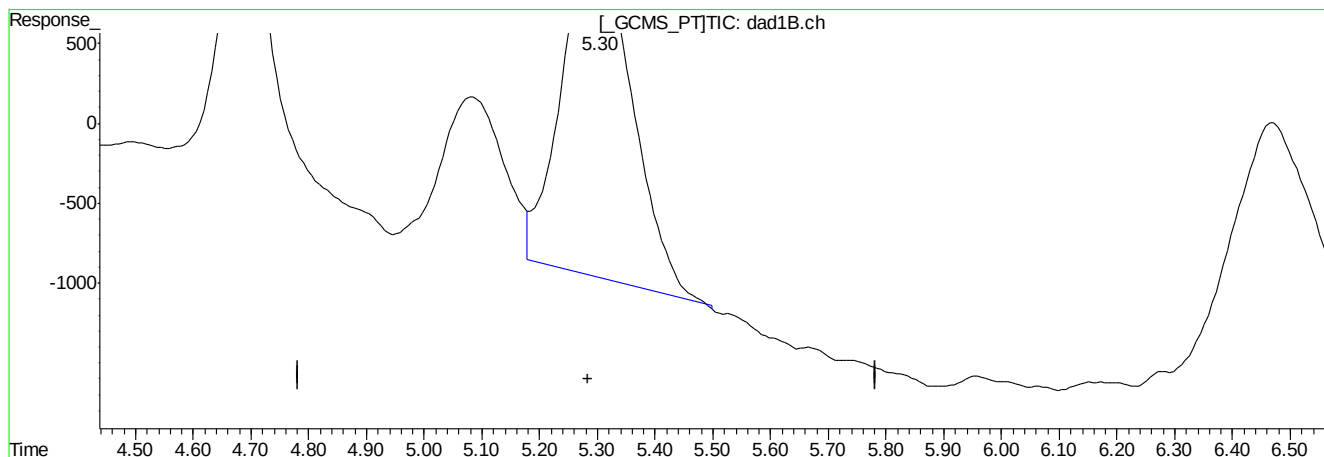
GG625698.D GGG3229_013023.M

Mon Jan 30 15:44:56 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(3) DNX

5.30min 23.428ppb m

response 178810

(3) DNX #2

5.30min 24.358ppb m

response 188762

(+) = Expected Retention Time

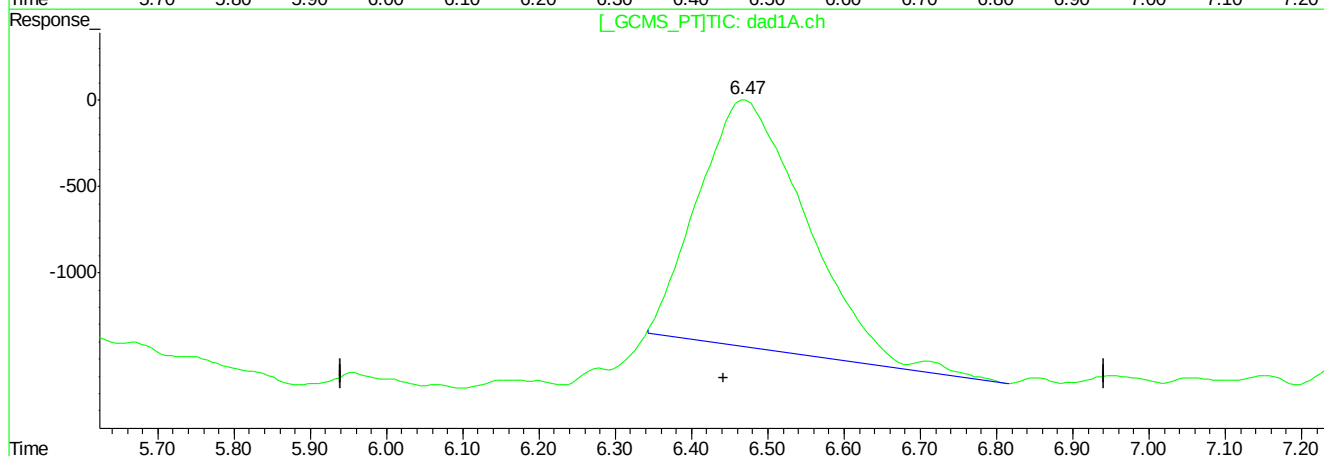
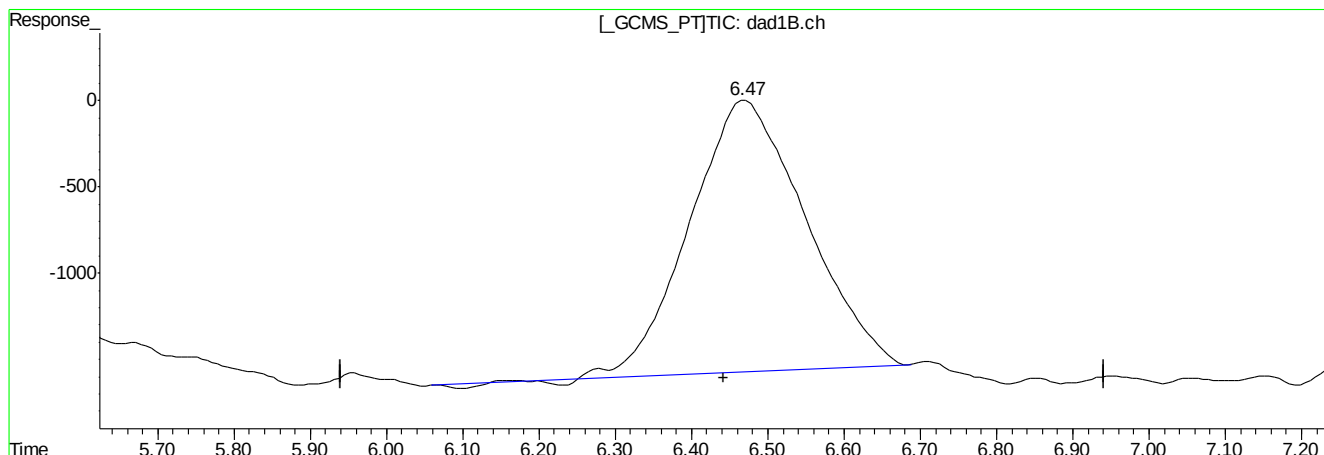
GG625698.D GGG3229_013023.M

Mon Jan 30 15:45:06 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(4) MNX

6.47min 24.780ppb

response 165566

(4) MNX #2

6.47min 21.345ppb

response 142609

(+) = Expected Retention Time

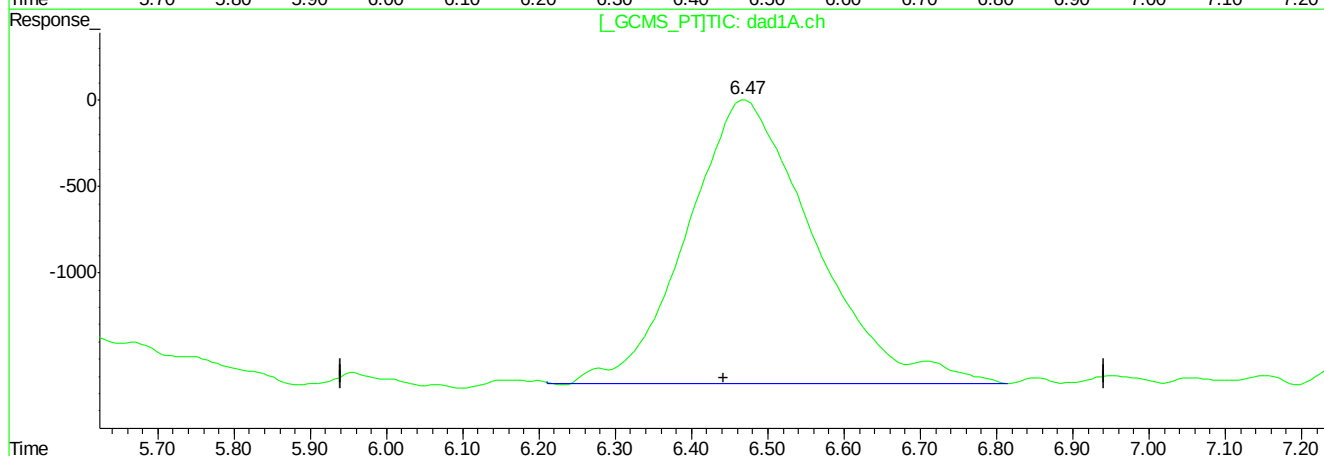
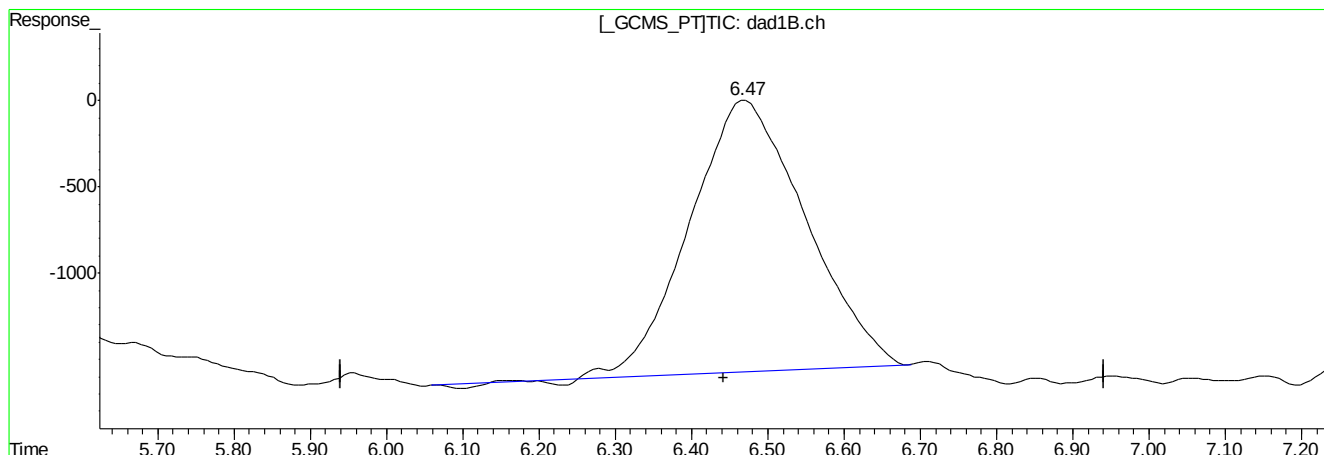
GG625698.D GGG3229_013023.M

Mon Jan 30 15:45:13 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(4) MNX

6.47min 24.780ppb

response 165566

(4) MNX #2

6.47min 28.471ppb m

response 190222

(+) = Expected Retention Time

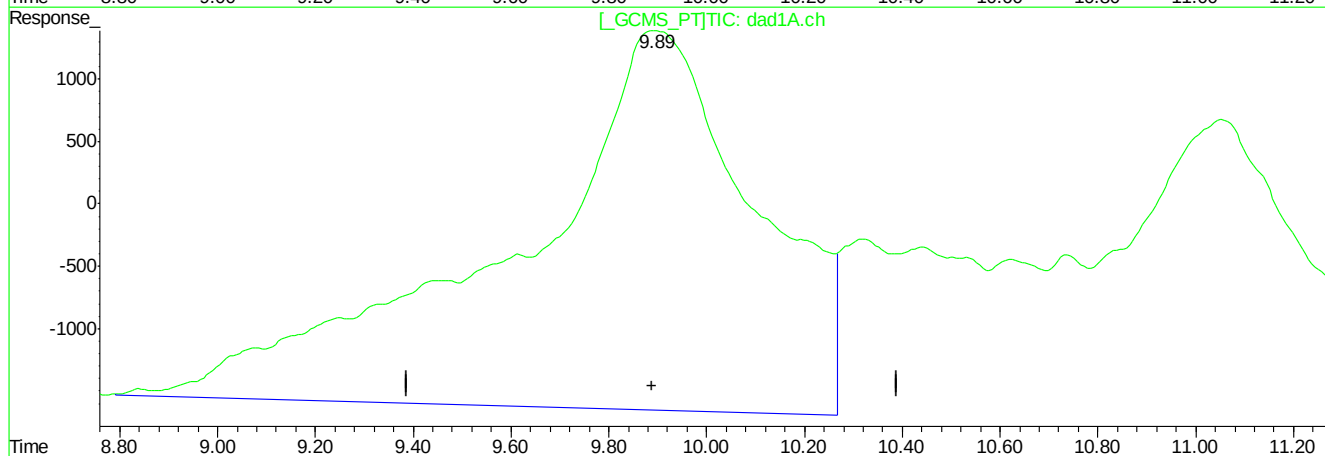
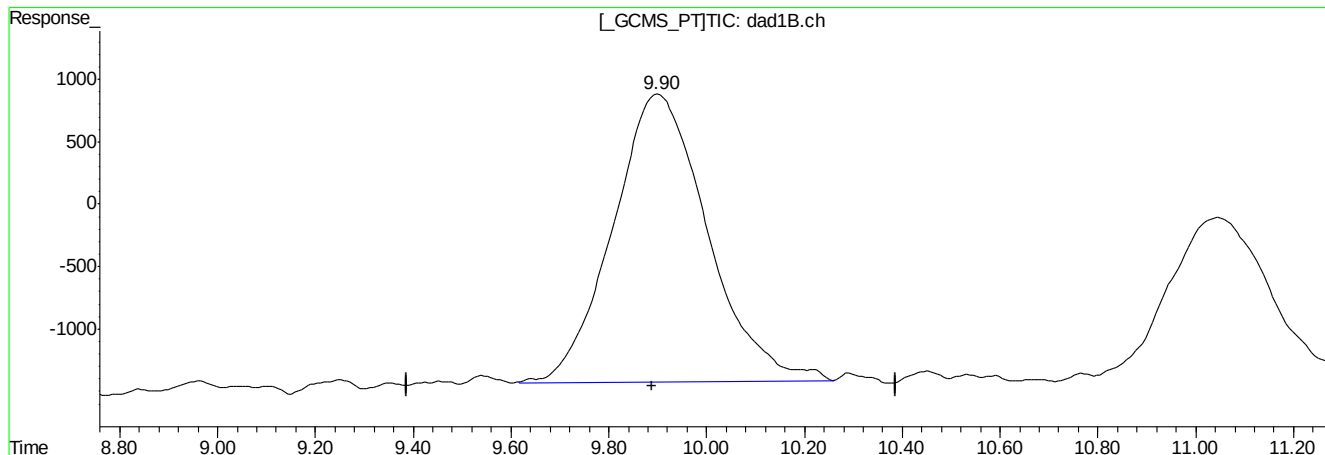
GG625698.D GGG3229_013023.M

Mon Jan 30 15:45:20 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

9.90min 25.156ppb

response 309647

(7) 1,3-Dinitrobenzene #2

9.90min 100.474ppb

response 1043168

(+) = Expected Retention Time

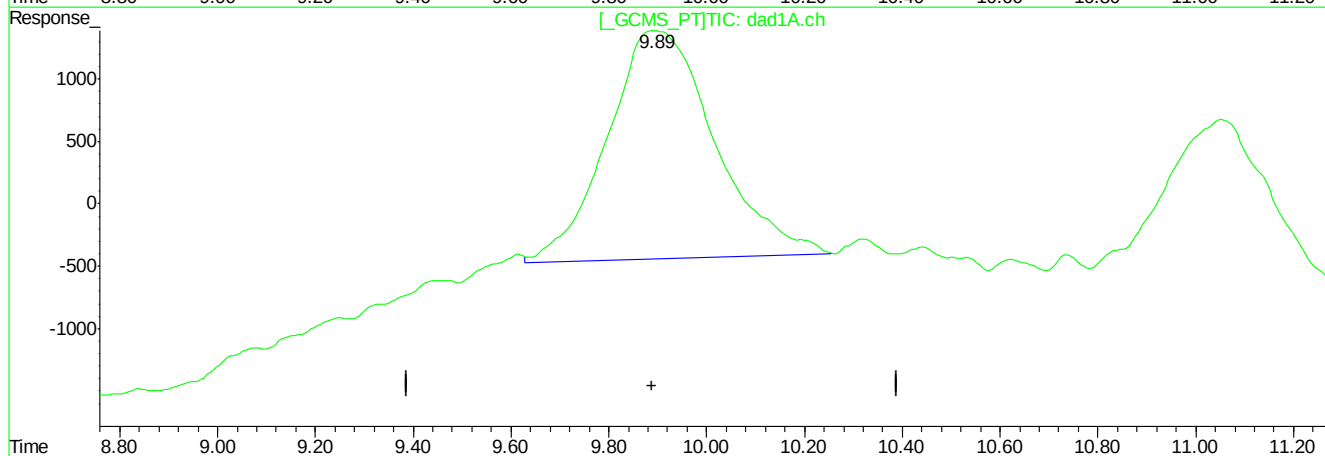
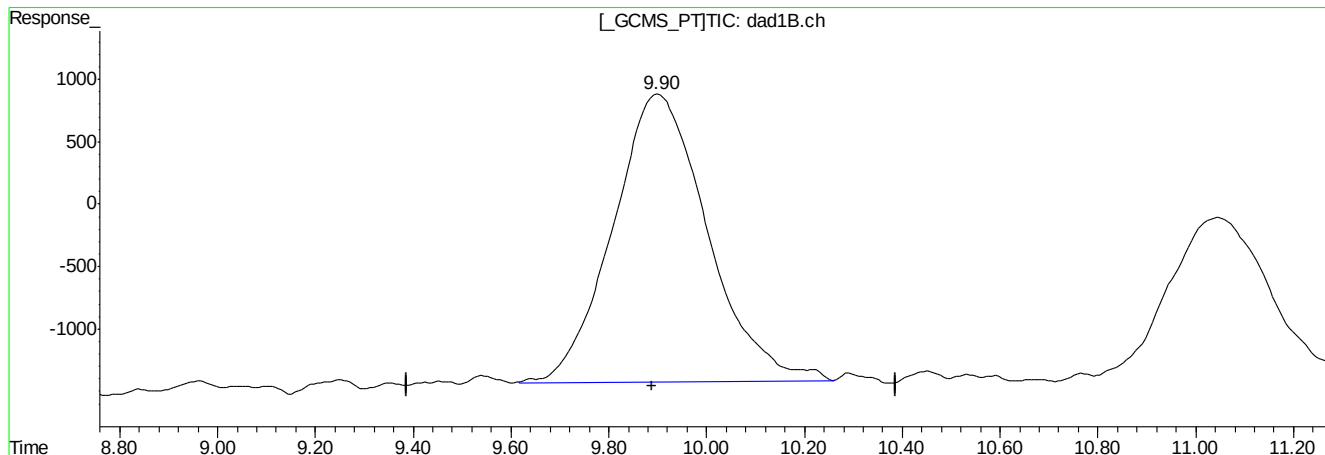
GG625698.D GGG3229_013023.M

Mon Jan 30 15:45:37 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

9.90min 25.156ppb

response 309647

(7) 1,3-Dinitrobenzene #2

9.89min 26.842ppb m

response 278691

(+) = Expected Retention Time

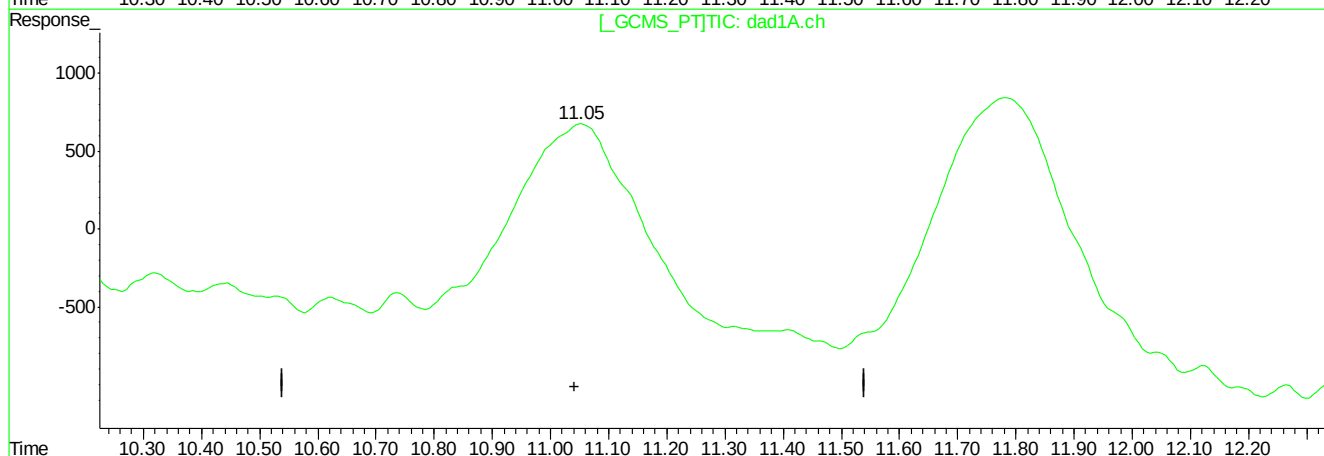
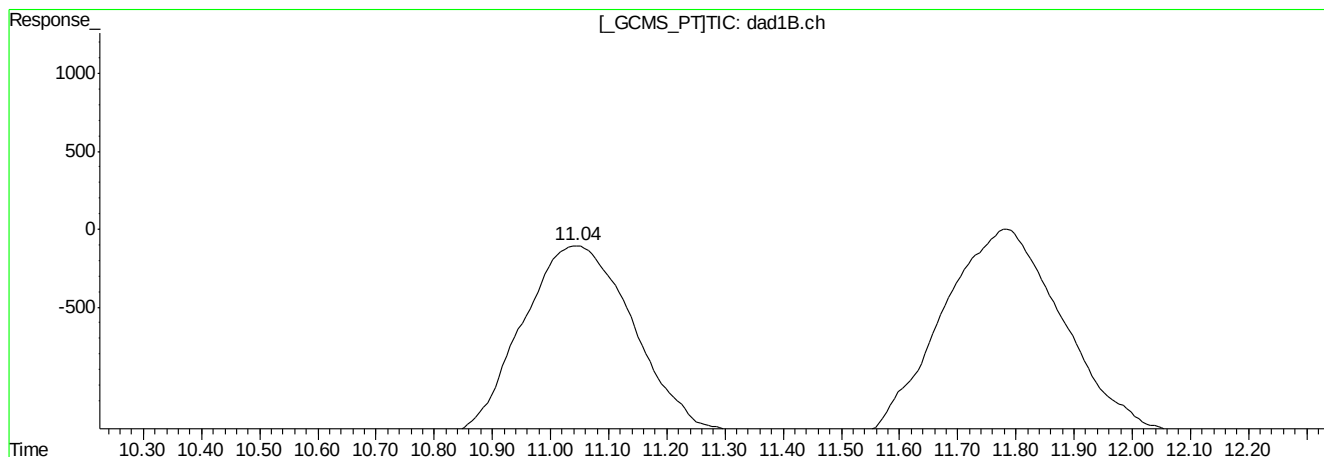
GG625698.D GGG3229_013023.M

Mon Jan 30 15:45:49 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene

11.05min 24.991ppb

response 196574

(8) Nitrobenzene #2

11.05min 95.594ppb

response 692360

(+) = Expected Retention Time

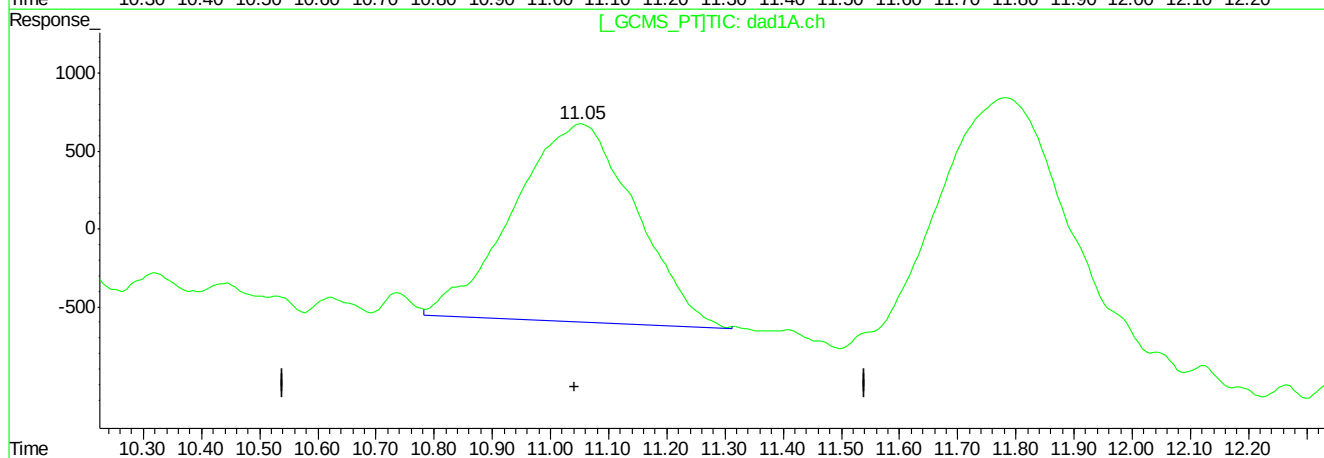
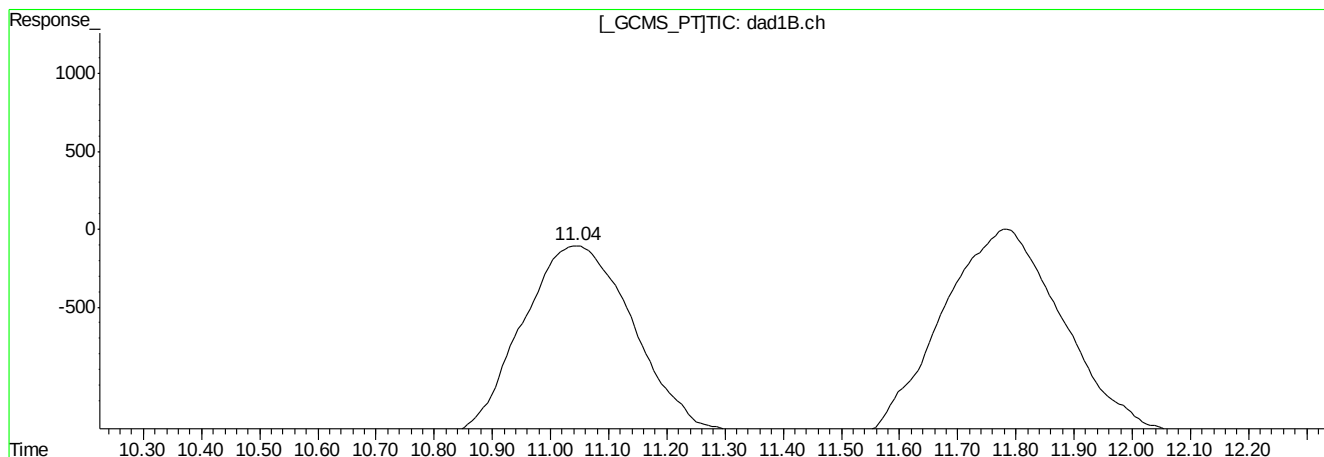
GG625698.D GGG3229_013023.M

Mon Jan 30 15:46:04 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene

11.05min 24.991ppb

response 196574

(8) Nitrobenzene #2

11.05min 25.654ppb m

response 185807

(+) = Expected Retention Time

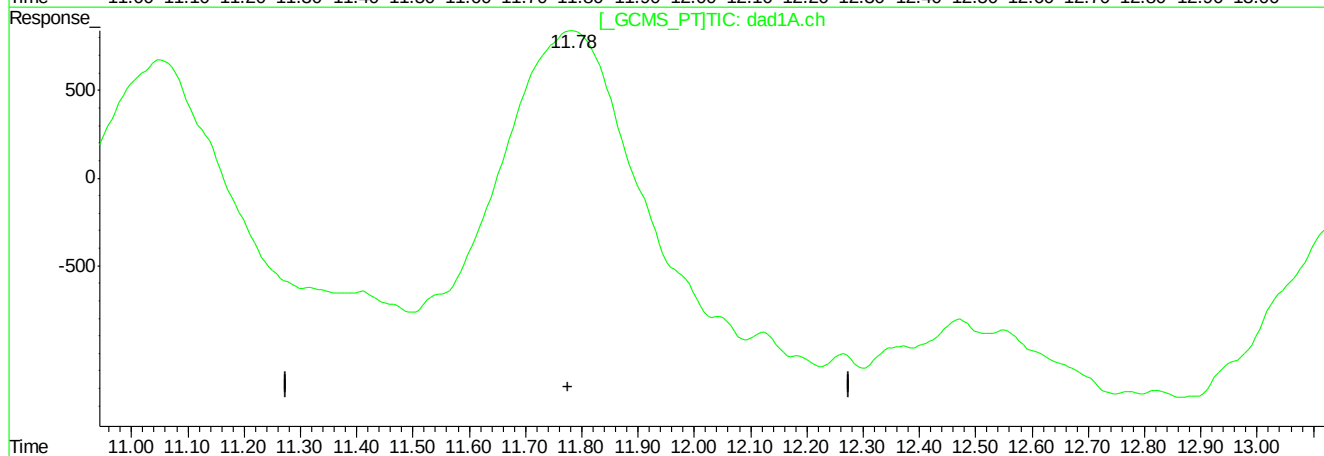
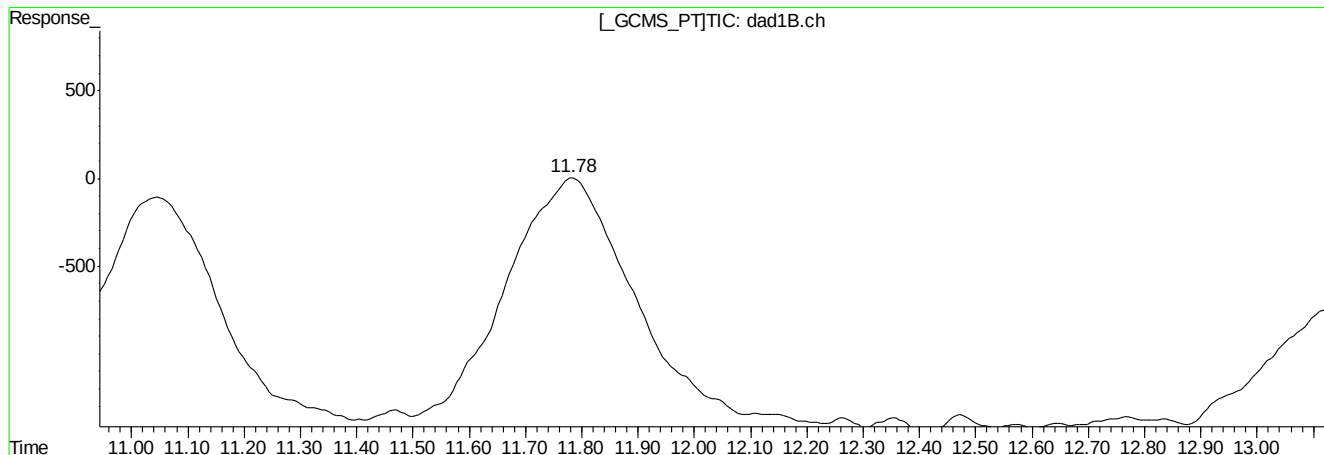
GG625698.D GGG3229_013023.M

Mon Jan 30 15:46:10 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(9) 2,4,6-Trinitrotoluene

11.79min 27.154ppb

response 237572

(9) 2,4,6-Trinitrotoluene #2

11.78min 62.458ppb

response 698535

(+) = Expected Retention Time

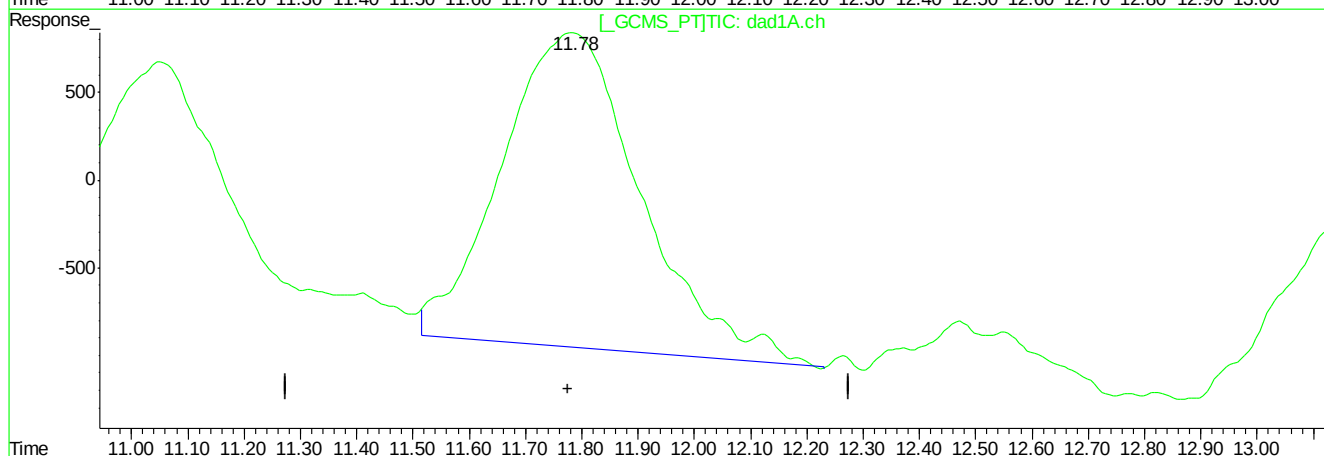
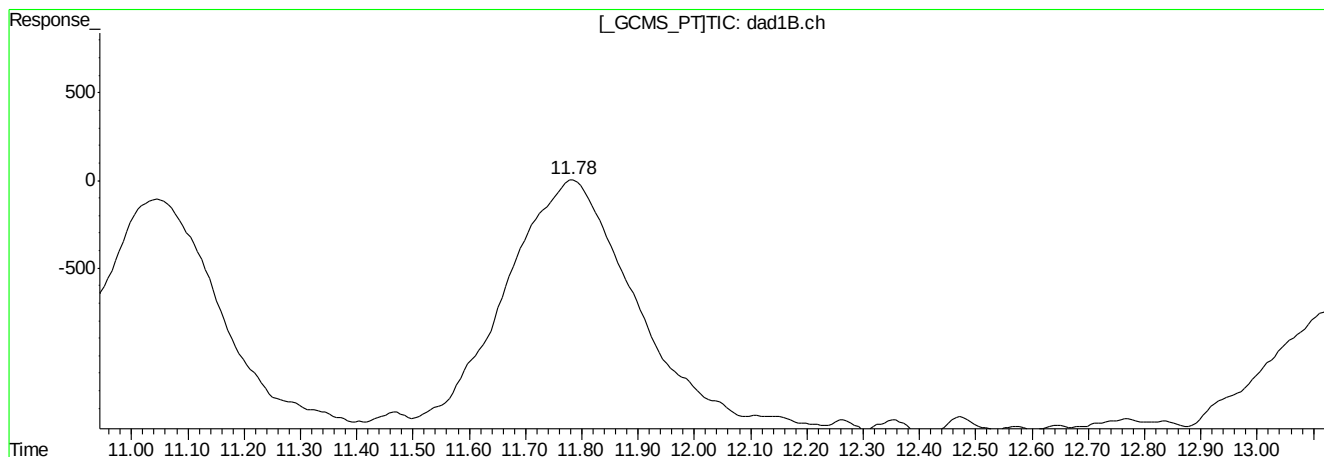
GG625698.D GGG3229_013023.M

Mon Jan 30 15:46:21 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(9) 2,4,6-Trinitrotoluene

11.79min 27.154ppb

response 237572

(9) 2,4,6-Trinitrotoluene #2

11.78min 27.570ppb m

response 308344

(+) = Expected Retention Time

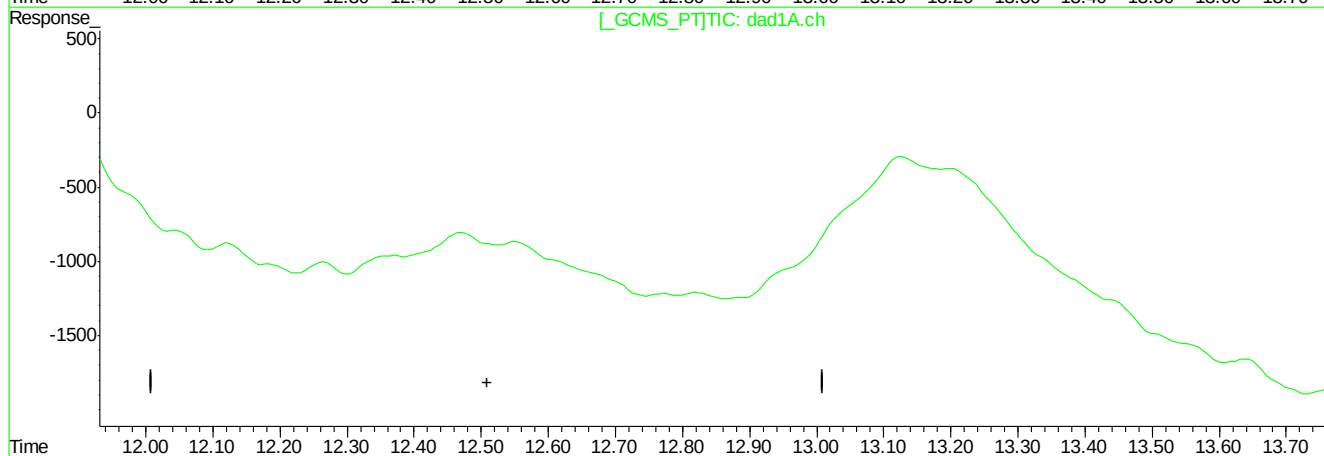
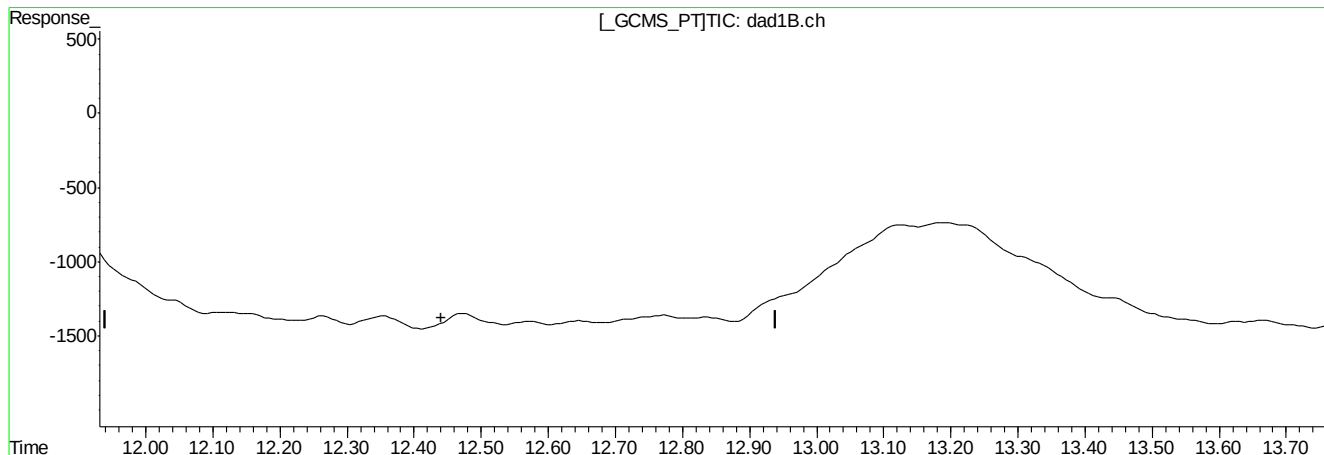
GG625698.D GGG3229_013023.M

Mon Jan 30 15:46:28 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(10) Nitroglycerin

0.00min 0.000ppb

response 0

(10) Nitroglycerin #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

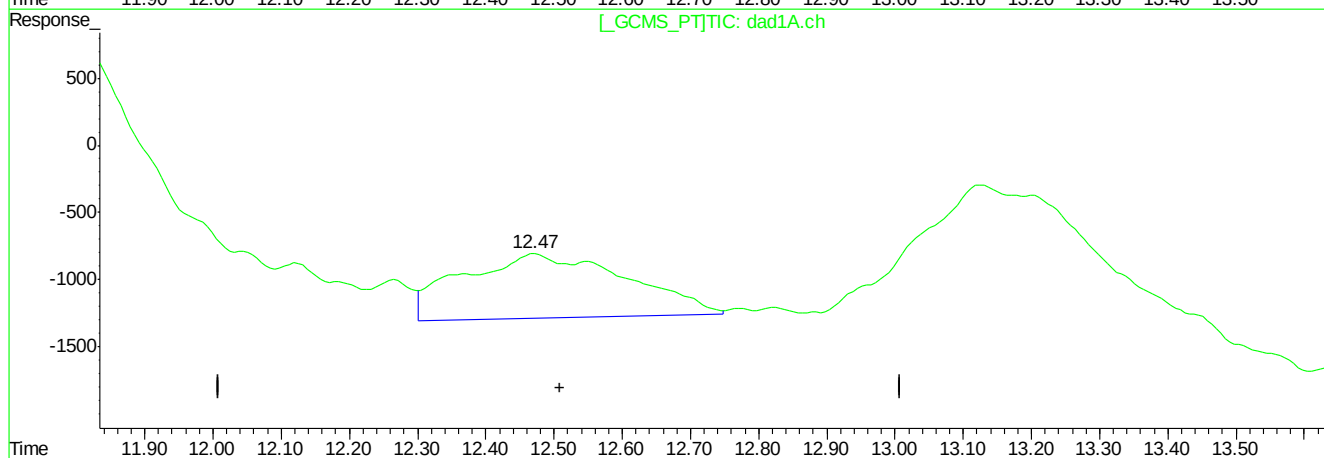
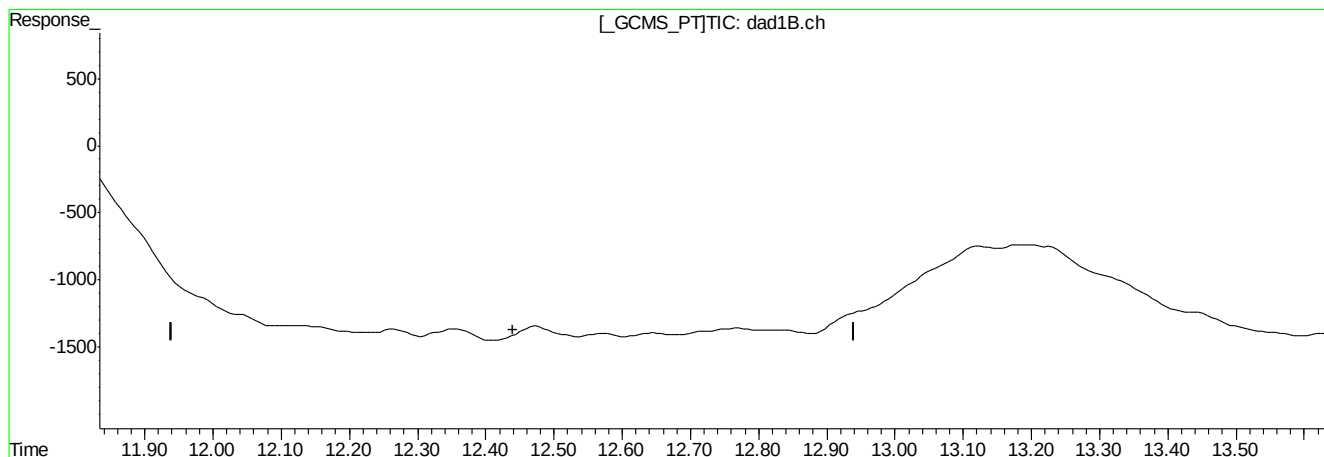
GG625698.D GGG3229_013023.M

Mon Jan 30 15:46:37 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(10) Nitroglycerin

0.00min 0.000ppb

response 0

(10) Nitroglycerin #2

12.47min 28.114ppb m

response 81663

(+) = Expected Retention Time

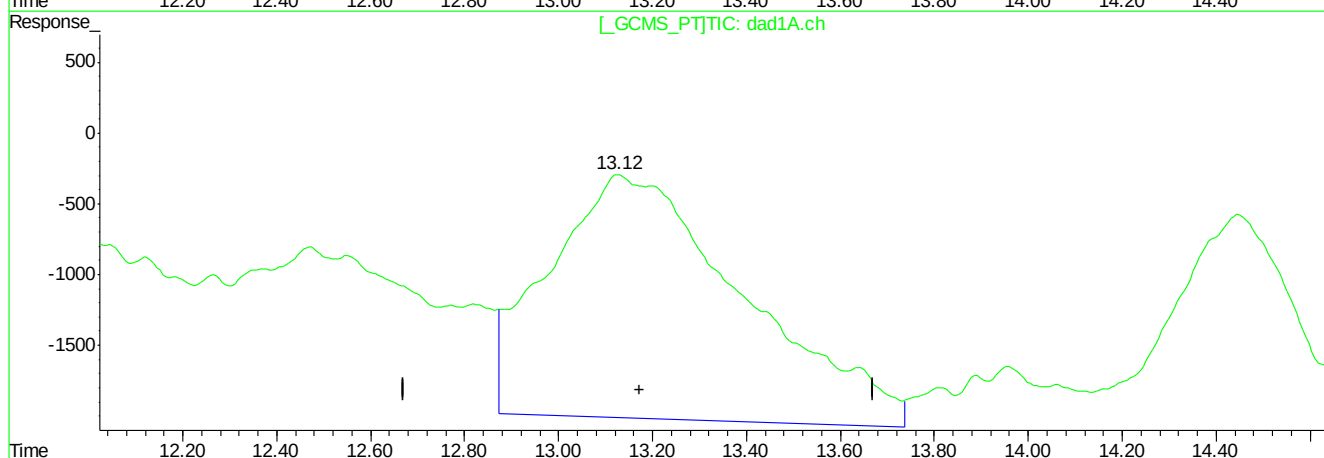
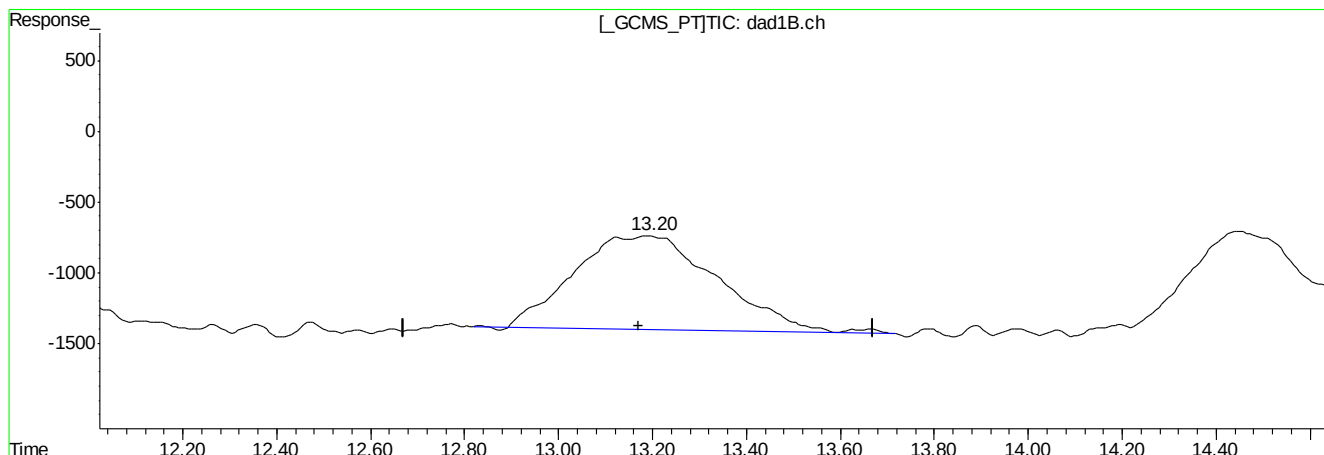
GG625698.D GGG3229_013023.M

Mon Jan 30 15:46:50 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(11) Tetryl

13.19min 20.293ppb

response 139767

(11) Tetryl #2

13.13min 43.457ppb

response 498524

(+) = Expected Retention Time

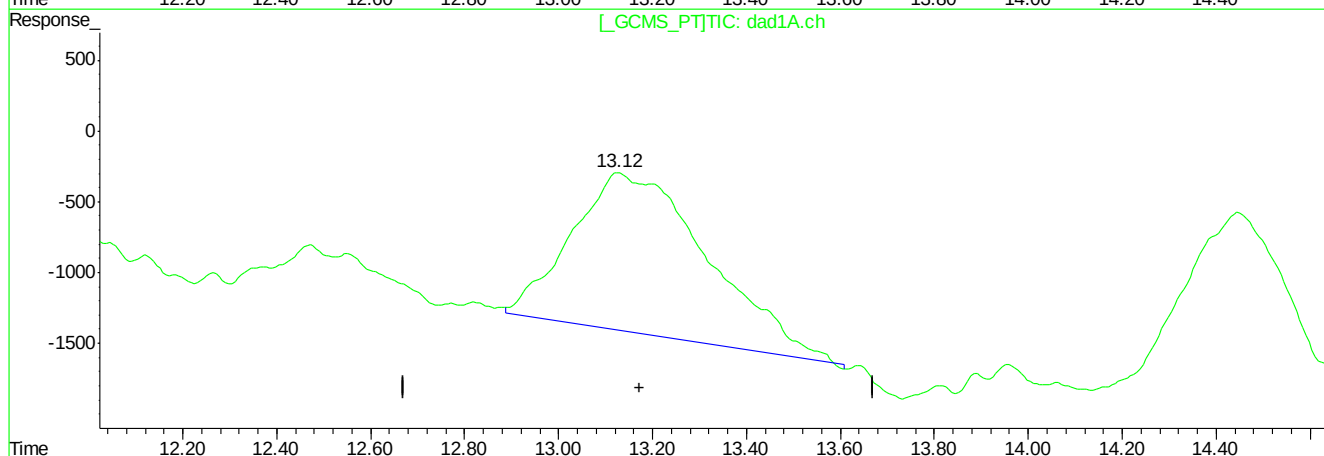
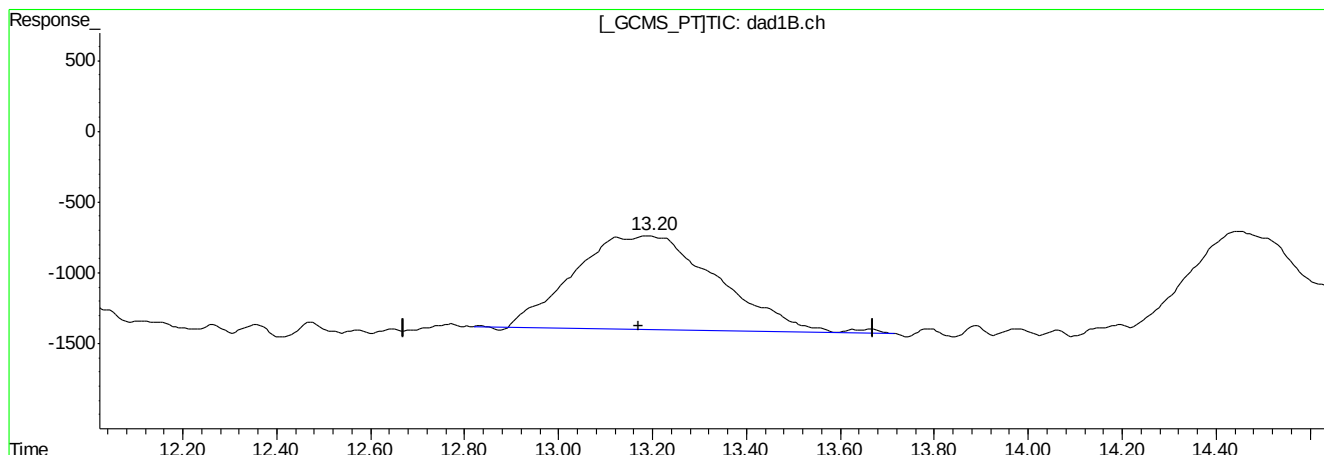
GG625698.D GGG3229_013023.M

Mon Jan 30 15:47:00 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(11) Tetryl

13.19min 20.293ppb

response 139767

(11) Tetryl #2

13.12min 19.767ppb m

response 226761

(+) = Expected Retention Time

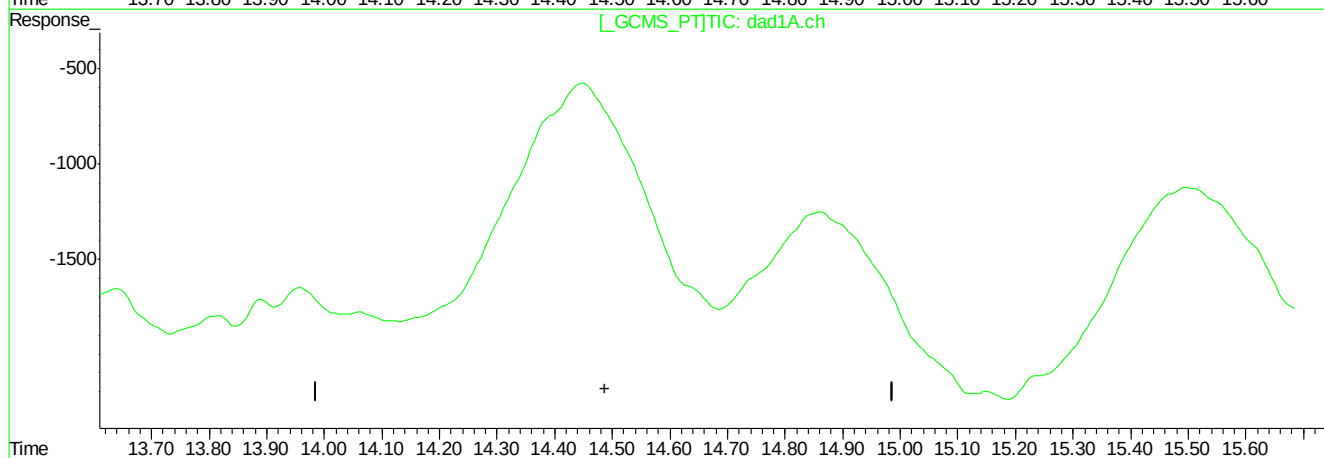
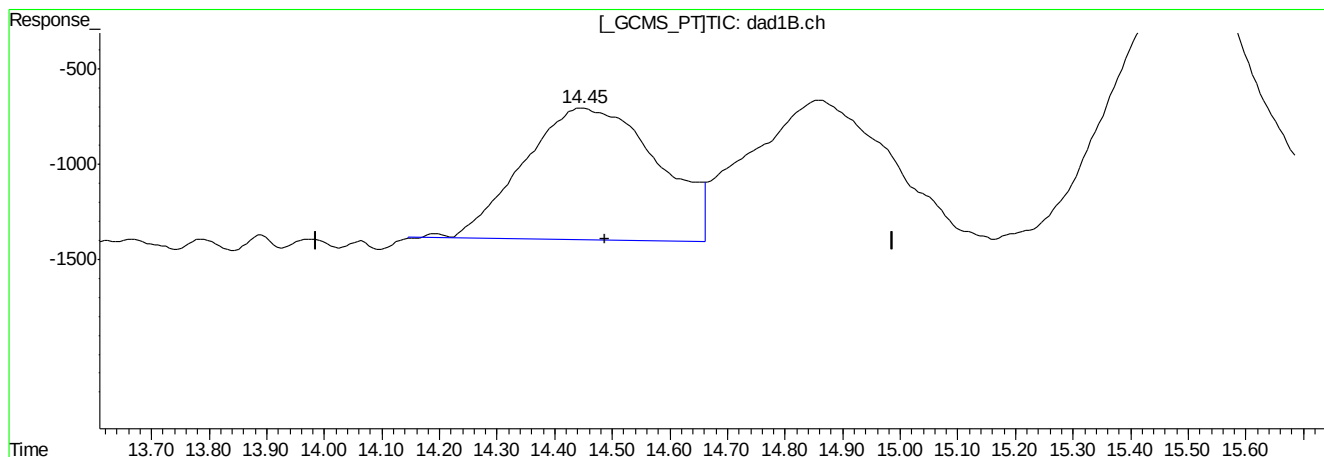
GG625698.D GGG3229_013023.M

Mon Jan 30 15:47:07 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(12) 3,4-Dinitrotoluene (S)

14.45min 24.570ppb

response 113079

(12) 3,4-Dinitrotoluene #2 (S)

14.45min 32.098ppb

response 293777

(+) = Expected Retention Time

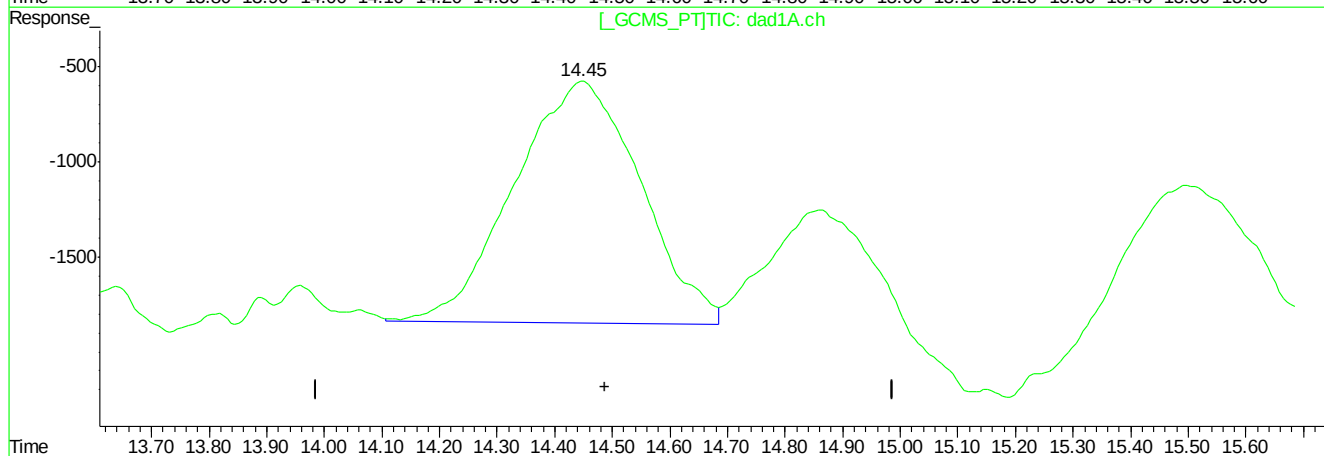
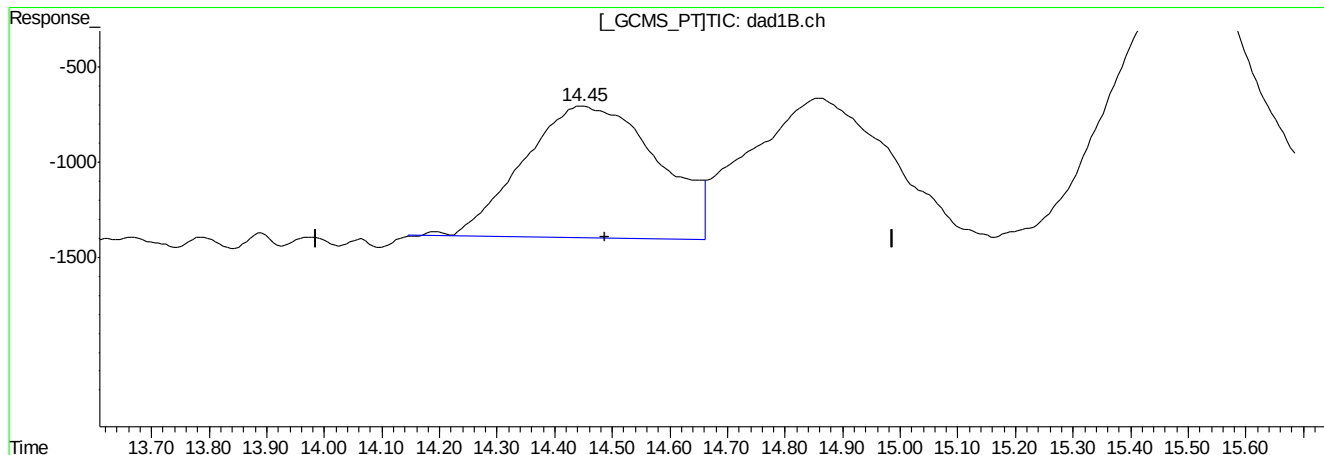
GG625698.D GGG3229_013023.M

Mon Jan 30 15:47:16 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(12) 3,4-Dinitrotoluene (S)

14.45min 24.570ppb

response 113079

(12) 3,4-Dinitrotoluene #2 (S)

14.45min 21.203ppb m

response 194058

(+) = Expected Retention Time

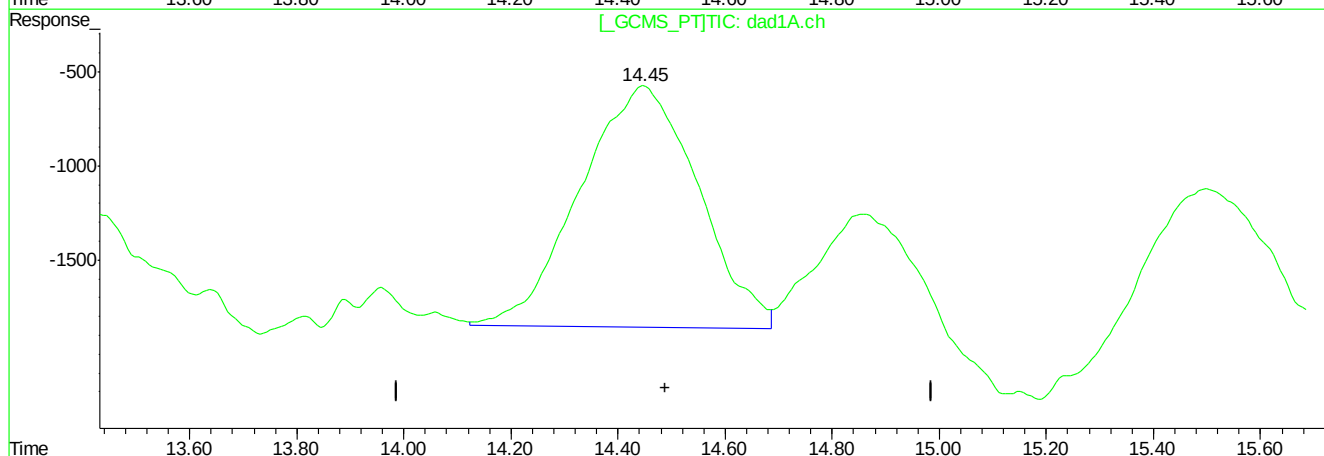
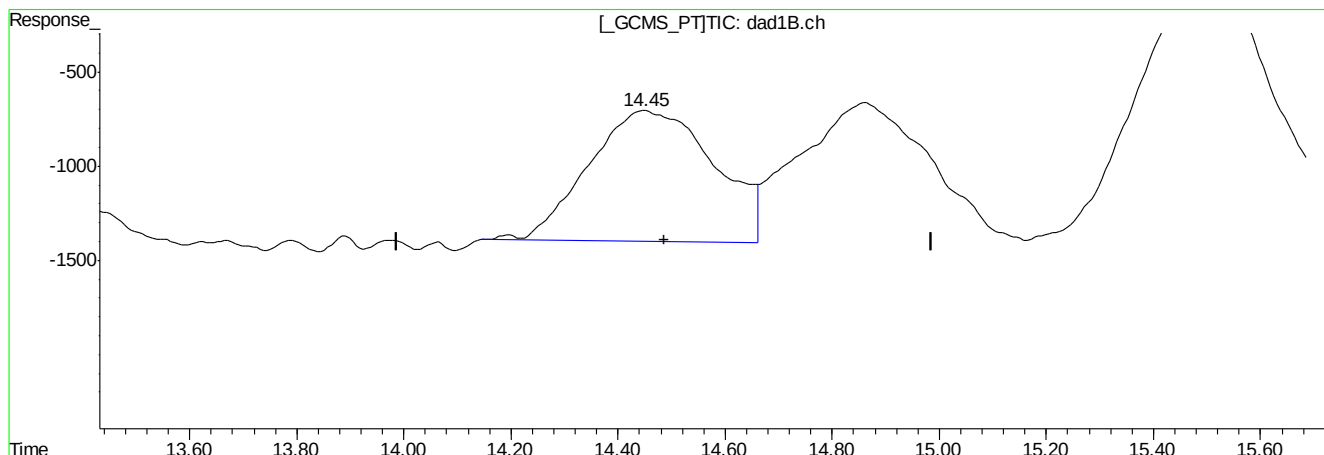
GG625698.D GGG3229_013023.M

Mon Jan 30 15:47:22 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(12) 3,4-Dinitrotoluene (S)

14.45min 24.570ppb

response 113079

(12) 3,4-Dinitrotoluene #2 (S)

14.45min 21.522ppb m

response 196978

(+) = Expected Retention Time

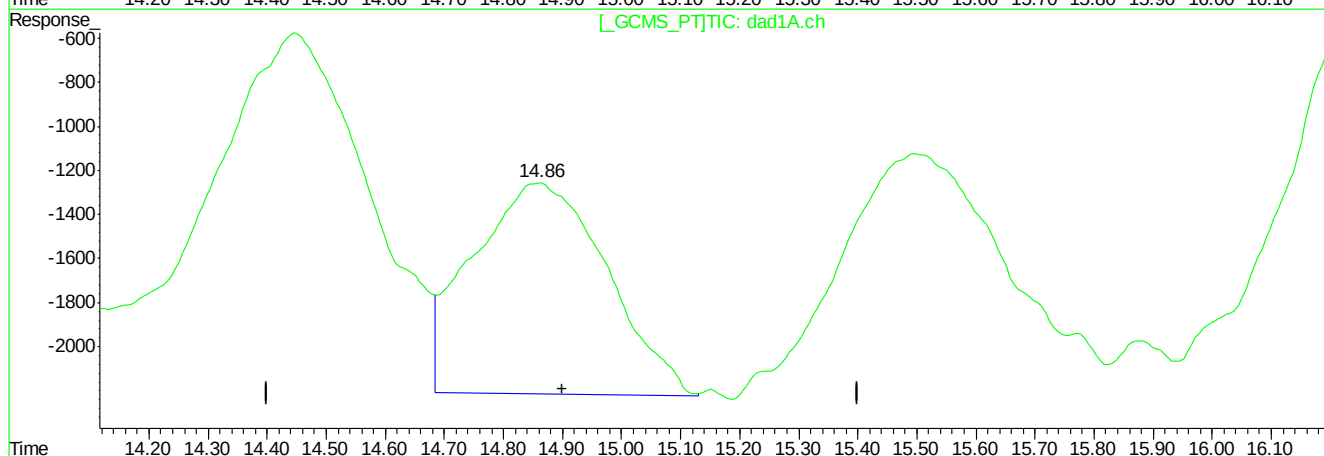
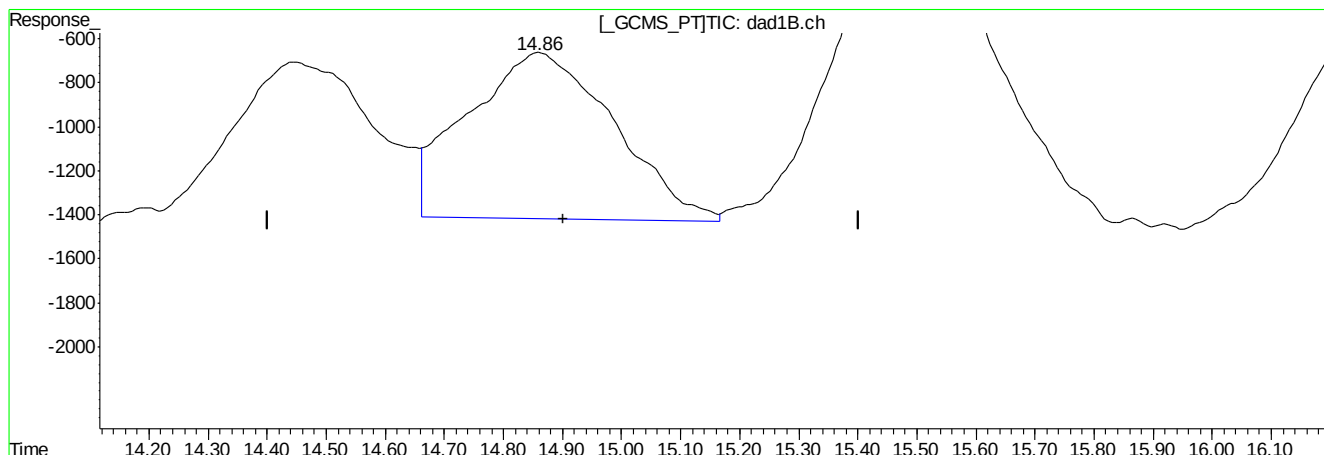
GG625698.D GGG3229_013023.M

Mon Jan 30 15:47:43 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(13) 2,6-Dinitrotoluene

14.86min 19.761ppb

response 130890

(13) 2,6-Dinitrotoluene #2

14.86min 15.928ppb m

response 151891

(+) = Expected Retention Time

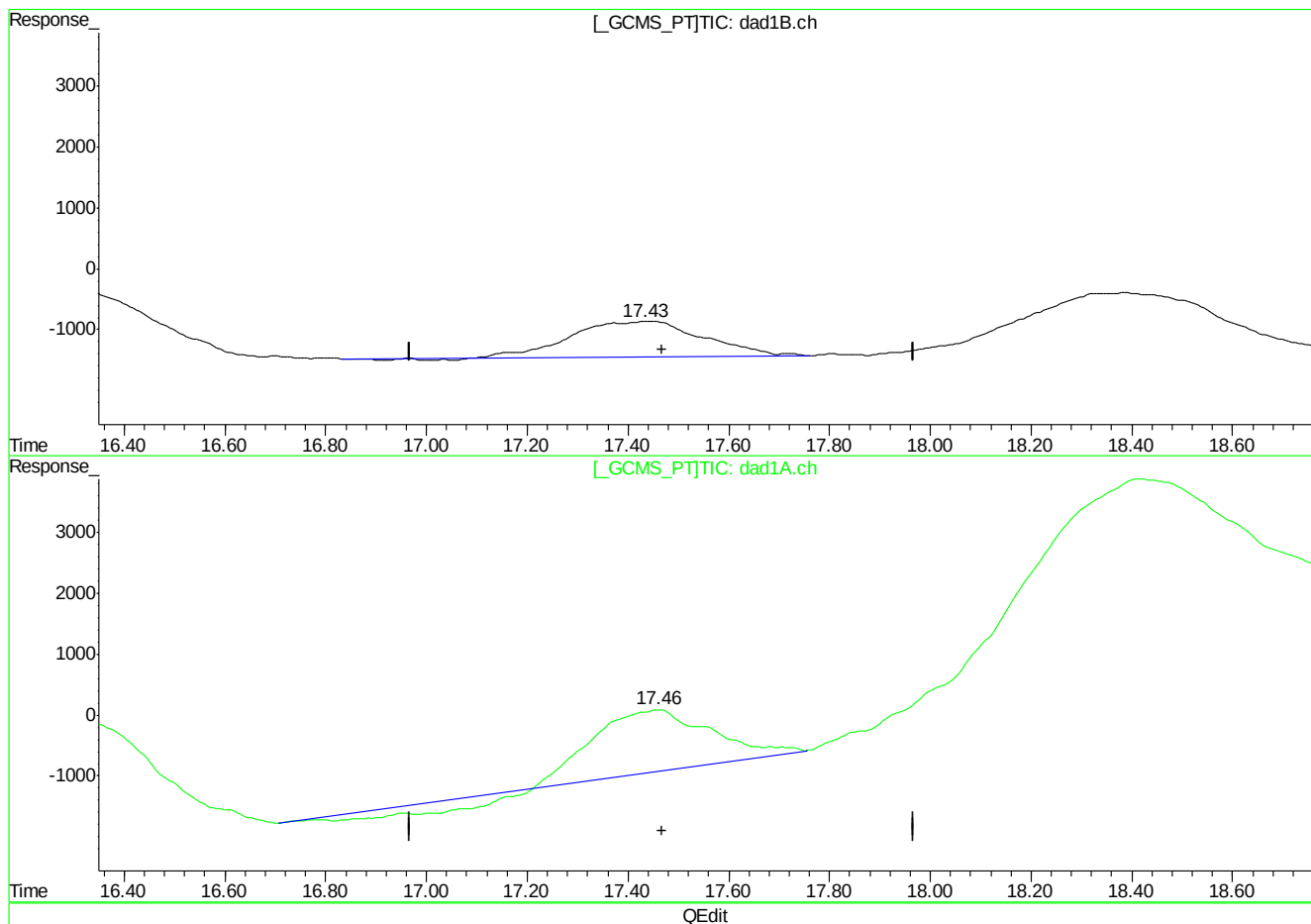
GG625698.D GGG3229_013023.M

Mon Jan 30 15:47:55 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(16) o-Nitrotoluene
17.44min 20.485ppb
response 105593

(16) o-Nitrotoluene #2
17.46min 18.344ppb
response 132126

(+) = Expected Retention Time

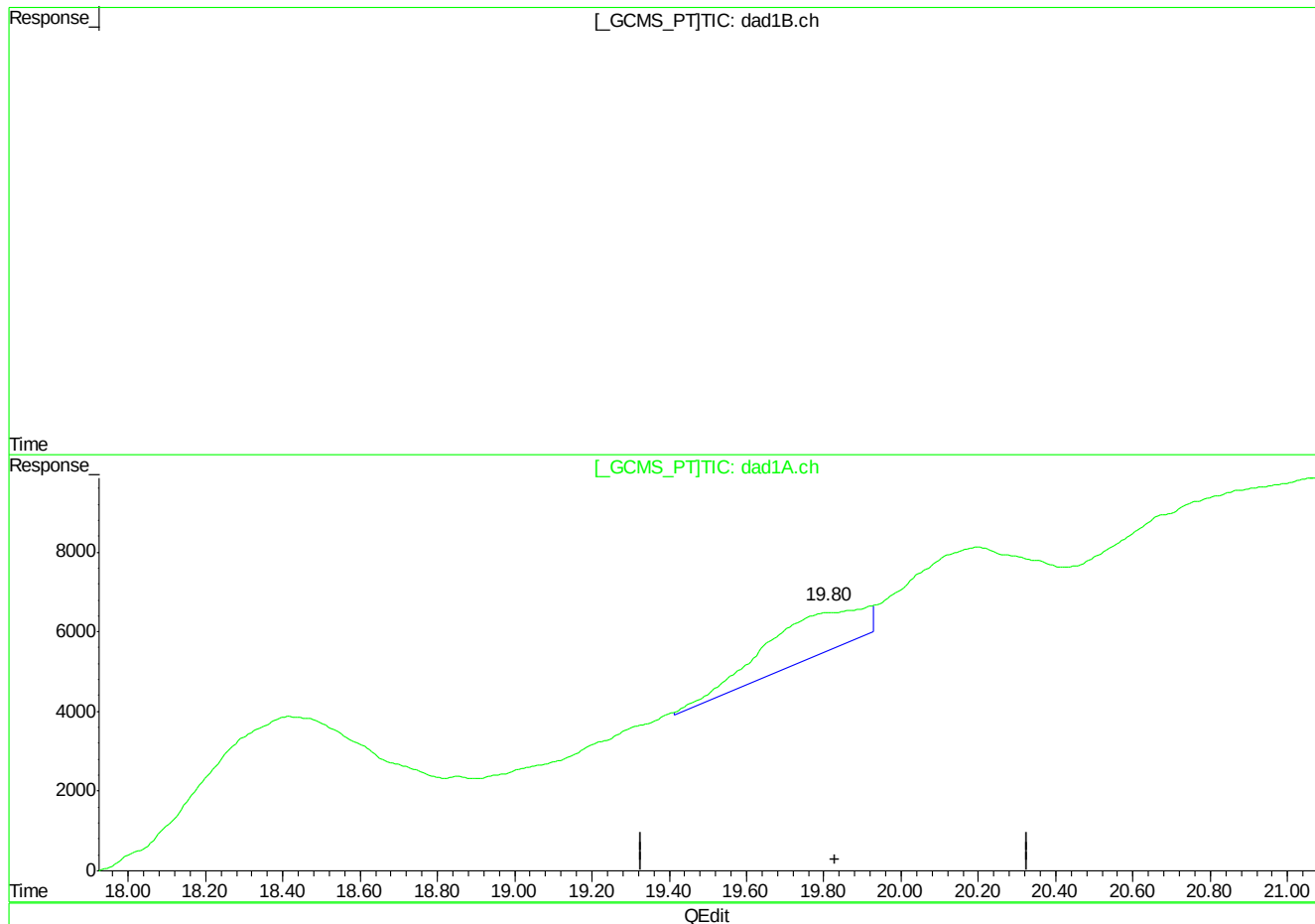
GG625698.D GGG3229_013023.M

Mon Jan 30 15:48:24 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(19) m-Nitrotoluene

19.78min 23.449ppb

response 118109

(19) m-Nitrotoluene #2

19.80min 24.872ppb m

response 196481

(+) = Expected Retention Time

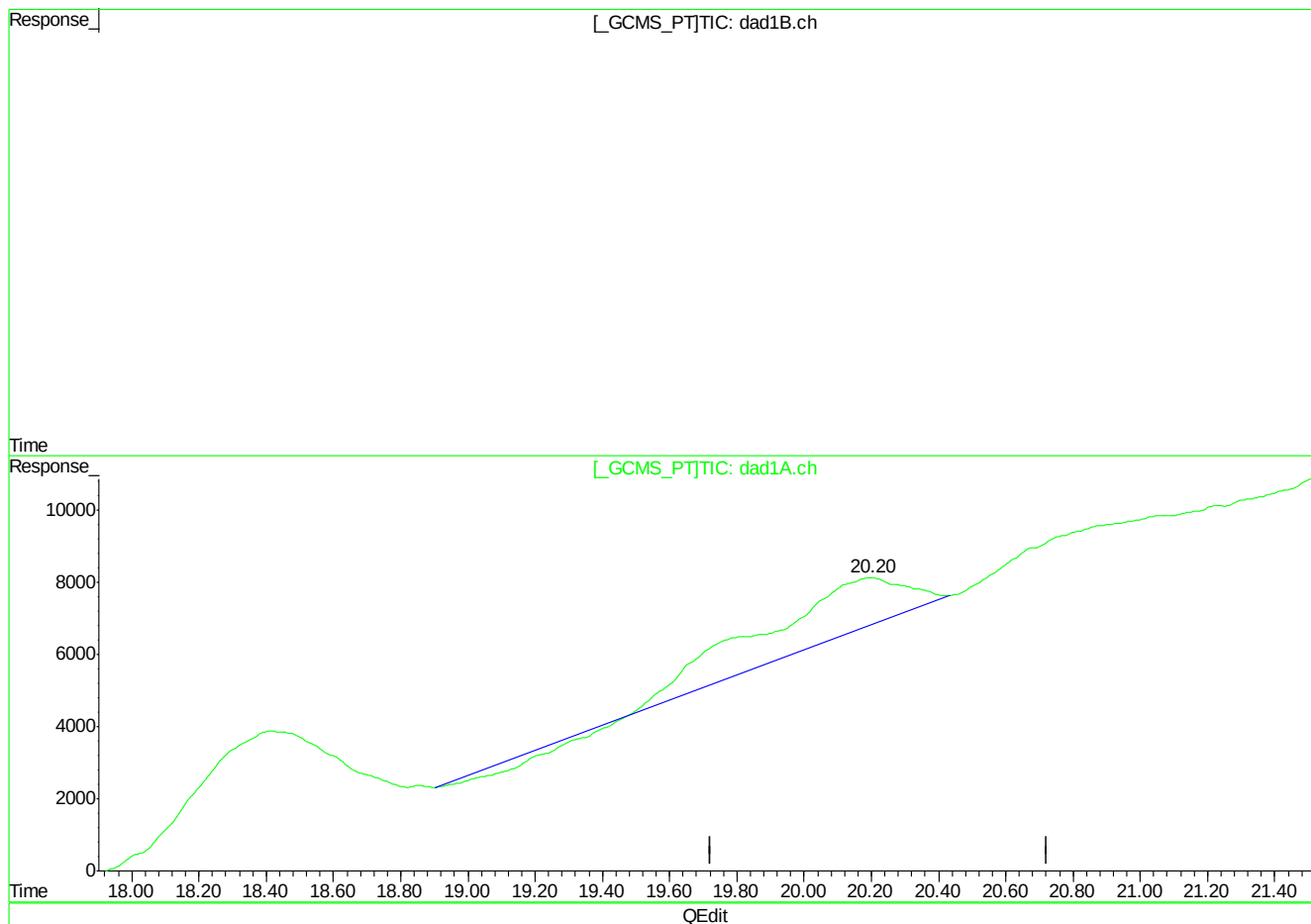
GG625698.D GGG3229_013023.M

Mon Jan 30 15:49:37 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625698.D\dad1A.ch
Acq On : 30-Jan-2023, 12:37:19 Operator: fouads
Sample : ic3229-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 13:32 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(20) 2-Amino-4,6-Dinitrotoluene

20.16min 24.862ppb

response 206546

(20) 2-Amino-4,6-Dinitrotoluene #2

20.20min 34.747ppb

response 399366

(+) = Expected Retention Time

GG625698.D GGG3229_013023.M

Mon Jan 30 15:49:42 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
 Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
 Sample : ic3229-50 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 30 14:07:21 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Mon Jan 30 12:26:09 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.43	14.43	297758	511823	64.698	55.922
Spiked Amount	500.000	Range	70 - 136	Recovery	=	12.94%# 11.18%#
Target Compounds						
1) TNX	4.67	4.67	222830	224059	25.213m	24.932
2) HMX	5.06	5.06	156394	151037	56.160m	53.911
3) DNx	5.27	5.27	425692	395248	55.776m	51.002m
4) MNX	6.43	6.43	404419	400060	60.529	59.878
5) 1,3,5-Trinitrobe	7.38	7.38	467295	473324	52.075	52.580
6) RDX	7.77	7.77	240272	242290	56.295	56.423
7) 1,3-Dinitrobenze	9.86	9.85	632958	510400	51.422	49.160m
8) Nitrobenzene	11.00	11.00	412278	400625	52.414	55.314
9) 2,4,6-Trinitroto	11.73	11.73	461928	657311	52.797	58.772m
10) Nitroglycerin	0.00	12.44	0	156701	N.D.	53.947 #
11) Tetryl	13.12	13.11	320682	507504	46.560	44.240
13) 2,6-Dinitrotolue	14.84	14.84	320357	389479	48.365	40.842
14) 2,4-Dinitrotolue	15.47	15.47	599341	393724	53.040	50.721
15) 3,5-Dinitroanili	16.29	16.30	513298	792058	54.461	51.166
16) o-Nitrotoluene	17.39	17.41	262370	420054	50.900	58.319
17) p-Nitrotoluene	18.39	18.39	534036	784726	105.298	89.740
18) 4-Amino-2,6-Dini	18.39	18.39	534036	784726	107.334	90.287
19) m-Nitrotoluene	19.74	19.77	241465	289743	47.940	36.678m
20) 2-Amino-4,6-Dini	20.12	20.14	463028	558434	55.735	48.586
21) PETN	0.00	22.06	0	146325	N.D.	47.565m#

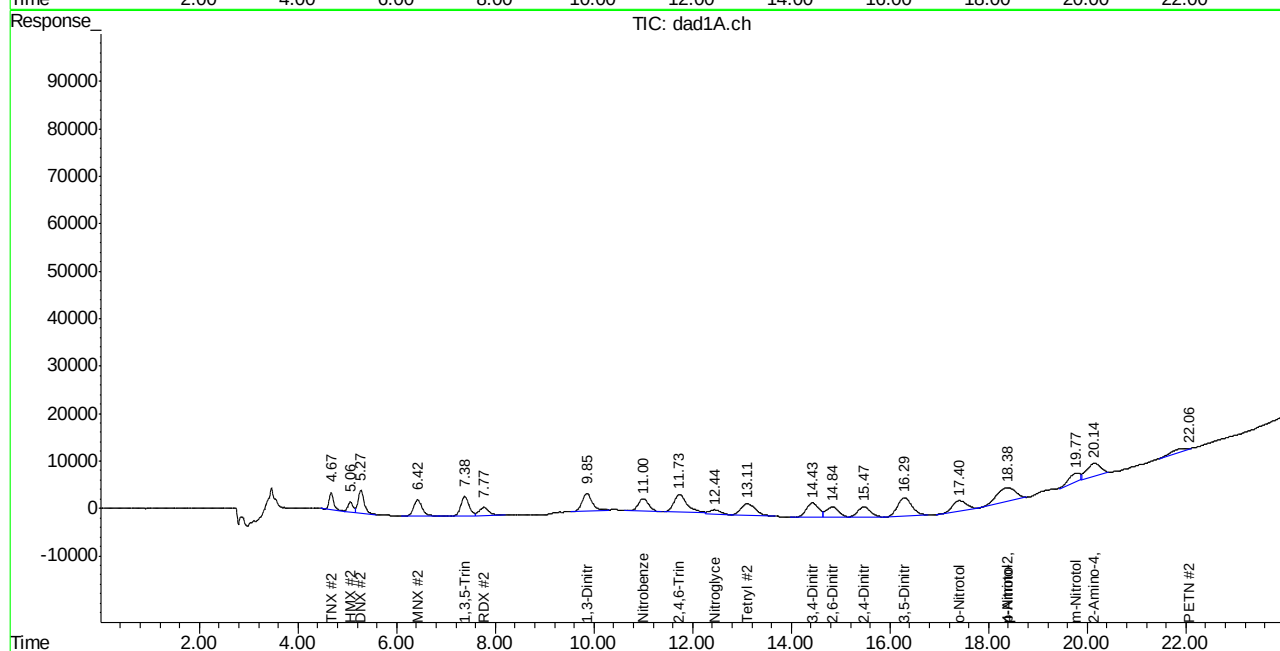
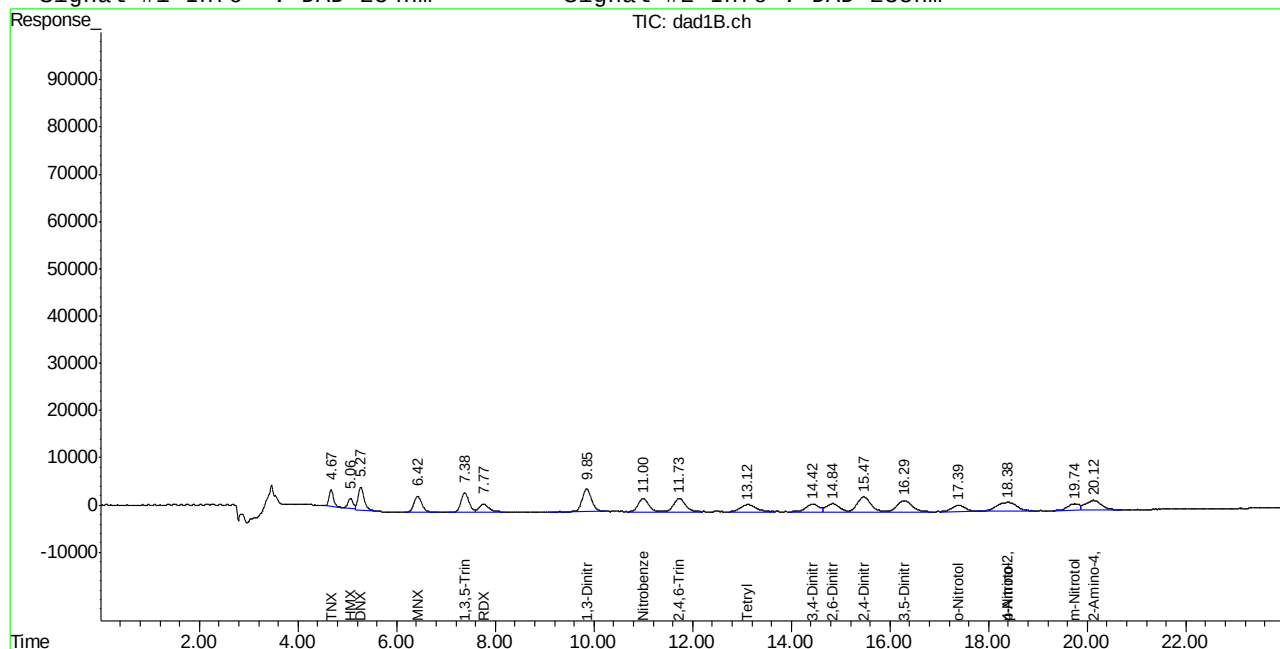
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625699.D GGG3229_013023.M Tue Jan 31 11:32:13 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number: GGG3229-IC3229

Method: SW846 8330B

Lab FileID: GG625699.D

Analyst approved: 01/31/23 11:38 Fouad Sekkar

Injection Time: 01/30/23 13:08

Supervisor approved: 01/31/23 12:29 Mike Eger

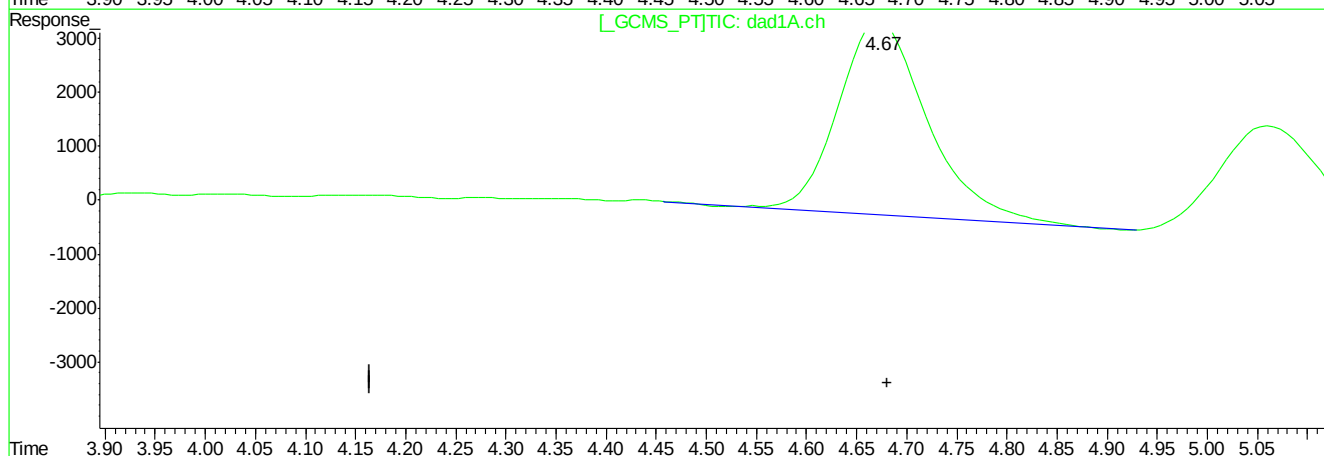
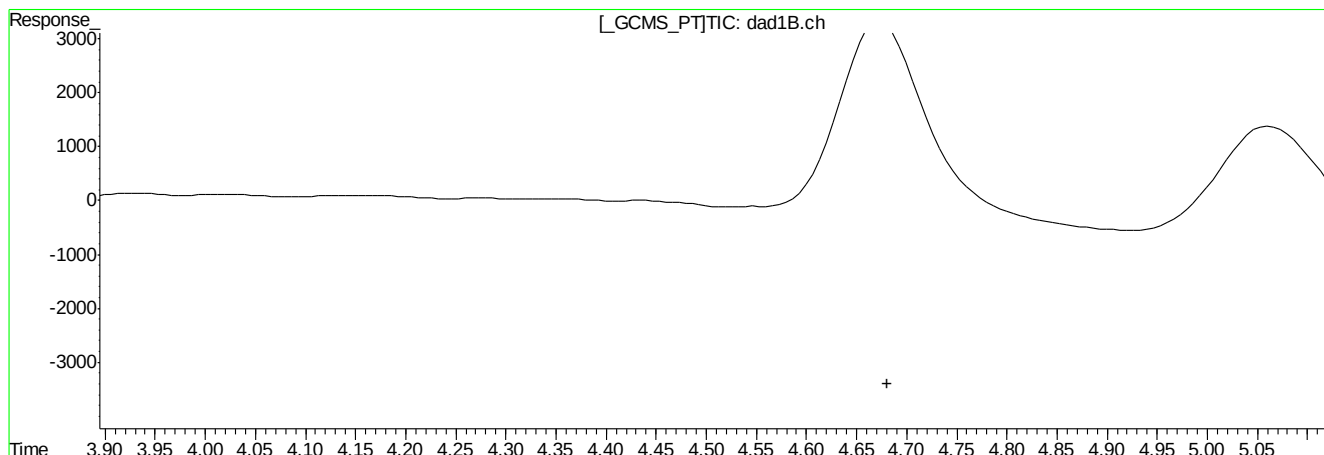
Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.67	Missed peak
HMX	2691-41-0	1	5.06	Poor instrument integration
DNX		1	5.27	Poor instrument integration
DNX		2	5.27	Poor instrument integration
1,3-Dinitrobenzene	99-65-0	2	9.85	Poor instrument integration
2,4,6-Trinitrotoluene	118-96-7	2	11.73	Poor instrument integration
m-Nitrotoluene	99-08-1	2	19.77	Poor instrument integration
PETN	78-11-5	2	22.06	Poor instrument integration

9.5.16.1
9

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.67min 24.932ppb

response 224059

(+) = Expected Retention Time

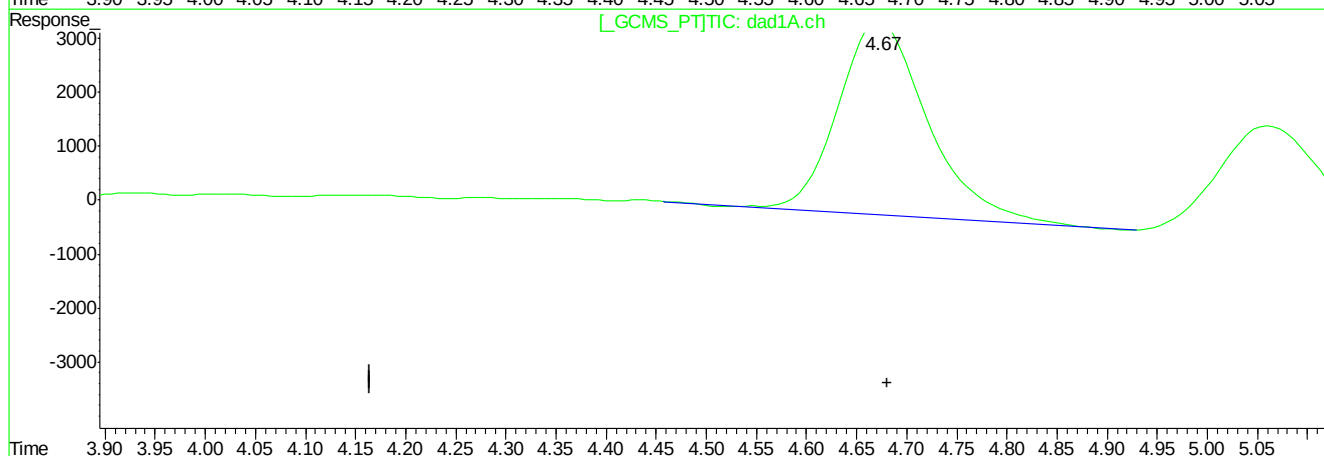
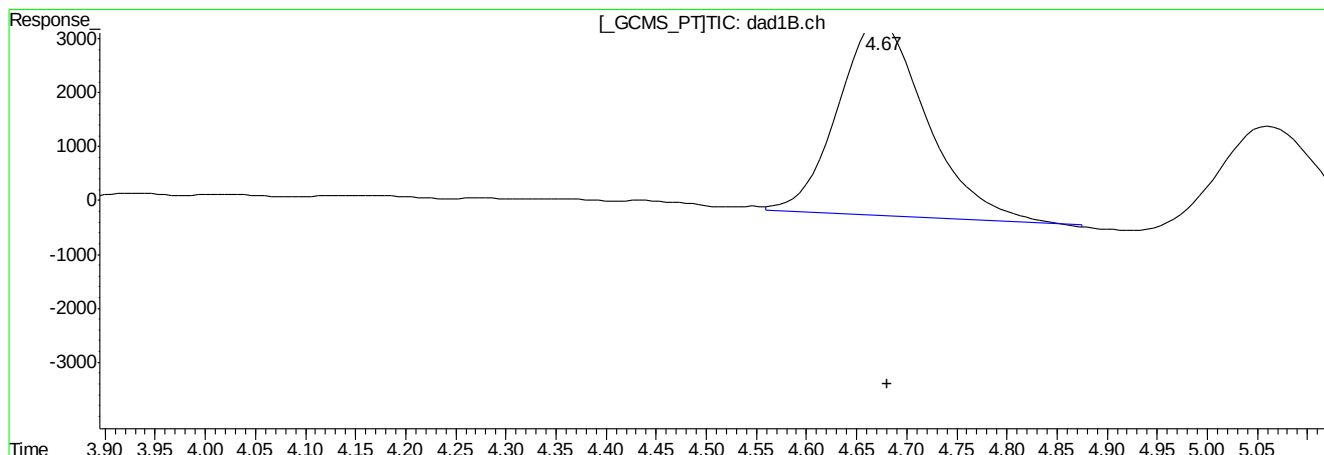
GG625699.D GGG3229_013023.M

Mon Jan 30 15:51:59 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

4.67min 25.213ppb m

response 222830

(1) TNX #2

4.67min 24.932ppb

response 224059

(+) = Expected Retention Time

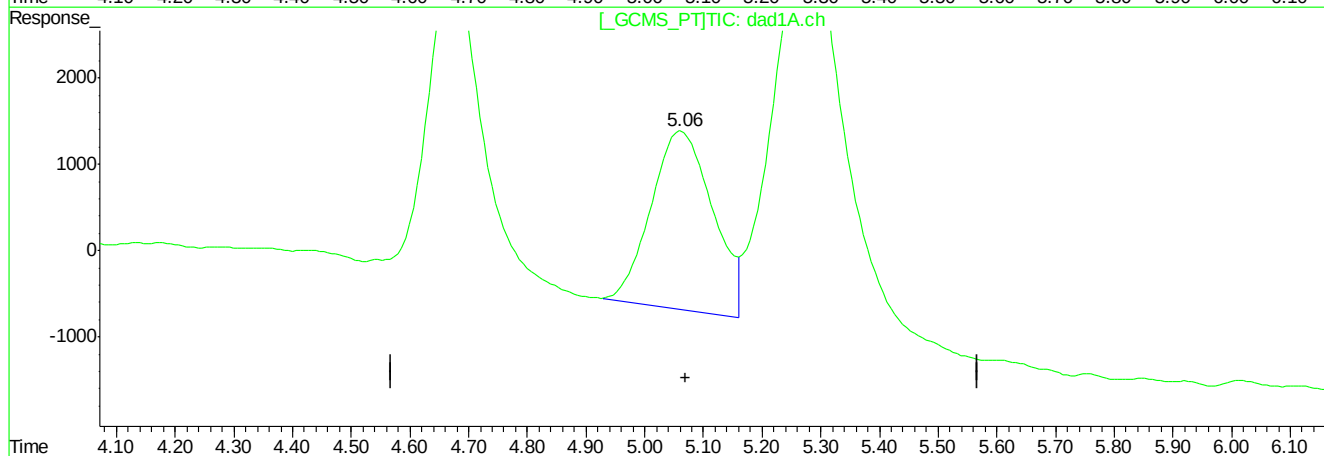
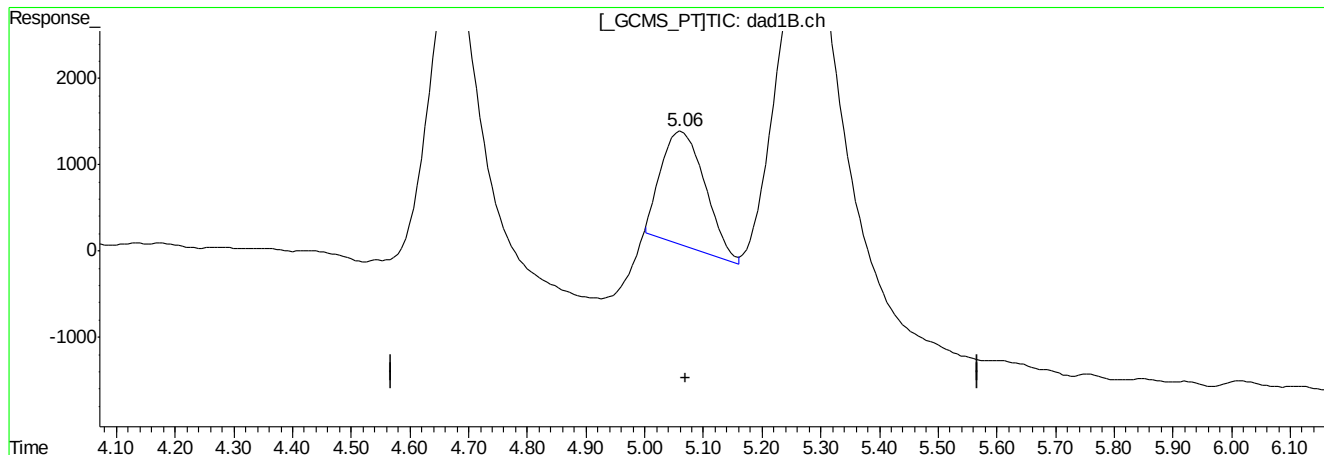
GG625699.D GGG3229_013023.M

Mon Jan 30 15:52:04 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 24.860ppb

response 69229

(2) HMX #2

5.06min 53.911ppb

response 151037

(+) = Expected Retention Time

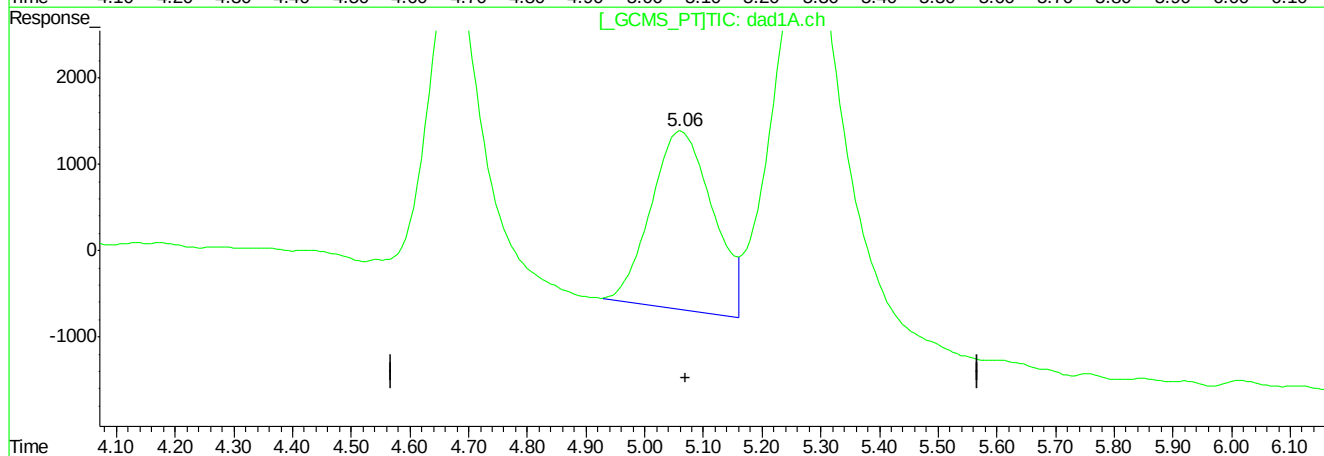
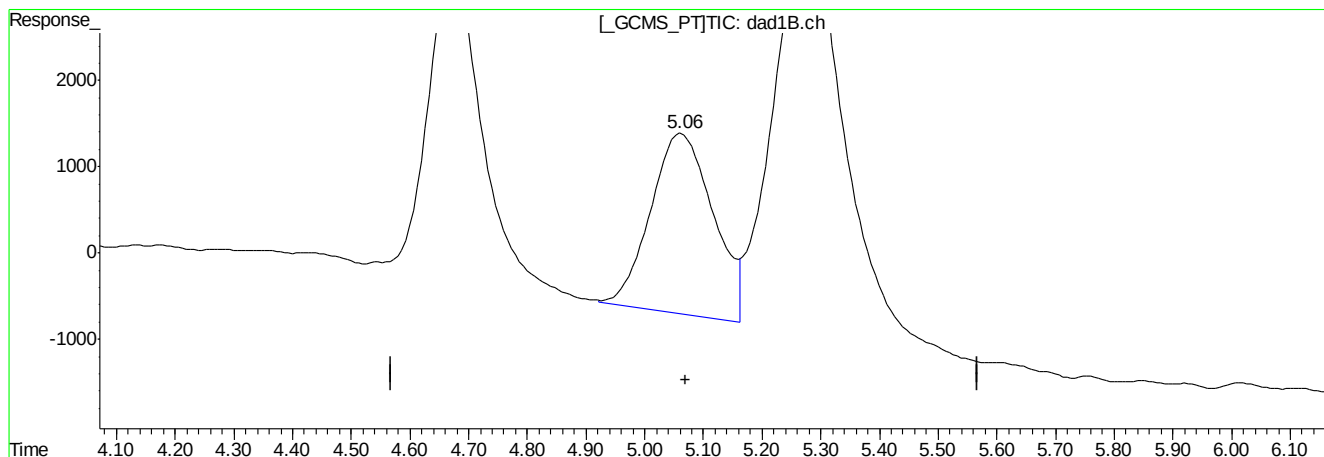
GG625699.D GGG3229_013023.M

Mon Jan 30 15:52:09 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 56.160ppb m

response 156394

(2) HMX #2

5.06min 53.911ppb

response 151037

(+) = Expected Retention Time

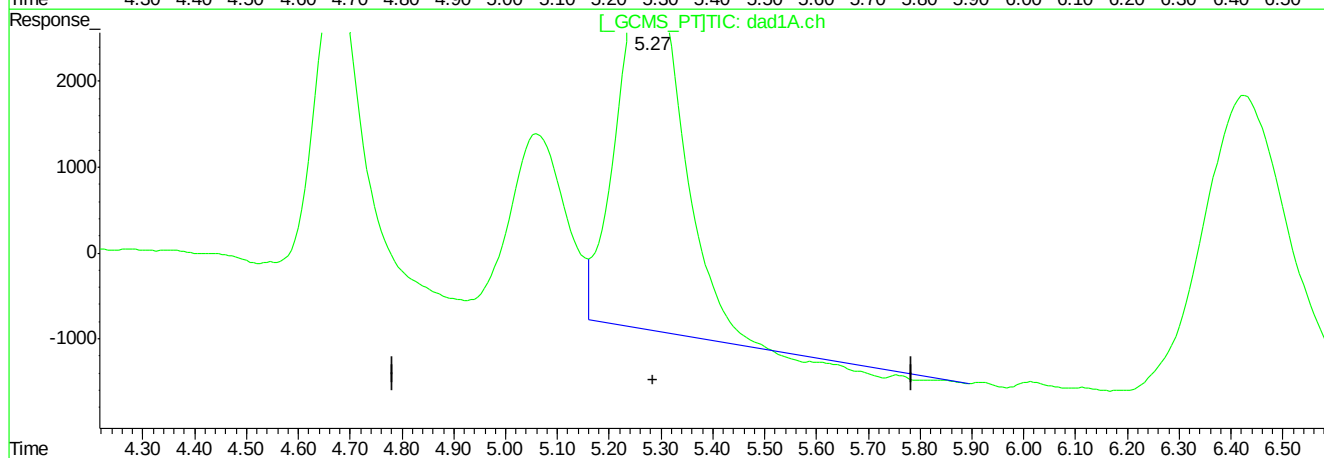
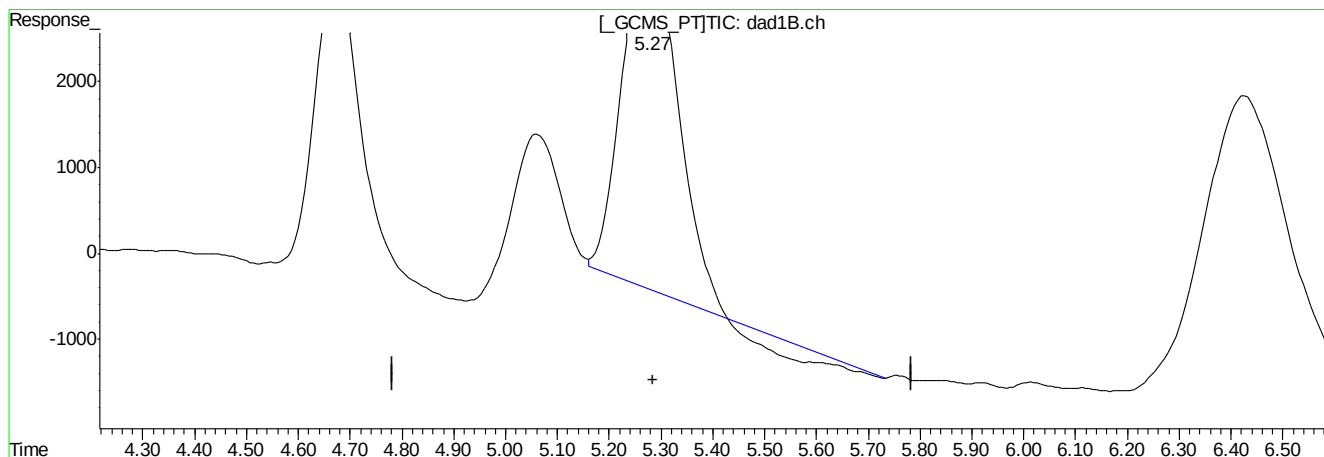
GG625699.D GGG3229_013023.M

Mon Jan 30 15:52:19 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.28min 37.798ppb

response 288479

(3) DNX #2

5.28min 48.622ppb

response 376803

(+) = Expected Retention Time

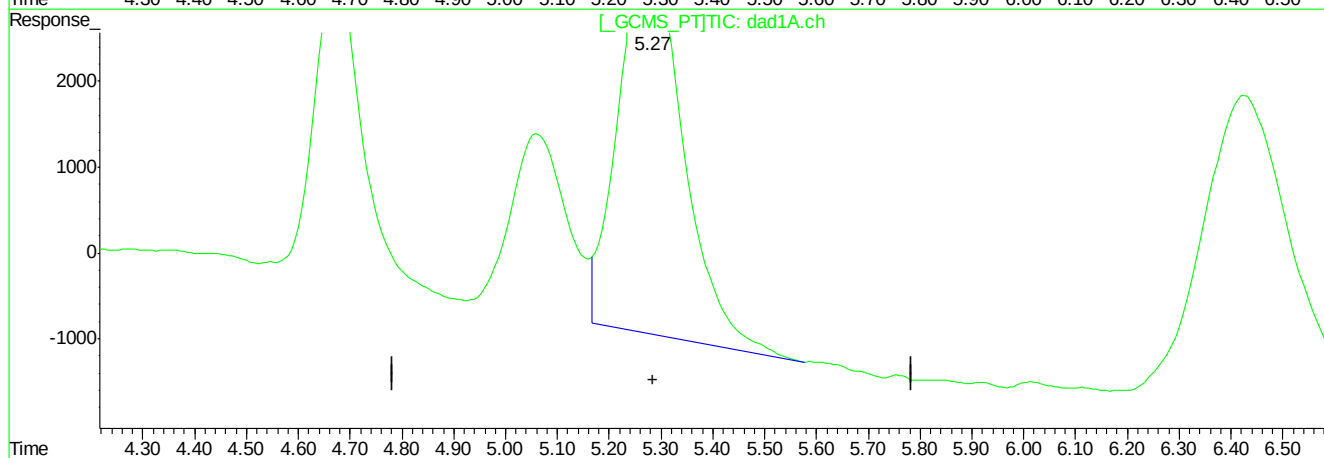
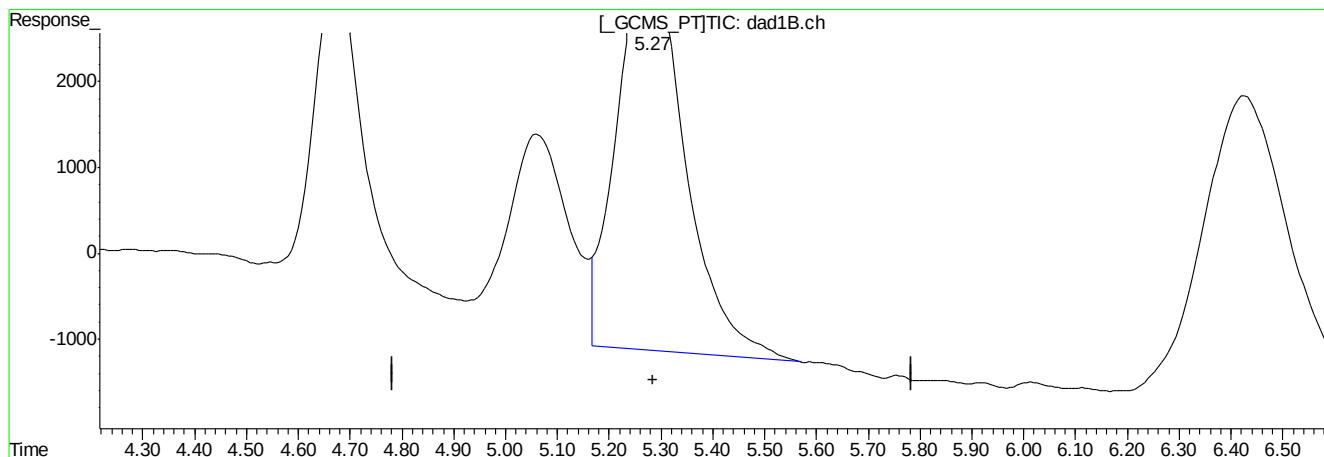
GG625699.D GGG3229_013023.M

Mon Jan 30 15:52:25 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.27min 55.776ppb m

response 425692

(3) DNX #2

5.27min 51.002ppb m

response 395248

(+) = Expected Retention Time

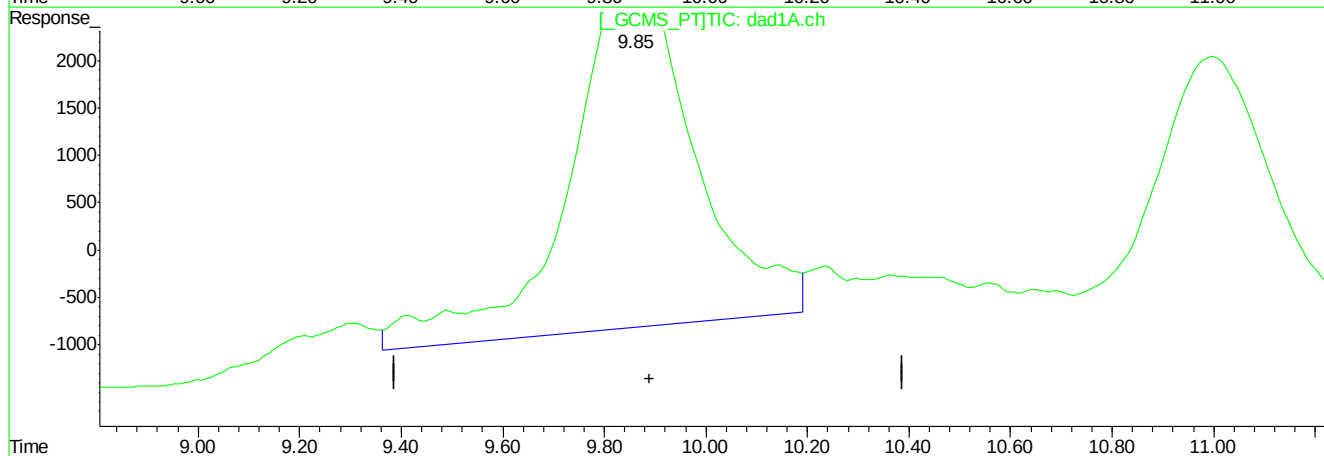
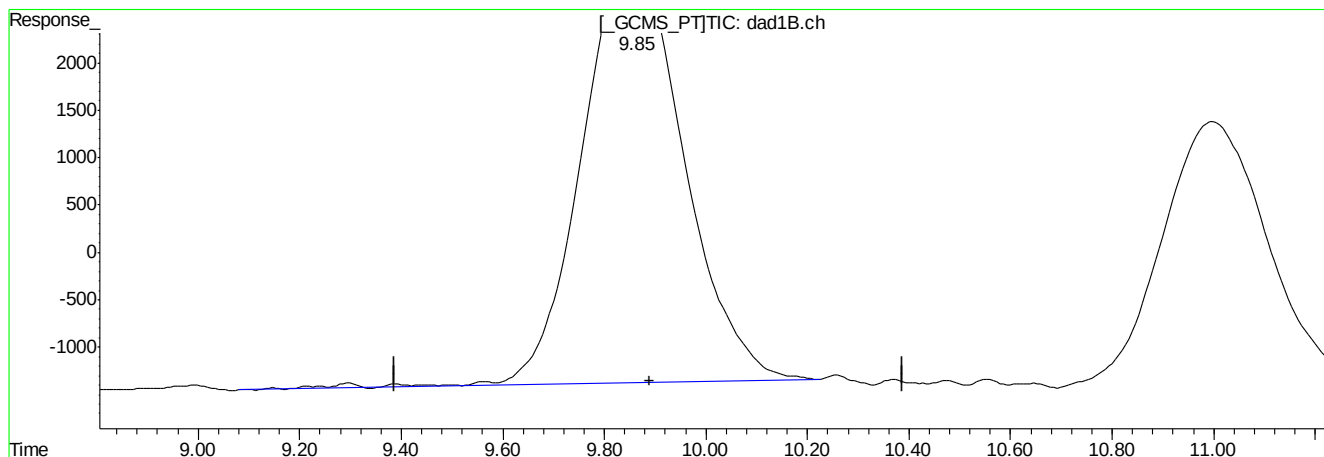
GG625699.D GGG3229_013023.M

Mon Jan 30 15:52:36 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

9.86min 51.422ppb

response 632958

(7) 1,3-Dinitrobenzene #2

9.86min 62.626ppb

response 650208

(+) = Expected Retention Time

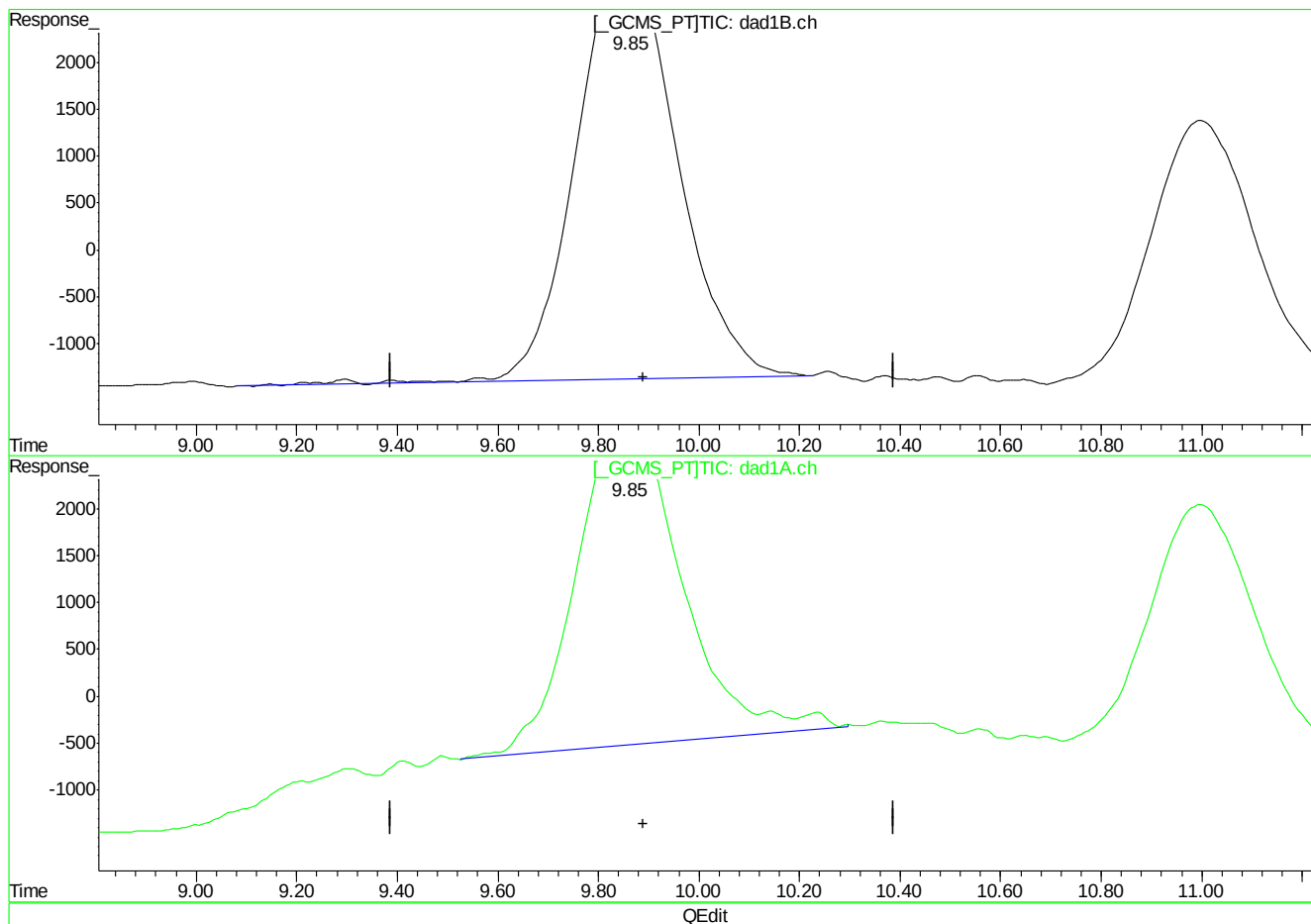
GG625699.D GGG3229_013023.M

Mon Jan 30 15:52:51 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

9.86min 51.422ppb

response 632958

(7) 1,3-Dinitrobenzene #2

9.85min 49.160ppb m

response 510400

(+) = Expected Retention Time

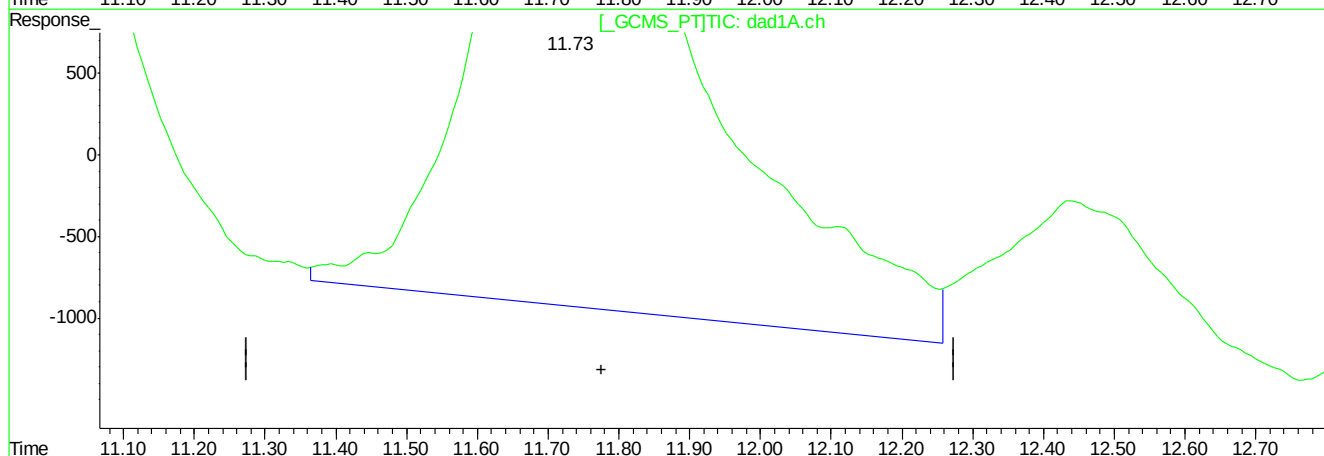
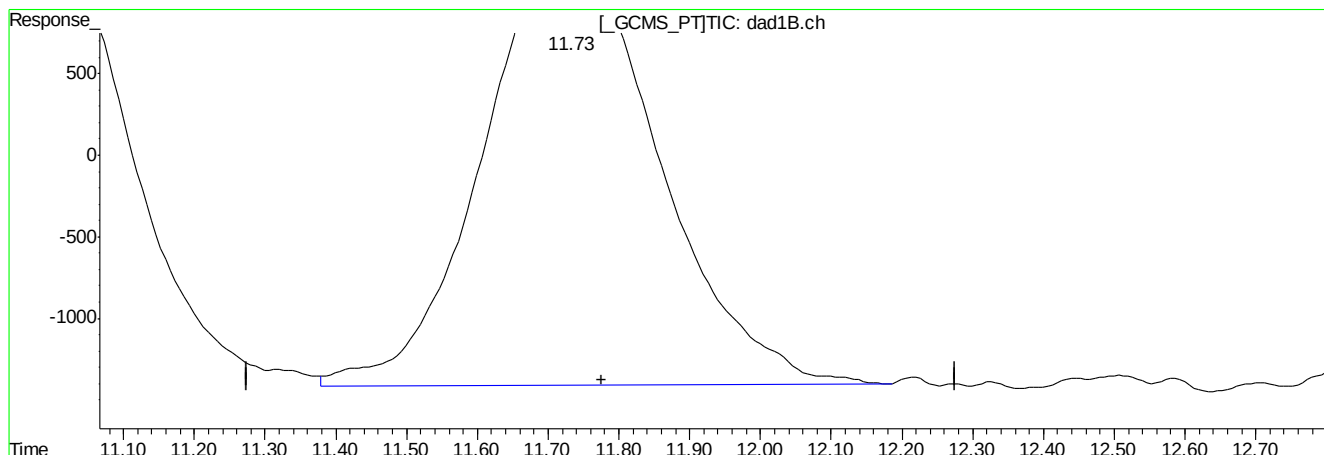
GG625699.D GGG3229_013023.M

Mon Jan 30 15:52:58 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(9) 2,4,6-Trinitrotoluene

11.73min 52.797ppb

response 461928

(9) 2,4,6-Trinitrotoluene #2

11.73min 69.088ppb

response 772683

(+) = Expected Retention Time

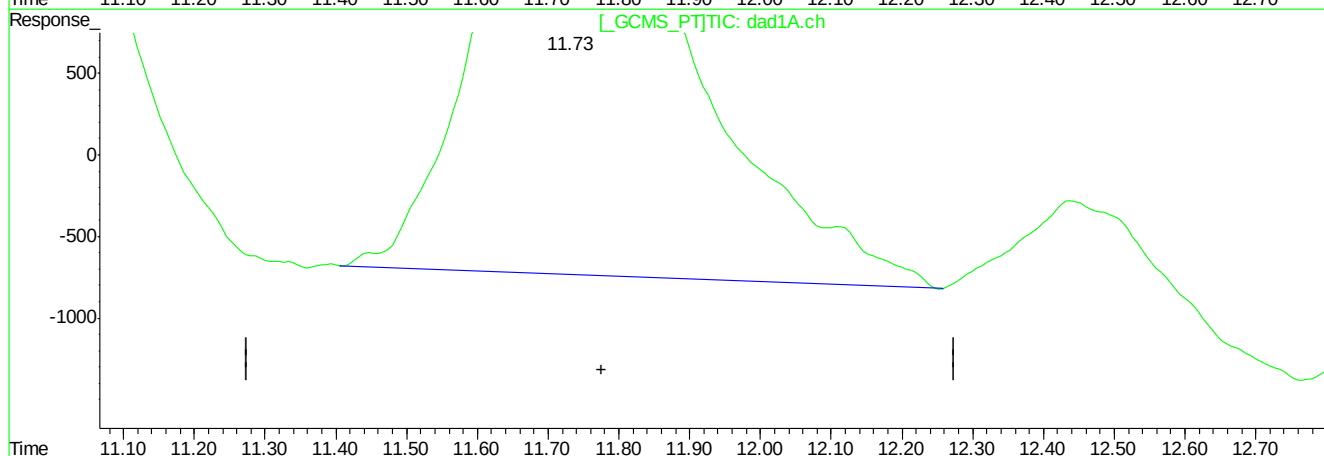
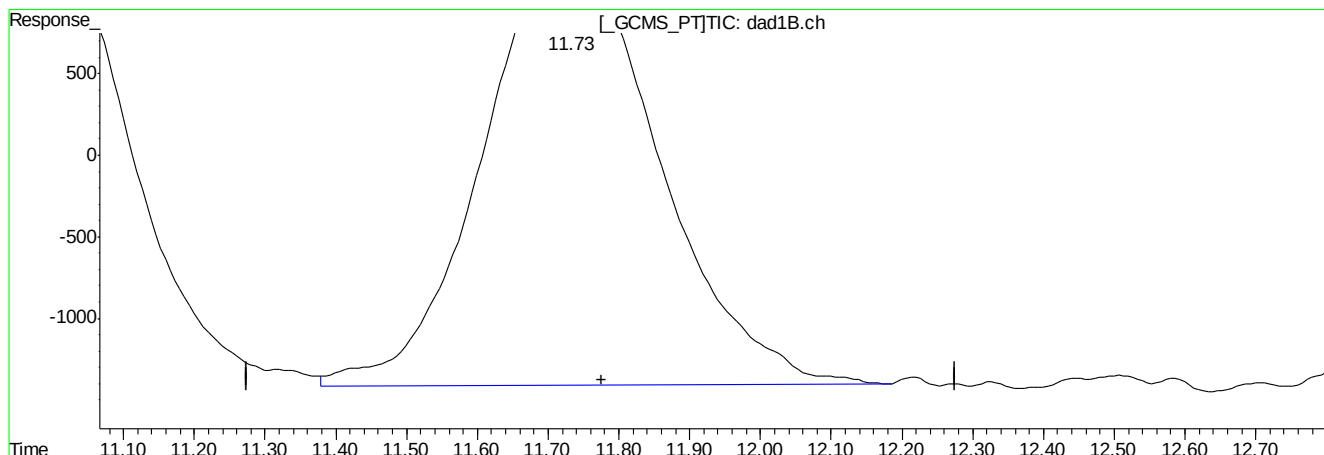
GG625699.D GGG3229_013023.M

Mon Jan 30 15:53:08 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(9) 2,4,6-Trinitrotoluene

11.73min 52.797ppb

response 461928

(9) 2,4,6-Trinitrotoluene #2

11.73min 58.772ppb m

response 657311

(+) = Expected Retention Time

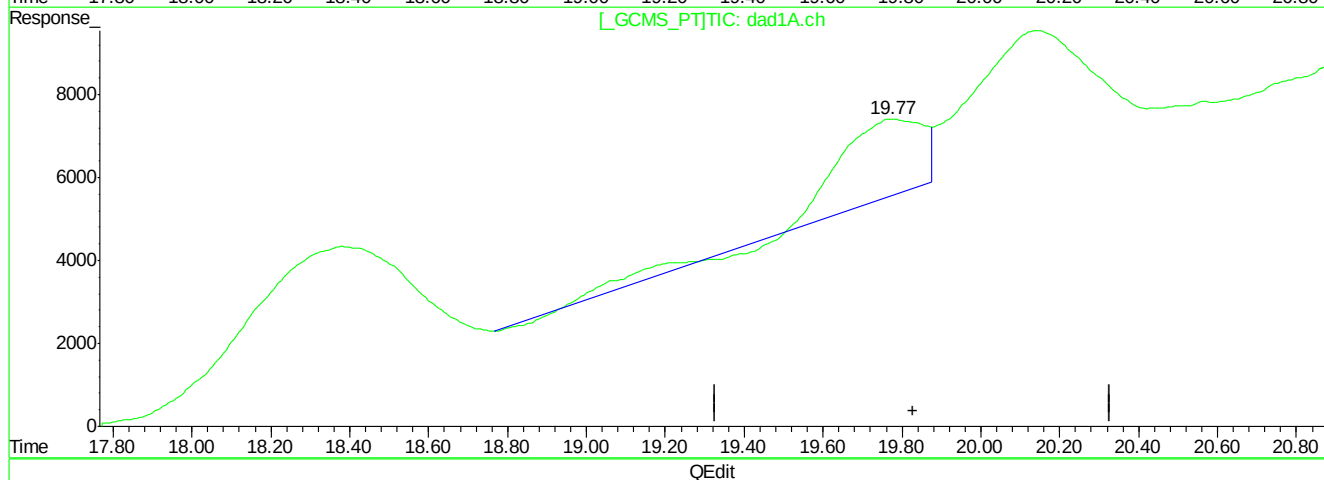
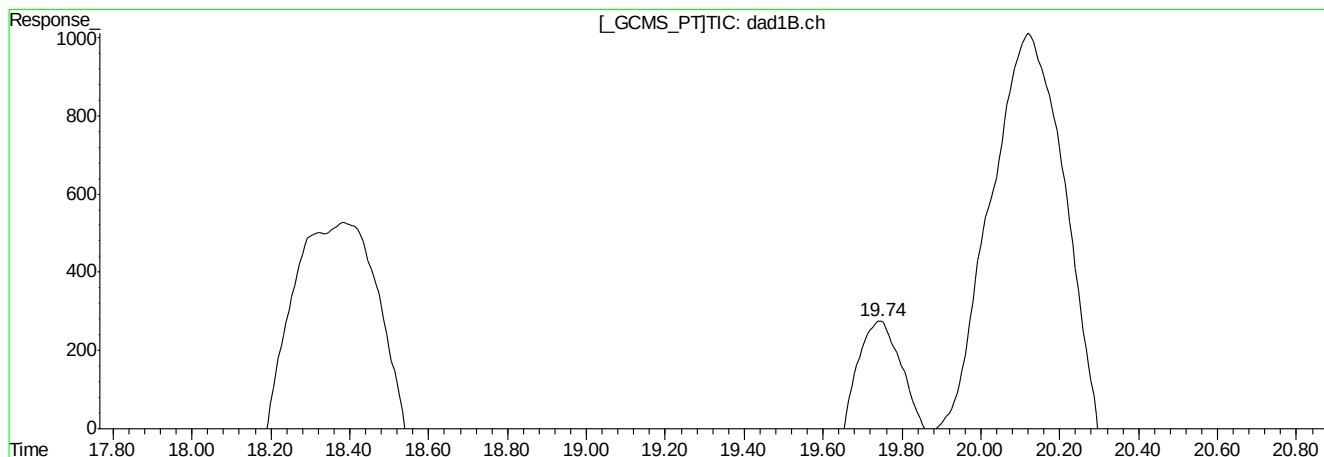
GG625699.D GGG3229_013023.M

Mon Jan 30 15:53:15 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(19) m-Nitrotoluene

19.74min 47.940ppb

response 241465

(19) m-Nitrotoluene #2

19.78min 36.532ppb

response 288596

(+) = Expected Retention Time

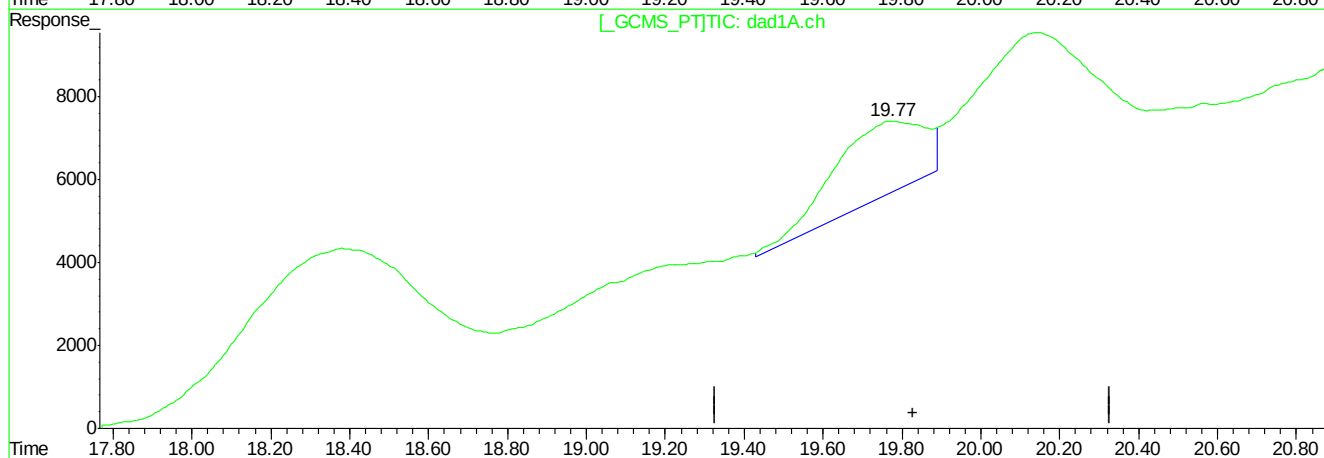
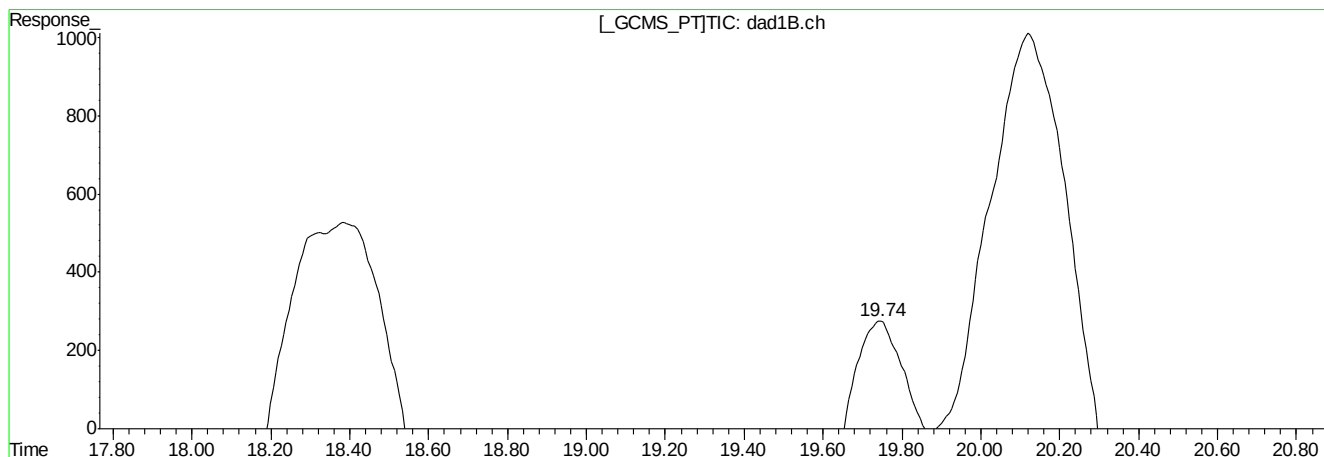
GG625699.D GGG3229_013023.M

Mon Jan 30 15:54:11 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(19) m-Nitrotoluene

19.74min 47.940ppb

response 241465

(19) m-Nitrotoluene #2

19.77min 36.678ppb m

response 289743

(+) = Expected Retention Time

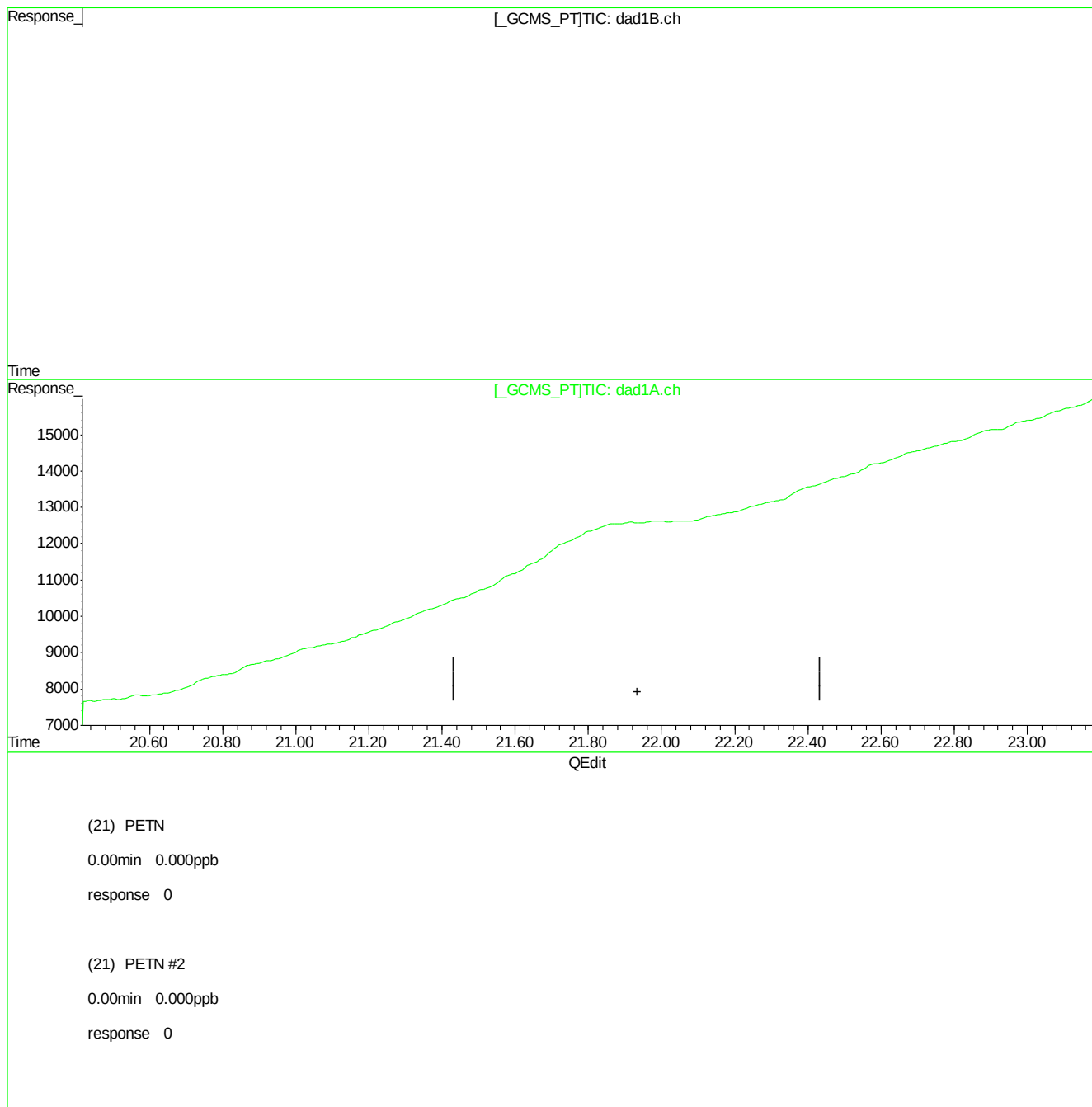
GG625699.D GGG3229_013023.M

Mon Jan 30 15:54:48 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(+) = Expected Retention Time

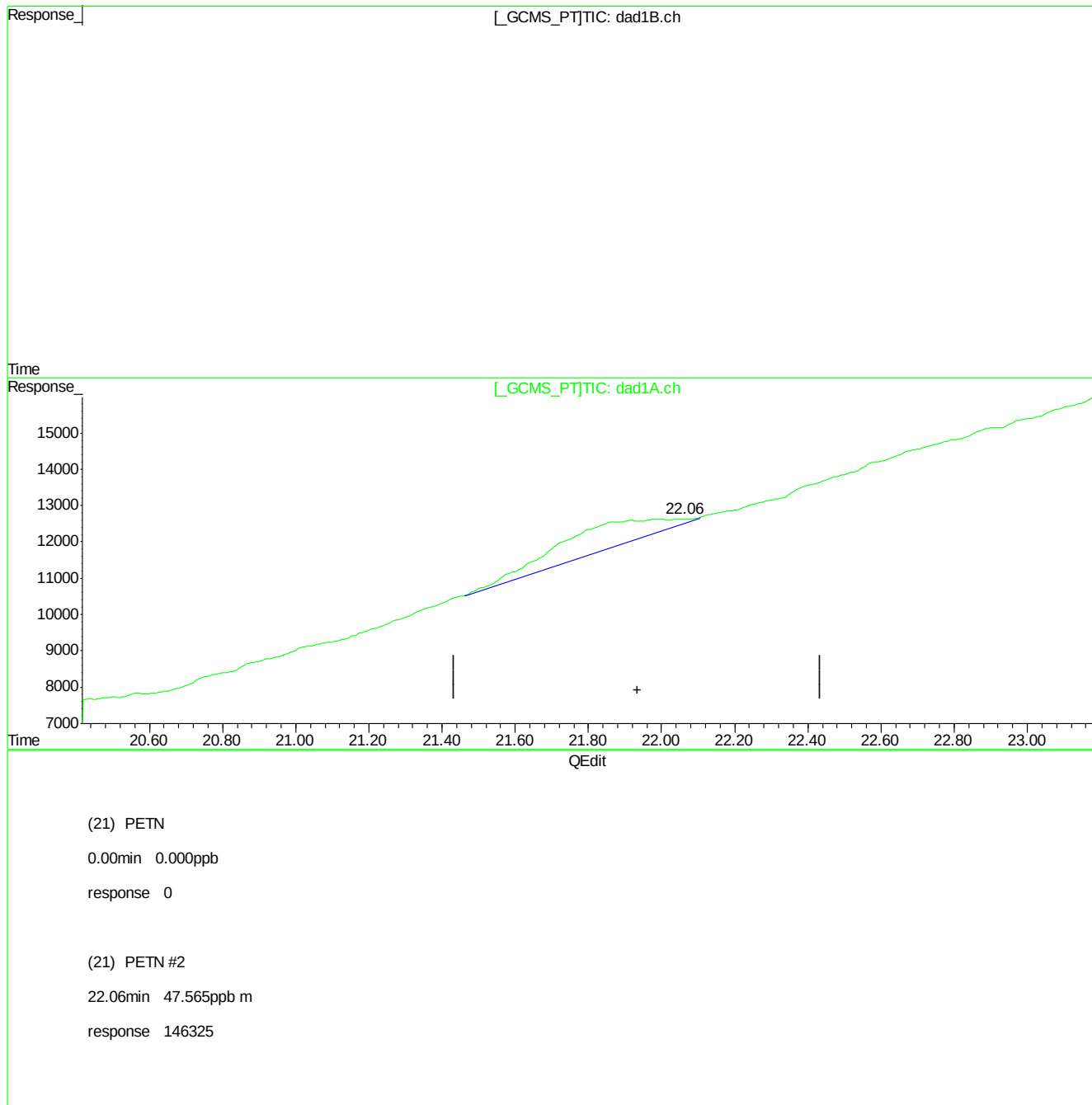
GG625699.D GGG3229_013023.M

Mon Jan 30 15:55:01 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625699.D\dad1A.ch
Acq On : 30-Jan-2023, 13:08:44 Operator: fouads
Sample : ic3229-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(+) = Expected Retention Time

GG625699.D GGG3229_013023.M

Mon Jan 30 15:55:07 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
 Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
 Sample : ic3229-100 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 30 15:55:42 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Mon Jan 30 12:26:09 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.45	14.44	494507	849644	107.448	92.833
Spiked Amount	500.000	Range	70 - 136	Recovery	=	21.49%#
Target Compounds						
1) TNX	4.67	4.68	369142	373852	41.769m	41.599
2) HMX	5.06	5.07	249203	252329	89.488m	90.066
3) DNx	5.28	5.28	735467	649897	96.363m	83.862
4) MNX	6.44	6.44	668997	661601	100.128	99.023
5) 1,3,5-Trinitrobe	7.39	7.39	780831	783339	87.016	87.019
6) RDX	7.78	7.78	370008	371072	86.692	86.413
7) 1,3-Dinitrobenze	9.87	9.86	1086300	789283	88.252	76.021m
8) Nitrobenzene	11.01	11.01	690640	718398	87.803	99.189m
9) 2,4,6-Trinitroto	11.74	11.74	785664	1186038	89.798	106.047m
10) Nitroglycerin	0.00	12.46	0	244824	N.D.	84.285 #
11) Tetryl	13.13	13.14	571614	925762	82.993	80.700
13) 2,6-Dinitrotolue	14.85	14.86	532079	615399	80.329	64.533
14) 2,4-Dinitrotolue	15.48	15.49	985063	604012	87.175	77.810
15) 3,5-Dinitroanili	16.31	16.32	854062	1522831	90.616	98.373
16) o-Nitrotoluene	17.39	17.39	430556	650882	83.528	90.367
17) p-Nitrotoluene	18.39	18.39	903288	1622293	178.105	185.523
18) 4-Amino-2,6-Dini	18.39	18.39	903288	1622293	181.549	186.653
19) m-Nitrotoluene	19.76	19.76	463315	674352	91.985	85.364m
20) 2-Amino-4,6-Dini	20.17	20.18	770374	1136522	92.730	98.882
21) PETN	0.00	21.88	0	443070	N.D.	144.027m#

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625700.D GGG3229_013023.M Tue Jan 31 11:32:14 2023

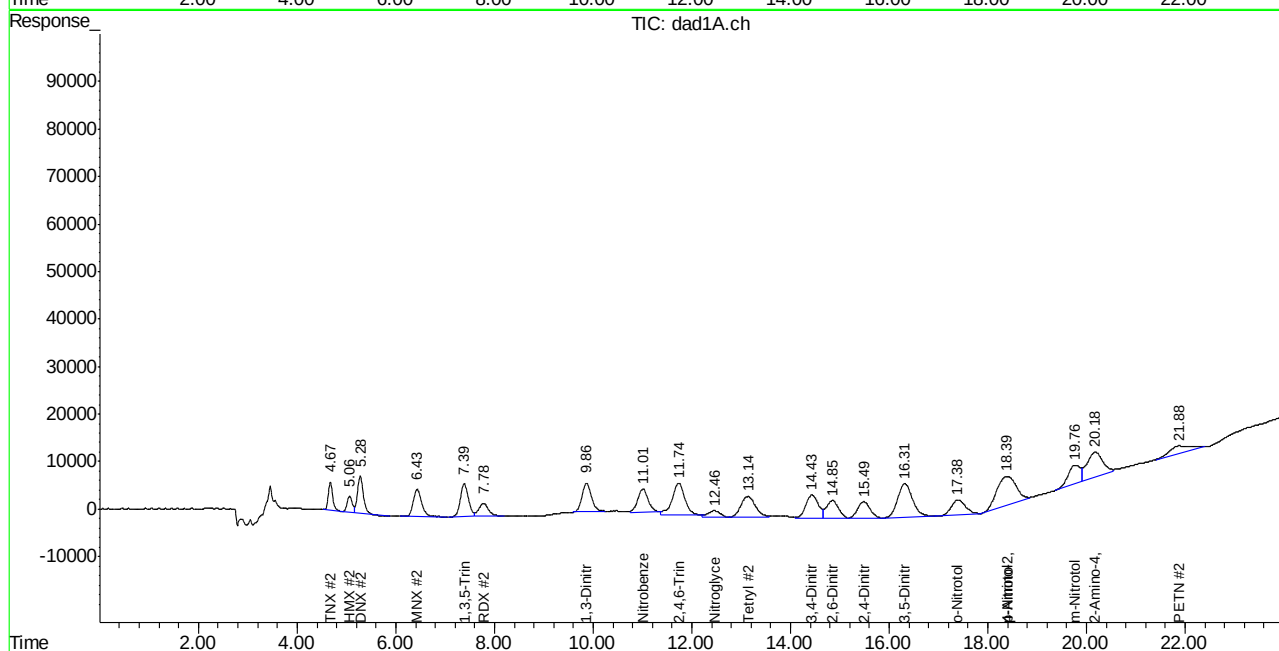
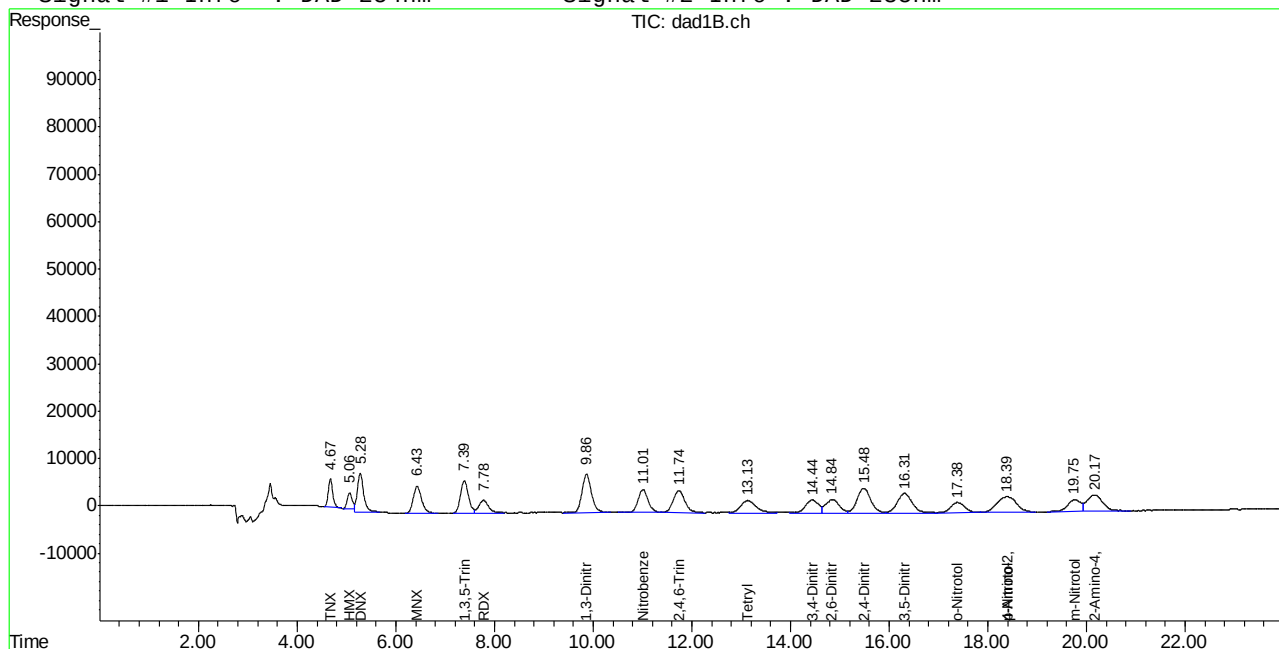
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:58 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Page 1 of 1

Sample Number: GGG3229-IC3229 **Method:** SW846 8330B
Lab FileID: GG625700.D **Analyst approved:** 01/31/23 11:38 Fouad Sekkar
Injection Time: 01/30/23 13:40 **Supervisor approved:** 01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.67	Missed peak
HMX	2691-41-0	1	5.06	Poor instrument integration
DNX		1	5.28	Poor instrument integration
1,3-Dinitrobenzene	99-65-0	2	9.86	Poor instrument integration
Nitrobenzene	98-95-3	2	11.01	Poor instrument integration
2,4,6-Trinitrotoluene	118-96-7	2	11.74	Poor instrument integration
m-Nitrotoluene	99-08-1	2	19.76	Poor instrument integration
PETN	78-11-5	2	21.88	Poor instrument integration

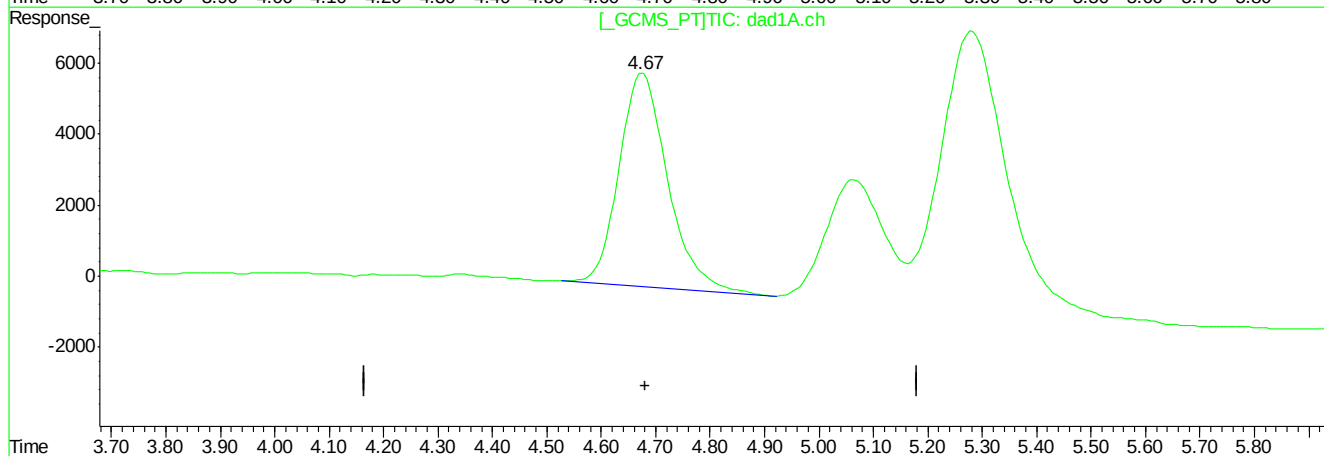
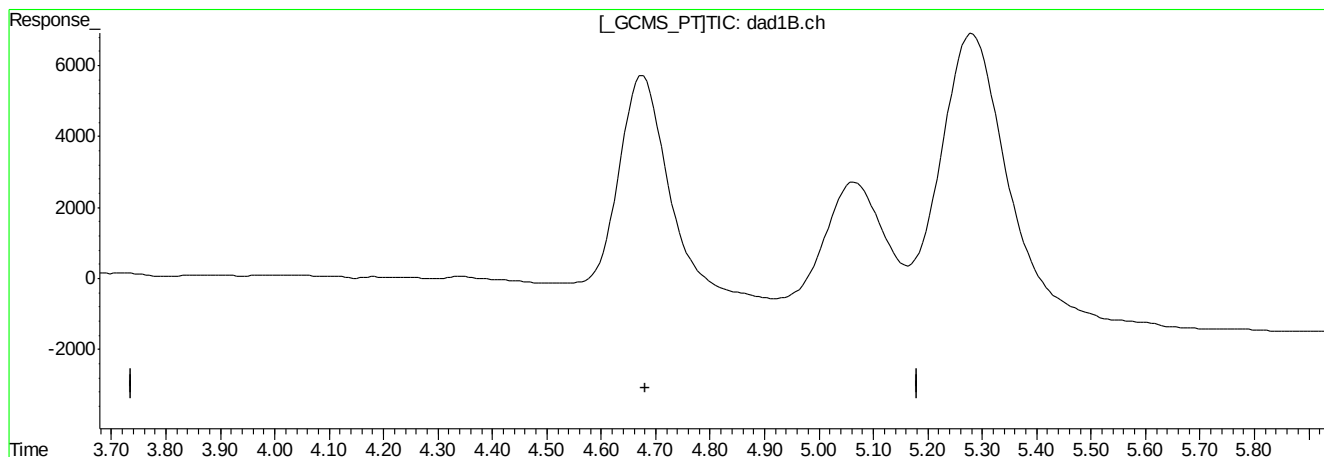
9.5.17.1

9

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.68min 41.599ppb

response 373852

(+) = Expected Retention Time

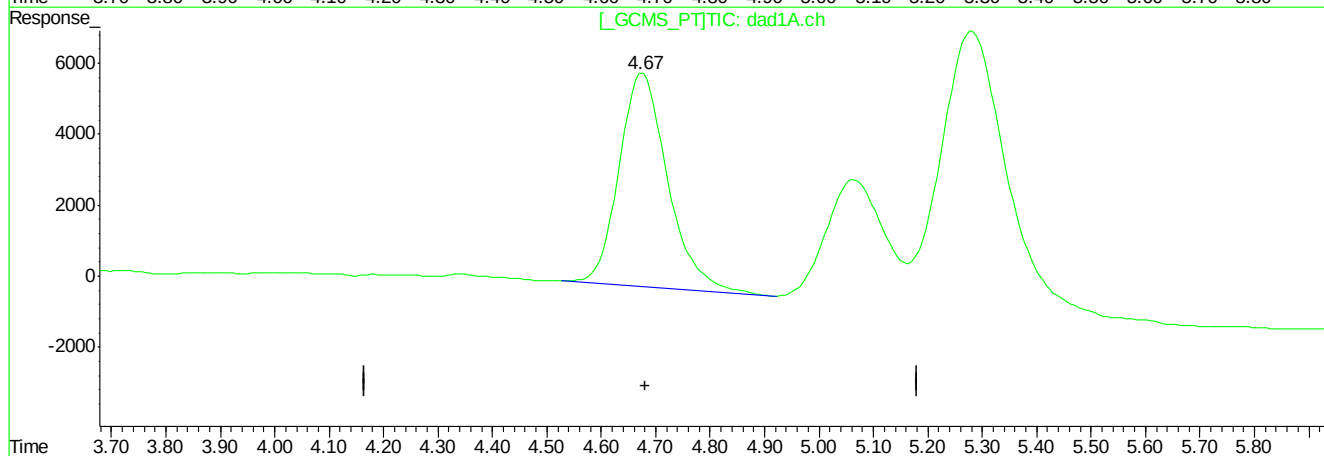
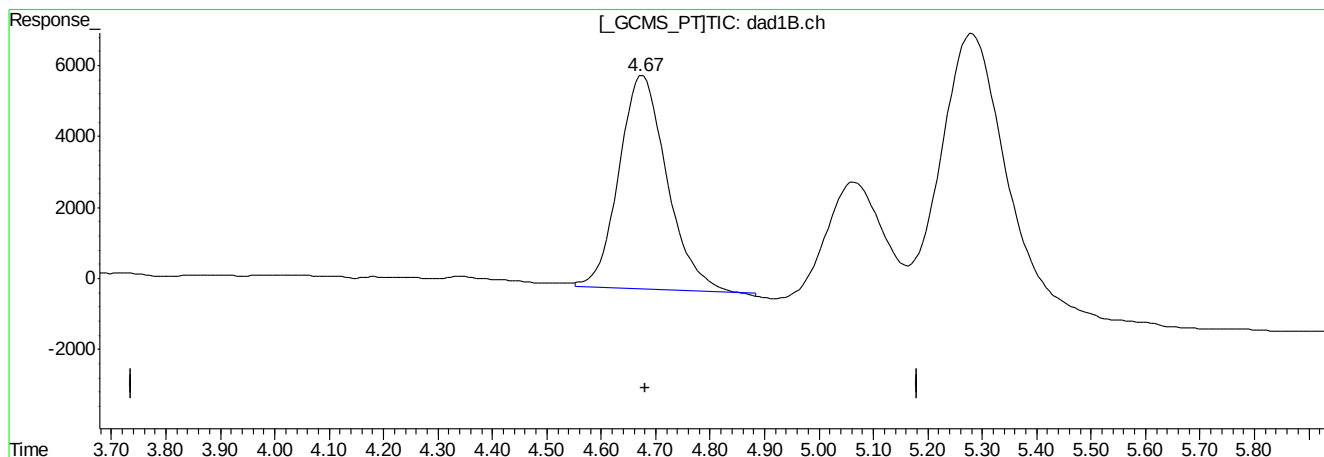
GG625700.D GGG3229_013023.M

Mon Jan 30 15:55:50 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

4.67min 41.769ppb m

response 369142

(1) TNX #2

4.68min 41.599ppb

response 373852

(+) = Expected Retention Time

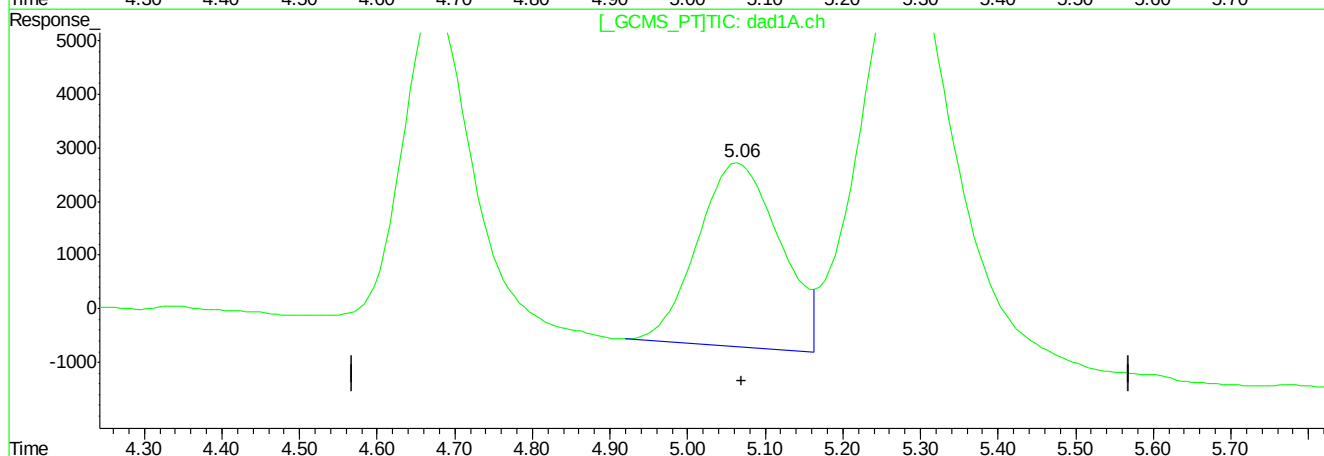
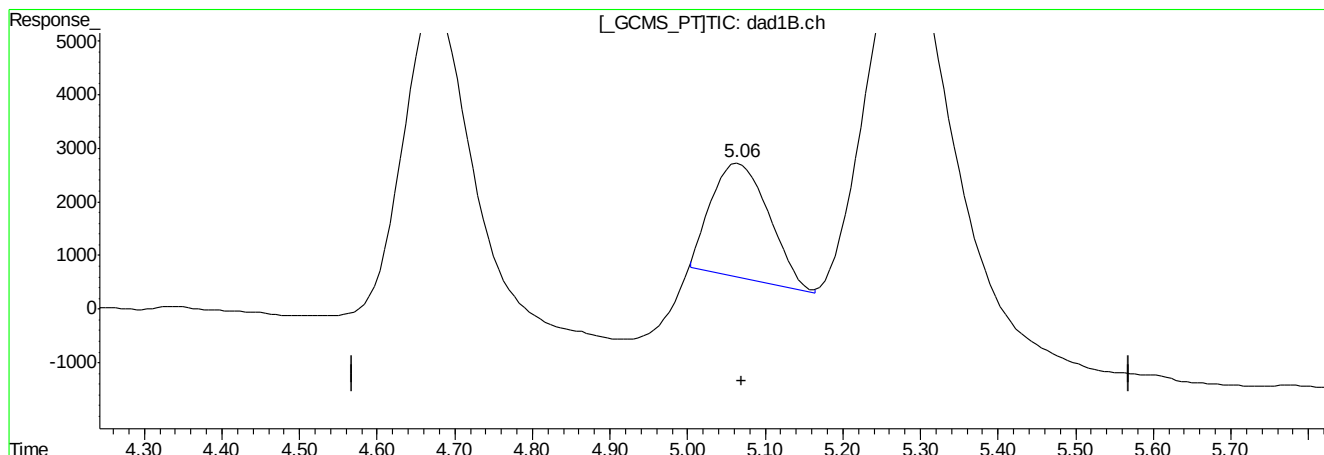
GG625700.D GGG3229_013023.M

Mon Jan 30 15:55:58 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(2) HMX

5.06min 40.074ppb

response 111596

(2) HMX #2

5.07min 90.066ppb

response 252329

QEdit

(+) = Expected Retention Time

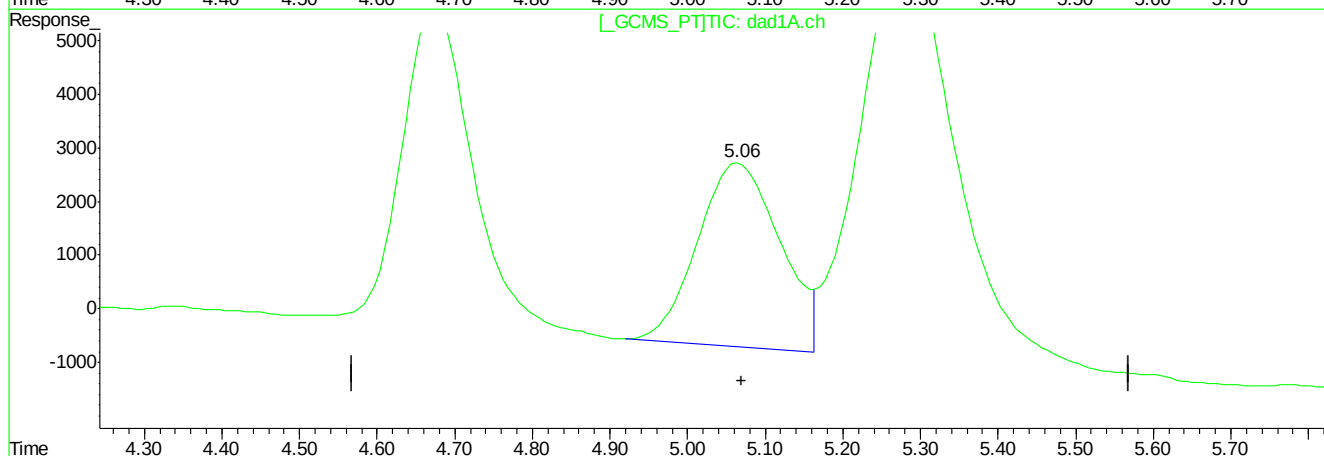
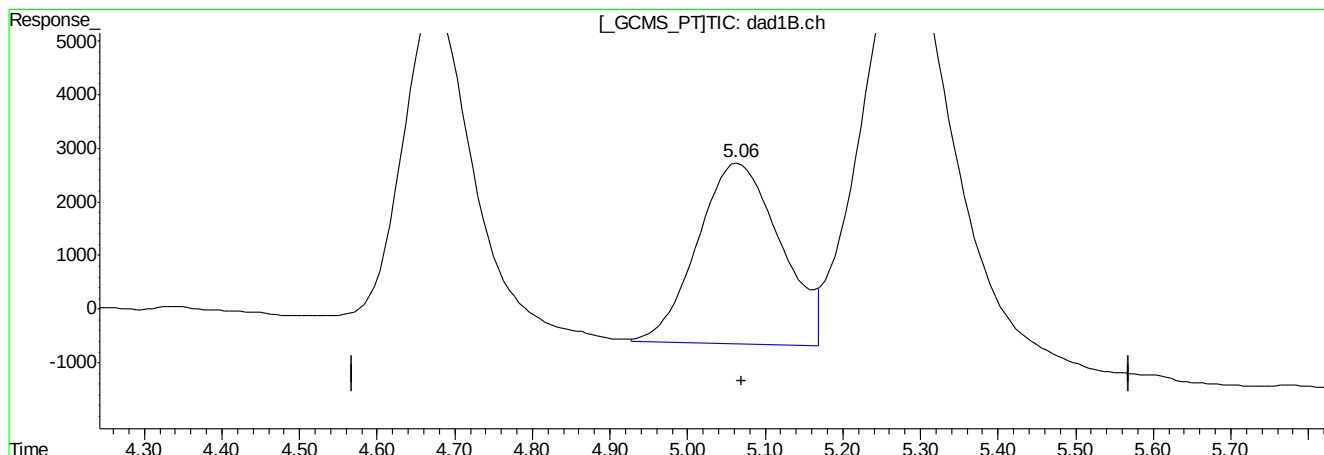
GG625700.D GGG3229_013023.M

Mon Jan 30 15:56:03 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 89.488ppb m

response 249203

(2) HMX #2

5.07min 90.066ppb

response 252329

(+) = Expected Retention Time

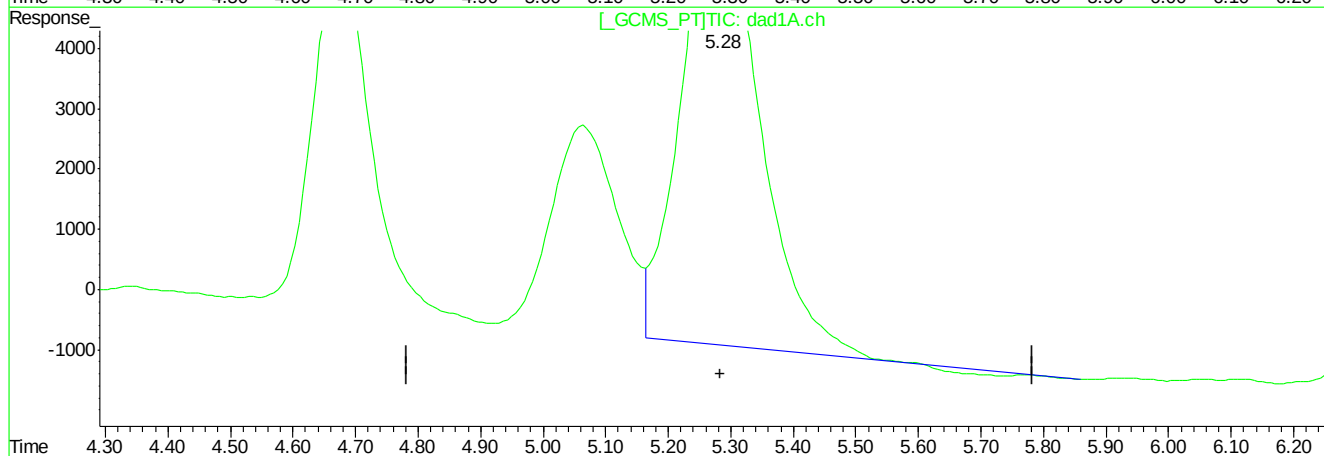
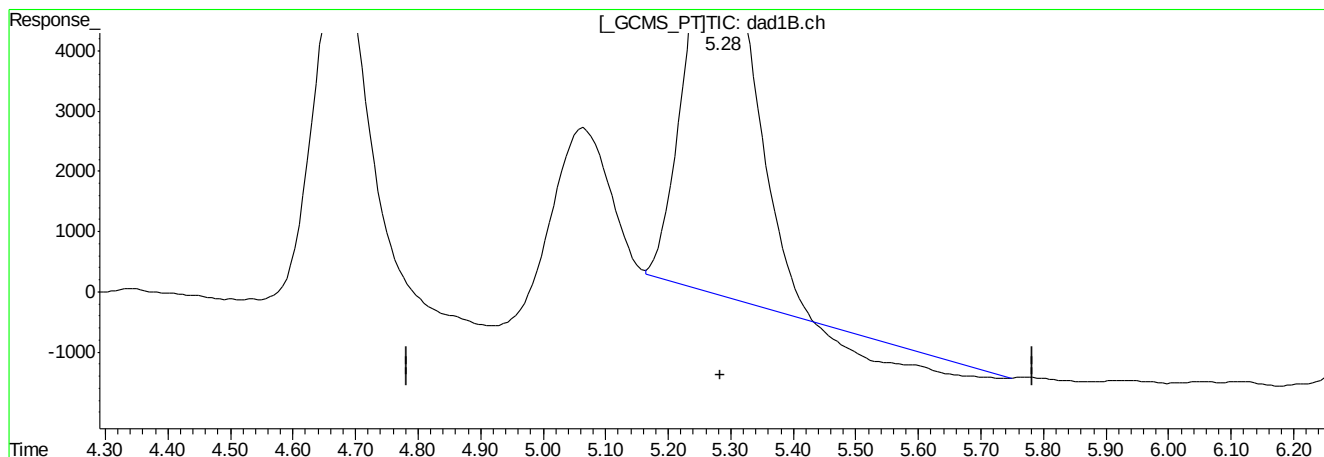
GG625700.D GGG3229_013023.M

Mon Jan 30 15:56:09 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.28min 61.159ppb

response 466779

(3) DNX #2

5.28min 83.862ppb

response 649897

(+) = Expected Retention Time

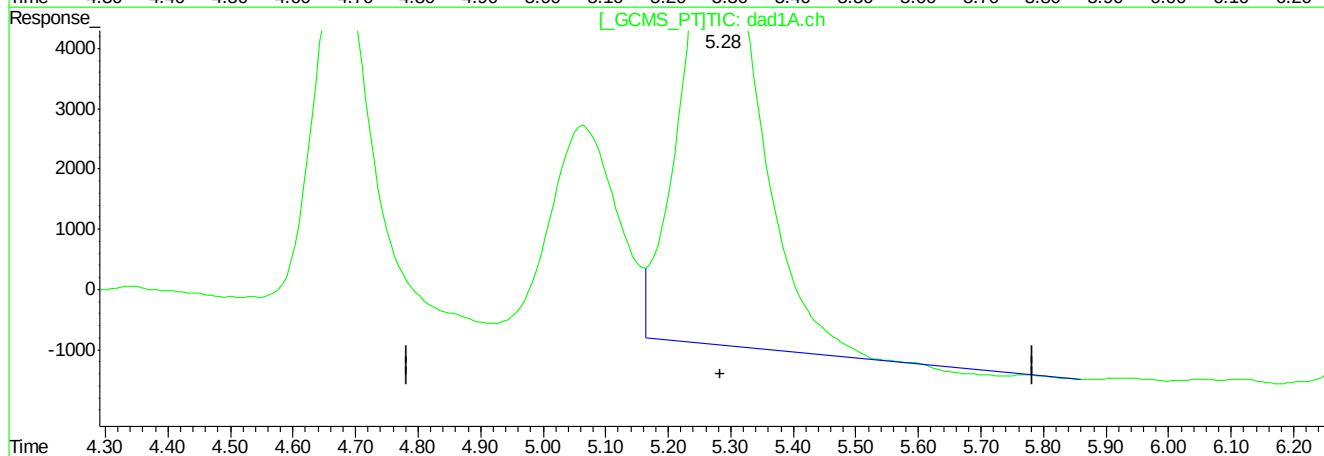
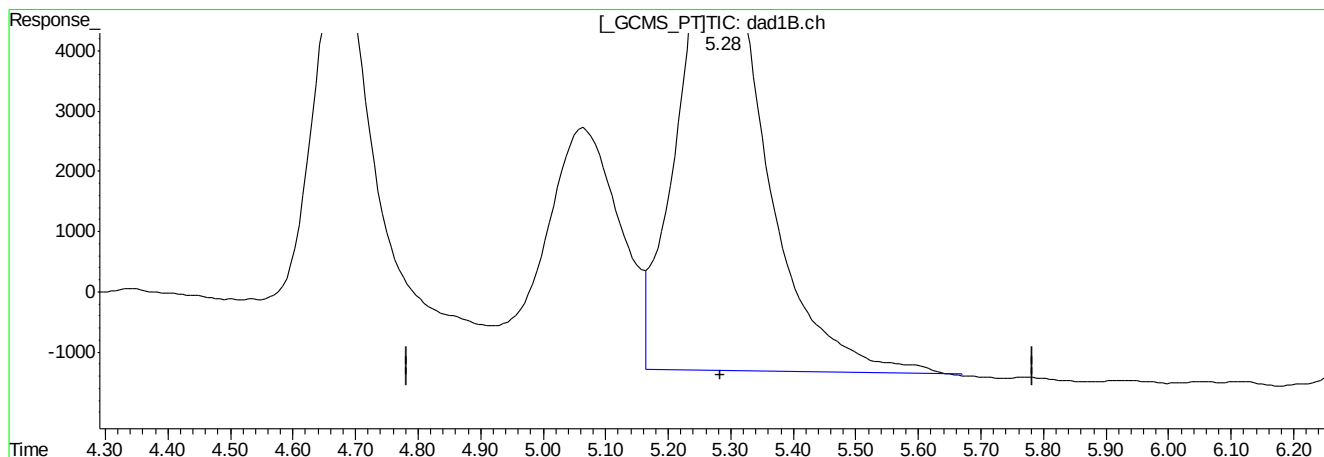
GG625700.D GGG3229_013023.M

Mon Jan 30 15:56:15 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.28min 96.363ppb m

response 735467

(3) DNX #2

5.28min 83.862ppb

response 649897

(+) = Expected Retention Time

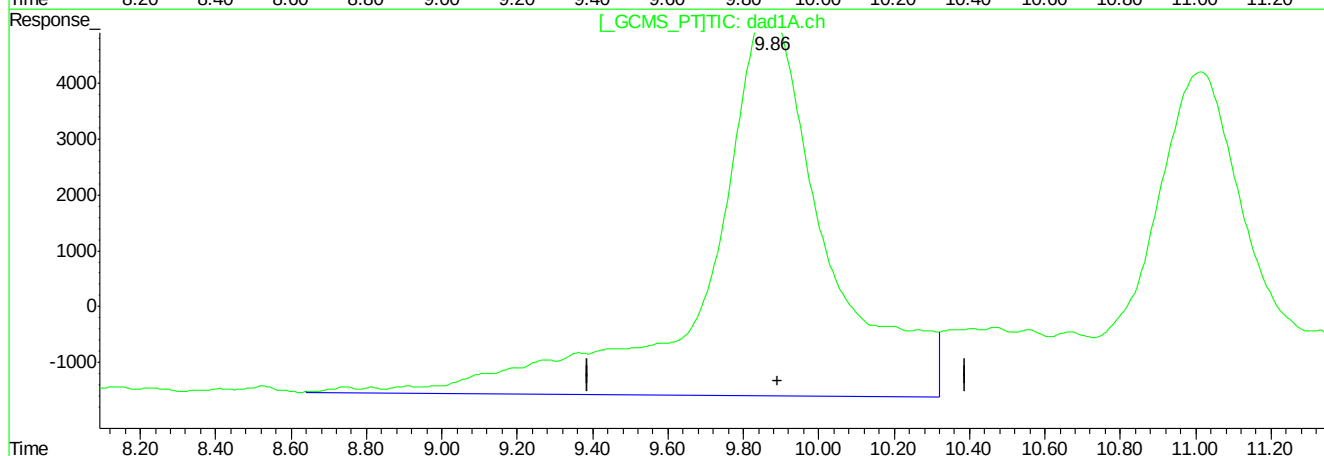
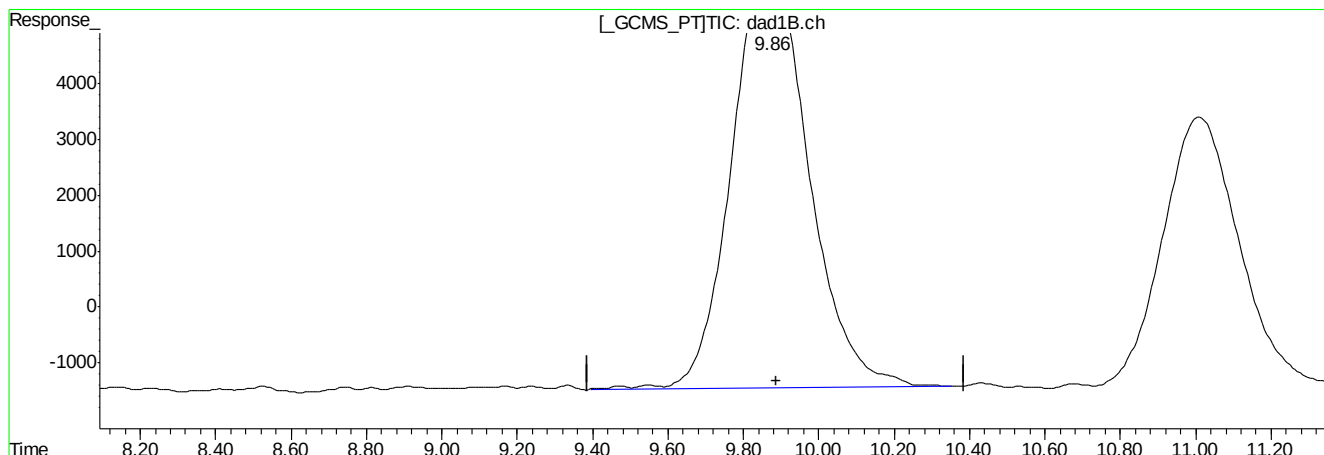
GG625700.D GGG3229_013023.M

Mon Jan 30 15:56:20 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

9.87min 88.252ppb

response 1086300

(7) 1,3-Dinitrobenzene #2

9.87min 142.689ppb

response 1481464

QEdit

(+) = Expected Retention Time

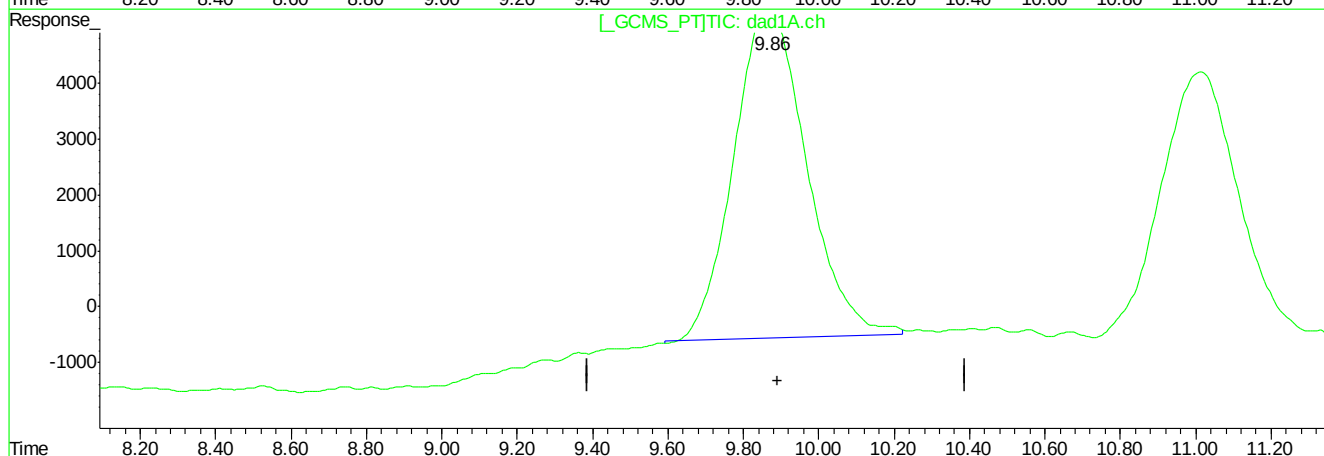
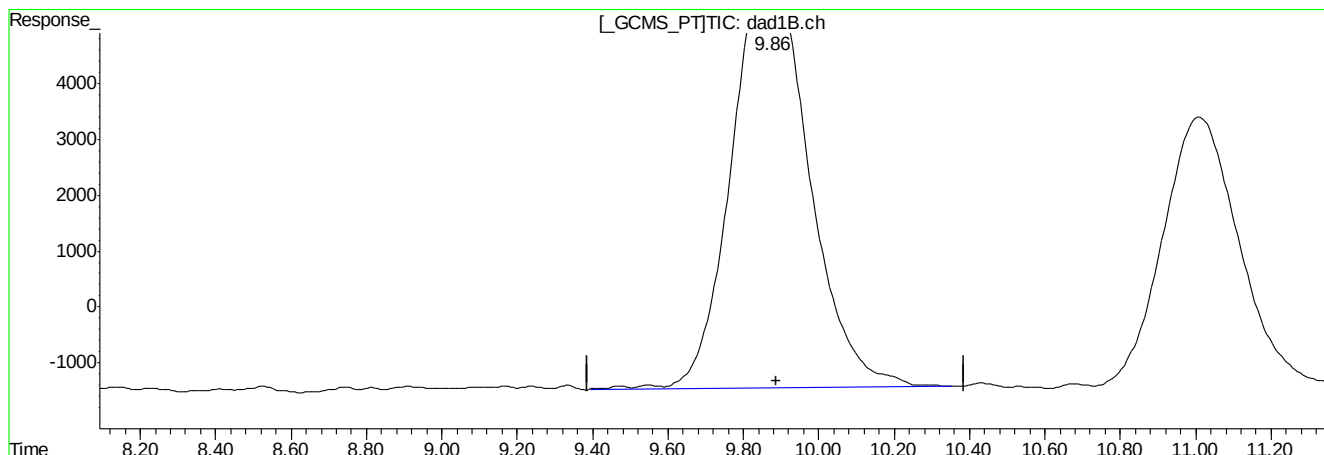
GG625700.D GGG3229_013023.M

Mon Jan 30 15:56:35 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

9.87min 88.252ppb

response 1086300

(7) 1,3-Dinitrobenzene #2

9.86min 76.021ppb m

response 789283

(+) = Expected Retention Time

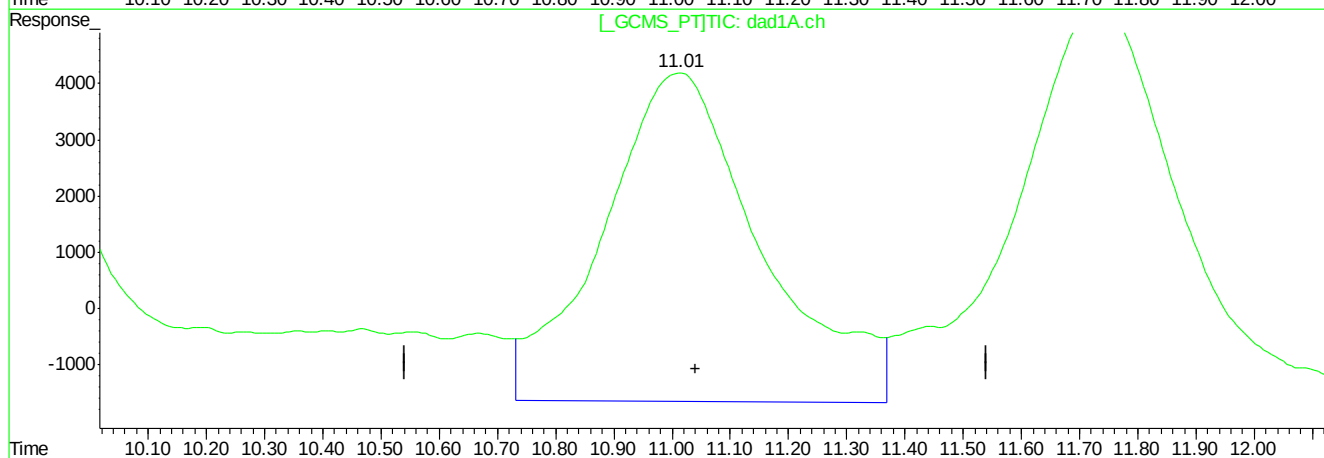
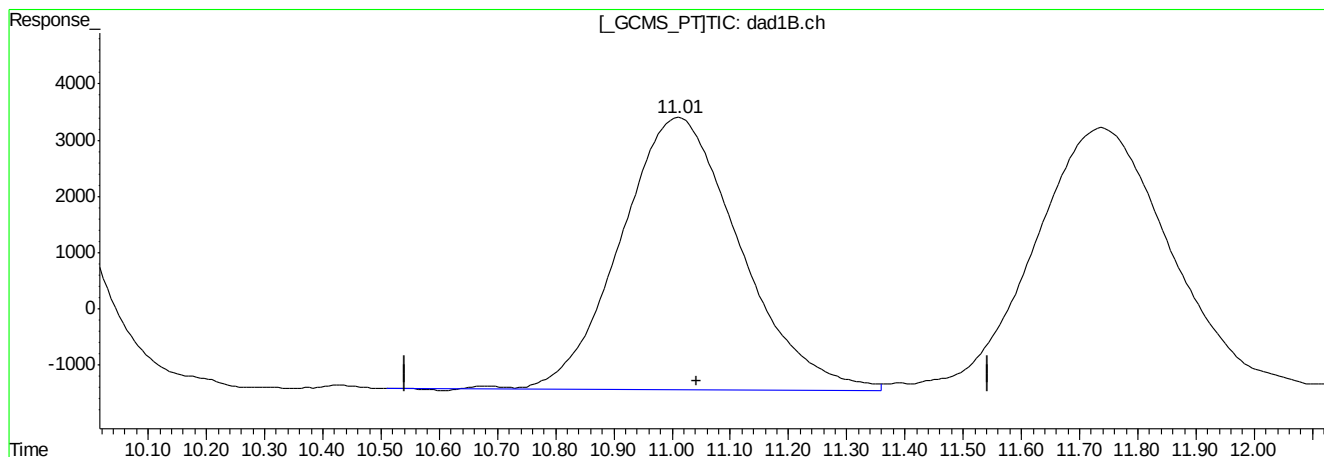
GG625700.D GGG3229_013023.M

Mon Jan 30 15:56:41 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene

11.01min 87.803ppb

response 690640

(8) Nitrobenzene #2

11.01min 152.884ppb

response 1107294

(+) = Expected Retention Time

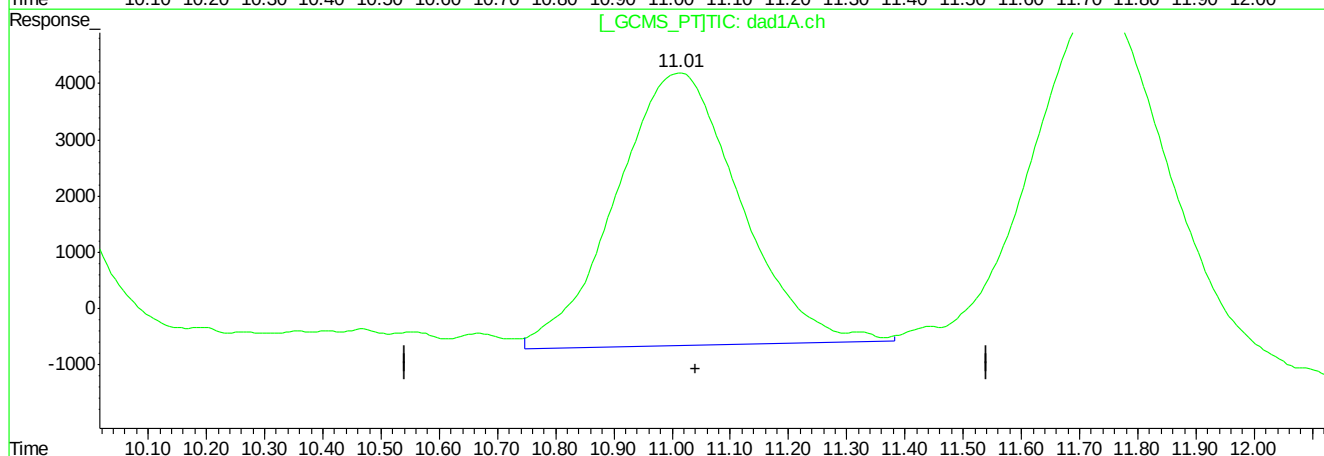
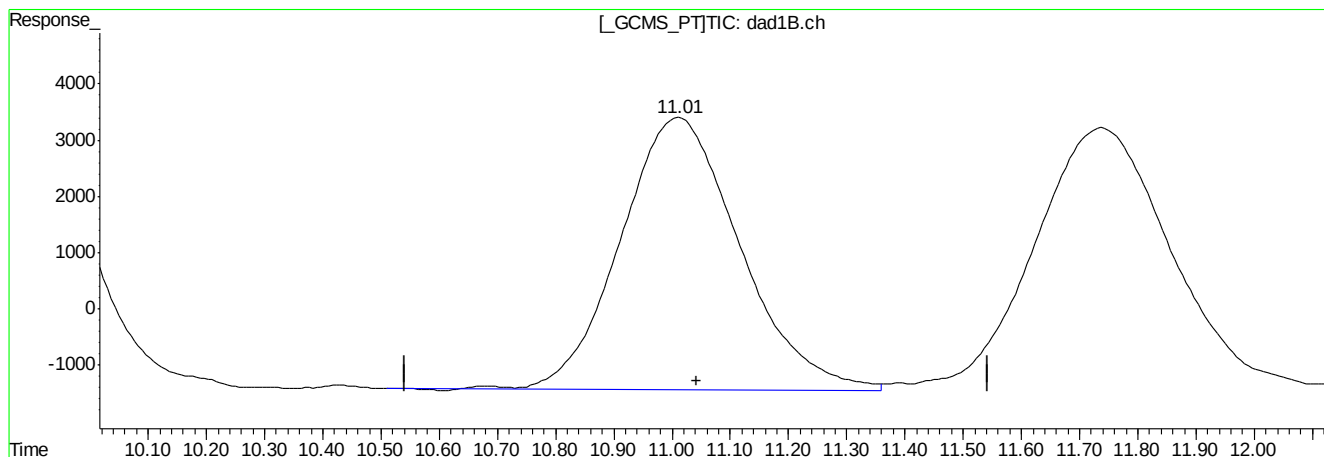
GG625700.D GGG3229_013023.M

Mon Jan 30 15:56:51 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene

11.01min 87.803ppb

response 690640

(8) Nitrobenzene #2

11.01min 99.189ppb m

response 718398

(+) = Expected Retention Time

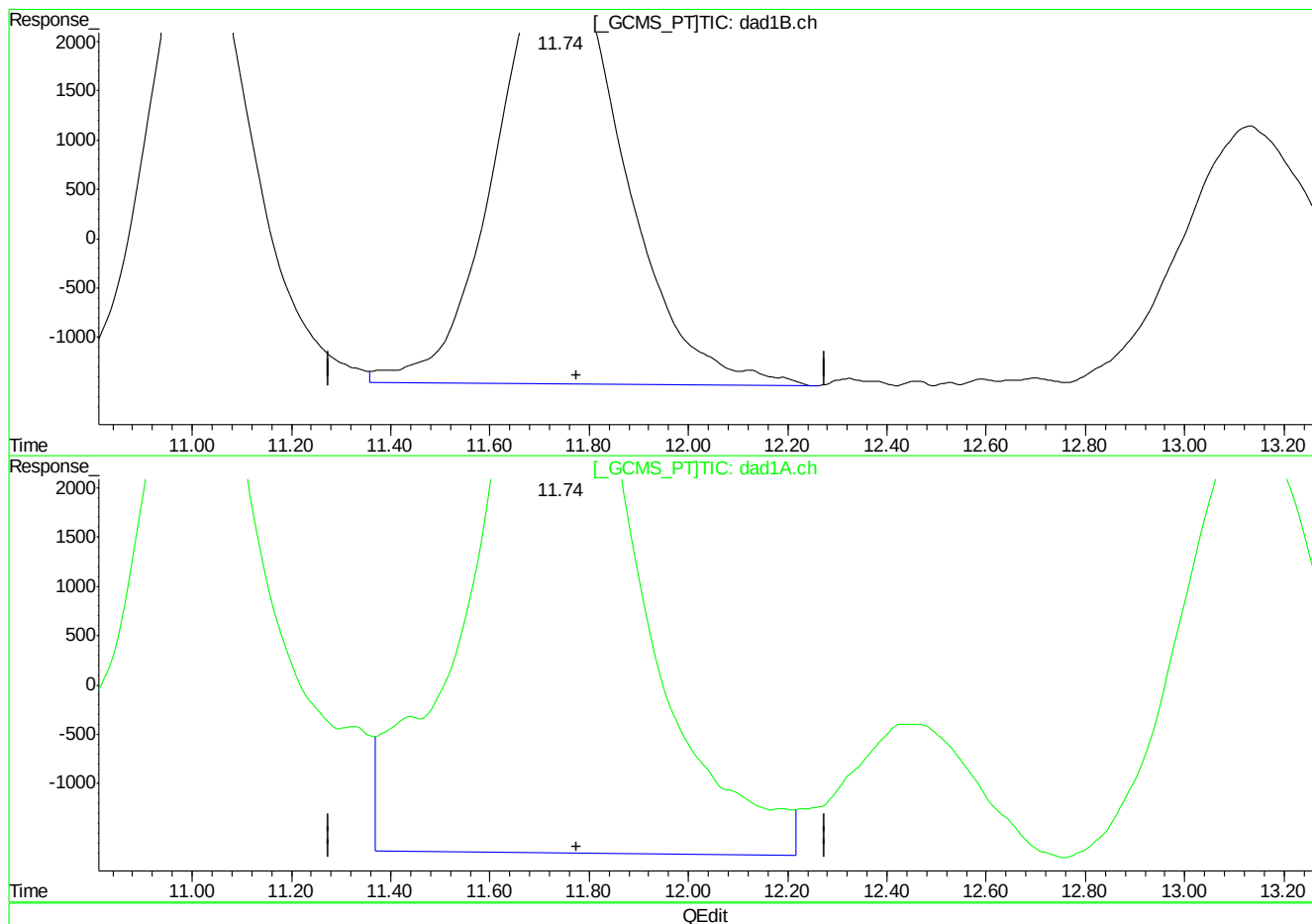
GG625700.D GGG3229_013023.M

Mon Jan 30 15:56:58 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(9) 2,4,6-Trinitrotoluene

11.74min 89.798ppb

response 785664

(9) 2,4,6-Trinitrotoluene #2

11.74min 128.757ppb

response 1440020

(+) = Expected Retention Time

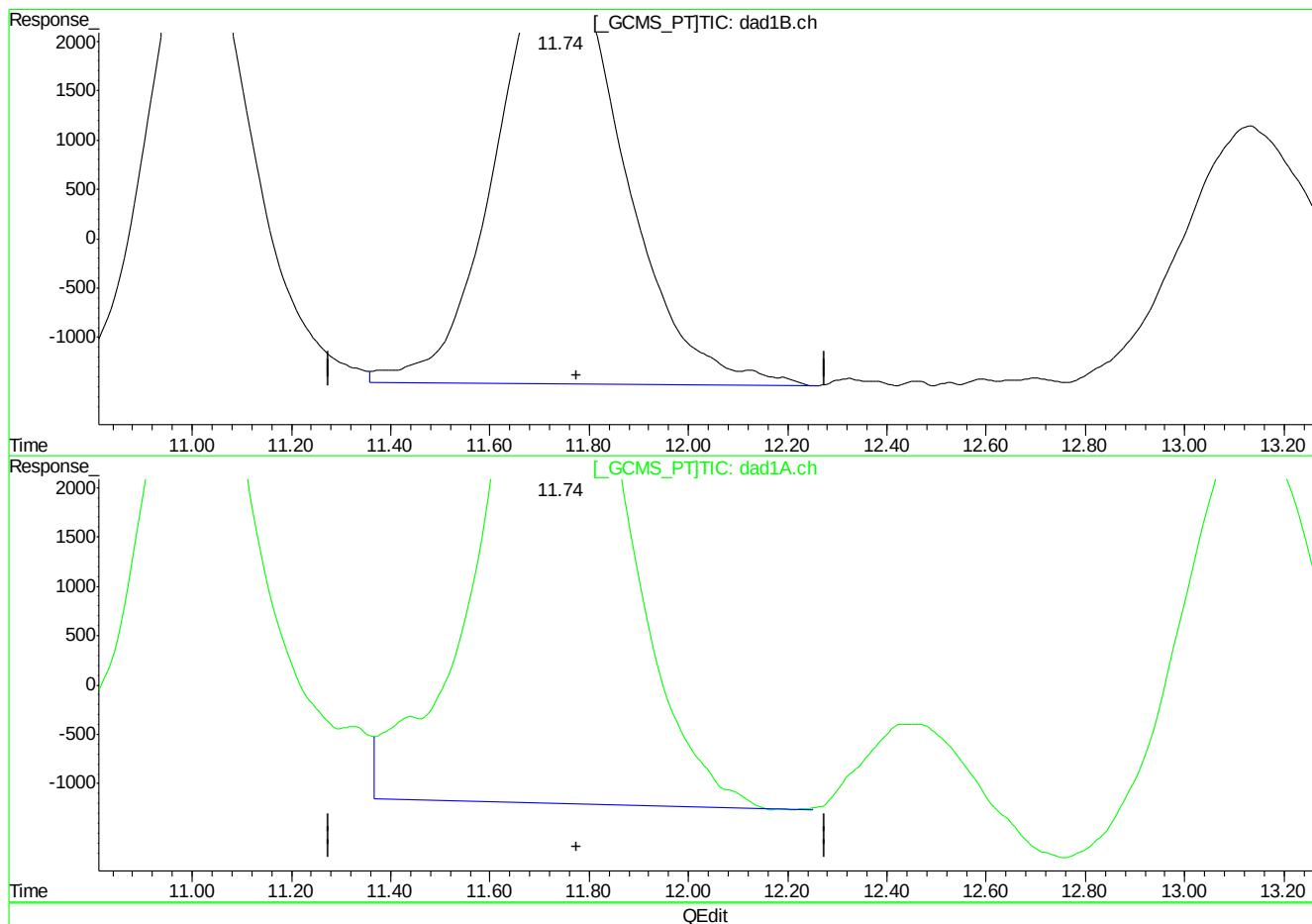
GG625700.D GGG3229_013023.M

Mon Jan 30 15:57:03 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(9) 2,4,6-Trinitrotoluene

11.74min 89.798ppb

response 785664

(9) 2,4,6-Trinitrotoluene #2

11.74min 106.047ppb m

response 1186038

(+) = Expected Retention Time

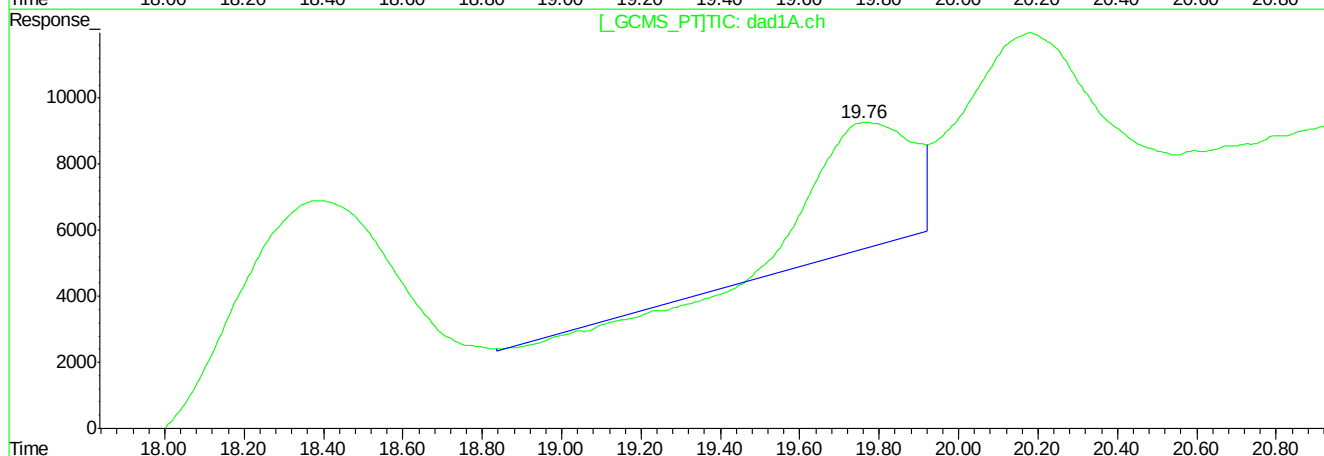
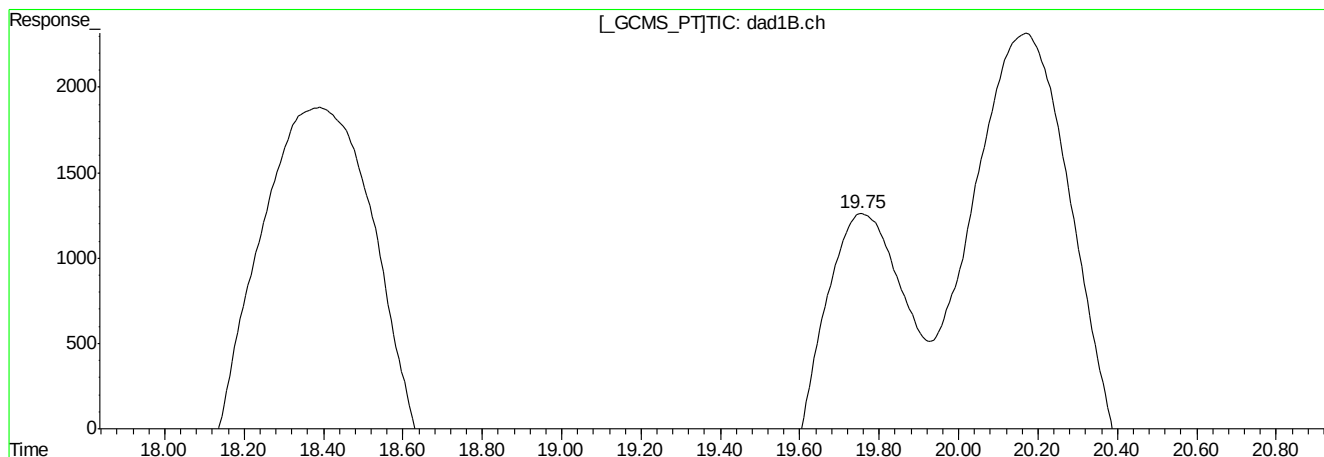
GG625700.D GGG3229_013023.M

Mon Jan 30 15:57:09 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(19) m-Nitrotoluene

19.76min 91.985ppb

response 463315

(19) m-Nitrotoluene #2

19.77min 75.788ppb

response 598703

(+) = Expected Retention Time

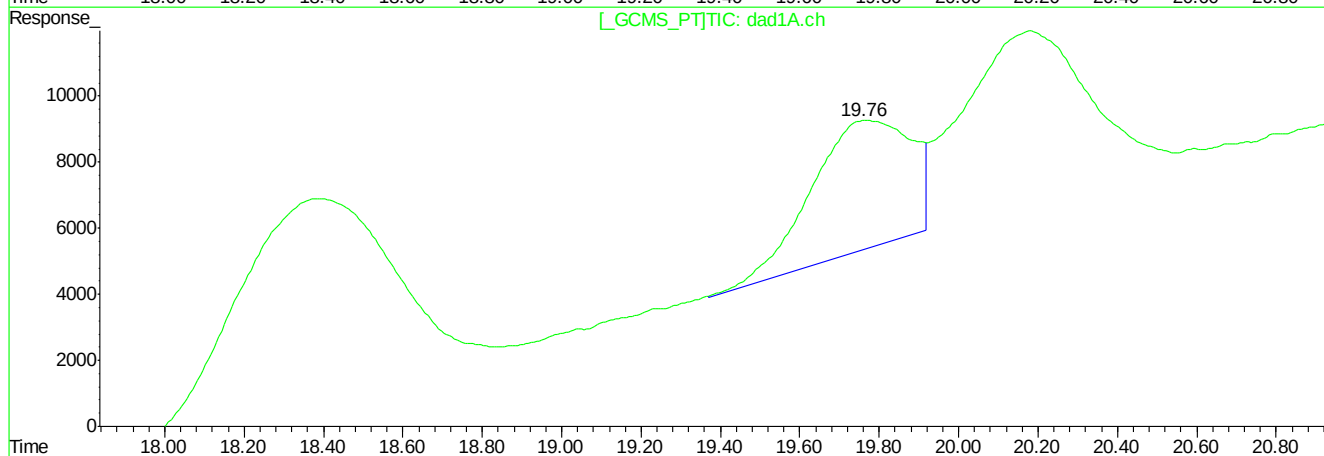
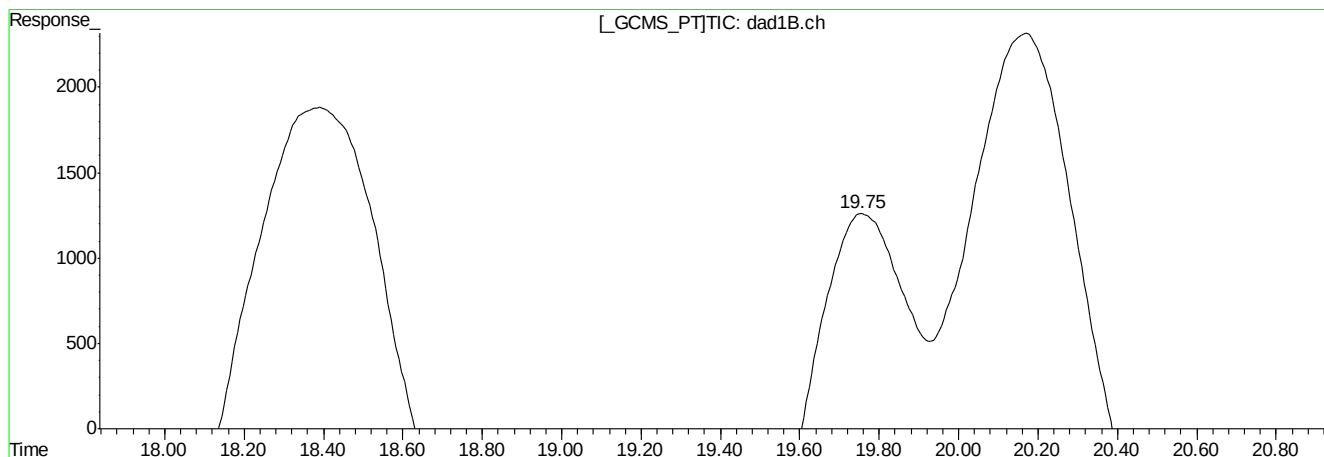
GG625700.D GGG3229_013023.M

Mon Jan 30 15:58:09 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(19) m-Nitrotoluene

19.76min 91.985ppb

response 463315

(19) m-Nitrotoluene #2

19.76min 85.364ppb m

response 674352

(+) = Expected Retention Time

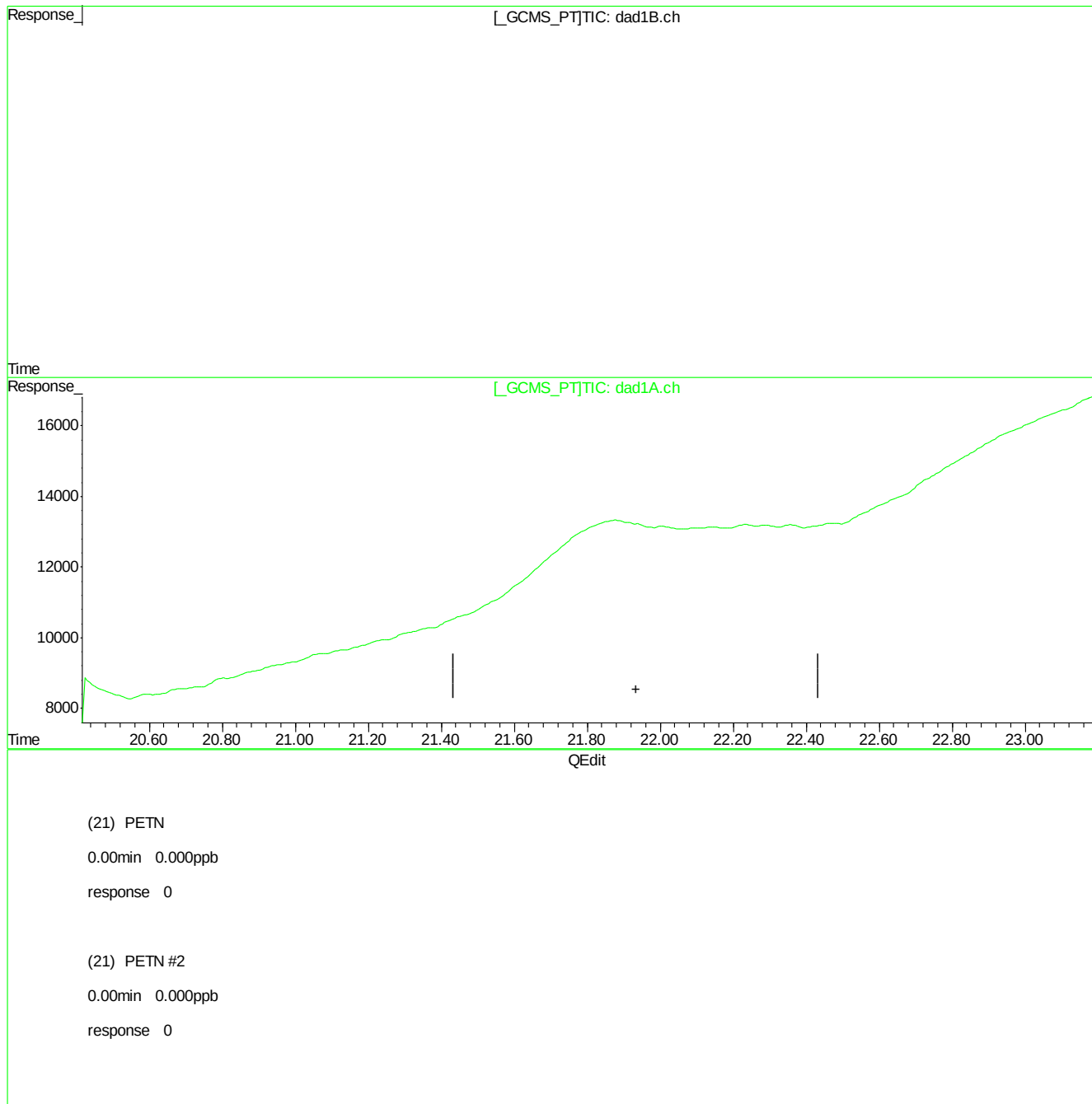
GG625700.D GGG3229_013023.M

Mon Jan 30 15:58:24 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(+) = Expected Retention Time

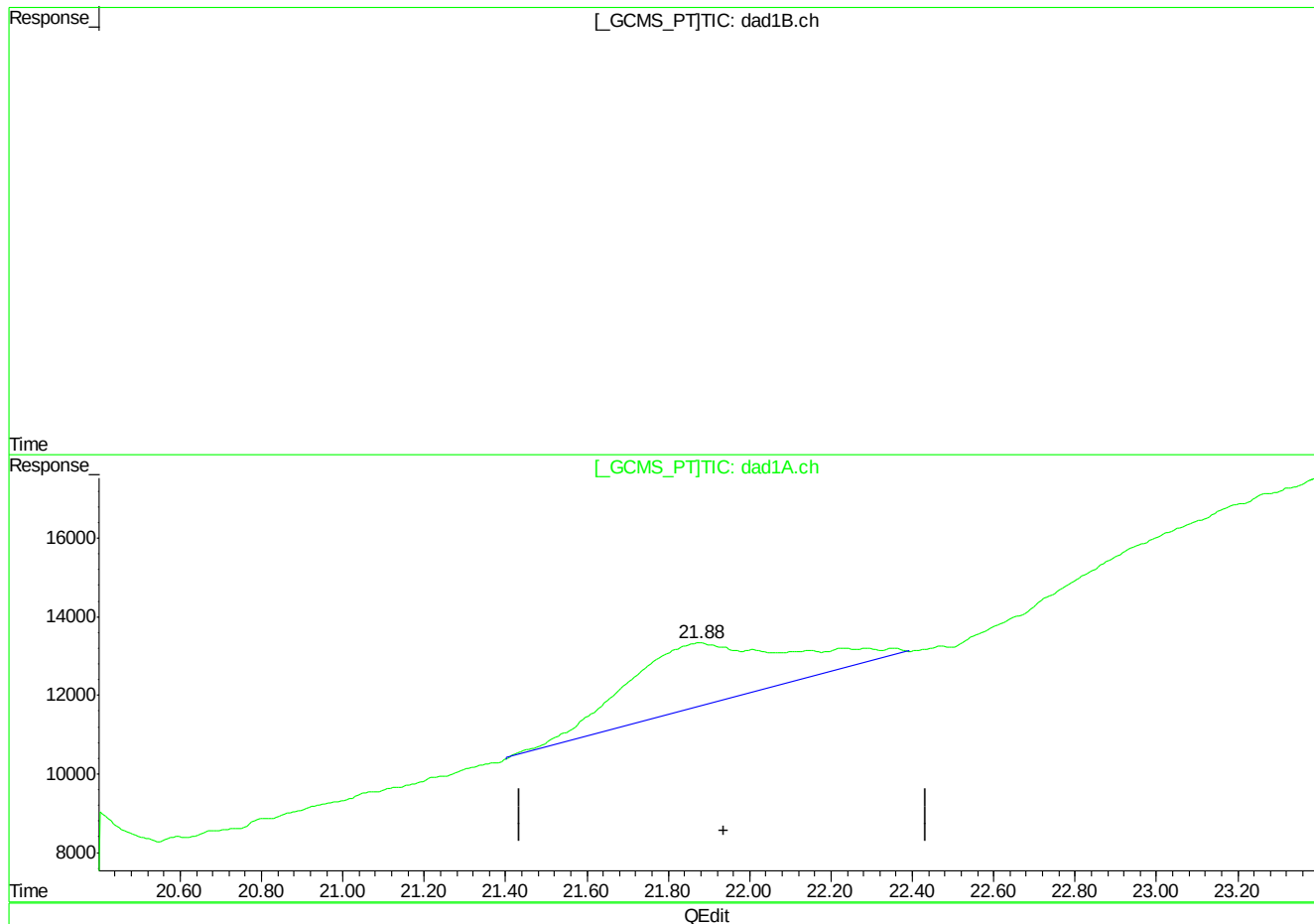
GG625700.D GGG3229_013023.M

Mon Jan 30 15:58:33 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625700.D\dad1A.ch
Acq On : 30-Jan-2023, 13:40:08 Operator: fouads
Sample : ic3229-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:55 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

21.88min 144.027ppb m

response 443070

(+) = Expected Retention Time

GG625700.D GGG3229_013023.M

Mon Jan 30 15:58:45 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
 Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
 Sample : ic3229-200 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 30 14:38:39 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Mon Jan 30 12:26:09 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.38	14.38	1078709	2124914	234.385	232.170
Spiked Amount	500.000	Range	70 - 136	Recovery	=	46.88%# 46.43%#
Target Compounds						
1) TNX	4.67	4.67	829539	818278	93.863m	91.051
2) HMX	5.05	5.05	563751	577221	202.440m	206.034
3) DNx	5.26	5.27	1425046	1445114	186.715m	186.475
4) MNX	6.41	6.41	1500001	1500278	224.504	224.550
5) 1,3,5-Trinitrobe	7.37	7.37	1747114	1740549	194.698	193.353
6) RDX	7.74	7.74	834991	831588	195.636	193.655
7) 1,3-Dinitrobenze	9.83	9.83	2409766	1955269	195.772	188.324
8) Nitrobenzene	10.98	10.98	1521784	1490359	193.469	205.773m
9) 2,4,6-Trinitroto	11.71	11.71	1694405	2300133	193.664	205.662m
10) Nitroglycerin	0.00	12.44	0	710141	N.D.	244.479 #
11) Tetryl	13.09	13.09	1255465	2334029	182.283	203.460
13) 2,6-Dinitrotolue	14.79	14.79	1161105	1477728	175.294	154.959
14) 2,4-Dinitrotolue	15.42	15.42	2170859	1363093	192.114	175.597
15) 3,5-Dinitroanili	16.22	16.23	1855234	3021153	196.839	195.163
16) o-Nitrotoluene	17.32	17.32	955217	1171806	185.313	162.690
17) p-Nitrotoluene	18.29	18.26	2013653	3575116	397.039	408.844
18) 4-Amino-2,6-Dini	18.29	18.26	2013653	3575116	404.718	411.336
19) m-Nitrotoluene	19.66	19.66	970524	1577296	192.685	199.665
20) 2-Amino-4,6-Dini	20.02	20.03	1685538	2350951	202.889	204.543
21) PETN	0.00	21.79	0	622611	N.D.	202.390m#

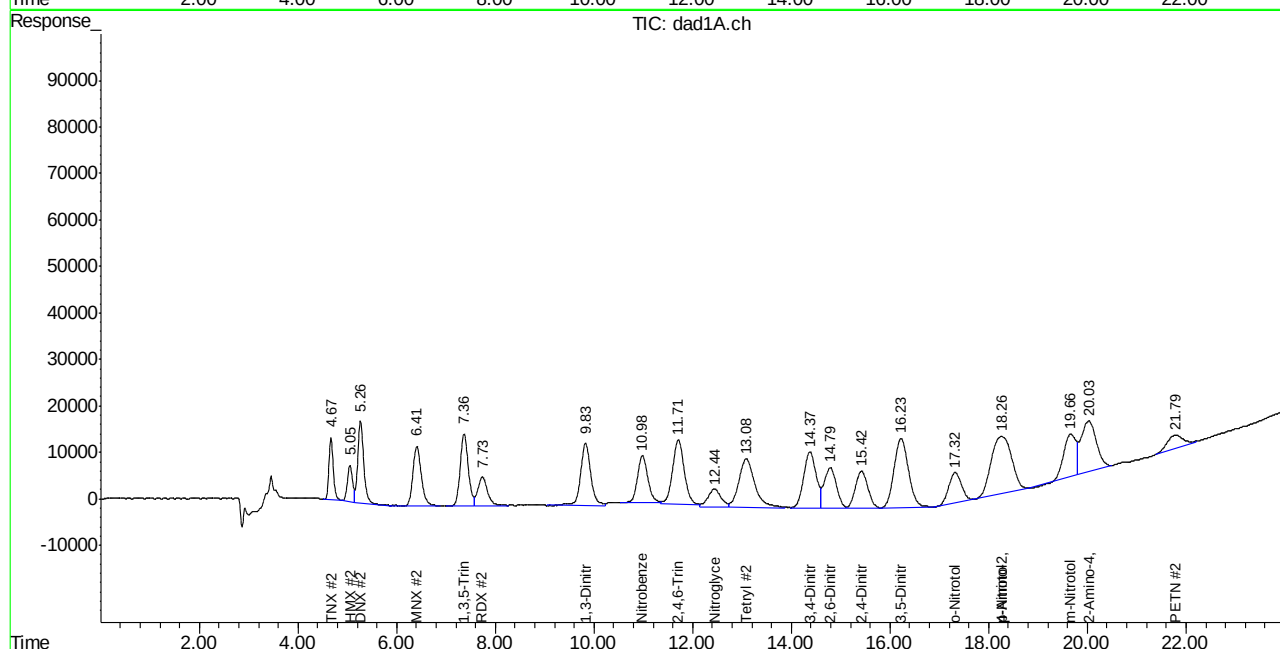
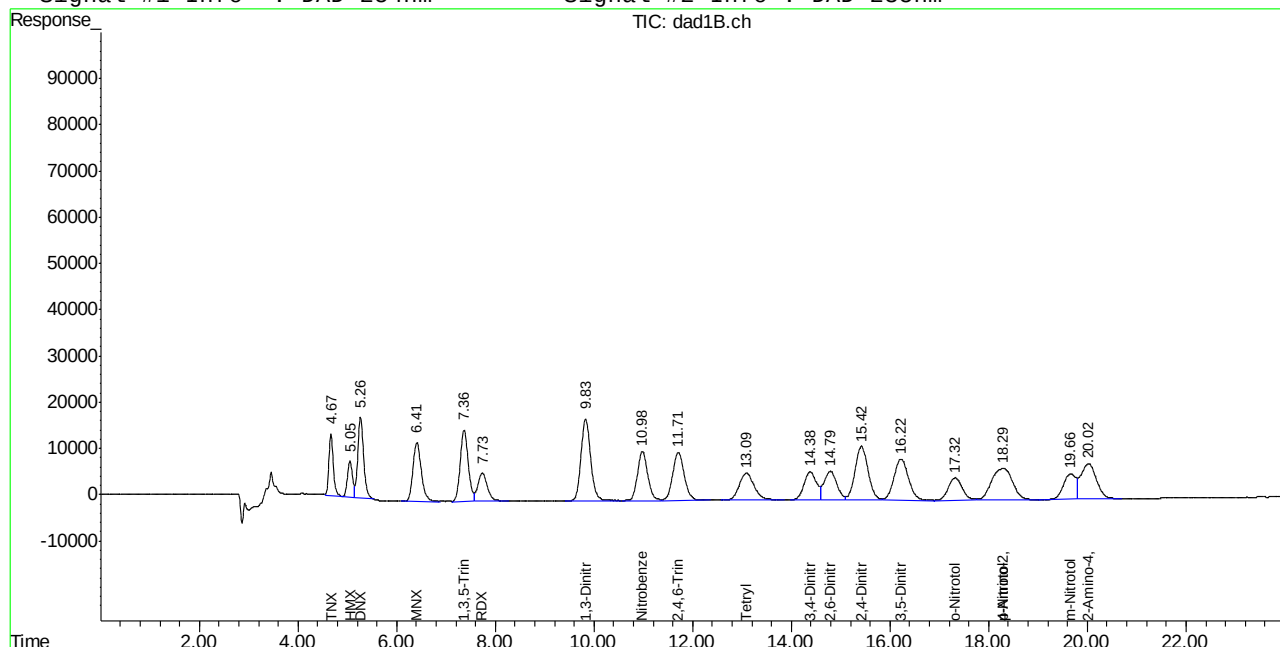
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625701.D GGG3229_013023.M Tue Jan 31 11:32:15 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 16:00 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number: GGG3229-IC3229

Method: SW846 8330B

Lab FileID: GG625701.D

Analyst approved: 01/31/23 11:38 Fouad Sekkar

Injection Time: 01/30/23 14:11

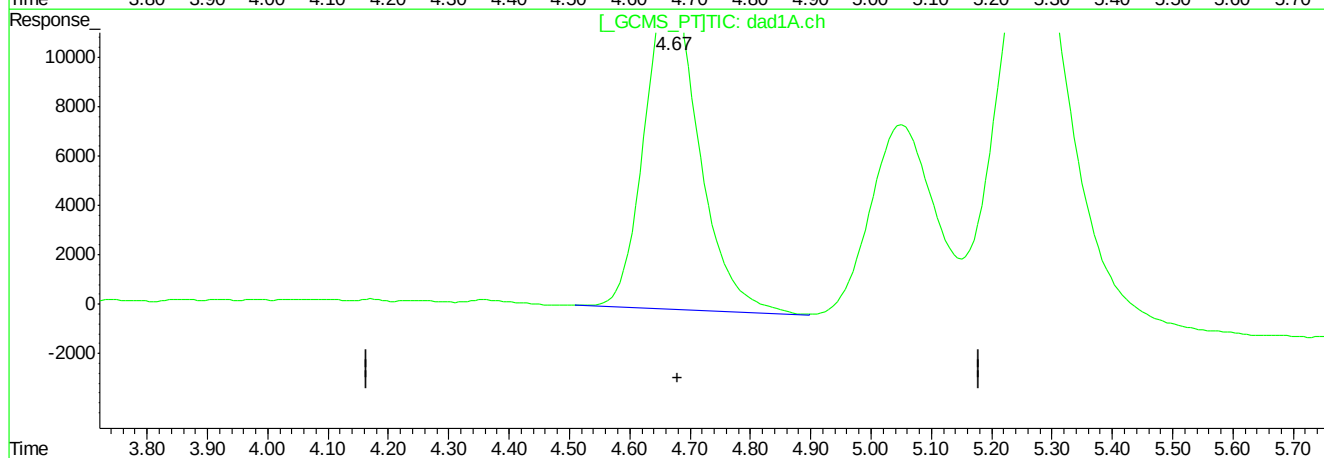
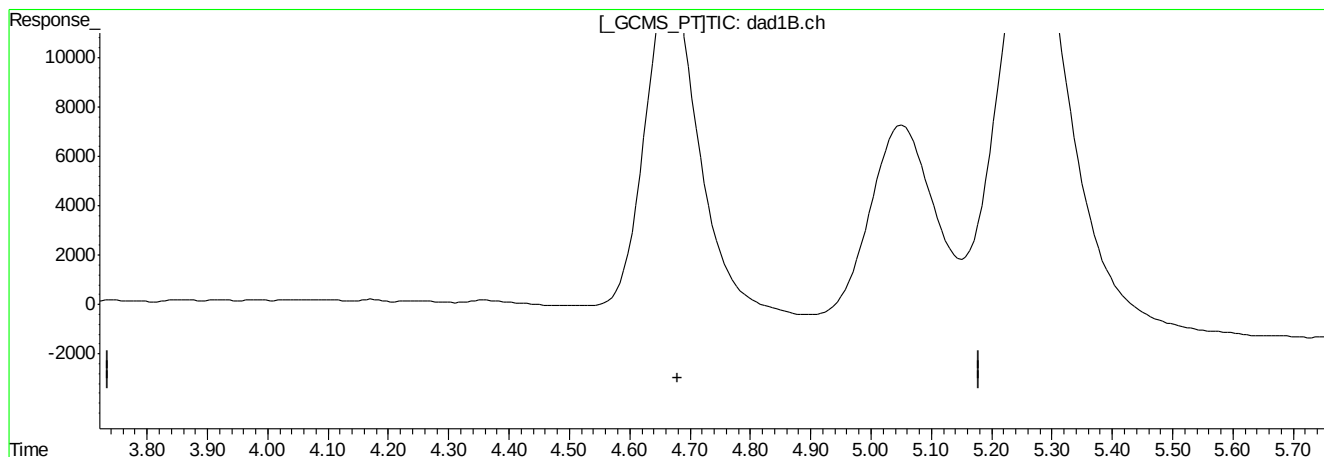
Supervisor approved: 01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.67	Missed peak
HMX	2691-41-0	1	5.05	Poor instrument integration
DNX		1	5.26	Poor instrument integration
Nitrobenzene	98-95-3	2	10.98	Poor instrument integration
2,4,6-Trinitrotoluene	118-96-7	2	11.71	Poor instrument integration
PETN	78-11-5	2	21.79	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.67min 91.051ppb

response 818278

(+) = Expected Retention Time

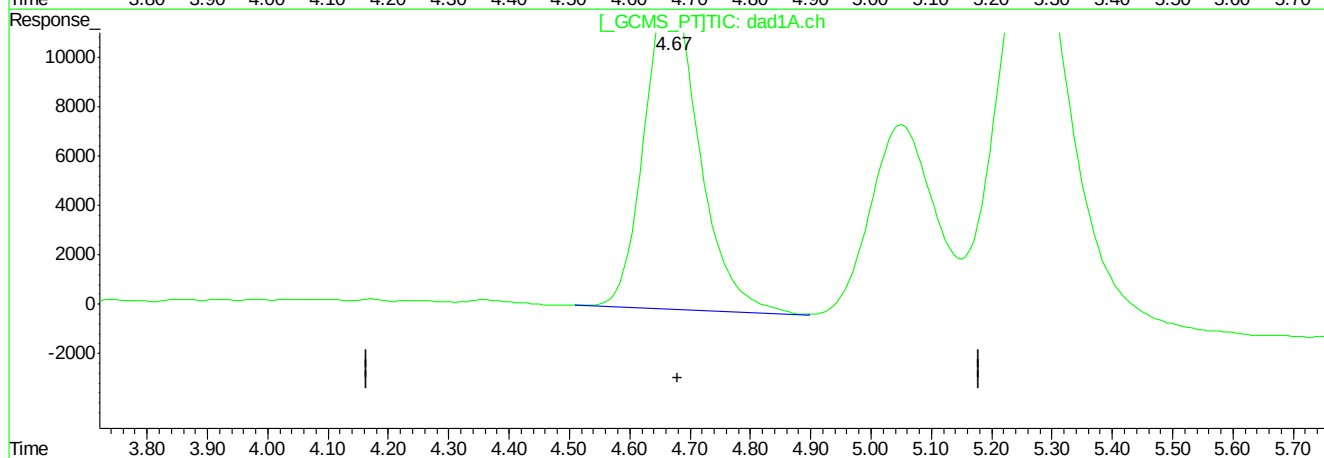
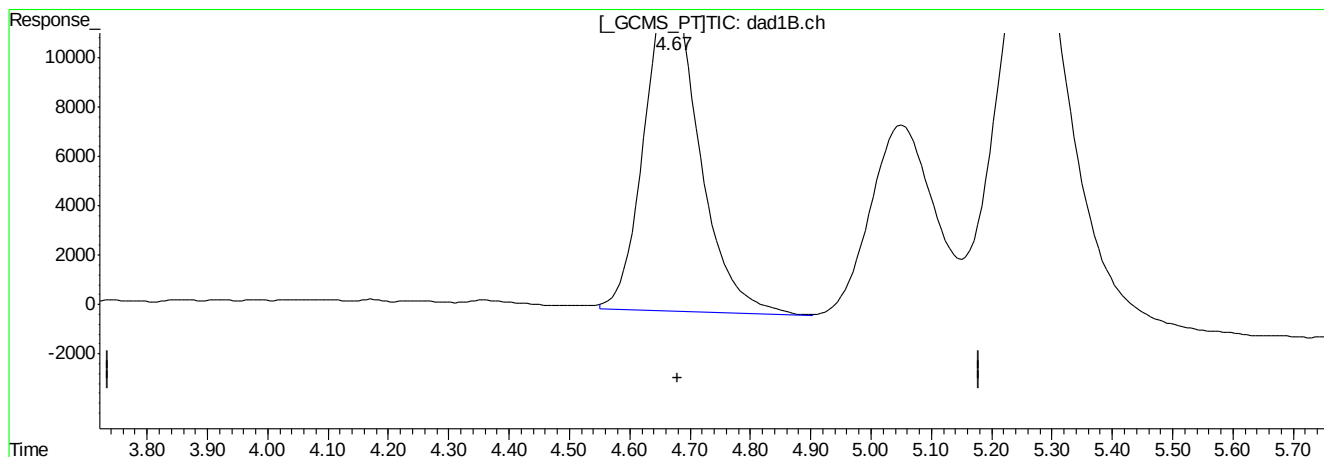
GG625701.D GGG3229_013023.M

Mon Jan 30 15:59:01 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

4.67min 93.863ppb m

response 829539

(1) TNX #2

4.67min 91.051ppb

response 818278

(+) = Expected Retention Time

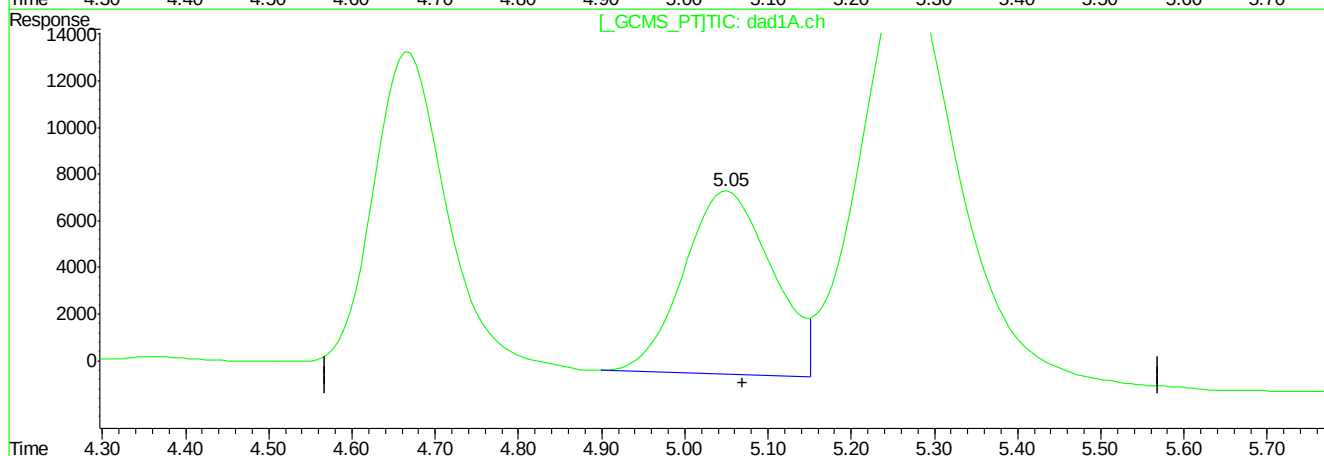
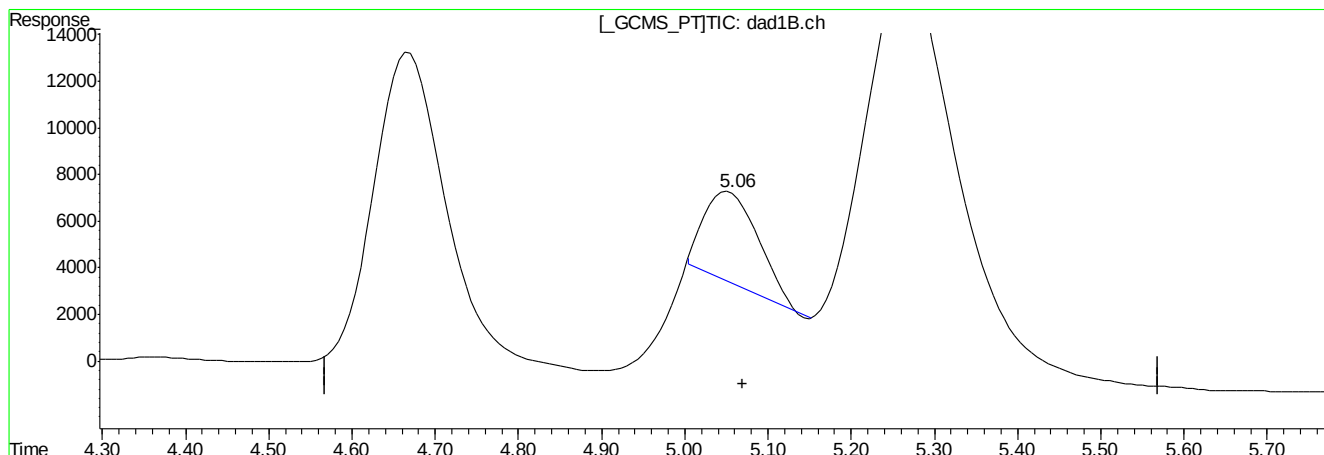
GG625701.D GGG3229_013023.M

Mon Jan 30 15:59:06 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(2) HMX

5.05min 63.900ppb

response 177946

(2) HMX #2

5.05min 206.034ppb

response 577221

(+) = Expected Retention Time

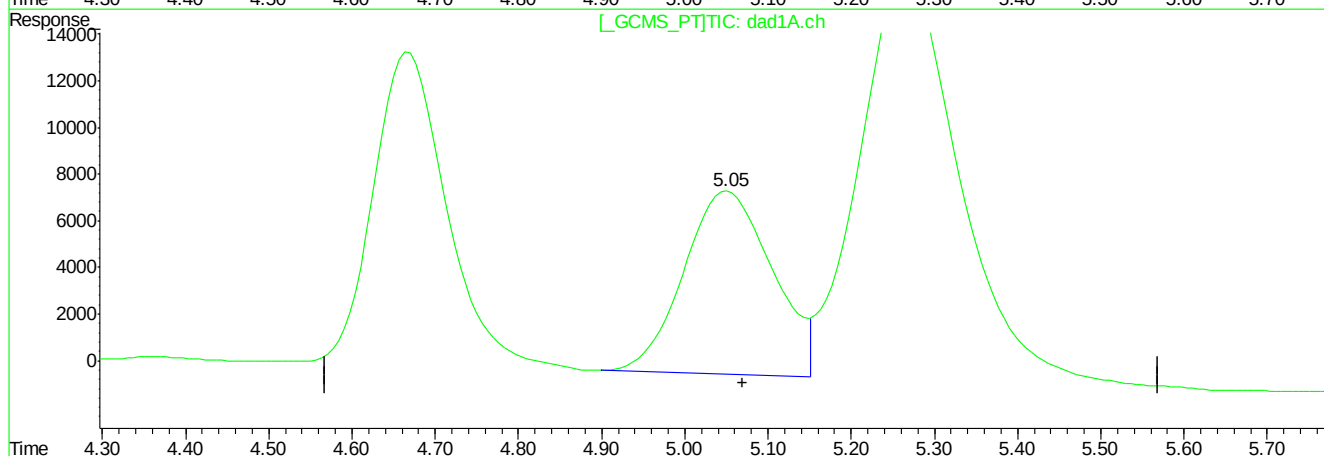
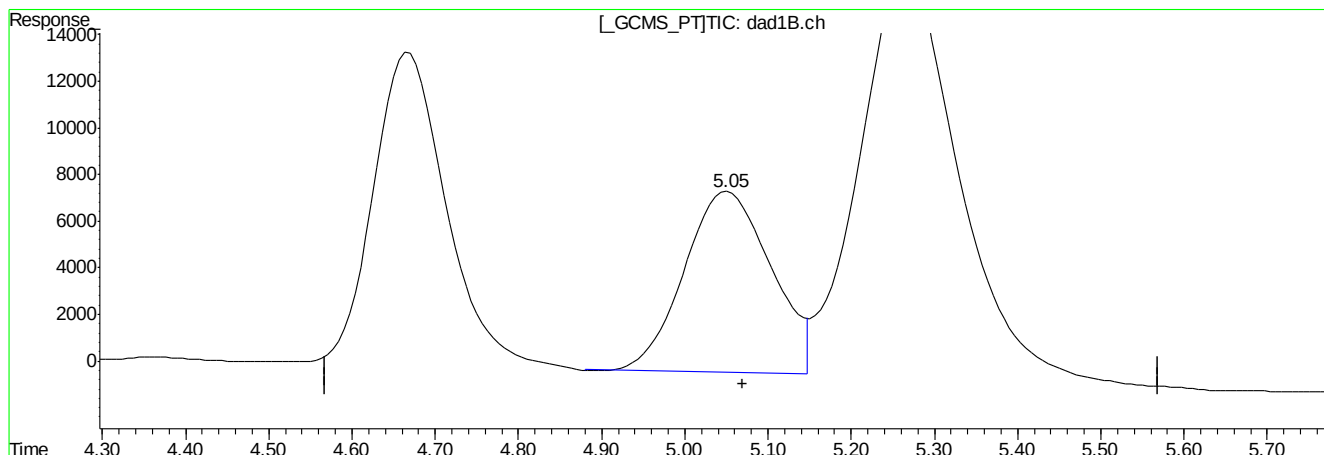
GG625701.D GGG3229_013023.M

Mon Jan 30 15:59:13 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(2) HMX

5.05min 202.440ppb m

response 563751

(2) HMX #2

5.05min 206.034ppb

response 577221

QEdit

(+) = Expected Retention Time

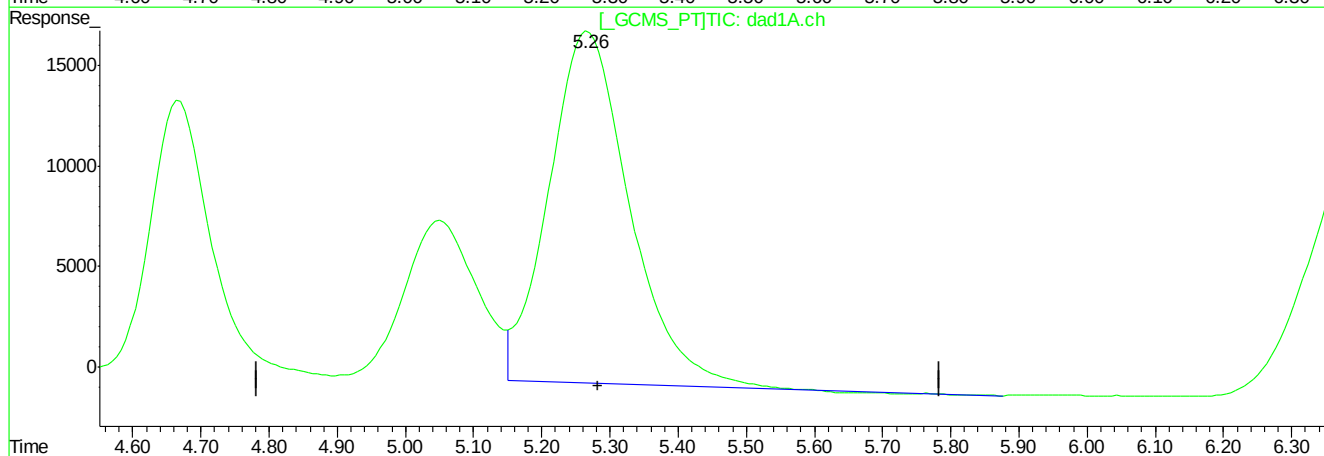
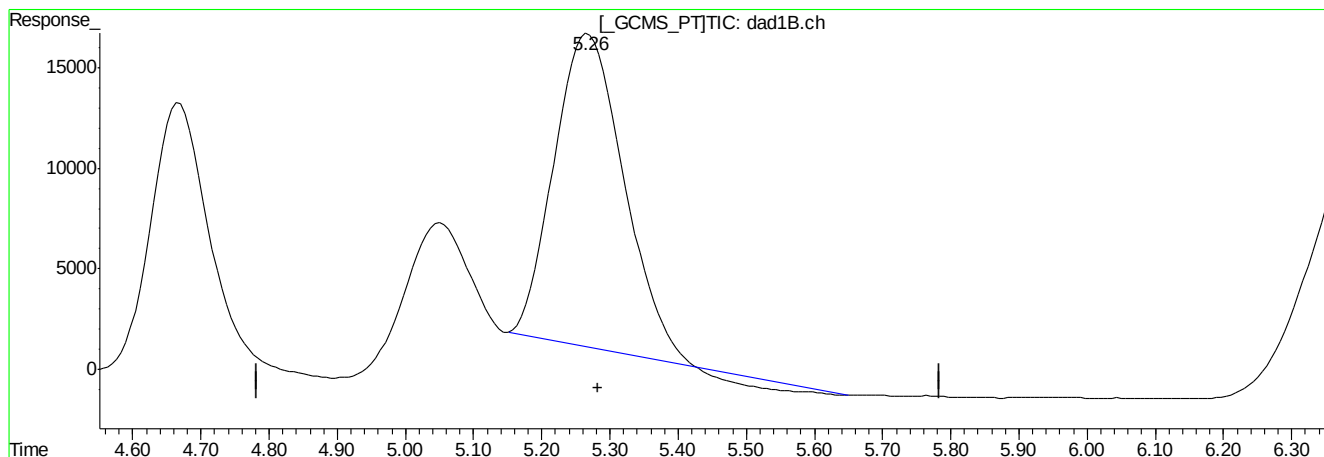
GG625701.D GGG3229_013023.M

Mon Jan 30 15:59:18 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.27min 142.096ppb

response 1084504

(3) DNX #2

5.27min 186.475ppb

response 1445114

(+) = Expected Retention Time

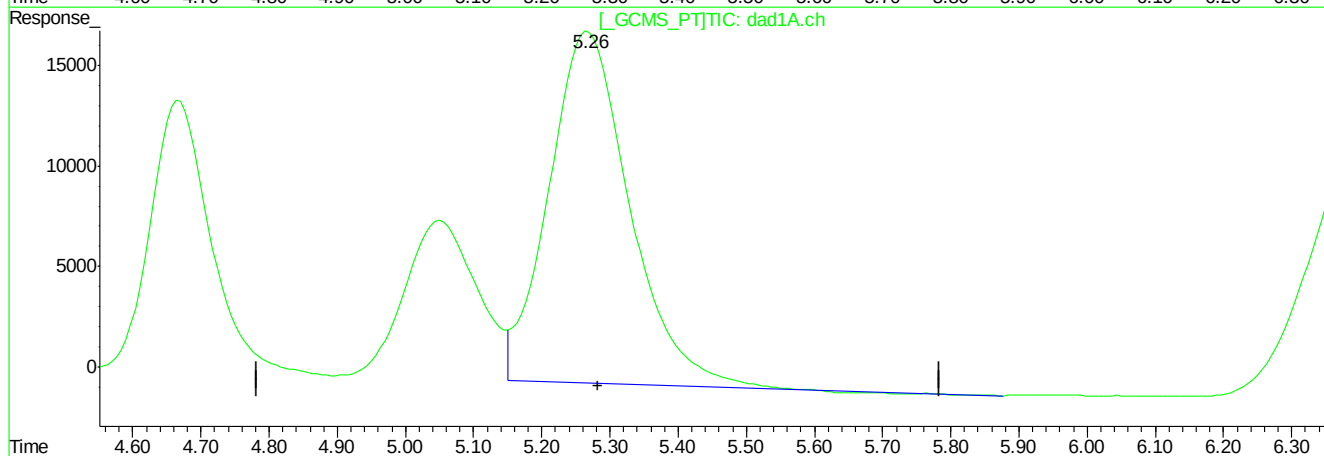
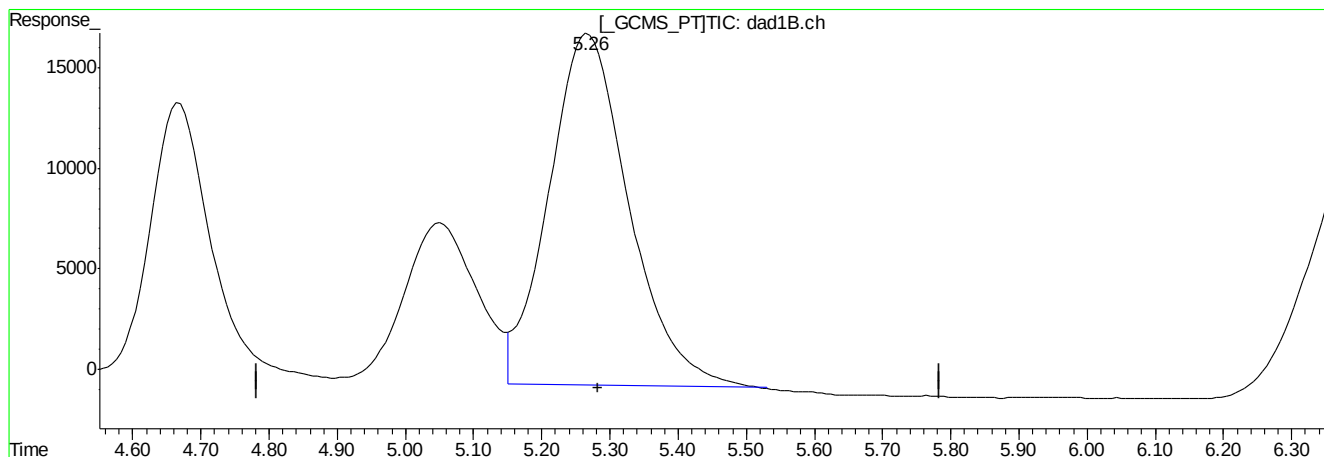
GG625701.D GGG3229_013023.M

Mon Jan 30 15:59:23 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.26min 186.715ppb m

response 1425046

(3) DNX #2

5.27min 186.475ppb

response 1445114

(+) = Expected Retention Time

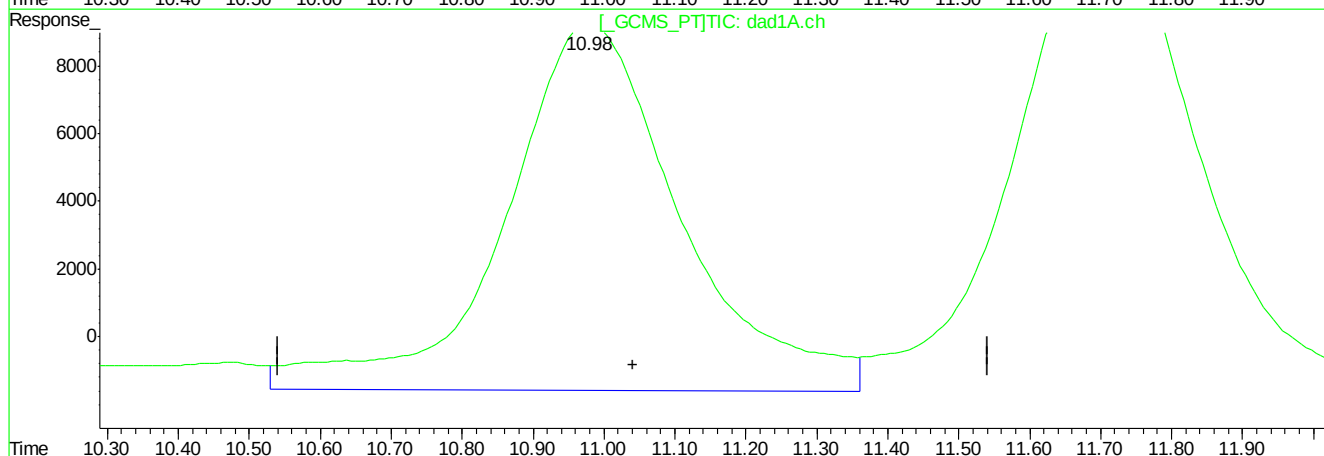
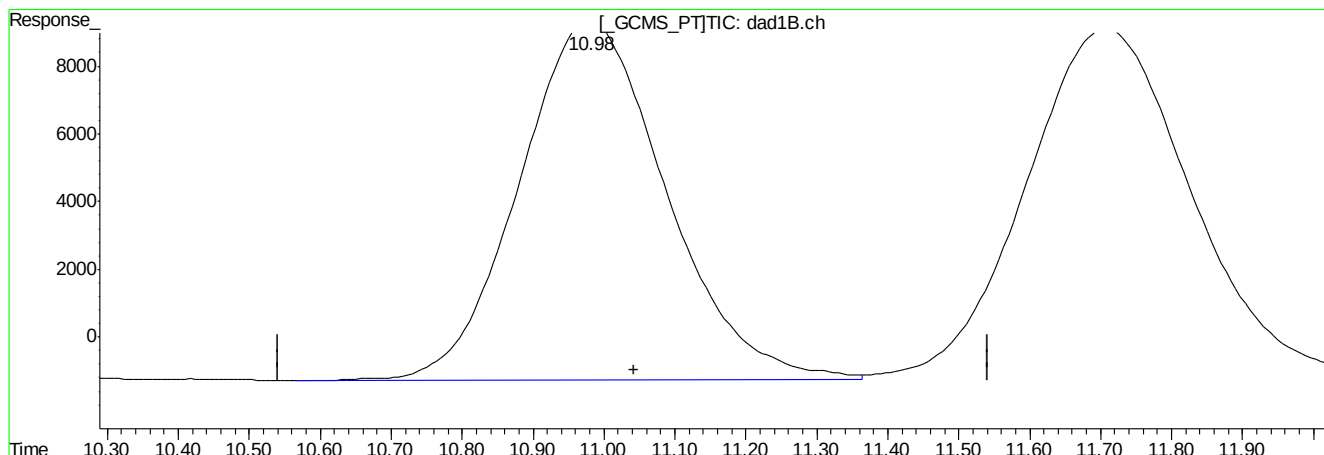
GG625701.D GGG3229_013023.M

Mon Jan 30 15:59:30 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene
10.98min 193.469ppb
response 1521784

(8) Nitrobenzene #2
10.98min 257.510ppb
response 1865077

(+) = Expected Retention Time

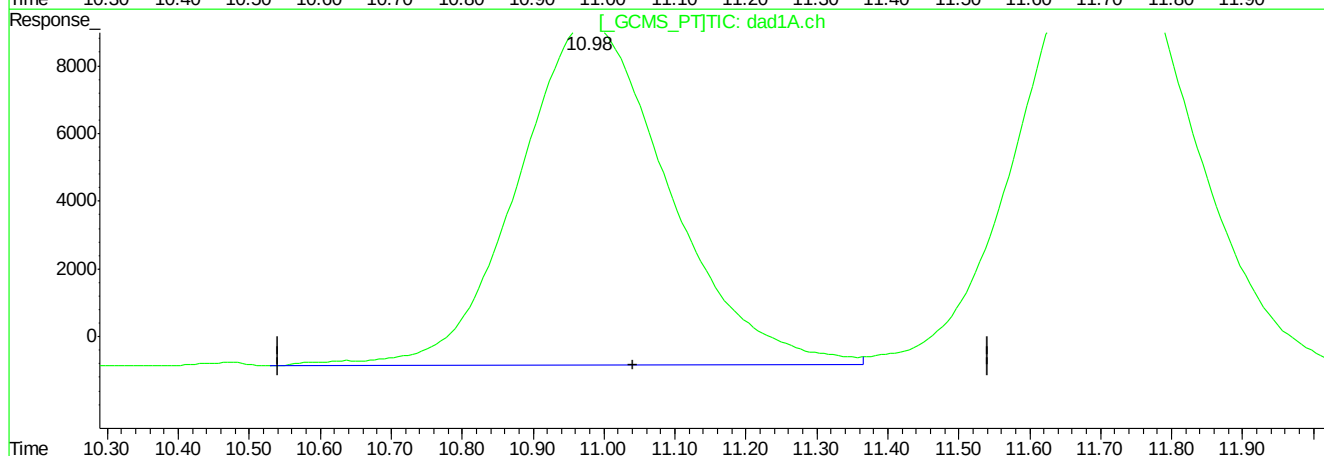
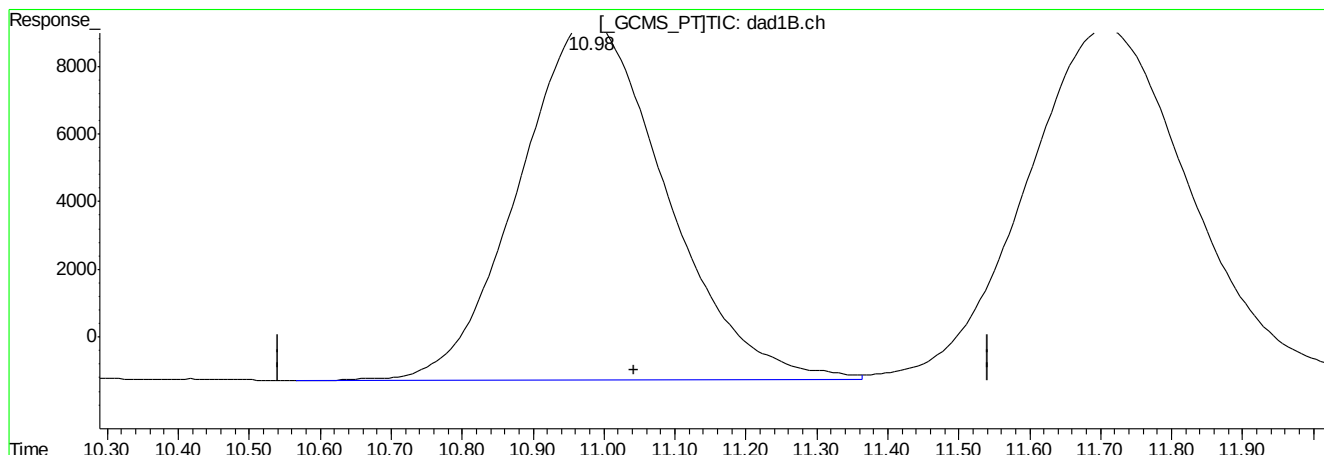
GG625701.D GGG3229_013023.M

Mon Jan 30 15:59:52 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(8) Nitrobenzene

10.98min 193.469ppb

response 1521784

(8) Nitrobenzene #2

10.98min 205.773ppb m

response 1490359

(+) = Expected Retention Time

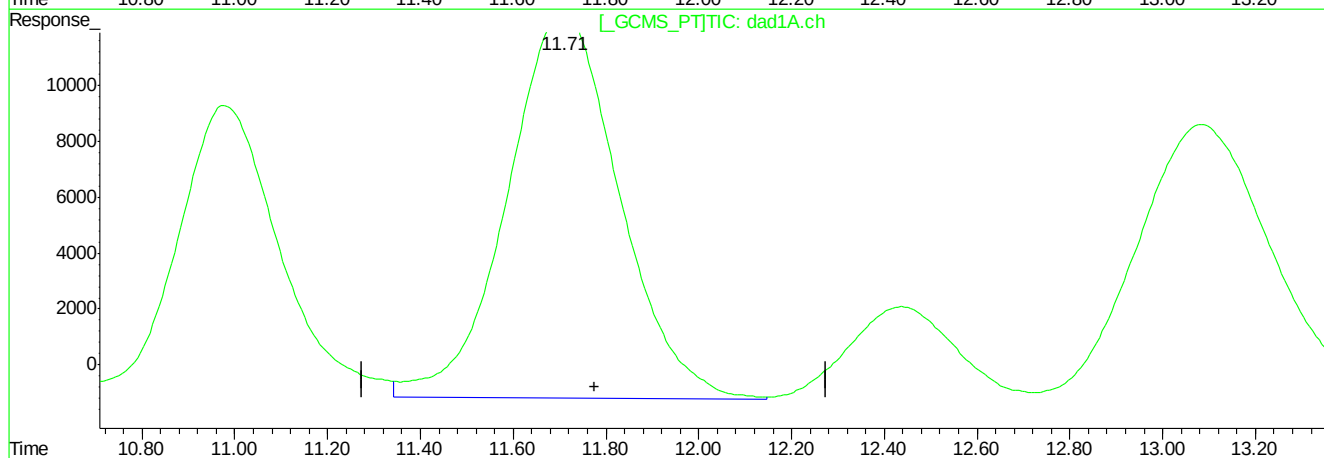
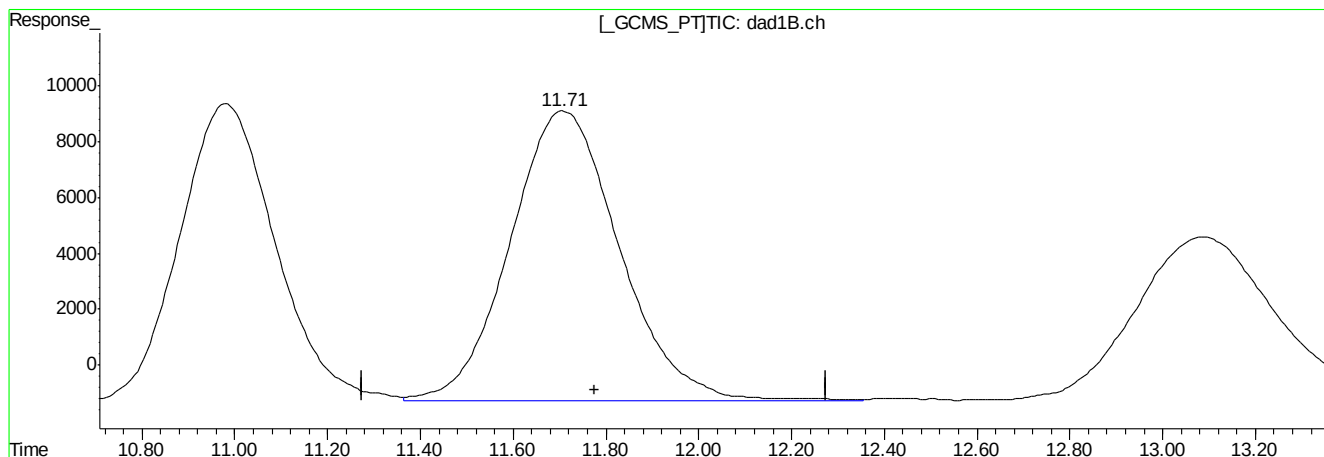
GG625701.D GGG3229_013023.M

Mon Jan 30 15:59:59 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(9) 2,4,6-Trinitrotoluene

11.71min 193.664ppb

response 1694405

(9) 2,4,6-Trinitrotoluene #2

11.71min 205.662ppb m

response 2300133

(+) = Expected Retention Time

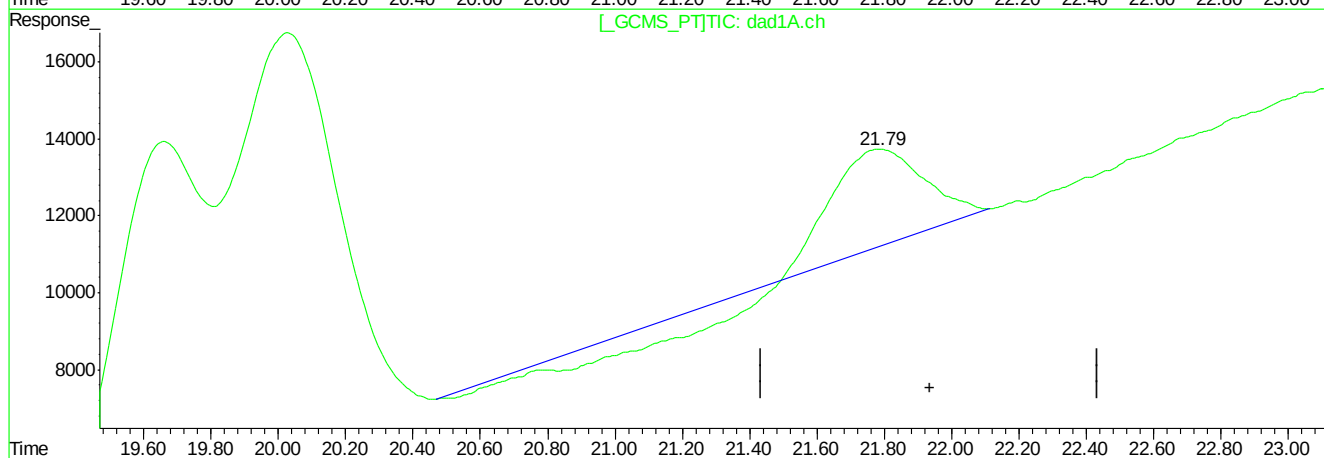
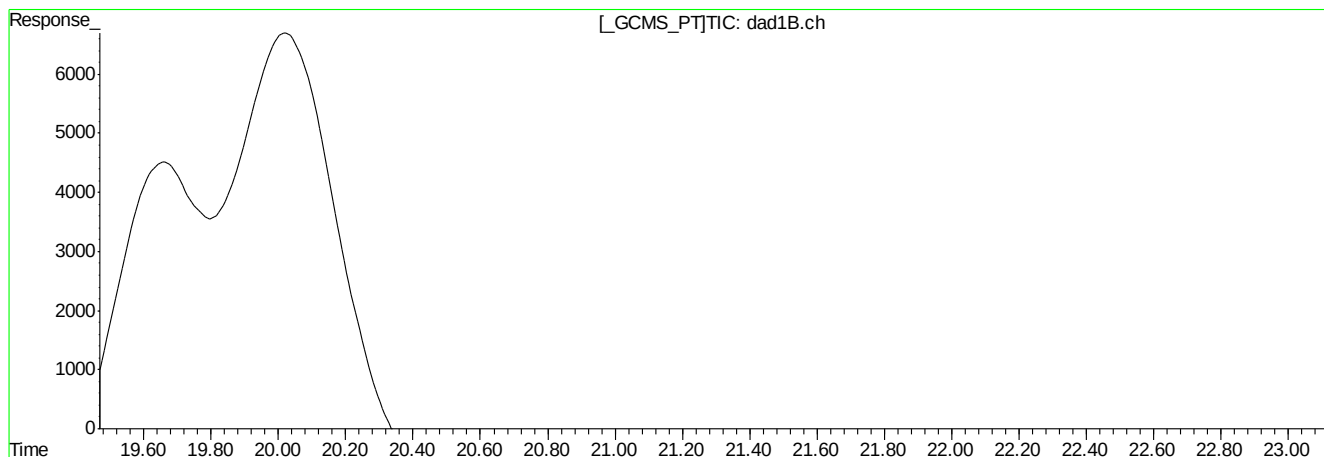
GG625701.D GGG3229_013023.M

Mon Jan 30 16:00:08 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

21.79min 90.217ppb

response 277534

(+) = Expected Retention Time

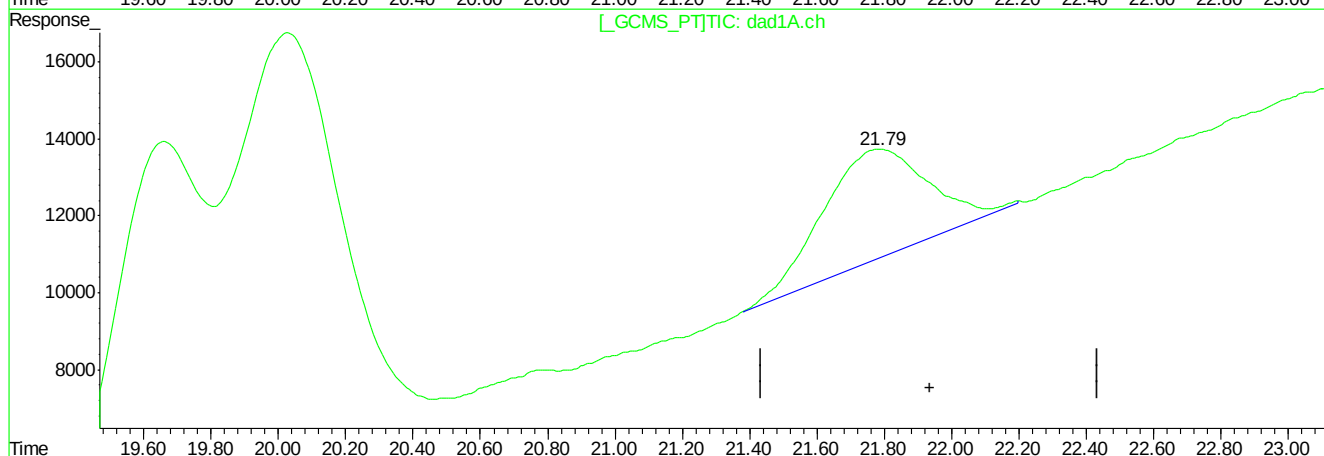
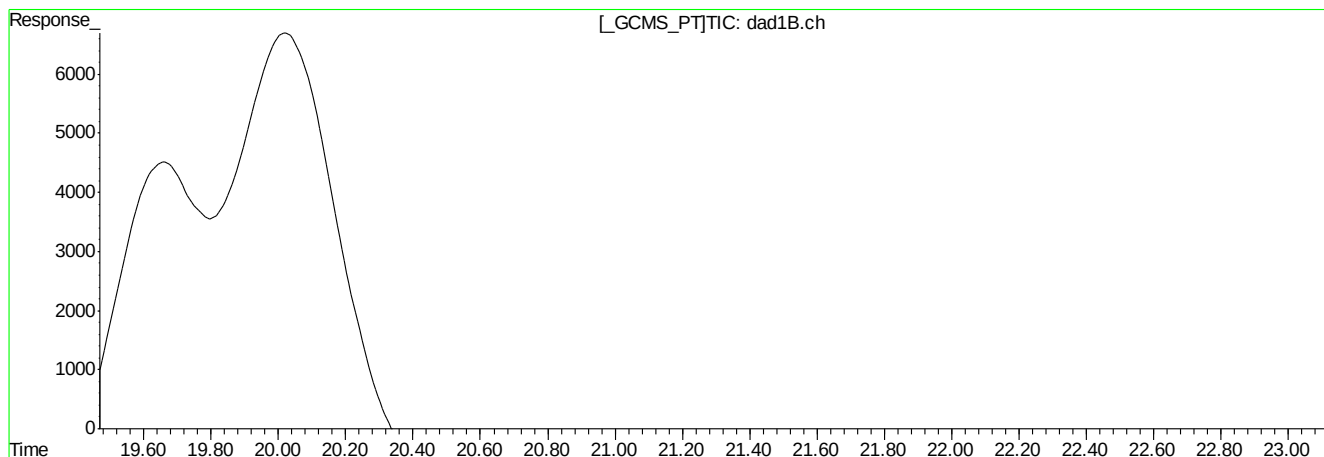
GG625701.D GGG3229_013023.M

Mon Jan 30 16:00:55 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625701.D\dad1A.ch
Acq On : 30-Jan-2023, 14:11:34 Operator: fouads
Sample : ic3229-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 14:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

21.79min 202.390ppb m

response 622611

(+) = Expected Retention Time

GG625701.D GGG3229_013023.M

Mon Jan 30 16:01:02 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1B.ch Vial: 7
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1A.ch
 Acq On : 30-Jan-2023, 14:45:35 Operator: fouads
 Sample : icc3229-1000 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 30 15:41:06 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Mon Jan 30 12:26:09 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

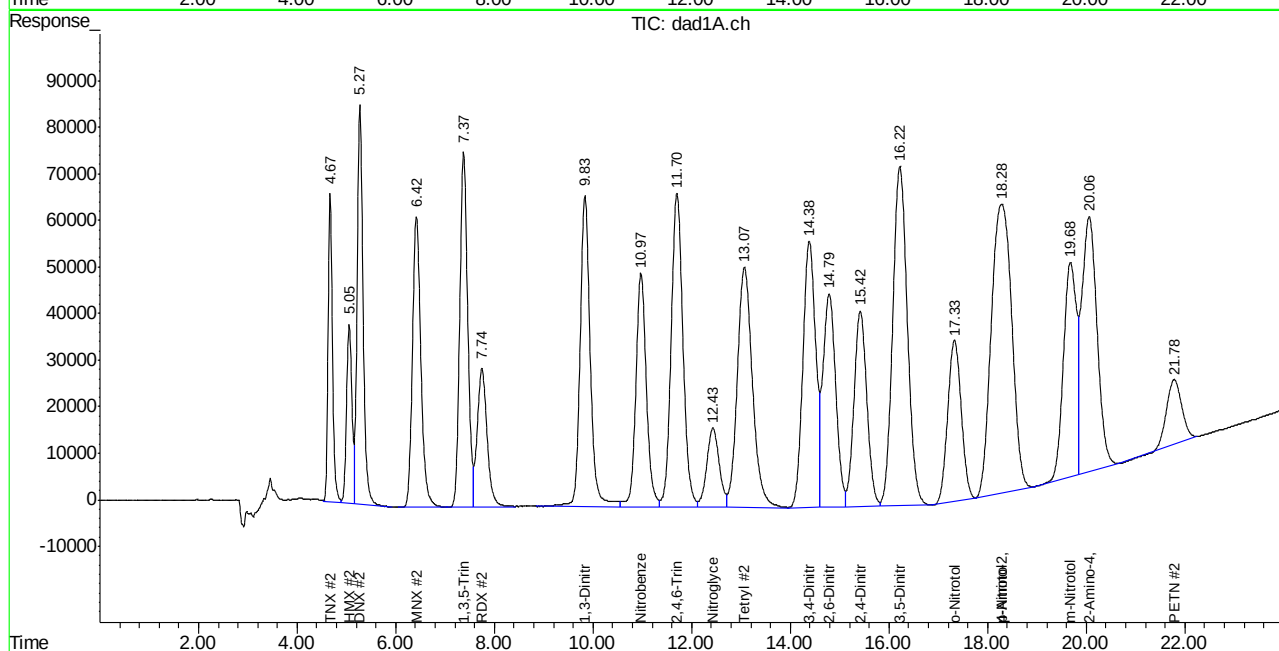
System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.39	14.39	5314003	10306693	1154.642	1126.119
Spiked Amount	500.000	Range	70 - 136	Recovery	= 230.93%#	225.22%#
Target Compounds						
1) TNX	4.67	4.67	3967262	4049026	448.899m	450.543
2) HMX	5.05	5.06	2752514	2885102	988.415m	1029.811
3) DNx	5.27	5.27	6940135	7154923	909.321m	923.259
4) MNX	6.42	6.42	7412537	7410832	1109.428	1109.197
5) 1,3,5-Trinitrobe	7.38	7.38	8591413	8592585	957.427	954.529
6) RDX	7.75	7.75	4114460	4113288	964.005	957.877
7) 1,3-Dinitrobenze	9.84	9.84	11777400	9537106	956.809	918.578
8) Nitrobenzene	10.97	10.97	7498260	7465508	953.275	1030.759
9) 2,4,6-Trinitroto	11.70	11.70	8294608	11157631	948.041	997.638
10) Nitroglycerin	0.00	12.43	0	2999623	N.D.	1032.677 #
11) Tetryl	13.07	13.07	6288775	11014909	913.076	960.182
13) 2,6-Dinitrotolue	14.79	14.79	5763065	8314754	870.060	871.912
14) 2,4-Dinitrotolue	15.42	15.42	10688271	7611820	945.878	980.573
15) 3,5-Dinitroanili	16.22	16.22	9075002	15014852	962.853	969.944
16) o-Nitrotoluene	17.33	17.33	4675981	6615082	907.143	918.420
17) p-Nitrotoluene	18.32	18.29	9827110	17873468	1937.647	2043.979
18) 4-Amino-2,6-Dini	18.32	18.29	9827110	17873468	1975.123	2056.438
19) m-Nitrotoluene	19.68	19.68	4819455	8441600	956.841	1068.594
20) 2-Amino-4,6-Dini	20.06	20.06	8209228	11965936	988.147	1041.089
21) PETN	0.00	21.79	0	2984607	N.D.	970.197 #

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625702.D GGG3229_013023.M Tue Jan 31 11:32:16 2023

9.5.19

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul



Manual Integration Approval Summary

Sample Number: GGG3229-ICC3229

Method: SW846 8330B

Lab FileID: GG625702.D

Analyst approved: 01/31/23 11:38 Fouad Sekkar

Injection Time: 01/30/23 14:45

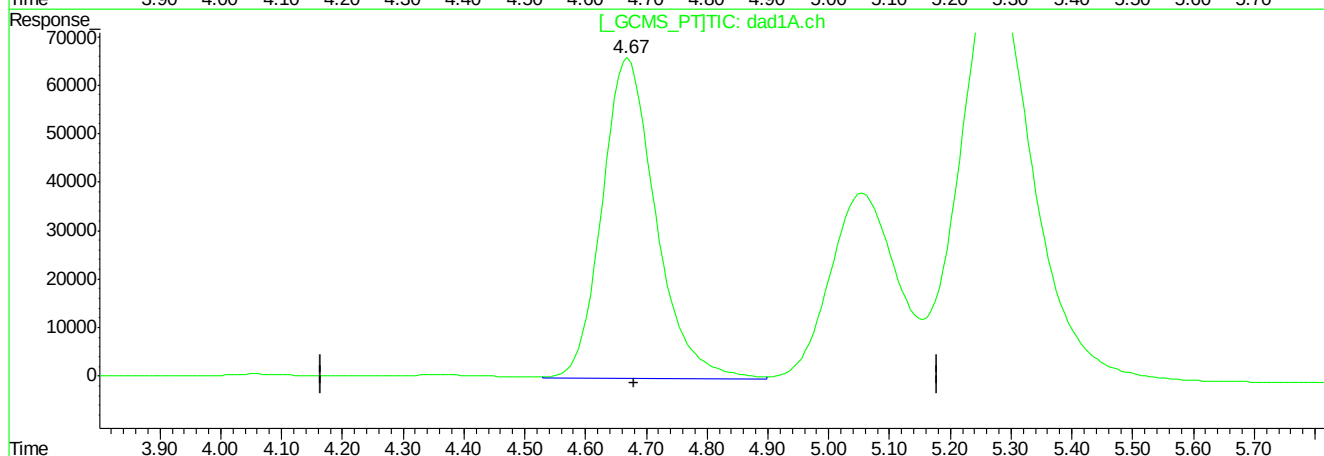
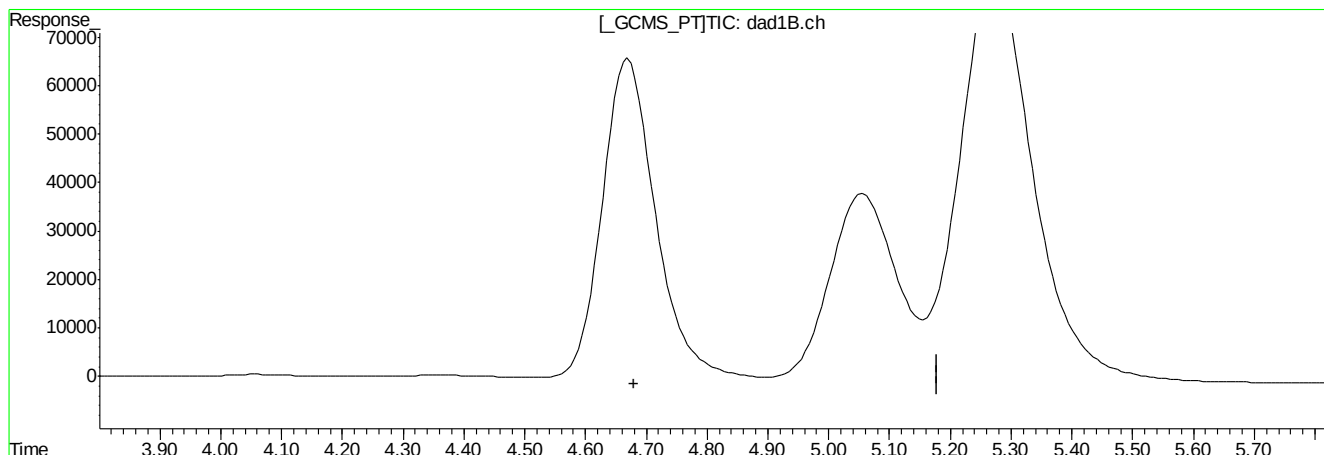
Supervisor approved: 01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.67	Missed peak
HMX	2691-41-0	1	5.05	Poor instrument integration
DNX		1	5.27	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1A.ch
Acq On : 30-Jan-2023, 14:45:35 Operator: fouads
Sample : icc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:41 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.67min 450.543ppb

response 4049026

(+) = Expected Retention Time

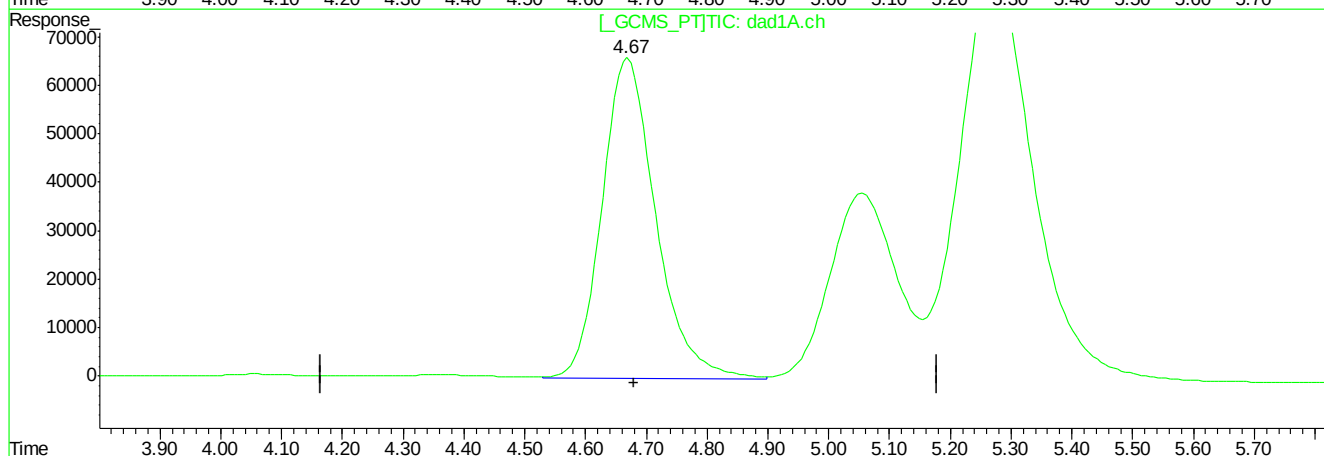
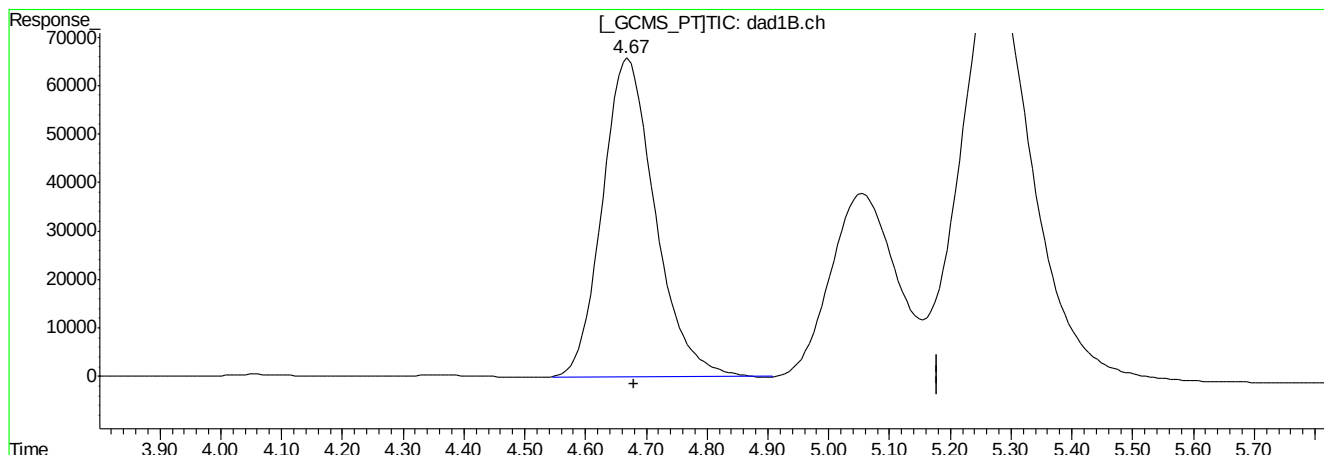
GG625702.D GGG3229_013023.M

Mon Jan 30 16:01:20 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1A.ch
Acq On : 30-Jan-2023, 14:45:35 Operator: fouads
Sample : icc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:41 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

4.67min 448.899ppb m

response 3967262

(1) TNX #2

4.67min 450.543ppb

response 4049026

(+) = Expected Retention Time

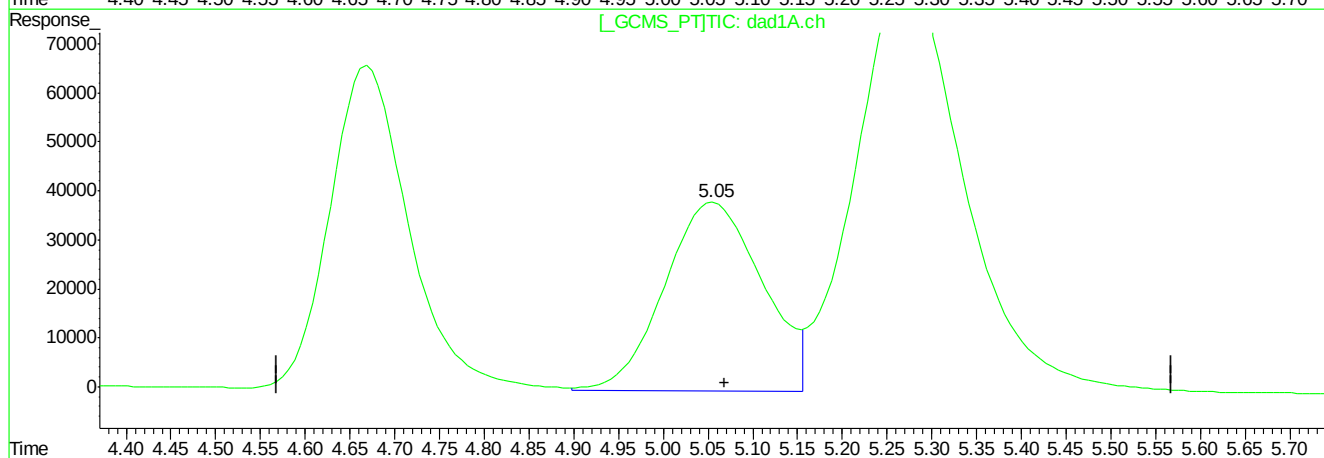
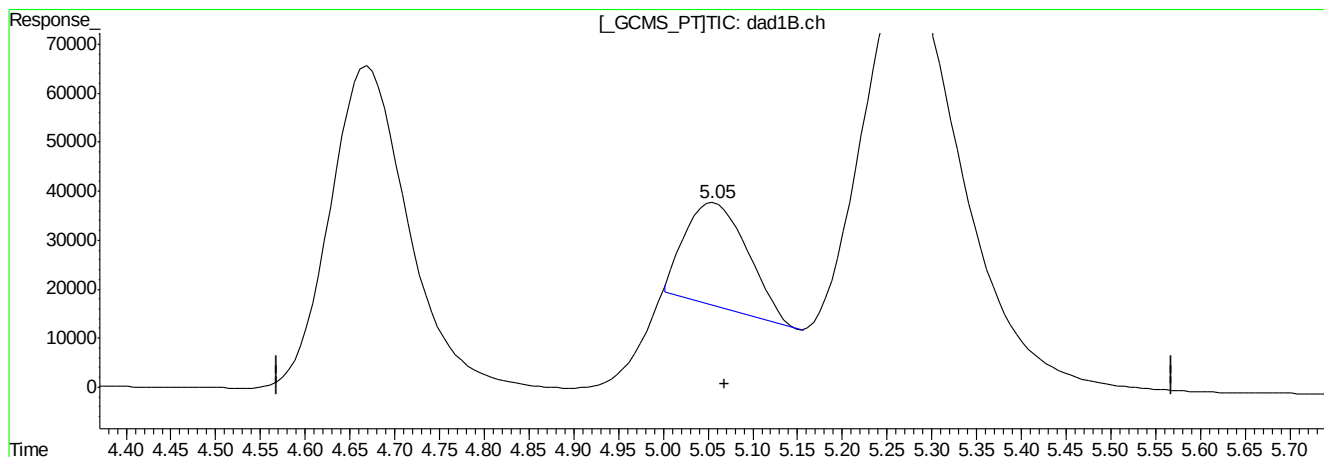
GG625702.D GGG3229_013023.M

Mon Jan 30 16:01:26 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1A.ch
Acq On : 30-Jan-2023, 14:45:35 Operator: fouads
Sample : icc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:41 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 368.191ppb

response 1025329

(2) HMX #2

5.06min 1029.811ppb

response 2885102

(+) = Expected Retention Time

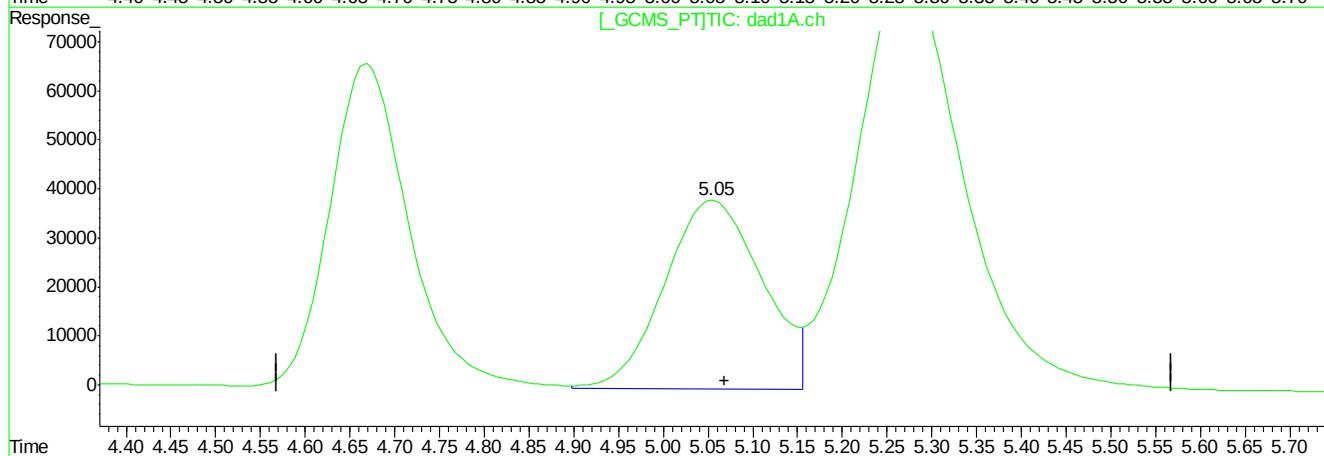
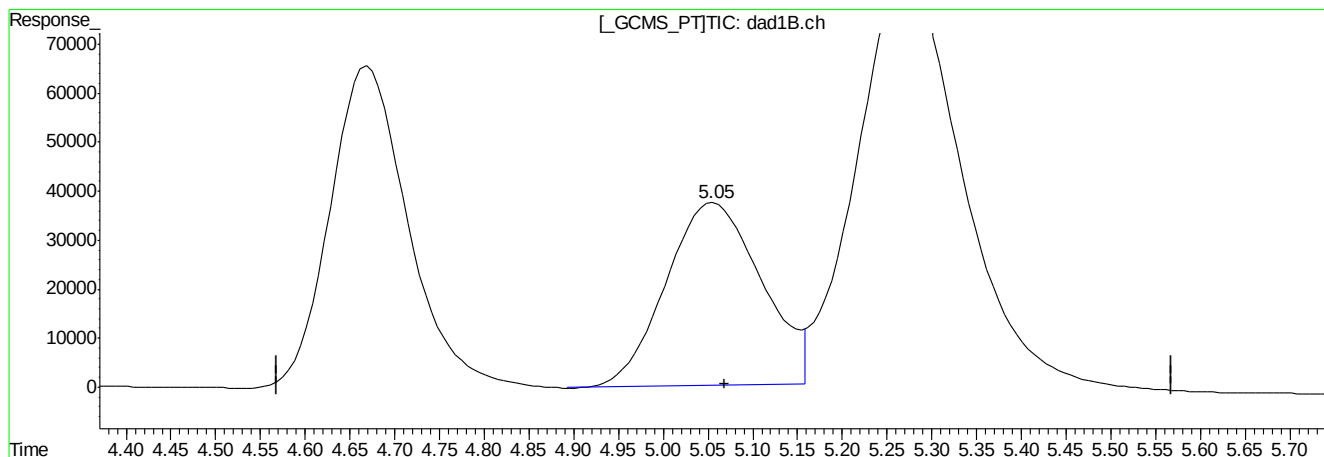
GG625702.D GGG3229_013023.M

Mon Jan 30 16:01:31 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1A.ch
Acq On : 30-Jan-2023, 14:45:35 Operator: fouads
Sample : icc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:41 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.05min 988.415ppb m

response 2752514

(2) HMX #2

5.06min 1029.811ppb

response 2885102

(+) = Expected Retention Time

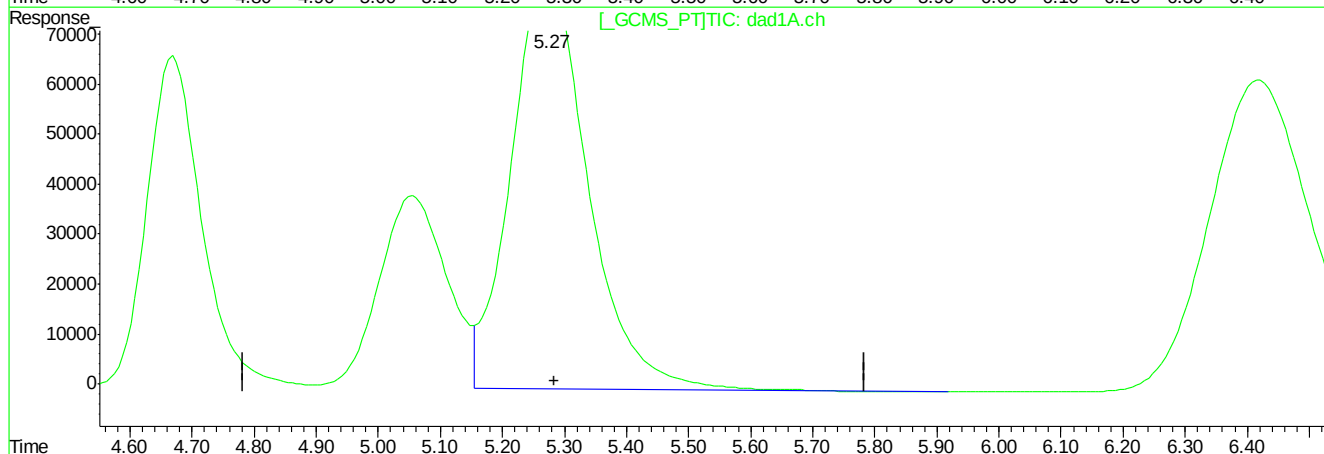
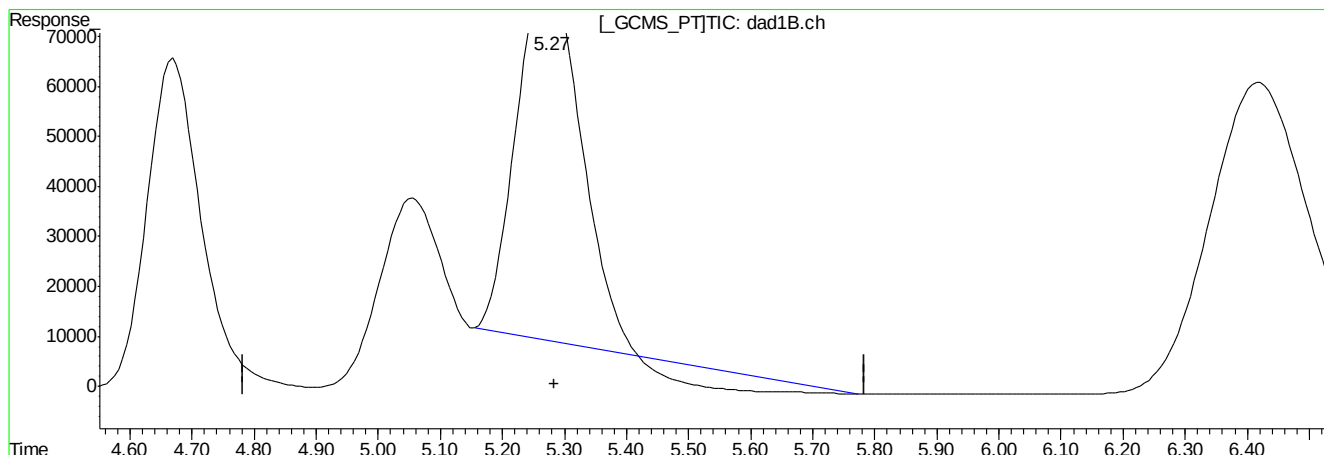
GG625702.D GGG3229_013023.M

Mon Jan 30 16:01:37 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1A.ch
Acq On : 30-Jan-2023, 14:45:35 Operator: fouads
Sample : icc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:41 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.27min 636.301ppb

response 4856389

(3) DNX #2

5.27min 923.259ppb

response 7154923

(+) = Expected Retention Time

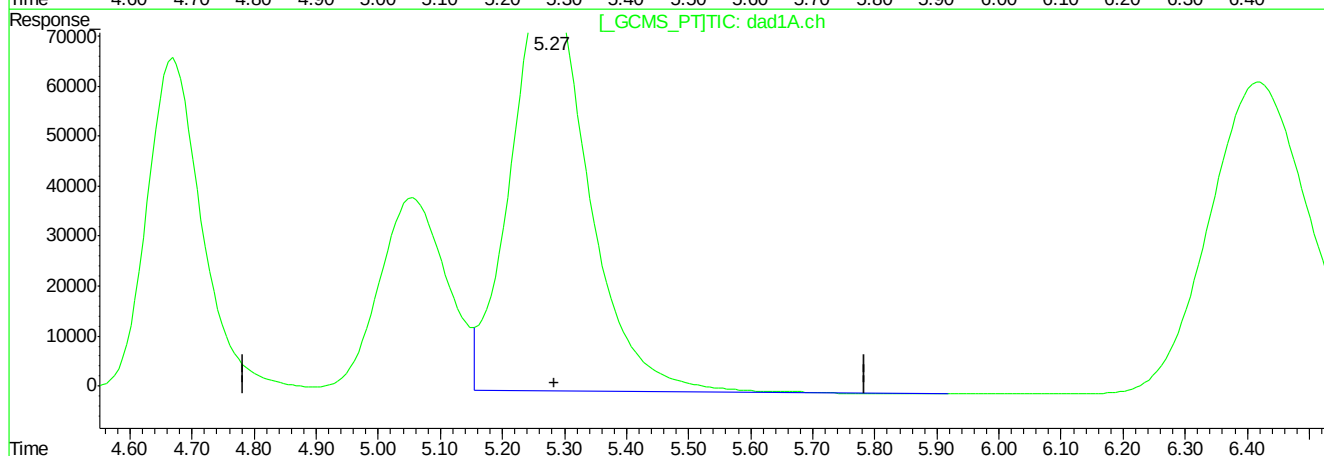
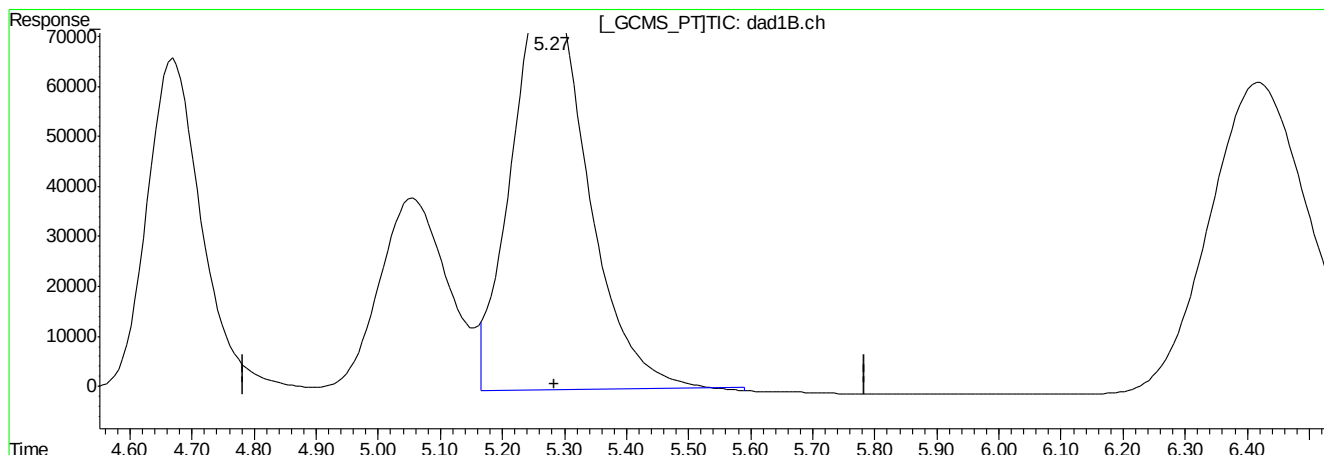
GG625702.D GGG3229_013023.M

Mon Jan 30 16:01:43 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625702.D\dad1A.ch
Acq On : 30-Jan-2023, 14:45:35 Operator: fouads
Sample : icc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 15:41 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.27min 909.321ppb m

response 6940135

(3) DNX #2

5.27min 923.259ppb

response 7154923

(+) = Expected Retention Time

GG625702.D GGG3229_013023.M

Mon Jan 30 16:01:50 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1B.ch Vial: 8
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1A.ch
 Acq On : 30-Jan-2023, 15:17:00 Operator: fouads
 Sample : ic3229-2500 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 30 16:03:09 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Mon Jan 30 12:26:09 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb
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System Monitoring Compounds

12) S	3,4-Dinitrotolue	14.41	14.41	13162219	25765453	2859.925	2815.158
Spiked Amount		500.000	Range	70 - 136	Recovery	= 571.99%#	563.03%#

Target Compounds

1)	TNX	4.67	4.67	9885163	9929833	1118.516m	1104.913
2)	HMX	5.06	5.06	6846729	7118408	2458.628m	2540.852
3)	DNX	5.27	5.28	17446026	17584670	2285.841m	2269.097
4)	MNX	6.42	6.42	18225388	18221169	2727.777	2727.207
5)	1,3,5-Trinitrobe	7.38	7.38	21131599	21141603	2354.906	2348.569
6)	RDX	7.76	7.76	10037502	10088396	2351.755	2349.323
7)	1,3-Dinitrobenze	9.85	9.85	29080440	22615795	2362.527	2178.267
8)	Nitrobenzene	11.00	11.00	18579564	17764759	2362.072	2452.772
9)	2,4,6-Trinitroto	11.72	11.72	20498201	27300487	2342.863	2441.020
10)	Nitroglycerin	12.40	12.45	174388	7317200	NoCal	2519.083 #
11)	Tetryl	13.11	13.11	15789665	27524526	2292.524	2399.344
13)	2,6-Dinitrotolue	14.82	14.82	14189103	20817908	2142.154	2183.033
14)	2,4-Dinitrotolue	15.45	15.45	26442268	18915705	2340.056	2436.768
15)	3,5-Dinitroanili	16.27	16.27	22426713	37403744	2379.463	2416.243
16)	o-Nitrotoluene	17.34	17.34	11678344	17144239	2265.606	2380.259
17)	p-Nitrotoluene	18.33	18.31	24328868	44808508	4797.011	5124.224
18)	4-Amino-2,6-Dini	18.33	18.31	24328868	44808508	4889.791	5155.458
19)	m-Nitrotoluene	19.67	19.67	11938013	20705297	2370.138	2621.016
20)	2-Amino-4,6-Dini	20.05	20.05	20233898	29121207	2435.561	2533.673
21)	PETN	21.74	21.73	120342	7375931	NoCal	2397.670 #

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625703.D GGG3229_013023.M Tue Jan 31 11:32:17 2023

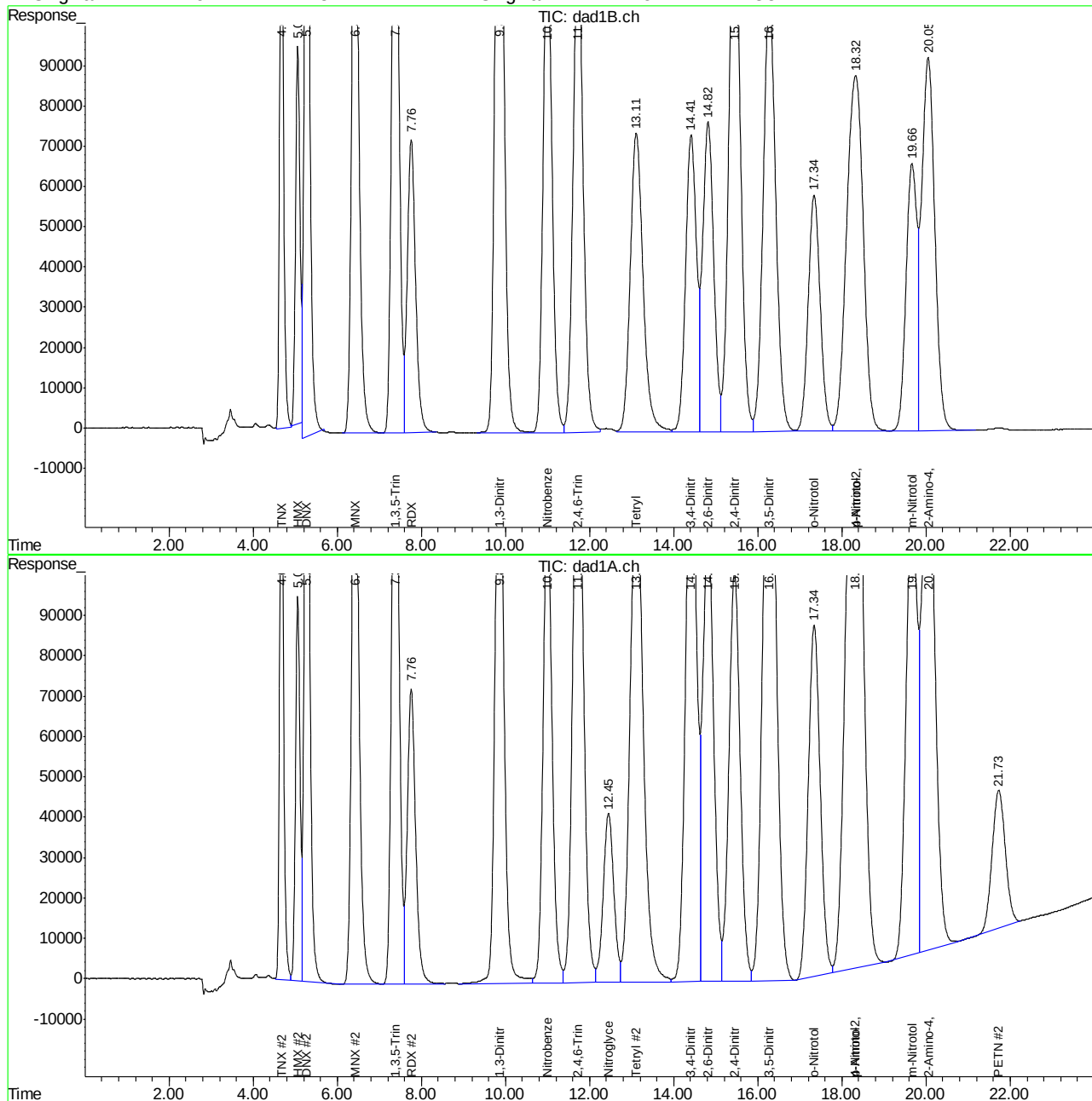
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1A.ch
Acq On : 30-Jan-2023, 15:17:00 Operator: fouads
Sample : ic3229-2500 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 16:03 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number:

GGG3229-IC3229

Method:

SW846 8330B

Lab FileID:

GG625703.D

Analyst approved:

01/31/23 11:38 Fouad Sekkar

Injection Time:

01/30/23 15:17

Supervisor approved:

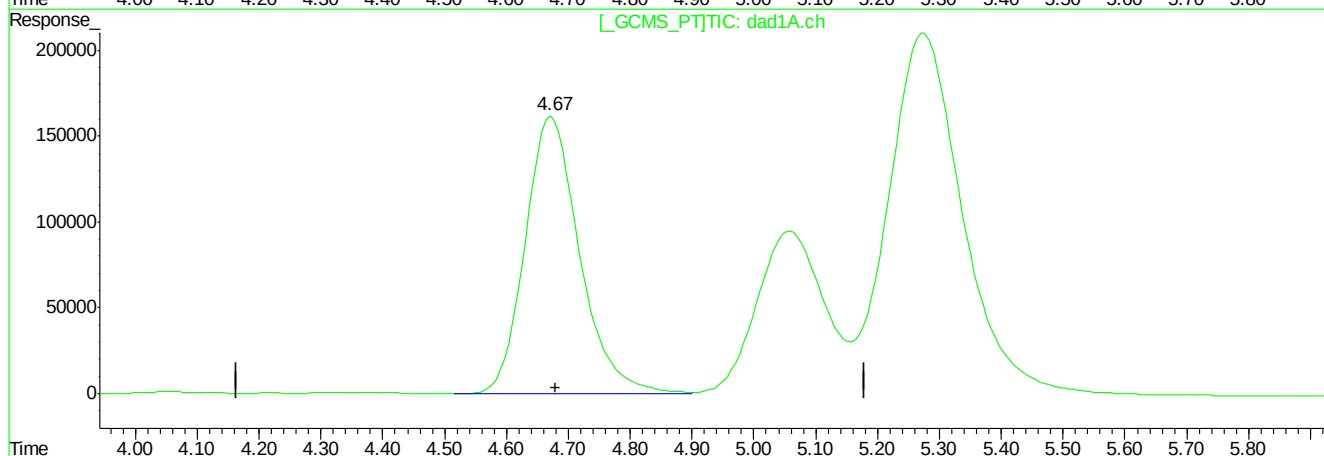
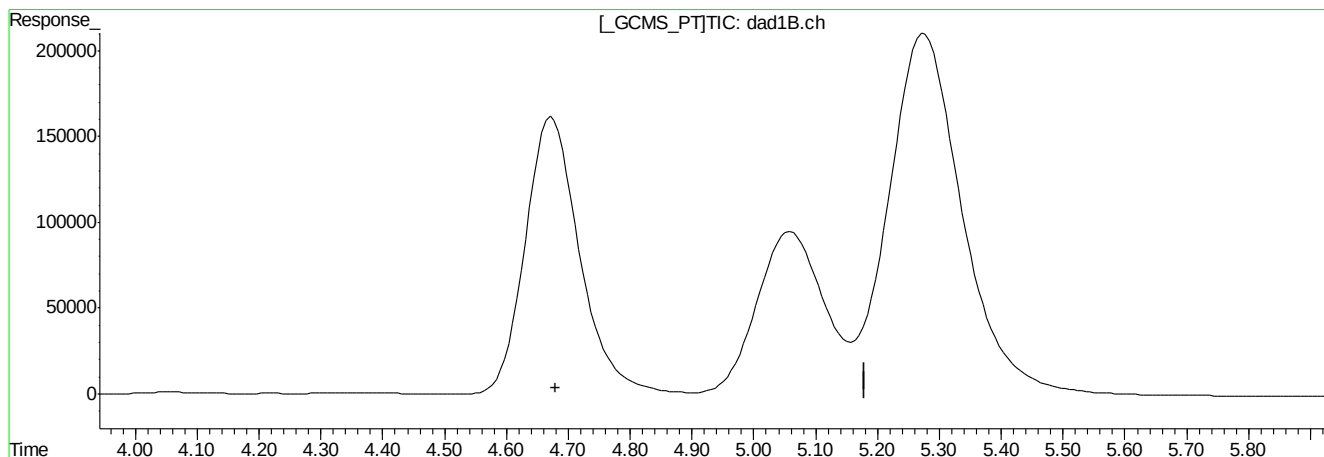
01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.67	Missed peak
HMX	2691-41-0	1	5.06	Poor instrument integration
DNX		1	5.27	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1A.ch
Acq On : 30-Jan-2023, 15:17:00 Operator: fouads
Sample : ic3229-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 16:03 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.67min 1104.913ppb

response 9929833

QEdit

(+) = Expected Retention Time

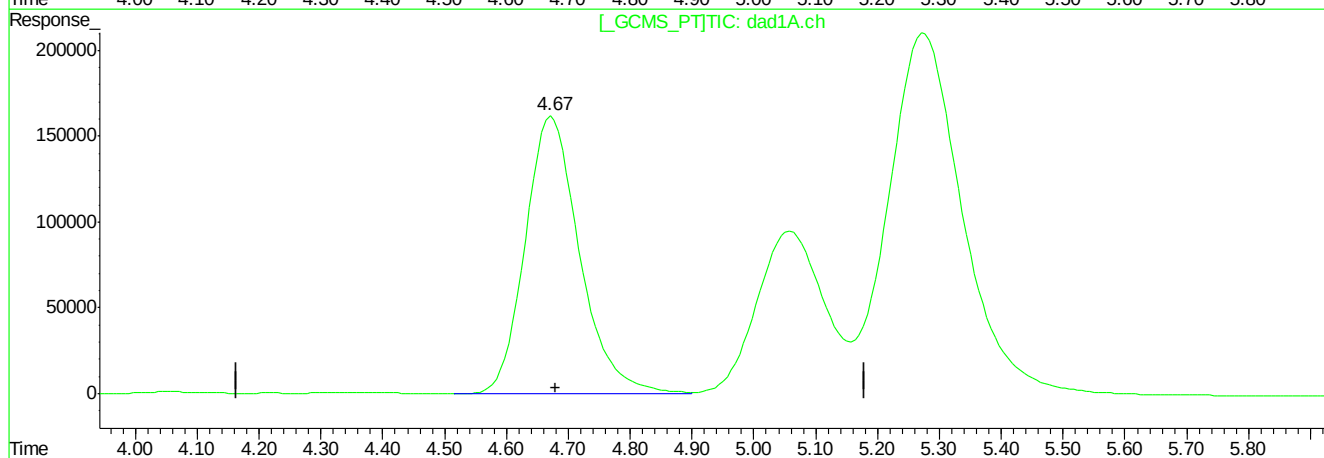
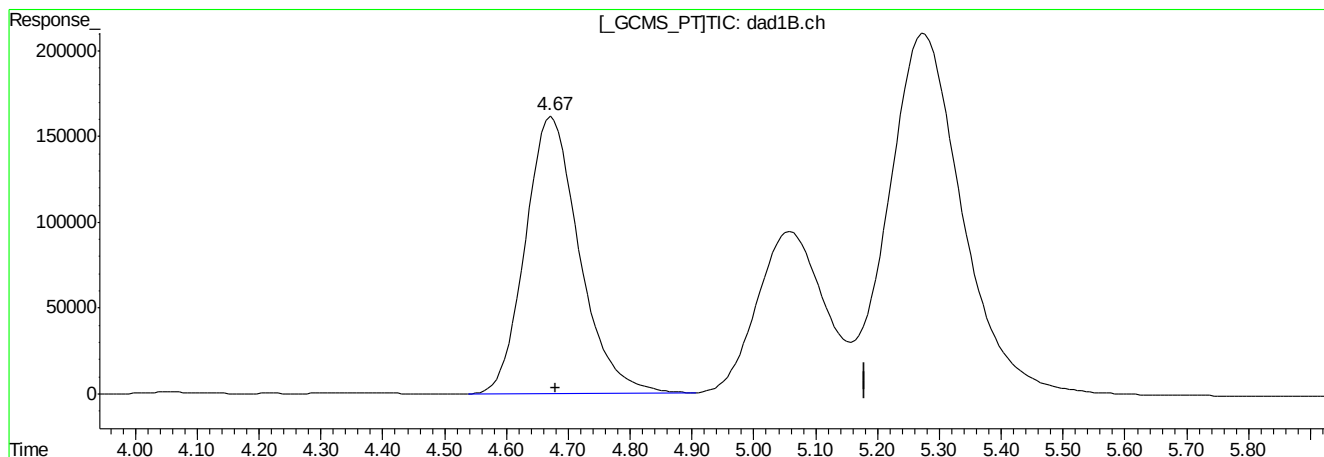
GG625703.D GGG3229_013023.M

Mon Jan 30 16:03:17 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1A.ch
Acq On : 30-Jan-2023, 15:17:00 Operator: fouads
Sample : ic3229-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 16:03 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

4.67min 1118.516ppb m

response 9885163

(1) TNX #2

4.67min 1104.913ppb

response 9929833

(+) = Expected Retention Time

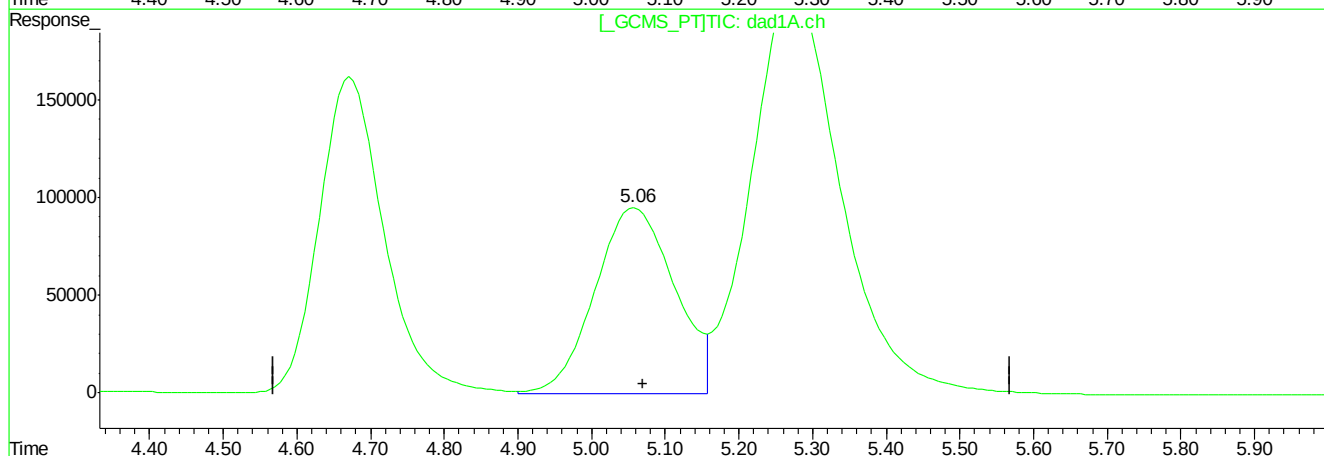
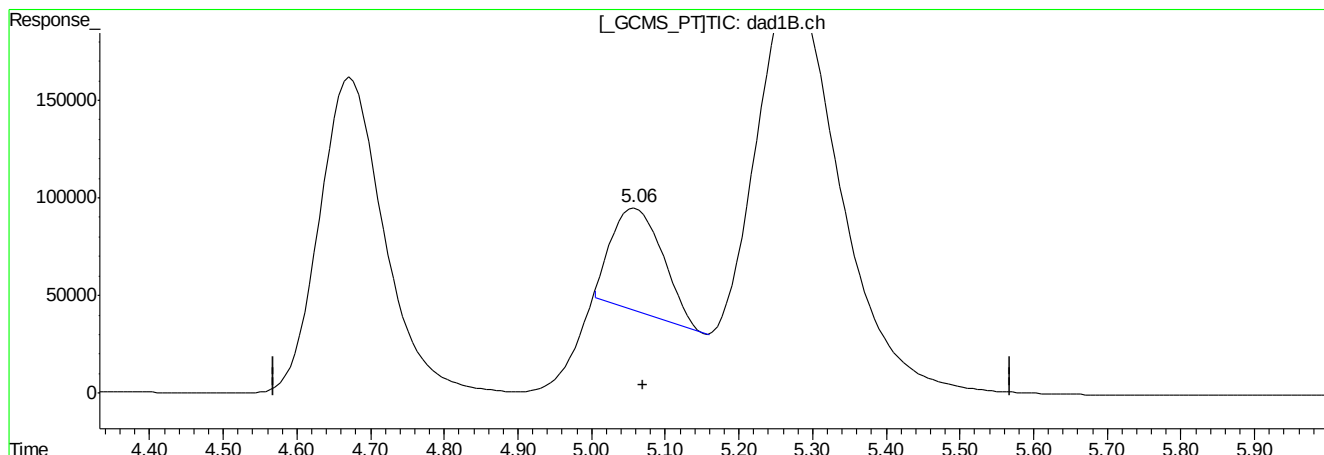
GG625703.D GGG3229_013023.M

Mon Jan 30 16:03:23 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1A.ch
Acq On : 30-Jan-2023, 15:17:00 Operator: fouads
Sample : ic3229-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 16:03 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 923.821ppb

response 2572636

(2) HMX #2

5.06min 2540.852ppb

response 7118408

(+) = Expected Retention Time

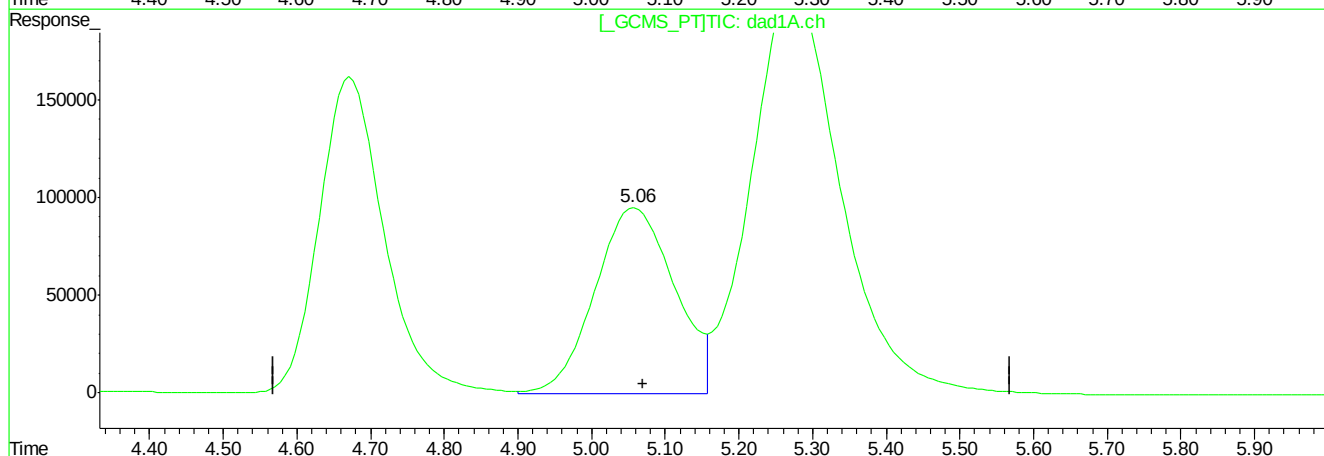
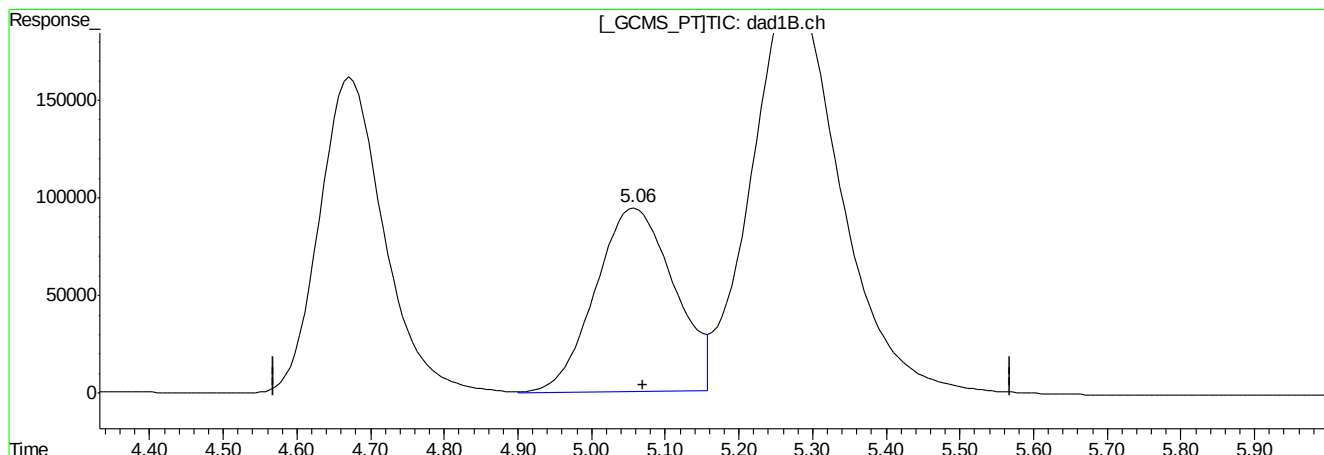
GG625703.D GGG3229_013023.M

Mon Jan 30 16:03:29 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1A.ch
Acq On : 30-Jan-2023, 15:17:00 Operator: fouads
Sample : ic3229-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 16:03 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 2458.628ppb m

response 6846729

(2) HMX #2

5.06min 2540.852ppb

response 7118408

(+) = Expected Retention Time

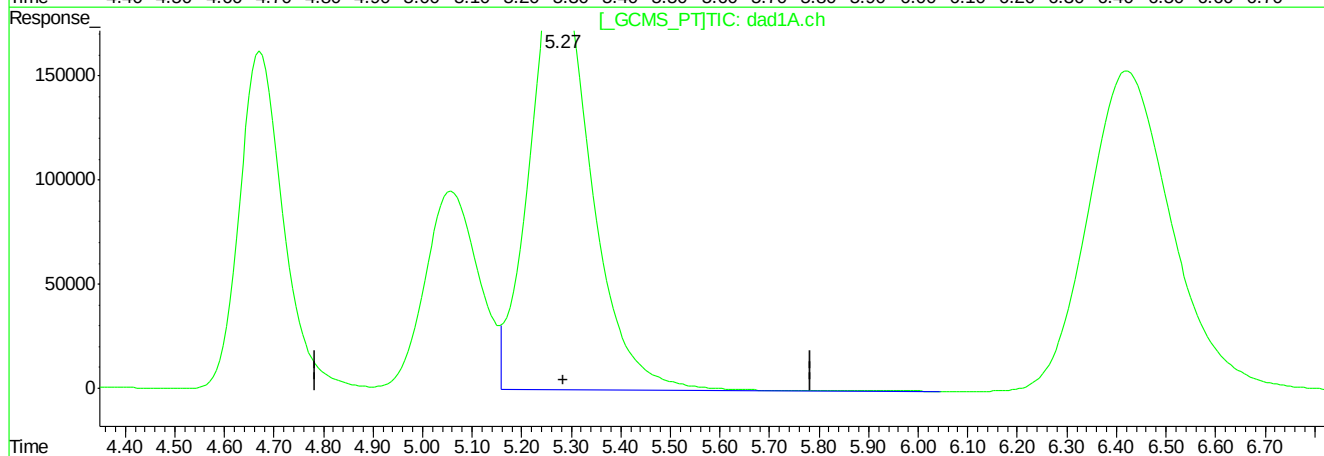
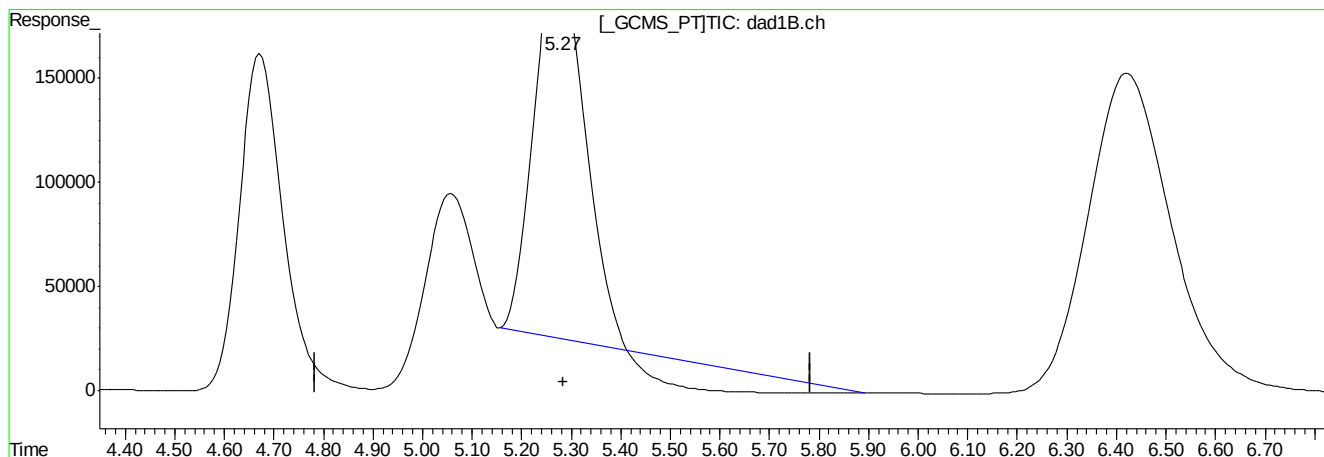
GG625703.D GGG3229_013023.M

Mon Jan 30 16:03:34 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1A.ch
Acq On : 30-Jan-2023, 15:17:00 Operator: fouads
Sample : ic3229-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 16:03 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.28min 1419.292ppb

response 10832341

(3) DNX #2

5.28min 2269.097ppb

response 17584670

(+) = Expected Retention Time

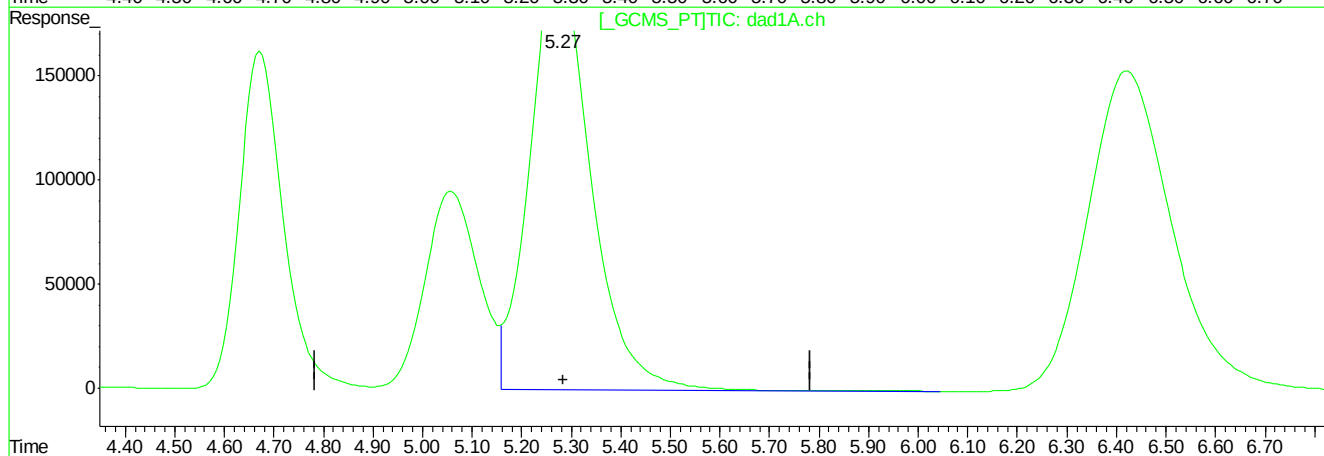
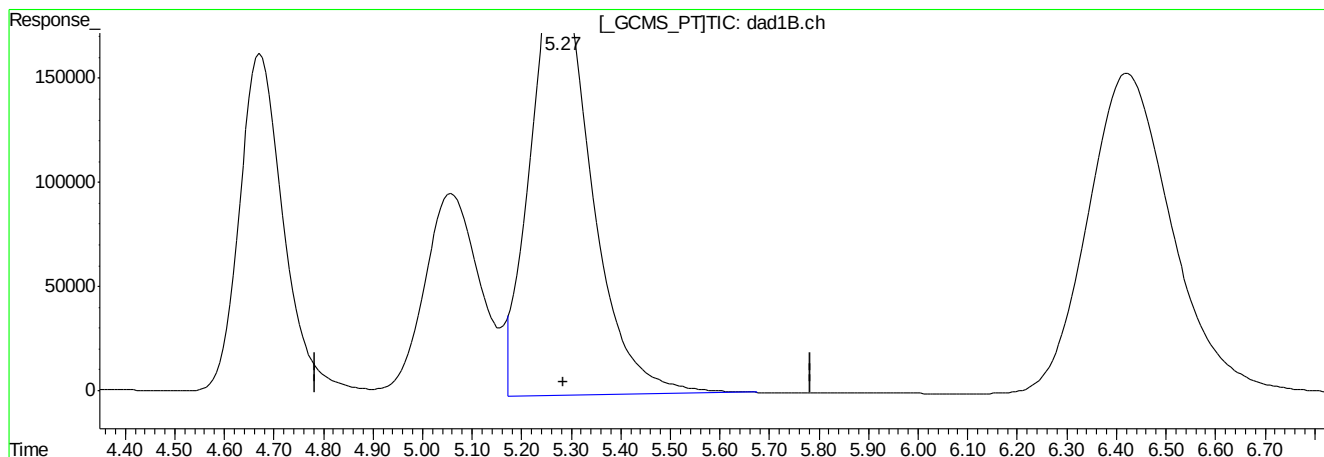
GG625703.D GGG3229_013023.M

Mon Jan 30 16:03:40 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625703.D\dad1A.ch
Acq On : 30-Jan-2023, 15:17:00 Operator: fouads
Sample : ic3229-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 30 16:03 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(3) DNX

5.27min 2285.841ppb m

response 17446026

(3) DNX #2

5.28min 2269.097ppb

response 17584670

(+) = Expected Retention Time

GG625703.D GGG3229_013023.M

Mon Jan 30 16:03:47 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1B.ch Vial: 9
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1A.ch
 Acq On : 30-Jan-2023, 15:48:27 Operator: fouads
 Sample : ic3229-50000 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 08:24:13 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Mon Jan 30 12:26:09 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.43	14.43	26446434	51031863	5746.359	5575.790
Spiked Amount	500.000	Range	70 - 136	Recovery	= 1149.27%#	1115.16%#
Target Compounds						
1) TNX	4.67	4.67	20101494	19926520	2274.503m	2217.265
2) HMX	5.06	5.06	14112872	14295711	5067.866m	5102.725
3) DNX	5.27	5.28	34435123	35402372	4511.813m	4568.264
4) MNX	6.43	6.43	36652087	36656107	5485.684	5486.409
5) 1,3,5-Trinitrobe	7.38	7.38	42551618	42560991	4741.953	4727.996
6) RDX	7.76	7.76	20266058	20277790	4748.274	4722.166
7) 1,3-Dinitrobenze	9.85	9.85	58459824	43624959	4749.341	4201.790
8) Nitrobenzene	11.00	11.00	36906916	34199012	4692.080	4721.841
9) 2,4,6-Trinitroto	11.73	11.73	41281895	54008929	4718.357	4829.103
10) Nitroglycerin	12.39	12.45	321064	14331294	NoCal	4933.817 #
11) Tetryl	13.11	13.11	32021424	54711318	4649.236	4769.247
13) 2,6-Dinitrotolue	14.84	14.84	28578821	41511460	4314.596	4353.026
14) 2,4-Dinitrotolue	15.48	15.48	53232322	37554282	4710.889	4837.835
15) 3,5-Dinitroanili	16.32	16.32	45244650	74873671	4800.434	4836.760
16) o-Nitrotoluene	17.38	17.38	23321675	34260164	4524.420	4756.587
17) p-Nitrotoluene	18.38	18.37	48798399	89710359	9621.758	10259.123
18) 4-Amino-2,6-Dini	18.38	18.37	48798399	89710359	9807.854	10321.655
19) m-Nitrotoluene	19.72	19.72	24031426	41399511	4771.129	5240.628
20) 2-Amino-4,6-Dini	20.14	20.14	40364870	57877954	4858.732	5035.636
21) PETN	21.79	21.77	226430	15110444	NoCal	4911.903 #

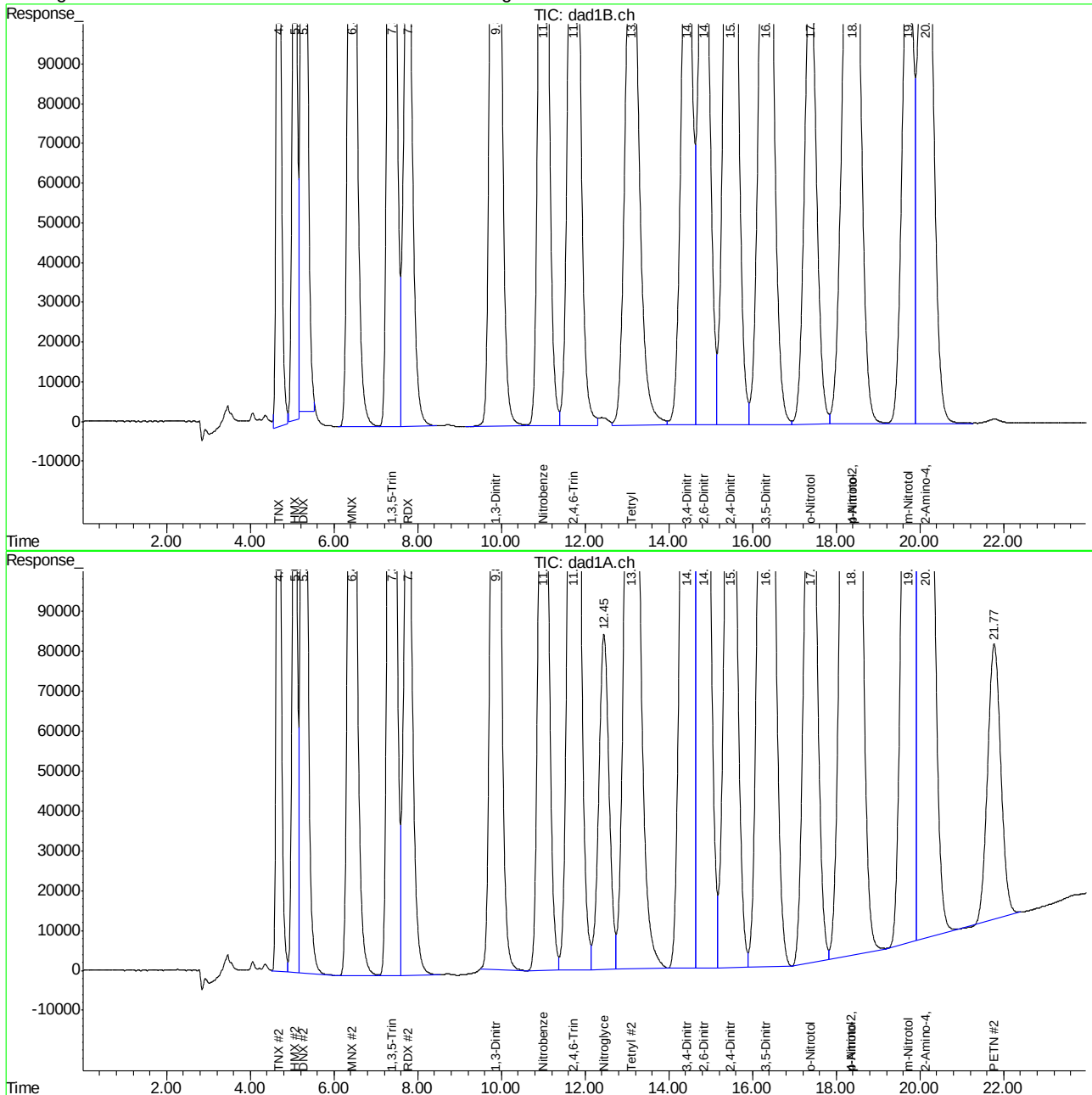
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625704.D GGG3229_013023.M Tue Jan 31 11:32:18 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1A.ch
Acq On : 30-Jan-2023, 15:48:27 Operator: fouads
Sample : ic3229-50000 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:24 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm
Signal #2 Phase : Bonus RP
Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number: GGG3229-IC3229

Method: SW846 8330B

Lab FileID: GG625704.D

Analyst approved: 01/31/23 11:38 Fouad Sekkar

Injection Time: 01/30/23 15:48

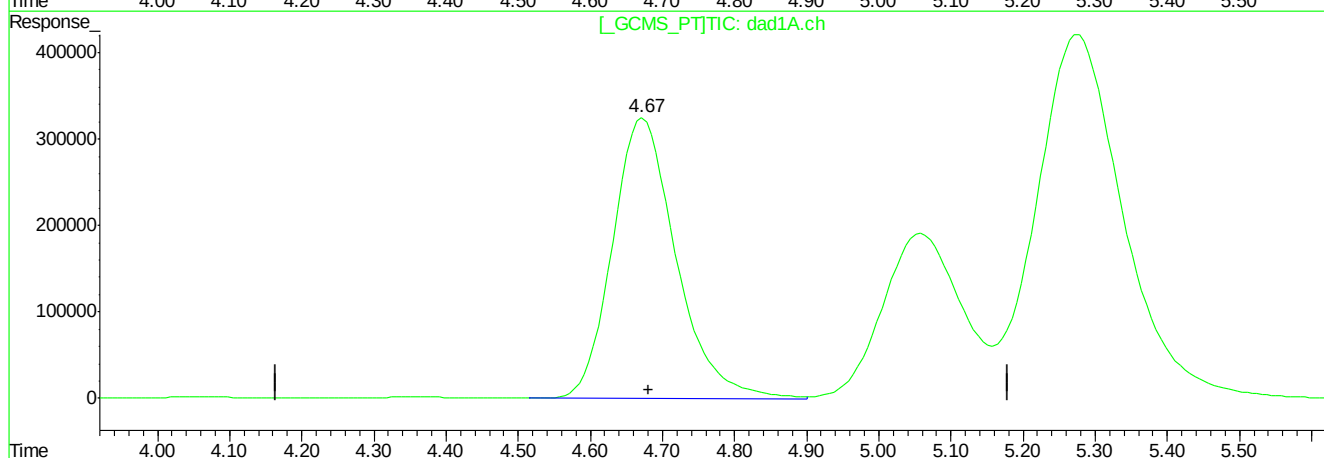
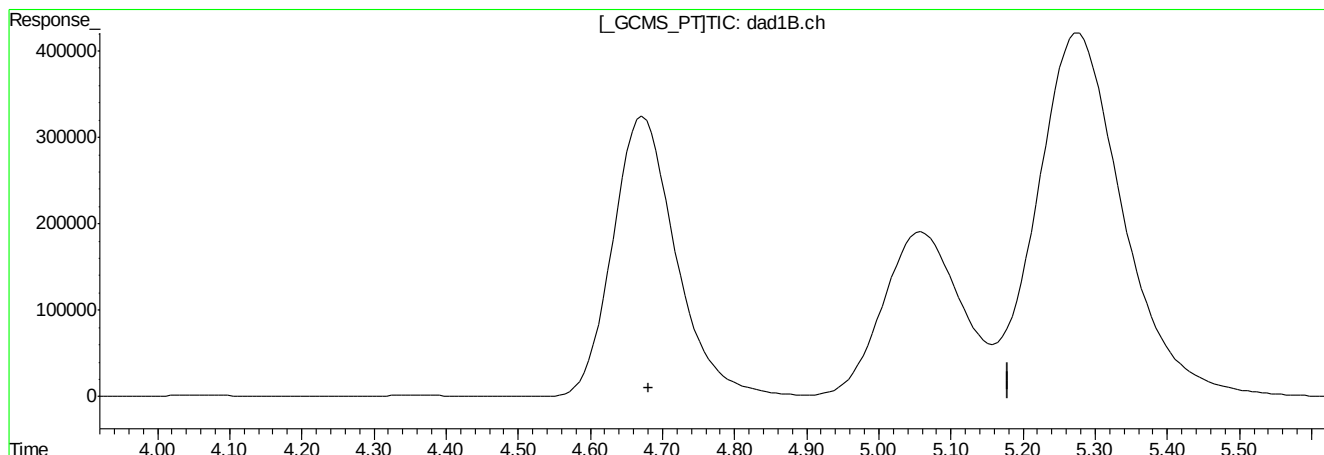
Supervisor approved: 01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.67	Missed peak
HMX	2691-41-0	1	5.06	Poor instrument integration
DNX		1	5.27	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1A.ch
Acq On : 30-Jan-2023, 15:48:27 Operator: fouads
Sample : ic3229-50000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:24 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.67min 2217.265ppb

response 19926520

(+) = Expected Retention Time

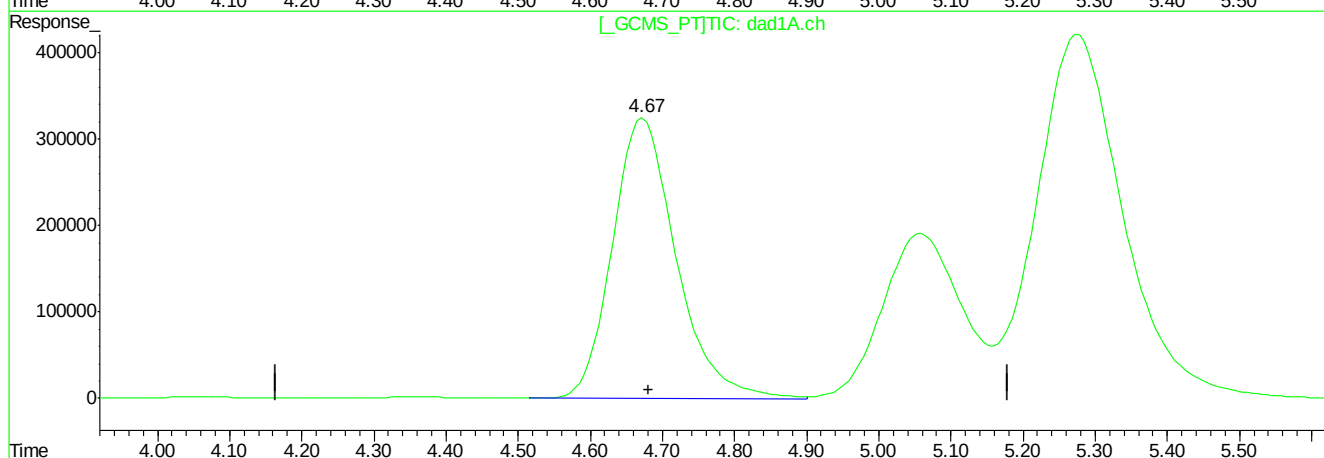
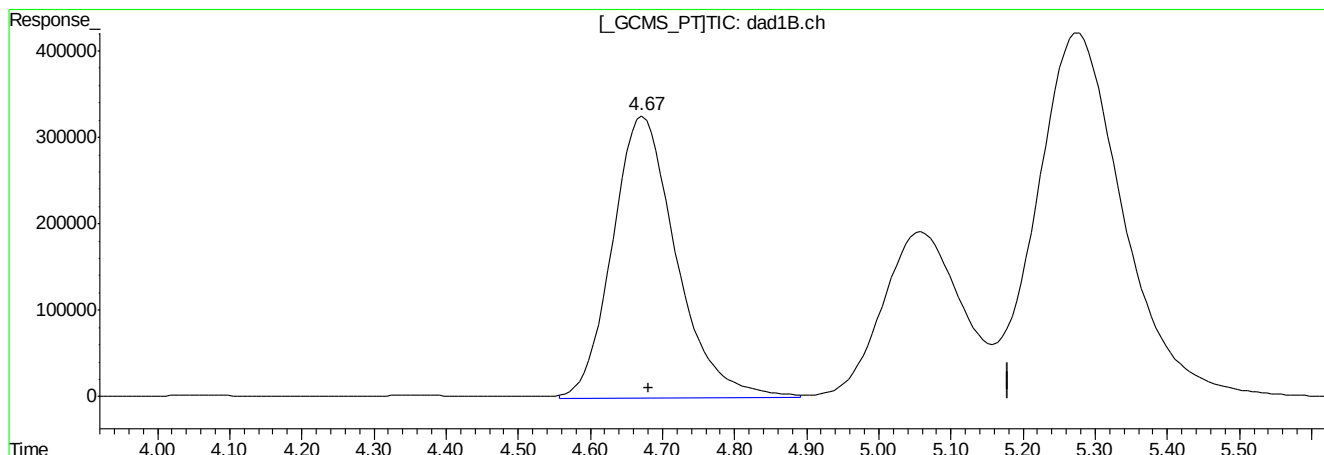
GG625704.D GGG3229_013023.M

Tue Jan 31 08:24:25 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1A.ch
Acq On : 30-Jan-2023, 15:48:27 Operator: fouads
Sample : ic3229-50000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:24 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

4.67min 2274.503ppb m

response 20101494

(1) TNX #2

4.67min 2217.265ppb

response 19926520

(+) = Expected Retention Time

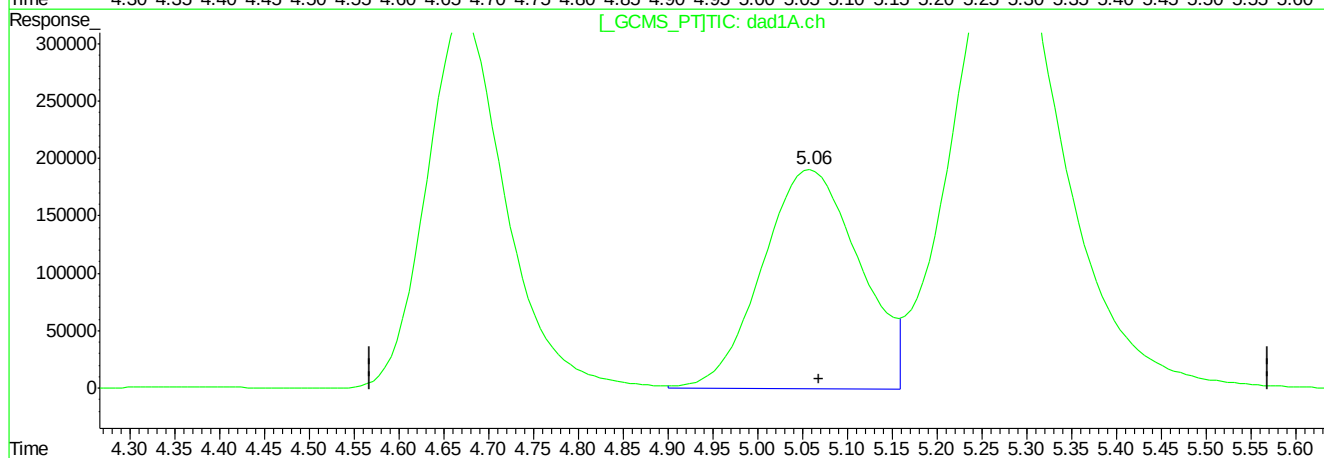
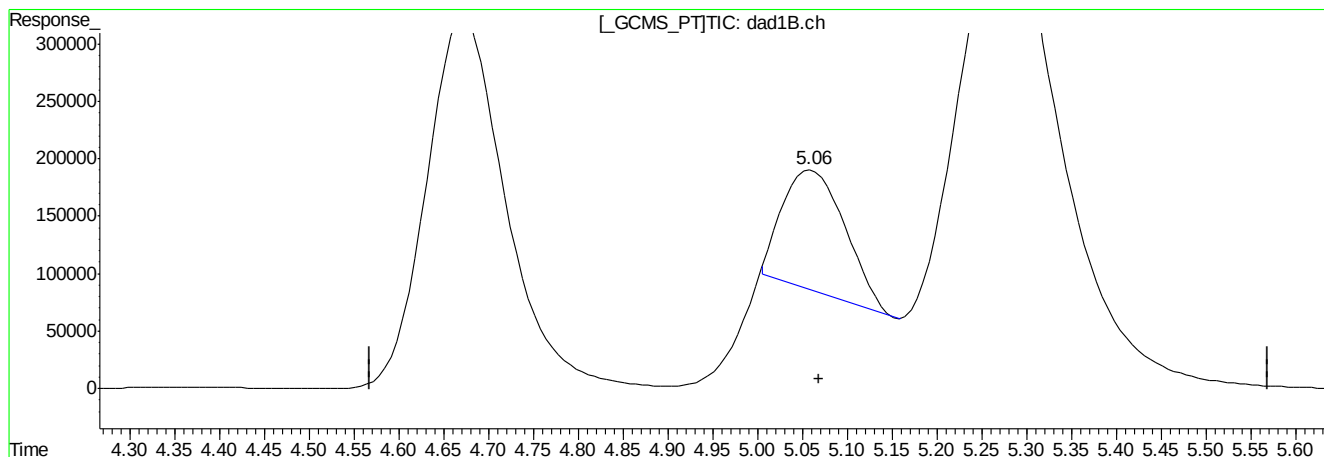
GG625704.D GGG3229_013023.M

Tue Jan 31 08:24:31 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1A.ch
Acq On : 30-Jan-2023, 15:48:27 Operator: fouads
Sample : ic3229-50000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:24 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 1845.533ppb

response 5139397

(2) HMX #2

5.06min 5102.725ppb

response 14295711

(+) = Expected Retention Time

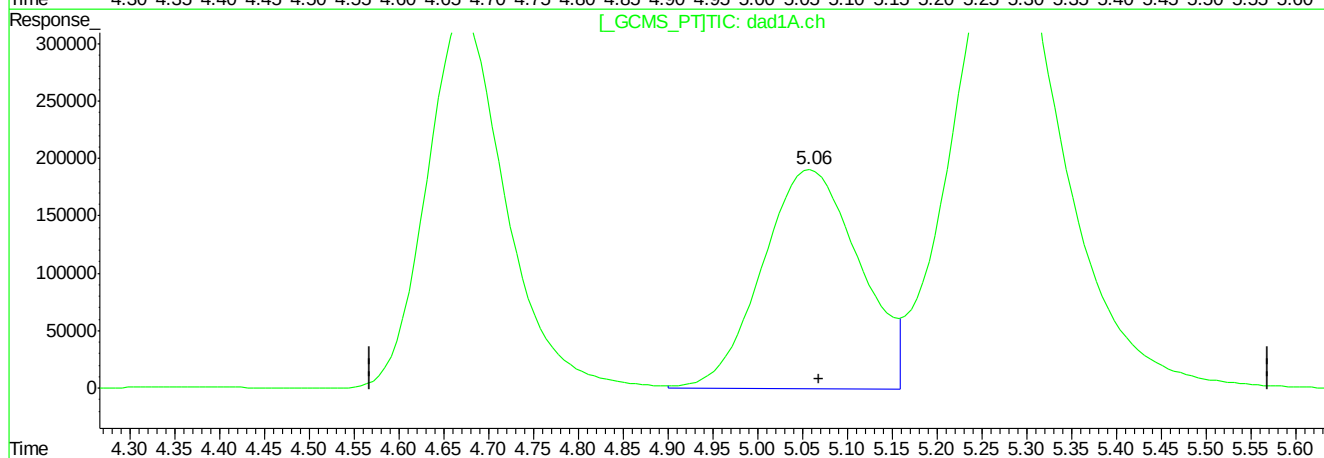
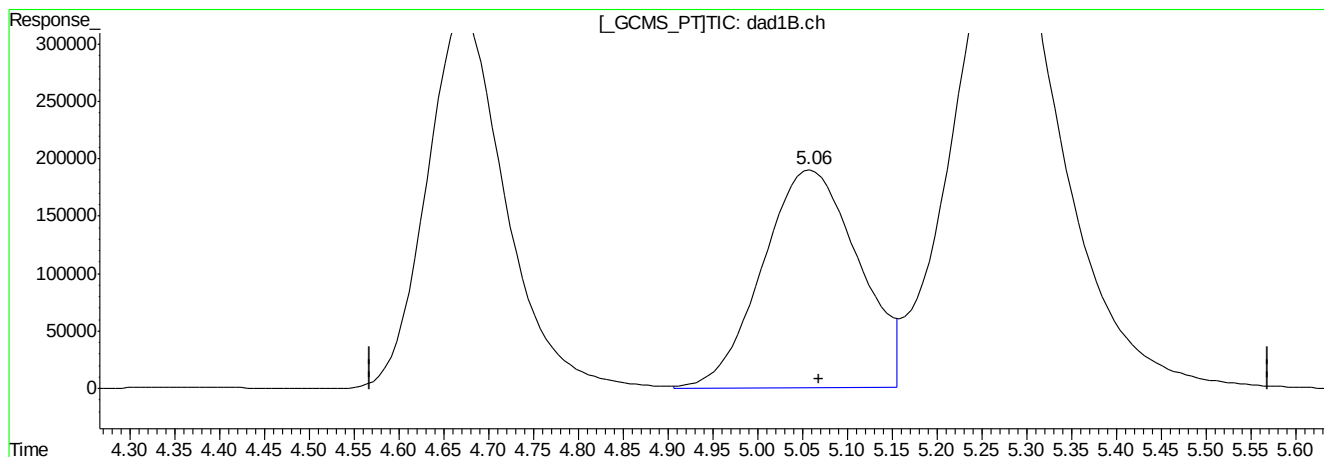
GG625704.D GGG3229_013023.M

Tue Jan 31 08:24:37 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1A.ch
Acq On : 30-Jan-2023, 15:48:27 Operator: fouads
Sample : ic3229-50000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:24 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 5067.866ppb m

response 14112872

(2) HMX #2

5.06min 5102.725ppb

response 14295711

(+) = Expected Retention Time

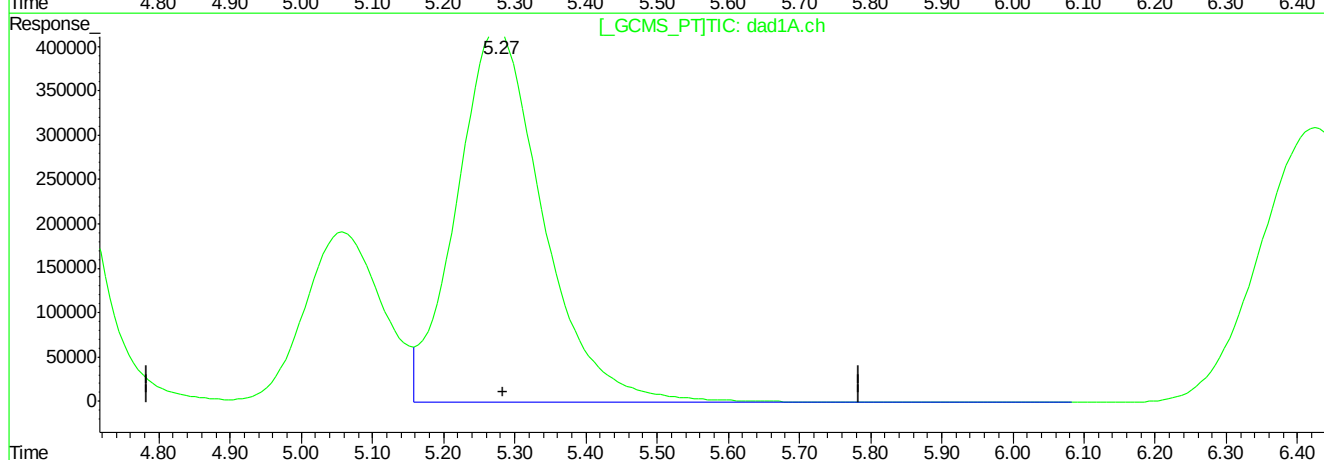
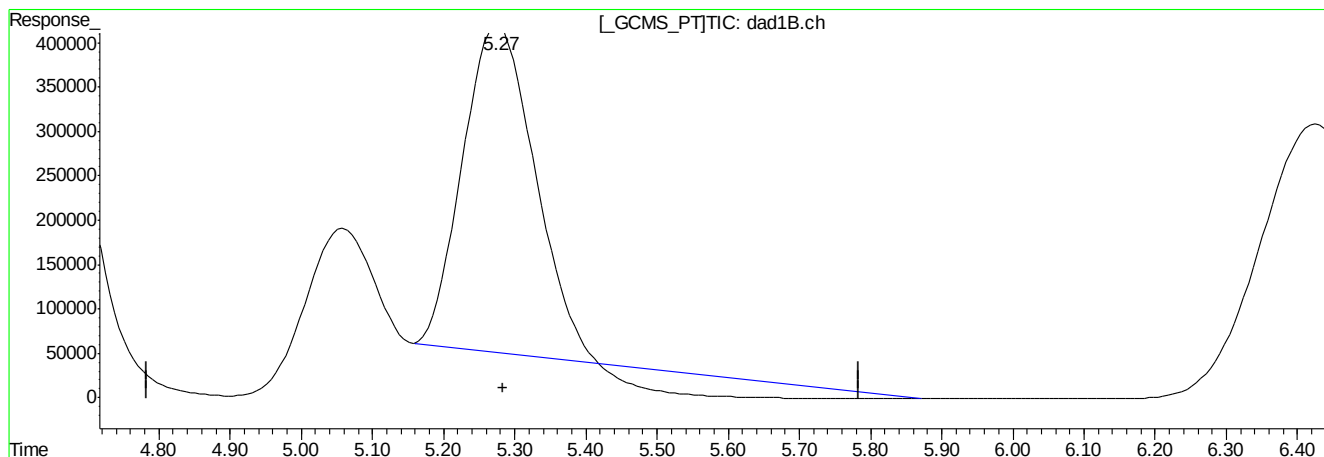
GG625704.D GGG3229_013023.M

Tue Jan 31 08:24:44 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1A.ch
Acq On : 30-Jan-2023, 15:48:27 Operator: fouads
Sample : ic3229-50000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:24 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



QEdit

(3) DNX

5.28min 2912.361ppb

response 22227764

(3) DNX #2

5.28min 4568.264ppb

response 35402372

(+) = Expected Retention Time

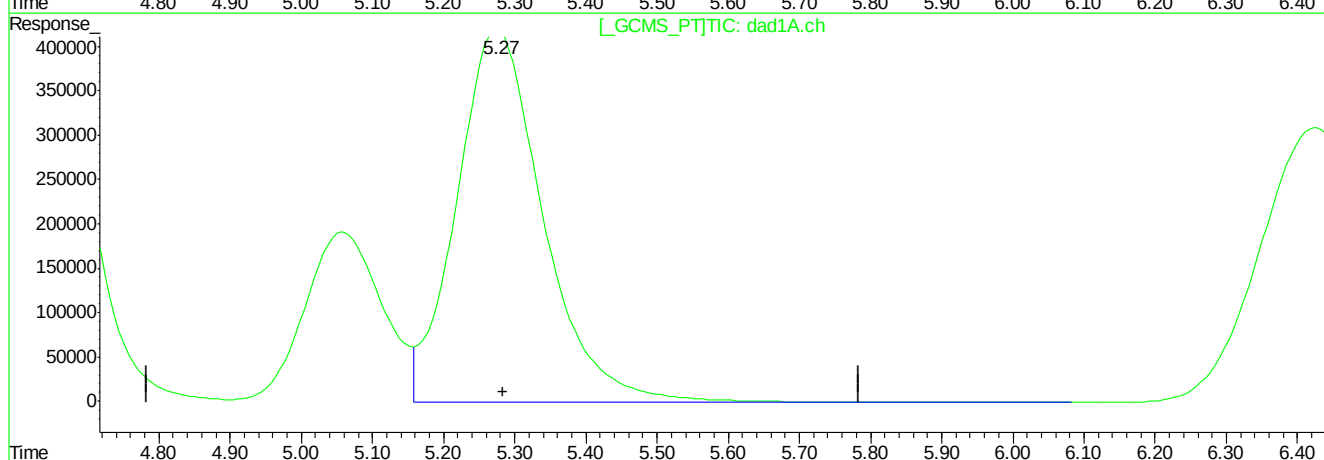
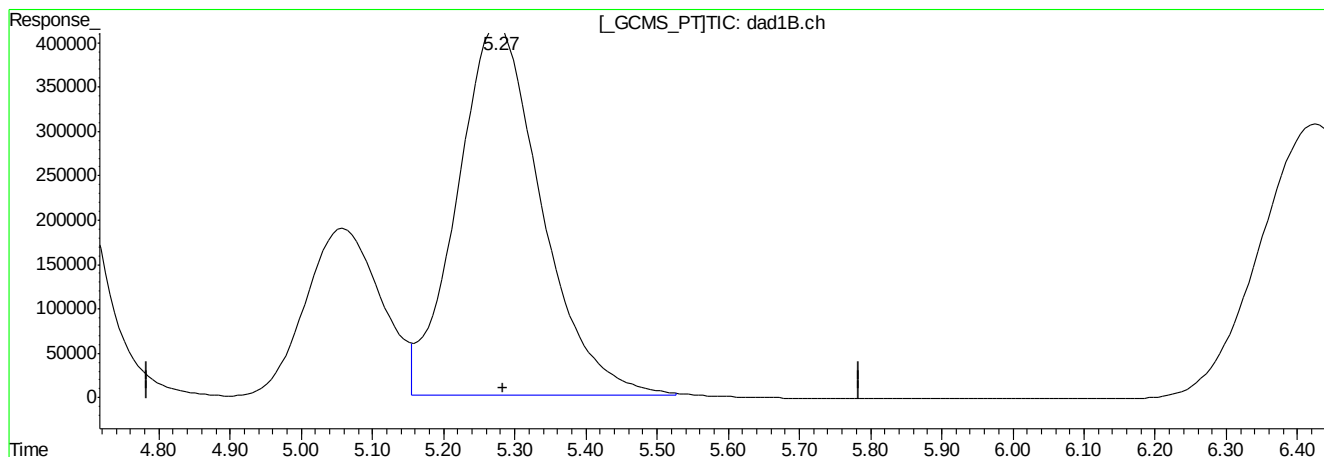
GG625704.D GGG3229_013023.M

Tue Jan 31 08:24:49 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625704.D\dad1A.ch
Acq On : 30-Jan-2023, 15:48:27 Operator: fouads
Sample : ic3229-50000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:24 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Mon Jan 30 12:26:09 2023
Response via : Multiple Level Calibration



(3) DNX

5.27min 4511.813ppb m

response 34435123

(3) DNX #2

5.28min 4568.264ppb

response 35402372

(+) = Expected Retention Time

GG625704.D GGG3229_013023.M

Tue Jan 31 08:24:55 2023

Mike Eger
01/31/23 12:29

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
 Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
 Sample : icv3229-1000 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 08:36:08 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
Spiked Amount	500.000	Range	70 - 136	Recovery	=	0.00%# 0.00%#
Target Compounds						
1) TNX	4.68	4.68	3991613	4032633	452.208m	476.755
2) HMX	5.06	5.06	3024242	3081290	1042.220m	1038.701
3) DNx	5.28	5.28	7226912	7030685	964.850m	947.561
4) MNX	6.43	6.43	7292432	7294728	1133.193	1113.801
5) 1,3,5-Trinitrobe	7.38	7.38	9040878	9041740	1019.868	1021.694
6) RDX	7.77	7.77	4296688	4295826	1003.691	1006.258
7) 1,3-Dinitrobenze	9.86	9.85	12450218	9386252	1018.683	1064.546m
8) Nitrobenzene	11.00	11.00	7897989	7871578	1013.251	1020.942
9) 2,4,6-Trinitroto	11.71	11.71	8523872	11562026	970.179	960.539
10) Nitroglycerin	0.00	12.43	0	3129729	N.D.	1084.658 #
11) Tetryl	13.08	13.08	6206859	10870158	986.124	1005.767
13) 2,6-Dinitrotolue	14.79	14.79	5743078	8361074	980.543m	1080.390m
14) 2,4-Dinitrotolue	15.42	15.42	11244412	7921340	1016.080	1051.017
15) 3,5-Dinitroanili	16.24	16.24	10067397	16797407	1066.198	1072.757
16) o-Nitrotoluene	17.32	17.32	4901302	7158733	1024.785	1046.172
17) p-Nitrotoluene	18.32	18.29	10197339	18638756	2090.417	2078.475
18) 4-Amino-2,6-Dini	18.32	18.29	10197339	18638756	2090.417	2078.475
19) m-Nitrotoluene	19.67	19.67	5090076	8679448	1031.944	1052.573
20) 2-Amino-4,6-Dini	20.05	20.06	8644428	12321619	1014.709	1090.721
21) PETN	0.00	21.74	0	3067548	N.D.	1020.922 #

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625705.D GGG3229_013023.M Tue Jan 31 11:32:19 2023

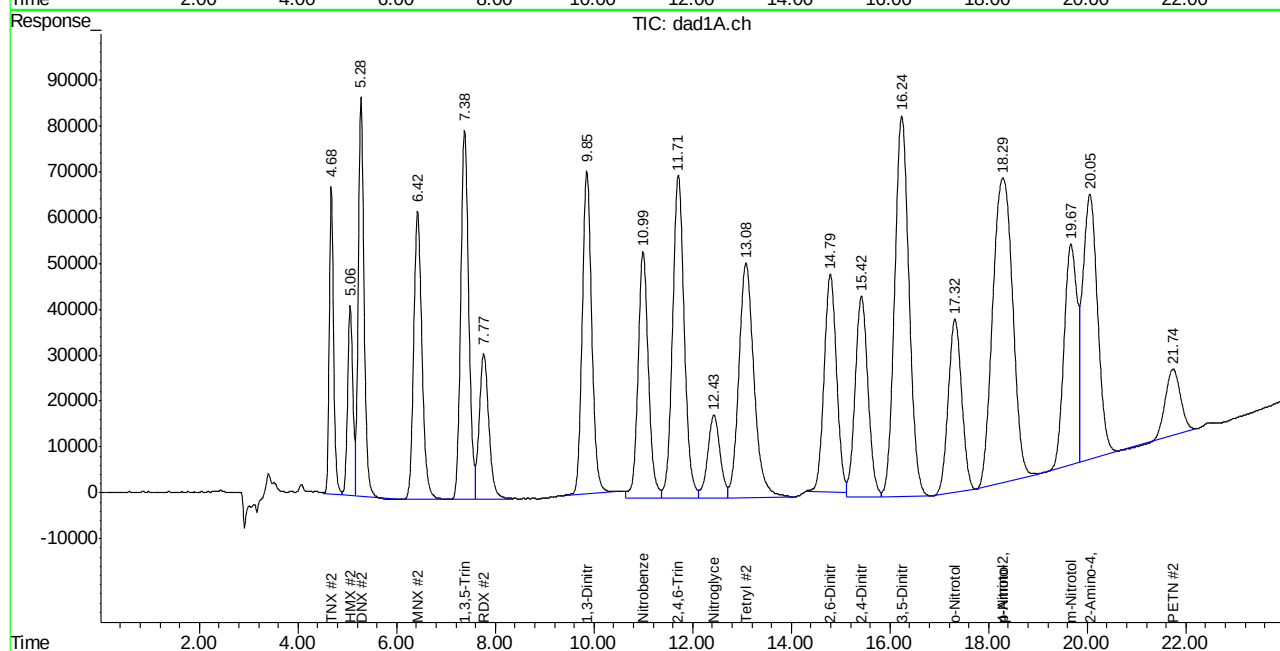
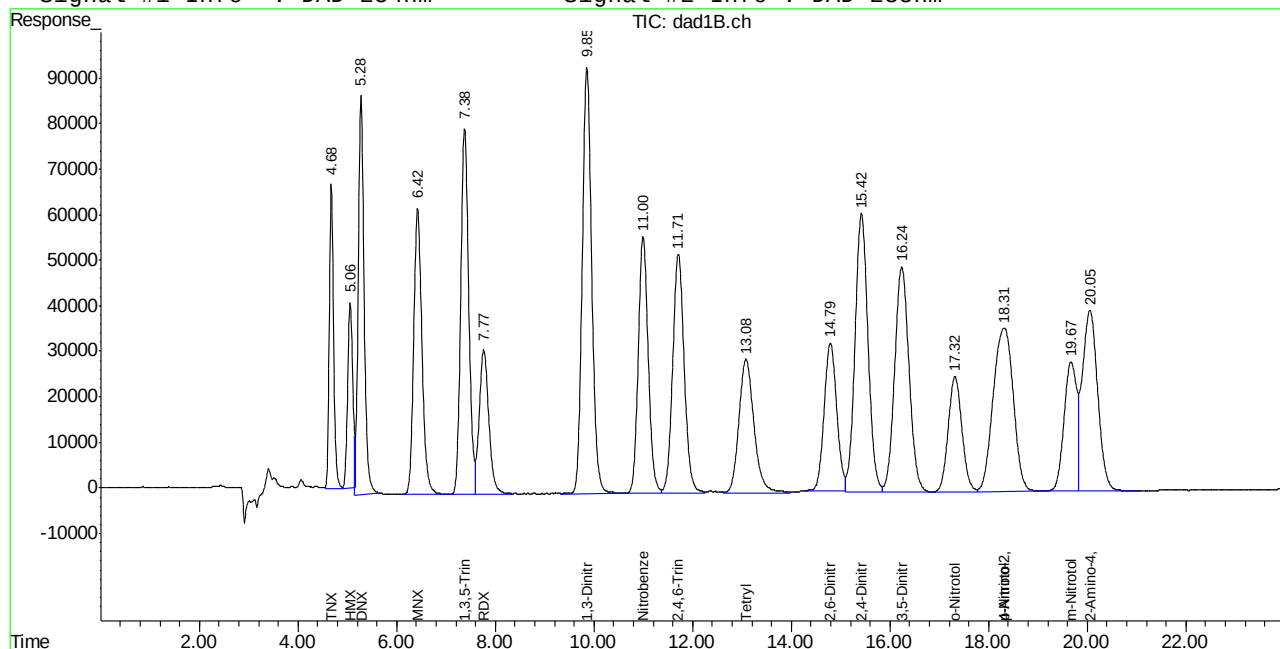
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:37 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number: GGG3229-ICV3229

Method: SW846 8330B

Lab FileID: GG625705.D

Analyst approved: 01/31/23 11:38 Fouad Sekkar

Injection Time: 01/30/23 16:19

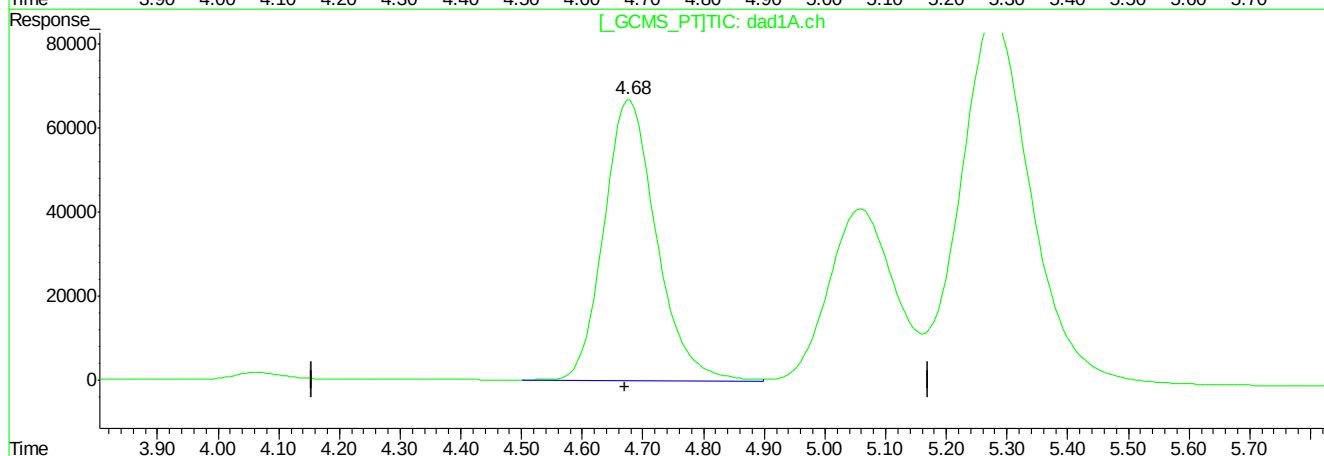
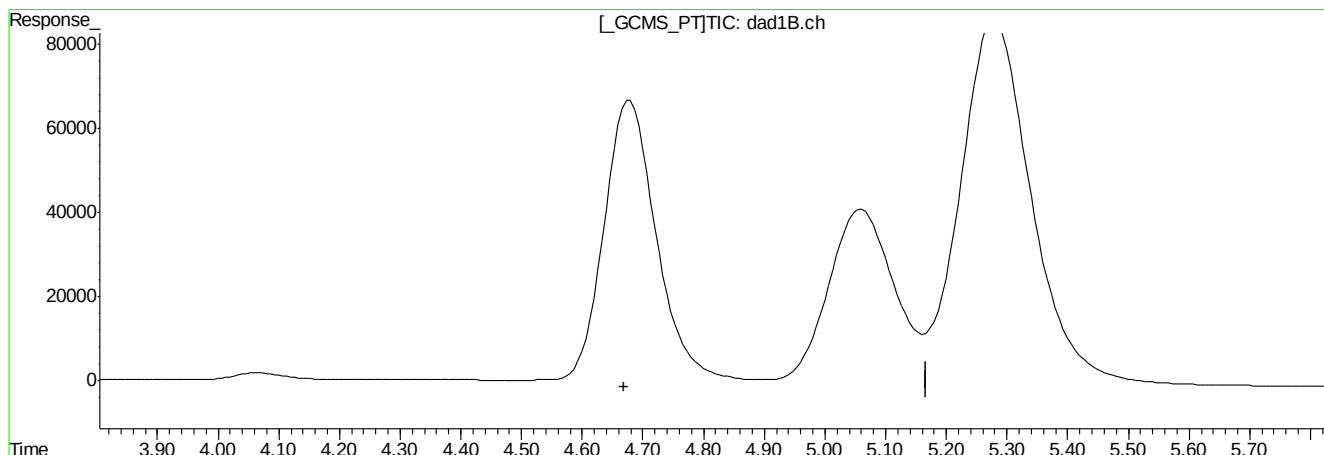
Supervisor approved: 01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.68	Missed peak
HMX	2691-41-0	1	5.06	Poor instrument integration
DNX		1	5.28	Poor instrument integration
1,3-Dinitrobenzene	99-65-0	2	9.85	Poor instrument integration
2,6-Dinitrotoluene	606-20-2	1	14.79	Poor instrument integration
2,6-Dinitrotoluene	606-20-2	2	14.79	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:30 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.68min 476.755ppb

response 4032633

(+) = Expected Retention Time

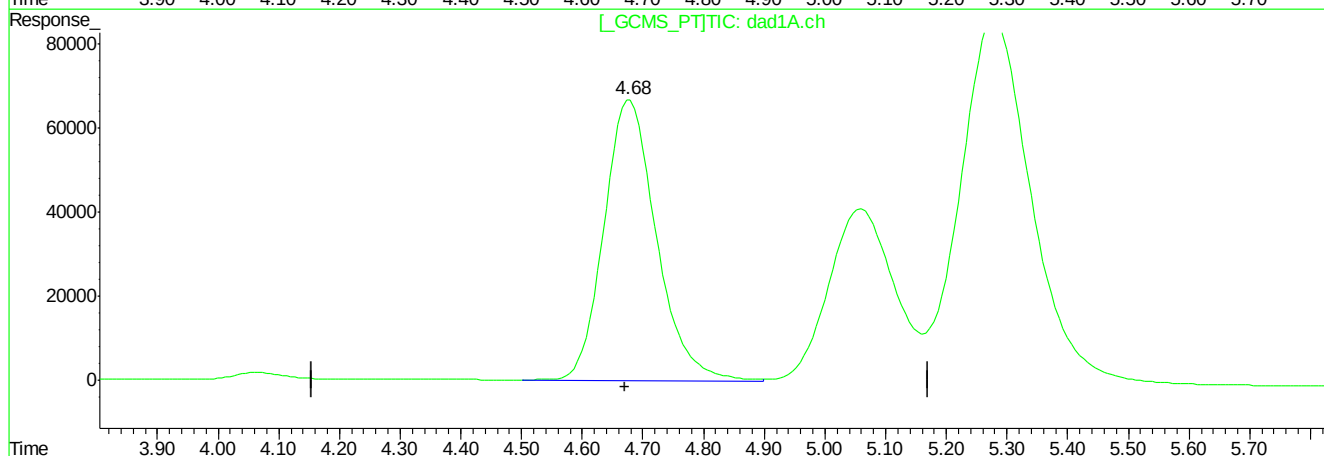
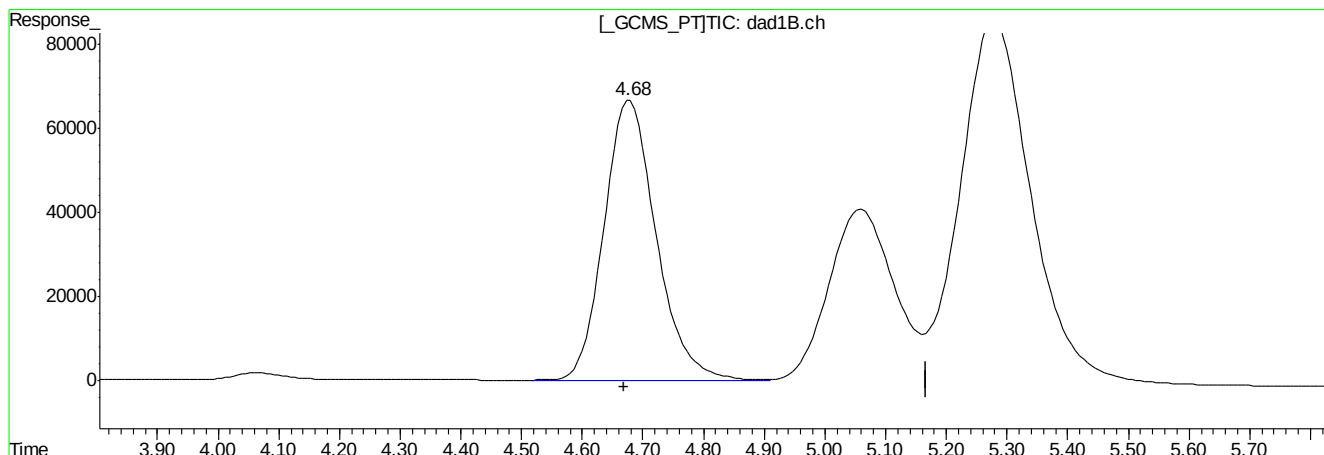
GG625705.D GGG3229_013023.M

Tue Jan 31 08:31:12 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:30 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

4.68min 454.480ppb m

response 4011672

(1) TNX #2

4.68min 476.755ppb

response 4032633

(+) = Expected Retention Time

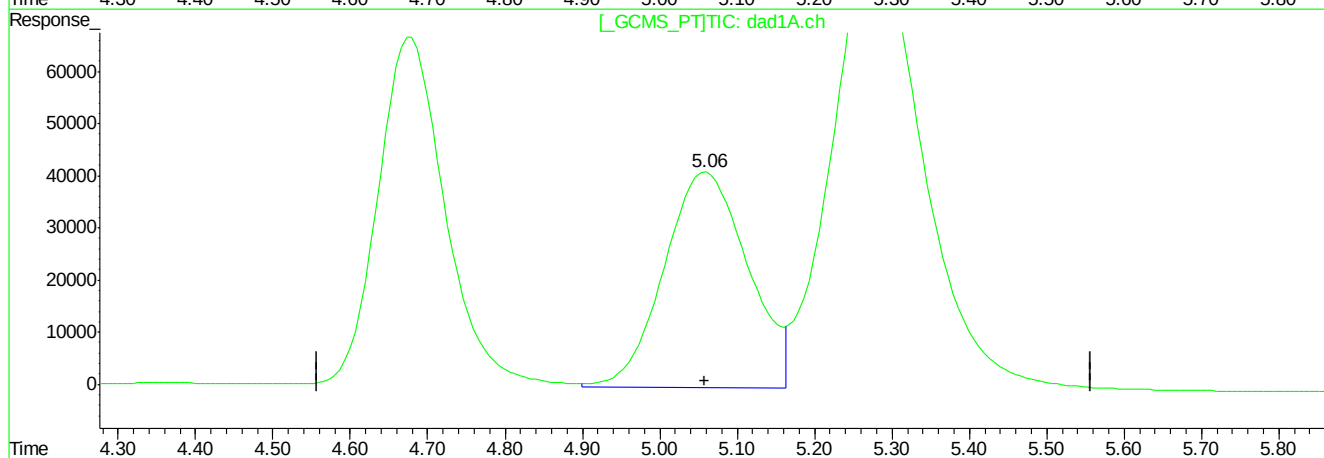
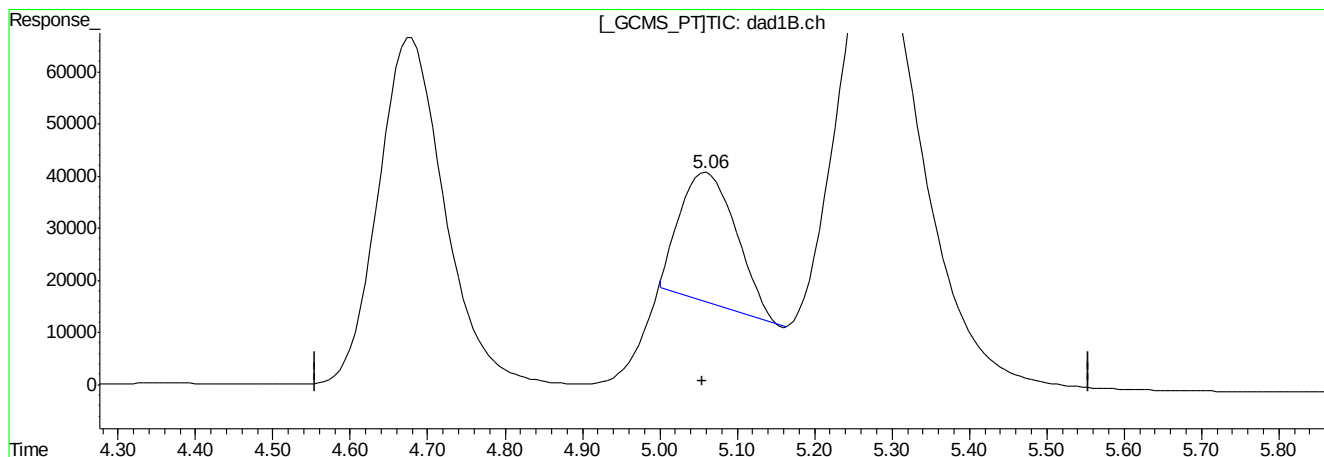
GG625705.D GGG3229_013023.M

Tue Jan 31 08:31:27 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:30 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 438.928ppb

response 1273651

(2) HMX #2

5.06min 1038.701ppb

response 3081290

(+) = Expected Retention Time

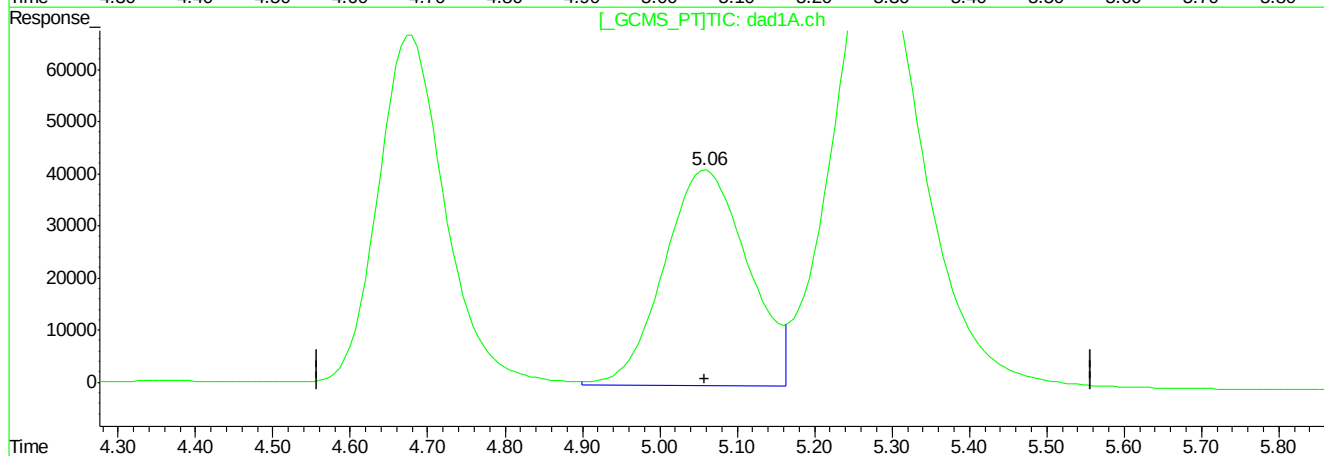
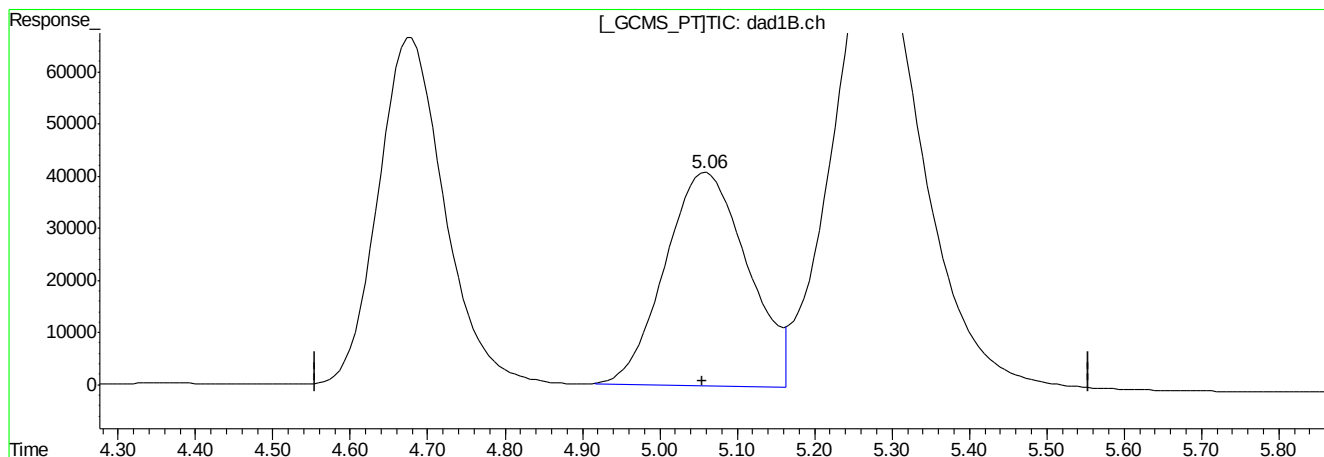
GG625705.D GGG3229_013023.M

Tue Jan 31 08:31:33 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:30 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 1050.766ppb m

response 3049040

(2) HMX #2

5.06min 1038.701ppb

response 3081290

(+) = Expected Retention Time

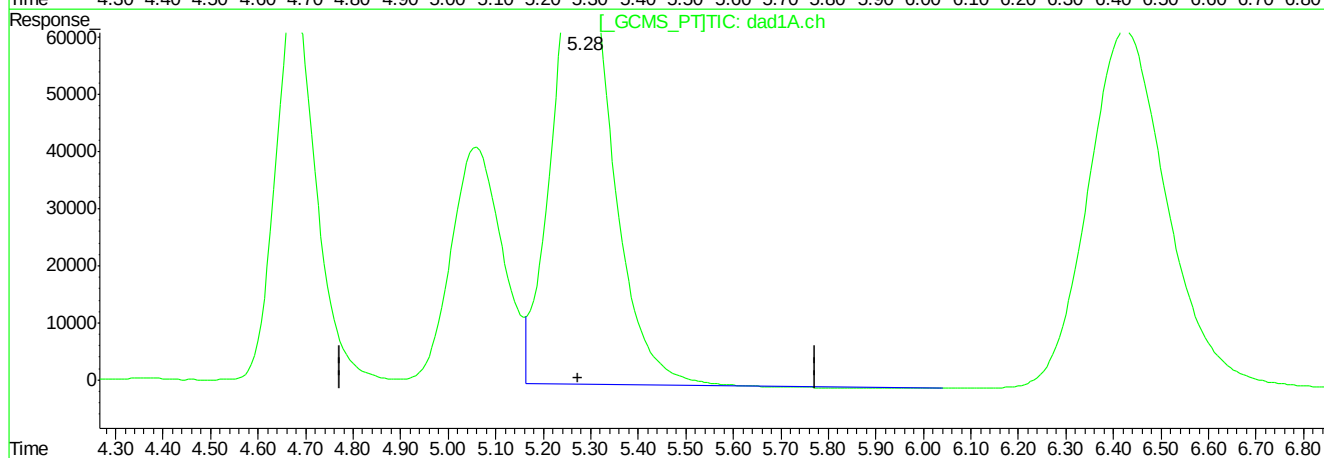
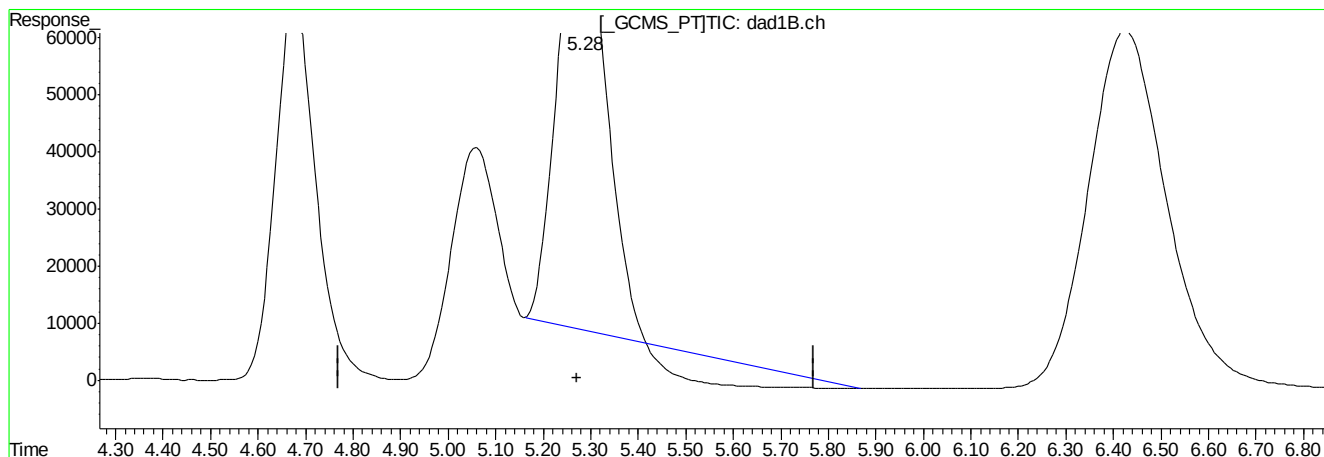
GG625705.D GGG3229_013023.M

Tue Jan 31 08:31:42 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:30 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



QEdit

(3) DNX

5.28min 610.425ppb

response 4572204

(3) DNX #2

5.28min 947.561ppb

response 7030685

(+) = Expected Retention Time

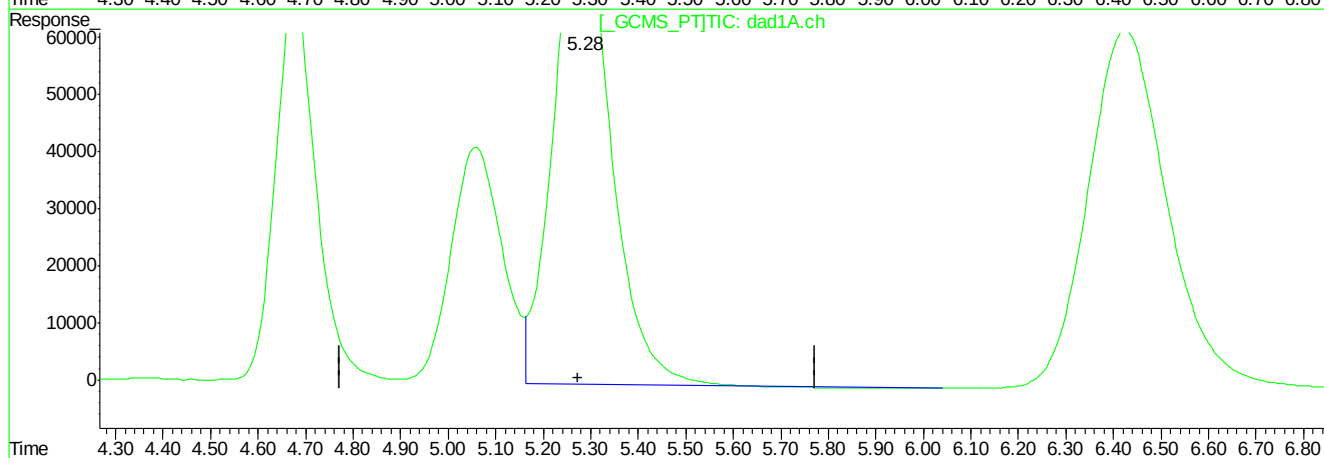
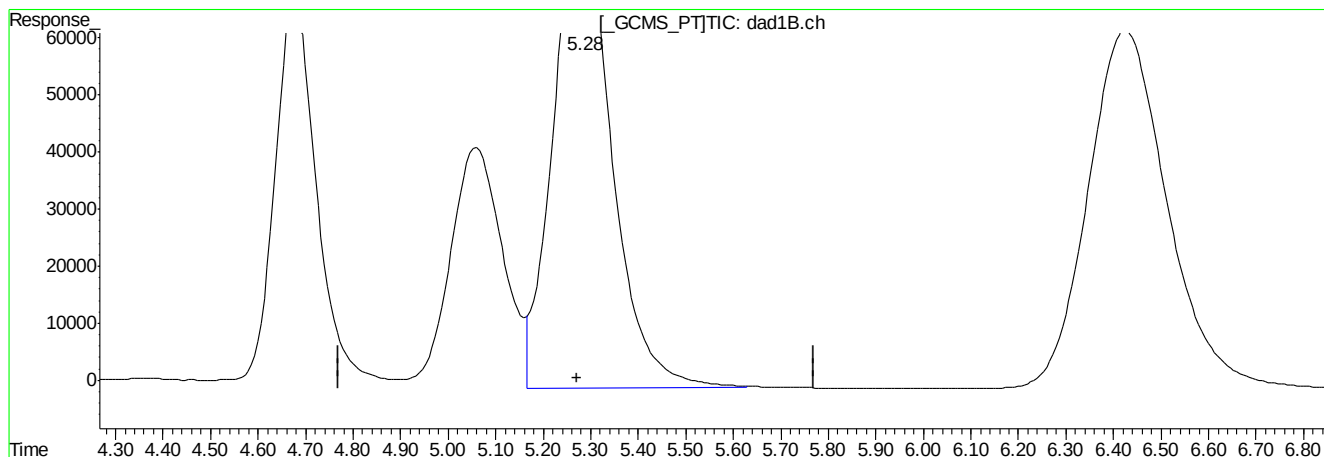
GG625705.D GGG3229_013023.M

Tue Jan 31 08:31:47 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:30 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



(3) DNX

5.28min 951.056ppb m

response 7123593

(3) DNX #2

5.28min 947.561ppb

response 7030685

(+) = Expected Retention Time

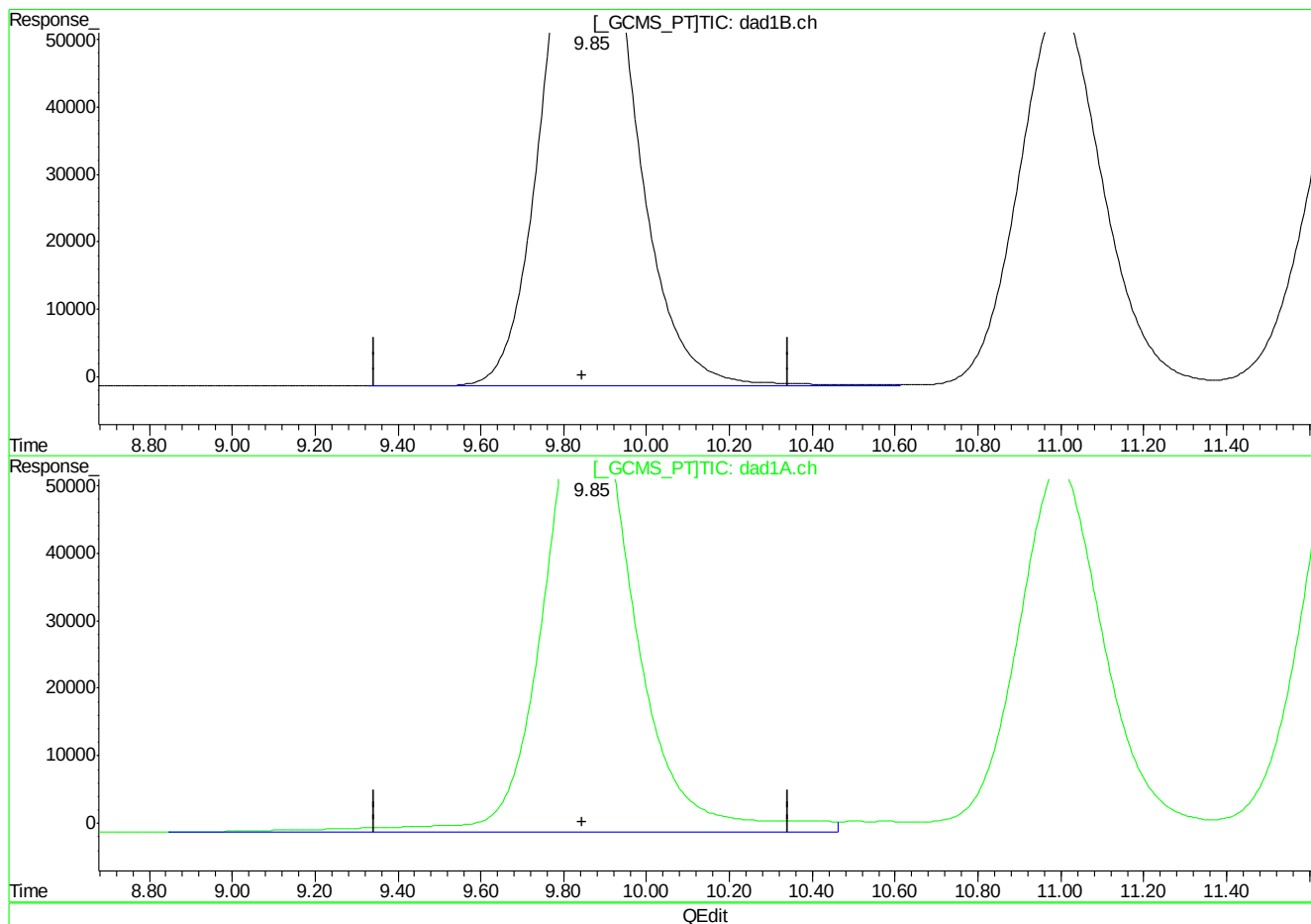
GG625705.D GGG3229_013023.M

Tue Jan 31 08:31:55 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:31 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

9.86min 1018.683ppb

response 12450218

(7) 1,3-Dinitrobenzene #2

9.86min 1150.863ppb

response 10147322

(+) = Expected Retention Time

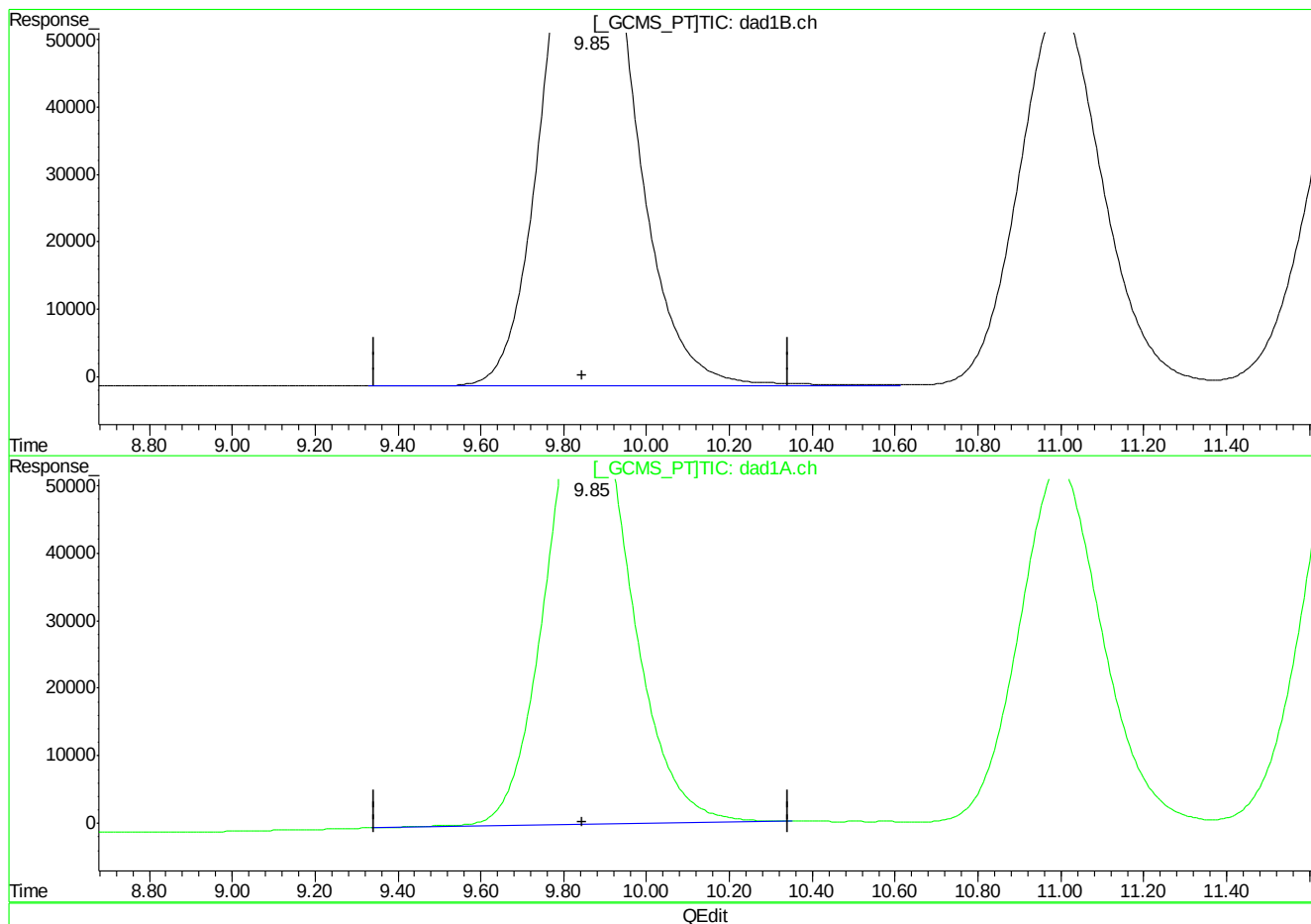
GG625705.D GGG3229_013023.M

Tue Jan 31 08:32:51 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:31 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

9.86min 1018.683ppb

response 12450218

(7) 1,3-Dinitrobenzene #2

9.85min 1052.434ppb m

response 9279461

(+) = Expected Retention Time

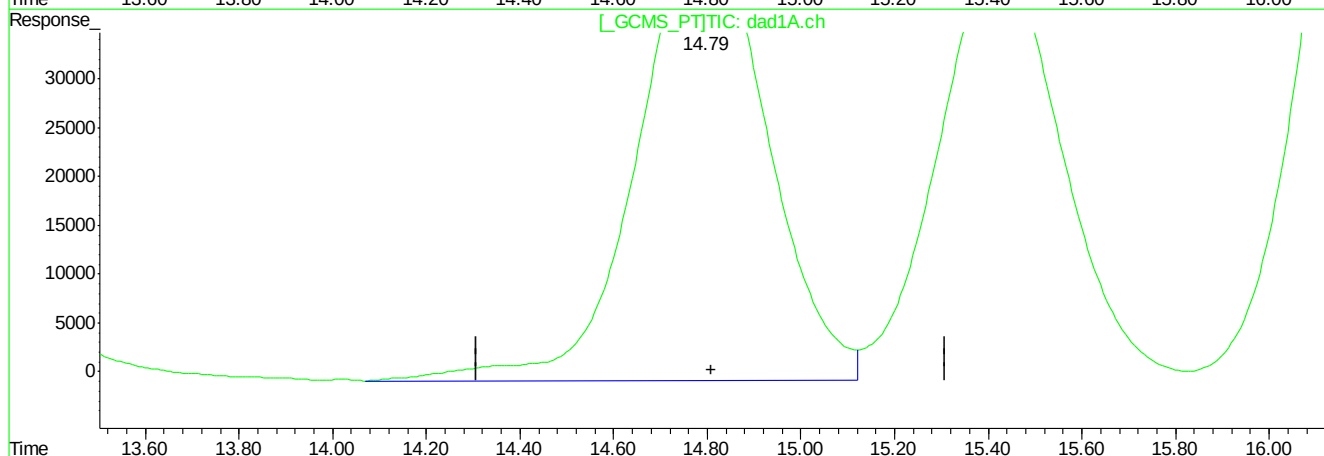
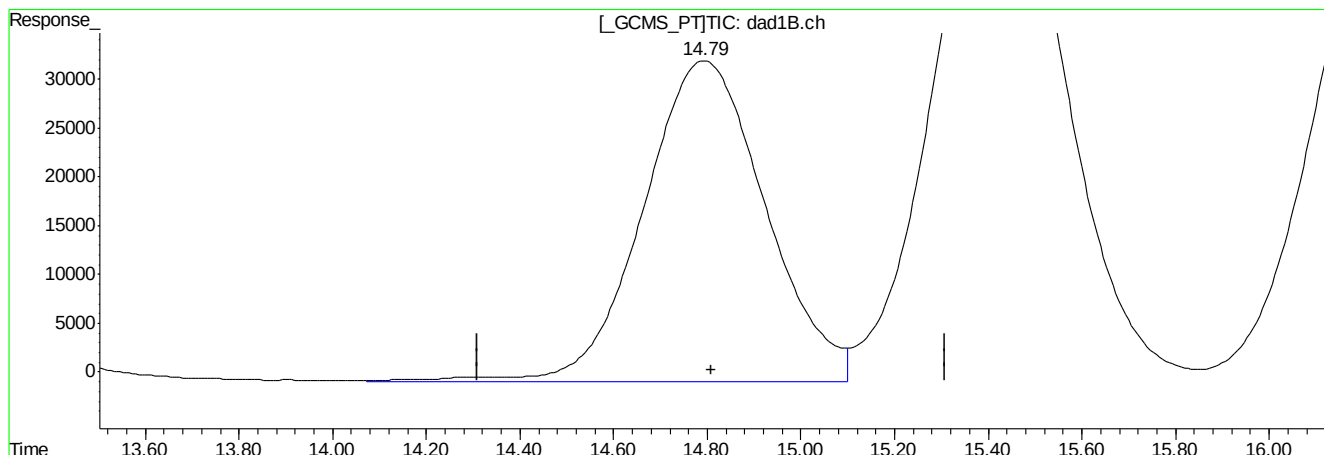
GG625705.D GGG3229_013023.M

Tue Jan 31 08:32:59 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:31 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



(13) 2,6-Dinitrotoluene

14.79min 1020.851ppb

response 5979160

(13) 2,6-Dinitrotoluene #2

14.79min 1154.773ppb

response 8936716

(+) = Expected Retention Time

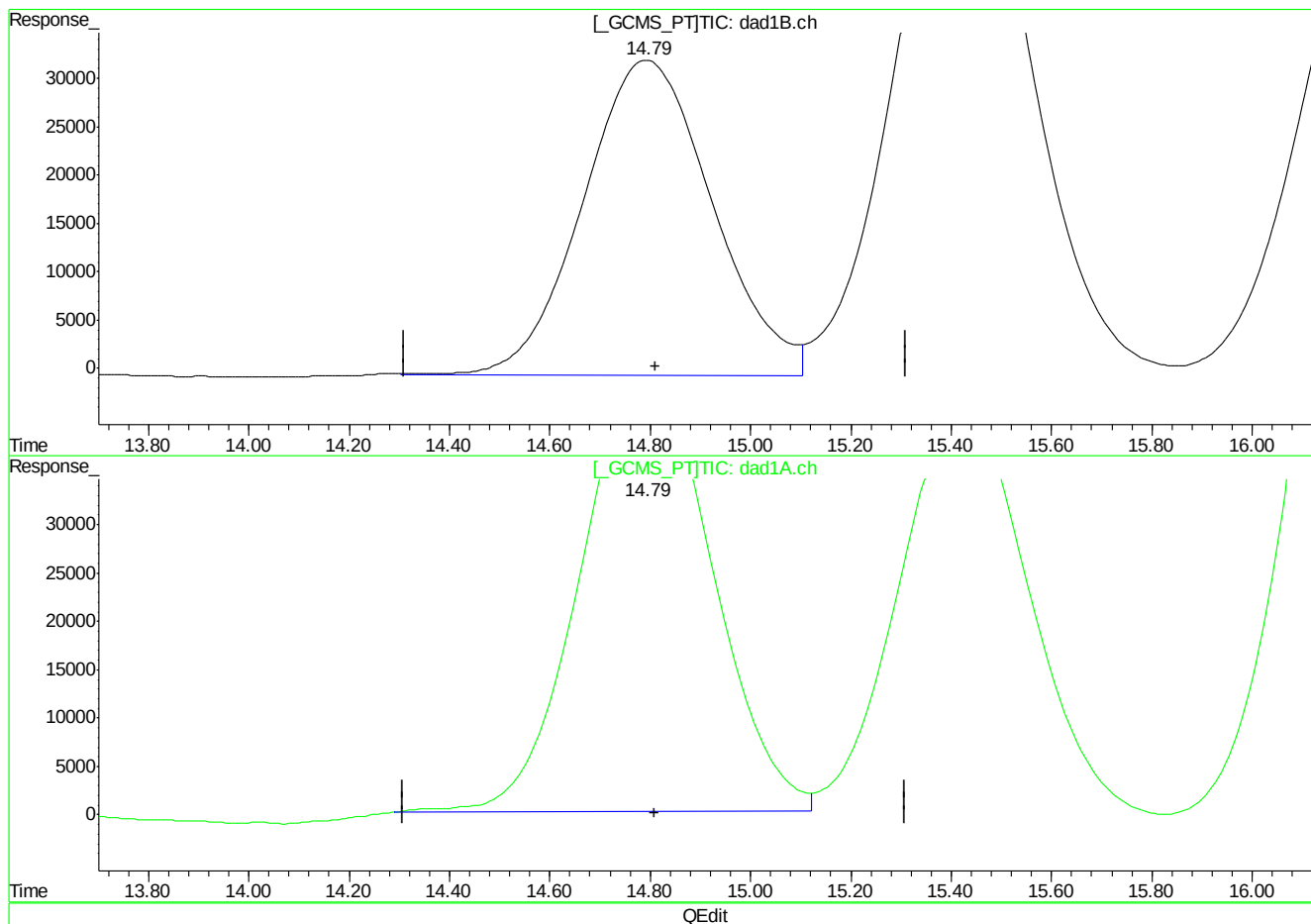
GG625705.D GGG3229_013023.M

Tue Jan 31 08:33:30 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:31 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:30:21 2023
Response via : Multiple Level Calibration



(13) 2,6-Dinitrotoluene

14.79min 989.235ppb m

response 5793984

(13) 2,6-Dinitrotoluene #2

14.79min 1067.475ppb m

response 8261123

(+) = Expected Retention Time

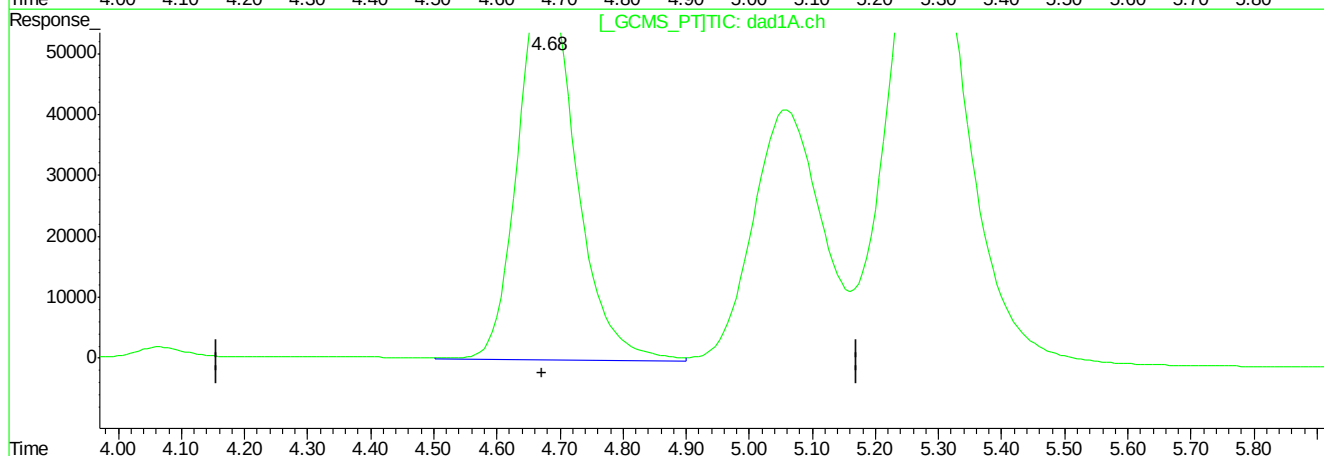
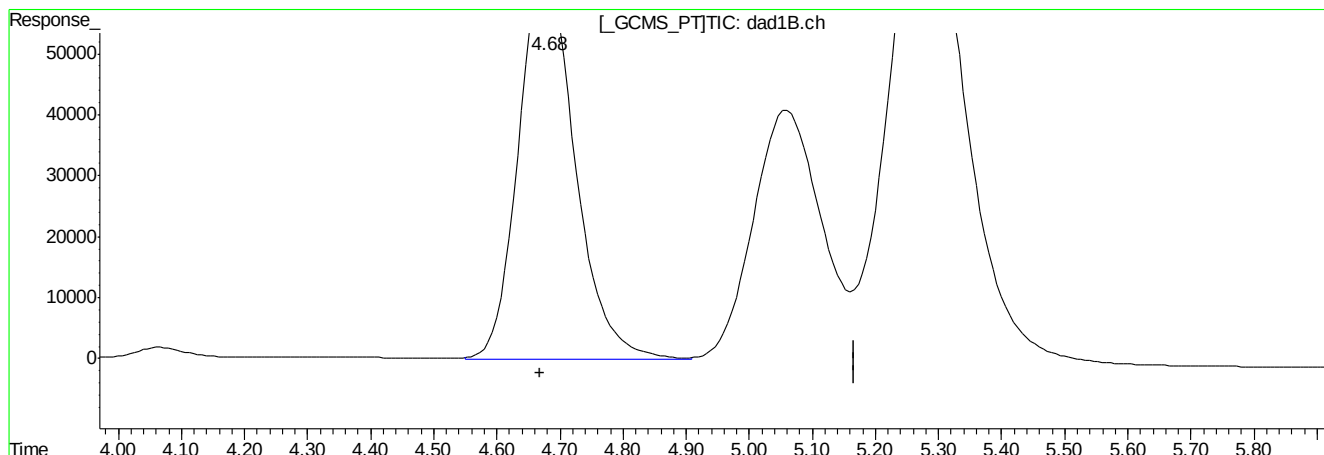
GG625705.D GGG3229_013023.M

Tue Jan 31 08:33:58 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:36 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



(1) TNX

4.68min 452.208ppb m

response 3991613

(1) TNX #2

4.68min 476.755ppb

response 4032633

(+) = Expected Retention Time

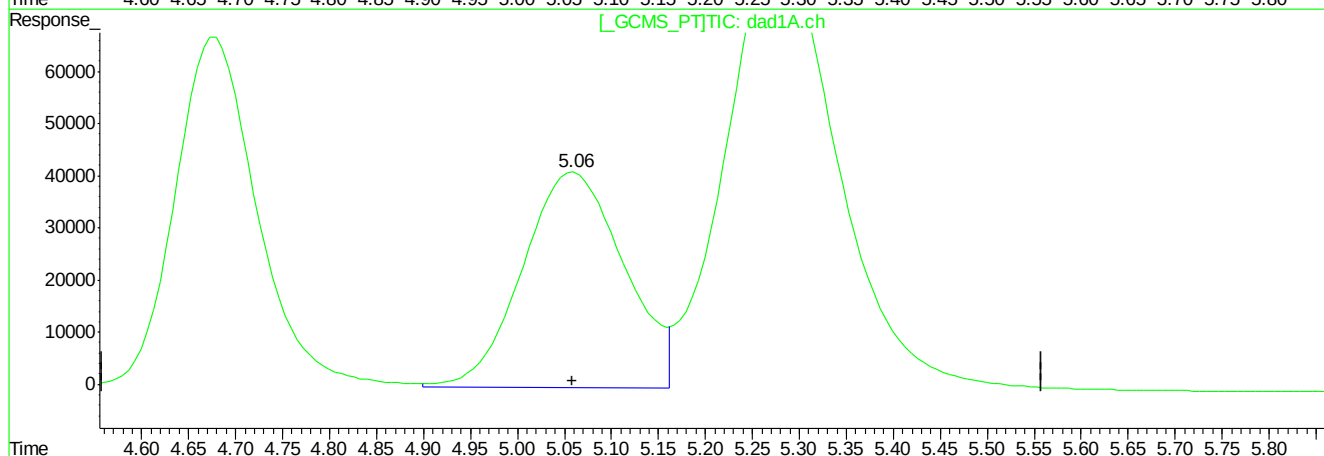
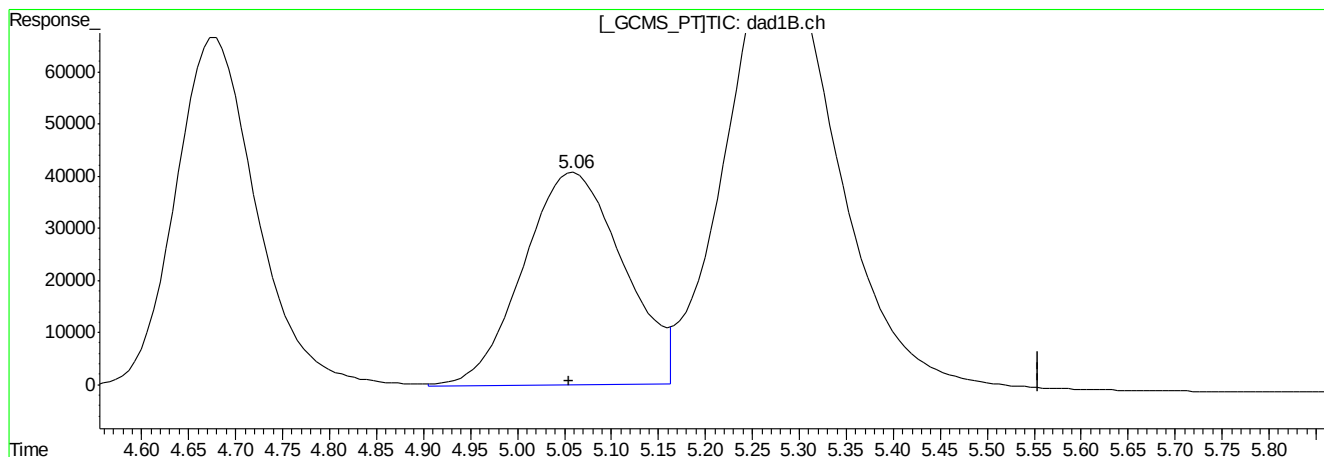
GG625705.D GGG3229_013023.M

Tue Jan 31 08:36:20 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:36 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 1042.220ppb m

response 3024242

(2) HMX #2

5.06min 1038.701ppb

response 3081290

(+) = Expected Retention Time

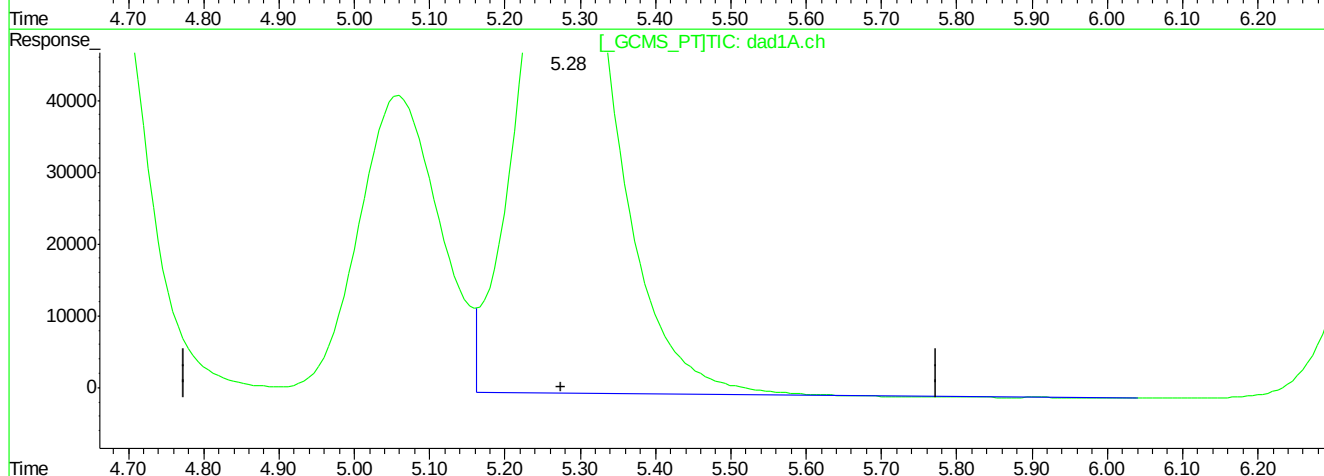
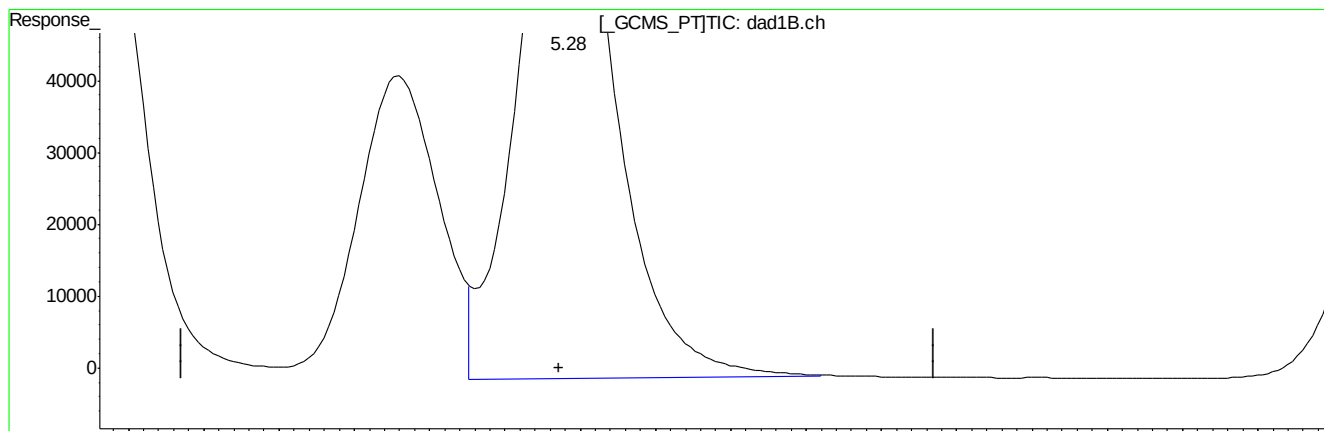
GG625705.D GGG3229_013023.M

Tue Jan 31 08:36:29 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:36 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



(3) DNX

5.28min 964.850ppb m

response 7226912

(3) DNX #2

5.28min 947.561ppb

response 7030685

(+) = Expected Retention Time

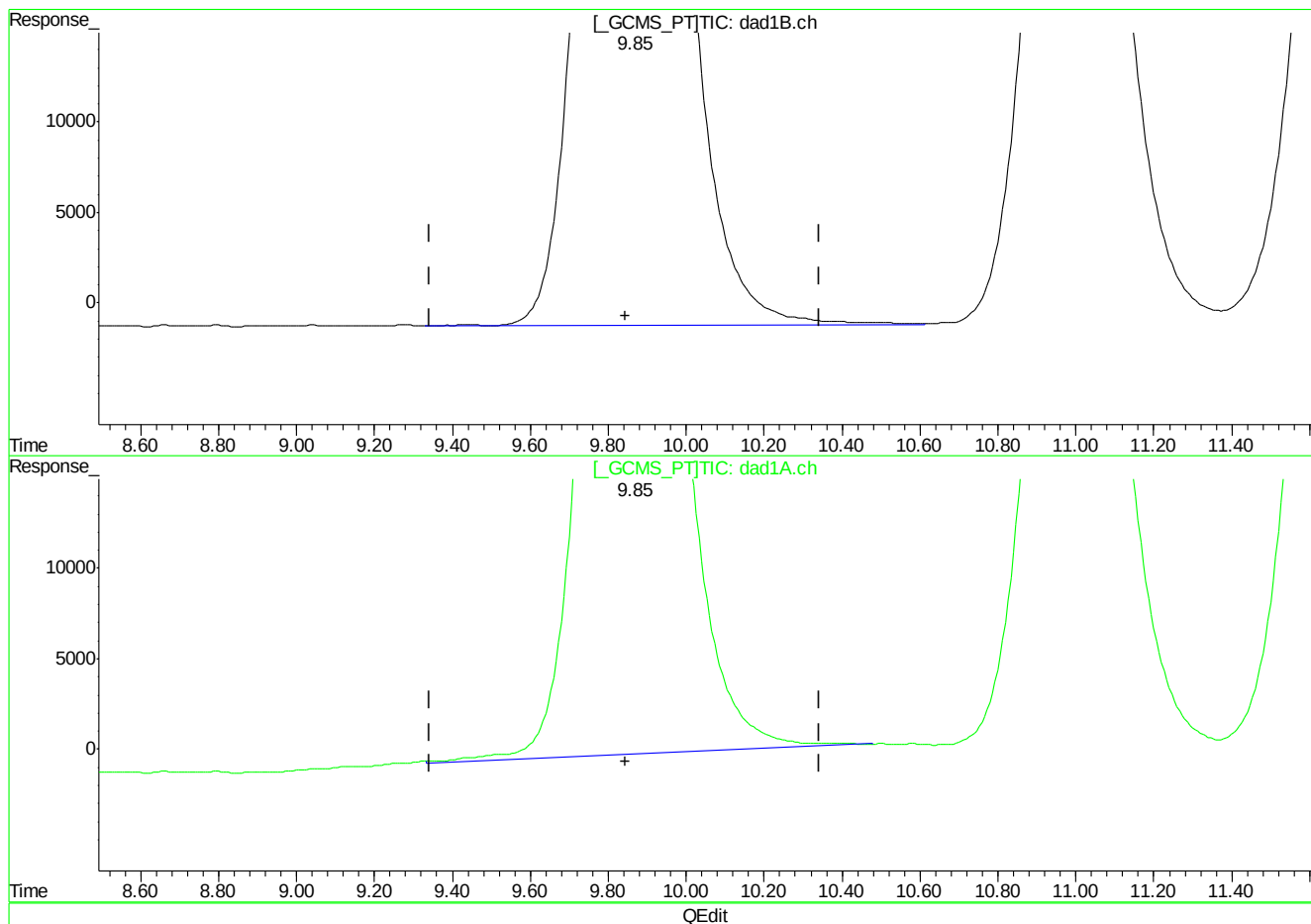
GG625705.D GGG3229_013023.M

Tue Jan 31 08:36:47 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:36 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

9.86min 1018.683ppb

response 12450218

(7) 1,3-Dinitrobenzene #2

9.85min 1064.546ppb m

response 9386252

(+) = Expected Retention Time

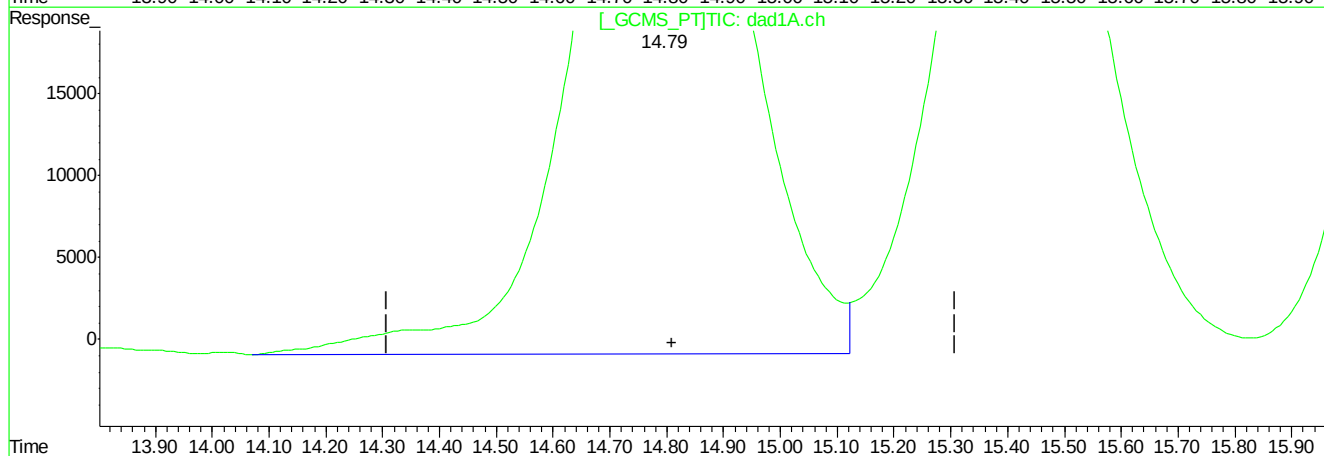
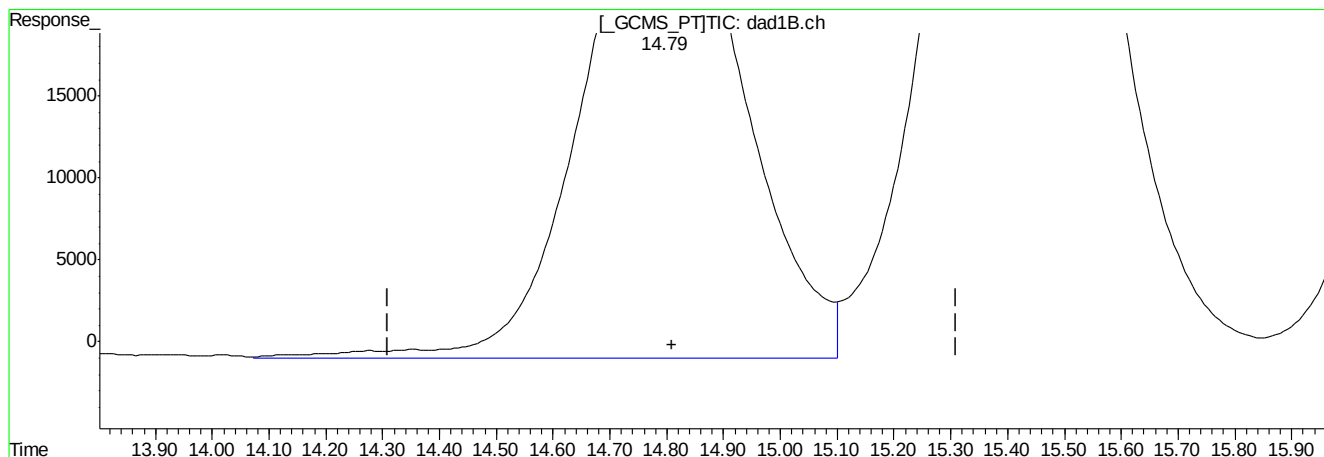
GG625705.D GGG3229_013023.M

Tue Jan 31 08:37:17 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:36 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(13) 2,6-Dinitrotoluene

14.79min 1020.851ppb

response 5979160

(13) 2,6-Dinitrotoluene #2

14.79min 1154.773ppb

response 8936716

(+) = Expected Retention Time

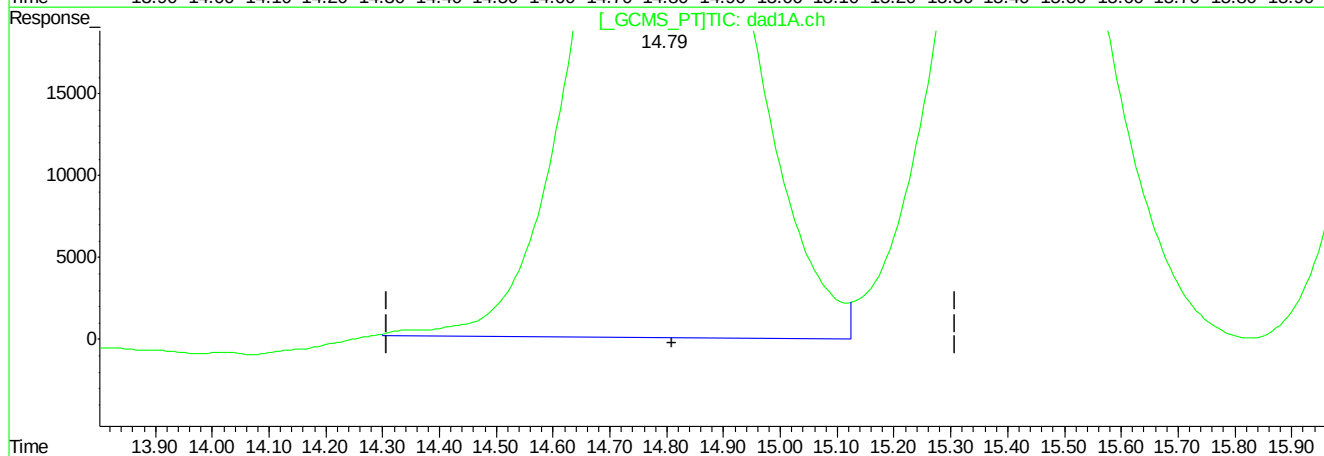
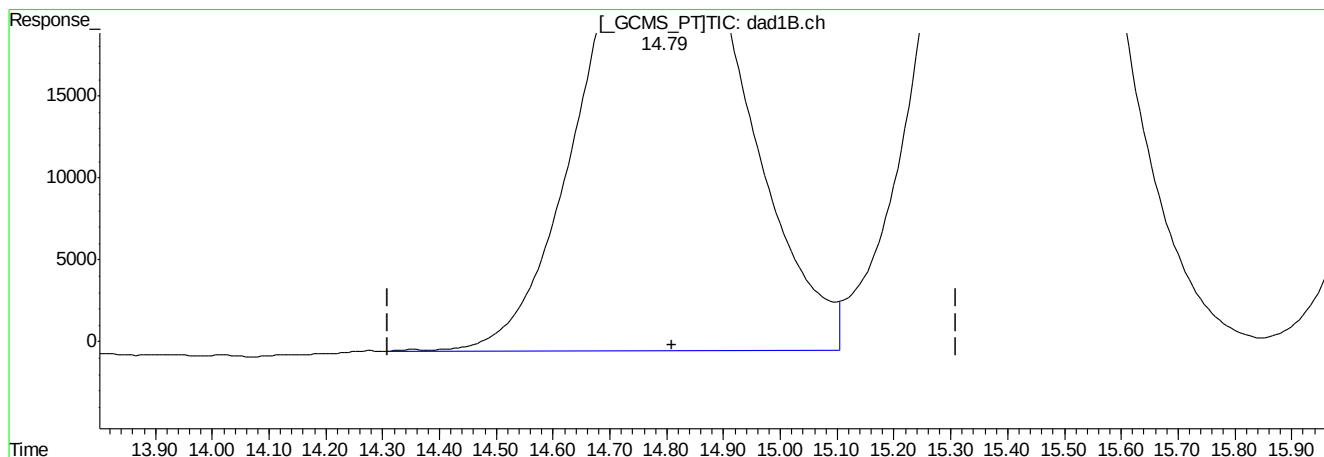
GG625705.D GGG3229_013023.M

Tue Jan 31 08:37:37 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625705.D\dad1A.ch
Acq On : 30-Jan-2023, 16:19:55 Operator: fouads
Sample : icv3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 8:36 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(13) 2,6-Dinitrotoluene

14.79min 980.543ppb m

response 5743078

(13) 2,6-Dinitrotoluene #2

14.79min 1080.390ppb m

response 8361074

(+) = Expected Retention Time

GG625705.D GGG3229_013023.M

Tue Jan 31 08:37:52 2023

Mike Eger
01/31/23 12:29

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1B.ch Vial: 7
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1A.ch
 Acq On : 30-Jan-2023, 21:34:27 Operator: fouads
 Sample : cc3229-1000 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 09:10:35 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.44	14.44	5318430	10400811	990.156	1036.244
Spiked Amount	500.000	Range	70 - 136	Recovery	=	198.03%# 207.25%#
Target Compounds						
1) TNX	4.68	4.68	4009537	4081715	454.238m	482.561
2) HMX	5.07	5.07	2749368	2906962	947.493m	979.936
3) DNx	5.28	5.29	7179106	7090626	958.467m	955.639
4) MNX	6.44	6.44	7330927	7343434	1139.175	1121.237
5) 1,3,5-Trinitrobe	7.39	7.39	8530654	8531192	962.312	964.004
6) RDX	7.78	7.78	4061408	4060870	948.730	951.222
7) 1,3-Dinitrobenze	9.87	9.87	11746469	9569314	961.102	1085.308
8) Nitrobenzene	11.01	11.01	7307398	7428927	937.482	963.530
9) 2,4,6-Trinitroto	11.73	11.73	8186809	11547615	931.815	959.341
10) Nitroglycerin	0.00	12.46	0	3072001	N.D.	1064.652 #
11) Tetryl	13.12	13.12	6205877	11122433	985.968	1029.109
13) 2,6-Dinitrotolue	14.84	14.84	5688575	8334830	971.238	1076.999
14) 2,4-Dinitrotolue	15.47	15.47	10638904	7545467	961.365	1001.146
15) 3,5-Dinitroanili	16.29	16.29	8999823	14931238	953.136	953.575
16) o-Nitrotoluene	17.39	17.39	4590012	6676537	959.700	975.704
17) p-Nitrotoluene	18.37	18.35	9750257	17764103	1998.767	1980.939
18) 4-Amino-2,6-Dini	18.37	18.35	9750257	17764103	1998.767	1980.939
19) m-Nitrotoluene	19.75	19.75	4813630	8102286	975.899	982.580
20) 2-Amino-4,6-Dini	20.14	20.15	8087136	11617002	949.293	1028.348
21) PETN	0.00	21.82	0	2729487	N.D.	908.411 #

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625715.D GGG3229_013023.M Tue Jan 31 11:32:56 2023

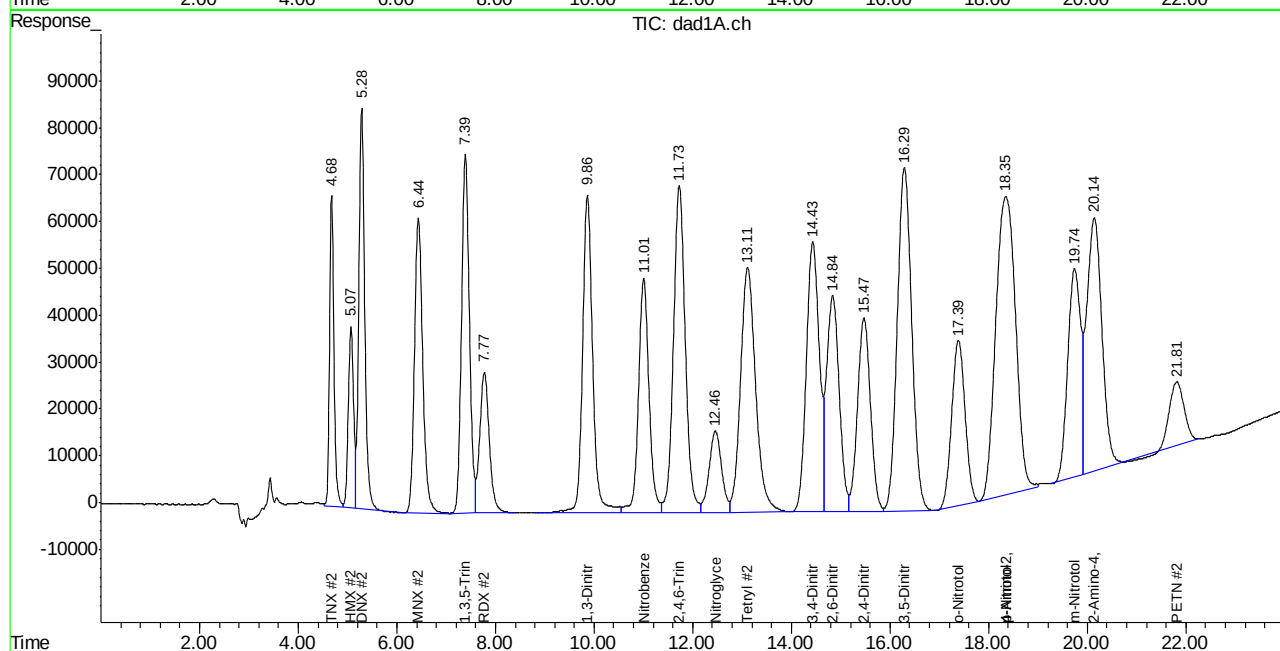
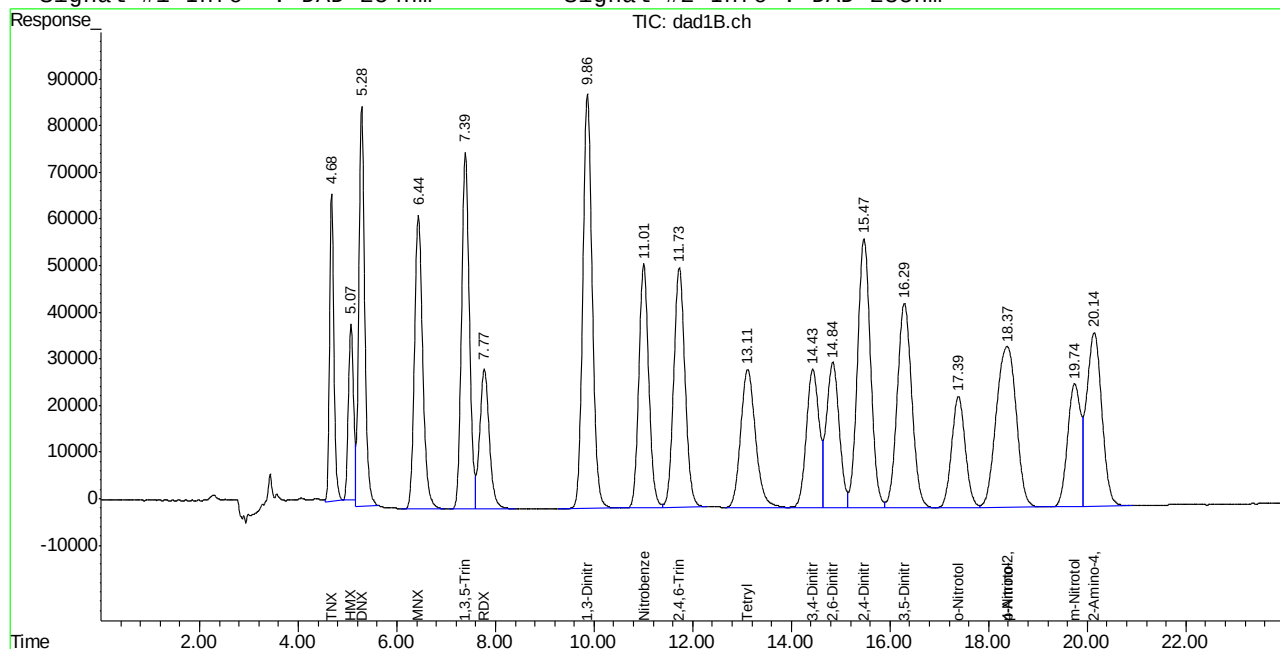
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1A.ch
Acq On : 30-Jan-2023, 21:34:27 Operator: fouads
Sample : cc3229-1000 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 9:11 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number:

GGG3229-CC3229

Method:

SW846 8330B

Lab FileID:

GG625715.D

Analyst approved:

01/31/23 11:38 Fouad Sekkar

Injection Time:

01/30/23 21:34

Supervisor approved:

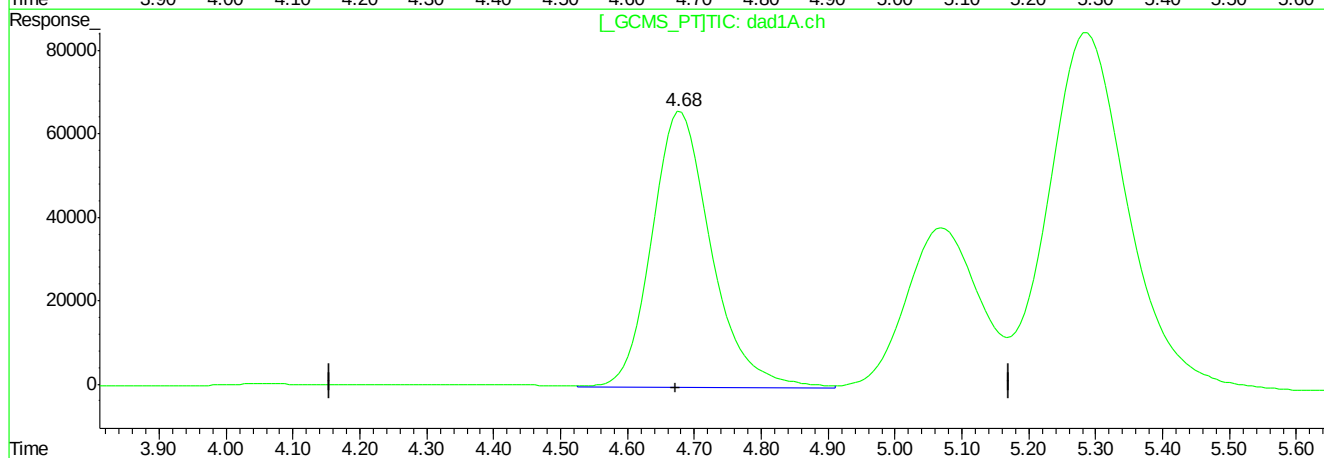
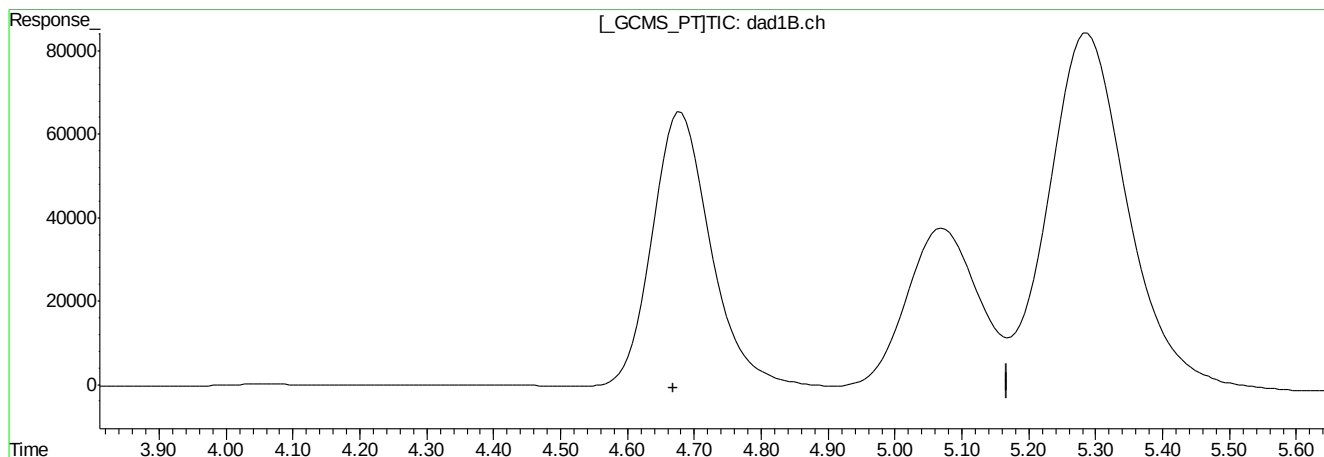
01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.68	Missed peak
HMX	2691-41-0	1	5.07	Poor instrument integration
DNX		1	5.28	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1A.ch
Acq On : 30-Jan-2023, 21:34:27 Operator: fouads
Sample : cc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 9:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.68min 482.561ppb

response 4081715

(+) = Expected Retention Time

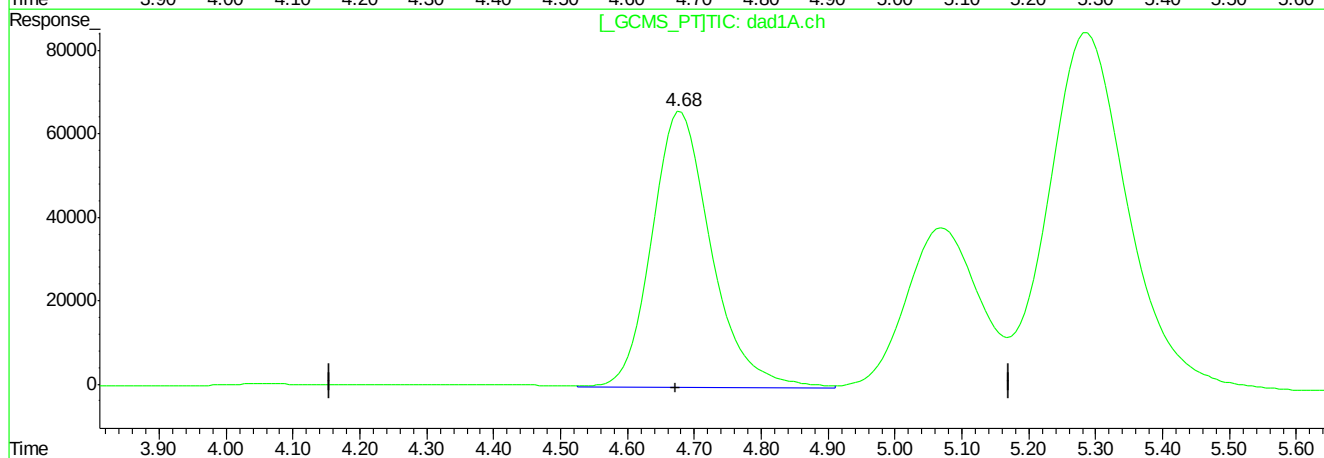
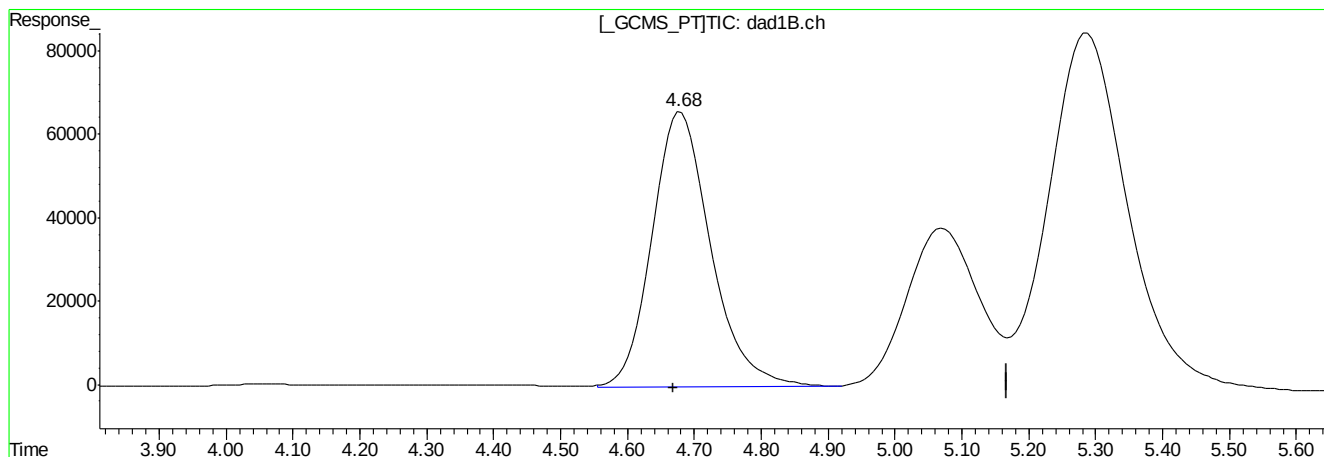
GG625715.D GGG3229_013023.M

Tue Jan 31 09:10:49 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1A.ch
Acq On : 30-Jan-2023, 21:34:27 Operator: fouads
Sample : cc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 9:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

4.68min 454.238ppb m

response 4009537

(1) TNX #2

4.68min 482.561ppb

response 4081715

(+) = Expected Retention Time

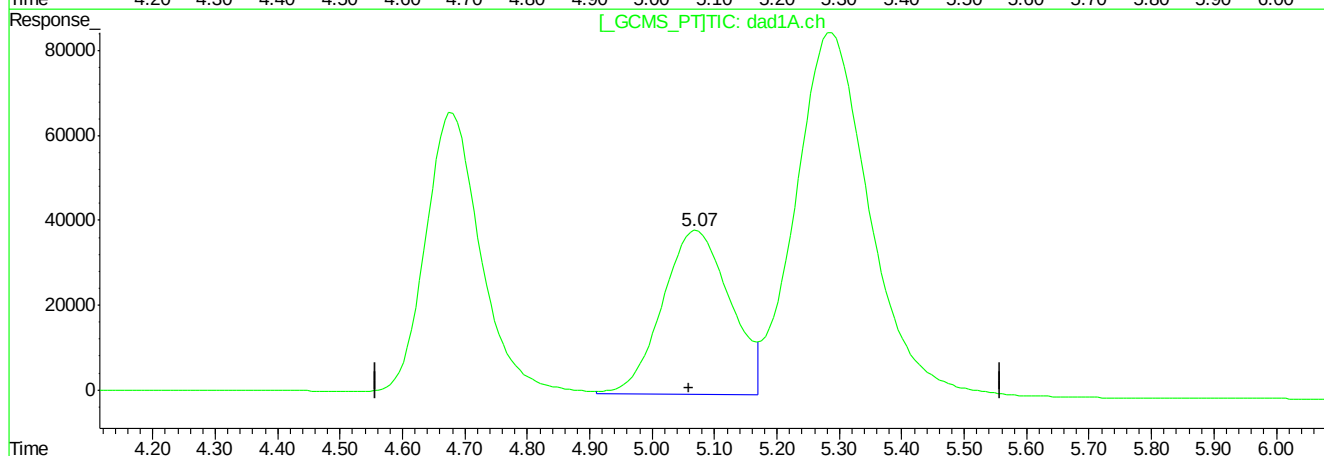
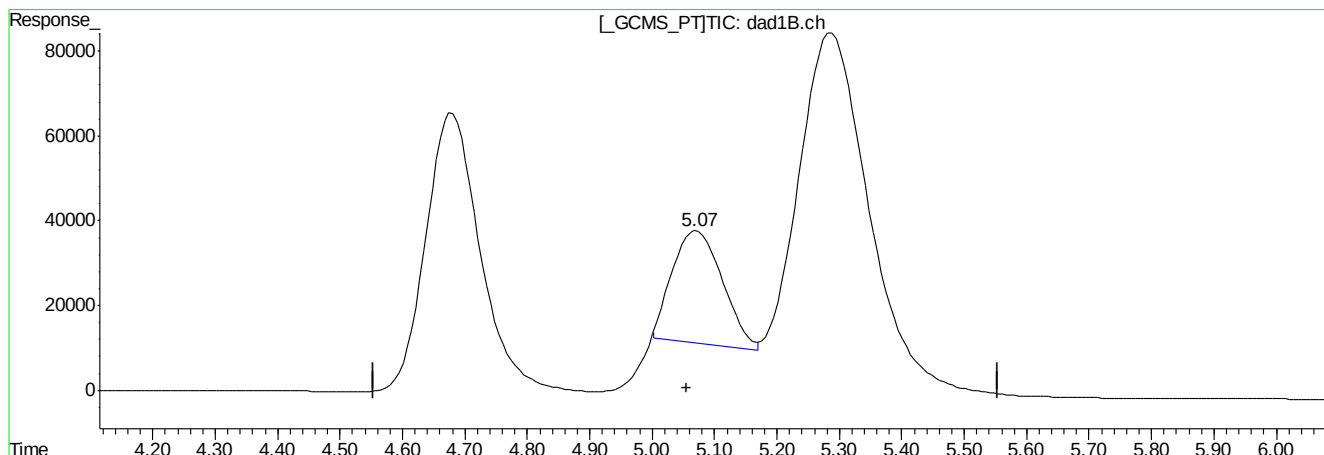
GG625715.D GGG3229_013023.M

Tue Jan 31 09:10:54 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1A.ch
Acq On : 30-Jan-2023, 21:34:27 Operator: fouads
Sample : cc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 9:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.07min 509.471ppb

response 1478347

(2) HMX #2

5.07min 979.936ppb

response 2906962

(+) = Expected Retention Time

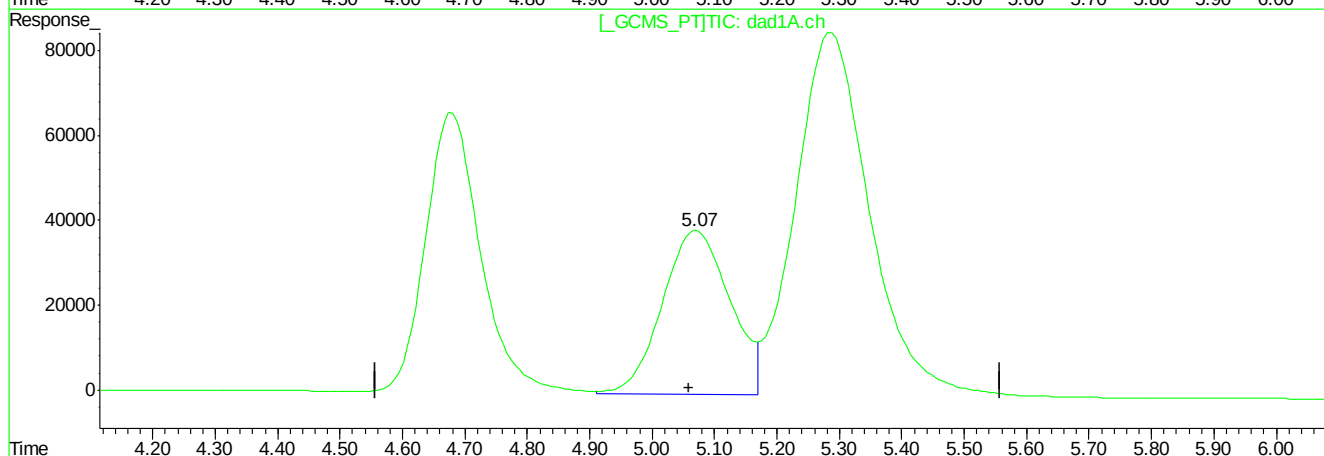
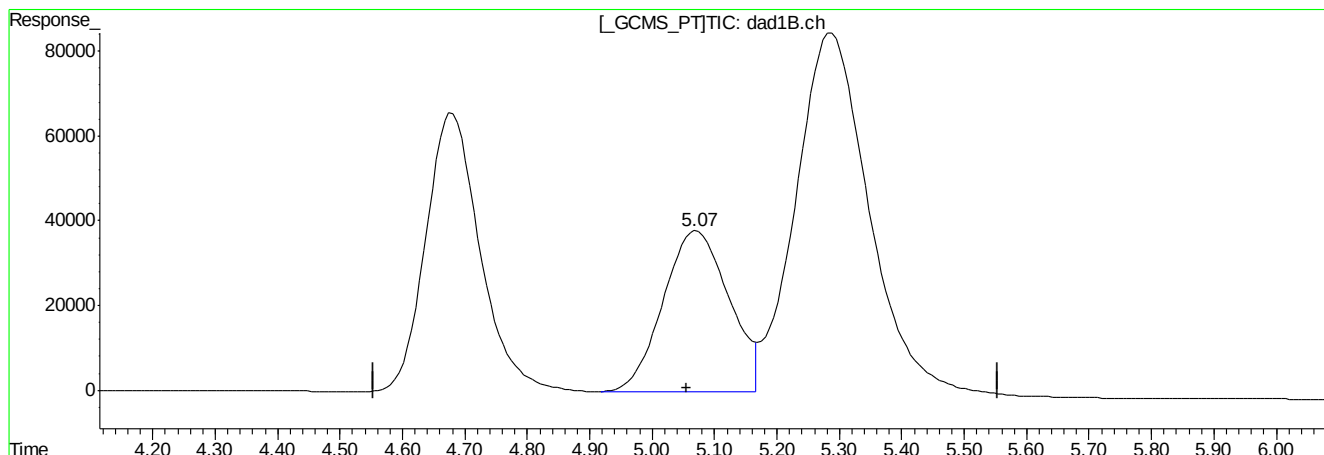
GG625715.D GGG3229_013023.M

Tue Jan 31 09:10:59 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1A.ch
Acq On : 30-Jan-2023, 21:34:27 Operator: fouads
Sample : cc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 9:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.07min 947.493ppb m

response 2749368

(2) HMX #2

5.07min 979.936ppb

response 2906962

(+) = Expected Retention Time

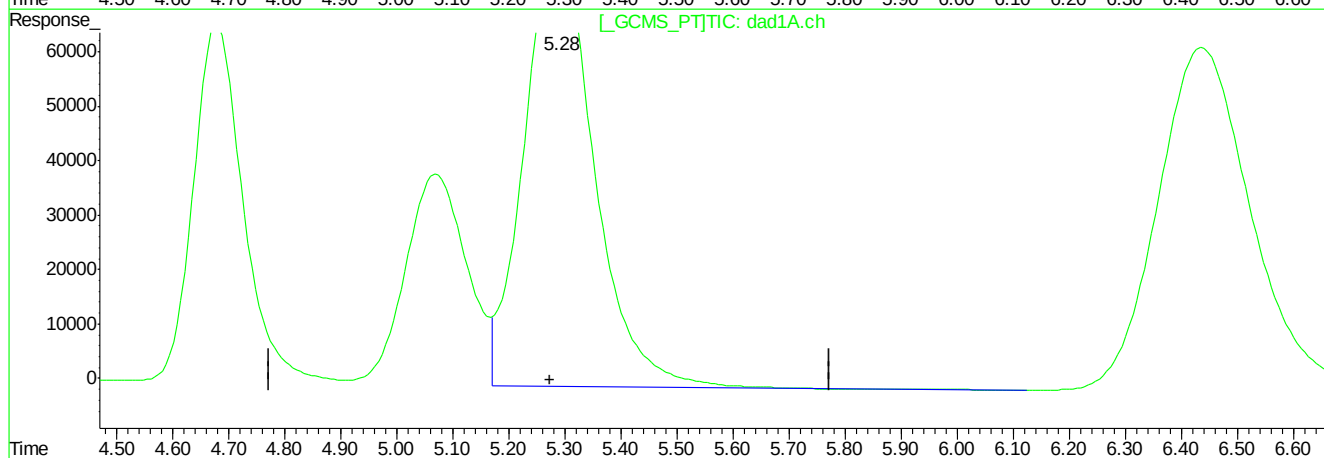
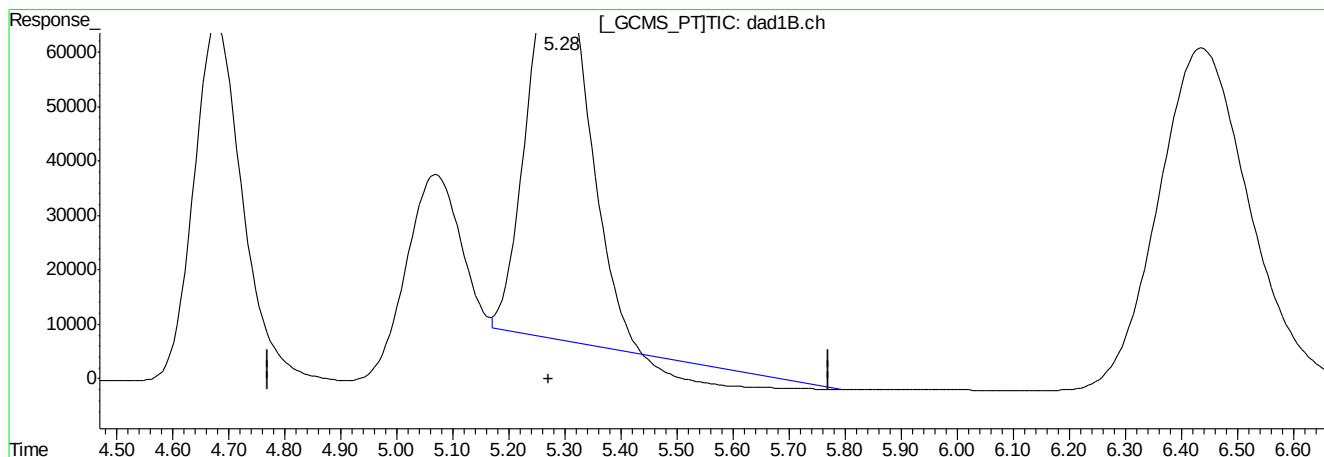
GG625715.D GGG3229_013023.M

Tue Jan 31 09:11:05 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1A.ch
Acq On : 30-Jan-2023, 21:34:27 Operator: fouads
Sample : cc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 9:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(3) DNX

5.29min 683.671ppb

response 5120832

(3) DNX #2

5.29min 955.639ppb

response 7090626

(+) = Expected Retention Time

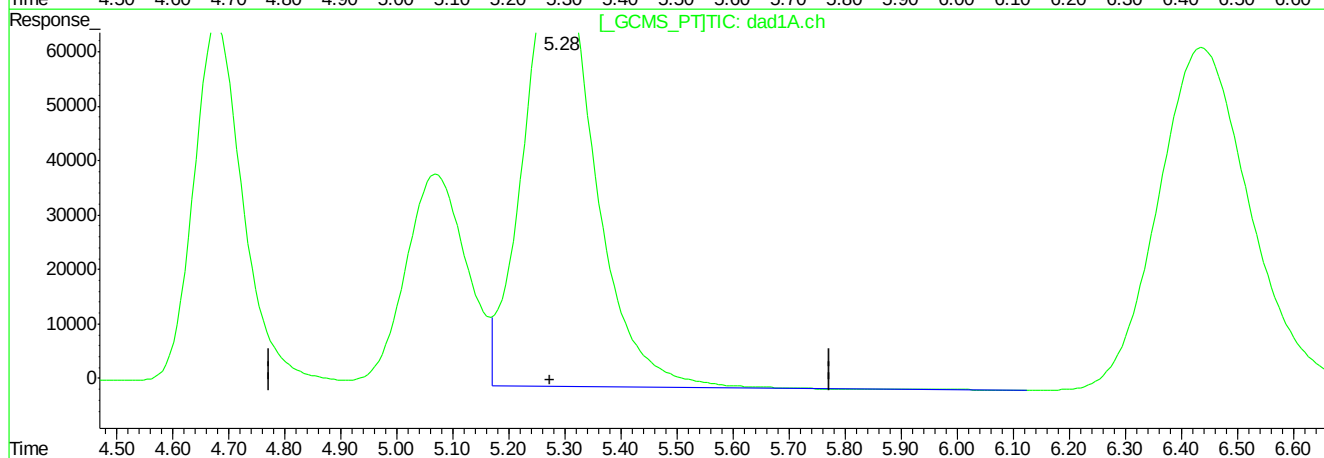
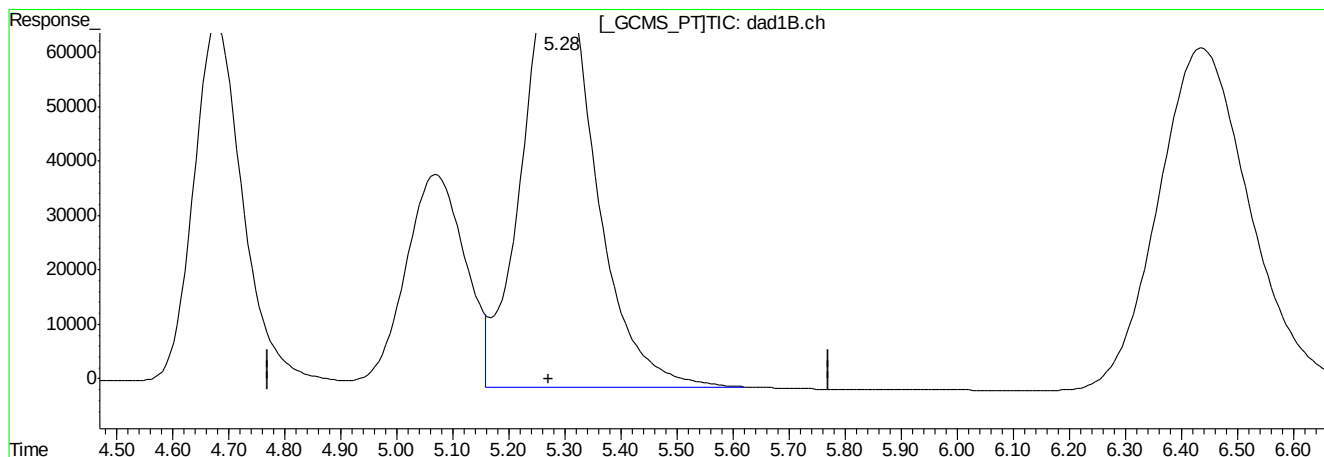
GG625715.D GGG3229_013023.M

Tue Jan 31 09:11:09 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625715.D\dad1A.ch
Acq On : 30-Jan-2023, 21:34:27 Operator: fouads
Sample : cc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 9:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



(3) DNX

5.28min 958.467ppb m

response 7179106

(3) DNX #2

5.29min 955.639ppb

response 7090626

(+) = Expected Retention Time

GG625715.D GGG3229_013023.M

Tue Jan 31 09:11:16 2023

Mike Eger
01/31/23 12:29

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625723.D\dad1B.ch Vial: 7
 Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625723.D\dad1A.ch
 Acq On : 31-Jan-2023, 10:13:10 Operator: fouads
 Sample : ecc3229-1000 Inst : G1315B
 Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jan 31 10:38:20 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Tue Jan 31 08:35:54 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	14.39	14.39	5578651	11204380	1038.603	1116.304
Spiked Amount	500.000	Range	70 - 136	Recovery	= 207.72%#	223.26%#
Target Compounds						
1) TNX	4.67	4.67	4161399	4235021	471.443m	500.696
2) HMX	5.06	5.06	2934554	3000177	1011.312m	1011.358
3) DNx	5.27	5.28	7311431	7435308	976.134m	1002.094
4) MNX	6.42	6.42	7782608	7782895	1209.363	1188.337
5) 1,3,5-Trinitrobe	7.37	7.37	9049865	9049865	1020.882	1022.613
6) RDX	7.76	7.76	4301016	4301016	1004.702	1007.474
7) 1,3-Dinitrobenze	9.84	9.84	12379205	10387030	1012.873	1178.049
8) Nitrobenzene	10.98	10.98	7812665	8379073	1002.304	1086.764
9) 2,4,6-Trinitroto	11.69	11.69	8659126	12341730	985.573	1025.314
10) Nitroglycerin	0.00	12.42	0	3467902	N.D.	1201.858 #
11) Tetryl	13.08	13.08	6547324	12201270	1040.215	1128.929
13) 2,6-Dinitrotolue	14.80	14.80	5990563	8884007	1022.797	1147.962
14) 2,4-Dinitrotolue	15.42	15.42	11170602	8052953	1009.410	1068.480
15) 3,5-Dinitroanili	16.24	16.24	9470619	15982595	1002.996	1020.719
16) o-Nitrotoluene	17.32	17.32	4879309	7041373	1020.187	1029.021
17) p-Nitrotoluene	18.30	18.28	10299789	18870911	2111.419	2104.363
18) 4-Amino-2,6-Dini	18.30	18.28	10299789	18870911	2111.419	2104.363
19) m-Nitrotoluene	19.66	19.66	5051345	8745405	1024.092	1060.572
20) 2-Amino-4,6-Dini	20.05	20.05	8550555	12321824	1003.690	1090.740
21) PETN	0.00	21.73	0	3111191	N.D.	1035.447 #

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG625723.D GGG3229_013023.M Tue Jan 31 11:33:03 2023

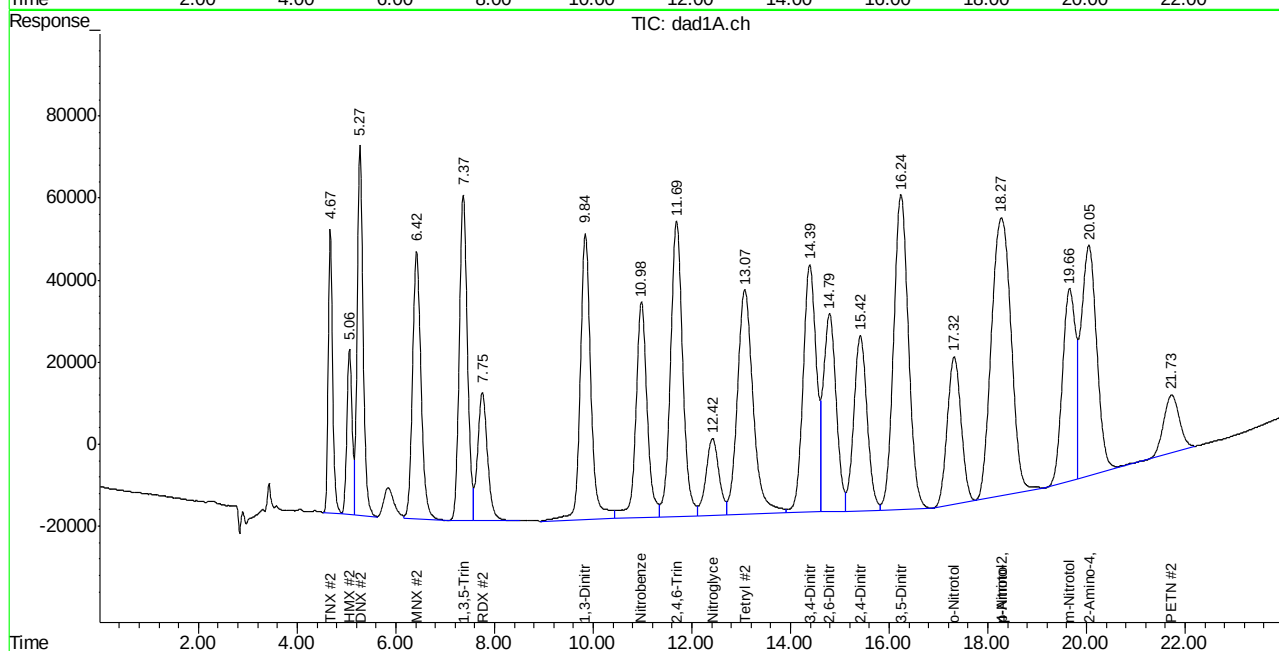
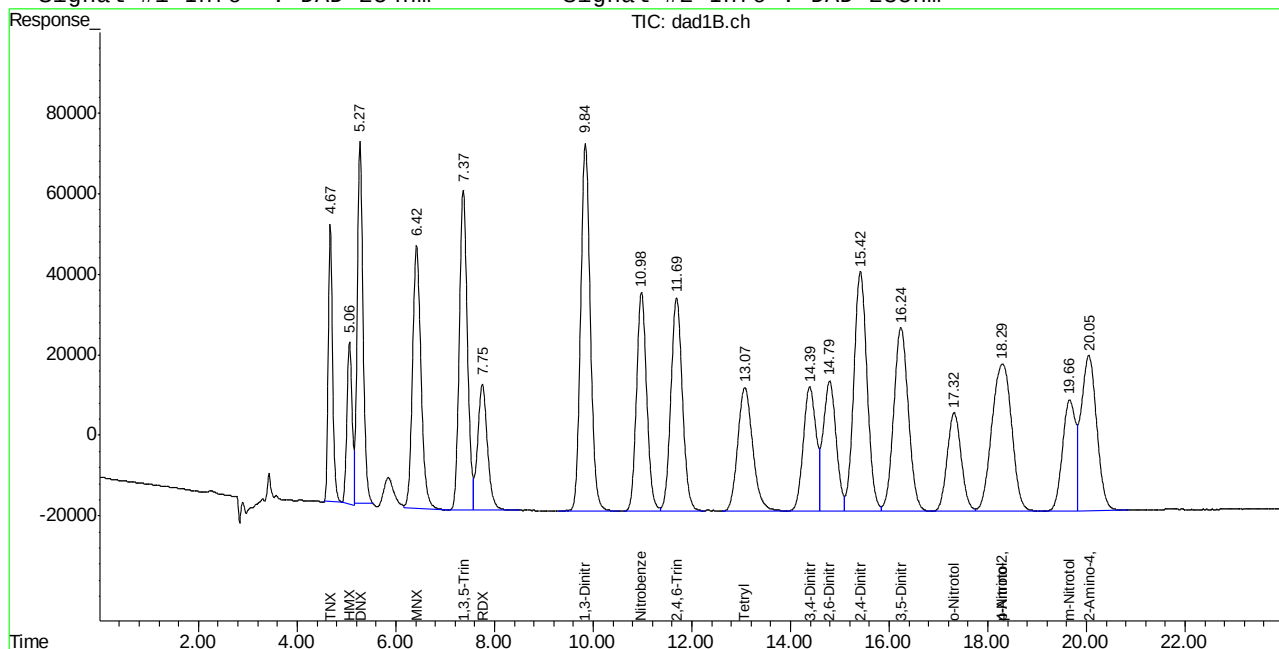
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625723.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625723.D\dad1A.ch
Acq On : 31-Jan-2023, 10:13:10 Operator: fouads
Sample : ecc3229-1000 Inst : G1315B
Misc : op95139,GGG3229,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 10:39 2023 Quant Results File: GGG3229_013023.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number: GGG3229-ECC3229

Method: SW846 8330B

Lab FileID: GG625723.D

Analyst approved: 01/31/23 11:42 Fouad Sekkar

Injection Time: 01/31/23 10:13

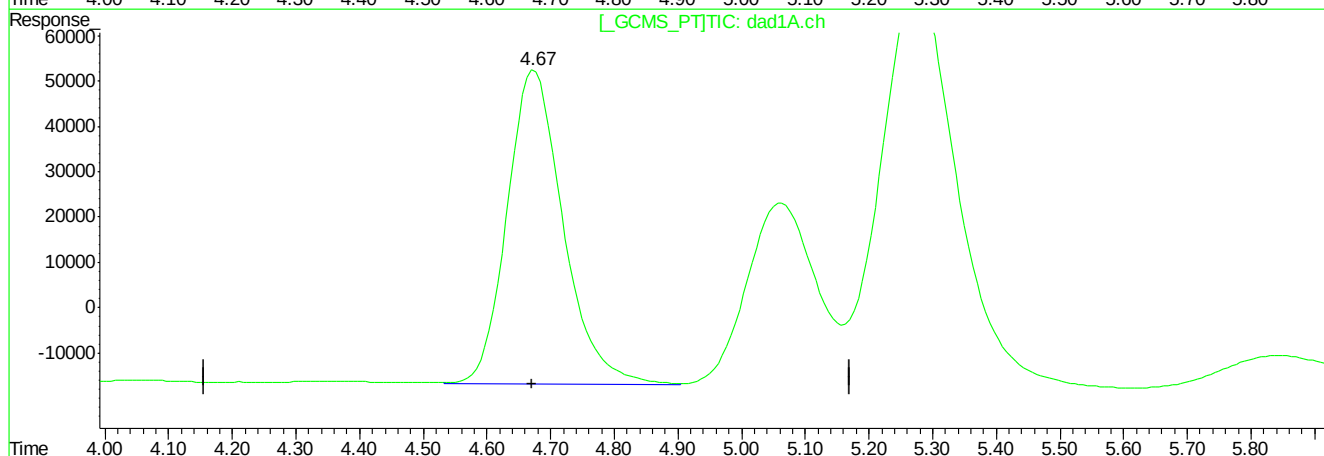
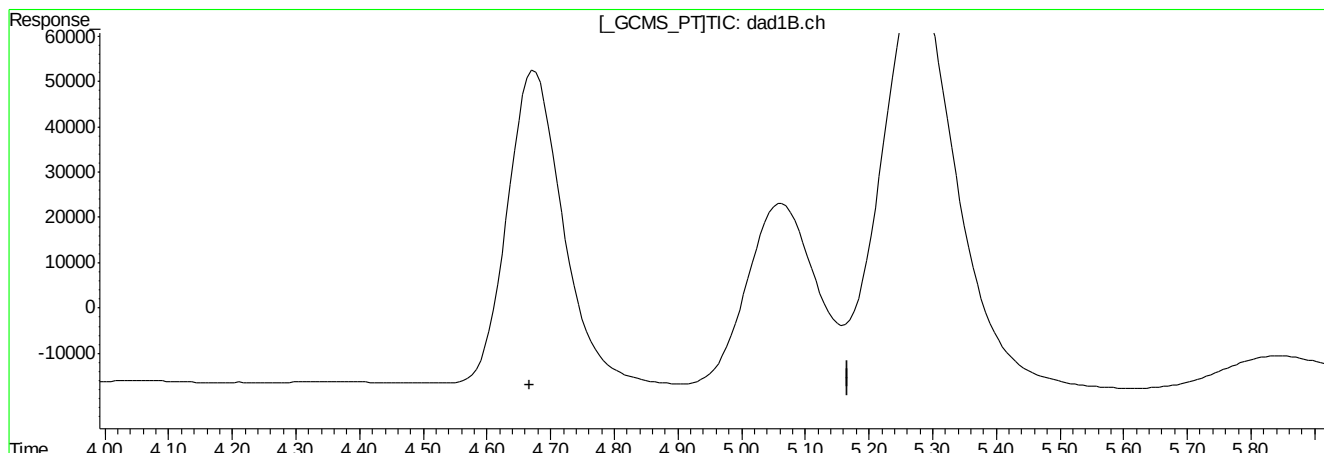
Supervisor approved: 01/31/23 12:29 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	4.67	Missed peak
HMX	2691-41-0	1	5.06	Poor instrument integration
DNX		1	5.27	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625723.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625723.D\dad1A.ch
Acq On : 31-Jan-2023, 10:13:10 Operator: fouads
Sample : ecc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 10:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

0.00min 0.000ppb

response 0

(1) TNX #2

4.67min 500.696ppb

response 4235021

(+) = Expected Retention Time

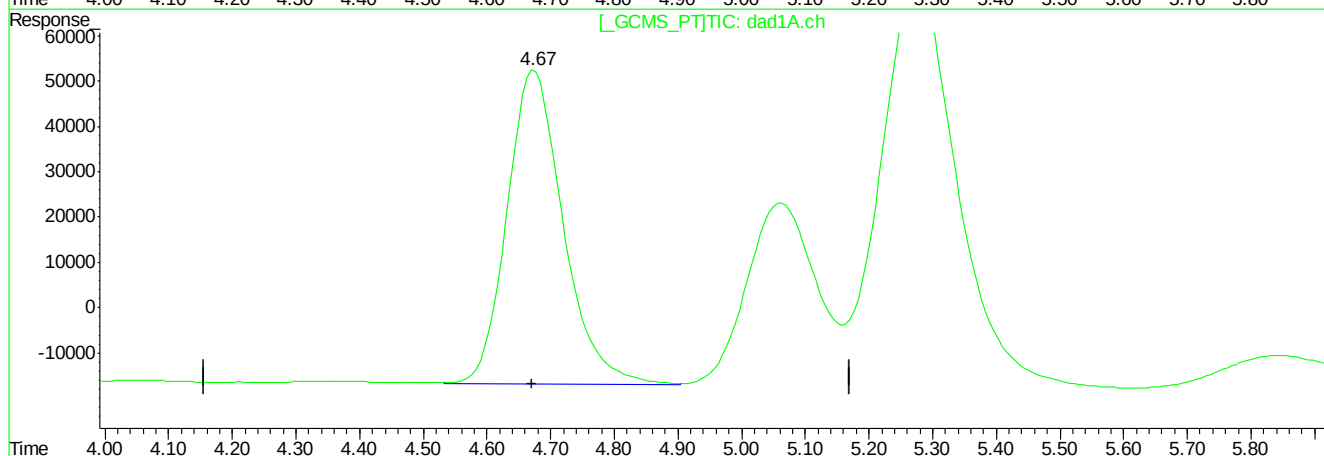
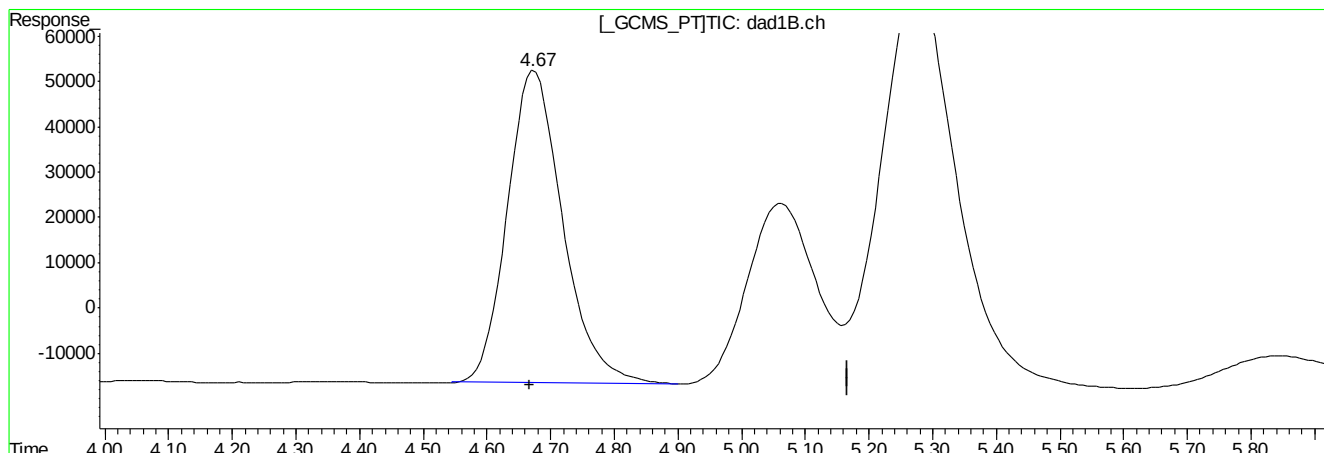
GG625723.D GGG3229_013023.M

Tue Jan 31 10:38:43 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625723.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625723.D\dad1A.ch
Acq On : 31-Jan-2023, 10:13:10 Operator: fouads
Sample : ecc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 10:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

4.67min 471.443ppb m

response 4161399

(1) TNX #2

4.67min 500.696ppb

response 4235021

(+) = Expected Retention Time

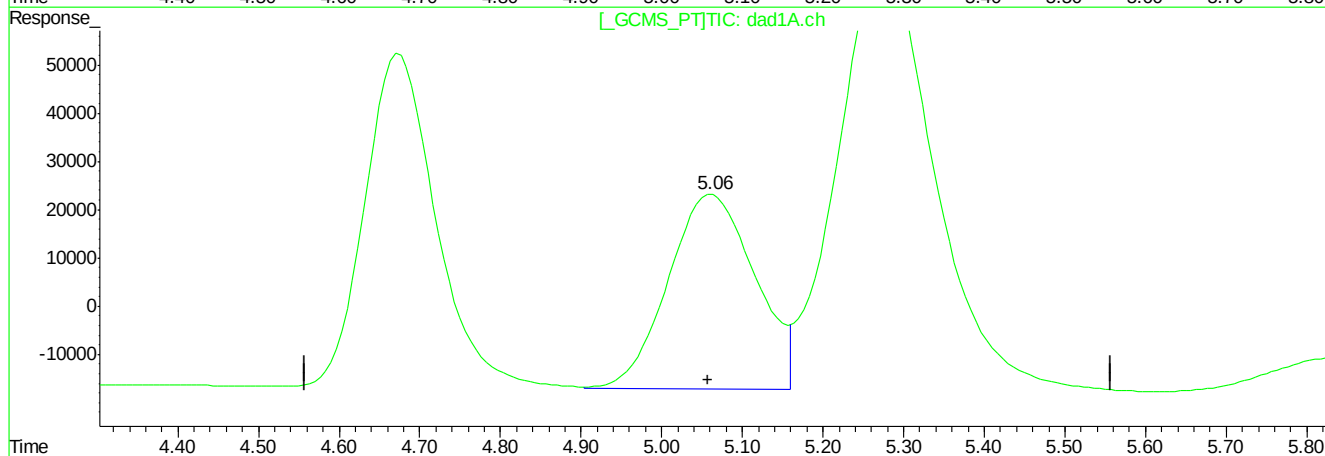
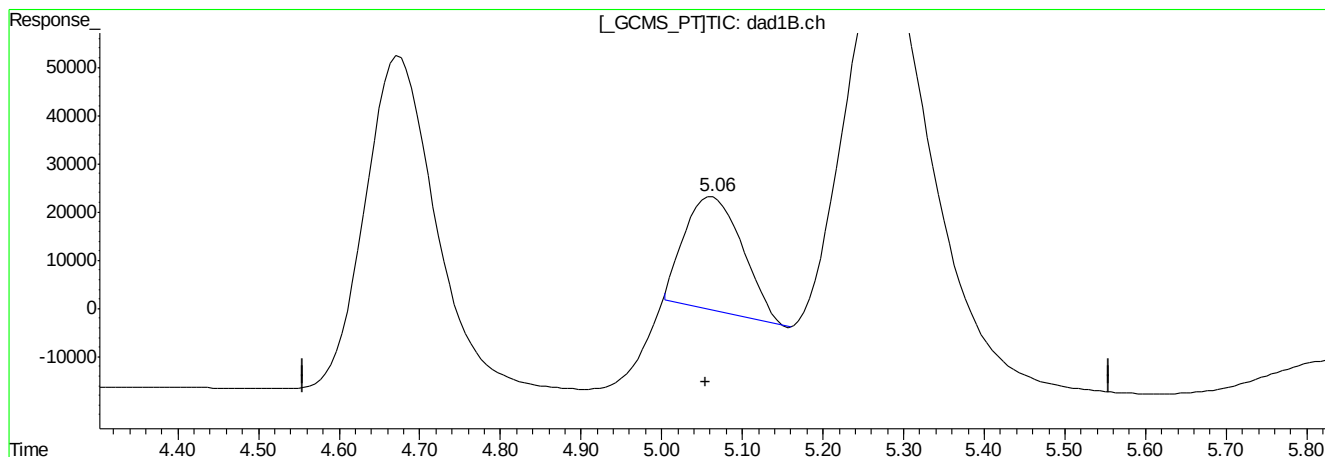
GG625723.D GGG3229_013023.M

Tue Jan 31 10:38:48 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625723.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625723.D\dad1A.ch
Acq On : 31-Jan-2023, 10:13:10 Operator: fouads
Sample : ecc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 10:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 406.591ppb

response 1179818

(2) HMX #2

5.06min 1011.358ppb

response 3000177

(+) = Expected Retention Time

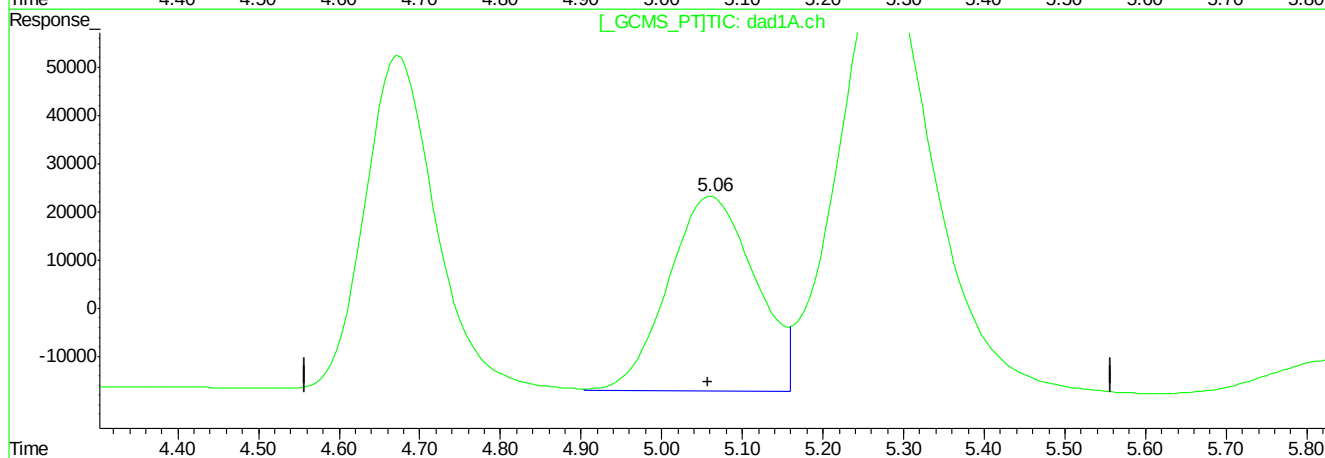
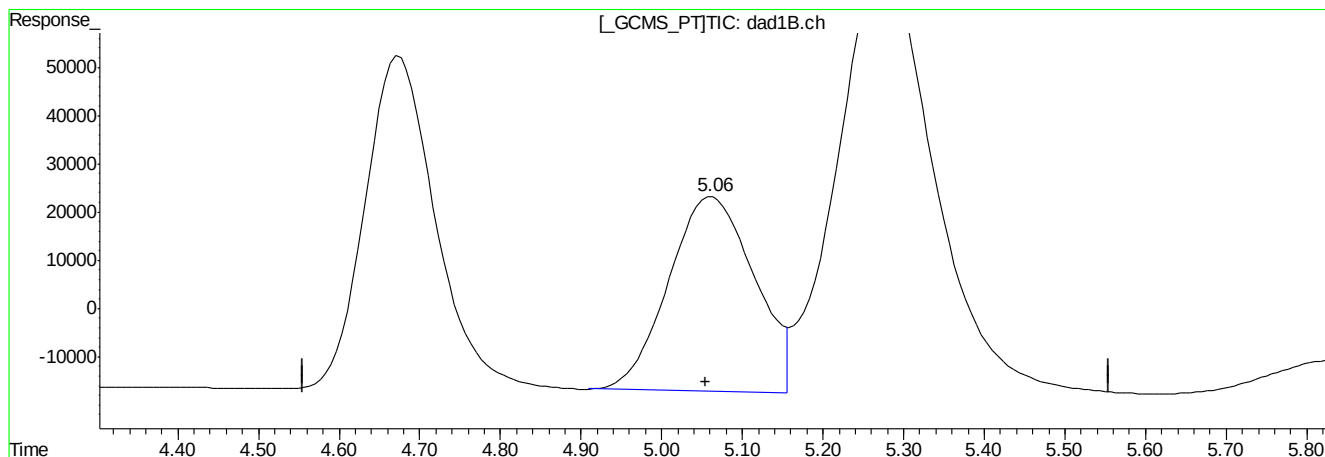
GG625723.D GGG3229_013023.M

Tue Jan 31 10:38:53 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625723.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625723.D\dad1A.ch
Acq On : 31-Jan-2023, 10:13:10 Operator: fouads
Sample : ecc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 10:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.06min 1011.312ppb m

response 2934554

(2) HMX #2

5.06min 1011.358ppb

response 3000177

(+) = Expected Retention Time

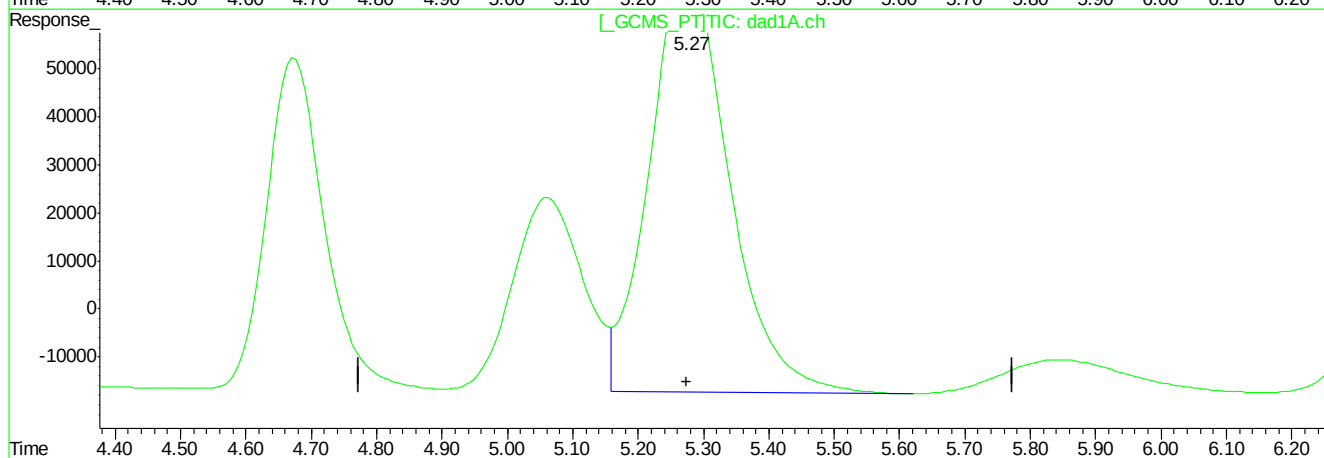
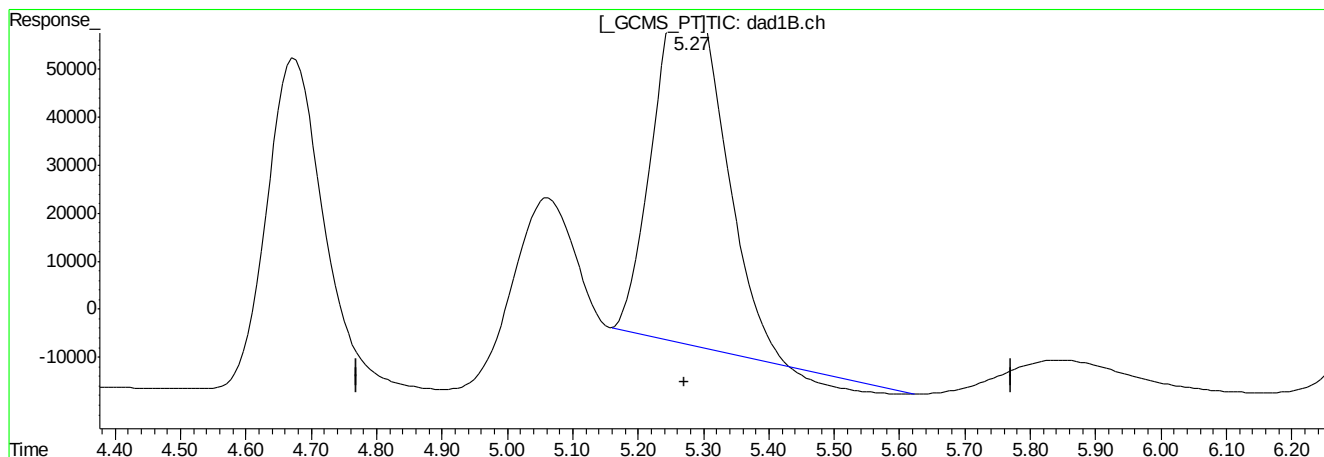
GG625723.D GGG3229_013023.M

Tue Jan 31 10:39:01 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625723.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625723.D\dad1A.ch
Acq On : 31-Jan-2023, 10:13:10 Operator: fouads
Sample : ecc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 10:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(3) DNX

5.28min 743.433ppb

response 5568459

(3) DNX #2

5.28min 1002.094ppb

response 7435308

(+) = Expected Retention Time

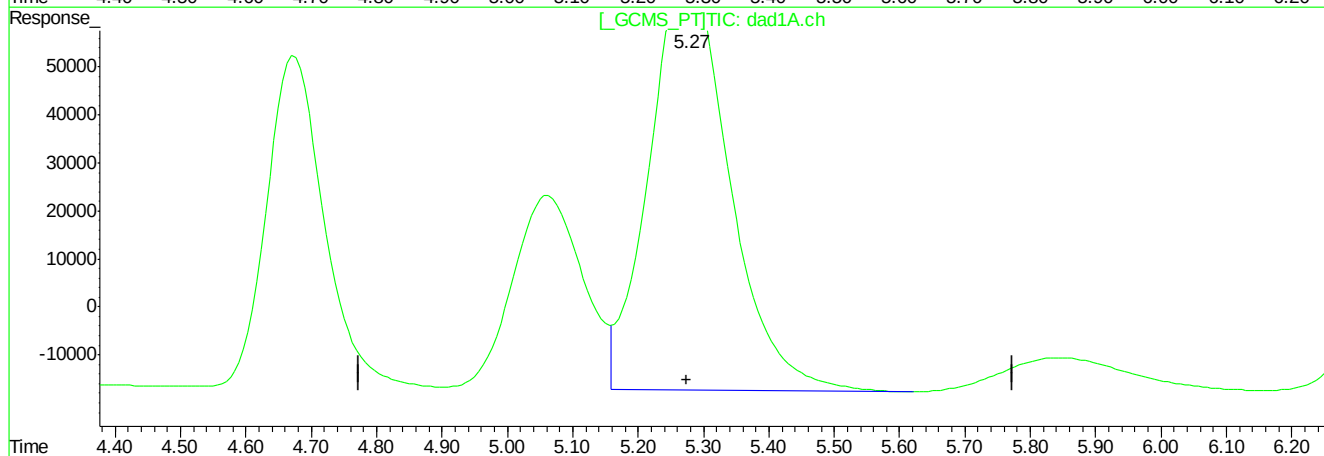
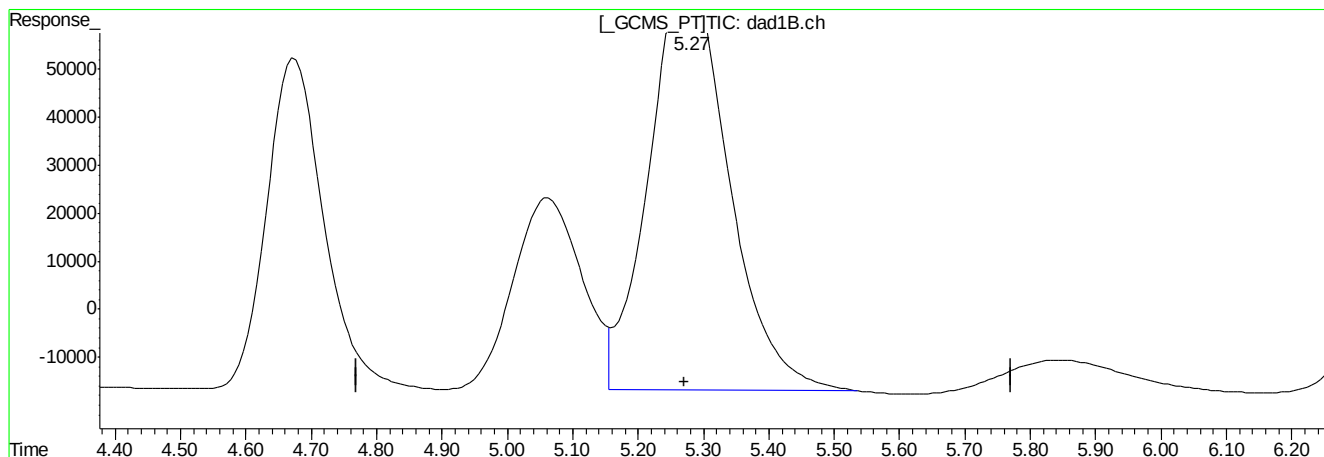
GG625723.D GGG3229_013023.M

Tue Jan 31 10:39:06 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3229\GG625723.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3229\GG625723.D\dad1A.ch
Acq On : 31-Jan-2023, 10:13:10 Operator: fouads
Sample : ecc3229-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jan 31 10:38 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Tue Jan 31 08:35:54 2023
Response via : Multiple Level Calibration



QEdit

(3) DNX

5.27min 976.134ppb m

response 7311431

(3) DNX #2

5.28min 1002.094ppb

response 7435308

(+) = Expected Retention Time

GG625723.D GGG3229_013023.M

Tue Jan 31 10:39:12 2023

SGS-ORLANDO

HPLC-04 BB

ANALYSIS LOG

DATE		8/31/2022	METHODS		8330	IC/ICC STD LOT	LC1645
COLUMN TYPE		Extend C18	ACQ. METHOD		8330B	ICV STD LOT	LC1648
AMOUNT INJ		100ul	PROC. METHOD		BBB2230_083122.M	SOLVENT	222737
INSTRUMENT		HPLC05-BB	CALIB. DATE		8/31/2022	SOLVENT	258274
ANALYST		fs	RUN BATCH		GBB2232	HEAD PRESSURE	157
DATA FILE	ALS	SAMPLE NAME	METHOD	DF	MISC. INFO	COMMENTS	
BB073628	1	ccb	8330	200/1000	op90239,GBB2232,1000,,,10,1,water	nd	
BB073629	2	ic2232-20	8330	1	op92480,GBB2232,1000,,,10,1,water		
BB073630	3	ic2232-50	8330	1	op92480,GBB2232,1000,,,10,1,soil		
BB073631	4	ic2232-100	8330	1	op92480,GBB2232,1000,,,10,1,soil		
BB073632	5	ic2232-200	8330	1	op92480,GBB2232,1000,,,10,1,soil		
BB073633	6	ic2232-500	8330	1	op92480,GBB2232,1000,,,10,1,water	curve passed	
BB073634	7	icc2232-1000	8330	1	op92480,GBB2232,1000,,,10,1,water		
BB073635	8	ic2232-2500	8330	1	op92480,GBB2232,1000,,,10,1,water		
BB073636	9	ic2232-5000	8330	1	op92480,GBB2232,1000,,,10,1,water		
BB073637	10	icv2232-1000	8330	1	op92480,GBB2232,1000,,,10,1,water	icv faild low (tnx,dnx,mnx) rerun	

SGS-ORLANDO

HPLC-04 BB

ANALYSIS LOG

DATE		1/30/2023	METHODS		8330	IC/ICC STD LOT	LC1653,lc1655
COLUMN TYPE		Extend C18	ACQ. METHOD		8330B	ICV STD LOT	LC1671
AMOUNT INJ		100ul	PROC. METHOD		BBB2232_083122.m	SOLVENT	222737
INSTRUMENT		HPLC05-BB	CALIB. DATE		8/31/2022	SOLVENT	258274
ANALYST		fs	RUN BATCH		GBB2301	HEAD PRESSURE	252
DATA FILE	ALS	SAMPLE NAME	METHOD	DF	MISC. INFO	COMMENTS	
BB075436	1	ccb	8330	1	op93022,GBB2301,1040,,,10,1,water	/	
BB075437	2	cc2232-1000	8330	200/1000	op95139,GBB2301,1000,,,10,1,water	passed (2,4 LOW SIG1)	
BB075438	3	op95195-mb	8330	1	op95195,GBB2301,1000,,,10,1,water	ND	
BB075439	4	op95195-bs	8330	1	op95195,GBB2301,1000,,,10,1,water	/	
BB075440	5	fc2161-1	8330	1	op95195,GBB2301,50,,,10,1,water	LOW RERUN BELOW	
BB075441	6	fc2197-1	8330	1	op95195,GBB2301,1020,,,10,1,water	RDX	
BB075442	7	fc2197-2	8330	1	op95195,GBB2301,1020,,,10,1,water	RDX	
BB075443	8	fc2200-1	8330	1	op95195,GBB2301,1030,,,10,1,water	/	
BB075444	5	fc2161-1	8330	1	op95195,GBB2301,50,,,10,1,water	LOW ,SEE GBB2302	
BB075445	9	op95195-ms	8330	1	op95195,GBB2301,510,,,10,1,water	LOW ,RERUN GBB2302	
BB075446	10	op95195-msd	8330	1	op95195,GBB2301,510,,,10,1,water	/	
BB075447	11	fc2200-2	8330	1	op95195,GBB2301,1030,,,10,1,water	HMX?	
BB075448	1	ccb	8330	1	op93022,GBB2301,1040,,,10,1,water	/	
BB075449	2	cc2232-1000	8330	200/1000	op95139,GBB2301,1000,,,10,1,water	passed (2,4 LOW SIG1)	

DATE	1/31/2023		METHODS	8330		IC/ICC STD LOT	LC1653,lc1655
COLUMN TYPE	Extend C18		ACQ. METHOD	8330B		ICV STD LOT	LC1671
AMOUNT INJ	100ul		PROC. METHOD	BBB2232_083122.m		SOLVENT	222737
INSTRUMENT	HPLC05-BB		CALIB. DATE	8/31/2022		SOLVENT	258274
ANALYST	fs		RUN BATCH	GBB2302		HEAD PRESSURE	252
DATA FILE	ALS	SAMPLE NAME	METHOD	DF	MISC. INFO	COMMENTS	
BB075450	1	ccb	8330	1	op93022,GBB2302,1040,,,10,1,water	/	
BB075451	2	cc2232-1000	8330	200/1000	op95139,GBB2302,1000,,,10,1,water	passed (2,4 LOW SIG1)	
BB075452	3	fc2161-1	8330	1	op95195,GBB2302,50,,,10,1,water	rdx	
BB075453	4	op95195-ms	8330	1	op95195,GBB2302,510,,,10,1,water	/	
BB075454	1	ccb	8330	1	op95195,GBB2302,1040,,,10,1,water	/	
BB075455	2	ecc2232-1000	8330	200/1000	op95195,GBB2302,1000,,,10,1,water	passed (2,4 LOW SIG1)	

DATE	1/30/2023	METHODS					
COLUMN TYPE	Bonus-RP	ACQ. METHOD			8330RBPB3	ICV STD LOT	LC1651
AMOUNT INJ	100uL	PROC. METHOD			GGG3226_013023.M	SOLVENT	222742
INSTRUMENT	HPLC3-GG	CALIB. DATE			1/30/2023	SOLVENT	223231
ANALYST	fs	RUN BATCH			GGG3229	HEAD PRESSURE	177
DATA FILE	ALS	SAMPLE NAME	METHOD	DF	MISC. INFO	COMMENTS	
GG63692	1	ccb	8330	1	op93022,GGG3229,1000,,,10.1,water	nd	
GG63693	2	ic3229-20	8330	1	op95139,GGG3229,1000,,,10.1,water	/	
GG63694	3	ic3229-50	8330	1	op95139,GGG3229,1000,,,10.1,water	/	
GG63695	4	ic3229-100	8330	1	op95139,GGG3229,1000,,,10.1,water	/	
GG63696	5	ic3229-200	8330	1	op95139,GGG3229,1000,,,10.1,water	/	
GG63697	6	ic3229-500	8330	50/500	op95139,GGG3229,1000,,,10.1,water	curve passed	
GG63698	2	ic3229-20	8330	2/500	op95139,GGG3229,1000,,,10.1,water	curve passed	
GG63699	3	ic3229-50	8330	5/500	op95139,GGG3229,1000,,,10.1,water	curve passed	
GG63700	4	ic3229-100	8330	10/500	op95139,GGG3229,1000,,,10.1,water	curve passed	
GG63701	5	ic3229-200	8330	20/500	op95139,GGG3229,1000,,,10.1,water	curve passed	
GG63702	7	ic3229-1000	8330	100/500	op95139,GGG3229,1000,,,10.1,water	curve passed	
GG63703	8	ic3229-2500	8330	250/500	op95139,GGG3229,1000,,,10.1,water	curve passed	
GG63704	9	ic3229-5000	8330	500(1x)	op95139,GGG3229,1000,,,10.1,water	curve passed	
GG63705	10	icv3229-1000	8330	1x	op95139,GGG3229,1000,,,10.1,water	icv passed	
GG63706	11	op95139-mb	8330	1	op95139,GGG3229,1000,,,10.1,water	nd	
GG63707	12	fc2128-1	8330	1	op95139,GGG3229,1000,,,10.1,water	confirmed	
GG63708	13	fc2128-2	8330	1	op95139,GGG3229,1030,,,10.1,water	confirmed	
GG63709	14	fc2128-3	8330	1	op95139,GGG3229,1020,,,10.1,water	confirmed	
GG63710	15	fc1994-7	8330	1	op95139,GGG3229,1000,,,10.1,water	confirmed	
GG63711	16	fc2057-2	8330	1	op95139,GGG3229,550,,,10.1,water	confirmed nd	
GG63712	17	fc2094-1	8330	1	op95139,GGG3229,640,,,10.1,water	confirmed nd	
GG63713	18	fc2124-3	8330	1	op95139,GGG3229,800,,,10.1,water	confirmed	
GG63714	1	ccb	8330	1	op95139,GGG3229,1000,,,10.1,water	/	
GG63715	7	cc3229-1000	8330	100/500	op95139,GGG3229,1000,,,10.1,water	passed	
GG63716	19	op95195-mb	8330	1	op95195,GGG3229,1000,,,10.1,water	nd	
GG63717	20	fc2161-1cf	8330	1	op95195,GGG3229,50,,,10.1,water	confirmed hmx.rdx	
GG63718	21	fc2197-1cf	8330	1	op95195,GGG3229,1020,,,10.1,water	confirmed rdx	
GG63719	22	fc2197-2cf	8330	1	op95195,GGG3229,1020,,,10.1,water	confirmed rdx	
GG63720	23	fc2200-1cf	8330	1	op95195,GGG3229,1030,,,10.1,water	confirmed	
GG63721	24	fc2200-2cf	8330	1	op95195,GGG3229,1030,,,10.1,water	confirmed nd	
GG63722	1	ccb	8330	1	op95139,GGG3229,1000,,,10.1,water	/	
GG63723	7	ecc3229-1000	8330	1	op95139,GGG3229,1000,,,10.1,water	passed	

SPE LIQUID SAMPLE PREP REPORT

Analytical Method:

Vialed By: SM

3W
1127123

50/100 volume rat.

Date: 01/30/23

FC2200

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Weston Solutions, Inc

Radford AAP; VA

SGS Job Number: FC7686

Sampling Date: 07/10/23

Report to:

Weston Solutions, Inc
2 Eaton St Suite 603
Hampton, VA 23669
pacea@westonsolutions.com

ATTN: Tony Pace

Total number of pages in report: **496**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.



Norm Farmer
Technical Director

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)

DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),

AL, AK, AR, CT, IA, KY, MA, MI, MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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Test results relate only to samples analyzed.

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Sample Summary

Weston Solutions, Inc
Radford AAP; VA

Job No: FC7686

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC7686-1	07/10/23	10:15	KMPT 07/11/23	AQ	Ground Water	54MW13
FC7686-2	07/10/23	10:15	KMPT 07/11/23	AQ	Ground Water	54TW13
FC7686-3	07/10/23	12:45	KMPT 07/11/23	AQ	Ground Water	54MW10
FC7686-4	07/10/23	14:00	KMPT 07/11/23	AQ	Ground Water	54MW12
FC7686-4D	07/10/23	14:00	KMPT 07/11/23	AQ	Water Dup/MSD	54MW12
FC7686-4S	07/10/23	14:00	KMPT 07/11/23	AQ	Water Matrix Spike	54MW12
FC7686-5	07/10/23	15:30	KMPT 07/11/23	AQ	Ground Water	54MW1

SAMPLE DELIVERY GROUP CASE NARRATIVE

2

Client: Weston Solutions, Inc

Job No: FC7686

Site: Radford AAP; VA

Report Date: 7/21/2023 4:53:40 PM

On 07/11/2023, 5 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 4 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC7686 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method SW846 6850

Matrix: AQ

Batch ID: OP97971

Sample(s) FC7686-4MS, FC7686-4MSD were used as the QC samples indicated.

GC/LC Semi-volatiles By Method SW846 8330B

Matrix: AQ

Batch ID: OP97885

Sample(s) FC7686-4MS, FC7686-4MSD were used as the QC samples indicated.

FC7686-1 for 2-amino-4,6-Dinitrotoluene: Primary and confirmation results differ by more than 40%.

FC7686-1: All hits confirmed by reanalysis on a dissimilar column.

FC7686-1: Confirmation run.

FC7686-2 for 2-amino-4,6-Dinitrotoluene: Primary and confirmation results differ by more than 40%.

FC7686-2: All hits confirmed by reanalysis on a dissimilar column.

FC7686-2: Confirmation run.

FC7686-3 for 2-amino-4,6-Dinitrotoluene: Primary and confirmation results differ by more than 40%.

FC7686-3: All hits confirmed by reanalysis on a dissimilar column.

FC7686-3: Confirmation run.

FC7686-4 for 2-amino-4,6-Dinitrotoluene: Primary and confirmation results differ by more than 40%.

FC7686-4: All hits confirmed by reanalysis on a dissimilar column.

FC7686-4: Confirmation run.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

Kim Benham, Client Services (*Signature on File*)

Summary of Hits

Job Number: FC7686
Account: Weston Solutions, Inc
Project: Radford AAP; VA
Collected: 07/10/23



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC7686-1 54MW13						
Perchlorate		0.30	0.20	0.10	ug/l	SW846 6850
HMX ^a		2.9	0.22	0.11	ug/l	SW846 8330B
RDX ^a		0.90	0.22	0.11	ug/l	SW846 8330B
3,5-Dinitroaniline ^b		0.58	0.22	0.11	ug/l	SW846 8330B
2-amino-4,6-Dinitrotoluene ^b		1.4	0.22	0.11	ug/l	SW846 8330B
4-amino-2,6-Dinitrotoluene ^b		0.98	0.22	0.11	ug/l	SW846 8330B
1,3,5-Trinitrobenzene ^a		14.3	0.22	0.11	ug/l	SW846 8330B
2,4,6-Trinitrotoluene ^a		8.8	0.22	0.11	ug/l	SW846 8330B
FC7686-2 54TW13						
Perchlorate		0.33	0.20	0.10	ug/l	SW846 6850
HMX ^a		3.0	0.24	0.12	ug/l	SW846 8330B
RDX ^a		0.91	0.24	0.12	ug/l	SW846 8330B
3,5-Dinitroaniline ^b		0.56	0.24	0.12	ug/l	SW846 8330B
2-amino-4,6-Dinitrotoluene ^b		1.3	0.24	0.12	ug/l	SW846 8330B
4-amino-2,6-Dinitrotoluene ^b		0.84	0.24	0.12	ug/l	SW846 8330B
1,3,5-Trinitrobenzene ^a		15.1	0.24	0.12	ug/l	SW846 8330B
2,4,6-Trinitrotoluene ^a		9.1	0.24	0.12	ug/l	SW846 8330B
FC7686-3 54MW10						
HMX ^b		0.45	0.21	0.10	ug/l	SW846 8330B
RDX ^a		0.34	0.21	0.10	ug/l	SW846 8330B
3,5-Dinitroaniline ^a		0.27	0.21	0.10	ug/l	SW846 8330B
2-amino-4,6-Dinitrotoluene ^b		0.29	0.21	0.10	ug/l	SW846 8330B
4-amino-2,6-Dinitrotoluene ^b		0.25	0.21	0.10	ug/l	SW846 8330B
1,3,5-Trinitrobenzene ^a		0.16 J	0.21	0.10	ug/l	SW846 8330B
2,4,6-Trinitrotoluene ^a		0.56	0.21	0.10	ug/l	SW846 8330B
FC7686-4 54MW12						
Perchlorate		0.61	0.20	0.10	ug/l	SW846 6850
HMX ^a		11.8	0.21	0.10	ug/l	SW846 8330B
RDX ^a		0.27	0.21	0.10	ug/l	SW846 8330B
3,5-Dinitroaniline ^b		0.20 J	0.21	0.10	ug/l	SW846 8330B
2-amino-4,6-Dinitrotoluene ^b		3.0	0.21	0.10	ug/l	SW846 8330B
4-amino-2,6-Dinitrotoluene ^b		2.0	0.21	0.10	ug/l	SW846 8330B
1,3,5-Trinitrobenzene ^a		5.3	0.21	0.10	ug/l	SW846 8330B
2,4,6-Trinitrotoluene ^a		4.0	0.21	0.10	ug/l	SW846 8330B

Summary of Hits

Job Number: FC7686
Account: Weston Solutions, Inc
Project: Radford AAP; VA
Collected: 07/10/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
---------------	------------------	-----------------	-----	-----	-------	--------

FC7686-5 54MW1

No hits reported in this sample.

- (a) All hits confirmed by reanalysis on a dissimilar column.
- (b) All hits confirmed by reanalysis on a dissimilar column. Primary and confirmation results differ by more than 40%.



Orlando, FL

Section 4

4

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

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Client Sample ID:	54MW13	Date Sampled:	07/10/23
Lab Sample ID:	FC7686-1	Date Received:	07/11/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 6850 IN HOUSE		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q104111.D	1	07/20/23 12:09	AL	07/20/23 10:12	OP97971	SQ2217
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.30	0.20	0.10	0.050	ug/l	

U = Not detected

LOQ = Limit of Quantitation

E = Indicates value exceeds calibration range

LOD = Limit of Detection

DL = Detection Limit

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.1
4

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	54MW13	Date Sampled:	07/10/23
Lab Sample ID:	FC7686-1	Date Received:	07/11/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8330B SW846 3535A		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	BB077749.D	1	07/18/23 11:28	FS	07/17/23 09:00	OP97885	GBB2394
Run #2 ^b	GG626850.D	4	07/20/23 13:57	FS	07/17/23 09:00	OP97885	GGG3303

	Initial Volume	Final Volume
Run #1	900 ml	10.0 ml
Run #2	900 ml	10.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX	2.9	0.22	0.11	0.089	ug/l	
121-82-4	RDX	0.90	0.22	0.11	0.089	ug/l	
	DNX	0.11 U	0.22	0.11	0.089	ug/l	
	MNX	0.11 U	0.22	0.11	0.089	ug/l	
	TNX	0.11 U	0.22	0.11	0.089	ug/l	
618-87-1	3,5-Dinitroaniline ^c	0.58	0.22	0.11	0.089	ug/l	
99-65-0	1,3-Dinitrobenzene	0.11 U	0.22	0.11	0.089	ug/l	
606-20-2	2,6-Dinitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
121-14-2	2,4-Dinitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene ^c	1.4	0.22	0.11	0.089	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene ^c	0.98	0.22	0.11	0.089	ug/l	
98-95-3	Nitrobenzene	0.11 U	0.22	0.11	0.11	ug/l	
88-72-2	o-Nitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
99-08-1	m-Nitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
99-99-0	p-Nitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
479-45-8	Tetryl	0.11 U	0.22	0.11	0.089	ug/l	
99-35-4	1,3,5-Trinitrobenzene	14.3	0.22	0.11	0.11	ug/l	
118-96-7	2,4,6-Trinitrotoluene	8.8	0.22	0.11	0.089	ug/l	
55-63-0	Nitroglycerine	1.1 U	2.2	1.1	0.56	ug/l	
78-11-5	PETN	1.1 U	2.2	1.1	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	90%	94%	70-136%

- (a) All hits confirmed by reanalysis on a dissimilar column.
(b) Confirmation run.
(c) Primary and confirmation results differ by more than 40%.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	54TW13	Date Sampled:	07/10/23
Lab Sample ID:	FC7686-2	Date Received:	07/11/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 6850 IN HOUSE		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q104112.D	1	07/20/23 12:16	AL	07/20/23 10:12	OP97971	SQ2217
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.33	0.20	0.10	0.050	ug/l	

U = Not detected

LOQ = Limit of Quantitation

E = Indicates value exceeds calibration range

LOD = Limit of Detection

DL = Detection Limit

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.2
4

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	54TW13	Date Sampled:	07/10/23
Lab Sample ID:	FC7686-2	Date Received:	07/11/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8330B SW846 3535A		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	BB077750.D	1	07/18/23 11:59	FS	07/17/23 09:00	OP97885	GBB2394
Run #2 ^b	GG626841.D	1	07/19/23 11:44	FS	07/17/23 09:00	OP97885	GGG3302

	Initial Volume	Final Volume
Run #1	850 ml	10.0 ml
Run #2	850 ml	10.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX	3.0	0.24	0.12	0.094	ug/l	
121-82-4	RDX	0.91	0.24	0.12	0.094	ug/l	
	DNX	0.12 U	0.24	0.12	0.094	ug/l	
	MNX	0.12 U	0.24	0.12	0.094	ug/l	
	TNX	0.12 U	0.24	0.12	0.094	ug/l	
618-87-1	3,5-Dinitroaniline ^c	0.56	0.24	0.12	0.094	ug/l	
99-65-0	1,3-Dinitrobenzene	0.12 U	0.24	0.12	0.094	ug/l	
606-20-2	2,6-Dinitrotoluene	0.12 U	0.24	0.12	0.094	ug/l	
121-14-2	2,4-Dinitrotoluene	0.12 U	0.24	0.12	0.094	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene ^c	1.3	0.24	0.12	0.094	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene ^c	0.84	0.24	0.12	0.094	ug/l	
98-95-3	Nitrobenzene	0.12 U	0.24	0.12	0.11	ug/l	
88-72-2	o-Nitrotoluene	0.12 U	0.24	0.12	0.094	ug/l	
99-08-1	m-Nitrotoluene	0.12 U	0.24	0.12	0.094	ug/l	
99-99-0	p-Nitrotoluene	0.12 U	0.24	0.12	0.094	ug/l	
479-45-8	Tetryl	0.12 U	0.24	0.12	0.094	ug/l	
99-35-4	1,3,5-Trinitrobenzene	15.1	0.24	0.12	0.12	ug/l	
118-96-7	2,4,6-Trinitrotoluene	9.1	0.24	0.12	0.094	ug/l	
55-63-0	Nitroglycerine	1.2 U	2.4	1.2	0.59	ug/l	
78-11-5	PETN	1.2 U	2.4	1.2	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	93%	103%	70-136%

- (a) All hits confirmed by reanalysis on a dissimilar column.
 (b) Confirmation run.
 (c) Primary and confirmation results differ by more than 40%.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	54MW10	Date Sampled:	07/10/23
Lab Sample ID:	FC7686-3	Date Received:	07/11/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 6850 IN HOUSE		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q104113.D	1	07/20/23 12:24	AL	07/20/23 10:12	OP97971	SQ2217
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.10 U	0.20	0.10	0.050	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

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SGS North America Inc.

Report of Analysis

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Client Sample ID:	54MW10	Date Sampled:	07/10/23
Lab Sample ID:	FC7686-3	Date Received:	07/11/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8330B SW846 3535A		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	BB077751.D	1	07/18/23 12:30	FS	07/17/23 09:00	OP97885	GBB2394
Run #2 ^b	GG626851.D	1	07/20/23 14:29	FS	07/17/23 09:00	OP97885	GGG3303

	Initial Volume	Final Volume
Run #1	970 ml	10.0 ml
Run #2	970 ml	10.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX ^c	0.45	0.21	0.10	0.082	ug/l	
121-82-4	RDX	0.34	0.21	0.10	0.082	ug/l	
	DNX	0.10 U	0.21	0.10	0.082	ug/l	
	MNX	0.10 U	0.21	0.10	0.082	ug/l	
	TNX	0.10 U	0.21	0.10	0.082	ug/l	
618-87-1	3,5-Dinitroaniline	0.27	0.21	0.10	0.082	ug/l	
99-65-0	1,3-Dinitrobenzene	0.10 U	0.21	0.10	0.082	ug/l	
606-20-2	2,6-Dinitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
121-14-2	2,4-Dinitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene ^c	0.29	0.21	0.10	0.082	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene ^c	0.25	0.21	0.10	0.082	ug/l	
98-95-3	Nitrobenzene	0.10 U	0.21	0.10	0.10	ug/l	
88-72-2	o-Nitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
99-08-1	m-Nitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
99-99-0	p-Nitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
479-45-8	Tetryl	0.10 U	0.21	0.10	0.082	ug/l	
99-35-4	1,3,5-Trinitrobenzene	0.16	0.21	0.10	0.10	ug/l	J
118-96-7	2,4,6-Trinitrotoluene	0.56	0.21	0.10	0.082	ug/l	
55-63-0	Nitroglycerine	1.0 U	2.1	1.0	0.52	ug/l	
78-11-5	PETN	1.0 U	2.1	1.0	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	87%	94%	70-136%

- (a) All hits confirmed by reanalysis on a dissimilar column.
(b) Confirmation run.
(c) Primary and confirmation results differ by more than 40%.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	54MW12	Date Sampled:	07/10/23
Lab Sample ID:	FC7686-4	Date Received:	07/11/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 6850 IN HOUSE		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q104114.D	1	07/20/23 12:31	AL	07/20/23 10:12	OP97971	SQ2217
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.61	0.20	0.10	0.050	ug/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	54MW12	Date Sampled:	07/10/23
Lab Sample ID:	FC7686-4	Date Received:	07/11/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8330B SW846 3535A		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	BB077752.D	1	07/18/23 13:01	FS	07/17/23 09:00	OP97885	GBB2394
Run #2 ^b	GG626843.D	1	07/19/23 12:49	FS	07/17/23 09:00	OP97885	GGG3302

	Initial Volume	Final Volume
Run #1	970 ml	10.0 ml
Run #2	960 ml	10.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX	11.8	0.21	0.10	0.082	ug/l	
121-82-4	RDX	0.27	0.21	0.10	0.082	ug/l	
	DNX	0.10 U	0.21	0.10	0.082	ug/l	
	MNX	0.10 U	0.21	0.10	0.082	ug/l	
	TNX	0.10 U	0.21	0.10	0.082	ug/l	
618-87-1	3,5-Dinitroaniline ^c	0.20	0.21	0.10	0.082	ug/l	J
99-65-0	1,3-Dinitrobenzene	0.10 U	0.21	0.10	0.082	ug/l	
606-20-2	2,6-Dinitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
121-14-2	2,4-Dinitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene ^c	3.0	0.21	0.10	0.082	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene ^c	2.0	0.21	0.10	0.082	ug/l	
98-95-3	Nitrobenzene	0.10 U	0.21	0.10	0.10	ug/l	
88-72-2	o-Nitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
99-08-1	m-Nitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
99-99-0	p-Nitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
479-45-8	Tetryl	0.10 U	0.21	0.10	0.082	ug/l	
99-35-4	1,3,5-Trinitrobenzene	5.3	0.21	0.10	0.10	ug/l	
118-96-7	2,4,6-Trinitrotoluene	4.0	0.21	0.10	0.082	ug/l	
55-63-0	Nitroglycerine	1.0 U	2.1	1.0	0.52	ug/l	
78-11-5	PETN	1.0 U	2.1	1.0	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	87%	95%	70-136%

- (a) All hits confirmed by reanalysis on a dissimilar column.
 (b) Confirmation run.
 (c) Primary and confirmation results differ by more than 40%.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	54MW1	Date Sampled:	07/10/23
Lab Sample ID:	FC7686-5	Date Received:	07/11/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 6850 IN HOUSE		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q104117.D	1	07/20/23 12:53	AL	07/20/23 10:12	OP97971	SQ2217
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.10 U	0.20	0.10	0.050	ug/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	54MW1	Date Sampled:	07/10/23
Lab Sample ID:	FC7686-5	Date Received:	07/11/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8330B SW846 3535A		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB077757.D	1	07/18/23 16:25	FS	07/17/23 09:00	OP97885	GBB2394
Run #2							

	Initial Volume	Final Volume
Run #1	900 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX	0.11 U	0.22	0.11	0.089	ug/l	
121-82-4	RDX	0.11 U	0.22	0.11	0.089	ug/l	
	DNX	0.11 U	0.22	0.11	0.089	ug/l	
	MNX	0.11 U	0.22	0.11	0.089	ug/l	
	TNX	0.11 U	0.22	0.11	0.089	ug/l	
618-87-1	3,5-Dinitroaniline	0.11 U	0.22	0.11	0.089	ug/l	
99-65-0	1,3-Dinitrobenzene	0.11 U	0.22	0.11	0.089	ug/l	
606-20-2	2,6-Dinitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
121-14-2	2,4-Dinitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
98-95-3	Nitrobenzene	0.11 U	0.22	0.11	0.11	ug/l	
88-72-2	o-Nitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
99-08-1	m-Nitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
99-99-0	p-Nitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
479-45-8	Tetryl	0.11 U	0.22	0.11	0.089	ug/l	
99-35-4	1,3,5-Trinitrobenzene	0.11 U	0.22	0.11	0.11	ug/l	
118-96-7	2,4,6-Trinitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
55-63-0	Nitroglycerine	1.1 U	2.2	1.1	0.56	ug/l	
78-11-5	PETN	1.1 U	2.2	1.1	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	86%		70-136%

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

FC 7686

[illegible]

ORLD-SMT-0001-03-FORM-COC (4).xls Rev 031318

<http://www.sqs.com/en/terms-and-conditions>

FC7686: Chain of Custody

Page 1 of 2

SGS Sample Receipt Summary

Job Number: FC7686

Client: WESTON SOLUTIONS

Project: RADFORD AAP SWMU 54

Date / Time Received: 7/11/2023 9:30:00 AM

Delivery Method: FED EX

Airbill #s: 7809 4310 5384

Therm ID: IR 1;

Therm CF: -0.2;

of Coolers: 2

Cooler Temps (Raw Measured) °C: Cooler 1: (3.8); Cooler 2: (4.2);

Cooler Temps (Corrected) °C: Cooler 1: (3.6); Cooler 2: (4.0);

Cooler Information

Y or N

- | | | |
|-----------------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present | ☒ | ☐ |
| 2. Custody Seals Intact | ☒ | ☐ |
| 3. Temp criteria achieved | ☒ | ☐ |
| 4. Cooler temp verification | <u>IR Gun</u> | |
| 5. Cooler media | <u>Ice (Bag)</u> | |

Trip Blank Information

Y or N N/A

- | | | | |
|--------------------------------|--------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler | ☐ | ☐ | ☒ |
| 2. Trip Blank listed on COC | ☐ | ☐ | ☒ |
| | <u>W or S</u> | <u>N/A</u> | |
| 3. Type Of TB Received | ☐ | ☐ | ☒ |

Sample Information

Y or N N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Sample labels present on bottles | ☒ | ☐ | |
| 2. Samples preserved properly | ☒ | ☐ | |
| 3. Sufficient volume/containers recvd for analysis: | ☒ | ☐ | |
| 4. Condition of sample | <u>Intact</u> | | |
| 5. Sample recvd within HT | ☒ | ☐ | |
| 6. Dates/Times/IDs on COC match Sample Label | ☒ | ☐ | |
| 7. VOCs have headspace | ☐ | ☐ | ☒ |
| 8. Bottles received for unspecified tests | ☐ | ☒ | |
| 9. Compositing instructions clear | ☐ | ☐ | ☒ |
| 10. Voa Soil Kits/Jars received past 48hrs? | ☐ | ☐ | ☒ |
| 11. % Solids Jar received? | ☐ | ☐ | ☒ |
| 12. Residual Chlorine Present? | ☐ | ☐ | ☒ |

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____
 Test Strip Lot #: pH 0-3 _____ 230320 _____
 Residual Chlorine Test Strip Lot #: _____

Number of 5035 Field Kits: _____

Number of Lab Filtered Metals: _____

Other: (Specify) pH 1.0 - 12.0 _____ 222221 _____

Comments

SM001
Rev. Date 05/24/17

Technician: SHAYLAP

Date: 7/11/2023 9:30:00 AM

Reviewer: _____

Date: _____

FC7686: Chain of Custody

Page 2 of 2

QC Evaluation: DOD QSM5.x Limits

Page 1 of 4

Job Number: FC7686
Account: Weston Solutions, Inc
Project: Radford AAP; VA
Collected: 07/10/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP97971	SW846 6850						
OP97971-BS	14797-73-0	Perchlorate	BSP	REC	100	%	84-119
OP97971-MS	14797-73-0	Perchlorate	MS	REC	90	%	84-119
OP97971-MSD	14797-73-0	Perchlorate	MSD	REC	115	%	84-119
OP97971-MSD	14797-73-0	Perchlorate	MSD	RPD	6	%	15
OP97885	SW846 8330B						
OP97885-BS	2691-41-0	HMX	BSP	REC	106	%	65-135
OP97885-BS	121-82-4	RDX	BSP	REC	96	%	68-130
OP97885-BS		DNX	BSP	REC	92	%	66-119
OP97885-BS		MNX	BSP	REC	95	%	57-132
OP97885-BS	618-87-1	3,5-Dinitroaniline	BSP	REC	100	%	71-117
OP97885-BS	99-65-0	1,3-Dinitrobenzene	BSP	REC	98	%	78-120
OP97885-BS	606-20-2	2,6-Dinitrotoluene	BSP	REC	96	%	77-127
OP97885-BS	121-14-2	2,4-Dinitrotoluene	BSP	REC	94	%	78-120
OP97885-BS	35572-78-2	2-amino-4,6-Dinitrotoluene	BSP	REC	102	%	79-120
OP97885-BS	19406-51-0	4-amino-2,6-Dinitrotoluene	BSP	REC	102	%	76-125
OP97885-BS	98-95-3	Nitrobenzene	BSP	REC	86	%	65-134
OP97885-BS	88-72-2	o-Nitrotoluene	BSP	REC	84	%	70-127
OP97885-BS	99-08-1	m-Nitrotoluene	BSP	REC	86	%	73-125
OP97885-BS	99-99-0	p-Nitrotoluene	BSP	REC	88	%	71-127
OP97885-BS	479-45-8	Tetryl	BSP	REC	86	%	64-128
OP97885-BS	99-35-4	1,3,5-Trinitrobenzene	BSP	REC	88	%	73-125
OP97885-BS	118-96-7	2,4,6-Trinitrotoluene	BSP	REC	100	%	71-123
OP97885-BS	55-63-0	Nitroglycerine	BSP	REC	98	%	74-127
OP97885-BS	78-11-5	PETN	BSP	REC	104	%	73-127
OP97885-MS	2691-41-0	HMX	MS	REC	122	%	65-135
OP97885-MS	121-82-4	RDX	MS	REC	100	%	68-130
OP97885-MS		DNX	MS	REC	92	%	66-119
OP97885-MS		MNX	MS	REC	95	%	57-132
OP97885-MS	618-87-1	3,5-Dinitroaniline	MS	REC	106	%	71-117
OP97885-MS	99-65-0	1,3-Dinitrobenzene	MS	REC	104	%	78-120
OP97885-MS	606-20-2	2,6-Dinitrotoluene	MS	REC	103	%	77-127
OP97885-MS	121-14-2	2,4-Dinitrotoluene	MS	REC	100	%	78-120
OP97885-MS	35572-78-2	2-amino-4,6-Dinitrotoluene	MS	REC	112	%	79-120
OP97885-MS	19406-51-0	4-amino-2,6-Dinitrotoluene	MS	REC	109	%	76-125
OP97885-MS	98-95-3	Nitrobenzene	MS	REC	97	%	65-134
OP97885-MS	88-72-2	o-Nitrotoluene	MS	REC	115	%	70-127
OP97885-MS	99-08-1	m-Nitrotoluene	MS	REC	98	%	73-125
OP97885-MS	99-99-0	p-Nitrotoluene	MS	REC	99	%	71-127
OP97885-MS	479-45-8	Tetryl	MS	REC	99	%	64-128
OP97885-MS	99-35-4	1,3,5-Trinitrobenzene	MS	REC	107	%	73-125

* Sample used for QC is not from job FC7686

QC Evaluation: DOD QSM5.x Limits

Page 2 of 4

Job Number: FC7686
Account: Weston Solutions, Inc
Project: Radford AAP; VA
Collected: 07/10/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP97885-MS	118-96-7	2,4,6-Trinitrotoluene	MS	REC	111	%	71-123
OP97885-MS	55-63-0	Nitroglycerine	MS	REC	101	%	74-127
OP97885-MS	78-11-5	PETN	MS	REC	102	%	73-127
OP97885-MSD	2691-41-0	HMX	MSD	REC	120	%	65-135
OP97885-MSD	2691-41-0	HMX	MSD	RPD	1	%	20
OP97885-MSD	121-82-4	RDX	MSD	REC	101	%	68-130
OP97885-MSD	121-82-4	RDX	MSD	RPD	1	%	20
OP97885-MSD		DNX	MSD	REC	92	%	66-119
OP97885-MSD		DNX	MSD	RPD	0	%	20
OP97885-MSD		MXN	MSD	REC	95	%	57-132
OP97885-MSD		MXN	MSD	RPD	0	%	20
OP97885-MSD	618-87-1	3,5-Dinitroaniline	MSD	REC	106	%	71-117
OP97885-MSD	618-87-1	3,5-Dinitroaniline	MSD	RPD	0	%	20
OP97885-MSD	99-65-0	1,3-Dinitrobenzene	MSD	REC	104	%	78-120
OP97885-MSD	99-65-0	1,3-Dinitrobenzene	MSD	RPD	0	%	20
OP97885-MSD	606-20-2	2,6-Dinitrotoluene	MSD	REC	103	%	77-127
OP97885-MSD	606-20-2	2,6-Dinitrotoluene	MSD	RPD	0	%	20
OP97885-MSD	121-14-2	2,4-Dinitrotoluene	MSD	REC	101	%	78-120
OP97885-MSD	121-14-2	2,4-Dinitrotoluene	MSD	RPD	1	%	20
OP97885-MSD	35572-78-2	2-amino-4,6-Dinitrotoluene	MSD	REC	111	%	79-120
OP97885-MSD	35572-78-2	2-amino-4,6-Dinitrotoluene	MSD	RPD	1	%	20
OP97885-MSD	19406-51-0	4-amino-2,6-Dinitrotoluene	MSD	REC	108	%	76-125
OP97885-MSD	19406-51-0	4-amino-2,6-Dinitrotoluene	MSD	RPD	1	%	20
OP97885-MSD	98-95-3	Nitrobenzene	MSD	REC	99	%	65-134
OP97885-MSD	98-95-3	Nitrobenzene	MSD	RPD	2	%	20
OP97885-MSD	88-72-2	o-Nitrotoluene	MSD	REC	114	%	70-127
OP97885-MSD	88-72-2	o-Nitrotoluene	MSD	RPD	1	%	20
OP97885-MSD	99-08-1	m-Nitrotoluene	MSD	REC	99	%	73-125
OP97885-MSD	99-08-1	m-Nitrotoluene	MSD	RPD	1	%	20
OP97885-MSD	99-99-0	p-Nitrotoluene	MSD	REC	100	%	71-127
OP97885-MSD	99-99-0	p-Nitrotoluene	MSD	RPD	1	%	20
OP97885-MSD	479-45-8	Tetryl	MSD	REC	97	%	64-128
OP97885-MSD	479-45-8	Tetryl	MSD	RPD	2	%	20
OP97885-MSD	99-35-4	1,3,5-Trinitrobenzene	MSD	REC	107	%	73-125
OP97885-MSD	99-35-4	1,3,5-Trinitrobenzene	MSD	RPD	0	%	20
OP97885-MSD	118-96-7	2,4,6-Trinitrotoluene	MSD	REC	110	%	71-123
OP97885-MSD	118-96-7	2,4,6-Trinitrotoluene	MSD	RPD	1	%	20
OP97885-MSD	55-63-0	Nitroglycerine	MSD	REC	104	%	74-127
OP97885-MSD	55-63-0	Nitroglycerine	MSD	RPD	3	%	20
OP97885-MSD	78-11-5	PETN	MSD	REC	100	%	73-127
OP97885-MSD	78-11-5	PETN	MSD	RPD	2	%	20
OP97885	SW846 8330A						
OP97885-BS	2691-41-0	HMX	BSP	REC	106	%	65-135

* Sample used for QC is not from job FC7686

QC Evaluation: DOD QSM5.x Limits

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Job Number: FC7686
Account: Weston Solutions, Inc
Project: Radford AAP; VA
Collected: 07/10/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP97885-BS	121-82-4	RDX	BSP	REC	96	%	68-130
OP97885-BS		DNX	BSP	REC	92	%	66-119
OP97885-BS		MNX	BSP	REC	95	%	57-132
OP97885-BS	618-87-1	3,5-Dinitroaniline	BSP	REC	100	%	71-117
OP97885-BS	99-65-0	1,3-Dinitrobenzene	BSP	REC	98	%	78-120
OP97885-BS	606-20-2	2,6-Dinitrotoluene	BSP	REC	96	%	77-127
OP97885-BS	121-14-2	2,4-Dinitrotoluene	BSP	REC	94	%	78-120
OP97885-BS	35572-78-2	2-amino-4,6-Dinitrotoluene	BSP	REC	102	%	79-120
OP97885-BS	19406-51-0	4-amino-2,6-Dinitrotoluene	BSP	REC	102	%	76-125
OP97885-BS	98-95-3	Nitrobenzene	BSP	REC	86	%	65-134
OP97885-BS	88-72-2	o-Nitrotoluene	BSP	REC	84	%	70-127
OP97885-BS	99-08-1	m-Nitrotoluene	BSP	REC	86	%	73-125
OP97885-BS	99-99-0	p-Nitrotoluene	BSP	REC	88	%	71-127
OP97885-BS	479-45-8	Tetryl	BSP	REC	86	%	64-128
OP97885-BS	99-35-4	1,3,5-Trinitrobenzene	BSP	REC	88	%	73-125
OP97885-BS	118-96-7	2,4,6-Trinitrotoluene	BSP	REC	100	%	71-123
OP97885-BS	55-63-0	Nitroglycerine	BSP	REC	98	%	74-127
OP97885-BS	78-11-5	PETN	BSP	REC	104	%	73-127
OP97885-MS	2691-41-0	HMX	MS	REC	122	%	65-135
OP97885-MS	121-82-4	RDX	MS	REC	100	%	68-130
OP97885-MS		DNX	MS	REC	92	%	66-119
OP97885-MS		MNX	MS	REC	95	%	57-132
OP97885-MS	618-87-1	3,5-Dinitroaniline	MS	REC	106	%	71-117
OP97885-MS	99-65-0	1,3-Dinitrobenzene	MS	REC	104	%	78-120
OP97885-MS	606-20-2	2,6-Dinitrotoluene	MS	REC	103	%	77-127
OP97885-MS	121-14-2	2,4-Dinitrotoluene	MS	REC	100	%	78-120
OP97885-MS	35572-78-2	2-amino-4,6-Dinitrotoluene	MS	REC	112	%	79-120
OP97885-MS	19406-51-0	4-amino-2,6-Dinitrotoluene	MS	REC	109	%	76-125
OP97885-MS	98-95-3	Nitrobenzene	MS	REC	97	%	65-134
OP97885-MS	88-72-2	o-Nitrotoluene	MS	REC	115	%	70-127
OP97885-MS	99-08-1	m-Nitrotoluene	MS	REC	98	%	73-125
OP97885-MS	99-99-0	p-Nitrotoluene	MS	REC	99	%	71-127
OP97885-MS	479-45-8	Tetryl	MS	REC	99	%	64-128
OP97885-MS	99-35-4	1,3,5-Trinitrobenzene	MS	REC	107	%	73-125
OP97885-MS	118-96-7	2,4,6-Trinitrotoluene	MS	REC	111	%	71-123
OP97885-MS	55-63-0	Nitroglycerine	MS	REC	101	%	74-127
OP97885-MS	78-11-5	PETN	MS	REC	102	%	73-127
OP97885-MSD	2691-41-0	HMX	MSD	REC	120	%	65-135
OP97885-MSD	2691-41-0	HMX	MSD	RPD	1	%	30
OP97885-MSD	121-82-4	RDX	MSD	REC	101	%	68-130
OP97885-MSD	121-82-4	RDX	MSD	RPD	1	%	30
OP97885-MSD		DNX	MSD	REC	92	%	66-119
OP97885-MSD		DNX	MSD	RPD	0	%	30
OP97885-MSD		MNX	MSD	REC	95	%	57-132
OP97885-MSD		MNX	MSD	RPD	0	%	30

* Sample used for QC is not from job FC7686

QC Evaluation: DOD QSM5.x Limits

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Job Number: FC7686
Account: Weston Solutions, Inc
Project: Radford AAP; VA
Collected: 07/10/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP97885-MSD	618-87-1	3,5-Dinitroaniline	MSD	REC	106	%	71-117
OP97885-MSD	618-87-1	3,5-Dinitroaniline	MSD	RPD	0	%	30
OP97885-MSD	99-65-0	1,3-Dinitrobenzene	MSD	REC	104	%	78-120
OP97885-MSD	99-65-0	1,3-Dinitrobenzene	MSD	RPD	0	%	30
OP97885-MSD	606-20-2	2,6-Dinitrotoluene	MSD	REC	103	%	77-127
OP97885-MSD	606-20-2	2,6-Dinitrotoluene	MSD	RPD	0	%	30
OP97885-MSD	121-14-2	2,4-Dinitrotoluene	MSD	REC	101	%	78-120
OP97885-MSD	121-14-2	2,4-Dinitrotoluene	MSD	RPD	1	%	30
OP97885-MSD	35572-78-2	2-amino-4,6-Dinitrotoluene	MSD	REC	111	%	79-120
OP97885-MSD	35572-78-2	2-amino-4,6-Dinitrotoluene	MSD	RPD	1	%	30
OP97885-MSD	19406-51-0	4-amino-2,6-Dinitrotoluene	MSD	REC	108	%	76-125
OP97885-MSD	19406-51-0	4-amino-2,6-Dinitrotoluene	MSD	RPD	1	%	30
OP97885-MSD	98-95-3	Nitrobenzene	MSD	REC	99	%	65-134
OP97885-MSD	98-95-3	Nitrobenzene	MSD	RPD	2	%	30
OP97885-MSD	88-72-2	o-Nitrotoluene	MSD	REC	114	%	70-127
OP97885-MSD	88-72-2	o-Nitrotoluene	MSD	RPD	1	%	30
OP97885-MSD	99-08-1	m-Nitrotoluene	MSD	REC	99	%	73-125
OP97885-MSD	99-08-1	m-Nitrotoluene	MSD	RPD	1	%	30
OP97885-MSD	99-99-0	p-Nitrotoluene	MSD	REC	100	%	71-127
OP97885-MSD	99-99-0	p-Nitrotoluene	MSD	RPD	1	%	30
OP97885-MSD	479-45-8	Tetryl	MSD	REC	97	%	64-128
OP97885-MSD	479-45-8	Tetryl	MSD	RPD	2	%	30
OP97885-MSD	99-35-4	1,3,5-Trinitrobenzene	MSD	REC	107	%	73-125
OP97885-MSD	99-35-4	1,3,5-Trinitrobenzene	MSD	RPD	0	%	30
OP97885-MSD	118-96-7	2,4,6-Trinitrotoluene	MSD	REC	110	%	71-123
OP97885-MSD	118-96-7	2,4,6-Trinitrotoluene	MSD	RPD	1	%	30
OP97885-MSD	55-63-0	Nitroglycerine	MSD	REC	104	%	74-127
OP97885-MSD	55-63-0	Nitroglycerine	MSD	RPD	3	%	30
OP97885-MSD	78-11-5	PETN	MSD	REC	100	%	73-127
OP97885-MSD	78-11-5	PETN	MSD	RPD	2	%	30

* Sample used for QC is not from job FC7686

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Instrument Blank

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
SQ2217-IBLK	Q104120.D	1	07/20/23	AL	n/a	n/a	SQ2217

The QC reported here applies to the following samples: Method: SW846 6850
FC7686-1, FC7686-2, FC7686-3, FC7686-4, FC7686-5

CAS No.	Compound	Result	RL	MDL	Units	Q
14797-73-0	Perchlorate	ND	0.20	0.050	ug/l	

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Method Blank Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97971-MB	Q104110.D	1	07/20/23	AL	07/20/23	OP97971	SQ2217

The QC reported here applies to the following samples: Method: SW846 6850
FC7686-1, FC7686-2, FC7686-3, FC7686-4, FC7686-5

CAS No.	Compound	Result	RL	MDL	Units	Q
14797-73-0	Perchlorate	ND	0.20	0.050	ug/l	

Blank Spike Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97971-BS	Q104109.D	1	07/20/23	AL	07/20/23	OP97971	SQ2217

The QC reported here applies to the following samples: Method: SW846 6850
FC7686-1, FC7686-2, FC7686-3, FC7686-4, FC7686-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
14797-73-0	Perchlorate	0.2	0.20	100	80-120

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97971-MS	Q104115.D	1	07/20/23	AL	07/20/23	OP97971	SQ2217
OP97971-MSD	Q104116.D	1	07/20/23	AL	07/20/23	OP97971	SQ2217
FC7686-4	Q104114.D	1	07/20/23	AL	07/20/23	OP97971	SQ2217

The QC reported here applies to the following samples: Method: SW846 6850
FC7686-1, FC7686-2, FC7686-3, FC7686-4, FC7686-5

CAS No.	Compound	FC7686-4 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
14797-73-0	Perchlorate	0.61	0.2	0.79	90	0.2	0.84	115	6	80-120/15

* = Outside of Control Limits.

Internal Standard Area Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Check Std:	SQ2217-CC2216	Injection Date:	07/20/23
Lab File ID:	Q104107.D	Injection Time:	11:40
Instrument ID:	GCMSQ	Method:	SW846 6850

IS 1		
	AREA	RT
Initial Cal ^a	24486	4.88
Check Std ^b	25752	4.80
Upper Limit ^c	36729	6.80
Lower Limit ^d	12243	2.80

Lab Sample ID	IS 1 AREA	RT
OP97971-BS	25305	4.81
OP97971-MB	26307	4.81
FC7686-1	25743	4.80
FC7686-2	24405	4.80
FC7686-3	25275	4.74
FC7686-4	23725	4.76
OP97971-MS	22792	4.78
OP97971-MSD	22064	4.77
FC7686-5	22125	4.76

IS 1 = Cl18O4 (ISTD)

- (a) Initial Cal is: SQ2216-ICC2216 Q104082.D 07/19/23 10:25. Area is AVERAGE of initial cal points.
(b) Check Std Limit = -50 to + 50% of initial cal area.
(c) Upper Limit = + 50% of initial standard area; Retention time + 2 minutes of check standard.
(d) Lower Limit = -50% of initial standard area; Retention time -2 minutes of check standard.

Initial Calibration Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: SQ2216-ICC2216
Lab FileID: Q104082.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
T Perchlorate	Quadratic	$y = -5.943213E-004 * x^2 + 1.323507 * x$	0.999931
(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike			

Initial Calibration Verification

Page 1 of 1

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: SQ2216-ICV2216
Lab FileID: Q104087.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\071923_6850_SQ2216\sq2216.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\071923_6850_SQ2216\Q104079.d
2:D:\MassHunter\Data\071923_6850_SQ2216\Q104080.d
3:D:\MassHunter\Data\071923_6850_SQ2216\Q104081.d
4:D:\MassHunter\Data\071923_6850_SQ2216\Q104082.d
5:D:\MassHunter\Data\071923_6850_SQ2216\Q104083.d
6:D:\MassHunter\Data\071923_6850_SQ2216\Q104084.d
7:D:\MassHunter\Data\071923_6850_SQ2216\Q104085.d
8:D:\MassHunter\Data\071923_6850_SQ2216\Q104086.d

Data File: Q104087
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
=====	=====	=====	=====	=====
Cl1804	---	--ISTD--		
Perchlorate	2.000	1.982	-0.9	99.1

CC Criteria: +/- 15%

Continuing Calibration Summary

Page 1 of 1

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: SQ2217-CC2216
Lab FileID: Q104107.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\072023_6850_SQ2217\sq2217.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\071923_6850_SQ2216\Q104079.d
2:D:\MassHunter\Data\071923_6850_SQ2216\Q104080.d
3:D:\MassHunter\Data\071923_6850_SQ2216\Q104081.d
4:D:\MassHunter\Data\071923_6850_SQ2216\Q104082.d
5:D:\MassHunter\Data\071923_6850_SQ2216\Q104083.d
6:D:\MassHunter\Data\071923_6850_SQ2216\Q104084.d
7:D:\MassHunter\Data\071923_6850_SQ2216\Q104085.d
8:D:\MassHunter\Data\071923_6850_SQ2216\Q104086.d

Data File: Q104107

Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
Cl1804	---	--ISTD--		
Perchlorate	2.000	1.832	-8.4	91.6

CC Criteria: +/- 15%

Continuing Calibration Summary

Page 1 of 1

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: SQ2217-CC2216
Lab FileID: Q104108.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\072023_6850_SQ2217\sq2217.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\071923_6850_SQ2216\Q104079.d
2:D:\MassHunter\Data\071923_6850_SQ2216\Q104080.d
3:D:\MassHunter\Data\071923_6850_SQ2216\Q104081.d
4:D:\MassHunter\Data\071923_6850_SQ2216\Q104082.d
5:D:\MassHunter\Data\071923_6850_SQ2216\Q104083.d
6:D:\MassHunter\Data\071923_6850_SQ2216\Q104084.d
7:D:\MassHunter\Data\071923_6850_SQ2216\Q104085.d
8:D:\MassHunter\Data\071923_6850_SQ2216\Q104086.d

Data File: Q104108
Type : QC
Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
Cl1804	---	--ISTD--		
Perchlorate	0.200	0.193	-3.4	96.6

CC Criteria: +/- 15%

Continuing Calibration Summary

Page 1 of 1

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: SQ2217-CC2216
Lab FileID: Q104118.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\072023_6850_SQ2217\sq2217.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\071923_6850_SQ2216\Q104079.d
2:D:\MassHunter\Data\071923_6850_SQ2216\Q104080.d
3:D:\MassHunter\Data\071923_6850_SQ2216\Q104081.d
4:D:\MassHunter\Data\071923_6850_SQ2216\Q104082.d
5:D:\MassHunter\Data\071923_6850_SQ2216\Q104083.d
6:D:\MassHunter\Data\071923_6850_SQ2216\Q104084.d
7:D:\MassHunter\Data\071923_6850_SQ2216\Q104085.d
8:D:\MassHunter\Data\071923_6850_SQ2216\Q104086.d

Data File: Q104118
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
Cl1804	---	--ISTD--		
Perchlorate	2.000	1.814	-9.3	90.7

CC Criteria: +/- 15%

Run Sequence Report

Page 1 of 1

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Run ID: SQ2216	Method: SW846 6850	Instrument ID: GCMSQ
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
SQ2216-IC2216	Q104078.D	07/19/23 09:56	n/a	Mass Calibration Verification
SQ2216-IC2216	Q104079.D	07/19/23 10:03	n/a	Initial cal 0.2
SQ2216-IC2216	Q104080.D	07/19/23 10:10	n/a	Initial cal 0.5
SQ2216-IC2216	Q104081.D	07/19/23 10:18	n/a	Initial cal 1
SQ2216-ICC2216	Q104082.D	07/19/23 10:25	n/a	Initial cal 2
SQ2216-IC2216	Q104083.D	07/19/23 10:32	n/a	Initial cal 5
SQ2216-IC2216	Q104084.D	07/19/23 10:40	n/a	Initial cal 10
SQ2216-IC2216	Q104085.D	07/19/23 10:47	n/a	Initial cal 25
SQ2216-IC2216	Q104086.D	07/19/23 10:54	n/a	Initial cal 50
SQ2216-ICV2216	Q104087.D	07/19/23 11:01	n/a	Initial cal verification 2
SQ2216-CC2216	Q104089.D	07/19/23 11:16	n/a	Continuing cal 2
SQ2216-CC2216	Q104090.D	07/19/23 11:23	n/a	Continuing cal 0.2
OP97893-BS	Q104091.D	07/19/23 11:31	OP97893	Blank Spike
OP97893-MB	Q104092.D	07/19/23 11:38	OP97893	Method Blank
ZZZZZZ	Q104093.D	07/19/23 11:45	OP97893	(unrelated sample)
FC7708-2	Q104094.D	07/19/23 11:53	OP97893	(used for QC only; not part of job FC7686)
OP97893-MS	Q104095.D	07/19/23 12:00	OP97893	Matrix Spike
OP97893-MSD	Q104096.D	07/19/23 12:07	OP97893	Matrix Spike Duplicate
SQ2216-CC2216	Q104097.D	07/19/23 12:15	n/a	Continuing cal 2
SQ2216-ECC2216	Q104098.D	07/19/23 12:22	n/a	Ending cal 0.2
SQ2216-IBLK	Q104099.D	07/19/23 12:29	n/a	Instrument Blank

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Run Sequence Report

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Run ID: SQ2217	Method: SW846 6850	Instrument ID: GCMSQ
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
SQ2217-CC2216	Q104107.D	07/20/23 11:40	n/a	Continuing cal 2
SQ2217-CC2216	Q104108.D	07/20/23 11:47	n/a	Continuing cal 0.2
OP97971-BS	Q104109.D	07/20/23 11:54	OP97971	Blank Spike
OP97971-MB	Q104110.D	07/20/23 12:02	OP97971	Method Blank
FC7686-1	Q104111.D	07/20/23 12:09	OP97971	54MW13
FC7686-2	Q104112.D	07/20/23 12:16	OP97971	54TW13
FC7686-3	Q104113.D	07/20/23 12:24	OP97971	54MW10
FC7686-4	Q104114.D	07/20/23 12:31	OP97971	54MW12
OP97971-MS	Q104115.D	07/20/23 12:38	OP97971	Matrix Spike
OP97971-MSD	Q104116.D	07/20/23 12:45	OP97971	Matrix Spike Duplicate
FC7686-5	Q104117.D	07/20/23 12:53	OP97971	54MW1
SQ2217-CC2216	Q104118.D	07/20/23 13:00	n/a	Continuing cal 2
SQ2217-ECC2216	Q104119.D	07/20/23 13:07	n/a	Ending cal 0.2
SQ2217-IBLK	Q104120.D	07/20/23 13:15	n/a	Instrument Blank



Orlando, FL

Section 7

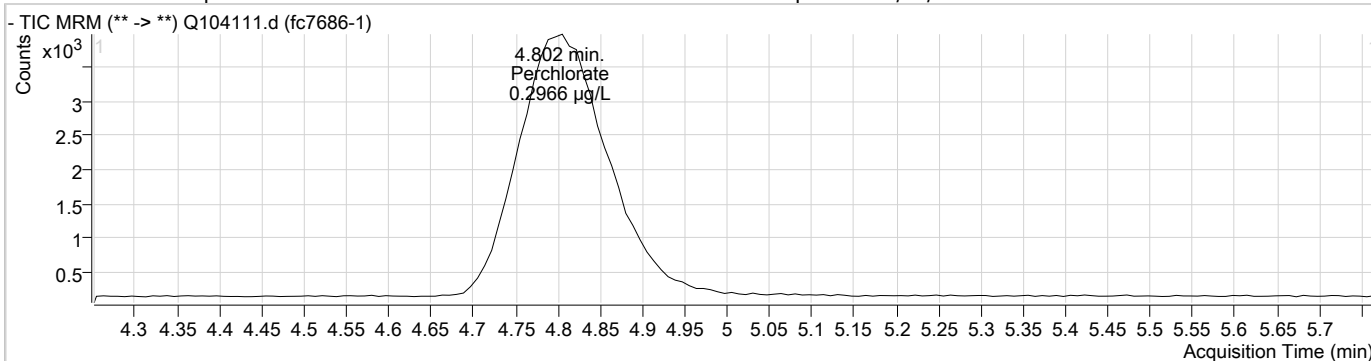
MS Semi-volatiles

Raw Data

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Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104111.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/20/2023 12:09:23 PM
Sample Name	fc7686-1	Instrument	Instrument 1
Vial	P2-A3	Sample Information	OP97971,SQ2217,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2217.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



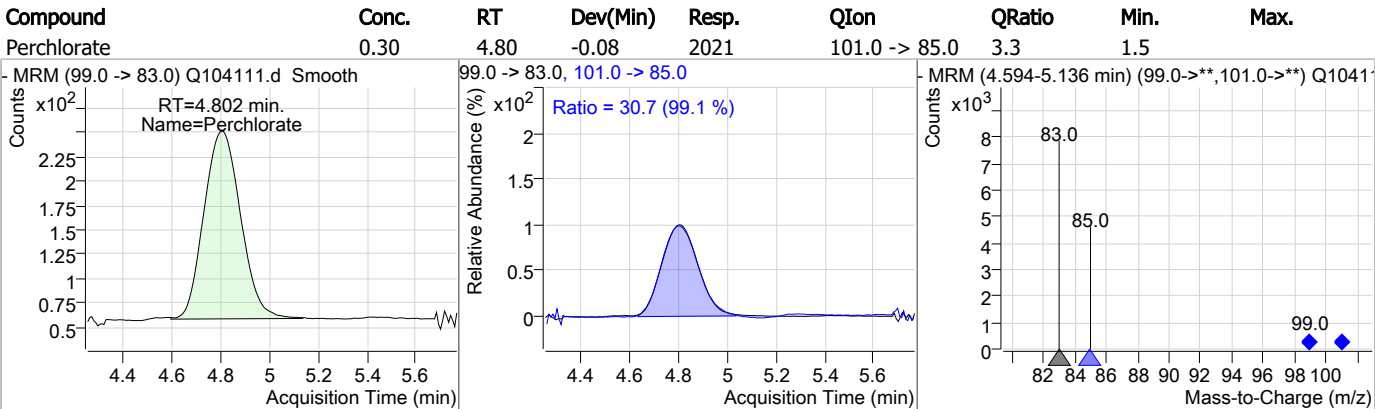
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.805	107.0 -> 89.0	25743	NoQ	5.00 µg/L	-0.075

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	4.802	99.0 -> 83.0	2021	3.3	0.30 µg/L	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

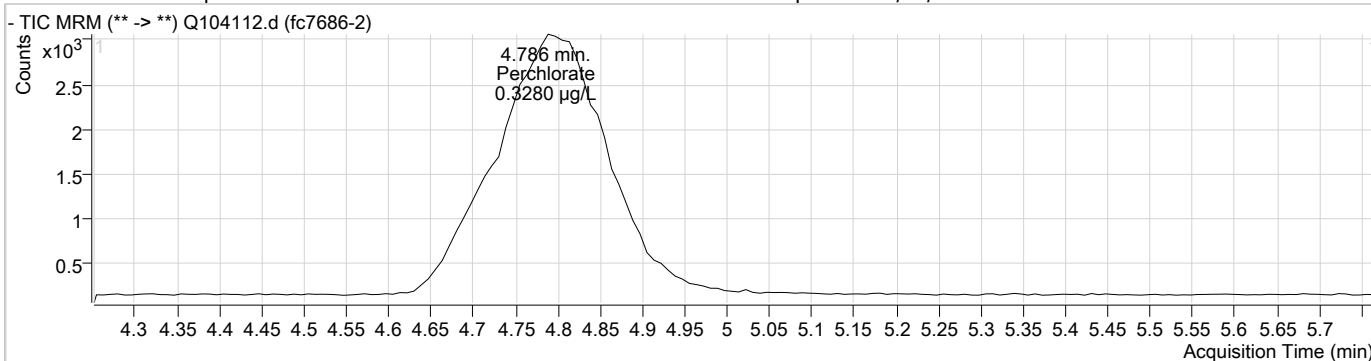


7.1.1

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Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104112.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/20/2023 12:16:42 PM
Sample Name	fc7686-2	Instrument	Instrument 1
Vial	P2-A4	Sample Information	OP97971,SQ2217,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2217.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



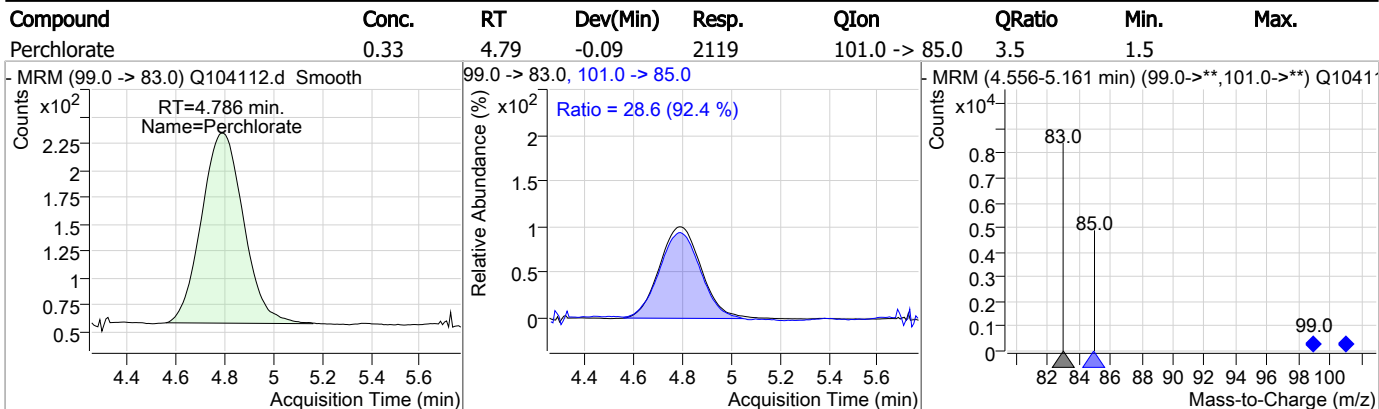
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.797	107.0 -> 89.0	24405	NoQ	5.00 µg/L	-0.083

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	4.786	99.0 -> 83.0	2119	3.5	0.33 µg/L	96

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

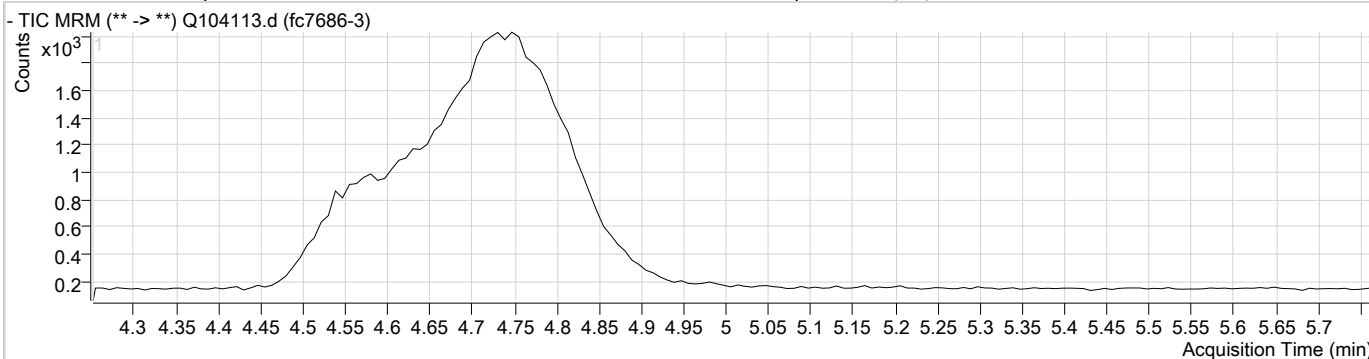
Quantitative Analysis Report for Perchlorate by 6850



7.1.2
7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104113.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/20/2023 12:24:01 PM
Sample Name	fc7686-3	Instrument	Instrument 1
Vial	P2-A5	Sample Information	OP97971,SQ2217,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2217.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.738	107.0 -> 89.0	25275	NoQ	5.00 µg/L	-0.142

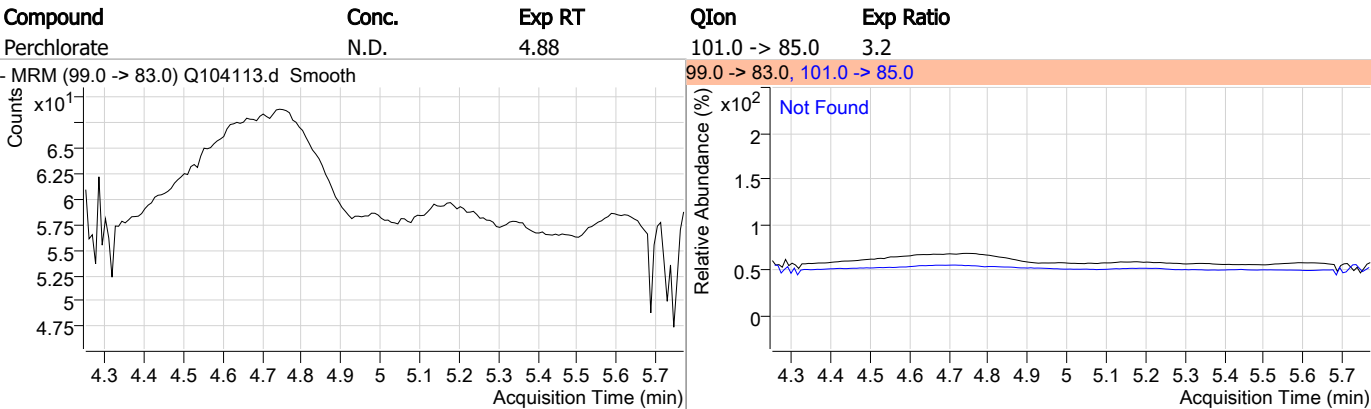
System Monitoring Compounds

Target Compounds

Perchlorate	-	99.0 -> 83.0	-	N.D.	QValue
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(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

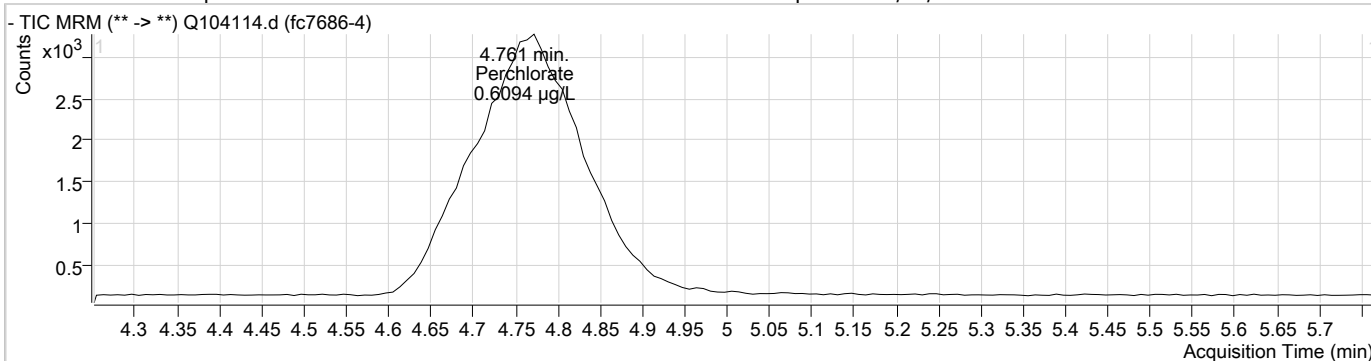
Quantitative Analysis Report for Perchlorate by 6850



7.1.3
7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104114.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/20/2023 12:31:22 PM
Sample Name	fc7686-4	Instrument	Instrument 1
Vial	P2-A6	Sample Information	OP97971,SQ2217,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2217.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



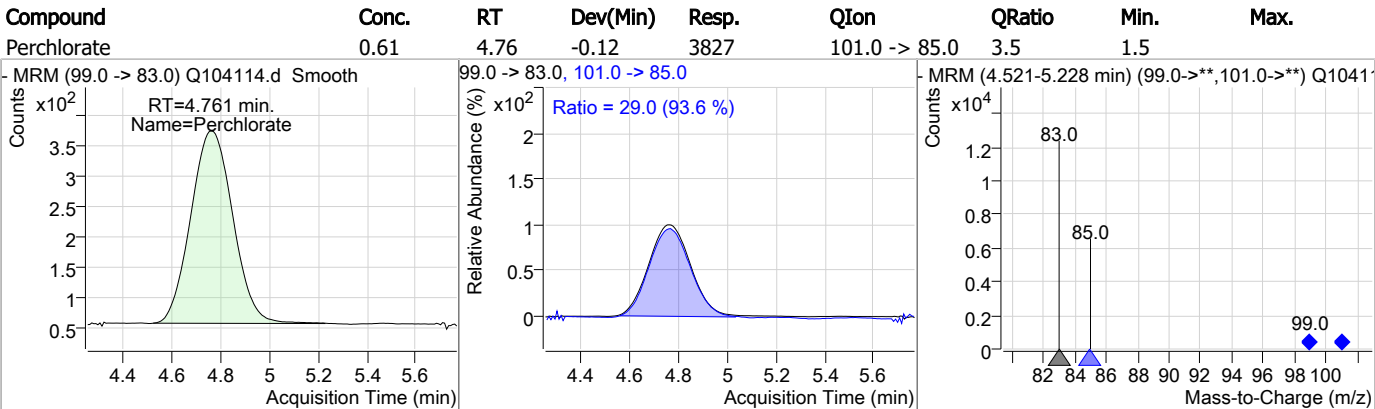
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.763	107.0 -> 89.0	23725	NoQ	5.00 µg/L	-0.117

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	4.761	99.0 -> 83.0	3827	3.5	0.61 µg/L	96

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

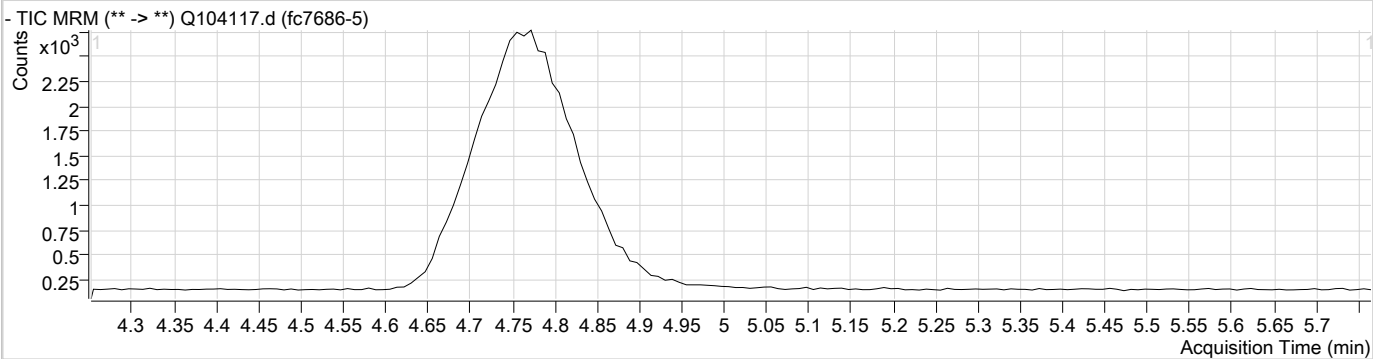


7.1.4

7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104117.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/20/2023 12:53:14 PM
Sample Name	fc7686-5	Instrument	Instrument 1
Vial	P2-A9	Sample Information	OP97971,SQ2217,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2217.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



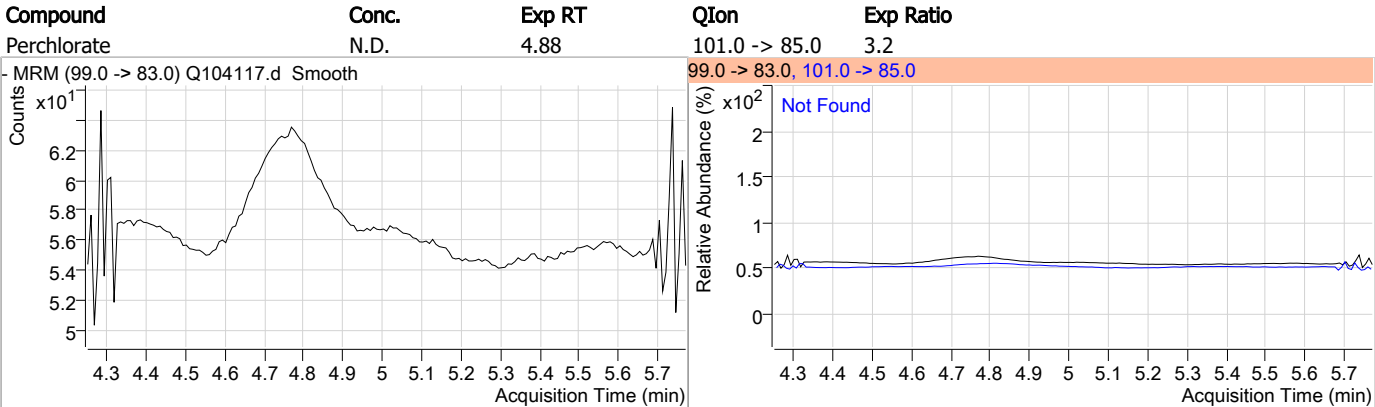
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.763	107.0 -> 89.0	22125	NoQ	5.00 µg/L	-0.117

System Monitoring Compounds

Target Compounds						QValue
Perchlorate	-	99.0 -> 83.0	-	-	N.D.	

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

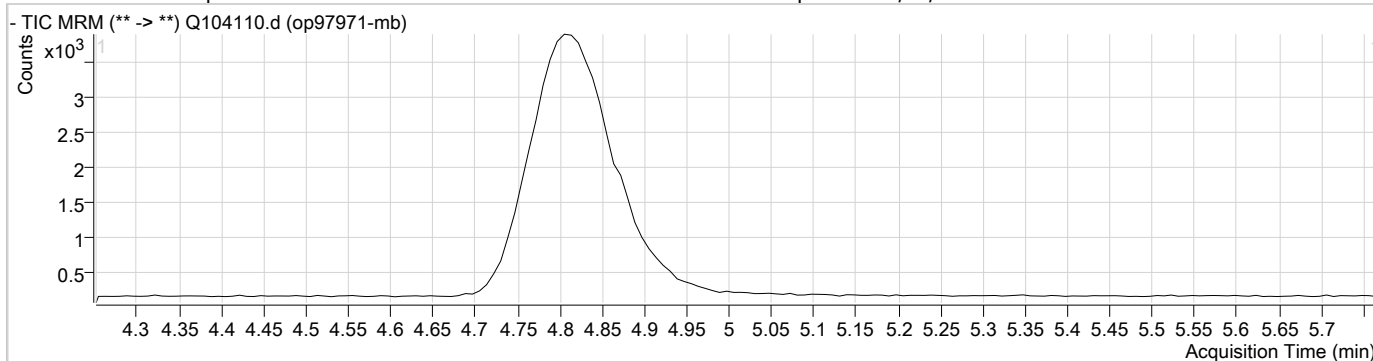
Quantitative Analysis Report for Perchlorate by 6850



7.1.5
7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104110.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/20/2023 12:02:05 PM
Sample Name	op97971-mb	Instrument	Instrument 1
Vial	P2-A2	Sample Information	OP97971,SQ2217,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2217.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.813	107.0 -> 89.0	26307	NoQ	5.00 µg/L	-0.067

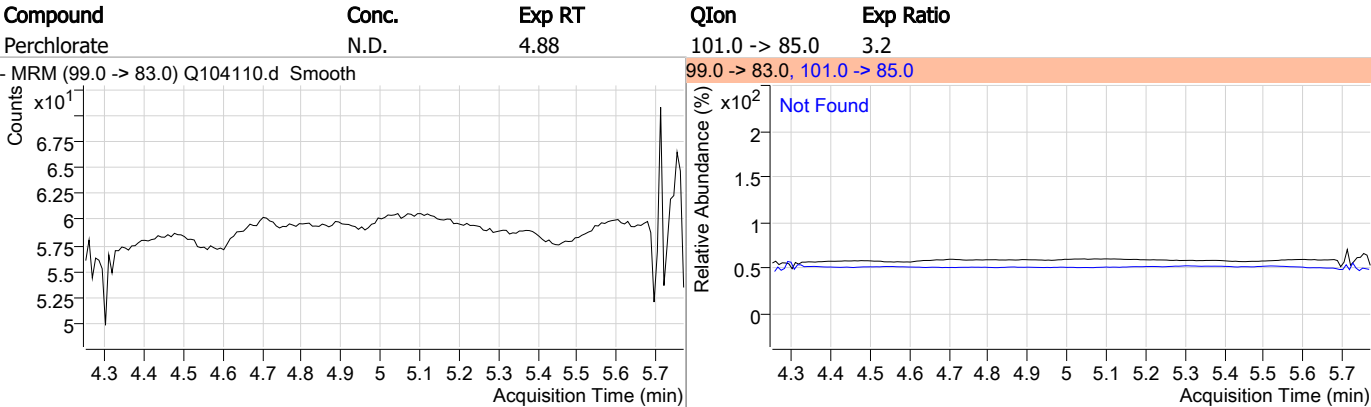
System Monitoring Compounds

Target Compounds

						QValue
Perchlorate	-	99.0 -> 83.0	-	-	N.D.	

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

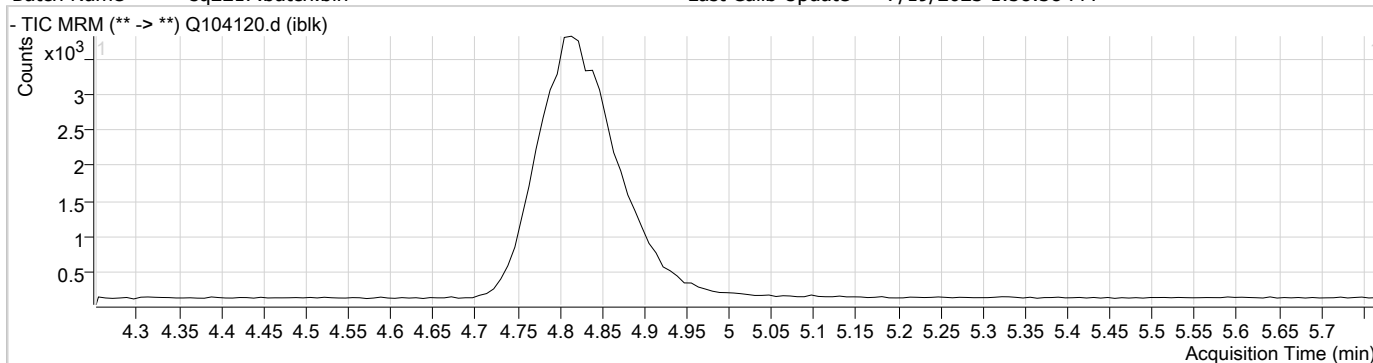
Quantitative Analysis Report for Perchlorate by 6850



7.2.1
7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104120.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/20/2023 1:15:05 PM
Sample Name	iblk	Instrument	Instrument 1
Vial	Vial 1	Sample Information	OP97589,SQ2217,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2217.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.813	107.0 -> 89.0	24490	NoQ	5.00 µg/L	-0.067

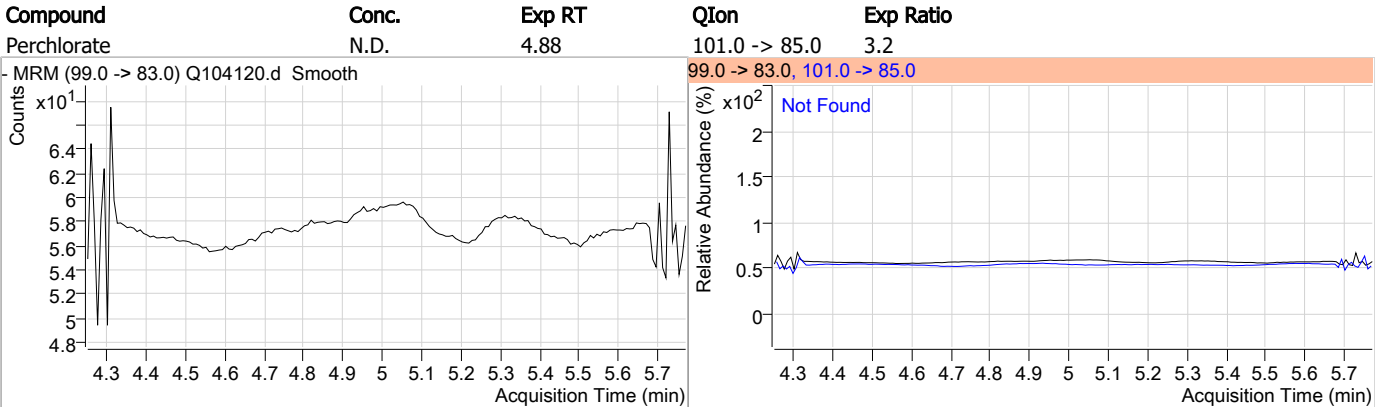
System Monitoring Compounds

Target Compounds

						QValue
Perchlorate	-	99.0 -> 83.0	-	-	N.D.	

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

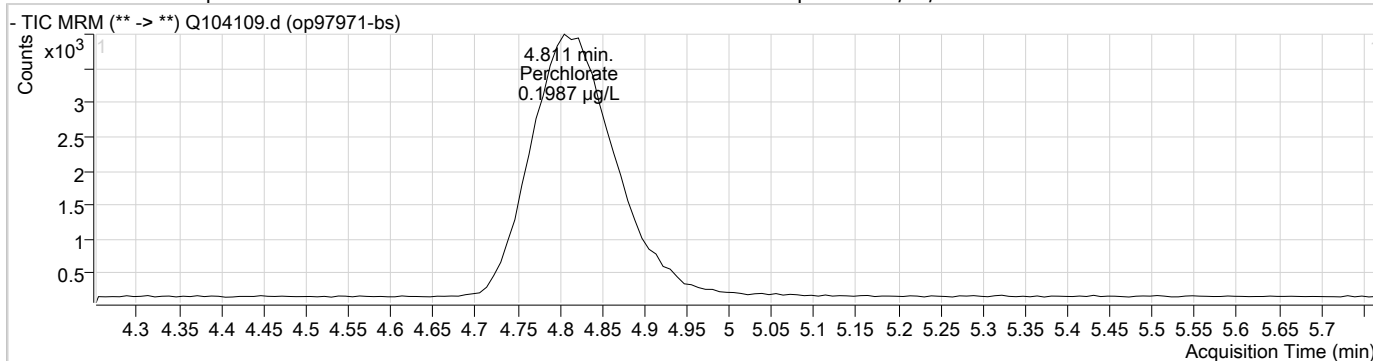
Quantitative Analysis Report for Perchlorate by 6850



7.2.2
7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104109.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/20/2023 11:54:47 AM
Sample Name	op97971-bs	Instrument	Instrument 1
Vial	P2-A1	Sample Information	OP97971,SQ2217,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2217.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



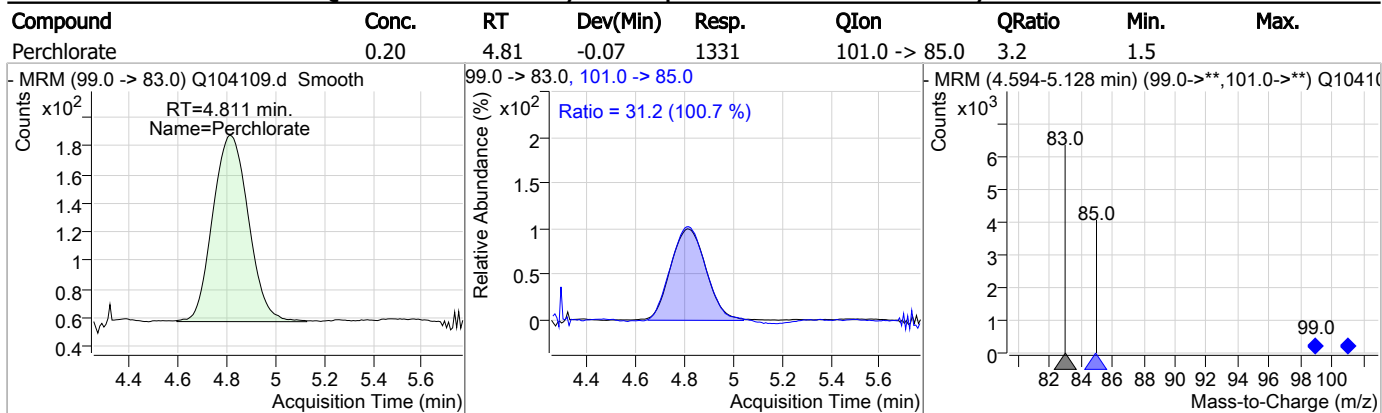
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.813	107.0 -> 89.0	25305	NoQ	5.00 µg/L	-0.067

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	4.811	99.0 -> 83.0	1331	3.2	0.20 µg/L	99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

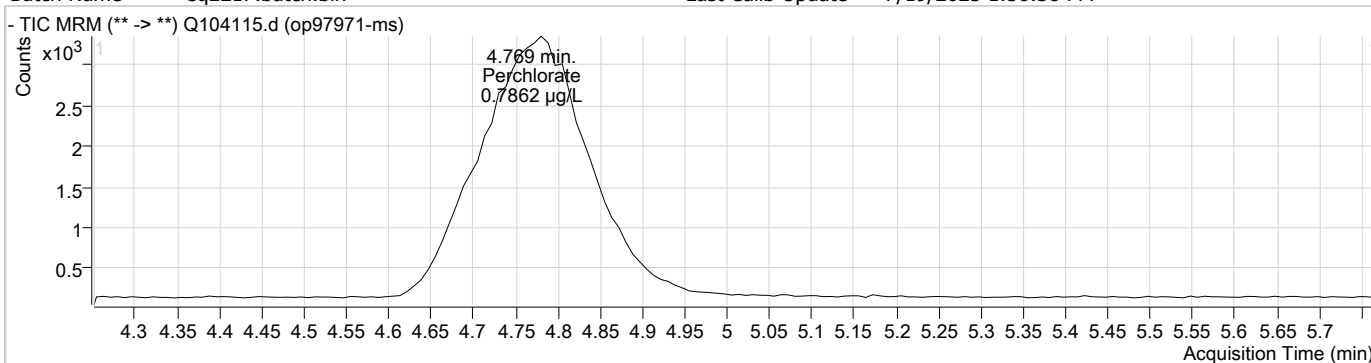
Quantitative Analysis Report for Perchlorate by 6850



7.3.1
7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104115.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/20/2023 12:38:40 PM
Sample Name	op97971-ms	Instrument	Instrument 1
Vial	P2-A7	Sample Information	OP97971,SQ2217,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2217.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.780	107.0 -> 89.0	22792	NoQ	5.00 µg/L	-0.100

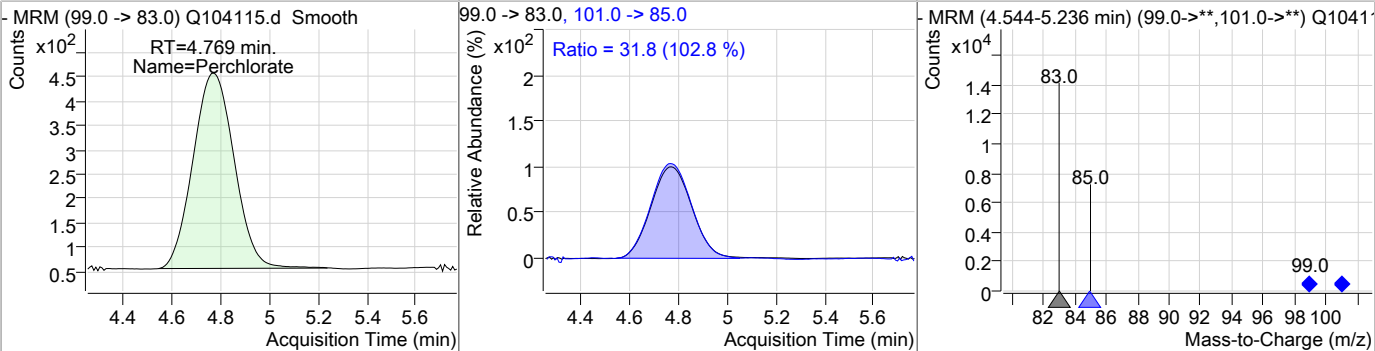
System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	4.769	99.0 -> 83.0	4743	3.1	0.79 µg/L	98

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

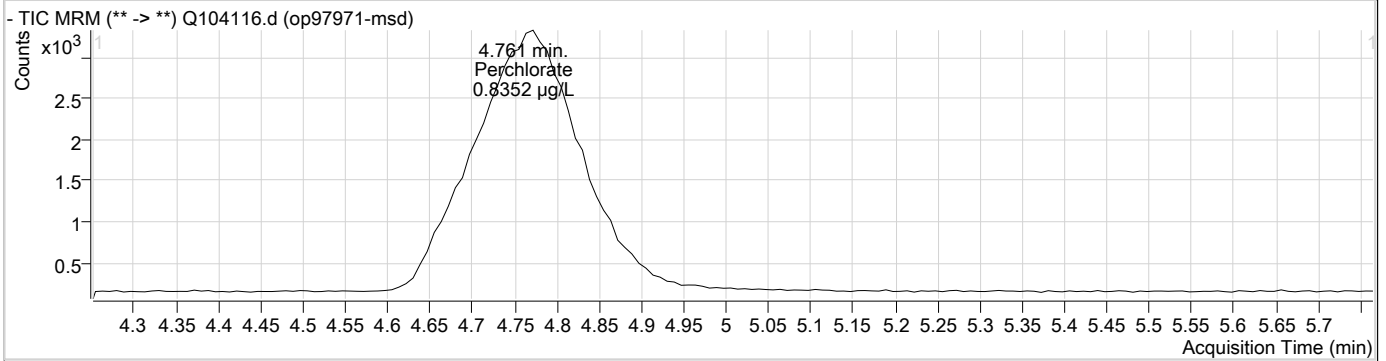
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
Perchlorate	0.79	4.77	-0.11	4743	101.0 -> 85.0	3.1	1.5	



7.4.1
7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104116.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/20/2023 12:45:58 PM
Sample Name	op97971-msd	Instrument	Instrument 1
Vial	P2-A8	Sample Information	OP97971,SQ2217,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2217.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



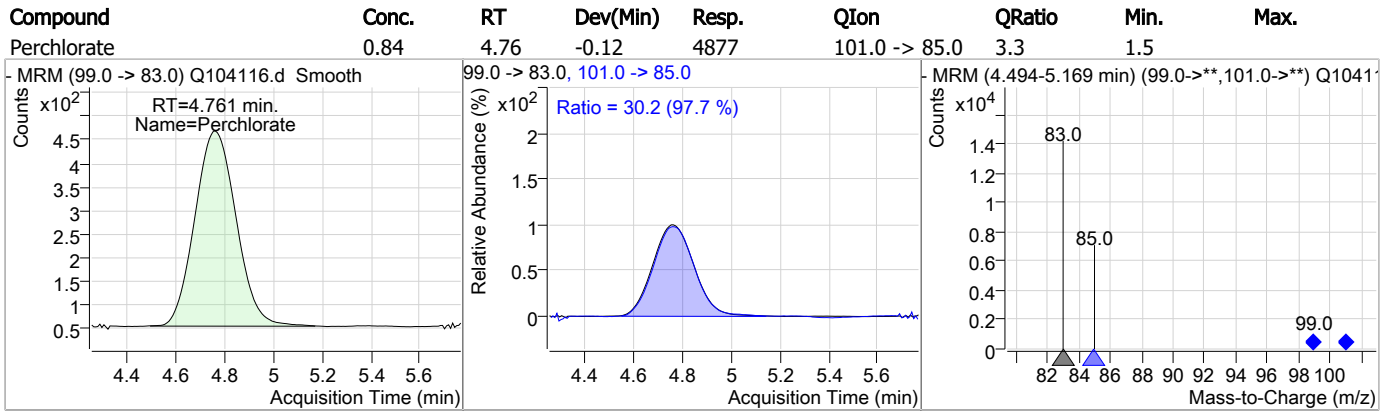
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.772	107.0 -> 89.0	22064	NoQ	5.00 µg/L	-0.108

System Monitoring Compounds

Target Compounds						QValue
Perchlorate	4.761	99.0 -> 83.0	4877	3.3	0.84 µg/L	99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



7.4.2

7

QQQ Check Tune Report



Instrument Name	Instrument 1
MS Model	G6460A
MS Instrument Serial	SG10447001
Software_Firmware Version	B.08.02.B8260.0, FW: A.00.08.62
Tune Date & Time	16 July 2023 11:56:08
Data Path	D:\MassHunter\Tune\QQQ\G6460A\atunes.TUNE.XML
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.45E+0[R]; 2.22E-5[H]

Source Parameters

Parameter	Value
Gas Temp	300
Gas Flow	10
Nebulizer	15
Capillary	4000
Nozzle Voltage	1500
Sheath Gas Temp	250
Sheath Gas Flow	7

QQQ Check Tune Report



Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.94	-0.05	Pass	0.70	0.72	0.02	Pass	82973
302.00	301.95	-0.05	Pass	0.70	0.77	0.07	Pass	36741
601.98	601.94	-0.04	Pass	0.70	0.77	0.07	Pass	62686
1033.99	1033.96	-0.03	Pass	0.70	0.74	0.04	Pass	127131
1633.95	1633.92	-0.03	Pass	0.70	0.74	0.04	Pass	234950
2233.91	2233.85	-0.06	Pass	0.70	0.65	-0.05	Pass	76101

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.00	0.00	Pass	0.70	0.70	0.00	Pass	36176
112.99	112.92	-0.07	Pass	0.70	0.73	0.03	Pass	194185
302.00	301.95	-0.05	Pass	0.70	0.76	0.06	Pass	79262
601.98	601.95	-0.03	Pass	0.70	0.72	0.02	Pass	141353
1033.99	1033.93	-0.06	Pass	0.70	0.72	0.02	Pass	256836
1633.95	1633.90	-0.05	Pass	0.70	0.71	0.01	Pass	543048
2233.91	2233.83	-0.08	Pass	0.70	0.74	0.04	Pass	384231

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.89	-0.10	Pass	1.20	1.16	-0.04	Pass	111331
302.00	301.90	-0.10	Pass	1.20	1.33	0.13	Pass	45917
601.98	601.87	-0.11	Pass	1.20	1.39	0.19	Pass	85720
1033.99	1033.88	-0.11	Pass	1.20	1.43	0.23	Pass	199226
1633.95	1633.82	-0.13	Pass	1.20	1.29	0.09	Pass	481746
2233.91	2233.83	-0.08	Pass	1.20	1.15	-0.05	Pass	341493

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.01	0.01	Pass	1.20	1.13	-0.07	Pass	45067
112.99	112.95	-0.04	Pass	1.20	1.21	0.01	Pass	214206
302.00	301.91	-0.09	Pass	1.20	1.30	0.10	Pass	115595
601.98	601.89	-0.09	Pass	1.20	1.25	0.05	Pass	188264
1033.99	1033.87	-0.12	Pass	1.20	1.03	-0.17	Pass	416580
1633.95	1633.87	-0.08	Pass	1.20	1.02	-0.18	Pass	1151080
2233.91	2233.87	-0.04	Pass	1.20	1.20	0.00	Pass	1104253

Analyzer: MS1 Polarity: Negative Width: Widest

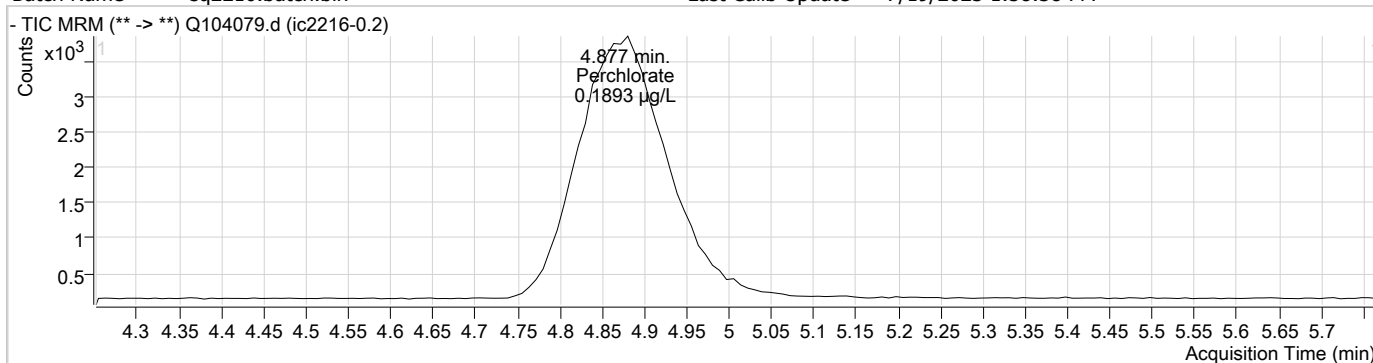
m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.78	-0.21	Pass	2.50	2.40	-0.10	Pass	145314
302.00	301.86	-0.14	Pass	2.50	2.58	0.08	Pass	58174
601.98	601.82	-0.16	Pass	2.50	2.61	0.11	Pass	113939
1033.99	1033.81	-0.18	Pass	2.50	2.62	0.12	Pass	310487
1633.95	1633.79	-0.16	Pass	2.50	2.48	-0.02	Pass	852974
2233.91	2233.81	-0.10	Pass	2.50	2.33	-0.17	Pass	714095

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.01	0.01	Pass	2.50	2.54	0.04	Pass	53030
112.99	112.94	-0.05	Pass	2.50	2.65	0.15	Pass	243040
302.00	301.93	-0.07	Pass	2.50	2.68	0.18	Pass	132226
601.98	601.85	-0.13	Pass	2.50	2.59	0.09	Pass	255647
1033.99	1033.87	-0.12	Pass	2.50	2.20	-0.30	Pass	795203
1633.95	1633.85	-0.10	Pass	2.50	2.21	-0.29	Pass	2598548
2233.91	2233.77	-0.14	Pass	2.50	2.29	-0.21	Pass	2888336

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104079.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/19/2023 10:03:42 AM
Sample Name	ic2216-0.2	Instrument	Instrument 1
Vial	Vial 2	Sample Information	OP97589,SQ2216,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2216.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



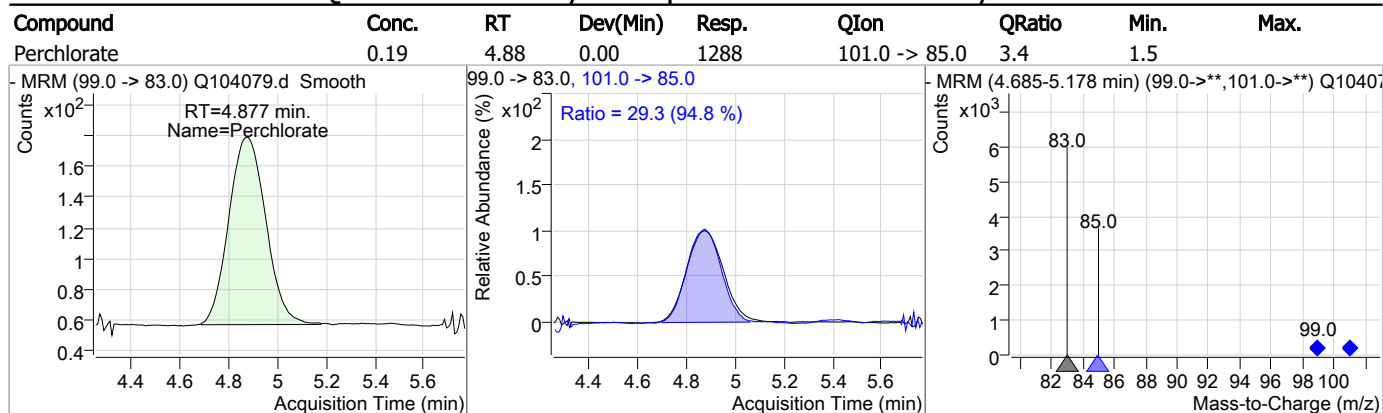
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.872	107.0 -> 89.0	25702	NoQ	5.00 µg/L	-0.008

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	4.877	99.0 -> 83.0	1288	3.4	0.19 µg/L	97

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

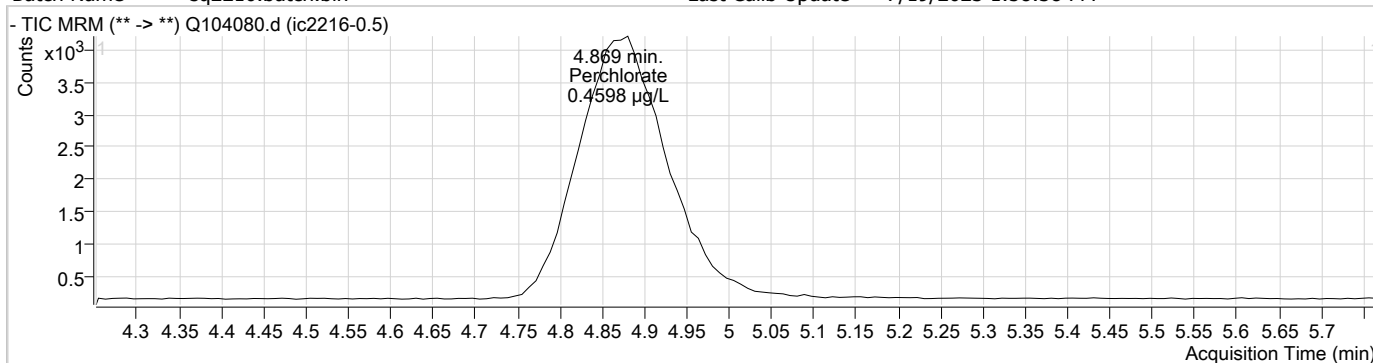


7.5.2

7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104080.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/19/2023 10:10:58 AM
Sample Name	ic2216-0.5	Instrument	Instrument 1
Vial	Vial 3	Sample Information	OP97589,SQ2216,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2216.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



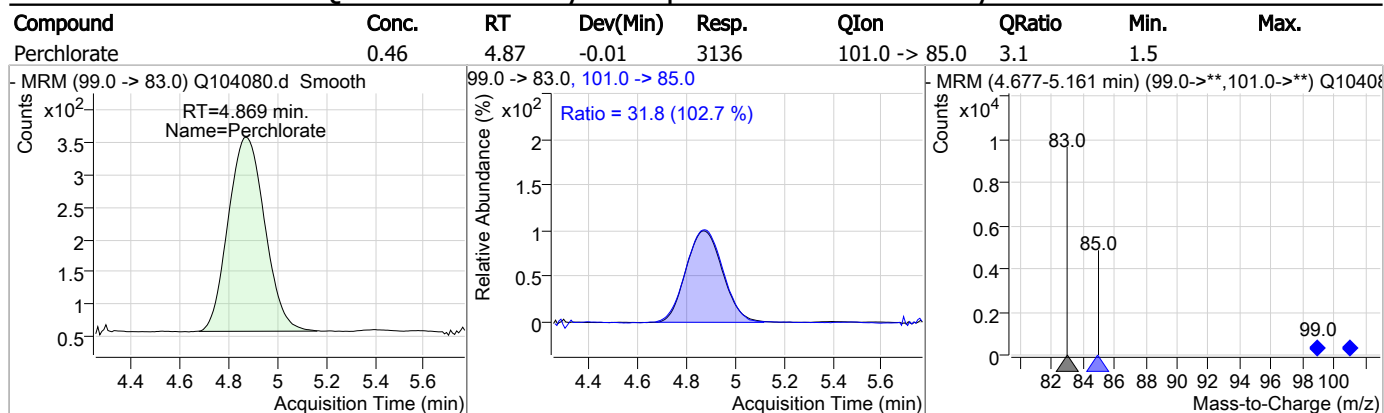
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.872	107.0 -> 89.0	25766	NoQ	5.00 µg/L	-0.008

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	4.869	99.0 -> 83.0	3136	3.1	0.46 µg/L	98

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

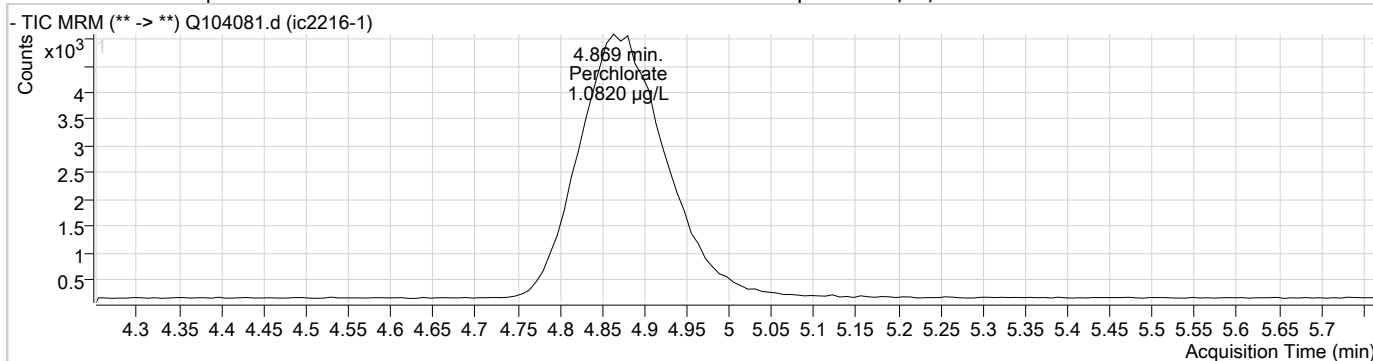


7.5.3

7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104081.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/19/2023 10:18:15 AM
Sample Name	ic2216-1	Instrument	Instrument 1
Vial	Vial 4	Sample Information	OP97589,SQ2216,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2216.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



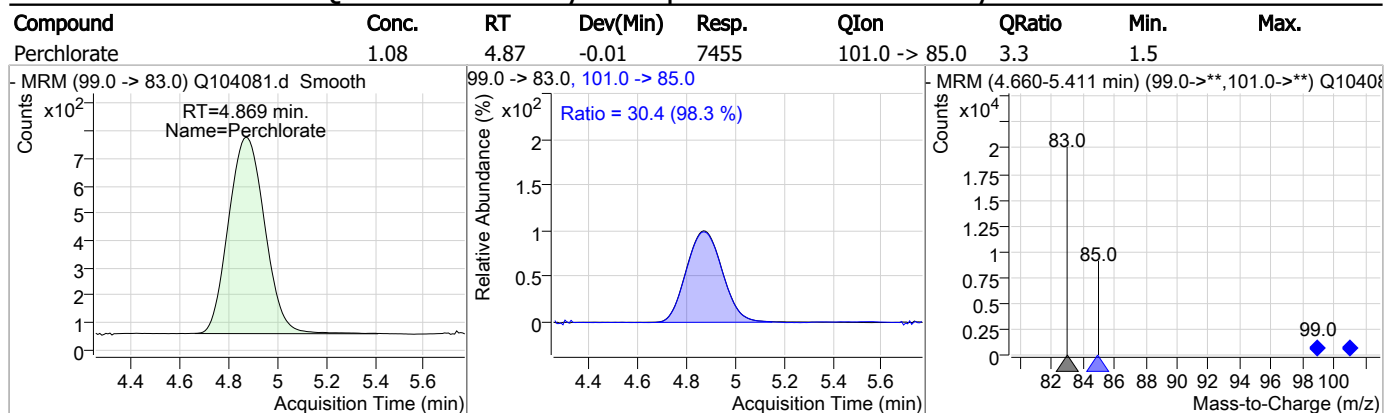
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.872	107.0 -> 89.0	26032	NoQ	5.00 µg/L	-0.008

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	4.869	99.0 -> 83.0	7455	3.3	1.08 µg/L	99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

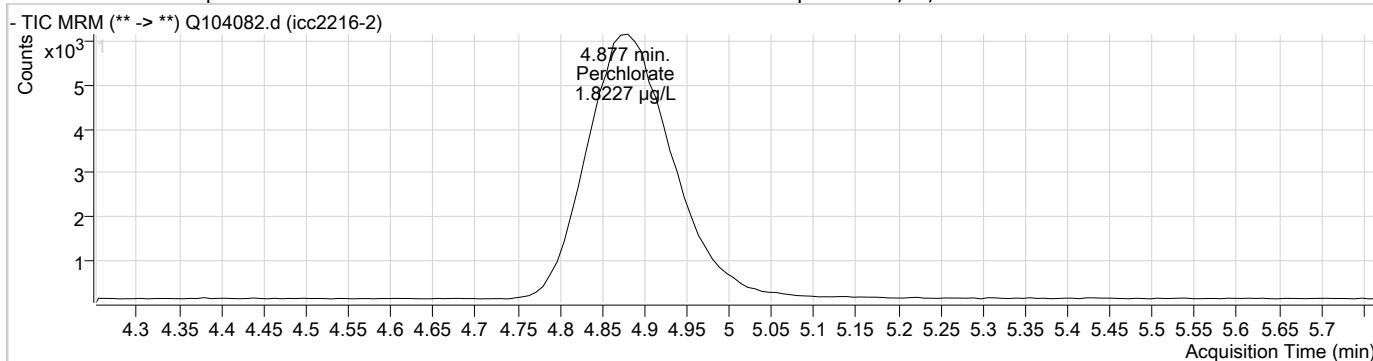


7.5.4

7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104082.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/19/2023 10:25:32 AM
Sample Name	icc2216-2	Instrument	Instrument 1
Vial	Vial 5	Sample Information	OP97589,SQ2216,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2216.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



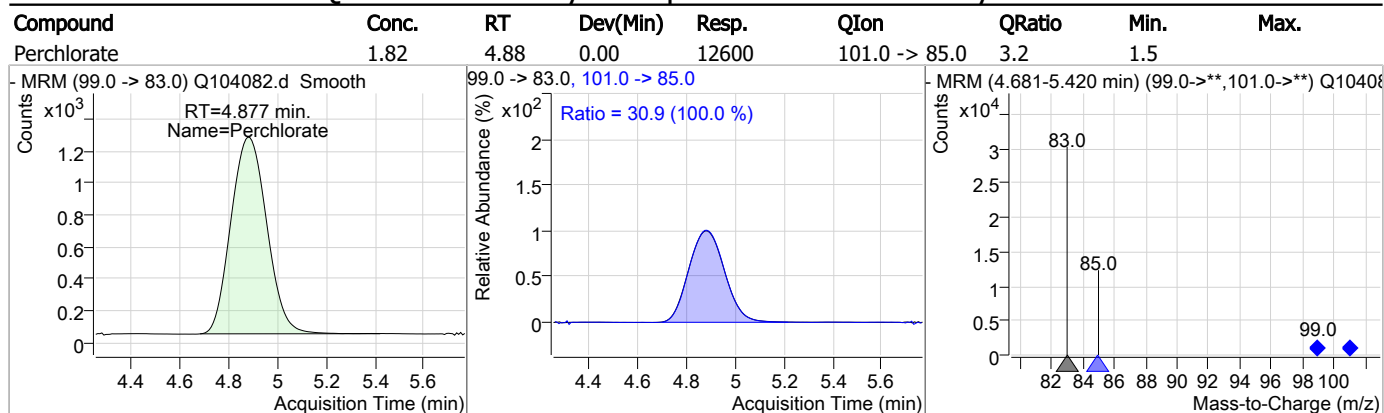
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.880	107.0 -> 89.0	26120	NoQ	5.00 µg/L	0.000

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	4.877	99.0 -> 83.0	12600	3.2	1.82 µg/L	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

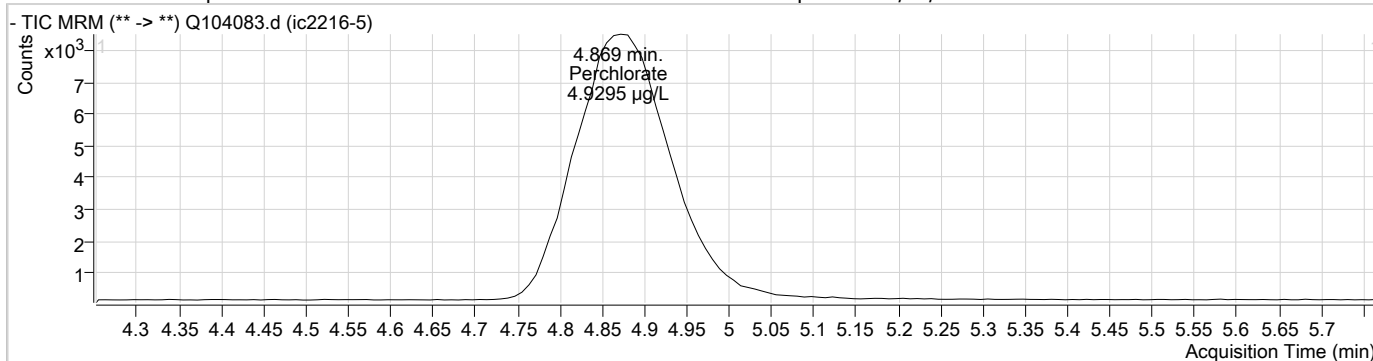


7.5.5

7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104083.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/19/2023 10:32:49 AM
Sample Name	ic2216-5	Instrument	Instrument 1
Vial	Vial 6	Sample Information	OP97589,SQ2216,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2216.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



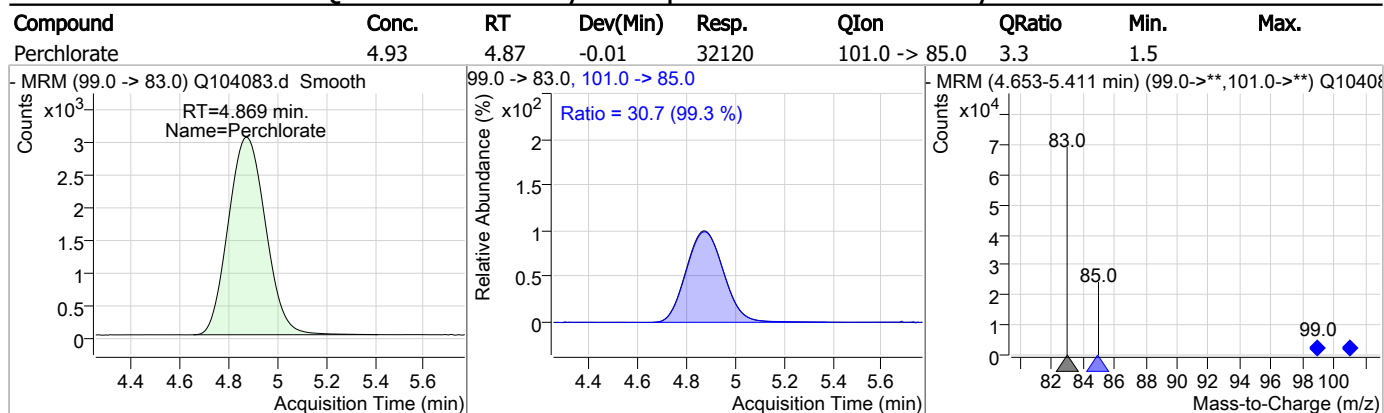
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.872	107.0 -> 89.0	24627	NoQ	5.00 µg/L	-0.008

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	4.869	99.0 -> 83.0	32120	3.3	4.93 µg/L	100

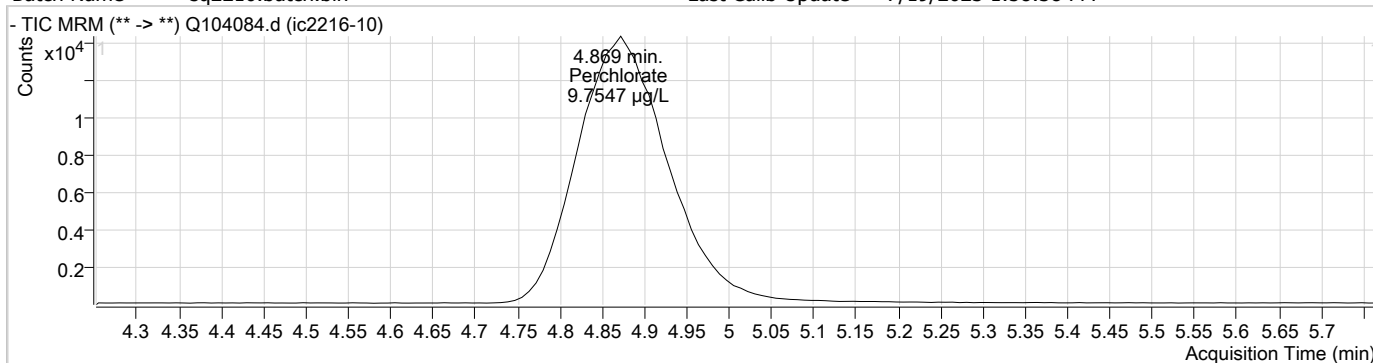
(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104084.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/19/2023 10:40:06 AM
Sample Name	ic2216-10	Instrument	Instrument 1
Vial	Vial 7	Sample Information	OP97589,SQ2216,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2216.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



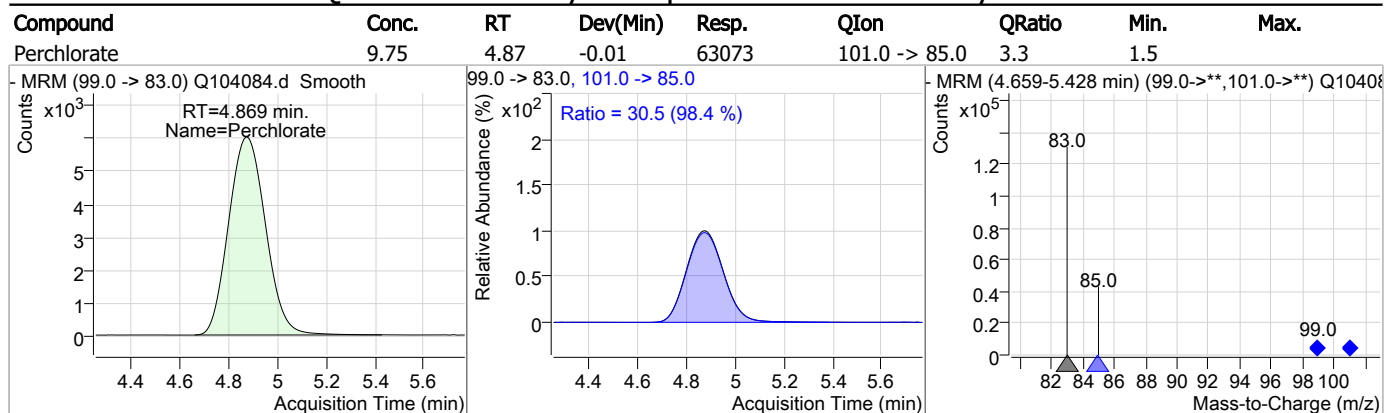
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.872	107.0 -> 89.0	24449	NoQ	5.00 µg/L	-0.008

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	4.869	99.0 -> 83.0	63073	3.3	9.75 µg/L	99

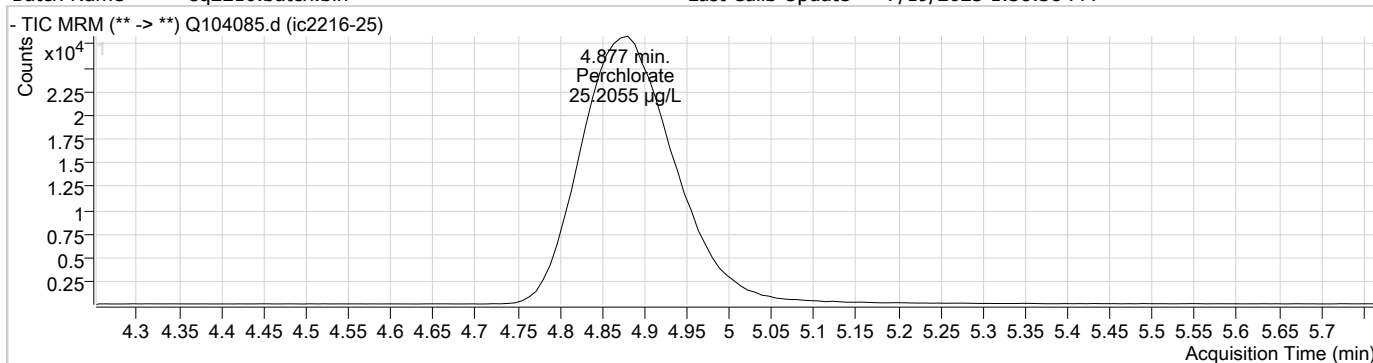
(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104085.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/19/2023 10:47:23 AM
Sample Name	ic2216-25	Instrument	Instrument 1
Vial	Vial 8	Sample Information	OP97589,SQ2216,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2216.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.880	107.0 -> 89.0	22573	NoQ	5.00 µg/L	0.000

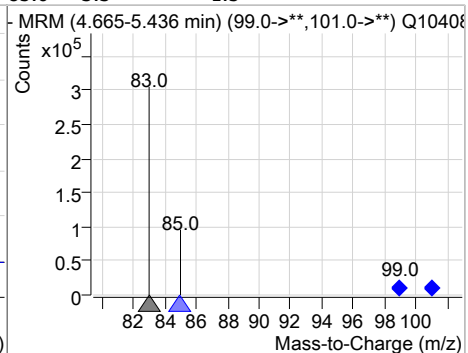
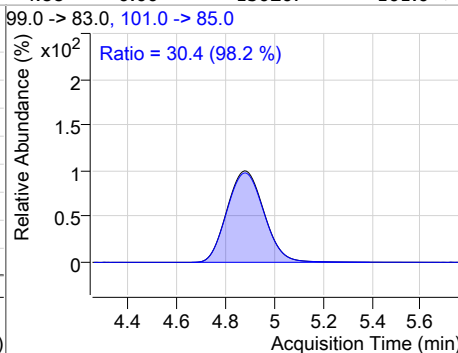
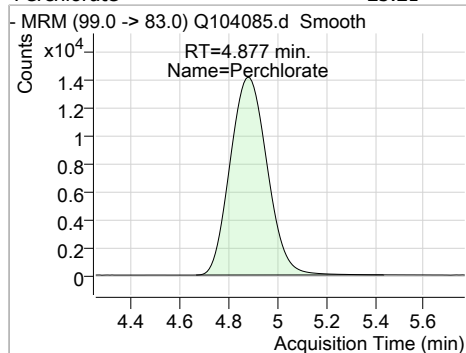
System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	4.877	99.0 -> 83.0	150267	3.3	25.21 µg/L	99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

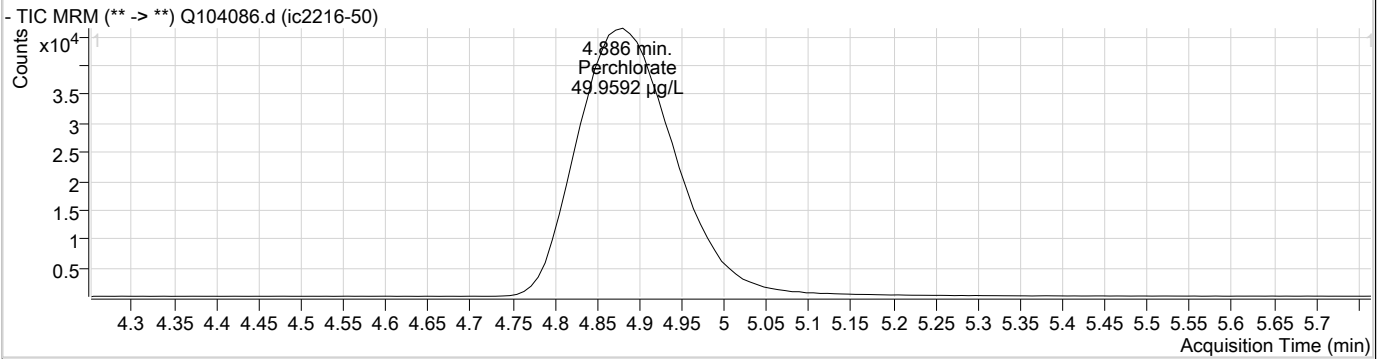
Quantitative Analysis Report for Perchlorate by 6850

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
Perchlorate	25.21	4.88	0.00	150267	101.0 -> 85.0	3.3	1.5	



Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104086.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/19/2023 10:54:41 AM
Sample Name	ic2216-50	Instrument	Instrument 1
Vial	Vial 9	Sample Information	OP97589,SQ2216,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2216.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.880	107.0 -> 89.0	20617	NoQ	5.00 µg/L	0.000

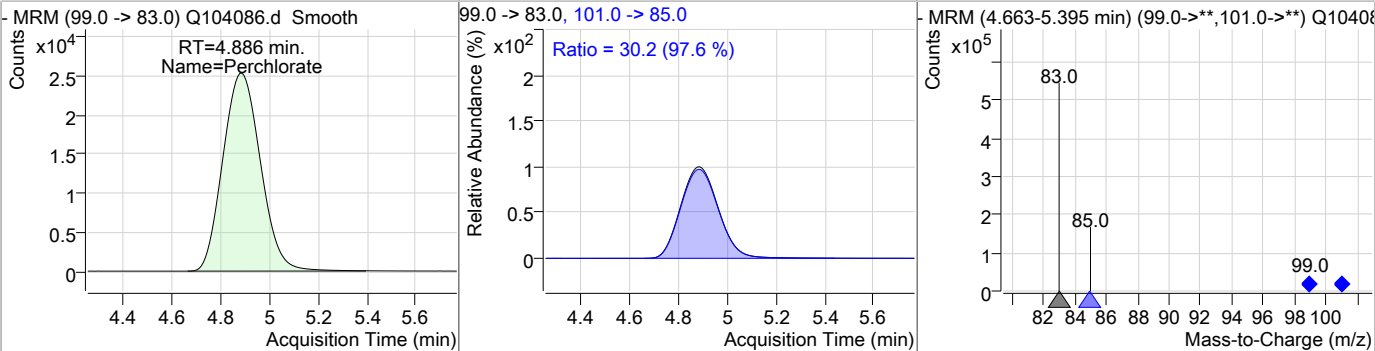
System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	4.886	99.0 -> 83.0	271427	3.3	49.96 µg/L	99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

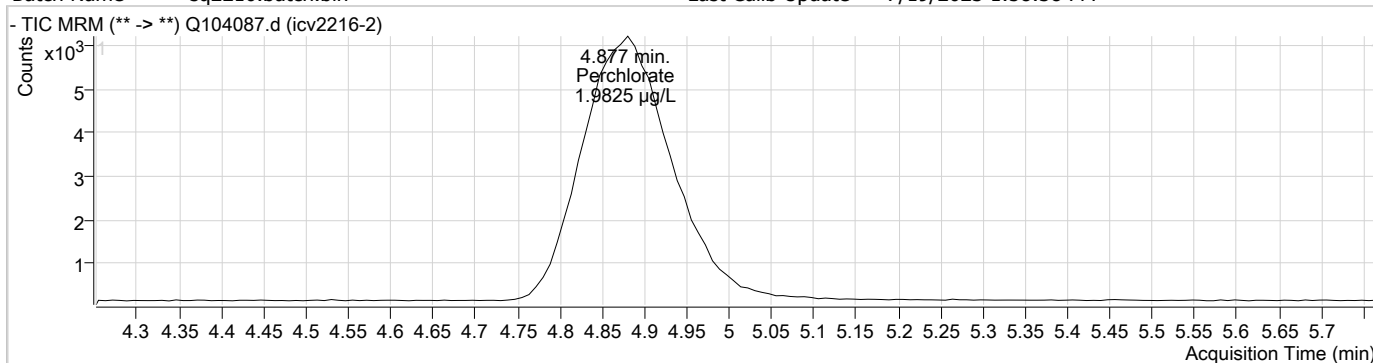
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
Perchlorate	49.96	4.89	0.01	271427	101.0 -> 85.0	3.3	1.5	



7.5.9
7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104087.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/19/2023 11:01:59 AM
Sample Name	icv2216-2	Instrument	Instrument 1
Vial	Vial 10	Sample Information	OP97589,SQ2216,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2216.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



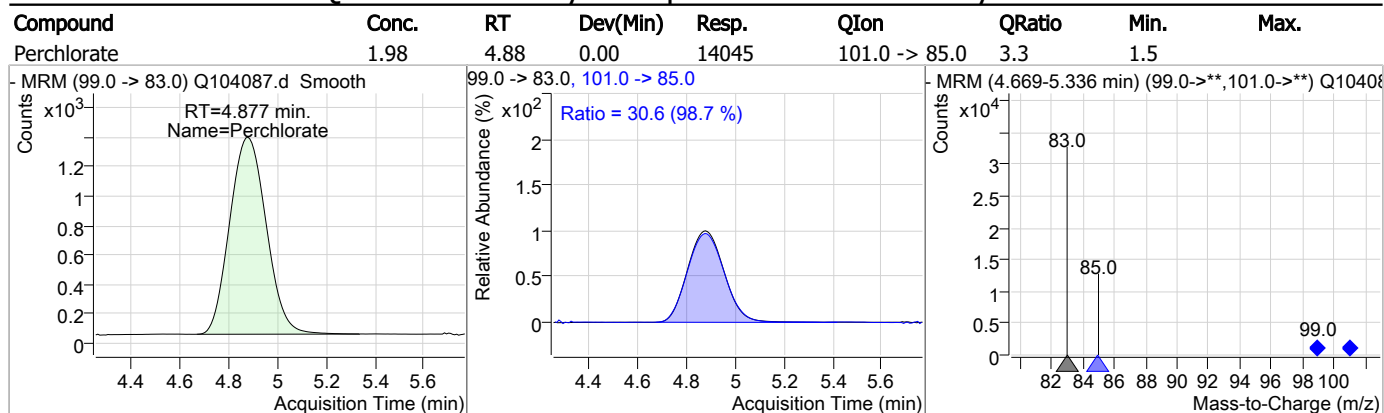
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.880	107.0 -> 89.0	26770	NoQ	5.00 µg/L	0.000

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	4.877	99.0 -> 83.0	14045	3.3	1.98 µg/L	99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

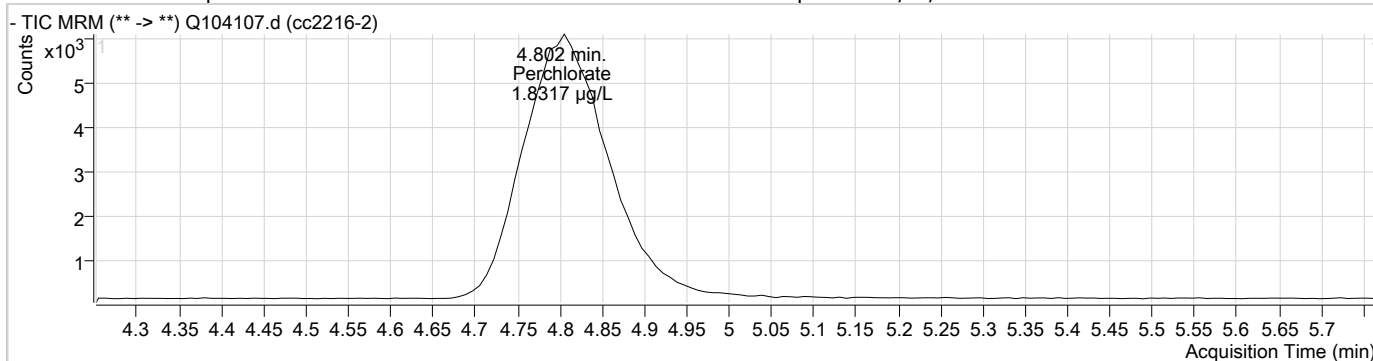


7.5.10

7

Quantitative Analysis Report for Perchlorate by 6850

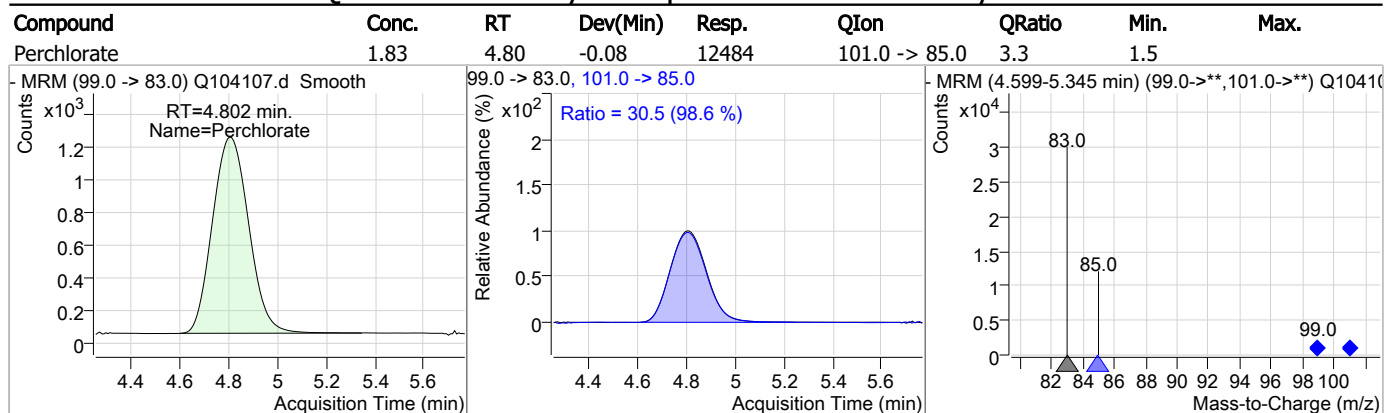
Data File	: Q104107.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/20/2023 11:40:10 AM
Sample Name	cc2216-2	Instrument	Instrument 1
Vial	Vial 5	Sample Information	OP97589,SQ2217,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2217.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.805	107.0 -> 89.0	25752	NoQ	5.00 µg/L	-0.075
System Monitoring Compounds						
Target Compounds						
Perchlorate	4.802	99.0 -> 83.0	12484	3.3	1.83 µg/L	99

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

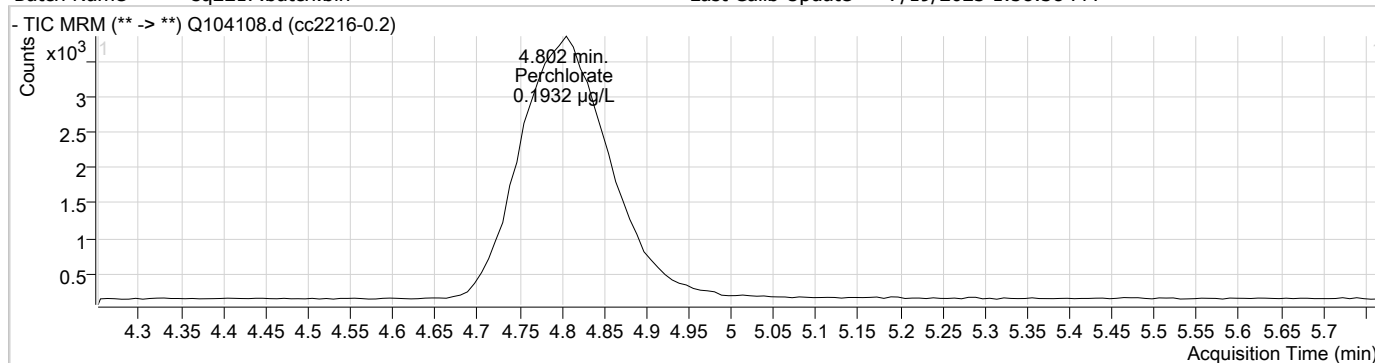


7.5.11

7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104108.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/20/2023 11:47:27 AM
Sample Name	cc2216-0.2	Instrument	Instrument 1
Vial	Vial 2	Sample Information	OP97589,SQ2217,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2217.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.805	107.0 -> 89.0	25652	NoQ	5.00 µg/L	-0.075

System Monitoring Compounds

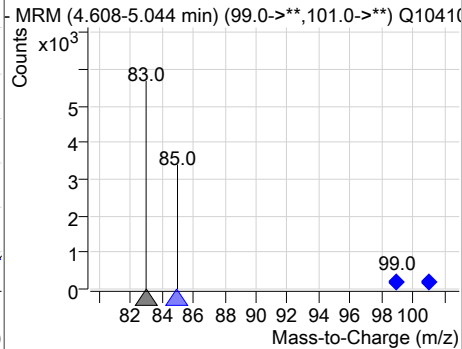
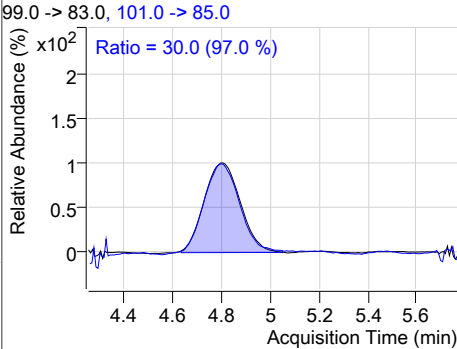
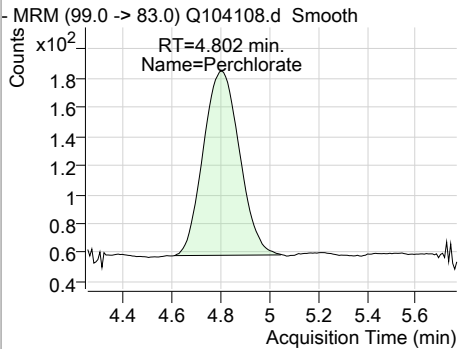
Target Compounds

						QValue
Perchlorate	4.802	99.0 -> 83.0	1312	3.3	0.19 µg/L	98

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850

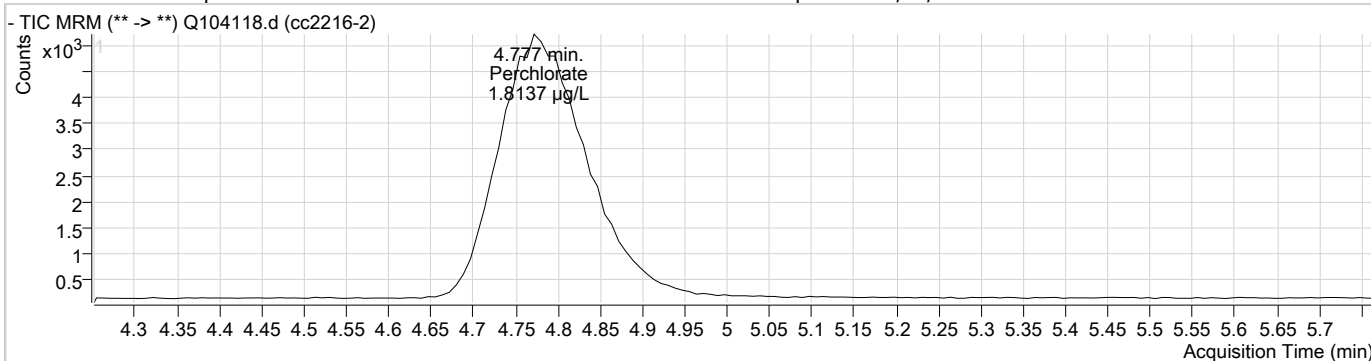
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
Perchlorate	0.19	4.80	-0.08	1312	101.0 -> 85.0	3.3	1.5	



7.5.12
7

Quantitative Analysis Report for Perchlorate by 6850

Data File	: Q104118.d	Operator	annal
Acq. Method	Perchlorate_5.m	Acq. Date-Time	7/20/2023 1:00:31 PM
Sample Name	cc2216-2	Instrument	Instrument 1
Vial	Vial 5	Sample Information	OP97589,SQ2217,10,,,10,1,water
DA Method File	6850_071923_SQ2216.quantmethod.xml	Comment	
Batch Name	sq2217.batch.bin	Last Calib Update	7/19/2023 1:58:38 PM



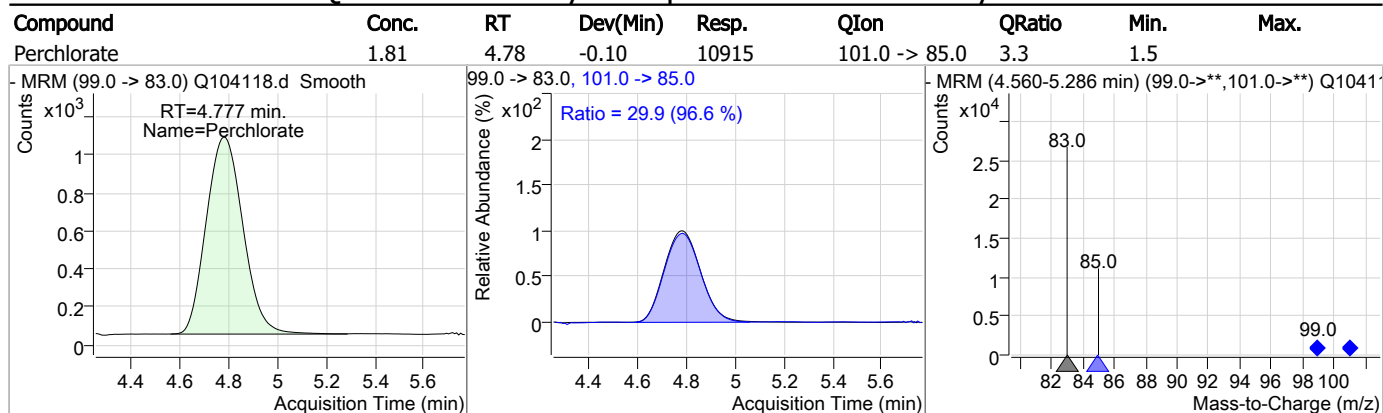
Compound	RT	QIon	Resp.	Q-ratio	Conc. Units	Dev(Min)
Internal Standards						
Cl18O4	4.780	107.0 -> 89.0	22740	NoQ	5.00 µg/L	-0.100

System Monitoring Compounds

Target Compounds	RT	QIon	Resp.	Q-ratio	Conc. Units	QValue
Perchlorate	4.777	99.0 -> 83.0	10915	3.3	1.81 µg/L	98

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

Quantitative Analysis Report for Perchlorate by 6850



7.5.13

7

SGS ORLANDO

DATE:	07/19/23
COLUMN TYPE:	K-Prime
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS1-Q

LCMS1-Q ANALYSIS LOG

METHODS:	6850
PROC. METH:	6850_071923_SQ2216
CAL DATE:	07/19/23
ANALYST:	AL
RUN BATCH:	SQ2216

ELUENT A LOT #:	224231 W/0.1% AA 224297
ELUENT B LOT #:	225380 W/0.1% AA 224297
IC/CC STD LOT #:	LCMS 2102
ICV STD LOT #:	LCMS 2138
ISTD/ID STD LOT #:	11605

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	Q104074.d	Vial 1	ccb	Perchlorate_5.m	Sample		OP97589 SQ2216.10,,10.1,water	nd
2	Q104075.d	Vial 1	ccb	Perchlorate_5.m	Sample		OP97589 SQ2216.10,,10.1,water	nd
3	Q104076.d	Vial 1	ccb	Perchlorate_5.m	Sample		OP97589 SQ2216.10,,10.1,water	nd
4	Q104077.d	Vial 1	ccb	Perchlorate_5.m	Sample		OP97589 SQ2216.10,,10.1,water	nd
5	Q104078.d	Vial 1	ic2216-0	Perchlorate_5.m	Sample		OP97589 SQ2216.10,,10.1,water	check tune file
6	Q104079.d	Vial 2	ic2216-0.2	Perchlorate_5.m	Calibration	500x	OP97589 SQ2216.10,,10.1,water	pass
7	Q104080.d	Vial 3	ic2216-0.5	Perchlorate_5.m	Calibration	200x	OP97589 SQ2216.10,,10.1,water	pass
8	Q104081.d	Vial 4	ic2216-1	Perchlorate_5.m	Calibration	100x	OP97589 SQ2216.10,,10.1,water	pass
9	Q104082.d	Vial 5	icc2216-2	Perchlorate_5.m	Calibration	50x	OP97589 SQ2216.10,,10.1,water	pass
10	Q104083.d	Vial 6	ic2216-5	Perchlorate_5.m	Calibration	20x	OP97589 SQ2216.10,,10.1,water	pass
11	Q104084.d	Vial 7	ic2216-10	Perchlorate_5.m	Calibration	10x	OP97589 SQ2216.10,,10.1,water	pass
12	Q104085.d	Vial 8	ic2216-25	Perchlorate_5.m	Calibration	4x	OP97589 SQ2216.10,,10.1,water	pass
13	Q104086.d	Vial 9	ic2216-50	Perchlorate_5.m	Calibration	2x	OP97589 SQ2216.10,,10.1,water	pass
14	Q104087.d	Vial 10	icv2216-2	Perchlorate_5.m	QC	50x	OP97589 SQ2216.10,,10.1,water	pass
15	Q104088.d	P1-A1	ics	Perchlorate_5.m	Sample	500x	OP97589 SQ2216.10,,10.1,water	pass
16	Q104089.d	Vial 5	cc2216-2	Perchlorate_5.m	QC	50x	OP97589 SQ2216.10,,10.1,water	pass
17	Q104090.d	Vial 2	cc2216-0.2	Perchlorate_5.m	QC	500x	OP97589 SQ2216.10,,10.1,water	pass
18	Q104091.d	P1-E2	op97893-bs	Perchlorate_5.m	Sample		OP97893 SQ2216.10,,10.1,water	nd
19	Q104092.d	P1-E3	op97893-mb	Perchlorate_5.m	Sample		OP97893 SQ2216.10,,10.1,water	✓
20	Q104093.d	P1-F2	fc7708-1	Perchlorate_5.m	Sample		OP97893 SQ2216.10,,10.1,water	✓
21	Q104094.d	P1-F3	fc7708-2	Perchlorate_5.m	Sample		OP97893 SQ2216.10,,10.1,water	✓
22	Q104095.d	P1-F4	op97893-ms	Perchlorate_5.m	Sample		OP97893 SQ2216.10,,10.1,water	✓
23	Q104096.d	P1-F5	op97893-msd	Perchlorate_5.m	Sample		OP97893 SQ2216.10,,10.1,water	✓
24	Q104097.d	Vial 5	cc2216-2	Perchlorate_5.m	QC	50x	OP97589 SQ2216.10,,10.1,water	pass
25	Q104098.d	Vial 2	ecc2216-0.2	Perchlorate_5.m	QC	500x	OP97589 SQ2216.10,,10.1,water	pass
26	Q104099.d	Vial 1	iblk	Perchlorate_5.m	Sample		OP97589 SQ2216.10,,10.1,water	nd

SGS ORLANDO

DATE:	07/20/23
COLUMN TYPE:	K-Prime
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS1-Q

LCMS1-Q ANALYSIS LOG

METHODS:	6850
PROC. METH:	6850_071923_SQ2216
CAL DATE:	07/19/23
ANALYST:	AL
RUN BATCH:	SQ2217

ELUENT A LOT #:	224231 W/0.1% AA 224297
ELUENT B LOT #:	225380 W/0.1% AA 224297
IC/CC STD LOT #:	LCMS 2102
ICV STD LOT #:	LCMS 2138
ISTD/ID STD LOT #:	11605

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	Q104100.d	Vial 1	ccb	Perchlorate_5.m	Sample		OP97589 SQ2217,10,,10,1,water	nd
2	Q104101.d	Vial 1	ccb	Perchlorate_5.m	Sample		OP97589 SQ2217,10,,10,1,water	nd
3	Q104102.d	Vial 1	ccb	Perchlorate_5.m	Sample		OP97589 SQ2217,10,,10,1,water	nd
4	Q104103.d	Vial 1	ccb	Perchlorate_5.m	Sample		OP97589 SQ2217,10,,10,1,water	nd
5	Q104104.d	Vial 1	ccb	Perchlorate_5.m	Sample		OP97589 SQ2217,10,,10,1,water	nd
6	Q104105.d	Vial 1	ccb	Perchlorate_5.m	Sample		OP97589 SQ2217,10,,10,1,water	nd
7	Q104106.d	P1-A1	ics	Perchlorate_5.m	Sample		OP97589 SQ2217,10,,10,1,water	pass
8	Q104107.d	Vial 5	cc2216-2	Perchlorate_5.m	QC	50x	OP97589 SQ2217,10,,10,1,water	pass
9	Q104108.d	Vial 2	cc2216-0.2	Perchlorate_5.m	QC	500x	OP97589 SQ2217,10,,10,1,water	pass
10	Q104109.d	P2-A1	op97971-bs	Perchlorate_5.m	Sample		OP97971 SQ2217,10,,10,1,water	✓
11	Q104110.d	P2-A2	op97971-mb	Perchlorate_5.m	Sample		OP97971 SQ2217,10,,10,1,water	✓
12	Q104111.d	P2-A3	fc7686-1	Perchlorate_5.m	Sample		OP97971 SQ2217,10,,10,1,water	✓
13	Q104112.d	P2-A4	fc7686-2	Perchlorate_5.m	Sample		OP97971 SQ2217,10,,10,1,water	✓
14	Q104113.d	P2-A5	fc7686-3	Perchlorate_5.m	Sample		OP97971 SQ2217,10,,10,1,water	✓
15	Q104114.d	P2-A6	fc7686-4	Perchlorate_5.m	Sample		OP97971 SQ2217,10,,10,1,water	✓
16	Q104115.d	P2-A7	op97971-ms	Perchlorate_5.m	Sample		OP97971 SQ2217,10,,10,1,water	✓
17	Q104116.d	P2-A8	op97971-msd	Perchlorate_5.m	Sample		OP97971 SQ2217,10,,10,1,water	✓
18	Q104117.d	P2-A9	fc7686-5	Perchlorate_5.m	Sample		OP97971 SQ2217,10,,10,1,water	✓
19	Q104118.d	Vial 5	cc2216-2	Perchlorate_5.m	QC	50x	OP97589 SQ2217,10,,10,1,water	pass
20	Q104119.d	Vial 2	ecc2216-0.2	Perchlorate_5.m	QC	500x	OP97589 SQ2217,10,,10,1,water	pass
21	Q104120.d	Vial 1	iblk	Perchlorate_5.m	Sample		OP97589 SQ2217,10,,10,1,water	nd

LIQUID SAMPLE PREP REPORT

Date/Time: 07/20/23 1012
Started (mm/dd/yy 24:00)Prep Method: 3510C 3580A or Method (circle)Date/Time: 07/20/23 1041
Finished (mm/dd/yy 24:00)Analytical Method: 10850Batch#: OP97971 Ext. By: — Conc. By: — Viald By: AL

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Comments
OP 97971 MB	<u>10/20/23</u>	<u>10.0</u>					<u>10.0</u>	
OP 97971 BS	<u>AL</u>					<u>20μl</u>		
<u>FC7686-1</u>	<u>3</u>	<u>↓</u>					<u>↓</u>	
<u>-2</u>	<u>2</u>							
<u>-3</u>	<u>2</u>							
<u>-4</u>	<u>5</u>							
<u>↓ -5</u>	<u>3</u>	<u>↓</u>					<u>↓</u>	<u>MS/MSD</u>
<u>N/A</u> <u>07/20/23</u> <u>AL</u>								
OP 97971 MS	<u>5</u>	<u>10.0</u>				<u>20μl</u>	<u>10.0</u>	<u>FC7686-4</u>
OP 97971 MSD	<u>↓</u>	<u>↓</u>				<u>↓</u>	<u>↓</u>	<u>↓</u>
DUP								

Comments: 1STD: 11860 conc: 1.0mg/L Exp: 06/30/24 add: 50 μ lSurr. ID: — Conc: — Exp. Date: — Inj. By: — Ver. By: —
Spk. ID: LLMS2138 Conc: 100ppb Exp. Date: 12/21/23 Inj. By: AL Ver. By: JLInitial Bath Temp (Therm ID): — Exchange Bath/N-Evap Temp (Therm ID): —
Observed Temp °C: — Corr. Temp °C: — Observed Temp °C: — Corr. Temp °C: —CH2CL2 Lot # — Hexane Lot # — Na2SO4 Lot# —
Acetonitrile Lot # — Methanol Lot # — Acetone Lot# —
Syringe Filter Lot# 2323/00163 pH Paper # — Reagent # HPLC H₂O: 230470
Copper Lot # — If Sulfur Cleaning is performed in Extractions (3660B)Relinquished By: AmDate: 07/20/23Accepted By: AmDate: 07/20/23

ORLD-EXT-0001-1-06-FORM-extwater.xls 062718

GC/LC Semi-volatiles

QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- GC Identification Summaries (Explosives)
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Method Blank Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97885-MB	BB077746.D	1	07/18/23	FS	07/17/23	OP97885	GBB2394

The QC reported here applies to the following samples: Method: SW846 8330A

FC7686-1, FC7686-2, FC7686-3, FC7686-4, FC7686-5

CAS No.	Compound	Result	RL	MDL	Units	Q
2691-41-0	HMX	ND	0.20	0.080	ug/l	
121-82-4	RDX	ND	0.20	0.080	ug/l	
	DNX	ND	0.20	0.080	ug/l	
	MNX	ND	0.20	0.080	ug/l	
	TNX	ND	0.20	0.080	ug/l	
618-87-1	3,5-Dinitroaniline	ND	0.20	0.080	ug/l	
99-65-0	1,3-Dinitrobenzene	ND	0.20	0.080	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.20	0.080	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
98-95-3	Nitrobenzene	ND	0.20	0.097	ug/l	
88-72-2	o-Nitrotoluene	ND	0.20	0.080	ug/l	
99-08-1	m-Nitrotoluene	ND	0.20	0.080	ug/l	
99-99-0	p-Nitrotoluene	ND	0.20	0.080	ug/l	
479-45-8	Tetryl	ND	0.20	0.080	ug/l	
99-35-4	1,3,5-Trinitrobenzene	ND	0.20	0.099	ug/l	
118-96-7	2,4,6-Trinitrotoluene	ND	0.20	0.080	ug/l	
55-63-0	Nitroglycerine	ND	2.0	0.50	ug/l	
78-11-5	PETN	ND	2.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Limits
610-39-9	3,4-Dinitrotoluene	85% 70-136%

8.1.1
8

Method Blank Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97885-MB	GG626836.D	1	07/19/23	FS	07/17/23	OP97885	GGG3302

The QC reported here applies to the following samples: Method: SW846 8330A

FC7686-1, FC7686-2, FC7686-3, FC7686-4, FC7686-5

CAS No.	Compound	Result	RL	MDL	Units	Q
2691-41-0	HMX	ND	0.20	0.080	ug/l	
121-82-4	RDX	ND	0.20	0.080	ug/l	
	DNX	ND	0.20	0.080	ug/l	
	MNX	ND	0.20	0.080	ug/l	
	TNX	ND	0.20	0.080	ug/l	
618-87-1	3,5-Dinitroaniline	ND	0.20	0.080	ug/l	
99-65-0	1,3-Dinitrobenzene	ND	0.20	0.080	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.20	0.080	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
98-95-3	Nitrobenzene	ND	0.20	0.097	ug/l	
88-72-2	o-Nitrotoluene	ND	0.20	0.080	ug/l	
99-08-1	m-Nitrotoluene	ND	0.20	0.080	ug/l	
99-99-0	p-Nitrotoluene	ND	0.20	0.080	ug/l	
479-45-8	Tetryl	ND	0.20	0.080	ug/l	
99-35-4	1,3,5-Trinitrobenzene	ND	0.20	0.099	ug/l	
118-96-7	2,4,6-Trinitrotoluene	ND	0.20	0.080	ug/l	
55-63-0	Nitroglycerine	ND	2.0	0.50	ug/l	
78-11-5	PETN	ND	2.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Limits
610-39-9	3,4-Dinitrotoluene	88% 70-136%

8.1.2
8

Method Blank Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97885-MB	BB077746.D	1	07/18/23	FS	07/17/23	OP97885	GBB2394

The QC reported here applies to the following samples: Method: SW846 8330B

FC7686-1, FC7686-2, FC7686-3, FC7686-4, FC7686-5

CAS No.	Compound	Result	RL	MDL	Units	Q
2691-41-0	HMX	ND	0.20	0.080	ug/l	
121-82-4	RDX	ND	0.20	0.080	ug/l	
	DNX	ND	0.20	0.080	ug/l	
	MNX	ND	0.20	0.080	ug/l	
	TNX	ND	0.20	0.080	ug/l	
618-87-1	3,5-Dinitroaniline	ND	0.20	0.080	ug/l	
99-65-0	1,3-Dinitrobenzene	ND	0.20	0.080	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.20	0.080	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
98-95-3	Nitrobenzene	ND	0.20	0.097	ug/l	
88-72-2	o-Nitrotoluene	ND	0.20	0.080	ug/l	
99-08-1	m-Nitrotoluene	ND	0.20	0.080	ug/l	
99-99-0	p-Nitrotoluene	ND	0.20	0.080	ug/l	
479-45-8	Tetryl	ND	0.20	0.080	ug/l	
99-35-4	1,3,5-Trinitrobenzene	ND	0.20	0.099	ug/l	
118-96-7	2,4,6-Trinitrotoluene	ND	0.20	0.080	ug/l	
55-63-0	Nitroglycerine	ND	2.0	0.50	ug/l	
78-11-5	PETN	ND	2.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Limits
610-39-9	3,4-Dinitrotoluene	85% 70-136%

8.1.3
8

Method Blank Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97885-MB	GG626836.D	1	07/19/23	FS	07/17/23	OP97885	GGG3302

The QC reported here applies to the following samples: Method: SW846 8330B

FC7686-1, FC7686-2, FC7686-3, FC7686-4, FC7686-5

CAS No.	Compound	Result	RL	MDL	Units	Q
2691-41-0	HMX	ND	0.20	0.080	ug/l	
121-82-4	RDX	ND	0.20	0.080	ug/l	
	DNX	ND	0.20	0.080	ug/l	
	MNX	ND	0.20	0.080	ug/l	
	TNX	ND	0.20	0.080	ug/l	
618-87-1	3,5-Dinitroaniline	ND	0.20	0.080	ug/l	
99-65-0	1,3-Dinitrobenzene	ND	0.20	0.080	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	0.20	0.080	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	ND	0.20	0.080	ug/l	
98-95-3	Nitrobenzene	ND	0.20	0.097	ug/l	
88-72-2	o-Nitrotoluene	ND	0.20	0.080	ug/l	
99-08-1	m-Nitrotoluene	ND	0.20	0.080	ug/l	
99-99-0	p-Nitrotoluene	ND	0.20	0.080	ug/l	
479-45-8	Tetryl	ND	0.20	0.080	ug/l	
99-35-4	1,3,5-Trinitrobenzene	ND	0.20	0.099	ug/l	
118-96-7	2,4,6-Trinitrotoluene	ND	0.20	0.080	ug/l	
55-63-0	Nitroglycerine	ND	2.0	0.50	ug/l	
78-11-5	PETN	ND	2.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Limits
610-39-9	3,4-Dinitrotoluene	88% 70-136%

8.1.4
8

Blank Spike Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97885-BS	BB077745.D	1	07/18/23	FS	07/17/23	OP97885	GBB2394

The QC reported here applies to the following samples: Method: SW846 8330A

FC7686-1, FC7686-2, FC7686-3, FC7686-4, FC7686-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
2691-41-0	HMX	5	5.3	106	77-144
121-82-4	RDX	5	4.8	96	77-125
	DNX	5	4.6	92	66-127
	MNX	5.8	5.5	95	71-137
	TNX	2.35	2.2	94	60-126
618-87-1	3,5-Dinitroaniline	5	5.0	100	77-115
99-65-0	1,3-Dinitrobenzene	5	4.9	98	79-122
606-20-2	2,6-Dinitrotoluene	5	4.8	96	81-131
121-14-2	2,4-Dinitrotoluene	5	4.7	94	80-123
35572-78-2	2-amino-4,6-Dinitrotoluene	5	5.1	102	81-120
19406-51-0	4-amino-2,6-Dinitrotoluene	5	5.1	102	79-119
98-95-3	Nitrobenzene	5	4.3	86	78-130
88-72-2	o-Nitrotoluene	5	4.2	84	76-131
99-08-1	m-Nitrotoluene	5	4.3	86	78-122
99-99-0	p-Nitrotoluene	5	4.4	88	79-124
479-45-8	Tetryl	5	4.3	86	65-124
99-35-4	1,3,5-Trinitrobenzene	5	4.4	88	79-128
118-96-7	2,4,6-Trinitrotoluene	5	5.0	100	72-112
55-63-0	Nitroglycerine	5	4.9	98	69-123
78-11-5	PETN	5	5.2	104	73-145

CAS No.	Surrogate Recoveries	BSP	Limits
610-39-9	3,4-Dinitrotoluene	87%	70-136%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97885-BS	BB077745.D	1	07/18/23	FS	07/17/23	OP97885	GBB2394

The QC reported here applies to the following samples: Method: SW846 8330B

FC7686-1, FC7686-2, FC7686-3, FC7686-4, FC7686-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
2691-41-0	HMX	5	5.3	106	77-144
121-82-4	RDX	5	4.8	96	77-125
	DNX	5	4.6	92	66-127
	MNX	5.8	5.5	95	71-137
	TNX	2.35	2.2	94	60-126
618-87-1	3,5-Dinitroaniline	5	5.0	100	77-115
99-65-0	1,3-Dinitrobenzene	5	4.9	98	79-122
606-20-2	2,6-Dinitrotoluene	5	4.8	96	81-131
121-14-2	2,4-Dinitrotoluene	5	4.7	94	80-123
35572-78-2	2-amino-4,6-Dinitrotoluene	5	5.1	102	81-120
19406-51-0	4-amino-2,6-Dinitrotoluene	5	5.1	102	79-119
98-95-3	Nitrobenzene	5	4.3	86	78-130
88-72-2	o-Nitrotoluene	5	4.2	84	76-131
99-08-1	m-Nitrotoluene	5	4.3	86	78-122
99-99-0	p-Nitrotoluene	5	4.4	88	79-124
479-45-8	Tetryl	5	4.3	86	65-124
99-35-4	1,3,5-Trinitrobenzene	5	4.4	88	79-128
118-96-7	2,4,6-Trinitrotoluene	5	5.0	100	72-112
55-63-0	Nitroglycerine	5	4.9	98	69-123
78-11-5	PETN	5	5.2	104	73-145

CAS No.	Surrogate Recoveries	BSP	Limits
610-39-9	3,4-Dinitrotoluene	87%	70-136%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97885-MS	BB077755.D	1	07/18/23	FS	07/17/23	OP97885	GBB2394
OP97885-MSD	BB077756.D	1	07/18/23	FS	07/17/23	OP97885	GBB2394
FC7686-4 ^a	BB077752.D	1	07/18/23	FS	07/17/23	OP97885	GBB2394
FC7686-4 ^b	GG626843.D	1	07/19/23	FS	07/17/23	OP97885	GGG3302

The QC reported here applies to the following samples: Method: SW846 8330A

FC7686-1, FC7686-2, FC7686-3, FC7686-4, FC7686-5

CAS No.	Compound	FC7686-4 ug/l	Spike Q	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
2691-41-0	HMX	11.8		10.2	122	10.2	24.0	120	1	77-144/21
121-82-4	RDX	0.27		10.2	100	10.2	10.6	101	1	77-125/19
	DNX	0.21 U		10.2	92	10.2	9.4	92	0	66-127/25
	MNX	0.21 U		11.8	95	11.8	11.2	95	0	71-137/20
	TNX	0.21 U		4.8	92	4.8	4.3	90	2	60-126/18
618-87-1	3,5-Dinitroaniline	0.20	J	10.2	106	10.2	11.0	106	0	77-115/19
99-65-0	1,3-Dinitrobenzene	0.21 U		10.2	104	10.2	10.6	104	0	79-122/17
606-20-2	2,6-Dinitrotoluene	0.21 U		10.2	103	10.2	10.5	103	0	81-131/17
121-14-2	2,4-Dinitrotoluene	0.21 U		10.2	100	10.2	10.3	101	1	80-123/19
35572-78-2	2-amino-4,6-Dinitrotoluene	3.0		10.2	112	10.2	14.3	111	1	81-120/19
19406-51-0	4-amino-2,6-Dinitrotoluene	2.0		10.2	109	10.2	13.0	108	1	79-119/20
98-95-3	Nitrobenzene	0.21 U		10.2	97	10.2	10.1	99	2	78-130/19
88-72-2	o-Nitrotoluene	0.21 U		10.2	115	10.2	11.6	114	1	76-131/20
99-08-1	m-Nitrotoluene	0.21 U		10.2	98	10.2	10.1	99	1	78-122/18
99-99-0	p-Nitrotoluene	0.21 U		10.2	99	10.2	10.2	100	1	79-124/18
479-45-8	Tetryl	0.21 U		10.2	99	10.2	9.9	97	2	65-124/20
99-35-4	1,3,5-Trinitrobenzene	5.3		10.2	107	10.2	16.2	107	0	79-128/16
118-96-7	2,4,6-Trinitrotoluene	4.0		10.2	111	10.2	15.2	110	1	72-112/16
55-63-0	Nitroglycerine	2.1 U		10.2	101	10.2	10.6	104	3	69-123/18
78-11-5	PETN	2.1 U		10.2	102	10.2	10.2	100	2	73-145/18

CAS No.	Surrogate Recoveries	MS	MSD	FC7686-4	FC7686-4	Limits
610-39-9	3,4-Dinitrotoluene	84%	83%	87%	95%	70-136%

(a) All hits confirmed by reanalysis on a dissimilar column.
(b) Confirmation run.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97885-MS	BB077755.D	1	07/18/23	FS	07/17/23	OP97885	GBB2394
OP97885-MSD	BB077756.D	1	07/18/23	FS	07/17/23	OP97885	GBB2394
FC7686-4 ^a	BB077752.D	1	07/18/23	FS	07/17/23	OP97885	GBB2394
FC7686-4 ^b	GG626843.D	1	07/19/23	FS	07/17/23	OP97885	GGG3302

The QC reported here applies to the following samples: Method: SW846 8330B

FC7686-1, FC7686-2, FC7686-3, FC7686-4, FC7686-5

CAS No.	Compound	FC7686-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
2691-41-0	HMX	11.8		10.2	24.3	122	10.2	24.0	120	1	77-144/21
121-82-4	RDX	0.27		10.2	10.5	100	10.2	10.6	101	1	77-125/19
	DNX	0.21 U		10.2	9.4	92	10.2	9.4	92	0	66-127/25
	MNX	0.21 U		11.8	11.2	95	11.8	11.2	95	0	71-137/20
	TNX	0.21 U		4.8	4.4	92	4.8	4.3	90	2	60-126/18
618-87-1	3,5-Dinitroaniline	0.20	J	10.2	11.0	106	10.2	11.0	106	0	77-115/19
99-65-0	1,3-Dinitrobenzene	0.21 U		10.2	10.6	104	10.2	10.6	104	0	79-122/17
606-20-2	2,6-Dinitrotoluene	0.21 U		10.2	10.5	103	10.2	10.5	103	0	81-131/17
121-14-2	2,4-Dinitrotoluene	0.21 U		10.2	10.2	100	10.2	10.3	101	1	80-123/19
35572-78-2	2-amino-4,6-Dinitrotoluene	3.0		10.2	14.4	112	10.2	14.3	111	1	81-120/19
19406-51-0	4-amino-2,6-Dinitrotoluene	2.0		10.2	13.1	109	10.2	13.0	108	1	79-119/20
98-95-3	Nitrobenzene	0.21 U		10.2	9.9	97	10.2	10.1	99	2	78-130/19
88-72-2	o-Nitrotoluene	0.21 U		10.2	11.7	115	10.2	11.6	114	1	76-131/20
99-08-1	m-Nitrotoluene	0.21 U		10.2	10	98	10.2	10.1	99	1	78-122/18
99-99-0	p-Nitrotoluene	0.21 U		10.2	10.1	99	10.2	10.2	100	1	79-124/18
479-45-8	Tetryl	0.21 U		10.2	10.1	99	10.2	9.9	97	2	65-124/20
99-35-4	1,3,5-Trinitrobenzene	5.3		10.2	16.2	107	10.2	16.2	107	0	79-128/16
118-96-7	2,4,6-Trinitrotoluene	4.0		10.2	15.3	111	10.2	15.2	110	1	72-112/16
55-63-0	Nitroglycerine	2.1 U		10.2	10.3	101	10.2	10.6	104	3	69-123/18
78-11-5	PETN	2.1 U		10.2	10.4	102	10.2	10.2	100	2	73-145/18

CAS No.	Surrogate Recoveries	MS	MSD	FC7686-4	FC7686-4	Limits
610-39-9	3,4-Dinitrotoluene	84%	83%	87%	95%	70-136%

(a) All hits confirmed by reanalysis on a dissimilar column.
(b) Confirmation run.

* = Outside of Control Limits.

GC Identification Summary (Explosives)

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample ID:	FC7686-1	Method:	SW846 8330B
Client ID:	54MW13		

Injection Type	Lab File ID	Dilution	Prep Batch	Inst Batch	Injection Time	Inst ID
Reportable	BB077749.D	1	OP97885	GBB2394	07/18/23 11:28	GCBB
Confirmation	GG626850.D	4	OP97885	GGG3303	07/20/23 13:57	GCGG

Compound	Lab File ID	Dilution	Sig#	Conc	Q	Units	RPD Conc
HMX	BB077749.D	1	1	2.9		ug/l	23.1
HMX	GG626850.D	4	1	2.3		ug/l	
RDX	BB077749.D	1	1	.9		ug/l	28.6
RDX	GG626850.D	4	1	1.2		ug/l	
3,5-Dinitroaniline ^a	BB077749.D	1	1	.58		ug/l	98.2
3,5-Dinitroaniline	GG626850.D	4	1	1.7		ug/l	
2-amino-4,6-Dinitrotoluene ^a	BB077749.D	1	1	1.4		ug/l	140.4
2-amino-4,6-Dinitrotoluene	GG626850.D	4	1	8		ug/l	
4-amino-2,6-Dinitrotoluene ^a	BB077749.D	1	1	.98		ug/l	90.5
4-amino-2,6-Dinitrotoluene	GG626850.D	4	1	2.6		ug/l	
1,3,5-Trinitrobenzene	BB077749.D	1	1	14.3		ug/l	4.8
1,3,5-Trinitrobenzene	GG626850.D	4	1	15		ug/l	
2,4,6-Trinitrotoluene	BB077749.D	1	1	8.8		ug/l	2.3
2,4,6-Trinitrotoluene	GG626850.D	4	1	8.6		ug/l	

(a) Primary and confirmation results differ by more than 40%.

8.4.1
8

GC Identification Summary (Explosives)

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample ID:	FC7686-2	Method:	SW846 8330B
Client ID:	54TW13		

Injection Type	Lab File ID	Dilution	Prep Batch	Inst Batch	Injection Time	Inst ID
Reportable	BB077750.D	1	OP97885	GBB2394	07/18/23 11:59	GCBB
Confirmation	GG626841.D	1	OP97885	GGG3302	07/19/23 11:44	GCGG

Compound	Lab File ID	Dilution	Sig#	Conc	Q	Units	RPD Conc
HMX	BB077750.D	1	1	3		ug/l	6.9
HMX	GG626841.D	1	1	2.8		ug/l	
RDX	BB077750.D	1	1	.91		ug/l	27.5
RDX	GG626841.D	1	1	1.2		ug/l	
3,5-Dinitroaniline ^a	BB077750.D	1	1	.56		ug/l	100.9
3,5-Dinitroaniline	GG626841.D	1	1	1.7		ug/l	
2-amino-4,6-Dinitrotoluene ^a	BB077750.D	1	1	1.3		ug/l	140.2
2-amino-4,6-Dinitrotoluene	GG626841.D	1	1	7.4		ug/l	
4-amino-2,6-Dinitrotoluene ^a	BB077750.D	1	1	.84		ug/l	102.3
4-amino-2,6-Dinitrotoluene	GG626841.D	1	1	2.6		ug/l	
1,3,5-Trinitrobenzene	BB077750.D	1	1	15.1		ug/l	6.4
1,3,5-Trinitrobenzene	GG626841.D	1	1	16.1		ug/l	
2,4,6-Trinitrotoluene	BB077750.D	1	1	9.1		ug/l	0.0
2,4,6-Trinitrotoluene	GG626841.D	1	1	9.1		ug/l	

(a) Primary and confirmation results differ by more than 40%.

8.4.2
8

GC Identification Summary (Explosives)

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample ID:	FC7686-3	Method:	SW846 8330B
Client ID:	54MW10		

Injection Type	Lab File ID	Dilution	Prep Batch	Inst Batch	Injection Time	Inst ID
Reportable	BB077751.D	1	OP97885	GBB2394	07/18/23 12:30	GCBB
Confirmation	GG626851.D	1	OP97885	GGG3303	07/20/23 14:29	GCGG

Compound	Lab File ID	Dilution	Sig#	Conc	Q	Units	RPD Conc
HMX ^a	BB077751.D	1	1	.45		ug/l	81.3
HMX	GG626851.D	1	1	.19	J	ug/l	
RDX	BB077751.D	1	1	.34		ug/l	23.0
RDX	GG626851.D	1	1	.27		ug/l	
3,5-Dinitroaniline	BB077751.D	1	1	.27		ug/l	3.8
3,5-Dinitroaniline	GG626851.D	1	1	.26		ug/l	
2-amino-4,6-Dinitrotoluene ^a	BB077751.D	1	1	.29		ug/l	177.6
2-amino-4,6-Dinitrotoluene	GG626851.D	1	1	4.9		ug/l	
4-amino-2,6-Dinitrotoluene ^a	BB077751.D	1	1	.25		ug/l	46.2
4-amino-2,6-Dinitrotoluene	GG626851.D	1	1	.4		ug/l	
1,3,5-Trinitrobenzene	BB077751.D	1	1	.16	J	ug/l	0.0
1,3,5-Trinitrobenzene	GG626851.D	1	1	.16	J	ug/l	
2,4,6-Trinitrotoluene	BB077751.D	1	1	.56		ug/l	9.3
2,4,6-Trinitrotoluene	GG626851.D	1	1	.51		ug/l	

(a) Primary and confirmation results differ by more than 40%.

8.4.3
8

GC Identification Summary (Explosives)

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample ID:	FC7686-4	Method:	SW846 8330B
Client ID:	54MW12		

Injection Type	Lab File ID	Dilution	Prep Batch	Inst Batch	Injection Time	Inst ID
Reportable	BB077752.D	1	OP97885	GBB2394	07/18/23 13:01	GCBB
Confirmation	GG626843.D	1	OP97885	GGG3302	07/19/23 12:49	GCGG

Compound	Lab File ID	Dilution	Sig#	Conc	Q	Units	RPD Conc
HMX	BB077752.D	1	1	11.8		ug/l	3.4
HMX	GG626843.D	1	1	11.4		ug/l	
RDX	BB077752.D	1	1	.27		ug/l	25.8
RDX	GG626843.D	1	1	.35		ug/l	
3,5-Dinitroaniline ^a	BB077752.D	1	1	.2	J	ug/l	146.7
3,5-Dinitroaniline	GG626843.D	1	1	1.3		ug/l	
2-amino-4,6-Dinitrotoluene ^a	BB077752.D	1	1	3		ug/l	50.0
2-amino-4,6-Dinitrotoluene	GG626843.D	1	1	1.8		ug/l	
4-amino-2,6-Dinitrotoluene ^a	BB077752.D	1	1	2		ug/l	93.3
4-amino-2,6-Dinitrotoluene	GG626843.D	1	1	5.5		ug/l	
1,3,5-Trinitrobenzene	BB077752.D	1	1	5.3		ug/l	5.5
1,3,5-Trinitrobenzene	GG626843.D	1	1	5.6		ug/l	
2,4,6-Trinitrotoluene	BB077752.D	1	1	4		ug/l	0.0
2,4,6-Trinitrotoluene	GG626843.D	1	1	4		ug/l	

(a) Primary and confirmation results differ by more than 40%.

8.4.4
8

Surrogate Recovery Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Method: SW846 8330B	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 ^a
FC7686-1	GG626850.D	94
FC7686-1	BB077749.D	90
FC7686-2	GG626841.D	103
FC7686-2	BB077750.D	93
FC7686-3	GG626851.D	94
FC7686-3	BB077751.D	87
FC7686-4	GG626843.D	95
FC7686-4	BB077752.D	87
FC7686-5	BB077757.D	86
OP97885-BS	BB077745.D	87
OP97885-MB	BB077746.D	85
OP97885-MB	GG626836.D	88
OP97885-MS	BB077755.D	84
OP97885-MSD	BB077756.D	83

Surrogate Compounds	Recovery Limits
S1 = 3,4-Dinitrotoluene	70-136%

(a) Recovery from GC signal #1

8.5.1
8

GC Surrogate Retention Time Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Check Std:	GBB2394-CC2349	Injection Date:	07/18/23
Lab File ID:	BB077744.D	Injection Time:	08:11
Instrument ID:	GCBB	Method:	SW846 8330B

S1 ^a
RT

Check Std	10.97
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Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT
OP97885-BS	BB077745.D	07/18/23	09:24	11.02
OP97885-BS	BB077745.D	07/18/23	09:24	11.02
OP97885-MB	BB077746.D	07/18/23	09:55	10.99
OP97885-MB	BB077746.D	07/18/23	09:55	10.99
ZZZZZZ	BB077747.D	07/18/23	10:26	10.99
ZZZZZZ	BB077748.D	07/18/23	10:57	10.97
FC7686-1	BB077749.D	07/18/23	11:28	10.99
FC7686-2	BB077750.D	07/18/23	11:59	11.00
FC7686-3	BB077751.D	07/18/23	12:30	10.98
FC7686-4	BB077752.D	07/18/23	13:01	10.98

Surrogate
Compounds

S1 = 3,4-Dinitrotoluene

(a) Retention time from GC signal #1

8.6.1
8

GC Surrogate Retention Time Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Check Std:	GBB2394-CC2349	Injection Date:	07/18/23
Lab File ID:	BB077754.D	Injection Time:	14:52
Instrument ID:	GCBB	Method:	SW846 8330B

S1^a S1^b
RT RT

Check Std	11.01	11.01
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Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT	S1 ^b RT
OP97885-MS	BB077755.D	07/18/23	15:23		11.00
OP97885-MS	BB077755.D	07/18/23	15:23		11.00
OP97885-MSD	BB077756.D	07/18/23	15:54		11.00
OP97885-MSD	BB077756.D	07/18/23	15:54		11.00
FC7686-5	BB077757.D	07/18/23	16:25		10.96
ZZZZZZ	BB077758.D	07/18/23	16:56		11.00
ZZZZZZ	BB077759.D	07/18/23	17:26		11.00
ZZZZZZ	BB077760.D	07/18/23	17:57		11.00
ZZZZZZ	BB077761.D	07/18/23	18:28		11.00
ZZZZZZ	BB077762.D	07/18/23	18:59		11.00
GBB2394-ECC2349	BB077764.D	07/18/23	20:01	11.01	11.01

Surrogate Compounds

S1 = 3,4-Dinitrotoluene

(a) Retention time from GC signal #2
(b) Retention time from GC signal #1

8.6.2
8

GC Surrogate Retention Time Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Check Std:	GGG3302-CC3298	Injection Date:	07/19/23
Lab File ID:	GG626835.D	Injection Time:	08:19
Instrument ID:	GCGG	Method:	SW846 8330B

	S1 ^a	S1 ^b
	RT	RT
Check Std	15.54	15.55

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT	S1 ^b RT
OP97885-MB	GG626836.D	07/19/23	08:58		15.44
OP97885-MB	GG626836.D	07/19/23	08:58		15.44
ZZZZZZ	GG626837.D	07/19/23	09:35		15.36
ZZZZZZ	GG626838.D	07/19/23	10:07		15.31
ZZZZZZ	GG626839.D	07/19/23	10:39		15.41
FC7686-2	GG626841.D	07/19/23	11:44		15.44
FC7686-4	GG626843.D	07/19/23	12:49		15.45
ZZZZZZ	GG626844.D	07/19/23	13:21		15.53
GGG3302-ECC3298	GG626846.D	07/19/23	14:37	15.55	15.55

Surrogate Compounds

S1 = 3,4-Dinitrotoluene

- (a) Retention time from GC signal #2
- (b) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Check Std:	GGG3303-CC3298	Injection Date:	07/20/23
Lab File ID:	GG626848.D	Injection Time:	12:19
Instrument ID:	GCGG	Method:	SW846 8330B

S1^a S1^b
RT RT

Check Std	15.39	15.39
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Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT	S1 ^b RT
FC7686-1	GG626850.D	07/20/23	13:57		15.46
FC7686-3	GG626851.D	07/20/23	14:29		15.38
GGG3303-ECC3298	GG626853.D	07/20/23	15:34	15.51	15.51

Surrogate Compounds

S1 = 3,4-Dinitrotoluene

(a) Retention time from GC signal #2
(b) Retention time from GC signal #1

8.6.4
8

Initial Calibration Summary

Page 1 of 2

Job Number: FC7686
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GBB2349-ICC2349
 Lab FileID: BB076380.D

Response Factor Report G1315B

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Apr 14 14:45:26 2023
 Response via : Initial Calibration

Calibration Files

20 =BB076375.D 50 =BB076376.D 100 =BB076377.D 200 =BB076378.D
 500 =BB076379.D 1000=BB076380.D 2500=BB076381.D 5000=BB076382.D

Compound	20	50	100	200	500	1000	2500	5000	Avg	%RSD
1) TNX	3.904	3.905	3.747	3.326	3.162	3.257	3.268	3.265	3.479	E3 9.07
2) HMX	2.468	1.799	1.632	1.585	1.498	1.471	1.482	1.471	1.676	E3 20.25
---- Linear regr., Force(0,0) ---- Coefficient = 1.0000										
Response Ratio = 0.00000 + 1473.61215 *A										
3) DNX	3.767	3.639	3.312	2.795	2.687	2.753	2.746	2.743	3.055	E3 14.65
4) MNX	3.261	3.203	2.943	2.577	2.448	2.526	2.527	2.529	2.752	E3 12.08
5) RDX	2.331	2.270	2.037	1.822	1.721	1.760	1.777	1.780	1.937	E3 12.61
6) 1,3,5-Trinit	4.971	4.840	4.378	3.939	3.708	3.792	3.845	3.863	4.167	E3 11.98
7) 1,3-Dinitrob	6.343	6.279	5.745	5.103	4.830	4.957	5.002	5.015	5.409	E3 11.48
8) 3,5-Dinitroa	4.099	4.451	4.271	3.838	3.646	3.740	3.779	3.793	3.952	E3 7.28
9) Nitrobenzene	4.155	3.715	3.390	2.959	2.867	2.915	2.937	2.917	3.232	E3 14.82
10) Nitroglyceri								5.420	5.420	0.00
11) Tetryl	4.092	3.631	3.238	2.895	2.657	2.754	2.806	2.803	3.110	E3 16.39
---- Linear regr., Force(0,0) ---- Coefficient = 0.9999										
Response Ratio = 0.00000 + 2801.53979 *A										
12) 2,4,6-Trinit	5.022	4.741	4.289	3.712	3.493	3.557	3.584	3.591	3.999	E3 15.10
---- Linear regr., Force(0,0) ---- Coefficient = 1.0000										
Response Ratio = 0.00000 + 3588.04975 *A										
13) 2-Amino-4,6-	4.467	4.199	3.736	3.266	3.068	3.135	3.170	3.178	3.527	E3 15.38
---- Linear regr., Force(0,0) ---- Coefficient = 1.0000										
Response Ratio = 0.00000 + 3174.57752 *A										
14) 4-Amino-2,6-	3.332	3.144	2.816	2.450	2.296	2.343	2.367	2.370	2.640	E3 15.38
---- Linear regr., Force(0,0) ---- Coefficient = 1.0000										
Response Ratio = 0.00000 + 2368.65311 *A										
15) 3,4-Dinitrot	2.702	2.783	2.582	2.253	2.151	2.210	2.239	2.254	2.397	E3 10.44
16) 2,4-Dinitrot	5.775	5.648	5.172	4.549	4.297	4.409	4.455	4.474	4.847	E3 12.29
17) 2,6-Dinitrot	3.253	3.198	2.943	2.599	2.444	2.519	2.535	2.555	2.756	E3 11.84
18) o-Nitrotolue	2.952	2.652	2.487	2.176	2.035	2.083	2.101	2.088	2.322	E3 14.54
19) p-Nitrotolue	4.006	4.155	3.784	3.315	3.109	3.169	3.207	3.196	3.492	E3 12.05
20) m-Nitrotolue	4.158	3.949	3.530	3.120	2.951	3.006	3.054	3.036	3.350	E3 14.09
21) PETN							1.310	1.182	1.246	E1 7.24

Signal #2

1) TNX	6.158	5.842	5.843	5.133	4.826	4.946	5.012	4.977	5.342	E3 9.69
2) HMX	1.198	0.629	0.597	0.464	0.428	0.410	0.409	0.405	0.568	E4 47.52
---- Linear regr., Force(0,0) ---- Coefficient = 1.0000										
Response Ratio = 0.00000 + 4064.71332 *A										
3) DNX	7.063	6.329	5.491	4.806	4.359	4.345	4.326	4.304	5.128	E3 20.78
---- Linear regr., Force(0,0) ---- Coefficient = 1.0000										
Response Ratio = 0.00000 + 4310.87104 *A										

Initial Calibration Summary

Page 2 of 2

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GBB2349-ICC2349
Lab FileID: BB076380.D

4) MNX	5.033	4.801	4.617	4.036	3.766	3.857	3.870	3.877	4.232	E3	11.87
5) RDX	3.417	3.530	3.229	2.879	2.726	2.787	2.809	2.820	3.025	E3	10.51
6) 1,3,5-Trinit	7.756	7.727	7.110	6.248	5.934	6.077	6.119	6.093	6.633	E3	11.66
7) 1,3-Dinitrob	3.918	4.511	4.589	3.807	3.536	3.540	3.455	3.438	3.849	E3	12.06
8) 3,5-Dinitroa	7.351	7.733	7.190	7.411	6.525	6.558	6.417	6.408	6.949	E3	7.61
9) Nitrobenzene	3.815	3.570	3.297	2.963	2.836	2.882	2.890	2.870	3.140	E3	11.98
10) Nitroglyceri	1.636	1.569	1.417	1.279	1.181	1.222	1.230	1.244	1.347	E3	12.85
11) Tetryl	5.918	5.826	5.163	4.642	4.283	4.481	4.541	4.551	4.926	E3	12.91
12) 2,4,6-Trinit	5.764	5.716	5.102	4.474	4.256	4.349	4.376	4.398	4.804	E3	13.19
13) 2-Amino-4,6-	6.052	5.928	5.419	4.814	4.588	4.724	4.777	4.809	5.139	E3	11.29
14) 4-Amino-2,6-	5.869	5.876	5.315	4.739	4.542	4.689	4.744	4.784	5.070	E3	10.72
15) 3,4-Dinitrot	3.827	4.388	4.209	3.890	3.815	3.962	4.032	4.094	4.027	E3	4.93
16) 2,4-Dinitrot	2.761	3.453	3.184	2.964	2.854	2.936	2.971	3.017	3.018	E3	7.10
17) 2,6-Dinitrot	3.286	3.770	3.683	3.348	3.229	3.334	3.368	3.395	3.427	E3	5.65
18) o-Nitrotolue	3.641	3.453	3.331	3.064	2.898	2.986	3.030	3.020	3.178	E3	8.31
19) p-Nitrotolue	3.633	3.104	3.080	2.743	2.624	2.726	2.787	2.796	2.937	E3	11.19
20) m-Nitrotolue	4.159	4.166	3.912	3.602	3.148	3.477	3.684	3.719	3.733	E3	9.21
21) PETN	1.122	1.498	1.431	1.248	1.283	1.326	1.356	1.365	1.329	E3	8.65

(#) = Out of Range ### Number of calibration levels exceeded format ###

BBB2349_041423.M

Mon Apr 17 11:47:03 2023

8.7.1
8

Initial Calibration Verification

Page 1 of 2

Job Number: FC7686
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GBB2349-ICV2349
 Lab FileID: BB076383.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076383.D\dad1B.ch Vial: 11
 Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076383.D\dad1A.ch
 Acq On : 14-Apr-2023, 14:04:32 Operator: fouads
 Sample : icv2349-1000 Inst : G1315B
 Misc : op96339,GBB2349,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Apr 14 14:45:26 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT	Window
1	TNX	472.000	498.339	-5.6	113	0.01	0.98-	1.58
2	HMX	1000.000	1062.534	-6.3	106	0.00	1.13-	1.73
3	DNX	1000.000	1013.045	-1.3	112	0.02	1.35-	1.95
4	MXN	1166.000	1213.971	-4.1	113	0.02	1.92-	2.52
5	RDX	1000.000	962.563	3.7	106	0.02	2.42-	3.22
6	1,3,5-Trinitrobenzene	1000.000	961.585	3.8	106	0.01	4.15-	4.95
7	1,3-Dinitrobenzene	1000.000	966.410	3.4	105	0.02	5.32-	6.12
8	3,5-Dinitroaniline	1000.000	1063.416	-6.3	112	0.02	5.68-	6.48
9	Nitrobenzene	1000.000	911.608	8.8	101	0.02	6.84-	7.64
10	Nitroglycerin	-----NA-----						
11	Tetryl	1000.000	1015.179	-1.5	103	0.00	8.80-	9.60
12	2,4,6-Trinitrotoluene	1000.000	1015.034	-1.5	102	0.00	9.16-	9.96
13	2-Amino-4,6-Dinitrotol	1000.000	1042.614	-4.3	106	0.03	9.53-	10.33
14	4-Amino-2,6-Dinitrotol	1000.000	1047.104	-4.7	106	0.02	9.97-	10.77
15 S	3,4-Dinitrotoluene	-----NA-----						
16	2,4-Dinitrotoluene	1000.000	946.493	5.4	104	0.02	11.09-	11.89
17	2,6-Dinitrotoluene	1000.000	967.472	3.3	106	0.01	11.54-	12.34
18	o-Nitrotoluene	1000.000	929.104	7.1	104	0.02	14.61-	15.49
19	p-Nitrotoluene	1000.000	923.213	7.7	102	0.02	15.06-	16.06
20	m-Nitrotoluene	1000.000	906.444	9.4	101	0.02	15.94-	16.94
21	PETN	-----NA-----						

***** Signal #2 *****

1	TNX	472.000	493.791	-4.6	113	0.01	0.98-	1.58
2	HMX	1000.000	1079.616	-8.0	107	0.00	1.13-	1.73
3	DNX	1000.000	1141.060	-14.1	113	0.02	1.35-	1.95
4	MXN	1166.000	1209.404	-3.7	114	0.02	1.92-	2.52
5	RDX	1000.000	976.620	2.3	106	0.02	2.42-	3.22

Initial Calibration Verification

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Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GBB2349-ICV2349
Lab FileID: BB076383.D

6	1,3,5-Trinitrobenzene	1000.000	960.217	4.0	105	0.01	4.15- 4.95
7	1,3-Dinitrobenzene	1000.000	958.757	4.1	104	0.02	5.32- 6.12
8	3,5-Dinitroaniline	1000.000	1041.931	-4.2	110	0.02	5.68- 6.48
9	Nitrobenzene	1000.000	926.219	7.4	101	0.02	6.84- 7.64
10	Nitroglycerin	1000.000	940.811	5.9	104	0.00	8.20- 9.20
11	Tetryl	1000.000	939.590	6.0	103	0.00	8.80- 9.60
12	2,4,6-Trinitrotoluene	1000.000	930.801	6.9	103	0.00	9.16- 9.96
13	2-Amino-4,6-Dinitrotol	1000.000	977.024	2.3	106	0.03	9.53-10.33
14	4-Amino-2,6-Dinitrotol	1000.000	989.247	1.1	107	0.02	9.97-10.77
15 S	3,4-Dinitrotoluene		-----NA-----				
16	2,4-Dinitrotoluene	1000.000	1029.374	-2.9	106	0.02	11.09-11.89
17	2,6-Dinitrotoluene	1000.000	1030.245	-3.0	106	0.01	11.54-12.34
18	o-Nitrotoluene	1000.000	970.472	3.0	103	0.02	14.49-15.49
19	p-Nitrotoluene	1000.000	942.686	5.7	102	0.02	15.06-16.06
20	m-Nitrotoluene	1000.000	950.478	5.0	102	0.02	15.94-16.94
21	PETN	1000.000	1067.274	-6.7	107	0.01	17.68-18.88

(#) = Out of Range
BB076380.D BBB2349_041423.M

SPCC's out = 0 CCC's out = 0
Mon Apr 17 13:03:37 2023

8.7.2

8

Continuing Calibration Summary

Page 1 of 2

Job Number: FC7686
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GBB2394-CC2349
 Lab FileID: BB077744.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077744.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077744.D\dad1A.ch
 Acq On : 18-Jul-2023, 08:11:56 Operator: fouads
 Sample : cc2349-1000 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Jul 07 08:35:11 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT Window
1	TNX	472.000	476.958	-1.1	108	0.00	1.01- 1.61
2	HMX	1000.000	1044.829	-4.5	105	0.01	1.14- 1.74
3	DNX	1000.000	958.702	4.1	106	0.00	1.39- 1.99
4	MNX	1166.000	1136.878	2.5	106	0.00	1.96- 2.56
5	RDX	1000.000	941.225	5.9	104	0.01	2.47- 3.27
6	1,3,5-Trinitrobenzene	1000.000	966.182	3.4	106	0.01	4.21- 5.01
7	1,3-Dinitrobenzene	1000.000	963.858	3.6	105	0.02	5.41- 6.21
8	3,5-Dinitroaniline	1000.000	987.772	1.2	104	0.03	5.76- 6.56
9	Nitrobenzene	1000.000	838.507	16.1#	93	0.02	6.93- 7.73
10	Nitroglycerin	-----NA-----					
11	Tetryl	1000.000	1000.542	-0.1	102	0.05	8.75- 9.55
12	2,4,6-Trinitrotoluene	1000.000	1039.281	-3.9	105	0.04	9.18- 9.98
13	2-Amino-4,6-Dinitrotol	1000.000	1013.966	-1.4	103	0.06	9.60-10.40
14	4-Amino-2,6-Dinitrotol	1000.000	1024.887	-2.5	104	0.06	10.01-10.81
15 S	3,4-Dinitrotoluene	1000.000	891.505	10.8	97	0.06	10.52-11.32
16	2,4-Dinitrotoluene	1000.000	949.818	5.0	104	0.05	11.17-11.97
17	2,6-Dinitrotoluene	1000.000	949.561	5.0	104	0.05	11.59-12.39
18	o-Nitrotoluene	1000.000	829.788	17.0#	92	0.04	14.68-15.56
19	p-Nitrotoluene	1000.000	879.019	12.1	97	0.04	15.11-16.11
20	m-Nitrotoluene	1000.000	841.205	15.9#	94	0.03	16.00-17.00
21	PETN	-----NA-----					

***** Signal #2 *****

1	TNX	472.000	476.558	-1.0	109	0.00	1.01- 1.61
2	HMX	1000.000	1056.793	-5.7	105	0.01	1.14- 1.74
3	DNX	1000.000	1074.273	-7.4	107	0.00	1.39- 1.99
4	MNX	1166.000	1142.534	2.0	108	0.00	1.96- 2.56
5	RDX	1000.000	957.490	4.3	104	0.01	2.47- 3.27

Continuing Calibration Summary

Page 2 of 2

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GBB2394-CC2349
Lab FileID: BB077744.D

6	1,3,5-Trinitrobenzene	1000.000	958.323	4.2	105	0.01	4.21- 5.01
7	1,3-Dinitrobenzene	1000.000	951.973	4.8	104	0.01	5.41- 6.21
8	3,5-Dinitroaniline	1000.000	976.215	2.4	103	0.03	5.76- 6.56
9	Nitrobenzene	1000.000	836.407	16.4#	91	0.02	6.93- 7.73
10	Nitroglycerin	1000.000	940.904	5.9	104	0.04	8.13- 9.13
11	Tetryl	1000.000	919.019	8.1	101	0.05	8.75- 9.55
12	2,4,6-Trinitrotoluene	1000.000	949.375	5.1	105	0.04	9.18- 9.98
13	2-Amino-4,6-Dinitrotol	1000.000	944.577	5.5	103	0.06	9.60-10.40
14	4-Amino-2,6-Dinitrotol	1000.000	964.795	3.5	104	0.06	10.01-10.81
15 S	3,4-Dinitrotoluene	1000.000	951.286	4.9	97	0.05	10.52-11.32
16	2,4-Dinitrotoluene	1000.000	1018.083	-1.8	105	0.05	11.17-11.97
17	2,6-Dinitrotoluene	1000.000	1012.222	-1.2	104	0.05	11.59-12.39
18	o-Nitrotoluene	1000.000	848.429	15.2#	90	0.04	14.56-15.56
19	p-Nitrotoluene	1000.000	887.180	11.3	96	0.04	15.11-16.11
20	m-Nitrotoluene	1000.000	880.938	11.9	95	0.03	16.00-17.00
21	PETN	1000.000	1049.501	-5.0	105	0.02	17.54-18.74

(#) = Out of Range
 BB076380.D BBB2349_041423.M

SPCC's out = 0 CCC's out = 0
 Wed Jul 19 09:06:34 2023

8.7.3

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Continuing Calibration Summary

Page 1 of 2

Job Number: FC7686
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GBB2394-CC2349
 Lab FileID: BB077754.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077754.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077754.D\dad1A.ch
 Acq On : 18-Jul-2023, 14:52:14 Operator: fouads
 Sample : cc2349-1000 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 09:08:22 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT Window
1	TNX	472.000	498.754	-5.7	113	0.00	1.01- 1.61
2	HMX	1000.000	1079.118	-7.9	108	0.02	1.14- 1.74
3	DNX	1000.000	995.637	0.4	110	0.01	1.39- 1.99
4	MNX	1166.000	1190.413	-2.1	111	0.02	1.96- 2.56
5	RDX	1000.000	977.470	2.3	108	0.02	2.47- 3.27
6	1,3,5-Trinitrobenzene	1000.000	991.581	0.8	109	0.00	4.24- 5.04
7	1,3-Dinitrobenzene	1000.000	1000.442	-0.0	109	0.00	5.44- 6.24
8	3,5-Dinitroaniline	1000.000	1022.644	-2.3	108	0.00	5.80- 6.60
9	Nitrobenzene	1000.000	884.180	11.6	98	0.00	6.96- 7.76
10	Nitroglycerin	-----NA-----					
11	Tetryl	1000.000	1044.614	-4.5	106	0.00	8.83- 9.63
12	2,4,6-Trinitrotoluene	1000.000	1071.419	-7.1	108	0.00	9.25-10.05
13	2-Amino-4,6-Dinitrotol	1000.000	1050.017	-5.0	106	0.00	9.69-10.49
14	4-Amino-2,6-Dinitrotol	1000.000	1061.662	-6.2	107	0.00	10.10-10.90
15 S	3,4-Dinitrotoluene	1000.000	910.637	8.9	99	0.00	10.61-11.41
16	2,4-Dinitrotoluene	1000.000	980.239	2.0	108	0.00	11.26-12.06
17	2,6-Dinitrotoluene	1000.000	979.526	2.0	107	0.00	11.67-12.47
18	o-Nitrotoluene	1000.000	886.236	11.4	99	0.00	14.76-15.63
19	p-Nitrotoluene	1000.000	931.343	6.9	103	0.00	15.19-16.19
20	m-Nitrotoluene	1000.000	900.793	9.9	100	0.00	16.06-17.06
21	PETN	-----NA-----					

***** Signal #2 *****

1	TNX	472.000	492.911	-4.4	113	0.00	1.01- 1.61
2	HMX	1000.000	1088.833	-8.9	108	0.02	1.14- 1.74
3	DNX	1000.000	1107.716	-10.8	110	0.01	1.39- 1.99
4	MNX	1166.000	1183.207	-1.5	111	0.02	1.96- 2.56
5	RDX	1000.000	993.251	0.7	108	0.02	2.47- 3.27

Continuing Calibration Summary

Page 2 of 2

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GBB2394-CC2349
Lab FileID: BB077754.D

6	1,3,5-Trinitrobenzene	1000.000	990.059	1.0	108	0.00	4.24- 5.04
7	1,3-Dinitrobenzene	1000.000	977.533	2.2	106	0.00	5.44- 6.24
8	3,5-Dinitroaniline	1000.000	1011.263	-1.1	107	0.00	5.80- 6.60
9	Nitrobenzene	1000.000	900.129	10.0	98	0.00	6.96- 7.76
10	Nitroglycerin	1000.000	982.364	1.8	108	0.00	8.19- 9.19
11	Tetryl	1000.000	955.743	4.4	105	0.00	8.83- 9.63
12	2,4,6-Trinitrotoluene	1000.000	976.478	2.4	108	0.00	9.25-10.05
13	2-Amino-4,6-Dinitrotol	1000.000	973.718	2.6	106	0.00	9.69-10.49
14	4-Amino-2,6-Dinitrotol	1000.000	994.158	0.6	107	0.00	10.10-10.90
15 S	3,4-Dinitrotoluene	1000.000	974.858	2.5	99	0.00	10.61-11.41
16	2,4-Dinitrotoluene	1000.000	1053.465	-5.3	108	0.00	11.26-12.06
17	2,6-Dinitrotoluene	1000.000	1049.551	-5.0	108	0.00	11.68-12.48
18	o-Nitrotoluene	1000.000	912.310	8.8	97	0.00	14.63-15.63
19	p-Nitrotoluene	1000.000	936.187	6.4	101	0.00	15.19-16.19
20	m-Nitrotoluene	1000.000	944.333	5.6	101	0.00	16.06-17.06
21	PETN	1000.000	1086.831	-8.7	109	0.00	17.59-18.79

(#) = Out of Range
 BB076380.D BBB2349_041423.M

SPCC's out = 0 CCC's out = 0
 Wed Jul 19 09:08:41 2023

8.7.4

8

Continuing Calibration Summary

Page 1 of 2

Job Number: FC7686
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GBB2394-ECC2349
 Lab FileID: BB077764.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077764.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077764.D\dad1A.ch
 Acq On : 18-Jul-2023, 20:01:42 Operator: fouads
 Sample : ecc2349-1000 Inst : G1315B
 Misc : op96396,GBB2394,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 09:08:22 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT Window
1	TNX	472.000	492.563	-4.4	111	0.00	1.01- 1.61
2	HMx	1000.000	1076.751	-7.7	108	0.02	1.14- 1.74
3	DNx	1000.000	987.874	1.2	110	0.01	1.39- 1.99
4	MNx	1166.000	1182.991	-1.5	111	0.02	1.96- 2.56
5	RDX	1000.000	971.510	2.8	107	0.03	2.47- 3.27
6	1,3,5-Trinitrobenzene	1000.000	986.017	1.4	108	0.00	4.24- 5.04
7	1,3-Dinitrobenzene	1000.000	993.141	0.7	108	0.00	5.44- 6.24
8	3,5-Dinitroaniline	1000.000	1014.398	-1.4	107	0.00	5.80- 6.60
9	Nitrobenzene	1000.000	861.107	13.9	95	0.00	6.96- 7.76
10	Nitroglycerin	-----NA-----					
11	Tetryl	1000.000	1036.610	-3.7	105	0.00	8.83- 9.63
12	2,4,6-Trinitrotoluene	1000.000	1065.112	-6.5	107	0.00	9.25-10.05
13	2-Amino-4,6-Dinitrotol	1000.000	1043.628	-4.4	106	0.00	9.69-10.49
14	4-Amino-2,6-Dinitrotol	1000.000	1056.410	-5.6	107	0.00	10.10-10.90
15 S	3,4-Dinitrotoluene	1000.000	911.519	8.8	99	0.00	10.61-11.41
16	2,4-Dinitrotoluene	1000.000	977.775	2.2	107	0.00	11.26-12.06
17	2,6-Dinitrotoluene	1000.000	978.739	2.1	107	0.00	11.67-12.47
18	o-Nitrotoluene	1000.000	861.679	13.8	96	0.00	14.76-15.63
19	p-Nitrotoluene	1000.000	917.838	8.2	101	0.00	15.19-16.19
20	m-Nitrotoluene	1000.000	879.235	12.1	98	0.00	16.06-17.06
21	PETN	-----NA-----					

***** Signal #2 *****

1	TNX	472.000	491.153	-4.1	112	0.00	1.01- 1.61
2	HMx	1000.000	1081.690	-8.2	107	0.02	1.14- 1.74
3	DNx	1000.000	1105.280	-10.5	110	0.01	1.39- 1.99
4	MNx	1166.000	1176.624	-0.9	111	0.02	1.96- 2.56
5	RDX	1000.000	988.005	1.2	107	0.03	2.47- 3.27

Continuing Calibration Summary

Page 2 of 2

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GBB2394-ECC2349
Lab FileID: BB077764.D

6	1,3,5-Trinitrobenzene	1000.000	979.417	2.1	107	0.00	4.24- 5.04
7	1,3-Dinitrobenzene	1000.000	987.489	1.3	107	0.00	5.44- 6.24
8	3,5-Dinitroaniline	1000.000	1009.116	-0.9	107	0.00	5.80- 6.60
9	Nitrobenzene	1000.000	867.109	13.3	95	0.00	6.96- 7.76
10	Nitroglycerin	1000.000	990.739	0.9	109	0.00	8.19- 9.19
11	Tetryl	1000.000	956.683	4.3	105	0.00	8.83- 9.63
12	2,4,6-Trinitrotoluene	1000.000	973.857	2.6	108	0.00	9.25-10.05
13	2-Amino-4,6-Dinitrotol	1000.000	971.264	2.9	106	0.00	9.69-10.49
14	4-Amino-2,6-Dinitrotol	1000.000	992.520	0.7	107	0.00	10.10-10.90
15 S	3,4-Dinitrotoluene	1000.000	971.846	2.8	99	0.00	10.61-11.41
16	2,4-Dinitrotoluene	1000.000	1054.534	-5.5	108	0.00	11.26-12.06
17	2,6-Dinitrotoluene	1000.000	1050.169	-5.0	108	0.00	11.68-12.48
18	o-Nitrotoluene	1000.000	874.624	12.5	93	0.00	14.63-15.63
19	p-Nitrotoluene	1000.000	913.639	8.6	98	0.00	15.19-16.19
20	m-Nitrotoluene	1000.000	920.612	7.9	99	0.00	16.06-17.06
21	PETN	1000.000	1067.999	-6.8	107	0.00	17.59-18.79

(#) = Out of Range
BB076380.D BBB2349_041423.M

SPCC's out = 0 CCC's out = 0
Thu Jul 20 09:22:08 2023

Initial Calibration Summary

Page 1 of 3

Job Number: FC7686
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GGG3298-ICC3298
 Lab FileID: GG626767.D

Response Factor Report G1315B

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 12 15:57:06 2023
 Response via : Initial Calibration

Calibration Files

20 =GG626762.D 50 =GG626763.D 100 =GG626764.D 200 =GG626765.D
 500 =GG626766.D 1000=GG626767.D 2500=GG626768.D 5000=GG626769.D

Compound	20	50	100	200	500	1000	2500	5000	Avg	%RSD
1) TNX	4.297	2.188	1.775	1.005	1.055	1.054	1.058	1.014	1.681	E4 68.15
---- Linear regr., Force(0,0)	---- Coefficient = 0.9995									
Response Ratio = 0.00000 + 10244.74613 *A										
2) HMX	4.222	4.214	3.806	3.329	3.602	3.593	3.592	3.579	3.742	E3 8.56
3) DNX	2.980	1.597	1.363	0.800	0.853	0.860	0.866	0.828	1.268	E4 59.31
---- Linear regr., Force(0,0)	---- Coefficient = 0.9995									
Response Ratio = 0.00000 + 8369.29905 *A										
4) MNX	2.899	1.500	1.213	0.711	0.764	0.771	0.775	0.740	1.171	E4 64.33
---- Linear regr., Force(0,0)	---- Coefficient = 0.9995									
Response Ratio = 0.00000 + 7482.24550 *A										
5) 1,3,5-Trinit	1.460	1.386	1.173	0.981	1.035	1.024	1.023	1.018	1.137	E4 16.36
---- Linear regr., Force(0,0)	---- Coefficient = 1.0000									
Response Ratio = 0.00000 + 10189.96946 *A										
6) RDX	6.212	6.459	5.463	4.662	4.964	4.923	4.878	4.846	5.301	E3 12.85
7) 1,3-Dinitro	1.850	1.918	1.572	1.397	1.415	1.407	1.403	1.395	1.545	E4 14.13
8) Nitrobenzene	1.233	1.265	1.023	0.865	0.883	0.885	0.880	0.870	0.988	E4 17.12
---- Linear regr., Force(0,0)	---- Coefficient = 1.0000									
Response Ratio = 0.00000 + 8725.24370 *A										
9) 2,4,6-Trinit	1.614	1.383	1.137	0.958	0.992	0.993	0.993	0.991	1.133	E4 21.20
---- Linear regr., Force(0,0)	---- Coefficient = 1.0000									
Response Ratio = 0.00000 + 9913.56151 *A										
10) Nitroglyceri								0.000	-1.00	
11) Tetryl	6.832	7.439	7.183	6.131	6.906	7.131	7.301	7.380	7.038	E3 6.03
12) 3,4-Dinitro	8.177	6.773	6.507	5.661	5.980	5.961	5.986	5.991	6.380	E3 12.65
13) 2,6-Dinitro	9.581	8.837	7.738	6.338	6.804	6.786	6.794	6.787	7.458	E3 15.63
---- Linear regr., Force(0,0)	---- Coefficient = 1.0000									
Response Ratio = 0.00000 + 6788.55597 *A										
14) 2,4-Dinitro	1.638	1.626	1.438	1.223	1.276	1.269	1.271	1.269	1.376	E4 12.36
15) 3,5-Dinitro	1.480	1.411	1.240	1.033	1.087	1.079	1.081	1.081	1.186	E4 14.48
16) o-Nitrotolue	7.024	7.517	6.651	5.518	5.554	5.543	5.475	5.473	6.094	E3 13.72
17) p-Nitrotolue	5.133	4.707	3.954	3.233	3.425	3.391	3.358	3.357	3.820	E3 18.89
---- Linear regr., Force(0,0)	---- Coefficient = 1.0000									
Response Ratio = 0.00000 + 3358.69222 *A										
18) 4-Amino-2,6-	5.133	4.707	3.954	3.233	3.425	3.391	3.358	3.357	3.820	E3 18.89
---- Linear regr., Force(0,0)	---- Coefficient = 1.0000									
Response Ratio = 0.00000 + 3358.69222 *A										
19) m-Nitrotolue	6.493	6.968	5.777	5.114	5.109	5.042	5.040	5.007	5.569	E3 13.82
20) 2-Amino-4,6-	2.011	2.091	1.778	1.538	1.585	1.562	1.551	1.547	1.708	E4 13.25

87.6

8

Initial Calibration Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GGG3298-ICC3298
Lab FileID: GG626767.D

21) PETN 0.000 -1.00

Signal #2

1) TNX	4.294	2.111	1.941	1.008	1.050	1.074	1.069	1.019	1.696	E4	67.26
	---- Linear regr., Force(0,0) ---- Coefficient = 0.9994										
	Response Ratio = 0.00000 + 10311.18980 *A										
2) HMX	4.226	4.064	4.165	3.334	3.591	3.642	3.613	3.589	3.778	E3	8.64
3) DNX	2.974	1.570	1.390	0.801	0.853	0.866	0.869	0.830	1.269	E4	58.95
	---- Linear regr., Force(0,0) ---- Coefficient = 0.9995										
	Response Ratio = 0.00000 + 8392.86258 *A										
4) MNX	2.828	1.531	1.213	0.739	0.767	0.784	0.775	0.753	1.174	E4	62.01
	---- Linear regr., Force(0,0) ---- Coefficient = 0.9997										
	Response Ratio = 0.00000 + 7587.17845 *A										
5) 1,3,5-Trinit	1.442	1.538	1.199	0.990	1.044	1.042	1.028	1.041	1.165	E4	18.10
	---- Linear regr., Force(0,0) ---- Coefficient = 0.9999										
	Response Ratio = 0.00000 + 10382.76955 *A										
6) RDX	6.985	8.701	6.305	4.661	5.145	5.117	5.007	5.121	5.880	E3	23.45
	---- Linear regr., Force(0,0) ---- Coefficient = 0.9998										
	Response Ratio = 0.00000 + 5099.35387 *A										
7) 1,3-Dinitrob	1.464	1.548	1.424	1.014	1.062	1.066	1.104	1.074	1.220	E4	17.92
	---- Linear regr., Force(0,0) ---- Coefficient = 0.9998										
	Response Ratio = 0.00000 + 10796.74500 *A										
8) Nitrobenzene	1.194	1.126	0.929	0.846	0.838	0.965	0.877	0.815	0.949	E4	14.79
9) 2,4,6-Trinit	2.202	1.751	1.574	1.334	1.478	1.409	1.329	1.298	1.547	E4	19.70
	---- Linear regr., Force(0,0) ---- Coefficient = 0.9997										
	Response Ratio = 0.00000 + 13092.87204 *A										
10) Nitroglyceri	7.178	6.222	7.976	5.099	4.031	3.885	3.502	3.471	5.171	E3	34.00
	---- Linear regr., Force(0,0) ---- Coefficient = 0.9995										
	Response Ratio = 0.00000 + 3497.71176 *A										
11) Tetryl	0.975	1.249	1.605	1.037	1.254	1.275	1.254	1.260	1.239	E4	15.14
	---- Linear regr., Force(0,0) ---- Coefficient = 0.9999										
	Response Ratio = 0.00000 + 12591.51801 *A										
12) 3,4-Dinitrot	1.531	1.346	1.259	1.086	1.148	1.159	1.156	1.157	1.230	E4	11.82
13) 2,6-Dinitrot	1.338	1.199	1.086	0.876	0.981	0.981	0.982	0.985	1.053	E4	14.12
14) 2,4-Dinitrot	1.403	1.053	0.848	0.772	0.864	0.893	0.903	0.904	0.955	E4	20.66
	---- Linear regr., Force(0,0) ---- Coefficient = 0.9999										
	Response Ratio = 0.00000 + 9029.89168 *A										
15) 3,5-Dinitroa	2.329	2.167	1.962	1.580	1.763	1.775	1.788	1.778	1.893	E4	12.98
16) o-Nitrotolue	9.346	9.476	7.089	6.946	8.077	8.223	8.243	8.171	8.196	E3	11.07
17) p-Nitrotolue	8.998	8.894	7.448	6.084	6.840	6.826	6.722	6.699	7.314	E3	14.67
18) 4-Amino-2,6-	8.998	8.894	7.448	6.084	6.840	6.826	6.722	6.699	7.314	E3	14.67
19) m-Nitrotolue	0.691	1.121	0.801	0.699	0.807	0.786	0.813	0.804	0.815	E4	16.30
	---- Linear regr., Force(0,0) ---- Coefficient = 0.9986										
	Response Ratio = 0.00000 + 8039.18119 *A										
20) 2-Amino-4,6-	2.983	3.078	2.982	2.336	2.398	2.400	2.393	2.372	2.618	E4	12.62
21) PETN	3.031	4.616	6.107	2.740	3.762	3.634	3.711	3.667	3.908	E3	26.77
	---- Linear regr., Force(0,0) ---- Coefficient = 0.9996										
	Response Ratio = 0.00000 + 3674.69534 *A										

87.6

8

Initial Calibration Summary

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GGG3298-ICC3298
Lab FileID: GG626767.D

(#) = Out of Range ### Number of calibration levels exceeded format ###
GGG3229_071123.M Wed Jul 12 16:01:44 2023

8.7.6
8

Initial Calibration Verification

Page 1 of 2

Job Number: FC7686
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GGG3298-ICV3298
 Lab FileID: GG626774.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\1\DATA\GGG3299\GG626774.D\dad1B.ch Vial: 3
 Signal #2 : C:\HPCHEM\1\DATA\GGG3299\GG626774.D\dad1A.ch
 Acq On : 12-Jul-2023, 11:59:39 Operator: fouads
 Sample : icv3298-1000 Inst : G1315B
 Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 12 15:57:06 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT	Window
1	TNX	472.000	395.348	16.2#	81	0.00	4.32-	5.76
2	HMX	1000.000	1054.716	-5.5	110	0.02	5.17-	6.17
3	DNX	1000.000	839.610	16.0#	82	0.01	5.44-	6.44
4	MNX	1166.000	971.892	16.6#	81	0.03	6.73-	7.73
5	1,3,5-Trinitrobenzene	1000.000	1108.955	-10.9	110	0.01	7.80-	8.80
6	RDX	1000.000	1011.802	-1.2	109	0.05	8.18-	9.18
7	1,3-Dinitrobenzene	1000.000	1009.117	-0.9	111	0.05	10.49-	11.49
8	Nitrobenzene	1000.000	1162.199	-16.2#	115	0.05	11.75-	12.75
9	2,4,6-Trinitrotoluene	1000.000	1086.611	-8.7	108	0.04	12.50-	13.50
10	Nitroglycerin			NA				
11	Tetryl	1000.000	1098.035	-9.8	108	0.05	13.94-	14.94
12 S	3,4-Dinitrotoluene			NA				
13	2,6-Dinitrotoluene	1000.000	1087.847	-8.8	109	0.06	15.85-	16.85
14	2,4-Dinitrotoluene	1000.000	1025.721	-2.6	111	0.05	16.55-	17.55
15	3,5-Dinitroaniline	1000.000	998.422	0.2	110	0.08	17.30-	18.30
16	o-Nitrotoluene	1000.000	1070.528	-7.1	118	0.04	18.60-	19.60
17	p-Nitrotoluene	2000.000	2204.936	-10.2	109	0.11	19.33-	20.33
18	4-Amino-2,6-Dinitrotol	2000.000	2204.936	-10.2	109	0.11	19.33-	20.33
19	m-Nitrotoluene	1000.000	1055.916	-5.6	117	0.03	19.68-	20.68
20	2-Amino-4,6-Dinitrotol	1000.000	1027.772	-2.8	112	0.13	21.20-	22.20
21	PETN			NA				

8.7.7

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Initial Calibration Verification

Page 2 of 2

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GGG3298-ICV3298
Lab FileID: GG626774.D

***** Signal #2 *****

		Amount	Calc.	%Drift			
1	TNX	472.000	394.170	16.5#	80	0.00	4.75- 5.76
2	HMX	1000.000	1045.939	-4.6	109	0.02	5.17- 6.17
3	DNX	1000.000	838.348	16.2#	81	0.01	5.44- 6.44
4	MNX	1166.000	985.860	15.4#	82	0.03	6.73- 7.73
5	1,3,5-Trinitrobenzene	1000.000	1129.188	-12.9	113	0.01	7.80- 8.80
6	RDX	1000.000	1140.585	-14.1	114	0.05	8.18- 9.18
7	1,3-Dinitrobenzene	1000.000	1143.488	-14.3	116	0.05	10.49-11.49
8	Nitrobenzene	1000.000	1107.018	-10.7	109	0.05	11.75-12.75
9	2,4,6-Trinitrotoluene	1000.000	1135.410	-13.5	106	0.04	12.50-13.50
10	Nitroglycerin	1000.000	1205.600	-20.6#	109	0.04	13.35-14.35
11	Tetryl	1000.000	1073.323	-7.3	106	0.05	13.94-14.94
12 S	3,4-Dinitrotoluene			-----NA-----			
13	2,6-Dinitrotoluene	1000.000	1009.507	-1.0	108	0.06	15.85-16.85
14	2,4-Dinitrotoluene	1000.000	1104.020	-10.4	112	0.05	16.55-17.55
15	3,5-Dinitroaniline	1000.000	1020.637	-2.1	109	0.08	17.30-18.30
16	o-Nitrotoluene	1000.000	1230.220	-23.0#	123	0.04	18.60-19.60
17	p-Nitrotoluene	2000.000	2119.786	-6.0	114	0.10	19.33-20.33
18	4-Amino-2,6-Dinitrotol	2000.000	2119.786	-6.0	114	0.10	19.33-20.33
19	m-Nitrotoluene	1000.000	1106.993	-10.7	113	0.02	19.67-20.67
20	2-Amino-4,6-Dinitrotol	1000.000	1033.891	-3.4	113	0.14	21.18-22.18
21	PETN	1000.000	1094.988	-9.5	111	0.04	23.10-24.10

(#) = Out of Range
GG626767.D GGG3229_071123.M

SPCC's out = 0 CCC's out = 0
Wed Jul 12 16:02:15 2023

8.7.7

8

Continuing Calibration Summary

Page 1 of 2

Job Number: FC7686
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GGG3302-CC3298
 Lab FileID: GG626835.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626835.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626835.D\dad1A.ch
 Acq On : 19-Jul-2023, 08:19:21 Operator: fouads
 Sample : cc3298-1000 Inst : G1315B
 Misc : op97623,GGG3302,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT Window
1	TNX	472.000	431.892	8.5	89	0.00	4.29- 5.73
2	HMX	1000.000	918.763	8.1	96	0.00	5.13- 6.13
3	DNX	1000.000	912.435	8.8	89	0.00	5.38- 6.38
4	MNX	1166.000	1061.131	9.0	88	0.00	6.61- 7.61
5	1,3,5-Trinitrobenzene	1000.000	968.037	3.2	96	0.00	7.70- 8.70
6	RDX	1000.000	870.030	13.0	94	0.00	8.02- 9.02
7	1,3-Dinitrobenzene	1000.000	870.650	12.9	96	0.00	10.28-11.28
8	Nitrobenzene	1000.000	907.216	9.3	89	0.00	11.44-12.44
9	2,4,6-Trinitrotoluene	1000.000	955.512	4.4	95	0.00	12.27-13.27
10	Nitroglycerin			NA			
11	Tetryl	1000.000	978.367	2.2	97	0.00	13.63-14.63
12 S	3,4-Dinitrotoluene	1000.000	879.817	12.0	94	0.00	15.04-16.04
13	2,6-Dinitrotoluene	1000.000	962.547	3.7	96	0.00	15.40-16.40
14	2,4-Dinitrotoluene	1000.000	887.680	11.2	96	0.00	16.11-17.11
15	3,5-Dinitroaniline	1000.000	868.317	13.2	95	0.00	16.74-17.74
16	o-Nitrotoluene	1000.000	805.432	19.5#	89	0.00	17.98-18.98
17	p-Nitrotoluene	2000.000	1946.747	2.7	96	0.00	18.72-19.72
18	4-Amino-2,6-Dinitrotol	2000.000	1946.747	2.7	96	0.00	18.72-19.72
19	m-Nitrotoluene	1000.000	800.071	20.0#	88	0.00	19.08-20.08
20	2-Amino-4,6-Dinitrotol	1000.000	852.400	14.8	93	0.00	20.63-21.63
21	PETN			NA			

87.8

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Continuing Calibration Summary

Page 2 of 2

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GGG3302-CC3298
Lab FileID: GG626835.D

***** Signal #2 *****

		Amount	Calc.	%Drift			
1	TNX	472.000	438.449	7.1	89	0.00	4.71- 5.73
2	HMX	1000.000	919.626	8.0	95	0.00	5.13- 6.13
3	DNX	1000.000	913.472	8.7	89	0.00	5.38- 6.38
4	MNX	1166.000	1055.027	9.5	88	0.00	6.61- 7.61
5	1,3,5-Trinitrobenzene	1000.000	962.995	3.7	96	0.00	7.70- 8.70
6	RDX	1000.000	947.095	5.3	94	0.00	8.02- 9.02
7	1,3-Dinitrobenzene	1000.000	1169.441	-16.9#	118	0.00	10.28-11.28
8	Nitrobenzene	1000.000	929.905	7.0	91	0.00	11.44-12.44
9	2,4,6-Trinitrotoluene	1000.000	1077.265	-7.7	100	0.00	12.27-13.27
10	Nitroglycerin	1000.000	1099.716	-10.0	99	0.00	13.12-14.12
11	Tetryl	1000.000	988.289	1.2	98	0.00	13.63-14.63
12 S	3,4-Dinitrotoluene	1000.000	914.562	8.5	97	0.00	15.04-16.04
13	2,6-Dinitrotoluene	1000.000	898.030	10.2	96	0.00	15.40-16.40
14	2,4-Dinitrotoluene	1000.000	965.702	3.4	98	0.00	16.11-17.11
15	3,5-Dinitroaniline	1000.000	903.044	9.7	96	0.00	16.74-17.74
16	o-Nitrotoluene	1000.000	873.748	12.6	87	0.00	17.99-18.99
17	p-Nitrotoluene	2000.000	1769.862	11.5	95	0.00	18.72-19.72
18	4-Amino-2,6-Dinitrotol	2000.000	1769.862	11.5	95	0.00	18.72-19.72
19	m-Nitrotoluene	1000.000	878.244	12.2	90	0.00	19.07-20.07
20	2-Amino-4,6-Dinitrotol	1000.000	857.433	14.3	94	0.00	20.62-21.62
21	PETN	1000.000	925.759	7.4	94	0.00	22.89-23.89

(#) = Out of Range
GG626767.D GGG3229_071123.M

SPCC's out = 0 CCC's out = 0
Thu Jul 20 08:39:47 2023

8.7.8

8

Continuing Calibration Summary

Page 1 of 2

Job Number: FC7686
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GGG3302-ECC3298
 Lab FileID: GG626846.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626846.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626846.D\dad1A.ch
 Acq On : 19-Jul-2023, 14:37:32 Operator: fouads
 Sample : ecc3298-1000 Inst : G1315B
 Misc : op97623,GGG3302,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT	Window
1	TNX	472.000	436.196	7.6	90	0.02	4.29	5.73
2	HMX	1000.000	929.651	7.0	97	0.01	5.13	6.13
3	DNX	1000.000	922.170	7.8	90	0.02	5.38	6.38
4	MNX	1166.000	1073.451	7.9	89	0.01	6.61	7.61
5	1,3,5-Trinitrobenzene	1000.000	985.903	1.4	98	0.01	7.70	8.70
6	RDX	1000.000	880.441	12.0	95	-0.01	8.02	9.02
7	1,3-Dinitrobenzene	1000.000	886.178	11.4	97	0.01	10.28	11.28
8	Nitrobenzene	1000.000	886.923	11.3	87	0.02	11.44	12.44
9	2,4,6-Trinitrotoluene	1000.000	969.765	3.0	97	0.02	12.27	13.27
10	Nitroglycerin			NA				
11	Tetryl	1000.000	1008.383	-0.8	100	-0.03	13.63	14.63
12 S	3,4-Dinitrotoluene	1000.000	903.373	9.7	97	0.00	15.04	16.04
13	2,6-Dinitrotoluene	1000.000	961.089	3.9	96	0.02	15.40	16.40
14	2,4-Dinitrotoluene	1000.000	901.533	9.8	98	0.00	16.11	17.11
15	3,5-Dinitroaniline	1000.000	871.550	12.8	96	-0.08	16.74	17.74
16	o-Nitrotoluene	1000.000	787.986	21.2#	87	0.03	17.98	18.98
17	p-Nitrotoluene	2000.000	1959.080	2.0	97	-0.06	18.72	19.72
18	4-Amino-2,6-Dinitrotol	2000.000	1959.080	2.0	97	-0.06	18.72	19.72
19	m-Nitrotoluene	1000.000	797.742	20.2#	88	0.04	19.08	20.08
20	2-Amino-4,6-Dinitrotol	1000.000	849.830	15.0#	93	-0.11	20.63	21.63
21	PETN			NA				

8.7.9

8

Continuing Calibration Summary

Page 2 of 2

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GGG3302-ECC3298
Lab FileID: GG626846.D

***** Signal #2 *****

		Amount	Calc.	%Drift			
1	TNX	472.000	441.103	6.5	90	0.02	4.71- 5.73
2	HMX	1000.000	931.223	6.9	97	0.01	5.13- 6.13
3	DNX	1000.000	926.568	7.3	90	0.02	5.38- 6.38
4	MNX	1166.000	1069.943	8.2	89	0.01	6.61- 7.61
5	1,3,5-Trinitrobenzene	1000.000	975.228	2.5	97	0.01	7.70- 8.70
6	RDX	1000.000	934.851	6.5	93	-0.01	8.02- 9.02
7	1,3-Dinitrobenzene	1000.000	1223.119	-22.3#	124	0.01	10.28-11.28
8	Nitrobenzene	1000.000	938.242	6.2	92	0.02	11.44-12.44
9	2,4,6-Trinitrotoluene	1000.000	1065.632	-6.6	99	0.02	12.27-13.27
10	Nitroglycerin	1000.000	1109.685	-11.0	100	0.02	13.12-14.12
11	Tetryl	1000.000	1027.237	-2.7	101	-0.03	13.63-14.63
12 S	3,4-Dinitrotoluene	1000.000	943.084	5.7	100	0.00	15.04-16.04
13	2,6-Dinitrotoluene	1000.000	907.011	9.3	97	0.02	15.40-16.40
14	2,4-Dinitrotoluene	1000.000	990.883	0.9	100	0.00	16.11-17.11
15	3,5-Dinitroaniline	1000.000	924.906	7.5	99	-0.08	16.74-17.74
16	o-Nitrotoluene	1000.000	865.141	13.5	86	0.03	17.99-18.99
17	p-Nitrotoluene	2000.000	1769.122	11.5	95	-0.06	18.72-19.72
18	4-Amino-2,6-Dinitrotol	2000.000	1769.122	11.5	95	-0.06	18.72-19.72
19	m-Nitrotoluene	1000.000	891.793	10.8	91	0.05	19.07-20.07
20	2-Amino-4,6-Dinitrotol	1000.000	848.465	15.2#	93	-0.11	20.62-21.62
21	PETN	1000.000	891.544	10.8	90	-0.01	22.89-23.89

(#) = Out of Range
GG626767.D GGG3229_071123.M

SPCC's out = 0 CCC's out = 0
Thu Jul 20 08:38:44 2023

8.7.9

8

Continuing Calibration Summary

Page 1 of 2

Job Number: FC7686
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GGG3303-CC3298
 Lab FileID: GG626848.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626848.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626848.D\dad1A.ch
 Acq On : 20-Jul-2023, 12:19:44 Operator: fouads
 Sample : cc3298-1000 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

Compound		Amount	Calc.	%Drift	Area%	Dev(min)	RT	Window

1	TNX	472.000	470.159	0.4	97	0.00	4.29-	5.73
2	HMX	1000.000	1007.845	-0.8	105	-0.02	5.13-	6.13
3	DNX	1000.000	988.872	1.1	96	-0.01	5.38-	6.38
4	MNX	1166.000	1153.007	1.1	96	-0.04	6.61-	7.61
5	1,3,5-Trinitrobenzene	1000.000	1058.465	-5.8	105	-0.05	7.70-	8.70
6	RDX	1000.000	927.988	7.2	100	-0.08	8.02-	9.02
7	1,3-Dinitrobenzene	1000.000	941.282	5.9	103	-0.06	10.28-	11.28
8	Nitrobenzene	1000.000	946.331	5.4	93	-0.06	11.44-	12.44
9	2,4,6-Trinitrotoluene	1000.000	1035.210	-3.5	103	-0.09	12.27-	13.27
10	Nitroglycerin	-----NA-----						
11	Tetryl	1000.000	1082.785	-8.3	107	-0.19	13.63-	14.63
12 S	3,4-Dinitrotoluene	1000.000	957.870	4.2	103	-0.15	15.04-	16.04
13	2,6-Dinitrotoluene	1000.000	1030.995	-3.1	103	-0.11	15.40-	16.40
14	2,4-Dinitrotoluene	1000.000	964.488	3.6	105	-0.12	16.11-	17.11
15	3,5-Dinitroaniline	1000.000	941.110	5.9	103	-0.19	16.74-	17.74
16	o-Nitrotoluene	1000.000	851.890	14.8	94	-0.12	17.98-	18.98
17	p-Nitrotoluene	2000.000	2110.432	-5.5	105	-0.22	18.72-	19.72
18	4-Amino-2,6-Dinitrotol	2000.000	2110.432	-5.5	105	-0.22	18.72-	19.72
19	m-Nitrotoluene	1000.000	862.546	13.7	95	-0.11	19.08-	20.08
20	2-Amino-4,6-Dinitrotol	1000.000	909.776	9.0	99	-0.26	20.63-	21.63
21	PETN	-----NA-----						

Continuing Calibration Summary

Page 2 of 2

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GGG3303-CC3298
Lab FileID: GG626848.D

***** Signal #2 *****

		Amount	Calc.	%Drift			
1	TNX	472.000	468.101	0.8	95	0.00	4.71- 5.73
2	HMX	1000.000	998.646	0.1	104	-0.02	5.13- 6.13
3	DNX	1000.000	986.711	1.3	96	-0.01	5.38- 6.38
4	MNX	1166.000	1141.567	2.1	95	-0.04	6.61- 7.61
5	1,3,5-Trinitrobenzene	1000.000	1050.057	-5.0	105	-0.05	7.70- 8.70
6	RDX	1000.000	1001.464	-0.1	100	-0.08	8.02- 9.02
7	1,3-Dinitrobenzene	1000.000	1215.693	-21.6#	123	-0.06	10.28-11.28
8	Nitrobenzene	1000.000	994.936	0.5	98	-0.06	11.44-12.44
9	2,4,6-Trinitrotoluene	1000.000	1148.117	-14.8	107	-0.09	12.27-13.27
10	Nitroglycerin	1000.000	1203.663	-20.4#	108	-0.13	13.12-14.12
11	Tetryl	1000.000	1135.301	-13.5	112	-0.18	13.63-14.63
12 S	3,4-Dinitrotoluene	1000.000	995.511	0.4	106	-0.15	15.04-16.04
13	2,6-Dinitrotoluene	1000.000	986.631	1.3	106	-0.11	15.40-16.40
14	2,4-Dinitrotoluene	1000.000	1051.137	-5.1	106	-0.12	16.11-17.11
15	3,5-Dinitroaniline	1000.000	983.544	1.6	105	-0.19	16.74-17.74
16	o-Nitrotoluene	1000.000	919.819	8.0	92	-0.12	17.99-18.99
17	p-Nitrotoluene	2000.000	1896.102	5.2	102	-0.22	18.72-19.72
18	4-Amino-2,6-Dinitrotol	2000.000	1896.102	5.2	102	-0.22	18.72-19.72
19	m-Nitrotoluene	1000.000	970.816	2.9	99	-0.11	19.07-20.07
20	2-Amino-4,6-Dinitrotol	1000.000	918.380	8.2	100	-0.27	20.62-21.62
21	PETN	1000.000	1070.564	-7.1	108	-0.29	22.89-23.89

(#) = Out of Range
GG626767.D GGG3229_071123.M

SPCC's out = 0 CCC's out = 0
Fri Jul 21 10:00:57 2023

8.7.10

8

Continuing Calibration Summary

Page 1 of 2

Job Number: FC7686
 Account: WESTVAH Weston Solutions, Inc
 Project: Radford AAP; VA

Sample: GGG3303-ECC3298
 Lab FileID: GG626853.D

Evaluate Continuing Calibration Report

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626853.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626853.D\dad1A.ch
 Acq On : 20-Jul-2023, 15:34:46 Operator: fouads
 Sample : ecc3298-1000 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Jul 21 10:06:31 2023
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT	Window
1	TNX	472.000	473.068	-0.2	97	0.01	4.29-	5.73
2	HMX	1000.000	1011.336	-1.1	105	0.00	5.13-	6.13
3	DNX	1000.000	997.107	0.3	97	0.01	5.38-	6.38
4	MNX	1166.000	1161.971	0.3	97	0.00	6.61-	7.61
5	1,3,5-Trinitrobenzene	1000.000	1061.004	-6.1	106	0.05	7.65-	8.65
6	RDX	1000.000	951.549	4.8	102	0.06	7.94-	8.94
7	1,3-Dinitrobenzene	1000.000	956.341	4.4	105	0.07	10.22-	11.22
8	Nitrobenzene	1000.000	939.481	6.1	93	0.08	11.38-	12.38
9	2,4,6-Trinitrotoluene	1000.000	1049.321	-4.9	105	0.08	12.18-	13.18
10	Nitroglycerin			NA				
11	Tetryl	1000.000	1101.111	-10.1	109	0.12	13.44-	14.44
12 S	3,4-Dinitrotoluene	1000.000	967.015	3.3	103	0.12	14.89-	15.89
13	2,6-Dinitrotoluene	1000.000	1044.781	-4.5	105	0.10	15.28-	16.28
14	2,4-Dinitrotoluene	1000.000	974.239	2.6	106	0.10	15.98-	16.98
15	3,5-Dinitroaniline	1000.000	946.273	5.4	104	0.09	16.54-	17.54
16	o-Nitrotoluene	1000.000	838.697	16.1#	92	0.12	17.86-	18.86
17	p-Nitrotoluene	2000.000	2115.289	-5.8	105	0.12	18.50-	19.50
18	4-Amino-2,6-Dinitrotol	2000.000	2115.289	-5.8	105	0.12	18.50-	19.50
19	m-Nitrotoluene	1000.000	857.002	14.3	95	0.13	18.96-	19.96
20	2-Amino-4,6-Dinitrotol	1000.000	914.544	8.5	100	0.13	20.37-	21.37
21	PETN			NA				

8.7.11

8

Continuing Calibration Summary

Page 2 of 2

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Sample: GGG3303-ECC3298
Lab FileID: GG626853.D

***** Signal #2 *****

		Amount	Calc.	%Drift			
1	TNX	472.000	469.979	0.4	96	0.01	4.71- 5.73
2	HMX	1000.000	1001.525	-0.2	104	0.00	5.13- 6.13
3	DNX	1000.000	994.549	0.5	96	0.01	5.38- 6.38
4	MNX	1166.000	1148.040	1.5	95	0.00	6.61- 7.61
5	1,3,5-Trinitrobenzene	1000.000	1048.978	-4.9	105	0.05	7.65- 8.65
6	RDX	1000.000	1011.123	-1.1	101	0.06	7.94- 8.94
7	1,3-Dinitrobenzene	1000.000	1268.852	-26.9#	129	0.07	10.21-11.21
8	Nitrobenzene	1000.000	979.722	2.0	96	0.08	11.38-12.38
9	2,4,6-Trinitrotoluene	1000.000	1158.662	-15.9#	108	0.08	12.18-13.18
10	Nitroglycerin	1000.000	1159.696	-16.0#	104	0.10	12.99-13.99
11	Tetryl	1000.000	1104.732	-10.5	109	0.11	13.44-14.44
12 S	3,4-Dinitrotoluene	1000.000	986.448	1.4	105	0.12	14.89-15.89
13	2,6-Dinitrotoluene	1000.000	977.087	2.3	105	0.10	15.28-16.28
14	2,4-Dinitrotoluene	1000.000	1049.755	-5.0	106	0.10	15.98-16.98
15	3,5-Dinitroaniline	1000.000	991.871	0.8	106	0.09	16.54-17.54
16	o-Nitrotoluene	1000.000	904.588	9.5	90	0.12	17.86-18.86
17	p-Nitrotoluene	2000.000	1908.958	4.6	102	0.12	18.50-19.50
18	4-Amino-2,6-Dinitrotol	2000.000	1908.958	4.6	102	0.12	18.50-19.50
19	m-Nitrotoluene	1000.000	952.533	4.7	97	0.13	18.96-19.96
20	2-Amino-4,6-Dinitrotol	1000.000	909.662	9.0	99	0.13	20.35-21.35
21	PETN	1000.000	990.727	0.9	100	0.15	22.60-23.60

(#) = Out of Range
GG626767.D GGG3229_071123.M

SPCC's out = 0 CCC's out = 0
Fri Jul 21 10:07:27 2023

8.7.11

8

Run Sequence Report

Job Number: FC7686

Account: WESTVAH Weston Solutions, Inc

Project: Radford AAP; VA

Run ID: GBB2349		Method: SW846 8330A		Instrument ID: GCBB	
Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID	
GBB2349-IC2349	BB076375.D	04/14/23 09:53	n/a	Initial cal 20	
GBB2349-IC2349	BB076376.D	04/14/23 10:24	n/a	Initial cal 50	
GBB2349-IC2349	BB076377.D	04/14/23 10:55	n/a	Initial cal 100	
GBB2349-IC2349	BB076378.D	04/14/23 11:26	n/a	Initial cal 200	
GBB2349-IC2349	BB076379.D	04/14/23 12:00	n/a	Initial cal 500	
GBB2349-ICC2349	BB076380.D	04/14/23 12:31	n/a	Initial cal 1000	
GBB2349-IC2349	BB076381.D	04/14/23 13:02	n/a	Initial cal 2500	
GBB2349-IC2349	BB076382.D	04/14/23 13:33	n/a	Initial cal 5000	
GBB2349-ICV2349	BB076383.D	04/14/23 14:04	n/a	Initial cal verification 1000	
OP96361-BS	BB076384.D	04/14/23 14:35	OP96361	Blank Spike	
OP96361-MB	BB076385.D	04/14/23 15:06	OP96361	Method Blank	
FC5106-1	BB076386.D	04/14/23 15:37	OP96361	(used for QC only; not part of job FC7686)	
ZZZZZZ	BB076389.D	04/14/23 17:10	OP96361	(unrelated sample)	
ZZZZZZ	BB076390.D	04/14/23 17:41	OP96361	(unrelated sample)	
ZZZZZZ	BB076391.D	04/14/23 18:12	OP96361	(unrelated sample)	
ZZZZZZ	BB076392.D	04/14/23 18:43	OP96361	(unrelated sample)	
ZZZZZZ	BB076393.D	04/14/23 19:14	OP96361	(unrelated sample)	
GBB2349-CC2349	BB076395.D	04/14/23 20:16	n/a	Continuing cal 1000	
ZZZZZZ	BB076396.D	04/14/23 20:47	OP96320	(unrelated sample)	
FC5069-8	BB076397.D	04/14/23 21:18	OP96321	(used for QC only; not part of job FC7686)	
ZZZZZZ	BB076398.D	04/14/23 21:49	OP96321	(unrelated sample)	
GBB2349-ECC2349	BB076400.D	04/14/23 22:51	n/a	Ending cal 1000	

Run Sequence Report

Job Number: FC7686

Account: WESTVAH Weston Solutions, Inc

Project: Radford AAP; VA

Run ID: GBB2394	Method: SW846 8330B	Instrument ID: GCBB
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
GBB2394-CC2349	BB077744.D	07/18/23 08:11	n/a	Continuing cal 1000
OP97885-BS	BB077745.D	07/18/23 09:24	OP97885	Blank Spike
OP97885-BS	BB077745.D	07/18/23 09:24	OP97885	Blank Spike
OP97885-MB	BB077746.D	07/18/23 09:55	OP97885	Method Blank
OP97885-MB	BB077746.D	07/18/23 09:55	OP97885	Method Blank
ZZZZZZ	BB077747.D	07/18/23 10:26	OP97885	(unrelated sample)
ZZZZZZ	BB077748.D	07/18/23 10:57	OP97885	(unrelated sample)
FC7686-1	BB077749.D	07/18/23 11:28	OP97885	54MW13
FC7686-2	BB077750.D	07/18/23 11:59	OP97885	54TW13
FC7686-3	BB077751.D	07/18/23 12:30	OP97885	54MW10
FC7686-4	BB077752.D	07/18/23 13:01	OP97885	54MW12
GBB2394-CC2349	BB077754.D	07/18/23 14:52	n/a	Continuing cal 1000
OP97885-MS	BB077755.D	07/18/23 15:23	OP97885	Matrix Spike
OP97885-MS	BB077755.D	07/18/23 15:23	OP97885	Matrix Spike
OP97885-MSD	BB077756.D	07/18/23 15:54	OP97885	Matrix Spike Duplicate
OP97885-MSD	BB077756.D	07/18/23 15:54	OP97885	Matrix Spike Duplicate
FC7686-5	BB077757.D	07/18/23 16:25	OP97885	54MW1
ZZZZZZ	BB077758.D	07/18/23 16:56	OP97885	(unrelated sample)
ZZZZZZ	BB077759.D	07/18/23 17:26	OP97885	(unrelated sample)
ZZZZZZ	BB077760.D	07/18/23 17:57	OP97885	(unrelated sample)
ZZZZZZ	BB077761.D	07/18/23 18:28	OP97885	(unrelated sample)
ZZZZZZ	BB077762.D	07/18/23 18:59	OP97885	(unrelated sample)
GBB2394-ECC2349	BB077764.D	07/18/23 20:01	n/a	Ending cal 1000

Run Sequence Report

Page 1 of 1

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Run ID: GGG3298	Method: SW846 8330A	Instrument ID: GCGG
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
GGG3298-IC3298	GG626762.D	07/11/23 15:47	n/a	Initial cal 20
GGG3298-IC3298	GG626763.D	07/11/23 16:19	n/a	Initial cal 50
GGG3298-IC3298	GG626764.D	07/11/23 16:52	n/a	Initial cal 100
GGG3298-IC3298	GG626765.D	07/11/23 17:24	n/a	Initial cal 200
GGG3298-IC3298	GG626766.D	07/11/23 17:57	n/a	Initial cal 500
GGG3298-ICC3298	GG626767.D	07/11/23 18:29	n/a	Initial cal 1000
GGG3298-IC3298	GG626768.D	07/11/23 19:02	n/a	Initial cal 2500
GGG3298-IC3298	GG626769.D	07/11/23 19:34	n/a	Initial cal 5000
GGG3298-ICV3298	GG626774.D	07/12/23 11:59	n/a	Initial cal verification 1000

8.8.3

8

Run Sequence Report

Page 1 of 1

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Run ID: GGG3302	Method: SW846 8330B	Instrument ID: GCGG
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
GGG3302-CC3298	GG626835.D	07/19/23 08:19	n/a	Continuing cal 1000
OP97885-MB	GG626836.D	07/19/23 08:58	OP97885	Method Blank
OP97885-MB	GG626836.D	07/19/23 08:58	OP97885	Method Blank
ZZZZZZ	GG626837.D	07/19/23 09:35	OP97885	(unrelated sample)
ZZZZZZ	GG626838.D	07/19/23 10:07	OP97885	(unrelated sample)
ZZZZZZ	GG626839.D	07/19/23 10:39	OP97885	(unrelated sample)
FC7686-2	GG626841.D	07/19/23 11:44	OP97885	54TW13
FC7686-4	GG626843.D	07/19/23 12:49	OP97885	54MW12
ZZZZZZ	GG626844.D	07/19/23 13:21	OP97885	(unrelated sample)
GGG3302-ECC3298	GG626846.D	07/19/23 14:37	n/a	Ending cal 1000

8.8.4

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Run Sequence Report

Page 1 of 1

Job Number: FC7686
Account: WESTVAH Weston Solutions, Inc
Project: Radford AAP; VA

Run ID: GGG3303	Method: SW846 8330B	Instrument ID: GCGG
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Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
GGG3303-CC3298	GG626848.D	07/20/23 12:19	n/a	Continuing cal 1000
FC7686-1	GG626850.D	07/20/23 13:57	OP97885	54MW13
FC7686-3	GG626851.D	07/20/23 14:29	OP97885	54MW10
GGG3303-ECC3298	GG626853.D	07/20/23 15:34	n/a	Ending cal 1000

8.8.5

8



Orlando, FL

Section 9

GC/LC Semi-volatiles

Raw Data

6

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077749.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077749.D\dad1A.ch
Acq On : 18-Jul-2023, 11:28:39 Operator: fouads
Sample : FC7686-1 Inst : G1315B
Misc : op97885,GBB2394,900,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 12:34:10 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Initial Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	10.99	10.99	1077850	1902860	449.729	472.516
Spiked Amount	500.000	Range	70 - 136	Recovery	= 89.95%	94.50%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	1.45	1.45	378254	1034778	256.685	254.576
3) DNX	0.00	0.00	0	0	N.D. d	N.D. d
4) MNX	0.00	0.00	0	0	N.D.	N.D. d
5) RDX	2.87	2.88	156335	251918	80.699	83.288
6) 1,3,5-Trinitrobe	4.63	4.63	5361072	8697213	1286.568	1311.237
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D. d
8) 3,5-Dinitroanili	6.18	6.18	207532	333103	52.513	47.934m
9) Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D. d
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
12) 2,4,6-Trinitroto	9.63	9.63	2846887	3523393	793.436	733.382
13) 2-Amino-4,6-Dini	10.06	10.06	389155	709764	122.585	138.115
14) 4-Amino-2,6-Dini	10.48	10.47	208150	455275	87.877	89.800
16) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
17) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D. d	N.D. d
18) o-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
19) p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D. d
20) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
21) PETN	0.00	0.00	0	0	N.D.	N.D.

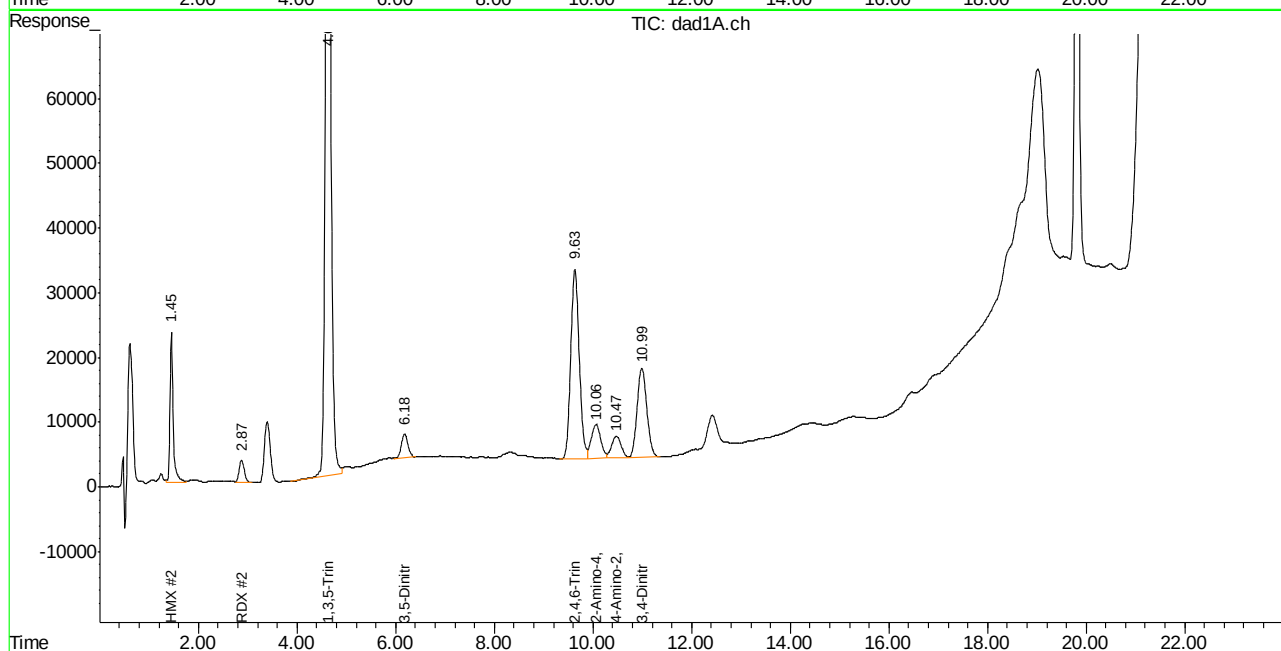
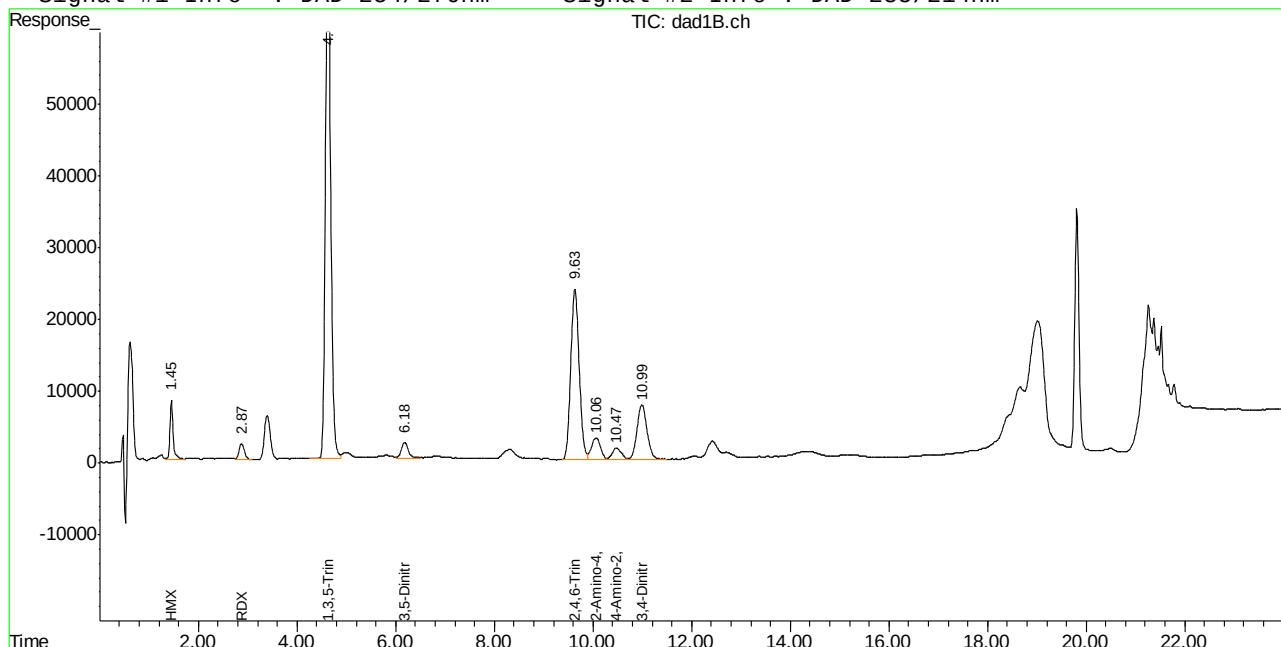
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
BB077749.D BBB2349_041423.M Thu Jul 20 08:40:52 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077749.D\dad1B.ch Vial: 7
 Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077749.D\dad1A.ch
 Acq On : 18-Jul-2023, 11:28:39 Operator: fouads
 Sample : FC7686-1 Inst : G1315B
 Misc : op97885,GBB2394,900,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jul 19 8:43 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Jul 07 08:35:11 2023
 Response via : Multiple Level Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: FC7686-1

Method: SW846 8330B

Lab FileID: BB077749.D

Analyst approved: 07/20/23 09:08 Fouad Sekkar

Injection Time: 07/18/23 11:28

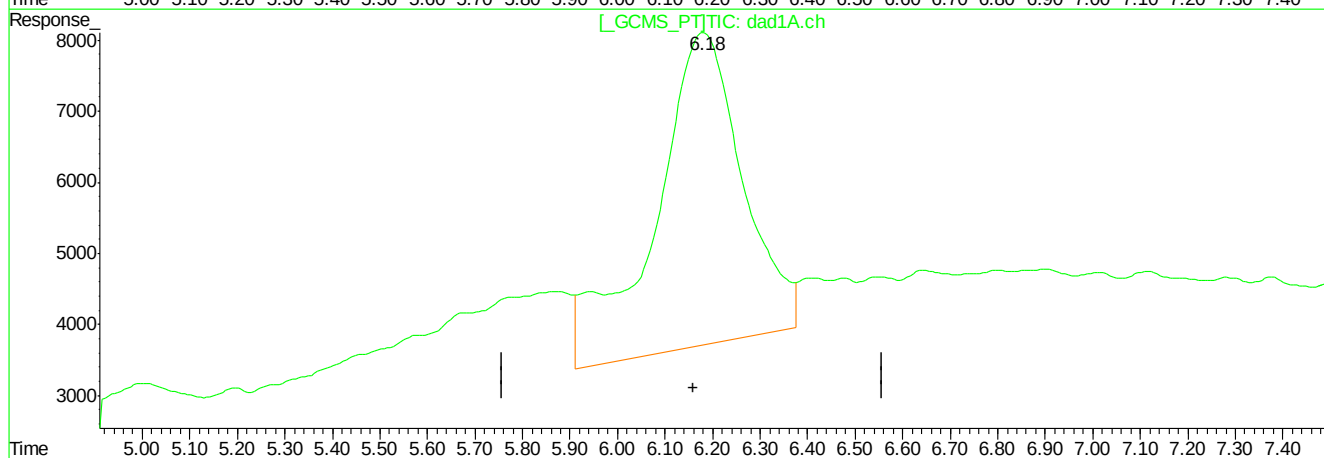
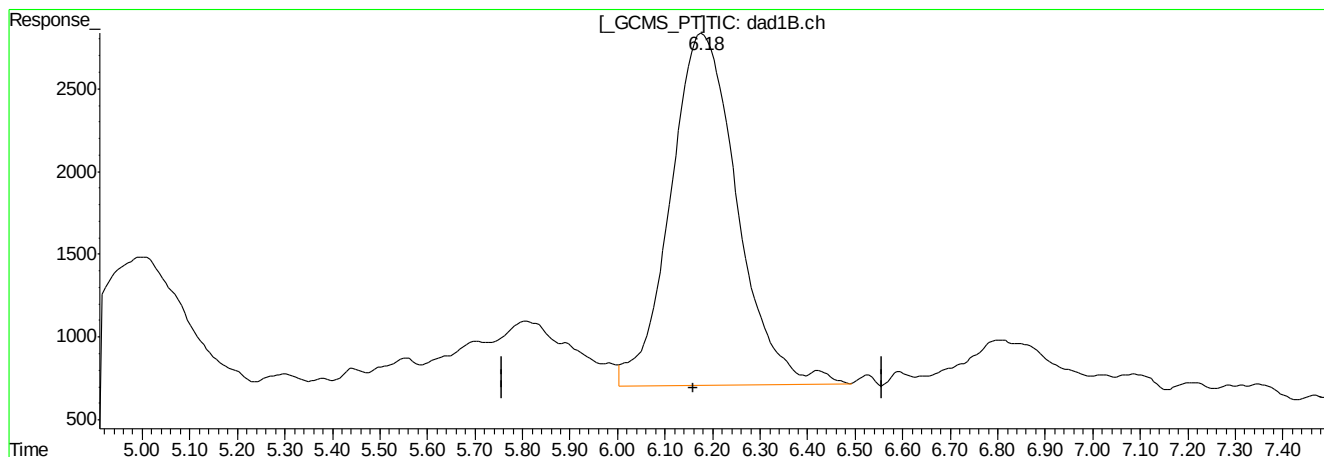
Supervisor approved: 07/21/23 11:45 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	2	6.18	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077749.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077749.D\dad1A.ch
Acq On : 18-Jul-2023, 11:28:39 Operator: fouads
Sample : FC7686-1 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 12:34 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

6.18min 52.513ppb

response 207532

(8) 3,5-Dinitroaniline #2

6.18min 81.320ppb

response 565117

(+) = Expected Retention Time

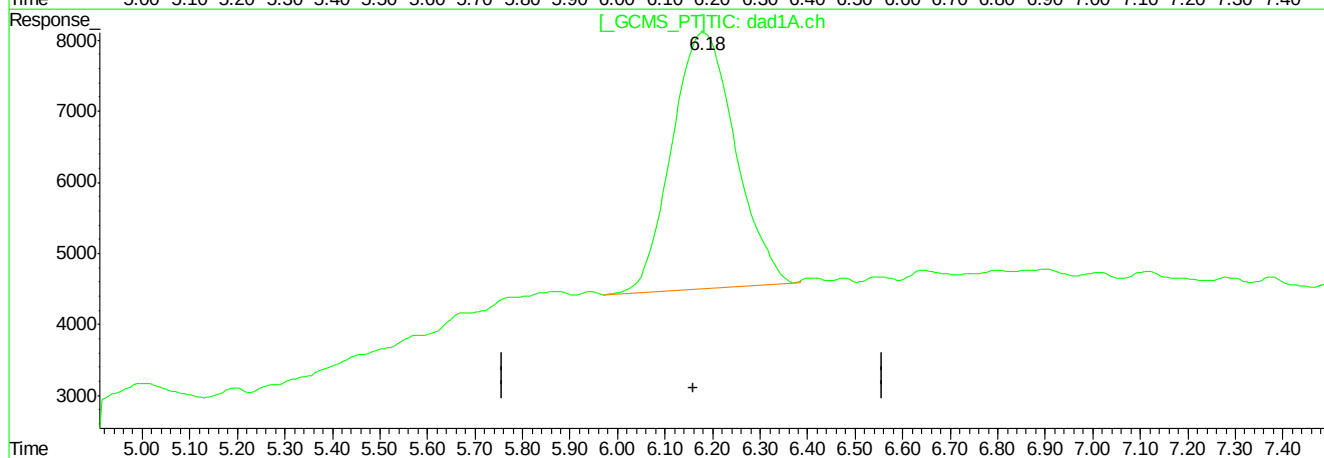
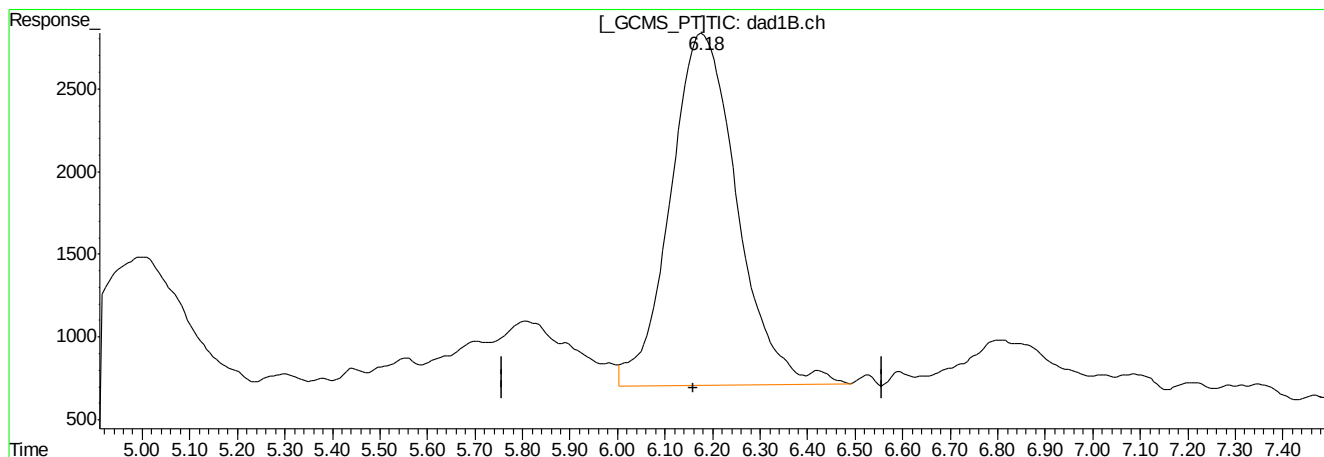
BB077749.D BBB2349_041423.M

Wed Jul 19 08:43:17 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077749.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077749.D\dad1A.ch
Acq On : 18-Jul-2023, 11:28:39 Operator: fouads
Sample : FC7686-1 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 12:34 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

6.18min 52.513ppb

response 207532

(8) 3,5-Dinitroaniline #2

6.18min 47.934ppb m

response 333103

(+) = Expected Retention Time

BB077749.D BBB2349_041423.M

Wed Jul 19 08:43:22 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626850.D\dad1B.ch Vial: 4
 Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626850.D\dad1A.ch
 Acq On : 20-Jul-2023, 13:57:22 Operator: fouads
 Sample : fc7686-1cf,4 Inst : G1315B
 Misc : op97885,GGG3303,900,,,10,4,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 21 09:44:32 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	15.46	15.45	750640	1511220	117.662	122.847
Spiked Amount	500.000	Range	70 - 136	Recovery	=	23.53%# 24.57%#
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D.	N.D.
2) HMX	5.62	5.62	196124	196049	52.409	51.893m
3) DNX	0.00	0.00	0	0	N.D.	N.D.
4) MNX	0.00	0.00	0	0	N.D. d	N.D. d
5) 1,3,5-Trinitrobe	8.18	8.18	3430399	3375599	336.645m	325.115m
6) RDX	8.41	8.42	142567	155221	26.895m	30.439m
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D. d
8) Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
9) 2,4,6-Trinitroto	12.72	12.73	1923985	2723885	194.076	208.043m
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
13) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
14) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
15) 3,5-Dinitroanili	17.40	17.40	462080	783316	38.949	41.390
16) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D. d
17) p-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
18) 4-Amino-2,6-Dini	19.09	19.10	197195	340516	58.712	46.559
19) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20) 2-Amino-4,6-Dini	21.25	21.26	3066848	3707267	179.562	141.625m
21) PETN	0.00	0.00	0	0	N.D.	N.D. d

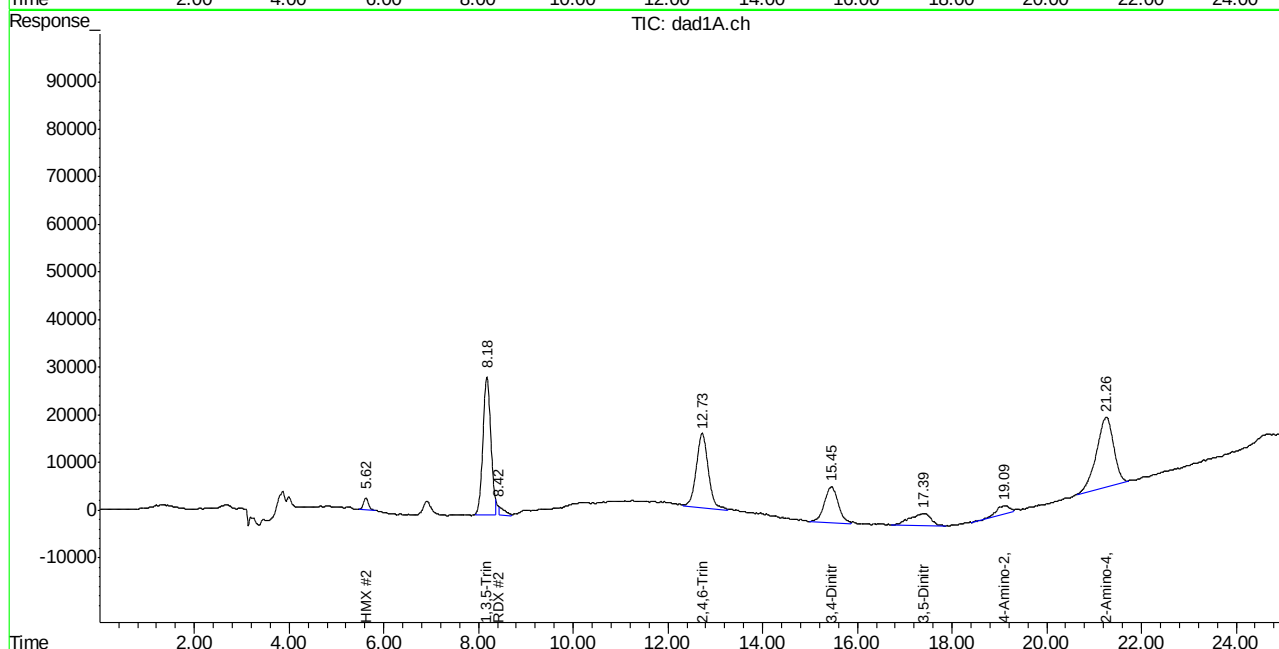
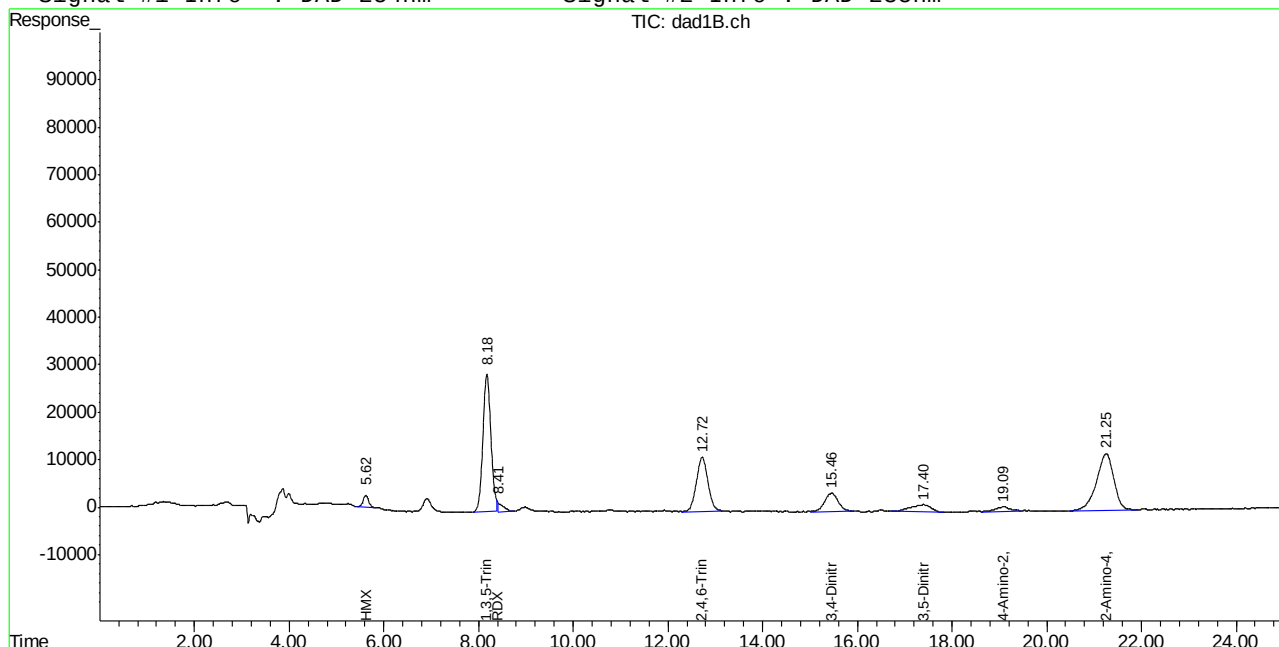
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG626850.D GGG3229_071123.M Fri Jul 21 10:09:28 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626850.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626850.D\dad1A.ch
Acq On : 20-Jul-2023, 13:57:22 Operator: fouads
Sample : fc7686-1cf,4 Inst : G1315B
Misc : op97885,GGG3303,900,,,10,4,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 21 9:47 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Page 1 of 1

Sample Number: FC7686-1

Method: SW846 8330B

Lab FileID: GG626850.D

Analyst approved: 07/21/23 10:18 Fouad Sekkar

Injection Time: 07/20/23 13:57

Supervisor approved: 07/21/23 11:45 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
HMX	2691-41-0	2	5.62	Poor instrument integration
1,3,5-Trinitrobenzene	99-35-4	1	8.18	Poor instrument integration
1,3,5-Trinitrobenzene	99-35-4	2	8.18	Poor instrument integration
RDX	121-82-4	1	8.41	Missed peak
RDX	121-82-4	2	8.42	Missed peak
2,4,6-Trinitrotoluene	118-96-7	2	12.73	Poor instrument integration
2-amino-4,6-Dinitrotoluene	35572-78-2	2	21.26	Poor instrument integration

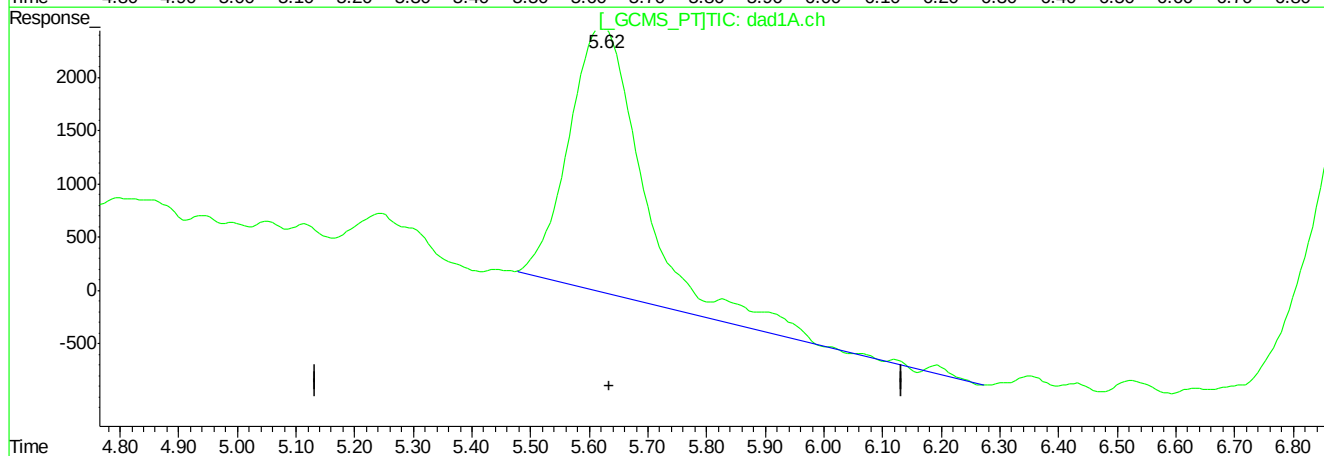
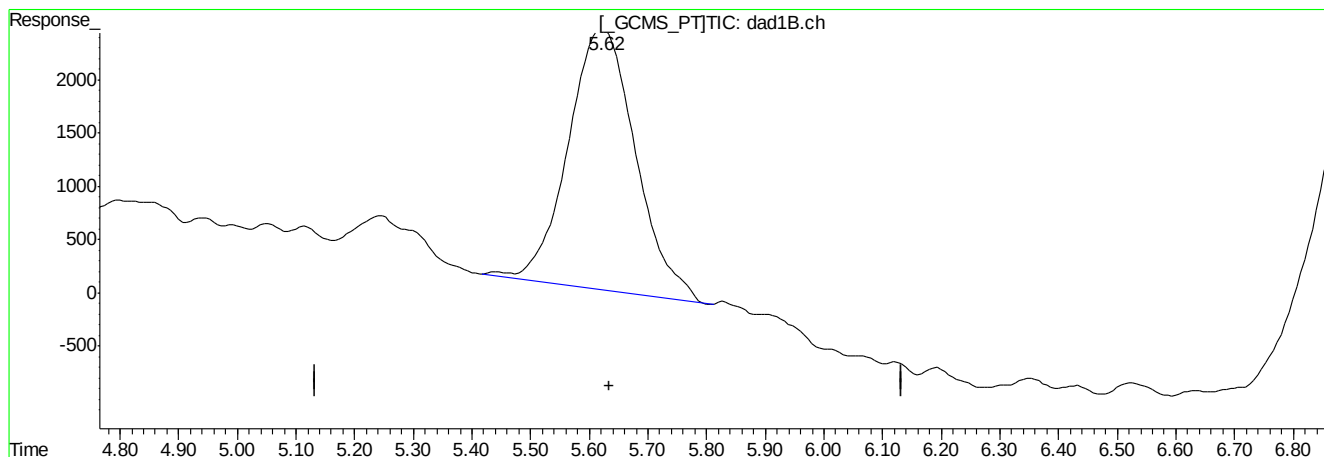
9.1.2.1

9

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626850.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626850.D\dad1A.ch
Acq On : 20-Jul-2023, 13:57:22 Operator: fouads
Sample : fc7686-1cf,4 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 21 9:44 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

5.62min 52.409ppb

response 196124

(2) HMX #2

5.62min 59.899ppb

response 226295

(+) = Expected Retention Time

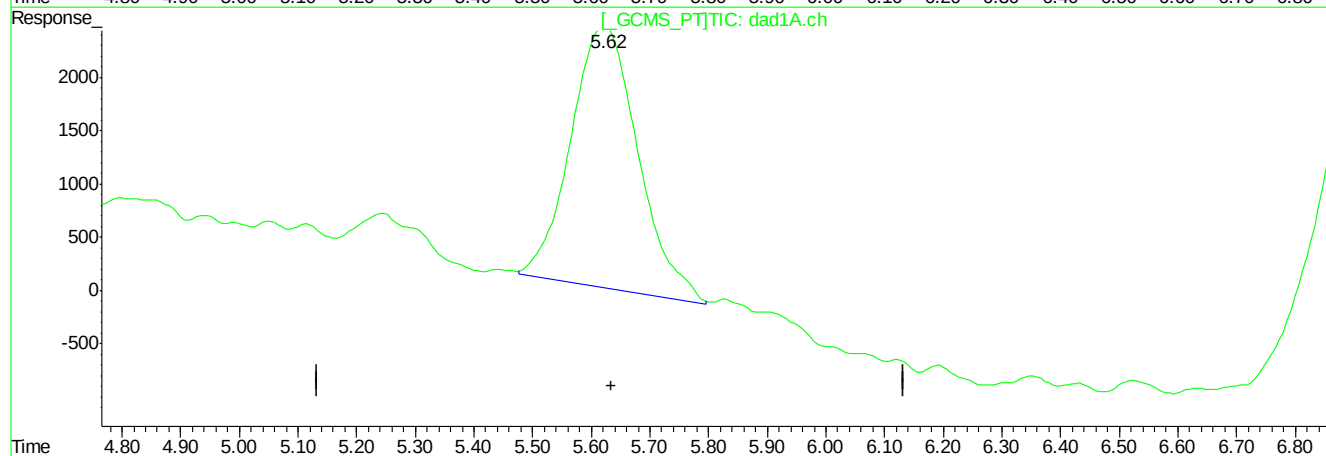
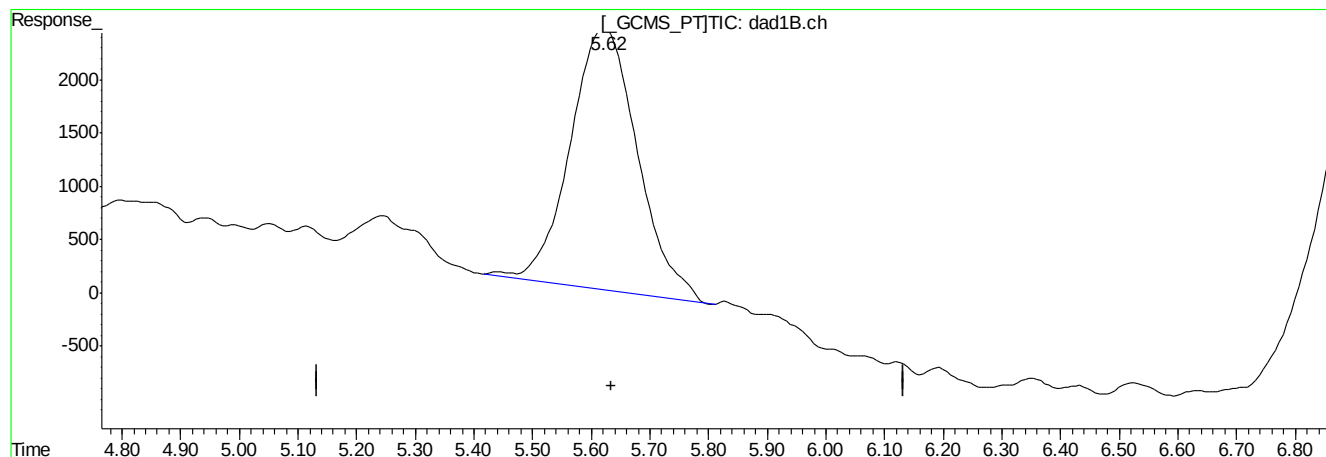
GG626850.D GGG3229_071123.M

Fri Jul 21 09:44:40 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626850.D\dad1B.ch Vial: 4
 Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626850.D\dad1A.ch
 Acq On : 20-Jul-2023, 13:57:22 Operator: fouads
 Sample : fc7686-1cf,4 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 21 9:44 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Multiple Level Calibration



(2) HMX

5.62min 52.409ppb

response 196124

(2) HMX #2

5.62min 51.893ppb m

response 196049

(+) = Expected Retention Time

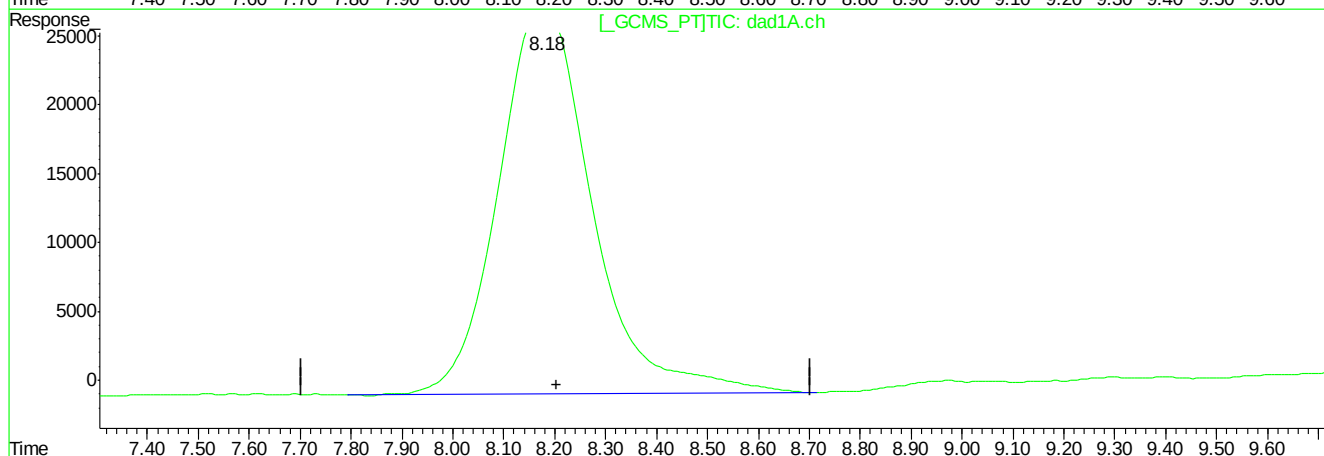
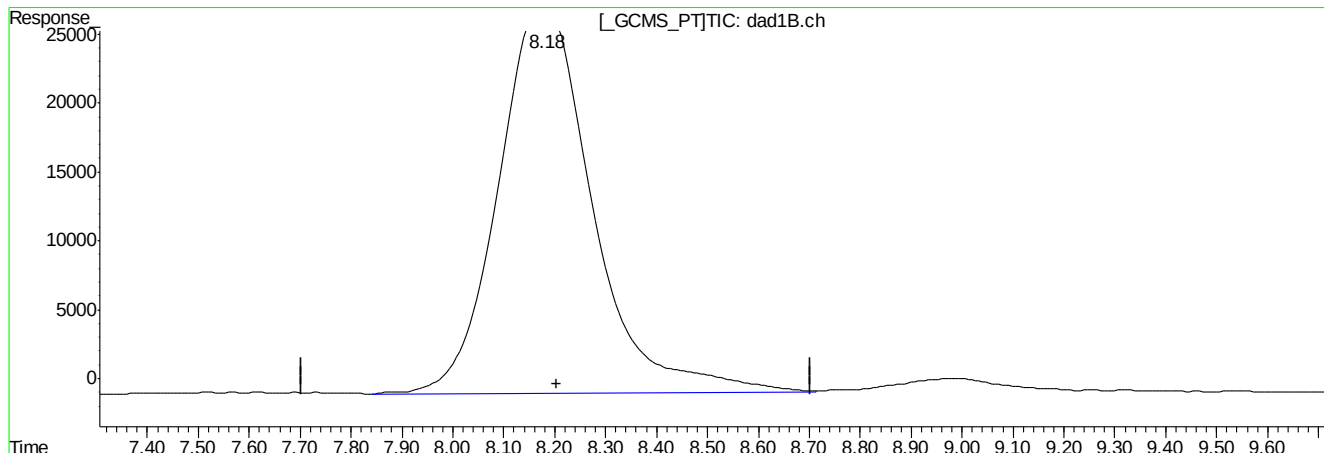
GG626850.D GGG3229_071123.M

Fri Jul 21 09:44:45 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626850.D\dad1B.ch Vial: 4
 Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626850.D\dad1A.ch
 Acq On : 20-Jul-2023, 13:57:22 Operator: fouads
 Sample : fc7686-1cf,4 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 21 9:44 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Multiple Level Calibration



QEdit

(5) 1,3,5-Trinitrobenzene

8.18min 356.699ppb

response 3634756

(5) 1,3,5-Trinitrobenzene #2

8.18min 345.036ppb

response 3582428

(+) = Expected Retention Time

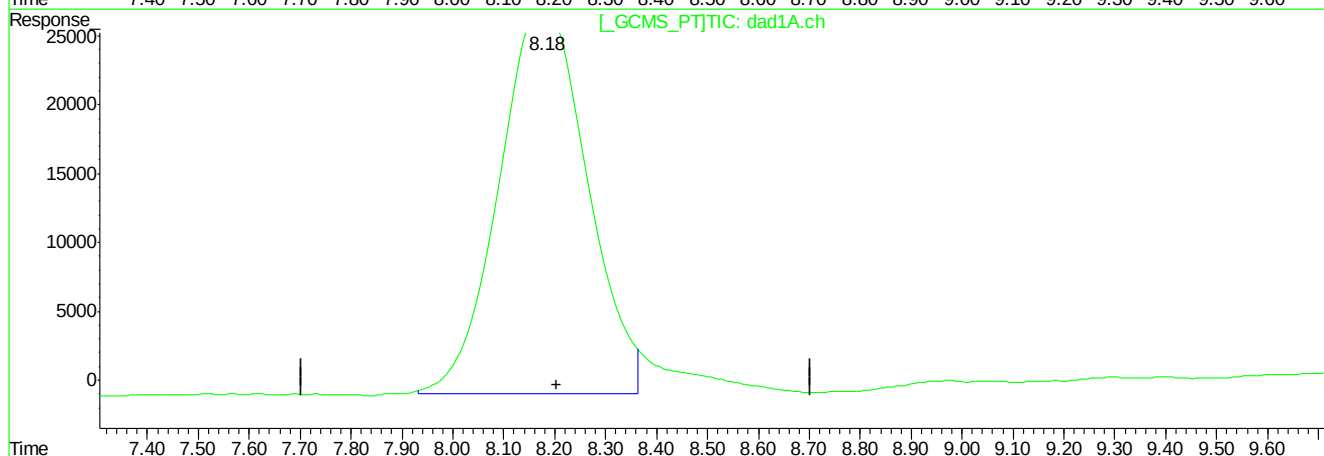
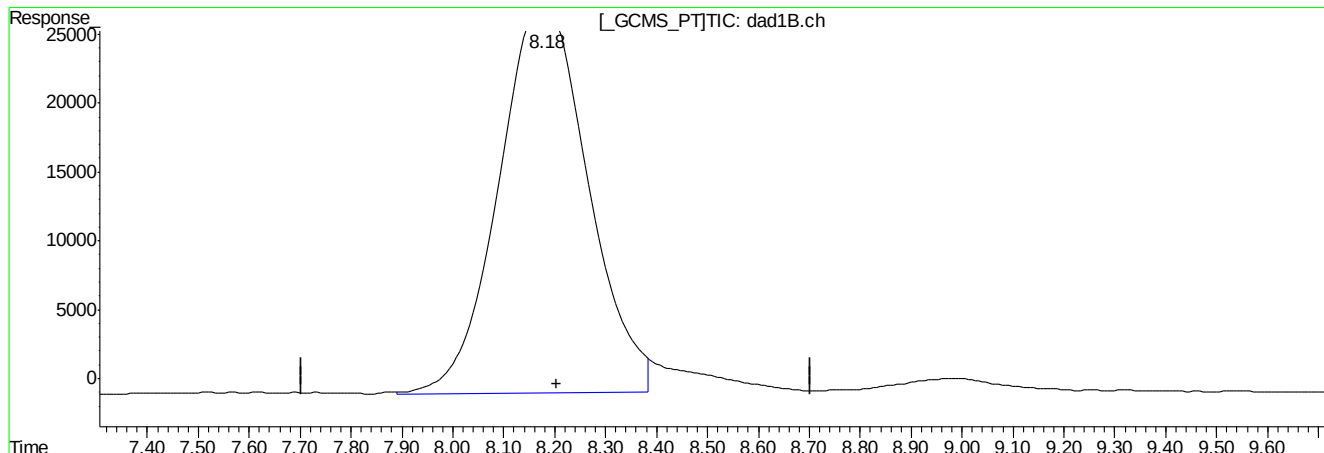
GG626850.D GGG3229_071123.M

Fri Jul 21 09:45:34 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626850.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626850.D\dad1A.ch
Acq On : 20-Jul-2023, 13:57:22 Operator: fouads
Sample : fc7686-1cf,4 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 21 9:44 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration



QEdit

(5) 1,3,5-Trinitrobenzene

8.18min 336.645ppb m

response 3430399

(5) 1,3,5-Trinitrobenzene #2

8.18min 325.115ppb m

response 3375599

(+) = Expected Retention Time

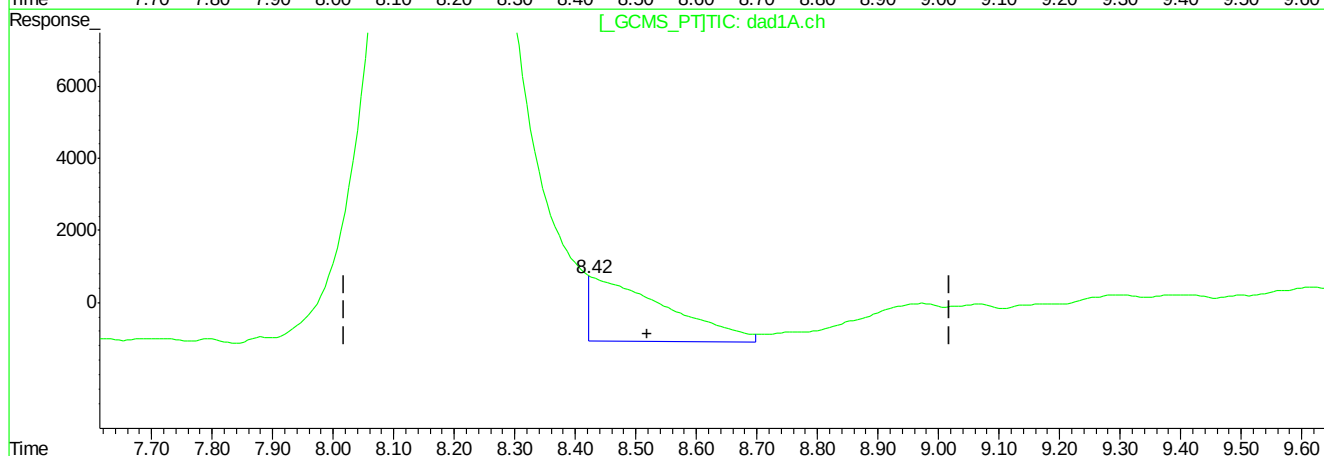
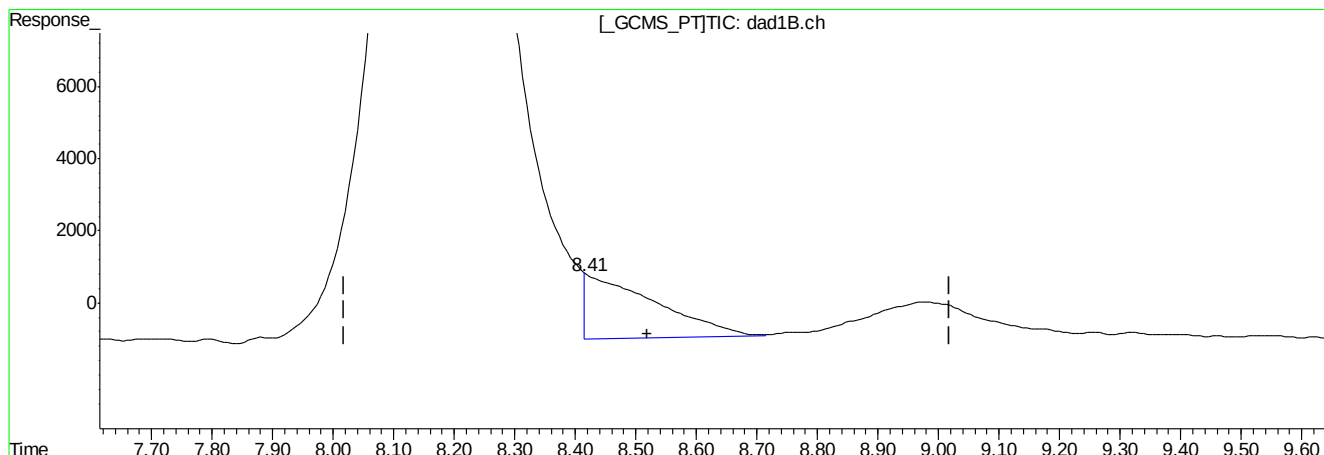
GG626850.D GGG3229_071123.M

Fri Jul 21 09:45:46 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626850.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626850.D\dad1A.ch
Acq On : 20-Jul-2023, 13:57:22 Operator: fouads
Sample : fc7686-1cf,4 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 21 9:44 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration



QEdit

(6) RDX

8.41min 26.895ppb m

response 142567

(6) RDX #2

8.42min 30.439ppb m

response 155221

(+) = Expected Retention Time

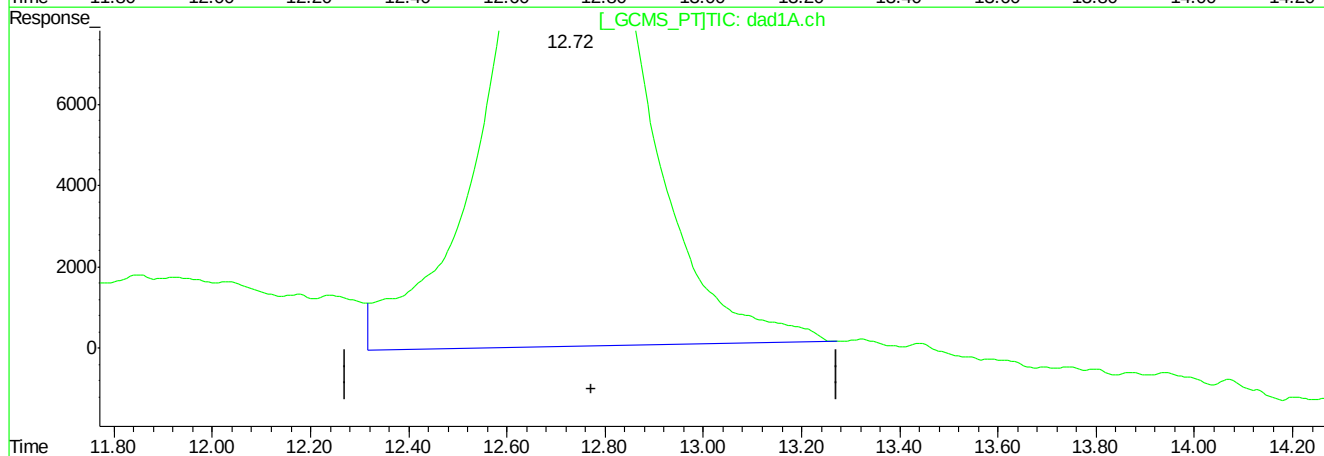
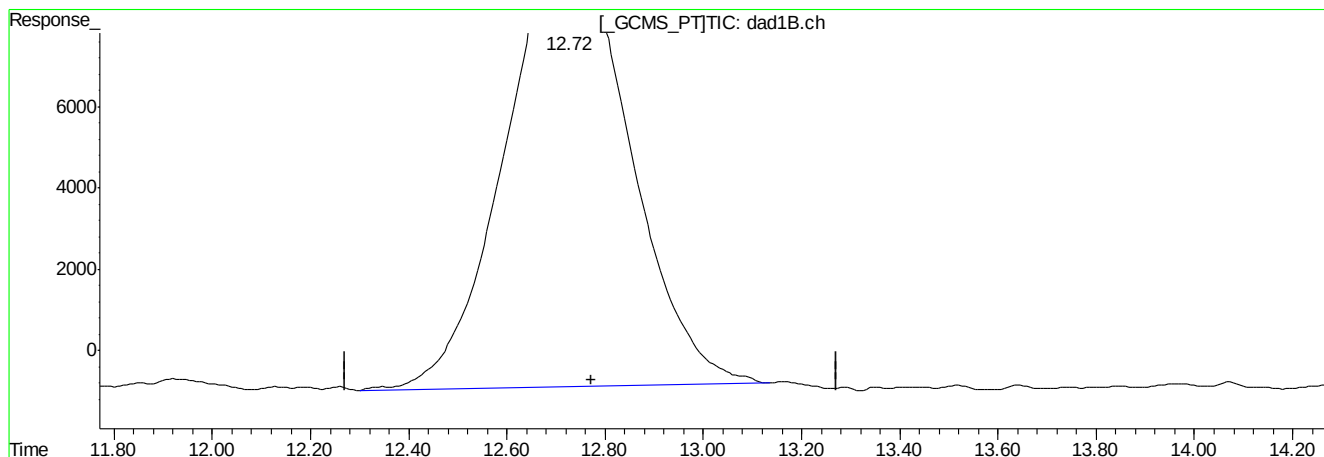
GG626850.D GGG3229_071123.M

Fri Jul 21 09:46:03 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626850.D\dad1B.ch Vial: 4
 Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626850.D\dad1A.ch
 Acq On : 20-Jul-2023, 13:57:22 Operator: fouads
 Sample : fc7686-1cf,4 Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 21 9:44 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Multiple Level Calibration



QEdit

(9) 2,4,6-Trinitrotoluene

12.72min 194.076ppb

response 1923985

(9) 2,4,6-Trinitrotoluene #2

12.73min 228.564ppb

response 2992560

(+) = Expected Retention Time

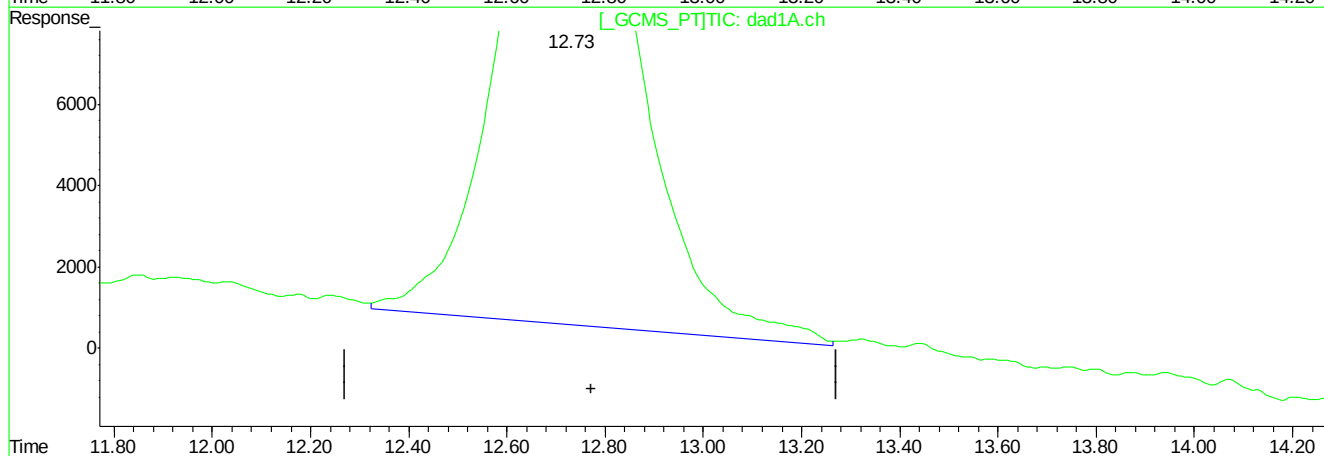
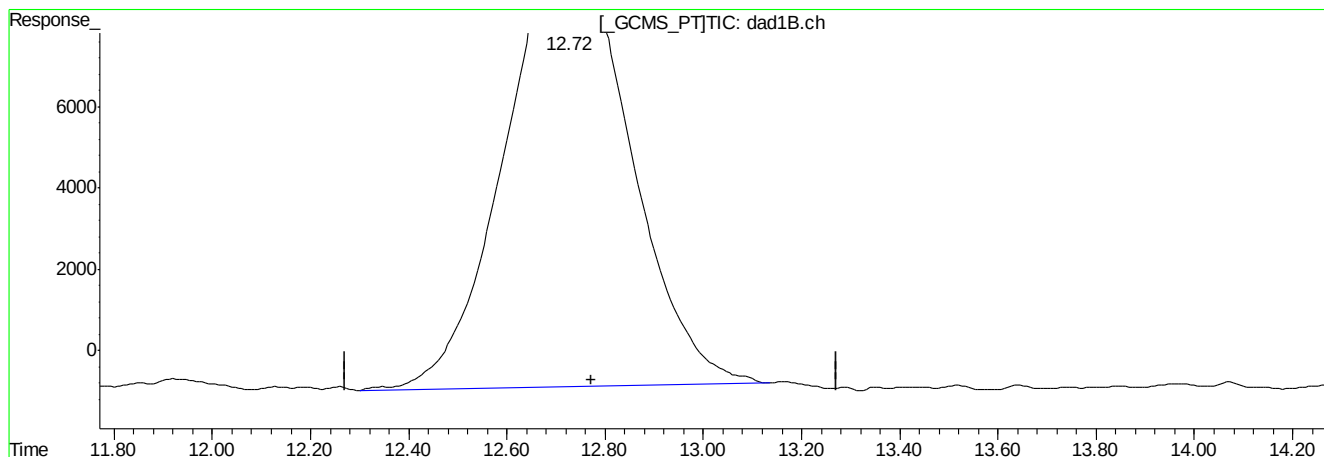
GG626850.D GGG3229_071123.M

Fri Jul 21 09:46:19 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626850.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626850.D\dad1A.ch
Acq On : 20-Jul-2023, 13:57:22 Operator: fouads
Sample : fc7686-1cf,4 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 21 9:44 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration



QEdit

(9) 2,4,6-Trinitrotoluene

12.72min 194.076ppb

response 1923985

(9) 2,4,6-Trinitrotoluene #2

12.73min 208.043ppb m

response 2723885

(+) = Expected Retention Time

GG626850.D GGG3229_071123.M

Fri Jul 21 09:46:25 2023

Naresh Jiawan
07/20/23 10:52

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077750.D\dad1B.ch Vial: 8
 Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077750.D\dad1A.ch
 Acq On : 18-Jul-2023, 11:59:34 Operator: fouads
 Sample : FC7686-2 Inst : G1315B
 Misc : op97885,GBB2394,850,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jul 18 12:34:25 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Jul 07 08:35:11 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	11.00	11.00	1113538	1956194	464.620	485.760
Spiked Amount	500.000	Range	70 - 136	Recovery	= 92.92%	97.15%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	1.45	1.45	370487	1080731	251.414	265.881
3) DNX	0.00	0.00	0	0	N.D. d	N.D. d
4) MNX	0.00	0.00	0	0	N.D.	N.D.
5) RDX	2.87	2.87	149630	242201	77.238m	80.075
6) 1,3,5-Trinitrobe	4.62	4.62	5365203	8599485	1287.559	1296.503
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D. d
8) 3,5-Dinitroanili	6.18	6.18	189722	297738	48.007	42.844m
9) Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
12) 2,4,6-Trinitroto	9.64	9.64	2777879	3436544	774.203	715.304
13) 2-Amino-4,6-Dini	10.07	10.06	363913	683594	114.634	133.022
14) 4-Amino-2,6-Dini	10.49	10.48	168661	418217	71.205	82.491
16) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
17) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D. d	N.D. d
18) o-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D.
19) p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D. d
20) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
21) PETN	0.00	0.00	0	0	N.D.	N.D.

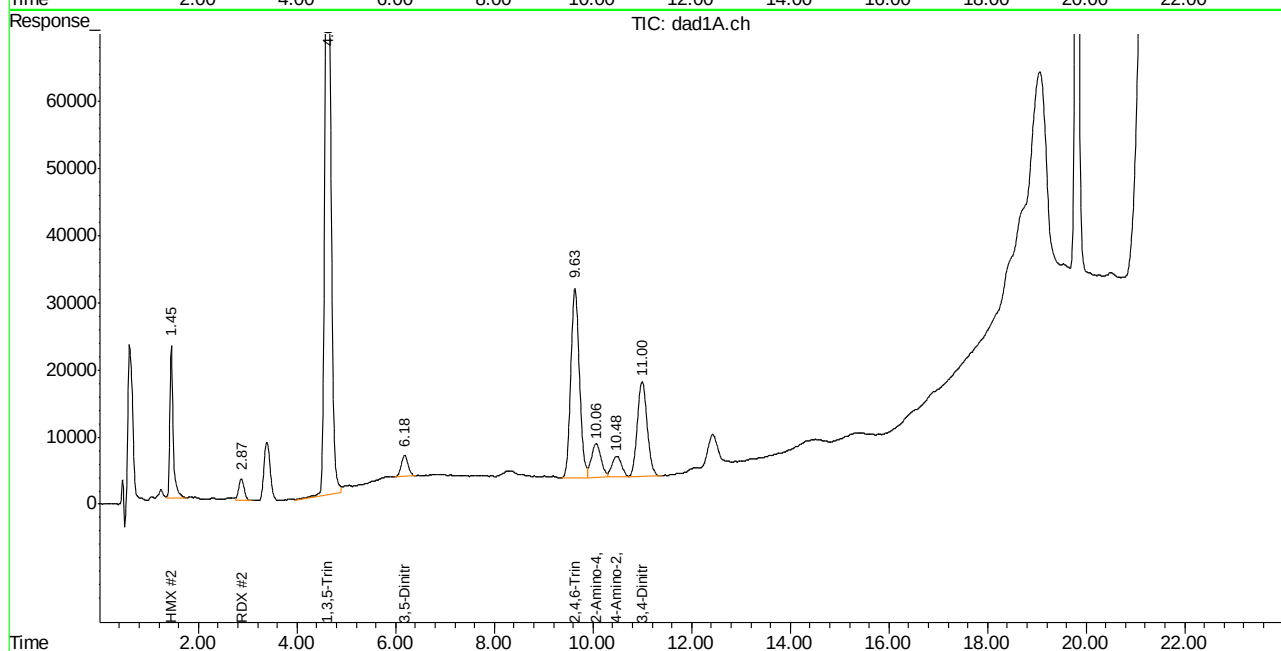
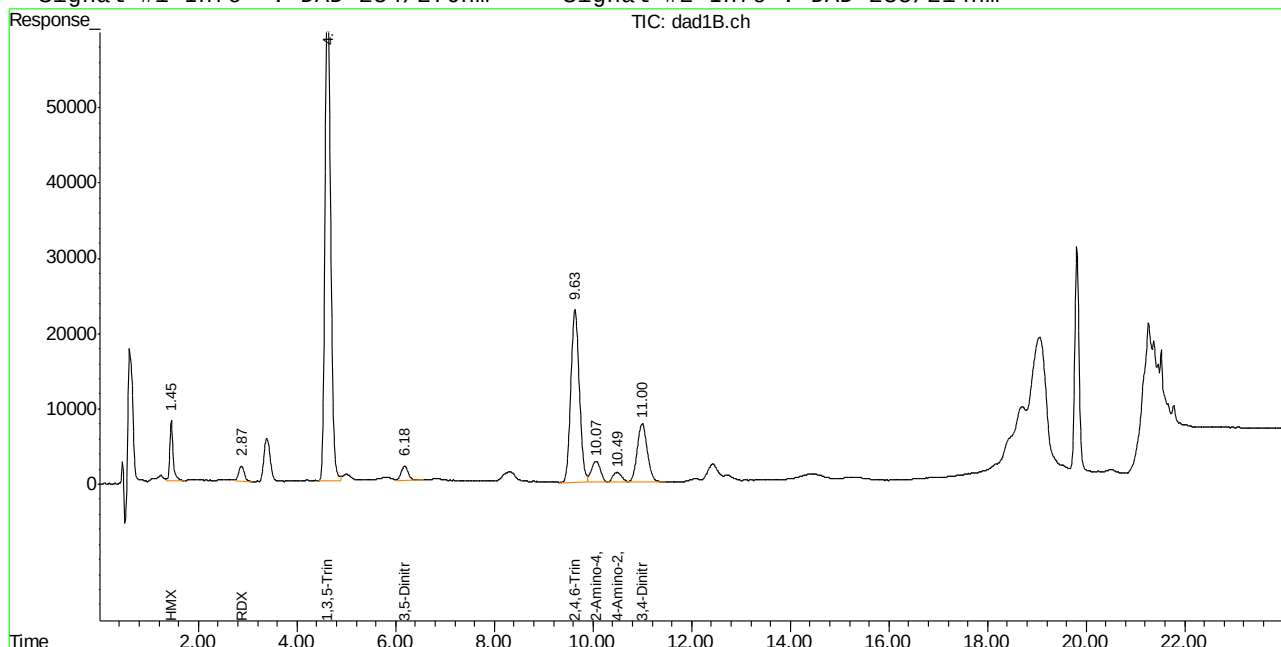
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB077750.D BBB2349_041423.M Thu Jul 20 08:40:53 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077750.D\dad1B.ch Vial: 8
 Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077750.D\dad1A.ch
 Acq On : 18-Jul-2023, 11:59:34 Operator: fouads
 Sample : FC7686-2 Inst : G1315B
 Misc : op97885,GBB2394,850,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jul 19 15:28 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Jul 07 08:35:11 2023
 Response via : Multiple Level Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

FC7686-2

Method:

SW846 8330B

Lab FileID:

BB077750.D

Analyst approved:

07/20/23 09:08 Fouad Sekkar

Injection Time:

07/18/23 11:59

Supervisor approved:

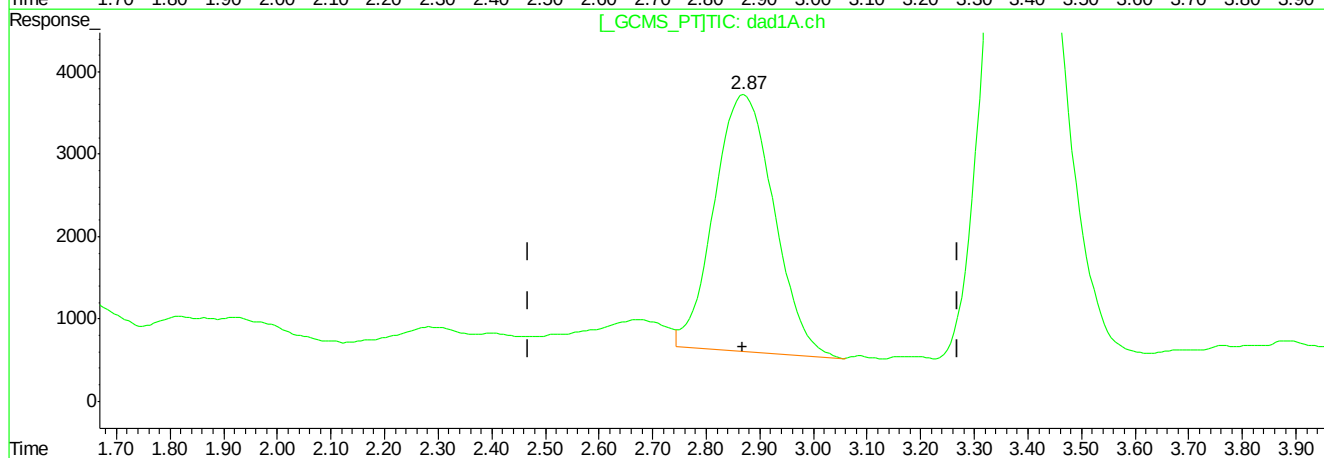
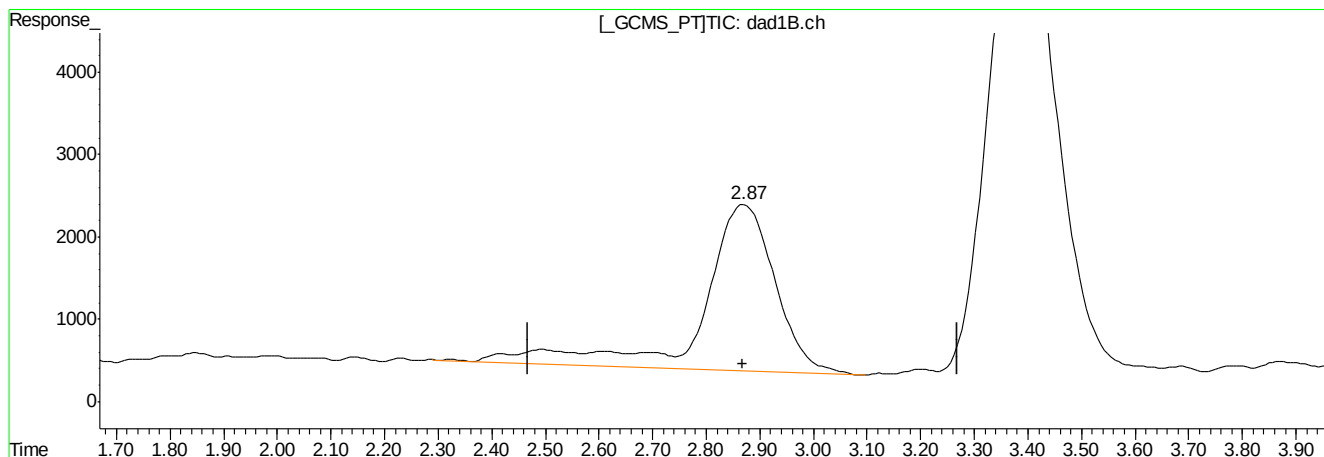
07/20/23 10:52 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
RDX	121-82-4	1	2.87	Poor instrument integration
3,5-Dinitroaniline	618-87-1	2	6.18	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077750.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077750.D\dad1A.ch
Acq On : 18-Jul-2023, 11:59:34 Operator: fouads
Sample : FC7686-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 12:34 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(5) RDX

2.87min 100.653ppb

response 194991

(5) RDX #2

2.87min 80.075ppb

response 242201

(+) = Expected Retention Time

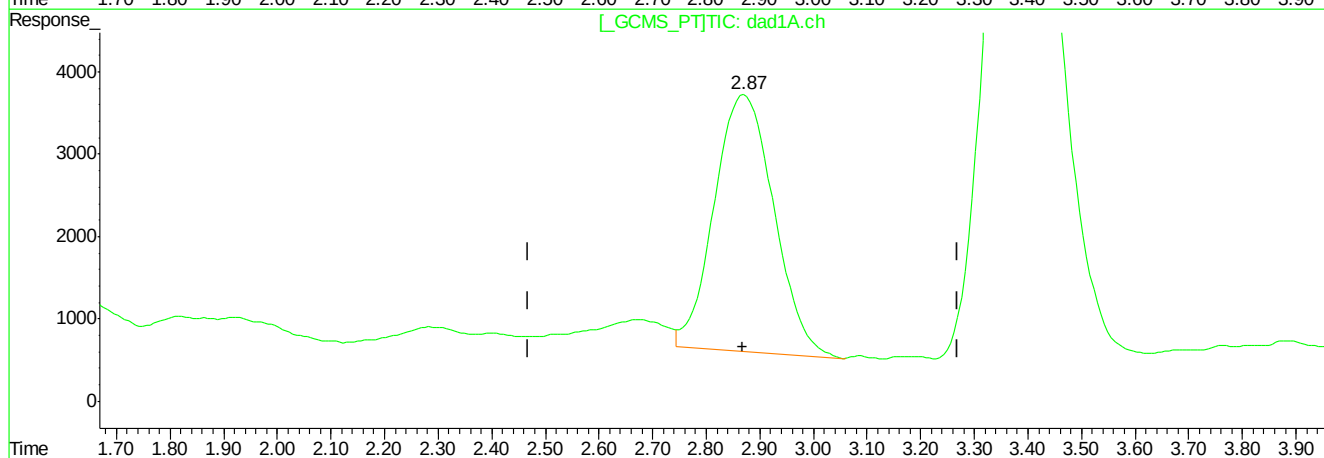
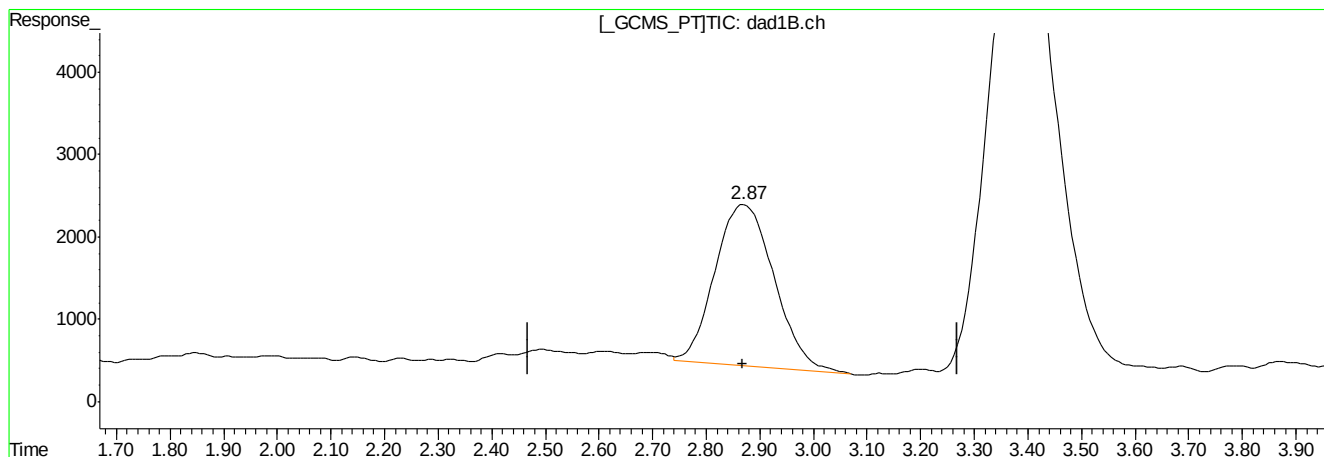
BB077750.D BBB2349_041423.M

Wed Jul 19 08:45:10 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077750.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077750.D\dad1A.ch
Acq On : 18-Jul-2023, 11:59:34 Operator: fouads
Sample : FC7686-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 12:34 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



QEdit

(5) RDX

2.87min 77.238ppb m

response 149630

(5) RDX #2

2.87min 80.075ppb

response 242201

(+) = Expected Retention Time

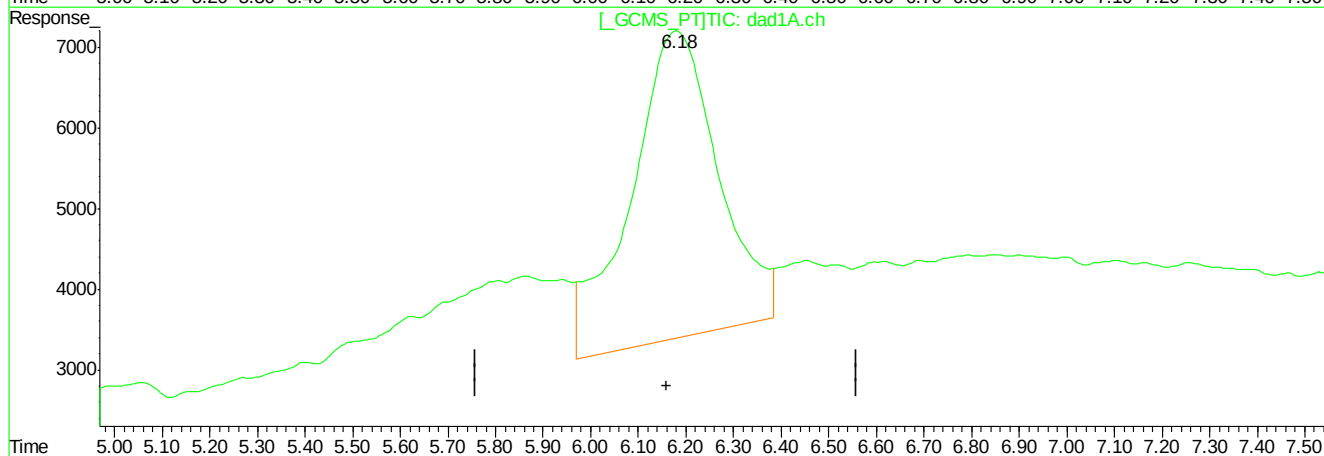
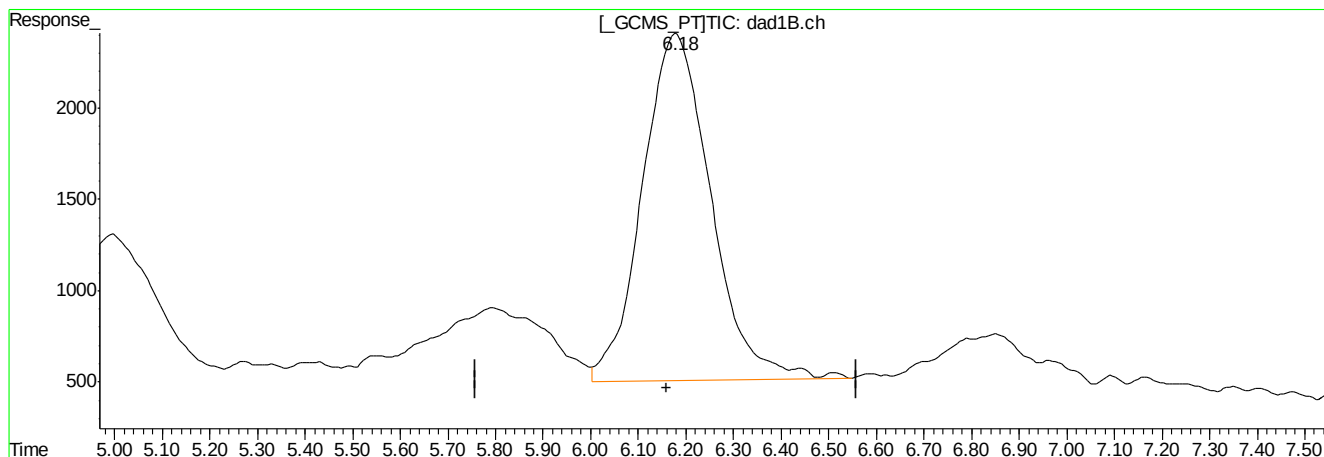
BB077750.D BBB2349_041423.M

Wed Jul 19 08:45:15 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077750.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077750.D\dad1A.ch
Acq On : 18-Jul-2023, 11:59:34 Operator: fouads
Sample : FC7686-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 12:34 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

6.18min 48.007ppb

response 189722

(8) 3,5-Dinitroaniline #2

6.18min 70.256ppb

response 488224

(+) = Expected Retention Time

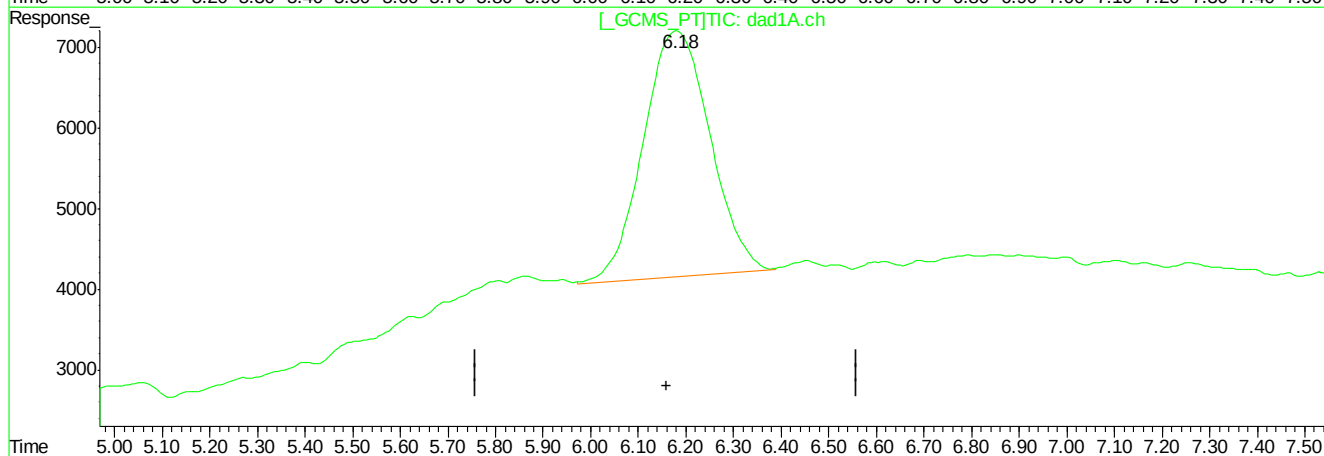
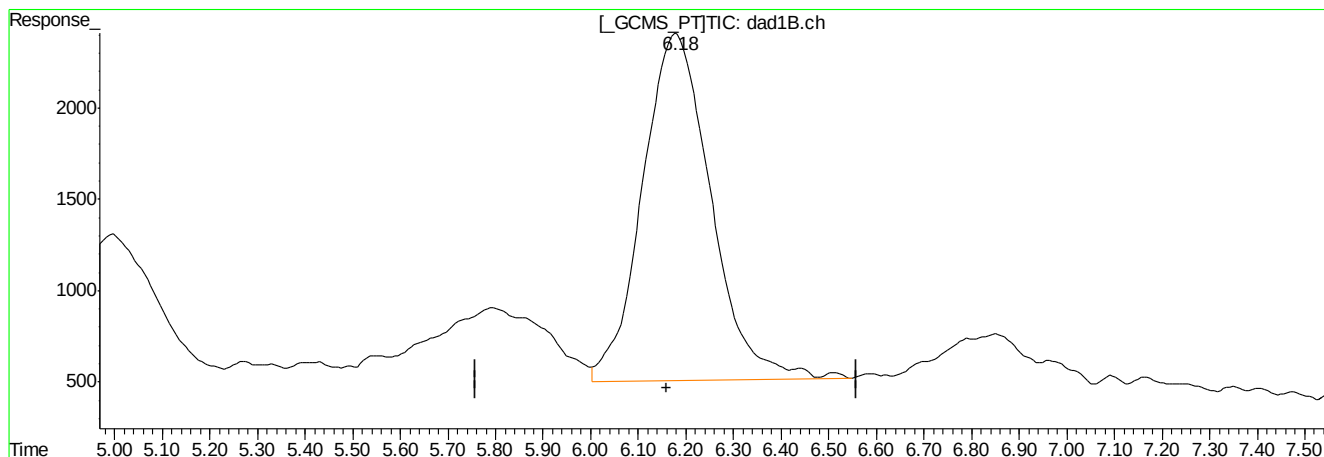
BB077750.D BBB2349_041423.M

Wed Jul 19 08:45:25 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077750.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077750.D\dad1A.ch
Acq On : 18-Jul-2023, 11:59:34 Operator: fouads
Sample : FC7686-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 12:34 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

6.18min 48.007ppb

response 189722

(8) 3,5-Dinitroaniline #2

6.18min 42.844ppb m

response 297738

(+) = Expected Retention Time

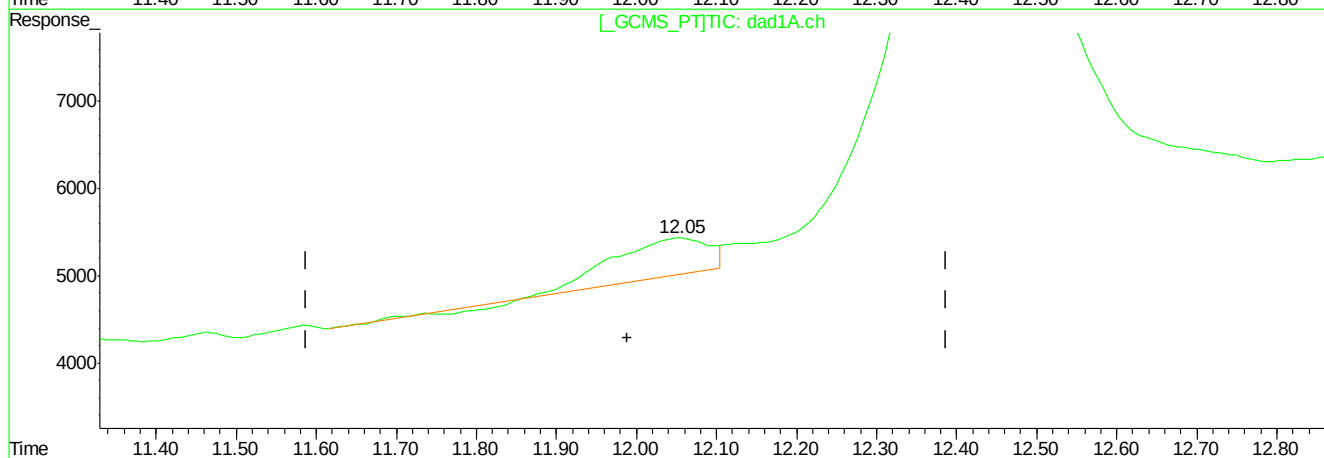
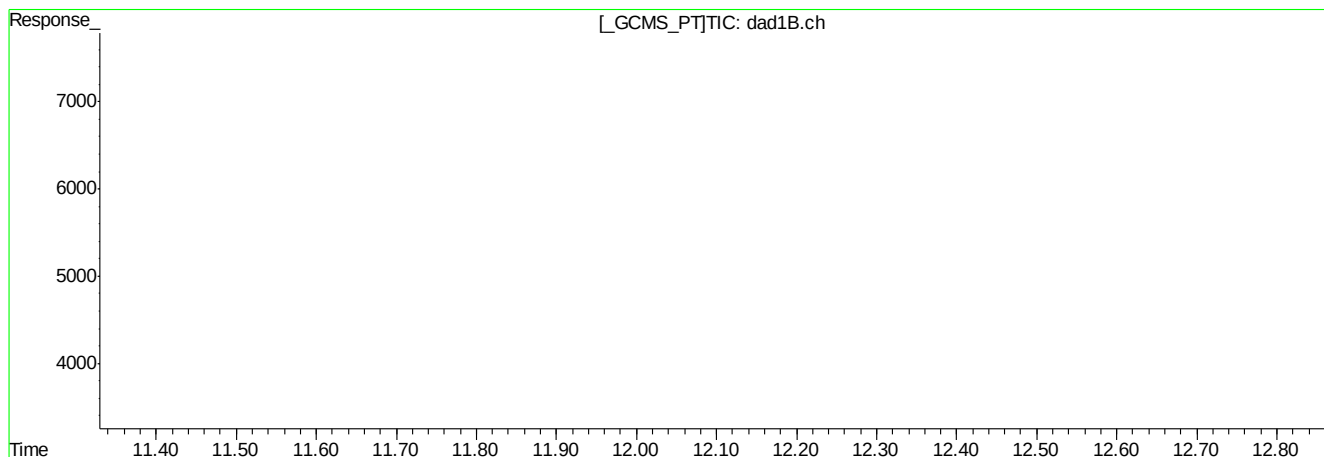
BB077750.D BBB2349_041423.M

Wed Jul 19 08:45:30 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077750.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077750.D\dad1A.ch
Acq On : 18-Jul-2023, 11:59:34 Operator: fouads
Sample : FC7686-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 12:34 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



QEdit

(17) 2,6-Dinitrotoluene

12.06min 20.395ppb

response 56208

(17) 2,6-Dinitrotoluene #2

12.06min 9.485ppb

response 32499

(+) = Expected Retention Time

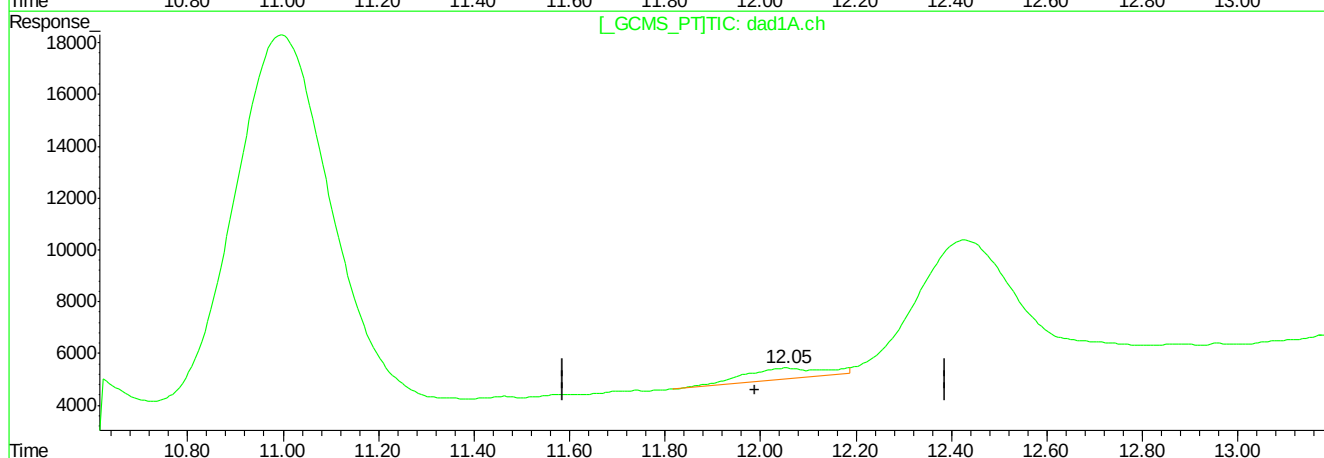
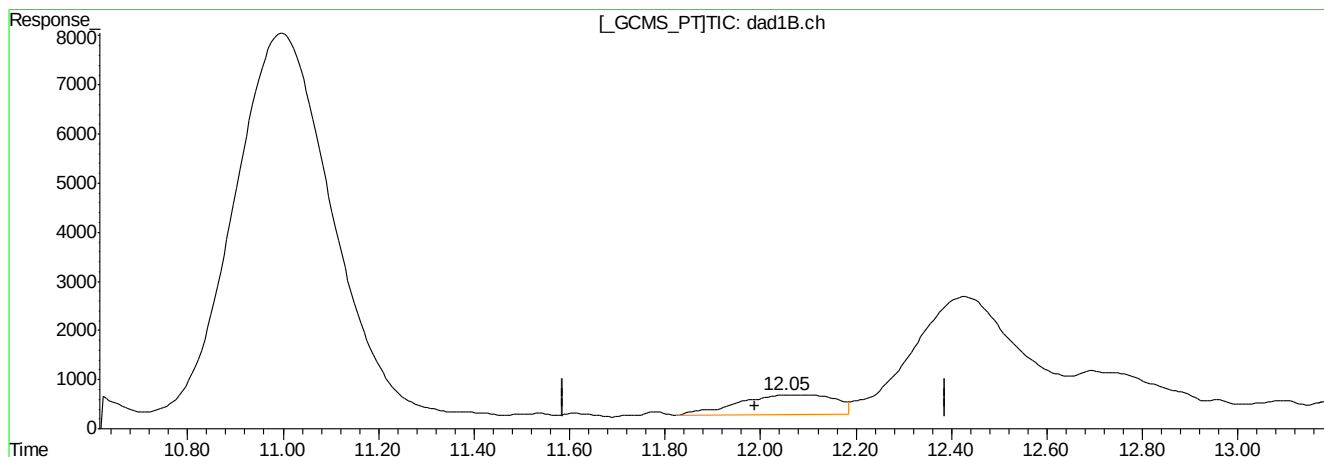
BB077750.D BBB2349_041423.M

Wed Jul 19 08:45:44 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077750.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077750.D\dad1A.ch
Acq On : 18-Jul-2023, 11:59:34 Operator: fouads
Sample : FC7686-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 12:34 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(17) 2,6-Dinitrotoluene

12.06min 20.395ppb

response 56208

(17) 2,6-Dinitrotoluene #2

12.05min 14.344ppb m

response 49151

QEdit

(+) = Expected Retention Time

BB077750.D BBB2349_041423.M

Wed Jul 19 08:45:56 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626841.D\dad1B.ch Vial: 8
 Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626841.D\dad1A.ch
 Acq On : 19-Jul-2023, 11:44:13 Operator: fouads
 Sample : fc7686-2cf Inst : G1315B
 Misc : op97885,GGG3302,850,,,20,1,soil Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 19 15:26:16 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	15.44	15.44	3273382	6159593	513.097	500.714
Spiked Amount	500.000	Range	69 - 134	Recovery	=	102.62% 100.14%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	5.62	5.62	880677	980176	235.340	259.445
3) DNX	0.00	0.00	0	0	N.D.	N.D.
4) MNX	0.00	0.00	0	0	N.D. d	N.D. d
5) 1,3,5-Trinitrobe	8.18	8.18	13962547	13687977	1370.225m	1318.336m
6) RDX	8.41	8.42	562030	501264	106.026m	98.300m
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D. d
8) Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
9) 2,4,6-Trinitroto	12.74	12.74	7705815	10365528	777.300	791.692
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
13) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
14) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
15) 3,5-Dinitroanili	17.35	17.35	1707677	2883572	143.942	152.367
16) o-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
17) p-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
18) 4-Amino-2,6-Dini	18.99	19.01	742298	1440568	221.008	196.968
19) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D. d
20) 2-Amino-4,6-Dini	21.12	21.12	10775943	13628855	630.924	520.651
21) PETN	0.00	0.00	0	0	N.D.	N.D.

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG626841.D GGG3229_071123.M Thu Jul 20 08:37:37 2023

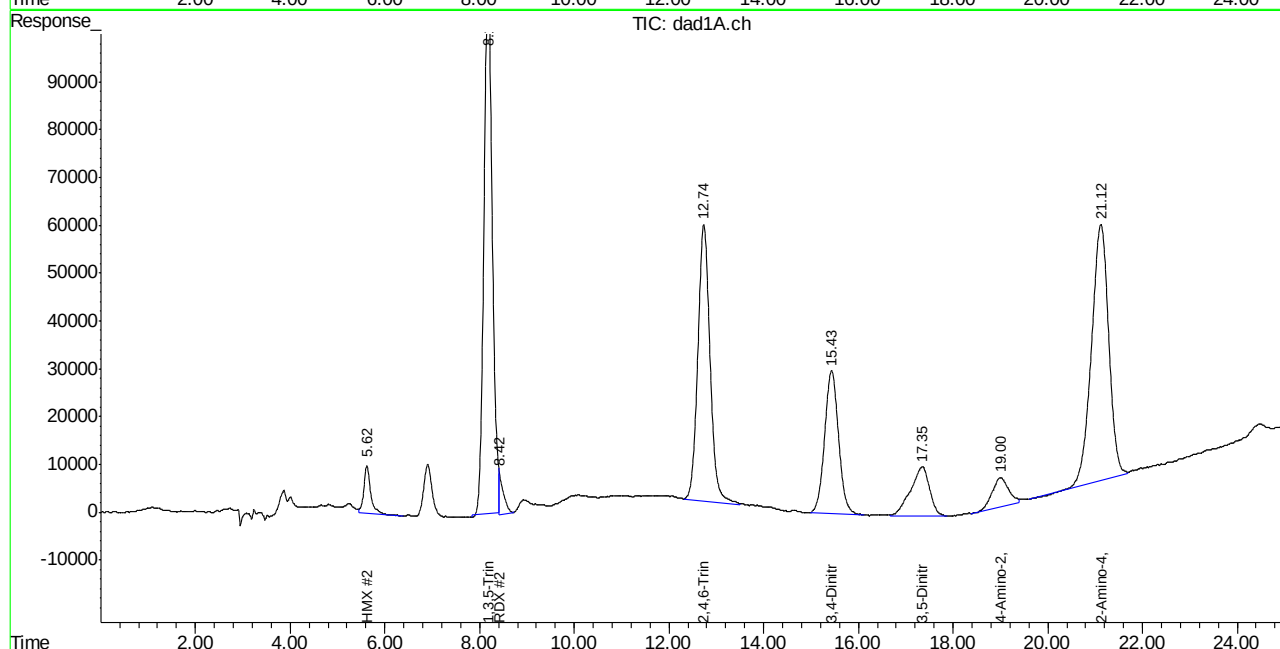
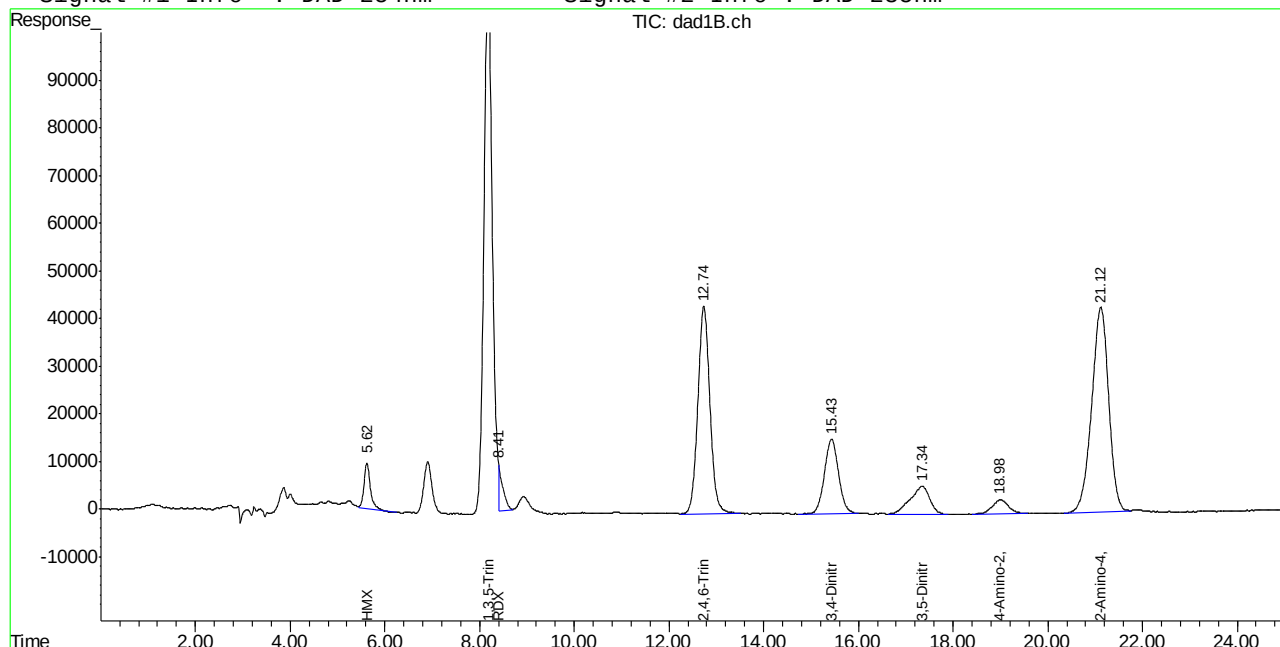
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626841.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626841.D\dad1A.ch
Acq On : 19-Jul-2023, 11:44:13 Operator: fouads
Sample : fc7686-2cf Inst : G1315B
Misc : op97885,GGG3302,850,,,20,1,soil Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 19 15:28 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number: FC7686-2

Method: SW846 8330B

Lab FileID: GG626841.D

Analyst approved: 07/20/23 09:54 Fouad Sekkar

Injection Time: 07/19/23 11:44

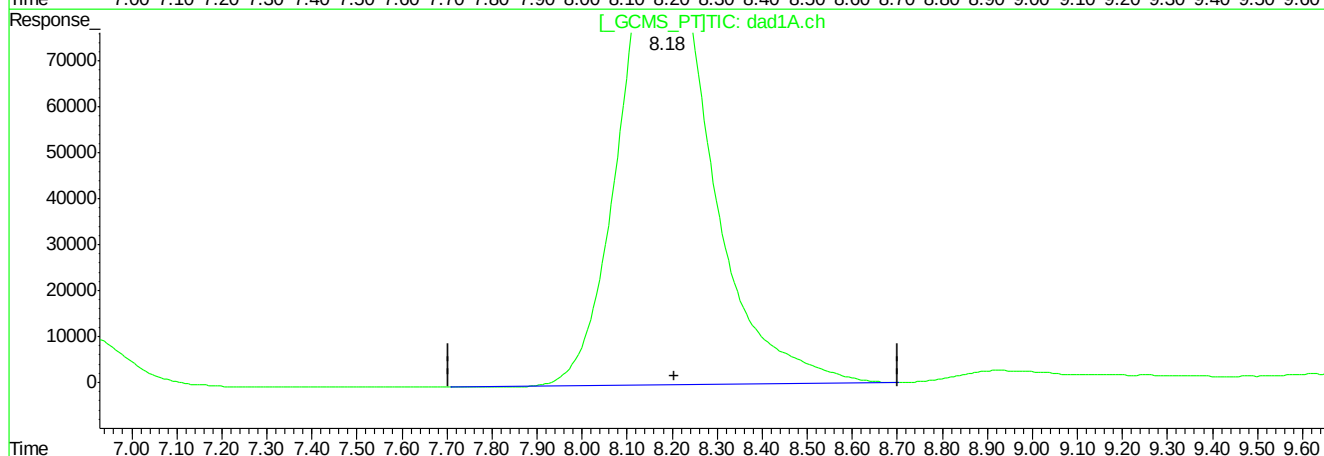
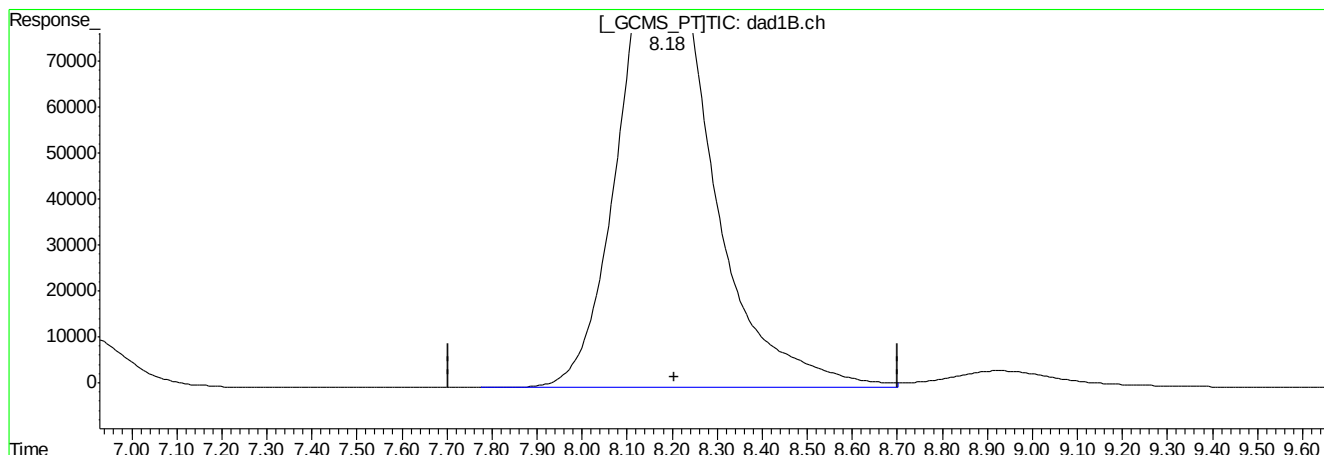
Supervisor approved: 07/20/23 10:52 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3,5-Trinitrobenzene	99-35-4	1	8.18	Poor instrument integration
1,3,5-Trinitrobenzene	99-35-4	2	8.18	Poor instrument integration
RDX	121-82-4	1	8.41	Overlapping peak
RDX	121-82-4	2	8.42	Overlapping peak

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626841.D\dad1B.ch Vial: 8
 Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626841.D\dad1A.ch
 Acq On : 19-Jul-2023, 11:44:13 Operator: fouads
 Sample : fc7686-2cf Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 19 15:26 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Multiple Level Calibration



QEdit

(5) 1,3,5-Trinitrobenzene

8.18min 1433.134ppb

response 14603592

(5) 1,3,5-Trinitrobenzene #2

8.18min 1376.675ppb

response 14293697

(+) = Expected Retention Time

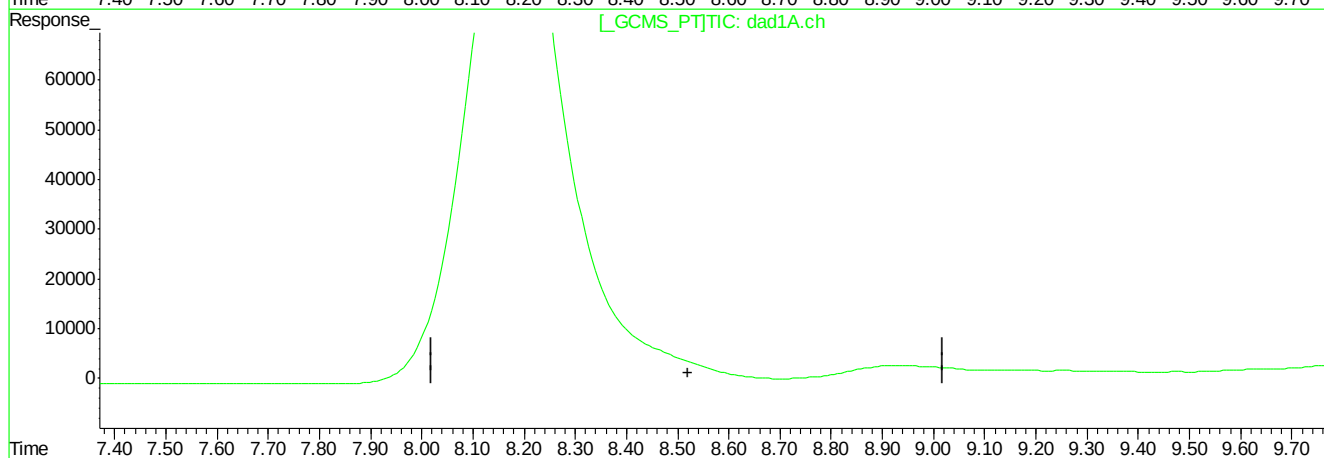
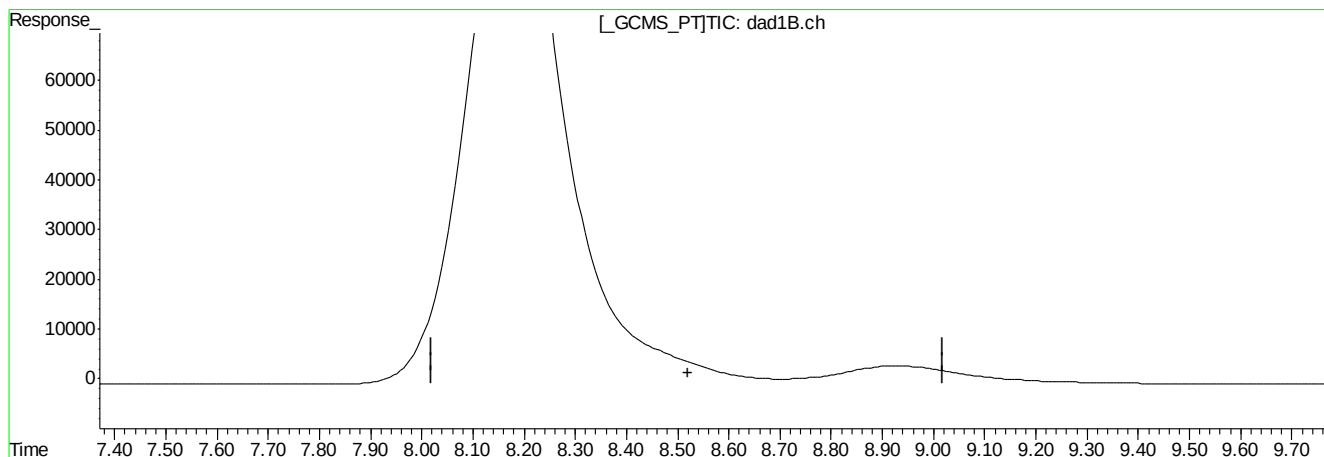
GG626841.D GGG3229_071123.M

Wed Jul 19 15:26:32 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626841.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626841.D\dad1A.ch
Acq On : 19-Jul-2023, 11:44:13 Operator: fouads
Sample : fc7686-2cf Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 19 15:26 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration



QEdit

(6) RDX

0.00min 0.000ppb

response 0

(6) RDX #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

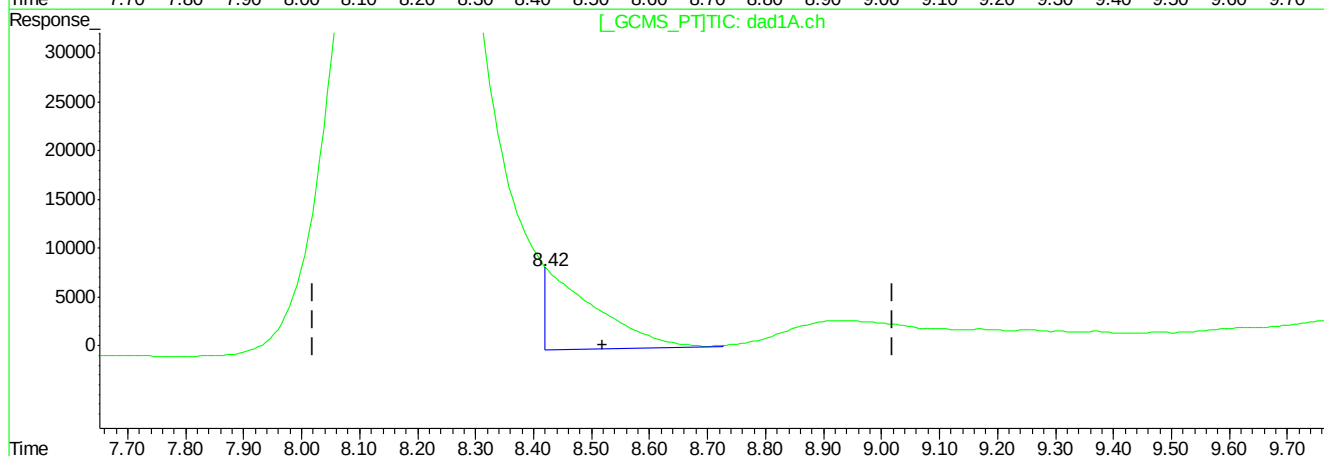
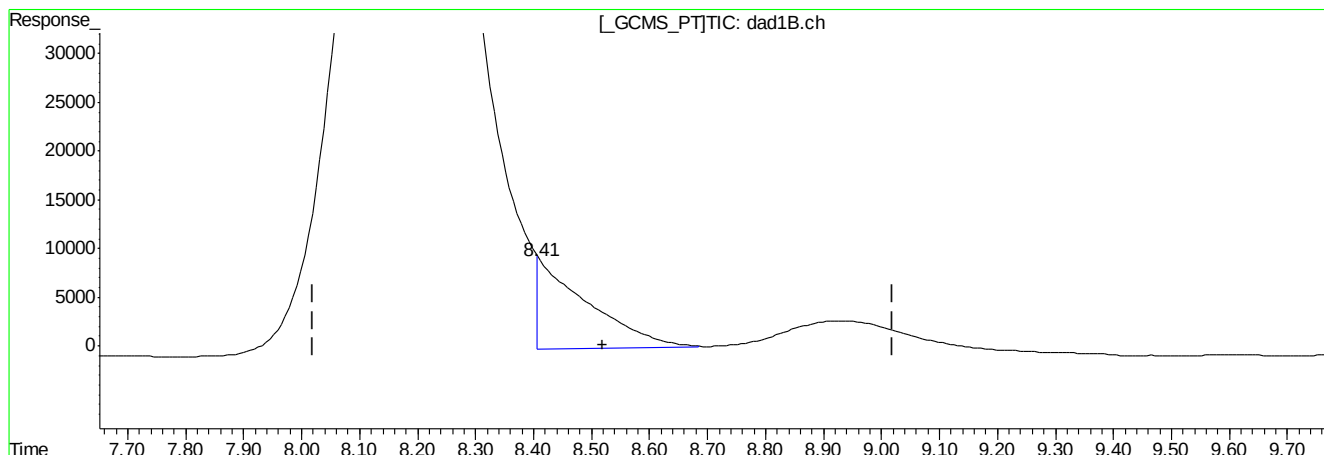
GG626841.D GGG3229_071123.M

Wed Jul 19 15:26:54 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626841.D\dad1B.ch Vial: 8
 Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626841.D\dad1A.ch
 Acq On : 19-Jul-2023, 11:44:13 Operator: fouads
 Sample : fc7686-2cf Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 19 15:26 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Multiple Level Calibration



QEdit

(6) RDX

8.41min 106.026ppb m

response 562030

(6) RDX #2

8.42min 98.300ppb m

response 501264

(+) = Expected Retention Time

GG626841.D GGG3229_071123.M

Wed Jul 19 15:27:51 2023

Naresh Jiawan
07/21/23 11:45

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077751.D\dad1B.ch Vial: 9
 Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077751.D\dad1A.ch
 Acq On : 18-Jul-2023, 12:30:34 Operator: fouads
 Sample : FC7686-3 Inst : G1315B
 Misc : op97885,GBB2394,970,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jul 18 14:16:59 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Jul 07 08:35:11 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	10.98	10.98	1046364	1865707	436.591	463.290
Spiked Amount	500.000	Range	70 - 136	Recovery	=	87.32% 92.66%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	1.45	1.45	64879	282215	44.027	69.430 #
3) DNX	0.00	0.00	0	0	N.D. d	N.D. d
4) MNX	0.00	0.00	0	0	N.D.	N.D.
5) RDX	2.86	2.87	64546	84539	33.318	27.950
6) 1,3,5-Trinitrobe	4.61	4.62	65716	113402	15.771	17.097
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D. d
8) 3,5-Dinitroanili	6.17	6.16	102076	170451	25.829m	24.528m
9) Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
10) Nitroglycerin	0.00	0.00	0	0	N.D. d	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
12) 2,4,6-Trinitroto	9.62	9.62	196096	223160	54.653	46.450
13) 2-Amino-4,6-Dini	10.05	10.05	90239	120497	28.426	23.448
14) 4-Amino-2,6-Dini	10.47	10.46	56993	93648	24.061	18.472
16) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
17) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D. d
18) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D. d
19) p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D. d
20) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
21) PETN	0.00	0.00	0	0	N.D.	N.D.

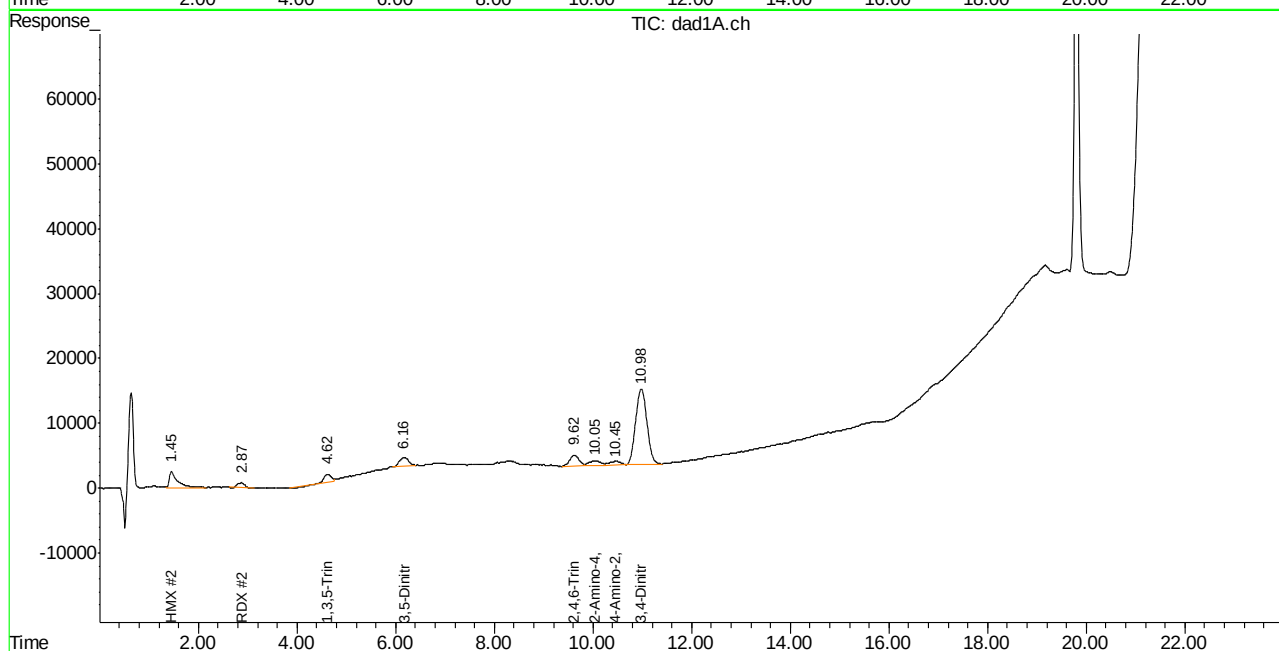
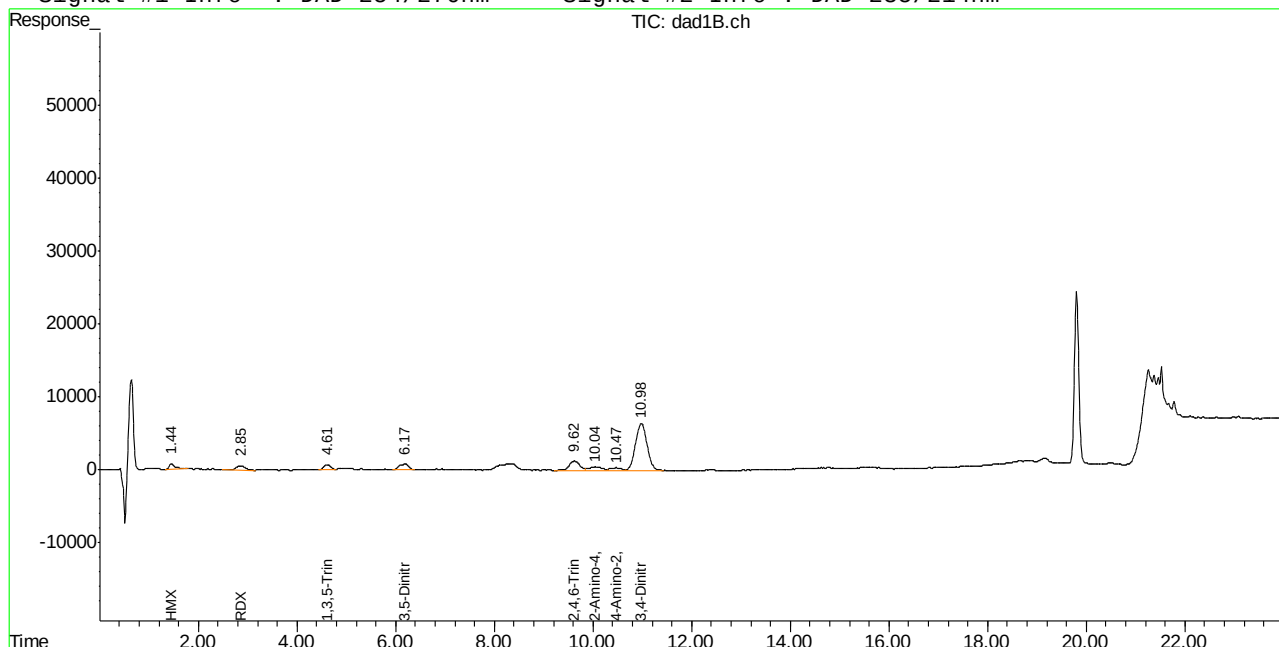
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB077751.D BBB2349_041423.M Thu Jul 20 08:40:54 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077751.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077751.D\dad1A.ch
Acq On : 18-Jul-2023, 12:30:34 Operator: fouads
Sample : FC7686-3 Inst : G1315B
Misc : op97885,GBB2394,970,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:02 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

FC7686-3

Method:

SW846 8330B

Lab FileID:

BB077751.D

Analyst approved:

07/20/23 09:08 Fouad Sekkar

Injection Time:

07/18/23 12:30

Supervisor approved:

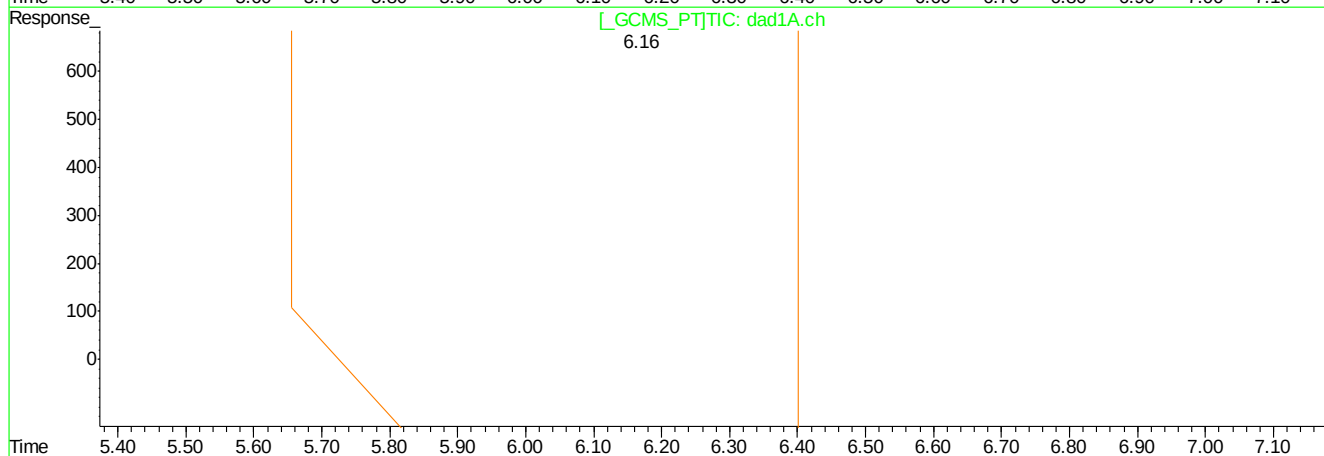
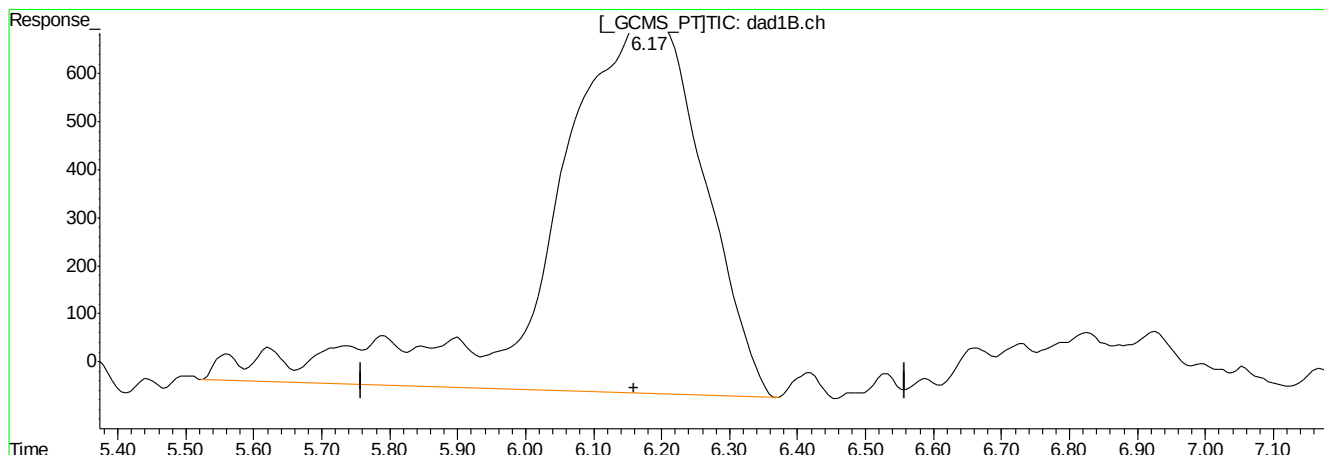
07/21/23 11:45 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
3,5-Dinitroaniline	618-87-1	2	6.16	Poor instrument integration
3,5-Dinitroaniline	618-87-1	1	6.17	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077751.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077751.D\dad1A.ch
Acq On : 18-Jul-2023, 12:30:34 Operator: fouads
Sample : FC7686-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 14:16 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

6.18min 31.156ppb

response 123128

(8) 3,5-Dinitroaniline #2

6.17min 65.560ppb

response 455592

(+) = Expected Retention Time

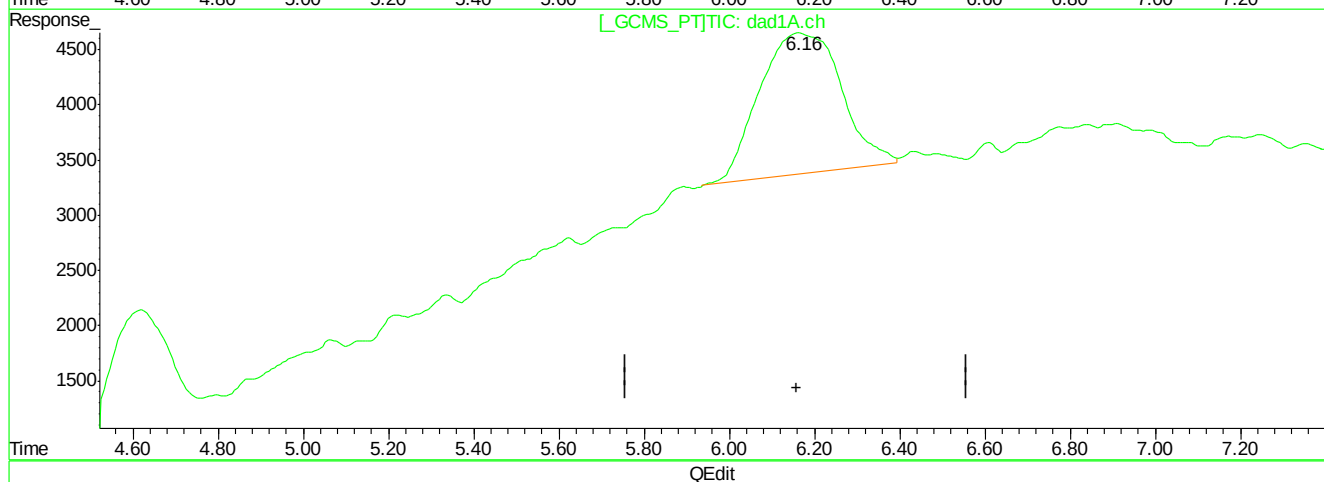
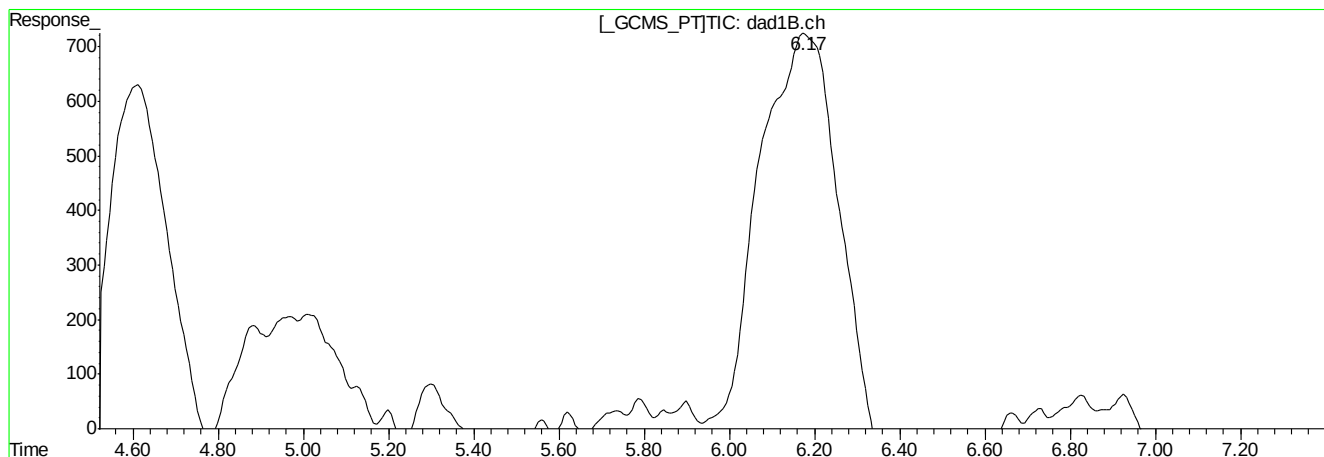
BB077751.D BBB2349_041423.M

Wed Jul 19 09:02:03 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077751.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077751.D\dad1A.ch
Acq On : 18-Jul-2023, 12:30:34 Operator: fouads
Sample : FC7686-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 14:16 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline
6.17min 25.829ppb m
response 102076

(8) 3,5-Dinitroaniline #2
6.16min 24.528ppb m
response 170451

(+) = Expected Retention Time
BB077751.D BBB2349_041423.M

Wed Jul 19 09:02:12 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1B.ch Vial: 5
 Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1A.ch
 Acq On : 20-Jul-2023, 14:29:49 Operator: fouads
 Sample : fc7686-3cf Inst : G1315B
 Misc : op97885,GGG3303,970,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 21 09:47:42 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	15.38	15.38	2984464	5789624	467.809	470.639
Spiked Amount	500.000	Range	70 - 136	Recovery	=	93.56% 94.13%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D.	N.D.
2) HMX	5.60	5.60	68961	71564	18.428	18.943m
3) DNX	0.00	0.00	0	0	N.D.	N.D.
4) MNX	0.00	0.00	0	0	N.D.	N.D.
5) 1,3,5-Trinitrobe	8.15	8.15	162779	160139	15.974	15.424
6) RDX	8.37	8.38	141345	145689	26.664m	28.570
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D. d
8) Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
9) 2,4,6-Trinitroto	12.67	12.65	486552	751362	49.079	57.387m
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
13) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
14) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
15) 3,5-Dinitroanili	17.01	17.03	298448	495479	25.156m	26.181m
16) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D. d
17) p-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
18) 4-Amino-2,6-Dini	18.98	19.00	130357	313015	38.812	42.798m
19) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D. d
20) 2-Amino-4,6-Dini	21.20	21.19	8043276	9810067	470.928	374.765
21) PETN	0.00	0.00	0	0	N.D.	N.D.

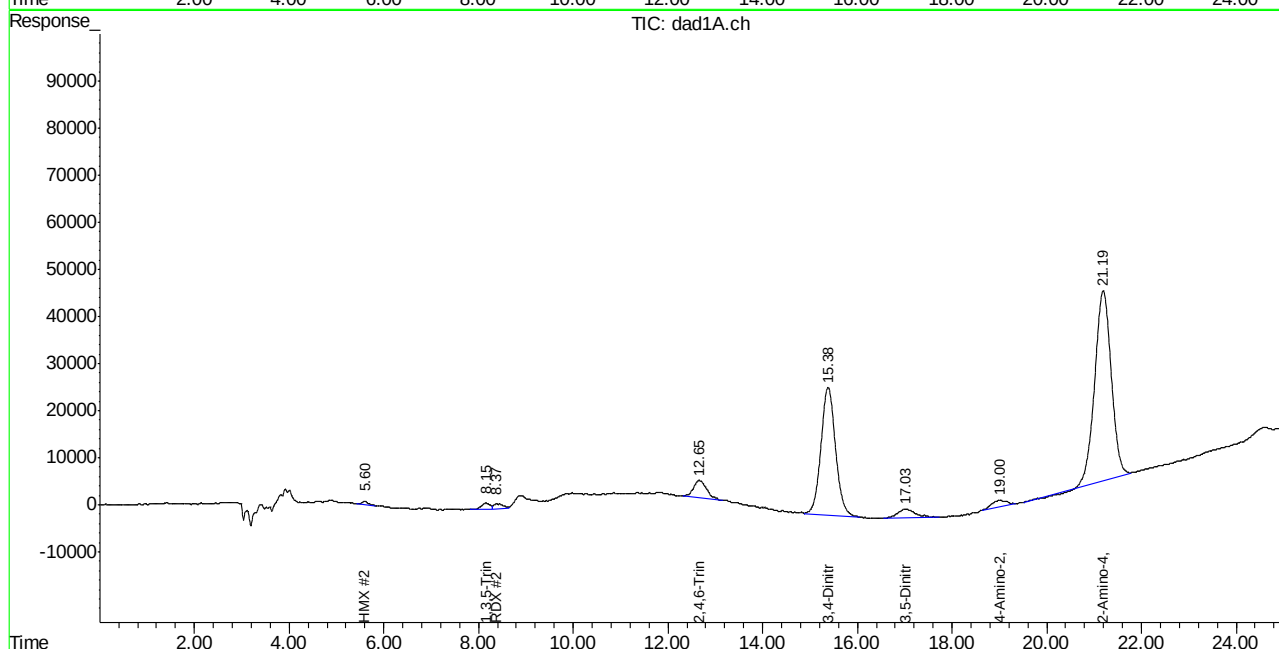
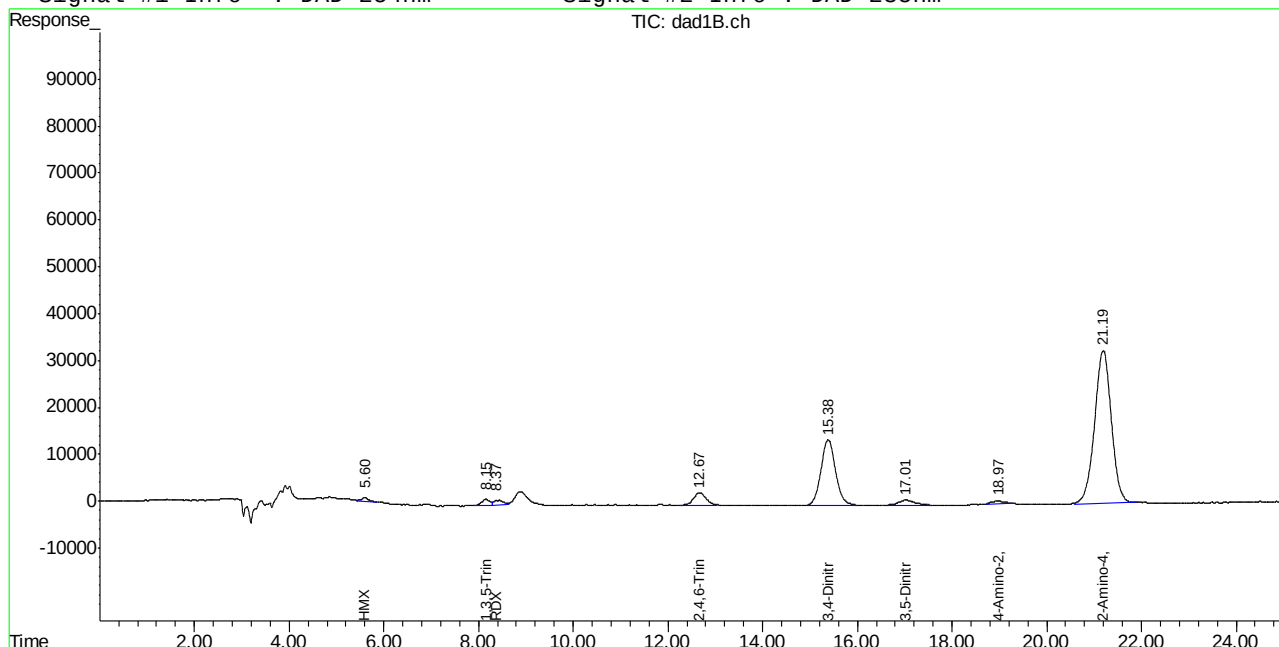
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG626851.D GGG3229_071123.M Fri Jul 21 10:09:29 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1A.ch
Acq On : 20-Jul-2023, 14:29:49 Operator: fouads
Sample : fc7686-3cf Inst : G1315B
Misc : op97885,GGG3303,970,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 21 9:51 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number: FC7686-3

Method: SW846 8330B

Lab FileID: GG626851.D

Analyst approved: 07/21/23 10:18 Fouad Sekkar

Injection Time: 07/20/23 14:29

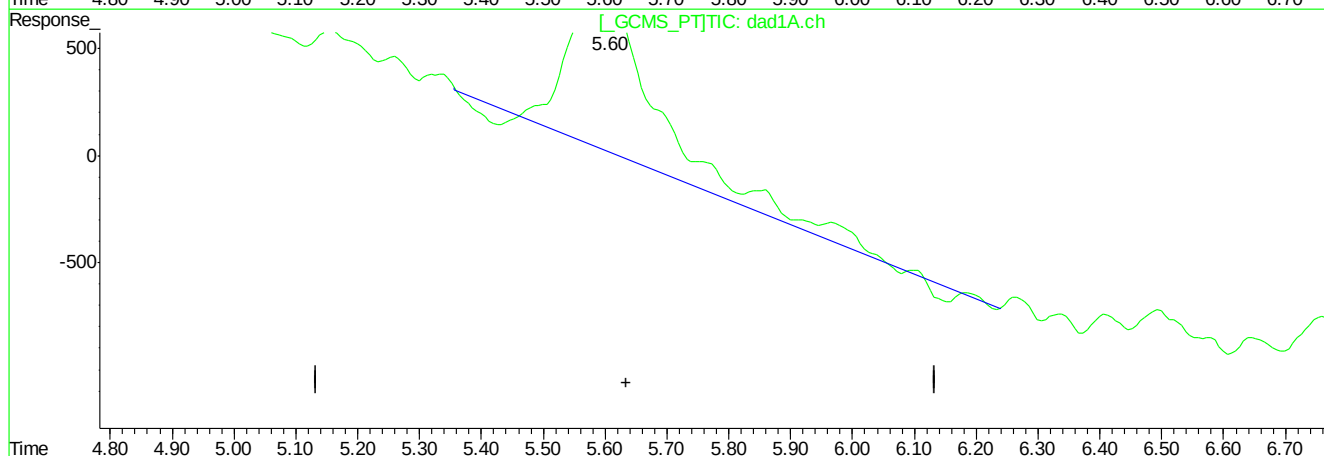
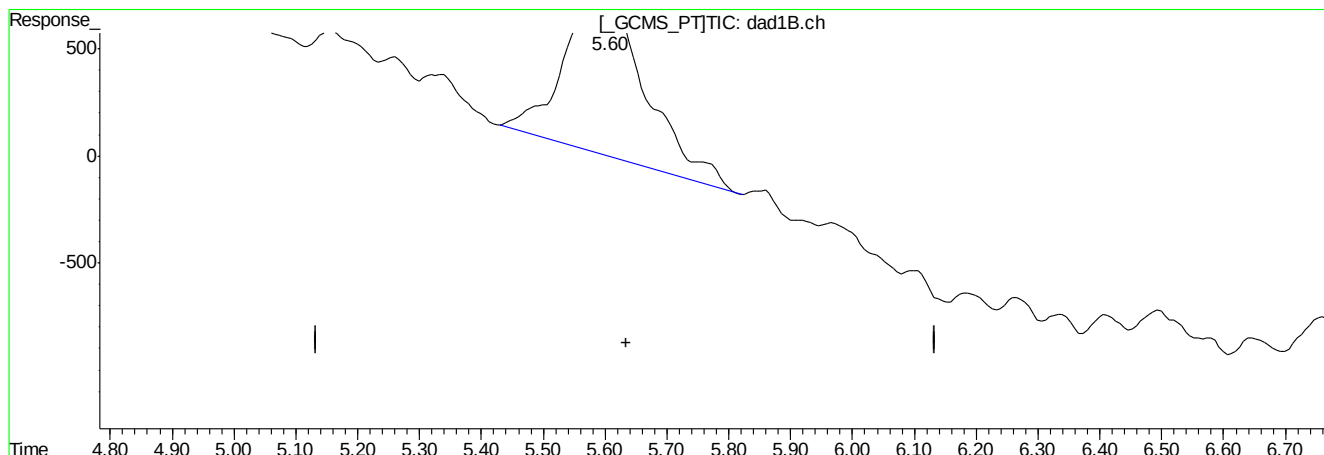
Supervisor approved: 07/21/23 11:45 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
HMX	2691-41-0	2	5.60	Poor instrument integration
RDX	121-82-4	1	8.37	Missed peak
2,4,6-Trinitrotoluene	118-96-7	2	12.65	Poor instrument integration
3,5-Dinitroaniline	618-87-1	1	17.01	Poor instrument integration
3,5-Dinitroaniline	618-87-1	2	17.03	Poor instrument integration
4-amino-2,6-Dinitrotoluene	19406-51-0	2	19.00	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1B.ch Vial: 5
 Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1A.ch
 Acq On : 20-Jul-2023, 14:29:49 Operator: fouads
 Sample : fc7686-3cf Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 21 9:47 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Multiple Level Calibration



(2) HMX

5.60min 18.428ppb

response 68961

(2) HMX #2

5.60min 19.454ppb

response 73497

QEdit

(+) = Expected Retention Time

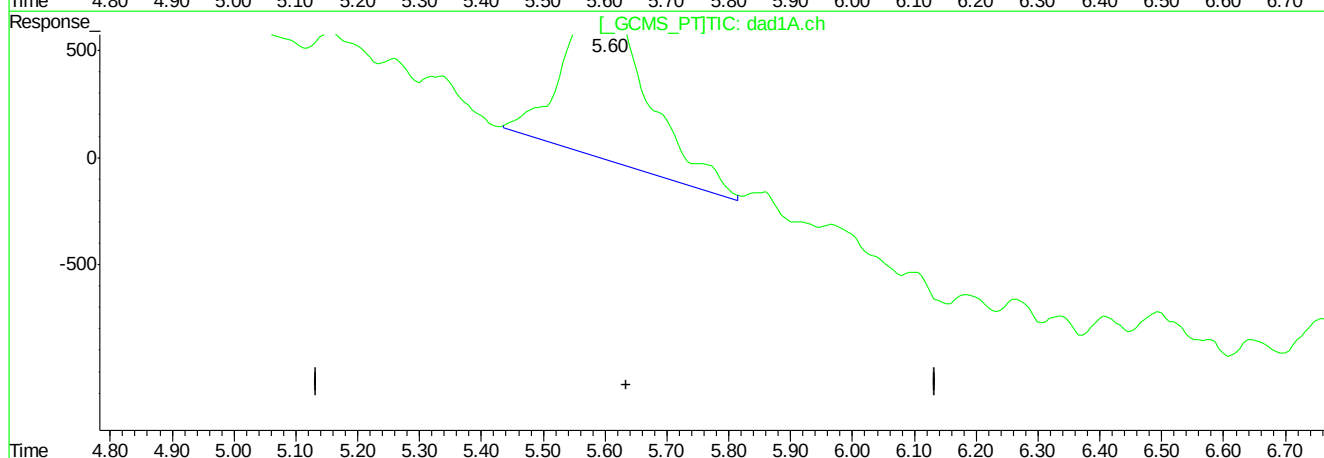
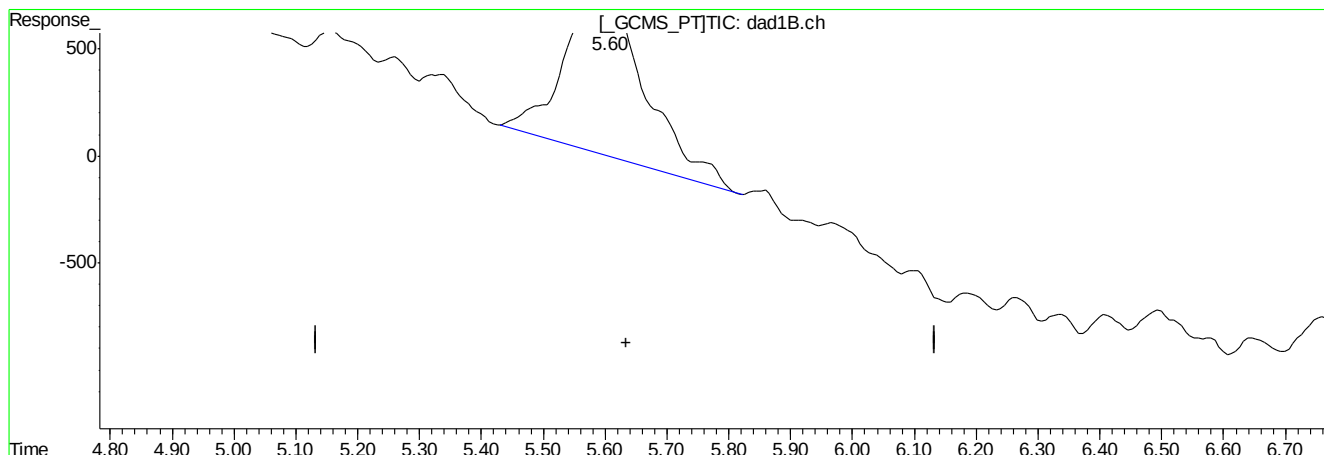
GG626851.D GGG3229_071123.M

Fri Jul 21 09:48:30 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1B.ch Vial: 5
 Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1A.ch
 Acq On : 20-Jul-2023, 14:29:49 Operator: fouads
 Sample : fc7686-3cf Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 21 9:47 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Multiple Level Calibration



(2) HMX

5.60min 18.428ppb

response 68961

(2) HMX #2

5.60min 18.943ppb m

response 71564

(+) = Expected Retention Time

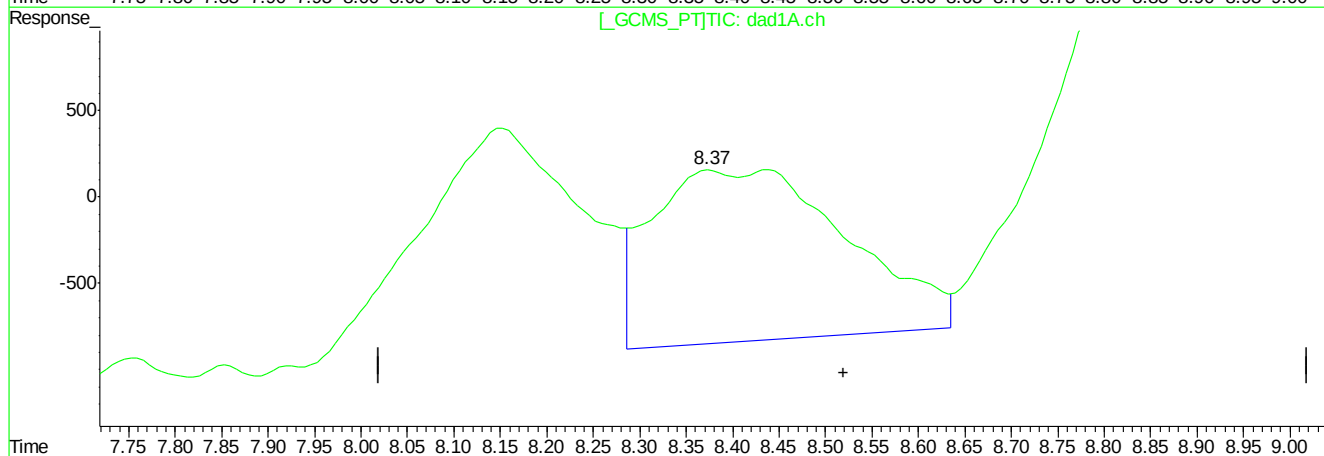
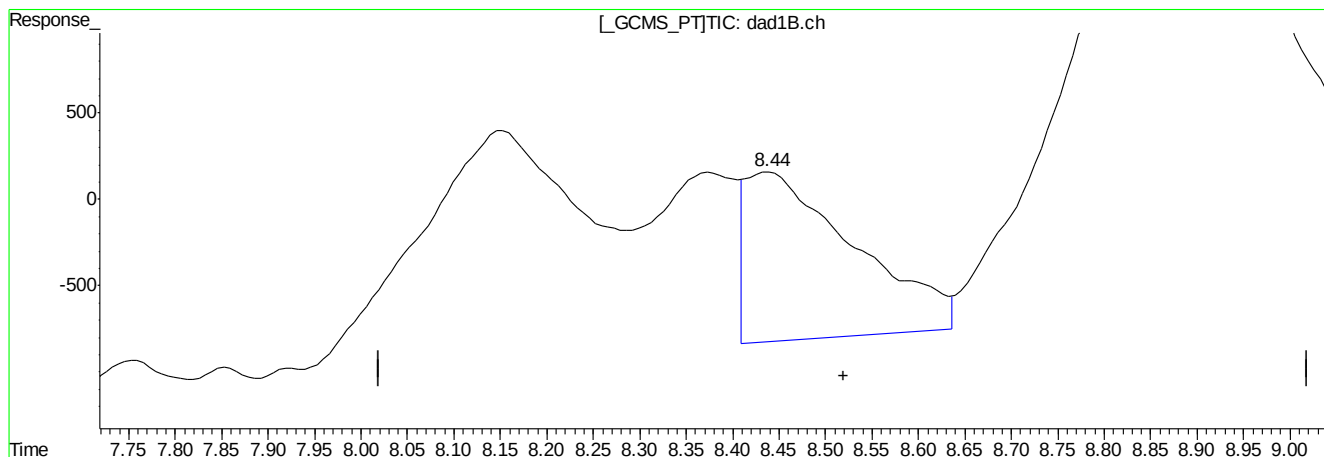
GG626851.D GGG3229_071123.M

Fri Jul 21 09:48:38 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1B.ch Vial: 5
 Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1A.ch
 Acq On : 20-Jul-2023, 14:29:49 Operator: fouads
 Sample : fc7686-3cf Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 21 9:47 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Multiple Level Calibration



QEdit

(6) RDX

8.44min 15.271ppb

response 80950

(6) RDX #2

8.38min 28.570ppb

response 145689

(+) = Expected Retention Time

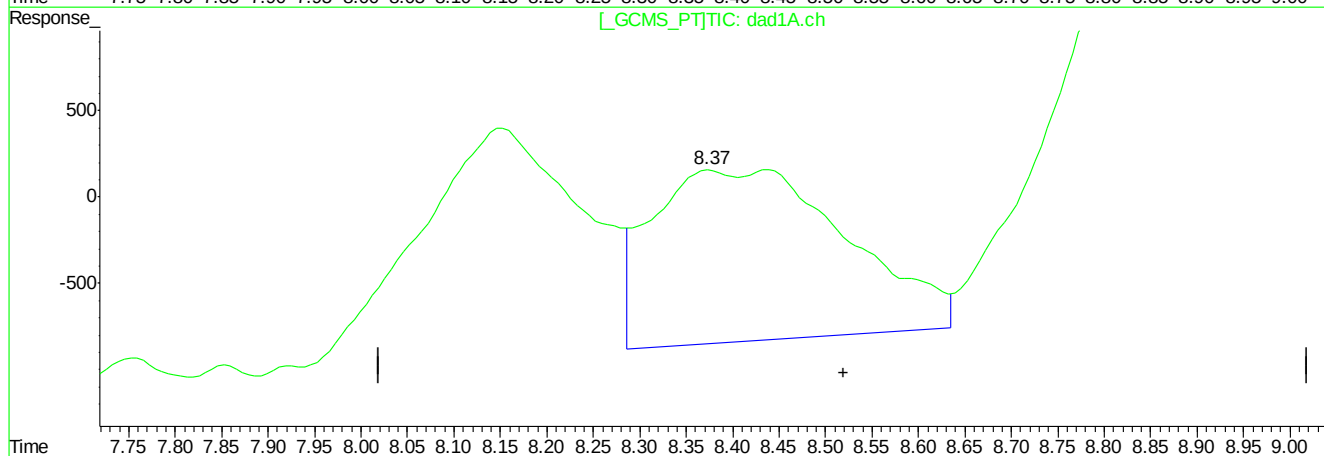
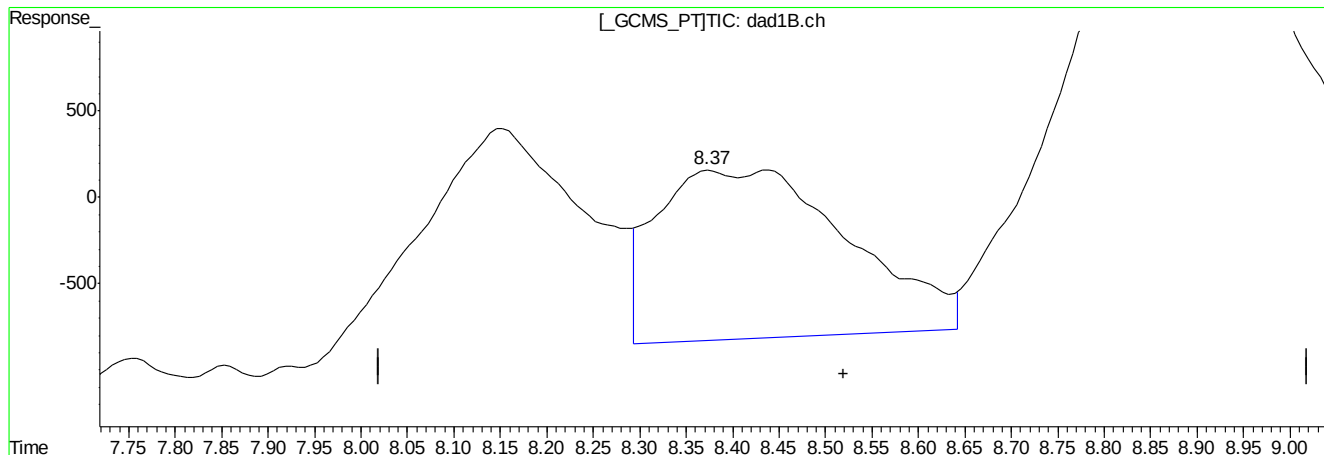
GG626851.D GGG3229_071123.M

Fri Jul 21 09:48:56 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1B.ch Vial: 5
 Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1A.ch
 Acq On : 20-Jul-2023, 14:29:49 Operator: fouads
 Sample : fc7686-3cf Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 21 9:47 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Multiple Level Calibration



QEdit

(6) RDX

8.37min 26.664ppb m

response 141345

(6) RDX #2

8.38min 28.570ppb

response 145689

(+) = Expected Retention Time

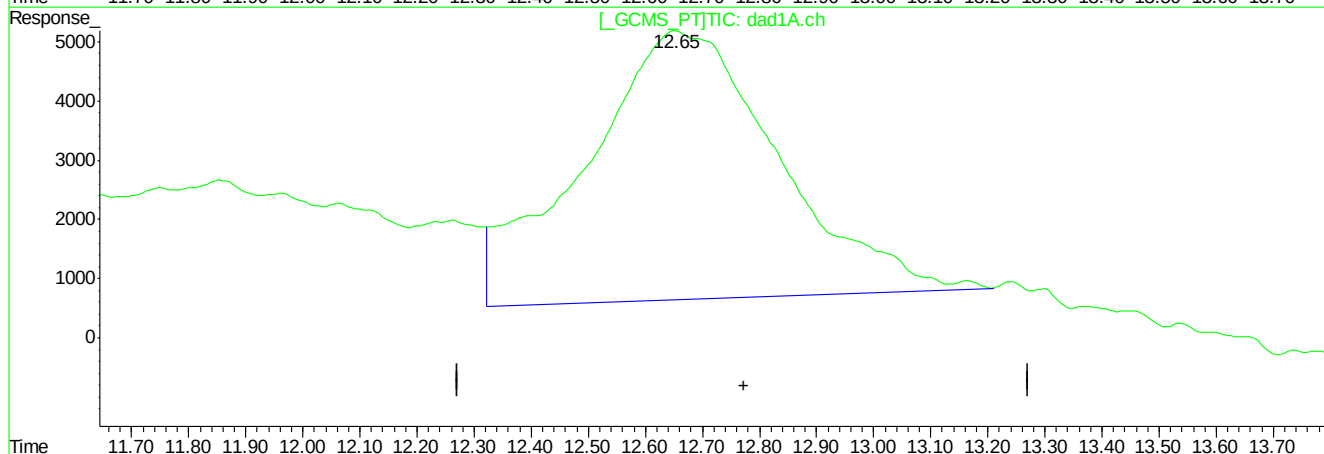
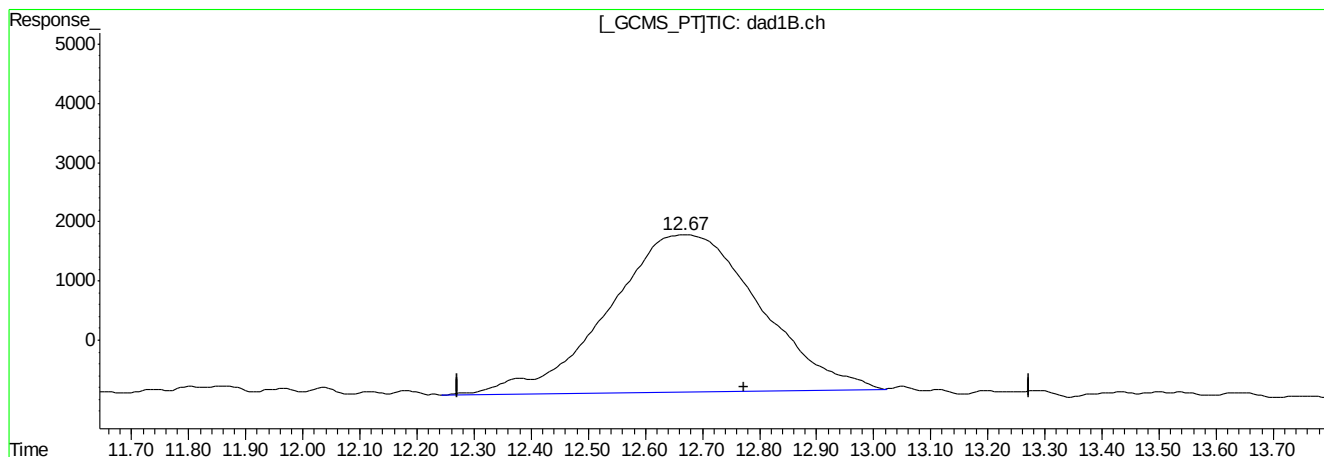
GG626851.D GGG3229_071123.M

Fri Jul 21 09:49:09 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1A.ch
Acq On : 20-Jul-2023, 14:29:49 Operator: fouads
Sample : fc7686-3cf Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 21 9:47 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration



QEdit

(9) 2,4,6-Trinitrotoluene

12.67min 49.079ppb

response 486552

(9) 2,4,6-Trinitrotoluene #2

12.65min 81.846ppb

response 1071594

(+) = Expected Retention Time

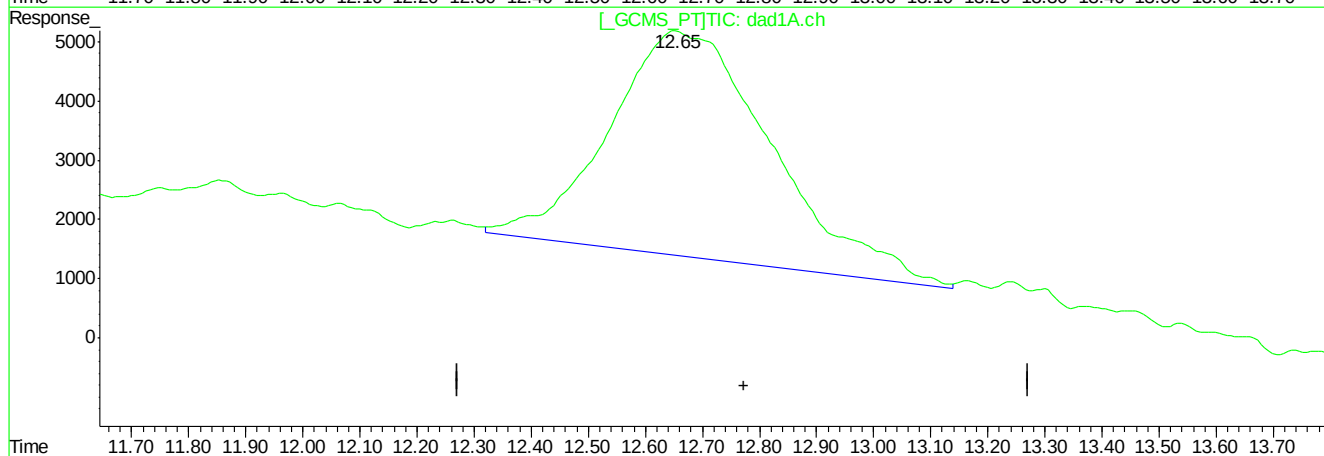
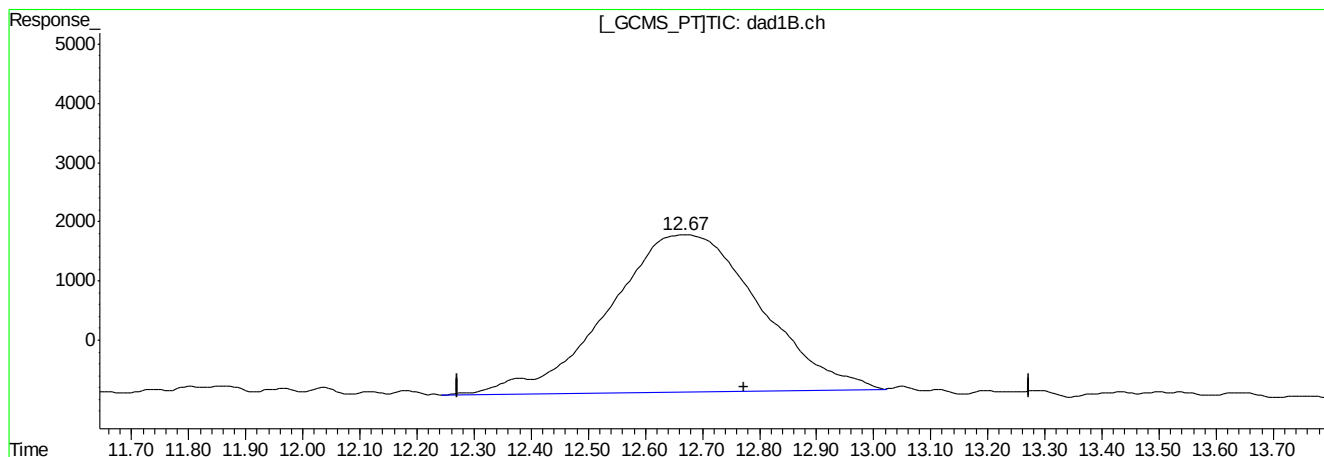
GG626851.D GGG3229_071123.M

Fri Jul 21 09:49:20 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1A.ch
Acq On : 20-Jul-2023, 14:29:49 Operator: fouads
Sample : fc7686-3cf Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 21 9:47 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration



QEdit

(9) 2,4,6-Trinitrotoluene

12.67min 49.079ppb

response 486552

(9) 2,4,6-Trinitrotoluene #2

12.65min 57.387ppb m

response 751362

(+) = Expected Retention Time

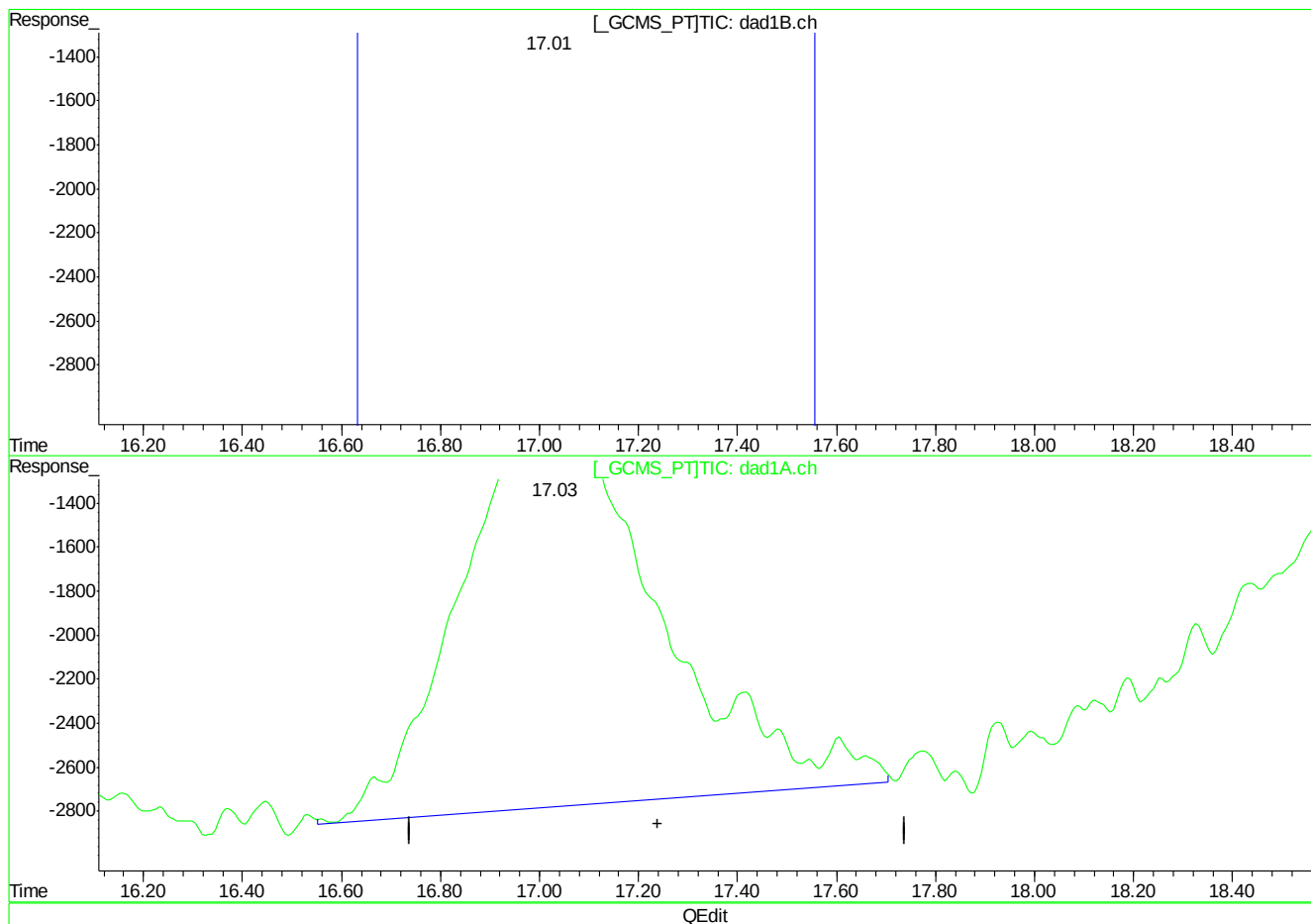
GG626851.D GGG3229_071123.M

Fri Jul 21 09:49:26 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1A.ch
Acq On : 20-Jul-2023, 14:29:49 Operator: fouads
Sample : fc7686-3cf Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 21 9:47 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration



(15) 3,5-Dinitroaniline

17.01min 25.156ppb m

response 298448

(15) 3,5-Dinitroaniline #2

17.03min 26.181ppb m

response 495479

(+) = Expected Retention Time

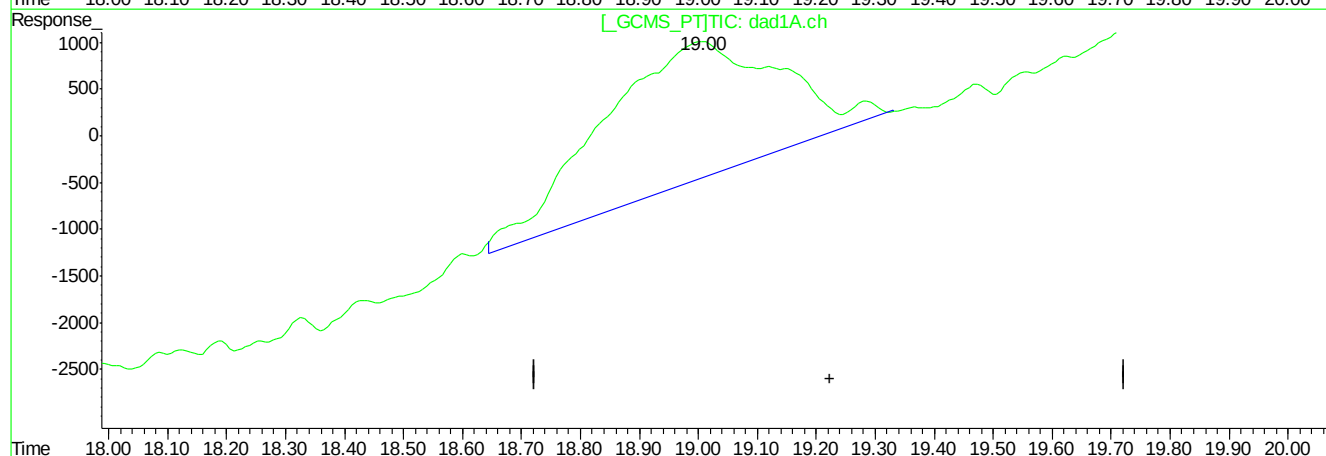
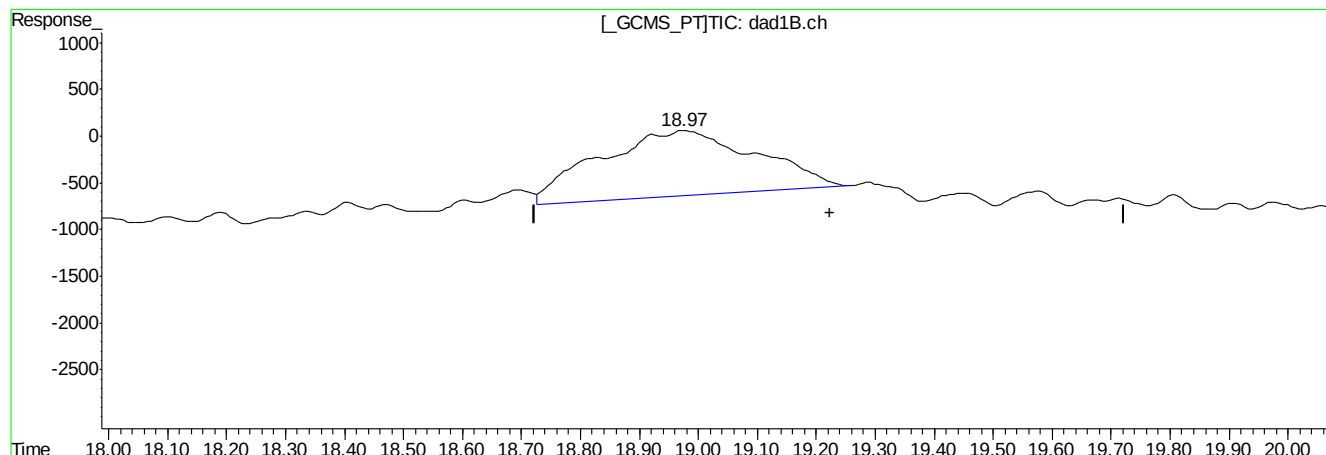
GG626851.D GGG3229_071123.M

Fri Jul 21 09:50:34 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1B.ch Vial: 5
 Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626851.D\dad1A.ch
 Acq On : 20-Jul-2023, 14:29:49 Operator: fouads
 Sample : fc7686-3cf Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 21 9:47 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Multiple Level Calibration



QEdit

(18) 4-Amino-2,6-Dinitrotoluene

18.98min 38.812ppb

response 130357

(18) 4-Amino-2,6-Dinitrotoluene #2

19.00min 42.798ppb m

response 313015

(+) = Expected Retention Time

GG626851.D GGG3229_071123.M

Fri Jul 21 09:51:03 2023

Naresh Jiawan
07/20/23 10:53

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077752.D\dad1B.ch Vial: 10
 Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077752.D\dad1A.ch
 Acq On : 18-Jul-2023, 13:01:32 Operator: fouads
 Sample : FC7686-4 Inst : G1315B
 Misc : op97885,GBB2394,970,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jul 19 09:02:55 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Jul 07 08:35:11 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	10.98	10.98	1040881	1871138	434.304	464.639
Spiked Amount	500.000	Range	70 - 136	Recovery	= 86.86%	92.93%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	1.45	1.45	1681099	4788298	1140.802	1178.016
3) DNX	0.00	0.00	0	0	N.D. d	N.D. d
4) MNX	0.00	0.00	0	0	N.D.	N.D.
5) RDX	2.82	2.80	51163	84639	26.410m	27.983
6) 1,3,5-Trinitrobe	4.62	4.62	2140182	3509448	513.608	529.103
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
8) 3,5-Dinitroanili	6.16	6.18	76823	154208	19.439	22.191m
9) Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
12) 2,4,6-Trinitroto	9.63	9.63	1395732	1704299	388.995	354.744
13) 2-Amino-4,6-Dini	10.05	10.06	917465	1493364	289.004	290.598
14) 4-Amino-2,6-Dini	10.47	10.47	459846	1098768	194.138	216.725
16) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
17) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D. d	N.D.
18) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
19) p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20) m-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D.
21) PETN	0.00	0.00	0	0	N.D.	N.D.

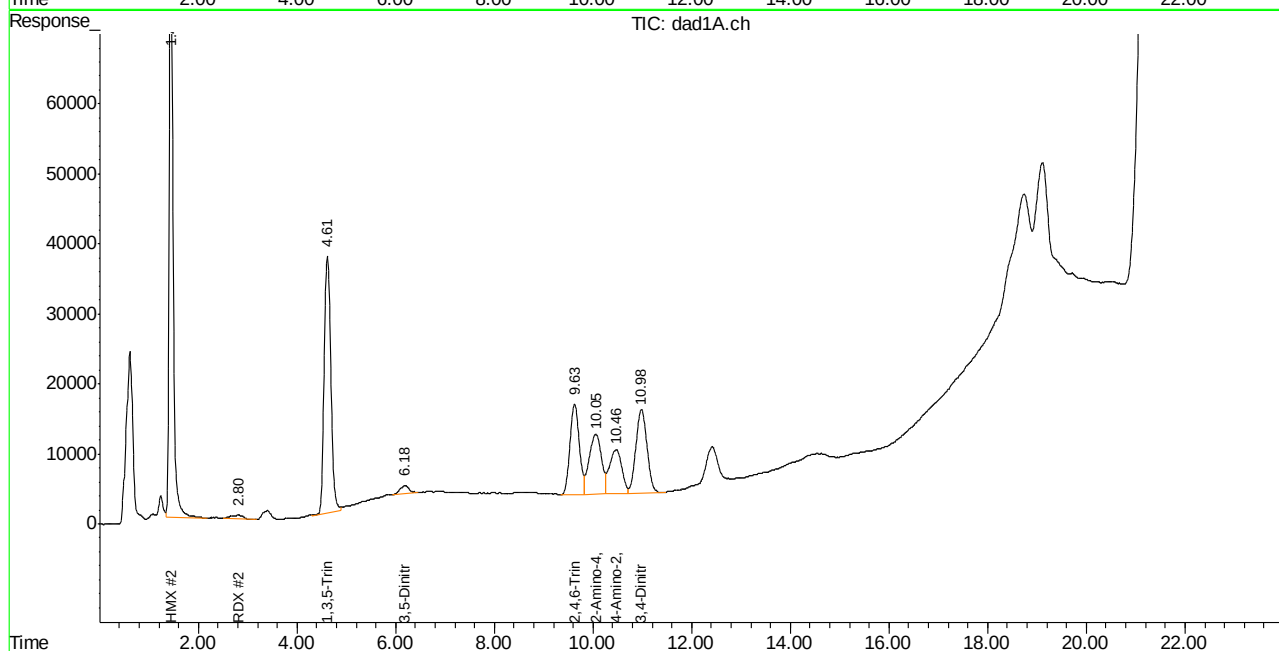
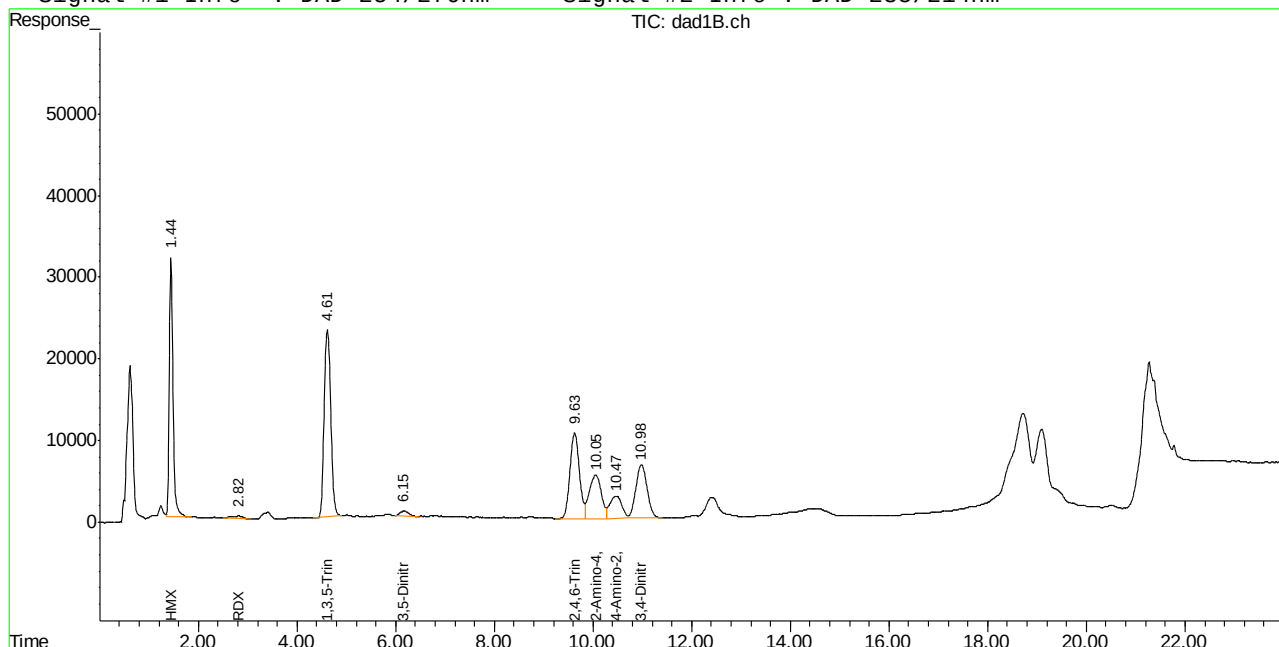
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB077752.D BBB2349_041423.M Thu Jul 20 08:40:55 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077752.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077752.D\dad1A.ch
Acq On : 18-Jul-2023, 13:01:32 Operator: fouads
Sample : FC7686-4 Inst : G1315B
Misc : op97885, GBB2394, 970,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:04 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

FC7686-4

Method:

SW846 8330B

Lab FileID:

BB077752.D

Analyst approved:

07/20/23 09:08 Fouad Sekkar

Injection Time:

07/18/23 13:01

Supervisor approved:

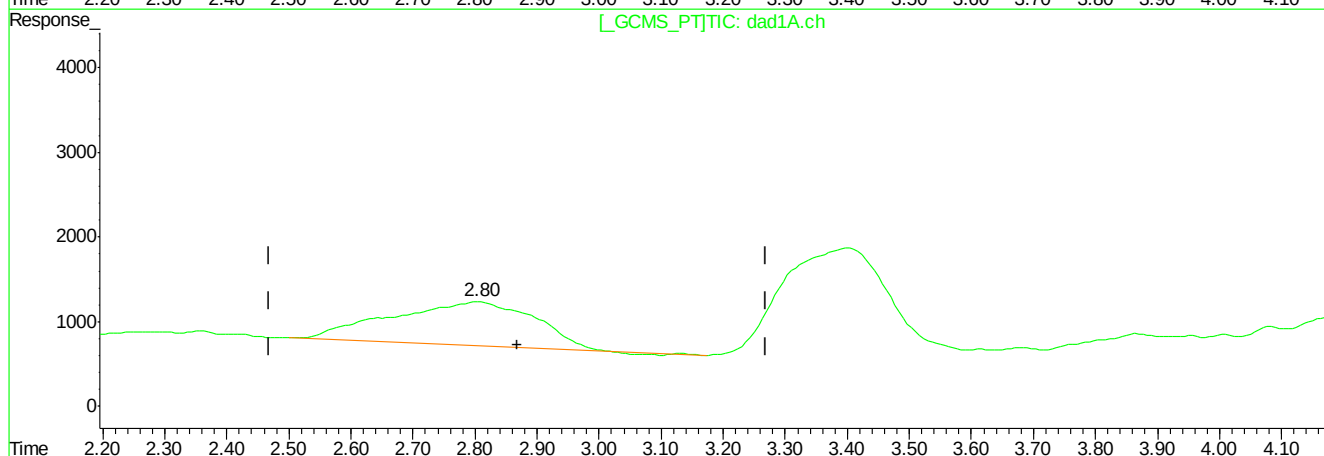
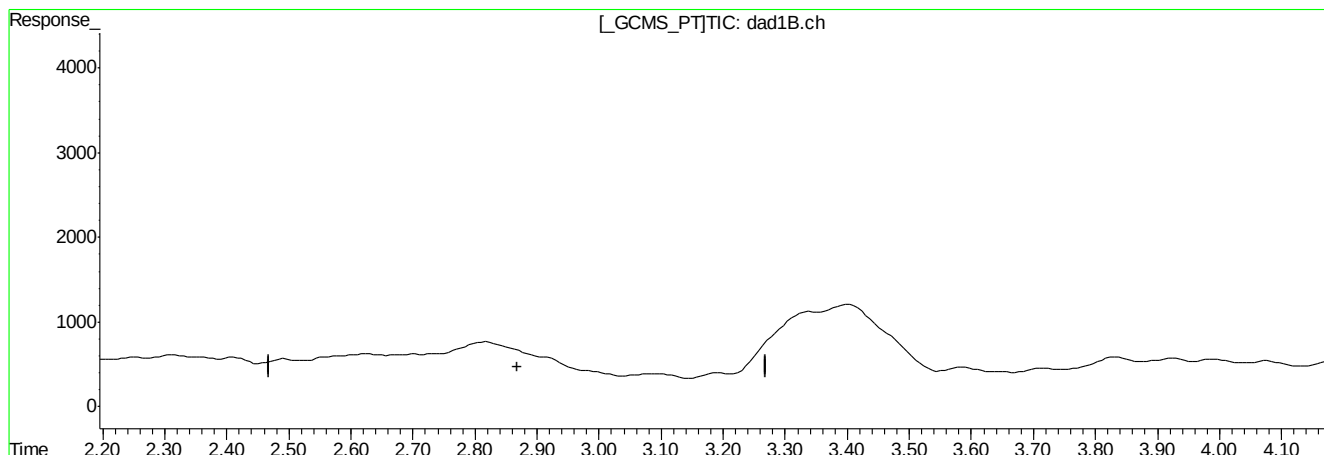
07/20/23 10:53 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
RDX	121-82-4	1	2.82	Poor instrument integration
3,5-Dinitroaniline	618-87-1	2	6.18	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077752.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077752.D\dad1A.ch
Acq On : 18-Jul-2023, 13:01:32 Operator: fouads
Sample : FC7686-4 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:02 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



QEdit

(5) RDX

0.00min 0.000ppb

response 0

(5) RDX #2

2.80min 27.983ppb

response 84639

(+) = Expected Retention Time

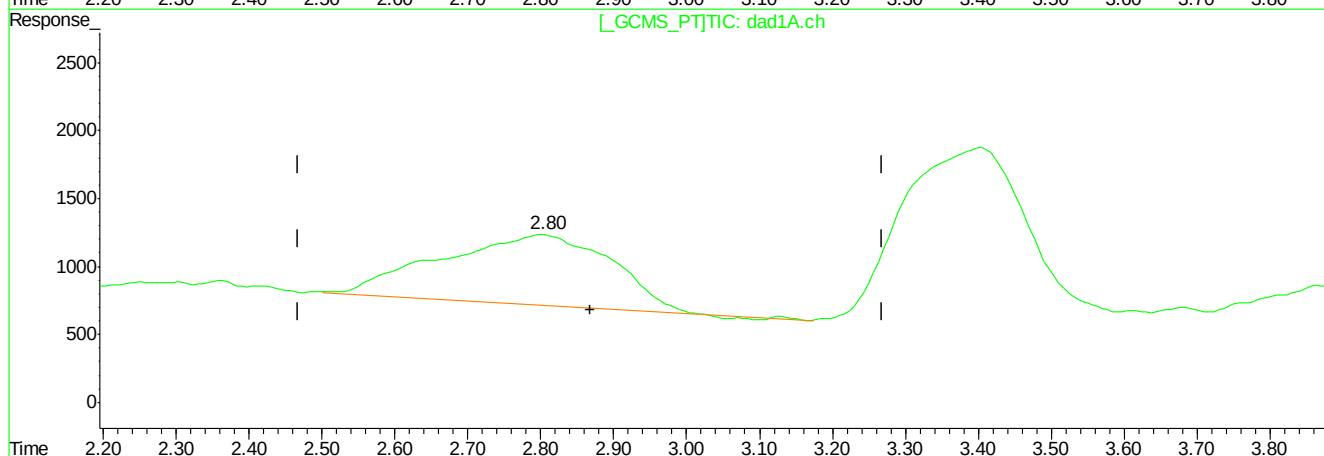
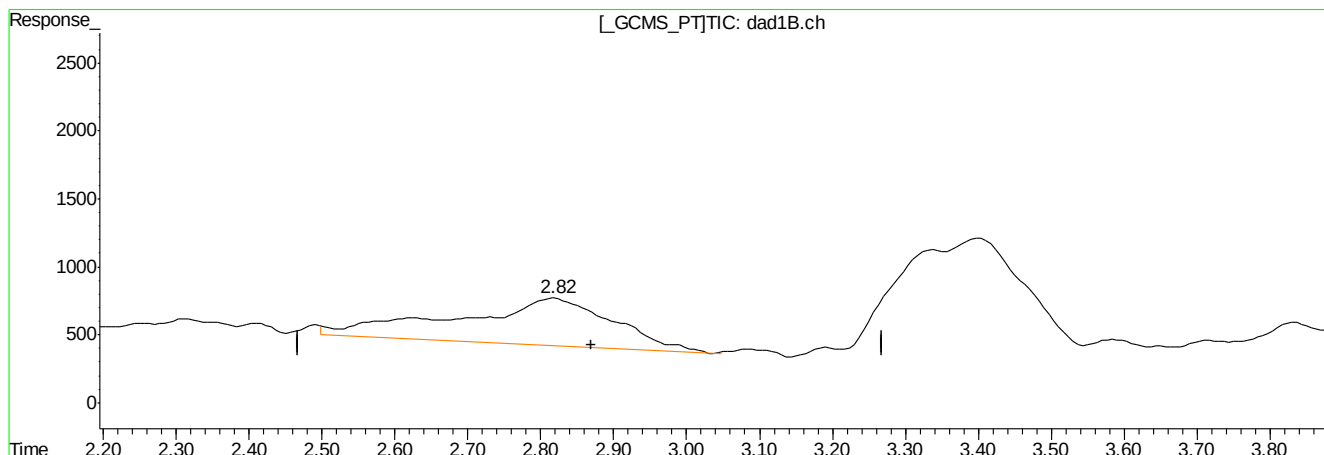
BB077752.D BBB2349_041423.M

Wed Jul 19 09:03:45 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077752.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077752.D\dad1A.ch
Acq On : 18-Jul-2023, 13:01:32 Operator: fouads
Sample : FC7686-4 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:02 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(5) RDX

2.82min 26.410ppb m

response 51163

(5) RDX #2

2.80min 27.983ppb

response 84639

(+) = Expected Retention Time

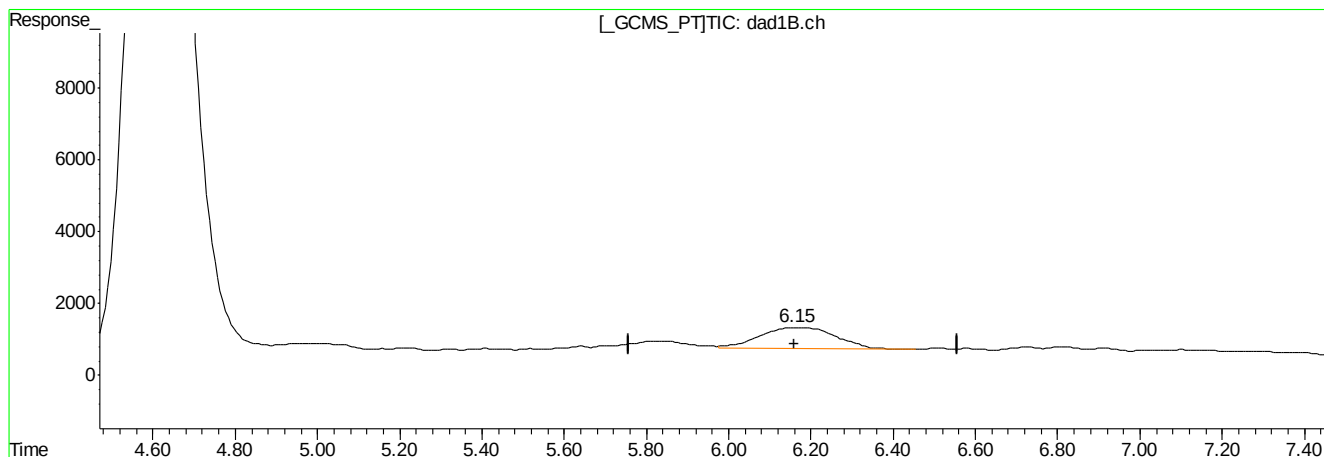
BB077752.D BBB2349_041423.M

Wed Jul 19 09:04:00 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077752.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077752.D\dad1A.ch
Acq On : 18-Jul-2023, 13:01:32 Operator: fouads
Sample : FC7686-4 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:02 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

6.16min 19.439ppb

response 76823

(8) 3,5-Dinitroaniline #2

6.19min 125.635ppb

response 873074

(+) = Expected Retention Time

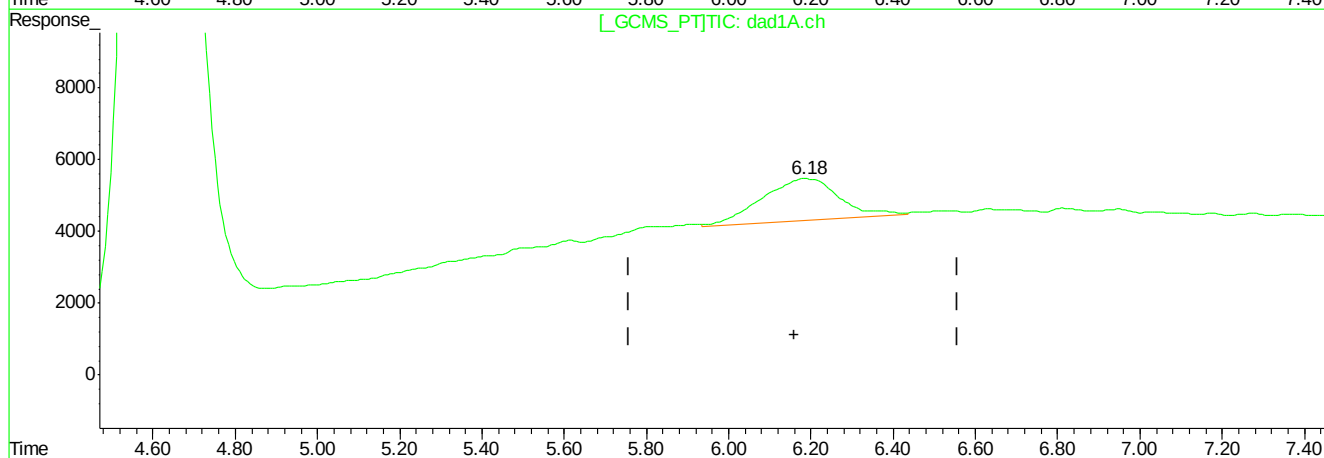
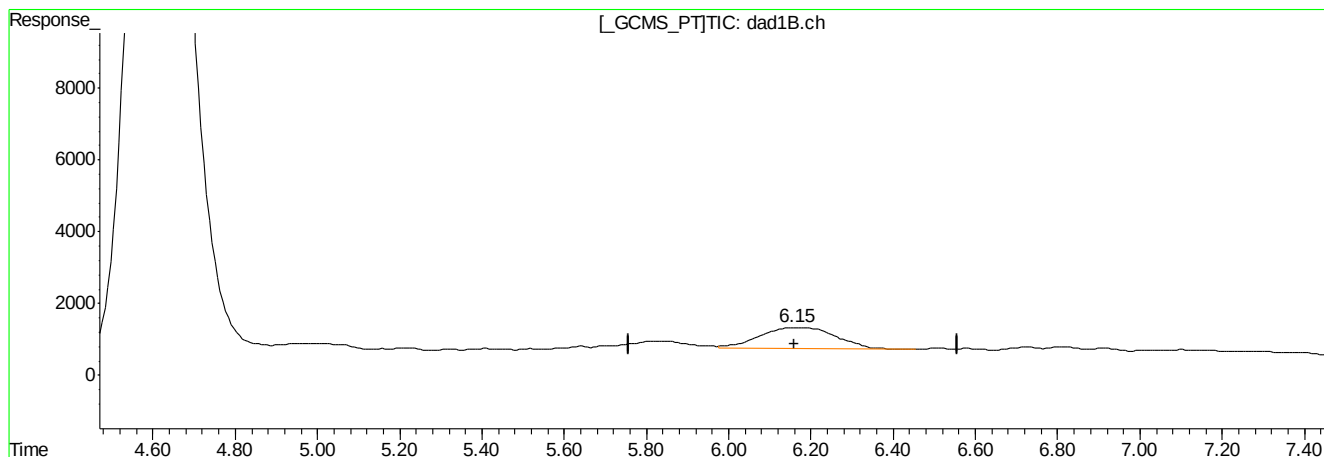
BB077752.D BBB2349_041423.M

Wed Jul 19 09:04:12 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077752.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077752.D\dad1A.ch
Acq On : 18-Jul-2023, 13:01:32 Operator: fouads
Sample : FC7686-4 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:02 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

6.16min 19.439ppb

response 76823

(8) 3,5-Dinitroaniline #2

6.18min 22.191ppb m

response 154208

(+) = Expected Retention Time

BB077752.D BBB2349_041423.M

Wed Jul 19 09:04:18 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626843.D\dad1B.ch Vial: 10
 Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626843.D\dad1A.ch
 Acq On : 19-Jul-2023, 12:49:11 Operator: fouads
 Sample : fc7686-4cf Inst : G1315B
 Misc : op97885,GGG3302,960,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 20 08:12:46 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	15.45	15.44	3034368	5876576	475.632	477.707
Spiked Amount	500.000	Range	70 - 136	Recovery	= 95.13%	95.54%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	5.60	5.60	4089775	4215066	1092.896	1115.697
3) DNX	0.00	0.00	0	0	N.D.	N.D.
4) MNX	0.00	0.00	0	0	N.D. d	N.D. d
5) 1,3,5-Trinitrobe	8.16	8.16	5522122	5630004	541.917m	542.245m
6) RDX	8.40	8.39	179671	180064	33.895m	35.311m
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D. d
8) Nitrobenzene	0.00	0.00	0	0	N.D.	N.D. d
9) 2,4,6-Trinitroto	12.72	12.72	3839753	5319377	387.323	406.280
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
13) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
14) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
15) 3,5-Dinitroanili	17.38	17.39	1453229	2719480	122.494	143.696
16) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
17) p-Nitrotoluene	0.00	0.00	0	0	N.D. d	N.D. d
18) 4-Amino-2,6-Dini	19.04	19.05	1771039	3258670	527.300	445.557
19) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20) 2-Amino-4,6-Dini	20.97	20.97	2890435	4150783	169.233	158.569
21) PETN	0.00	0.00	0	0	N.D.	N.D.

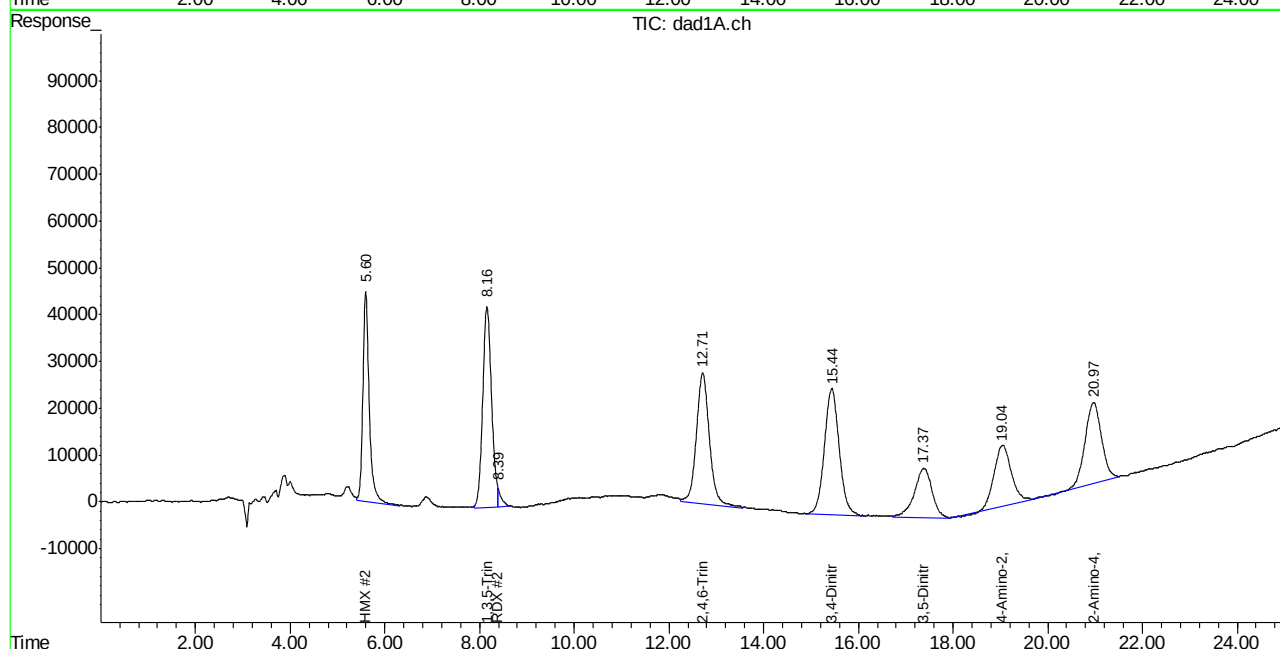
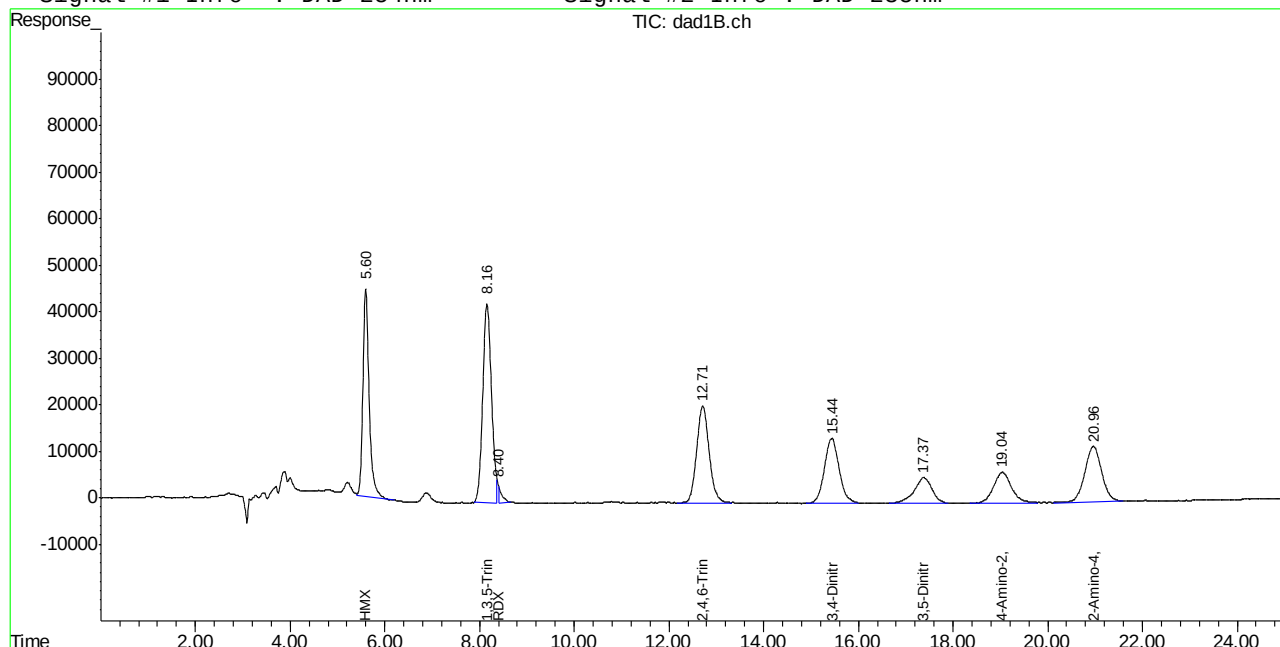
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG626843.D GGG3229_071123.M Thu Jul 20 08:37:39 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626843.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626843.D\dad1A.ch
Acq On : 19-Jul-2023, 12:49:11 Operator: fouads
Sample : fc7686-4cf Inst : G1315B
Misc : op97885,GGG3302,960,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 20 8:14 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number:

FC7686-4

Method:

SW846 8330B

Lab FileID:

GG626843.D

Analyst approved:

07/20/23 09:50 Fouad Sekkar

Injection Time:

07/19/23 12:49

Supervisor approved:

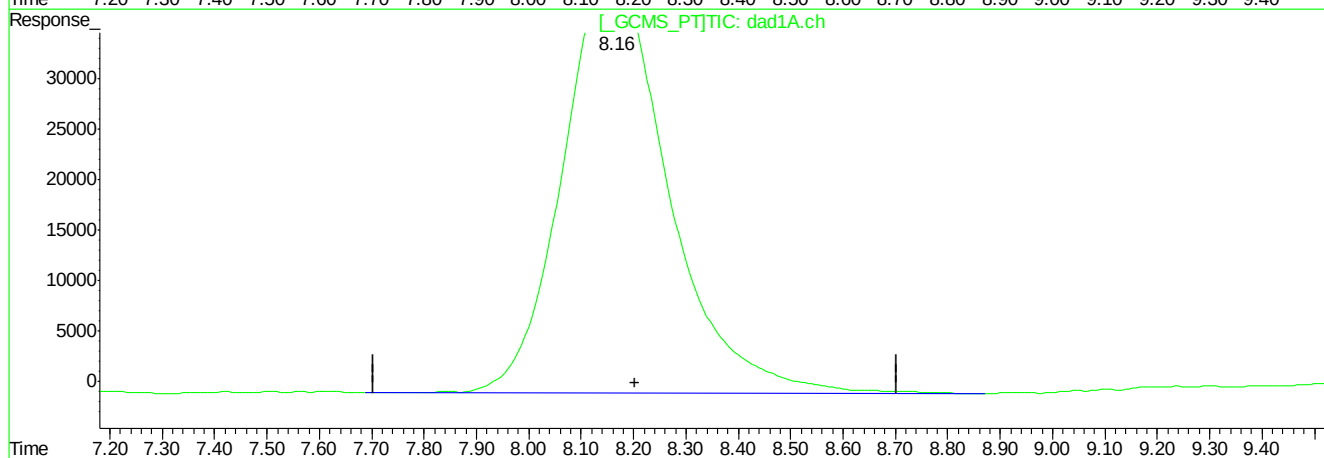
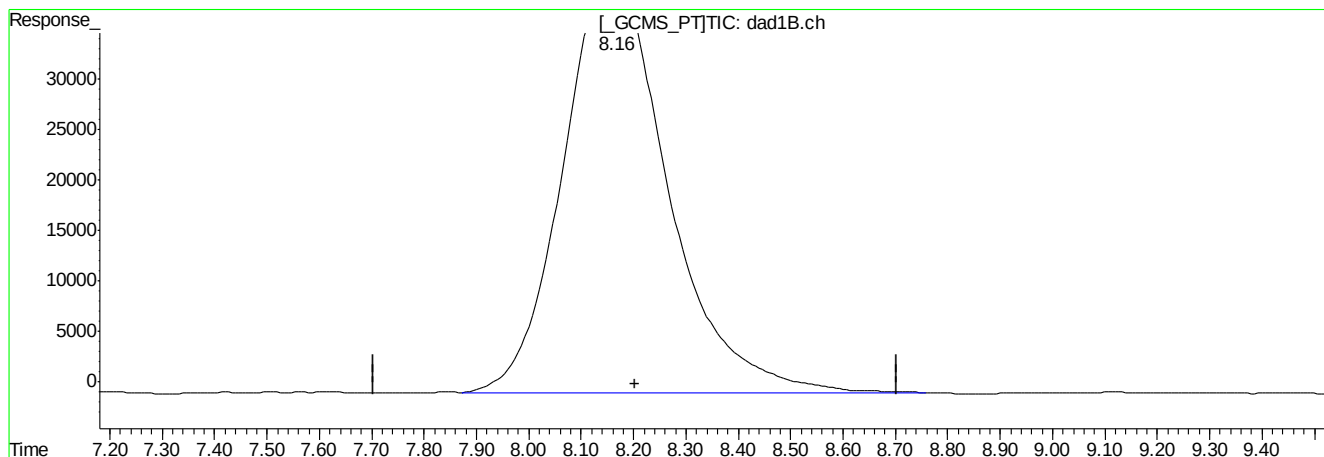
07/20/23 10:53 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3,5-Trinitrobenzene	99-35-4	1	8.16	Poor instrument integration
1,3,5-Trinitrobenzene	99-35-4	2	8.16	Poor instrument integration
RDX	121-82-4	2	8.39	Poor instrument integration
RDX	121-82-4	1	8.40	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626843.D\dad1B.ch Vial: 10
 Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626843.D\dad1A.ch
 Acq On : 19-Jul-2023, 12:49:11 Operator: fouads
 Sample : fc7686-4cf Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 20 8:12 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Multiple Level Calibration



QEdit

(5) 1,3,5-Trinitrobenzene

8.16min 567.722ppb

response 5785074

(5) 1,3,5-Trinitrobenzene #2

8.16min 561.672ppb

response 5831712

(+) = Expected Retention Time

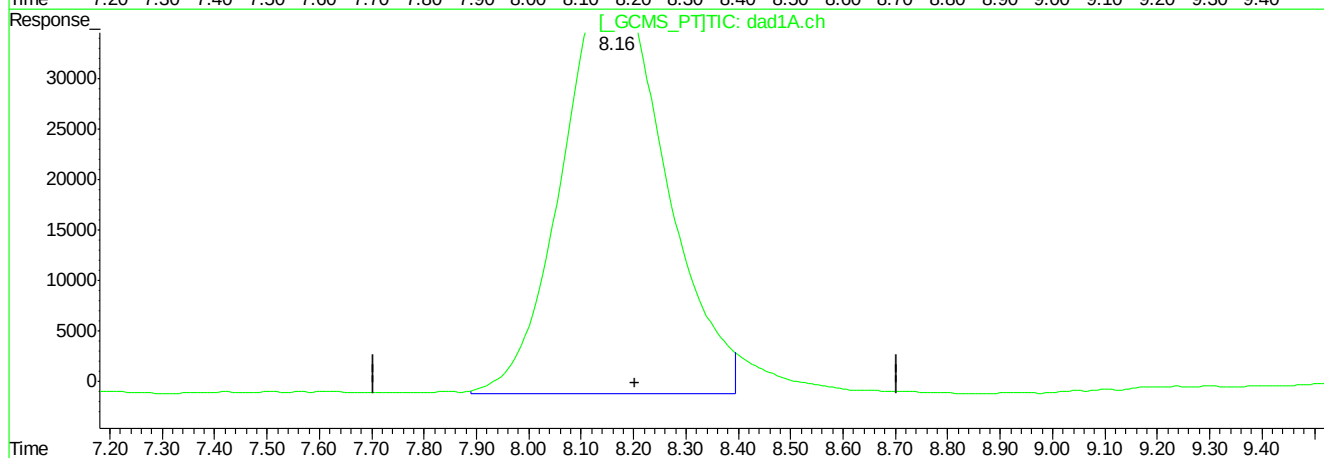
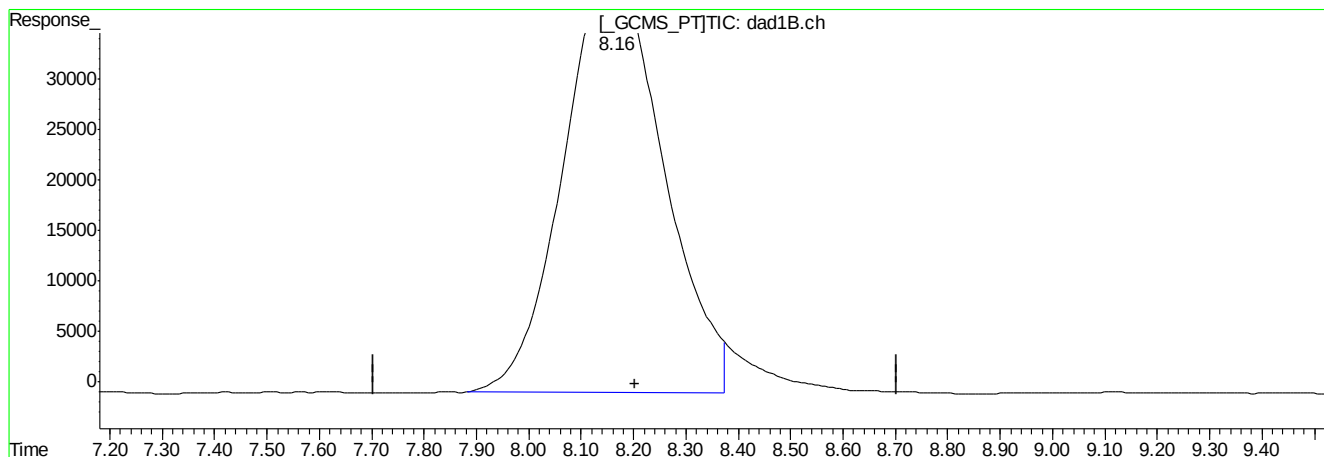
GG626843.D GGG3229_071123.M

Thu Jul 20 08:13:40 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626843.D\dad1B.ch Vial: 10
 Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626843.D\dad1A.ch
 Acq On : 19-Jul-2023, 12:49:11 Operator: fouads
 Sample : fc7686-4cf Inst : G1315B
 Misc : Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 20 8:12 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Multiple Level Calibration



QEdit

(5) 1,3,5-Trinitrobenzene

8.16min 541.917ppb m

response 5522122

(5) 1,3,5-Trinitrobenzene #2

8.16min 542.245ppb m

response 5630004

(+) = Expected Retention Time

GG626843.D GGG3229_071123.M

Thu Jul 20 08:13:55 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077757.D\dad1B.ch Vial: 13
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077757.D\dad1A.ch
Acq On : 18-Jul-2023, 16:25:01 Operator: fouads
Sample : FC7686-5 Inst : G1315B
Misc : op97885,GBB2394,900,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 09:09:05 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Initial Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound		RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds							
15) S	3,4-Dinitrotolue	10.96	10.96	1034063	1852347	431.459	459.973
Spiked Amount		500.000	Range	70 - 136	Recovery	=	86.29% 91.99%
Target Compounds							
1)	TNX	0.00	0.00	0	0	N.D.	N.D. d
2)	HMX	0.00	0.00	0	0	N.D.	N.D. d
3)	DNX	0.00	0.00	0	0	N.D.	N.D. d
4)	MNX	0.00	0.00	0	0	N.D.	N.D.
5)	RDX	0.00	0.00	0	0	N.D.	N.D.
6)	1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D. d
7)	1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
8)	3,5-Dinitroanili	0.00	0.00	0	0	N.D.	N.D. d
9)	Nitrobenzene	0.00	0.00	0	0	N.D.	N.D.
10)	Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11)	Tetryl	0.00	0.00	0	0	N.D.	N.D.
12)	2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D. d
13)	2-Amino-4,6-Dini	0.00	0.00	0	0	N.D.	N.D.
14)	4-Amino-2,6-Dini	0.00	0.00	0	0	N.D.	N.D.
16)	2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D. d
17)	2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
18)	o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
19)	p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20)	m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
21)	PETN	0.00	0.00	0	0	N.D. d	N.D.

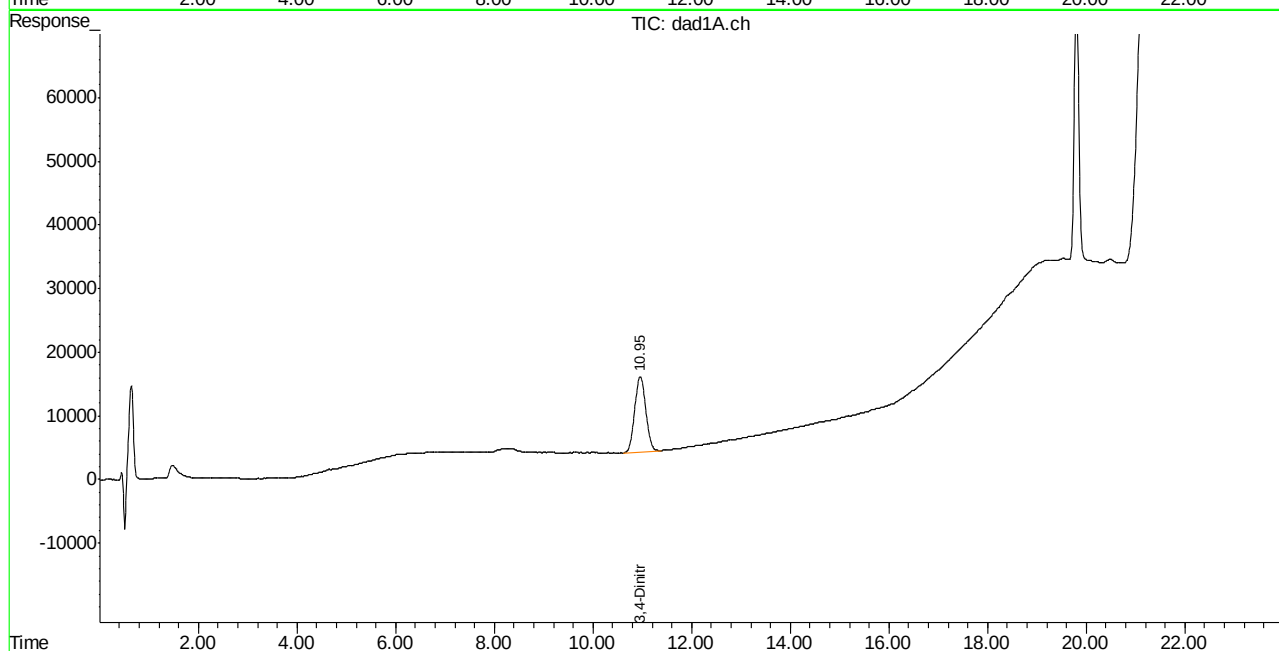
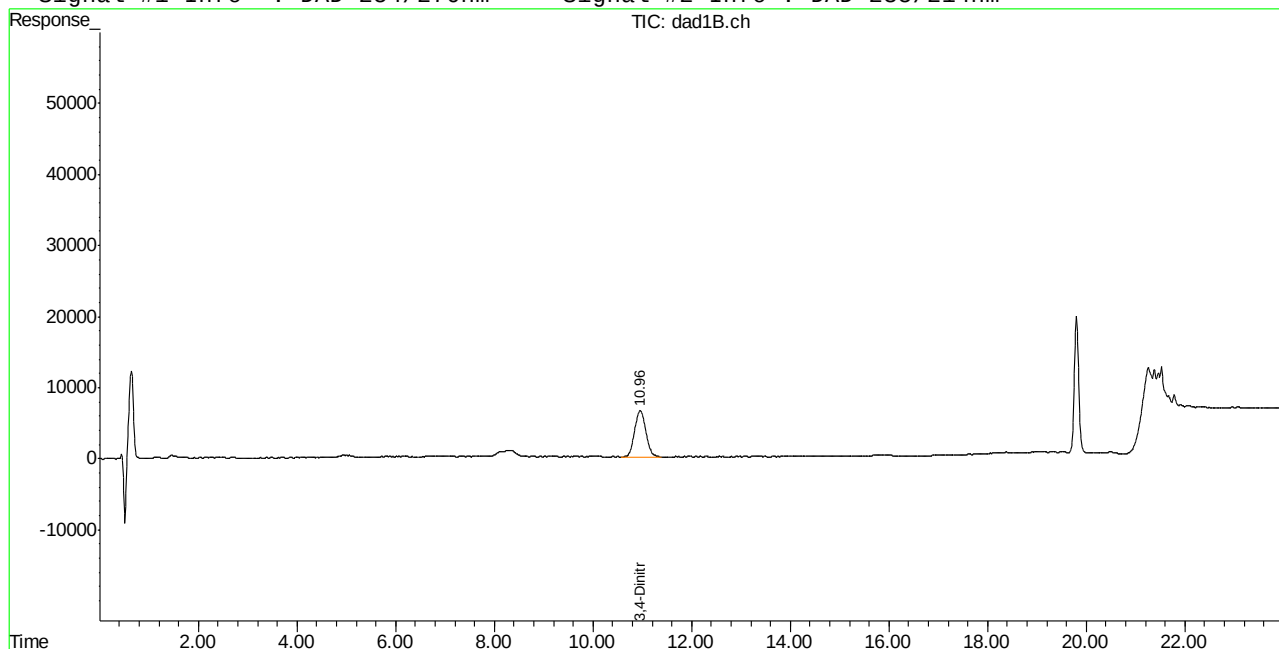
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
BB077757.D BBB2349_041423.M Thu Jul 20 08:40:59 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077757.D\dad1B.ch Vial: 13
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077757.D\dad1A.ch
Acq On : 18-Jul-2023, 16:25:01 Operator: fouads
Sample : FC7686-5 Inst : G1315B
Misc : op97885,GBB2394,900,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:17 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077746.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077746.D\dad1A.ch
Acq On : 18-Jul-2023, 09:55:47 Operator: fouads
Sample : op97885-MB Inst : G1315B
Misc : op97885,GBB2394,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 10:42:41 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Initial Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	10.99	10.99	1021582	1837649	426.251	456.323
Spiked Amount	500.000	Range	70 - 136	Recovery	=	85.25% 91.26%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	0.00	0.00	0	0	N.D. d	N.D. d
3) DNX	0.00	0.00	0	0	N.D. d	N.D. d
4) MNX	0.00	0.00	0	0	N.D.	N.D.
5) RDX	0.00	0.00	0	0	N.D.	N.D.
6) 1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
8) 3,5-Dinitroanili	0.00	0.00	0	0	N.D.	N.D. d
9) Nitrobenzene	0.00	0.00	0	0	N.D. d	N.D. d
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
12) 2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
13) 2-Amino-4,6-Dini	0.00	0.00	0	0	N.D.	N.D.
14) 4-Amino-2,6-Dini	0.00	0.00	0	0	N.D.	N.D.
16) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
17) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D. d
18) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
19) p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D. d
20) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
21) PETN	0.00	0.00	0	0	N.D.	N.D.

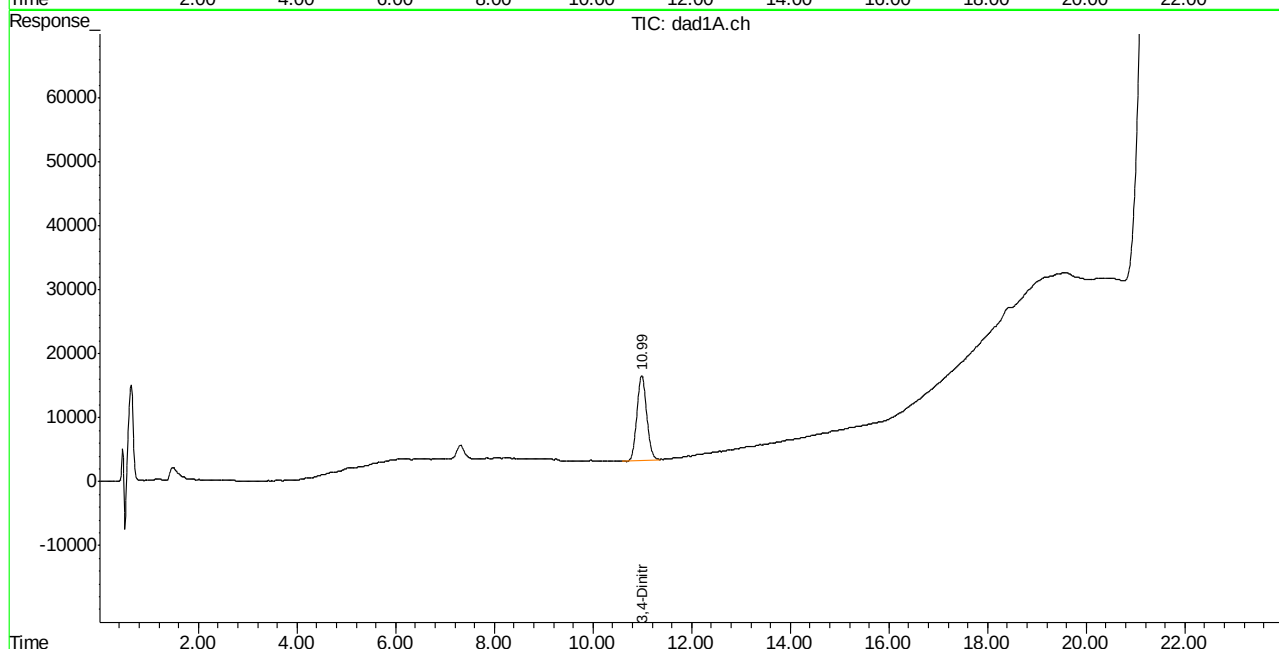
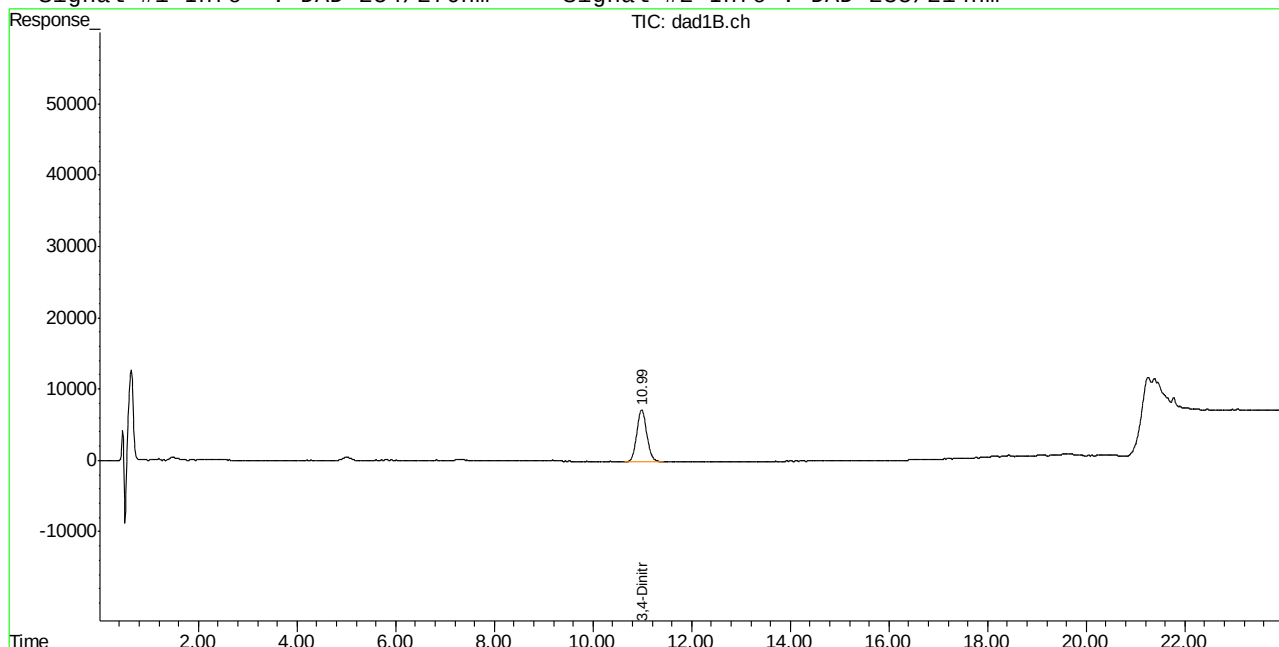
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
BB077746.D BBB2349_041423.M Thu Jul 20 08:40:49 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077746.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077746.D\dad1A.ch
Acq On : 18-Jul-2023, 09:55:47 Operator: fouads
Sample : op97885-MB Inst : G1315B
Misc : op97885, GBB2394, 1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 8:40 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626836.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626836.D\dad1A.ch
Acq On : 19-Jul-2023, 08:58:45 Operator: fouads
Sample : op97885-mb Inst : G1315B
Misc : op97885,GGG3302,1000,,,20,1x,soil Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 19 09:24:55 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Initial Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	15.44	15.44	2811935	5572308	440.766	452.973
Spiked Amount	500.000	Range	69 - 134	Recovery	= 88.15%	90.59%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D.	N.D.
2) HMX	0.00	0.00	0	0	N.D.	N.D.
3) DNX	0.00	0.00	0	0	N.D.	N.D.
4) MNX	0.00	0.00	0	0	N.D.	N.D.
5) 1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
6) RDX	0.00	0.00	0	0	N.D.	N.D.
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D. d
8) Nitrobenzene	0.00	0.00	0	0	N.D.	N.D. d
9) 2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D. d
13) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
14) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
15) 3,5-Dinitroanili	0.00	0.00	0	0	N.D.	N.D.
16) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D. d
17) p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
18) 4-Amino-2,6-Dini	0.00	0.00	0	0	N.D.	N.D.
19) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20) 2-Amino-4,6-Dini	0.00	0.00	0	0	N.D.	N.D.
21) PETN	0.00	0.00	0	0	N.D.	N.D.

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
GG626836.D GGG3229_071123.M Thu Jul 20 08:37:32 2023

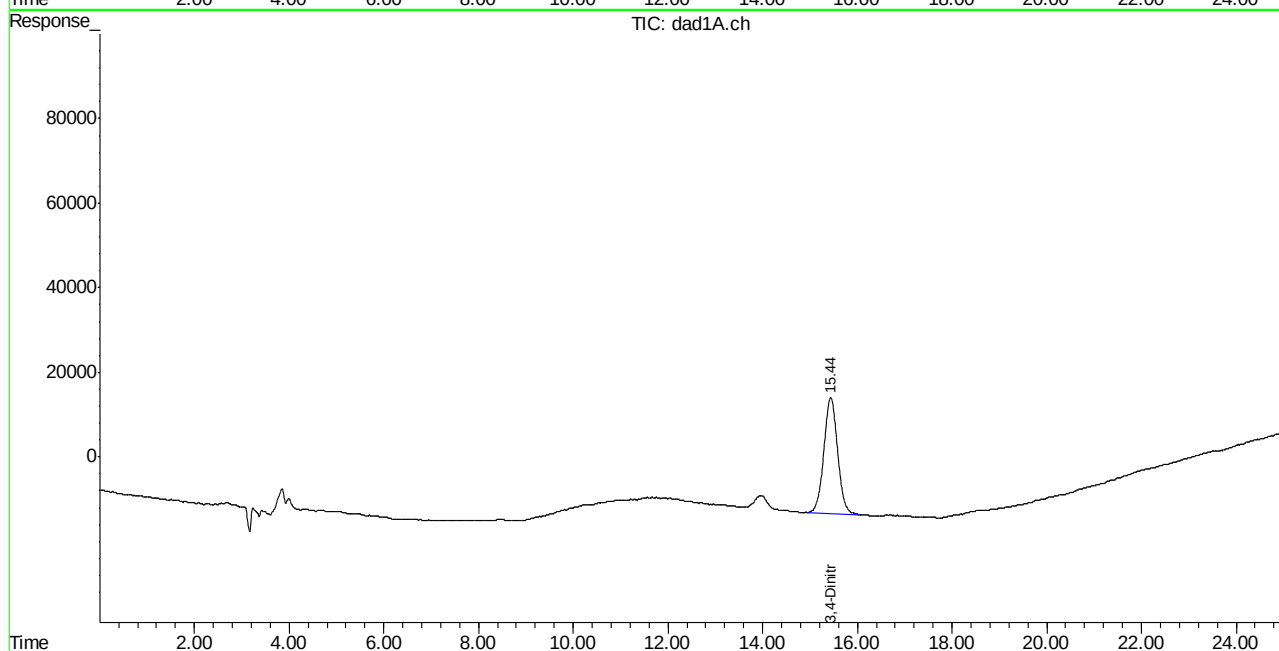
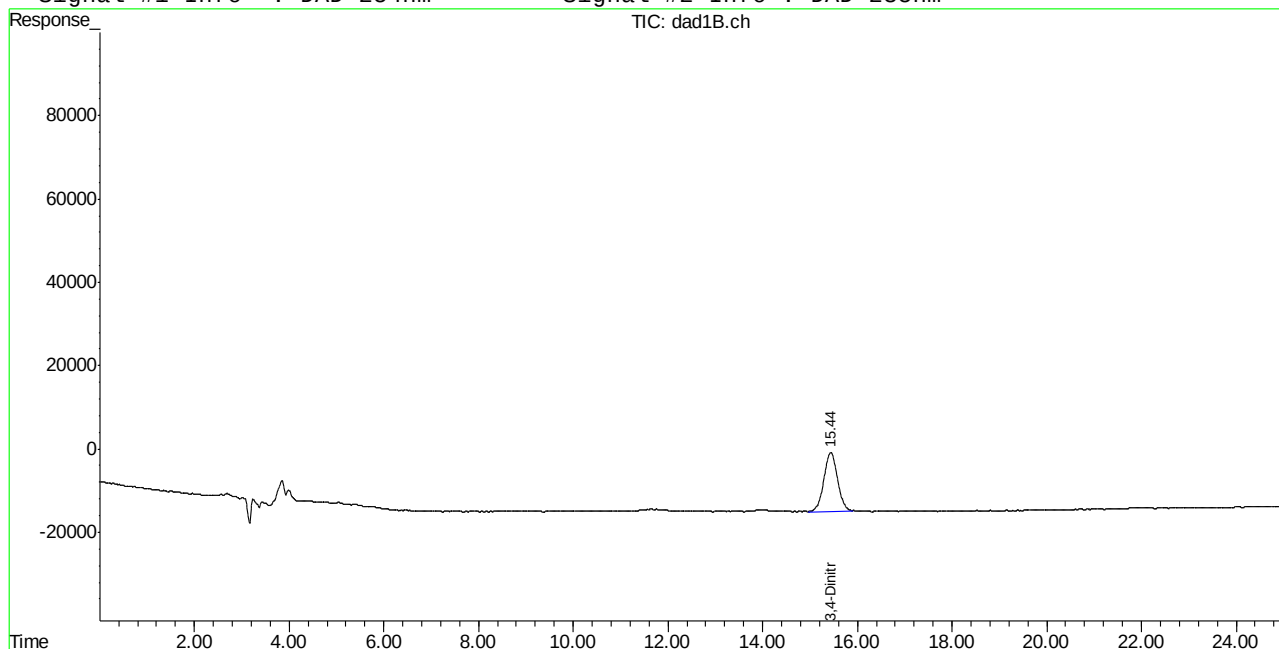
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626836.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626836.D\dad1A.ch
Acq On : 19-Jul-2023, 08:58:45 Operator: fouads
Sample : op97885-mb Inst : G1315B
Misc : op97885,GGG3302,1000,,,20,1x,soil Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 19 15:19 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077746.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077746.D\dad1A.ch
Acq On : 18-Jul-2023, 09:55:47 Operator: fouads
Sample : op97885-MB Inst : G1315B
Misc : op97885,GBB2394,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 10:42:41 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Initial Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	10.99	10.99	1021582	1837649	426.251	456.323
Spiked Amount	500.000	Range	70 - 136	Recovery	= 85.25%	91.26%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D. d	N.D. d
2) HMX	0.00	0.00	0	0	N.D. d	N.D. d
3) DNX	0.00	0.00	0	0	N.D. d	N.D. d
4) MNX	0.00	0.00	0	0	N.D.	N.D.
5) RDX	0.00	0.00	0	0	N.D.	N.D.
6) 1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D.
8) 3,5-Dinitroanili	0.00	0.00	0	0	N.D.	N.D. d
9) Nitrobenzene	0.00	0.00	0	0	N.D. d	N.D. d
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D.
12) 2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
13) 2-Amino-4,6-Dini	0.00	0.00	0	0	N.D.	N.D.
14) 4-Amino-2,6-Dini	0.00	0.00	0	0	N.D.	N.D.
16) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
17) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D. d
18) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
19) p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D. d
20) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
21) PETN	0.00	0.00	0	0	N.D.	N.D.

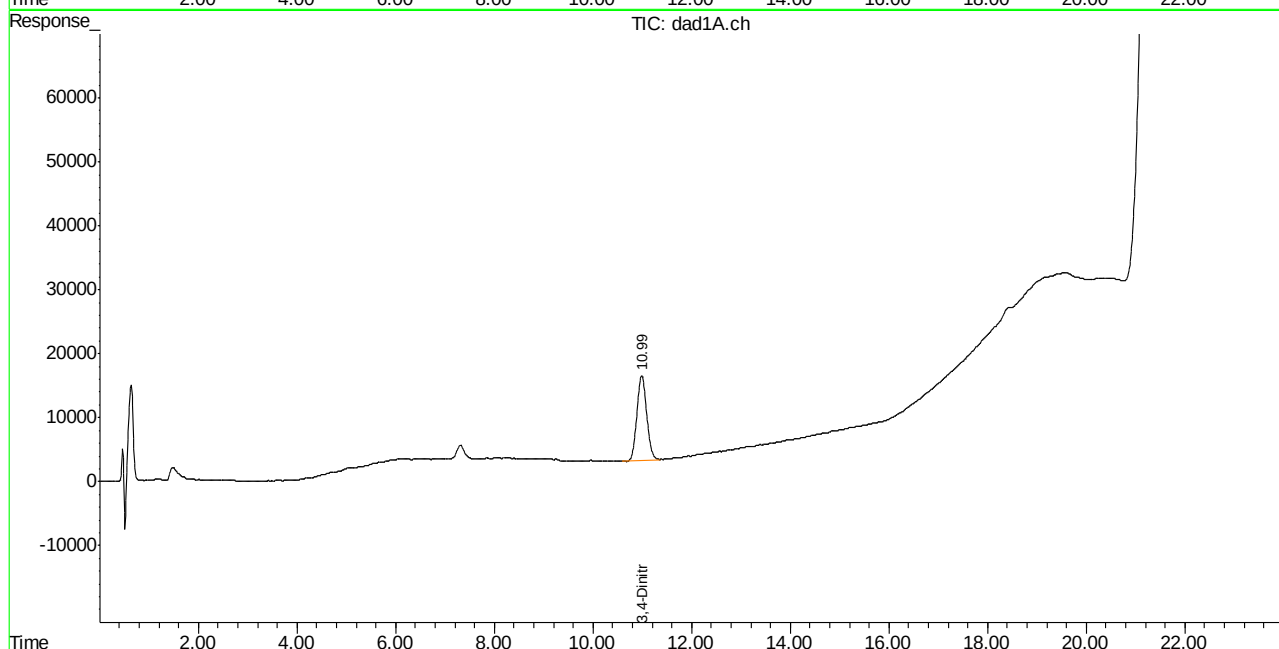
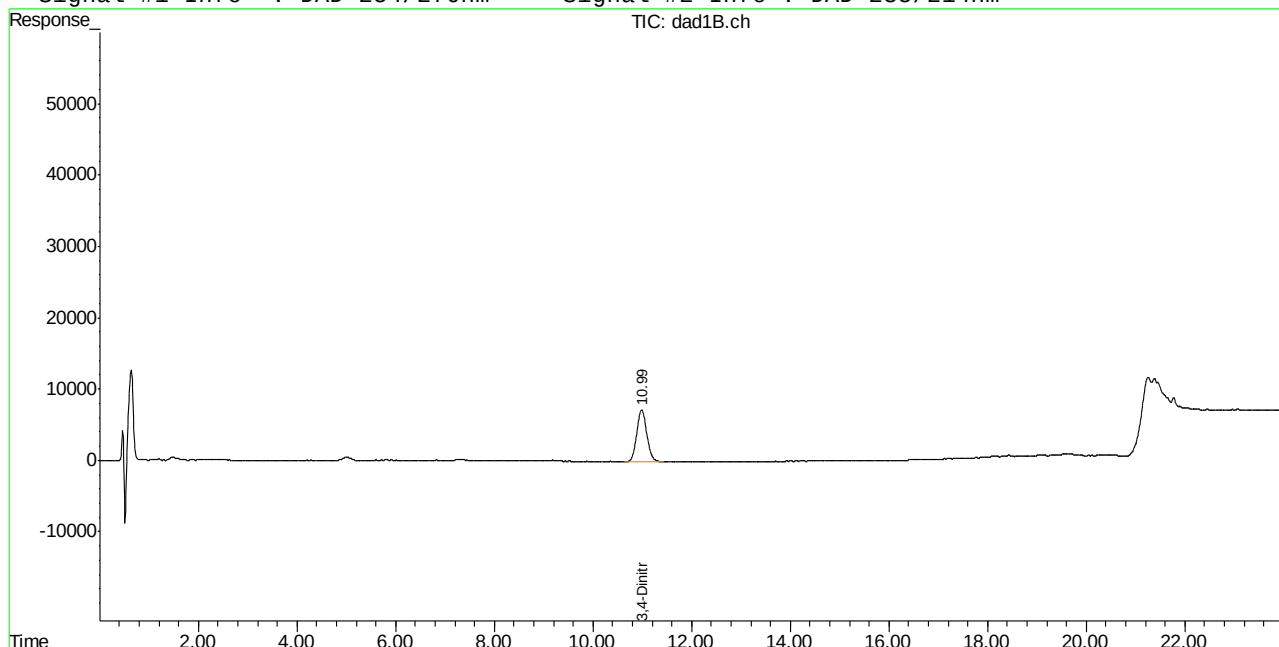
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
BB077746.D BBB2349_041423.M Thu Jul 20 08:40:49 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077746.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077746.D\dad1A.ch
Acq On : 18-Jul-2023, 09:55:47 Operator: fouads
Sample : op97885-MB Inst : G1315B
Misc : op97885, GBB2394, 1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 8:40 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626836.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626836.D\dad1A.ch
Acq On : 19-Jul-2023, 08:58:45 Operator: fouads
Sample : op97885-mb Inst : G1315B
Misc : op97885,GGG3302,1000,,,20,1x,soil Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 19 09:24:55 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Initial Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	15.44	15.44	2811935	5572308	440.766	452.973
Spiked Amount	500.000	Range	69 - 134	Recovery	= 88.15%	90.59%
Target Compounds						
1) TNX	0.00	0.00	0	0	N.D.	N.D.
2) HMX	0.00	0.00	0	0	N.D.	N.D.
3) DNX	0.00	0.00	0	0	N.D.	N.D.
4) MNX	0.00	0.00	0	0	N.D.	N.D.
5) 1,3,5-Trinitrobe	0.00	0.00	0	0	N.D.	N.D.
6) RDX	0.00	0.00	0	0	N.D.	N.D.
7) 1,3-Dinitrobenze	0.00	0.00	0	0	N.D.	N.D. d
8) Nitrobenzene	0.00	0.00	0	0	N.D.	N.D. d
9) 2,4,6-Trinitroto	0.00	0.00	0	0	N.D.	N.D.
10) Nitroglycerin	0.00	0.00	0	0	N.D.	N.D.
11) Tetryl	0.00	0.00	0	0	N.D.	N.D. d
13) 2,6-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
14) 2,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
15) 3,5-Dinitroanili	0.00	0.00	0	0	N.D.	N.D.
16) o-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D. d
17) p-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
18) 4-Amino-2,6-Dini	0.00	0.00	0	0	N.D.	N.D.
19) m-Nitrotoluene	0.00	0.00	0	0	N.D.	N.D.
20) 2-Amino-4,6-Dini	0.00	0.00	0	0	N.D.	N.D.
21) PETN	0.00	0.00	0	0	N.D.	N.D.

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
GG626836.D GGG3229_071123.M Thu Jul 20 08:37:32 2023

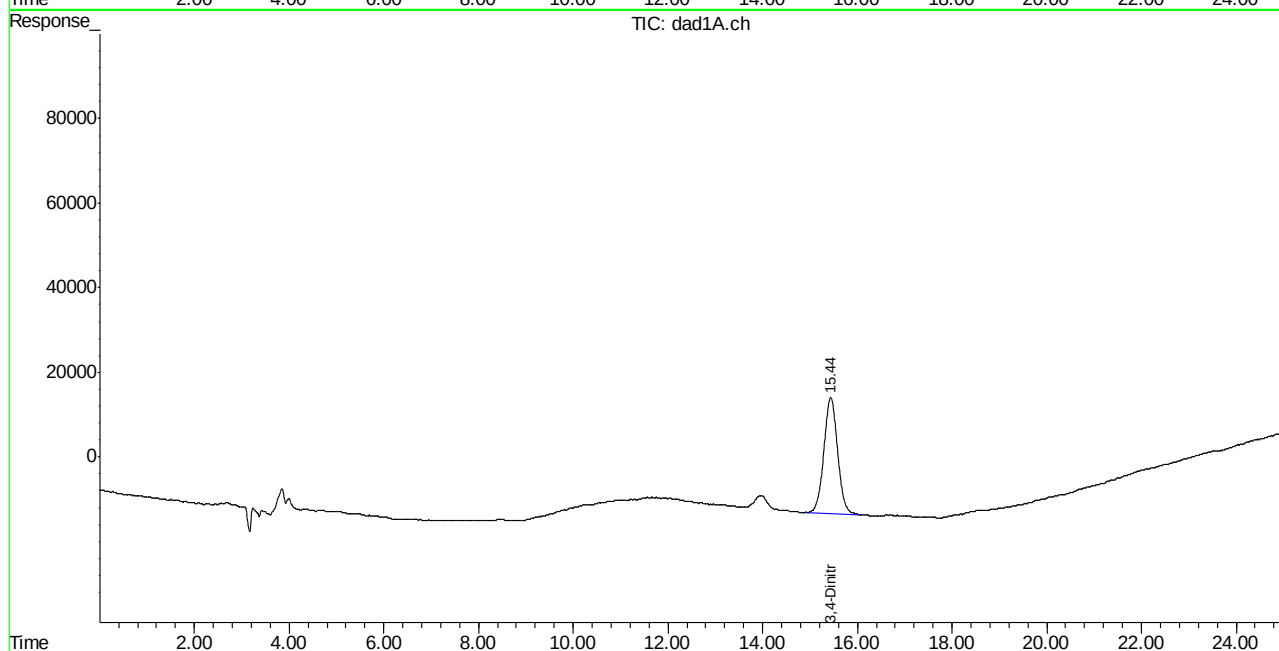
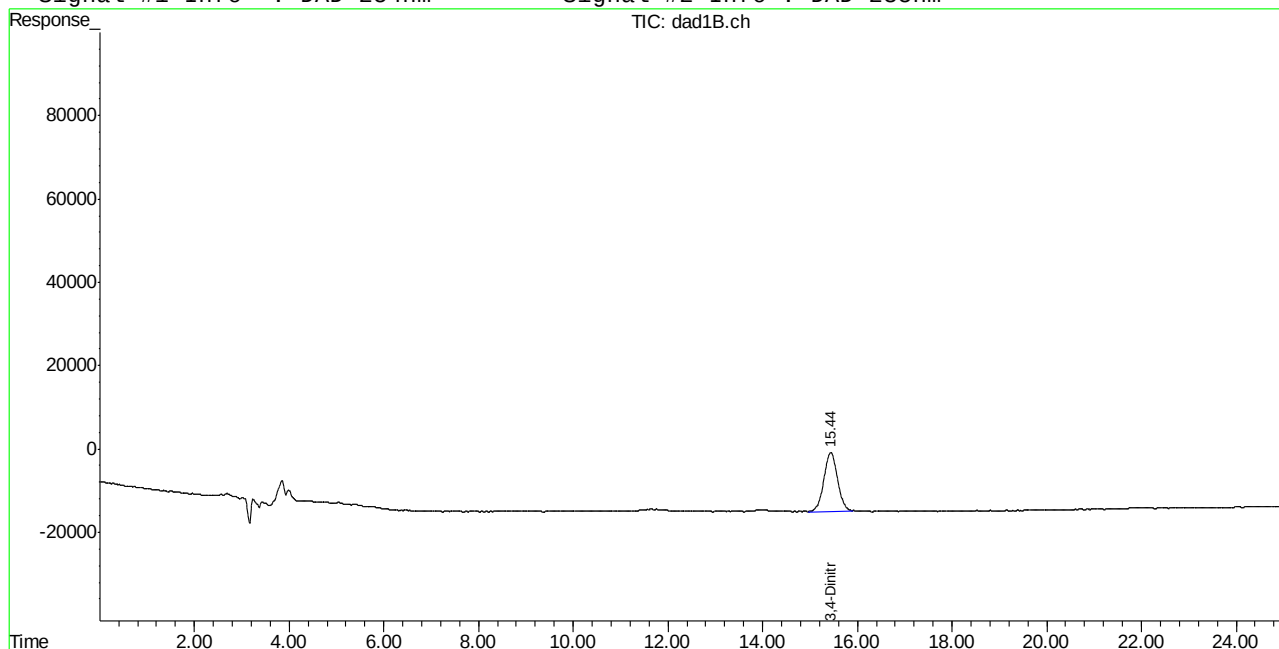
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626836.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626836.D\dad1A.ch
Acq On : 19-Jul-2023, 08:58:45 Operator: fouads
Sample : op97885-mb Inst : G1315B
Misc : op97885,GGG3302,1000,,,20,1x,soil Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 19 15:19 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Naresh Jiawan
07/20/23 17:18

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077745.D\dad1B.ch Vial: 3
 Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077745.D\dad1A.ch
 Acq On : 18-Jul-2023, 09:24:02 Operator: fouads
 Sample : OP97885-BS Inst : G1315B
 Misc : op97885,GBB2394,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jul 18 09:49:10 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Jul 07 08:35:11 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	11.02	11.02	1040394	1886014	434.100	468.333
Spiked Amount	500.000	Range	70 - 136	Recovery	= 86.82%	93.67%
Target Compounds						
1) TNX	1.32	1.32	766772	1181164	220.391	221.104
2) HMX	1.46	1.46	776568	2181706	526.982	536.743
3) DNX	1.70	1.70	1390433	2212483	455.083	513.233
4) MNX	2.28	2.28	1523781	2350918	553.768	555.483
5) RDX	2.90	2.89	922087	1476906	475.975	488.287
6) 1,3,5-Trinitrobe	4.64	4.64	1828511	2975675	438.812	448.628
7) 1,3-Dinitrobenze	5.85	5.85	2628418	1987163	485.929	516.258
8) 3,5-Dinitroanili	6.21	6.21	1964182	3478780	497.010	500.597
9) Nitrobenzene	7.37	7.37	1386180	1402849	428.923	446.704
10) Nitroglycerin	0.00	8.70	0	657087	N.D.	487.692 #
11) Tetryl	9.24	9.24	1206335	1957635	430.597	397.444
12) 2,4,6-Trinitroto	9.66	9.66	1785811	2198881	497.711	457.689
13) 2-Amino-4,6-Dini	10.10	10.10	1603186	2422959	505.008	471.490
14) 4-Amino-2,6-Dini	10.52	10.52	1208811	2456347	510.337	484.499
16) 2,4-Dinitrotolue	11.67	11.67	2298752	1544315	474.230	511.773
17) 2,6-Dinitrotolue	12.08	12.09	1312695	1752576	476.318	511.470
18) o-Nitrotoluene	15.14	15.14	965584	1331264	415.889	418.913
19) p-Nitrotoluene	15.69	15.69	1547314	1273426	443.048	433.609
20) m-Nitrotoluene	16.56	16.57	1430134	1606365	426.861	430.277
21) PETN	0.00	18.19	0	686312	N.D.	516.516m#

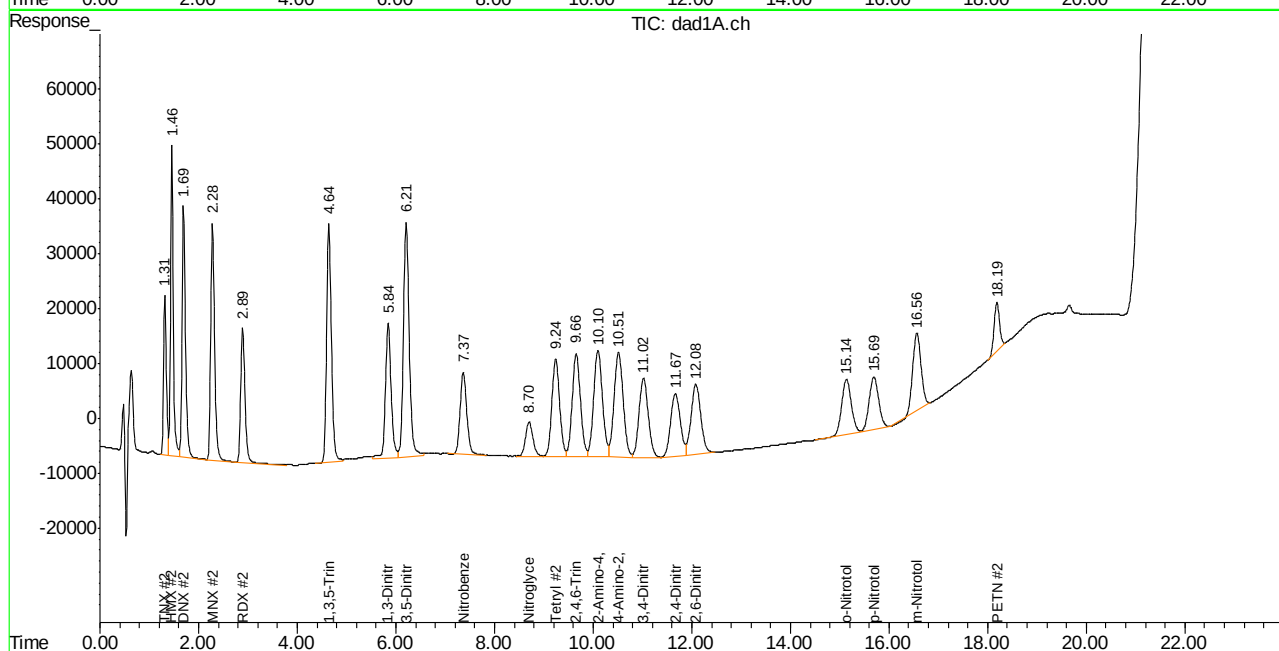
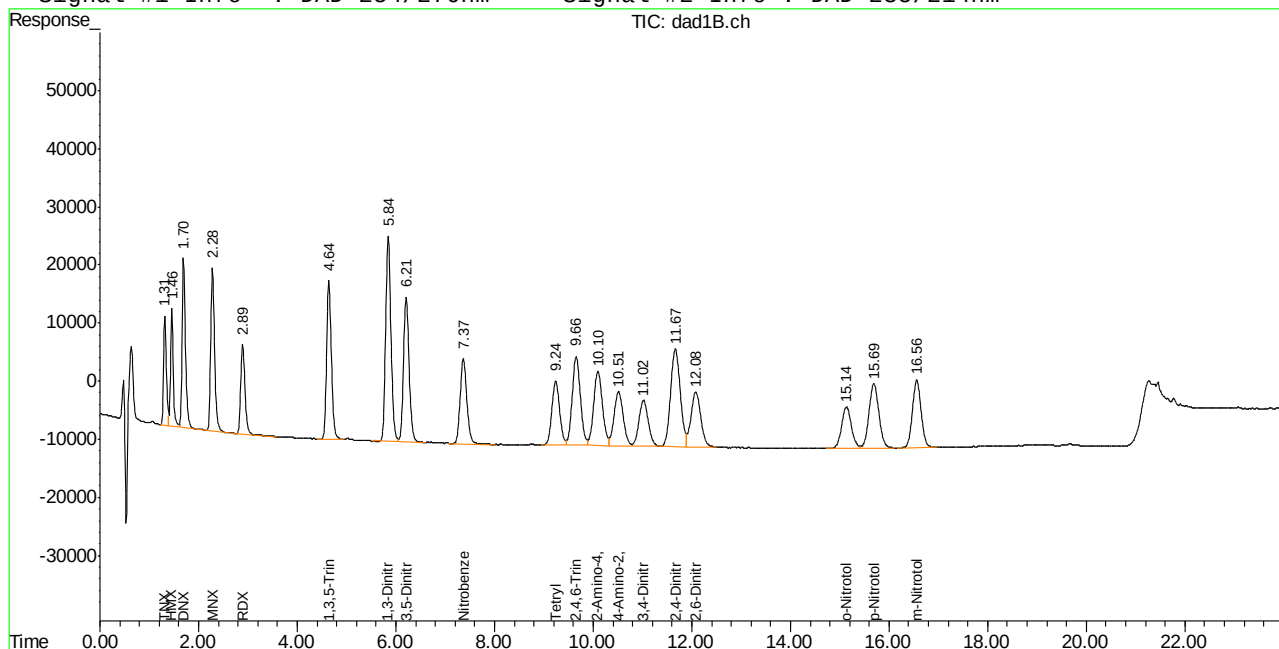
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB077745.D BBB2349_041423.M Thu Jul 20 08:40:48 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077745.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077745.D\dad1A.ch
Acq On : 18-Jul-2023, 09:24:02 Operator: fouads
Sample : OP97885-BS Inst : G1315B
Misc : op97885, GBB2394, 1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 8:39 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: OP97885-BS

Method: SW846 8330A

Lab FileID: BB077745.D

Analyst approved: 07/20/23 17:18 Naresh Jiawan

Injection Time: 07/18/23 09:24

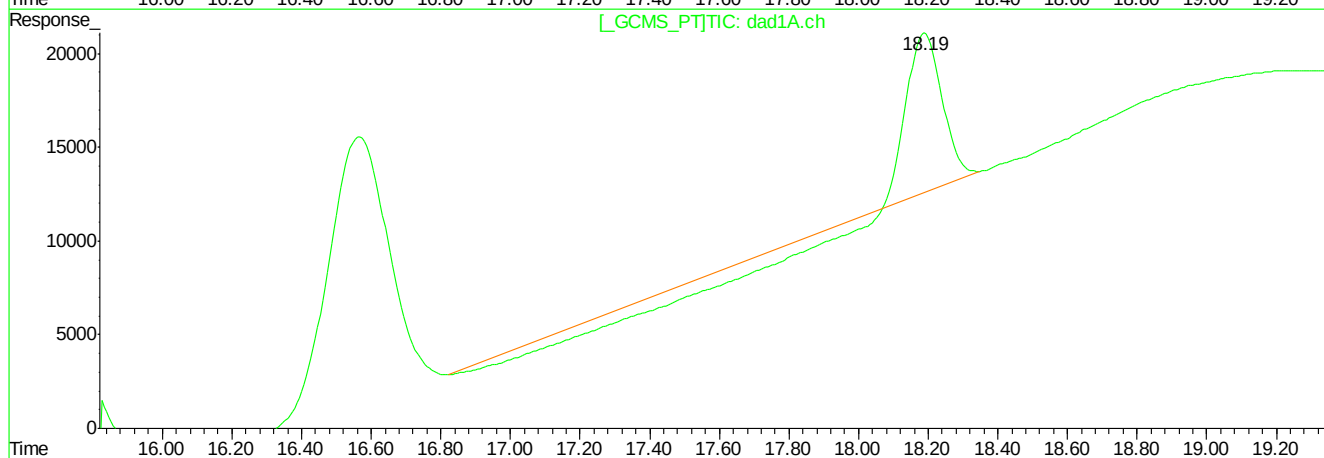
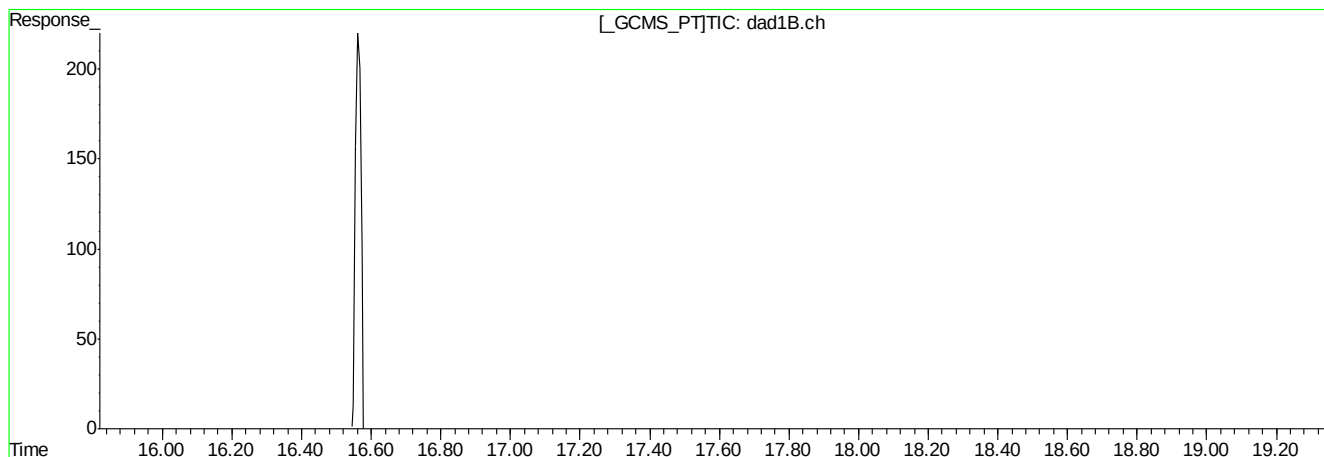
Supervisor approved: 07/20/23 17:18 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
PETN	78-11-5	2	18.19	Poorly defined baseline

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077745.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077745.D\dad1A.ch
Acq On : 18-Jul-2023, 09:24:02 Operator: fouads
Sample : OP97885-BS Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 9:49 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

18.19min 113.347ppb

response 150607

(+) = Expected Retention Time

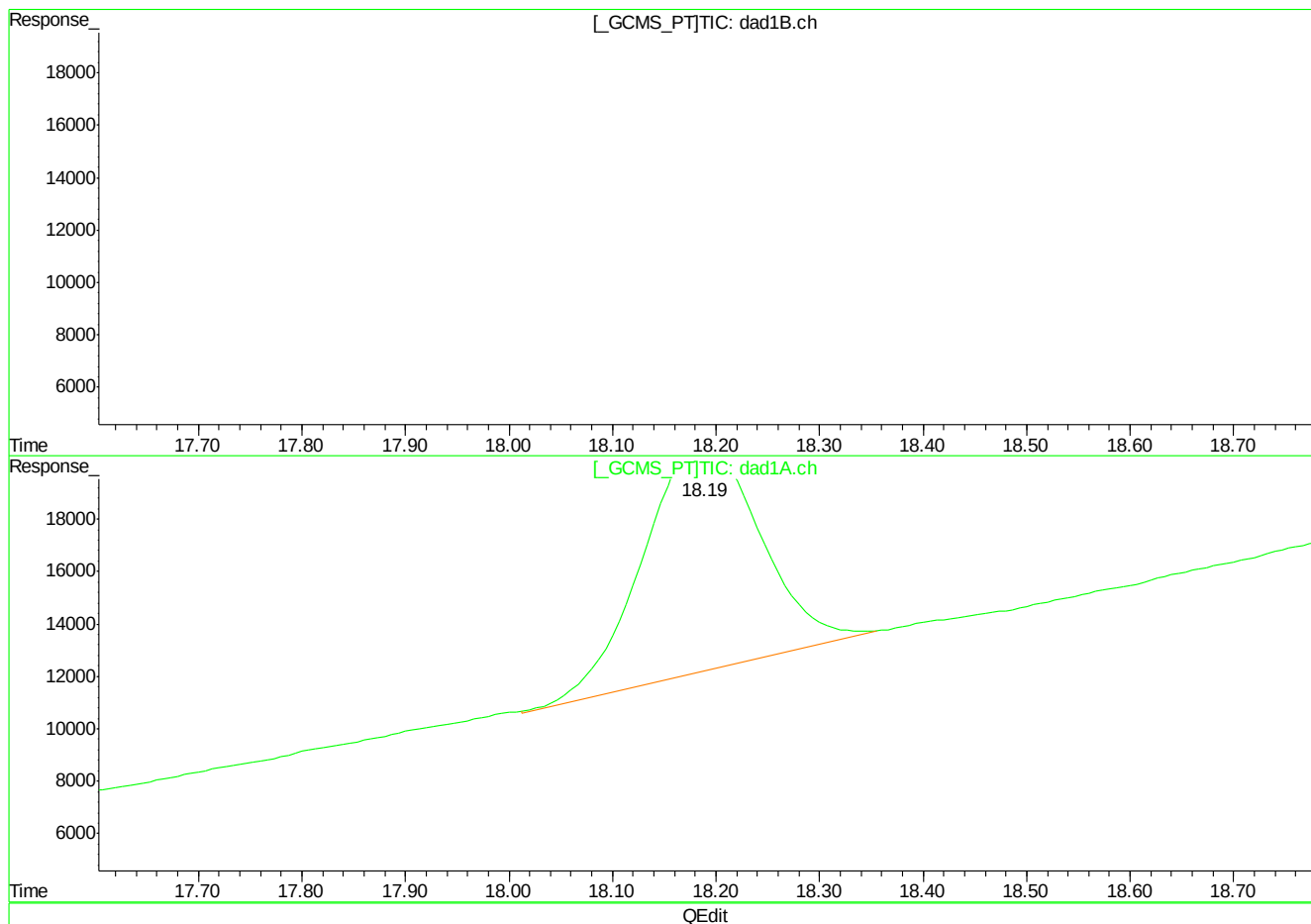
BB077745.D BBB2349_041423.M

Wed Jul 19 08:39:32 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077745.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077745.D\dad1A.ch
Acq On : 18-Jul-2023, 09:24:02 Operator: fouads
Sample : OP97885-BS Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 9:49 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

18.19min 516.516ppb m

response 686312

(+) = Expected Retention Time

BB077745.D BBB2349_041423.M

Wed Jul 19 08:39:41 2023

Naresh Jiawan
07/20/23 17:18

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077745.D\dad1B.ch Vial: 3
 Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077745.D\dad1A.ch
 Acq On : 18-Jul-2023, 09:24:02 Operator: fouads
 Sample : OP97885-BS Inst : G1315B
 Misc : op97885,GBB2394,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jul 18 09:49:10 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Jul 07 08:35:11 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	11.02	11.02	1040394	1886014	434.100	468.333
Spiked Amount	500.000	Range	70 - 136	Recovery	=	86.82% 93.67%
Target Compounds						
1) TNX	1.32	1.32	766772	1181164	220.391	221.104
2) HMX	1.46	1.46	776568	2181706	526.982	536.743
3) DNX	1.70	1.70	1390433	2212483	455.083	513.233
4) MNX	2.28	2.28	1523781	2350918	553.768	555.483
5) RDX	2.90	2.89	922087	1476906	475.975	488.287
6) 1,3,5-Trinitrobe	4.64	4.64	1828511	2975675	438.812	448.628
7) 1,3-Dinitrobenze	5.85	5.85	2628418	1987163	485.929	516.258
8) 3,5-Dinitroanili	6.21	6.21	1964182	3478780	497.010	500.597
9) Nitrobenzene	7.37	7.37	1386180	1402849	428.923	446.704
10) Nitroglycerin	0.00	8.70	0	657087	N.D.	487.692 #
11) Tetryl	9.24	9.24	1206335	1957635	430.597	397.444
12) 2,4,6-Trinitroto	9.66	9.66	1785811	2198881	497.711	457.689
13) 2-Amino-4,6-Dini	10.10	10.10	1603186	2422959	505.008	471.490
14) 4-Amino-2,6-Dini	10.52	10.52	1208811	2456347	510.337	484.499
16) 2,4-Dinitrotolue	11.67	11.67	2298752	1544315	474.230	511.773
17) 2,6-Dinitrotolue	12.08	12.09	1312695	1752576	476.318	511.470
18) o-Nitrotoluene	15.14	15.14	965584	1331264	415.889	418.913
19) p-Nitrotoluene	15.69	15.69	1547314	1273426	443.048	433.609
20) m-Nitrotoluene	16.56	16.57	1430134	1606365	426.861	430.277
21) PETN	0.00	18.19	0	686312	N.D.	516.516m#

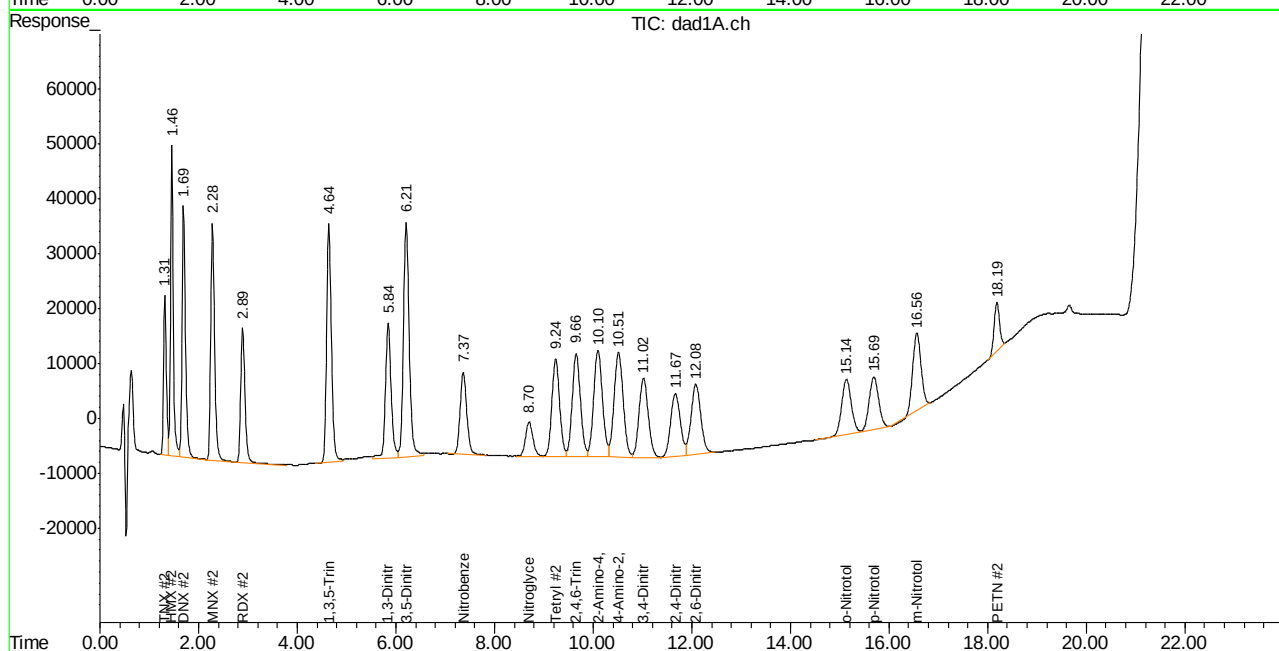
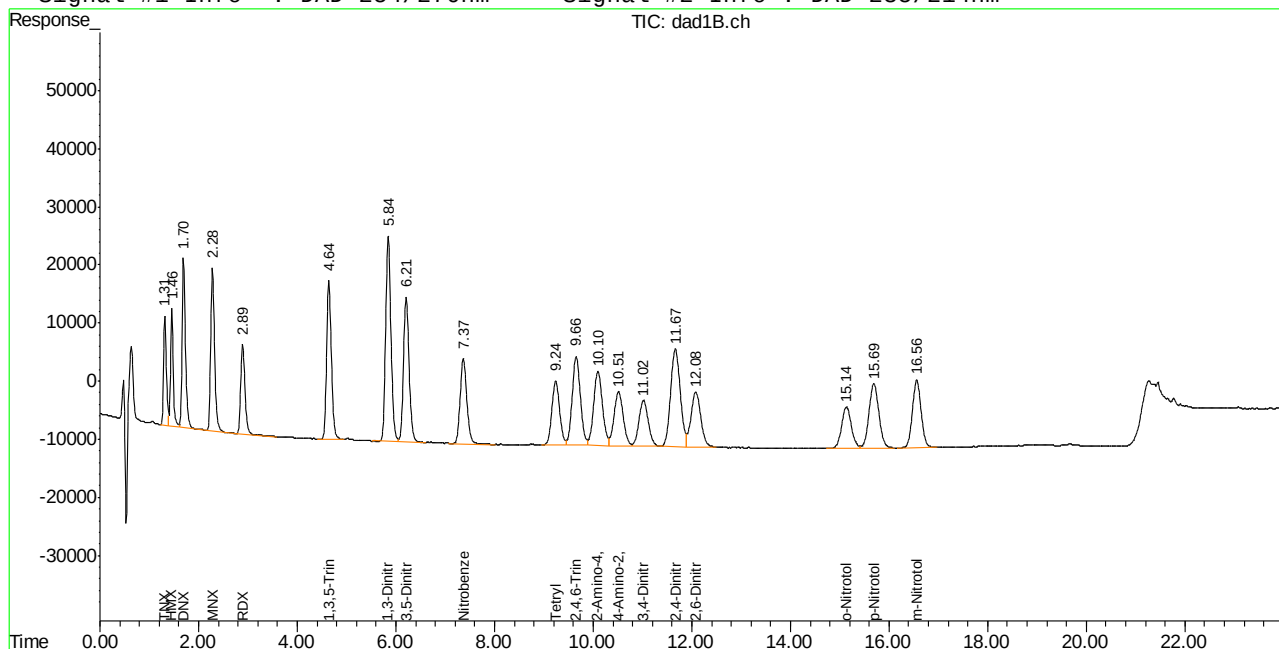
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB077745.D BBB2349_041423.M Thu Jul 20 08:40:48 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077745.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077745.D\dad1A.ch
Acq On : 18-Jul-2023, 09:24:02 Operator: fouads
Sample : OP97885-BS Inst : G1315B
Misc : op97885, GBB2394, 1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 8:39 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: OP97885-BS

Method: SW846 8330A

Lab FileID: BB077745.D

Analyst approved: 07/20/23 17:18 Naresh Jiawan

Injection Time: 07/18/23 09:24

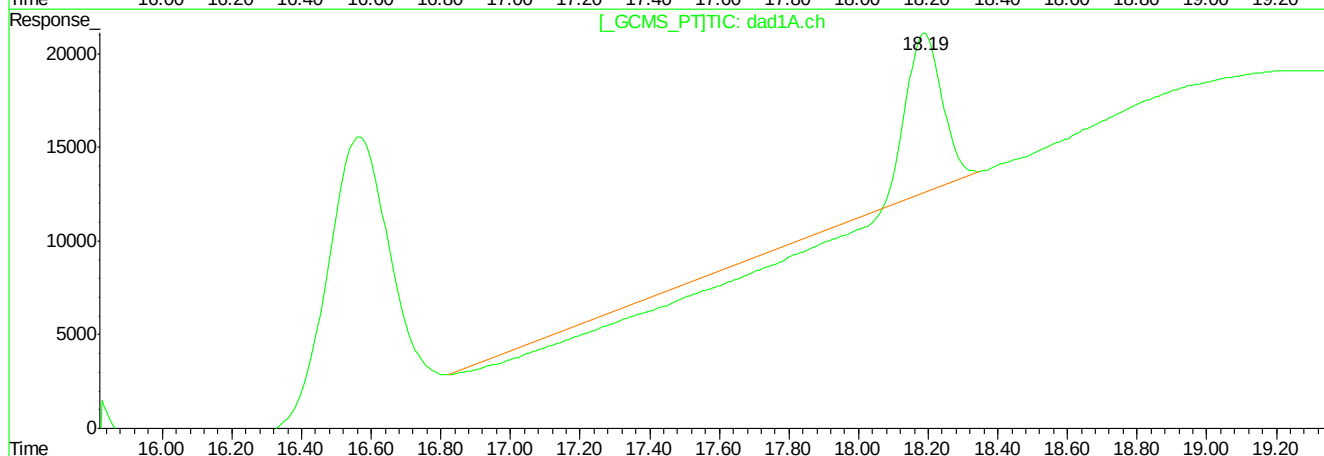
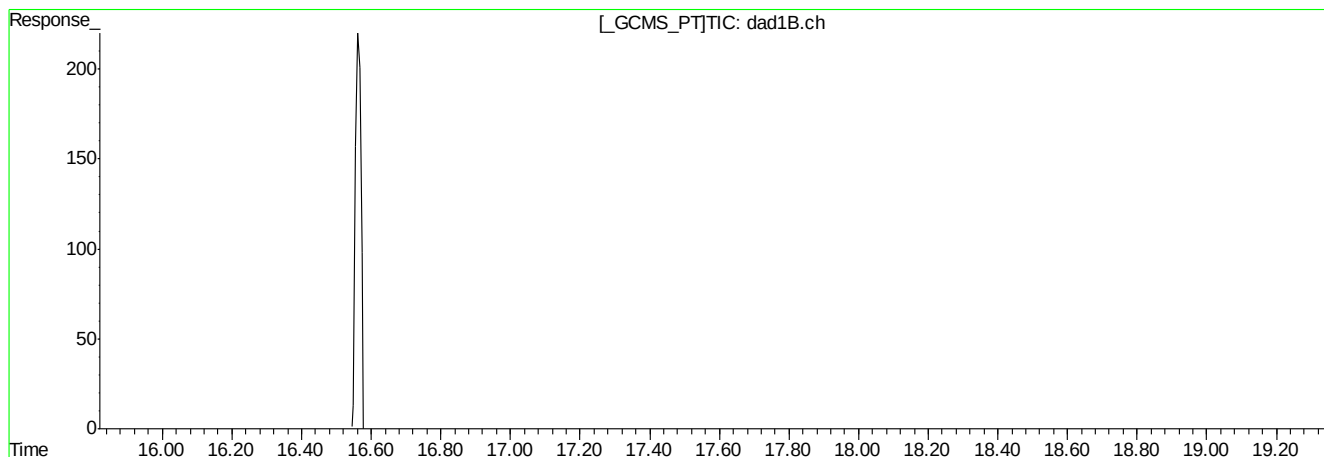
Supervisor approved: 07/20/23 17:18 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
PETN	78-11-5	2	18.19	Poorly defined baseline

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077745.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077745.D\dad1A.ch
Acq On : 18-Jul-2023, 09:24:02 Operator: fouads
Sample : OP97885-BS Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 9:49 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

18.19min 113.347ppb

response 150607

(+) = Expected Retention Time

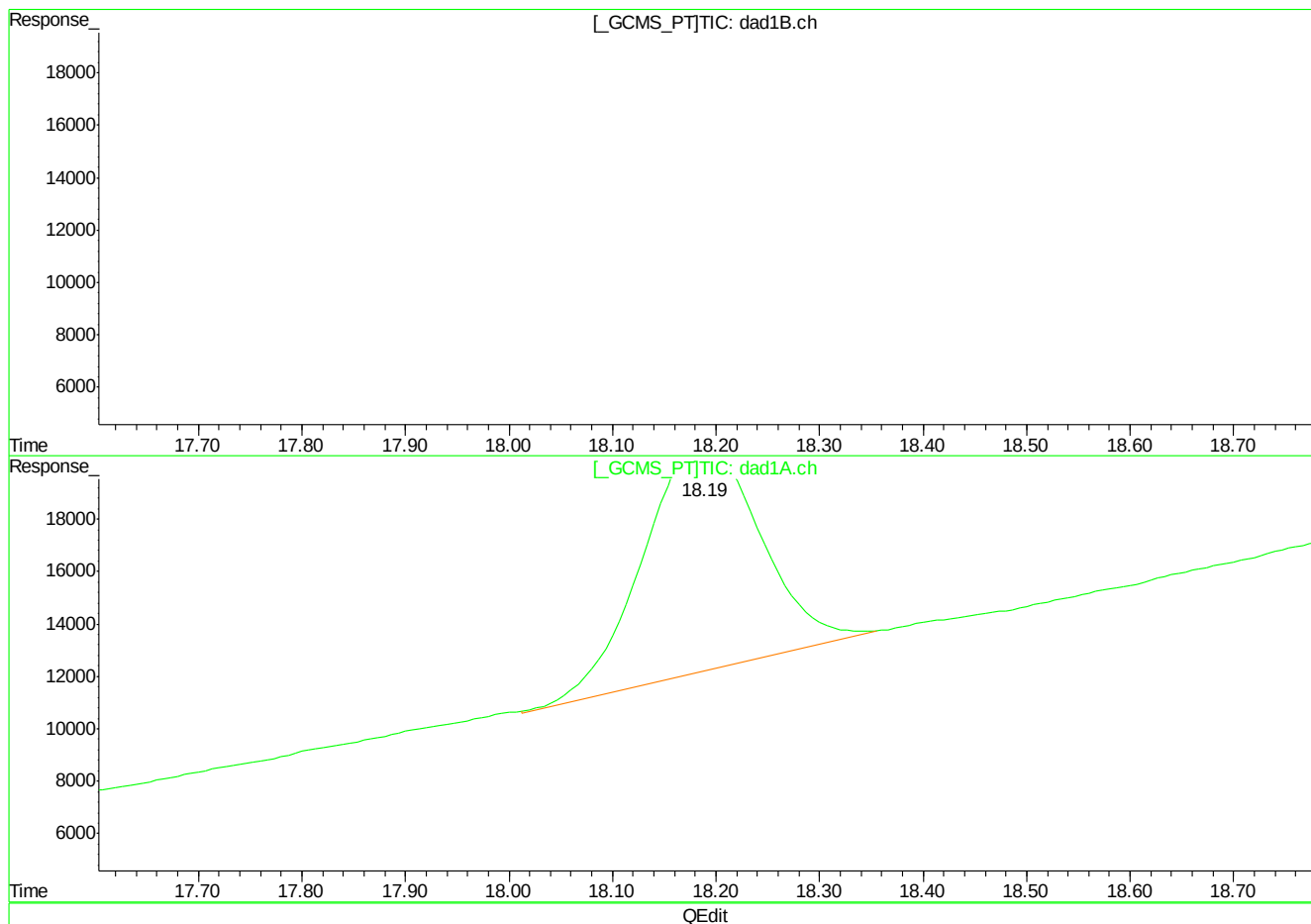
BB077745.D BBB2349_041423.M

Wed Jul 19 08:39:32 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077745.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077745.D\dad1A.ch
Acq On : 18-Jul-2023, 09:24:02 Operator: fouads
Sample : OP97885-BS Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 9:49 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

18.19min 516.516ppb m

response 686312

(+) = Expected Retention Time

BB077745.D BBB2349_041423.M

Wed Jul 19 08:39:41 2023

Naresh Jiawan
07/20/23 17:18

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1B.ch Vial: 11
 Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1A.ch
 Acq On : 18-Jul-2023, 15:23:09 Operator: fouads
 Sample : OP97885-MS Inst : G1315B
 Misc : op97885, GBB2394, 490,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jul 19 09:09:03 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 09:08:22 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	11.00	11.00	1002680	1895305	418.365	470.640
Spiked Amount	500.000	Range	70 - 136	Recovery	=	83.67% 94.13%
Target Compounds						
1) TNX	1.30	1.30	747872	1190464	214.959	222.845
2) HMX	1.45	1.45	1751170	4877221	1188.352	1199.893
3) DNX	1.68	1.68	1404633	2292400	459.730	531.772
4) MNX	2.26	2.26	1507813	2309954	547.965	545.804
5) RDX	2.87	2.87	997211	1586540	514.754	524.534
6) 1,3,5-Trinitrobe	4.62	4.62	3316598	5335032	795.928m	804.337m
7) 1,3-Dinitrobenze	5.82	5.82	2816273	2052994	520.658	533.361m
8) 3,5-Dinitroanili	6.18	6.18	2130457	3831679	539.084	551.379
9) Nitrobenzene	7.34	7.34	1569336	1538249	485.596	489.819
10) Nitroglycerin	0.00	8.69	0	678313	N.D.	503.446 #
11) Tetryl	9.22	9.22	1380853	2158182	492.891	438.160
12) 2,4,6-Trinitroto	9.64	9.64	2682012	3269210	747.485	680.474
13) 2-Amino-4,6-Dini	10.07	10.07	2244468	3382769	707.013	658.263
14) 4-Amino-2,6-Dini	10.48	10.49	1521249	3161319	642.242	623.551
16) 2,4-Dinitrotolue	11.65	11.65	2431424	1597509	501.600	529.401
17) 2,6-Dinitrotolue	12.06	12.06	1415531	1849342	513.632	539.710
18) o-Nitrotoluene	15.12	15.12	1326364	1702653	571.281	535.780
19) p-Nitrotoluene	15.68	15.68	1732058	1435254	495.946	488.712
20) m-Nitrotoluene	16.55	16.56	1639989	1790444	489.498	479.583
21) PETN	0.00	18.18	0	680087	N.D.	511.832m#

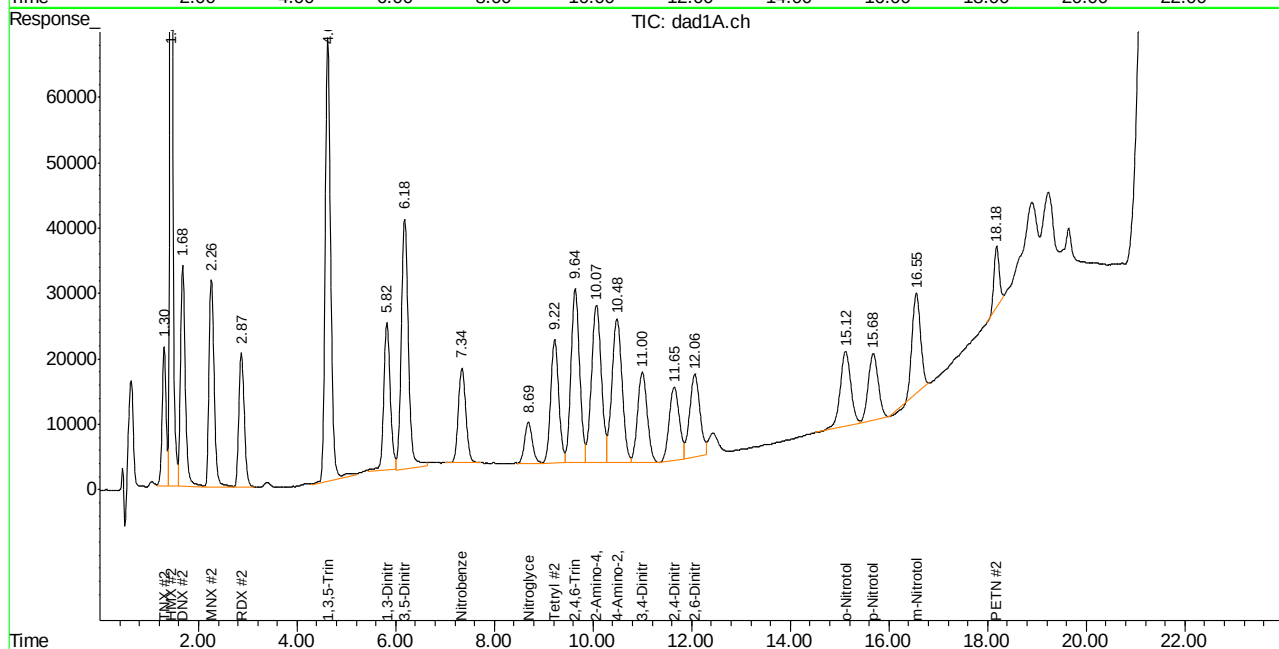
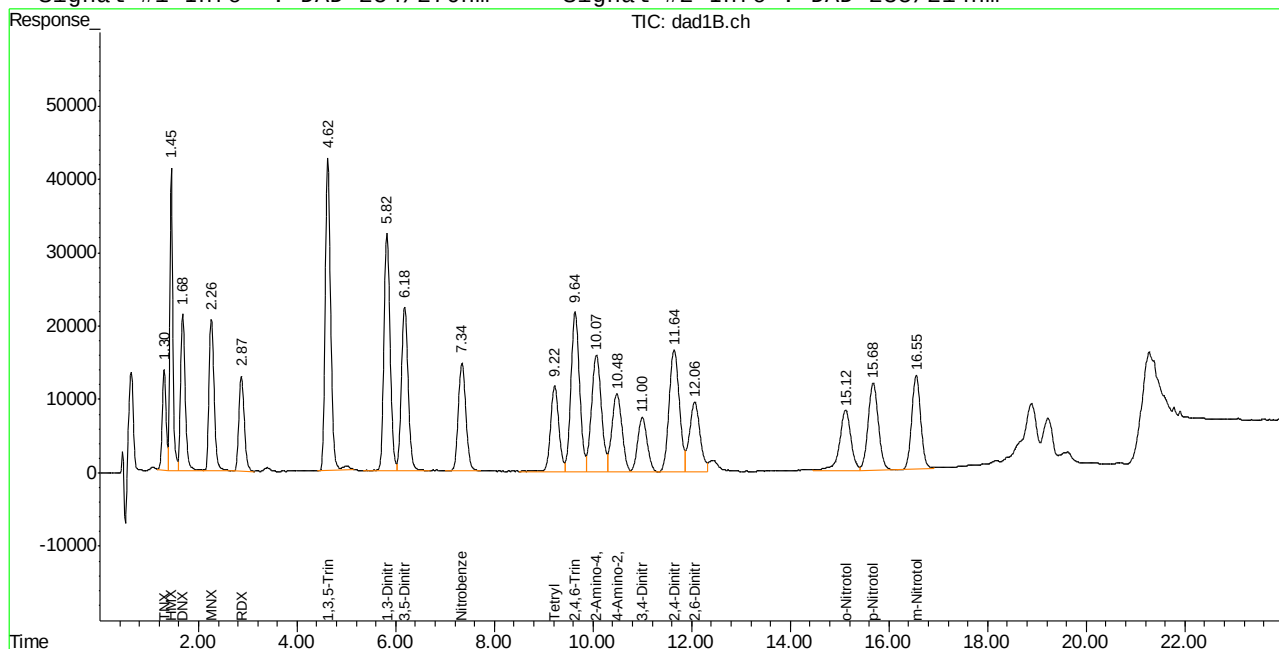
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB077755.D BBB2349_041423.M Thu Jul 20 08:40:57 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1A.ch
Acq On : 18-Jul-2023, 15:23:09 Operator: fouads
Sample : OP97885-MS Inst : G1315B
Misc : op97885, GBB2394, 490,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:32 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: OP97885-MS

Method: SW846 8330A

Lab FileID: BB077755.D

Analyst approved: 07/20/23 17:18 Naresh Jiawan

Injection Time: 07/18/23 15:23

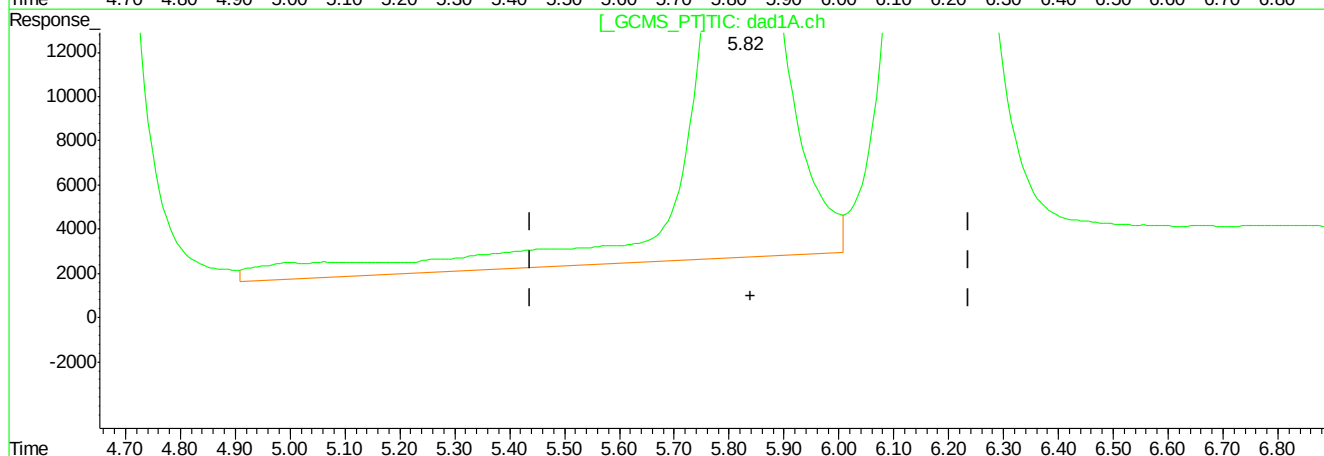
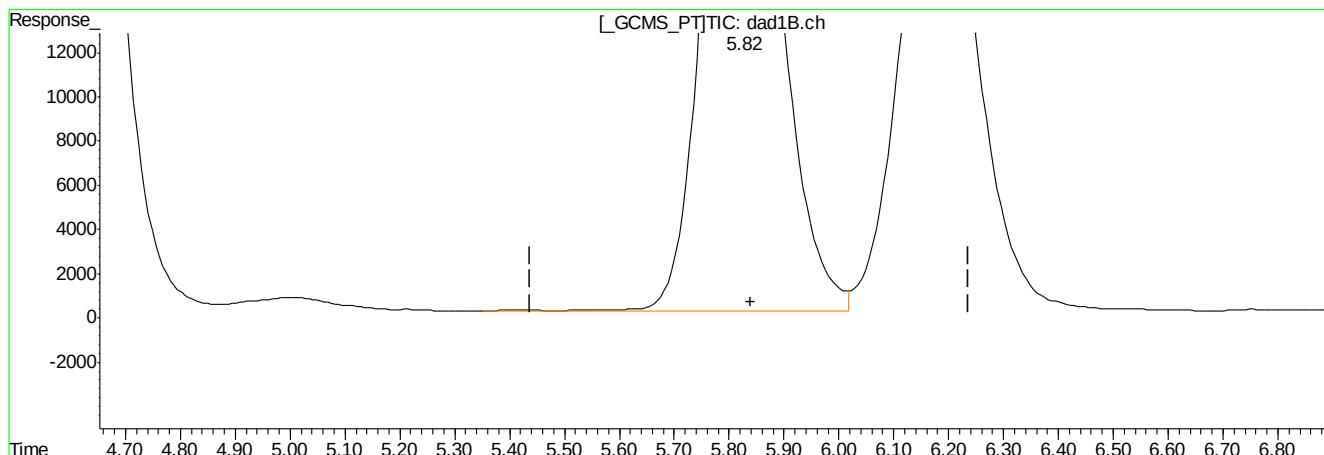
Supervisor approved: 07/20/23 17:18 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3,5-Trinitrobenzene	99-35-4	1	4.62	Poorly defined baseline
1,3,5-Trinitrobenzene	99-35-4	2	4.62	Poorly defined baseline
1,3-Dinitrobenzene	99-65-0	2	5.82	Poorly defined baseline
PETN	78-11-5	2	18.18	Poorly defined baseline

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1A.ch
Acq On : 18-Jul-2023, 15:23:09 Operator: fouads
Sample : OP97885-MS Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

5.82min 520.658ppb

response 2816273

(7) 1,3-Dinitrobenzene #2

5.82min 625.574ppb

response 2407938

(+) = Expected Retention Time

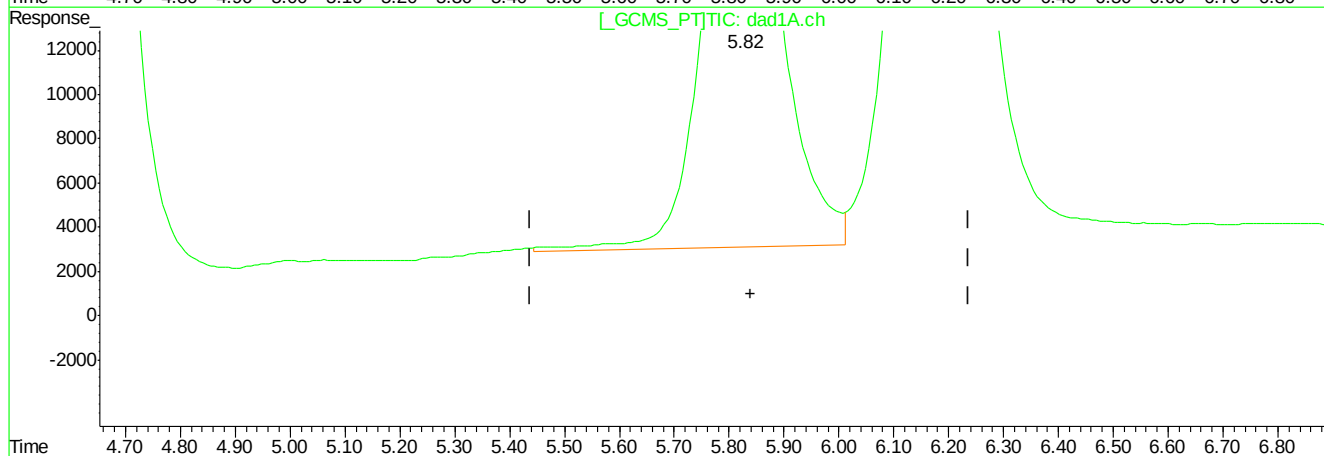
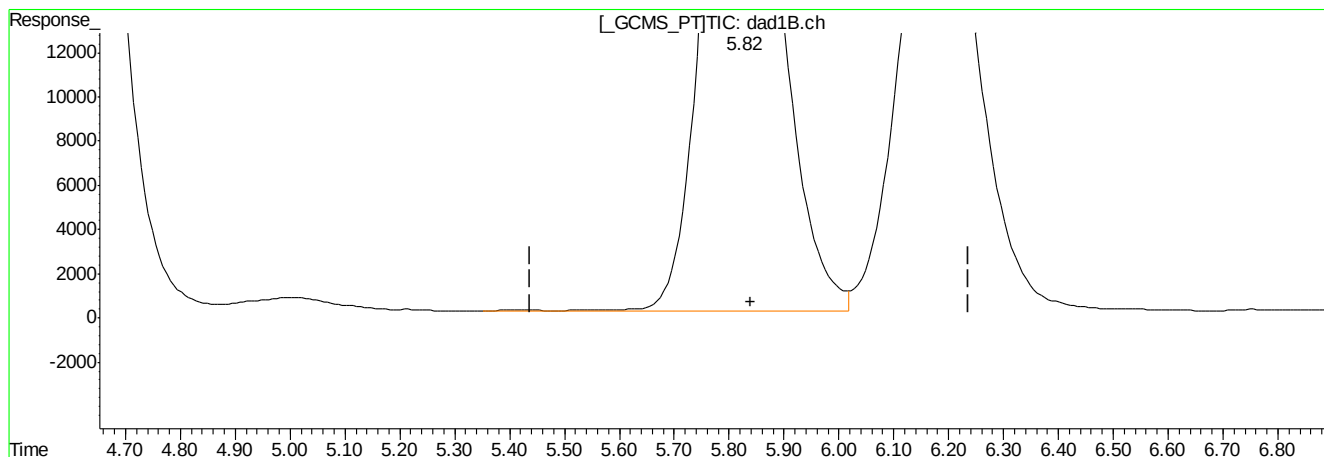
BB077755.D BBB2349_041423.M

Wed Jul 19 09:31:35 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1A.ch
Acq On : 18-Jul-2023, 15:23:09 Operator: fouads
Sample : OP97885-MS Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

5.82min 520.658ppb

response 2816273

(7) 1,3-Dinitrobenzene #2

5.82min 533.361ppb m

response 2052994

(+) = Expected Retention Time

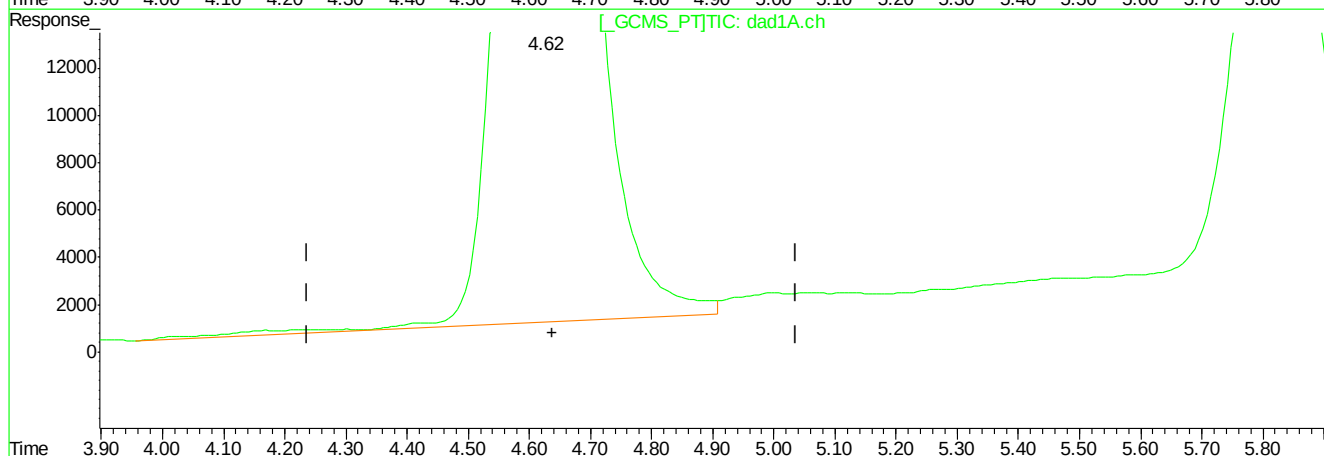
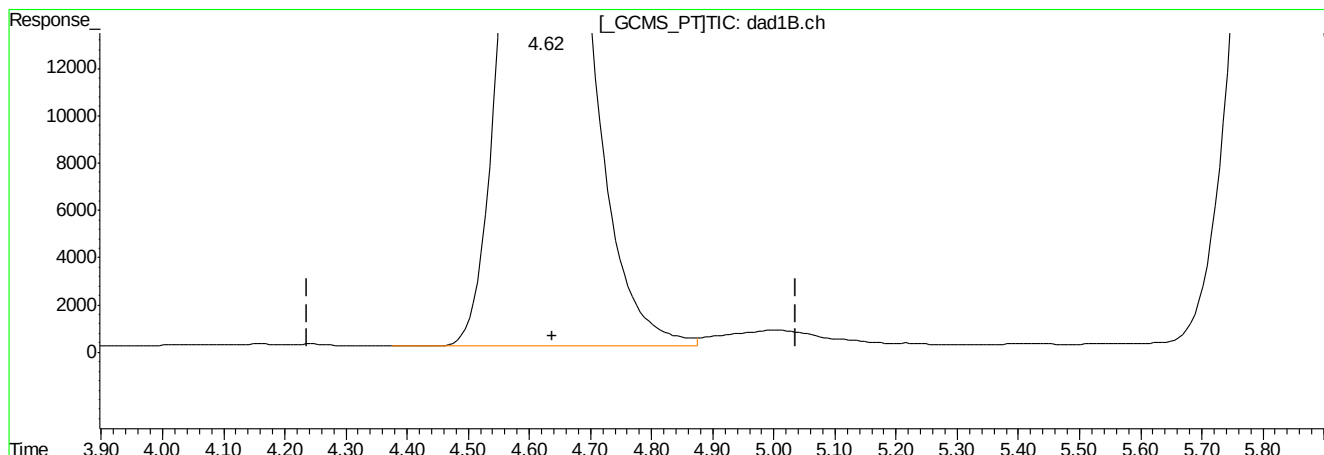
BB077755.D BBB2349_041423.M

Wed Jul 19 09:31:45 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1A.ch
Acq On : 18-Jul-2023, 15:23:09 Operator: fouads
Sample : OP97885-MS Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.62min 781.835ppb

response 3257875

(6) 1,3,5-Trinitrobenzene #2

4.62min 795.675ppb

response 5277577

(+) = Expected Retention Time

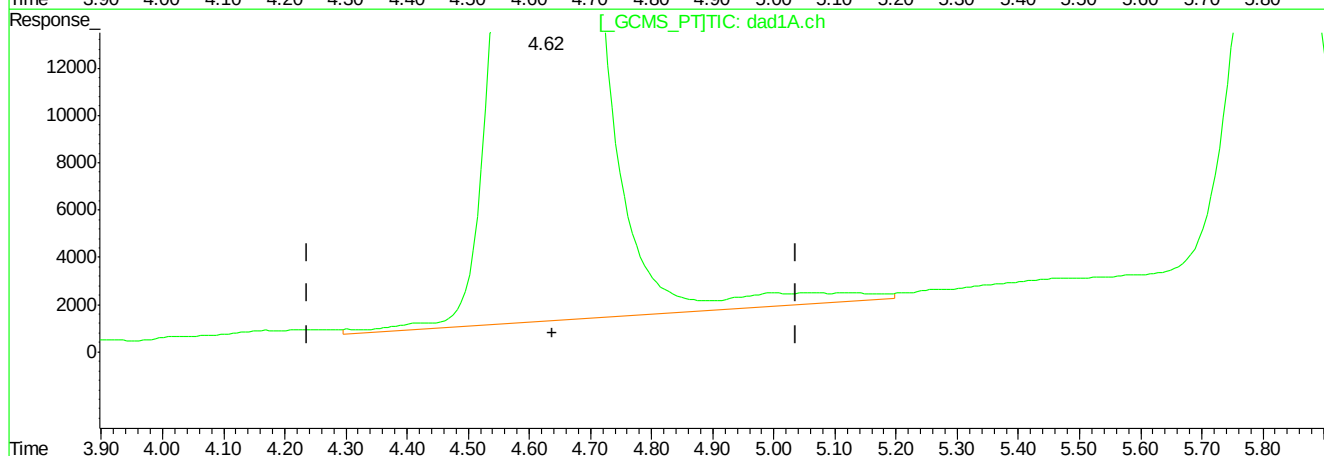
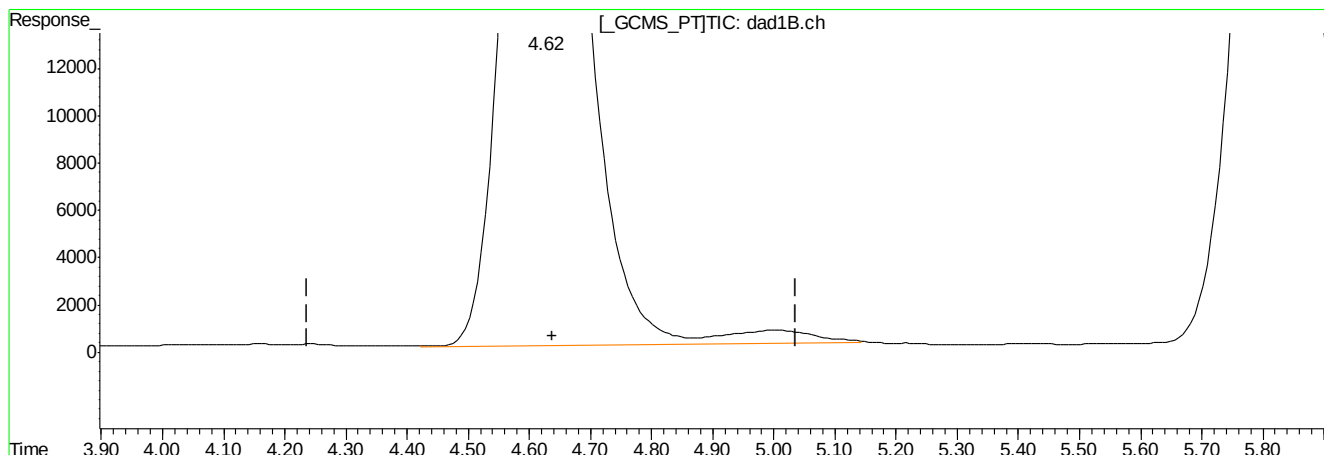
BB077755.D BBB2349_041423.M

Wed Jul 19 09:31:51 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1A.ch
Acq On : 18-Jul-2023, 15:23:09 Operator: fouads
Sample : OP97885-MS Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



QEdit

(6) 1,3,5-Trinitrobenzene

4.62min 795.928ppb m

response 3316598

(6) 1,3,5-Trinitrobenzene #2

4.62min 804.337ppb m

response 5335032

(+) = Expected Retention Time

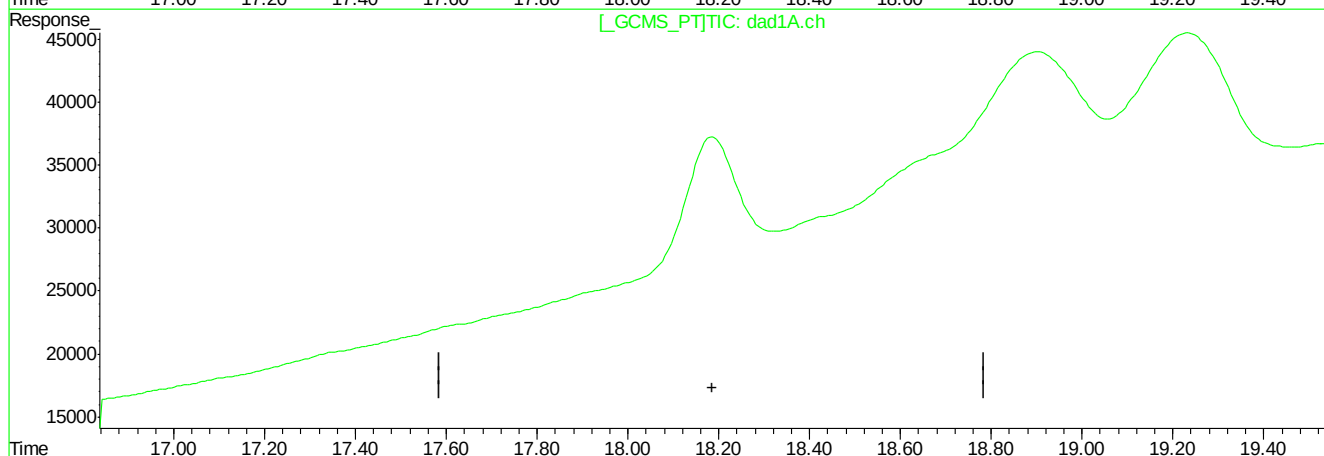
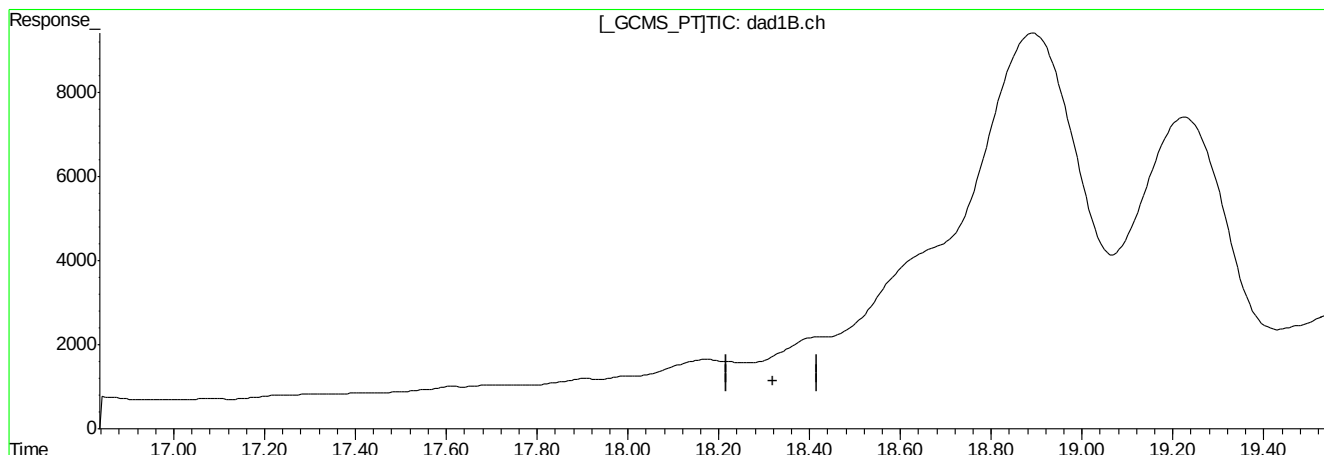
BB077755.D BBB2349_041423.M

Wed Jul 19 09:32:05 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1A.ch
Acq On : 18-Jul-2023, 15:23:09 Operator: fouads
Sample : OP97885-MS Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

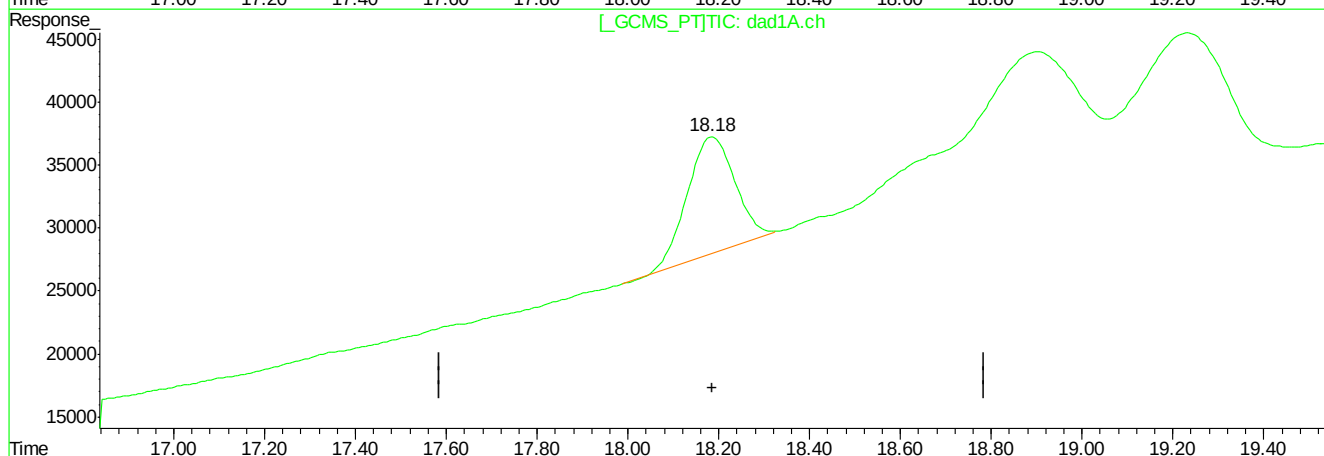
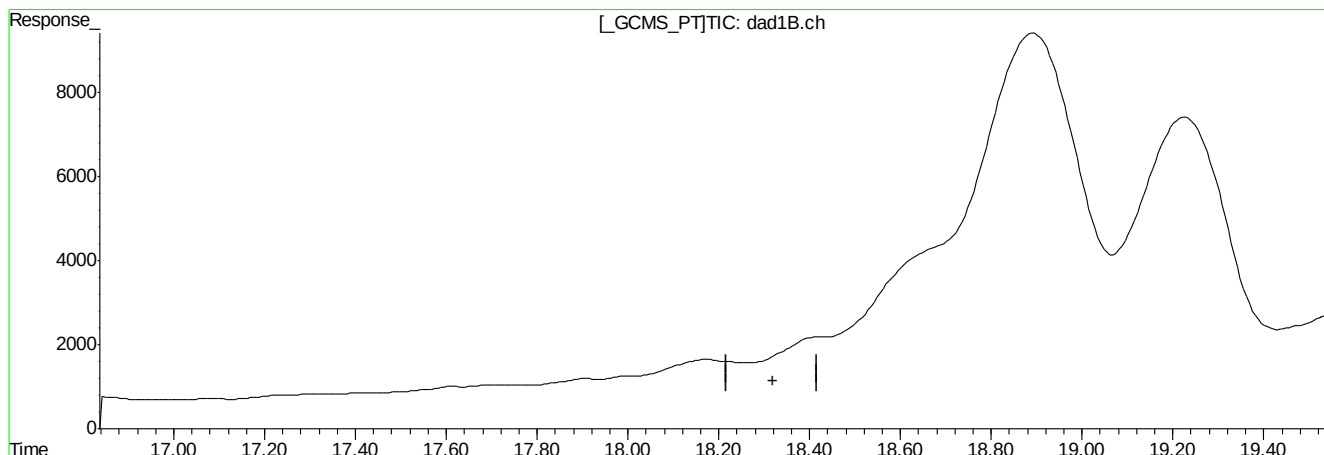
BB077755.D BBB2349_041423.M

Wed Jul 19 09:32:12 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1A.ch
Acq On : 18-Jul-2023, 15:23:09 Operator: fouads
Sample : OP97885-MS Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

18.18min 511.832ppb m

response 680087

(+) = Expected Retention Time

BB077755.D BBB2349_041423.M

Wed Jul 19 09:32:18 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1B.ch Vial: 12
 Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1A.ch
 Acq On : 18-Jul-2023, 15:54:05 Operator: fouads
 Sample : OP97885-MSD Inst : G1315B
 Misc : op97885, GBB2394, 490,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jul 19 09:09:04 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 09:08:22 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	11.00	11.00	994218	1901004	414.834	472.055
Spiked Amount	500.000	Range	70 - 136	Recovery	=	82.97% 94.41%
Target Compounds						
1) TNX	1.30	1.30	738085	1162423	212.146	217.596
2) HMX	1.45	1.45	1731627	4799821	1175.090	1180.851
3) DNX	1.68	1.68	1401399	2260148	458.672	524.290
4) MNX	2.27	2.27	1514803	2316839	550.506	547.430
5) RDX	2.88	2.88	1005515	1600313	519.040	529.088
6) 1,3,5-Trinitrobe	4.62	4.62	3313553	5247904	795.197m	791.201m
7) 1,3-Dinitrobenze	5.83	5.83	2810250	2025578	519.545	526.238m
8) 3,5-Dinitroanili	6.19	6.19	2122831	3809239	537.154	548.150
9) Nitrobenzene	7.35	7.35	1603618	1583880	496.204	504.349
10) Nitroglycerin	0.00	8.70	0	698903	N.D.	518.728 #
11) Tetryl	9.23	9.23	1355713	2181223	483.917	442.838
12) 2,4,6-Trinitroto	9.64	9.64	2677199	3278117	746.143	682.328
13) 2-Amino-4,6-Dini	10.07	10.07	2230819	3377646	702.714	657.266
14) 4-Amino-2,6-Dini	10.49	10.49	1511760	3175095	638.236	626.268
16) 2,4-Dinitrotolue	11.65	11.65	2435607	1604543	502.463	531.732
17) 2,6-Dinitrotolue	12.06	12.06	1423008	1875993	516.345	547.488
18) o-Nitrotoluene	15.11	15.11	1324154	1735276	570.329	546.045
19) p-Nitrotoluene	15.67	15.67	1753581	1445665	502.109	492.257
20) m-Nitrotoluene	16.55	16.55	1662778	1835109	496.300	491.547
21) PETN	0.00	18.18	0	665064	N.D.	500.526m#

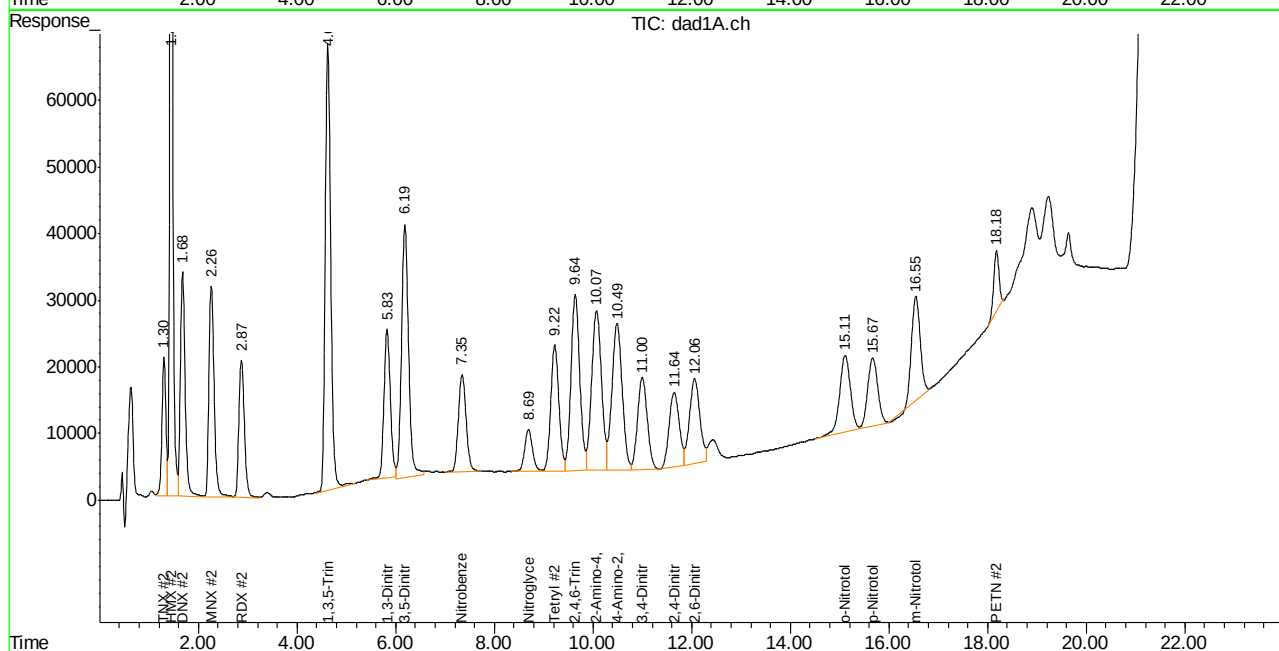
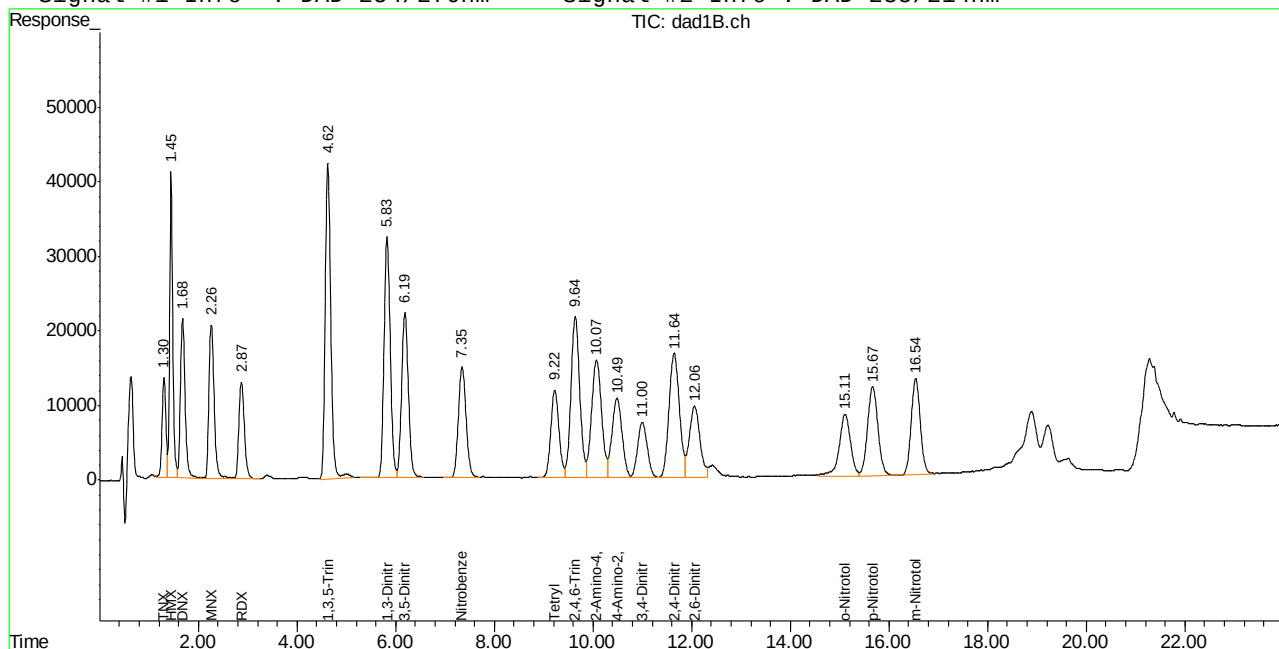
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB077756.D BBB2349_041423.M Thu Jul 20 08:40:58 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1B.ch Vial: 12
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1A.ch
Acq On : 18-Jul-2023, 15:54:05 Operator: fouads
Sample : OP97885-MSD Inst : G1315B
Misc : op97885, GBB2394, 490,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:33 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: OP97885-MSD

Method: SW846 8330A

Lab FileID: BB077756.D

Analyst approved: 07/20/23 17:18 Naresh Jiawan

Injection Time: 07/18/23 15:54

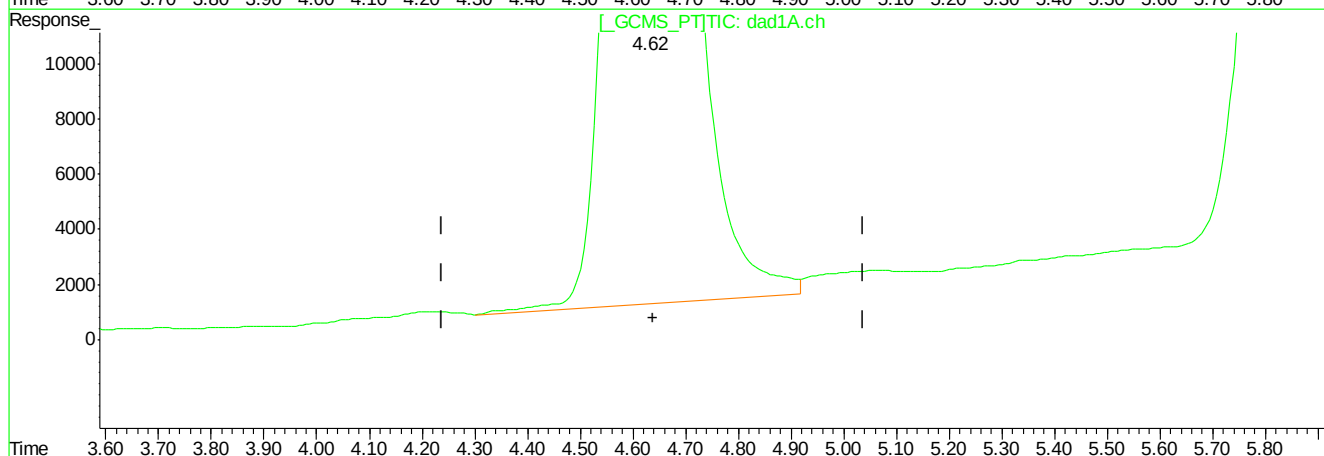
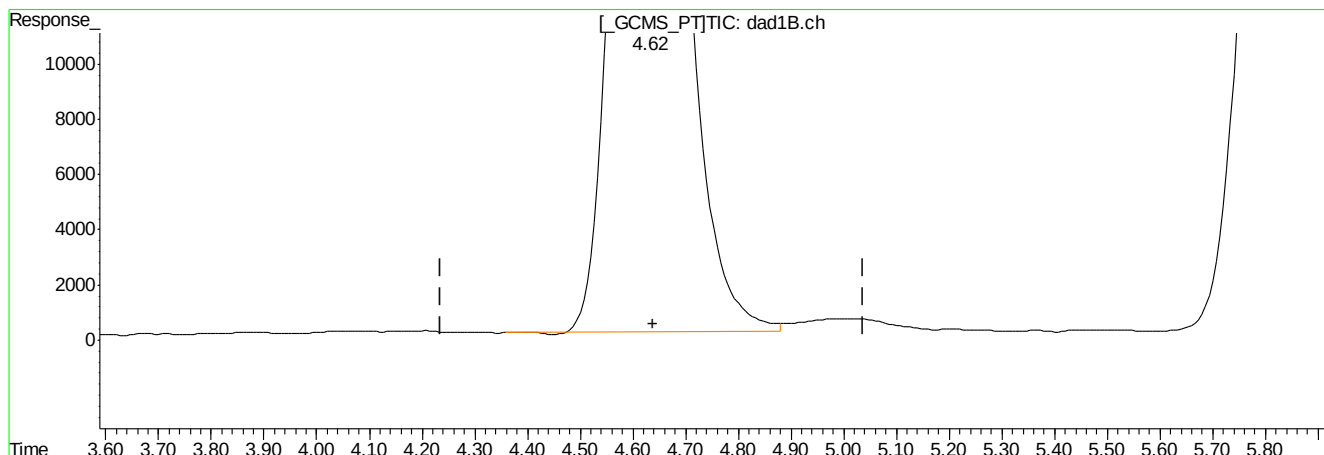
Supervisor approved: 07/20/23 17:18 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3,5-Trinitrobenzene	99-35-4	1	4.62	Poorly defined baseline
1,3,5-Trinitrobenzene	99-35-4	2	4.62	Poorly defined baseline
1,3-Dinitrobenzene	99-65-0	2	5.83	Poorly defined baseline
PETN	78-11-5	2	18.18	Poorly defined baseline

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1B.ch Vial: 12
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1A.ch
Acq On : 18-Jul-2023, 15:54:05 Operator: fouads
Sample : OP97885-MSD Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.63min 777.753ppb

response 3240864

(6) 1,3,5-Trinitrobenzene #2

4.63min 789.888ppb

response 5239194

(+) = Expected Retention Time

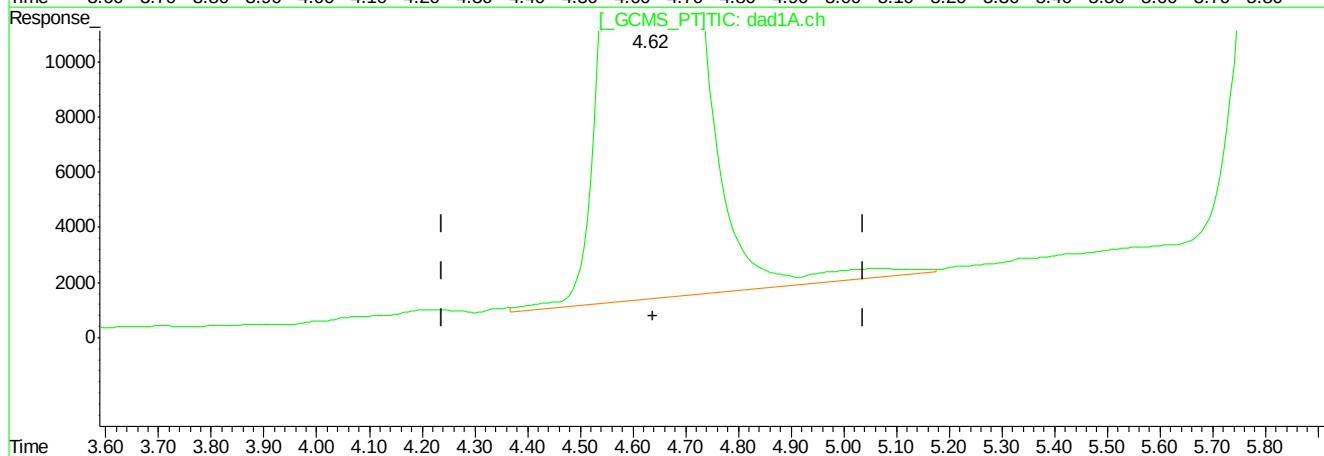
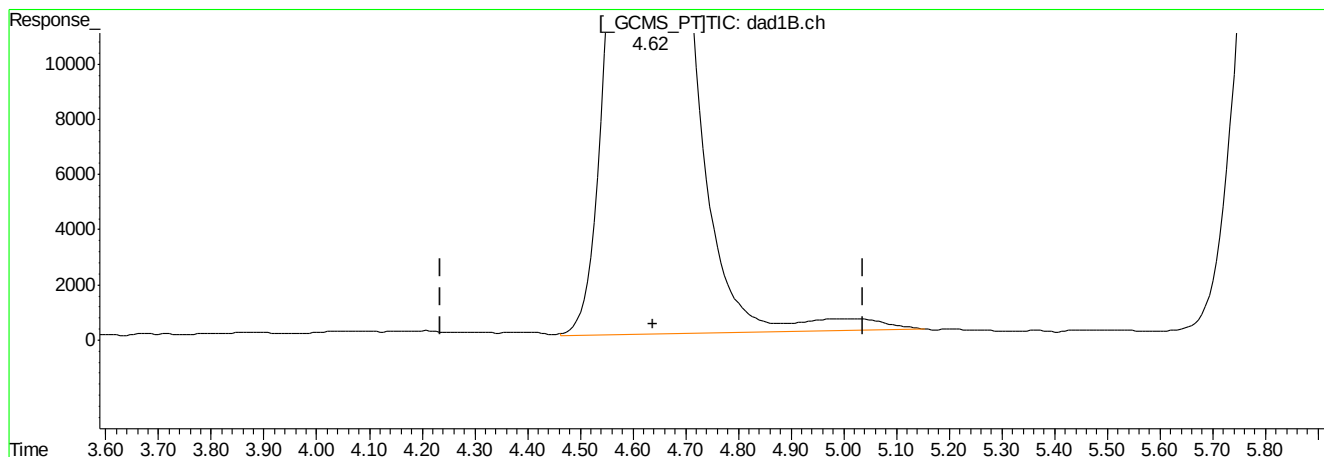
BB077756.D BBB2349_041423.M

Wed Jul 19 09:32:38 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1B.ch Vial: 12
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1A.ch
Acq On : 18-Jul-2023, 15:54:05 Operator: fouads
Sample : OP97885-MSD Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.62min 795.197ppb m

response 3313553

(6) 1,3,5-Trinitrobenzene #2

4.62min 791.201ppb m

response 5247904

(+) = Expected Retention Time

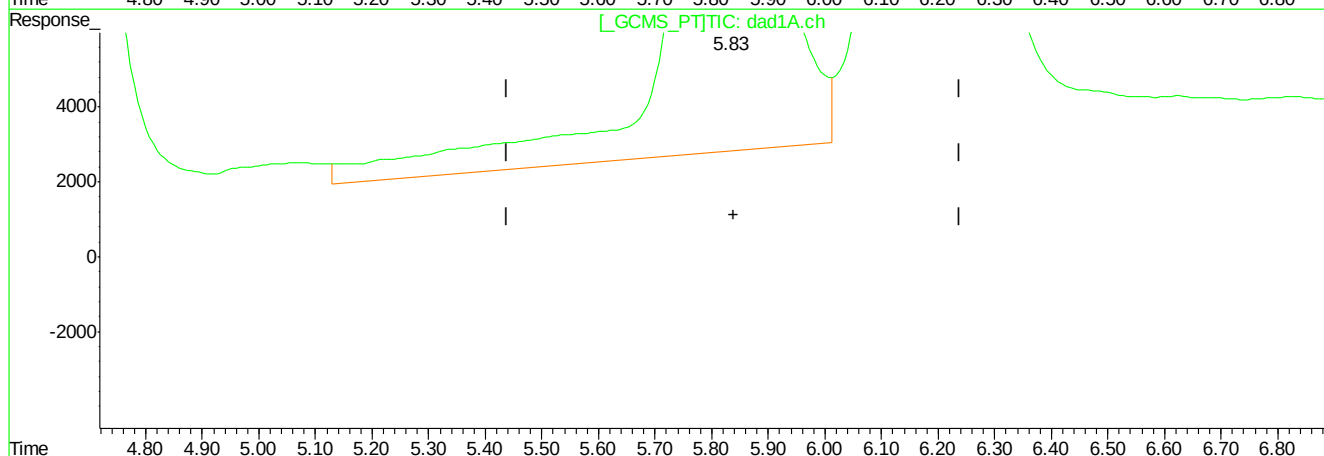
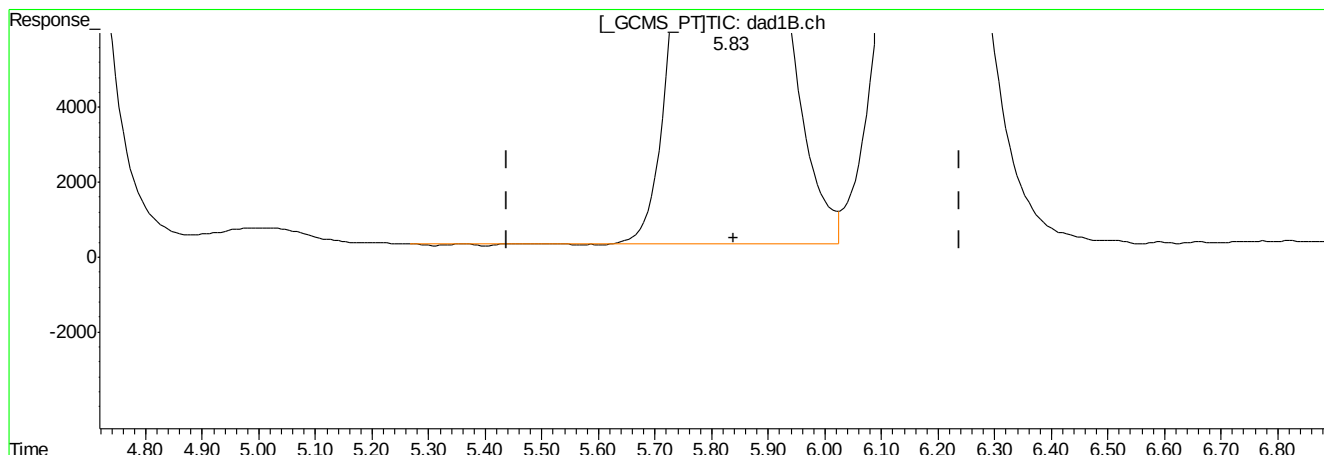
BB077756.D BBB2349_041423.M

Wed Jul 19 09:32:47 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1B.ch Vial: 12
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1A.ch
Acq On : 18-Jul-2023, 15:54:05 Operator: fouads
Sample : OP97885-MSD Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

5.83min 519.545ppb

response 2810250

(7) 1,3-Dinitrobenzene #2

5.83min 598.392ppb

response 2303310

(+) = Expected Retention Time

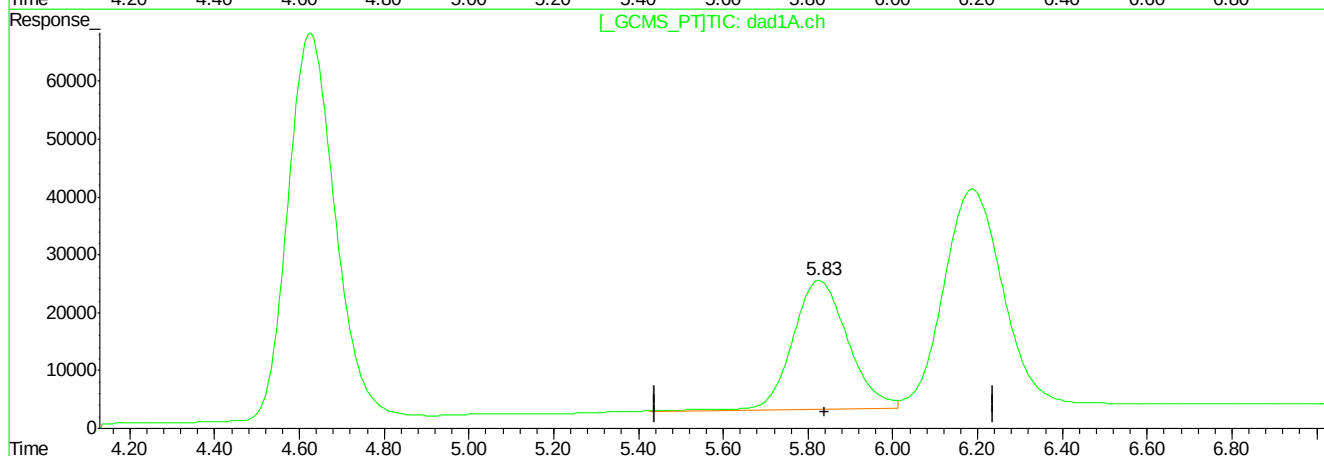
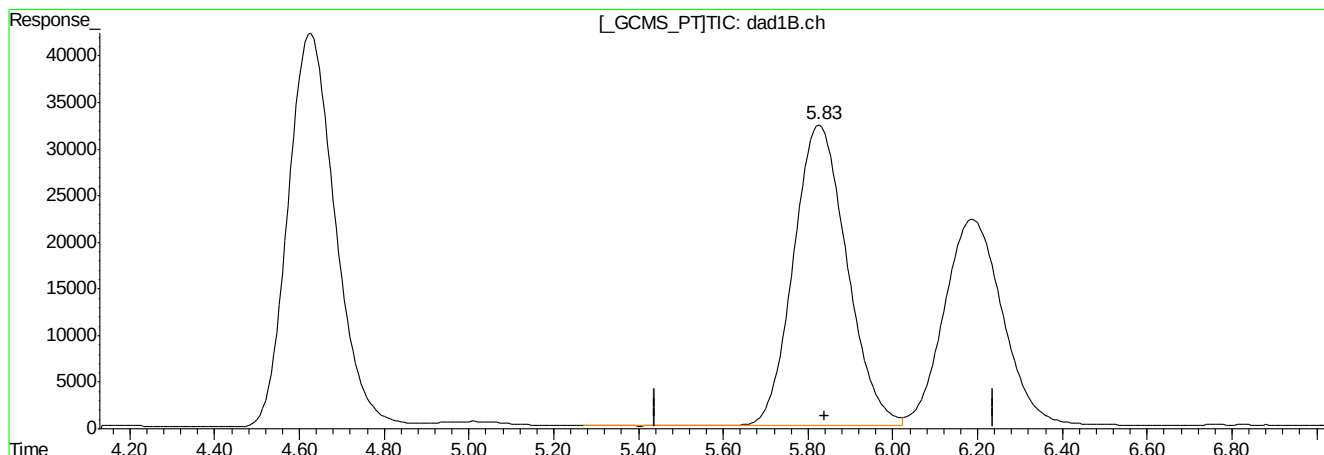
BB077756.D BBB2349_041423.M

Wed Jul 19 09:32:53 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1B.ch Vial: 12
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1A.ch
Acq On : 18-Jul-2023, 15:54:05 Operator: fouads
Sample : OP97885-MSD Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.83min 519.545ppb

response 2810250

(7) 1,3-Dinitrobenzene #2

5.83min 526.238ppb m

response 2025578

QEdit

(+) = Expected Retention Time

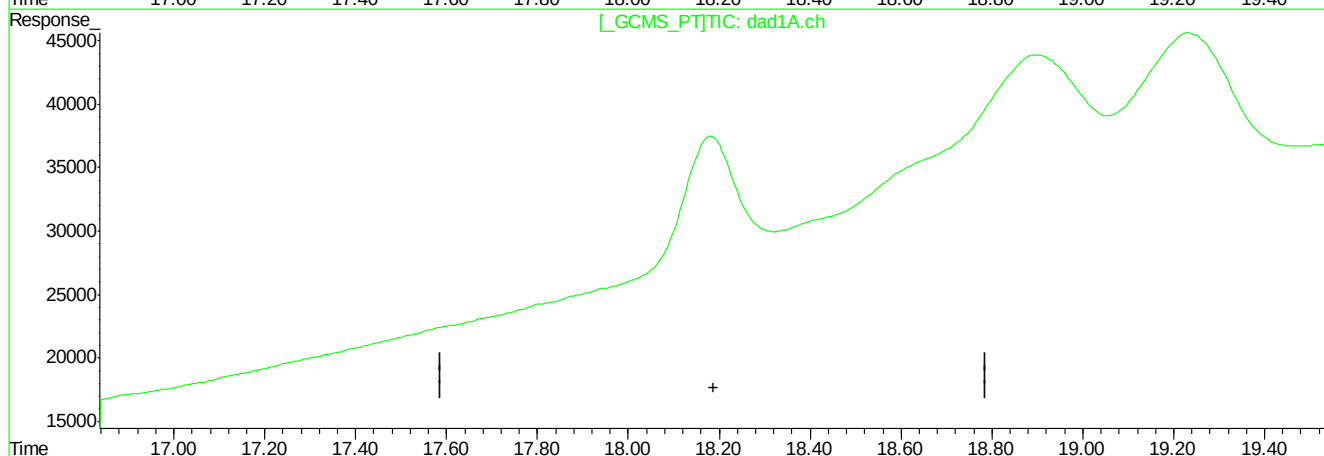
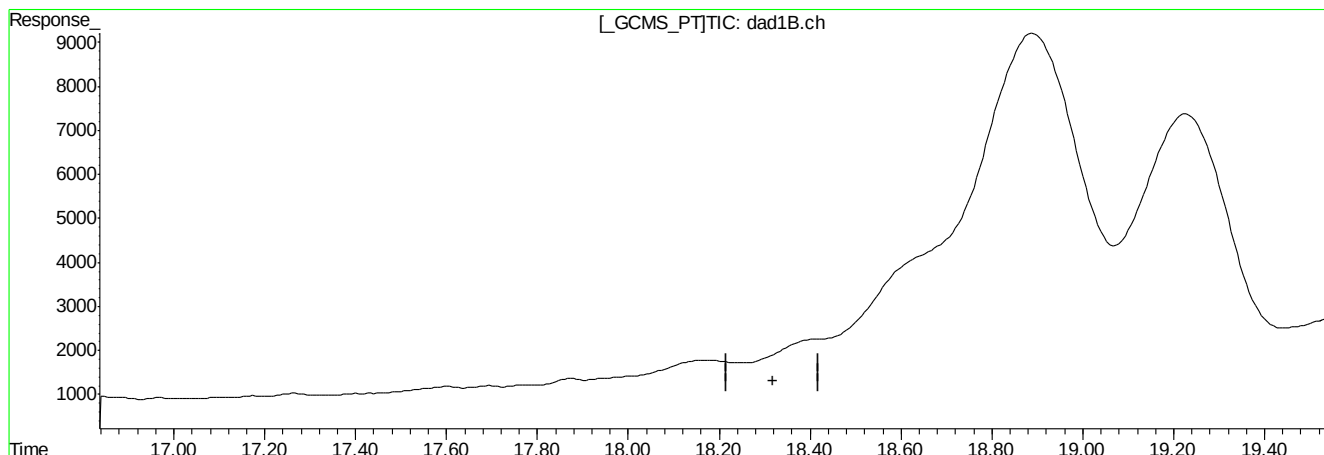
BB077756.D BBB2349_041423.M

Wed Jul 19 09:33:01 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1B.ch Vial: 12
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1A.ch
Acq On : 18-Jul-2023, 15:54:05 Operator: fouads
Sample : OP97885-MSD Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

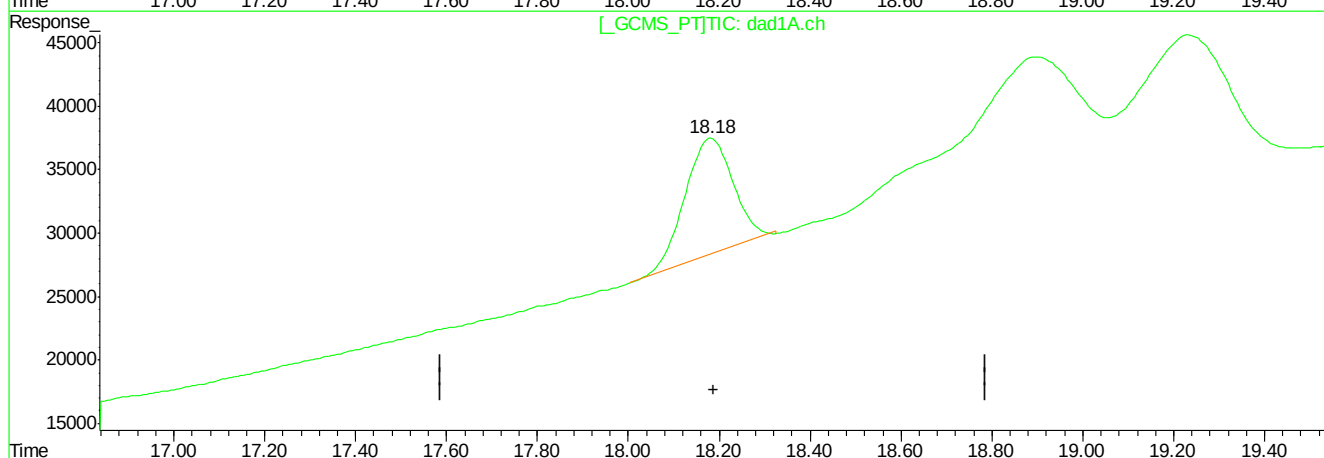
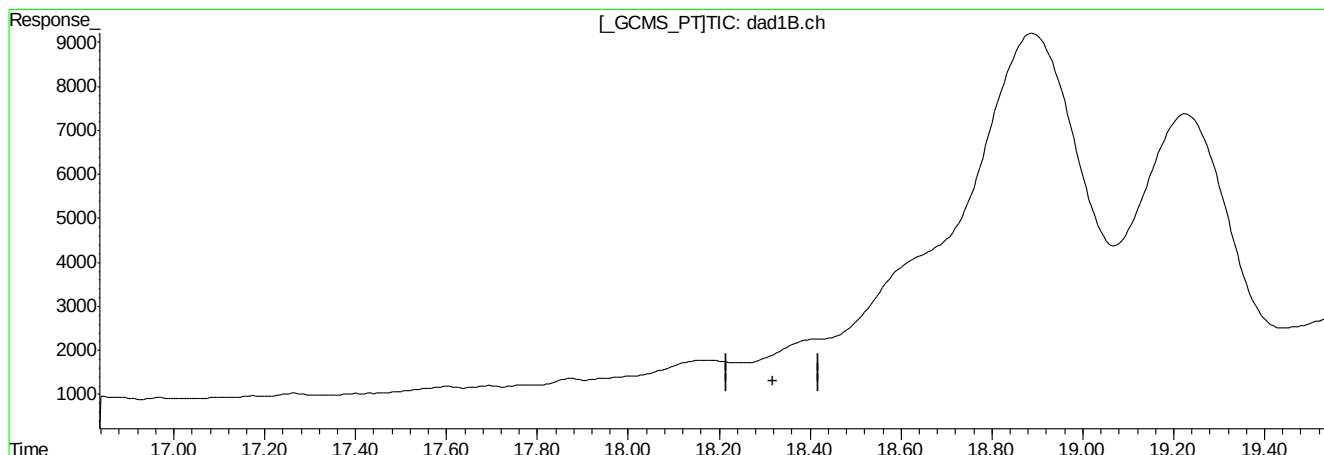
BB077756.D BBB2349_041423.M

Wed Jul 19 09:33:05 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1B.ch Vial: 12
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1A.ch
Acq On : 18-Jul-2023, 15:54:05 Operator: fouads
Sample : OP97885-MSD Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

18.18min 500.526ppb m

response 665064

(+) = Expected Retention Time

BB077756.D BBB2349_041423.M

Wed Jul 19 09:33:12 2023

Naresh Jiawan
07/20/23 17:18

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1B.ch Vial: 11
 Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1A.ch
 Acq On : 18-Jul-2023, 15:23:09 Operator: fouads
 Sample : OP97885-MS Inst : G1315B
 Misc : op97885, GBB2394, 490,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jul 19 09:09:03 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 09:08:22 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	11.00	11.00	1002680	1895305	418.365	470.640
Spiked Amount	500.000	Range	70 - 136	Recovery	=	83.67% 94.13%
Target Compounds						
1) TNX	1.30	1.30	747872	1190464	214.959	222.845
2) HMX	1.45	1.45	1751170	4877221	1188.352	1199.893
3) DNX	1.68	1.68	1404633	2292400	459.730	531.772
4) MNX	2.26	2.26	1507813	2309954	547.965	545.804
5) RDX	2.87	2.87	997211	1586540	514.754	524.534
6) 1,3,5-Trinitrobe	4.62	4.62	3316598	5335032	795.928m	804.337m
7) 1,3-Dinitrobenze	5.82	5.82	2816273	2052994	520.658	533.361m
8) 3,5-Dinitroanili	6.18	6.18	2130457	3831679	539.084	551.379
9) Nitrobenzene	7.34	7.34	1569336	1538249	485.596	489.819
10) Nitroglycerin	0.00	8.69	0	678313	N.D.	503.446 #
11) Tetryl	9.22	9.22	1380853	2158182	492.891	438.160
12) 2,4,6-Trinitroto	9.64	9.64	2682012	3269210	747.485	680.474
13) 2-Amino-4,6-Dini	10.07	10.07	2244468	3382769	707.013	658.263
14) 4-Amino-2,6-Dini	10.48	10.49	1521249	3161319	642.242	623.551
16) 2,4-Dinitrotolue	11.65	11.65	2431424	1597509	501.600	529.401
17) 2,6-Dinitrotolue	12.06	12.06	1415531	1849342	513.632	539.710
18) o-Nitrotoluene	15.12	15.12	1326364	1702653	571.281	535.780
19) p-Nitrotoluene	15.68	15.68	1732058	1435254	495.946	488.712
20) m-Nitrotoluene	16.55	16.56	1639989	1790444	489.498	479.583
21) PETN	0.00	18.18	0	680087	N.D.	511.832m#

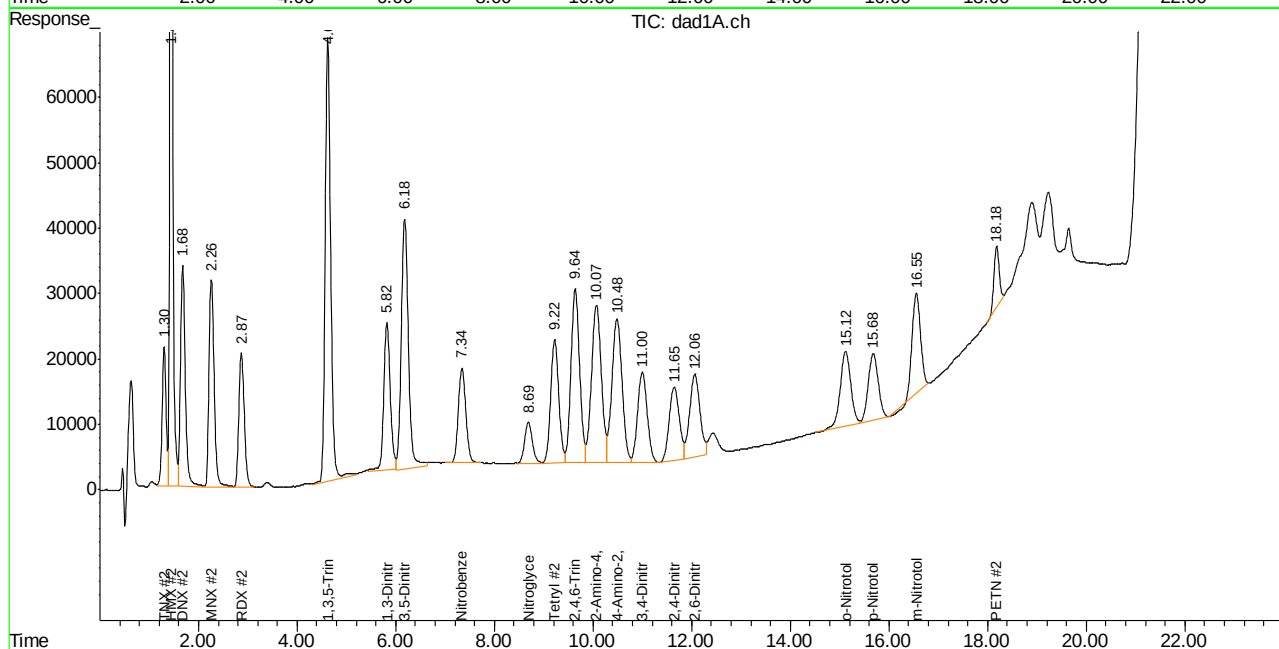
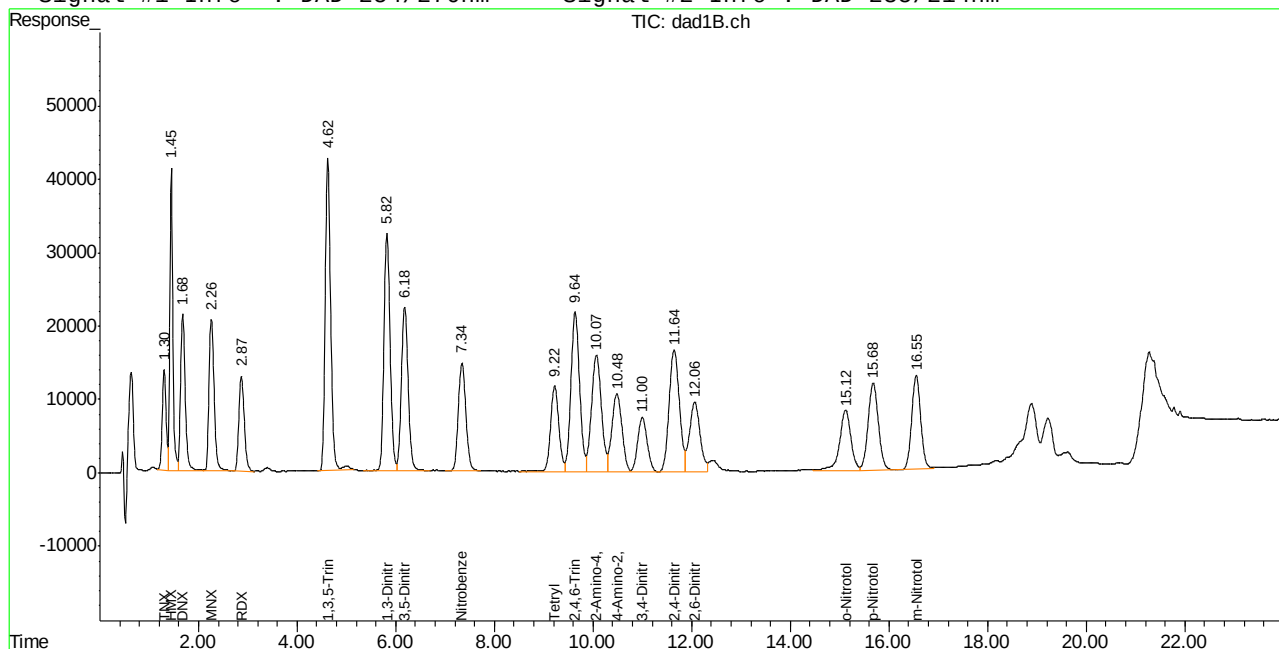
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB077755.D BBB2349_041423.M Thu Jul 20 08:40:57 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1A.ch
Acq On : 18-Jul-2023, 15:23:09 Operator: fouads
Sample : OP97885-MS Inst : G1315B
Misc : op97885, GBB2394, 490,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:32 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: OP97885-MS

Method: SW846 8330A

Lab FileID: BB077755.D

Analyst approved: 07/20/23 17:18 Naresh Jiawan

Injection Time: 07/18/23 15:23

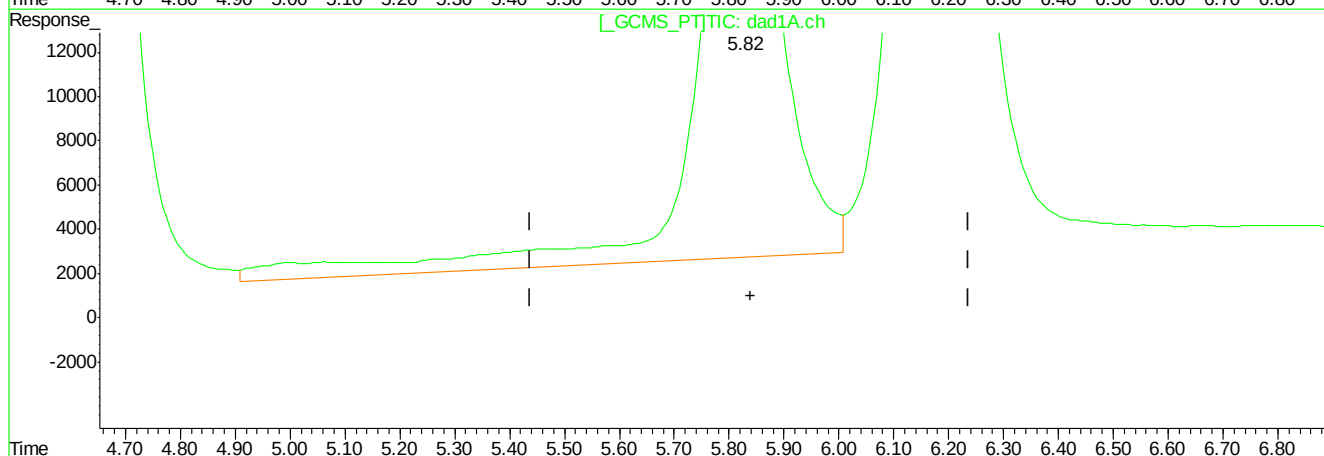
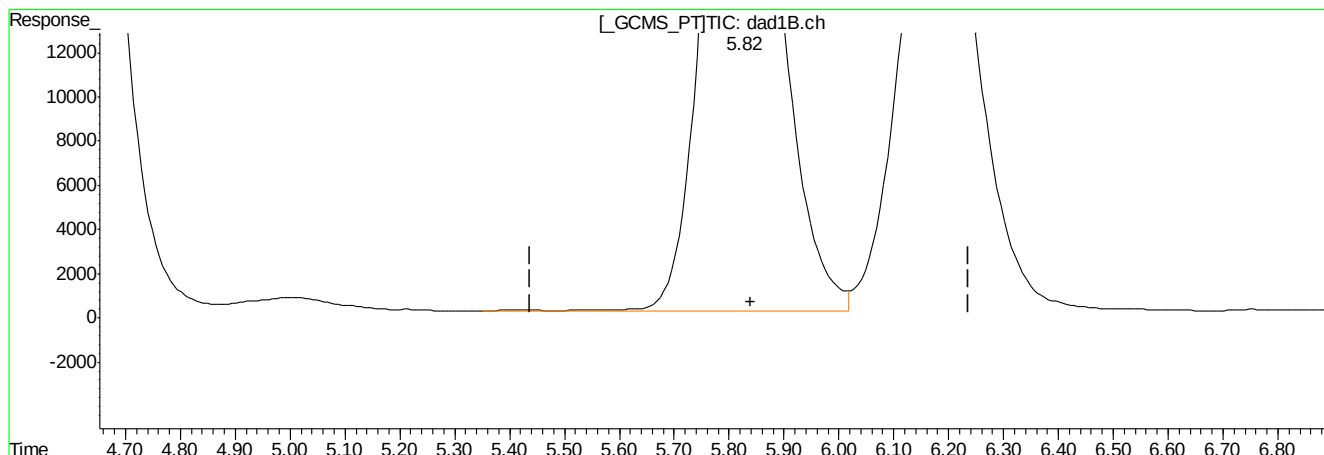
Supervisor approved: 07/20/23 17:18 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3,5-Trinitrobenzene	99-35-4	1	4.62	Poorly defined baseline
1,3,5-Trinitrobenzene	99-35-4	2	4.62	Poorly defined baseline
1,3-Dinitrobenzene	99-65-0	2	5.82	Poorly defined baseline
PETN	78-11-5	2	18.18	Poorly defined baseline

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1A.ch
Acq On : 18-Jul-2023, 15:23:09 Operator: fouads
Sample : OP97885-MS Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

5.82min 520.658ppb

response 2816273

(7) 1,3-Dinitrobenzene #2

5.82min 625.574ppb

response 2407938

(+) = Expected Retention Time

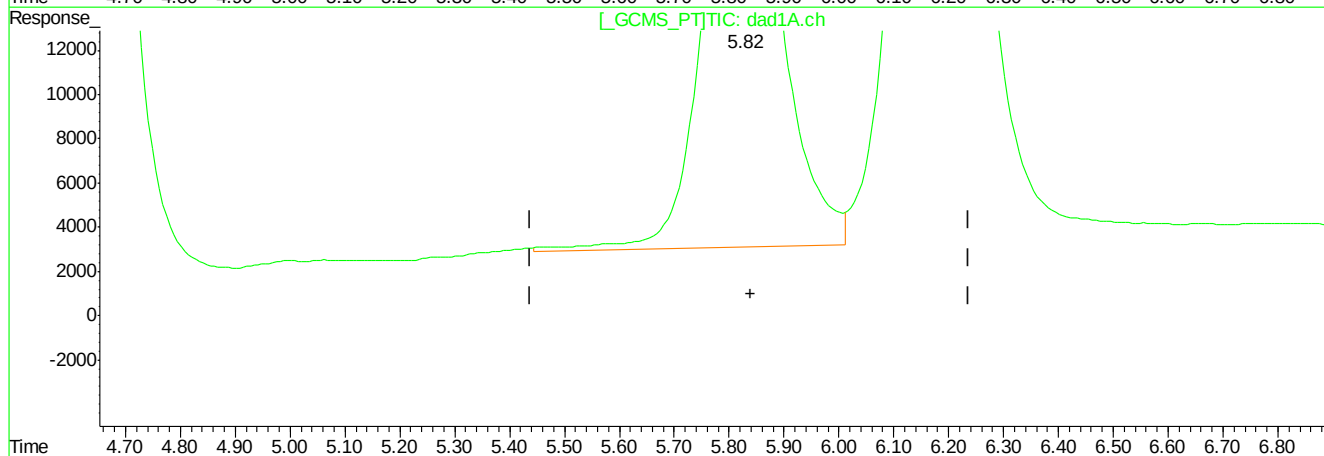
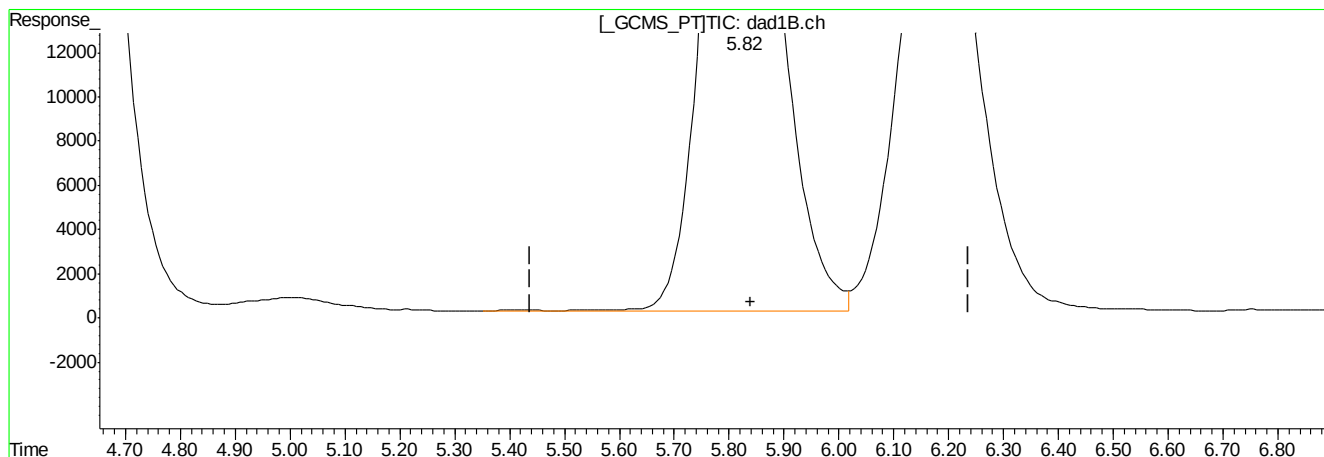
BB077755.D BBB2349_041423.M

Wed Jul 19 09:31:35 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1A.ch
Acq On : 18-Jul-2023, 15:23:09 Operator: fouads
Sample : OP97885-MS Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.82min 520.658ppb

response 2816273

(7) 1,3-Dinitrobenzene #2

5.82min 533.361ppb m

response 2052994

(+) = Expected Retention Time

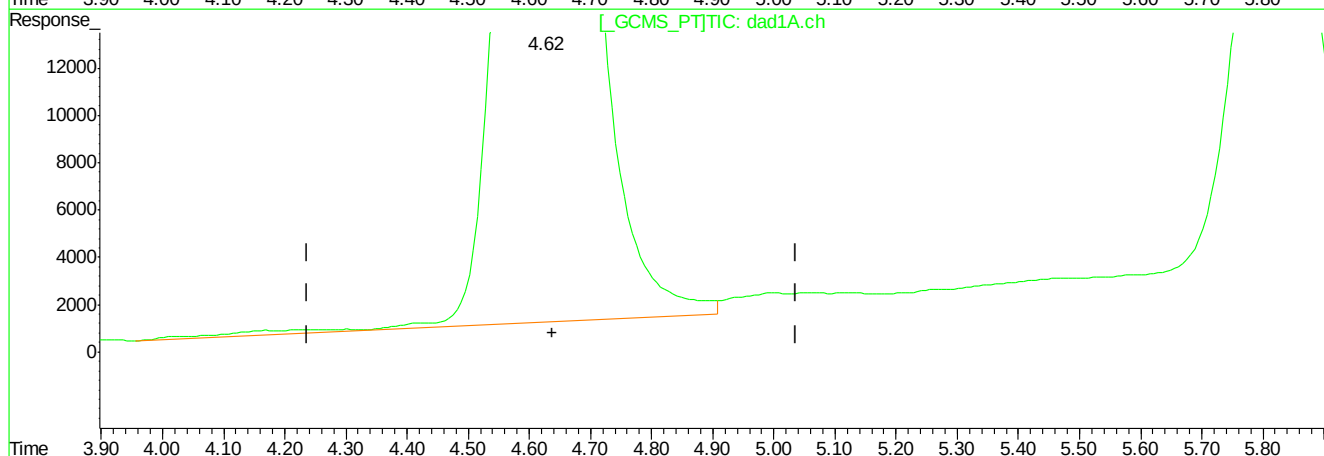
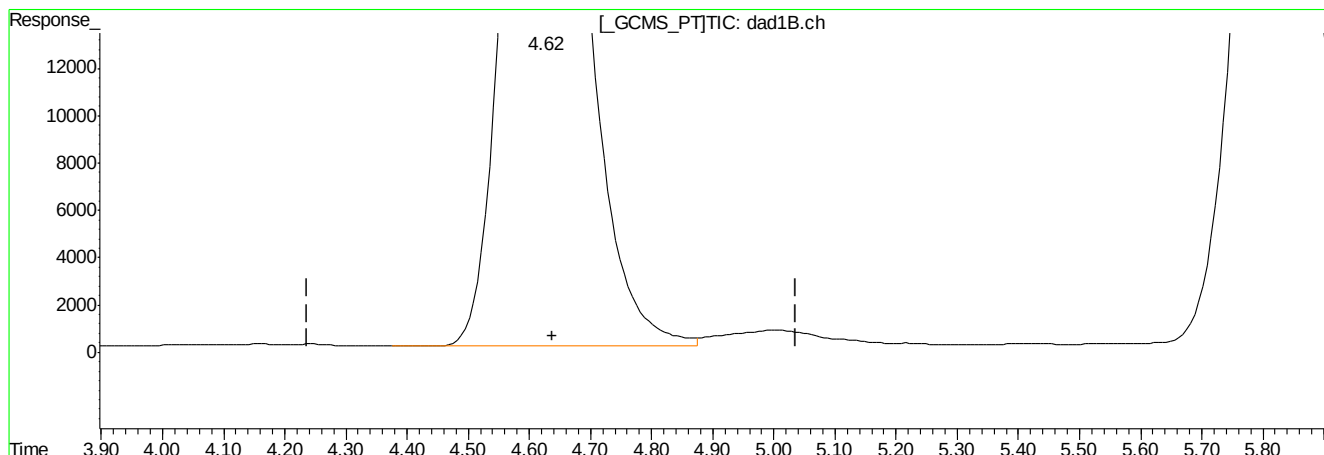
BB077755.D BBB2349_041423.M

Wed Jul 19 09:31:45 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1A.ch
Acq On : 18-Jul-2023, 15:23:09 Operator: fouads
Sample : OP97885-MS Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.62min 781.835ppb

response 3257875

(6) 1,3,5-Trinitrobenzene #2

4.62min 795.675ppb

response 5277577

(+) = Expected Retention Time

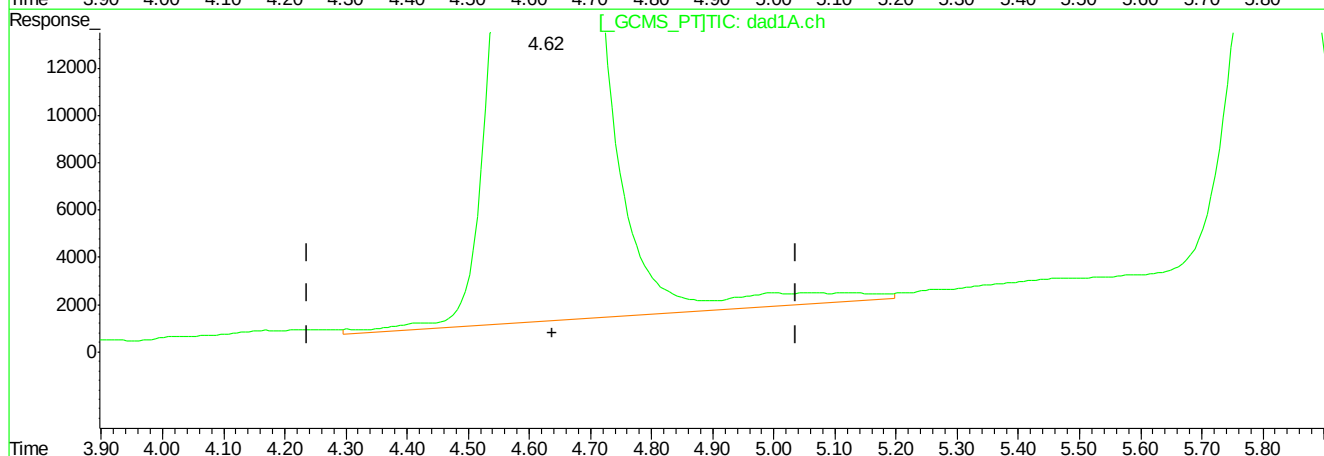
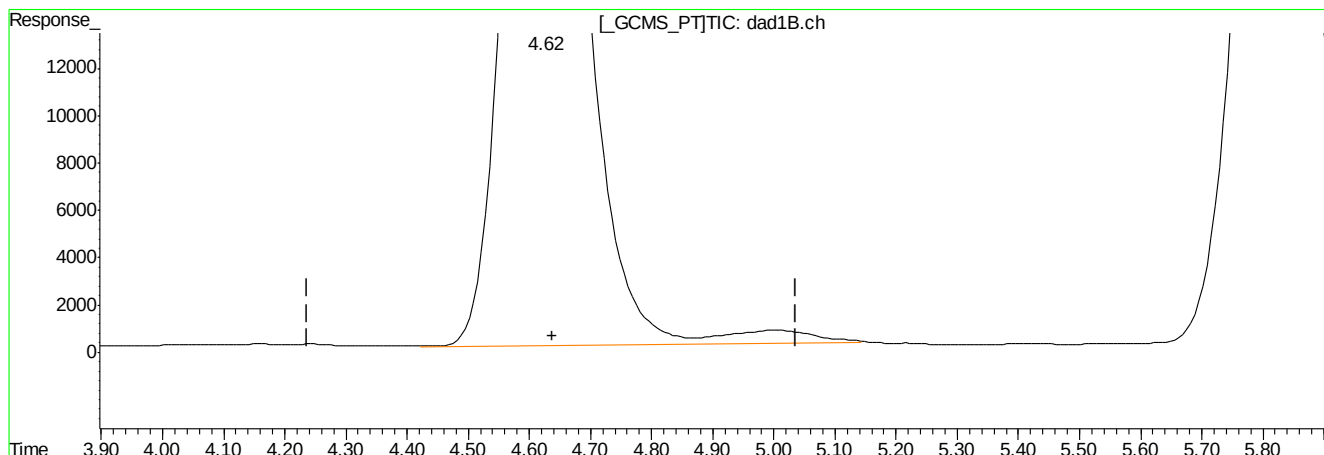
BB077755.D BBB2349_041423.M

Wed Jul 19 09:31:51 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1A.ch
Acq On : 18-Jul-2023, 15:23:09 Operator: fouads
Sample : OP97885-MS Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



QEdit

(6) 1,3,5-Trinitrobenzene

4.62min 795.928ppb m

response 3316598

(6) 1,3,5-Trinitrobenzene #2

4.62min 804.337ppb m

response 5335032

(+) = Expected Retention Time

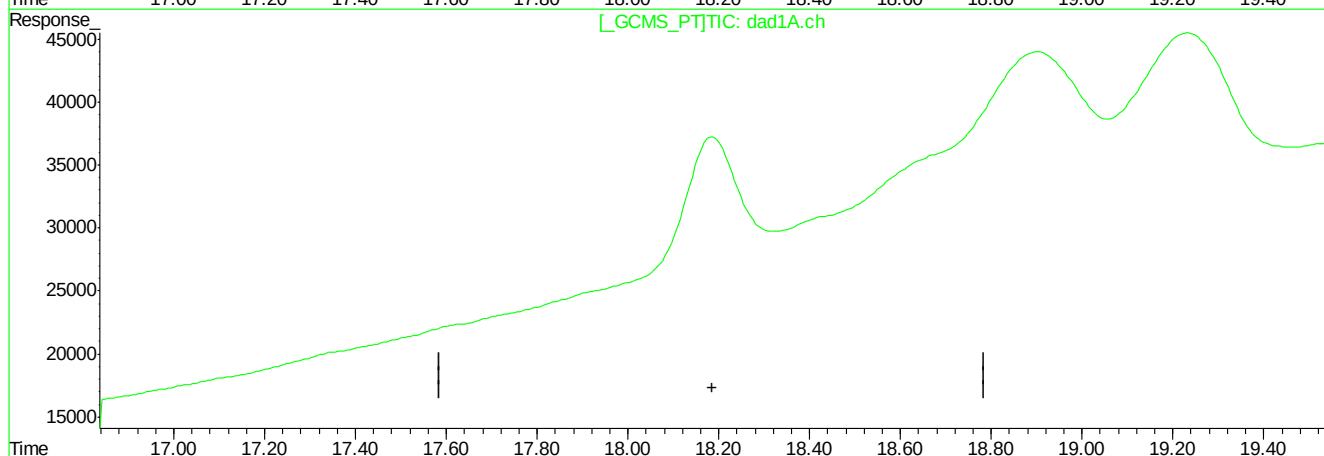
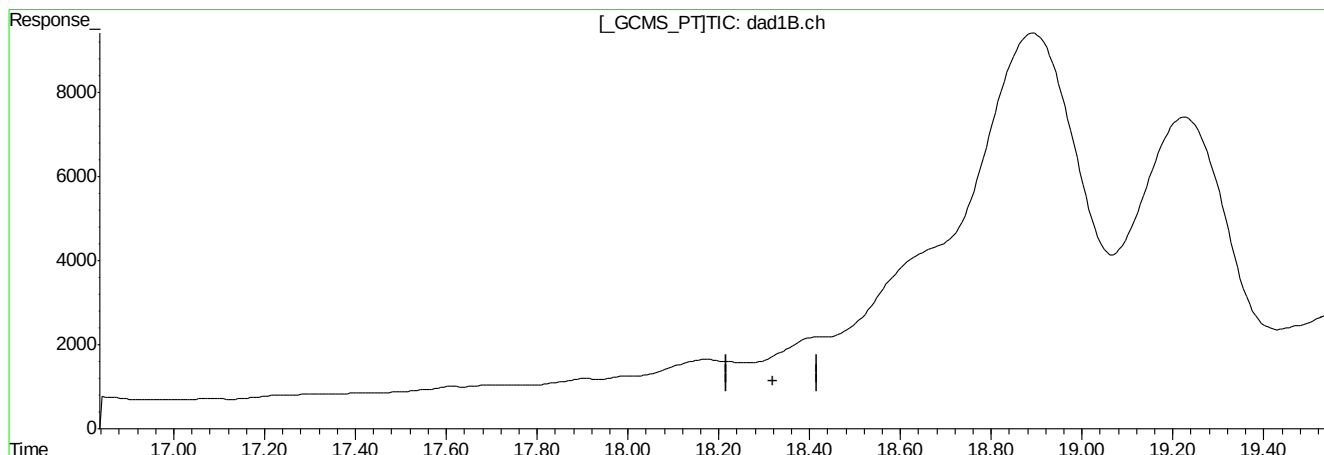
BB077755.D BBB2349_041423.M

Wed Jul 19 09:32:05 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1A.ch
Acq On : 18-Jul-2023, 15:23:09 Operator: fouads
Sample : OP97885-MS Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

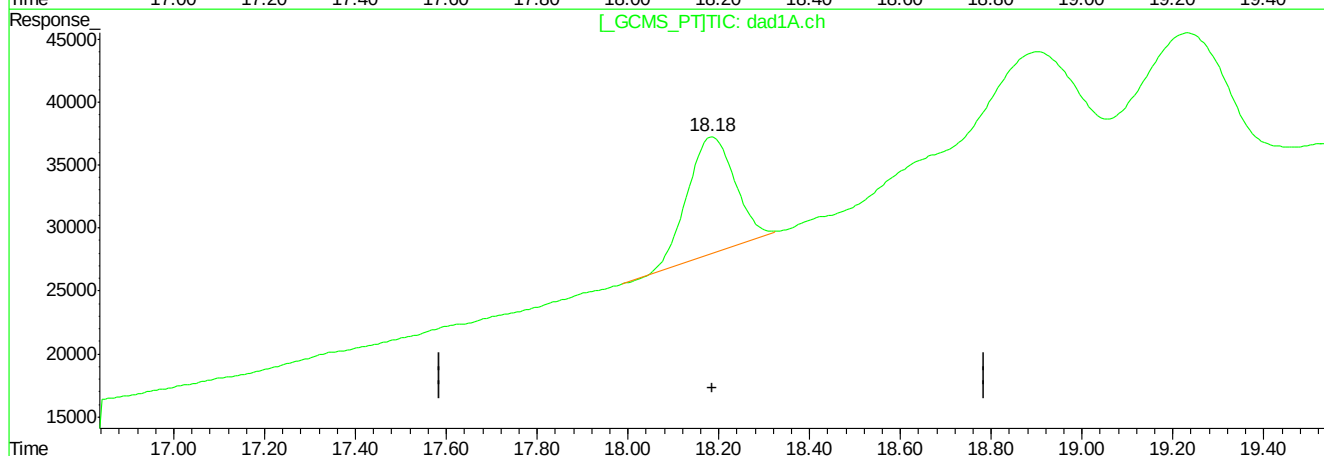
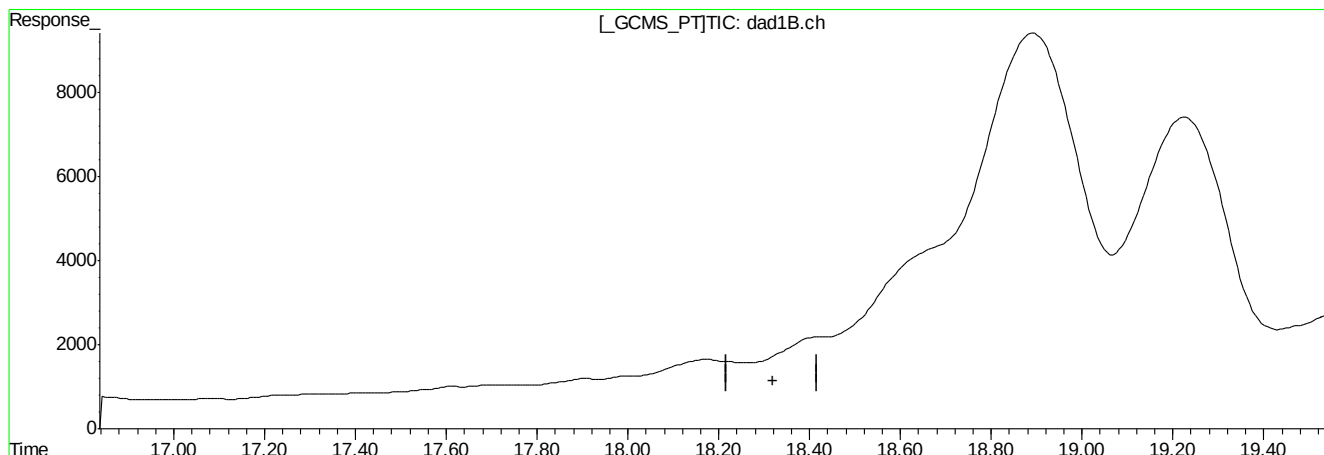
BB077755.D BBB2349_041423.M

Wed Jul 19 09:32:12 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077755.D\dad1A.ch
Acq On : 18-Jul-2023, 15:23:09 Operator: fouads
Sample : OP97885-MS Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

18.18min 511.832ppb m

response 680087

(+) = Expected Retention Time

BB077755.D BBB2349_041423.M

Wed Jul 19 09:32:18 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1B.ch Vial: 12
 Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1A.ch
 Acq On : 18-Jul-2023, 15:54:05 Operator: fouads
 Sample : OP97885-MSD Inst : G1315B
 Misc : op97885, GBB2394, 490,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jul 19 09:09:04 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 09:08:22 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	11.00	11.00	994218	1901004	414.834	472.055
Spiked Amount	500.000	Range	70 - 136	Recovery	=	82.97% 94.41%
Target Compounds						
1) TNX	1.30	1.30	738085	1162423	212.146	217.596
2) HMX	1.45	1.45	1731627	4799821	1175.090	1180.851
3) DNX	1.68	1.68	1401399	2260148	458.672	524.290
4) MNX	2.27	2.27	1514803	2316839	550.506	547.430
5) RDX	2.88	2.88	1005515	1600313	519.040	529.088
6) 1,3,5-Trinitrobe	4.62	4.62	3313553	5247904	795.197m	791.201m
7) 1,3-Dinitrobenze	5.83	5.83	2810250	2025578	519.545	526.238m
8) 3,5-Dinitroanili	6.19	6.19	2122831	3809239	537.154	548.150
9) Nitrobenzene	7.35	7.35	1603618	1583880	496.204	504.349
10) Nitroglycerin	0.00	8.70	0	698903	N.D.	518.728 #
11) Tetryl	9.23	9.23	1355713	2181223	483.917	442.838
12) 2,4,6-Trinitroto	9.64	9.64	2677199	3278117	746.143	682.328
13) 2-Amino-4,6-Dini	10.07	10.07	2230819	3377646	702.714	657.266
14) 4-Amino-2,6-Dini	10.49	10.49	1511760	3175095	638.236	626.268
16) 2,4-Dinitrotolue	11.65	11.65	2435607	1604543	502.463	531.732
17) 2,6-Dinitrotolue	12.06	12.06	1423008	1875993	516.345	547.488
18) o-Nitrotoluene	15.11	15.11	1324154	1735276	570.329	546.045
19) p-Nitrotoluene	15.67	15.67	1753581	1445665	502.109	492.257
20) m-Nitrotoluene	16.55	16.55	1662778	1835109	496.300	491.547
21) PETN	0.00	18.18	0	665064	N.D.	500.526m#

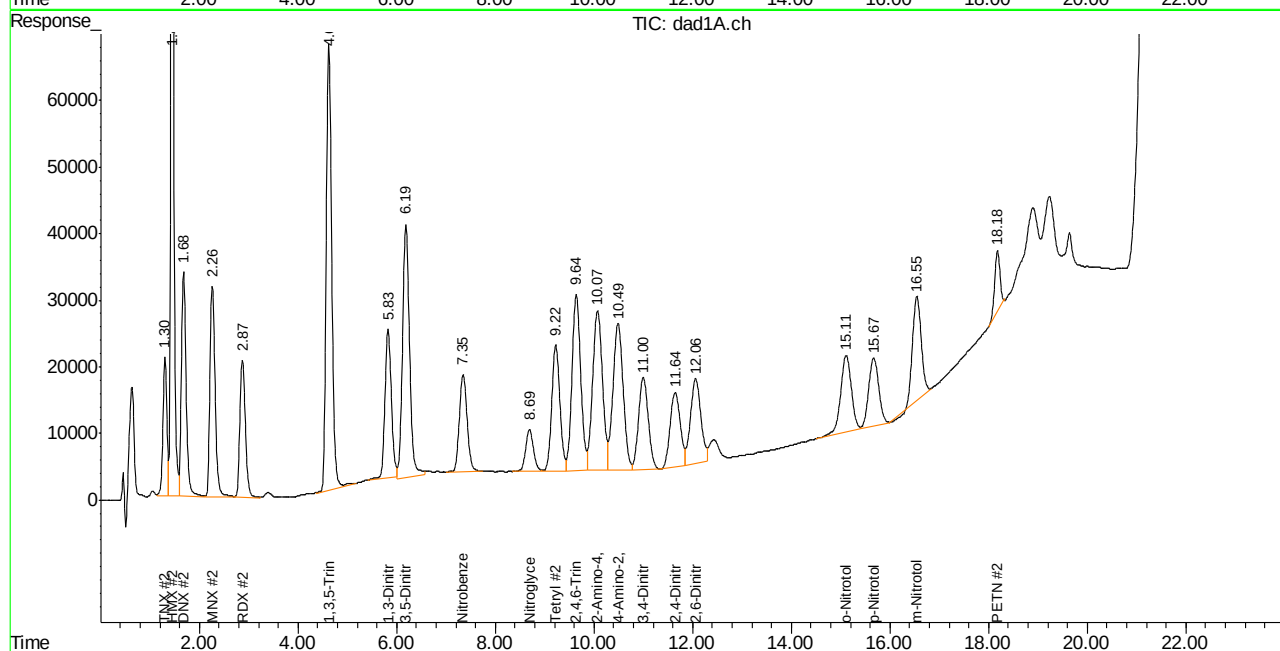
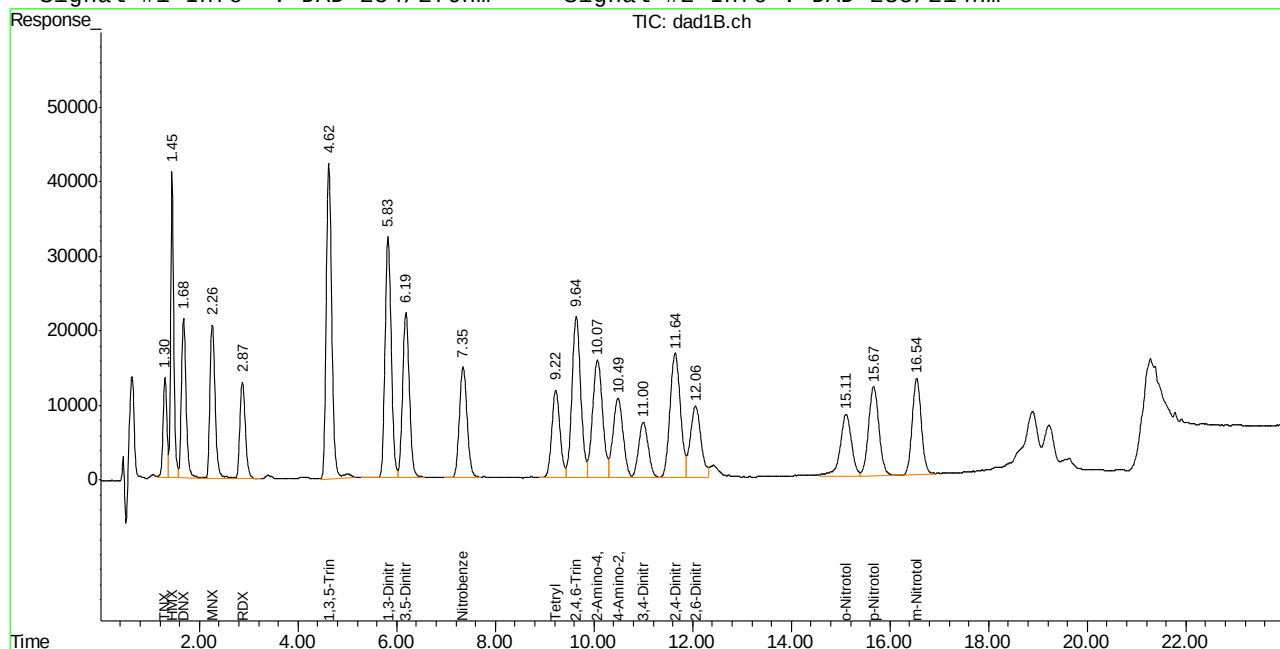
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB077756.D BBB2349_041423.M Thu Jul 20 08:40:58 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1B.ch Vial: 12
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1A.ch
Acq On : 18-Jul-2023, 15:54:05 Operator: fouads
Sample : OP97885-MSD Inst : G1315B
Misc : op97885, GBB2394, 490,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:33 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: OP97885-MSD

Method: SW846 8330A

Lab FileID: BB077756.D

Analyst approved: 07/20/23 17:18 Naresh Jiawan

Injection Time: 07/18/23 15:54

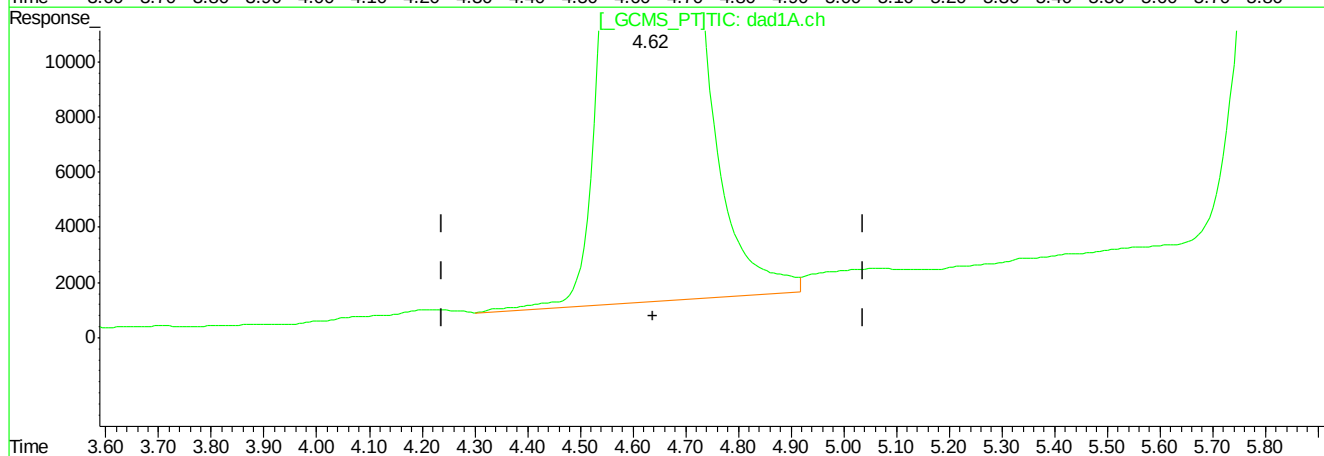
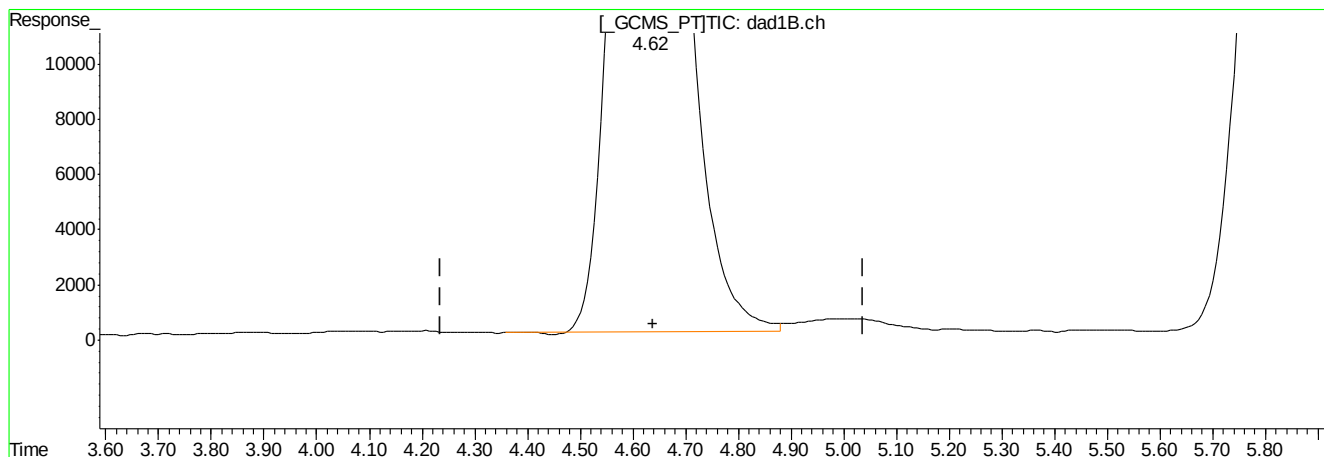
Supervisor approved: 07/20/23 17:18 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3,5-Trinitrobenzene	99-35-4	1	4.62	Poorly defined baseline
1,3,5-Trinitrobenzene	99-35-4	2	4.62	Poorly defined baseline
1,3-Dinitrobenzene	99-65-0	2	5.83	Poorly defined baseline
PETN	78-11-5	2	18.18	Poorly defined baseline

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1B.ch Vial: 12
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1A.ch
Acq On : 18-Jul-2023, 15:54:05 Operator: fouads
Sample : OP97885-MSD Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.63min 777.753ppb

response 3240864

(6) 1,3,5-Trinitrobenzene #2

4.63min 789.888ppb

response 5239194

(+) = Expected Retention Time

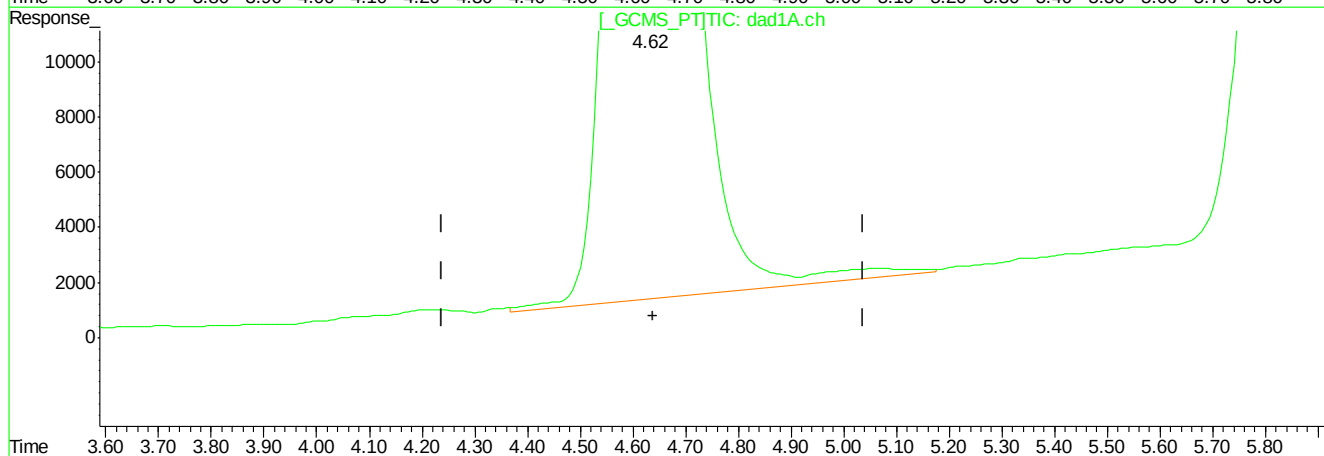
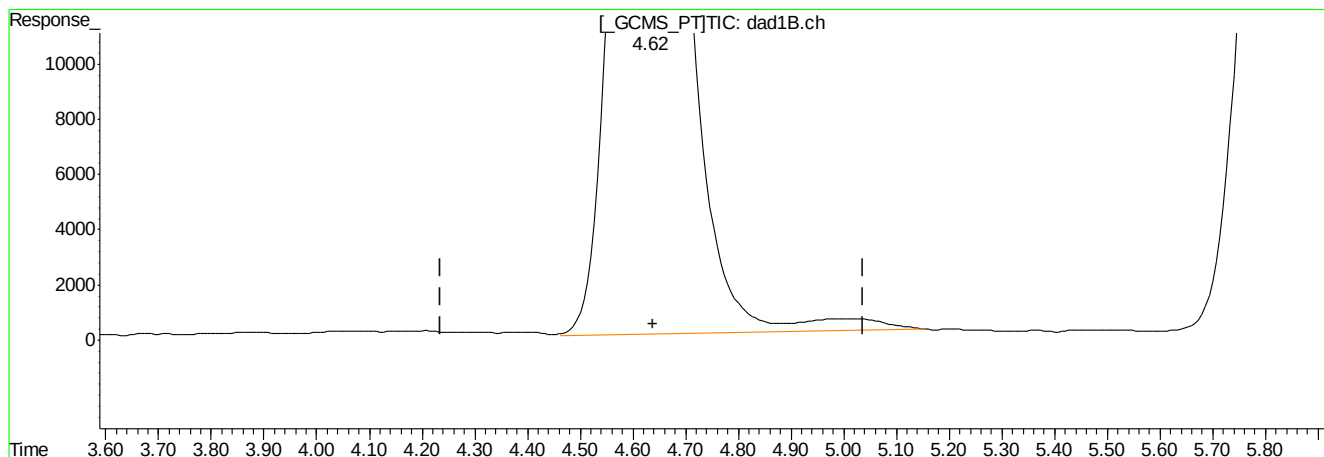
BB077756.D BBB2349_041423.M

Wed Jul 19 09:32:38 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1B.ch Vial: 12
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1A.ch
Acq On : 18-Jul-2023, 15:54:05 Operator: fouads
Sample : OP97885-MSD Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.62min 795.197ppb m

response 3313553

(6) 1,3,5-Trinitrobenzene #2

4.62min 791.201ppb m

response 5247904

(+) = Expected Retention Time

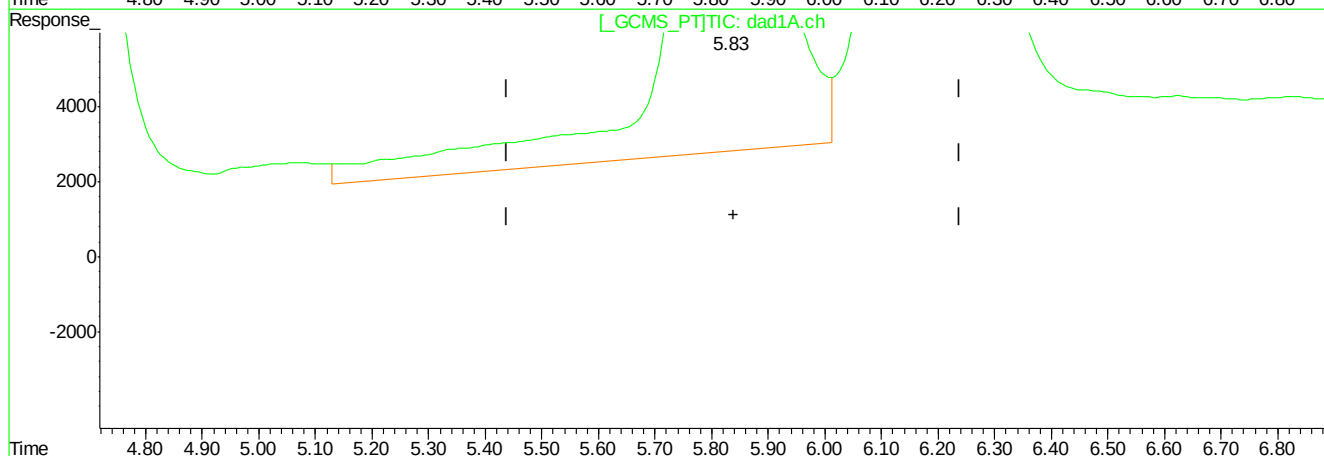
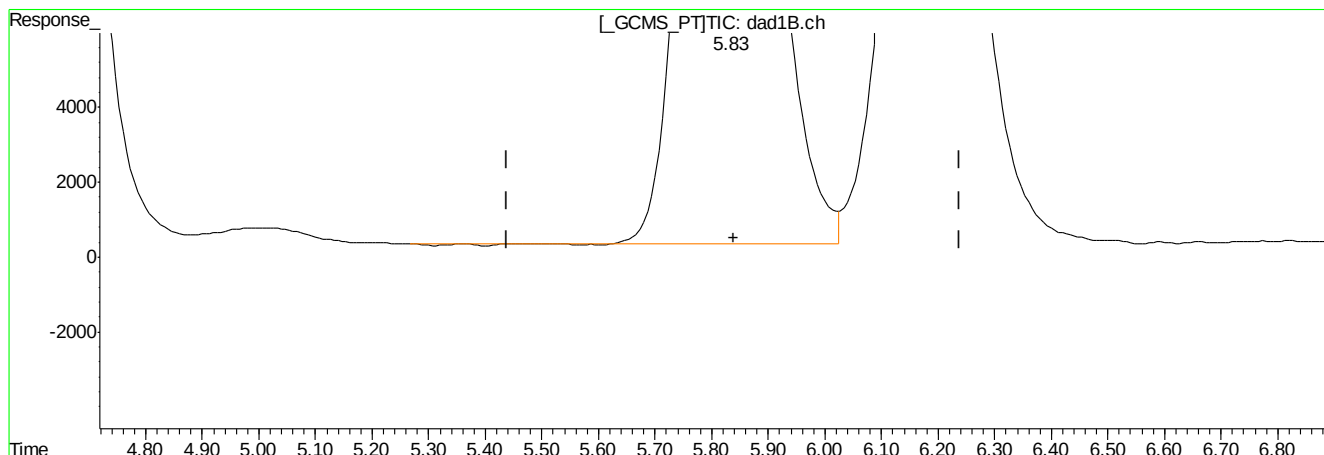
BB077756.D BBB2349_041423.M

Wed Jul 19 09:32:47 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1B.ch Vial: 12
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1A.ch
Acq On : 18-Jul-2023, 15:54:05 Operator: fouads
Sample : OP97885-MSD Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.83min 519.545ppb

response 2810250

(7) 1,3-Dinitrobenzene #2

5.83min 598.392ppb

response 2303310

(+) = Expected Retention Time

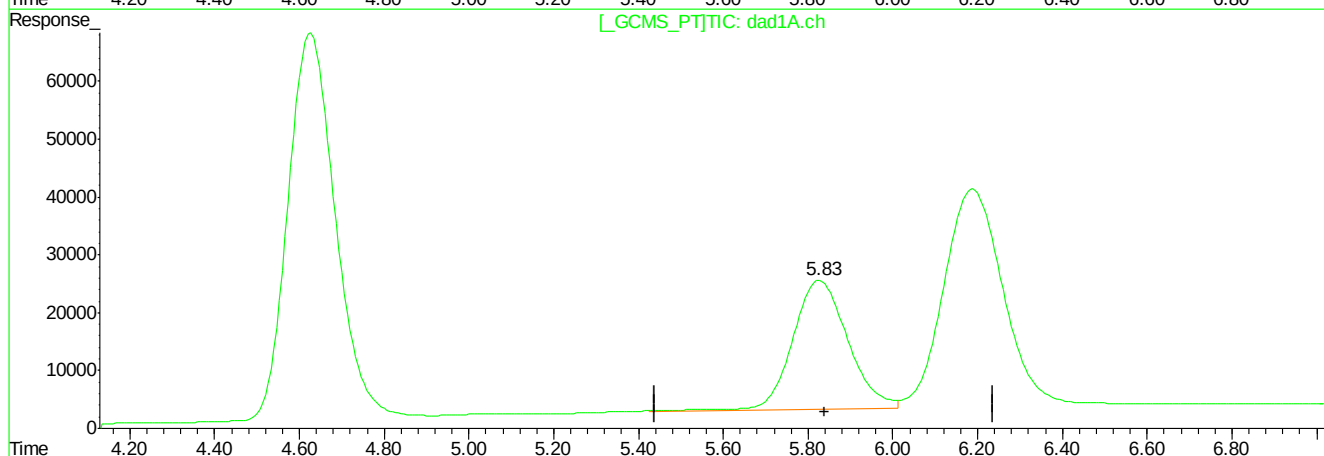
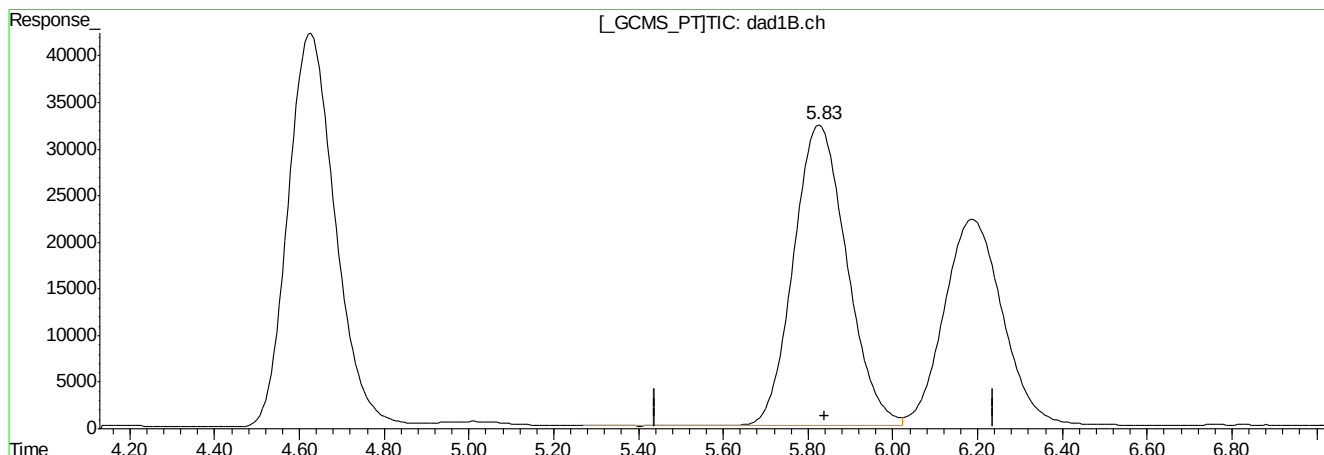
BB077756.D BBB2349_041423.M

Wed Jul 19 09:32:53 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1B.ch Vial: 12
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1A.ch
Acq On : 18-Jul-2023, 15:54:05 Operator: fouads
Sample : OP97885-MSD Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.83min 519.545ppb

response 2810250

(7) 1,3-Dinitrobenzene #2

5.83min 526.238ppb m

response 2025578

QEdit

(+) = Expected Retention Time

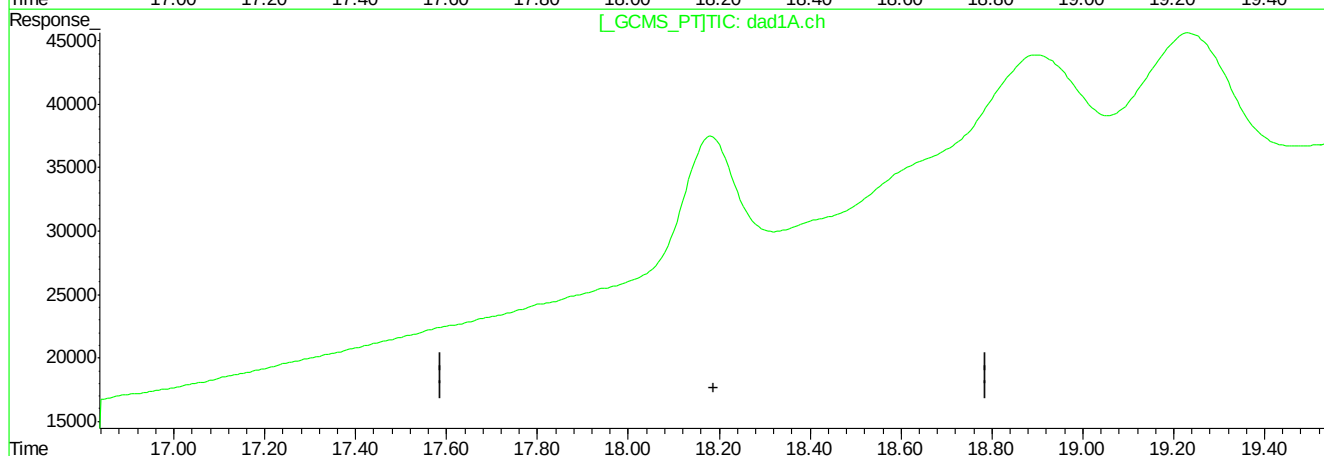
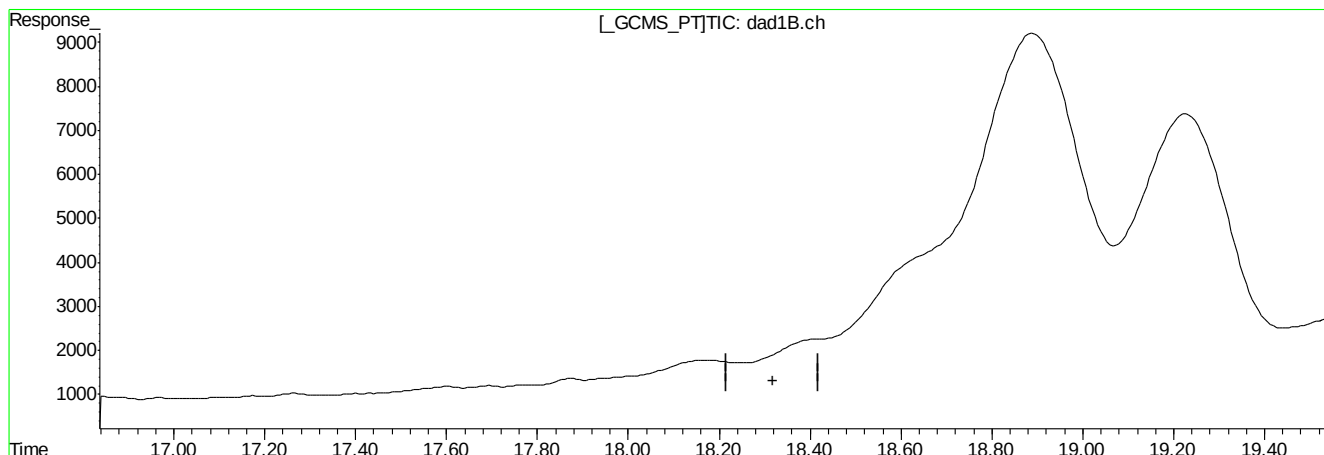
BB077756.D BBB2349_041423.M

Wed Jul 19 09:33:01 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1B.ch Vial: 12
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1A.ch
Acq On : 18-Jul-2023, 15:54:05 Operator: fouads
Sample : OP97885-MSD Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

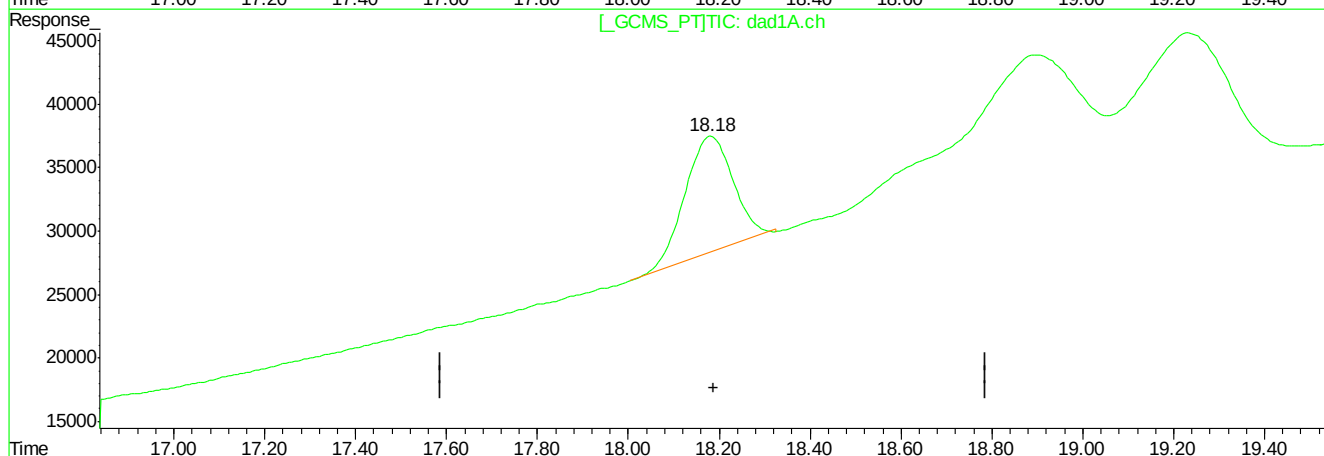
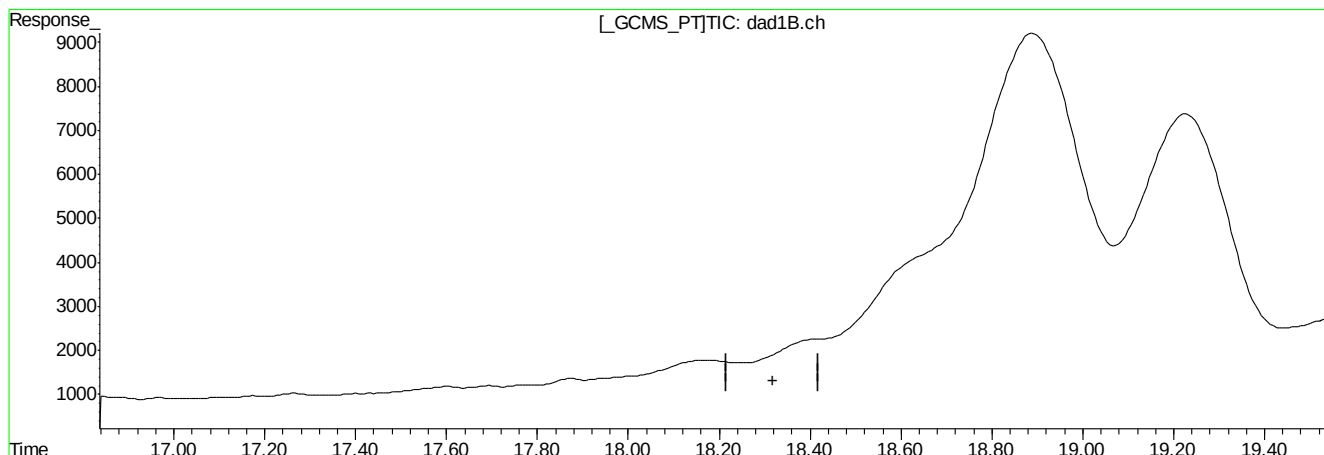
BB077756.D BBB2349_041423.M

Wed Jul 19 09:33:05 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1B.ch Vial: 12
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077756.D\dad1A.ch
Acq On : 18-Jul-2023, 15:54:05 Operator: fouads
Sample : OP97885-MSD Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

18.18min 500.526ppb m

response 665064

(+) = Expected Retention Time

BB077756.D BBB2349_041423.M

Wed Jul 19 09:33:12 2023

Naresh Jiawan
04/17/23 14:47

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1B.ch Vial: 3
 Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1A.ch
 Acq On : 14-Apr-2023, 09:53:15 Operator: fouads
 Sample : ic2349-20 Inst : G1315B
 Misc : op96339,GBB2349,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Apr 14 12:41:18 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Apr 14 10:52:34 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	10.79	10.79	54037	76530	24.804	22.089
Spiked Amount	500.000	Range	70 - 136	Recovery	=	4.96%# 4.42%#
Target Compounds						
1) TNX	1.28	1.28	37086	58501	9.499m	9.901m
2) HMX	1.42	1.43	49358	239681	31.720m	58.383m#
3) DNX	1.65	1.64	75346	141266	23.813	28.429m
4) MNX	2.21	2.21	74992	115748	25.833	25.920
5) RDX	2.81	2.81	46626	68345	24.860	23.271
6) 1,3,5-Trinitrobe	4.53	4.53	99421	155127	25.832	25.272m
7) 1,3-Dinitrobenze	5.71	5.71	126868	78364	24.191	20.645m
8) 3,5-Dinitroanili	6.06	6.06	81979	147025	20.811	22.002m
9) Nitrobenzene	7.22	7.23	83102	76307	29.737	27.660
10) Nitroglycerin	0.00	8.67	0	32719	N.D.	25.101 #
11) Tetryl	9.15	9.15	81849	118369	34.463	31.468
12) 2,4,6-Trinitroto	9.51	9.51	100436	115287	26.777	26.410
13) 2-Amino-4,6-Dini	9.89	9.88	89339	121037	27.649	27.748
14) 4-Amino-2,6-Dini	10.31	10.32	66632	117386	27.771	25.121
16) 2,4-Dinitrotolue	11.44	11.47	115491	55225	25.281	19.009
17) 2,6-Dinitrotolue	11.88	11.90	65069	65712	23.616	19.979
18) o-Nitrotoluene	14.97	14.97	59040	72824	30.231	24.906
19) p-Nitrotoluene	15.53	15.55	80112	72662	25.894	28.279
20) m-Nitrotoluene	16.41	16.47	83158	83183	28.000	23.599m
21) PETN	0.00	18.25	0	22447	N.D.	17.444m#

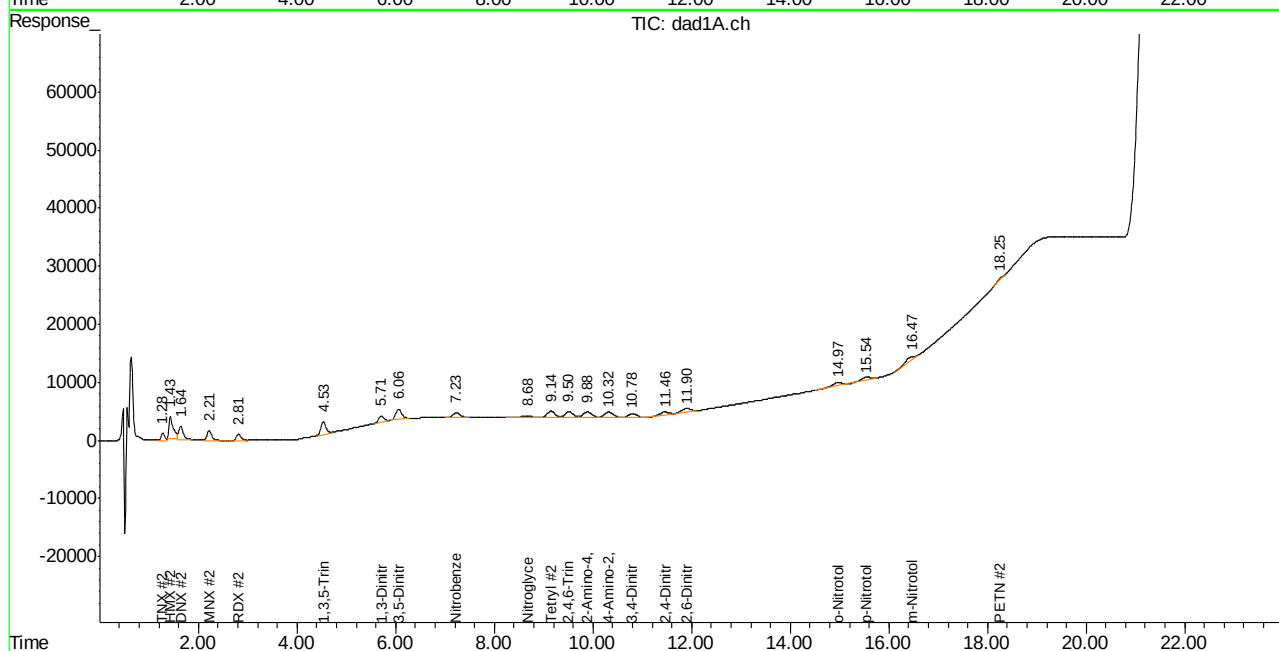
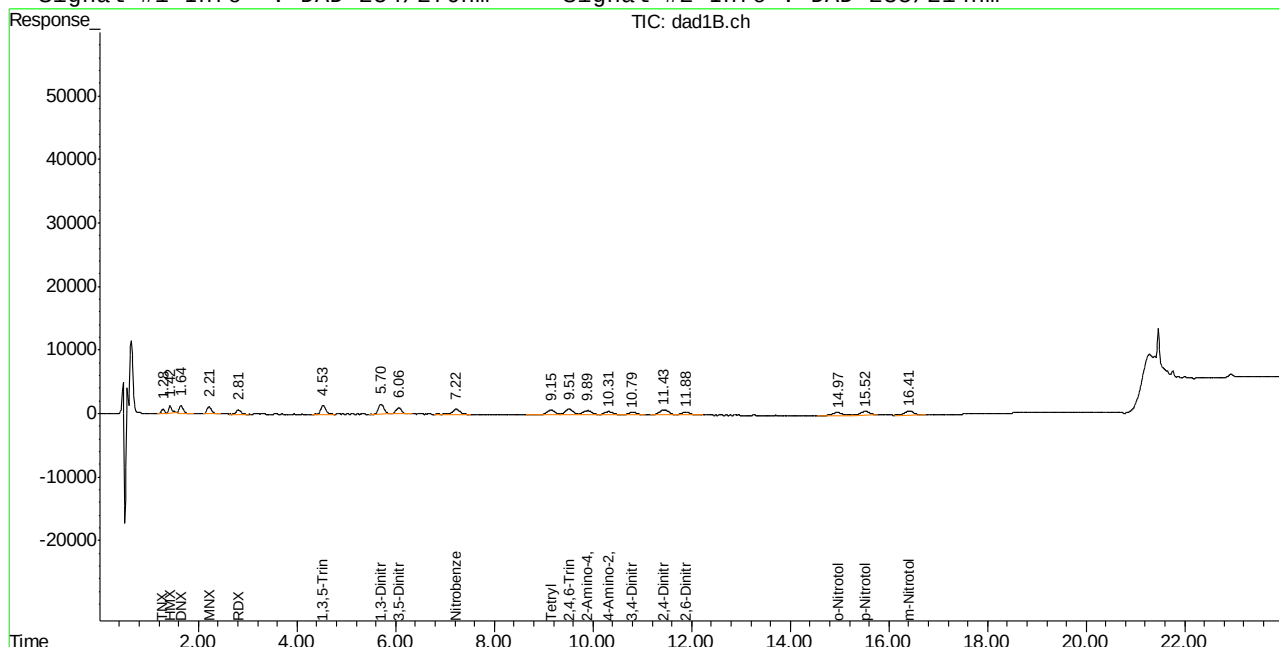
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB076375.D BBB2349_041423.M Mon Apr 17 11:46:34 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1A.ch
Acq On : 14-Apr-2023, 09:53:15 Operator: fouads
Sample : ic2349-20 Inst : G1315B
Misc : op96339,GBB2349,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:45 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2349-IC2349

Method:

SW846 8330B

Lab FileID:

BB076375.D

Analyst approved:

04/17/23 11:45 William Hustedde

Injection Time:

04/14/23 09:53

Supervisor approved:

04/17/23 14:47 Naresh Jiawan

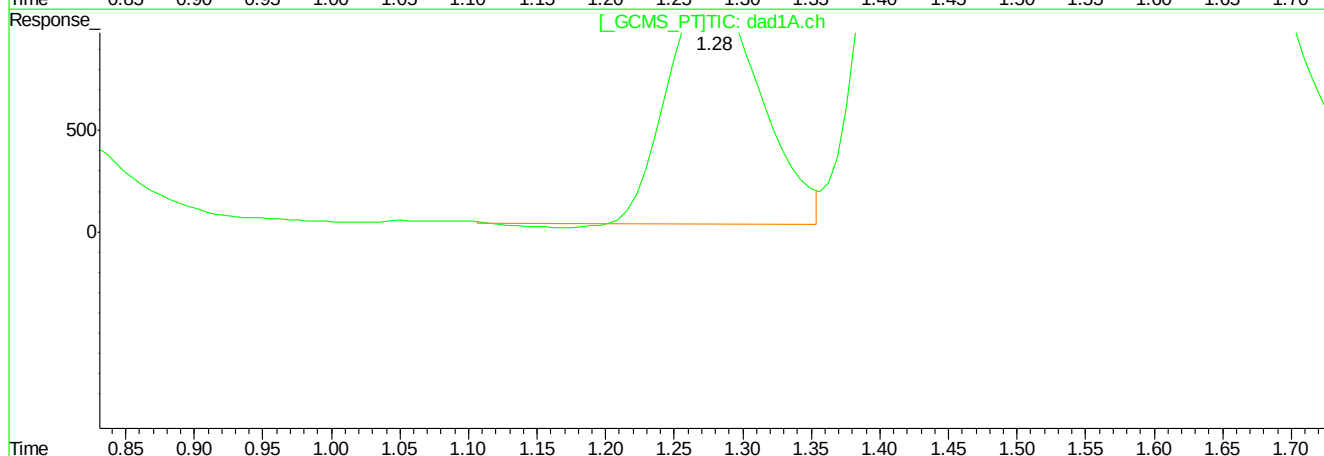
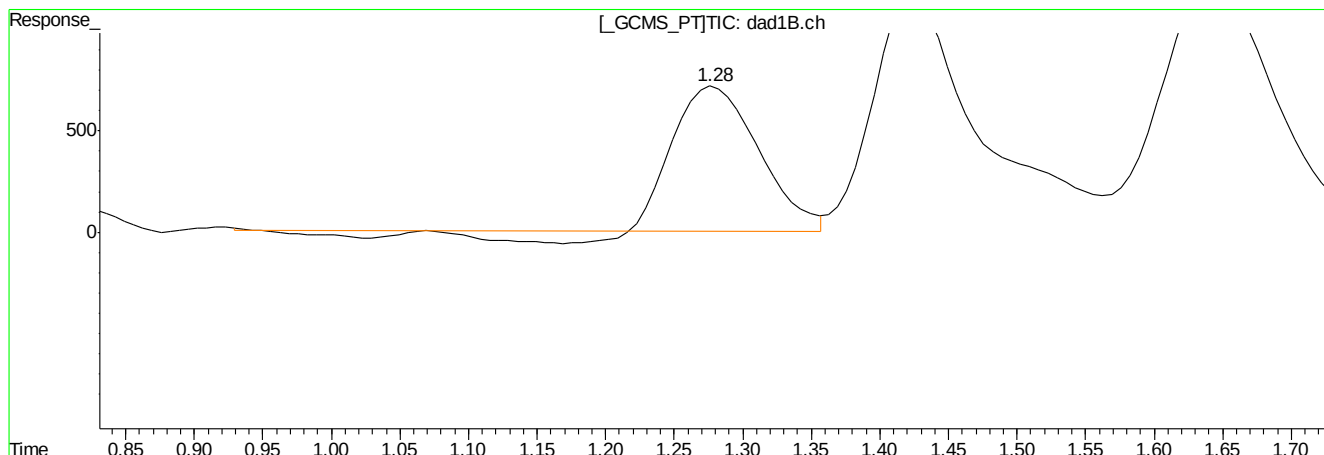
Parameter	CAS	Sig#	R.T. (min.)	Reason
TNX		1	1.28	Poor instrument integration
TNX		2	1.28	Poor instrument integration
HMX	2691-41-0	1	1.42	Poor instrument integration
HMX	2691-41-0	2	1.43	Poor instrument integration
DNX		2	1.64	Poor instrument integration
1,3,5-Trinitrobenzene	99-35-4	2	4.53	Poor instrument integration
1,3-Dinitrobenzene	99-65-0	2	5.71	Poor instrument integration
3,5-Dinitroaniline	618-87-1	2	6.06	Poor instrument integration
m-Nitrotoluene	99-08-1	2	16.47	Poor instrument integration
PETN	78-11-5	2	18.25	Poor instrument integration

9.5.1.1
9

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1A.ch
Acq On : 14-Apr-2023, 09:53:15 Operator: fouads
Sample : ic2349-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(1) TNX

1.28min 6.731ppb

response 26279

(1) TNX #2

1.28min 9.043ppb

response 53428

(+) = Expected Retention Time

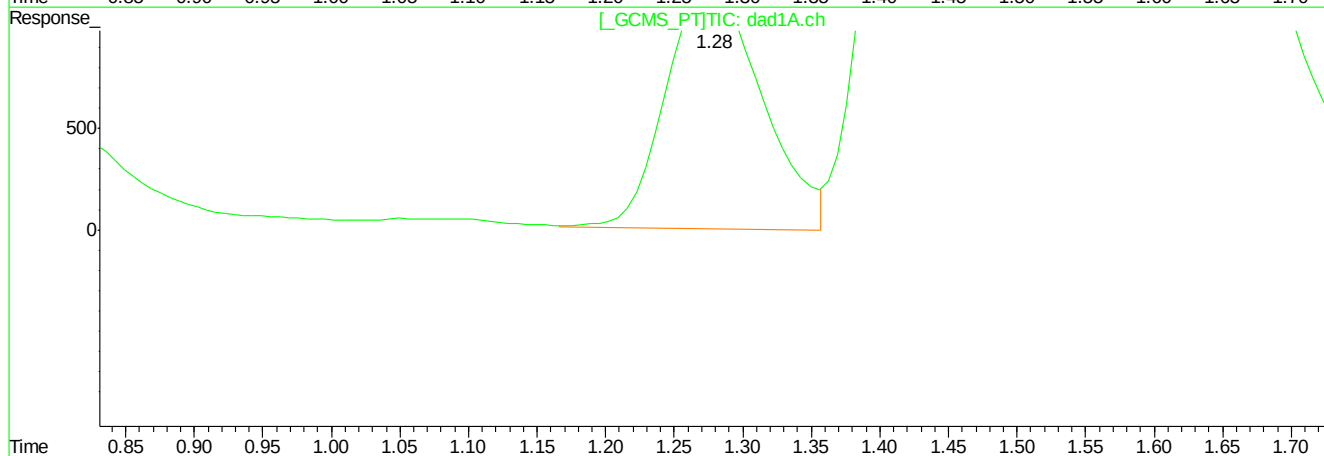
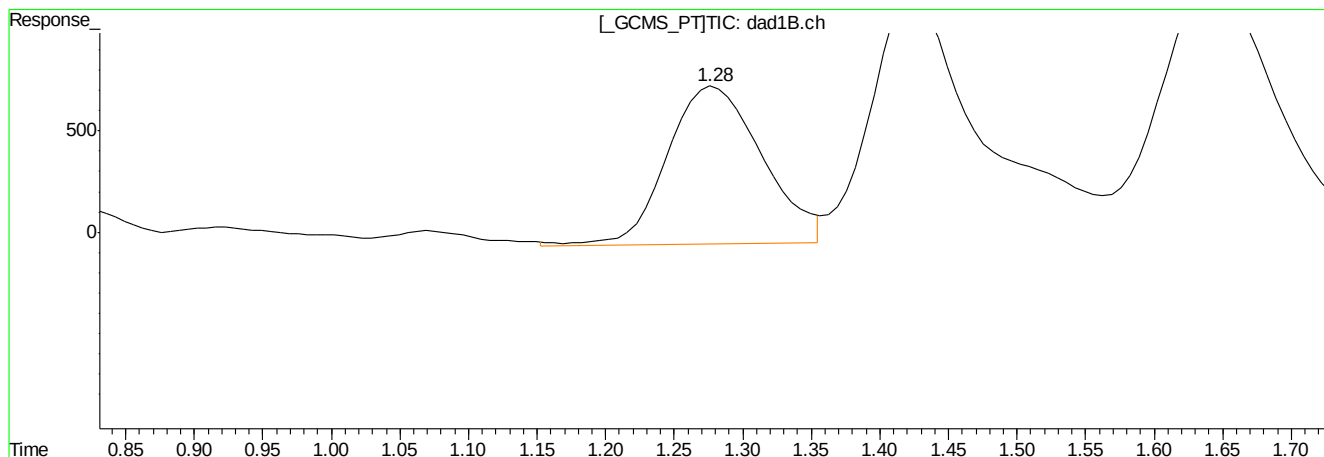
BB076375.D BBB2349_041423.M

Fri Apr 14 12:43:24 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1A.ch
Acq On : 14-Apr-2023, 09:53:15 Operator: fouads
Sample : ic2349-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(1) TNX

1.28min 9.499ppb m

response 37086

(1) TNX #2

1.28min 9.901ppb m

response 58501

(+) = Expected Retention Time

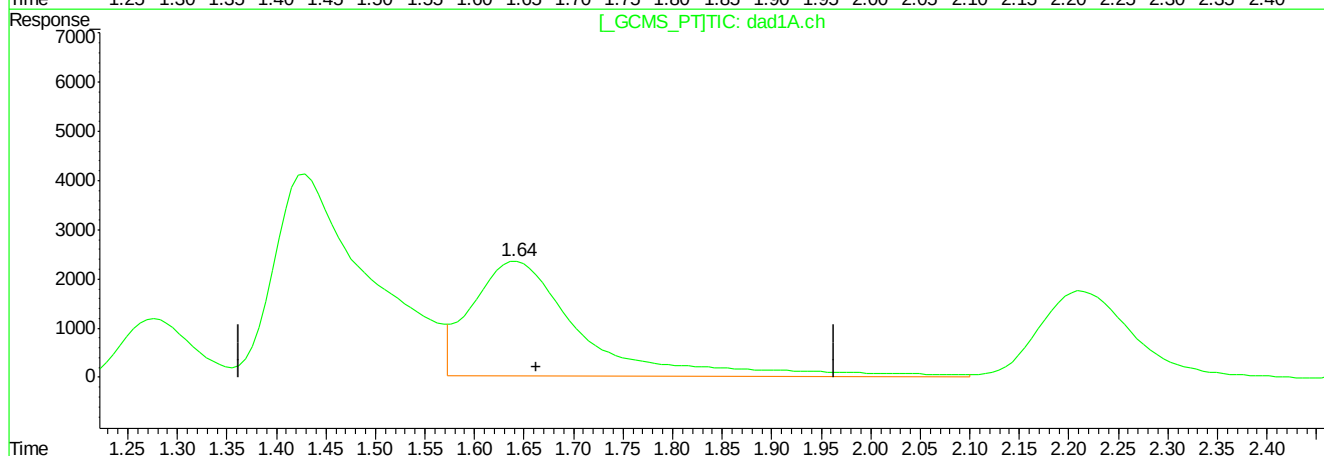
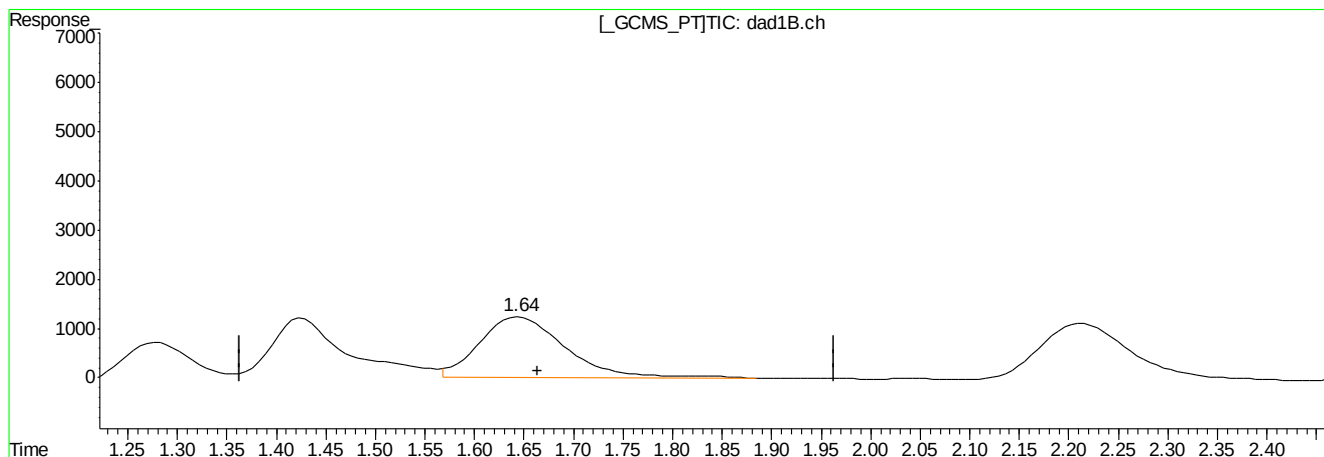
BB076375.D BBB2349_041423.M

Fri Apr 14 12:43:33 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1A.ch
Acq On : 14-Apr-2023, 09:53:15 Operator: fouads
Sample : ic2349-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(3) DNX

1.65min 23.813ppb

response 75346

(3) DNX #2

1.64min 36.810ppb

response 182912

(+) = Expected Retention Time

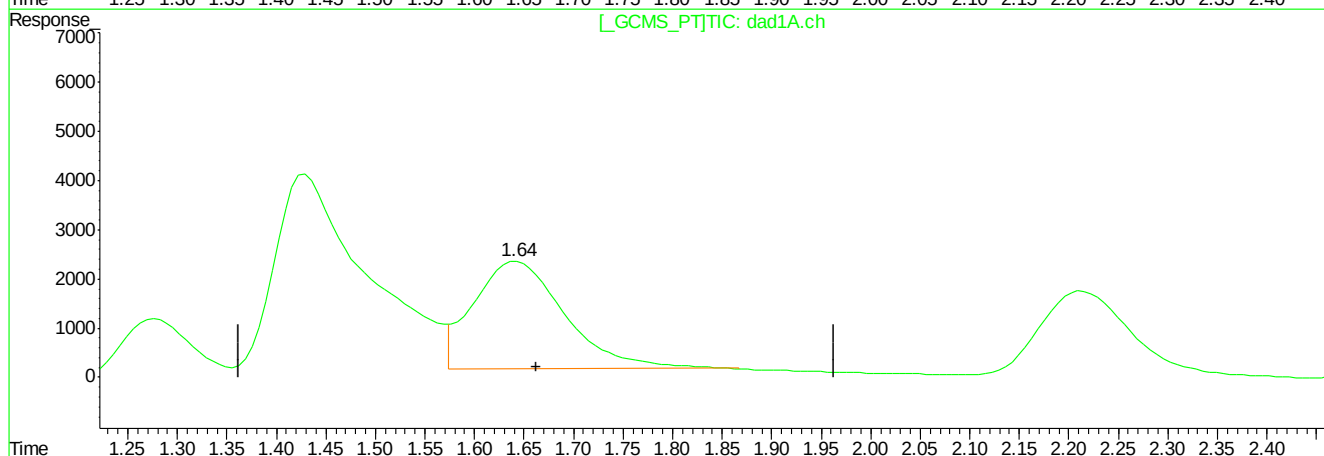
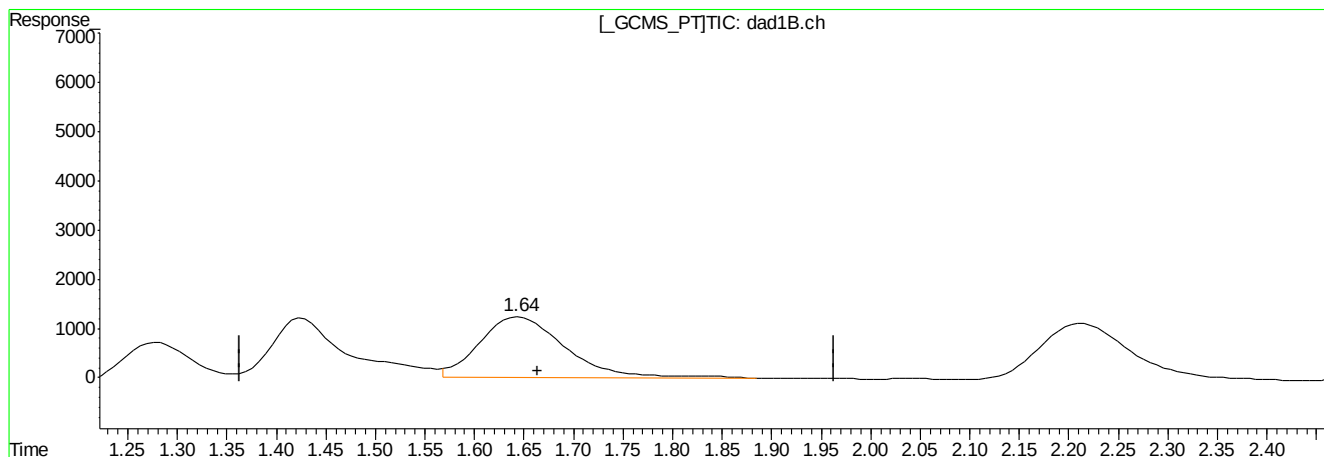
BB076375.D BBB2349_041423.M

Fri Apr 14 12:44:03 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1A.ch
Acq On : 14-Apr-2023, 09:53:15 Operator: fouads
Sample : ic2349-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(3) DNX

1.65min 23.813ppb

response 75346

(3) DNX #2

1.64min 28.429ppb m

response 141266

QEdit

(+) = Expected Retention Time

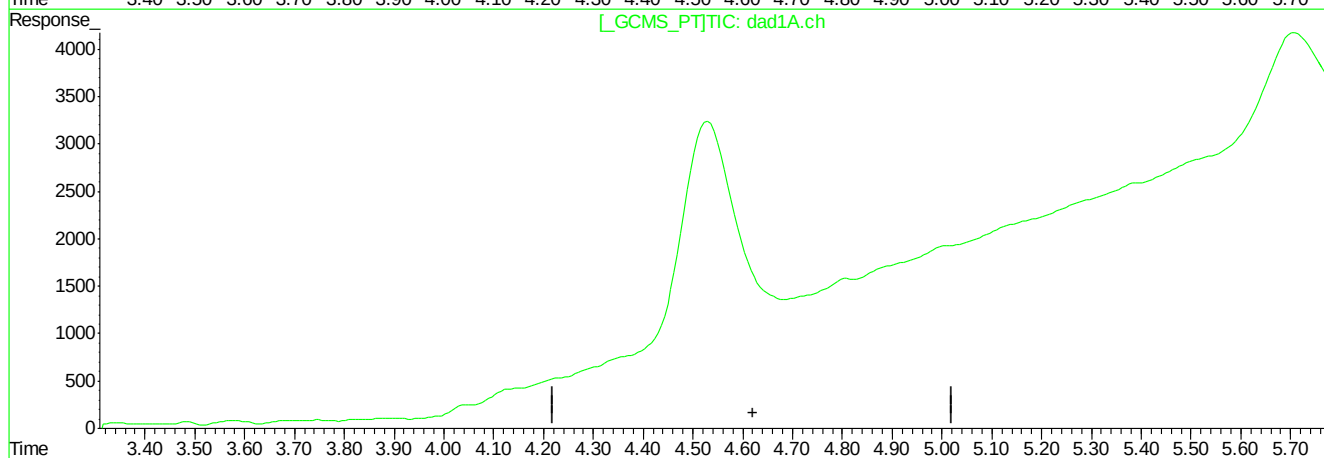
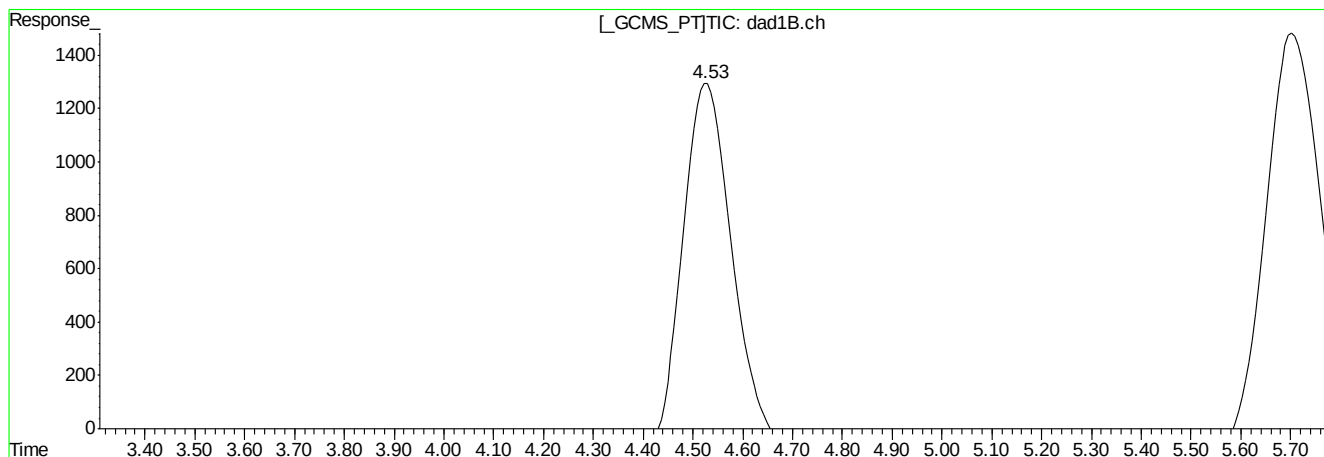
BB076375.D BBB2349_041423.M

Fri Apr 14 12:44:08 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1A.ch
Acq On : 14-Apr-2023, 09:53:15 Operator: fouads
Sample : ic2349-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.53min 25.832ppb

response 99421

(6) 1,3,5-Trinitrobenzene #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

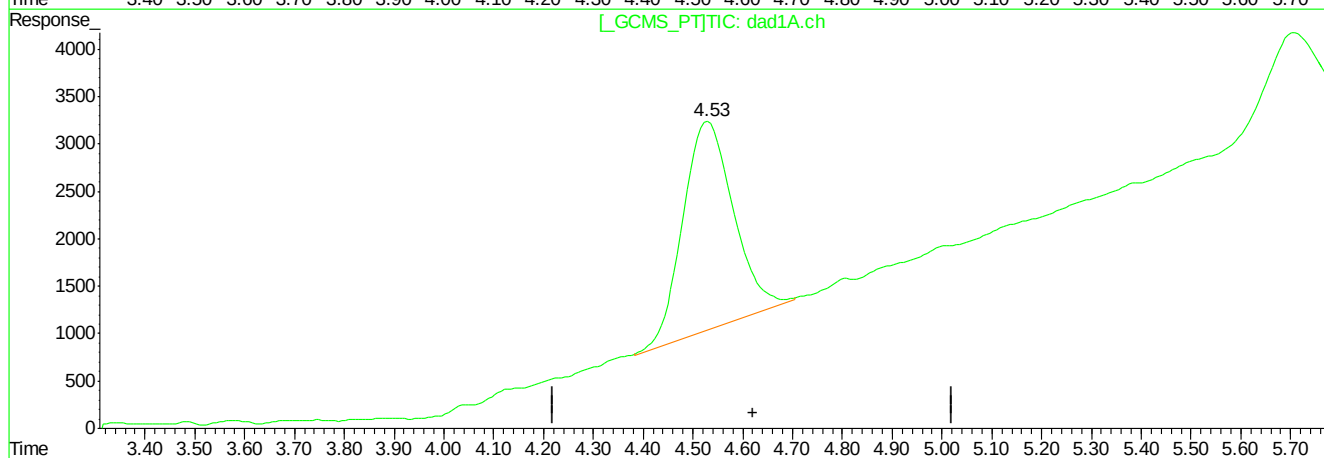
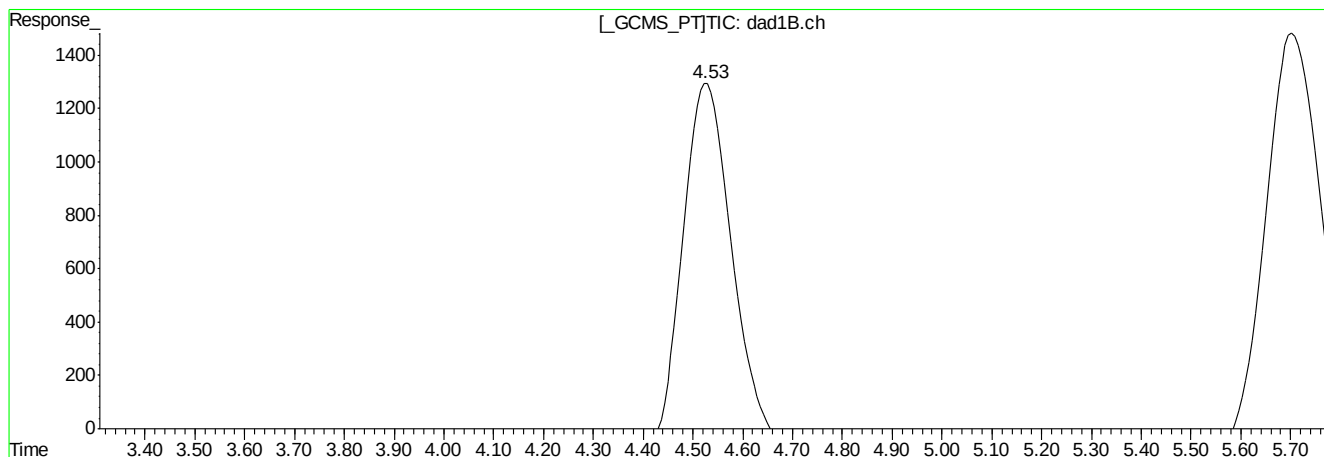
BB076375.D BBB2349_041423.M

Fri Apr 14 12:44:24 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1A.ch
Acq On : 14-Apr-2023, 09:53:15 Operator: fouads
Sample : ic2349-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.53min 25.832ppb

response 99421

(6) 1,3,5-Trinitrobenzene #2

4.53min 25.272ppb m

response 155127

(+) = Expected Retention Time

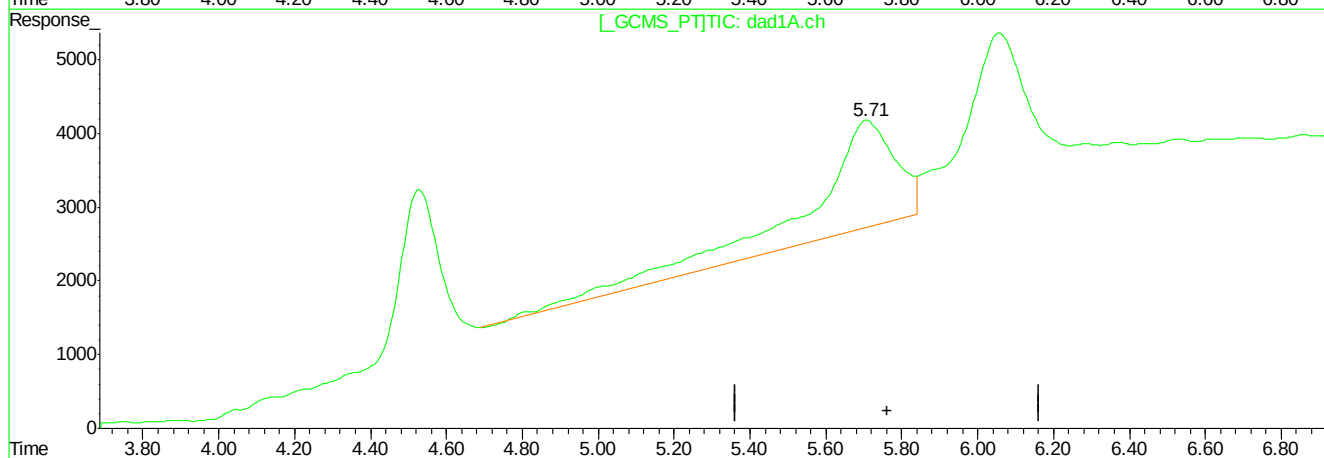
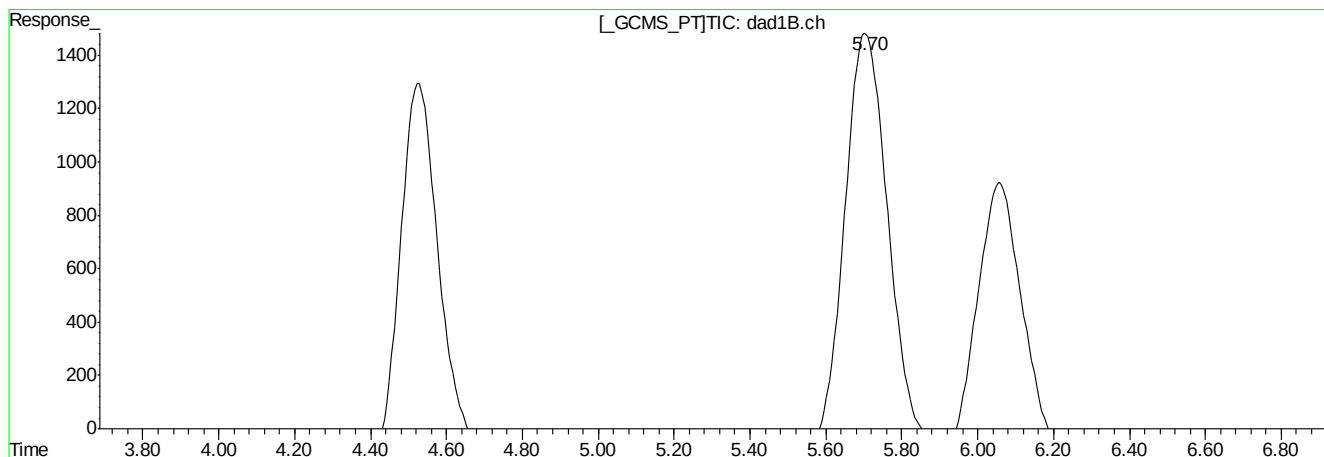
BB076375.D BBB2349_041423.M

Fri Apr 14 12:44:34 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1A.ch
Acq On : 14-Apr-2023, 09:53:15 Operator: fouads
Sample : ic2349-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.71min 24.191ppb

response 126868

(7) 1,3-Dinitrobenzene #2

5.71min 62.417ppb

response 236920

(+) = Expected Retention Time

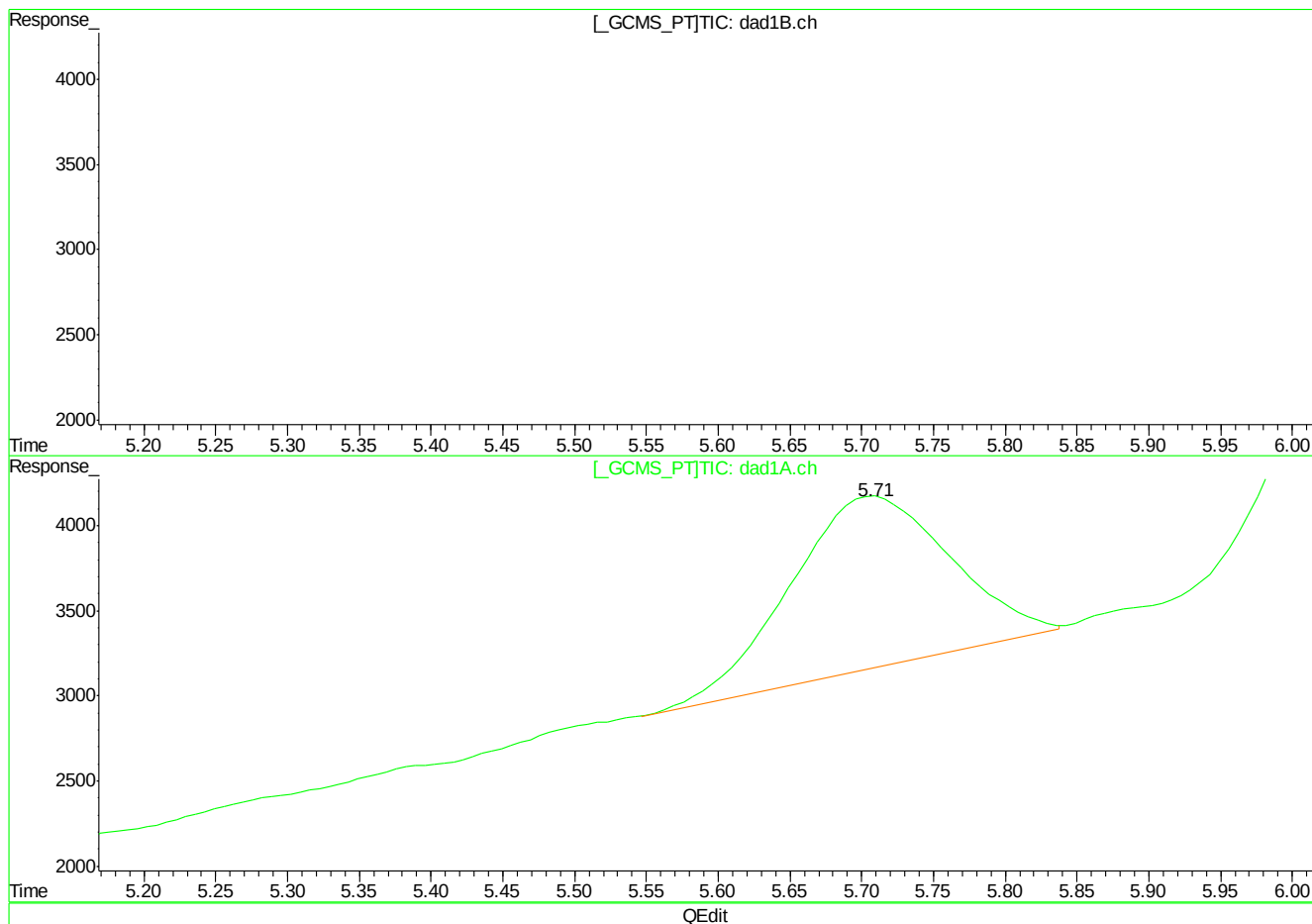
BB076375.D BBB2349_041423.M

Fri Apr 14 12:44:40 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1A.ch
Acq On : 14-Apr-2023, 09:53:15 Operator: fouads
Sample : ic2349-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.71min 24.191ppb

response 126868

(7) 1,3-Dinitrobenzene #2

5.71min 20.645ppb m

response 78364

(+) = Expected Retention Time

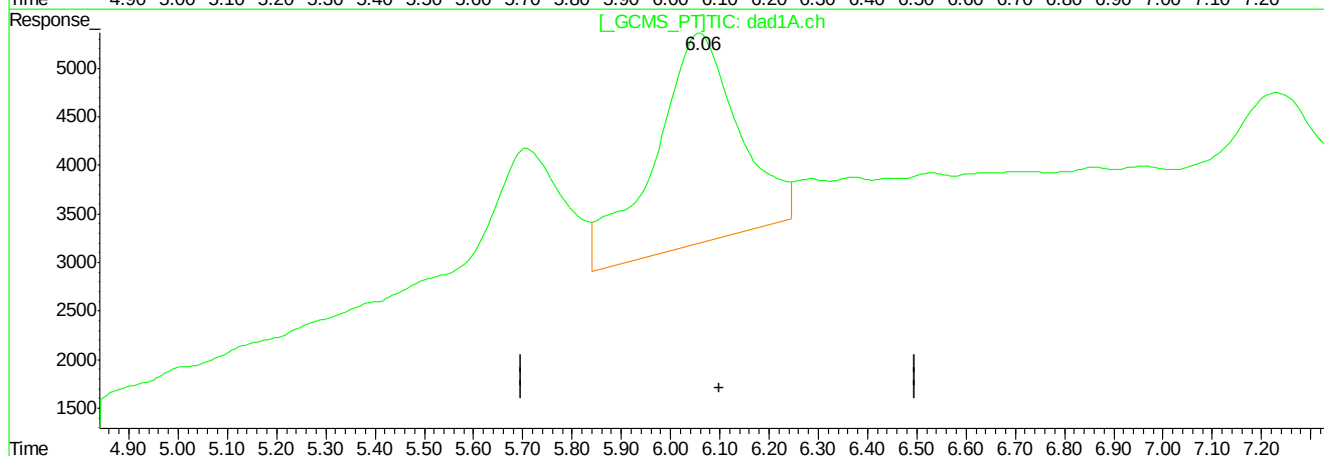
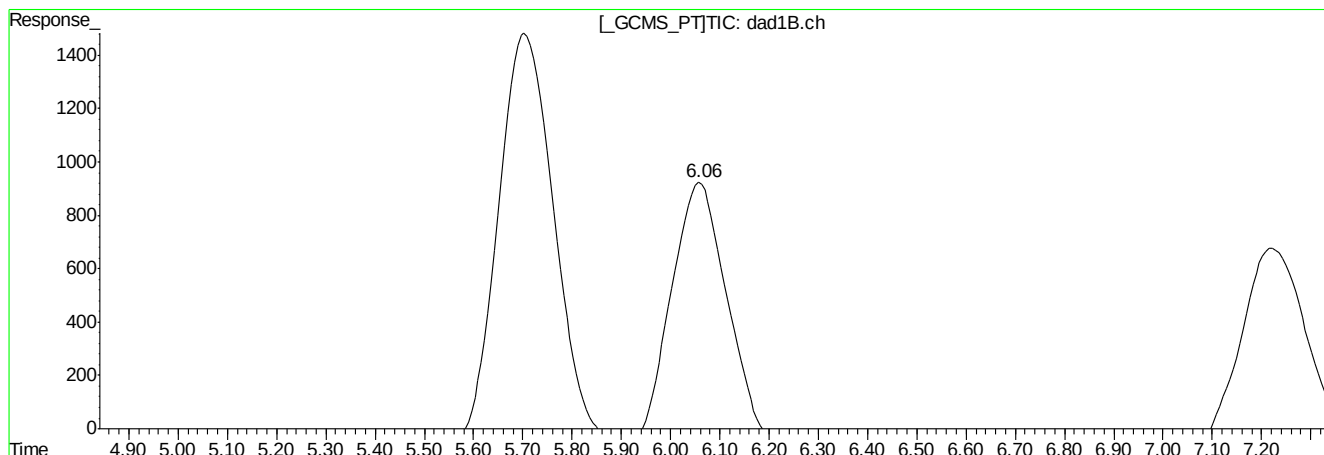
BB076375.D BBB2349_041423.M

Fri Apr 14 12:44:56 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1A.ch
Acq On : 14-Apr-2023, 09:53:15 Operator: fouads
Sample : ic2349-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

6.06min 20.811ppb

response 81979

(8) 3,5-Dinitroaniline #2

6.06min 38.476ppb

response 257117

(+) = Expected Retention Time

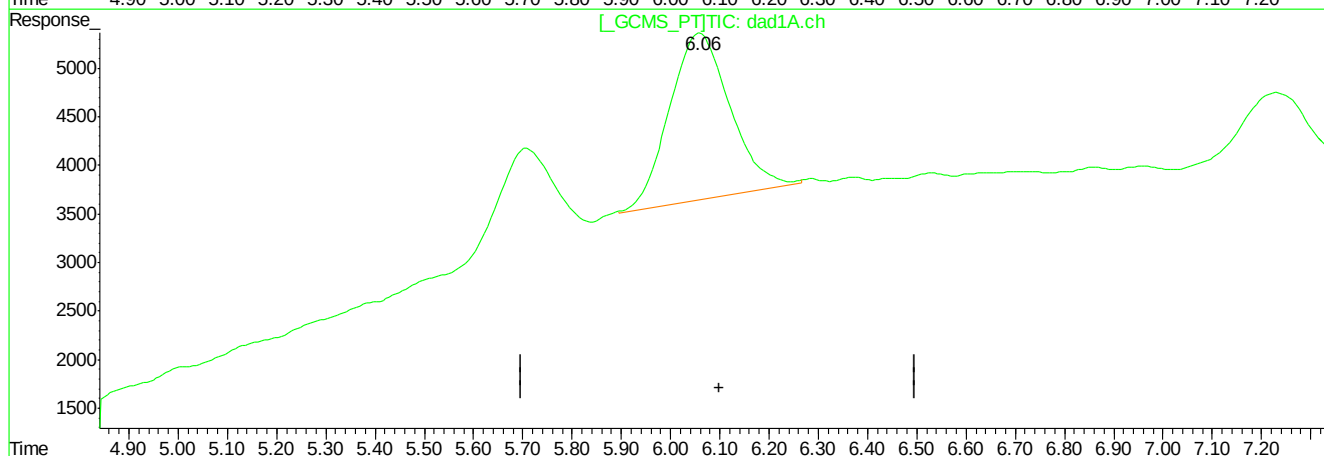
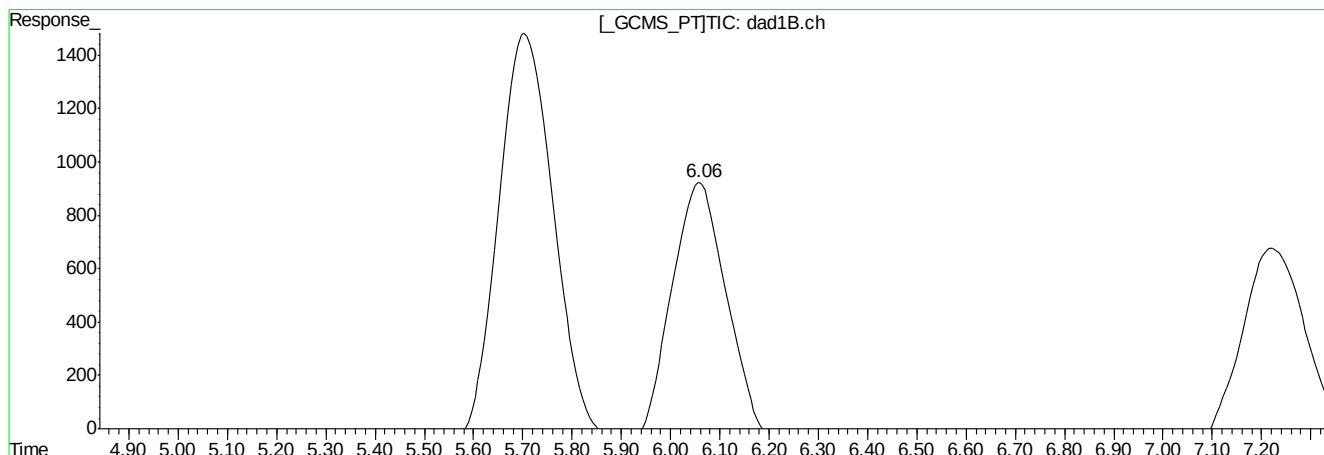
BB076375.D BBB2349_041423.M

Fri Apr 14 12:45:00 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1A.ch
Acq On : 14-Apr-2023, 09:53:15 Operator: fouads
Sample : ic2349-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

6.06min 20.811ppb

response 81979

(8) 3,5-Dinitroaniline #2

6.06min 22.002ppb m

response 147025

(+) = Expected Retention Time

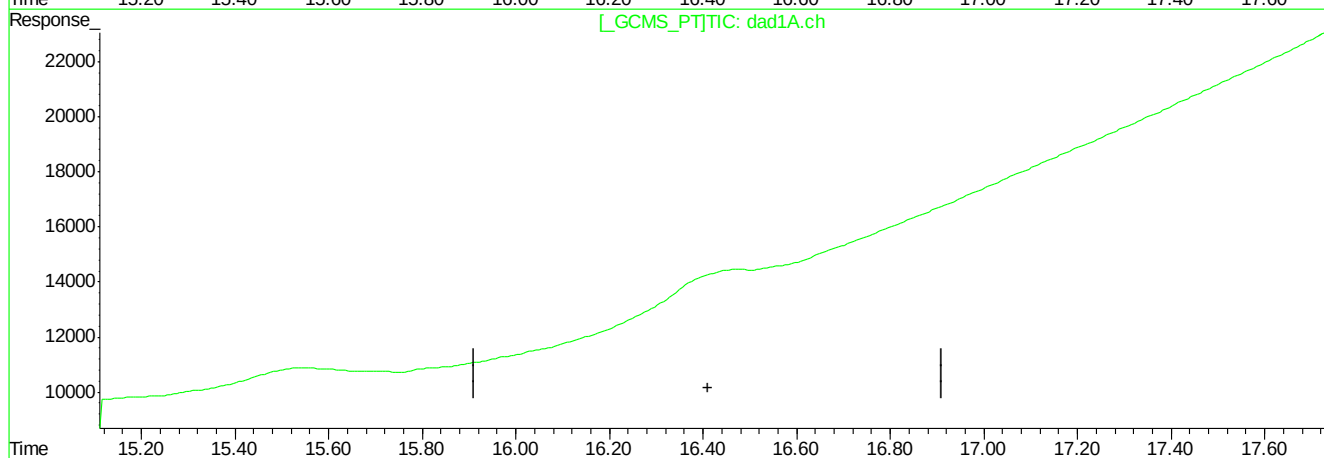
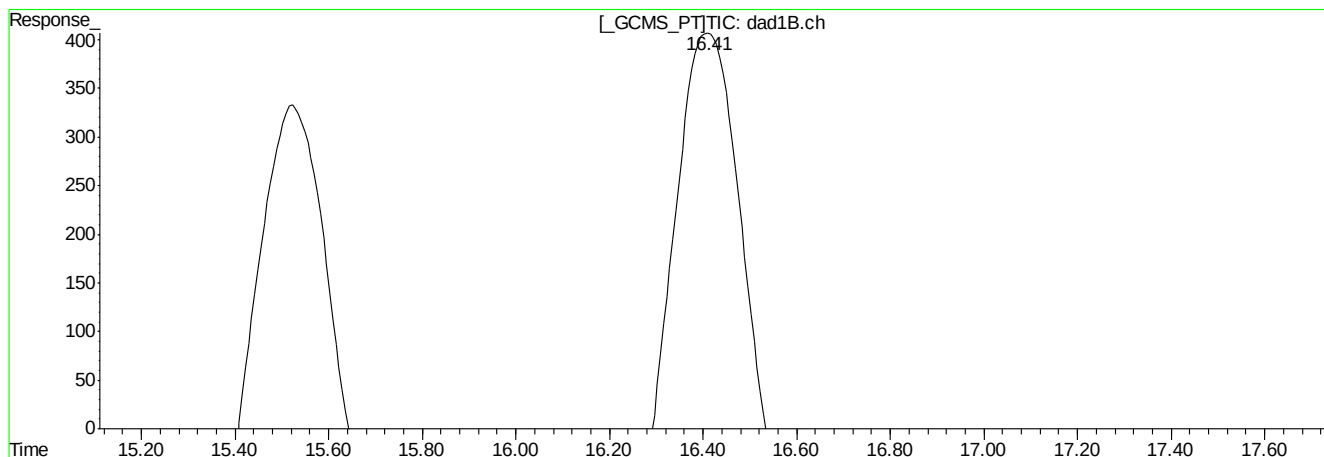
BB076375.D BBB2349_041423.M

Fri Apr 14 12:45:05 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1A.ch
Acq On : 14-Apr-2023, 09:53:15 Operator: fouads
Sample : ic2349-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(20) m-Nitrotoluene

16.41min 28.000ppb

response 83158

(20) m-Nitrotoluene #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

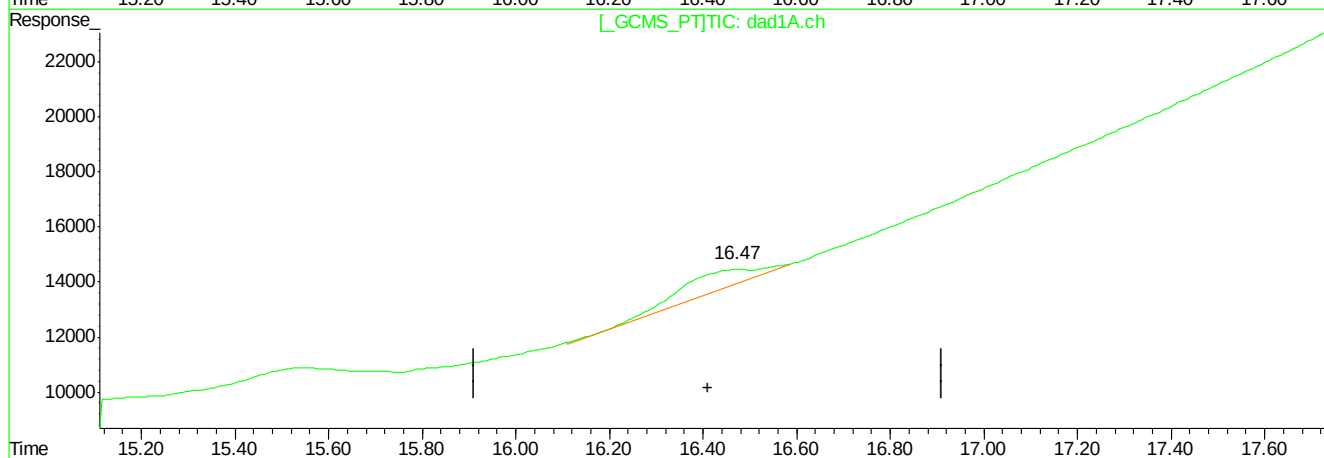
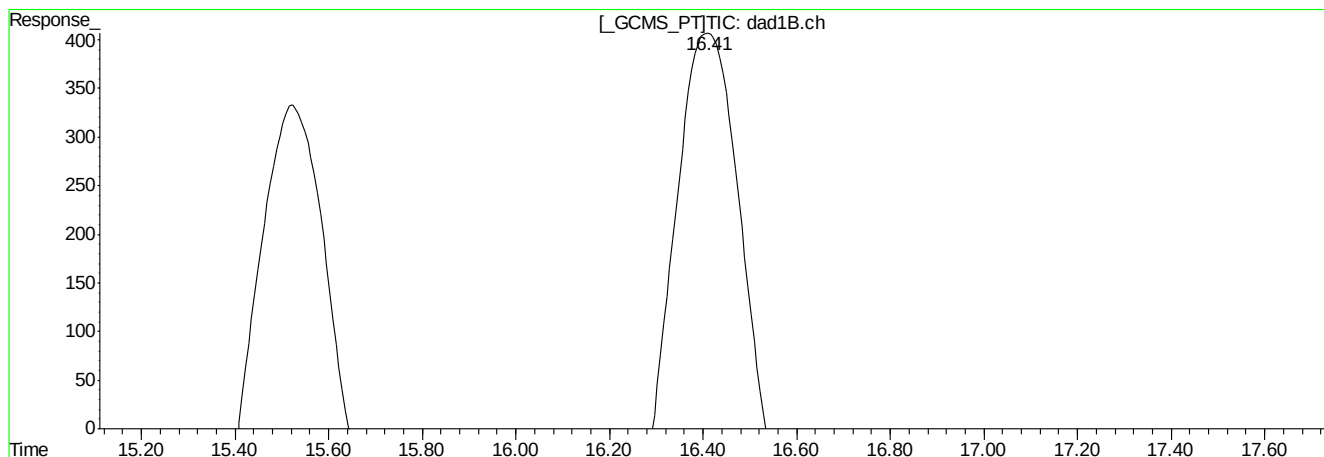
BB076375.D BBB2349_041423.M

Fri Apr 14 12:45:37 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1A.ch
Acq On : 14-Apr-2023, 09:53:15 Operator: fouads
Sample : ic2349-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(20) m-Nitrotoluene

16.41min 28.000ppb

response 83158

(20) m-Nitrotoluene #2

16.47min 23.599ppb m

response 83183

(+) = Expected Retention Time

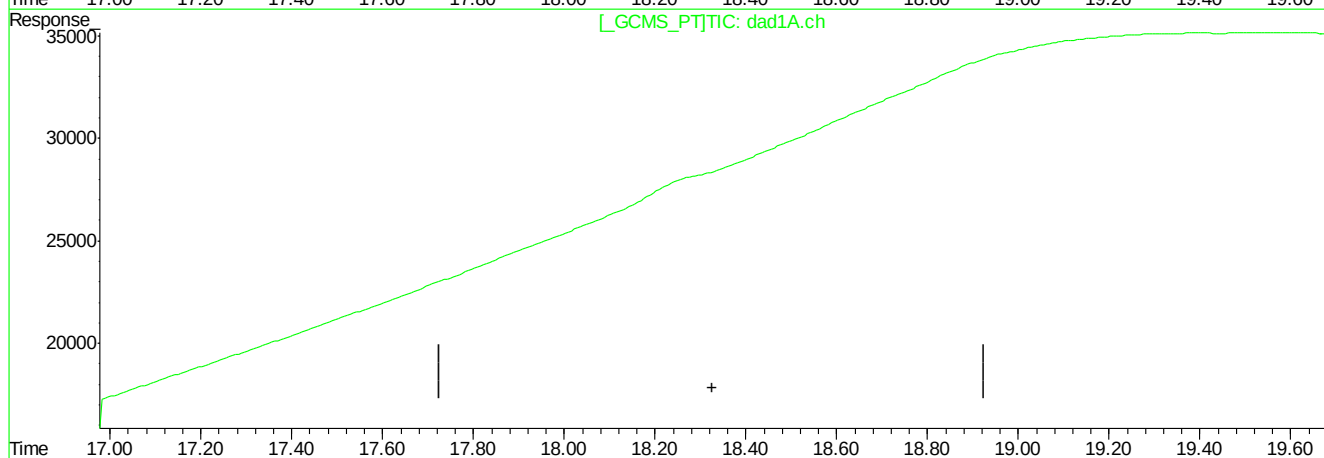
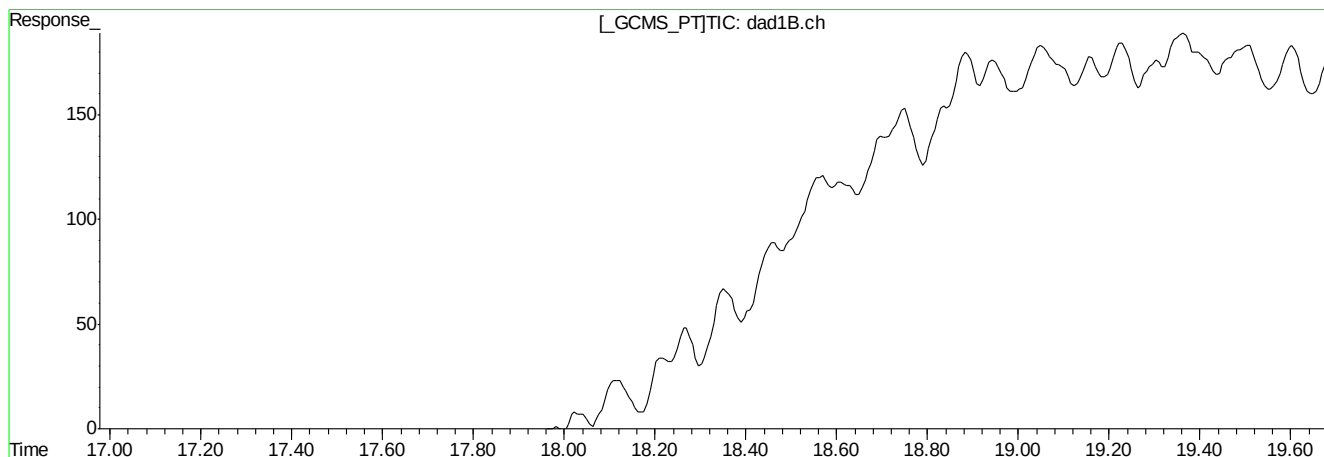
BB076375.D BBB2349_041423.M

Fri Apr 14 12:45:43 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1A.ch
Acq On : 14-Apr-2023, 09:53:15 Operator: fouads
Sample : ic2349-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

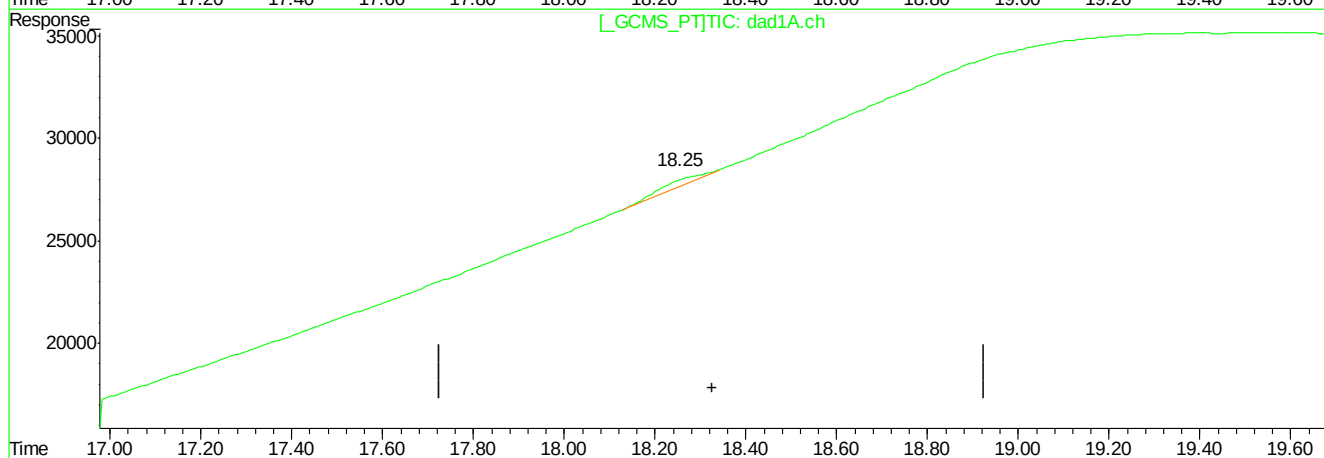
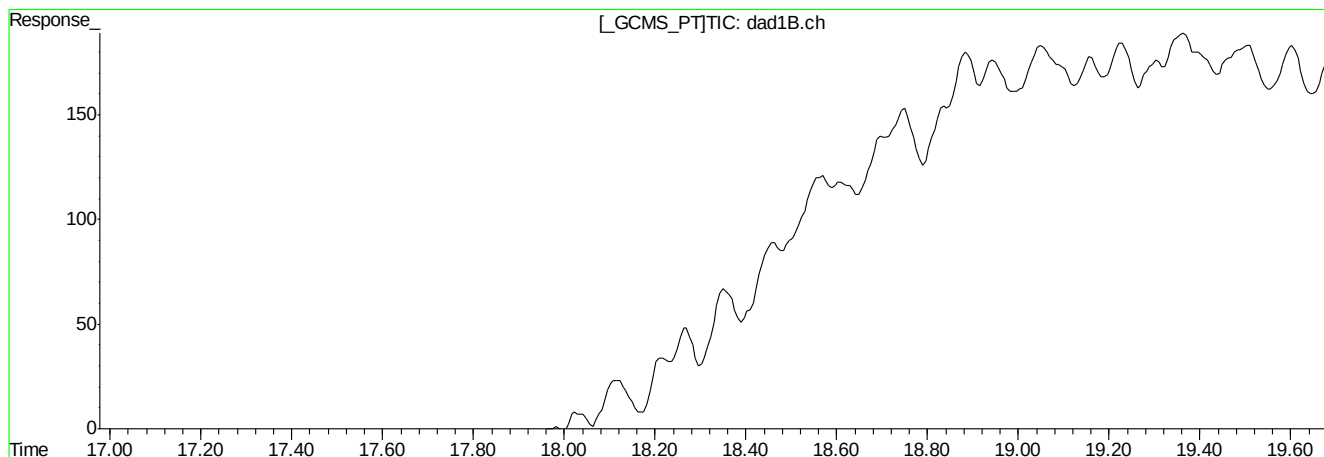
BB076375.D BBB2349_041423.M

Fri Apr 14 12:45:47 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076375.D\dad1A.ch
Acq On : 14-Apr-2023, 09:53:15 Operator: fouads
Sample : ic2349-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

18.25min 17.444ppb m

response 22447

(+) = Expected Retention Time

BB076375.D BBB2349_041423.M

Fri Apr 14 12:46:00 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1B.ch Vial: 4
 Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1A.ch
 Acq On : 14-Apr-2023, 10:24:11 Operator: fouads
 Sample : ic2349-50 Inst : G1315B
 Misc : op96339,GBB2349,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Apr 14 12:41:19 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Apr 14 10:52:34 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	10.82	10.82	139159	219402	63.877	63.326
Spiked Amount	500.000	Range	70 - 136	Recovery	=	12.78%# 12.67%#
Target Compounds						
1) TNX	1.28	1.28	93725	140202	24.005	23.730
2) HMX	1.42	1.42	89953	314519	57.809m	76.613m
3) DNX	1.64	1.64	181961	316473	57.509	63.688
4) MNX	2.21	2.21	185781	278441	63.998	62.352
5) RDX	2.81	2.81	113478	176502	60.505	60.098
6) 1,3,5-Trinitrobe	4.53	4.53	241986	386334	62.875	62.939m
7) 1,3-Dinitrobenze	5.71	5.71	313938	225534	59.861	59.418m
8) 3,5-Dinitroanili	6.06	6.06	222542	386640	56.494	57.859m
9) Nitrobenzene	7.23	7.23	185751	178503	66.469	64.704
10) Nitroglycerin	0.00	8.67	0	78474	N.D.	60.202 #
11) Tetryl	9.16	9.16	181567	291288	76.449	77.438
12) 2,4,6-Trinitroto	9.53	9.53	237059	285823	63.201	65.477
13) 2-Amino-4,6-Dini	9.90	9.90	209936	296405	64.971	67.952
14) 4-Amino-2,6-Dini	10.33	10.33	157203	293782	65.520	62.871
16) 2,4-Dinitrotolue	11.45	11.46	282415	172649	61.820	59.427
17) 2,6-Dinitrotolue	11.89	11.90	159918	188523	58.039	57.317
18) o-Nitrotoluene	14.96	14.97	132613	172662	67.903	59.049
19) p-Nitrotoluene	15.53	15.54	207757	155225	67.152	60.412
20) m-Nitrotoluene	16.42	16.43	197437	208276	66.478	59.088m
21) PETN	0.00	18.27	0	74920	N.D.	58.220m#

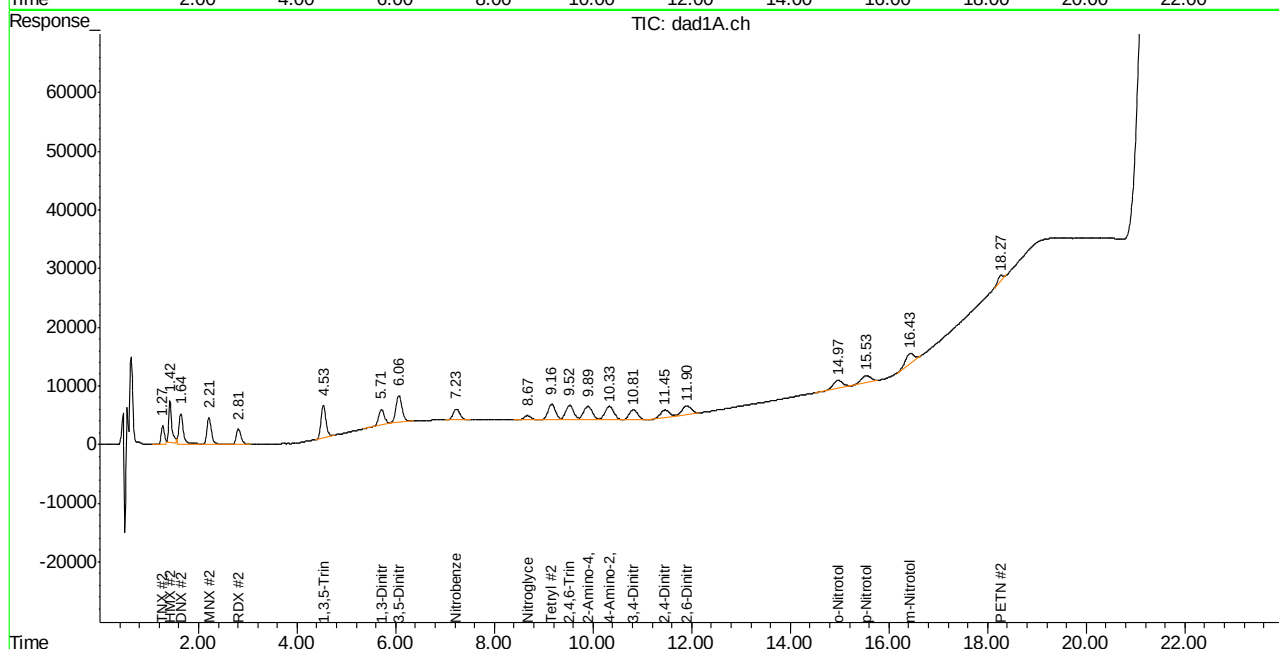
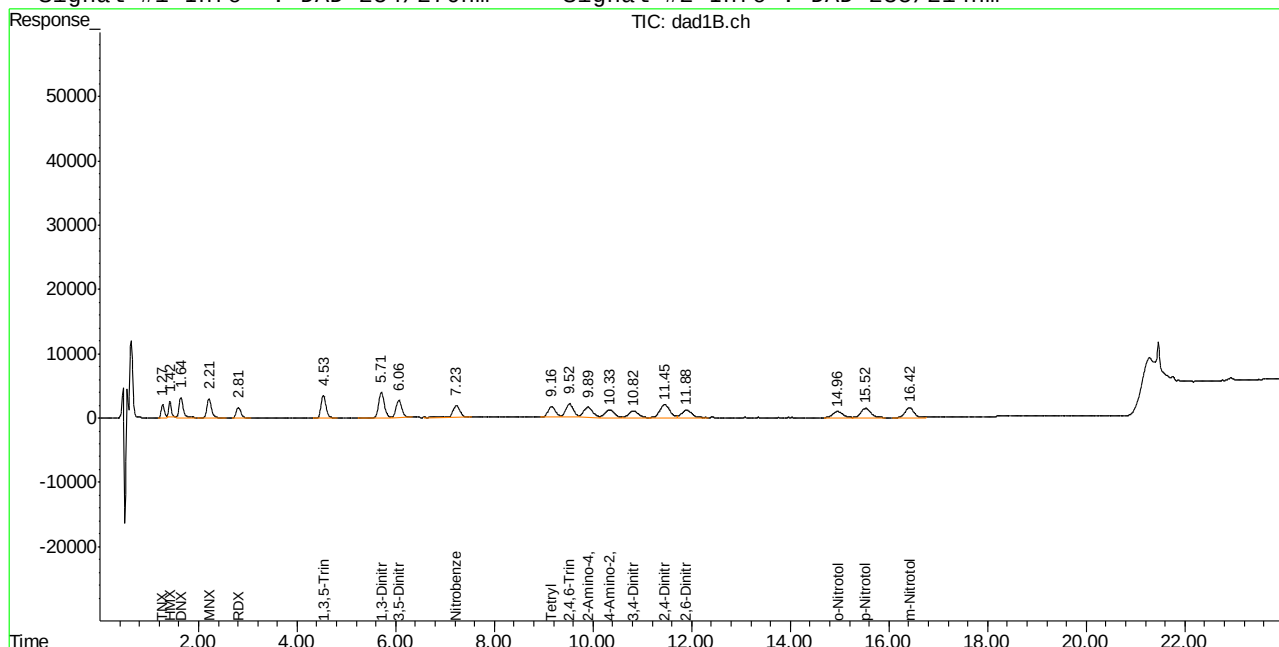
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB076376.D BBB2349_041423.M Mon Apr 17 11:46:35 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1A.ch
Acq On : 14-Apr-2023, 10:24:11 Operator: fouads
Sample : ic2349-50 Inst : G1315B
Misc : op96339,GBB2349,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:48 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2349-IC2349

Method:

SW846 8330B

Lab FileID:

BB076376.D

Analyst approved:

04/17/23 11:45 William Hustedde

Injection Time:

04/14/23 10:24

Supervisor approved:

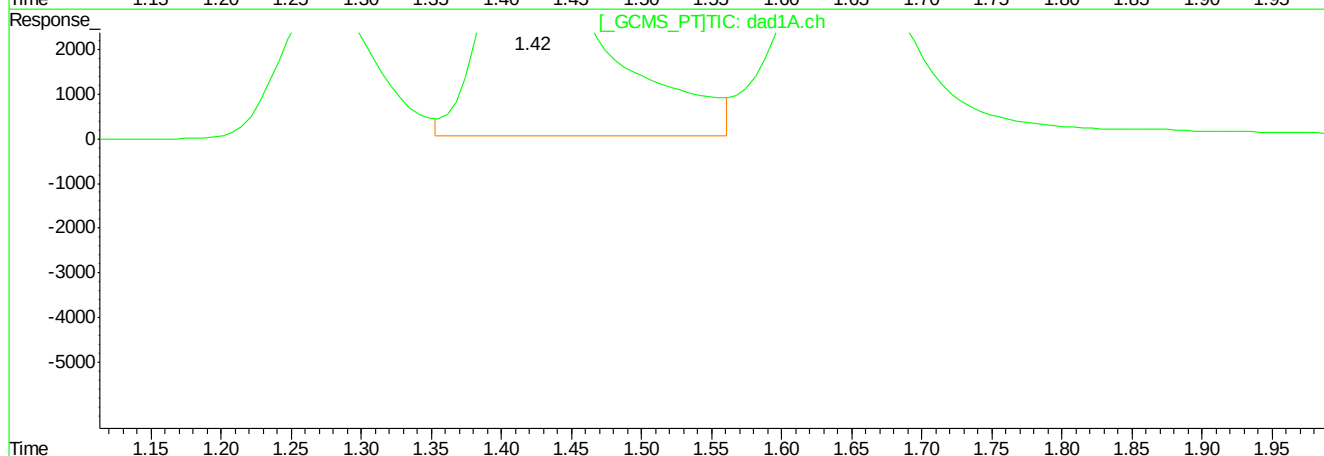
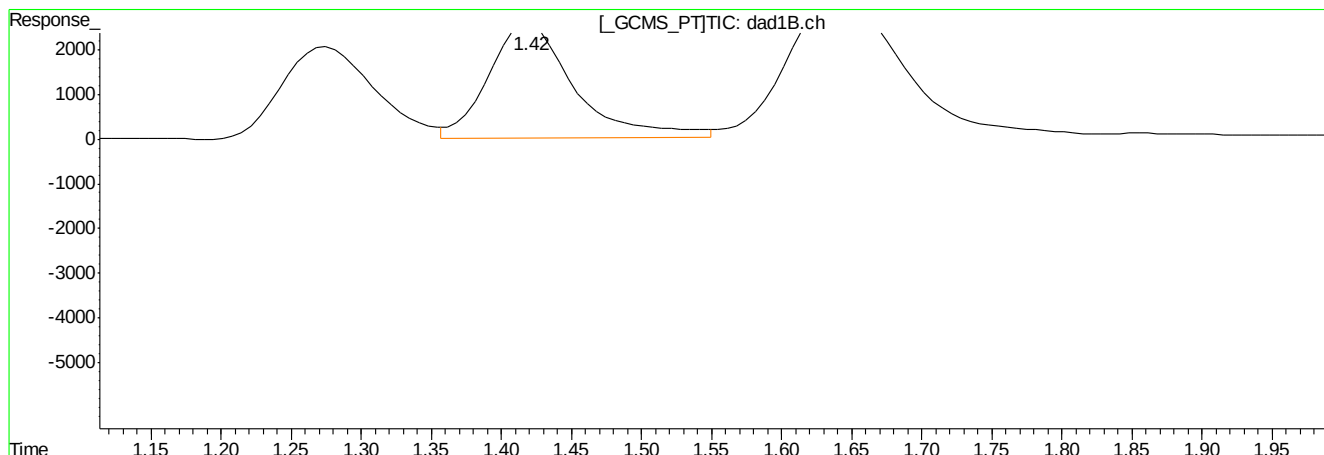
04/17/23 14:47 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
HMX	2691-41-0	1	1.42	Poor instrument integration
HMX	2691-41-0	2	1.42	Poor instrument integration
1,3,5-Trinitrobenzene	99-35-4	2	4.53	Poor instrument integration
1,3-Dinitrobenzene	99-65-0	2	5.71	Poor instrument integration
3,5-Dinitroaniline	618-87-1	2	6.06	Poor instrument integration
m-Nitrotoluene	99-08-1	2	16.43	Poor instrument integration
PETN	78-11-5	2	18.27	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1A.ch
Acq On : 14-Apr-2023, 10:24:11 Operator: fouads
Sample : ic2349-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

1.42min 70.140ppb

response 109140

(2) HMX #2

1.42min 84.741ppb

response 347886

(+) = Expected Retention Time

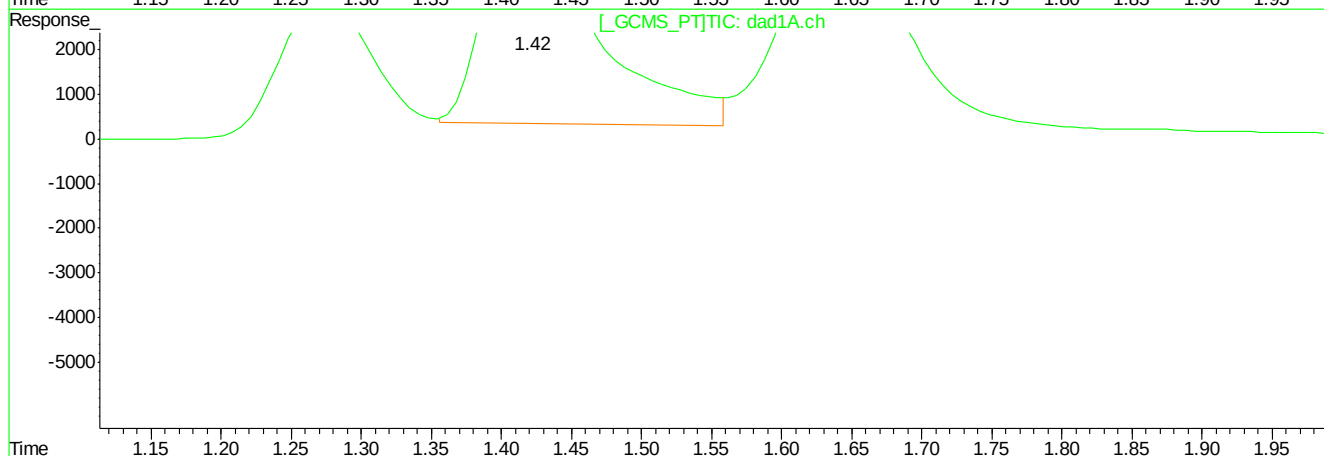
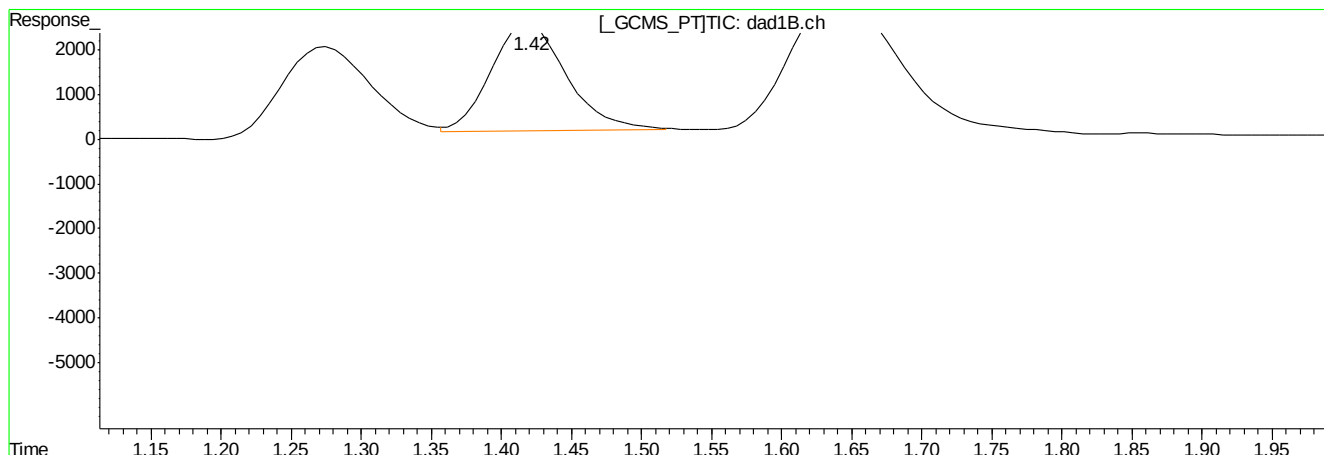
BB076376.D BBB2349_041423.M

Fri Apr 14 12:46:16 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1A.ch
Acq On : 14-Apr-2023, 10:24:11 Operator: fouads
Sample : ic2349-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(2) HMX

1.42min 57.809ppb m

response 89953

(2) HMX #2

1.42min 76.613ppb m

response 314519

(+) = Expected Retention Time

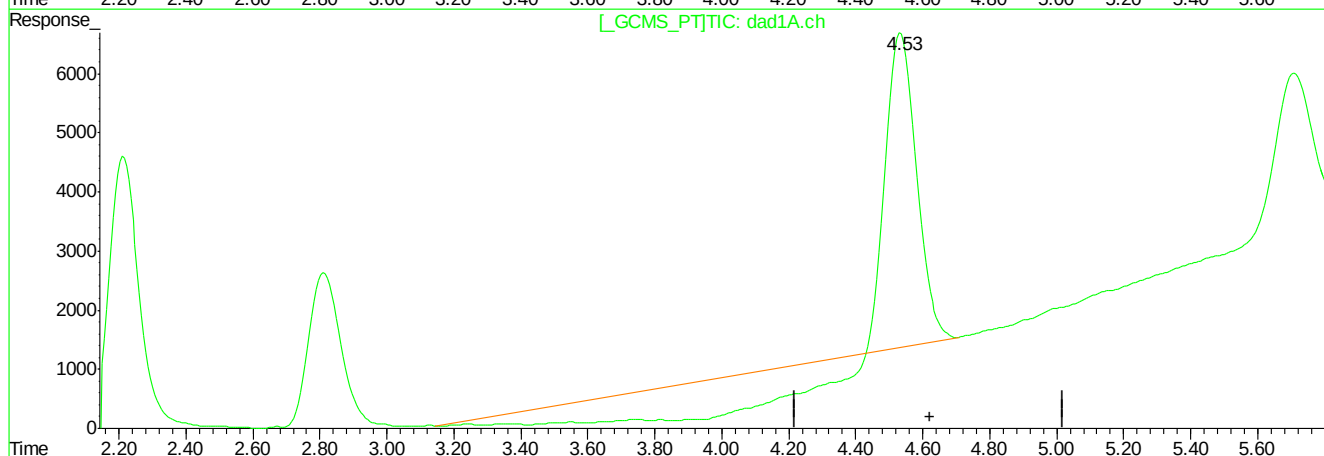
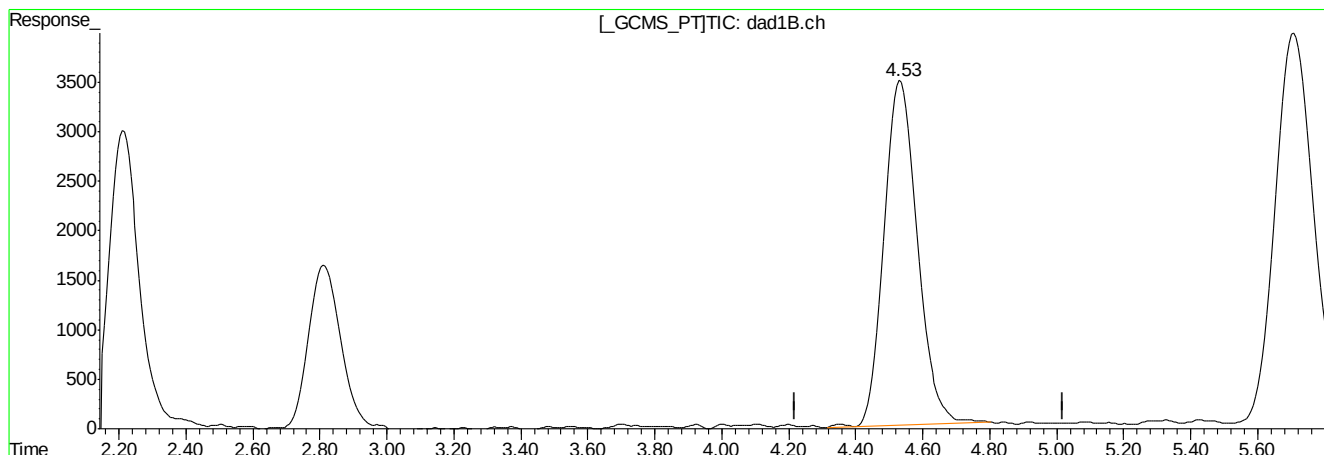
BB076376.D BBB2349_041423.M

Fri Apr 14 12:46:23 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1A.ch
Acq On : 14-Apr-2023, 10:24:11 Operator: fouads
Sample : ic2349-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.53min 62.875ppb

response 241986

(6) 1,3,5-Trinitrobenzene #2

4.53min 7.963ppb

response 48876

(+) = Expected Retention Time

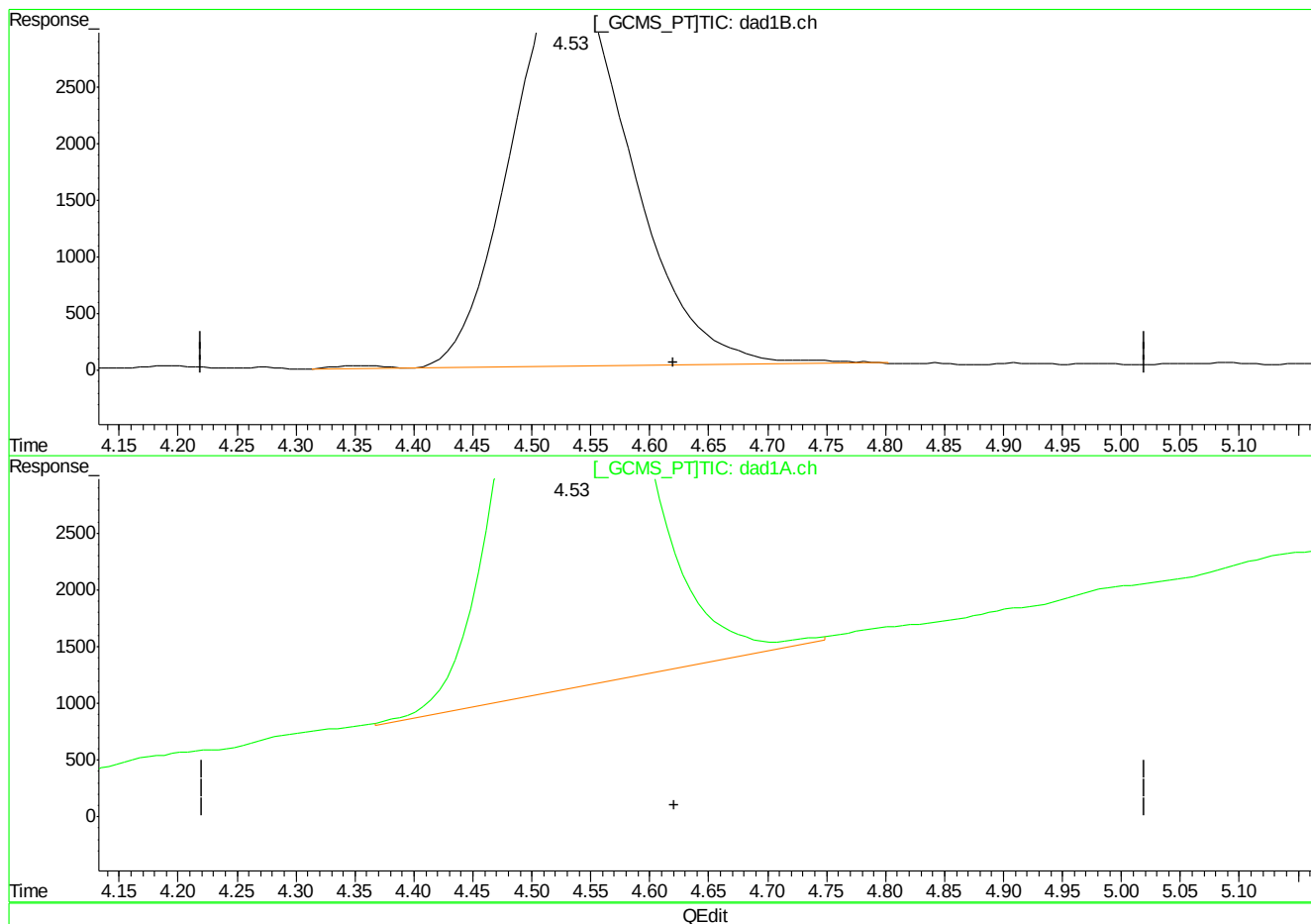
BB076376.D BBB2349_041423.M

Fri Apr 14 12:46:41 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1A.ch
Acq On : 14-Apr-2023, 10:24:11 Operator: fouads
Sample : ic2349-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.53min 62.875ppb

response 241986

(6) 1,3,5-Trinitrobenzene #2

4.53min 62.939ppb m

response 386334

(+) = Expected Retention Time

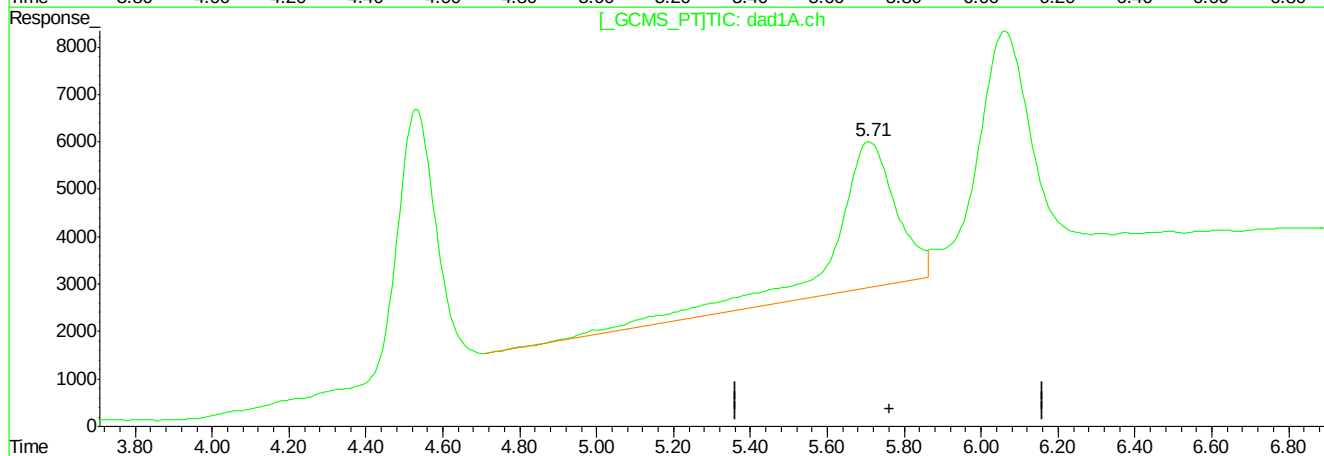
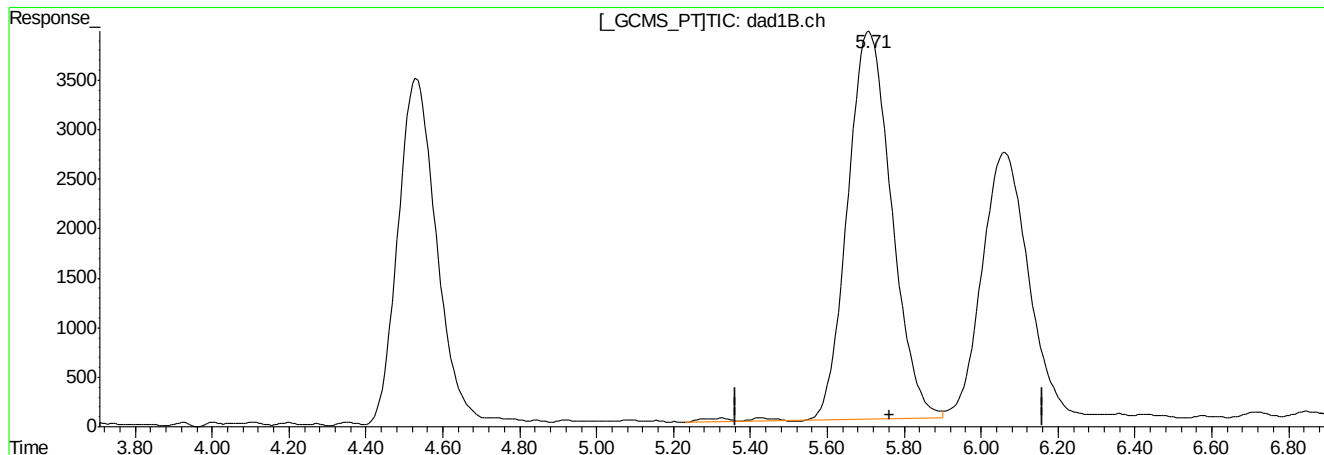
BB076376.D BBB2349_041423.M

Fri Apr 14 12:46:52 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1A.ch
Acq On : 14-Apr-2023, 10:24:11 Operator: fouads
Sample : ic2349-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

5.71min 59.861ppb

response 313938

(7) 1,3-Dinitrobenzene #2

5.71min 94.199ppb

response 357556

(+) = Expected Retention Time

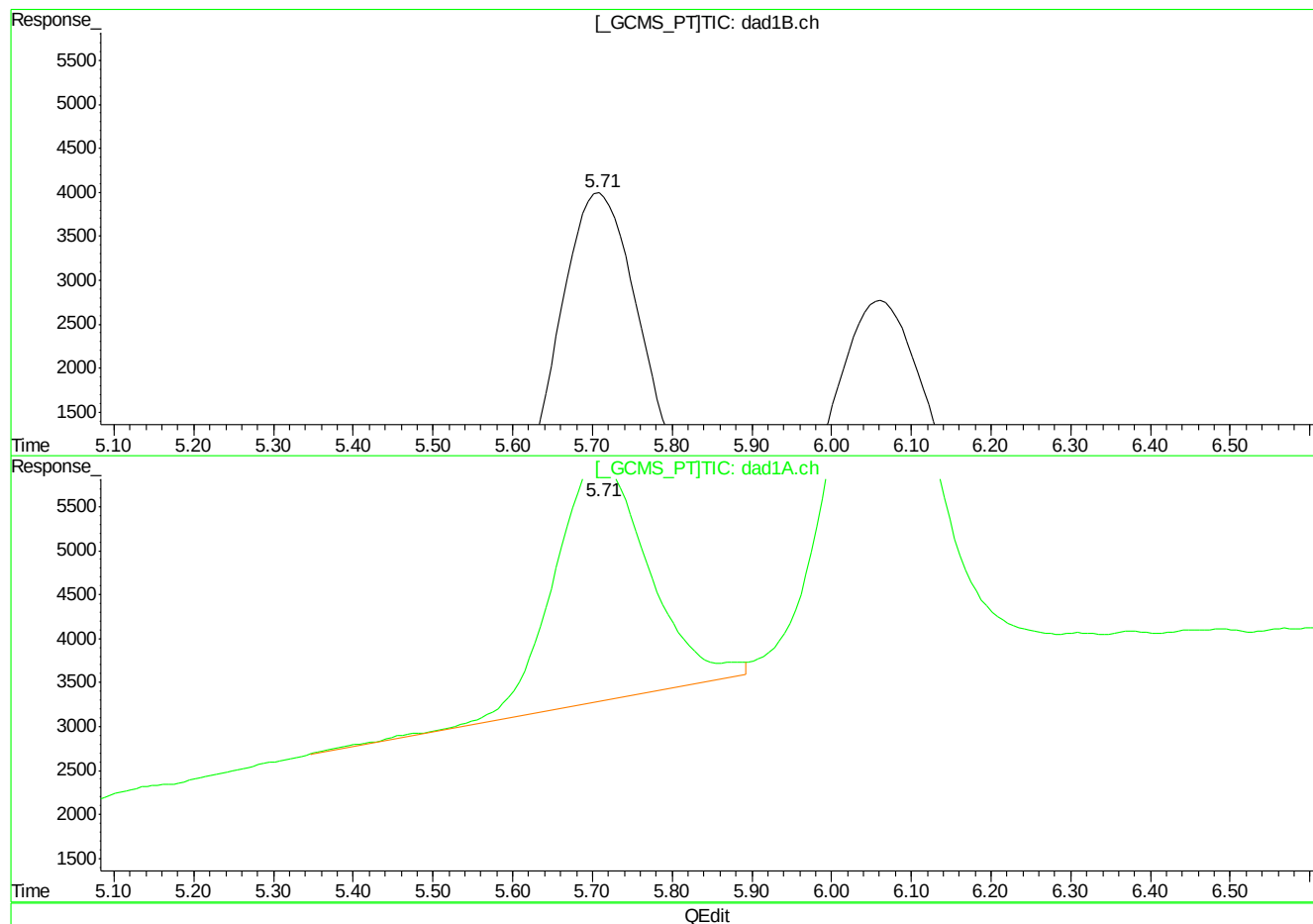
BB076376.D BBB2349_041423.M

Fri Apr 14 12:46:58 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1A.ch
Acq On : 14-Apr-2023, 10:24:11 Operator: fouads
Sample : ic2349-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.71min 59.861ppb

response 313938

(7) 1,3-Dinitrobenzene #2

5.71min 59.418ppb m

response 225534

(+) = Expected Retention Time

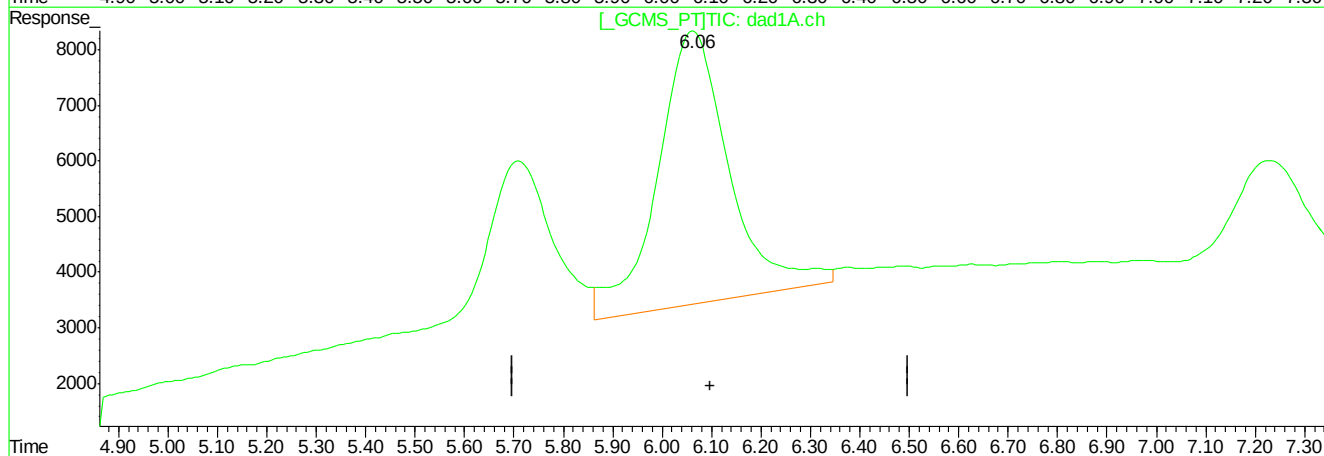
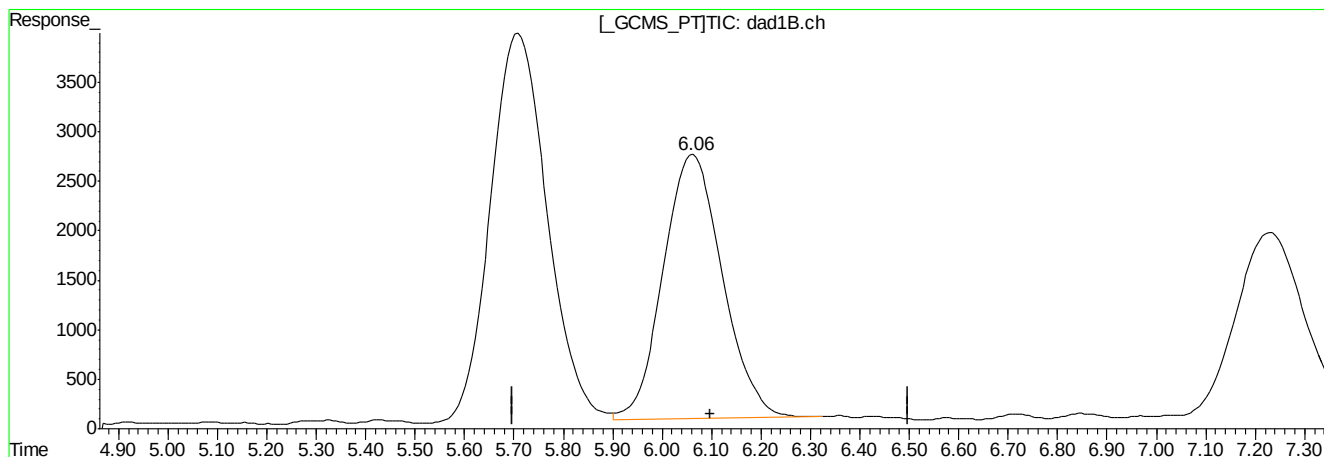
BB076376.D BBB2349_041423.M

Fri Apr 14 12:47:14 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1A.ch
Acq On : 14-Apr-2023, 10:24:11 Operator: fouads
Sample : ic2349-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

6.06min 56.494ppb

response 222542

(8) 3,5-Dinitroaniline #2

6.06min 74.134ppb

response 495398

(+) = Expected Retention Time

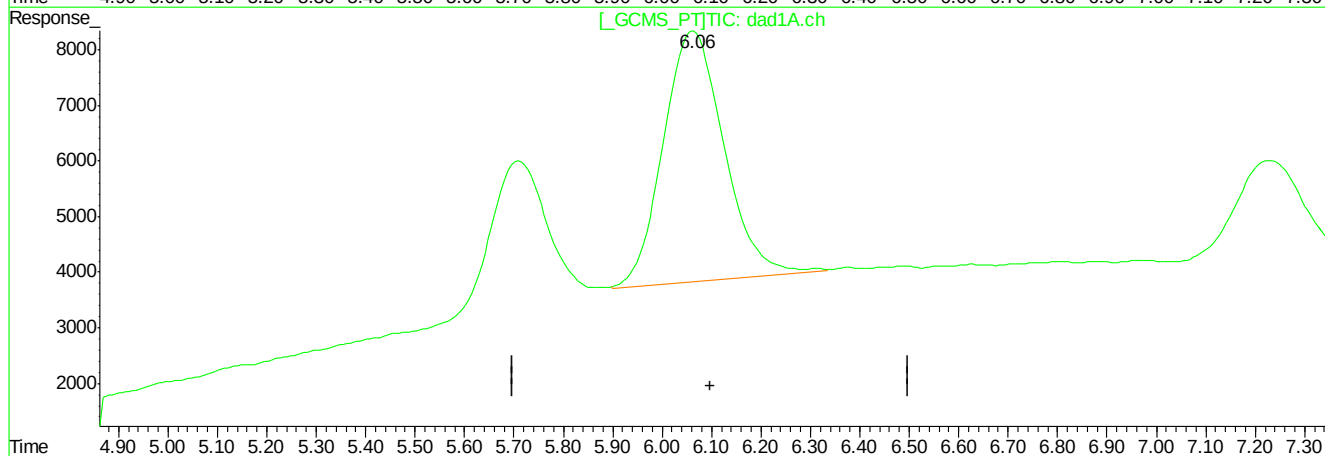
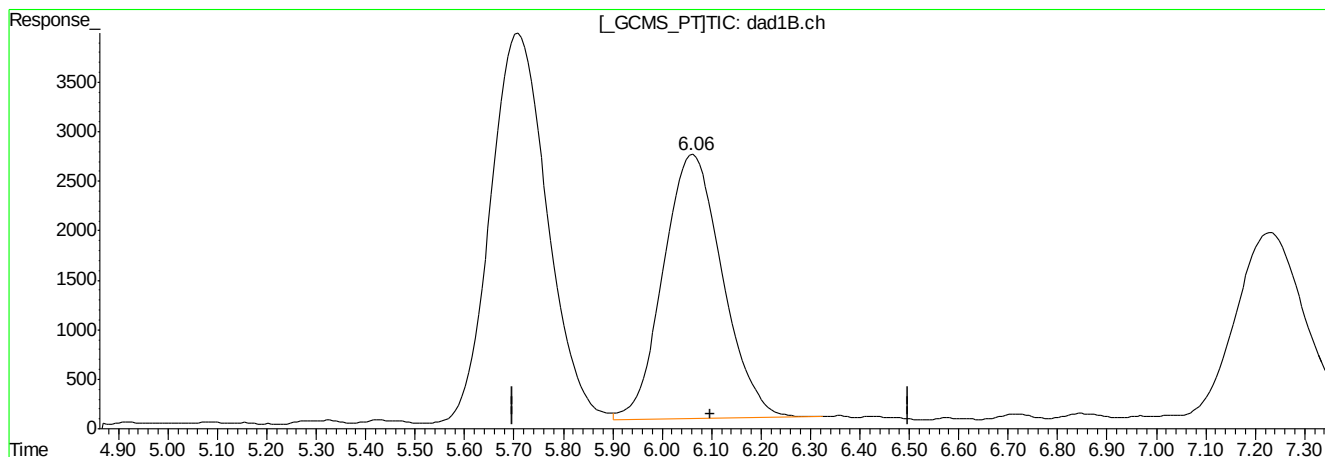
BB076376.D BBB2349_041423.M

Fri Apr 14 12:47:19 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1A.ch
Acq On : 14-Apr-2023, 10:24:11 Operator: fouads
Sample : ic2349-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(8) 3,5-Dinitroaniline

6.06min 56.494ppb

response 222542

(8) 3,5-Dinitroaniline #2

6.06min 57.859ppb m

response 386640

(+) = Expected Retention Time

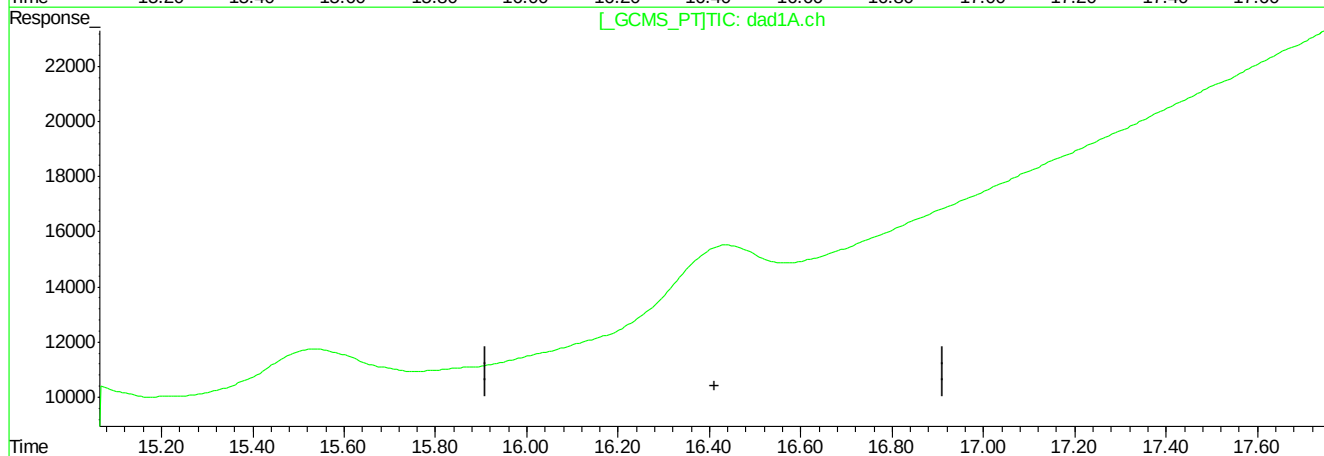
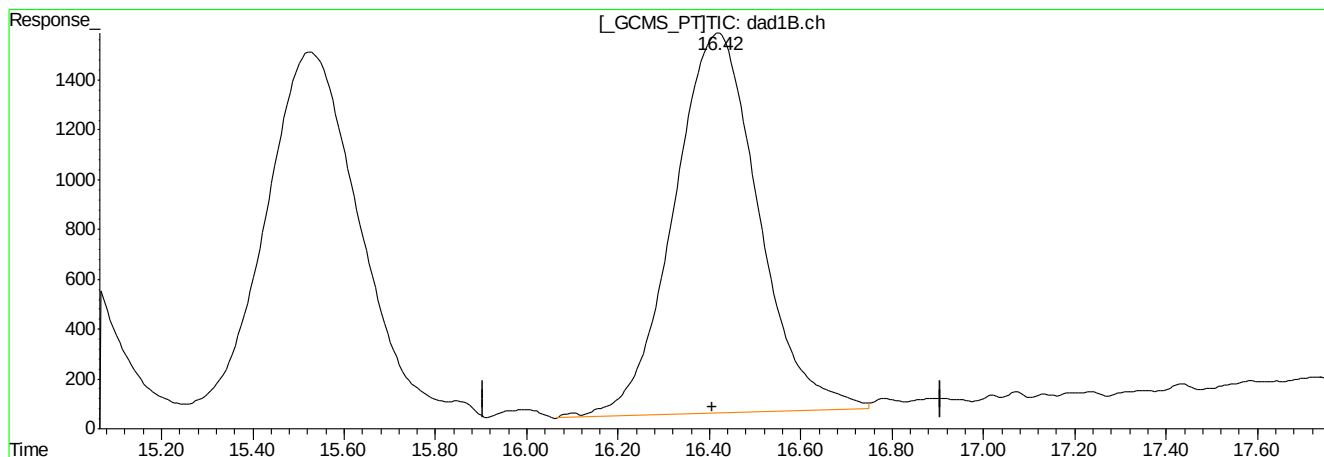
BB076376.D BBB2349_041423.M

Fri Apr 14 12:47:23 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1A.ch
Acq On : 14-Apr-2023, 10:24:11 Operator: fouads
Sample : ic2349-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(20) m-Nitrotoluene

16.42min 66.478ppb

response 197437

(20) m-Nitrotoluene #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

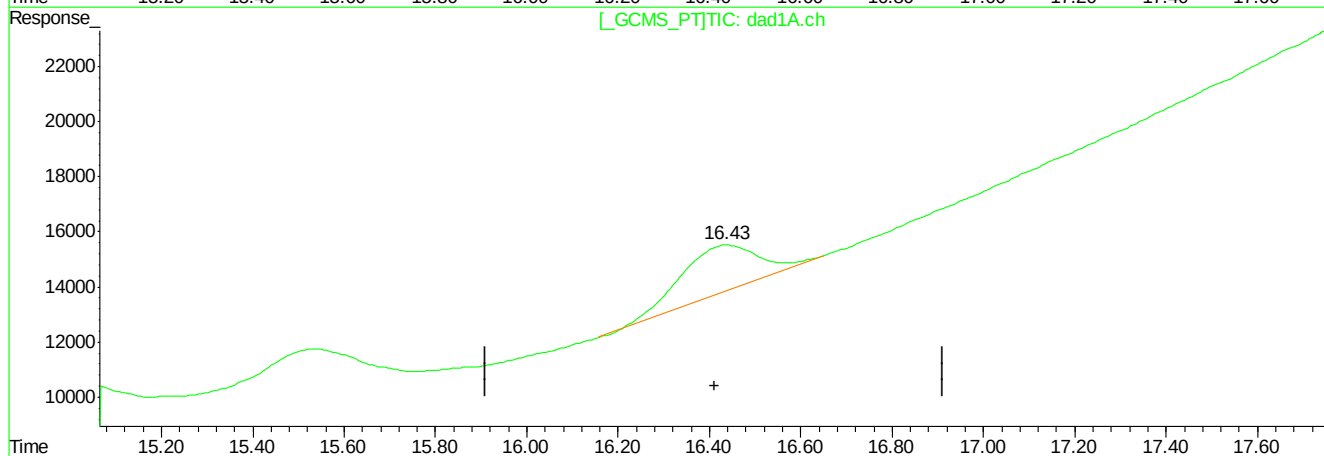
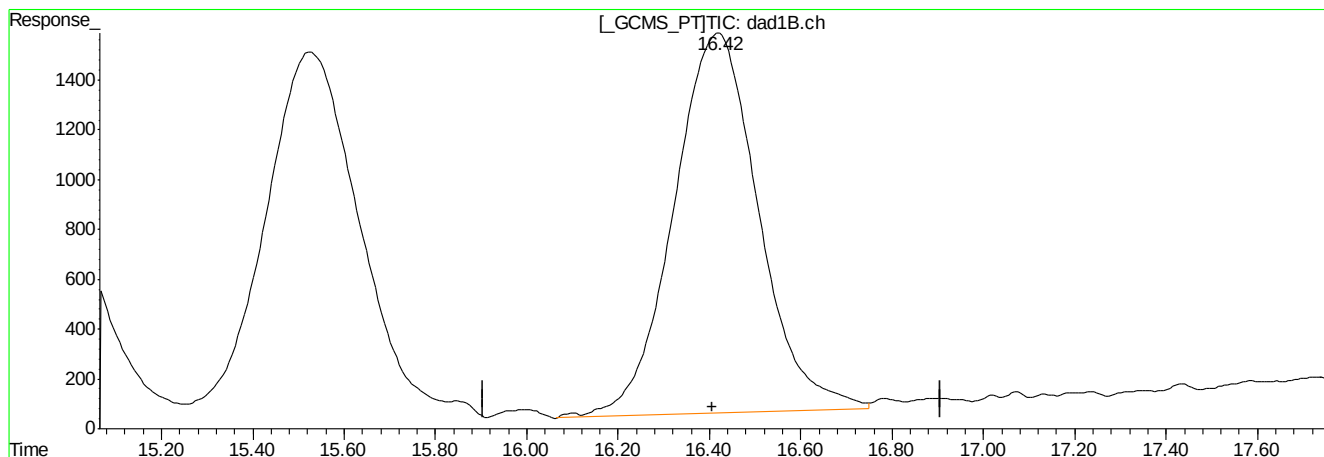
BB076376.D BBB2349_041423.M

Fri Apr 14 12:47:37 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1A.ch
Acq On : 14-Apr-2023, 10:24:11 Operator: fouads
Sample : ic2349-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(20) m-Nitrotoluene

16.42min 66.478ppb

response 197437

(20) m-Nitrotoluene #2

16.43min 59.088ppb m

response 208276

(+) = Expected Retention Time

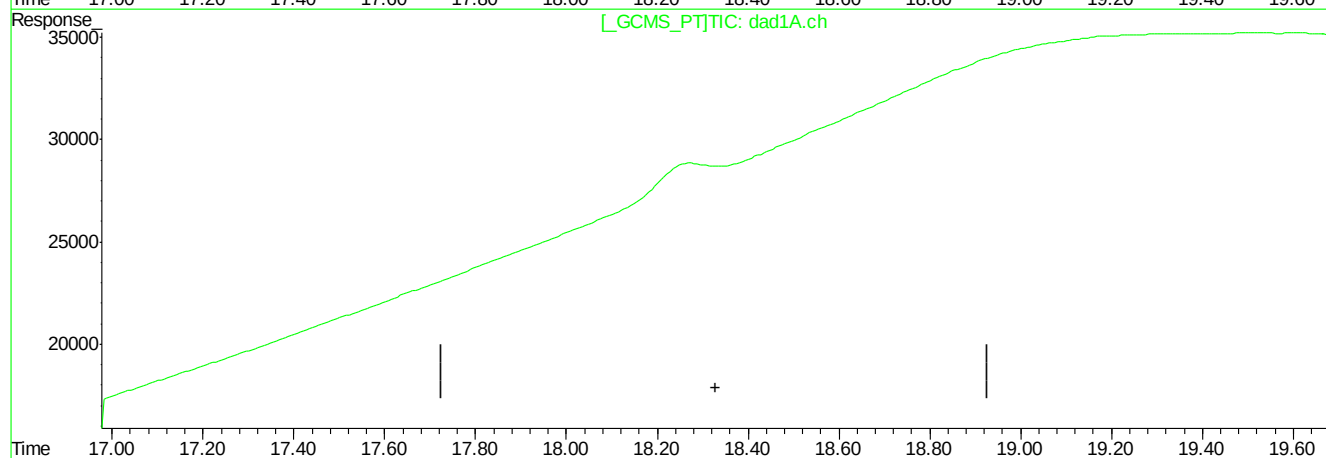
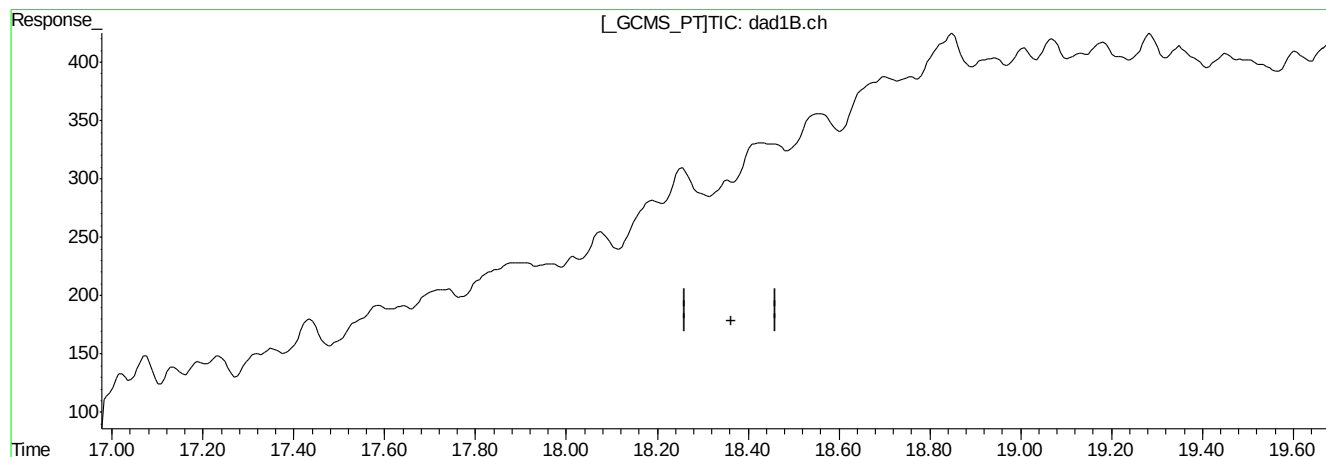
BB076376.D BBB2349_041423.M

Fri Apr 14 12:47:52 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1A.ch
Acq On : 14-Apr-2023, 10:24:11 Operator: fouads
Sample : ic2349-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

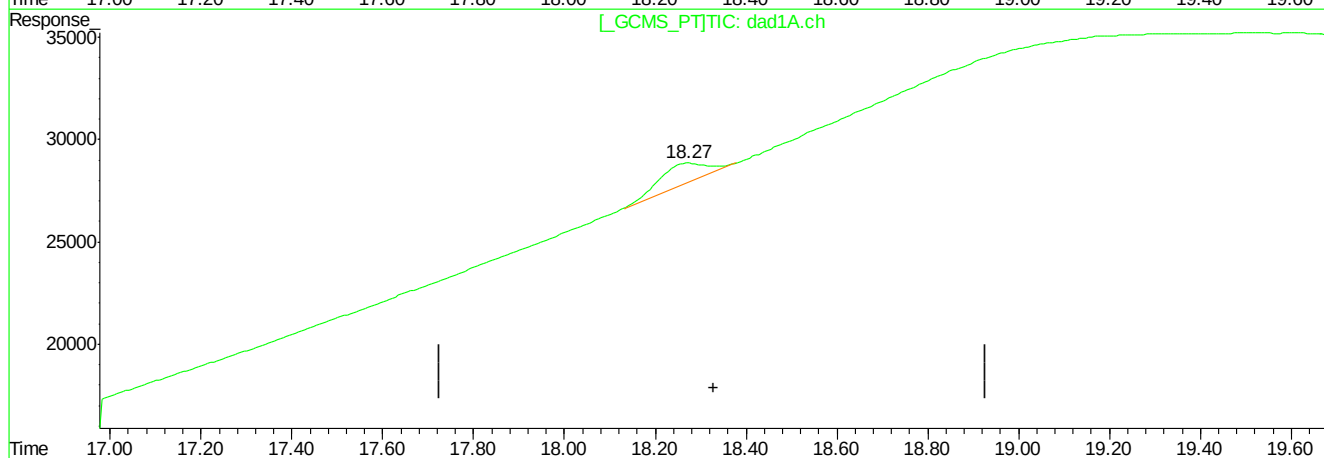
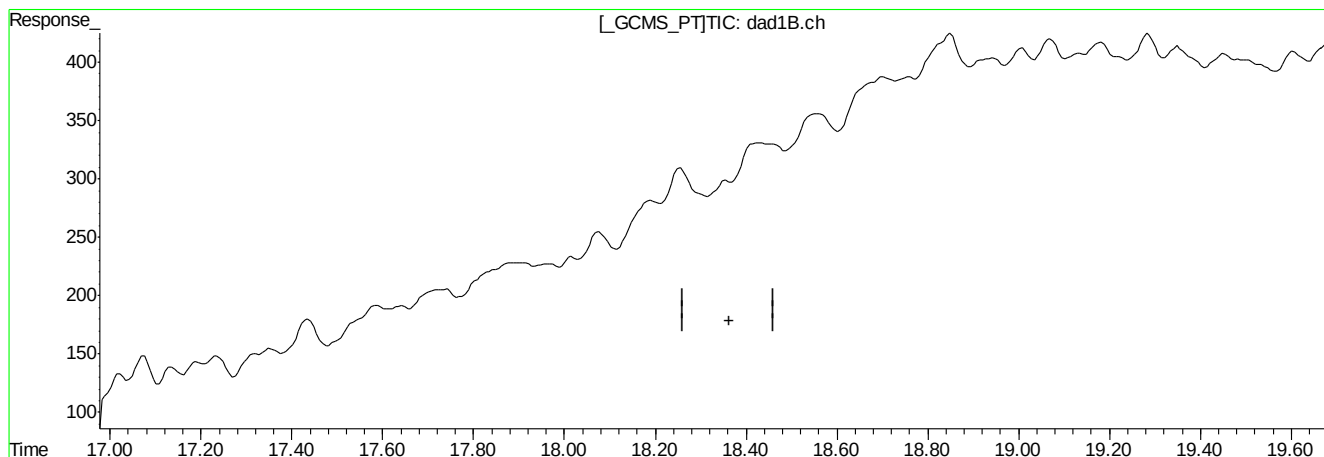
BB076376.D BBB2349_041423.M

Fri Apr 14 12:47:56 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076376.D\dad1A.ch
Acq On : 14-Apr-2023, 10:24:11 Operator: fouads
Sample : ic2349-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

18.27min 58.220ppb m

response 74920

(+) = Expected Retention Time

BB076376.D BBB2349_041423.M

Fri Apr 14 12:48:08 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1B.ch Vial: 5
 Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1A.ch
 Acq On : 14-Apr-2023, 10:55:12 Operator: fouads
 Sample : ic2349-100 Inst : G1315B
 Misc : op96339,GBB2349,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Apr 14 12:41:20 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Apr 14 10:52:34 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	10.83	10.84	258200	420866	118.520	121.475
Spiked Amount	500.000	Range	70 - 136	Recovery	=	23.70%# 24.30%#
Target Compounds						
1) TNX	1.28	1.28	176105	274640	45.105	46.484
2) HMX	1.42	1.42	163155	596782	104.853m	145.369m
3) DNX	1.65	1.64	331223	549145	104.682	110.511m
4) MNX	2.22	2.22	344290	540228	118.602	120.974
5) RDX	2.82	2.82	203715	322934	108.618	109.958
6) 1,3,5-Trinitrobe	4.54	4.53	437812	710958	113.756	115.825m
7) 1,3-Dinitrobenze	5.72	5.71	574463	458855	109.537	120.887m
8) 3,5-Dinitroanili	6.07	6.07	427054	718951	108.411	107.588m
9) Nitrobenzene	7.24	7.24	339012	329697	121.311	119.509
10) Nitroglycerin	0.00	8.68	0	141672	N.D.	108.684 #
11) Tetryl	9.18	9.18	323846	516292	136.356	137.254
12) 2,4,6-Trinitroto	9.54	9.54	428858	510237	114.336	116.886
13) 2-Amino-4,6-Dini	9.92	9.92	373550	541852	115.606	124.221
14) 4-Amino-2,6-Dini	10.35	10.35	281605	531471	117.370	113.737
16) 2,4-Dinitrotolue	11.47	11.48	517167	318395	113.206	109.593
17) 2,6-Dinitrotolue	11.91	11.92	294270	368283	106.800	111.970
18) o-Nitrotoluene	14.98	14.98	248727	333062	127.358	113.905
19) p-Nitrotoluene	15.54	15.55	378369	308046	122.298	119.888
20) m-Nitrotoluene	16.43	16.44	352959	391175	118.844	110.977m
21) PETN	0.00	18.27	0	143088	N.D.	111.194m#

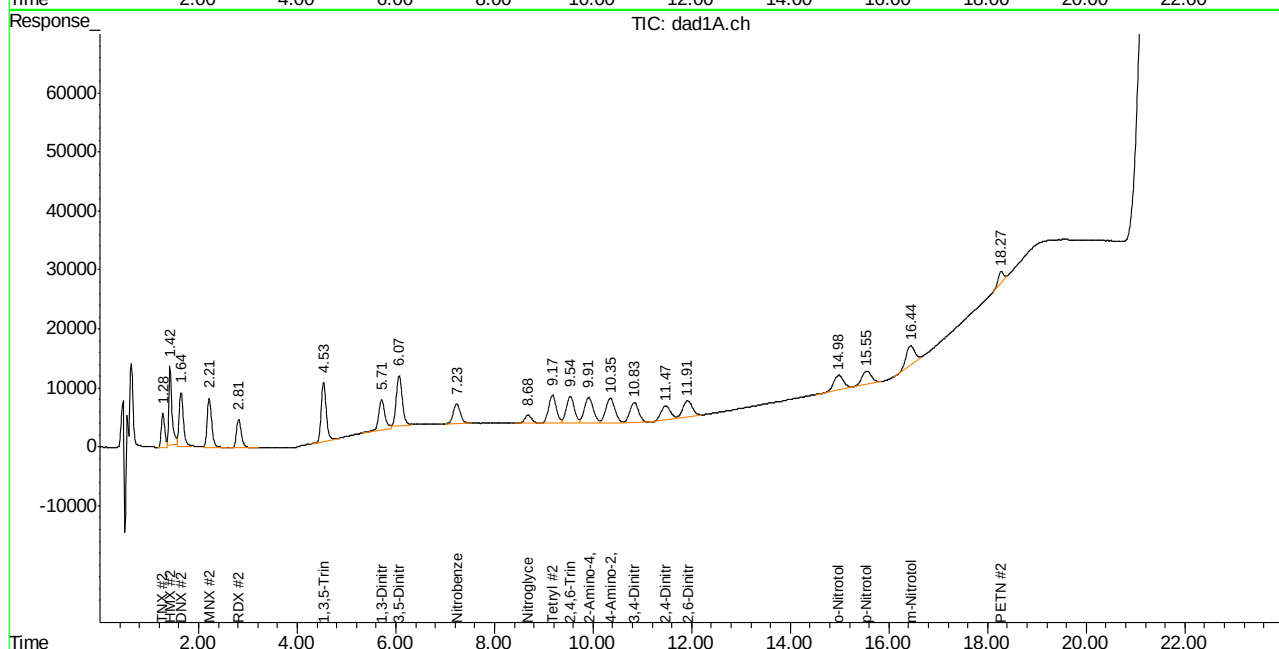
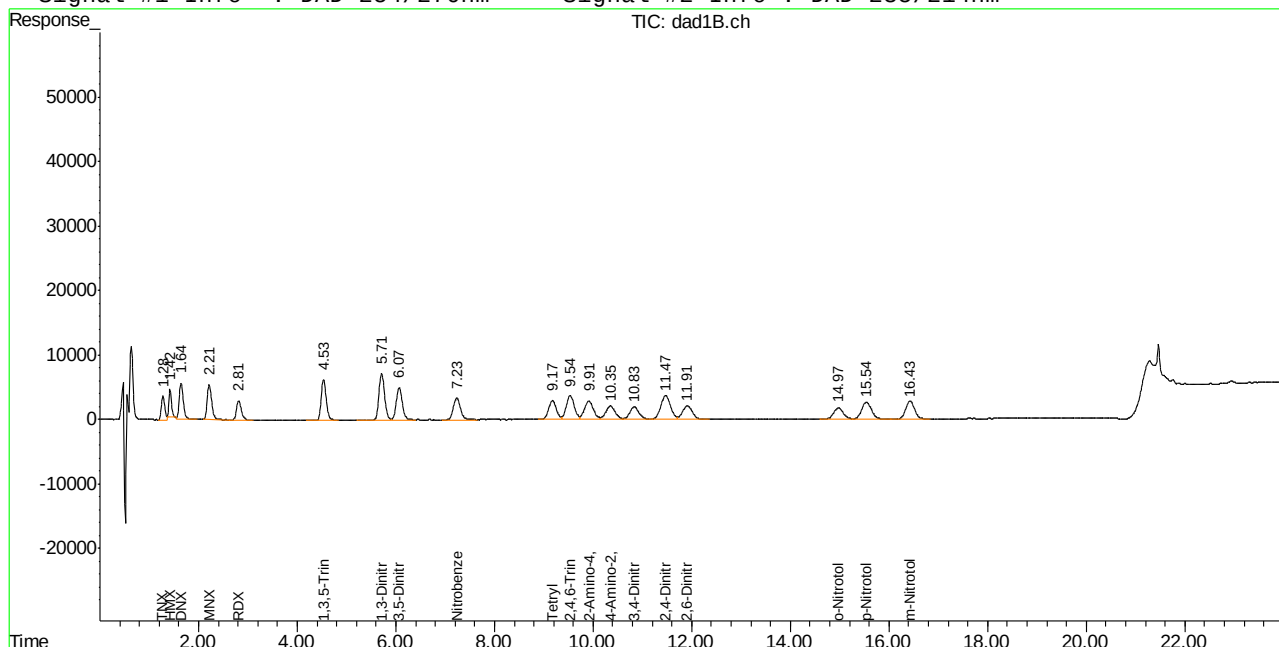
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB076377.D BBB2349_041423.M Mon Apr 17 11:46:36 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1A.ch
Acq On : 14-Apr-2023, 10:55:12 Operator: fouads
Sample : ic2349-100 Inst : G1315B
Misc : op96339, GBB2349, 1000,,, 10, 1, water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:50 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2349-IC2349

Method:

SW846 8330B

Lab FileID:

BB076377.D

Analyst approved:

04/17/23 11:45 William Hustedde

Injection Time:

04/14/23 10:55

Supervisor approved:

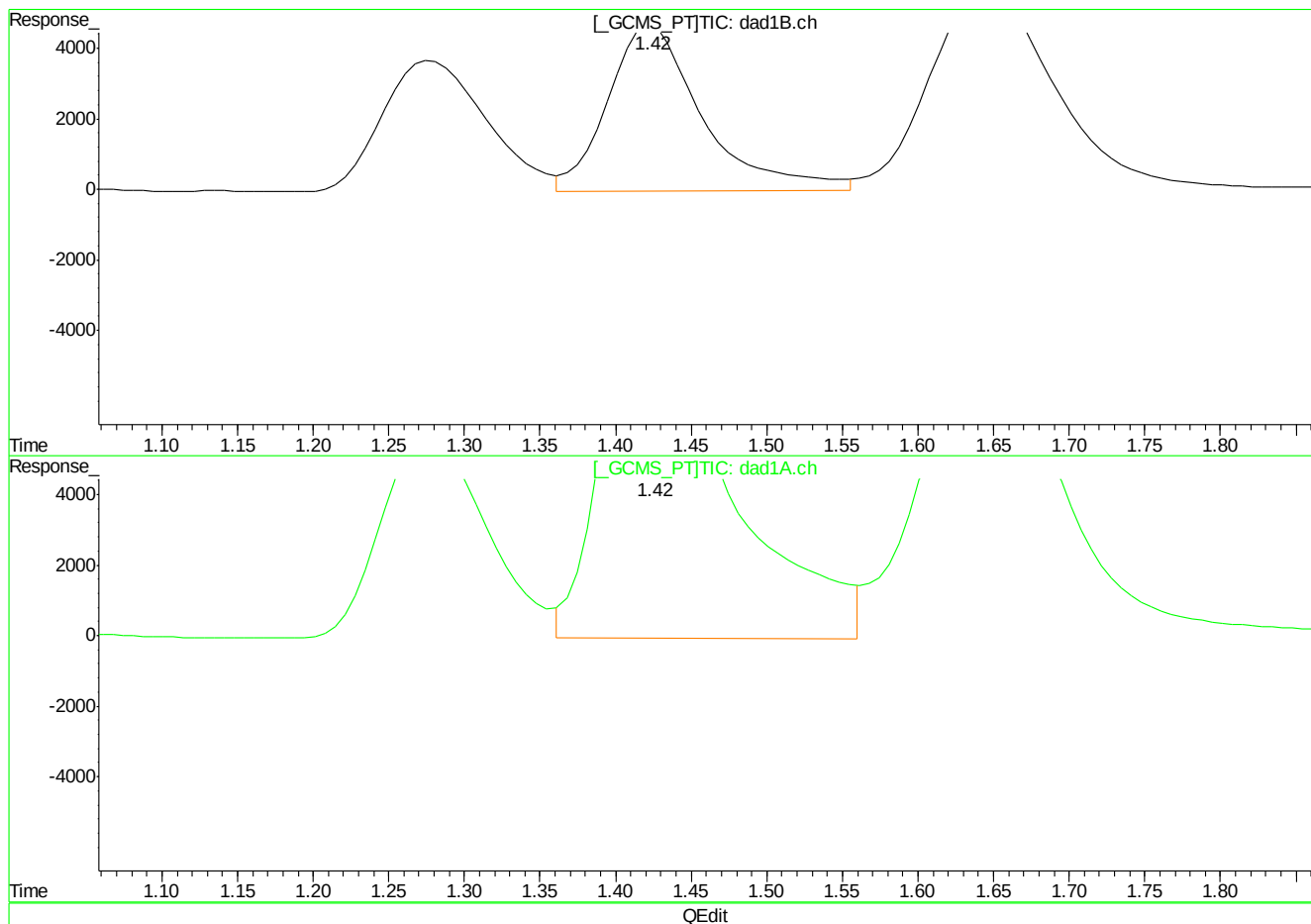
04/17/23 14:47 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
HMX	2691-41-0	1	1.42	Poor instrument integration
HMX	2691-41-0	2	1.42	Poor instrument integration
DNX		2	1.64	Poor instrument integration
1,3,5-Trinitrobenzene	99-35-4	2	4.53	Poor instrument integration
1,3-Dinitrobenzene	99-65-0	2	5.71	Poor instrument integration
3,5-Dinitroaniline	618-87-1	2	6.07	Poor instrument integration
m-Nitrotoluene	99-08-1	2	16.44	Poor instrument integration
PETN	78-11-5	2	18.27	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1A.ch
Acq On : 14-Apr-2023, 10:55:12 Operator: fouads
Sample : ic2349-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(2) HMX
1.42min 132.039ppb
response 205457

(2) HMX #2
1.43min 158.341ppb
response 650039

(+) = Expected Retention Time

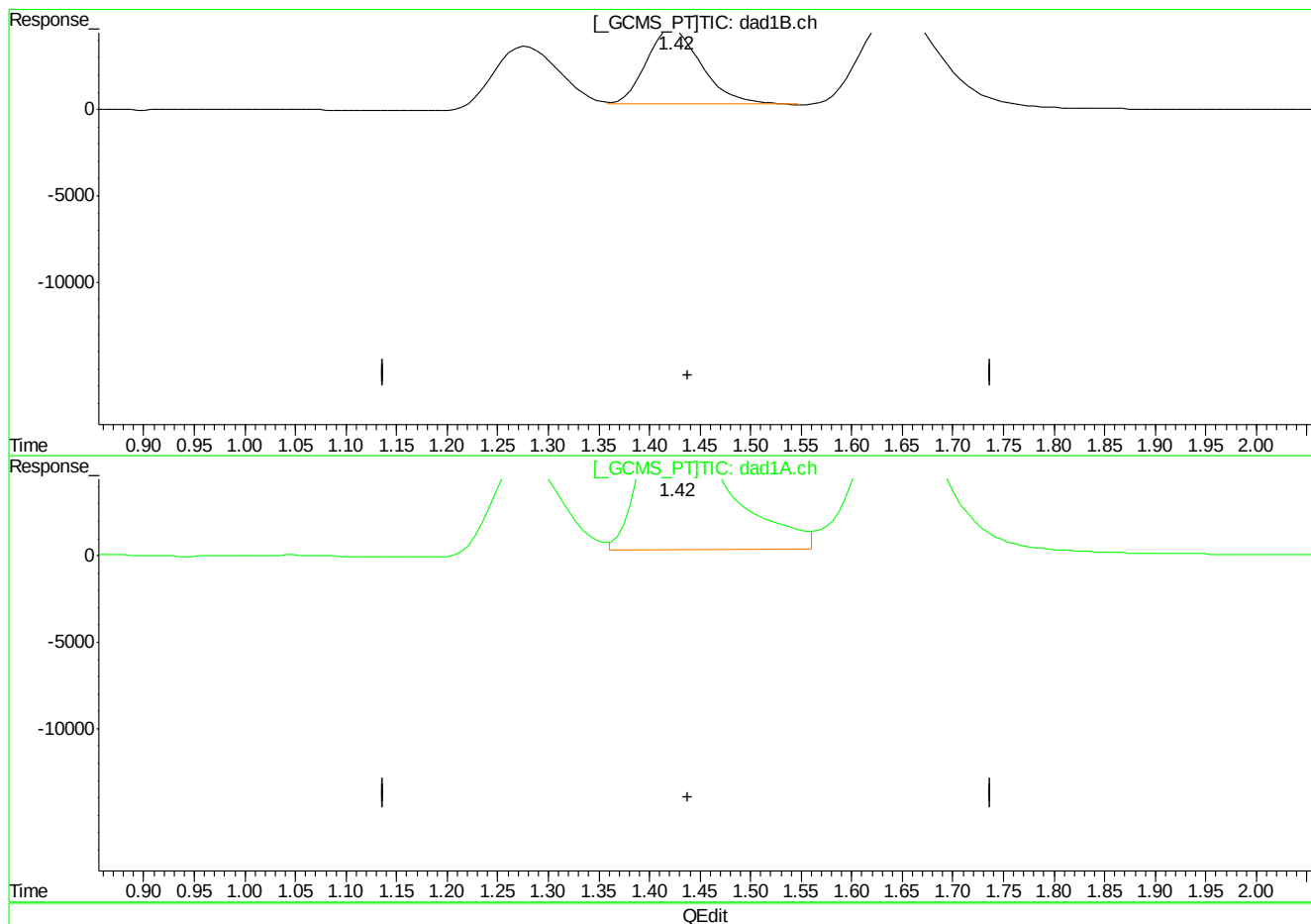
BB076377.D BBB2349_041423.M

Fri Apr 14 12:48:27 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1A.ch
Acq On : 14-Apr-2023, 10:55:12 Operator: fouads
Sample : ic2349-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(2) HMX

1.42min 104.853ppb m

response 163155

(2) HMX #2

1.42min 145.369ppb m

response 596782

(+) = Expected Retention Time

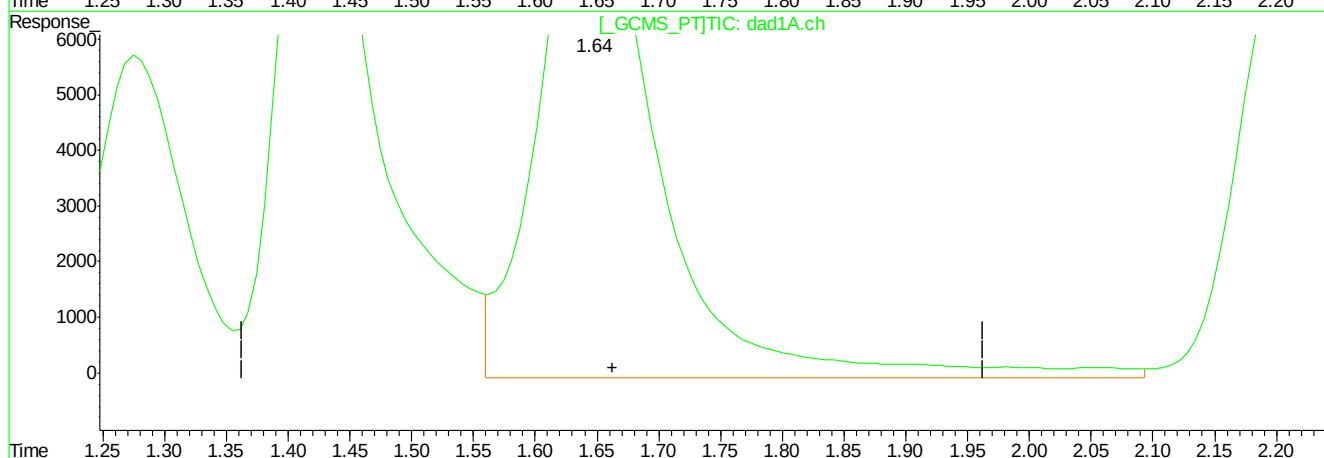
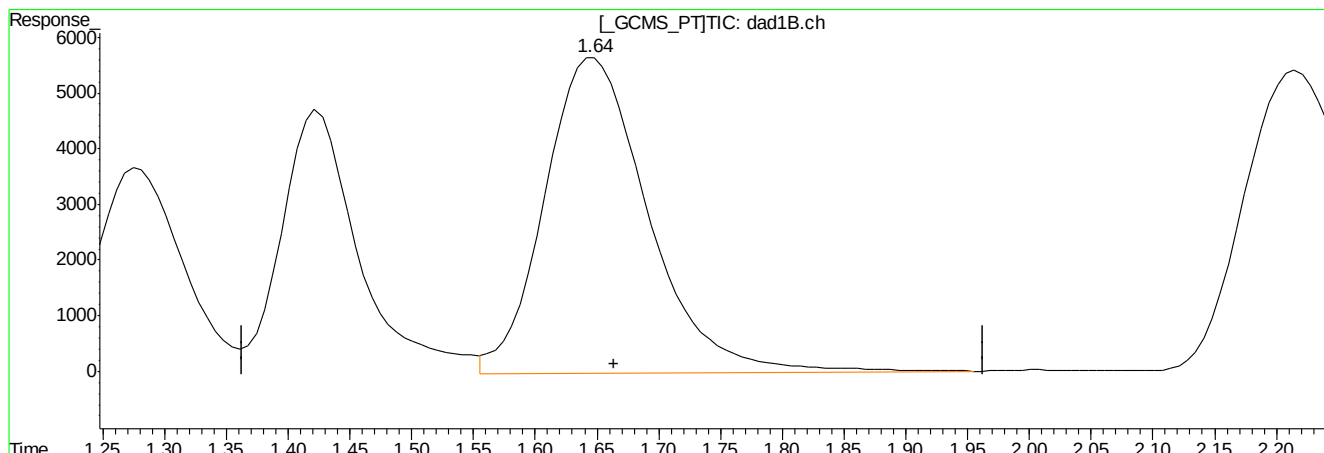
BB076377.D BBB2349_041423.M

Fri Apr 14 12:48:41 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1A.ch
Acq On : 14-Apr-2023, 10:55:12 Operator: fouads
Sample : ic2349-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(3) DNX

1.65min 104.682ppb

response 331223

(3) DNX #2

1.65min 124.000ppb

response 616172

QEdit

(+) = Expected Retention Time

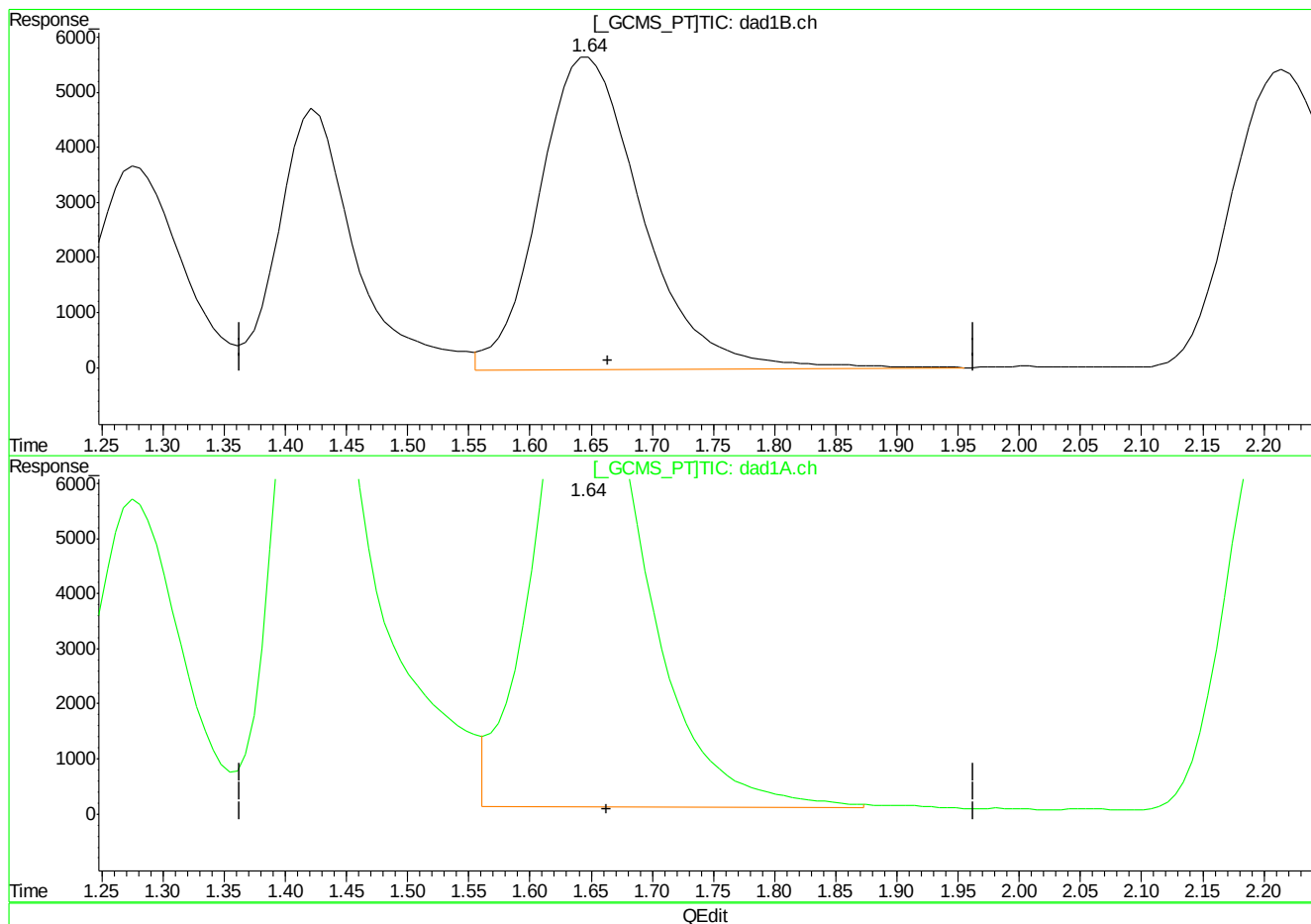
BB076377.D BBB2349_041423.M

Fri Apr 14 12:48:49 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1A.ch
Acq On : 14-Apr-2023, 10:55:12 Operator: fouads
Sample : ic2349-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(3) DNX

1.65min 104.682ppb

response 331223

(3) DNX #2

1.64min 110.511ppb m

response 549145

(+) = Expected Retention Time

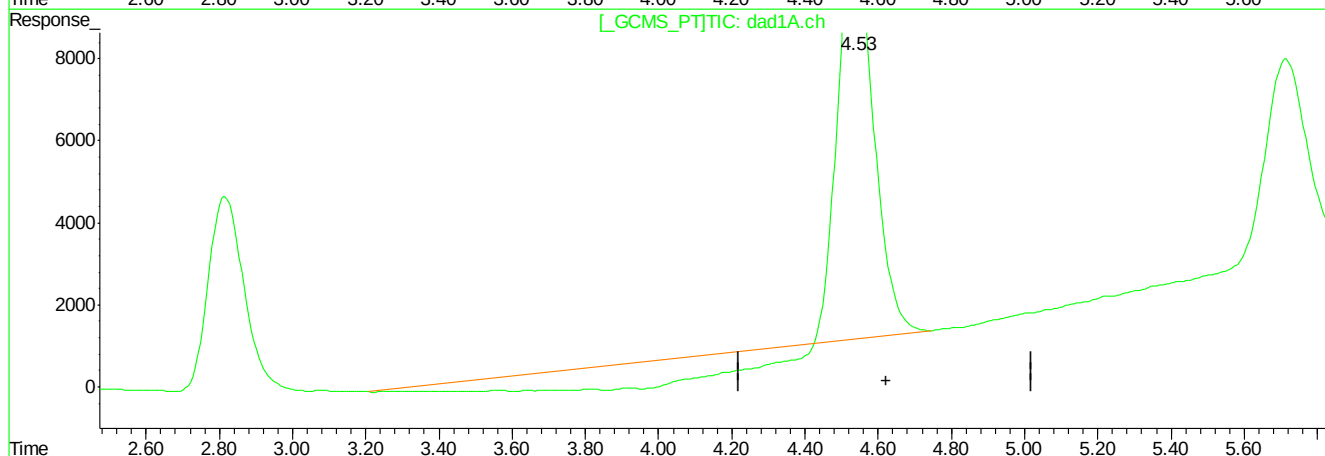
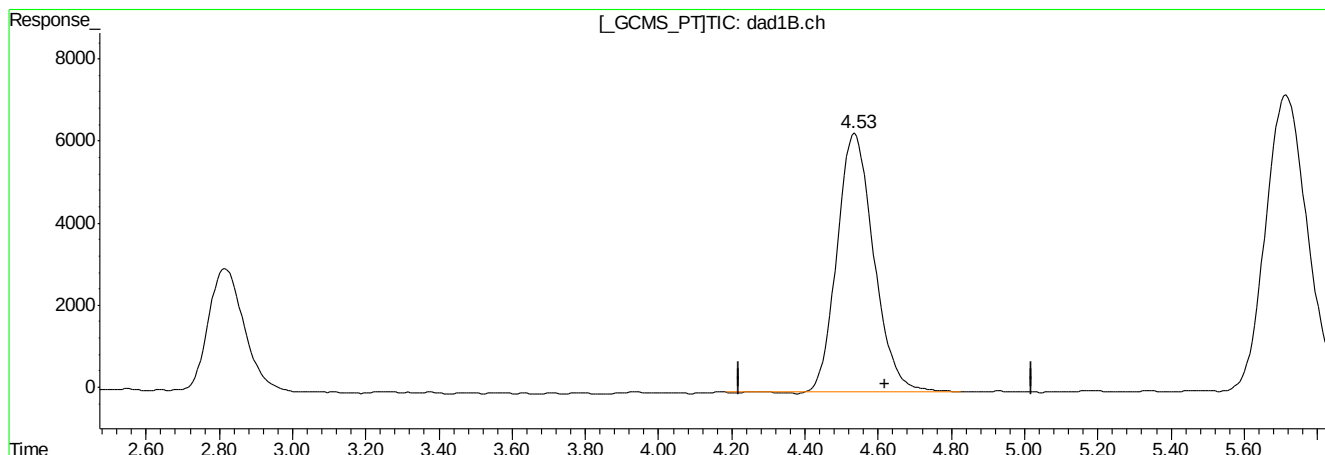
BB076377.D BBB2349_041423.M

Fri Apr 14 12:48:54 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1A.ch
Acq On : 14-Apr-2023, 10:55:12 Operator: fouads
Sample : ic2349-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.54min 113.756ppb

response 437812

(6) 1,3,5-Trinitrobenzene #2

4.54min 61.565ppb

response 377903

(+) = Expected Retention Time

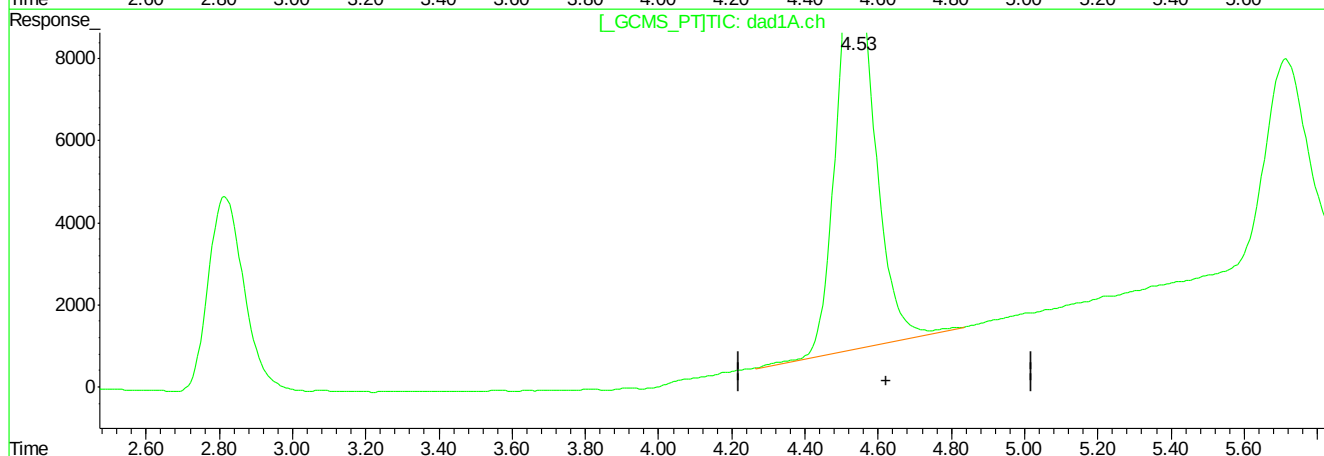
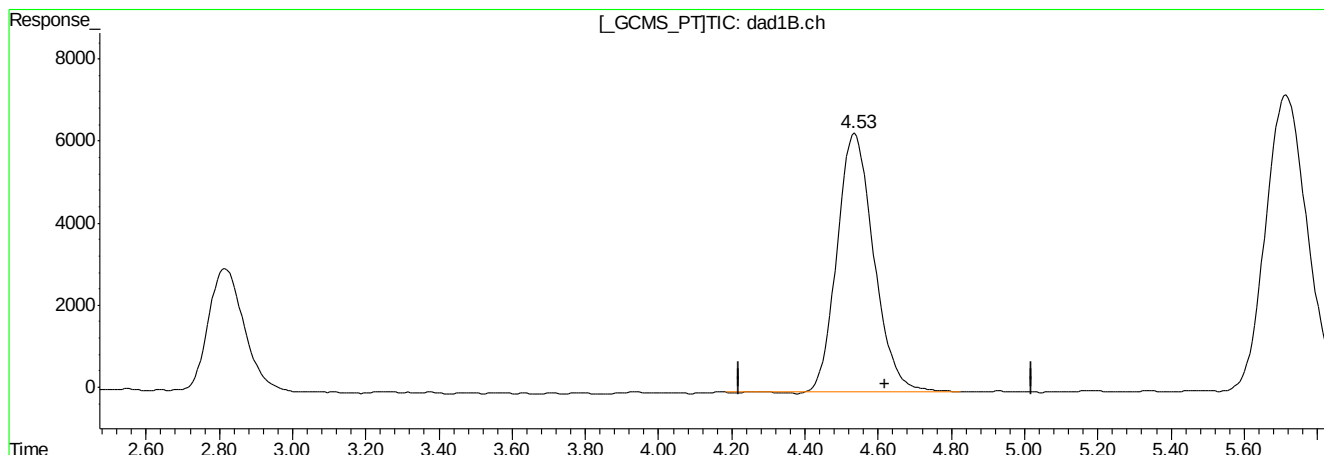
BB076377.D BBB2349_041423.M

Fri Apr 14 12:49:16 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1A.ch
Acq On : 14-Apr-2023, 10:55:12 Operator: fouads
Sample : ic2349-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.54min 113.756ppb

response 437812

(6) 1,3,5-Trinitrobenzene #2

4.53min 115.825ppb m

response 710958

(+) = Expected Retention Time

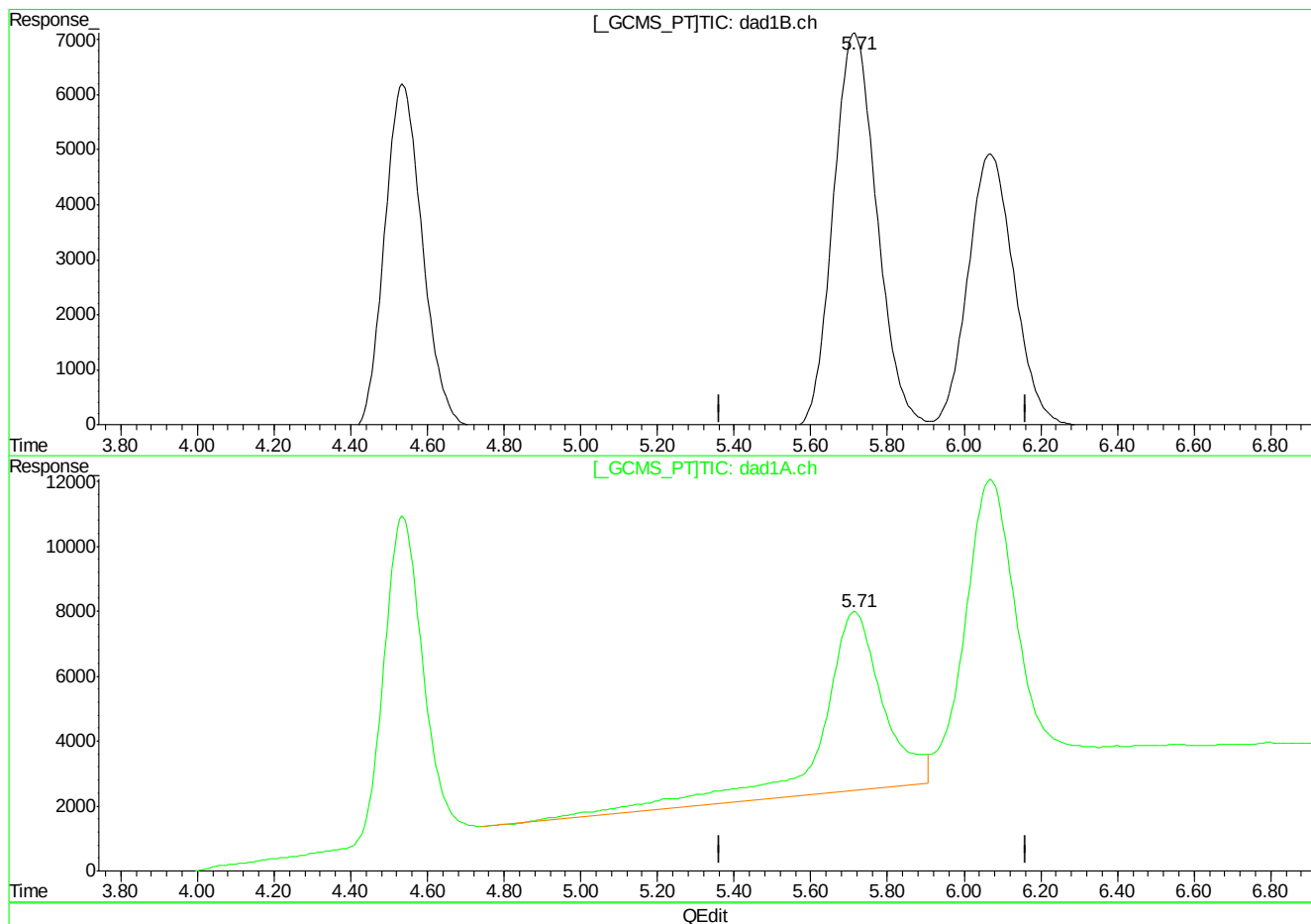
BB076377.D BBB2349_041423.M

Fri Apr 14 12:49:28 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1A.ch
Acq On : 14-Apr-2023, 10:55:12 Operator: fouads
Sample : ic2349-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.72min 109.537ppb

response 574463

(7) 1,3-Dinitrobenzene #2

5.72min 166.695ppb

response 632730

(+) = Expected Retention Time

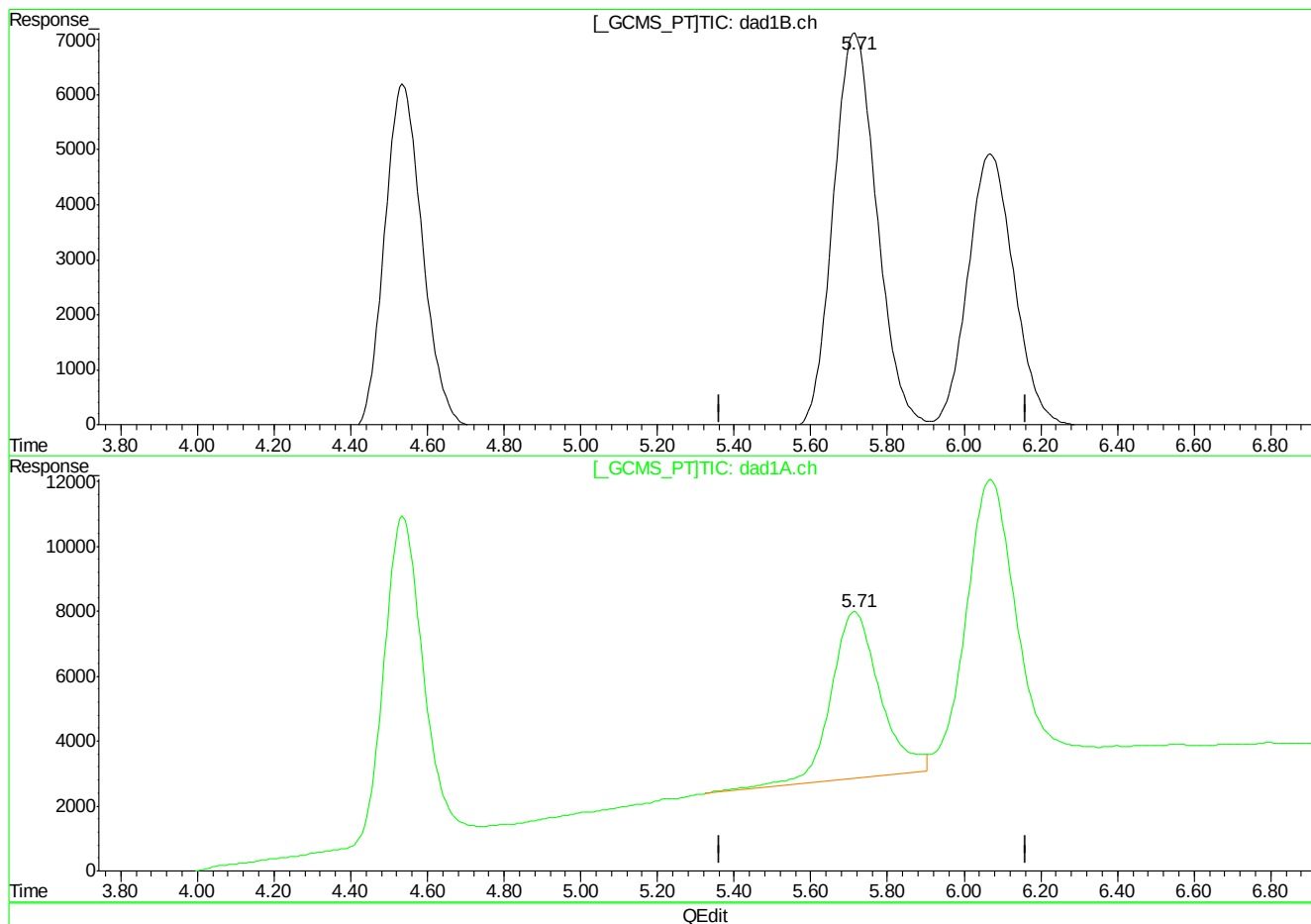
BB076377.D BBB2349_041423.M

Fri Apr 14 12:49:33 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1A.ch
Acq On : 14-Apr-2023, 10:55:12 Operator: fouads
Sample : ic2349-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.72min 109.537ppb

response 574463

(7) 1,3-Dinitrobenzene #2

5.71min 120.887ppb m

response 458855

(+) = Expected Retention Time

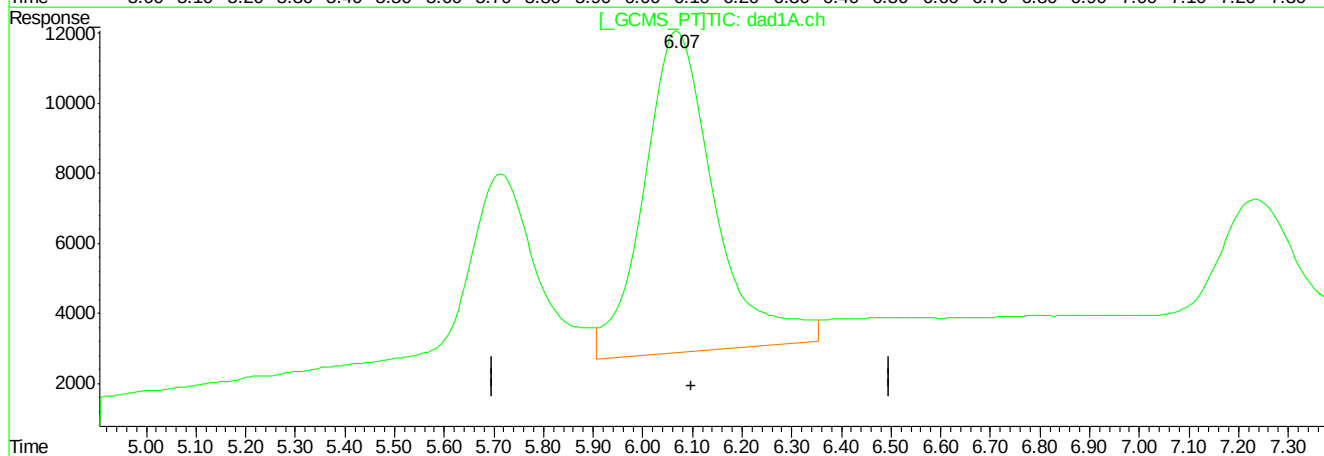
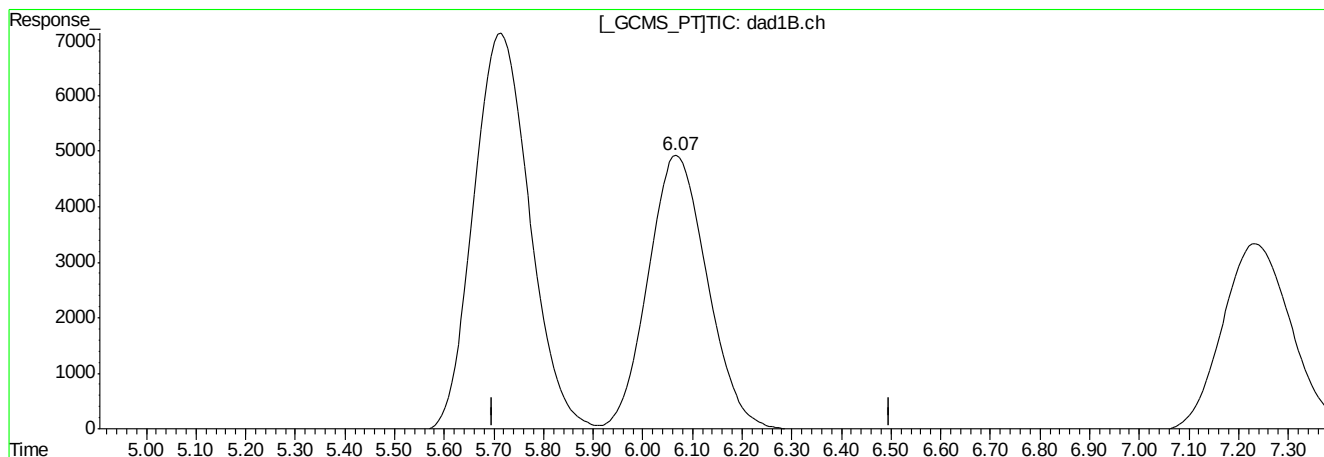
BB076377.D BBB2349_041423.M

Fri Apr 14 12:49:44 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1A.ch
Acq On : 14-Apr-2023, 10:55:12 Operator: fouads
Sample : ic2349-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

6.07min 108.411ppb

response 427054

(8) 3,5-Dinitroaniline #2

6.07min 135.919ppb

response 908276

(+) = Expected Retention Time

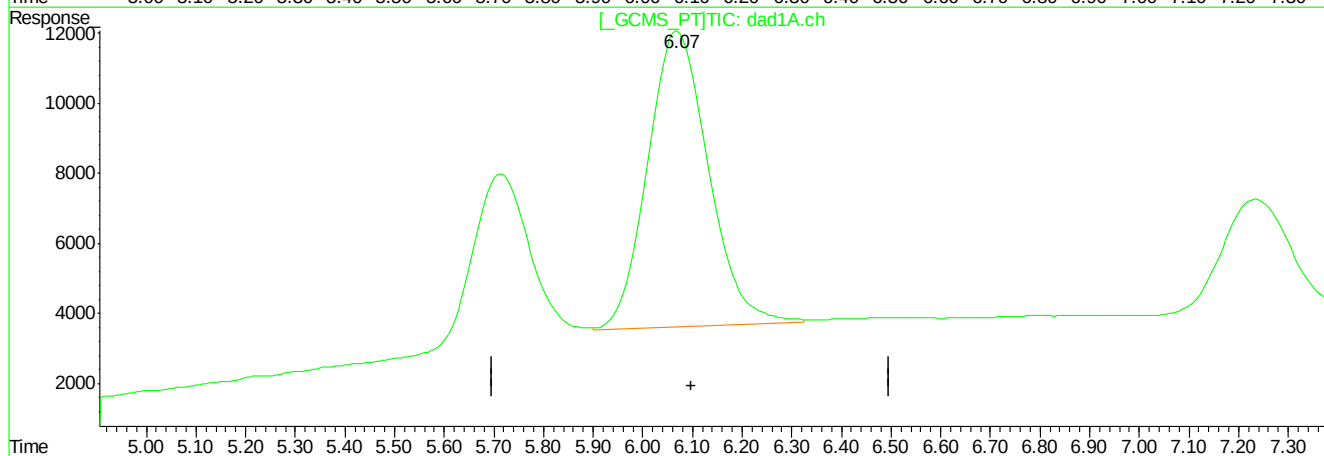
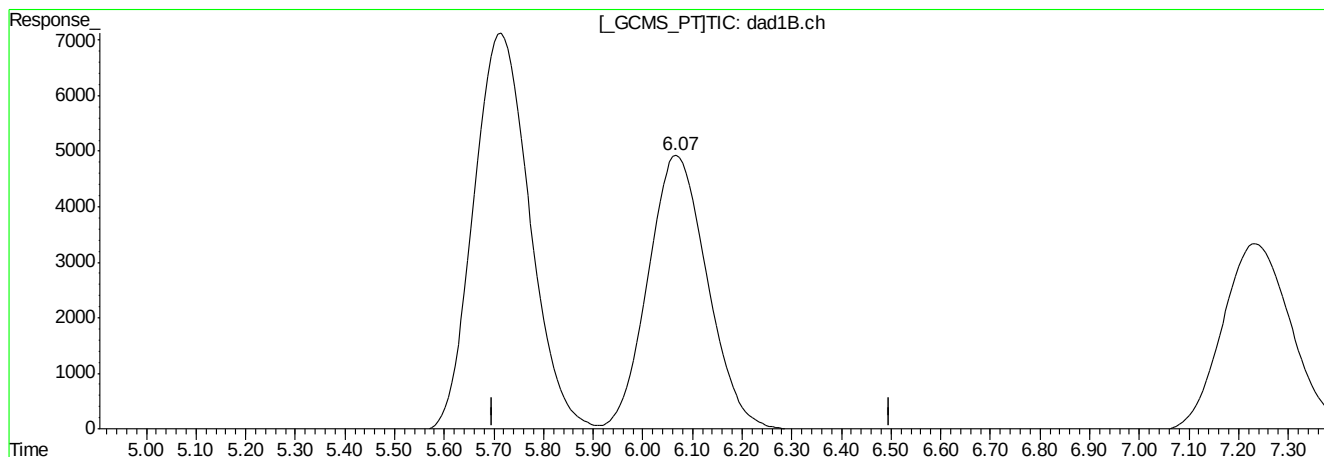
BB076377.D BBB2349_041423.M

Fri Apr 14 12:49:49 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1A.ch
Acq On : 14-Apr-2023, 10:55:12 Operator: fouads
Sample : ic2349-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(8) 3,5-Dinitroaniline

6.07min 108.411ppb

response 427054

(8) 3,5-Dinitroaniline #2

6.07min 107.588ppb m

response 718951

QEdit

(+) = Expected Retention Time

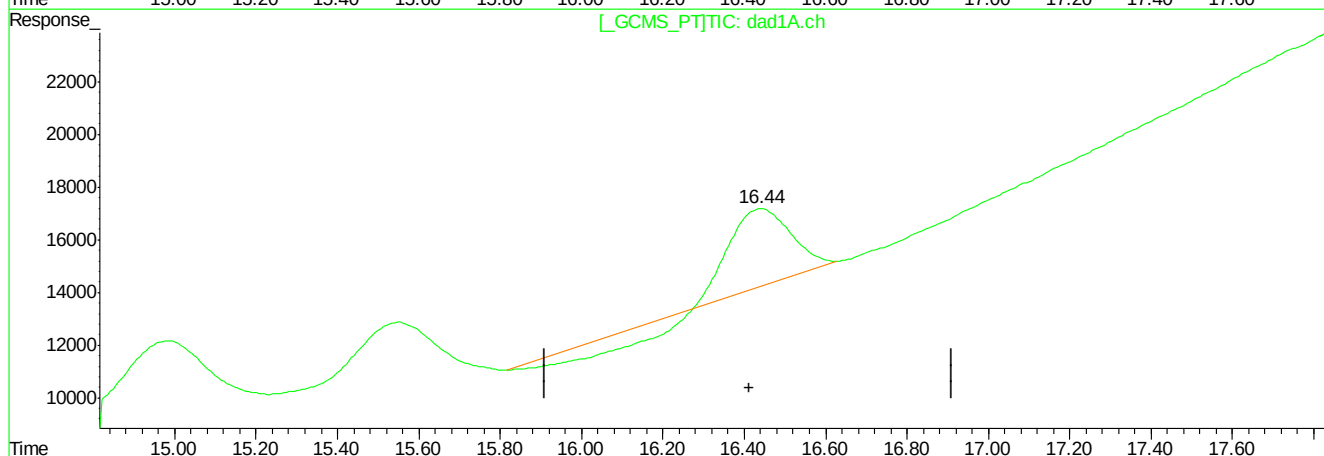
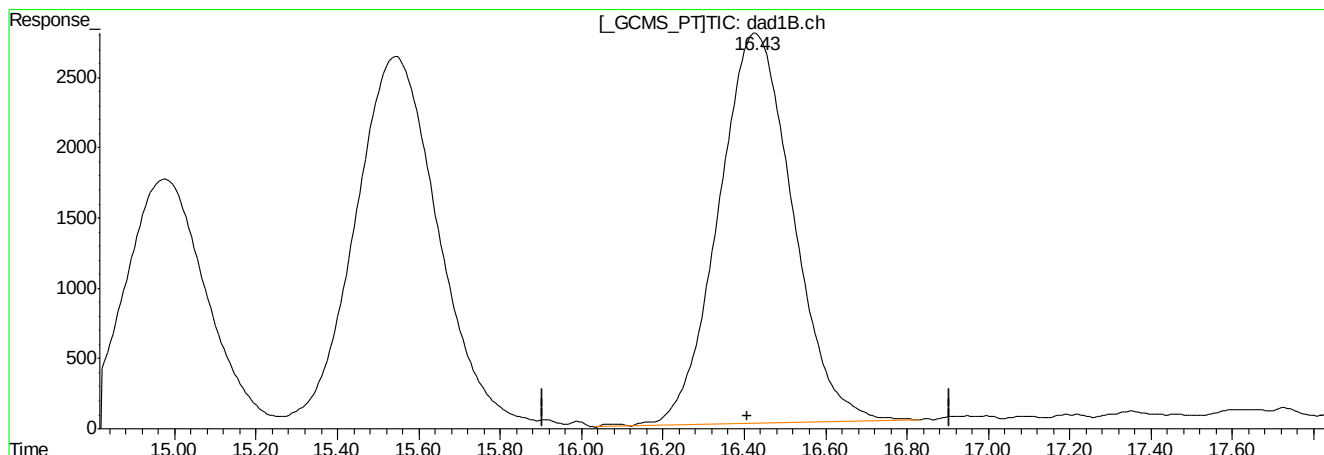
BB076377.D BBB2349_041423.M

Fri Apr 14 12:49:56 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1A.ch
Acq On : 14-Apr-2023, 10:55:12 Operator: fouads
Sample : ic2349-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(20) m-Nitrotoluene
16.43min 118.844ppb
response 352959

(20) m-Nitrotoluene #2
16.44min 54.372ppb
response 191651

(+) = Expected Retention Time

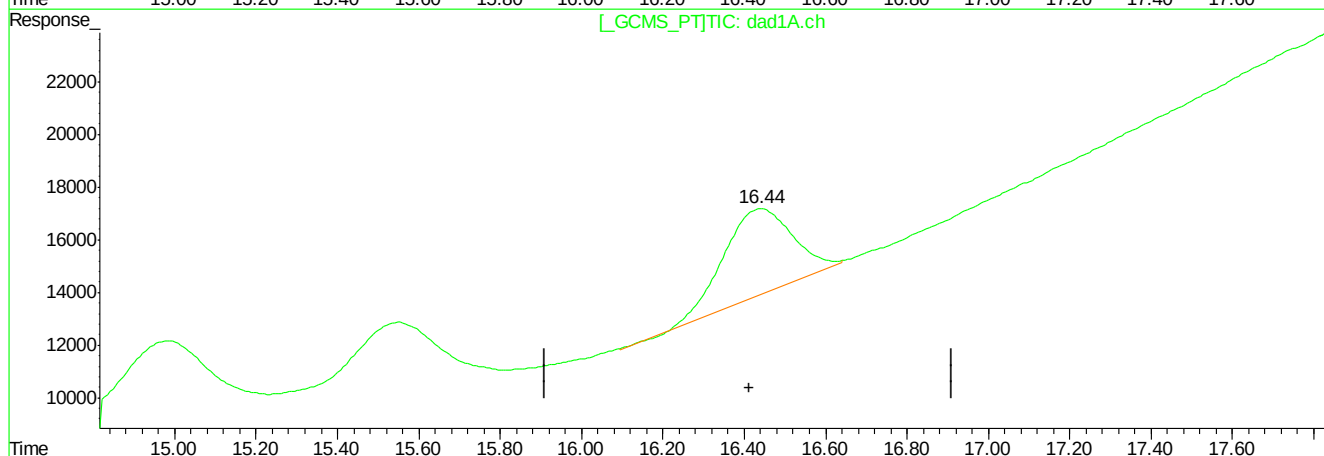
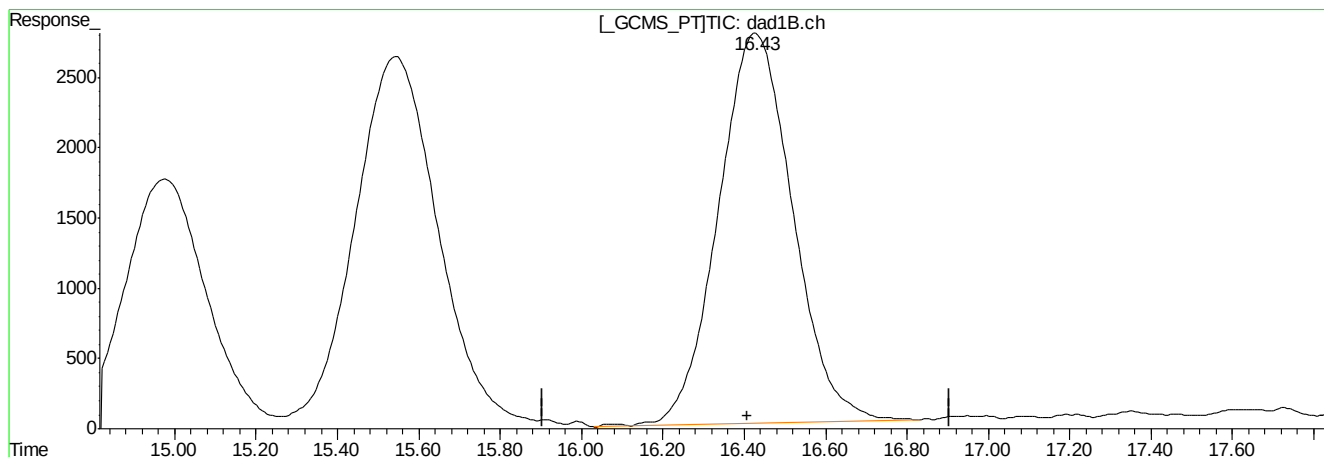
BB076377.D BBB2349_041423.M

Fri Apr 14 12:50:13 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1A.ch
Acq On : 14-Apr-2023, 10:55:12 Operator: fouads
Sample : ic2349-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(20) m-Nitrotoluene
16.43min 118.844ppb
response 352959

(20) m-Nitrotoluene #2
16.44min 110.977ppb m
response 391175

(+) = Expected Retention Time

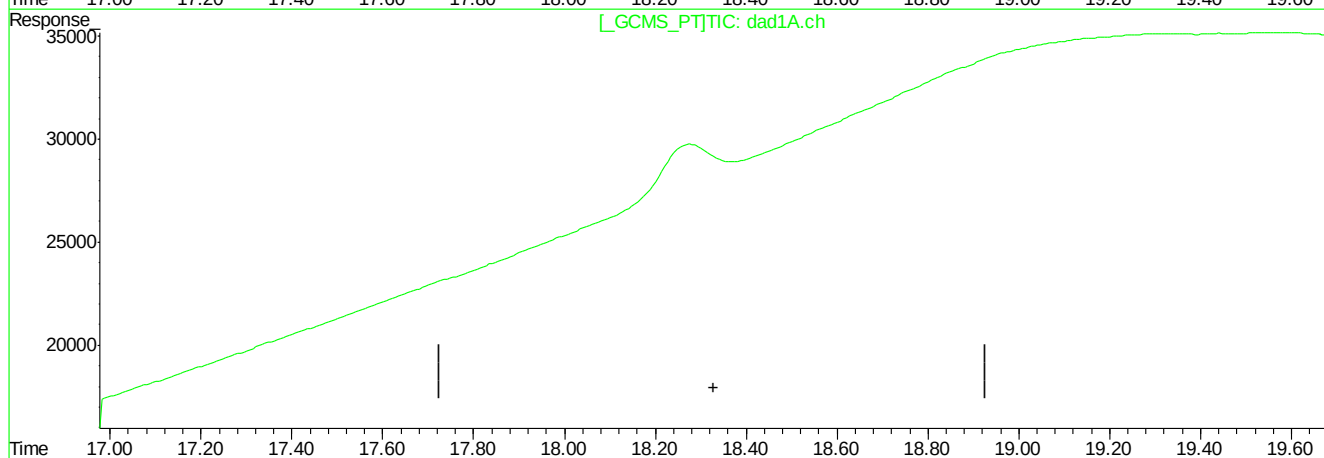
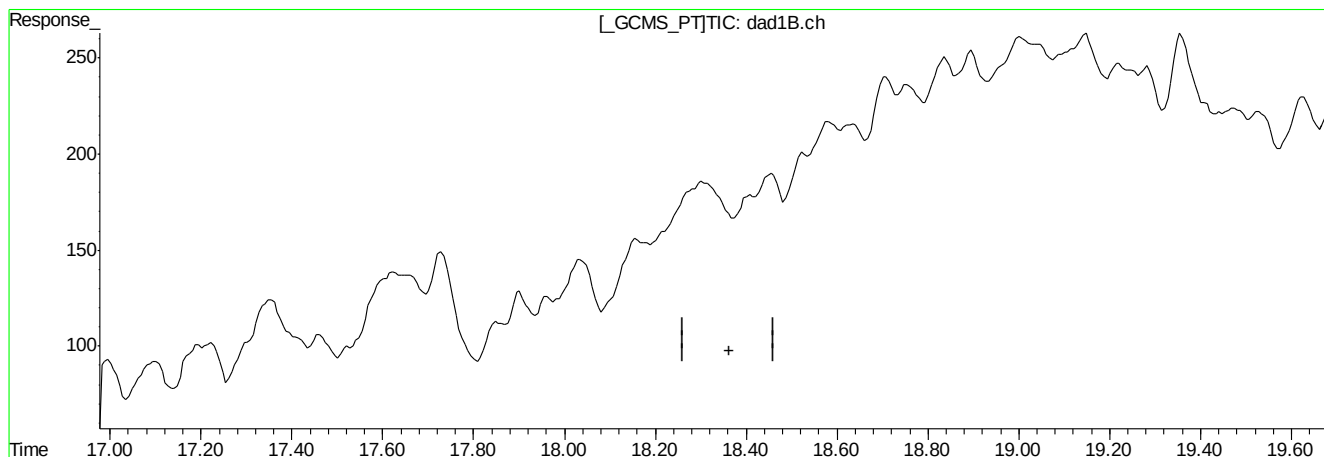
BB076377.D BBB2349_041423.M

Fri Apr 14 12:50:21 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1A.ch
Acq On : 14-Apr-2023, 10:55:12 Operator: fouads
Sample : ic2349-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

0.00min 0.000ppb

response 0

QEdit

(+) = Expected Retention Time

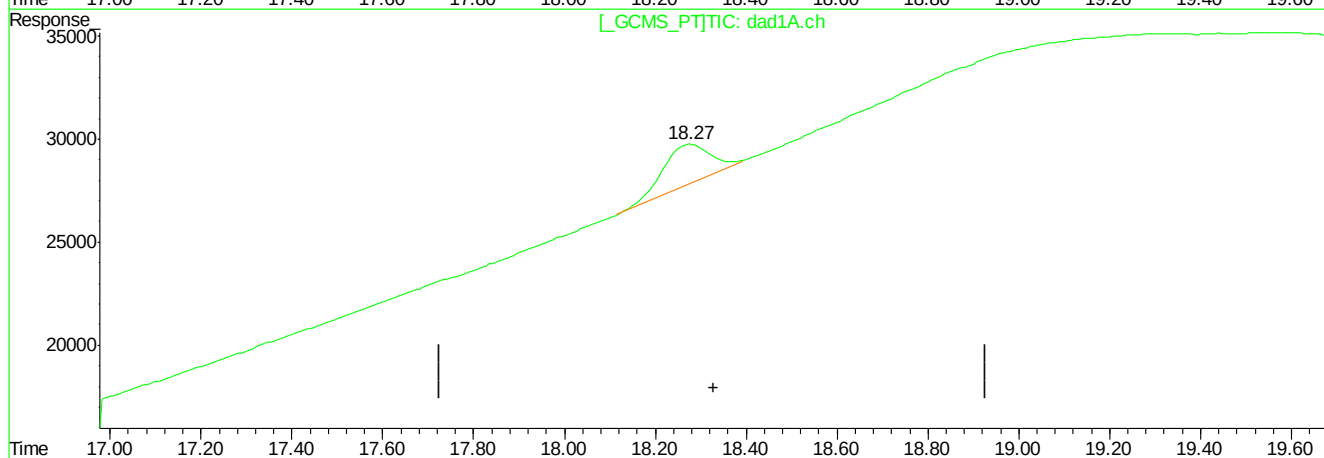
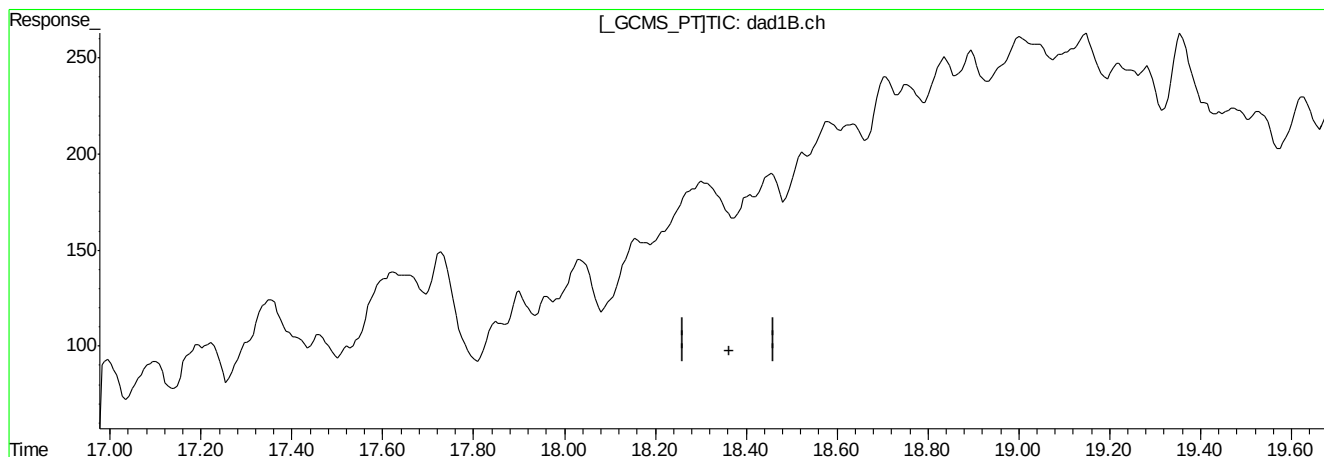
BB076377.D BBB2349_041423.M

Fri Apr 14 12:50:25 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076377.D\dad1A.ch
Acq On : 14-Apr-2023, 10:55:12 Operator: fouads
Sample : ic2349-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

18.27min 111.194ppb m

response 143088

QEdit

(+) = Expected Retention Time

BB076377.D BBB2349_041423.M

Fri Apr 14 12:50:34 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1B.ch Vial: 6
 Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1A.ch
 Acq On : 14-Apr-2023, 11:26:10 Operator: fouads
 Sample : ic2349-200 Inst : G1315B
 Misc : op96339,GBB2349,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Apr 14 12:41:21 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Apr 14 10:52:34 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	10.85	10.85	450564	778045	206.820	224.568
Spiked Amount	500.000	Range	70 - 136	Recovery	=	41.36%# 44.91%#
Target Compounds						
1) TNX	1.28	1.28	312603	482503	80.066	81.665
2) HMX	1.43	1.43	317058	929000	203.760	226.293
3) DNX	1.65	1.65	559073	961284	176.694	193.451
4) MNX	2.22	2.22	600393	940502	206.825	210.609
5) RDX	2.82	2.82	364451	575843	194.321	196.073
6) 1,3,5-Trinitrobe	4.54	4.54	787820	1249665	204.698	203.587m
7) 1,3-Dinitrobenze	5.72	5.72	1020510	761395	194.589	200.592m
8) 3,5-Dinitroanili	6.08	6.08	767580	1482294	194.856	221.818
9) Nitrobenzene	7.24	7.24	591730	592564	211.743	214.794
10) Nitroglycerin	0.00	8.70	0	255885	N.D.	196.303 #
11) Tetryl	9.19	9.20	578911	928393	243.752	246.809
12) 2,4,6-Trinitroto	9.55	9.55	742392	894702	197.925	204.960
13) 2-Amino-4,6-Dini	9.93	9.93	653226	962890	202.160	220.745
14) 4-Amino-2,6-Dini	10.37	10.37	489973	947889	204.215	202.853
16) 2,4-Dinitrotolue	11.49	11.49	909703	592783	199.131	204.039
17) 2,6-Dinitrotolue	11.93	11.93	519849	669672	188.669	203.603
18) o-Nitrotoluene	14.99	14.99	435279	612725	222.879	209.548
19) p-Nitrotoluene	15.56	15.56	662984	548634	214.292	213.523
20) m-Nitrotoluene	16.44	16.45	624047	720301	210.121	204.351m
21) PETN	0.00	18.28	0	249546	N.D.	193.923m#

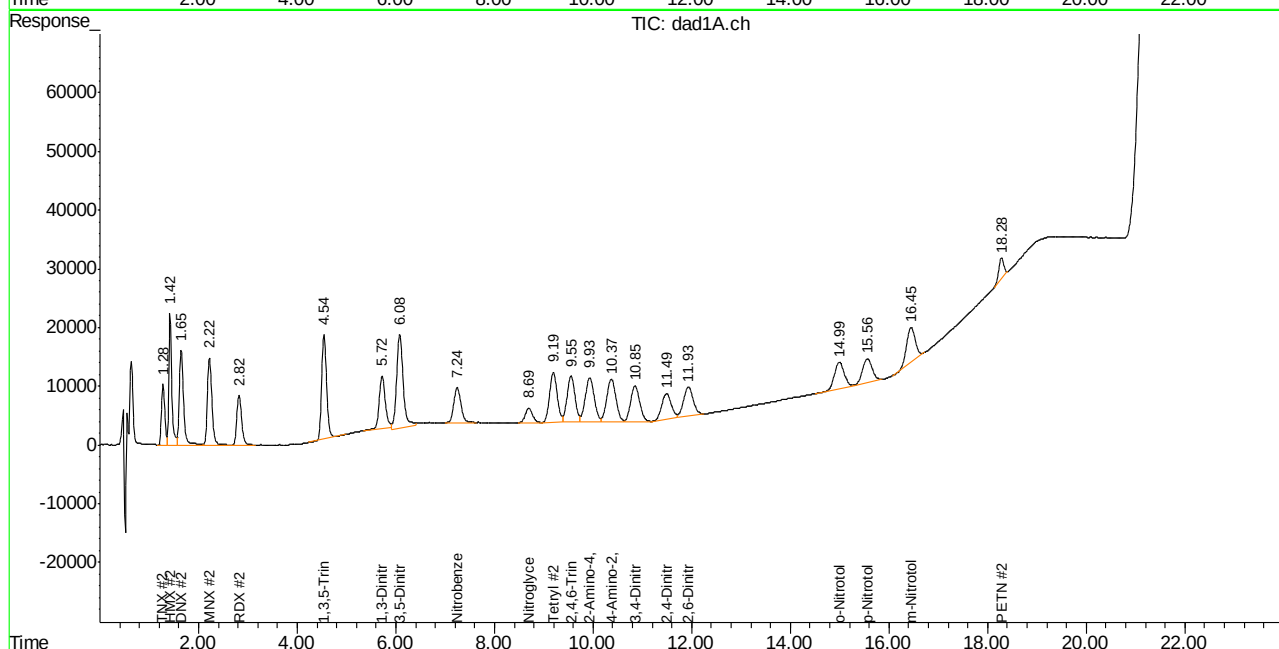
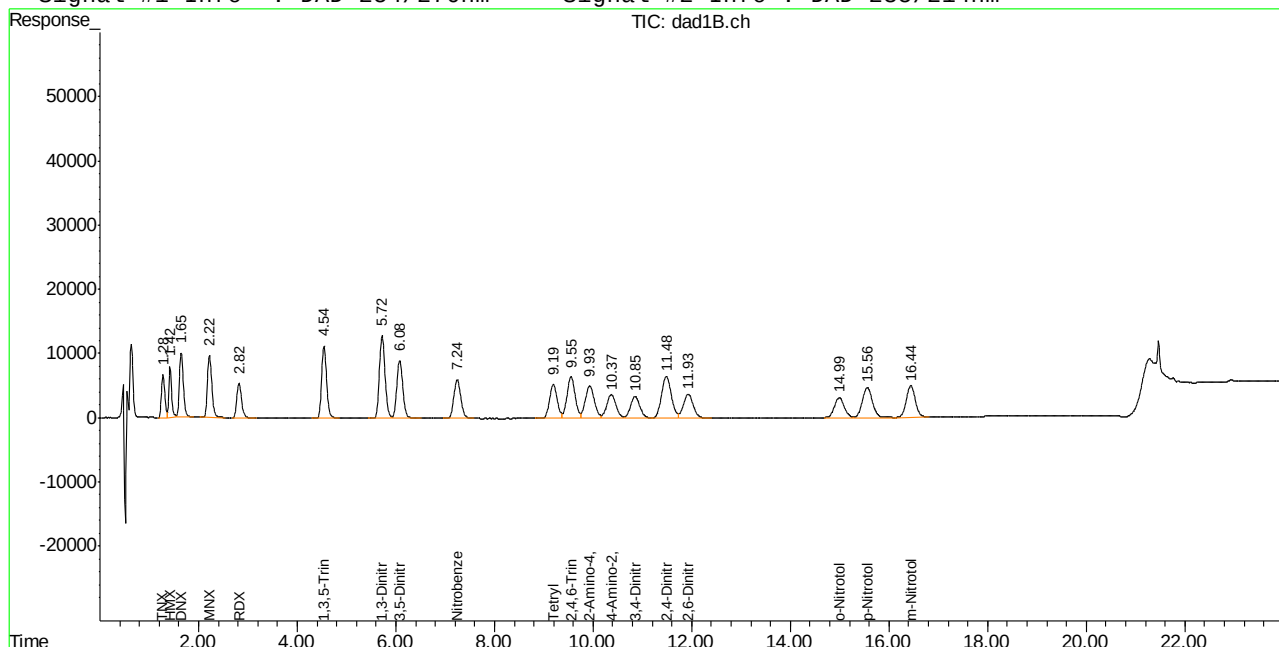
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB076378.D BBB2349_041423.M Mon Apr 17 11:46:37 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1A.ch
Acq On : 14-Apr-2023, 11:26:10 Operator: fouads
Sample : ic2349-200 Inst : G1315B
Misc : op96339, GBB2349, 1000,,, 10, 1, water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:42 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2349-IC2349

Method:

SW846 8330B

Lab FileID:

BB076378.D

Analyst approved:

04/17/23 11:45 William Hustedde

Injection Time:

04/14/23 11:26

Supervisor approved:

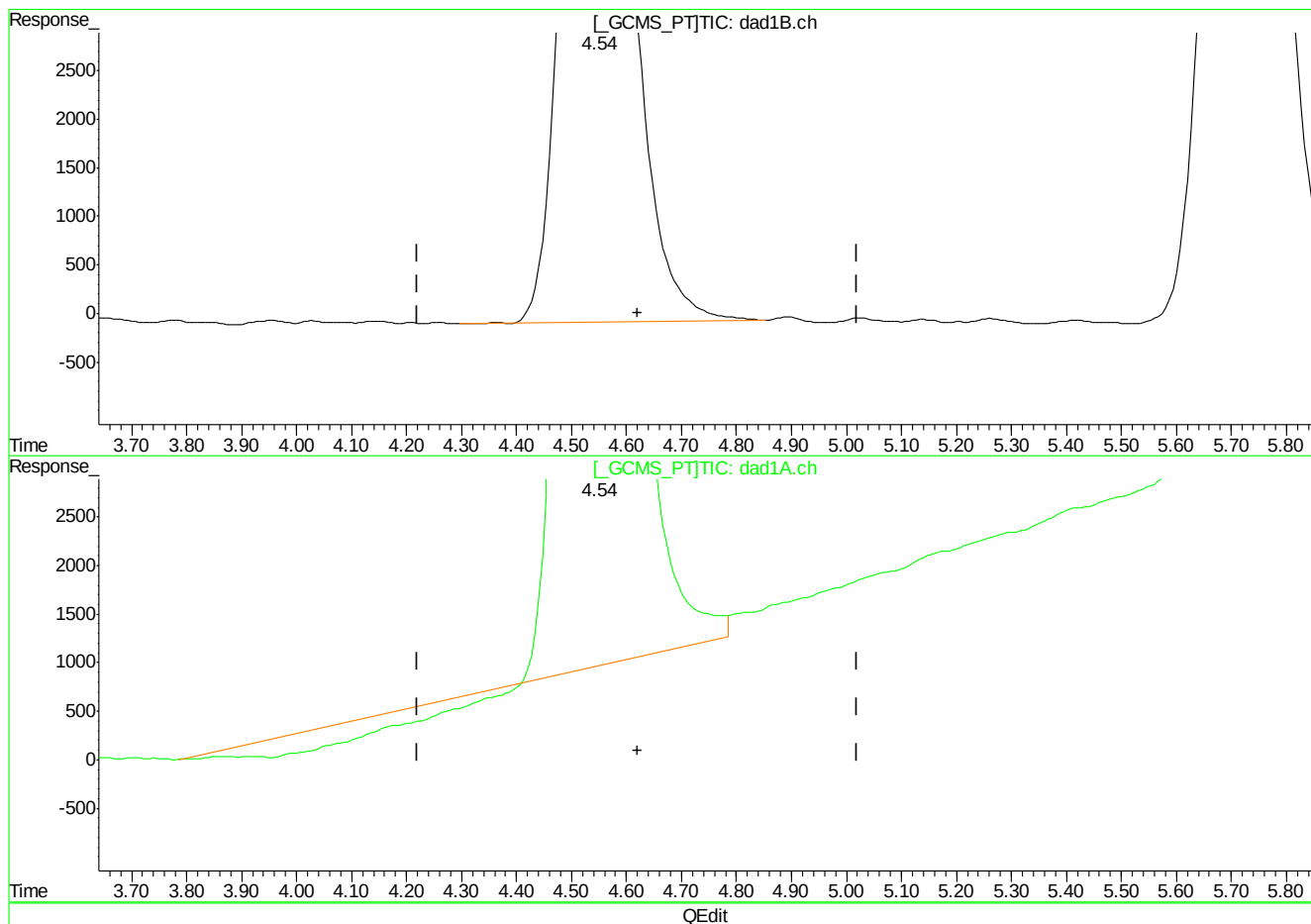
04/17/23 14:47 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3,5-Trinitrobenzene	99-35-4	2	4.54	Poor instrument integration
1,3-Dinitrobenzene	99-65-0	2	5.72	Poor instrument integration
m-Nitrotoluene	99-08-1	2	16.45	Poor instrument integration
PETN	78-11-5	2	18.28	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1A.ch
Acq On : 14-Apr-2023, 11:26:10 Operator: fouads
Sample : ic2349-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.54min 204.698ppb

response 787820

(6) 1,3,5-Trinitrobenzene #2

4.54min 195.858ppb

response 1202222

(+) = Expected Retention Time

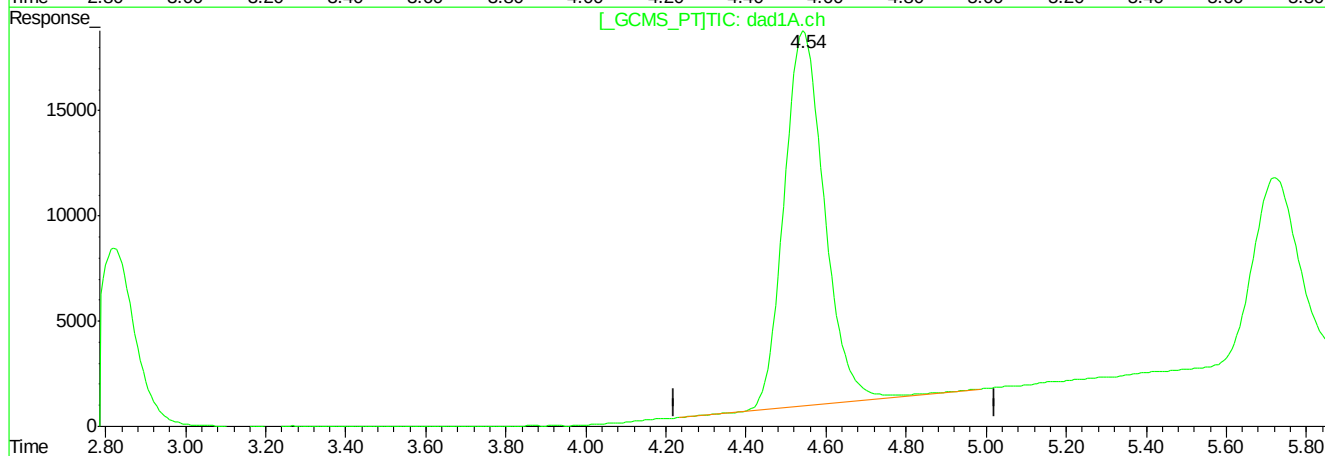
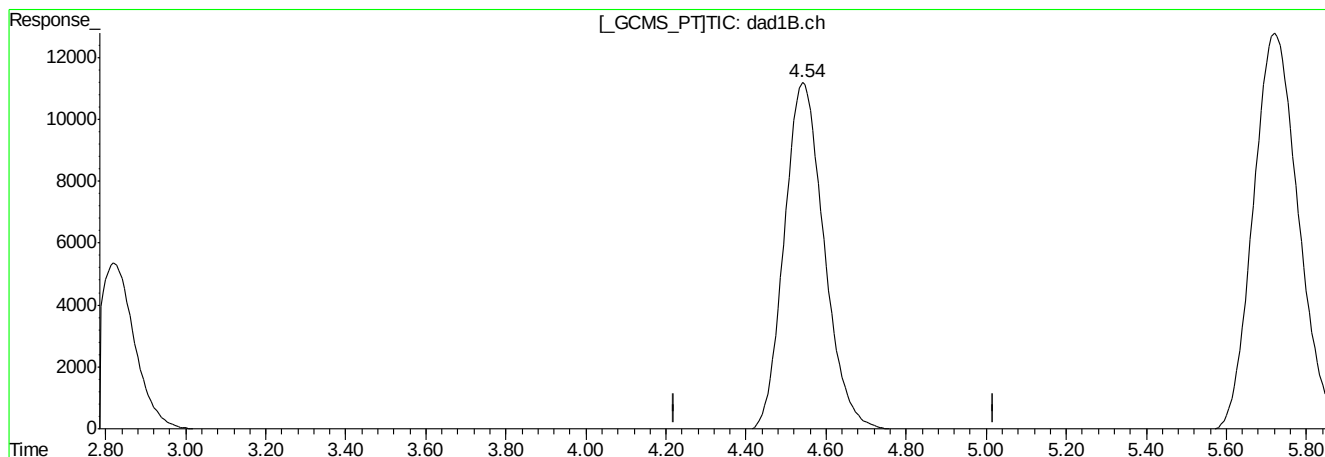
BB076378.D BBB2349_041423.M

Fri Apr 14 12:41:39 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1A.ch
Acq On : 14-Apr-2023, 11:26:10 Operator: fouads
Sample : ic2349-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(6) 1,3,5-Trinitrobenzene

4.54min 204.698ppb

response 787820

(6) 1,3,5-Trinitrobenzene #2

4.54min 203.587ppb m

response 1249665

(+) = Expected Retention Time

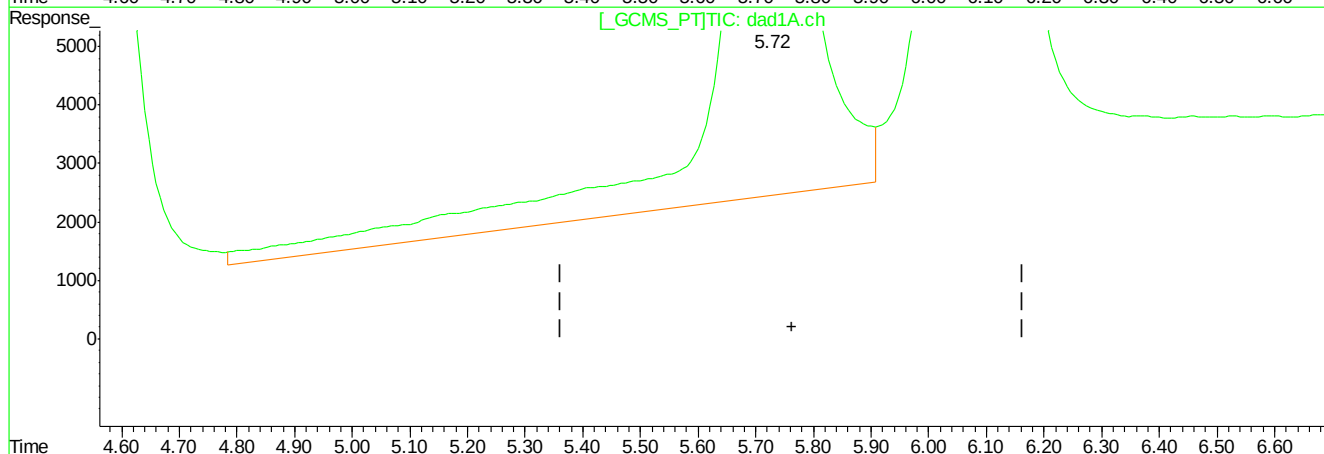
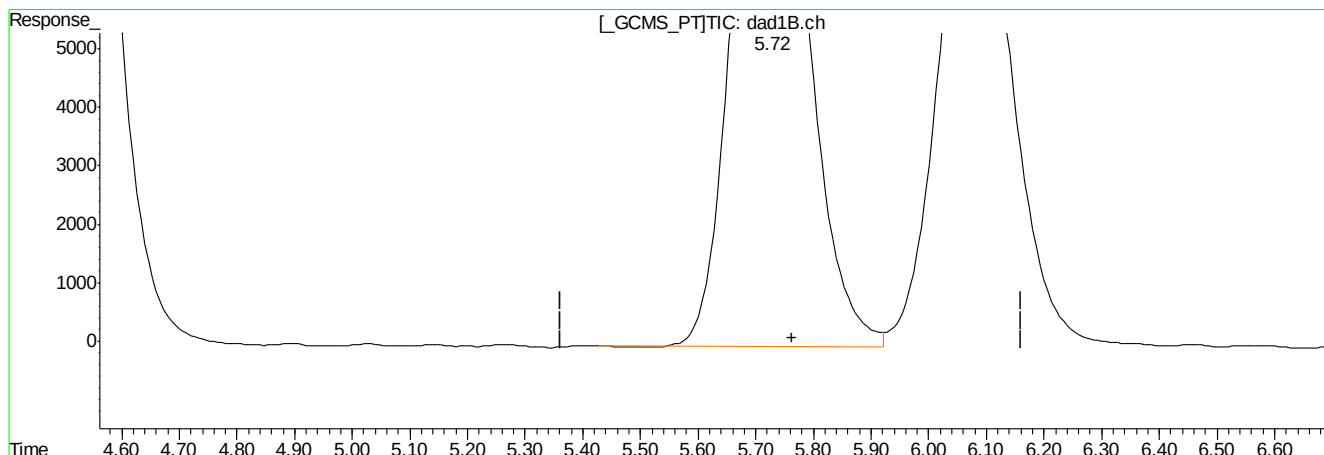
BB076378.D BBB2349_041423.M

Fri Apr 14 12:41:58 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1A.ch
Acq On : 14-Apr-2023, 11:26:10 Operator: fouads
Sample : ic2349-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

5.72min 194.589ppb

response 1020510

(7) 1,3-Dinitrobenzene #2

5.72min 263.503ppb

response 1000186

(+) = Expected Retention Time

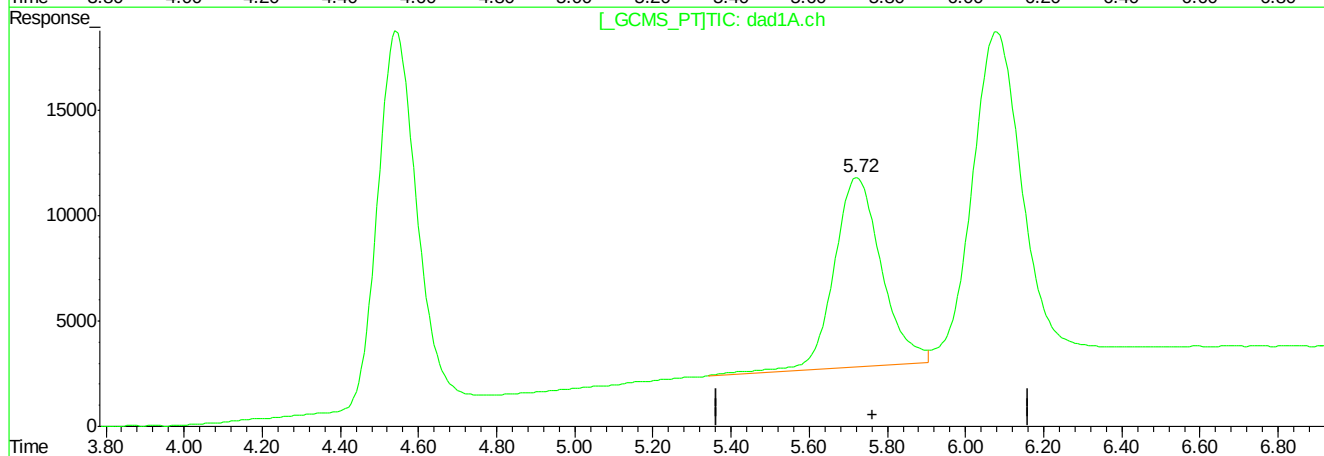
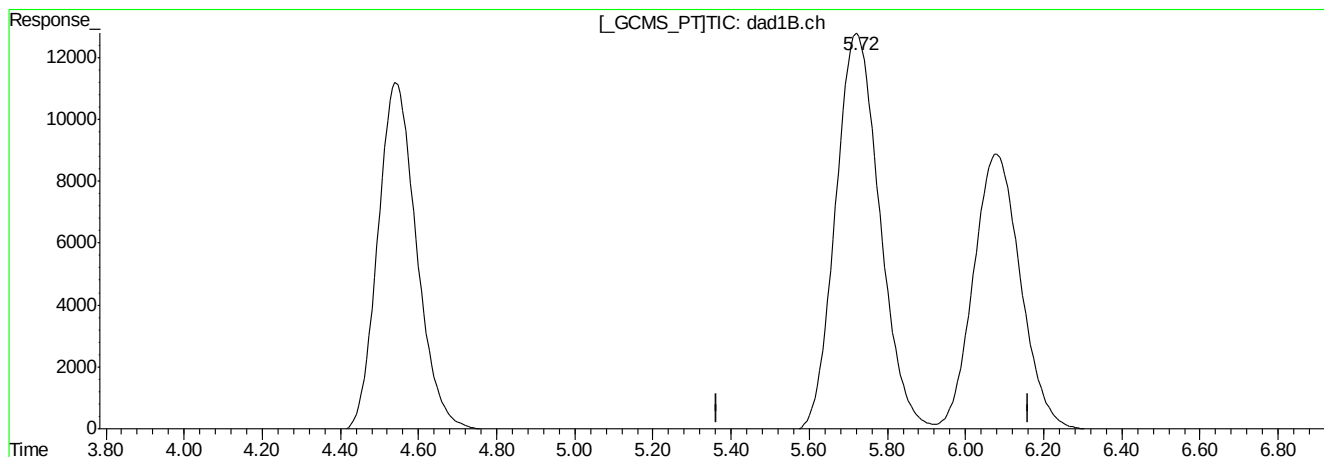
BB076378.D BBB2349_041423.M

Fri Apr 14 12:42:04 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1A.ch
Acq On : 14-Apr-2023, 11:26:10 Operator: fouads
Sample : ic2349-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

5.72min 194.589ppb

response 1020510

(7) 1,3-Dinitrobenzene #2

5.72min 200.592ppb m

response 761395

(+) = Expected Retention Time

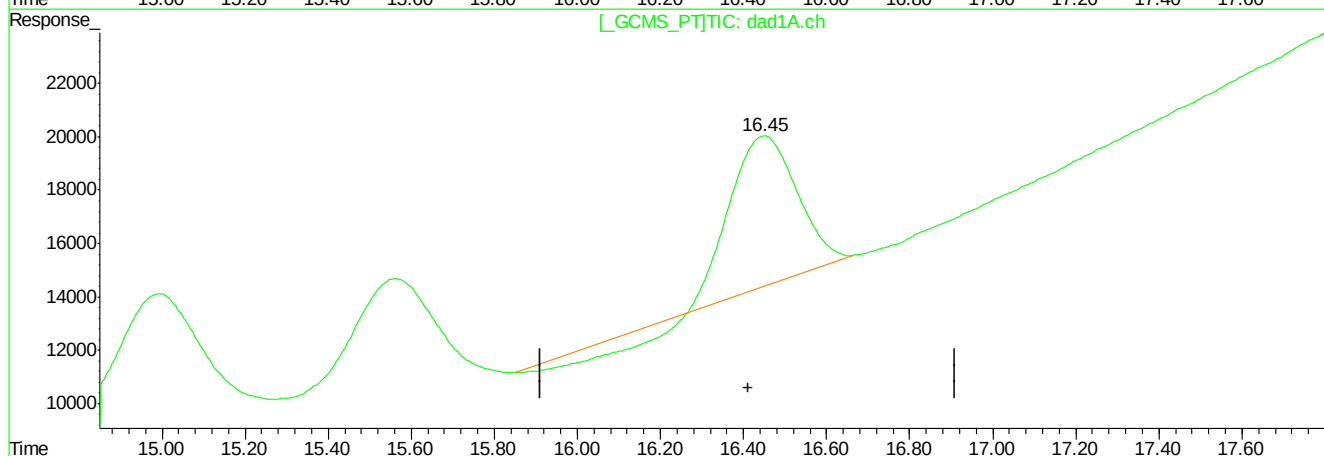
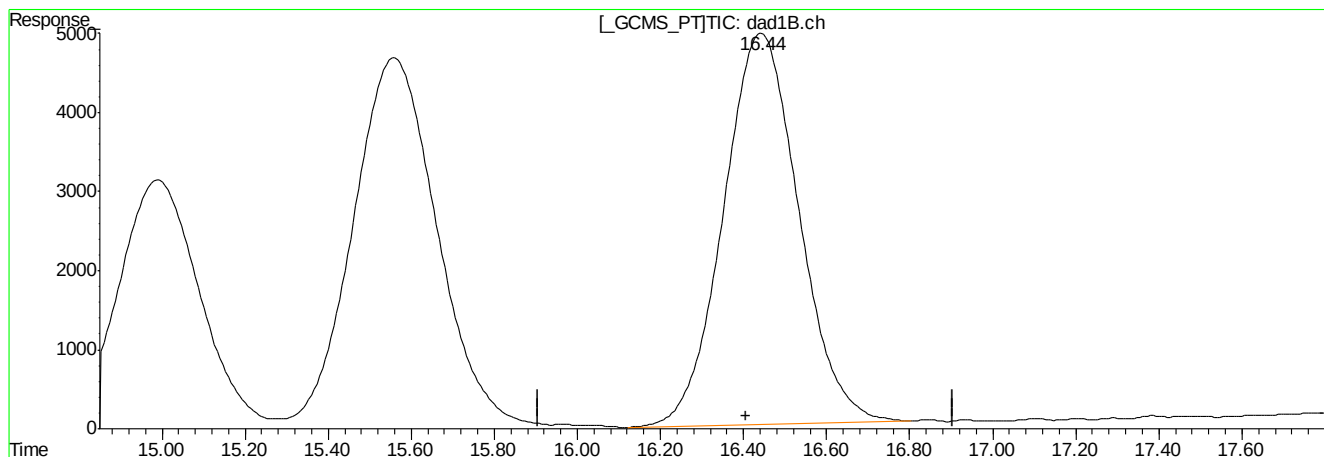
BB076378.D BBB2349_041423.M

Fri Apr 14 12:42:20 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1A.ch
Acq On : 14-Apr-2023, 11:26:10 Operator: fouads
Sample : ic2349-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(20) m-Nitrotoluene
16.44min 210.121ppb
response 624047

(20) m-Nitrotoluene #2
16.45min 151.971ppb
response 535671

(+) = Expected Retention Time

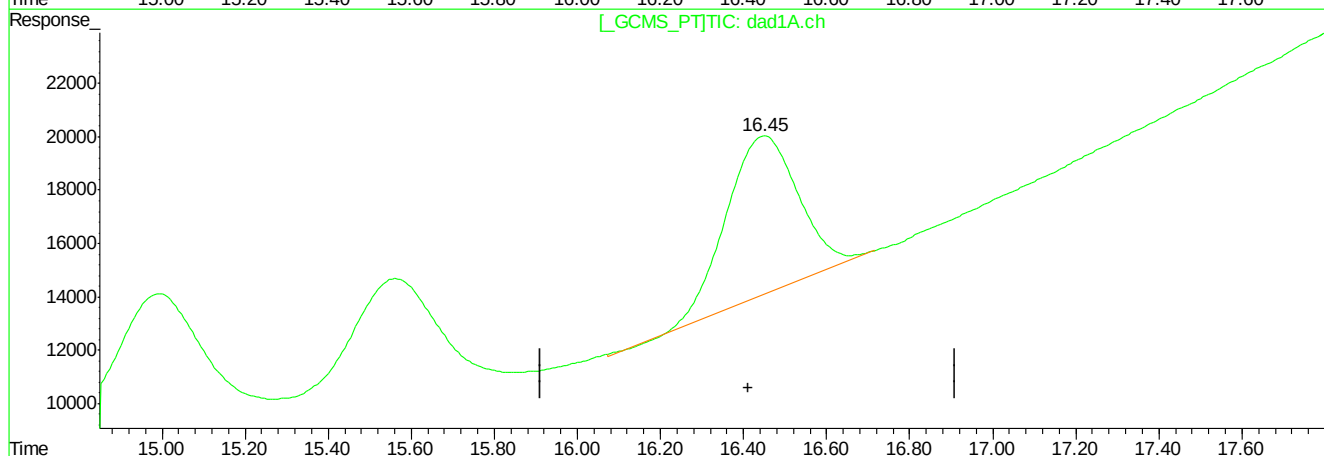
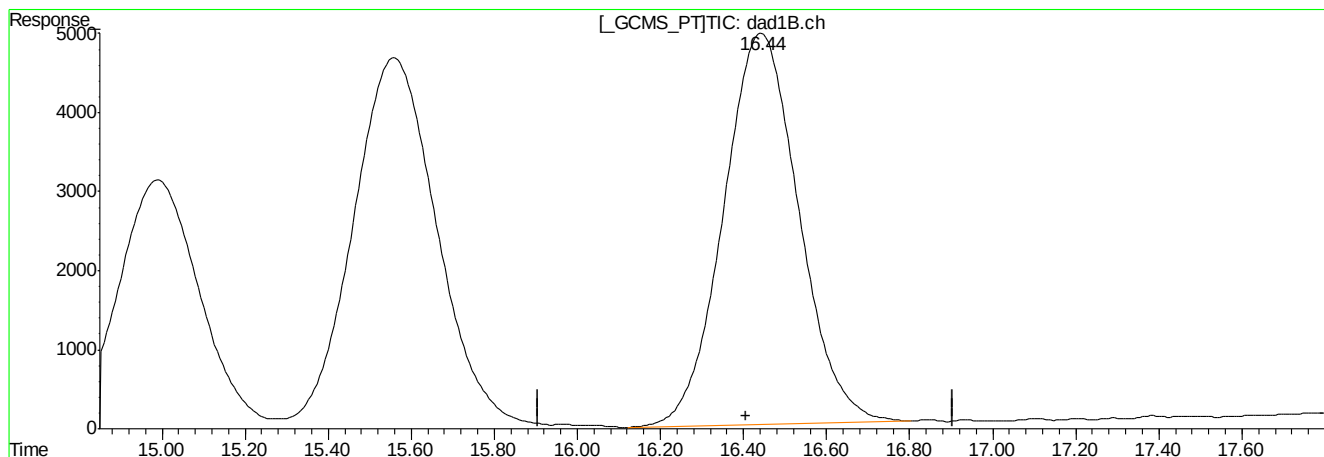
BB076378.D BBB2349_041423.M

Fri Apr 14 12:42:40 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1A.ch
Acq On : 14-Apr-2023, 11:26:10 Operator: fouads
Sample : ic2349-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(20) m-Nitrotoluene
16.44min 210.121ppb
response 624047

(20) m-Nitrotoluene #2
16.45min 204.351ppb m
response 720301

(+) = Expected Retention Time

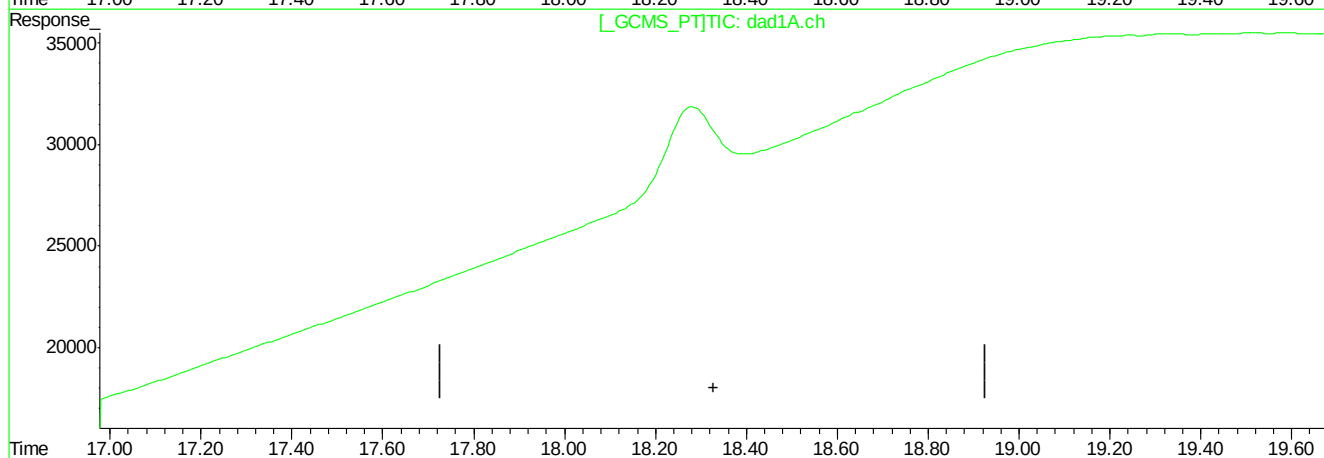
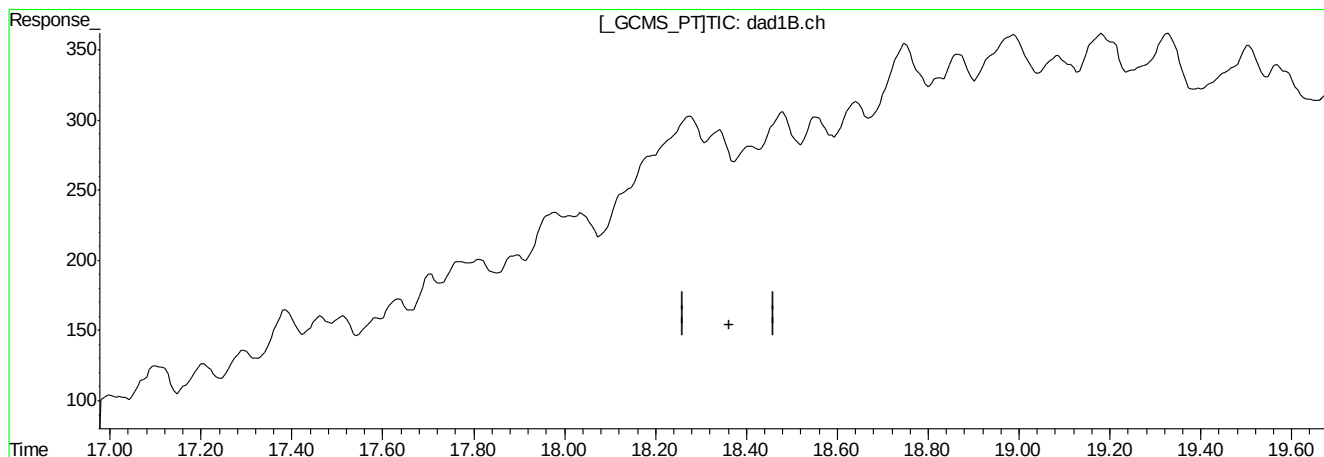
BB076378.D BBB2349_041423.M

Fri Apr 14 12:42:48 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1A.ch
Acq On : 14-Apr-2023, 11:26:10 Operator: fouads
Sample : ic2349-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

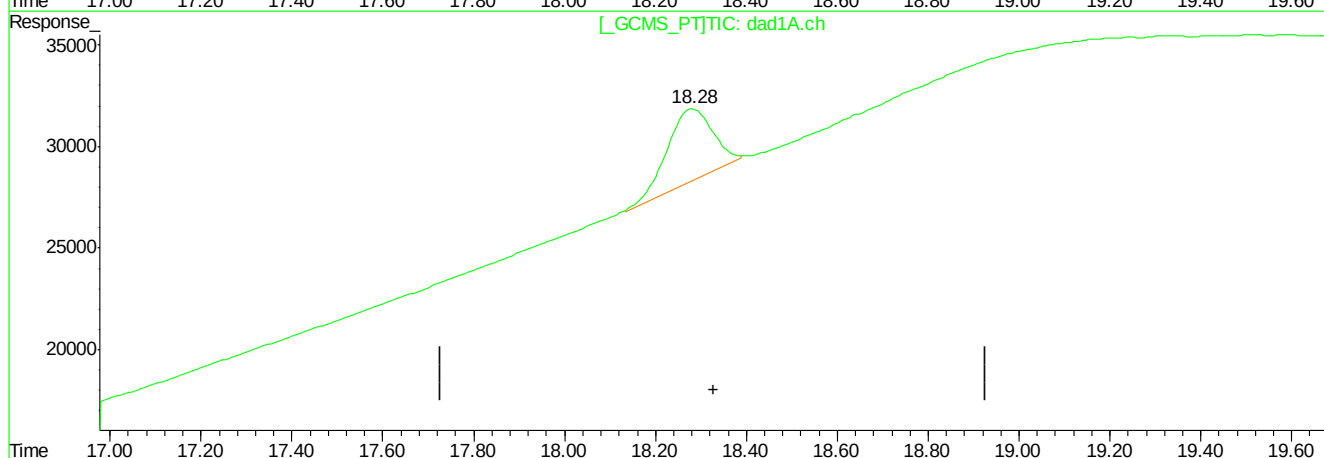
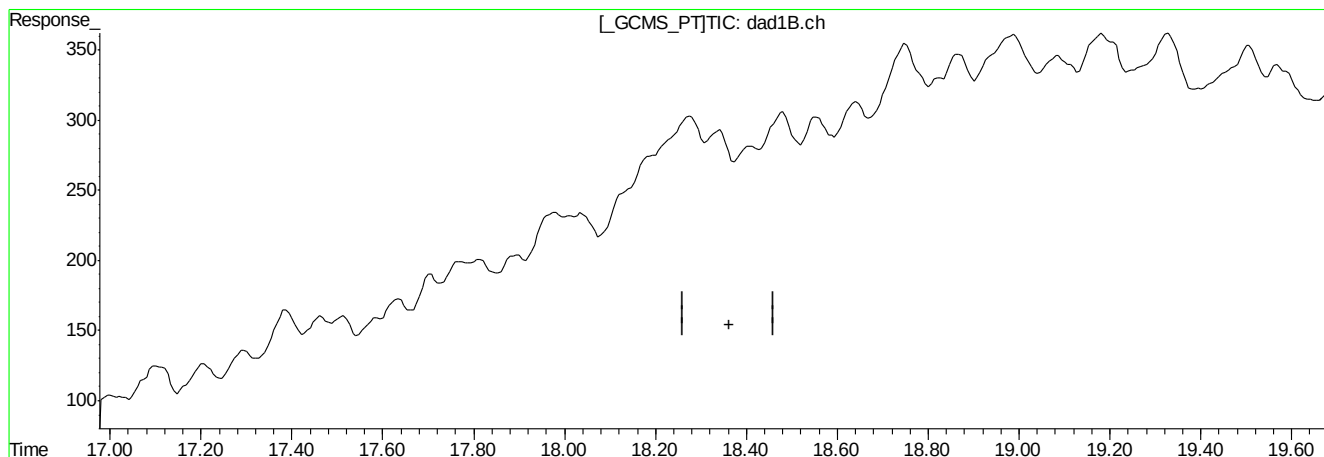
BB076378.D BBB2349_041423.M

Fri Apr 14 12:42:52 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076378.D\dad1A.ch
Acq On : 14-Apr-2023, 11:26:10 Operator: fouads
Sample : ic2349-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:41 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

18.28min 193.923ppb m

response 249546

(+) = Expected Retention Time

BB076378.D BBB2349_041423.M

Fri Apr 14 12:42:58 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076379.D\dad1B.ch Vial: 7
 Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076379.D\dad1A.ch
 Acq On : 14-Apr-2023, 12:00:37 Operator: fouads
 Sample : ic2349-500 Inst : G1315B
 Misc : op96339,GBB2349,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Apr 14 12:39:46 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Apr 14 10:52:34 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	10.84	10.84	1075738	1907620	493.791	550.598
Spiked Amount	500.000	Range	70 - 136	Recovery	=	98.76% 110.12%
Target Compounds						
1) TNX	1.28	1.28	746161	1138888	191.111	192.760
2) HMX	1.42	1.42	749104	2138836	481.420	520.993
3) DNX	1.65	1.65	1343350	2179674	424.563	438.643
4) MNX	2.22	2.22	1427196	2195779	491.645	491.705
5) RDX	2.82	2.82	860550	1362781	458.836	464.023
6) 1,3,5-Trinitrobe	4.54	4.54	1853914	2966834	481.700	483.338m
7) 1,3-Dinitrobenze	5.72	5.72	2414863	1767991	460.461	465.784m
8) 3,5-Dinitroanili	6.07	6.07	1822793	3262515	462.731	488.220
9) Nitrobenzene	7.24	7.24	1433285	1417946	512.883	513.981
10) Nitroglycerin	0.00	8.69	0	590690	N.D.	453.150 #
11) Tetryl	9.19	9.19	1328289	2141624	559.279	569.342
12) 2,4,6-Trinitroto	9.55	9.55	1746642	2127951	465.663	487.474
13) 2-Amino-4,6-Dini	9.92	9.92	1534170	2294105	474.795	525.930
14) 4-Amino-2,6-Dini	10.36	10.36	1147982	2270823	478.466	485.968
16) 2,4-Dinitrotolue	11.48	11.48	2148566	1427068	470.315	491.203
17) 2,6-Dinitrotolue	11.92	11.92	1221837	1614318	443.443	490.807
18) o-Nitrotoluene	14.98	14.98	1017286	1449126	520.888	495.593
19) p-Nitrotoluene	15.55	15.55	1554356	1312141	502.405	510.672
20) m-Nitrotoluene	16.44	16.44	1475523	1573998	496.818	446.547
21) PETN	0.00	18.28	0	641461	N.D.	498.482m#

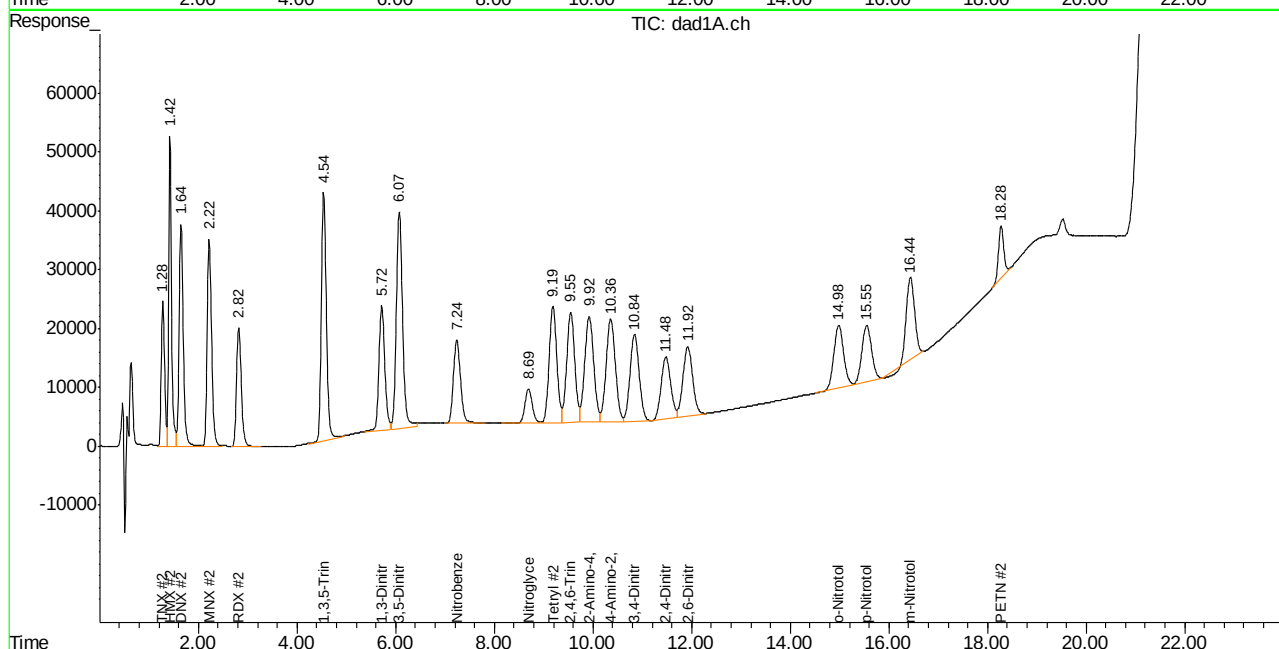
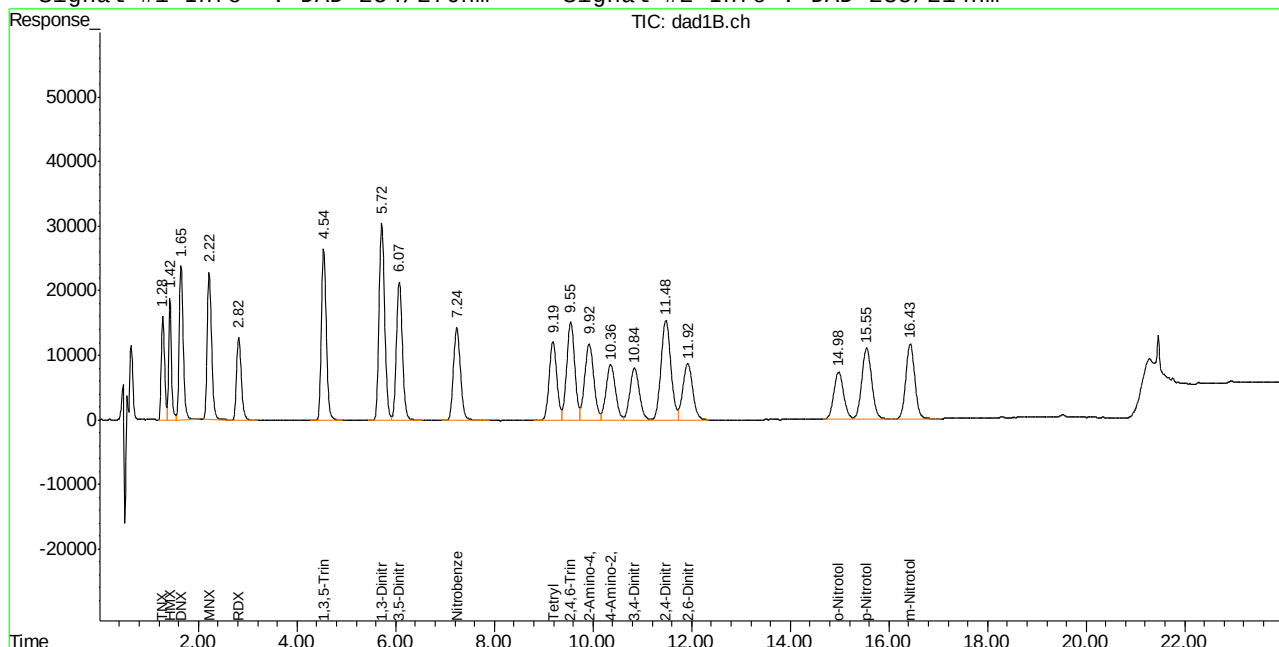
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB076379.D BBB2349_041423.M Mon Apr 17 12:18:43 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076379.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076379.D\dad1A.ch
Acq On : 14-Apr-2023, 12:00:37 Operator: fouads
Sample : ic2349-500 Inst : G1315B
Misc : op96339, GBB2349, 1000,,, 10, 1, water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:40 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: GBB2349-IC2349

Method: SW846 8330B

Lab FileID: BB076379.D

Analyst approved: 04/17/23 12:17 William Hustedde

Injection Time: 04/14/23 12:00

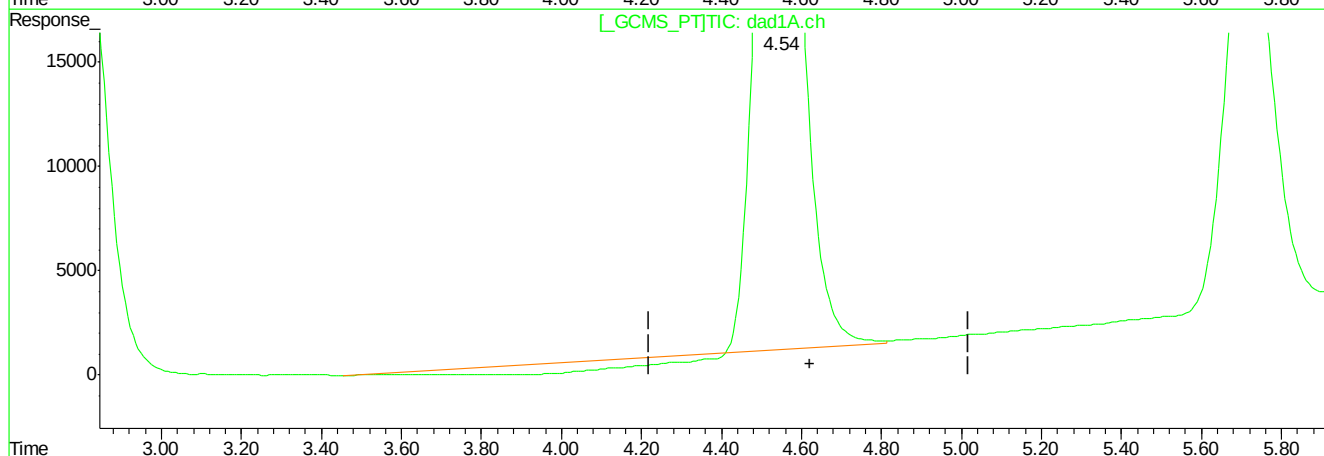
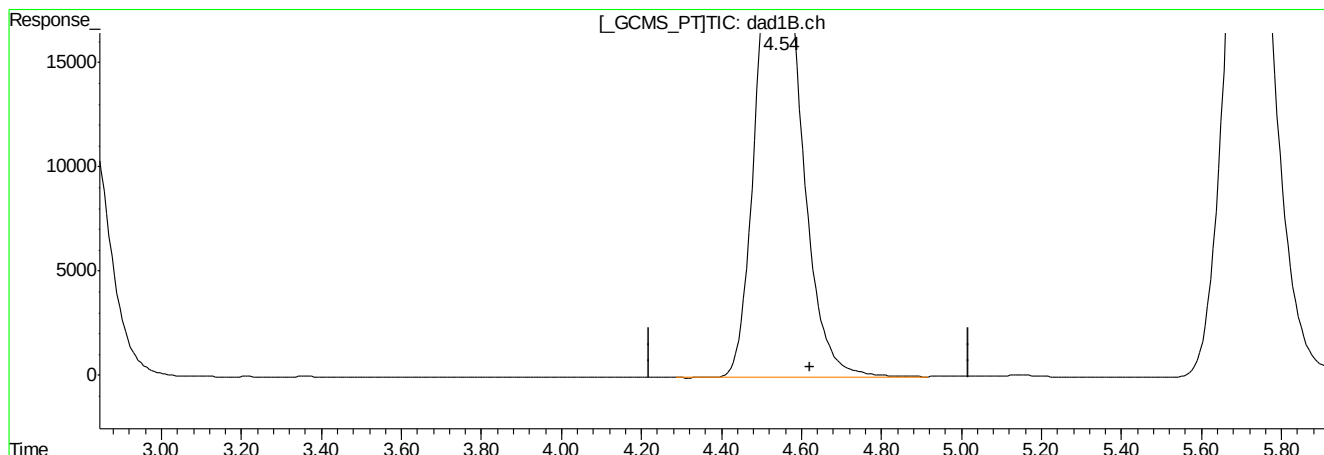
Supervisor approved: 04/17/23 14:47 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3,5-Trinitrobenzene	99-35-4	2	4.54	Poor instrument integration
1,3-Dinitrobenzene	99-65-0	2	5.72	Poor instrument integration
PETN	78-11-5	2	18.28	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076379.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076379.D\dad1A.ch
Acq On : 14-Apr-2023, 12:00:37 Operator: fouads
Sample : icc2349-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:39 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.54min 481.700ppb

response 1853914

(6) 1,3,5-Trinitrobenzene #2

4.54min 443.633ppb

response 2723116

QEdit

(+) = Expected Retention Time

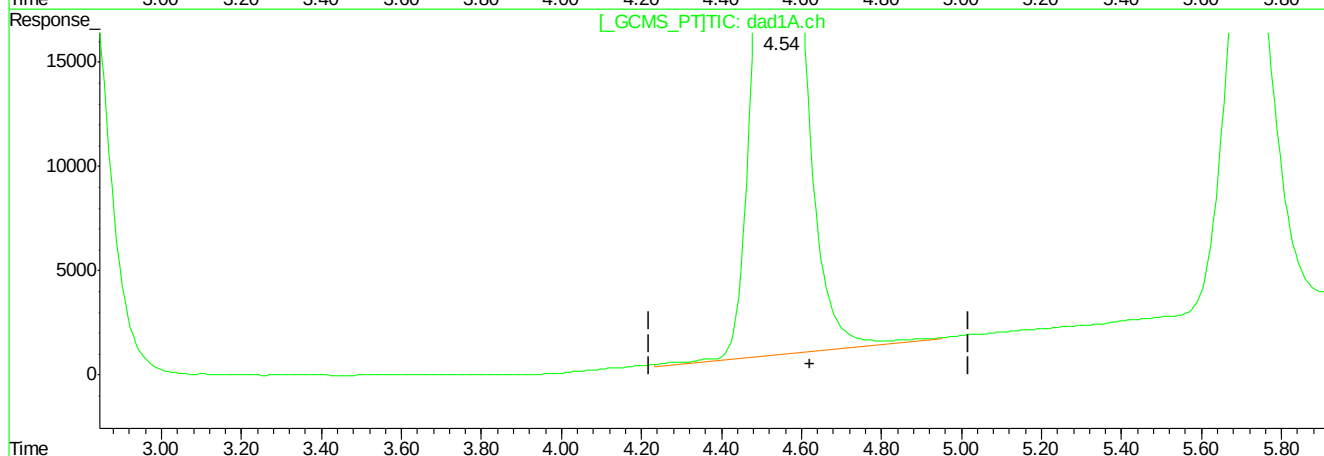
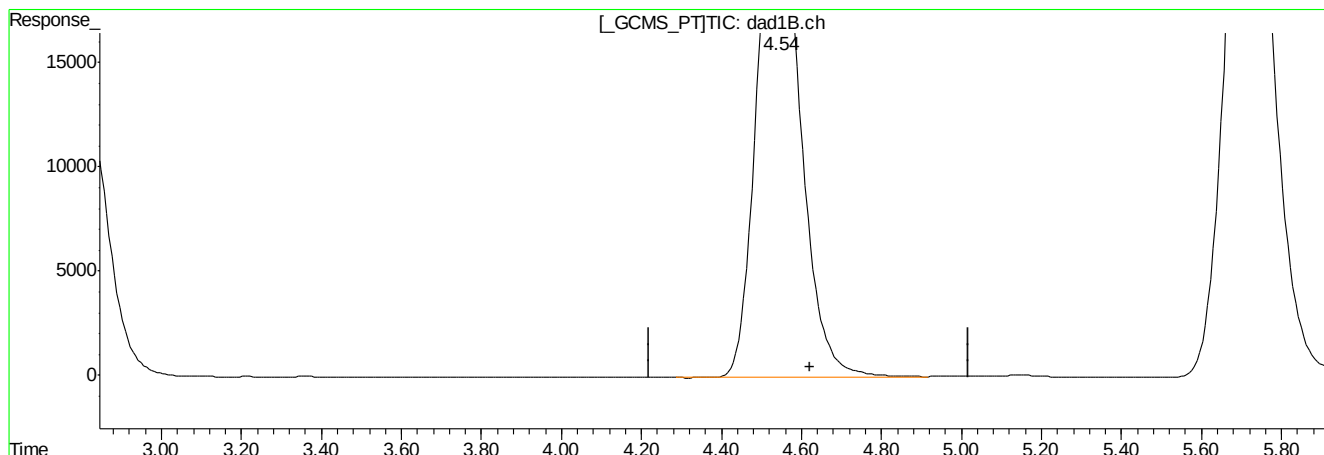
BB076379.D BBB2349_041423.M

Fri Apr 14 12:40:17 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076379.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076379.D\dad1A.ch
Acq On : 14-Apr-2023, 12:00:37 Operator: fouads
Sample : icc2349-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:39 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.54min 481.700ppb

response 1853914

(6) 1,3,5-Trinitrobenzene #2

4.54min 483.338ppb m

response 2966834

(+) = Expected Retention Time

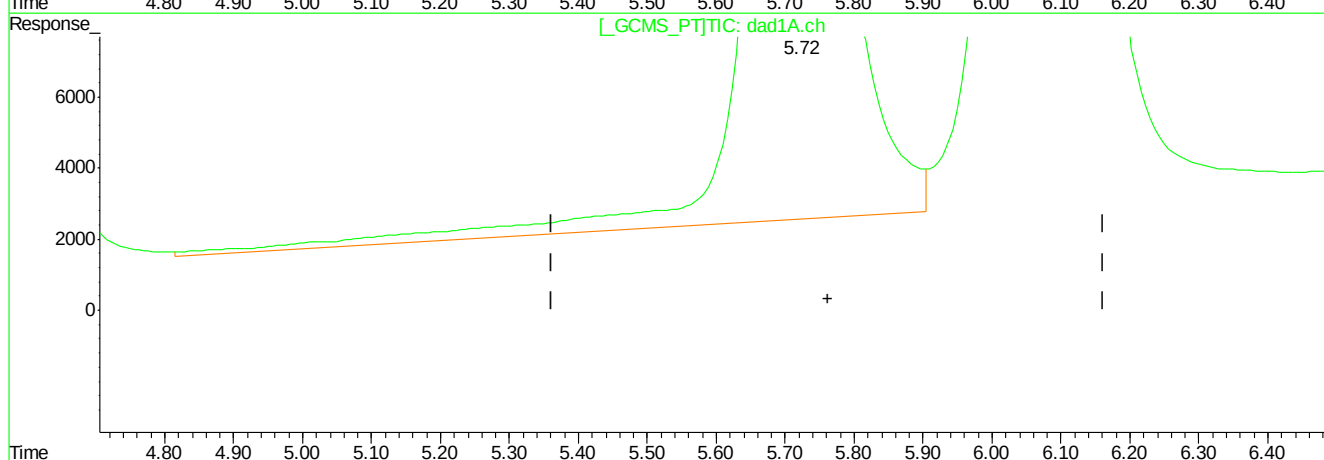
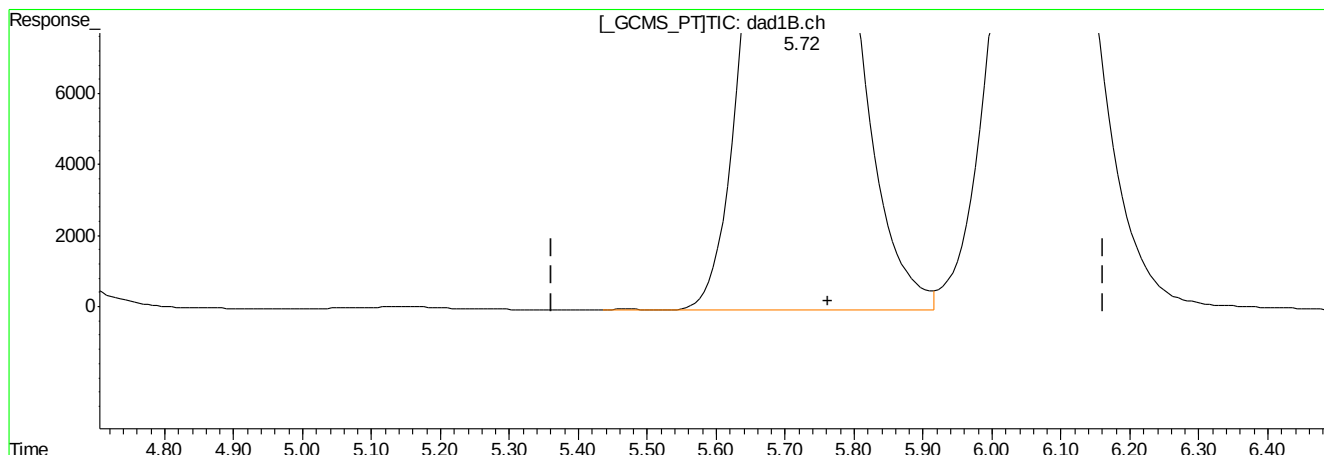
BB076379.D BBB2349_041423.M

Fri Apr 14 12:40:23 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076379.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076379.D\dad1A.ch
Acq On : 14-Apr-2023, 12:00:37 Operator: fouads
Sample : icc2349-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:39 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.72min 460.461ppb

response 2414863

(7) 1,3-Dinitrobenzene #2

5.72min 494.207ppb

response 1875878

(+) = Expected Retention Time

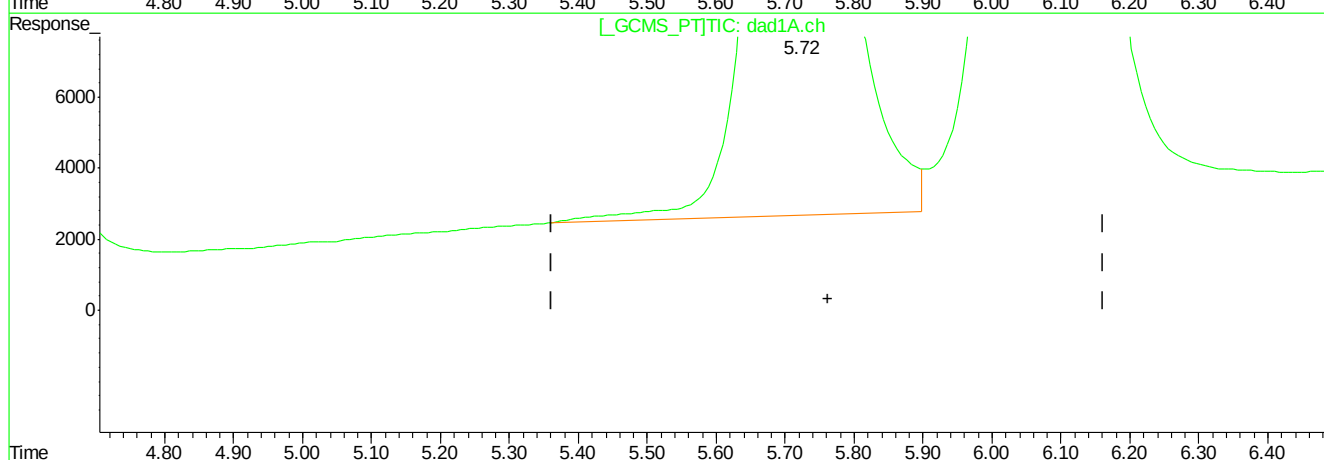
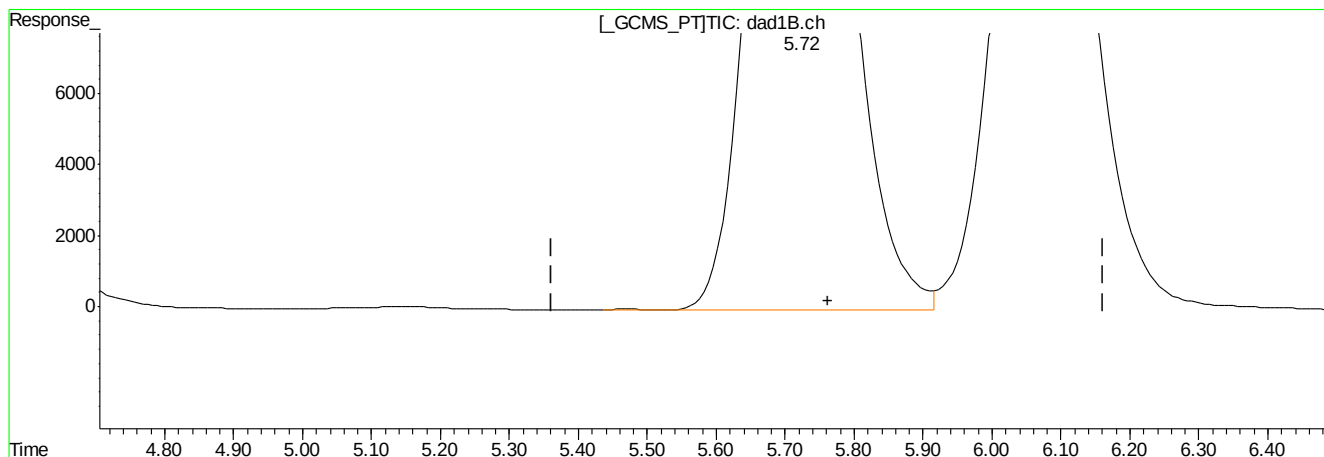
BB076379.D BBB2349_041423.M

Fri Apr 14 12:40:29 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076379.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076379.D\dad1A.ch
Acq On : 14-Apr-2023, 12:00:37 Operator: fouads
Sample : icc2349-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:39 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.72min 460.461ppb

response 2414863

(7) 1,3-Dinitrobenzene #2

5.72min 465.784ppb m

response 1767991

(+) = Expected Retention Time

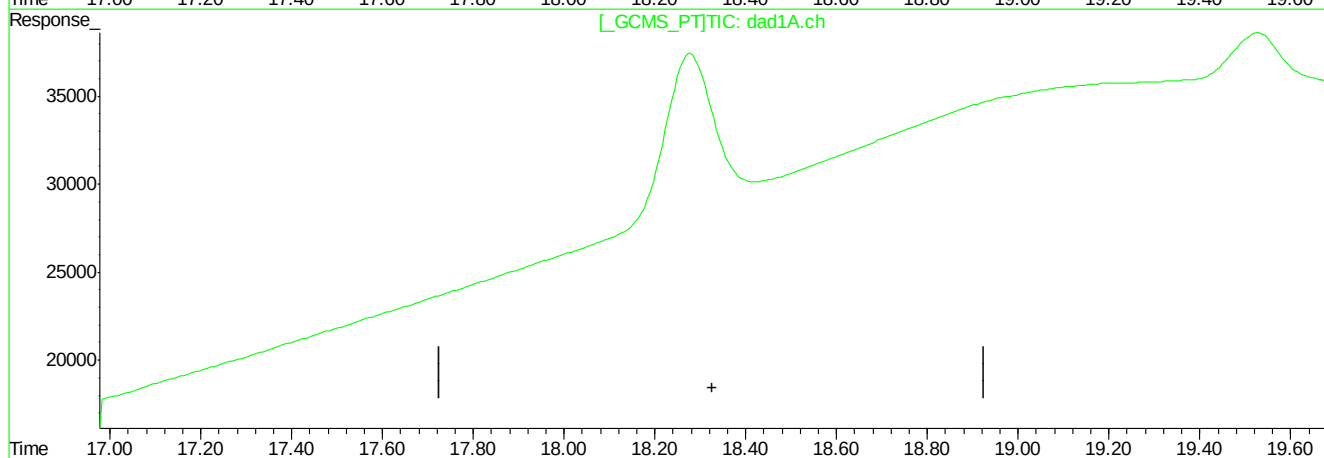
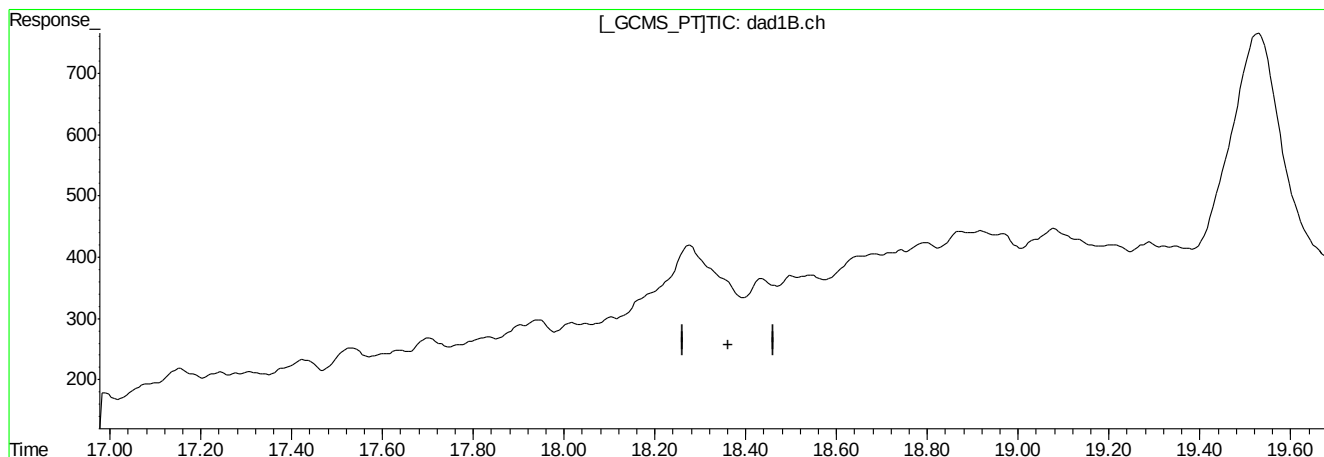
BB076379.D BBB2349_041423.M

Fri Apr 14 12:40:34 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076379.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076379.D\dad1A.ch
Acq On : 14-Apr-2023, 12:00:37 Operator: fouads
Sample : icc2349-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:39 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

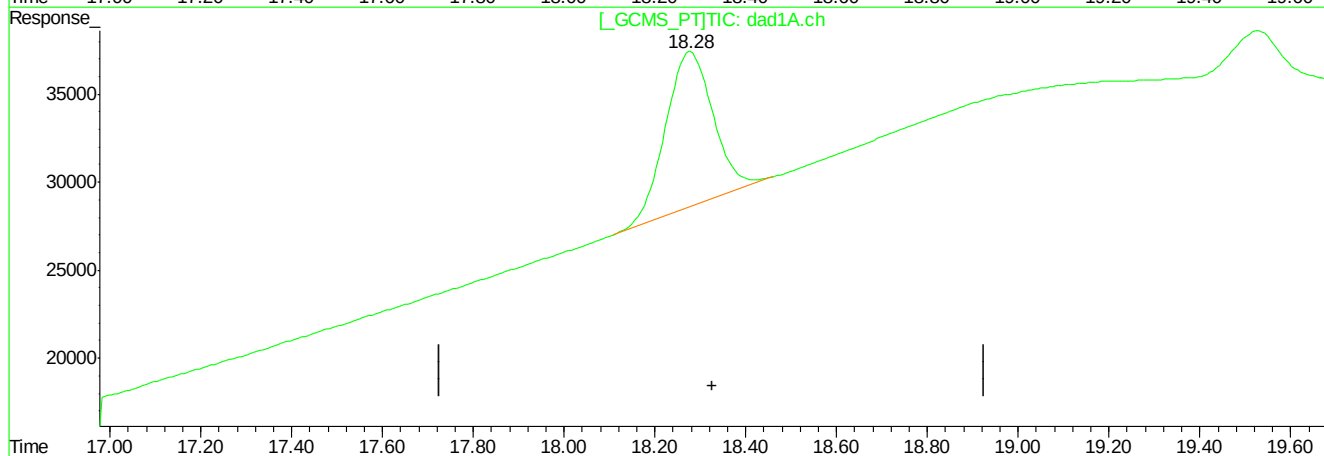
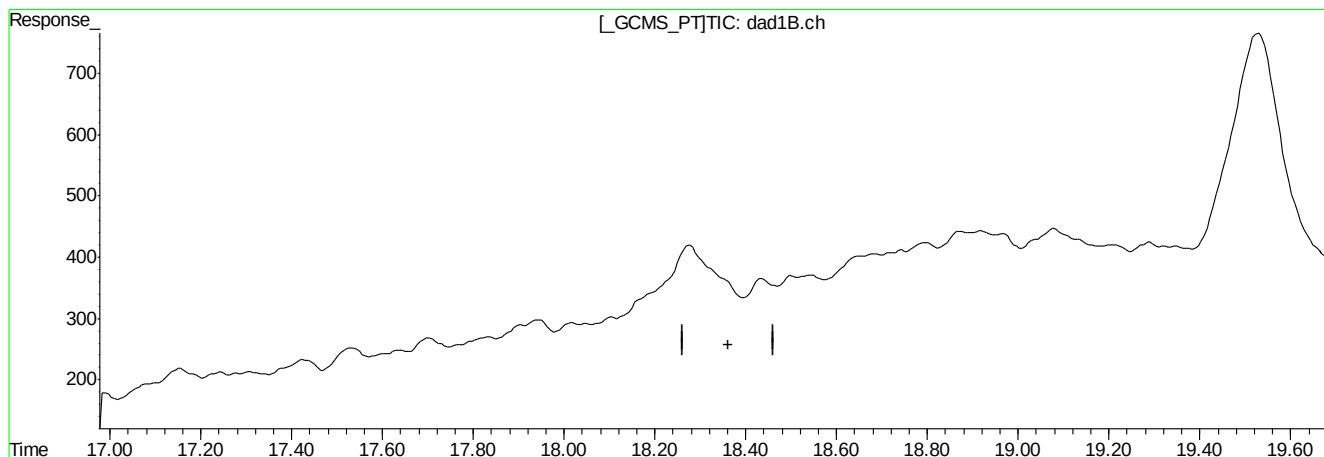
BB076379.D BBB2349_041423.M

Fri Apr 14 12:40:55 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076379.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076379.D\dad1A.ch
Acq On : 14-Apr-2023, 12:00:37 Operator: fouads
Sample : icc2349-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:39 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

18.28min 498.482ppb m

response 641461

QEdit

(+) = Expected Retention Time

BB076379.D BBB2349_041423.M

Fri Apr 14 12:41:01 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076380.D\dad1B.ch Vial: 8
 Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076380.D\dad1A.ch
 Acq On : 14-Apr-2023, 12:31:32 Operator: fouads
 Sample : icc2349-1000 Inst : G1315B
 Misc : op96339,GBB2349,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Apr 14 12:59:46 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Apr 14 10:52:34 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	10.85	10.85	2209626	3961957	1014.274	1143.543
Spiked Amount	500.000	Range	70 - 136	Recovery	= 202.85%#	228.71%#
Target Compounds						
1) TNX	1.28	1.28	1537336	2334578	393.751	395.133
2) HMX	1.43	1.43	1471078	4096110	945.404	997.760
3) DNX	1.65	1.65	2753106	4344939	870.115	874.386
4) MNX	2.22	2.22	2945841	4497546	1014.792	1007.145
5) RDX	2.82	2.82	1760267	2787314	938.554	949.073
6) 1,3,5-Trinitrobe	4.55	4.54	3791538	6076736	985.149	989.983m
7) 1,3-Dinitrobenze	5.72	5.72	4956555	3539649	945.105	932.534m
8) 3,5-Dinitroanili	6.08	6.08	3740262	6558360	949.496	981.427
9) Nitrobenzene	7.24	7.24	2915140	2881584	1043.146	1044.525
10) Nitroglycerin	0.00	8.70	0	1222057	N.D.	937.505 #
11) Tetryl	9.20	9.20	2753872	4480523	1159.525	1191.128
12) 2,4,6-Trinitroto	9.56	9.56	3557252	4348576	948.380	996.177
13) 2-Amino-4,6-Dini	9.93	9.93	3134898	4724056	970.188	1083.002
14) 4-Amino-2,6-Dini	10.37	10.37	2343160	4689475	976.602	1003.572
16) 2,4-Dinitrotolue	11.49	11.49	4409061	2936128	965.130	1010.629
17) 2,6-Dinitrotolue	11.93	11.93	2519326	3333719	914.342	1013.562
18) o-Nitrotoluene	14.99	14.99	2082792	2985913	1066.465	1021.165
19) p-Nitrotoluene	15.56	15.56	3168777	2726367	1024.224	1061.075
20) m-Nitrotoluene	16.44	16.44	3005727	3477000	1012.048	986.433
21) PETN	0.00	18.28	0	1326328	N.D. d	1030.694m

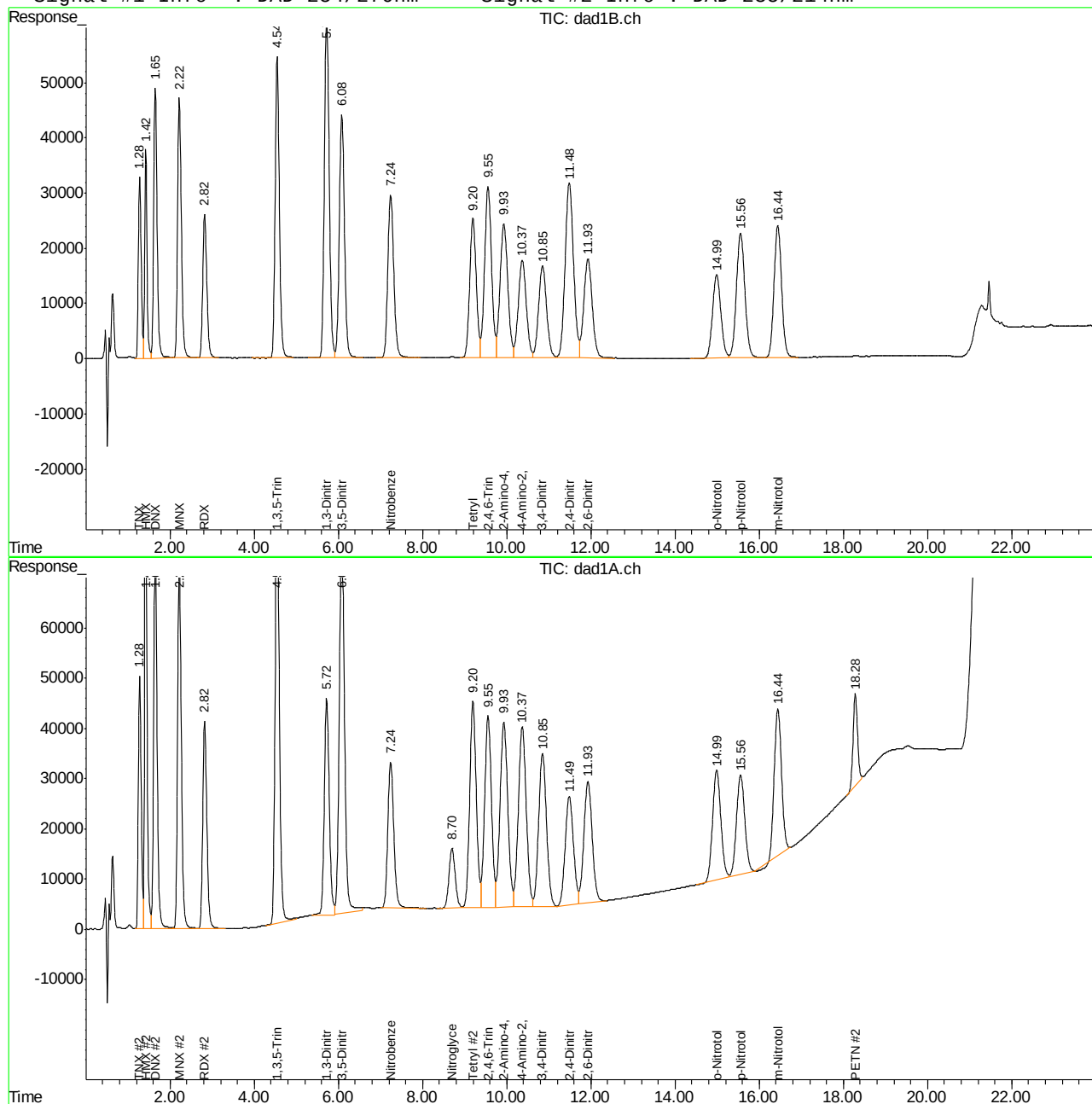
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB076380.D BBB2349_041423.M Mon Apr 17 11:46:39 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076380.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076380.D\dad1A.ch
Acq On : 14-Apr-2023, 12:31:32 Operator: fouads
Sample : icc2349-1000 Inst : G1315B
Misc : op96339, GBB2349, 1000,,, 10, 1, water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 13:01 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: GBB2349-ICC2349

Method: SW846 8330B

Lab FileID: BB076380.D

Analyst approved: 04/17/23 11:45 William Hustedde

Injection Time: 04/14/23 12:31

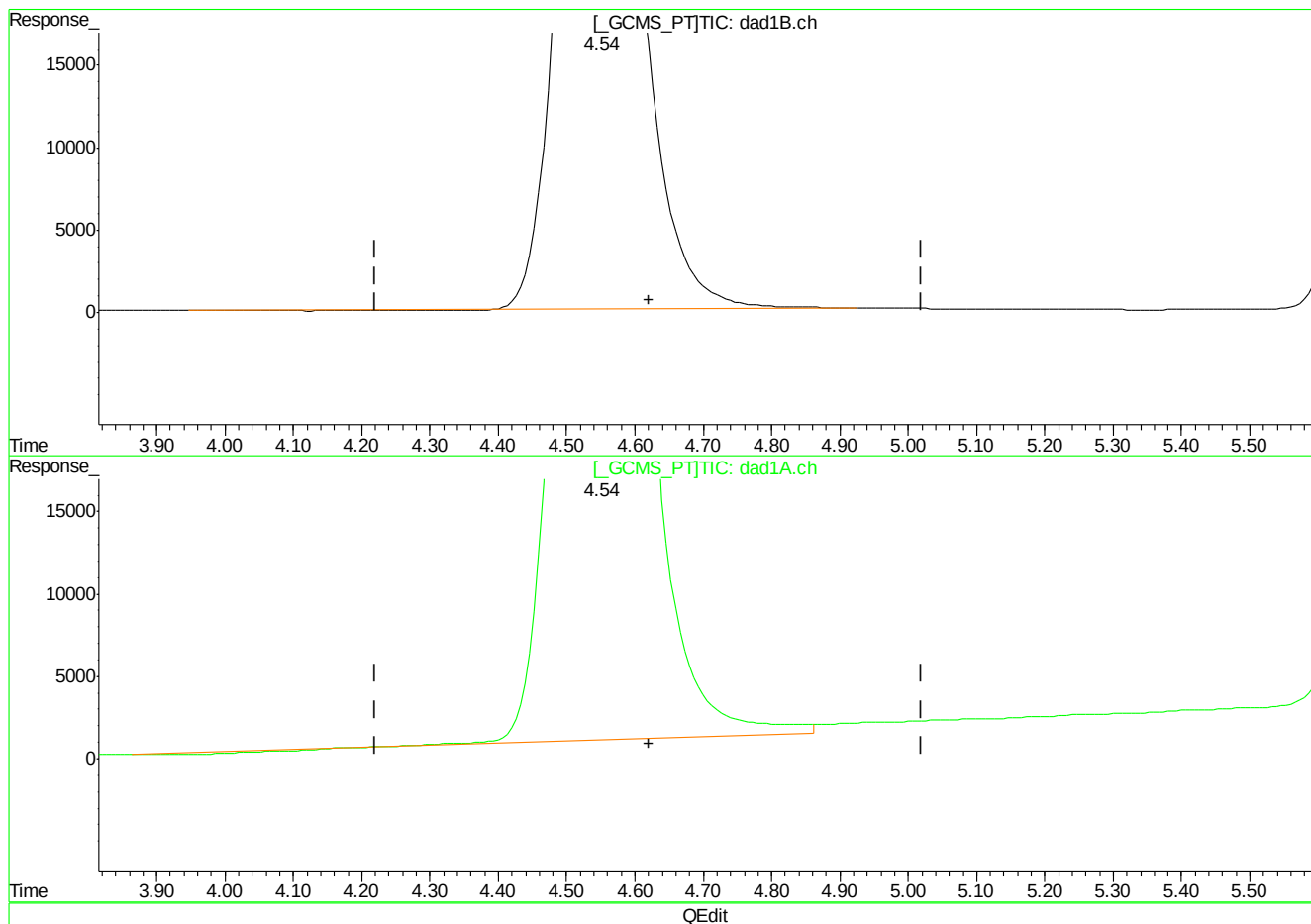
Supervisor approved: 04/17/23 14:47 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3,5-Trinitrobenzene	99-35-4	2	4.54	Poor instrument integration
1,3-Dinitrobenzene	99-65-0	2	5.72	Poor instrument integration
PETN	78-11-5	2	18.28	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076380.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076380.D\dad1A.ch
Acq On : 14-Apr-2023, 12:31:32 Operator: fouads
Sample : ic2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:59 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.55min 985.149ppb

response 3791538

(6) 1,3,5-Trinitrobenzene #2

4.55min 990.912ppb

response 6082438

(+) = Expected Retention Time

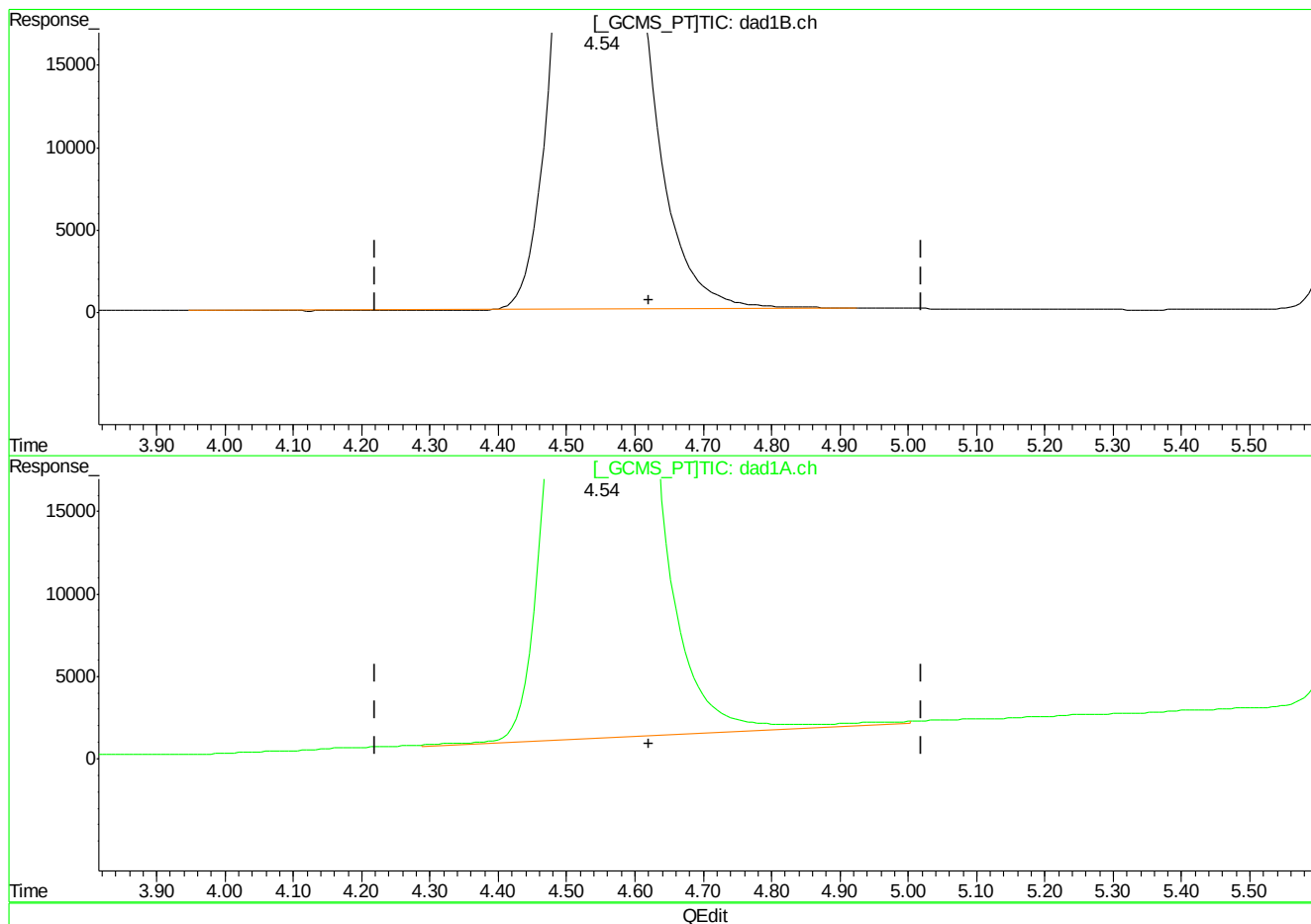
BB076380.D BBB2349_041423.M

Fri Apr 14 13:00:08 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076380.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076380.D\dad1A.ch
Acq On : 14-Apr-2023, 12:31:32 Operator: fouads
Sample : ic2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:59 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.55min 985.149ppb

response 3791538

(6) 1,3,5-Trinitrobenzene #2

4.54min 989.983ppb m

response 6076736

(+) = Expected Retention Time

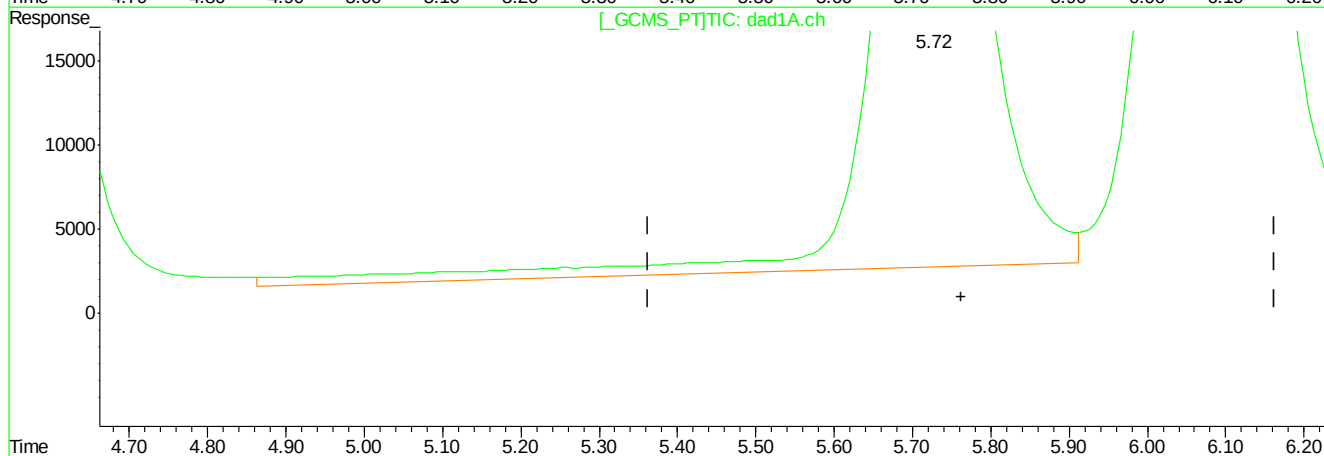
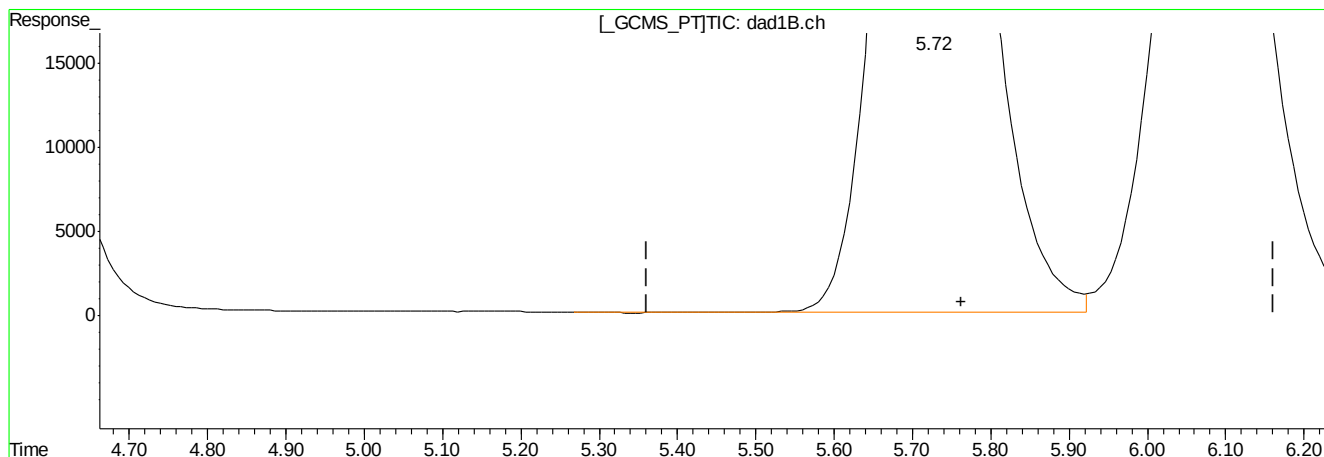
BB076380.D BBB2349_041423.M

Fri Apr 14 13:00:14 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076380.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076380.D\dad1A.ch
Acq On : 14-Apr-2023, 12:31:32 Operator: fouads
Sample : ic2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:59 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.72min 945.105ppb

response 4956555

(7) 1,3-Dinitrobenzene #2

5.72min 993.008ppb

response 3769194

(+) = Expected Retention Time

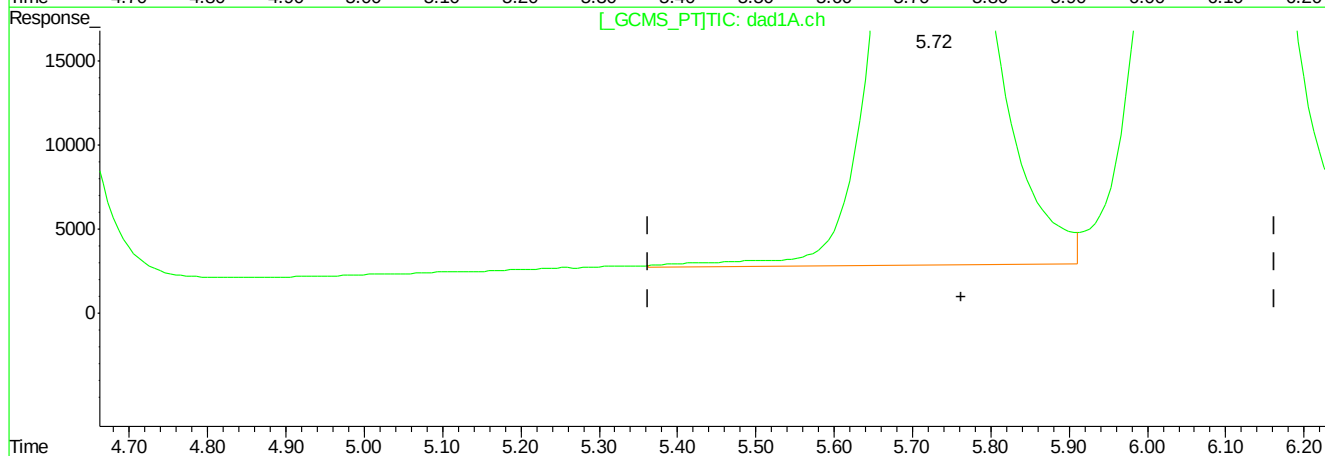
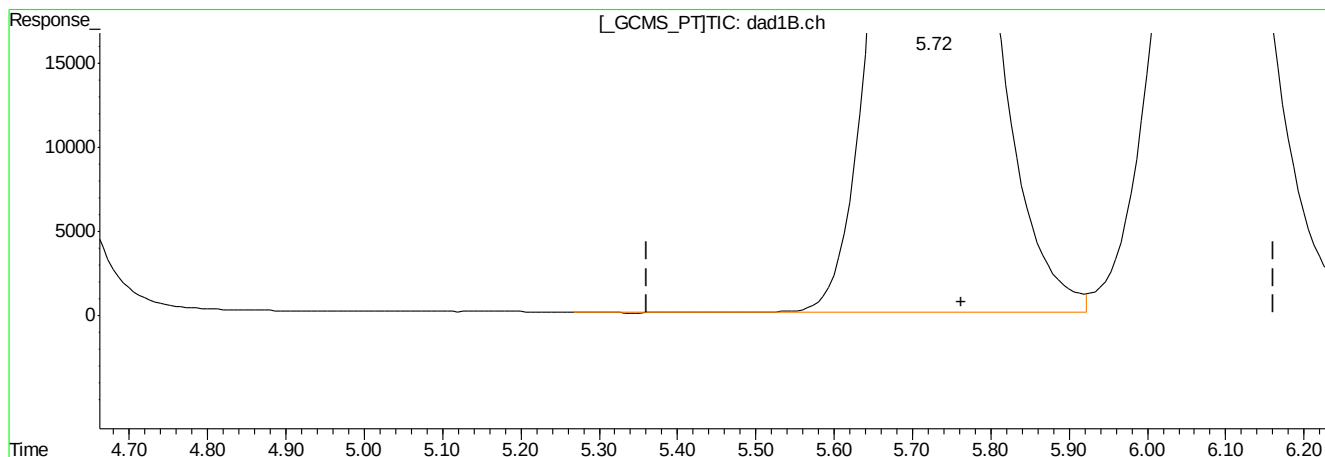
BB076380.D BBB2349_041423.M

Fri Apr 14 13:00:20 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076380.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076380.D\dad1A.ch
Acq On : 14-Apr-2023, 12:31:32 Operator: fouads
Sample : ic2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:59 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

5.72min 945.105ppb

response 4956555

(7) 1,3-Dinitrobenzene #2

5.72min 932.534ppb m

response 3539649

(+) = Expected Retention Time

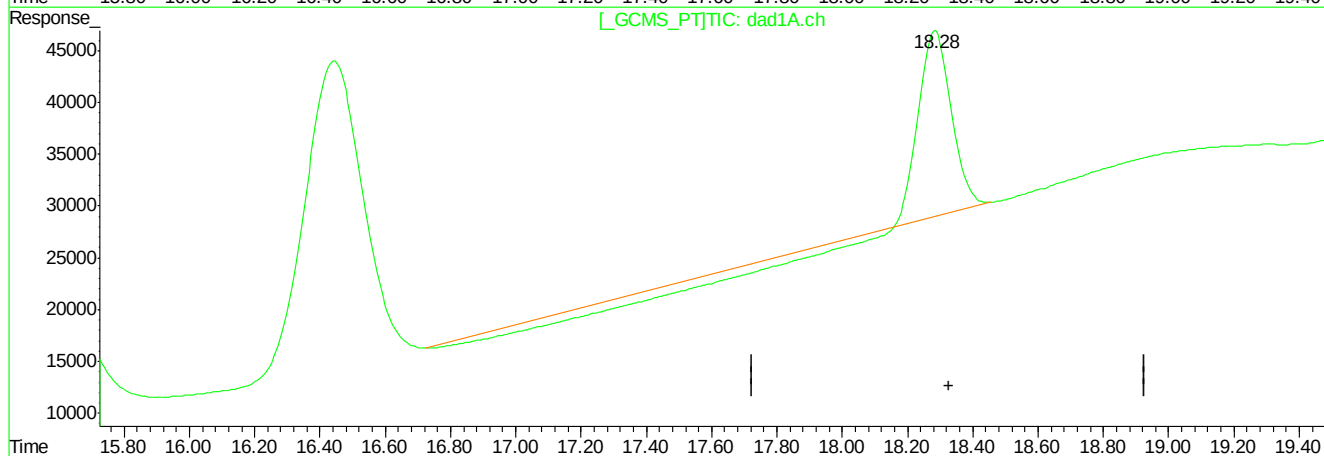
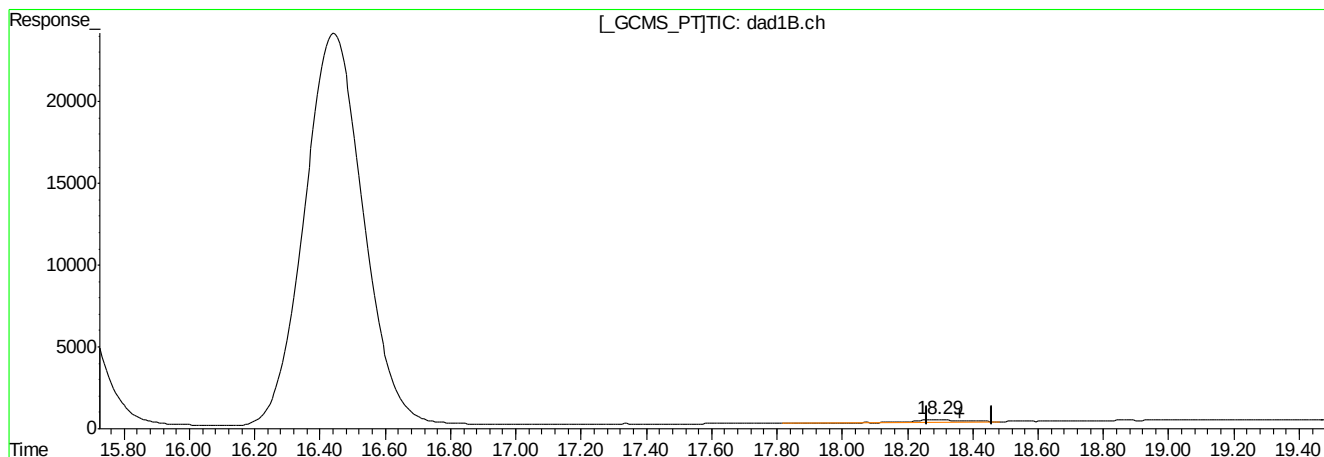
BB076380.D BBB2349_041423.M

Fri Apr 14 13:00:29 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076380.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076380.D\dad1A.ch
Acq On : 14-Apr-2023, 12:31:32 Operator: fouads
Sample : ic2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:59 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

18.29min 0.000ppb

response 15820

(21) PETN #2

18.29min 481.144ppb

response 619150

(+) = Expected Retention Time

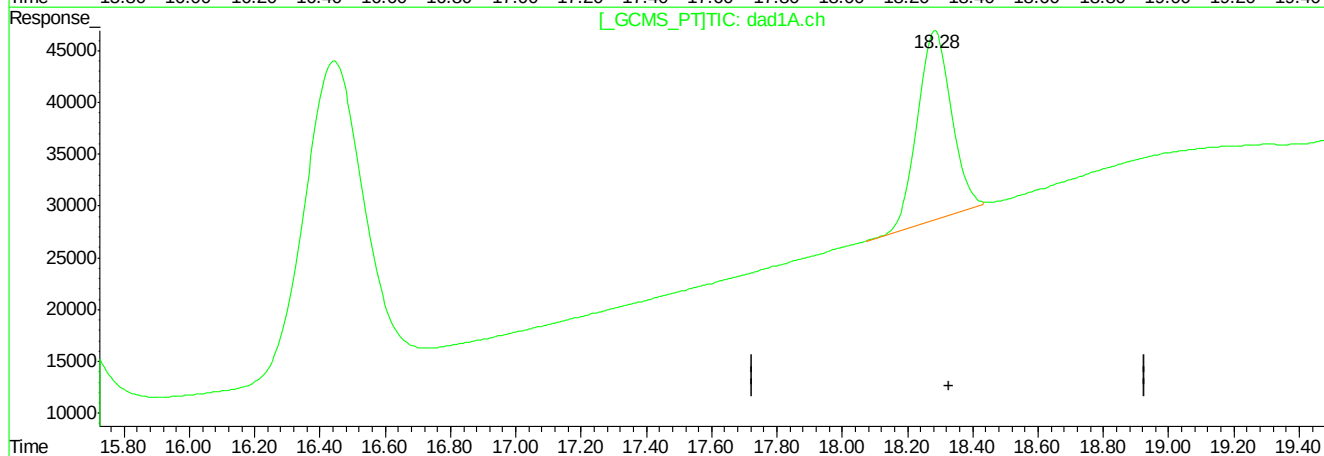
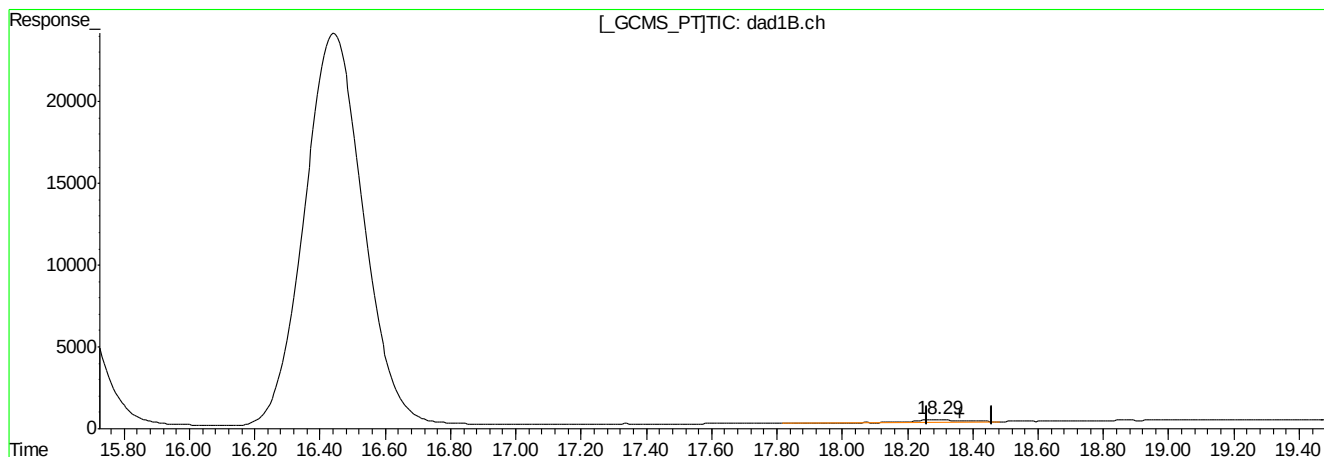
BB076380.D BBB2349_041423.M

Fri Apr 14 13:00:44 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076380.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076380.D\dad1A.ch
Acq On : 14-Apr-2023, 12:31:32 Operator: fouads
Sample : ic2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 12:59 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(21) PETN

18.29min 0.000ppb

response 15820

(21) PETN #2

18.28min 1030.694ppb m

response 1326328

(+) = Expected Retention Time

BB076380.D BBB2349_041423.M

Fri Apr 14 13:00:52 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076381.D\dad1B.ch Vial: 9
 Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076381.D\dad1A.ch
 Acq On : 14-Apr-2023, 13:02:31 Operator: fouads
 Sample : ic2349-2500 Inst : G1315B
 Misc : op96339,GBB2349,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Apr 14 13:27:52 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Apr 14 10:52:34 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	10.84	10.84	5596996	10079375	2569.163	2909.219
Spiked Amount	500.000	Range	70 - 136	Recovery	= 513.83%#	581.84%#
Target Compounds						
1) TNX	1.28	1.28	3855748	5913883	987.556	1000.940
2) HMX	1.42	1.42	3704833	10225741	2380.950	2490.861
3) DNx	1.65	1.65	6864758	10814188	2169.595	2176.274
4) MNX	2.22	2.22	7365826	11281655	2537.400	2526.324
5) RDX	2.82	2.82	4441893	7022645	2368.368	2391.191
6) 1,3,5-Trinitrobe	4.54	4.54	9611983	15296550	2497.467	2492.016m
7) 1,3-Dinitrobenze	5.72	5.72	12504264	8637466	2384.287	2275.572m
8) 3,5-Dinitroanili	6.08	6.08	9447180	16043602	2398.244	2400.848
9) Nitrobenzene	7.24	7.24	7342725	7226094	2627.502	2619.336
10) Nitroglycerin	0.00	8.70	0	3074425	N.D.	2358.554 #
11) Tetryl	9.19	9.19	7014980	11351436	2953.675	3017.732
12) 2,4,6-Trinitroto	9.55	9.55	8959781	10939028	2388.721	2505.926
13) 2-Amino-4,6-Dini	9.92	9.92	7924939	11942502	2452.609	2737.849
14) 4-Amino-2,6-Dini	10.36	10.36	5917816	11861240	2466.478	2538.367
16) 2,4-Dinitrotolue	11.48	11.48	11138204	7427699	2438.120	2556.649
17) 2,6-Dinitrotolue	11.92	11.92	6338568	8419048	2300.463	2559.671
18) o-Nitrotoluene	14.98	14.98	5251971	7575359	2689.201	2590.730
19) p-Nitrotoluene	15.55	15.55	8016369	6966865	2591.081	2711.436
20) m-Nitrotoluene	16.44	16.44	7634627	9210887	2570.629	2613.151
21) PETN	0.00	18.28	0	3389898	N.D. d	2634.303m

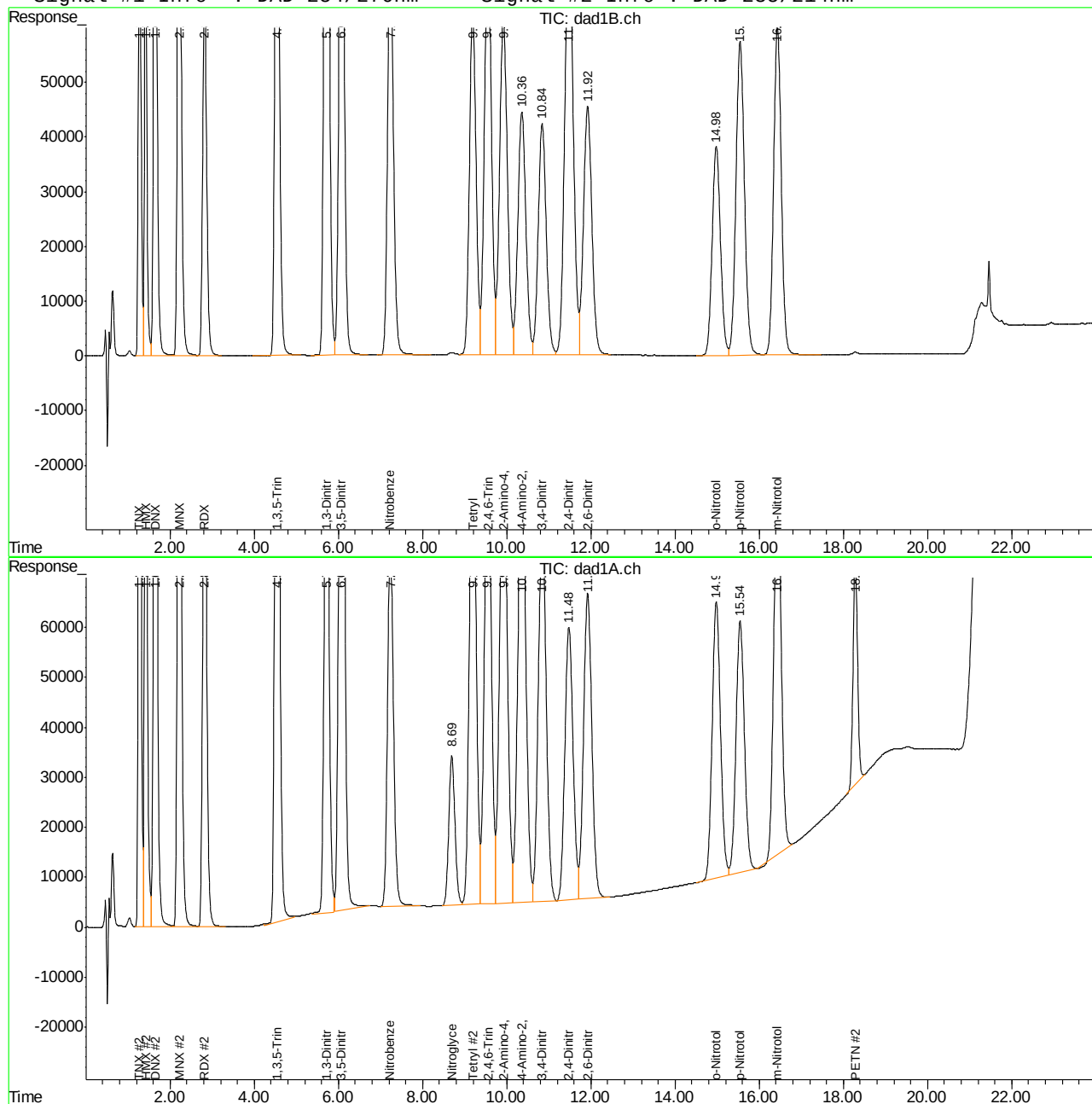
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB076381.D BBB2349_041423.M Mon Apr 17 11:46:40 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076381.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076381.D\dad1A.ch
Acq On : 14-Apr-2023, 13:02:31 Operator: fouads
Sample : ic2349-2500 Inst : G1315B
Misc : op96339, GBB2349, 1000,,, 10, 1, water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 14:42 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: GBB2349-IC2349

Method: SW846 8330B

Lab FileID: BB076381.D

Analyst approved: 04/17/23 11:45 William Hustedde

Injection Time: 04/14/23 13:02

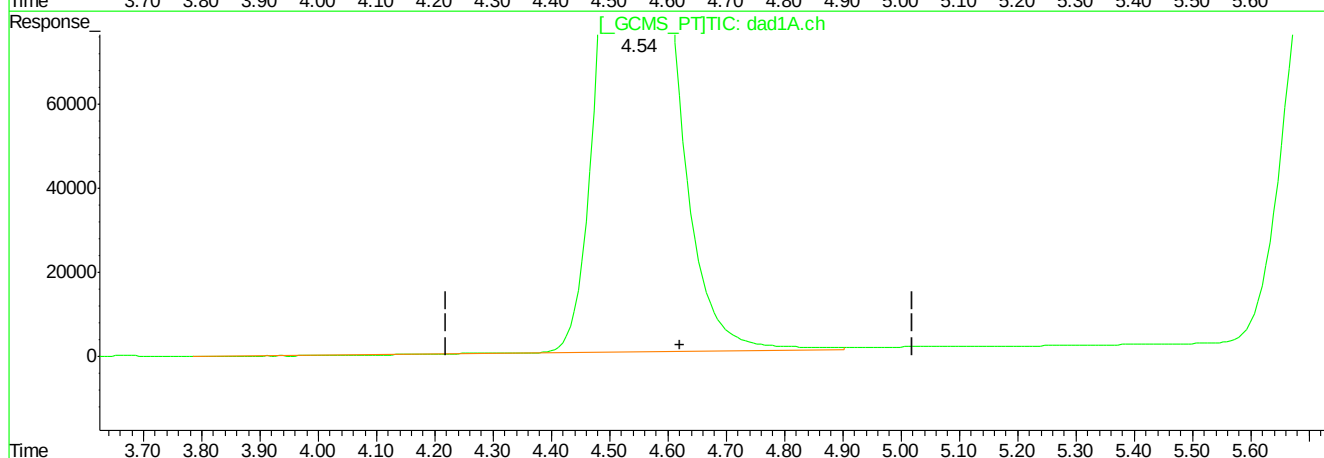
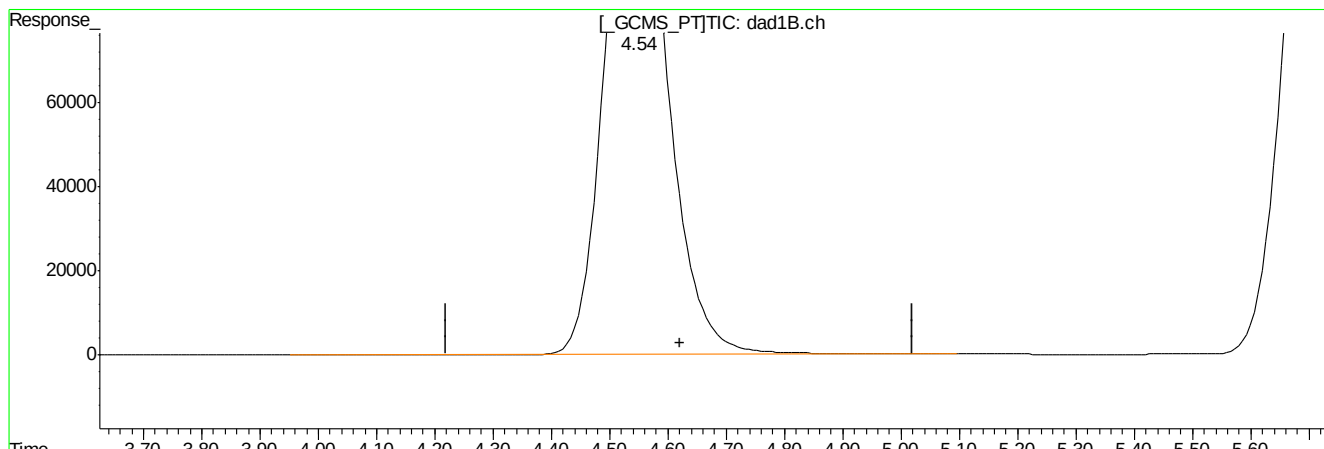
Supervisor approved: 04/17/23 14:47 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3,5-Trinitrobenzene	99-35-4	2	4.54	Poor instrument integration
1,3-Dinitrobenzene	99-65-0	2	5.72	Poor instrument integration
PETN	78-11-5	2	18.28	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076381.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076381.D\dad1A.ch
Acq On : 14-Apr-2023, 13:02:31 Operator: fouads
Sample : ic2349-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 13:27 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.54min 2497.467ppb

response 9611983

(6) 1,3,5-Trinitrobenzene #2

4.54min 2474.933ppb

response 15191692

(+) = Expected Retention Time

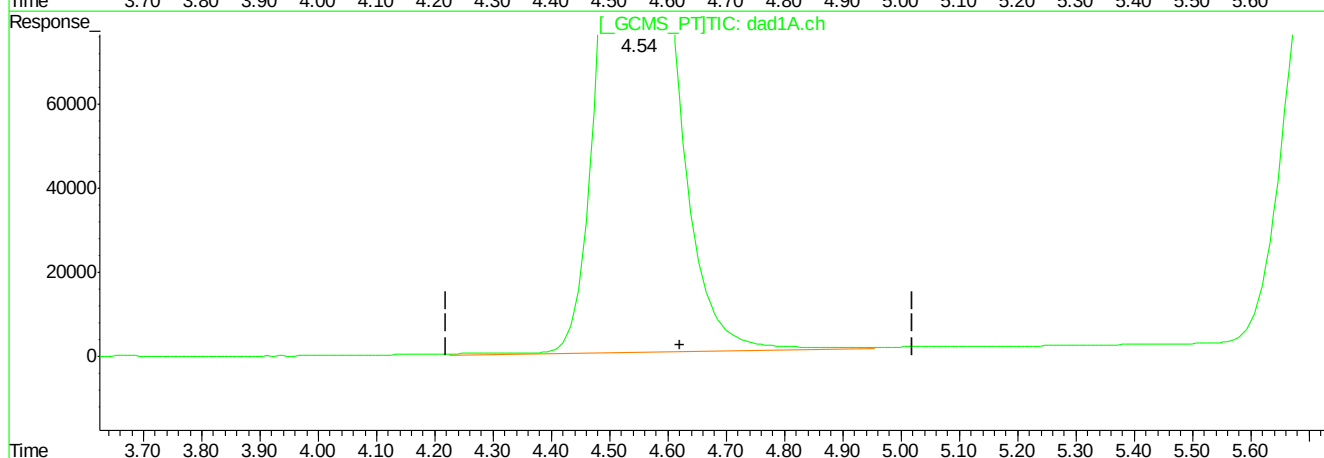
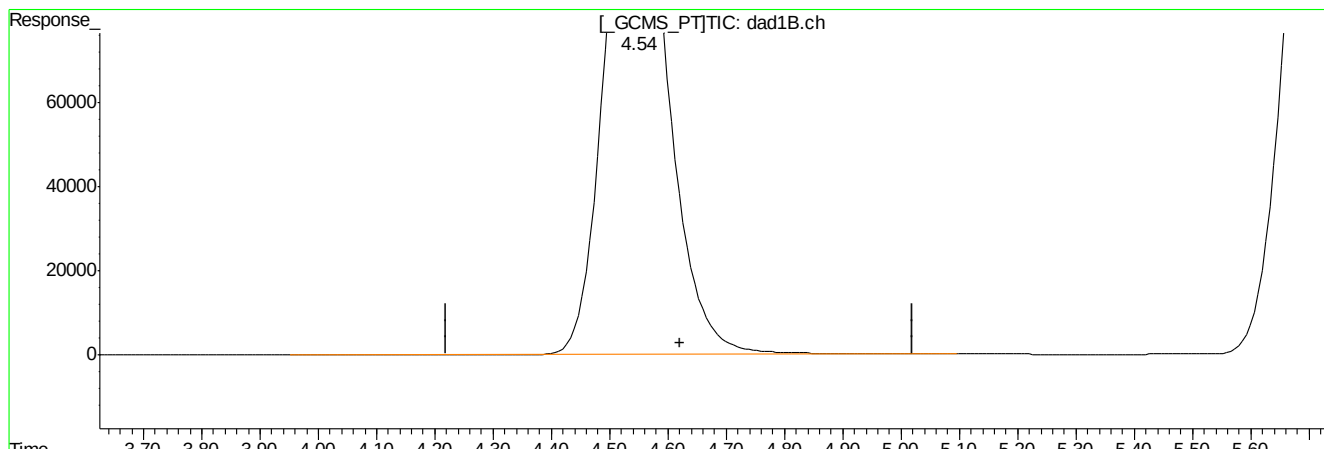
BB076381.D BBB2349_041423.M

Fri Apr 14 13:28:07 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076381.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076381.D\dad1A.ch
Acq On : 14-Apr-2023, 13:02:31 Operator: fouads
Sample : ic2349-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 13:27 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.54min 2497.467ppb

response 9611983

(6) 1,3,5-Trinitrobenzene #2

4.54min 2492.016ppb m

response 15296550

(+) = Expected Retention Time

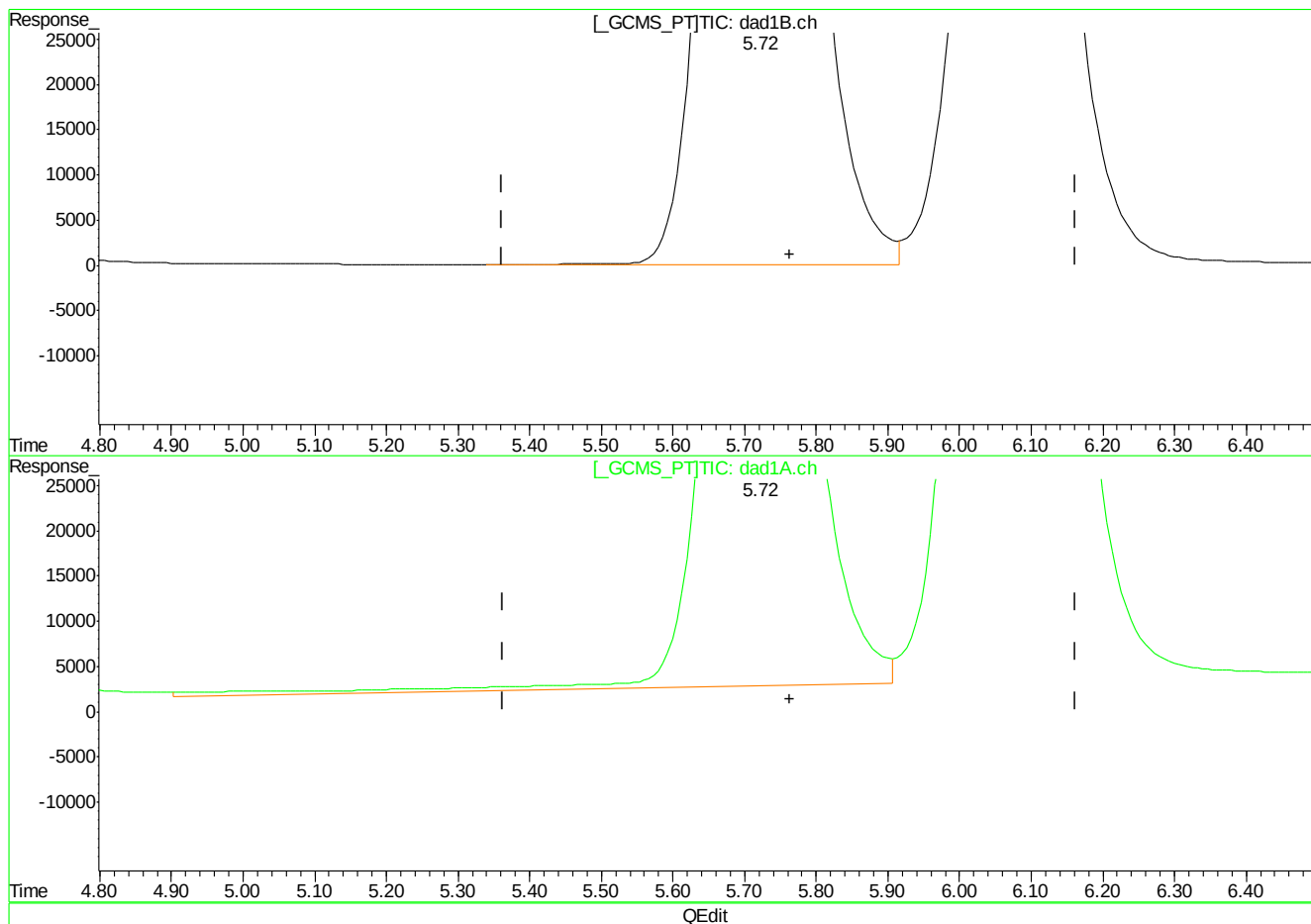
BB076381.D BBB2349_041423.M

Fri Apr 14 13:28:14 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076381.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076381.D\dad1A.ch
Acq On : 14-Apr-2023, 13:02:31 Operator: fouads
Sample : ic2349-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 13:27 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.72min 2384.287ppb

response 12504264

(7) 1,3-Dinitrobenzene #2

5.72min 2312.893ppb

response 8779127

(+) = Expected Retention Time

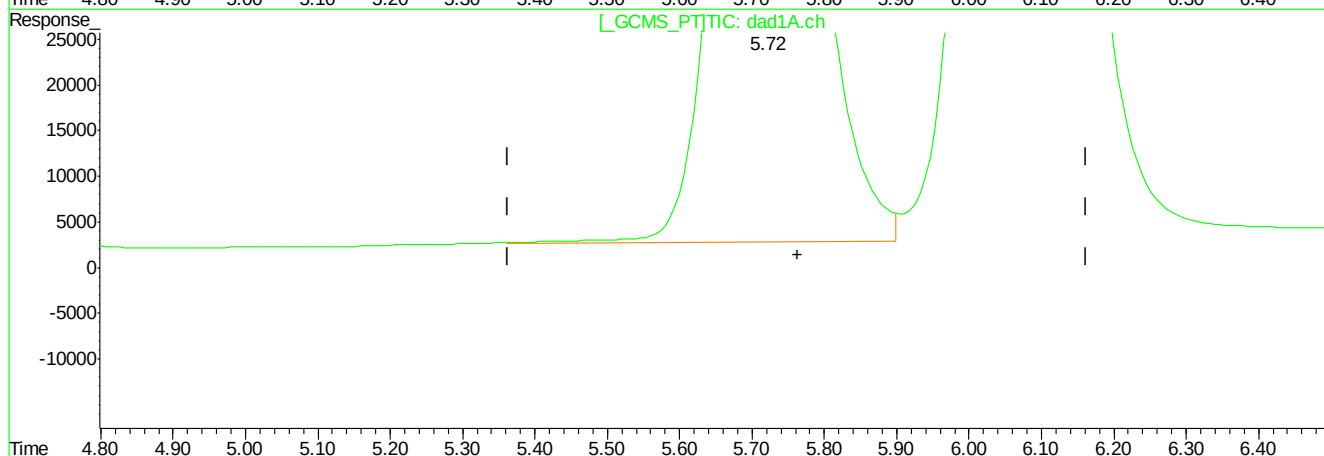
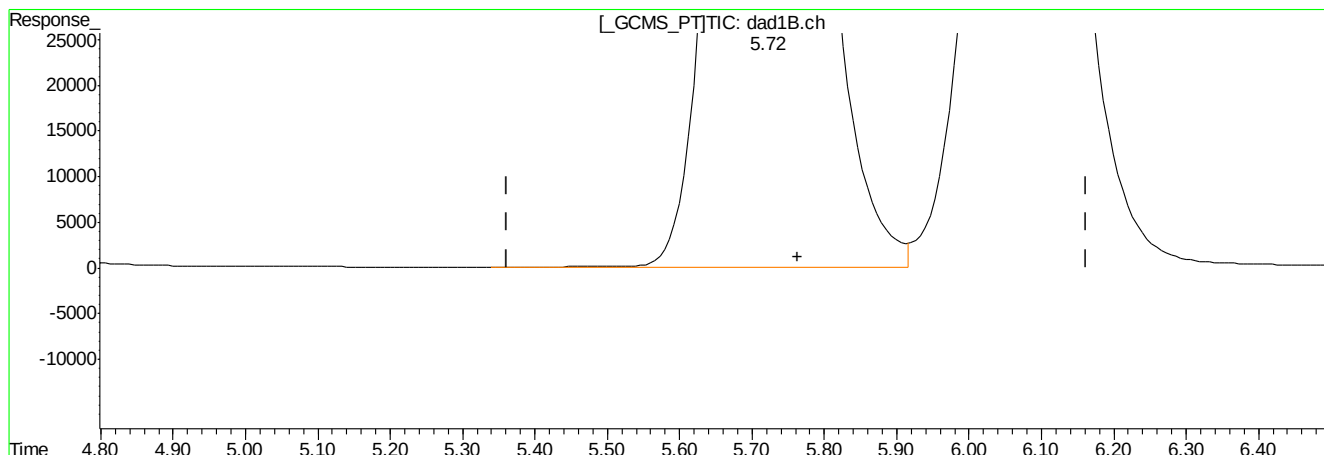
BB076381.D BBB2349_041423.M

Fri Apr 14 13:28:21 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076381.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076381.D\dad1A.ch
Acq On : 14-Apr-2023, 13:02:31 Operator: fouads
Sample : ic2349-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 13:27 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.72min 2384.287ppb

response 12504264

(7) 1,3-Dinitrobenzene #2

5.72min 2275.572ppb m

response 8637466

(+) = Expected Retention Time

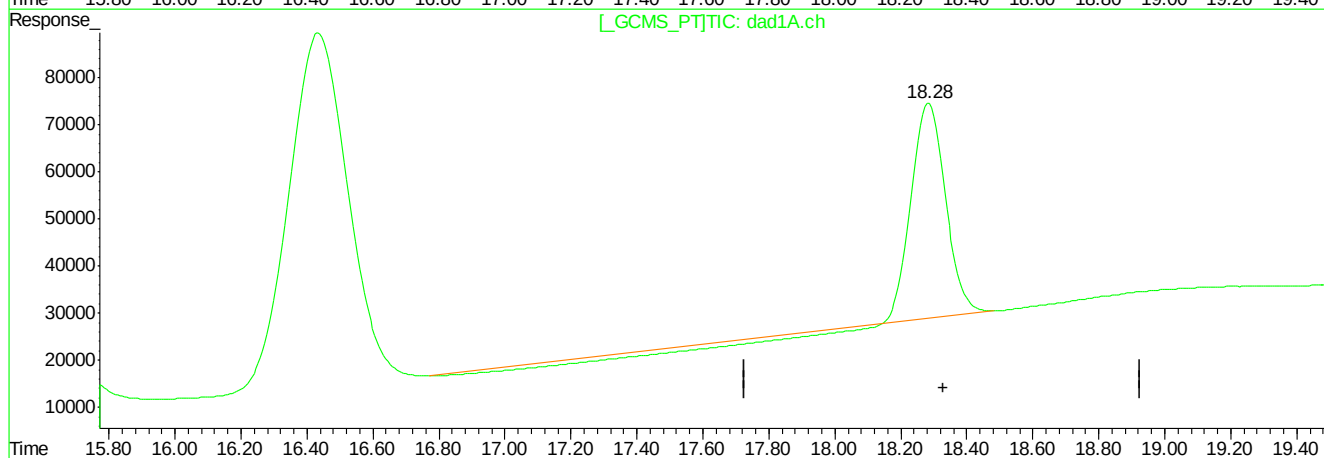
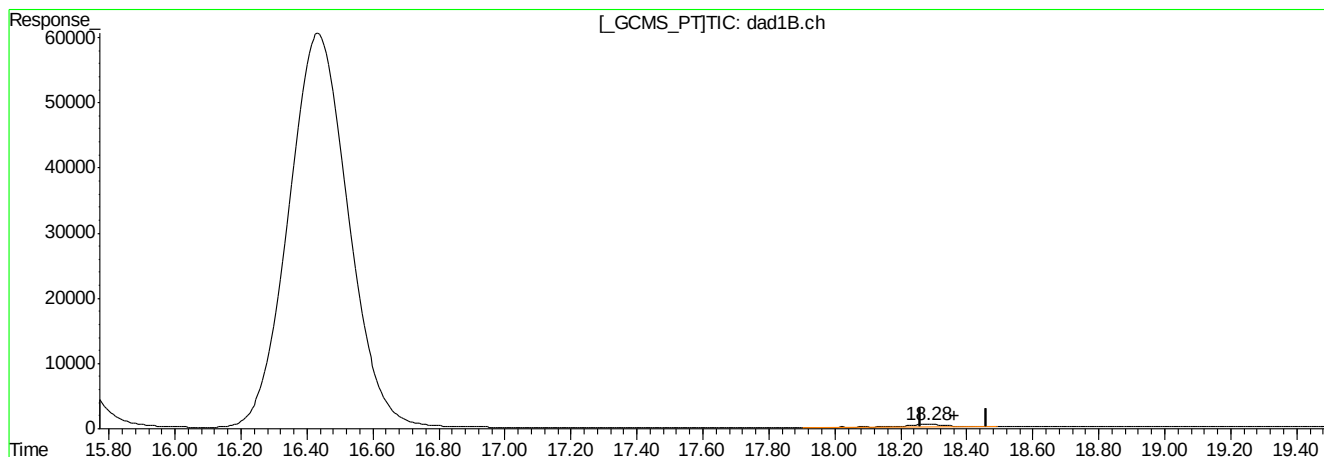
BB076381.D BBB2349_041423.M

Fri Apr 14 13:28:35 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076381.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076381.D\dad1A.ch
Acq On : 14-Apr-2023, 13:02:31 Operator: fouads
Sample : ic2349-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 13:27 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(21) PETN

18.28min 0.000ppb

response 32738

(21) PETN #2

18.28min 2081.024ppb

response 2677922

(+) = Expected Retention Time

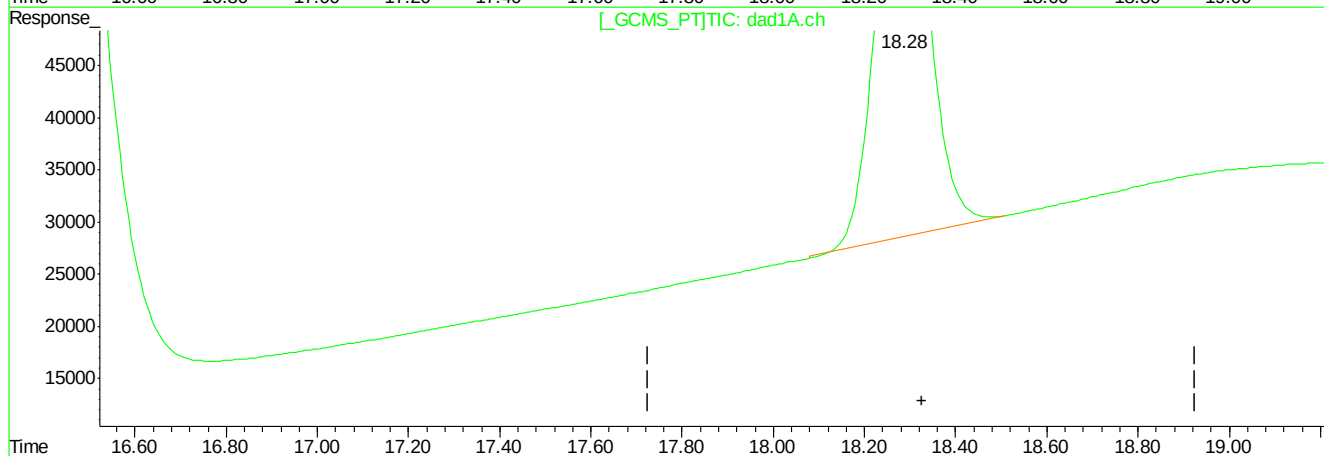
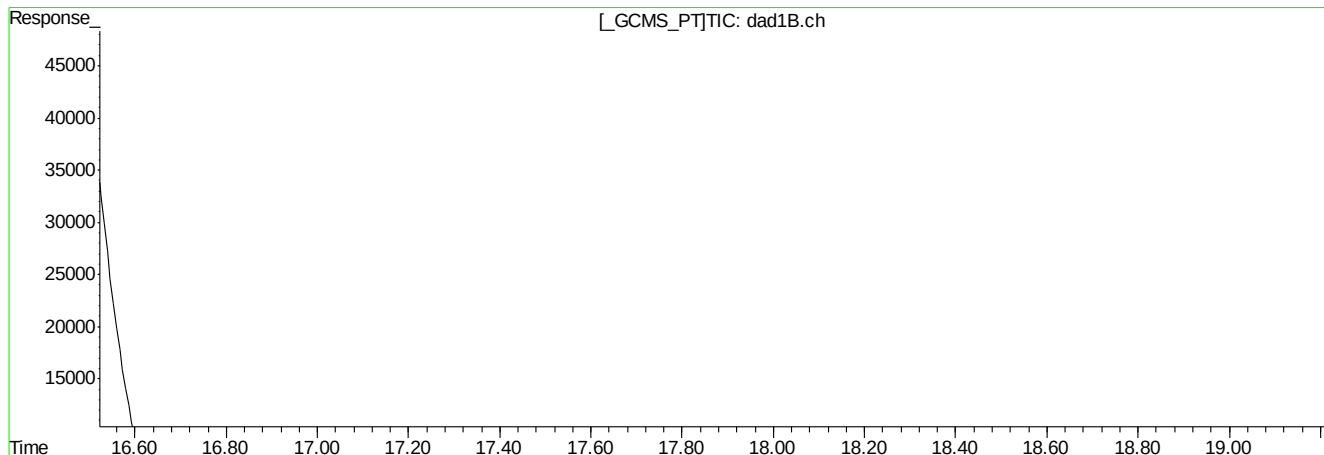
BB076381.D BBB2349_041423.M

Fri Apr 14 13:28:52 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076381.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076381.D\dad1A.ch
Acq On : 14-Apr-2023, 13:02:31 Operator: fouads
Sample : ic2349-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 13:27 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

18.28min 0.000ppb

response 32738

(21) PETN #2

18.28min 2634.303ppb m

response 3389898

(+) = Expected Retention Time

BB076381.D BBB2349_041423.M

Fri Apr 14 13:29:00 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076382.D\dad1B.ch Vial: 10
 Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076382.D\dad1A.ch
 Acq On : 14-Apr-2023, 13:33:32 Operator: fouads
 Sample : ic2349-5000 Inst : G1315B
 Misc : op96339,GBB2349,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Apr 14 14:38:53 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Apr 14 10:52:34 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	10.86	10.86	11267878	20471322	5172.241	5908.656
Spiked Amount	500.000	Range	70 - 136	Recovery	= 1034.45%#	1181.73%#
Target Compounds						
1) TNX	1.28	1.28	7705900	11745796	1973.678	1988.006
2) HMX	1.43	1.43	7355485	20264466	4727.081	4936.167
3) DNx	1.65	1.65	13714604	21519057	4334.478	4330.549
4) MNX	2.22	2.22	14743124	22601784	5078.752	5061.264
5) RDX	2.82	2.82	8898369	14097820	4744.511	4800.269
6) 1,3,5-Trinitrobe	4.55	4.55	19317478	30463477	5019.231	4962.915
7) 1,3-Dinitrobenze	5.72	5.72	25075818	17191399	4781.404	4529.138m
8) 3,5-Dinitroanili	6.08	6.08	18965015	32041282	4814.424	4794.823
9) Nitrobenzene	7.24	7.24	14582523	14352331	5218.173	5202.475
10) Nitroglycerin	0.00	8.70	0	6219593	N.D. d	4771.379
11) Tetryl	9.21	9.21	14016779	22755127	5901.800	6049.356
12) 2,4,6-Trinitroto	9.57	9.57	17953234	21988712	4786.418	5037.201
13) 2-Amino-4,6-Dini	9.94	9.93	15889418	24046505	4917.455	5512.723
14) 4-Amino-2,6-Dini	10.38	10.38	11851898	23920990	4939.736	5119.216
16) 2,4-Dinitrotolue	11.49	11.49	22370888	15085906	4896.921	5192.640
17) 2,6-Dinitrotolue	11.94	11.94	12776101	16975605	4636.844	5161.150
18) o-Nitrotoluene	14.99	14.99	10438968	15100827	5345.133	5164.397
19) p-Nitrotoluene	15.56	15.56	15980314	13979217	5165.218	5440.575
20) m-Nitrotoluene	16.44	16.44	15178388	18596873	5110.662	5275.978
21) PETN	0.00	18.29	0	6826437	N.D. d	5304.851m

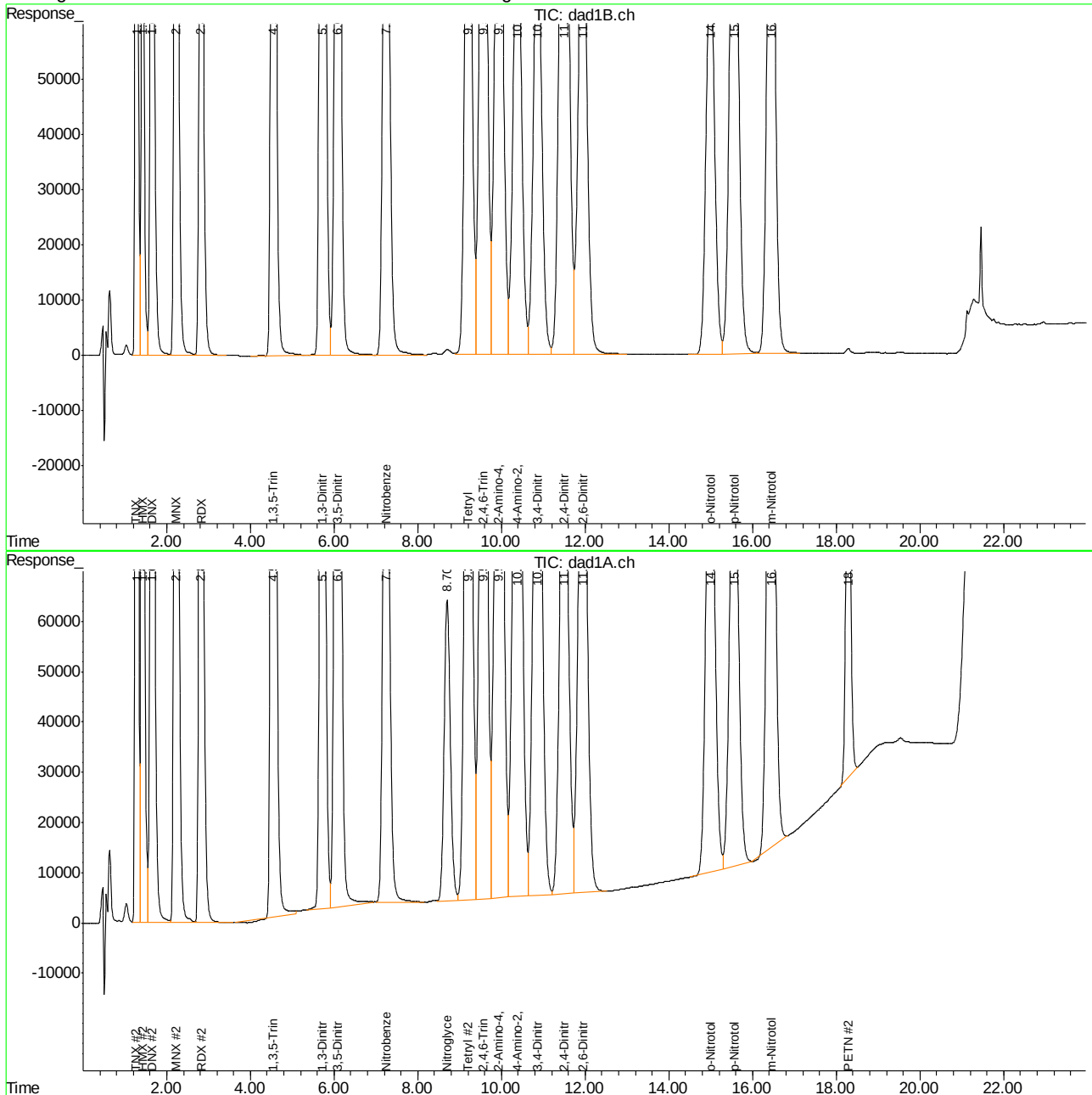
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB076382.D BBB2349_041423.M Mon Apr 17 11:46:41 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076382.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076382.D\dad1A.ch
Acq On : 14-Apr-2023, 13:33:32 Operator: fouads
Sample : ic2349-5000 Inst : G1315B
Misc : op96339, GBB2349, 1000,,, 10, 1, water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 14:42 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: GBB2349-IC2349

Method: SW846 8330B

Lab FileID: BB076382.D

Analyst approved: 04/17/23 11:45 William Hustedde

Injection Time: 04/14/23 13:33

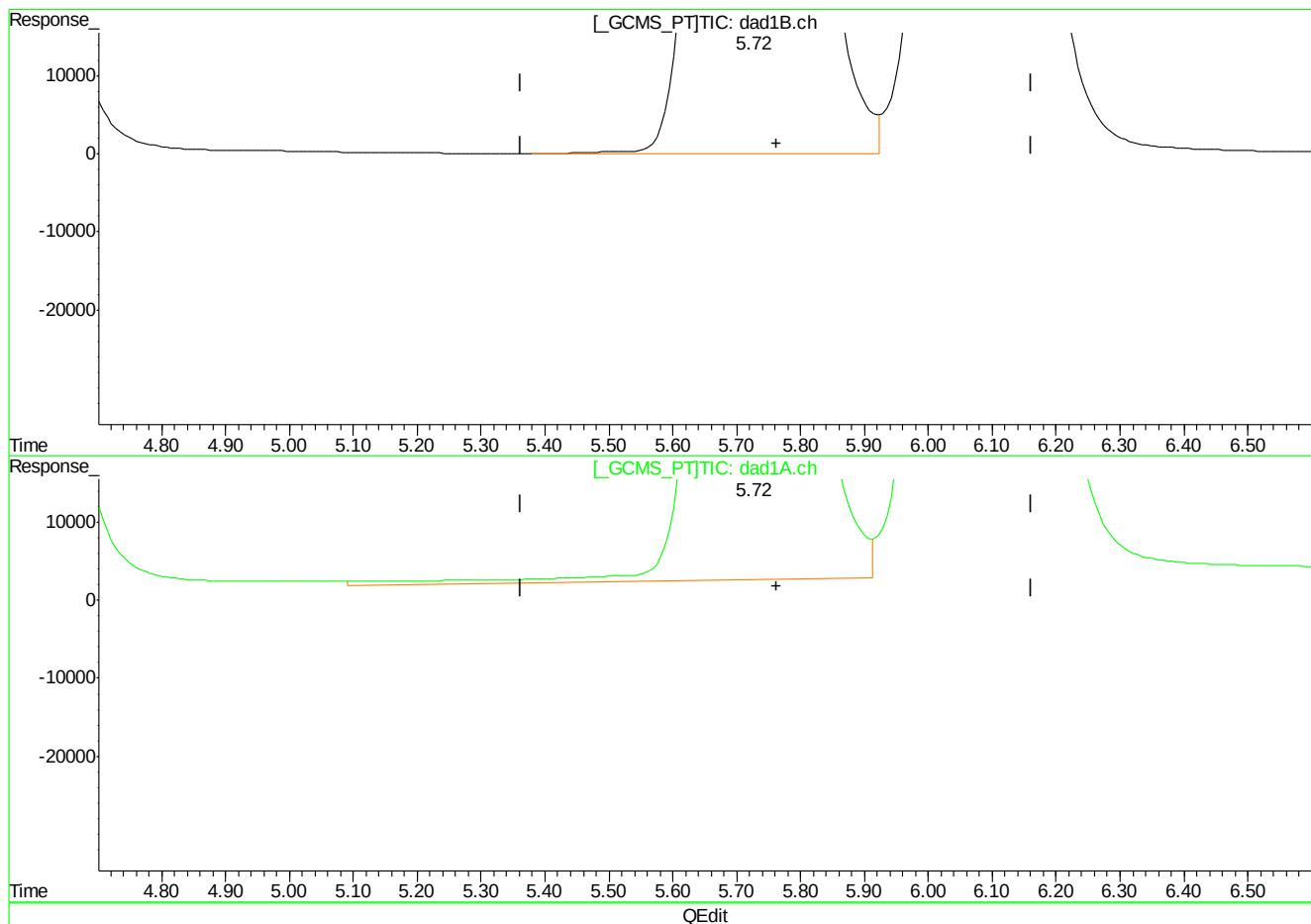
Supervisor approved: 04/17/23 14:47 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3-Dinitrobenzene	99-65-0	2	5.72	Poor instrument integration
PETN	78-11-5	2	18.29	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076382.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076382.D\dad1A.ch
Acq On : 14-Apr-2023, 13:33:32 Operator: fouads
Sample : ic2349-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 14:38 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.72min 4781.404ppb

response 25075818

(7) 1,3-Dinitrobenzene #2

5.72min 4562.095ppb

response 17316498

(+) = Expected Retention Time

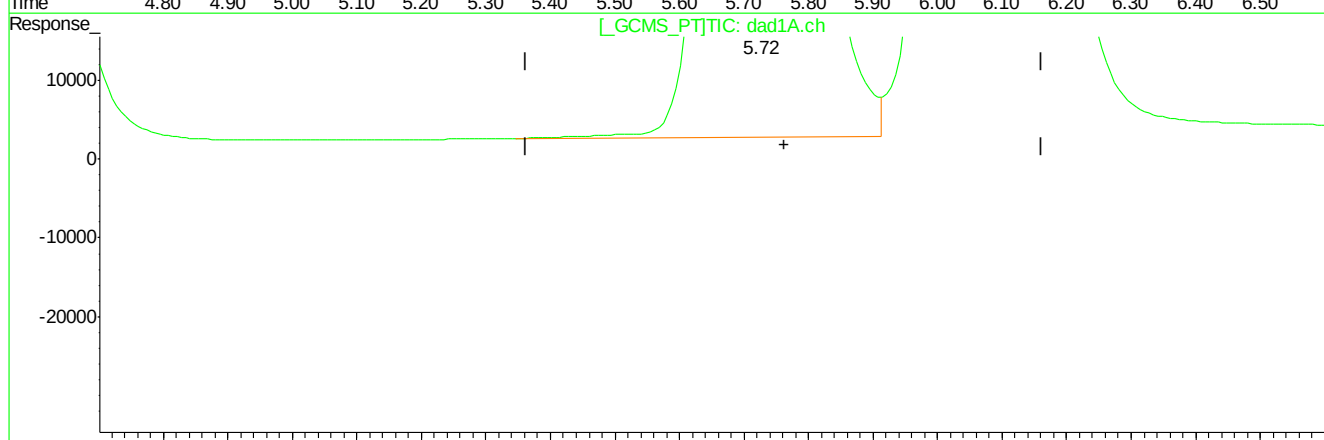
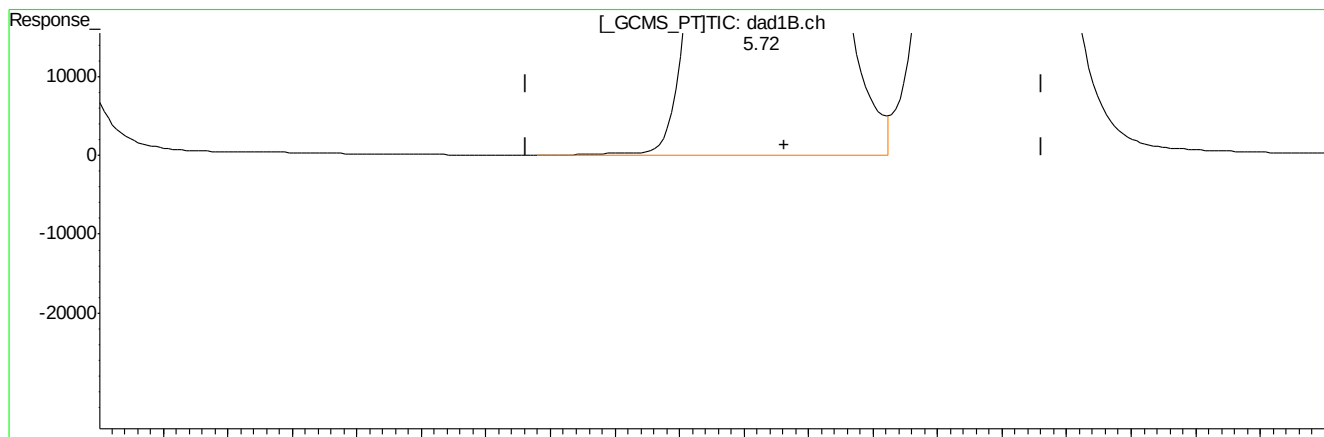
BB076382.D BBB2349_041423.M

Fri Apr 14 14:39:25 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076382.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076382.D\dad1A.ch
Acq On : 14-Apr-2023, 13:33:32 Operator: fouads
Sample : ic2349-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 14:38 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

5.72min 4781.404ppb

response 25075818

(7) 1,3-Dinitrobenzene #2

5.72min 4529.138ppb m

response 17191399

(+) = Expected Retention Time

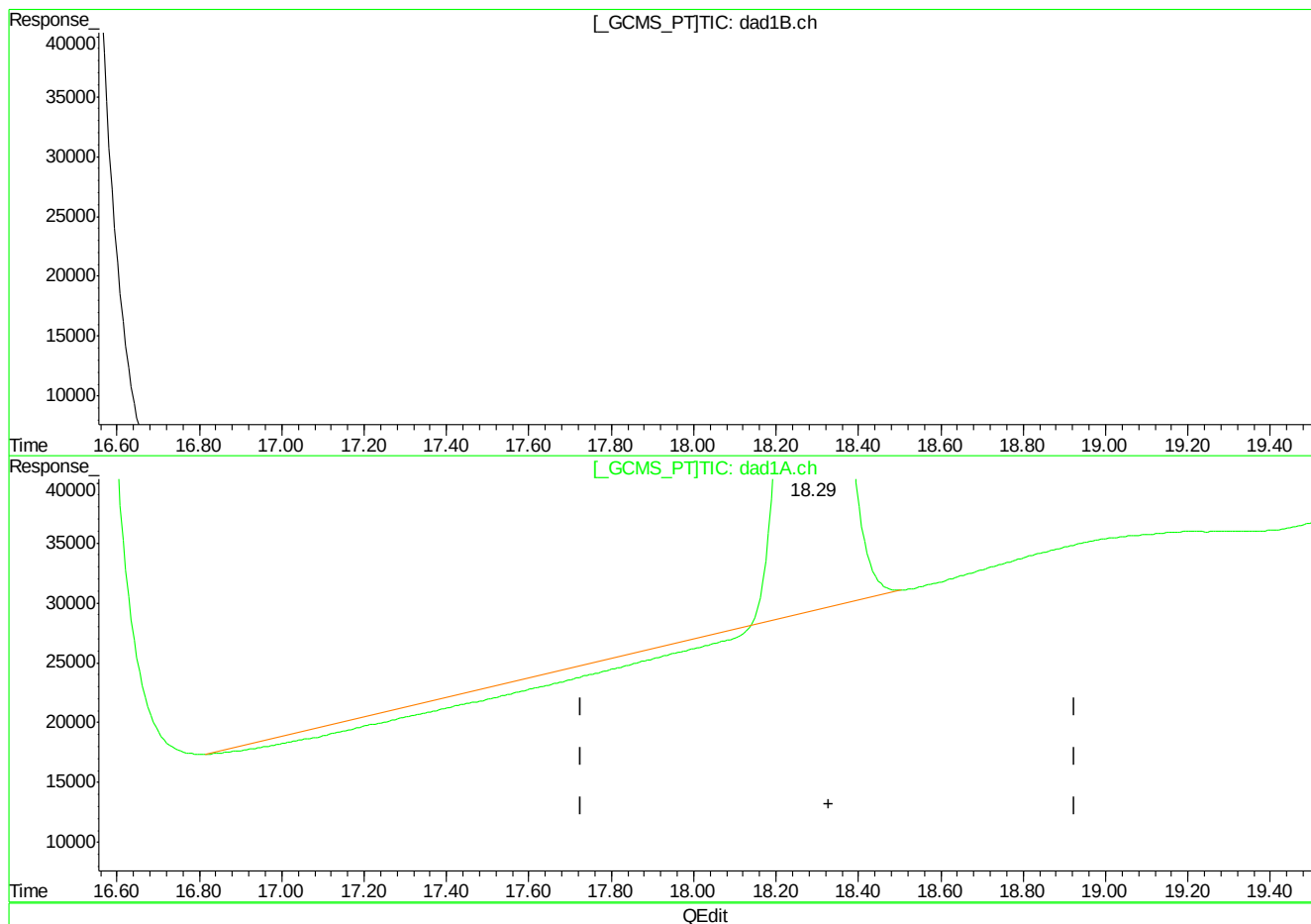
BB076382.D BBB2349_041423.M

Fri Apr 14 14:39:35 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076382.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076382.D\dad1A.ch
Acq On : 14-Apr-2023, 13:33:32 Operator: fouads
Sample : ic2349-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 14:38 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 10:52:34 2023
Response via : Multiple Level Calibration



(21) PETN

18.29min 0.000ppb

response 59099

(21) PETN #2

18.29min 4716.856ppb

response 6069788

(+) = Expected Retention Time

BB076382.D BBB2349_041423.M

Fri Apr 14 14:39:53 2023

Naresh Jiawan
04/17/23 14:47

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076383.D\dad1B.ch Vial: 11
 Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076383.D\dad1A.ch
 Acq On : 14-Apr-2023, 14:04:32 Operator: fouads
 Sample : icv2349-1000 Inst : G1315B
 Misc : op96339, GBB2349, 1000,,, 10, 1, water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Apr 14 14:45:48 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A, 8330B, 8332
 Last Update : Fri Apr 14 14:45:26 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	0.00	0.00	0	0	N.D.	N.D.
Spiked Amount	500.000	Range	70 - 136	Recovery	=	0.00%# 0.00%#
Target Compounds						
1) TNX	1.29	1.29	1733791	2637889	498.339	493.791
2) HMX	1.43	1.43	1565763	4388331	1062.534	1079.616
3) DNX	1.67	1.67	3095198	4918964	1013.045	1141.060
4) MNX	2.24	2.24	3340432	5118448	1213.971	1209.404
5) RDX	2.84	2.84	1864733	2953950	962.563	976.620
6) 1,3,5-Trinitrobe	4.56	4.56	4006883	6368956	961.585	960.217
7) 1,3-Dinitrobenze	5.74	5.73	5227372	3690411	966.410	958.757m
8) 3,5-Dinitroanili	6.10	6.10	4202617	7240655	1063.416	1041.931
9) Nitrobenzene	7.26	7.26	2946111	2908742	911.608	926.219
10) Nitroglycerin	0.00	8.70	0	1267591	N.D.	940.811 #
11) Tetryl	9.21	9.21	2844065	4628008	1015.179	939.590
12) 2,4,6-Trinitroto	9.57	9.57	3641992	4471860	1015.034	930.801
13) 2-Amino-4,6-Dini	9.96	9.96	3309857	5020861	1042.614	977.024
14) 4-Amino-2,6-Dini	10.40	10.40	2480226	5015351	1047.104	989.247
16) 2,4-Dinitrotolue	11.51	11.51	4587966	3106218	946.493	1029.374
17) 2,6-Dinitrotolue	11.95	11.95	2666279	3530181	967.472	1030.245
18) o-Nitrotoluene	15.01	15.01	2157136	3084062	929.104	970.472
19) p-Nitrotoluene	15.58	15.58	3224257	2768489	923.213	942.686
20) m-Nitrotoluene	16.46	16.46	3036905	3548449	906.444	950.478
21) PETN	0.00	18.29	0	1418121	N.D. d	1067.274m

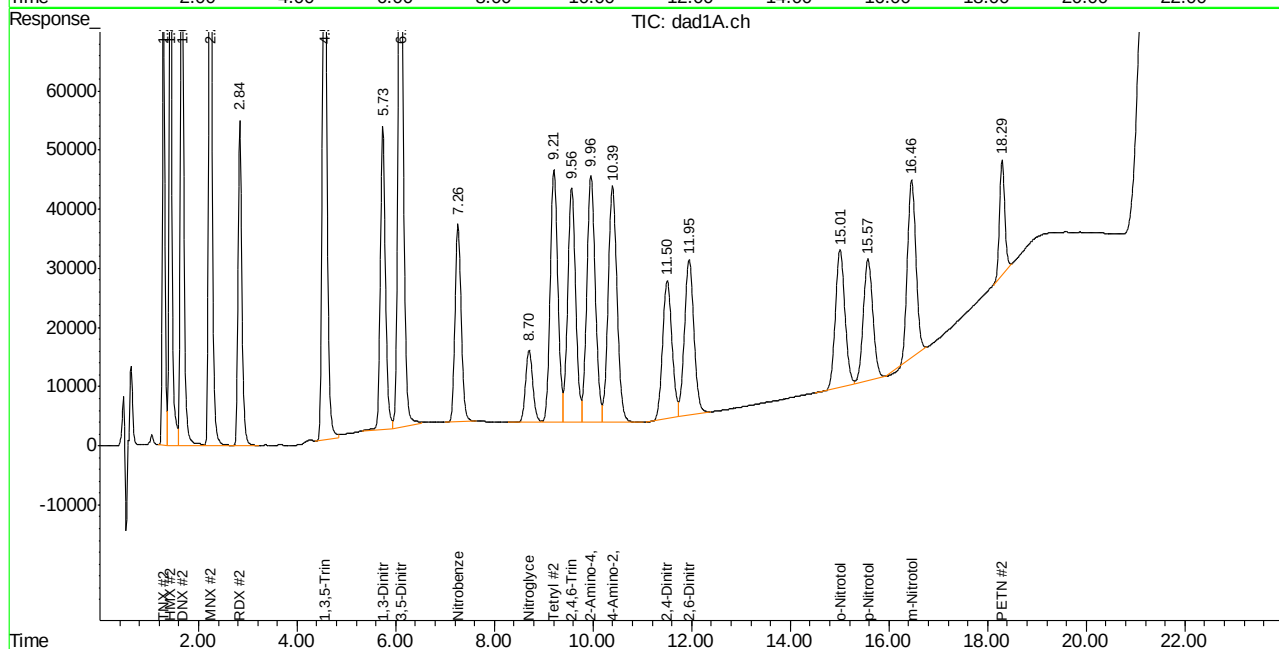
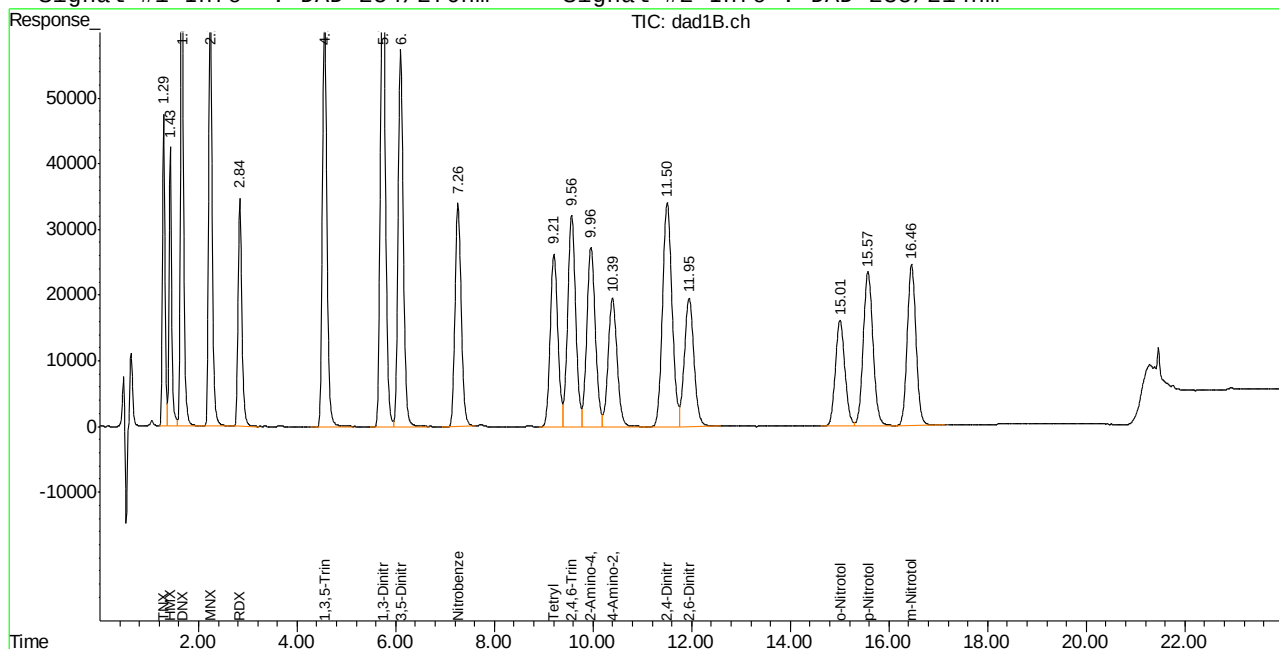
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB076383.D BBB2349_041423.M Mon Apr 17 13:02:44 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076383.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076383.D\dad1A.ch
Acq On : 14-Apr-2023, 14:04:32 Operator: fouads
Sample : icv2349-1000 Inst : G1315B
Misc : op96339, GBB2349, 1000,,, 10, 1, water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 14:46 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Fri Apr 14 14:45:26 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2349-ICV2349

Method:

SW846 8330B

Lab FileID:

BB076383.D

Analyst approved:

04/17/23 13:08 William Hustedde

Injection Time:

04/14/23 14:04

Supervisor approved:

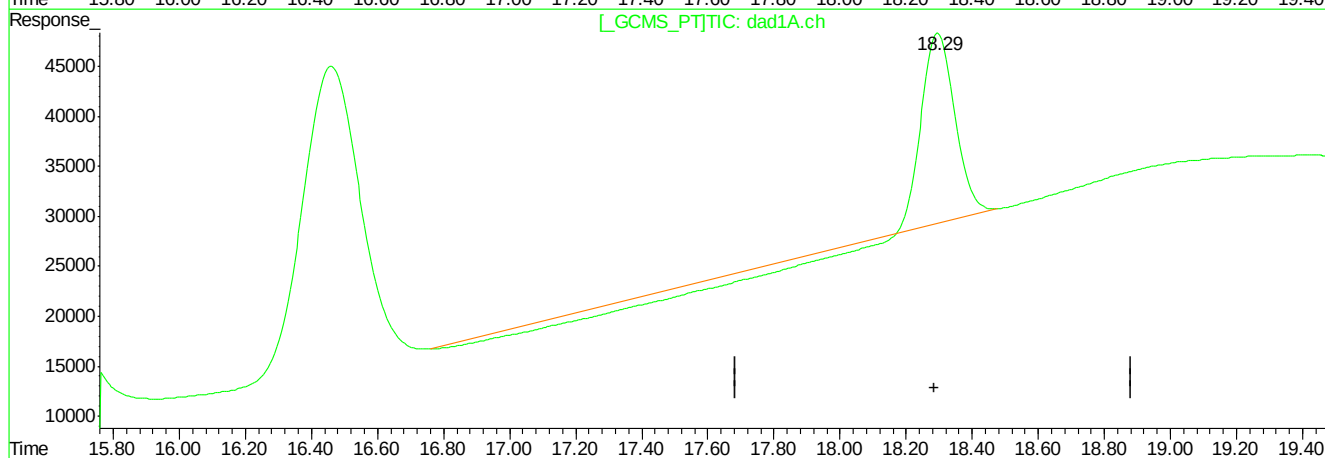
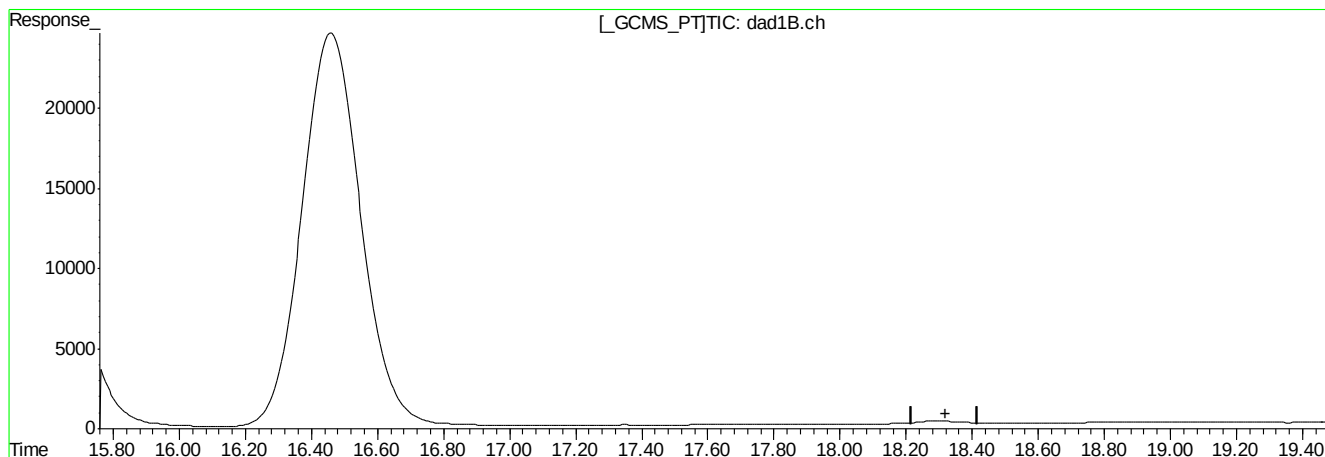
04/17/23 14:47 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3-Dinitrobenzene	99-65-0	2	5.73	Poor instrument integration
PETN	78-11-5	2	18.29	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076383.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076383.D\dad1A.ch
Acq On : 14-Apr-2023, 14:04:32 Operator: fouads
Sample : icv2349-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 14:45 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 14:45:26 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb d

response 0

(21) PETN #2

18.30min 576.310ppb

response 765761

QEdit

(+) = Expected Retention Time

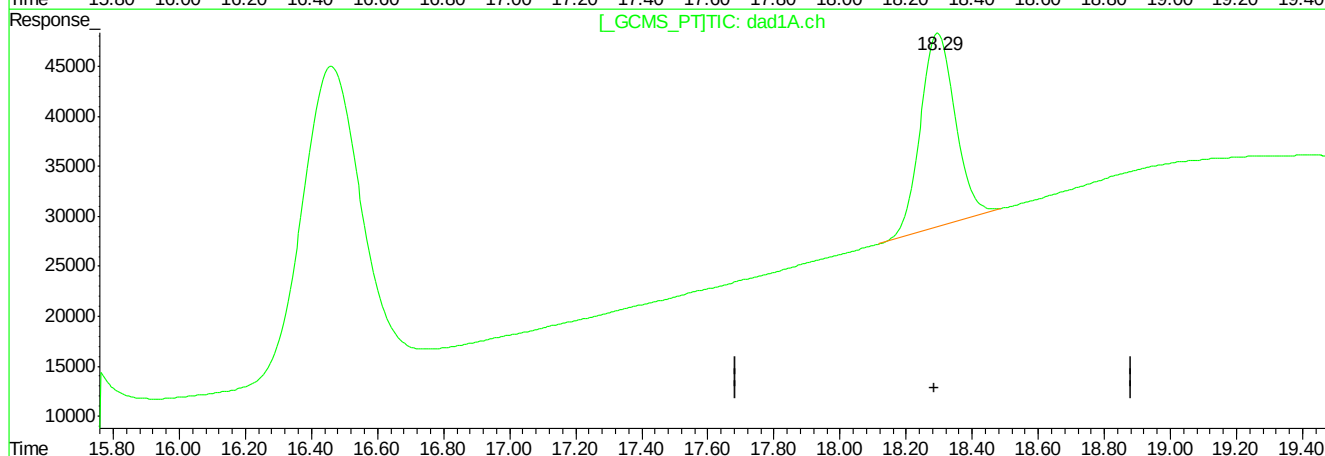
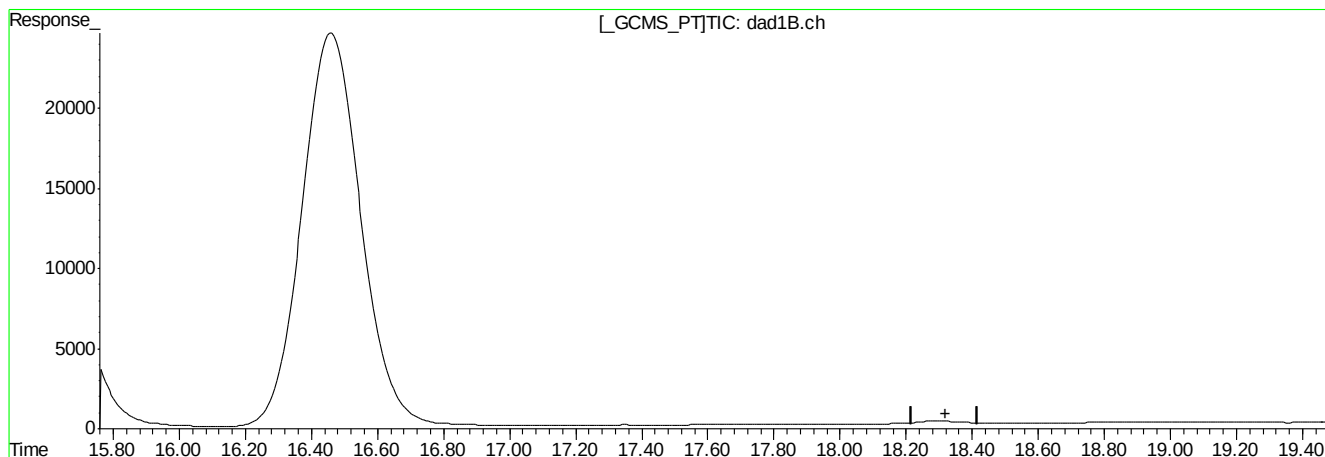
BB076383.D BBB2349_041423.M

Fri Apr 14 14:46:12 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076383.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076383.D\dad1A.ch
Acq On : 14-Apr-2023, 14:04:32 Operator: fouads
Sample : icv2349-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 14:45 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 14:45:26 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb d

response 0

(21) PETN #2

18.29min 1067.274ppb m

response 1418121

(+) = Expected Retention Time

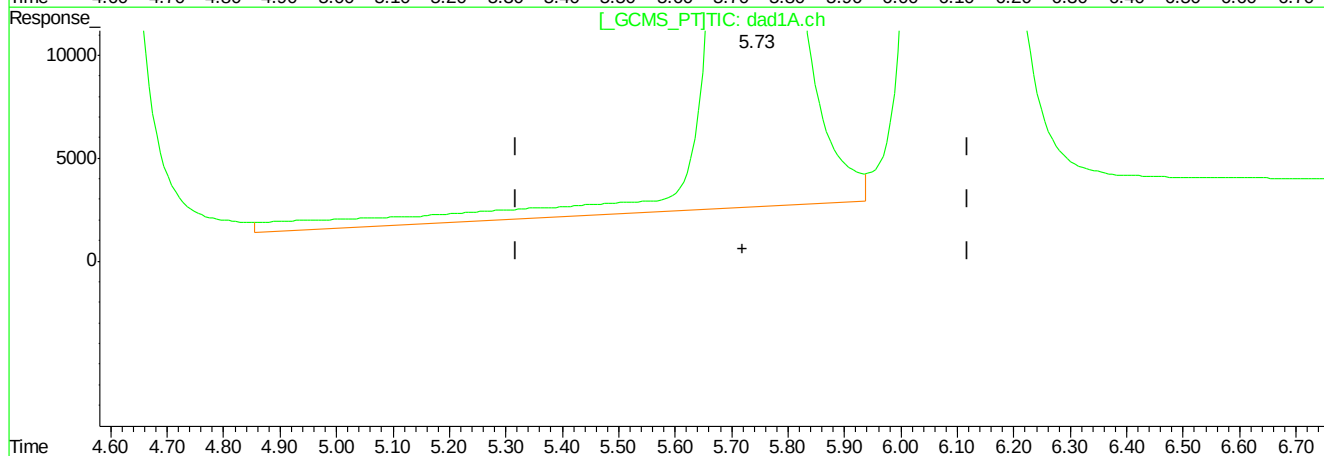
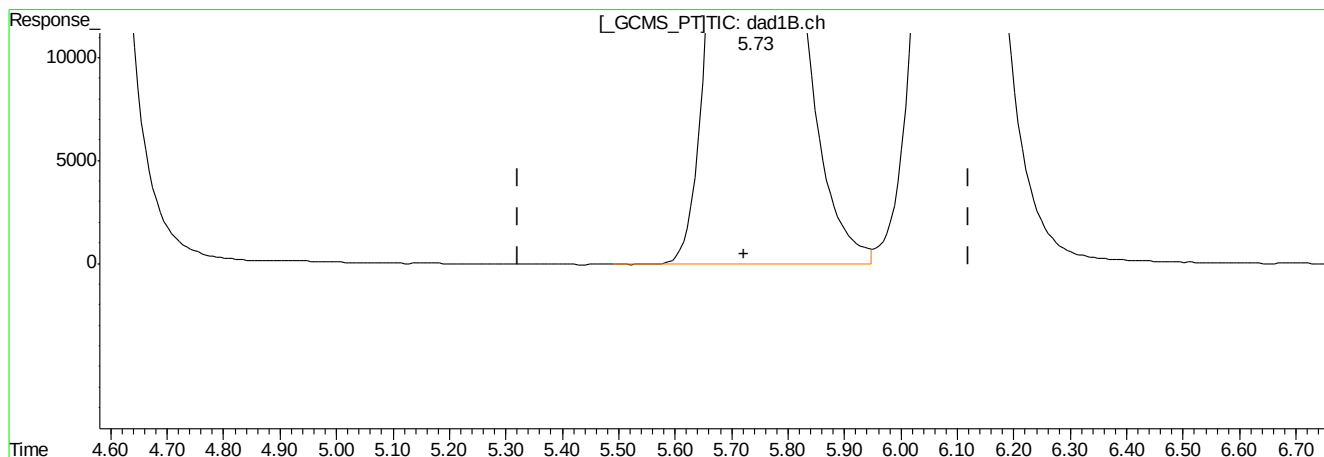
BB076383.D BBB2349_041423.M

Fri Apr 14 14:46:19 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076383.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076383.D\dad1A.ch
Acq On : 14-Apr-2023, 14:04:32 Operator: fouads
Sample : icv2349-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 14:45 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 14:45:26 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.74min 966.410ppb

response 5227372

(7) 1,3-Dinitrobenzene #2

5.74min 1010.525ppb

response 3889678

(+) = Expected Retention Time

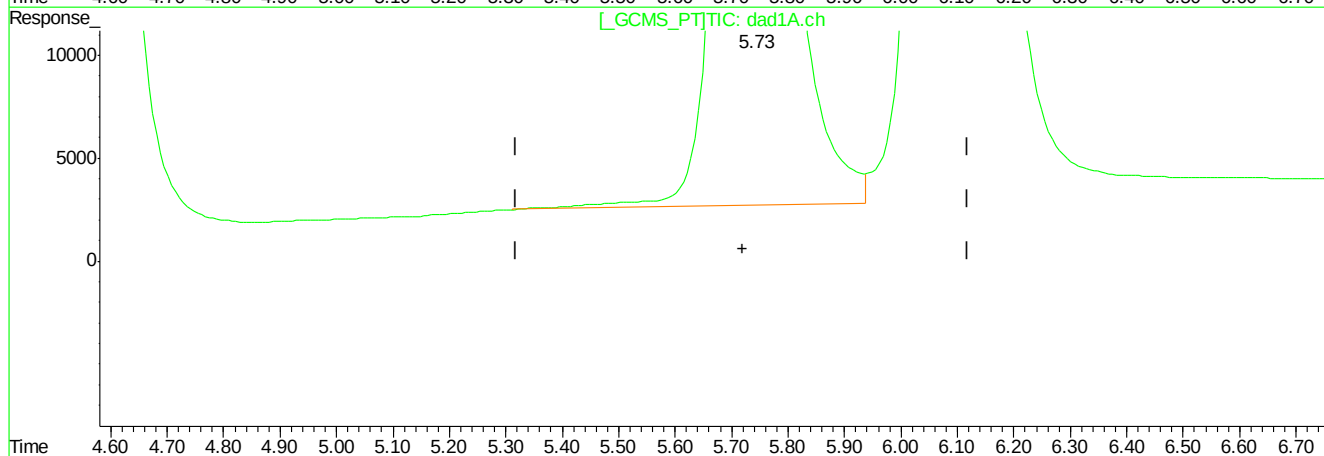
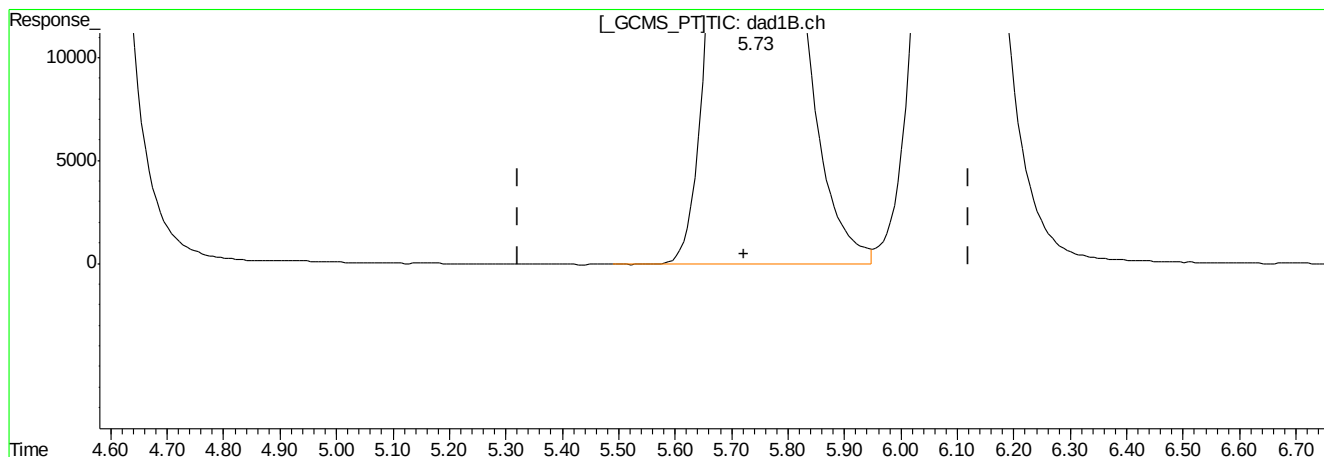
BB076383.D BBB2349_041423.M

Fri Apr 14 14:46:34 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2349\BB076383.D\dad1B.ch Vial: 11
Signal #2 : C:\HPCHEM\2\DATA\GBB2349\BB076383.D\dad1A.ch
Acq On : 14-Apr-2023, 14:04:32 Operator: fouads
Sample : icv2349-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Apr 14 14:45 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Apr 14 14:45:26 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.74min 966.410ppb

response 5227372

(7) 1,3-Dinitrobenzene #2

5.73min 958.757ppb m

response 3690411

(+) = Expected Retention Time

BB076383.D BBB2349_041423.M

Fri Apr 14 14:46:41 2023

Naresh Jiawan
07/20/23 10:43

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077744.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077744.D\dad1A.ch
 Acq On : 18-Jul-2023, 08:11:56 Operator: fouads
 Sample : cc2349-1000 Inst : G1315B
 Misc : op96396,GBB2394,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jul 18 08:38:30 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Jul 07 08:35:11 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	10.97	10.97	2136640	3830904	891.505	951.286
Spiked Amount	500.000	Range	70 - 136	Recovery	=	178.30%# 190.26%#
Target Compounds						
1) TNX	1.31	1.31	1659403	2545825	476.958	476.558
2) HMX	1.45	1.45	1539673	4295559	1044.829	1056.793
3) DNX	1.69	1.69	2929162	4631050	958.702	1074.273
4) MNX	2.27	2.27	3128299	4835443	1136.878	1142.534
5) RDX	2.88	2.88	1823395	2896088	941.225	957.490
6) 1,3,5-Trinitrobe	4.62	4.62	4026040	6356393	966.182m	958.323m
7) 1,3-Dinitrobenze	5.82	5.82	5213567	3664300	963.858	951.973m
8) 3,5-Dinitroanili	6.18	6.18	3903673	6783981	987.772	976.215
9) Nitrobenzene	7.34	7.34	2709864	2626693	838.507	836.407
10) Nitroglycerin	0.00	8.67	0	1267717	N.D.	940.904 #
11) Tetryl	9.20	9.20	2803059	4526681	1000.542	919.019
12) 2,4,6-Trinitroto	9.62	9.62	3728991	4561092	1039.281	949.375
13) 2-Amino-4,6-Dini	10.05	10.05	3218915	4854121	1013.966	944.577
14) 4-Amino-2,6-Dini	10.47	10.47	2427601	4891381	1024.887	964.795
16) 2,4-Dinitrotolue	11.62	11.62	4604083	3072146	949.818	1018.083
17) 2,6-Dinitrotolue	12.04	12.04	2616918	3468423	949.561	1012.222
18) o-Nitrotoluene	15.10	15.10	1926549	2696221	829.788	848.429
19) p-Nitrotoluene	15.65	15.65	3069913	2605477	879.019	887.180
20) m-Nitrotoluene	16.53	16.53	2818332	3288833	841.205	880.938
21) PETN	0.00	18.16	0	1394505	N.D.	1049.501m#

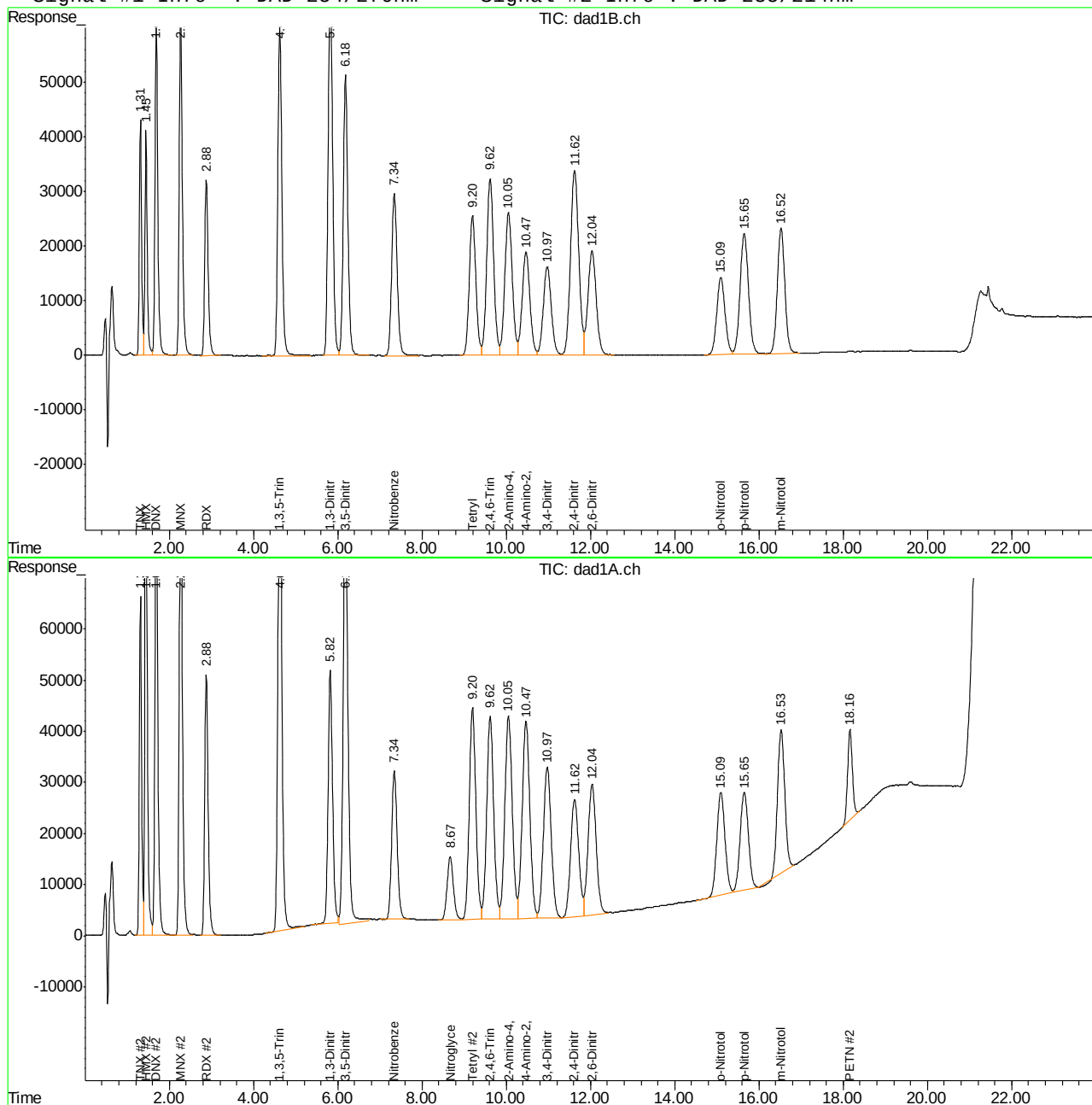
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB077744.D BBB2349_041423.M Thu Jul 20 08:40:47 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077744.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077744.D\dad1A.ch
Acq On : 18-Jul-2023, 08:11:56 Operator: fouads
Sample : cc2349-1000 Inst : G1315B
Misc : op96396, GBB2394, 1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 8:38 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number:

GBB2394-CC2349

Method:

SW846 8330A

Lab FileID:

BB077744.D

Analyst approved:

07/20/23 09:08 Fouad Sekkar

Injection Time:

07/18/23 08:11

Supervisor approved:

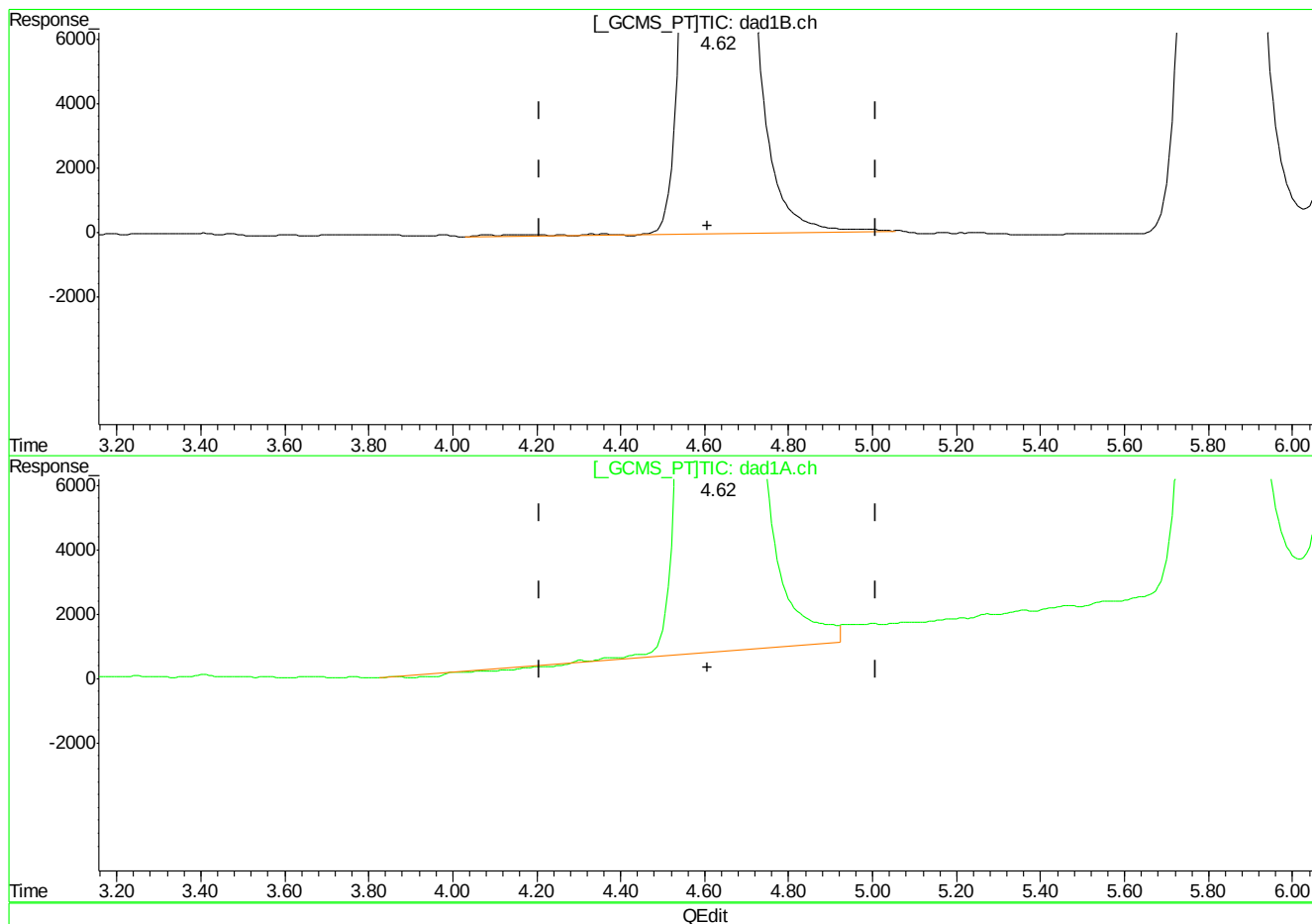
07/20/23 10:43 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3,5-Trinitrobenzene	99-35-4	1	4.62	Split peak
1,3,5-Trinitrobenzene	99-35-4	2	4.62	Split peak
1,3-Dinitrobenzene	99-65-0	2	5.82	Poorly defined baseline
PETN	78-11-5	2	18.16	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077744.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077744.D\dad1A.ch
Acq On : 18-Jul-2023, 08:11:56 Operator: fouads
Sample : cc2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 8:38 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.62min 955.805ppb

response 3982800

(6) 1,3,5-Trinitrobenzene #2

4.62min 957.652ppb

response 6351945

(+) = Expected Retention Time

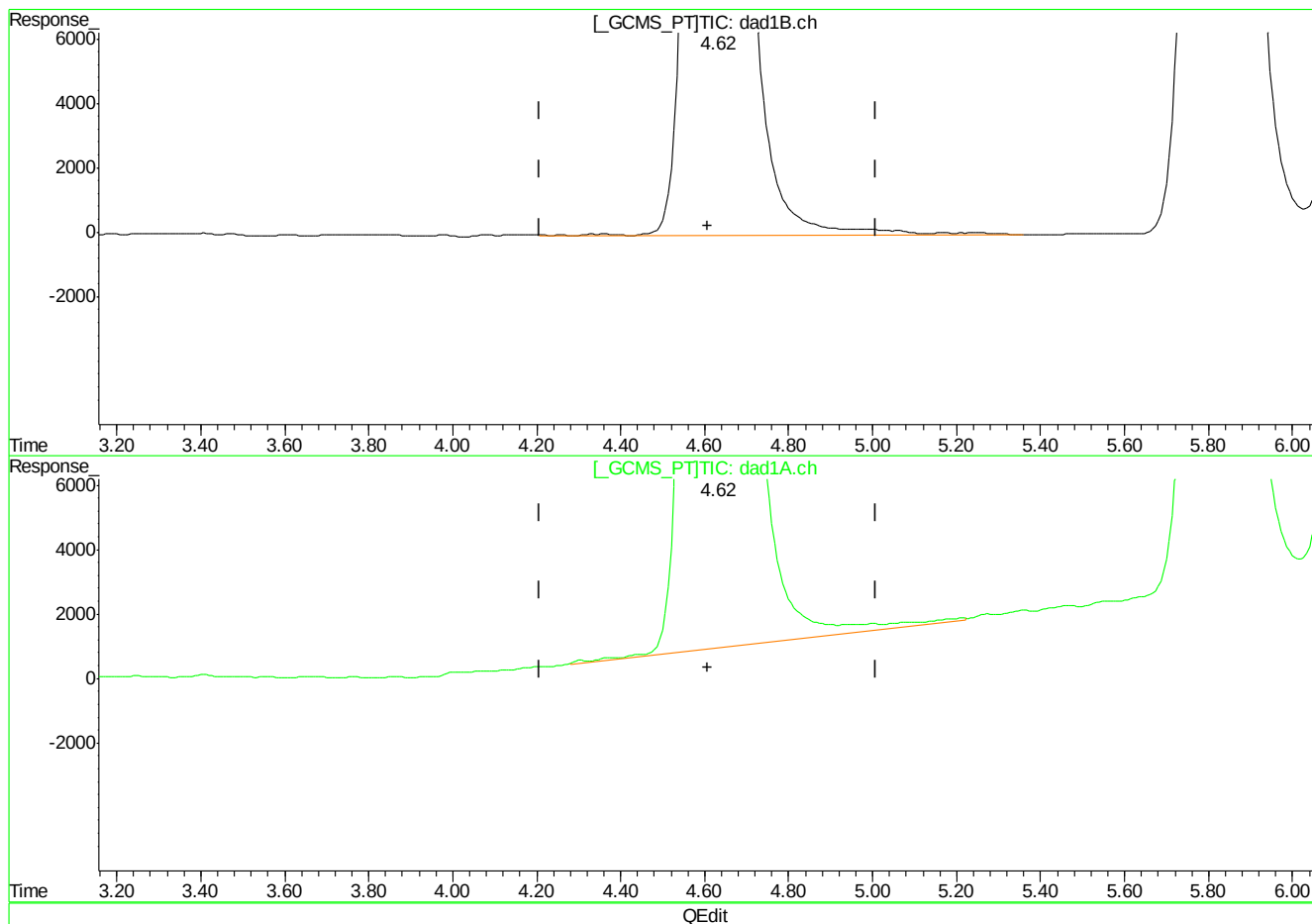
BB077744.D BBB2349_041423.M

Wed Jul 19 08:37:53 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077744.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077744.D\dad1A.ch
Acq On : 18-Jul-2023, 08:11:56 Operator: fouads
Sample : cc2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 8:38 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.62min 966.182ppb m

response 4026040

(6) 1,3,5-Trinitrobenzene #2

4.62min 958.323ppb m

response 6356393

(+) = Expected Retention Time

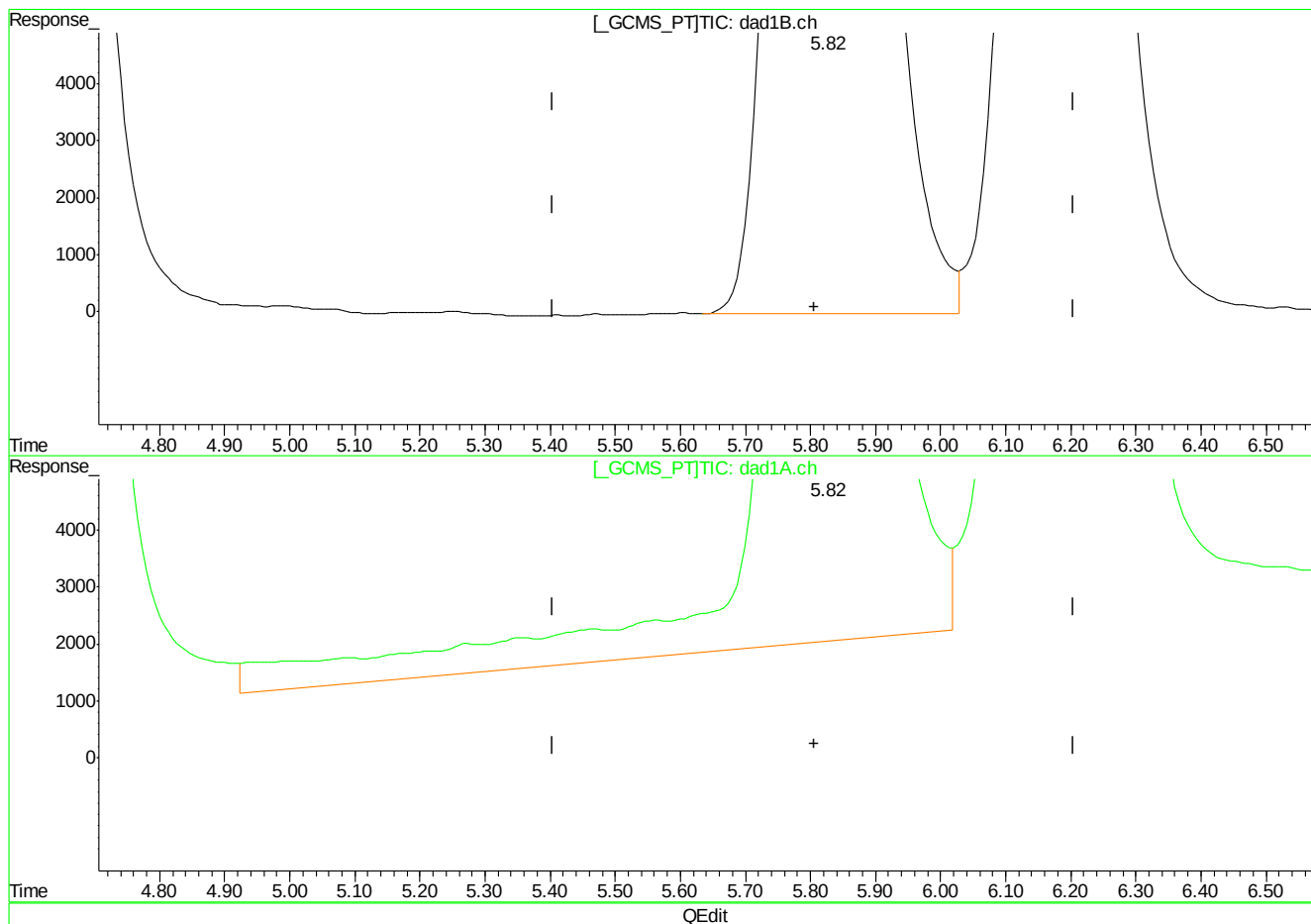
BB077744.D BBB2349_041423.M

Wed Jul 19 08:38:13 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077744.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077744.D\dad1A.ch
Acq On : 18-Jul-2023, 08:11:56 Operator: fouads
Sample : cc2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 8:38 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.82min 963.858ppb

response 5213567

(7) 1,3-Dinitrobenzene #2

5.82min 1018.496ppb

response 3920359

(+) = Expected Retention Time

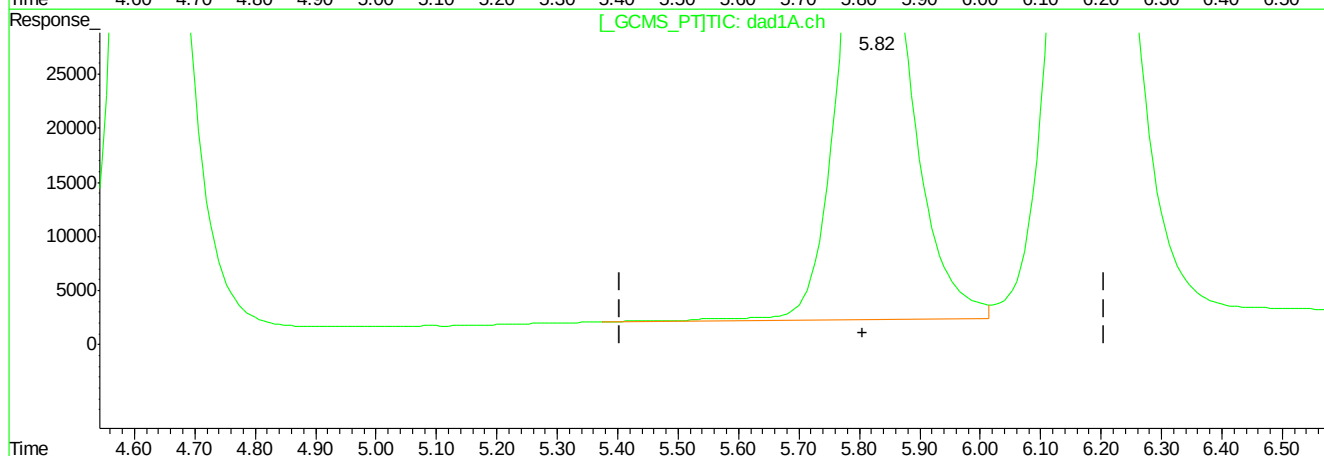
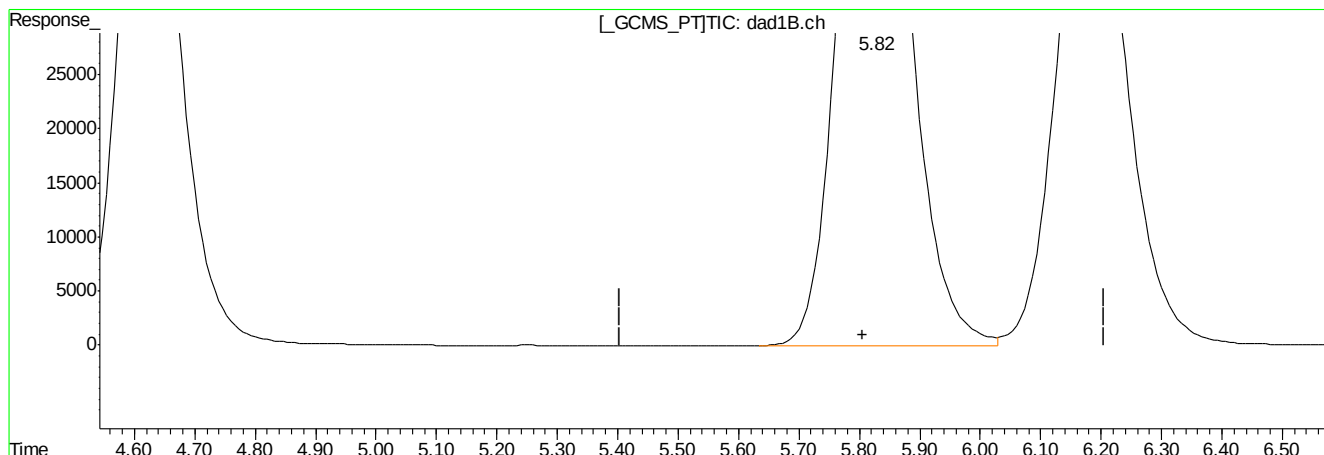
BB077744.D BBB2349_041423.M

Wed Jul 19 08:38:22 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077744.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077744.D\dad1A.ch
Acq On : 18-Jul-2023, 08:11:56 Operator: fouads
Sample : cc2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 8:38 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.82min 963.858ppb

response 5213567

(7) 1,3-Dinitrobenzene #2

5.82min 951.973ppb m

response 3664300

(+) = Expected Retention Time

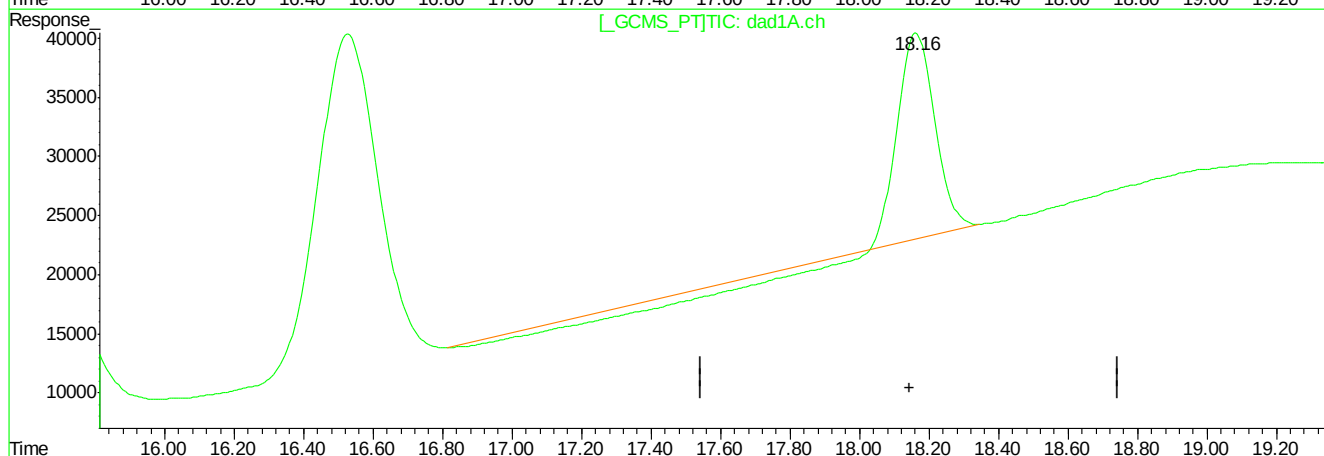
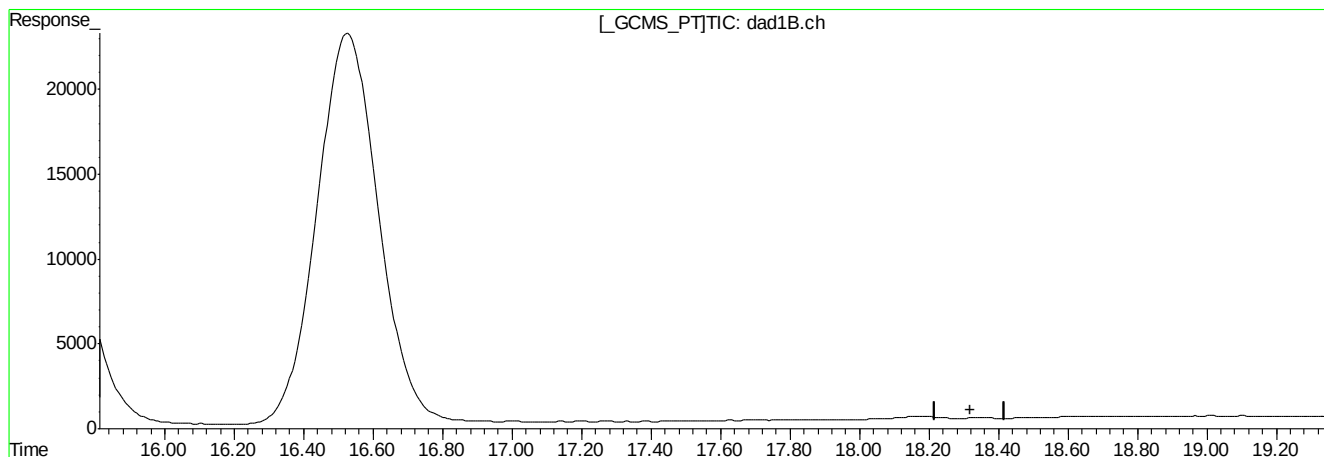
BB077744.D BBB2349_041423.M

Wed Jul 19 08:38:30 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077744.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077744.D\dad1A.ch
Acq On : 18-Jul-2023, 08:11:56 Operator: fouads
Sample : cc2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 8:38 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

18.16min 663.223ppb

response 881246

(+) = Expected Retention Time

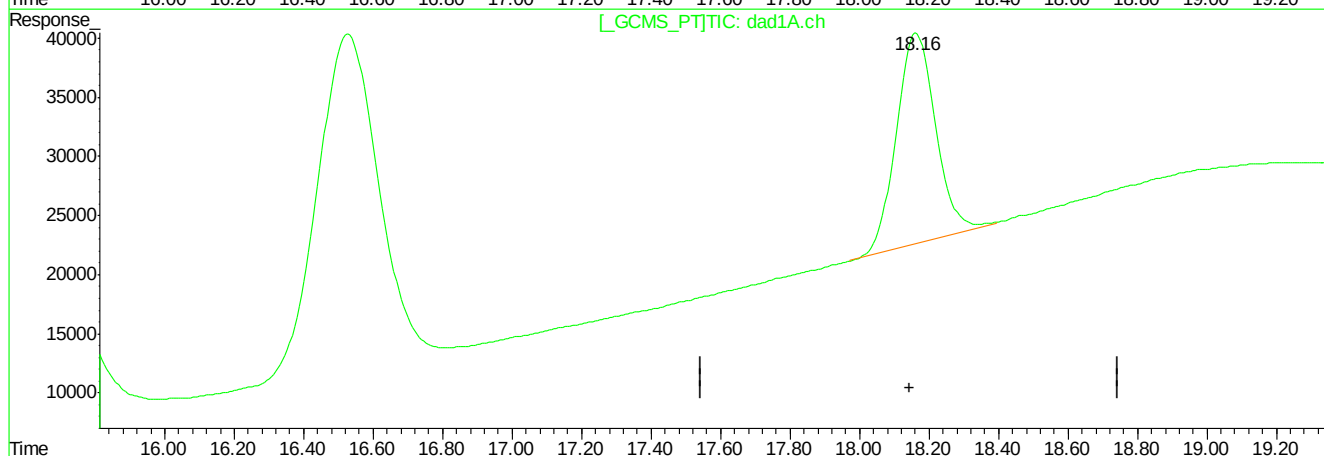
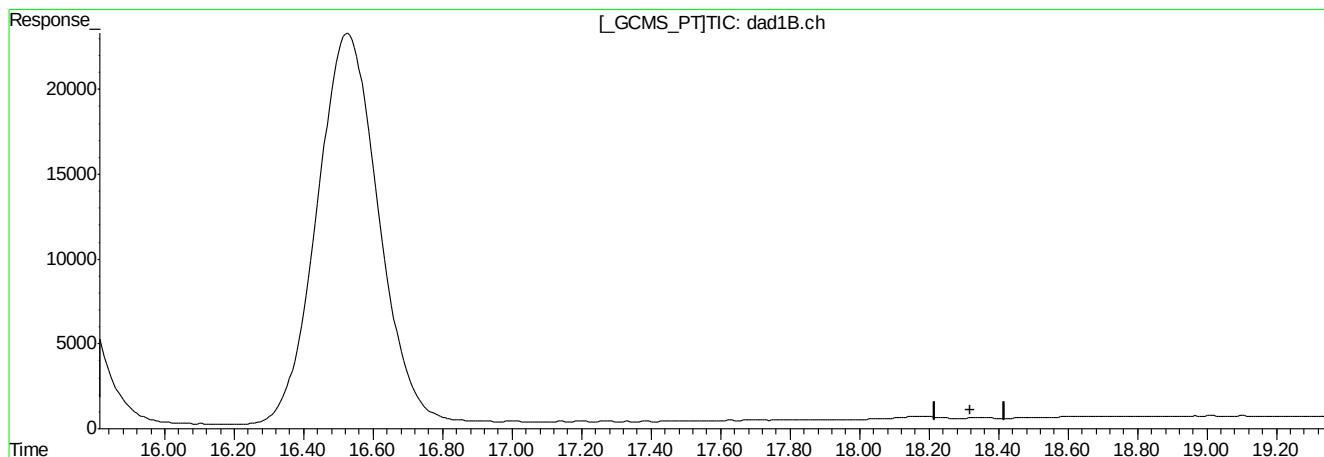
BB077744.D BBB2349_041423.M

Wed Jul 19 08:38:34 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077744.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077744.D\dad1A.ch
Acq On : 18-Jul-2023, 08:11:56 Operator: fouads
Sample : cc2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 8:38 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

18.16min 1049.501ppb m

response 1394505

(+) = Expected Retention Time

BB077744.D BBB2349_041423.M

Wed Jul 19 08:38:40 2023

Naresh Jiawan
07/20/23 10:43

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077754.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077754.D\dad1A.ch
 Acq On : 18-Jul-2023, 14:52:14 Operator: fouads
 Sample : cc2349-1000 Inst : G1315B
 Misc : op96396,GBB2394,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jul 18 15:18:37 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Jul 07 08:35:11 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	11.01	11.01	2182494	3925829	910.637	974.858
Spiked Amount	500.000	Range	70 - 136	Recovery	=	182.13%# 194.97%#
Target Compounds						
1) TNX	1.32	1.32	1735234	2633187	498.754	492.911
2) HMX	1.46	1.46	1590201	4425793	1079.118	1088.833
3) DNX	1.70	1.70	3042012	4775221	995.637	1107.716
4) MNX	2.28	2.28	3275608	5007578	1190.413	1183.207
5) RDX	2.89	2.89	1893612	3004252	977.470	993.251
6) 1,3,5-Trinitrobe	4.64	4.64	4131877	6566892	991.581m	990.059m
7) 1,3-Dinitrobenze	5.84	5.84	5411456	3762686	1000.442	977.533m
8) 3,5-Dinitroanili	6.20	6.20	4041484	7027540	1022.644	1011.263
9) Nitrobenzene	7.37	7.37	2857468	2826807	884.180	900.129
10) Nitroglycerin	0.00	8.70	0	1323578	N.D.	982.364 #
11) Tetryl	9.23	9.23	2926529	4707571	1044.614	955.743
12) 2,4,6-Trinitroto	9.65	9.65	3844304	4691306	1071.419	976.478
13) 2-Amino-4,6-Dini	10.09	10.09	3333360	5003871	1050.017	973.718
14) 4-Amino-2,6-Dini	10.51	10.51	2514710	5040251	1061.662	994.158
16) 2,4-Dinitrotolue	11.66	11.66	4751544	3178914	980.239	1053.465
17) 2,6-Dinitrotolue	12.08	12.08	2699501	3596333	979.526	1049.551
18) o-Nitrotoluene	15.14	15.14	2057608	2899226	886.236	912.310
19) p-Nitrotoluene	15.69	15.69	3252651	2749401	931.343	936.187
20) m-Nitrotoluene	16.56	16.56	3017970	3525507	900.793	944.333
21) PETN	0.00	18.19	0	1444106	N.D.	1086.831m#

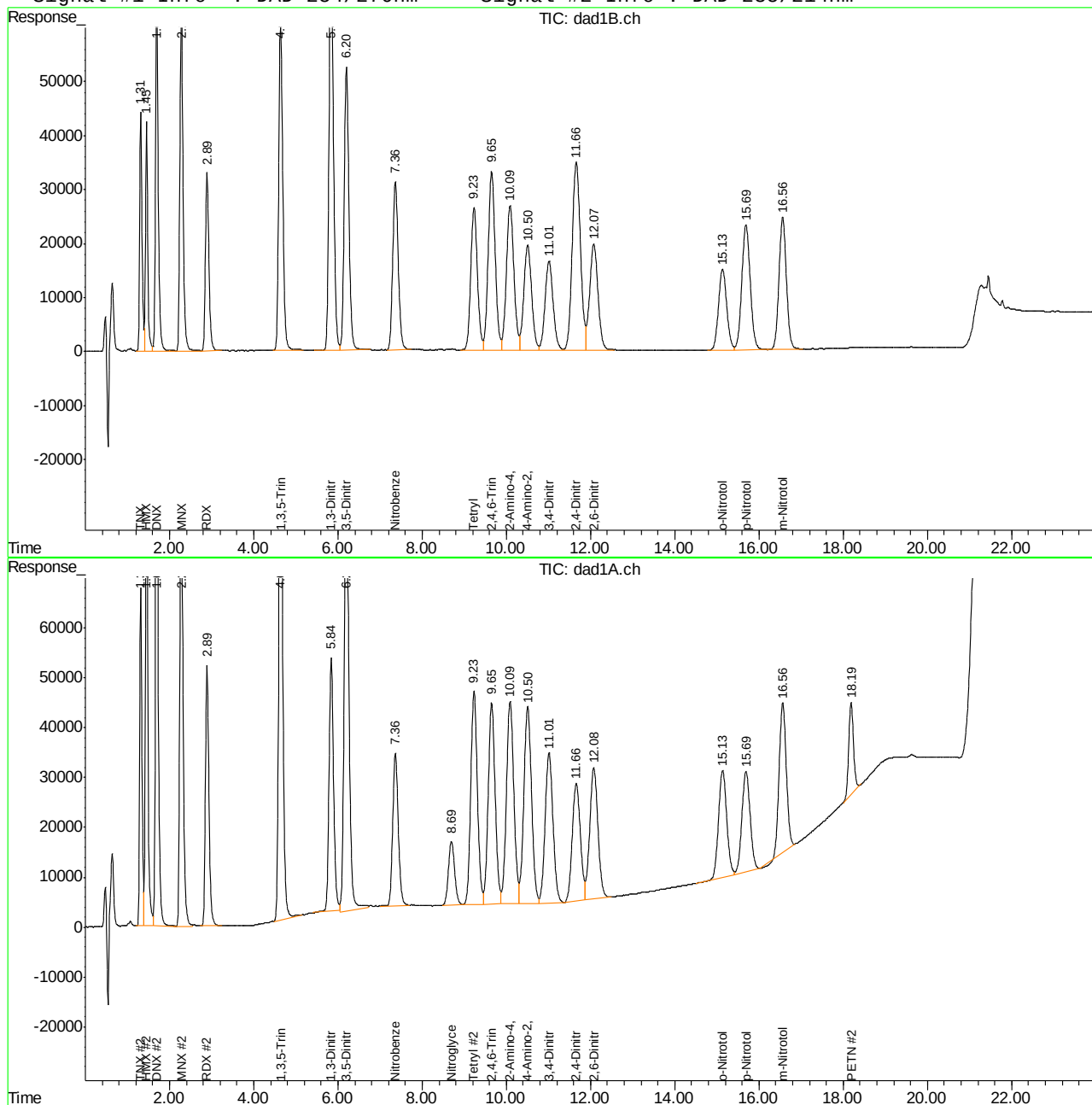
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB077754.D BBB2349_041423.M Thu Jul 20 08:40:56 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077754.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077754.D\dad1A.ch
Acq On : 18-Jul-2023, 14:52:14 Operator: fouads
Sample : cc2349-1000 Inst : G1315B
Misc : op96396, GBB2394, 1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:05 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: GBB2394-CC2349

Method: SW846 8330A

Lab FileID: BB077754.D

Analyst approved: 07/20/23 09:08 Fouad Sekkar

Injection Time: 07/18/23 14:52

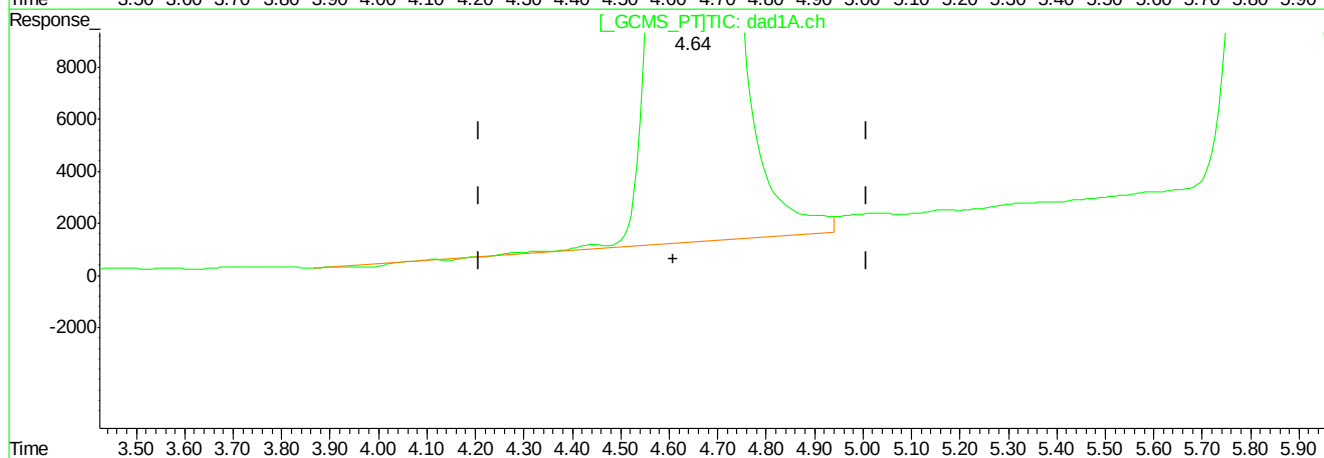
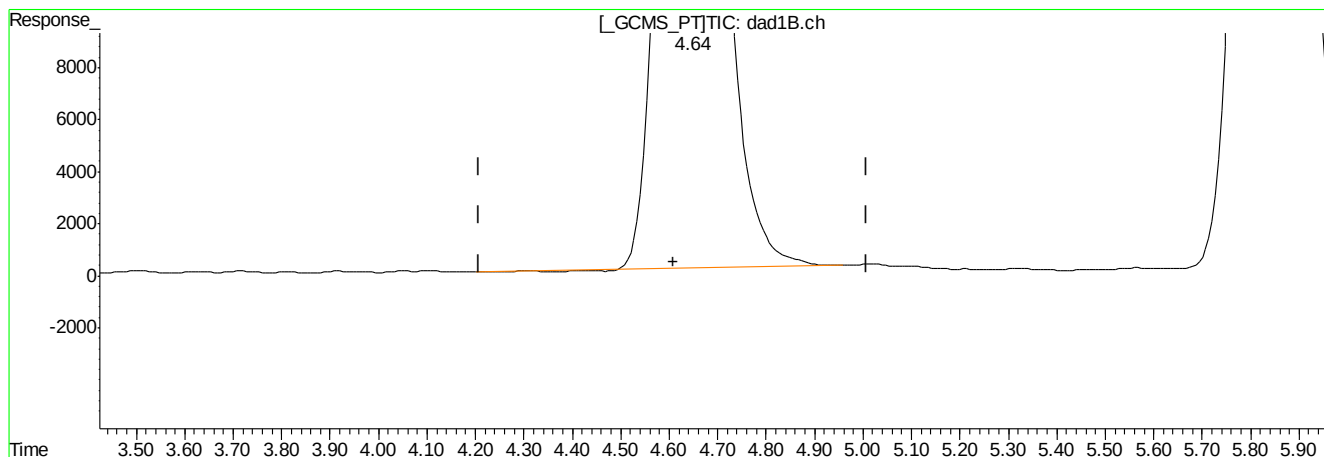
Supervisor approved: 07/20/23 10:43 Naresh Jiawan

Parameter	CAS	Sig#	R. T. (min.)	Reason
1,3,5-Trinitrobenzene	99-35-4	1	4.64	Split peak
1,3,5-Trinitrobenzene	99-35-4	2	4.64	Split peak
1,3-Dinitrobenzene	99-65-0	2	5.84	Poorly defined baseline
PETN	78-11-5	2	18.19	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077754.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077754.D\dad1A.ch
Acq On : 18-Jul-2023, 14:52:14 Operator: fouads
Sample : cc2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 15:18 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.64min 981.010ppb

response 4087828

(6) 1,3,5-Trinitrobenzene #2

4.64min 995.271ppb

response 6601465

(+) = Expected Retention Time

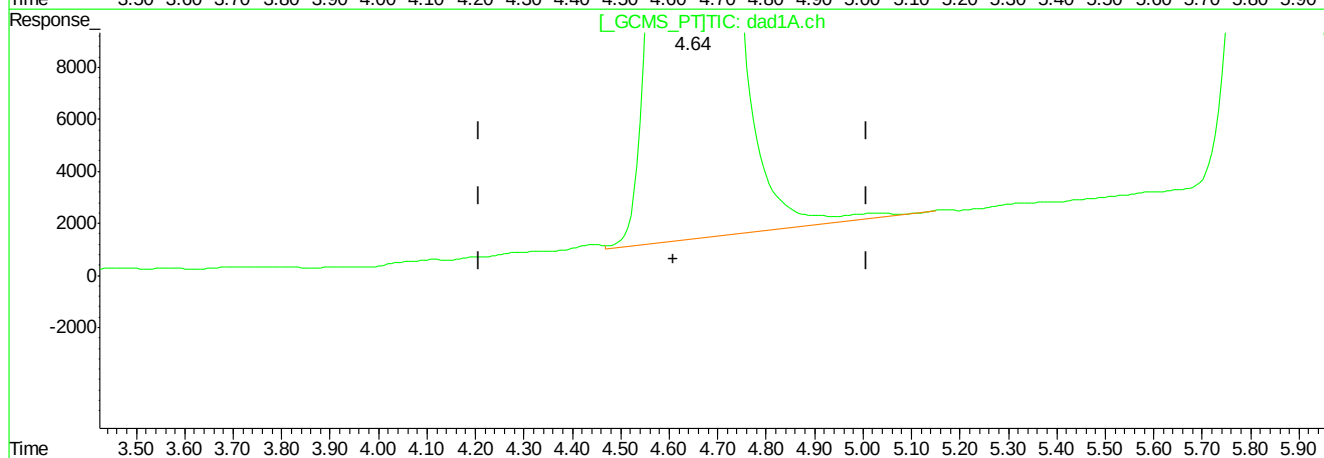
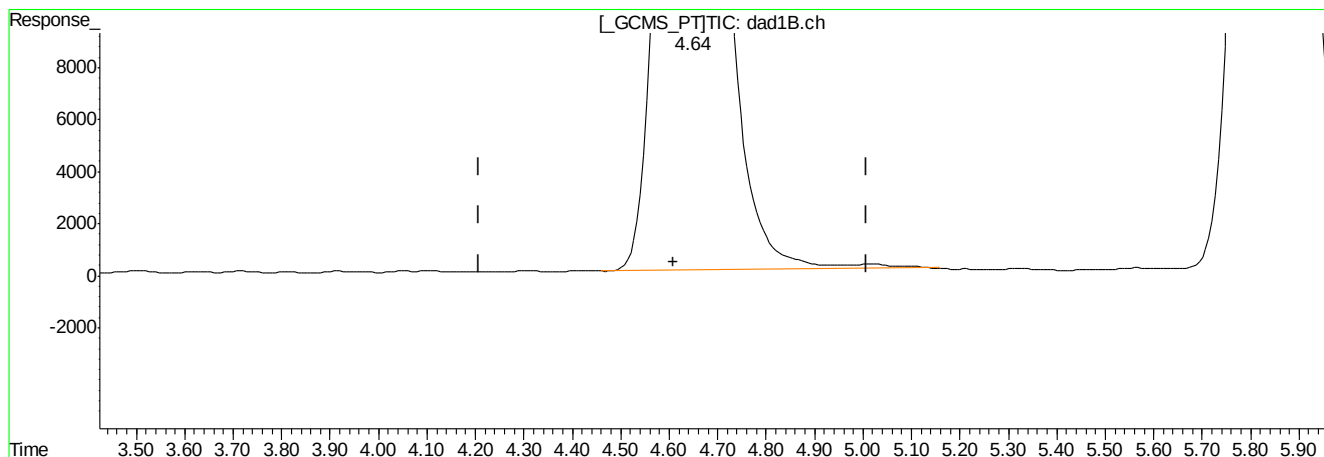
BB077754.D BBB2349_041423.M

Wed Jul 19 09:05:10 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077754.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077754.D\dad1A.ch
Acq On : 18-Jul-2023, 14:52:14 Operator: fouads
Sample : cc2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 15:18 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.64min 991.581ppb m

response 4131877

(6) 1,3,5-Trinitrobenzene #2

4.64min 990.059ppb m

response 6566892

(+) = Expected Retention Time

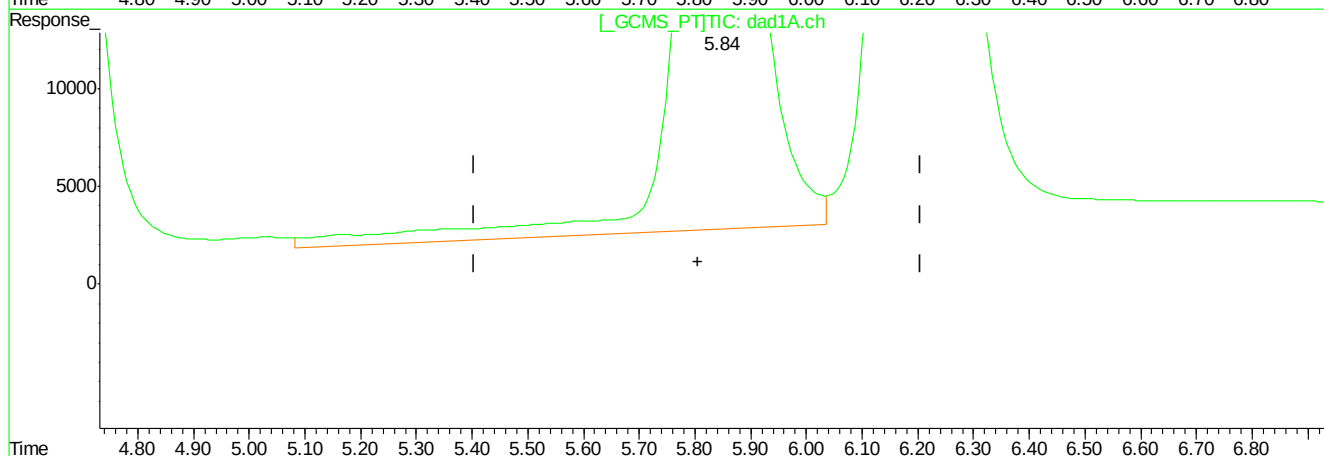
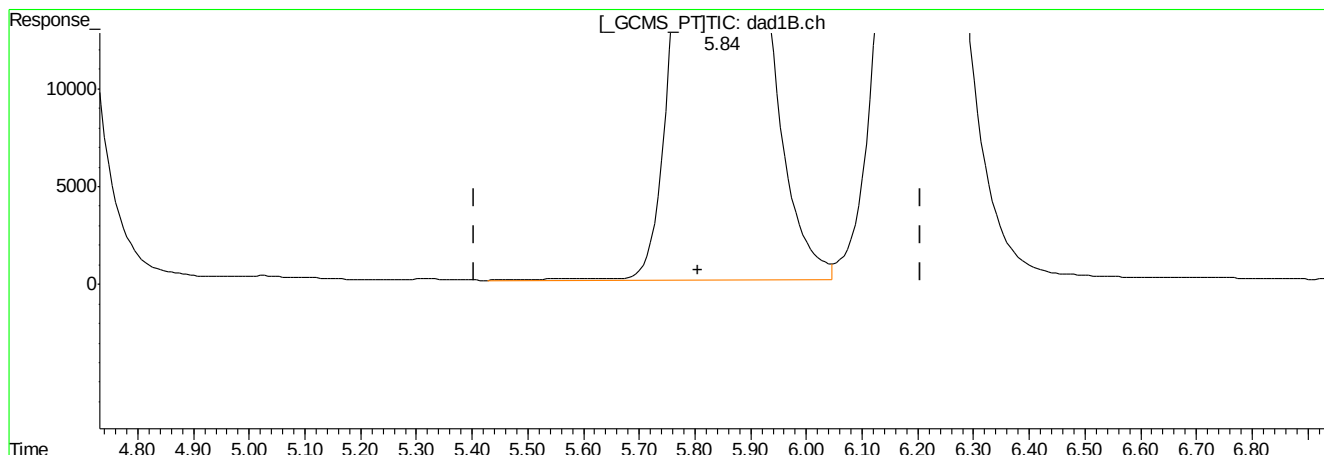
BB077754.D BBB2349_041423.M

Wed Jul 19 09:05:24 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077754.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077754.D\dad1A.ch
Acq On : 18-Jul-2023, 14:52:14 Operator: fouads
Sample : cc2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 15:18 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.84min 1000.442ppb

response 5411456

(7) 1,3-Dinitrobenzene #2

5.84min 1054.341ppb

response 4058330

(+) = Expected Retention Time

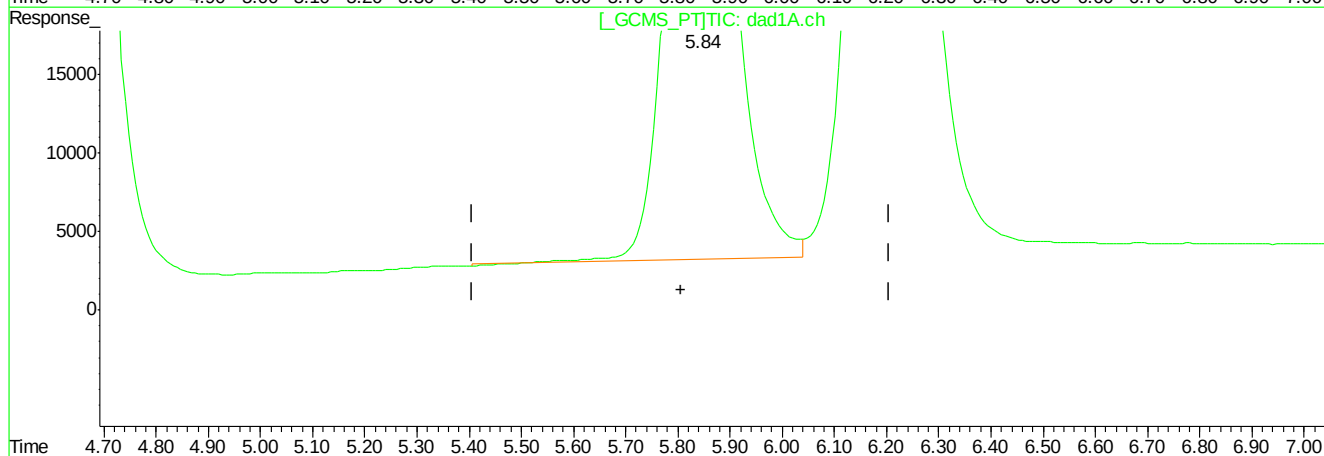
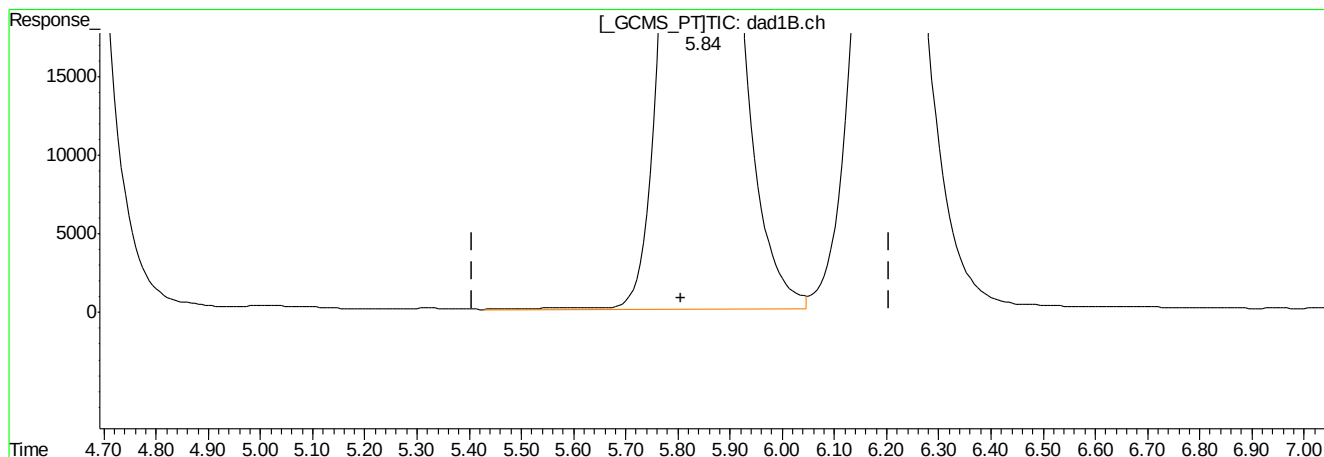
BB077754.D BBB2349_041423.M

Wed Jul 19 09:05:29 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077754.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077754.D\dad1A.ch
Acq On : 18-Jul-2023, 14:52:14 Operator: fouads
Sample : cc2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 15:18 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.84min 1000.442ppb

response 5411456

(7) 1,3-Dinitrobenzene #2

5.84min 977.533ppb m

response 3762686

(+) = Expected Retention Time

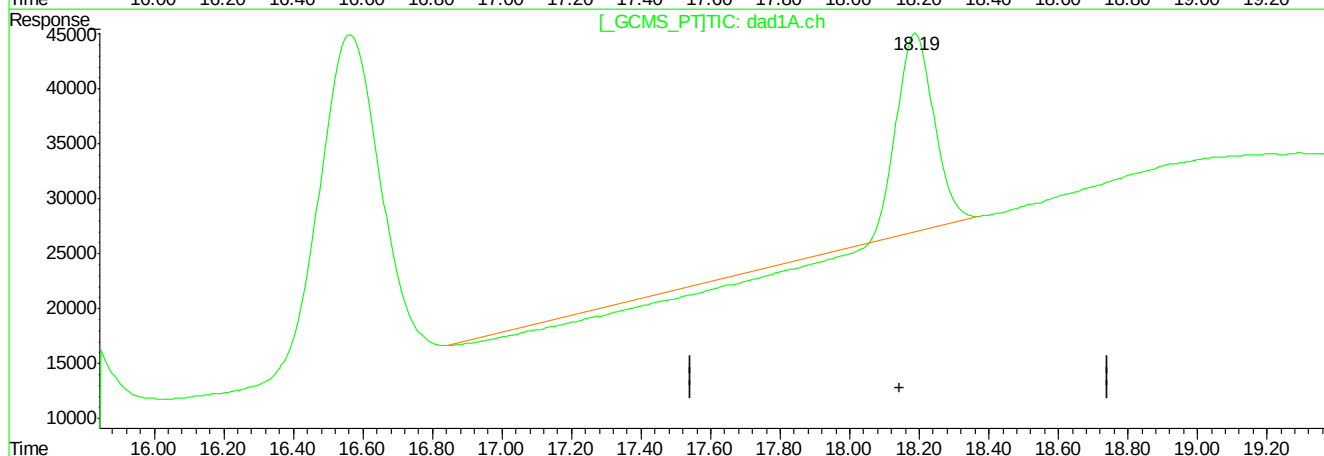
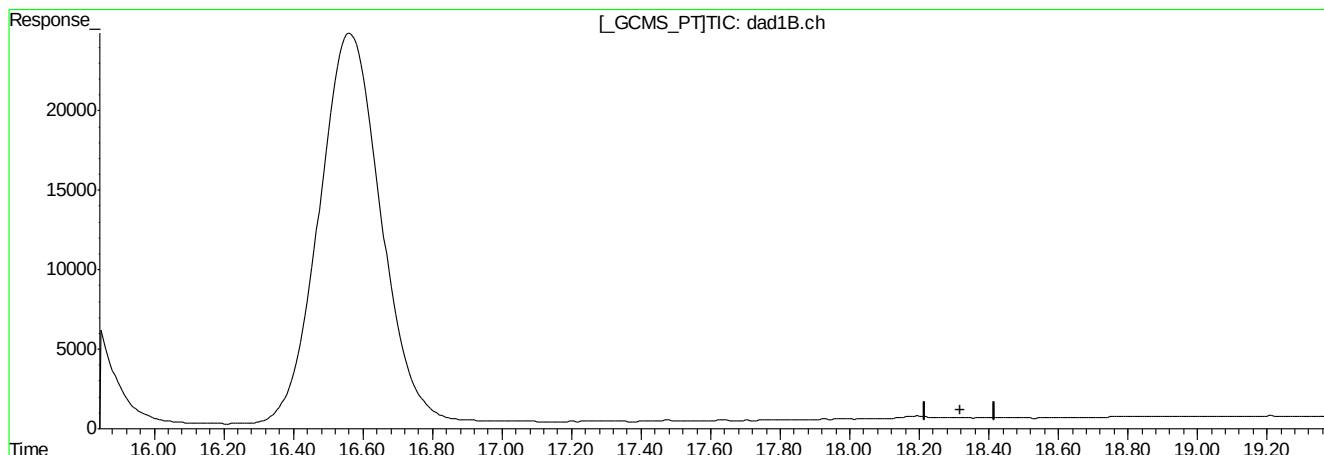
BB077754.D BBB2349_041423.M

Wed Jul 19 09:05:39 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077754.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077754.D\dad1A.ch
Acq On : 18-Jul-2023, 14:52:14 Operator: fouads
Sample : cc2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 15:18 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

18.19min 678.086ppb

response 900993

(+) = Expected Retention Time

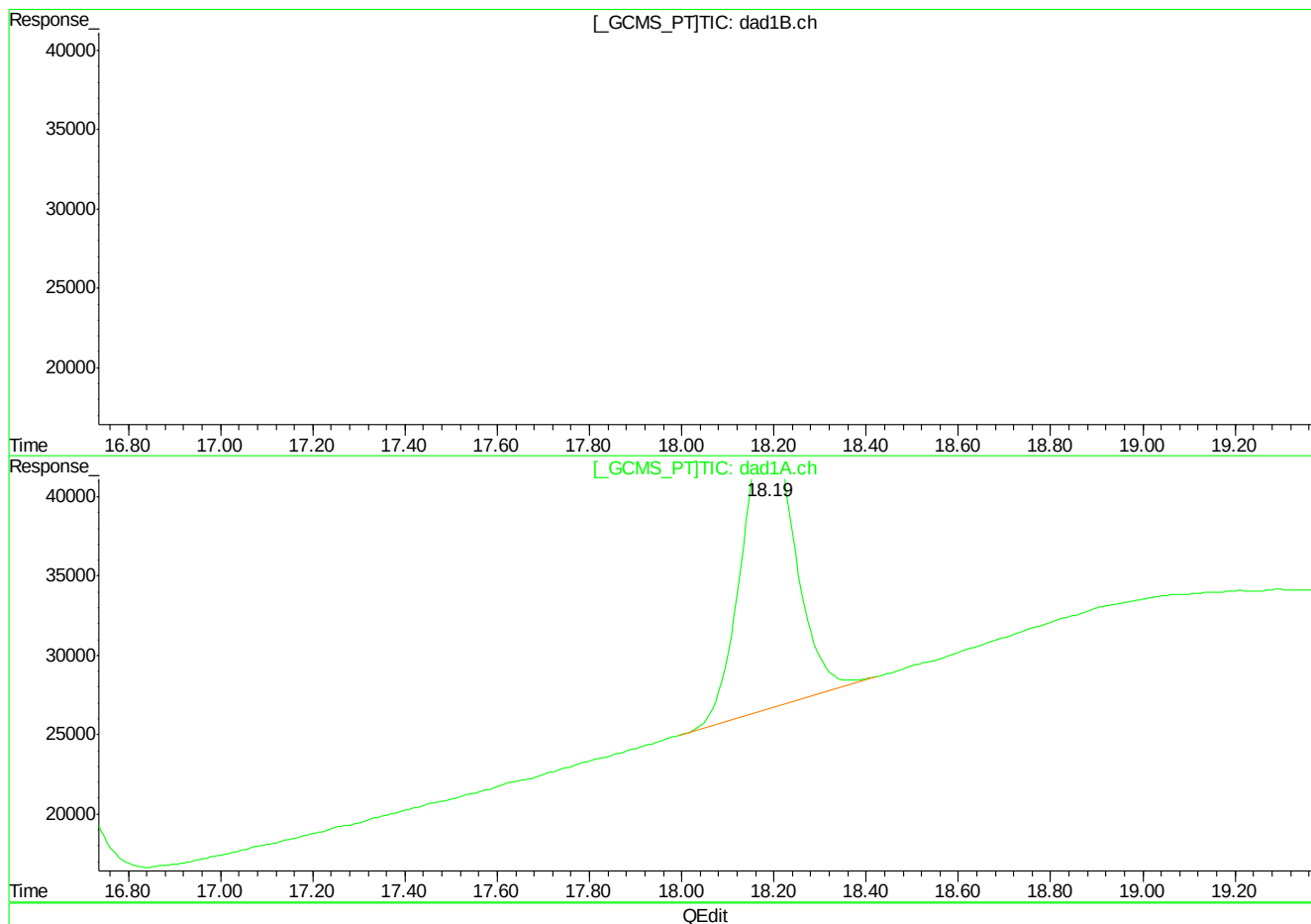
BB077754.D BBB2349_041423.M

Wed Jul 19 09:05:44 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077754.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077754.D\dad1A.ch
Acq On : 18-Jul-2023, 14:52:14 Operator: fouads
Sample : cc2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 18 15:18 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 07 08:35:11 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

18.19min 1086.831ppb m

response 1444106

(+) = Expected Retention Time

BB077754.D BBB2349_041423.M

Wed Jul 19 09:05:53 2023

Naresh Jiawan
07/20/23 10:43

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077764.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077764.D\dad1A.ch
 Acq On : 18-Jul-2023, 20:01:42 Operator: fouads
 Sample : ecc2349-1000 Inst : G1315B
 Misc : op96396,GBB2394,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
 Quant Time: Jul 19 09:09:12 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 09:08:22 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330B.M

Volume Inj. : 100ul
 Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
 Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
15) S 3,4-Dinitrotolue	11.01	11.01	2184608	3913700	911.519	971.846
Spiked Amount	500.000	Range	70 - 136	Recovery	=	182.30%# 194.37%#
Target Compounds						
1) TNX	1.32	1.32	1713693	2623794	492.563	491.153
2) HMX	1.46	1.46	1586714	4396760	1076.751	1081.690
3) DNX	1.70	1.70	3018294	4764719	987.874	1105.280
4) MNX	2.28	2.28	3255184	4979717	1182.991	1176.624
5) RDX	2.89	2.89	1882064	2988386	971.510	988.005
6) 1,3,5-Trinitrobe	4.64	4.64	4108692	6496308	986.017m	979.417m
7) 1,3-Dinitrobenze	5.84	5.84	5371963	3801008	993.141	987.489m
8) 3,5-Dinitroanili	6.21	6.21	4008896	7012618	1014.398	1009.116
9) Nitrobenzene	7.37	7.37	2782903	2723111	861.107	867.109
10) Nitroglycerin	0.00	8.70	0	1334861	N.D.	990.739 #
11) Tetryl	9.24	9.24	2904104	4712198	1036.610	956.683
12) 2,4,6-Trinitroto	9.65	9.65	3821675	4678713	1065.112	973.857
13) 2-Amino-4,6-Dini	10.09	10.09	3313077	4991261	1043.628	971.264
14) 4-Amino-2,6-Dini	10.51	10.51	2502268	5031946	1056.410	992.520
16) 2,4-Dinitrotolue	11.66	11.66	4739603	3182140	977.775	1054.534
17) 2,6-Dinitrotolue	12.07	12.07	2697330	3598451	978.739	1050.169
18) o-Nitrotoluene	15.13	15.13	2000593	2779466	861.679	874.624
19) p-Nitrotoluene	15.68	15.68	3205487	2683182	917.838	913.639
20) m-Nitrotoluene	16.56	16.56	2945745	3436951	879.235	920.612
21) PETN	0.00	18.18	0	1419084	N.D.	1067.999m#

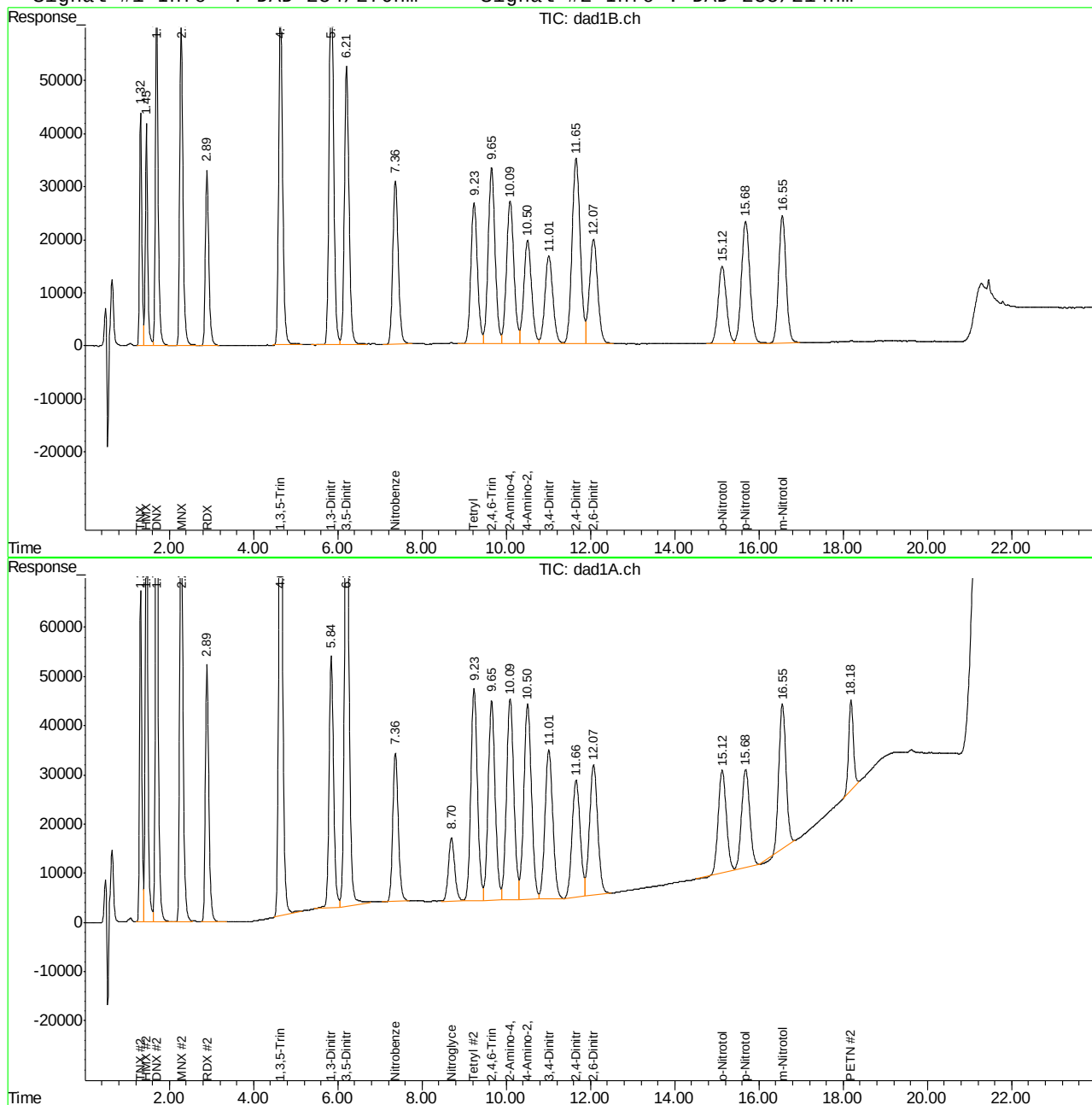
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 BB077764.D BBB2349_041423.M Thu Jul 20 09:18:24 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077764.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077764.D\dad1A.ch
Acq On : 18-Jul-2023, 20:01:42 Operator: fouads
Sample : ecc2349-1000 Inst : G1315B
Misc : op96396, GBB2394, 1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:11 2023 Quant Results File: BBB2349_041423.RES

Quant Method : C:\MSDCHEM\2...\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330B.M

Volume Inj. : 100ul
Signal #1 Phase : Extend C-18 Signal #2 Phase: Extend C-18
Signal #1 Info : DAD 254/270nm Signal #2 Info : DAD 235/214nm



Manual Integration Approval Summary

Sample Number: GBB2394-ECC2349

Method: SW846 8330A

Lab FileID: BB077764.D

Analyst approved: 07/20/23 09:08 Fouad Sekkar

Injection Time: 07/18/23 20:01

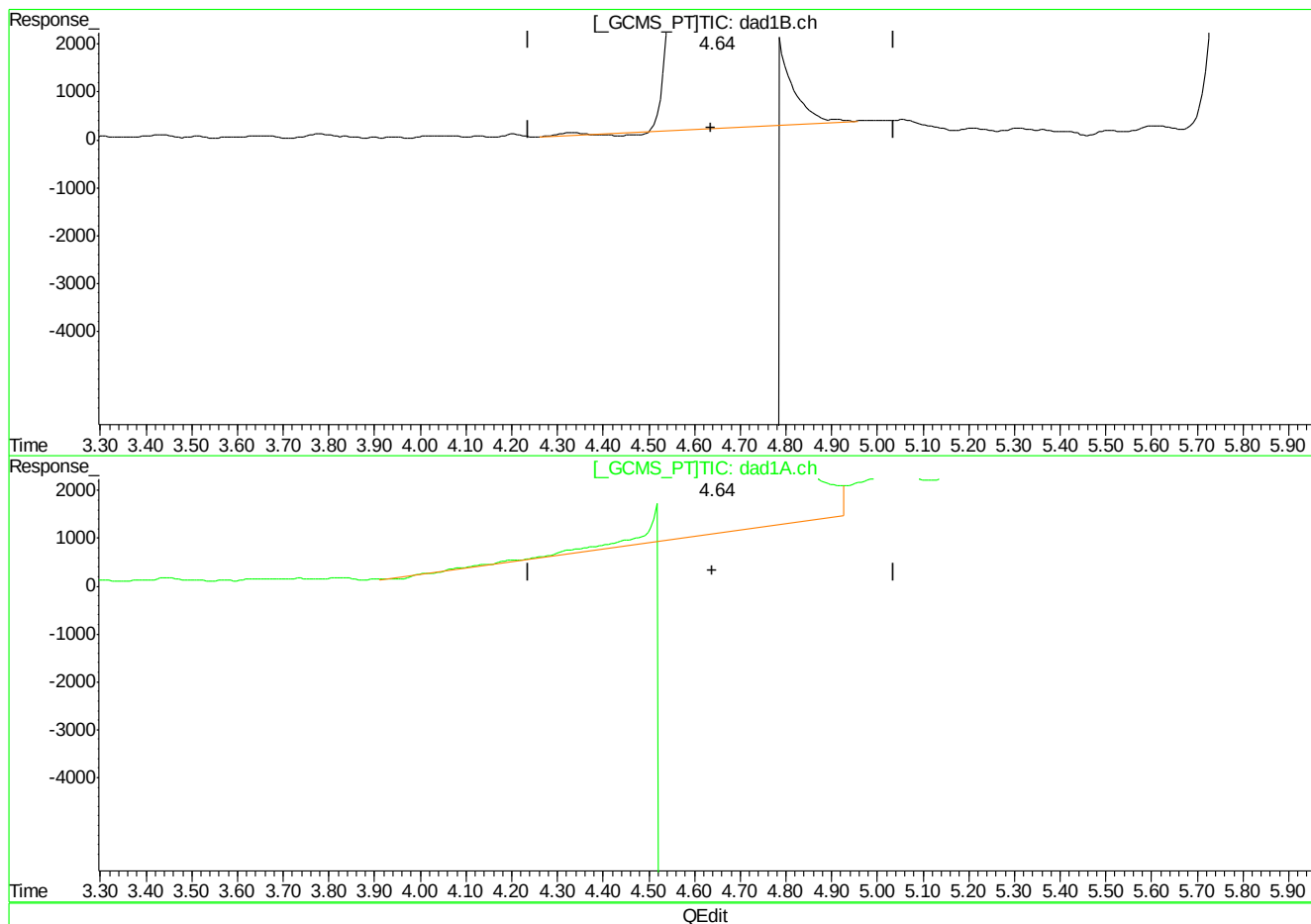
Supervisor approved: 07/20/23 10:43 Naresh Jiawan

Parameter	CAS	Sig#	R. T. (min.)	Reason
1,3,5-Trinitrobenzene	99-35-4	1	4.64	Split peak
1,3,5-Trinitrobenzene	99-35-4	2	4.64	Split peak
1,3-Dinitrobenzene	99-65-0	2	5.84	Poorly defined baseline
PETN	78-11-5	2	18.18	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077764.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077764.D\dad1A.ch
Acq On : 18-Jul-2023, 20:01:42 Operator: fouads
Sample : ecc2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.64min 974.368ppb

response 4060151

(6) 1,3,5-Trinitrobenzene #2

4.64min 988.077ppb

response 6553749

(+) = Expected Retention Time

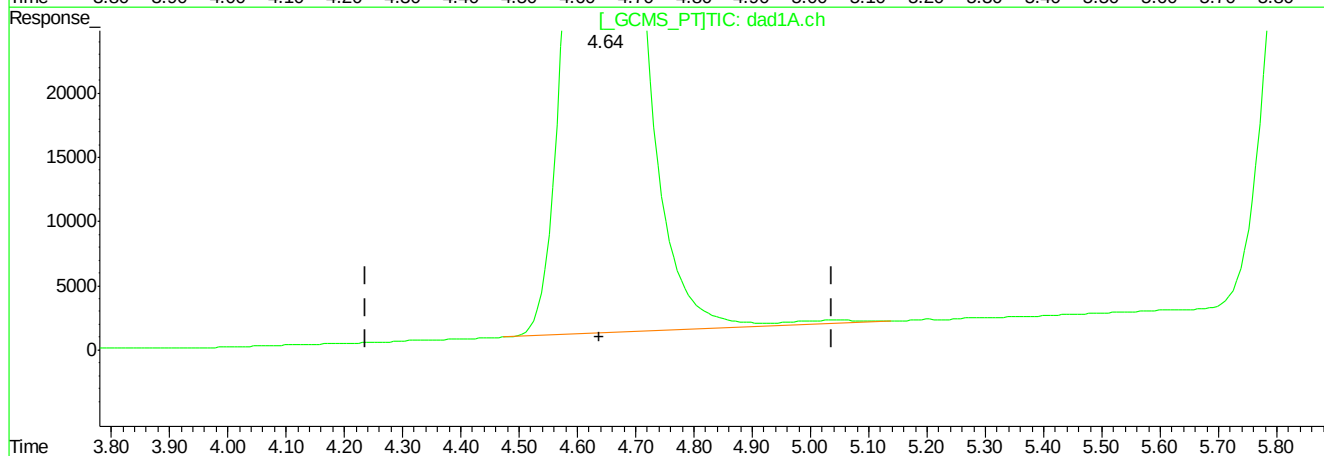
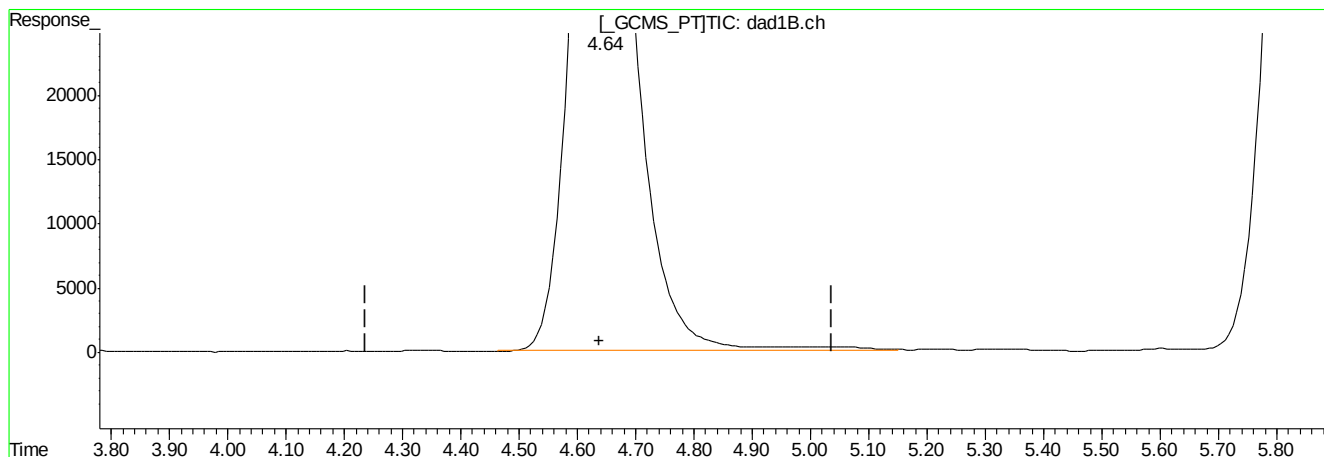
BB077764.D BBB2349_041423.M

Wed Jul 19 09:11:00 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077764.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077764.D\dad1A.ch
Acq On : 18-Jul-2023, 20:01:42 Operator: fouads
Sample : ecc2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(6) 1,3,5-Trinitrobenzene

4.64min 986.017ppb m

response 4108692

(6) 1,3,5-Trinitrobenzene #2

4.64min 979.417ppb m

response 6496308

QEdit

(+) = Expected Retention Time

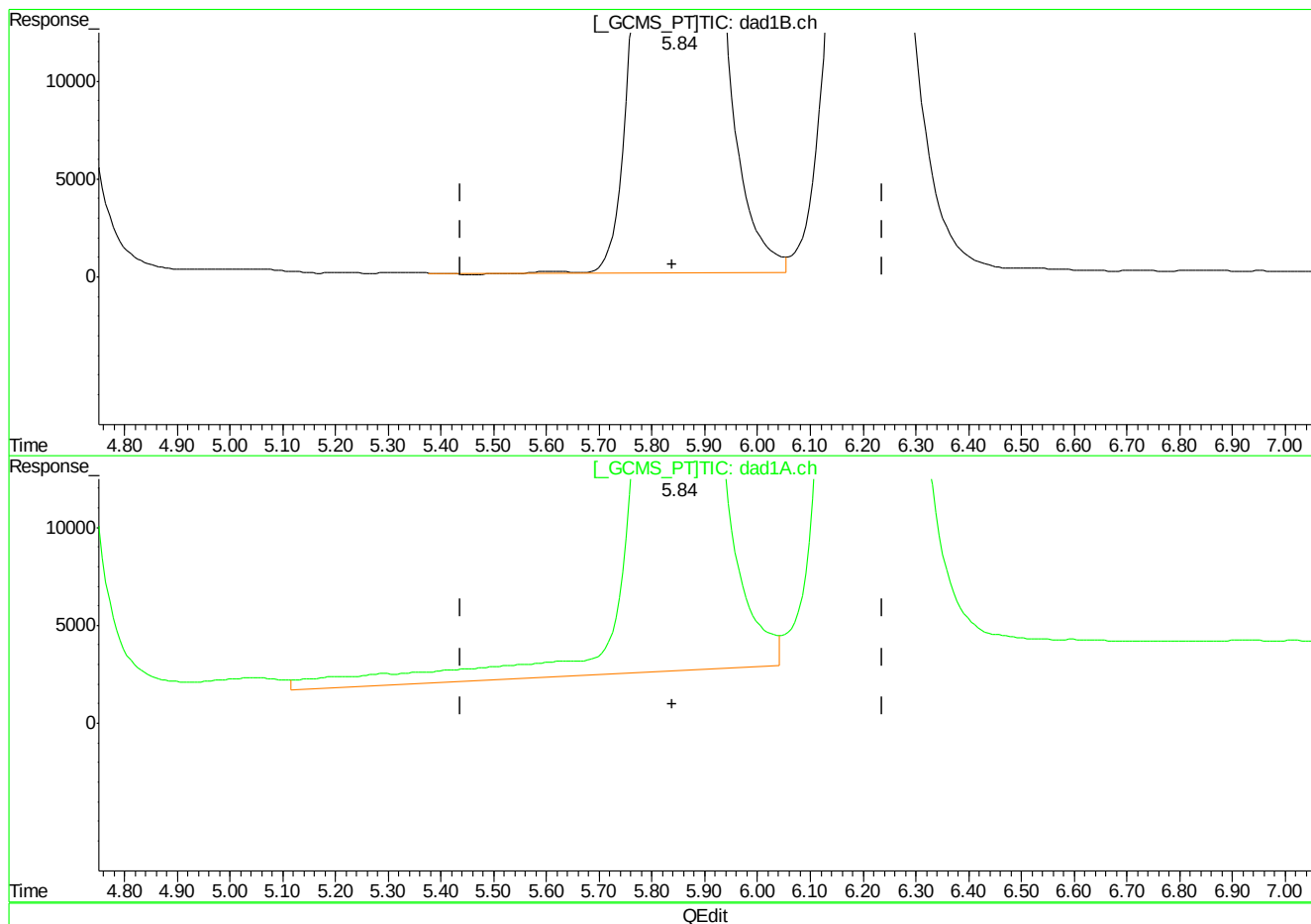
BB077764.D BBB2349_041423.M

Wed Jul 19 09:11:12 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077764.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077764.D\dad1A.ch
Acq On : 18-Jul-2023, 20:01:42 Operator: fouads
Sample : ecc2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.84min 993.141ppb

response 5371963

(7) 1,3-Dinitrobenzene #2

5.84min 1048.451ppb

response 4035661

(+) = Expected Retention Time

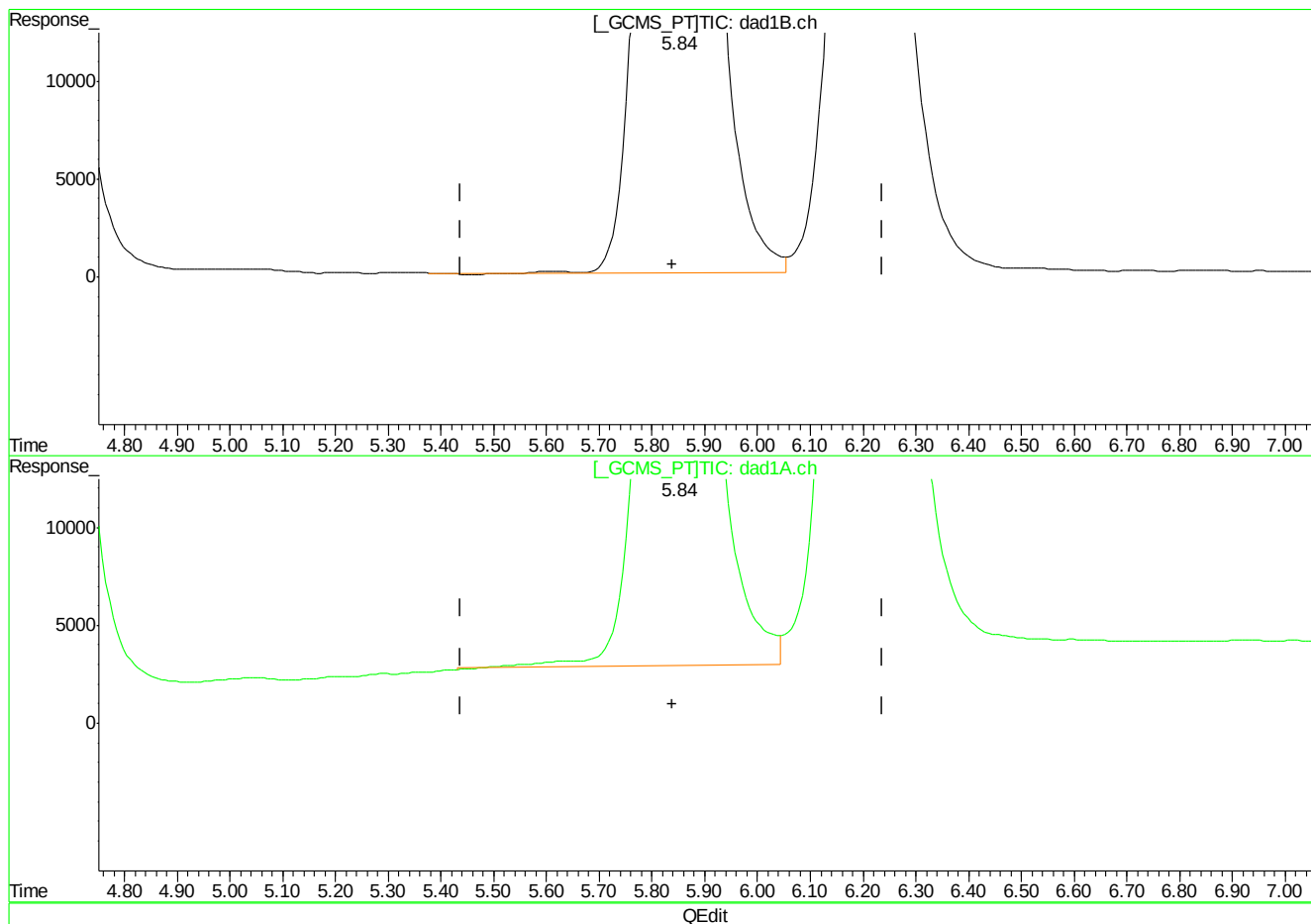
BB077764.D BBB2349_041423.M

Wed Jul 19 09:11:18 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077764.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077764.D\dad1A.ch
Acq On : 18-Jul-2023, 20:01:42 Operator: fouads
Sample : ecc2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

5.84min 993.141ppb

response 5371963

(7) 1,3-Dinitrobenzene #2

5.84min 987.489ppb m

response 3801008

(+) = Expected Retention Time

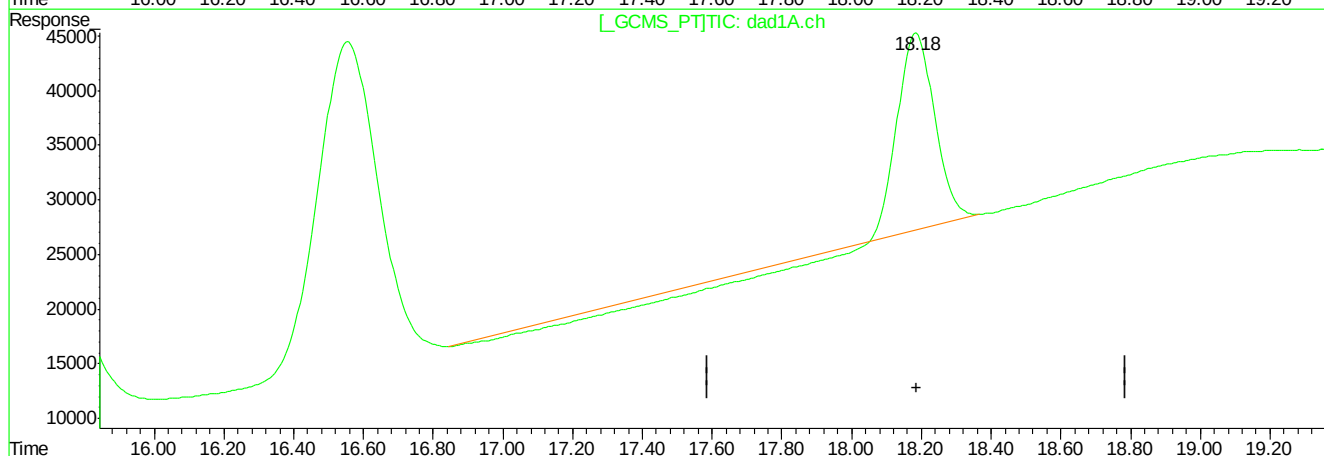
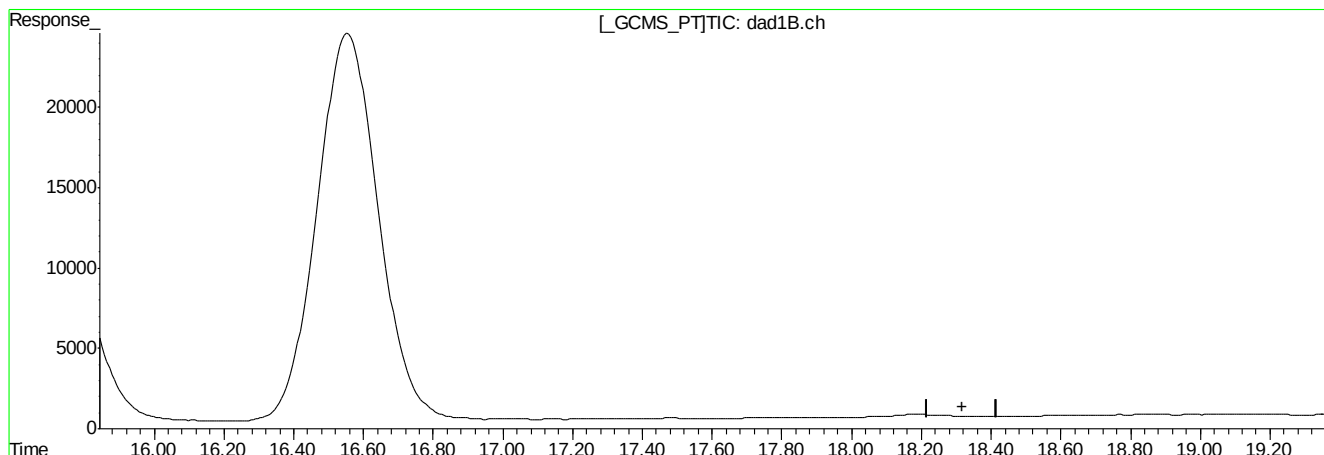
BB077764.D BBB2349_041423.M

Wed Jul 19 09:11:24 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077764.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077764.D\dad1A.ch
Acq On : 18-Jul-2023, 20:01:42 Operator: fouads
Sample : ecc2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

18.19min 713.343ppb

response 947842

(+) = Expected Retention Time

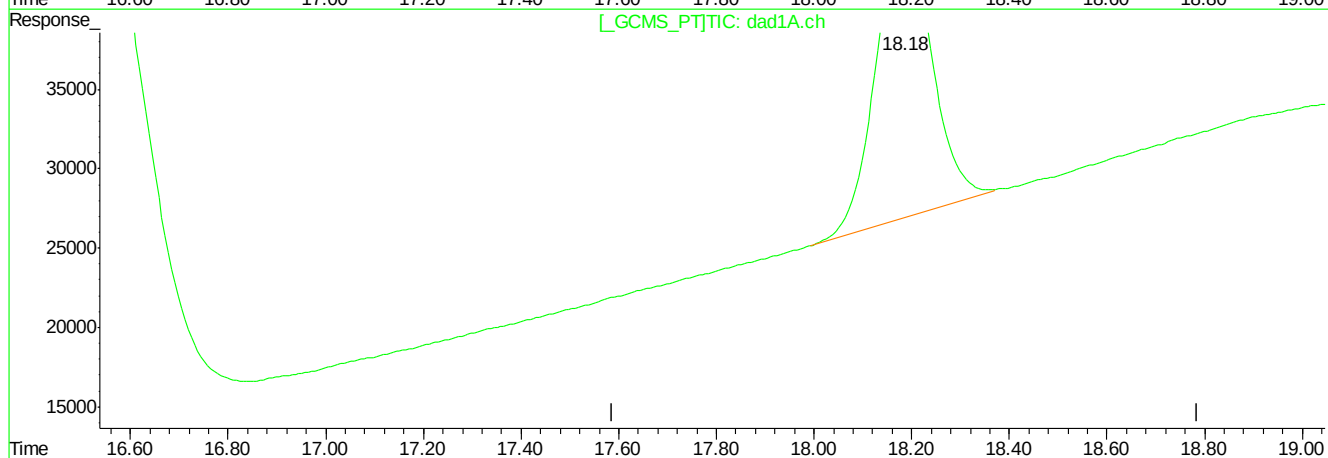
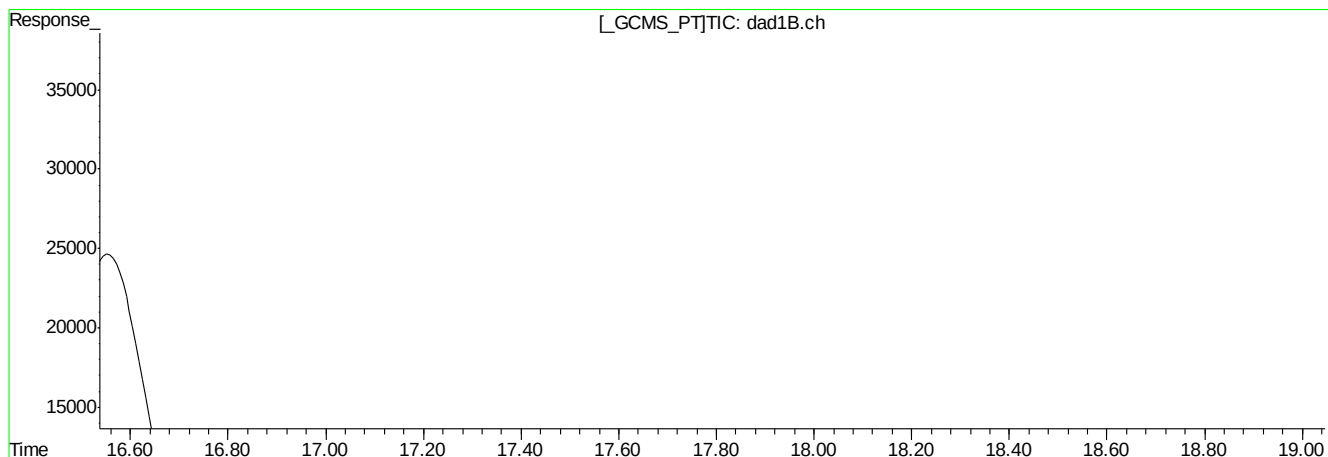
BB077764.D BBB2349_041423.M

Wed Jul 19 09:11:34 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\2\DATA\GBB2394\BB077764.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\2\DATA\GBB2394\BB077764.D\dad1A.ch
Acq On : 18-Jul-2023, 20:01:42 Operator: fouads
Sample : ecc2349-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: EVENTS2.E
Quant Time: Jul 19 9:09 2023 Quant Results File: BBB2349_041423.RES

Method : C:\MSDCHEM\2\METHODS\BBB2349_041423.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 09:08:22 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

18.18min 1067.999ppb m

response 1419084

(+) = Expected Retention Time

BB077764.D BBB2349_041423.M

Wed Jul 19 09:11:41 2023

Naresh Jiawan
07/13/23 18:08

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626762.D\dad1B.ch Vial: 3
 Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626762.D\dad1A.ch
 Acq On : 11-Jul-2023, 15:47:33 Operator: fouads
 Sample : ic3298-20 Inst : G1315B
 Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 12 10:09:22 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 12 10:08:59 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	16.03	16.01	163540	306143	27.306	26.465
Spiked Amount	500.000	Range	70 - 136	Recovery	=	5.46%# 5.29%#
Target Compounds						
1) TNX	5.28	5.28	408251	407894	39.850	39.558
2) HMX	5.70	5.70	84434	84518	23.571	23.507
3) DNx	5.97	5.97	596024	594806	71.216	70.870
4) MNx	7.27	7.27	666673	650507	89.101	85.738
5) 1,3,5-Trinitrobe	8.32	8.32	292017	288445	28.657	27.781
6) RDX	8.75	8.75	124232	139708	25.585	27.399
7) 1,3-Dinitrobenze	11.05	11.04	370098	292787	26.487	26.890m
8) Nitrobenzene	12.32	12.32	246518	238713	28.254	28.644m
9) 2,4,6-Trinitroto	13.05	13.05	322791	440468	32.561	33.640
10) Nitroglycerin	0.00	13.93	0	143560	N.D.	41.026 #
11) Tetryl	14.54	14.50	136637	195044	18.586	15.485
13) 2,6-Dinitrotolue	16.39	16.38	191628	267542	28.228	27.191
14) 2,4-Dinitrotolue	17.09	17.10	327684	280546	25.808	31.069
15) 3,5-Dinitroanili	17.86	17.92	295976	465733	27.373	26.175
16) o-Nitrotoluene	19.18	19.16	140484	186926	25.653	22.839
17) p-Nitrotoluene	19.85	19.86	205323	359932	61.132	53.660
18) 4-Amino-2,6-Dini	19.85	19.86	205323	359932	81.864	89.391
19) m-Nitrotoluene	20.23	20.29	129862	138254	8.385	5.775
20) 2-Amino-4,6-Dini	21.79	21.79	402112	596651	25.964	25.097
21) PETN	0.00	23.56	0	60619	N.D.	16.512m#

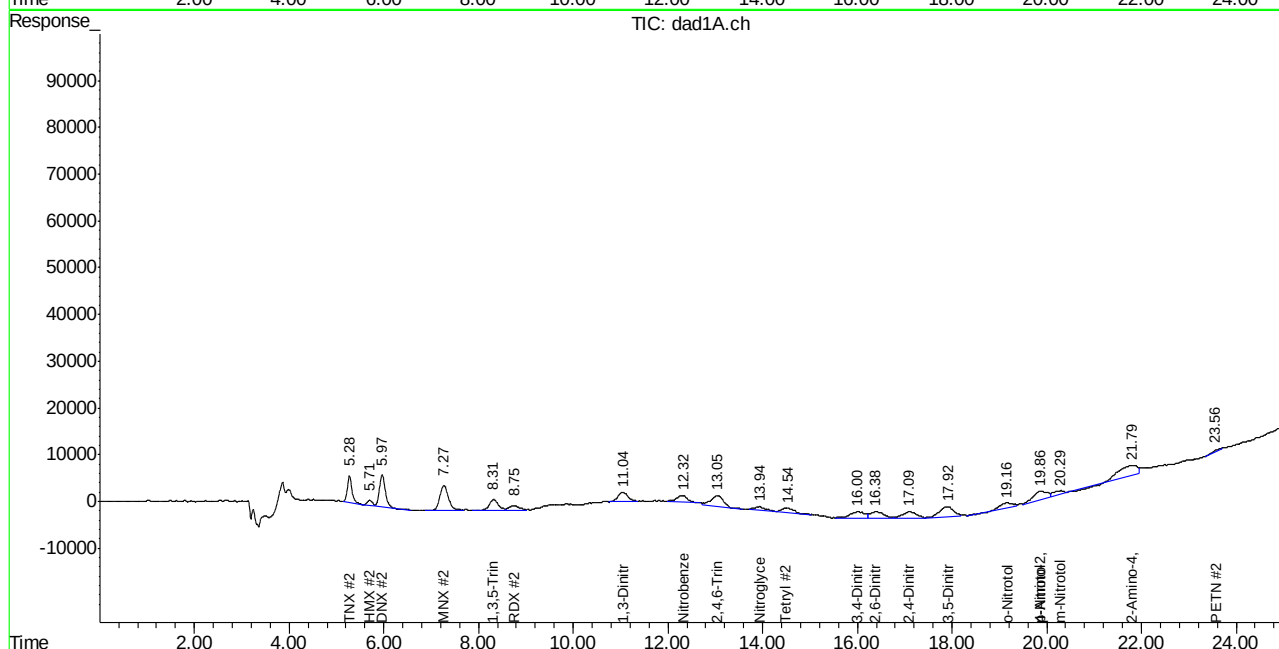
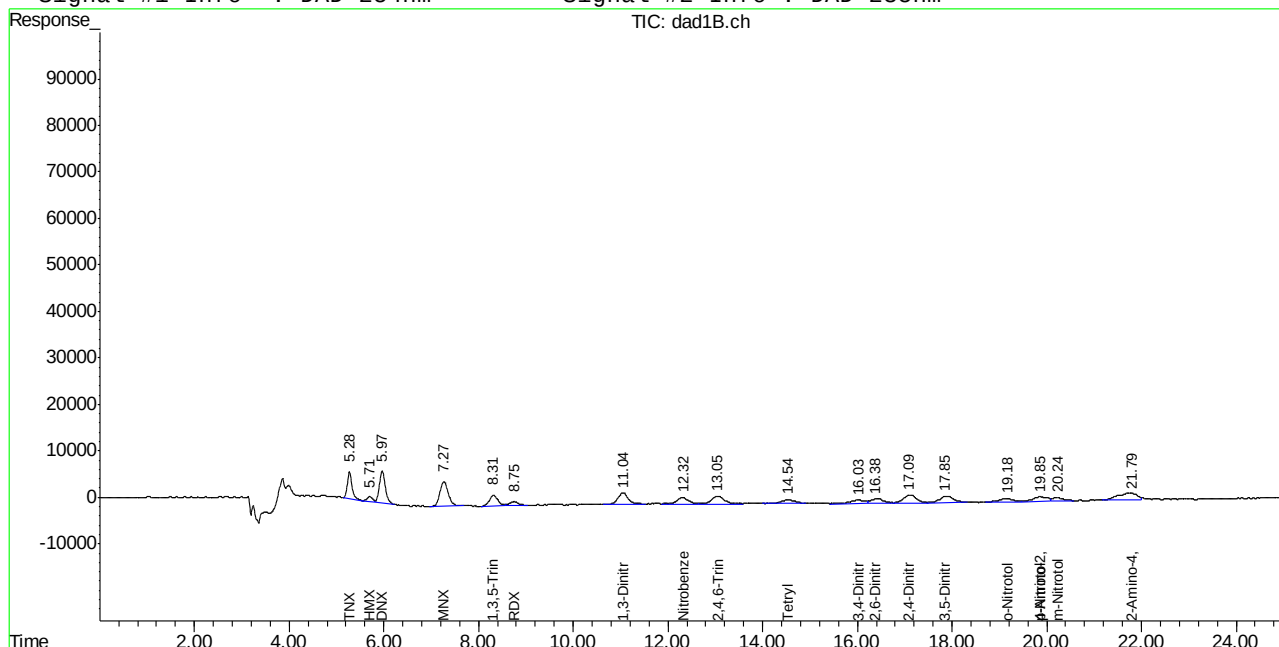
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG626762.D GGG3229_071123.M Wed Jul 12 15:27:49 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626762.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626762.D\dad1A.ch
Acq On : 11-Jul-2023, 15:47:33 Operator: fouads
Sample : ic3298-20 Inst : G1315B
Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:48 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number: GGG3298-IC3298

Method: SW846 8330A

Lab FileID: GG626762.D

Analyst approved: 07/12/23 15:40 Fouad Sekkar

Injection Time: 07/11/23 15:47

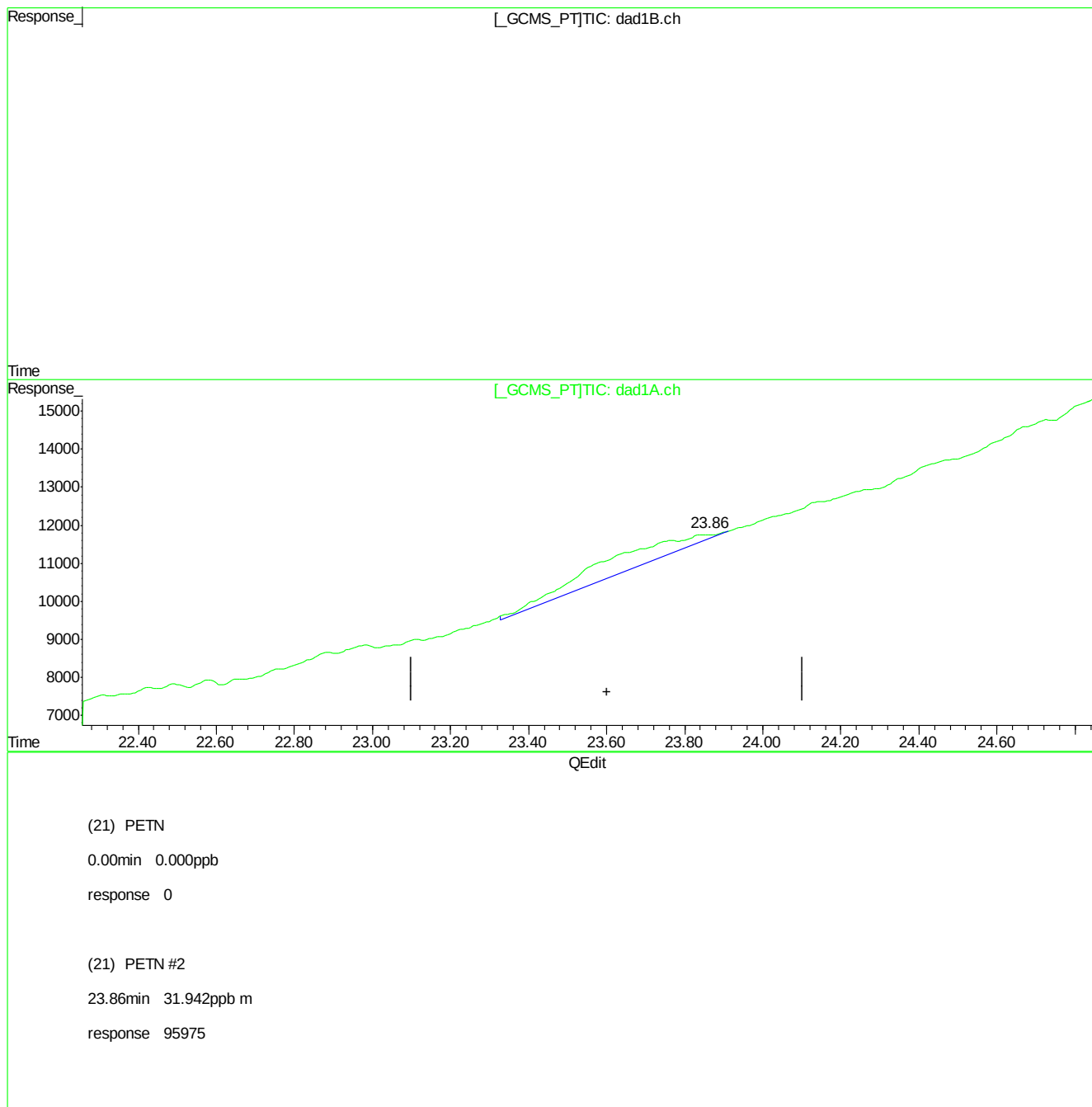
Supervisor approved: 07/13/23 18:08 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3-Dinitrobenzene	99-65-0	2	11.04	Poor instrument integration
Nitrobenzene	98-95-3	2	12.32	Poor instrument integration
PETN	78-11-5	2	23.56	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626762.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626762.D\dad1A.ch
Acq On : 11-Jul-2023, 15:47:33 Operator: fouads
Sample : ic3298-1 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:07 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



(+) = Expected Retention Time

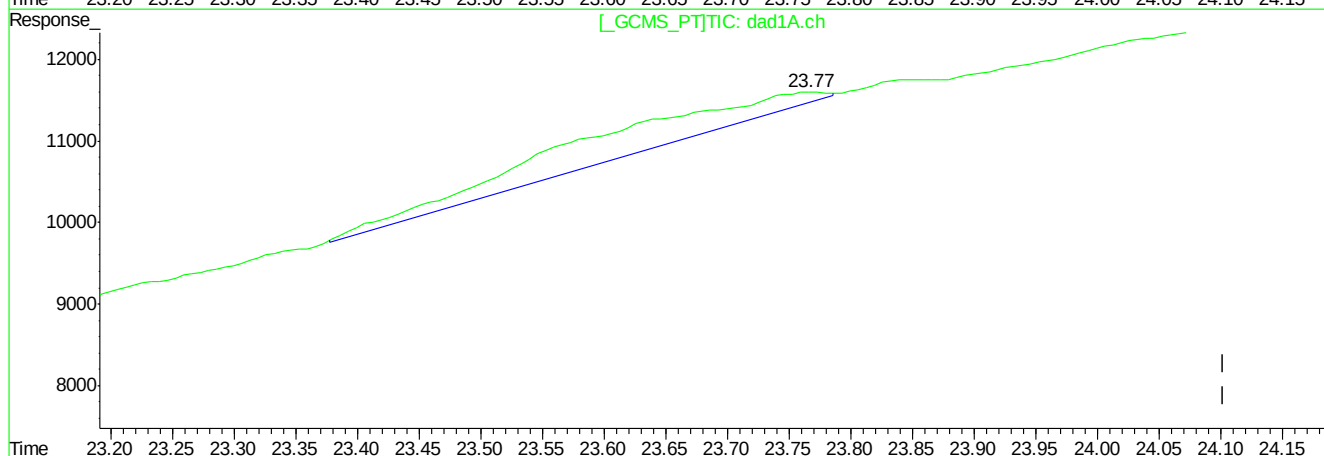
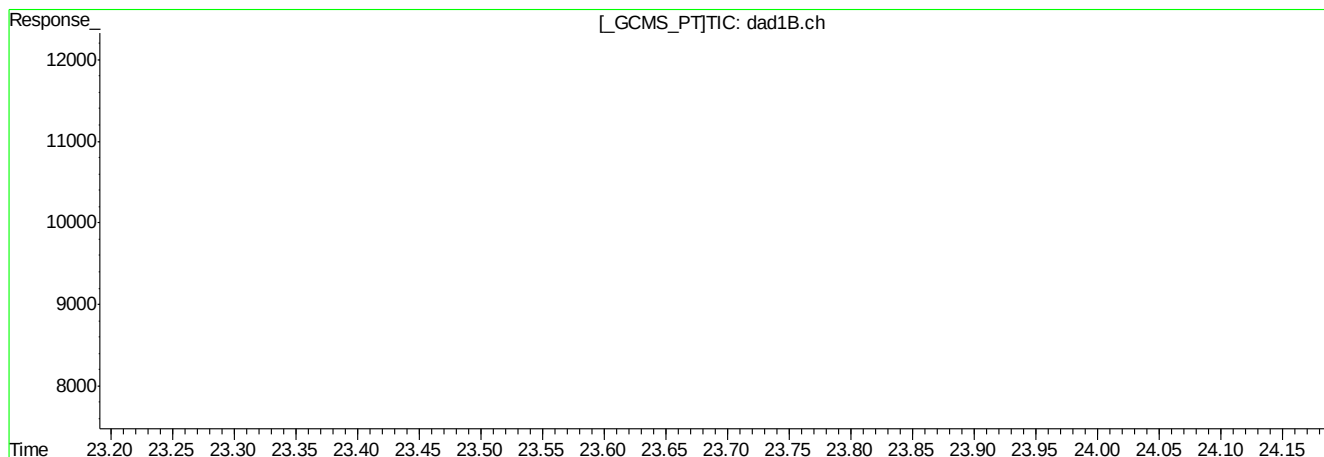
GG626762.D GGG3229_013023.M

Wed Jul 12 08:10:39 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626762.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626762.D\dad1A.ch
Acq On : 11-Jul-2023, 15:47:33 Operator: fouads
Sample : ic3298-1 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

23.77min 17.661ppb m

response 53065

(+) = Expected Retention Time

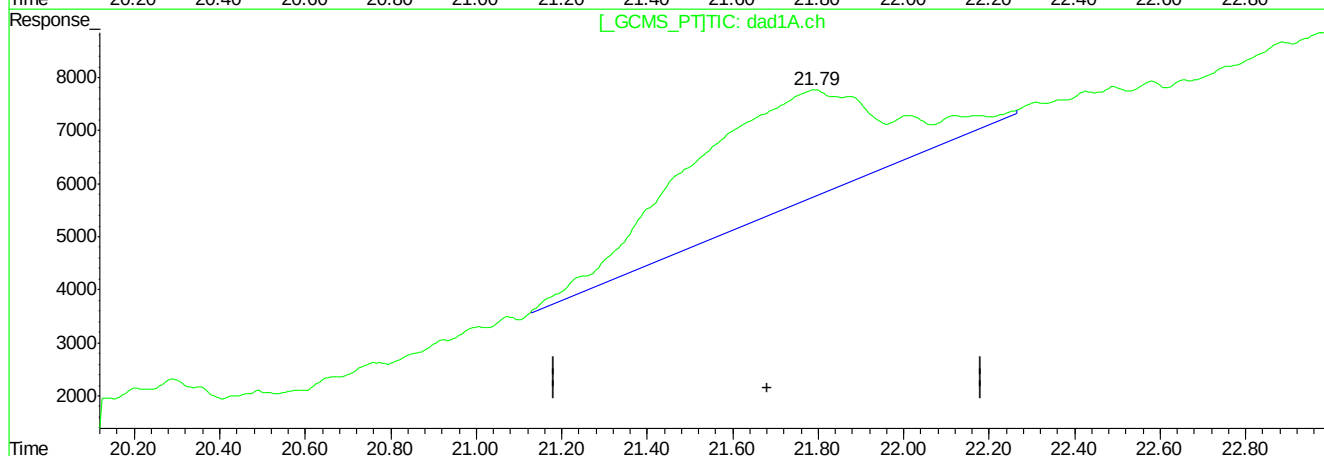
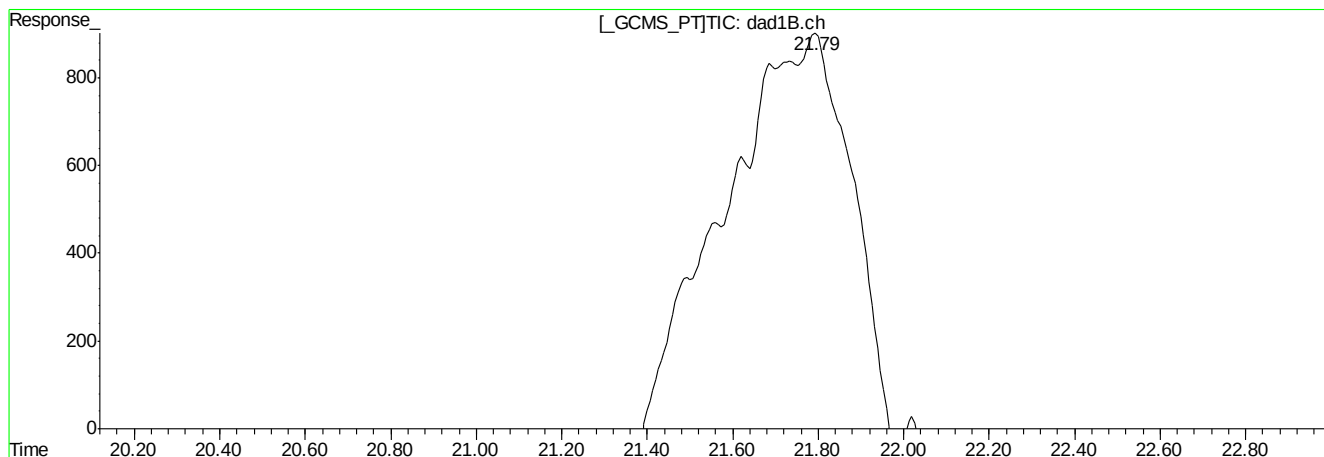
GG626762.D GGG3229_013023.M

Wed Jul 12 08:18:54 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626762.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626762.D\dad1A.ch
Acq On : 11-Jul-2023, 15:47:33 Operator: fouads
Sample : ic3298-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:18 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:35:53 2023
Response via : Multiple Level Calibration



(19) m-Nitrotoluene

21.79min 81.523ppb

response 402112

(19) m-Nitrotoluene #2

21.79min 84.345ppb m

response 695505

(+) = Expected Retention Time

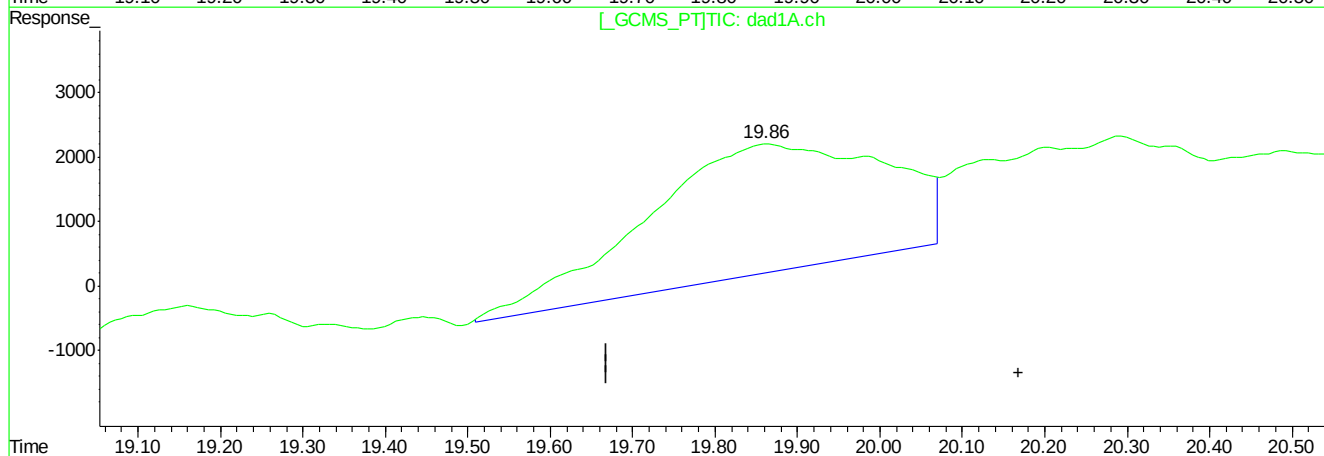
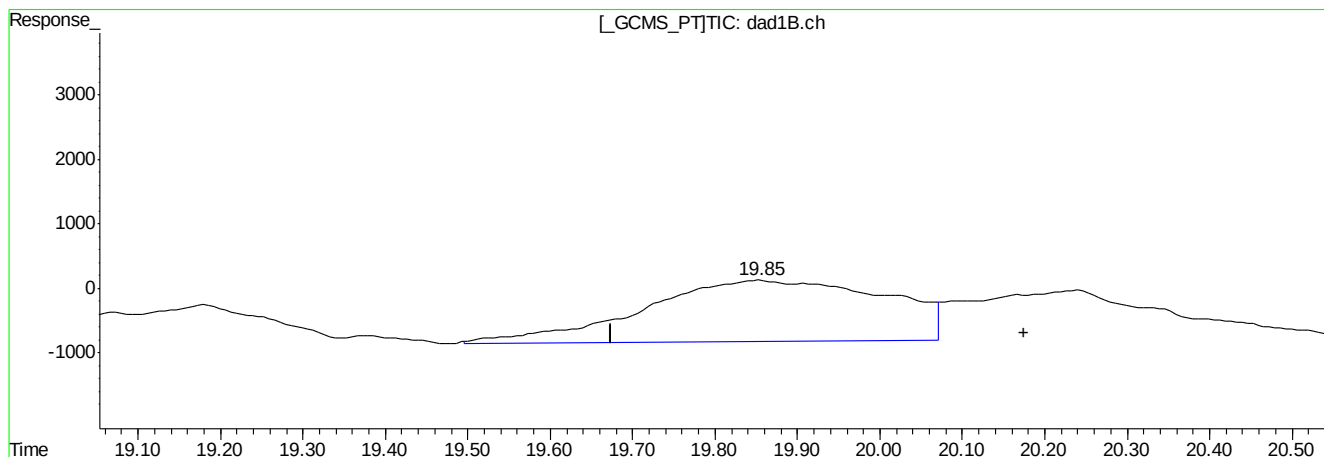
GG626762.D GGG3229_071123.M

Wed Jul 12 08:43:49 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626762.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626762.D\dad1A.ch
Acq On : 11-Jul-2023, 15:47:33 Operator: fouads
Sample : ic3298-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:43 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:48:42 2023
Response via : Multiple Level Calibration



(18) 4-Amino-2,6-Dinitrotoluene

19.85min 40.109ppb m

response 195659

(18) 4-Amino-2,6-Dinitrotoluene #2

19.86min 45.123ppb m

response 404641

(+) = Expected Retention Time

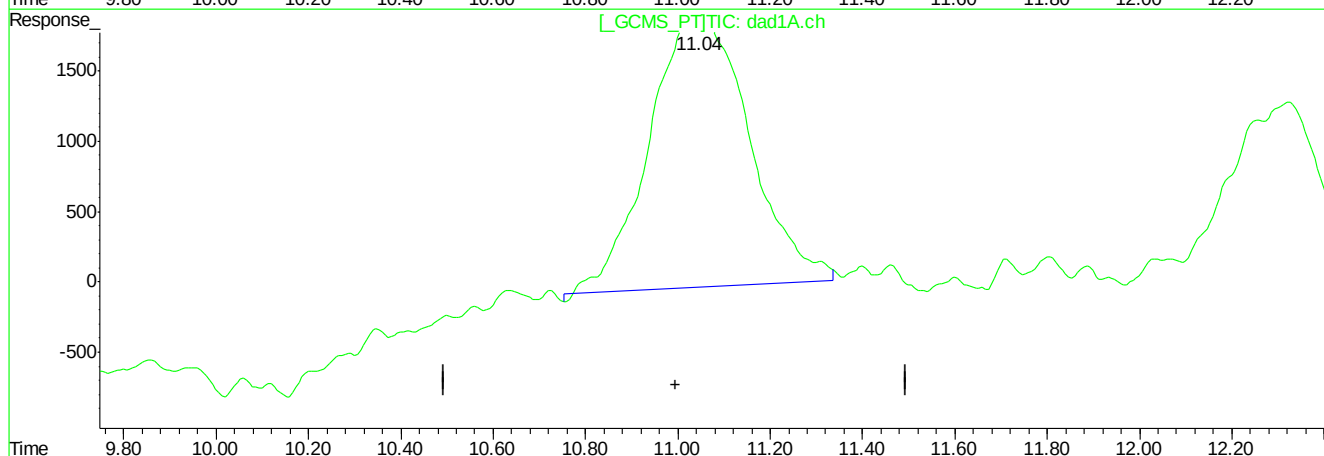
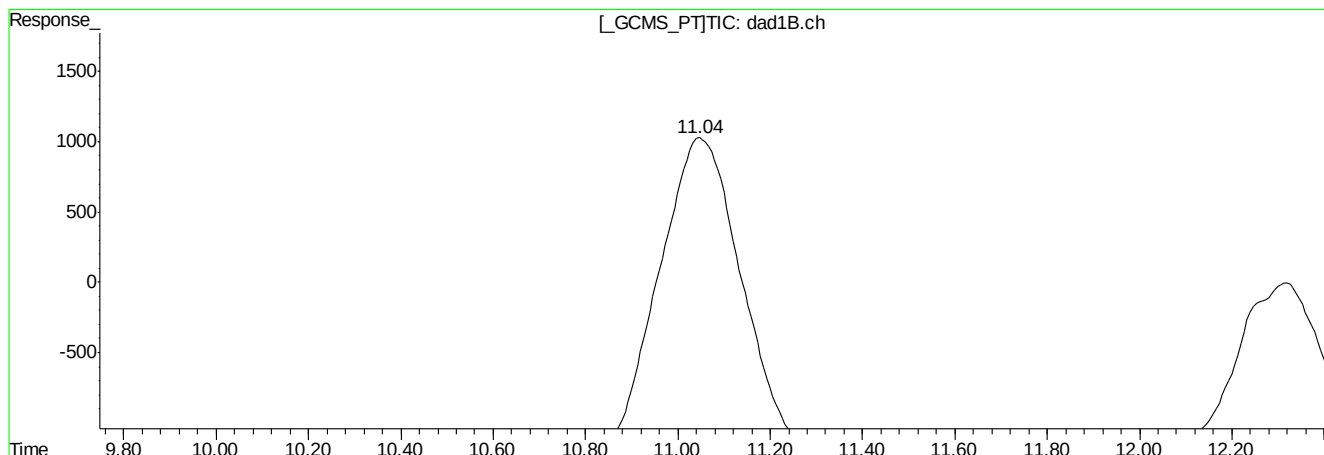
GG626762.D GGG3229_071123.M

Wed Jul 12 09:59:54 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626762.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626762.D\dad1A.ch
Acq On : 11-Jul-2023, 15:47:33 Operator: fouads
Sample : ic3298-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

11.05min 26.487ppb

response 370098

(7) 1,3-Dinitrobenzene #2

11.04min 26.890ppb m

response 292787

(+) = Expected Retention Time

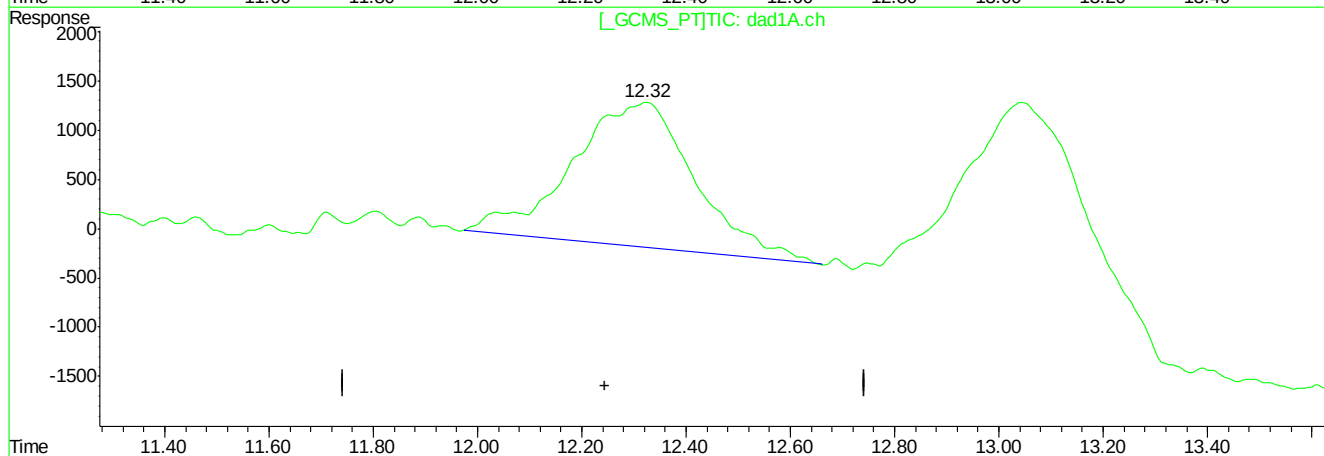
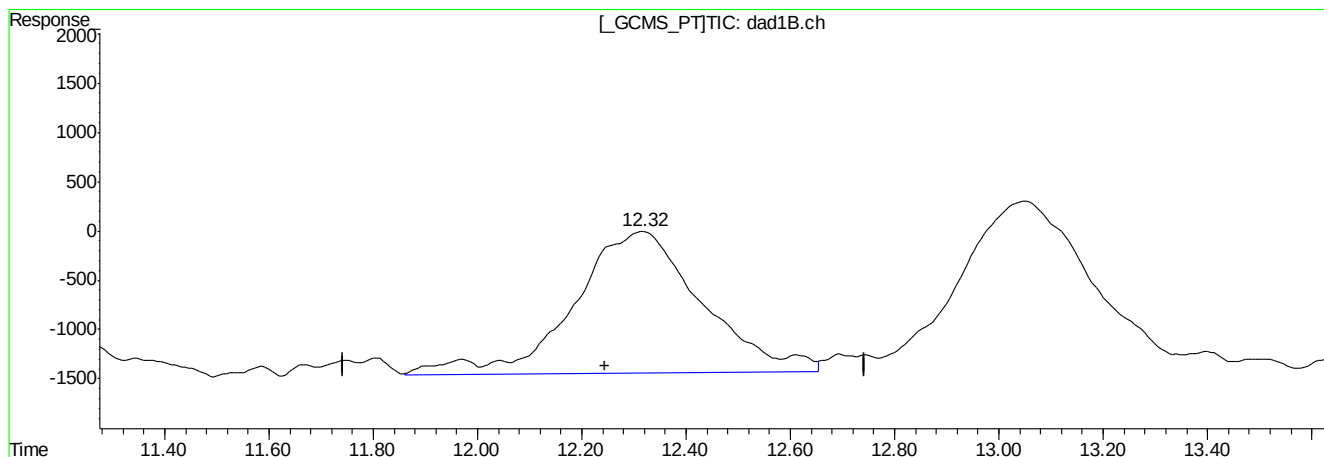
GG626762.D GGG3229_071123.M

Wed Jul 12 10:46:13 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626762.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626762.D\dad1A.ch
Acq On : 11-Jul-2023, 15:47:33 Operator: fouads
Sample : ic3298-20 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene

12.32min 28.254ppb

response 246518

(8) Nitrobenzene #2

12.32min 28.644ppb m

response 238713

(+) = Expected Retention Time

GG626762.D GGG3229_071123.M

Wed Jul 12 10:46:33 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1B.ch Vial: 4
 Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1A.ch
 Acq On : 11-Jul-2023, 16:19:58 Operator: fouads
 Sample : ic3298-50 Inst : G1315B
 Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 12 10:09:23 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 12 10:08:59 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	15.97	15.97	338672	672973	56.548	58.176
Spiked Amount	500.000	Range	70 - 136	Recovery	=	11.31%# 11.64%#
Target Compounds						
1) TNX	5.28	5.28	525024	506700	51.248	49.141
2) HMX	5.70	5.70	210702	203195	58.820	56.514
3) DNx	5.96	5.96	798350	785108	95.390	93.545
4) MNX	7.24	7.24	869905	888036	116.263	117.044
5) 1,3,5-Trinitrobe	8.30	8.30	692968	768949	68.005	74.060
6) RDX	8.71	8.71	322943	435067	66.508	85.323
7) 1,3-Dinitrobenze	11.02	11.02	959088	773829	68.640	71.070m
8) Nitrobenzene	12.29	12.28	632313	562986	72.470	67.555m
9) 2,4,6-Trinitroto	13.03	13.02	691591	875661	69.762	66.878m
10) Nitroglycerin	0.00	13.91	0	311098	N.D.	88.904 #
11) Tetryl	14.55	14.48	371927	624513	50.591	49.582
13) 2,6-Dinitrotolue	16.38	16.37	441844	599476	65.087	60.926
14) 2,4-Dinitrotolue	17.06	17.06	813169	526519	64.045	58.308
15) 3,5-Dinitroanili	17.81	17.82	705369	1083391	65.236	60.888
16) o-Nitrotoluene	19.09	19.12	375857	473815	68.632	57.891
17) p-Nitrotoluene	19.83	19.84	470747	889403	140.158	132.596
18) 4-Amino-2,6-Dini	19.83	19.84	470747	889403	187.691	220.887
19) m-Nitrotoluene	20.18	20.18	348397	560575	22.496	23.418
20) 2-Amino-4,6-Dini	21.68	21.69	1045412	1538875	67.501	64.731
21) PETN	0.00	23.64	0	230781	N.D.	62.863m#

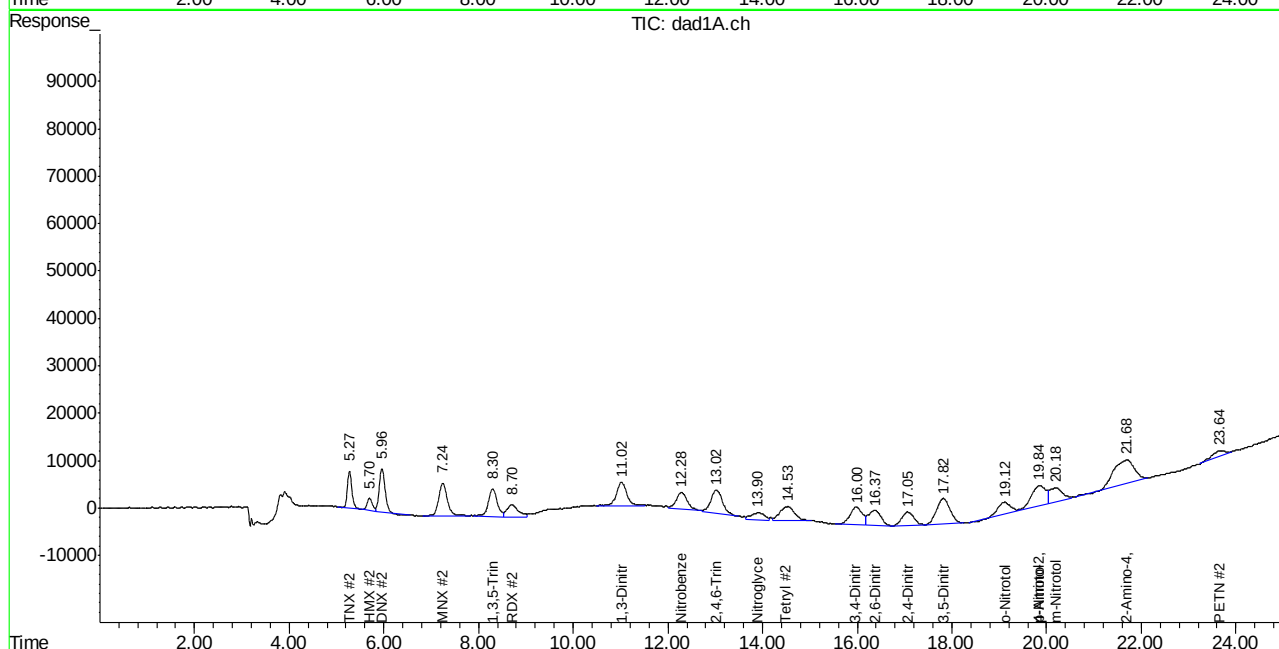
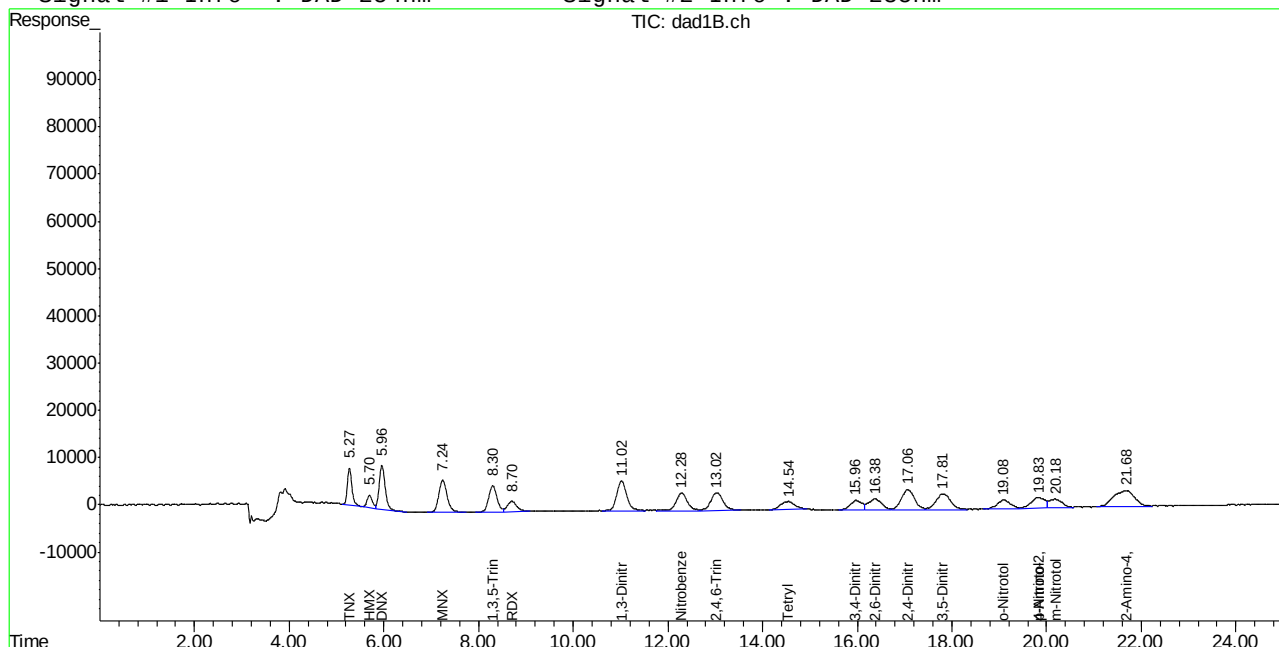
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG626763.D GGG3229_071123.M Wed Jul 12 15:27:50 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1A.ch
Acq On : 11-Jul-2023, 16:19:58 Operator: fouads
Sample : ic3298-50 Inst : G1315B
Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:50 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number:

GGG3298-IC3298

Method:

SW846 8330A

Lab FileID:

GG626763.D

Analyst approved:

07/12/23 15:40 Fouad Sekkar

Injection Time:

07/11/23 16:19

Supervisor approved:

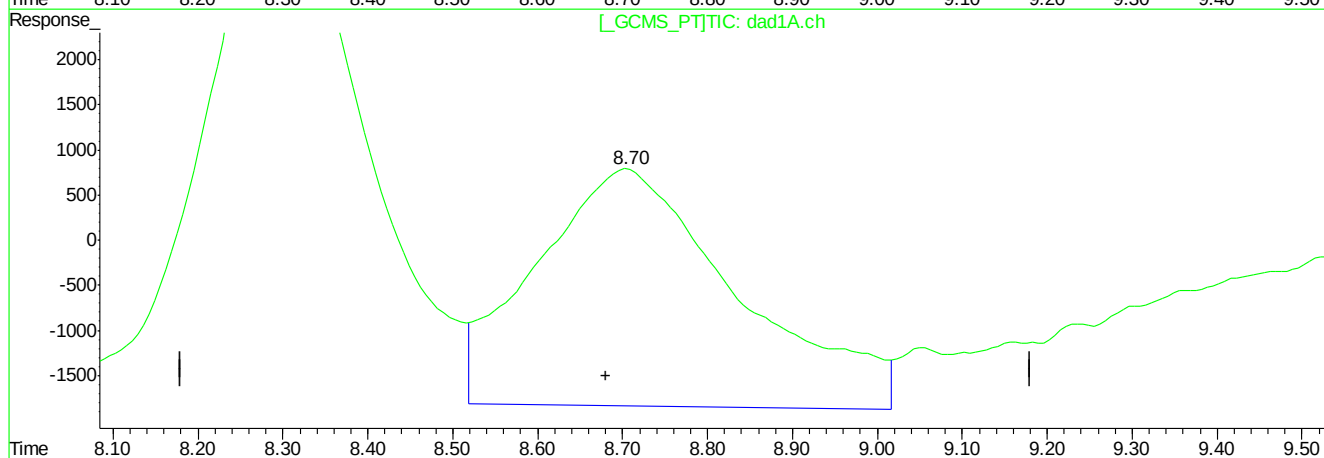
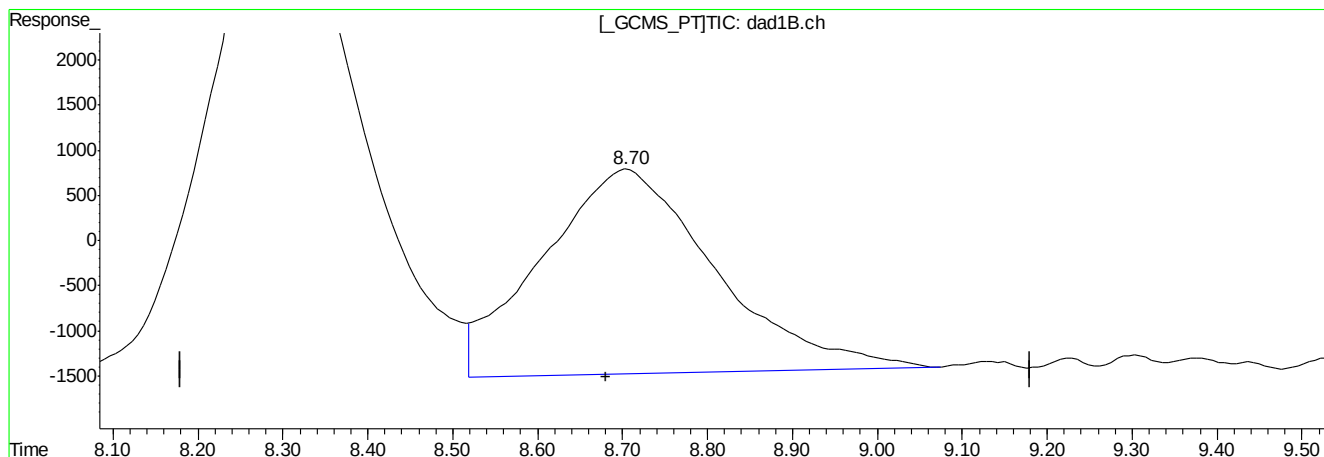
07/13/23 18:08 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3-Dinitrobenzene	99-65-0	2	11.02	Poor instrument integration
Nitrobenzene	98-95-3	2	12.28	Poor instrument integration
2,4,6-Trinitrotoluene	118-96-7	2	13.02	Poor instrument integration
PETN	78-11-5	2	23.64	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1A.ch
Acq On : 11-Jul-2023, 16:19:58 Operator: fouads
Sample : ic3298-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



QEdit

(6) RDX

8.71min 75.438ppb

response 322943

(6) RDX #2

8.71min 101.910ppb

response 435067

(+) = Expected Retention Time

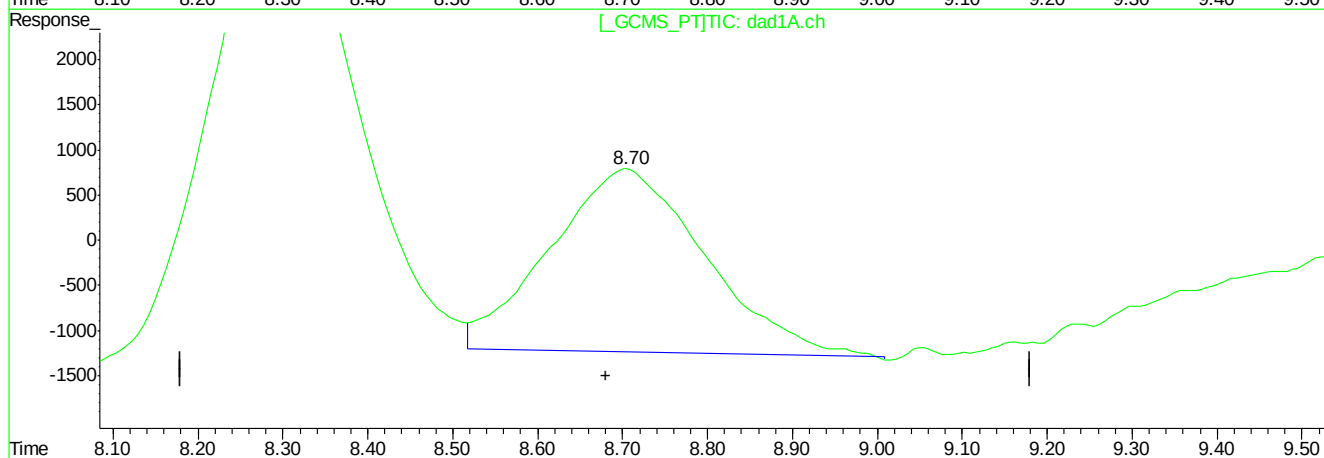
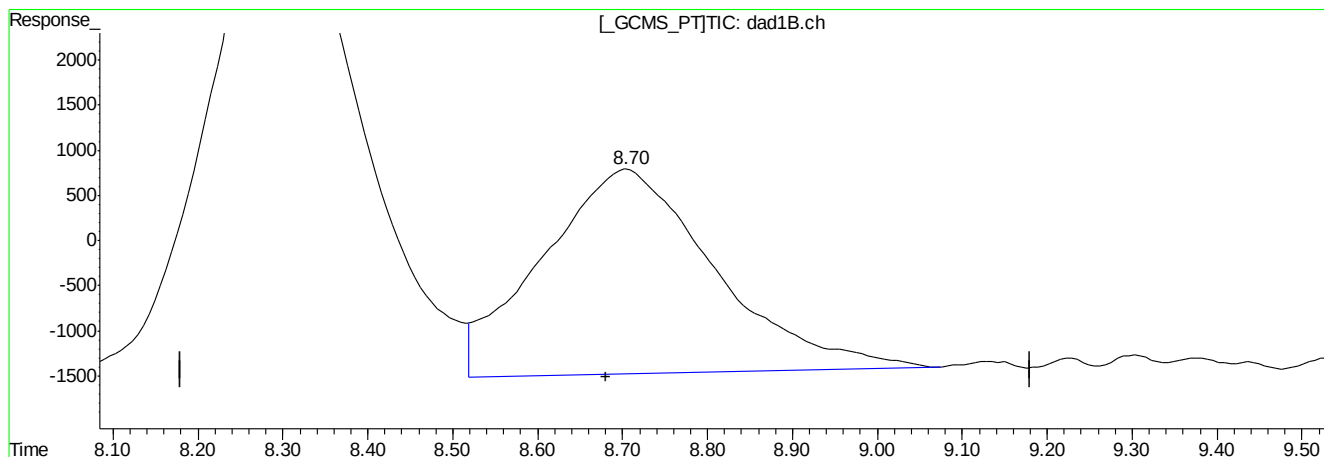
GG626763.D GGG3229_013023.M

Wed Jul 12 08:11:10 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1A.ch
Acq On : 11-Jul-2023, 16:19:58 Operator: fouads
Sample : ic3298-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



QEdit

(6) RDX

8.71min 75.438ppb

response 322943

(6) RDX #2

8.70min 60.290ppb m

response 257384

(+) = Expected Retention Time

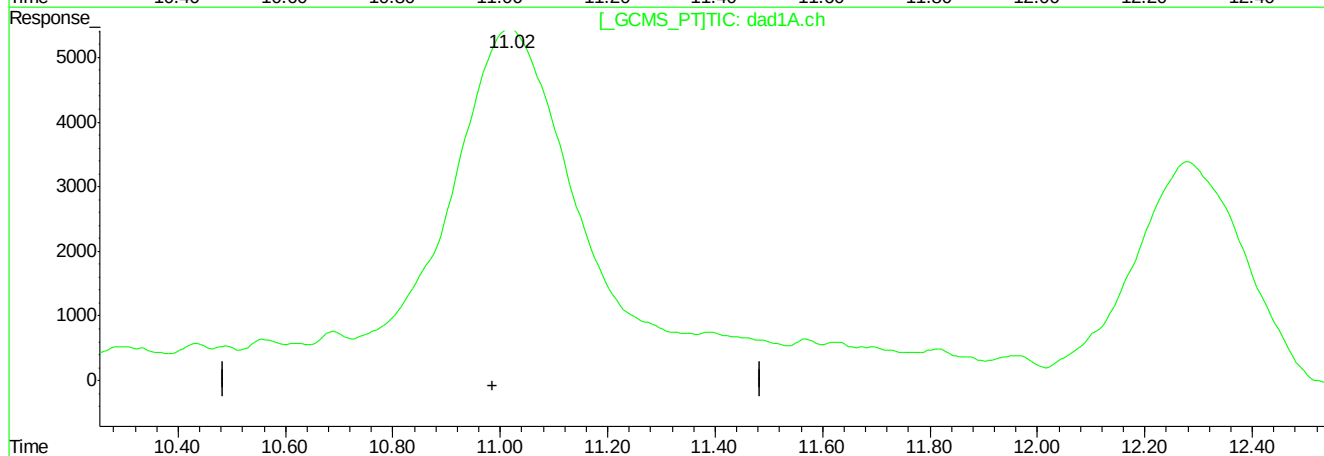
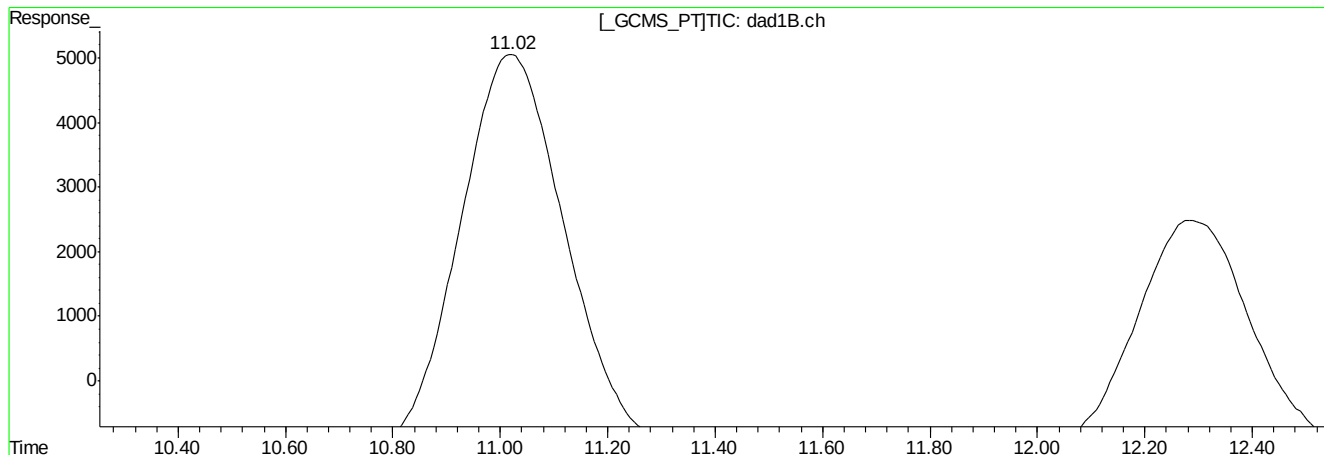
GG626763.D GGG3229_013023.M

Wed Jul 12 08:11:16 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1A.ch
Acq On : 11-Jul-2023, 16:19:58 Operator: fouads
Sample : ic3298-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

11.02min 78.473ppb

response 959088

(7) 1,3-Dinitrobenzene #2

11.02min 231.859ppb

response 2044336

(+) = Expected Retention Time

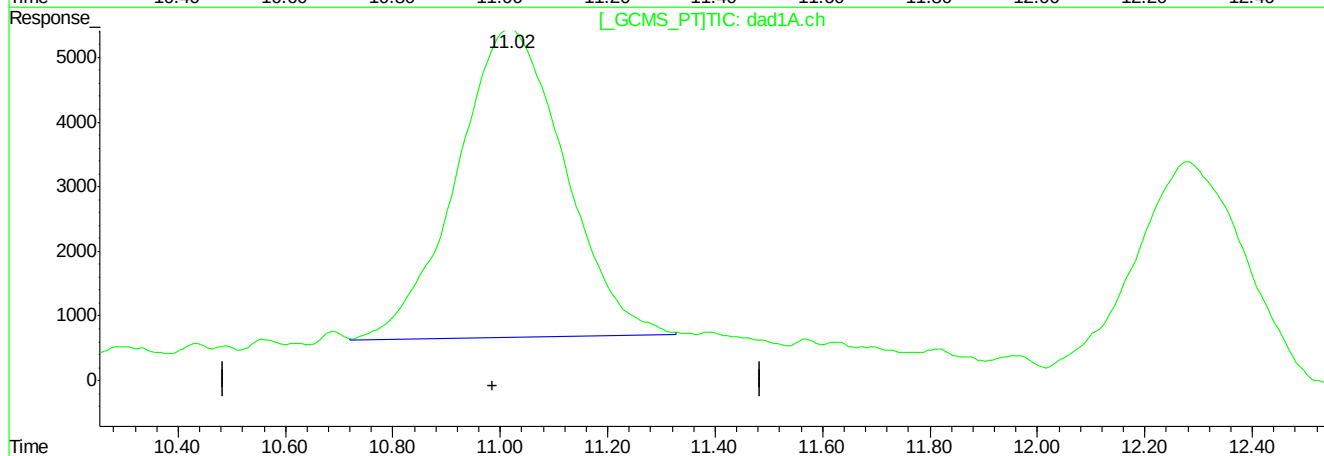
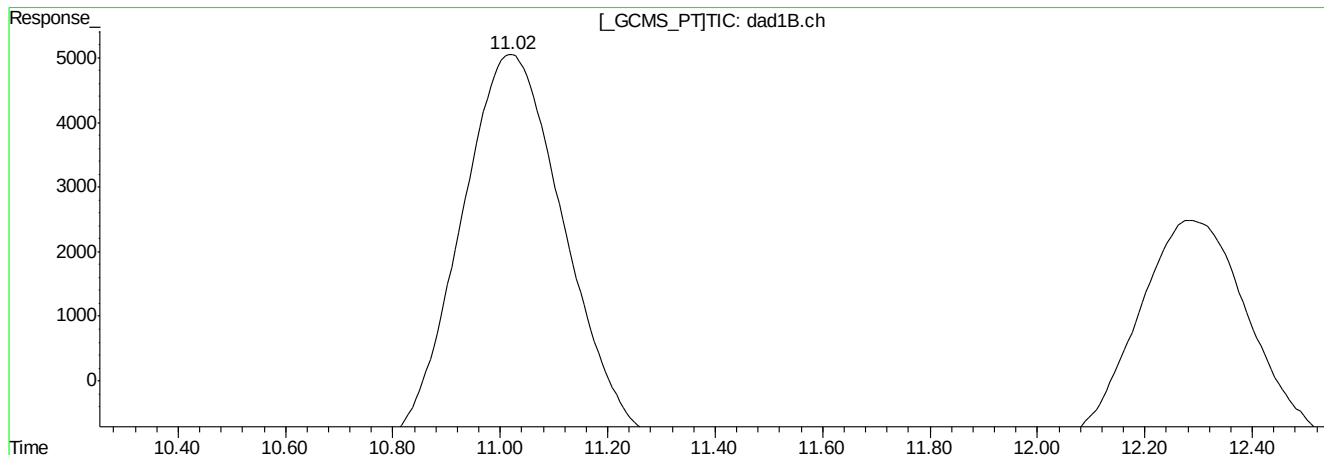
GG626763.D GGG3229_013023.M

Wed Jul 12 08:11:26 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1A.ch
Acq On : 11-Jul-2023, 16:19:58 Operator: fouads
Sample : ic3298-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

11.02min 78.473ppb

response 959088

(7) 1,3-Dinitrobenzene #2

11.02min 75.534ppb m

response 665994

(+) = Expected Retention Time

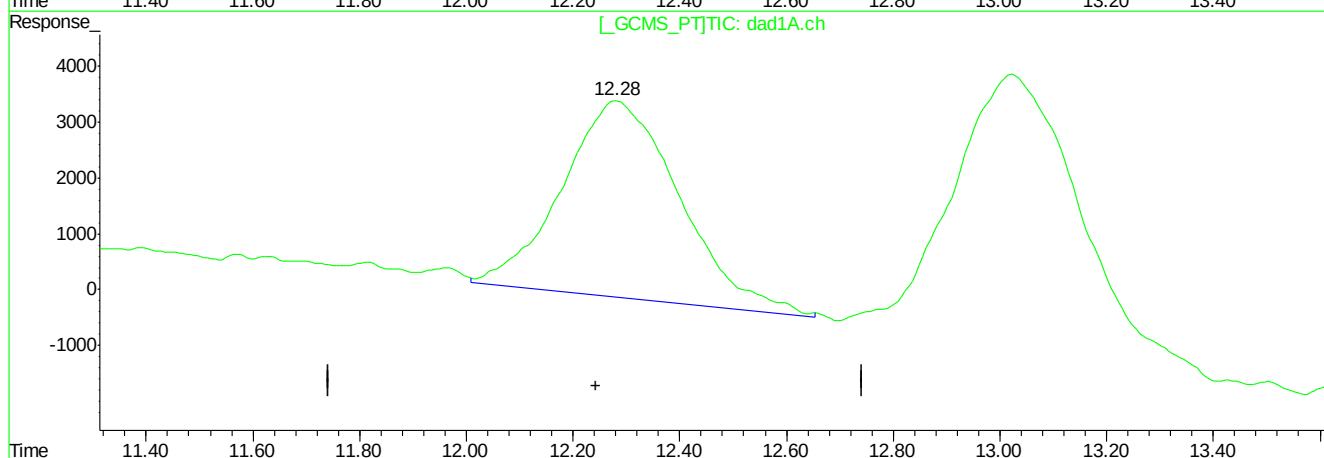
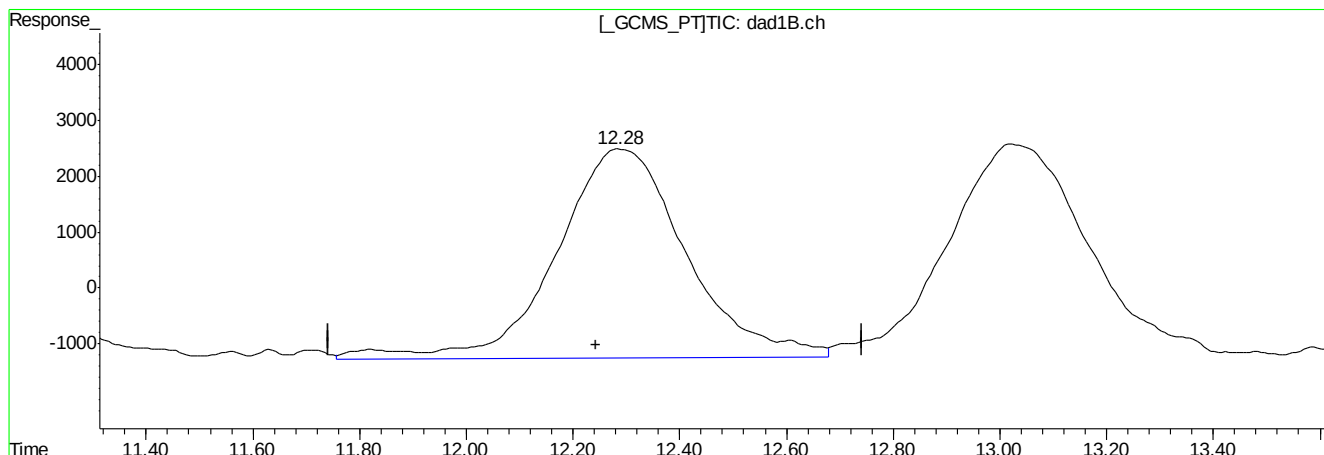
GG626763.D GGG3229_013023.M

Wed Jul 12 08:11:31 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1A.ch
Acq On : 11-Jul-2023, 16:19:58 Operator: fouads
Sample : ic3298-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene

12.29min 81.121ppb

response 632313

(8) Nitrobenzene #2

12.28min 69.885ppb m

response 538823

(+) = Expected Retention Time

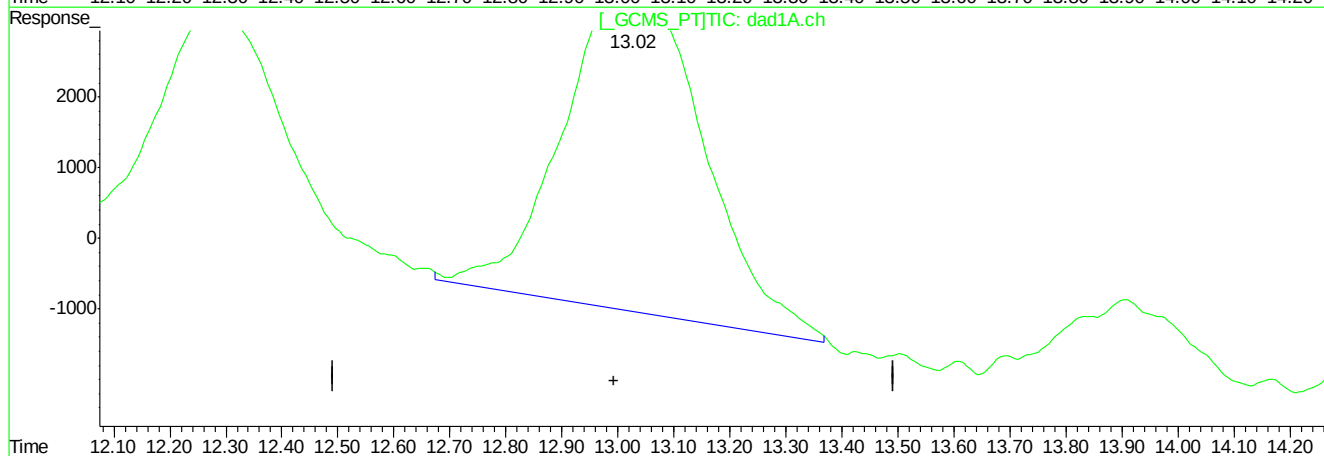
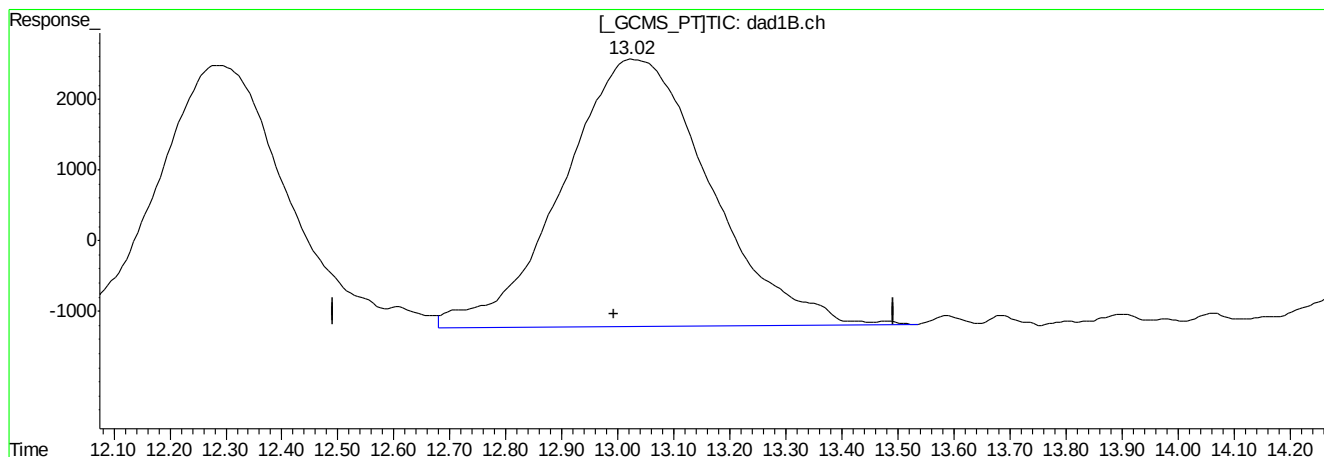
GG626763.D GGG3229_013023.M

Wed Jul 12 08:11:44 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1A.ch
Acq On : 11-Jul-2023, 16:19:58 Operator: fouads
Sample : ic3298-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



QEdit

(9) 2,4,6-Trinitrotoluene

13.03min 78.716ppb

response 691591

(9) 2,4,6-Trinitrotoluene #2

13.02min 67.107ppb m

response 807770

(+) = Expected Retention Time

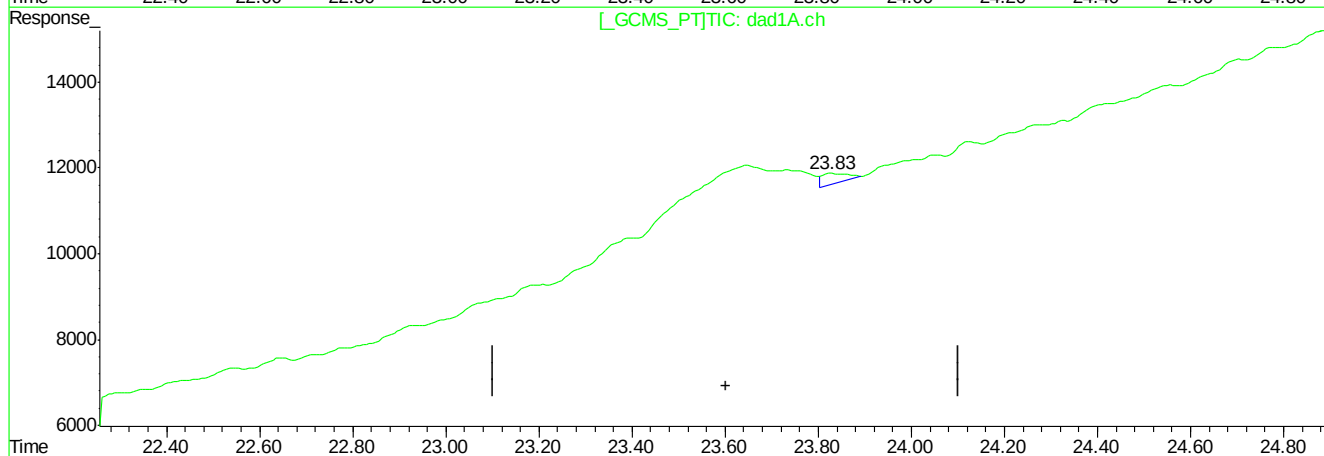
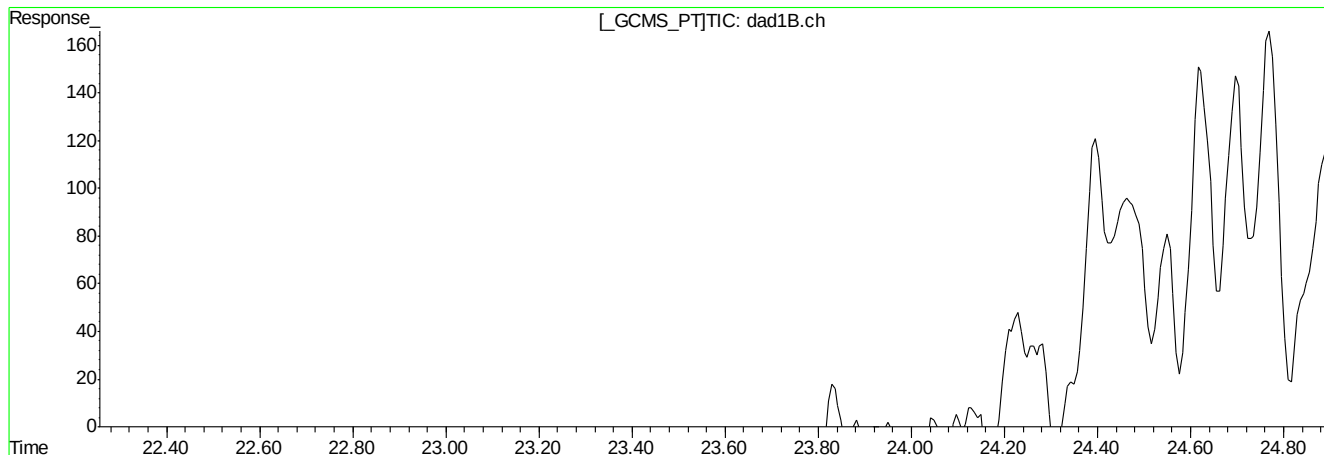
GG626763.D GGG3229_013023.M

Wed Jul 12 08:12:00 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1A.ch
Acq On : 11-Jul-2023, 16:19:58 Operator: fouads
Sample : ic3298-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

23.83min 2.908ppb

response 8738

(+) = Expected Retention Time

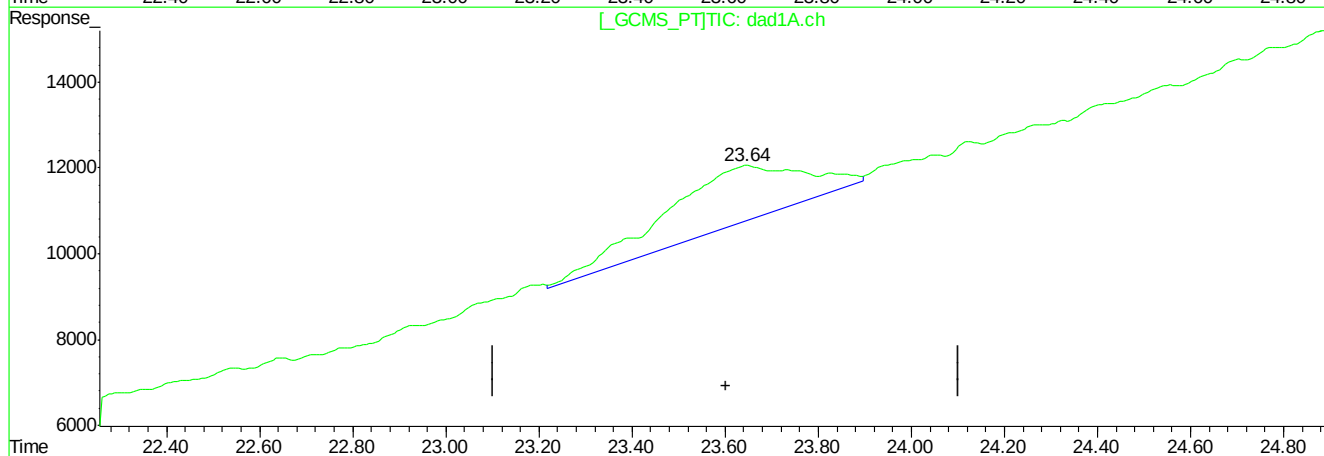
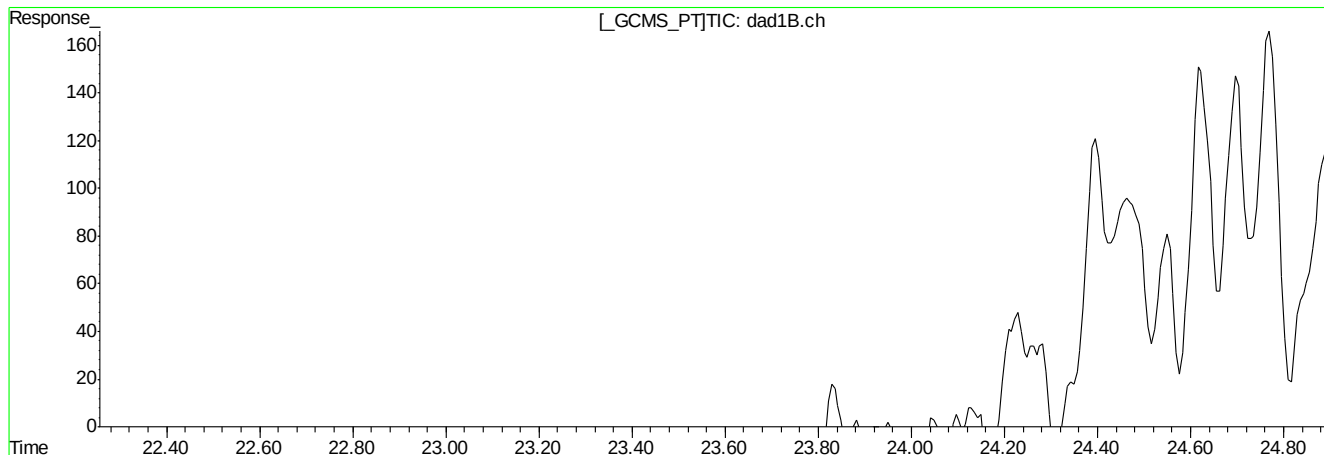
GG626763.D GGG3229_013023.M

Wed Jul 12 08:12:56 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1A.ch
Acq On : 11-Jul-2023, 16:19:58 Operator: fouads
Sample : ic3298-2 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:10 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

23.64min 91.230ppb m

response 274118

(+) = Expected Retention Time

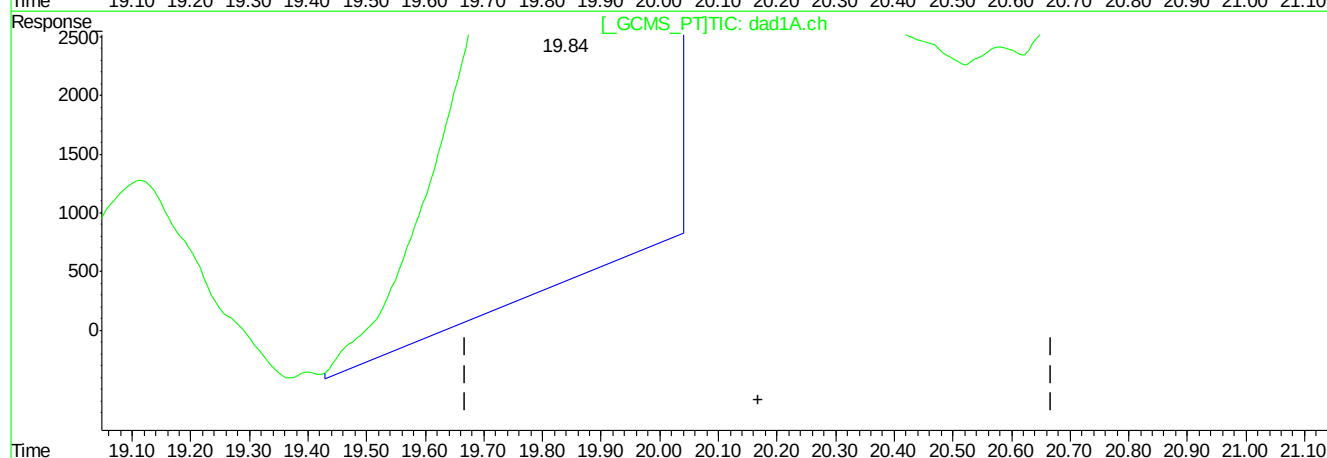
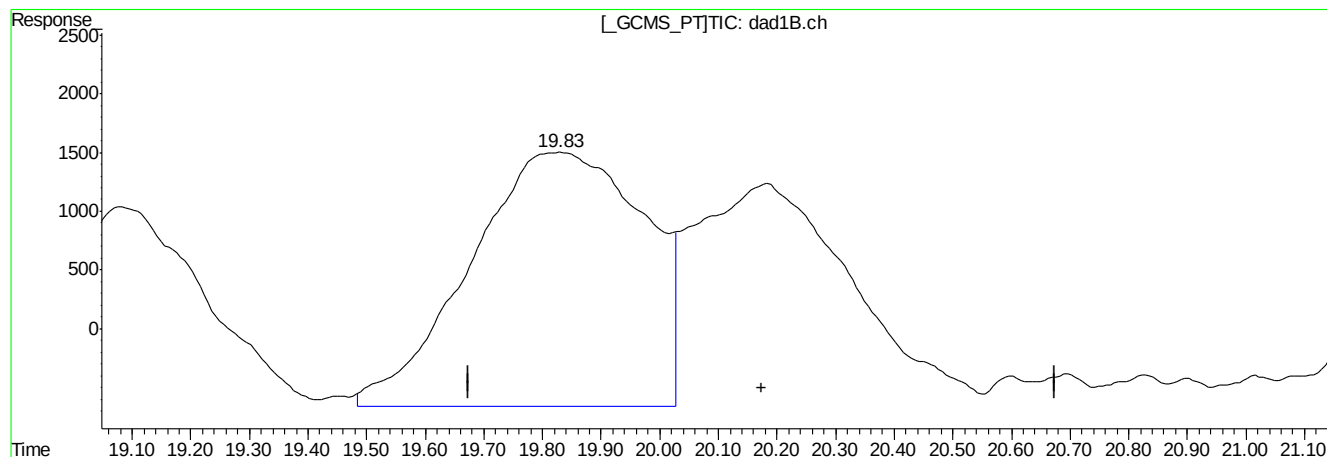
GG626763.D GGG3229_013023.M

Wed Jul 12 08:13:03 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1A.ch
Acq On : 11-Jul-2023, 16:19:58 Operator: fouads
Sample : ic3298-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:12 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:48:42 2023
Response via : Multiple Level Calibration



QEdit

(18) 4-Amino-2,6-Dinitrotoluene

19.83min 90.839ppb m

response 443123

(18) 4-Amino-2,6-Dinitrotoluene #2

19.84min 101.443ppb m

response 909696

(+) = Expected Retention Time

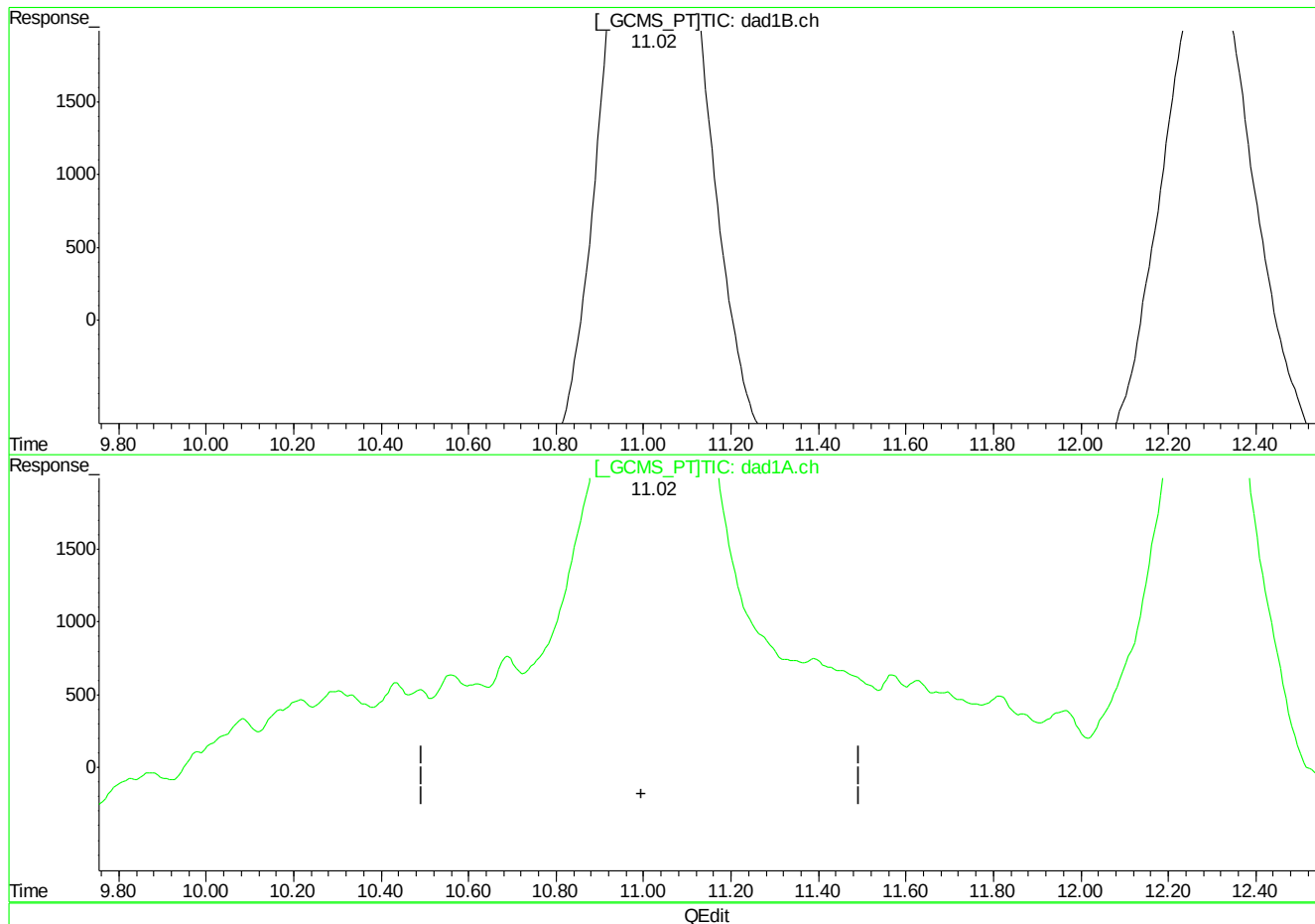
GG626763.D GGG3229_071123.M

Wed Jul 12 10:00:44 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1A.ch
Acq On : 11-Jul-2023, 16:19:58 Operator: fouads
Sample : ic3298-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

11.02min 68.640ppb

response 959088

(7) 1,3-Dinitrobenzene #2

11.02min 187.757ppb

response 2044336

(+) = Expected Retention Time

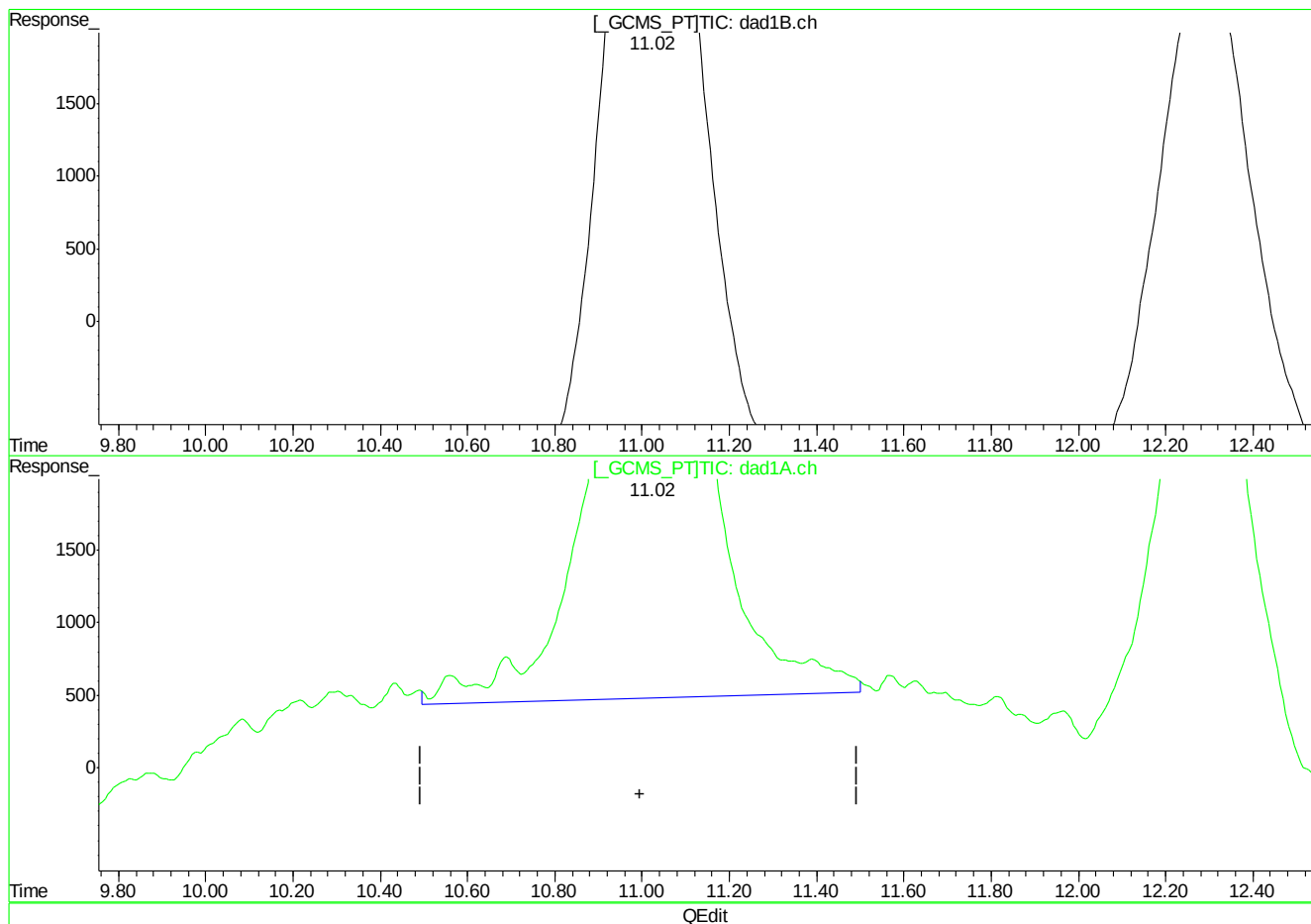
GG626763.D GGG3229_071123.M

Wed Jul 12 10:49:09 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1A.ch
Acq On : 11-Jul-2023, 16:19:58 Operator: fouads
Sample : ic3298-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

11.02min 68.640ppb

response 959088

(7) 1,3-Dinitrobenzene #2

11.02min 71.070ppb m

response 773829

(+) = Expected Retention Time

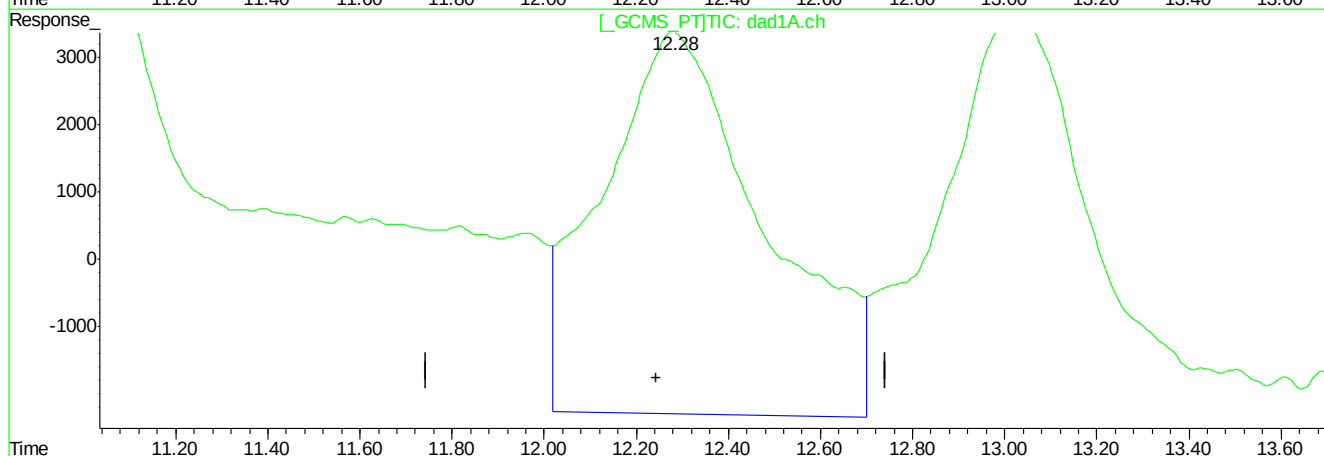
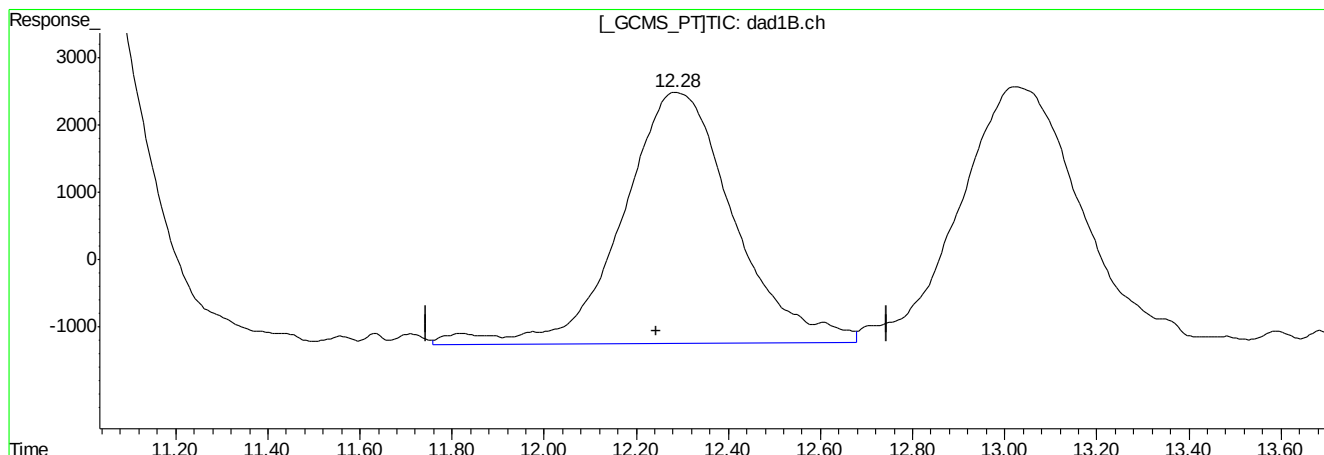
GG626763.D GGG3229_071123.M

Wed Jul 12 10:49:15 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1A.ch
Acq On : 11-Jul-2023, 16:19:58 Operator: fouads
Sample : ic3298-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene

12.29min 72.470ppb

response 632313

(8) Nitrobenzene #2

12.28min 168.087ppb

response 1400788

(+) = Expected Retention Time

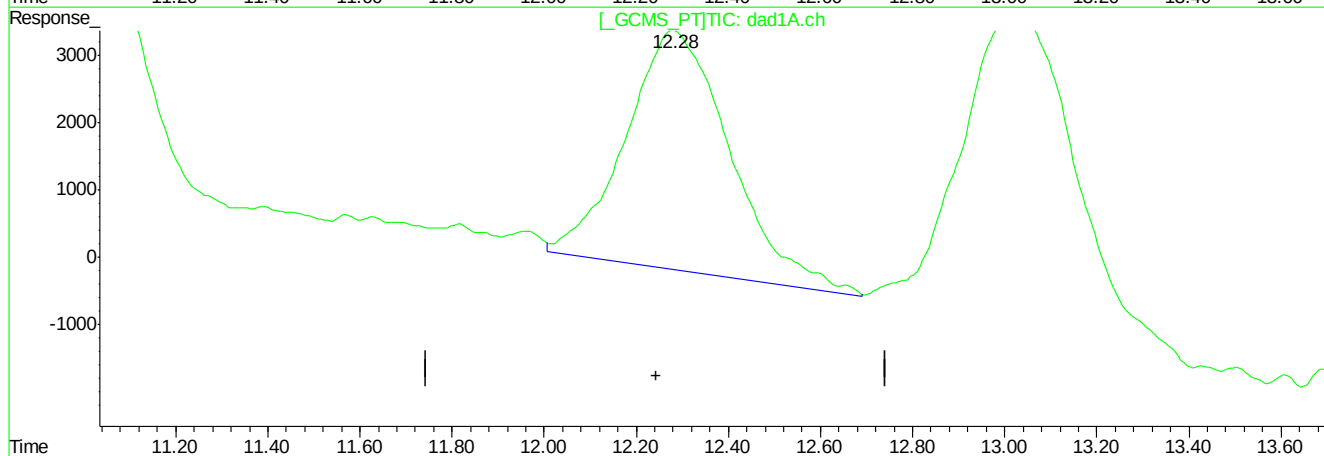
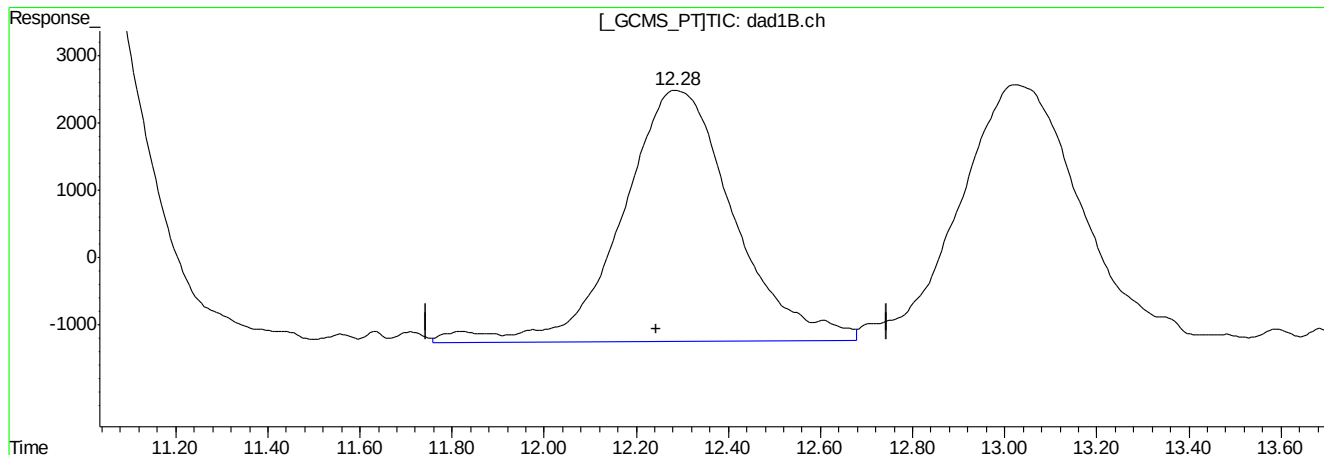
GG626763.D GGG3229_071123.M

Wed Jul 12 10:49:23 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1A.ch
Acq On : 11-Jul-2023, 16:19:58 Operator: fouads
Sample : ic3298-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene

12.29min 72.470ppb

response 632313

(8) Nitrobenzene #2

12.28min 67.555ppb m

response 562986

(+) = Expected Retention Time

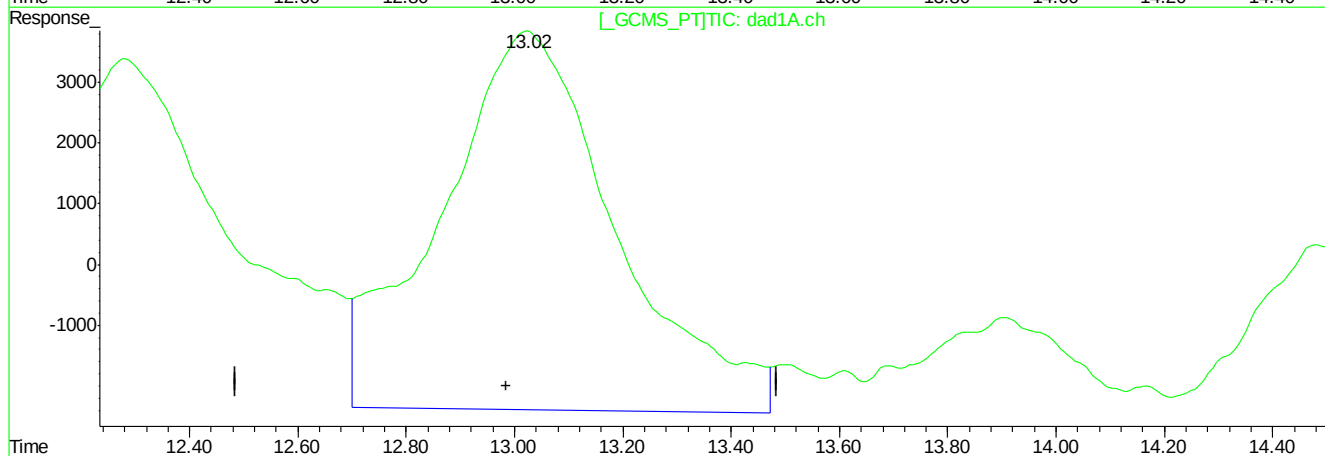
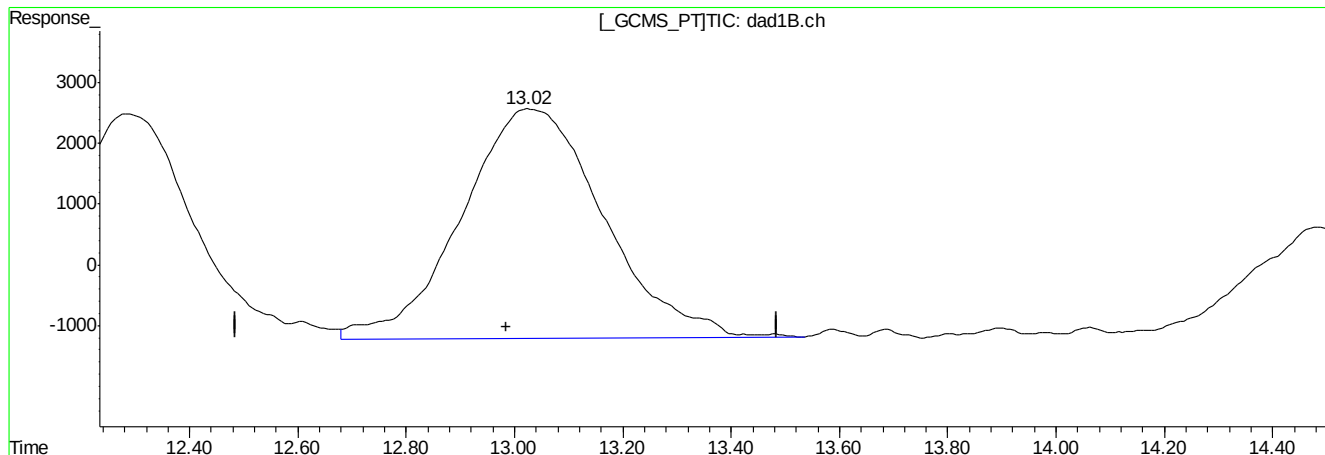
GG626763.D GGG3229_071123.M

Wed Jul 12 10:49:30 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1A.ch
Acq On : 11-Jul-2023, 16:19:58 Operator: fouads
Sample : ic3298-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



QEdit

(9) 2,4,6-Trinitrotoluene

13.03min 69.762ppb

response 691591

(9) 2,4,6-Trinitrotoluene #2

13.02min 107.097ppb

response 1402264

(+) = Expected Retention Time

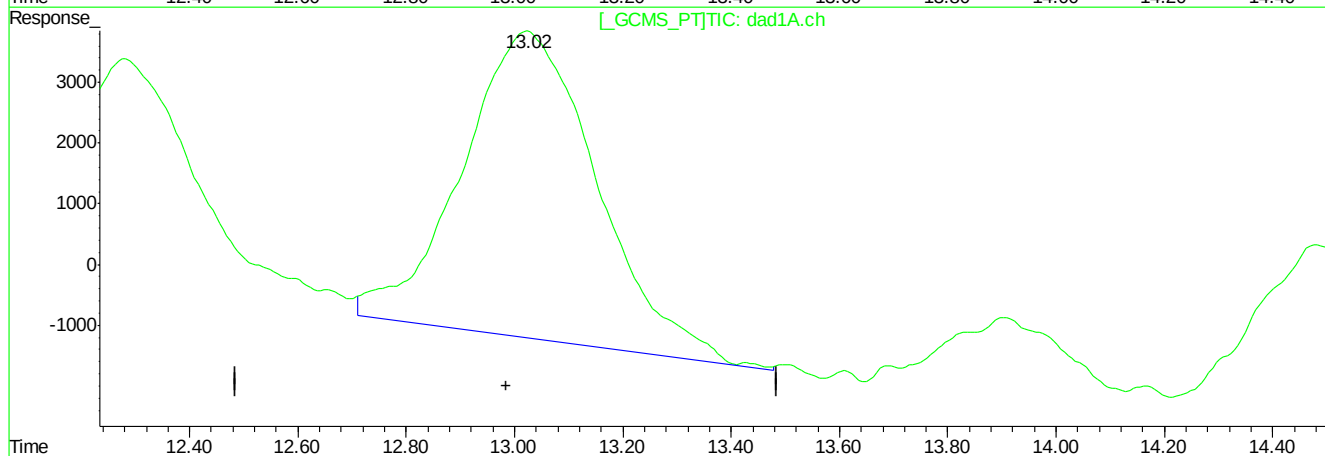
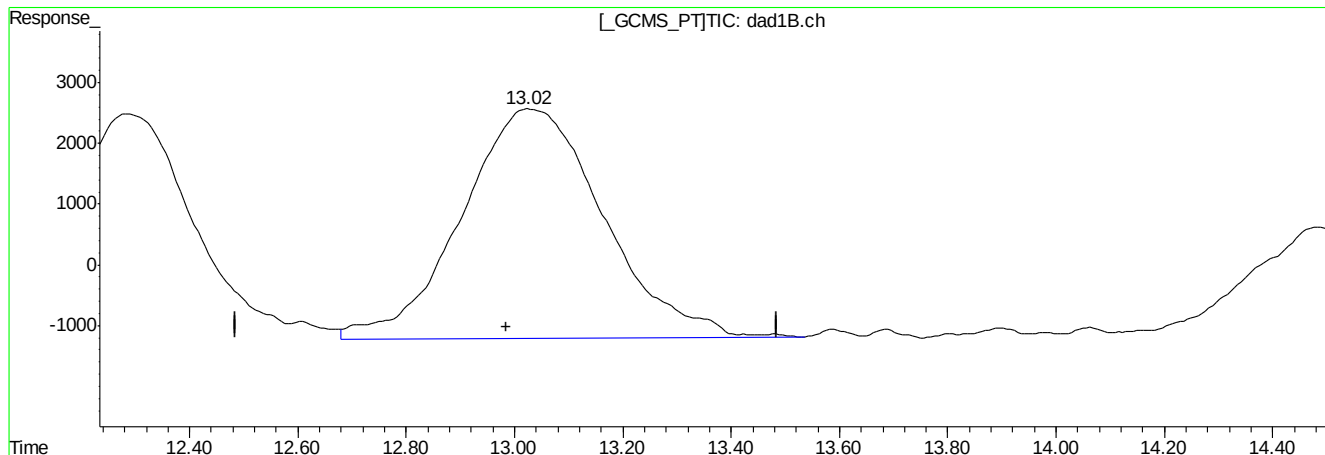
GG626763.D GGG3229_071123.M

Wed Jul 12 10:49:36 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1B.ch Vial: 4
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626763.D\dad1A.ch
Acq On : 11-Jul-2023, 16:19:58 Operator: fouads
Sample : ic3298-50 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



QEdit

(9) 2,4,6-Trinitrotoluene

13.03min 69.762ppb

response 691591

(9) 2,4,6-Trinitrotoluene #2

13.02min 66.878ppb m

response 875661

(+) = Expected Retention Time

GG626763.D GGG3229_071123.M

Wed Jul 12 10:49:42 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
 Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
 Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
 Sample : ic3298-100 Inst : G1315B
 Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 12 10:09:24 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 12 10:08:59 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	15.97	15.97	650724	1258780	108.651	108.817
Spiked Amount	500.000	Range	70 - 136	Recovery	=	21.73%# 21.76%#
Target Compounds						
1) TNX	5.27	5.27	834120	912222	81.419	88.469
2) HMX	5.69	5.69	380585	416505	106.245	115.842
3) DNx	5.95	5.95	1362799	1390202	162.833	165.641
4) MNX	7.24	7.24	1418879	1418925	189.633	187.016
5) 1,3,5-Trinitrobe	8.30	8.30	1172932	1198953	115.107	115.475
6) RDX	8.70	8.70	546310	630476	112.509	123.645
7) 1,3-Dinitrobenze	11.02	11.02	1572439	1424439	112.536	130.824m
8) Nitrobenzene	12.28	12.28	1023302	929325	117.281	111.514m
9) 2,4,6-Trinitroto	13.02	13.03	1137474	1573560	114.739	120.180m
10) Nitroglycerin	0.00	13.90	0	797642	N.D.	227.945 #
11) Tetryl	14.48	14.49	718257	1604688	97.699	127.401
13) 2,6-Dinitrotolue	16.38	16.37	773791	1086037	113.985	110.376
14) 2,4-Dinitrotolue	17.07	17.07	1437849	847685	113.244	93.875
15) 3,5-Dinitroanili	17.83	17.82	1239561	1961660	114.641	110.248
16) o-Nitrotoluene	19.11	19.12	665069	708941	121.443	86.618
17) p-Nitrotoluene	19.87	19.87	790876	1489555	235.471	222.070
18) 4-Amino-2,6-Dini	19.87	19.87	790876	1489555	315.330	369.937
19) m-Nitrotoluene	20.20	20.20	577697	800523	37.301	33.441
20) 2-Amino-4,6-Dini	21.75	21.74	1778375	2982224	114.827	125.444
21) PETN	0.00	23.66	0	610709	N.D.	166.351m#

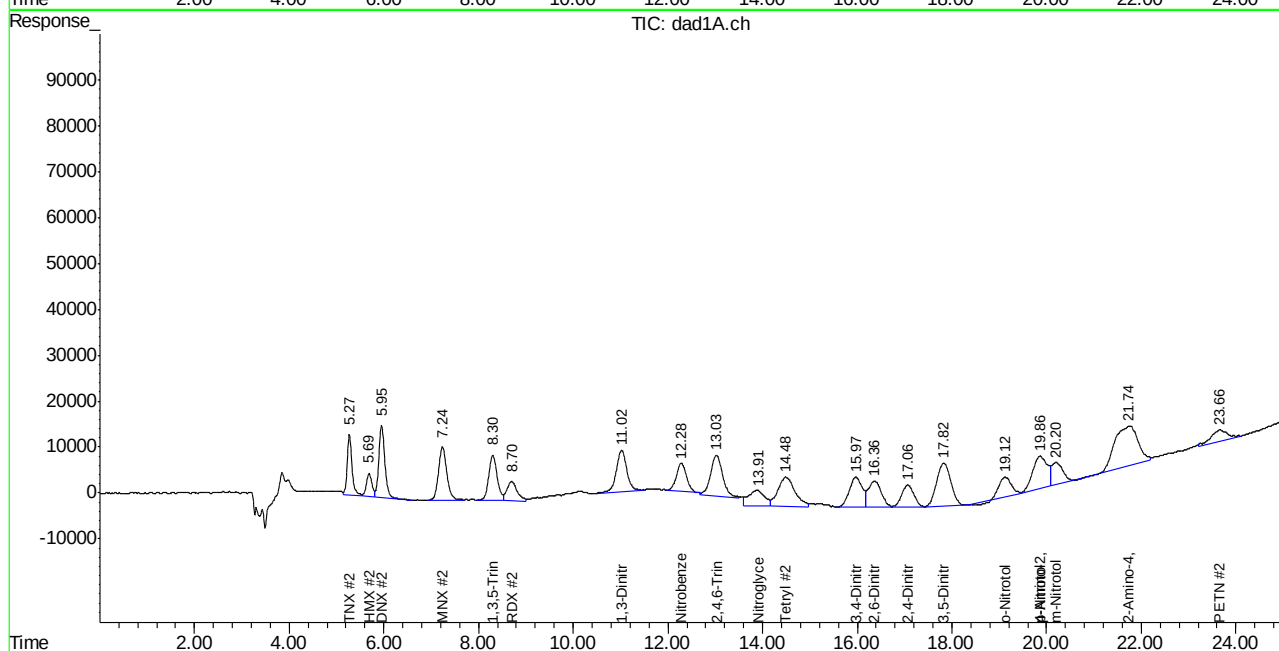
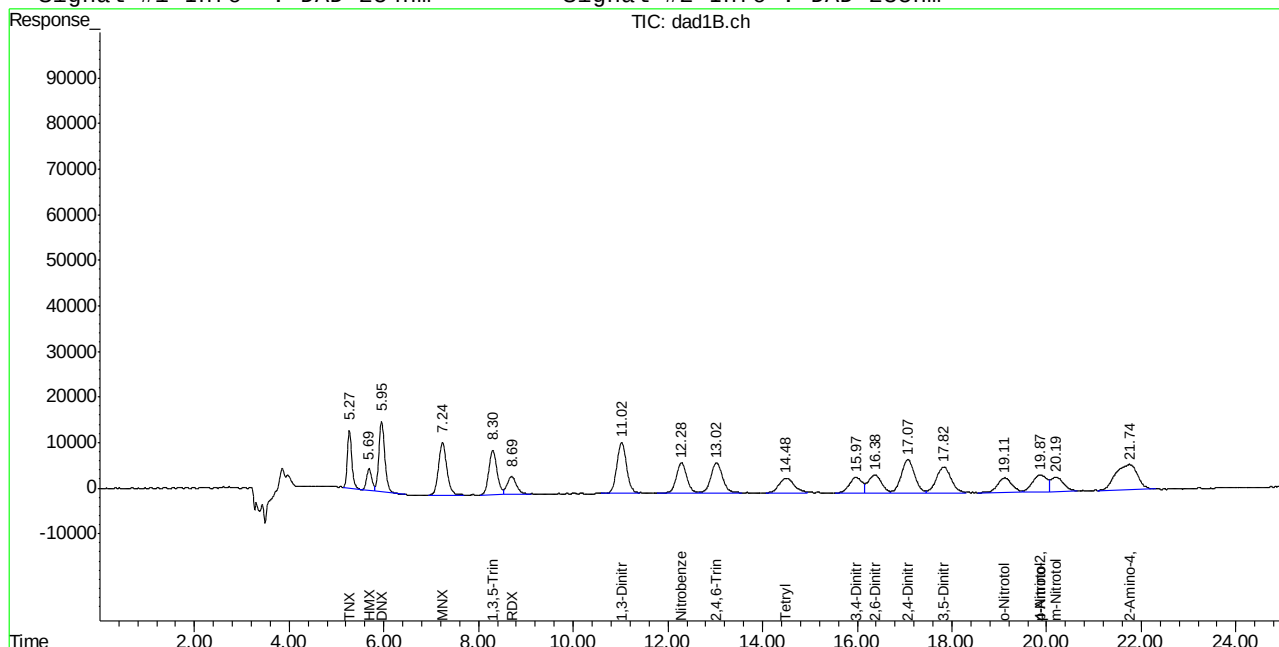
 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GGG626764.D GGG3229_071123.M Wed Jul 12 15:27:51 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
Sample : ic3298-100 Inst : G1315B
Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:52 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number: GGG3298-IC3298

Method: SW846 8330A

Lab FileID: GG626764.D

Analyst approved: 07/12/23 15:40 Fouad Sekkar

Injection Time: 07/11/23 16:52

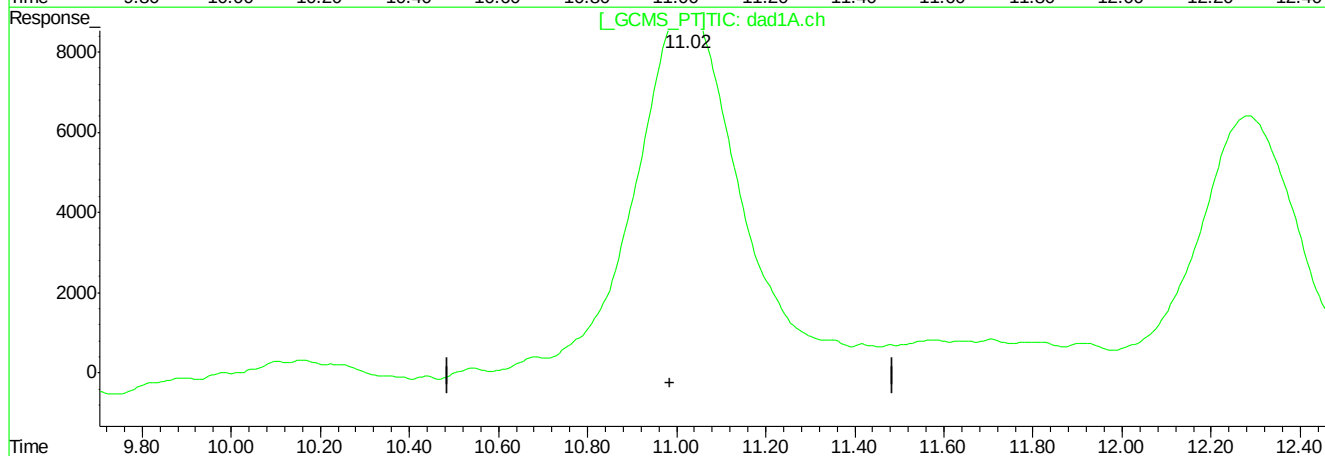
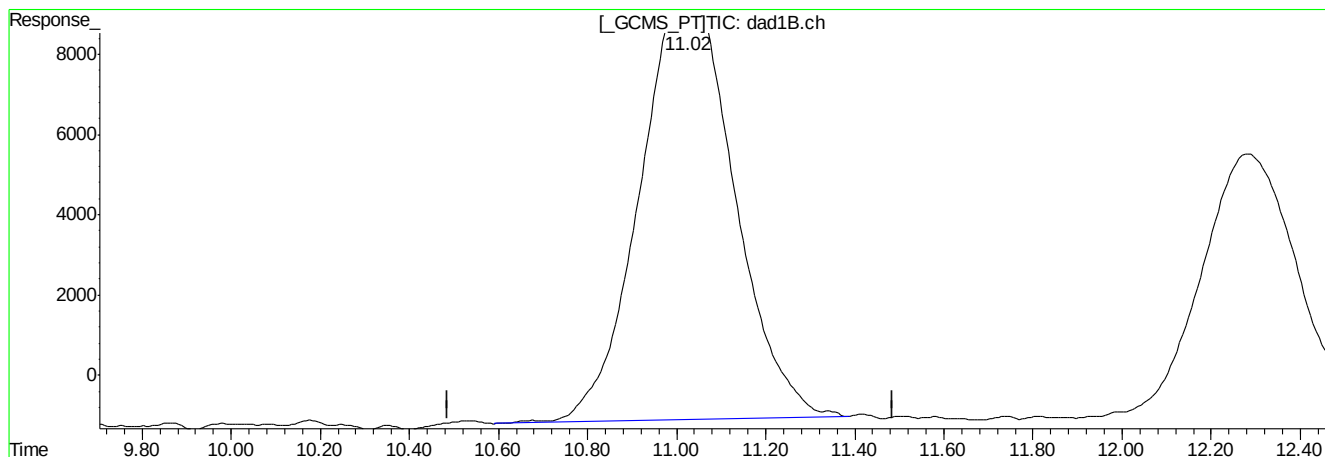
Supervisor approved: 07/13/23 18:08 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3-Dinitrobenzene	99-65-0	2	11.02	Poor instrument integration
Nitrobenzene	98-95-3	2	12.28	Poor instrument integration
2,4,6-Trinitrotoluene	118-96-7	2	13.03	Poor instrument integration
PETN	78-11-5	2	23.66	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
Sample : ic3298-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:15 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

11.02min 128.658ppb

response 1572439

(7) 1,3-Dinitrobenzene #2

11.02min 302.917ppb

response 2670861

(+) = Expected Retention Time

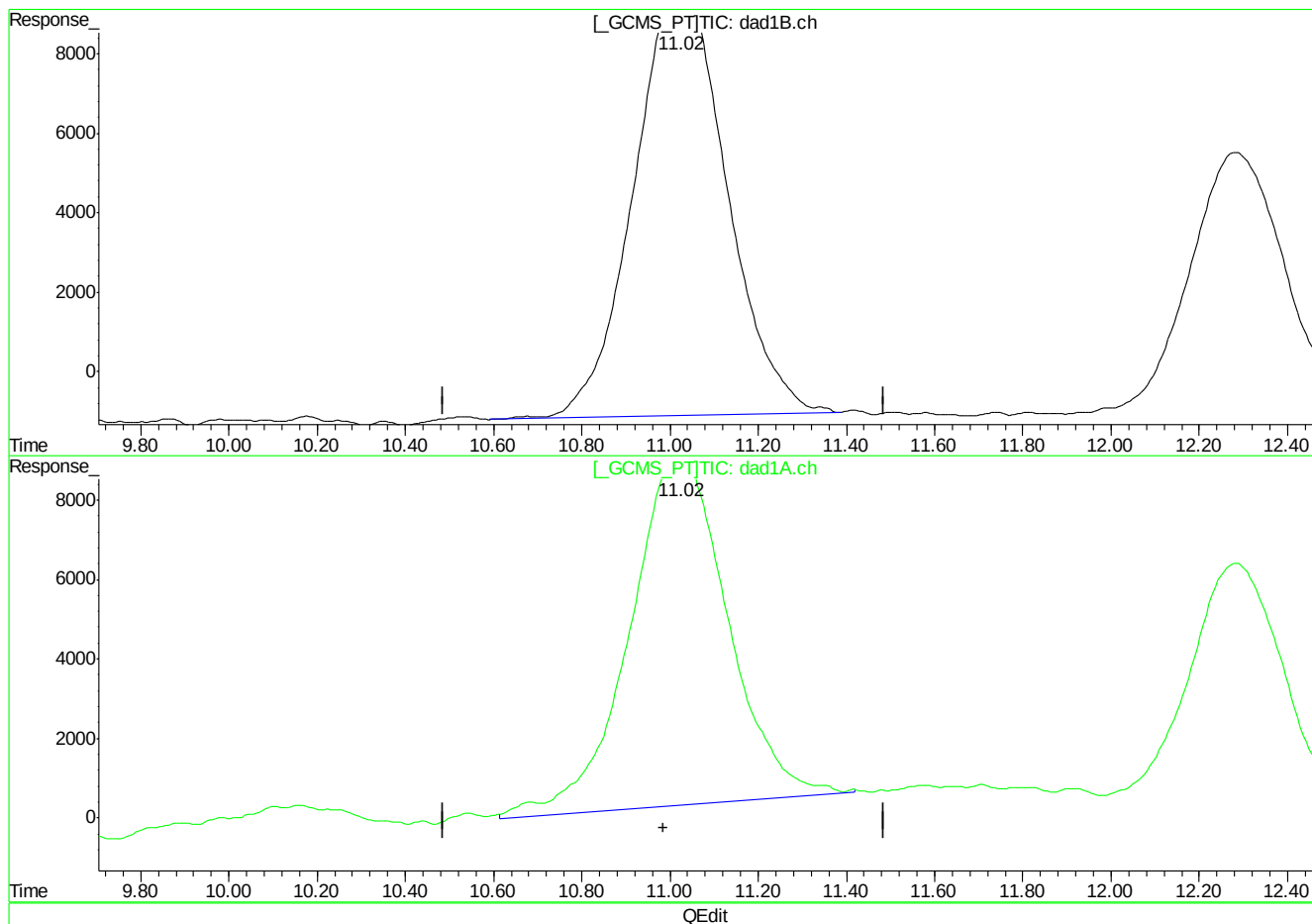
GG626764.D GGG3229_013023.M

Wed Jul 12 08:16:11 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
Sample : ic3298-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:15 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

11.02min 128.658ppb

response 1572439

(7) 1,3-Dinitrobenzene #2

11.02min 154.987ppb m

response 1366540

(+) = Expected Retention Time

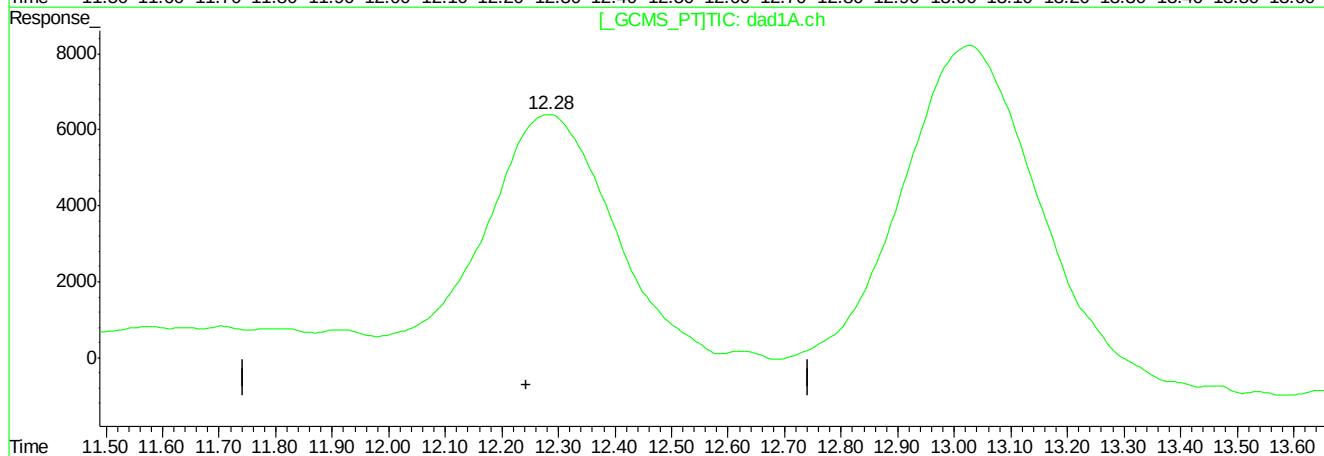
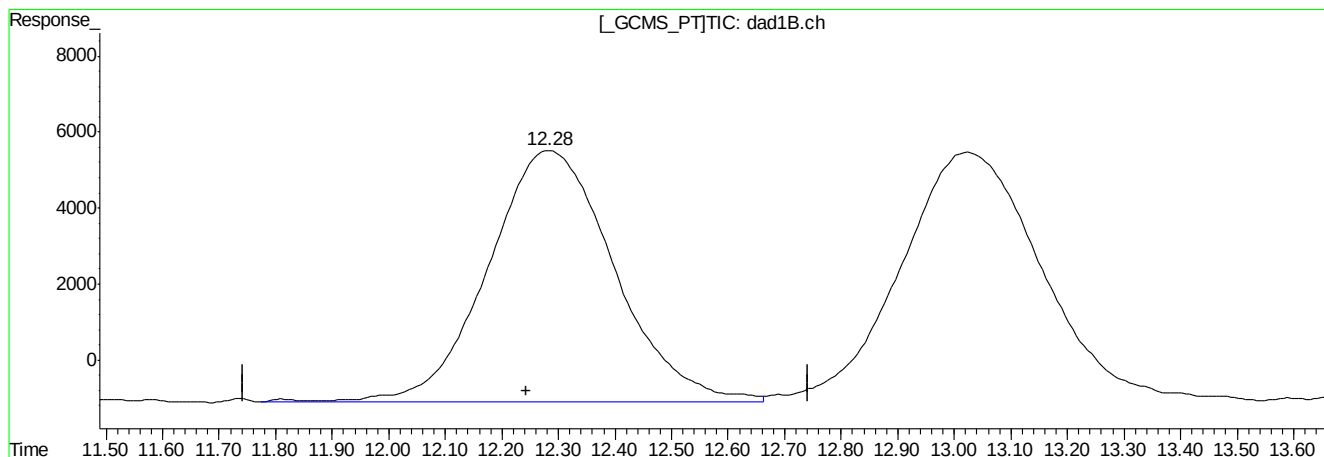
GG626764.D GGG3229_013023.M

Wed Jul 12 08:16:16 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
Sample : ic3298-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:15 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene
12.28min 131.282ppb
response 1023302

(8) Nitrobenzene #2
12.28min 249.451ppb
response 1923296

(+) = Expected Retention Time

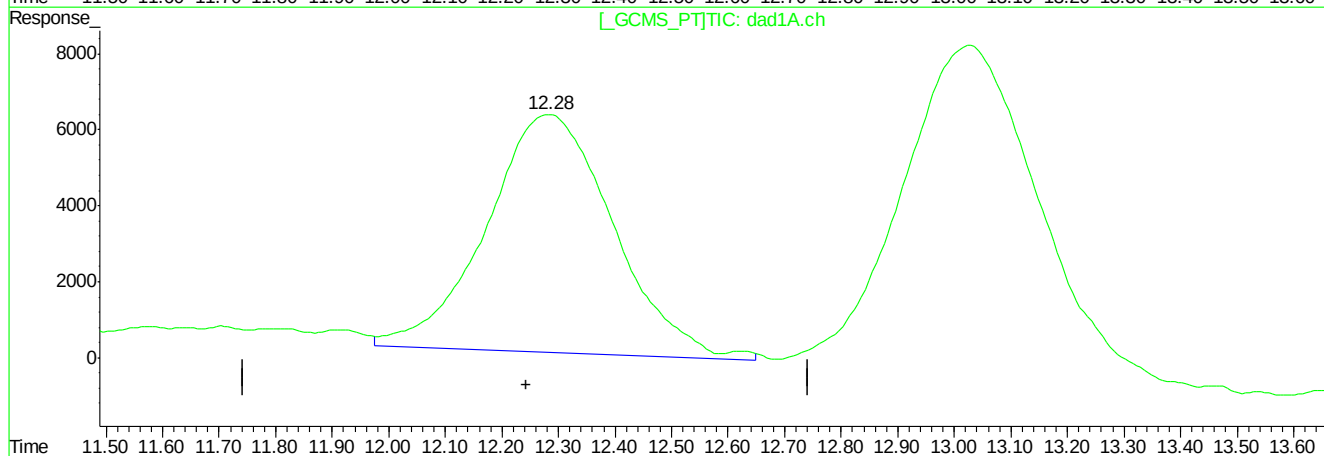
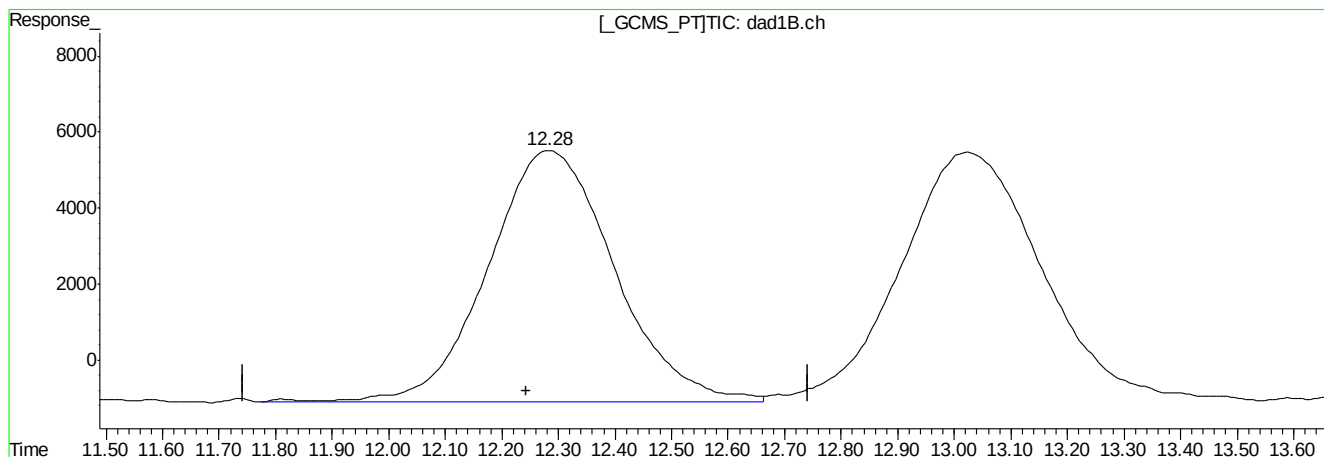
GG626764.D GGG3229_013023.M

Wed Jul 12 08:16:23 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
Sample : ic3298-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:15 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene
12.28min 131.282ppb
response 1023302

(8) Nitrobenzene #2
12.28min 126.987ppb m
response 979081

(+) = Expected Retention Time

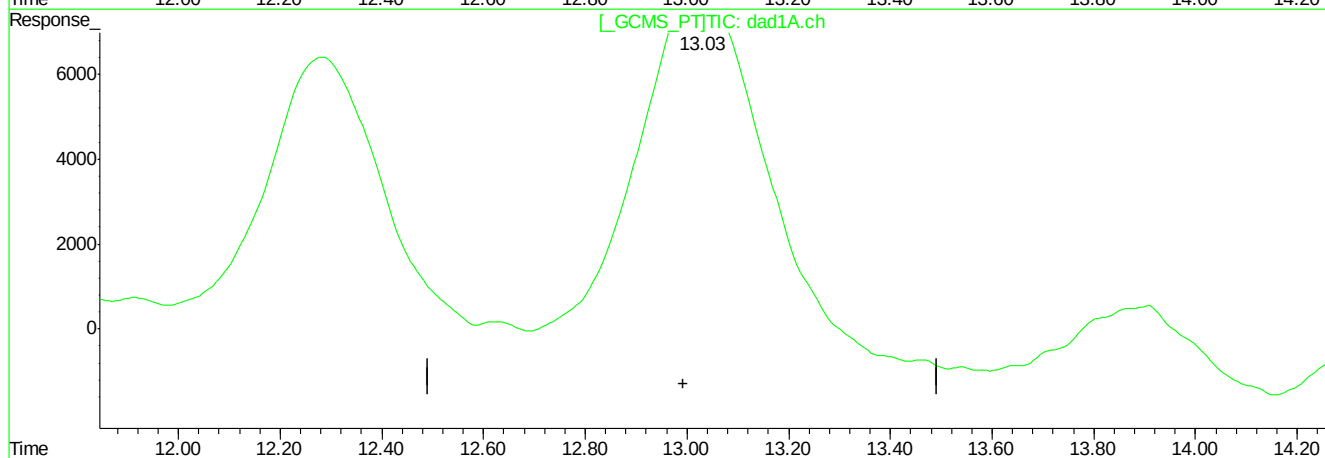
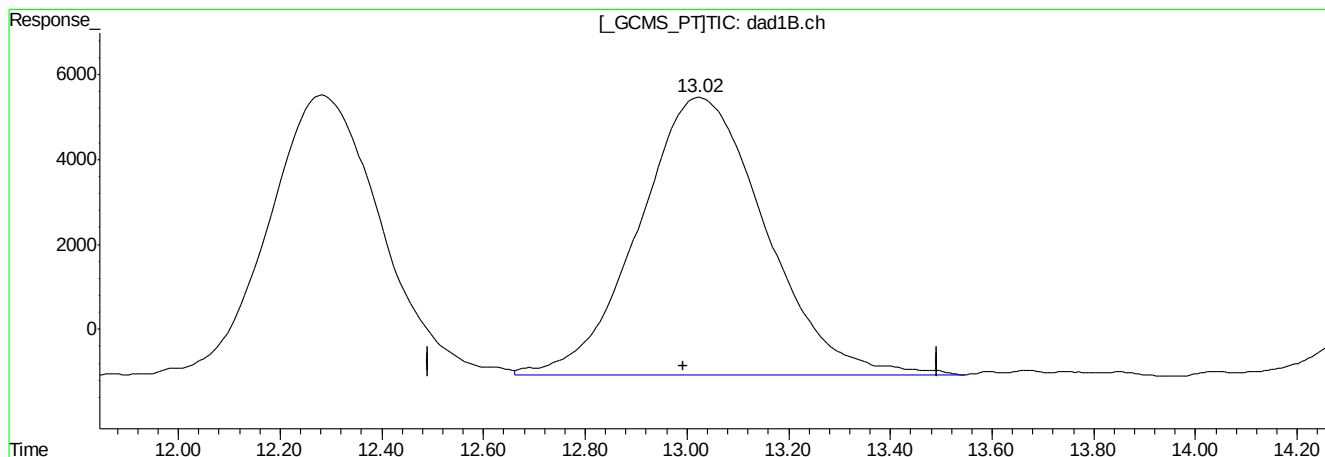
GG626764.D GGG3229_013023.M

Wed Jul 12 08:16:29 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
Sample : ic3298-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:15 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



QEdit

(9) 2,4,6-Trinitrotoluene

13.02min 129.466ppb

response 1137474

(9) 2,4,6-Trinitrotoluene #2

13.03min 216.535ppb

response 2606435

(+) = Expected Retention Time

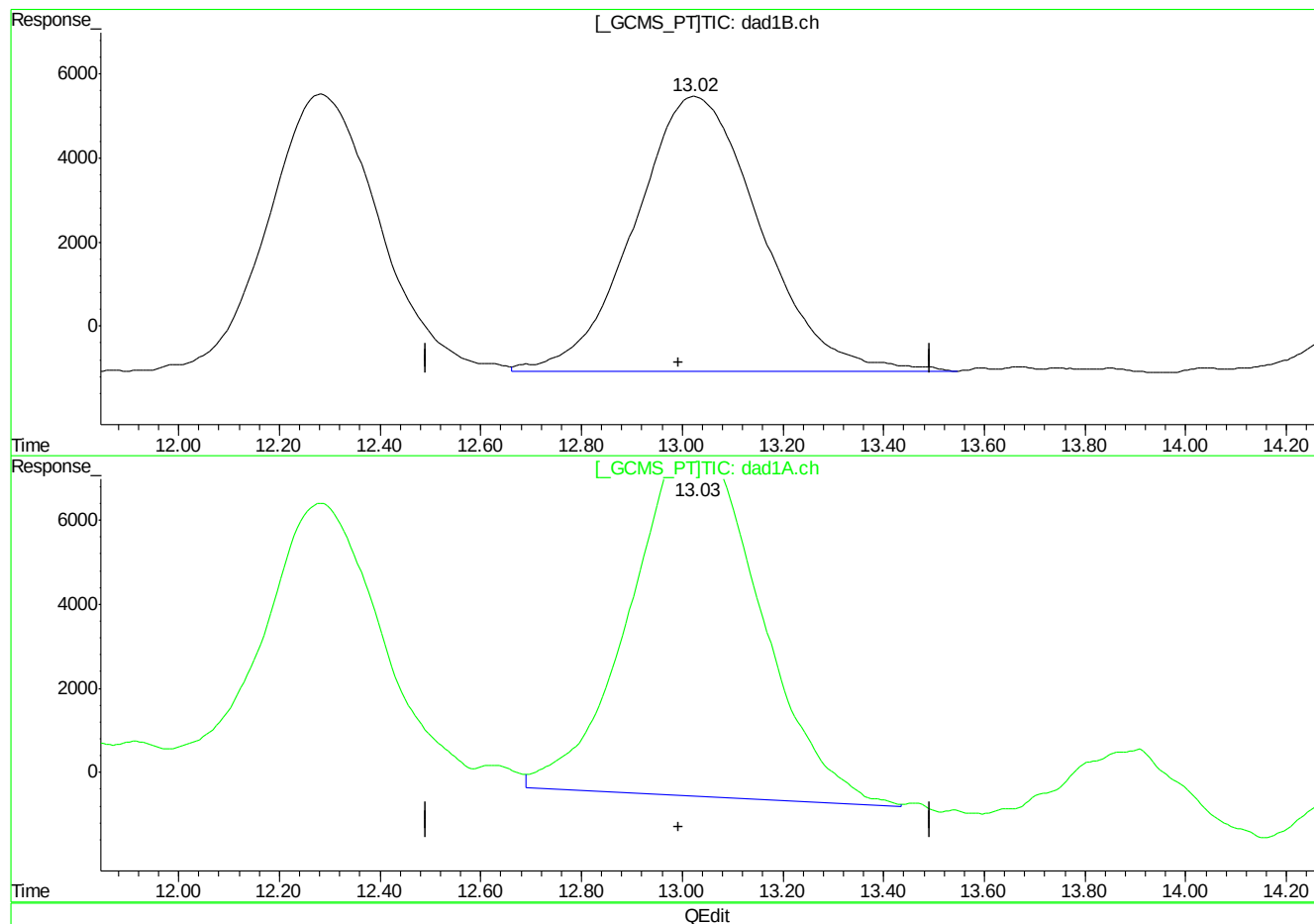
GG626764.D GGG3229_013023.M

Wed Jul 12 08:16:36 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
Sample : ic3298-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:15 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



(9) 2,4,6-Trinitrotoluene

13.02min 129.466ppb

response 1137474

(9) 2,4,6-Trinitrotoluene #2

13.03min 125.412ppb m

response 1509586

(+) = Expected Retention Time

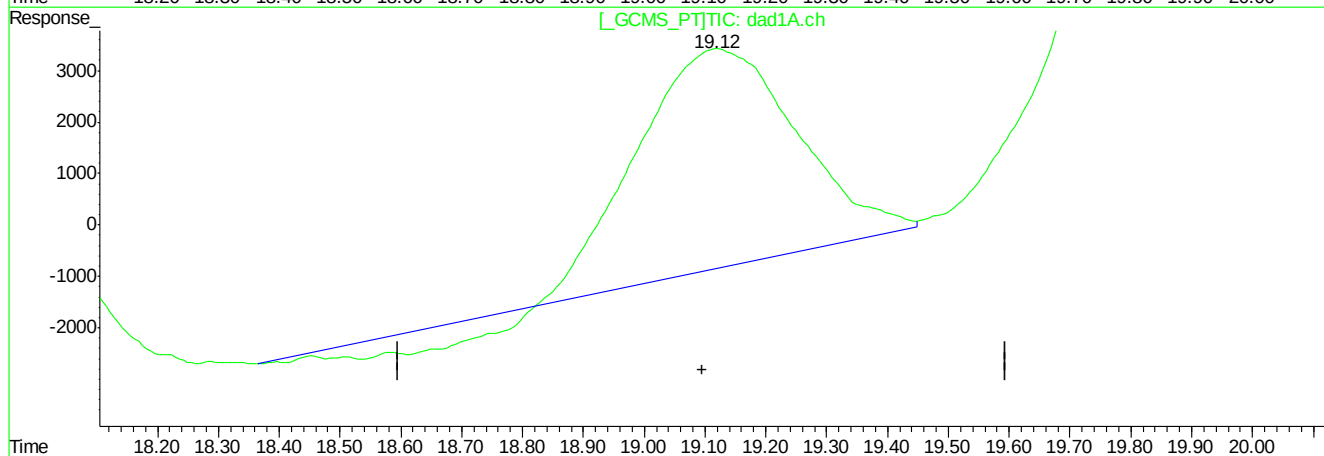
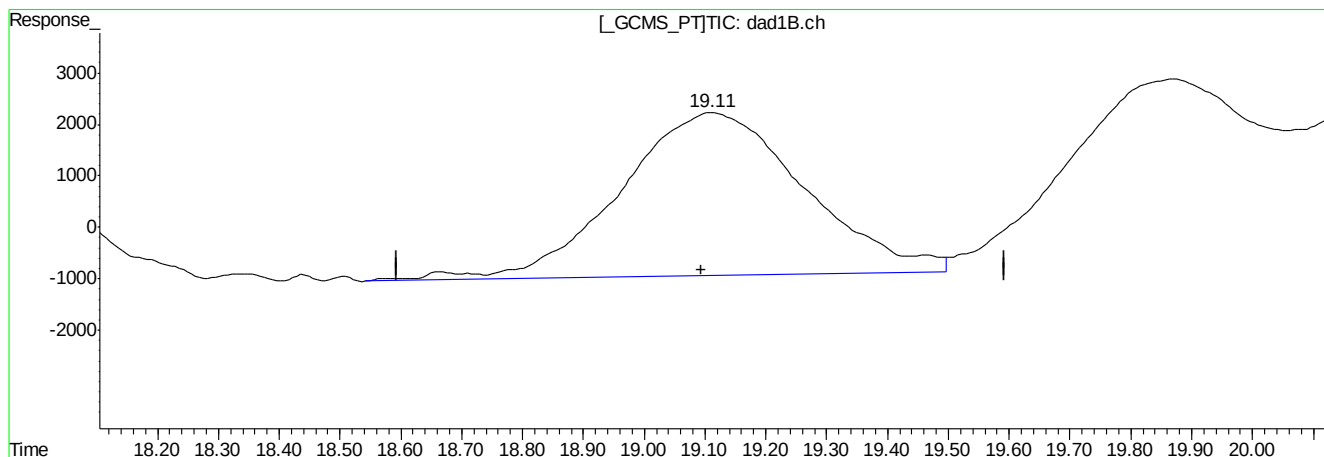
GG626764.D GGG3229_013023.M

Wed Jul 12 08:16:41 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
Sample : ic3298-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:15 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



(16) o-Nitrotoluene
19.11min 139.056ppb
response 665069

(16) o-Nitrotoluene #2
19.12min 103.604ppb
response 708941

(+) = Expected Retention Time

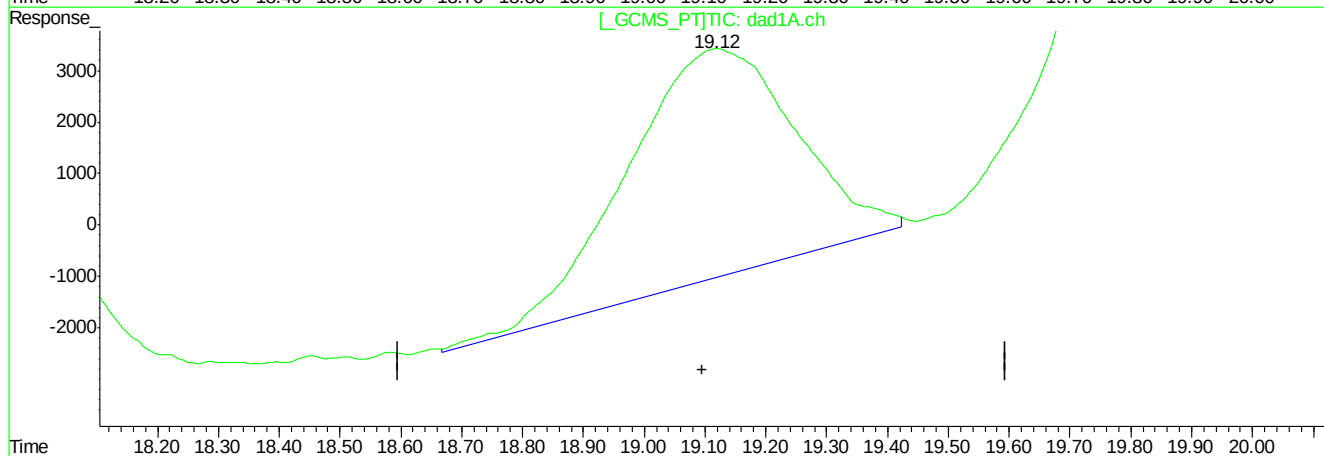
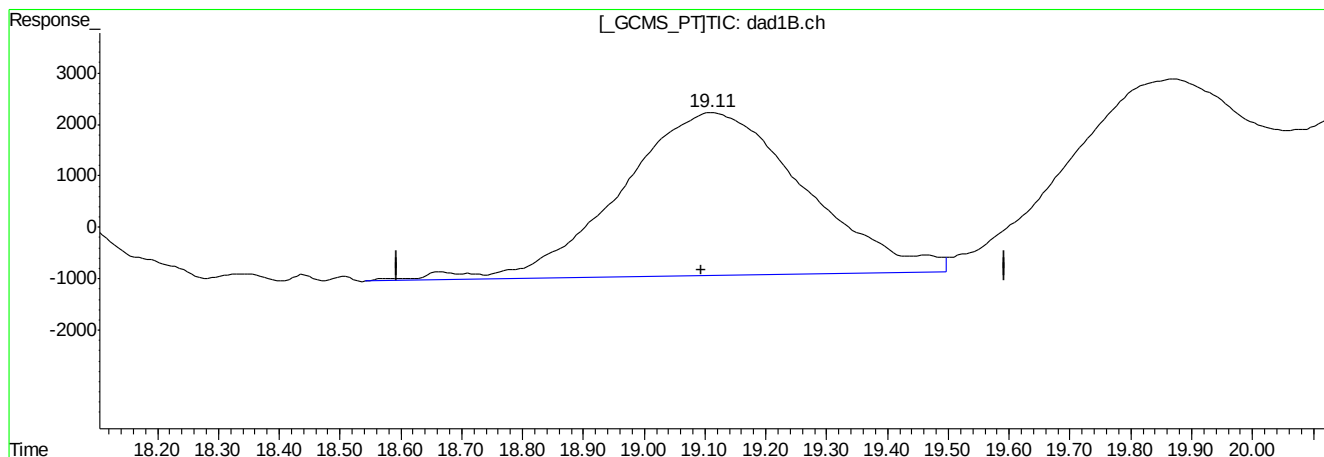
GG626764.D GGG3229_013023.M

Wed Jul 12 08:17:15 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
Sample : ic3298-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:15 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



QEdit

(16) o-Nitrotoluene
19.11min 139.056ppb
response 665069

(16) o-Nitrotoluene #2
19.12min 125.537ppb m
response 859026

(+) = Expected Retention Time

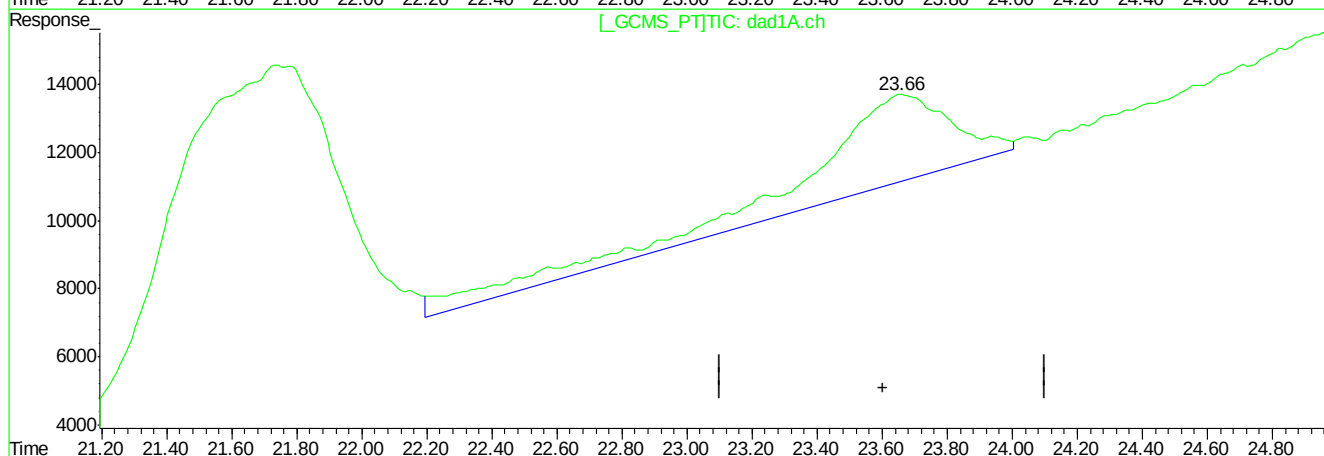
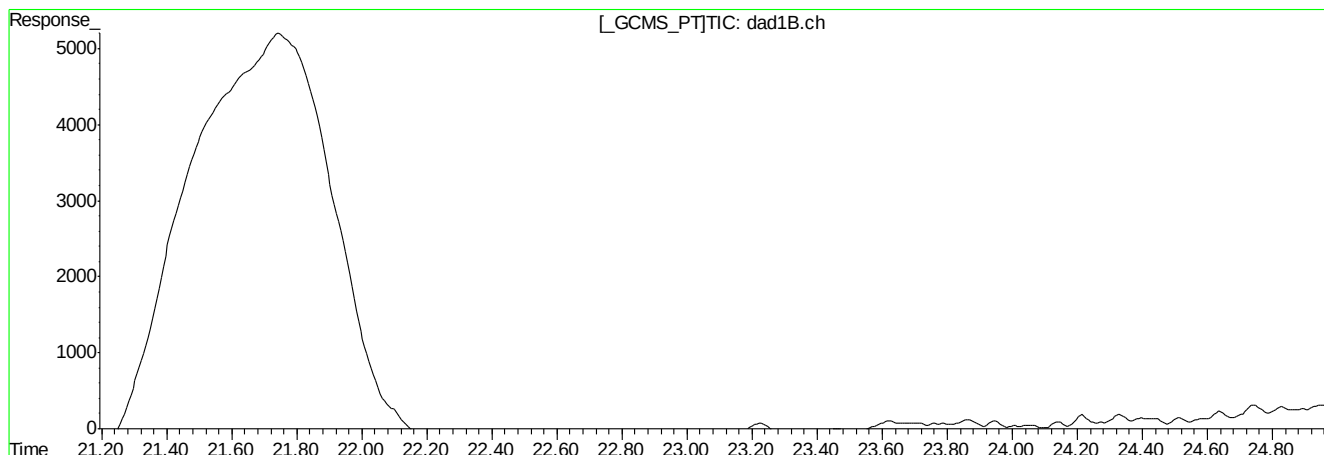
GG626764.D GGG3229_013023.M

Wed Jul 12 08:17:21 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
Sample : ic3298-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:15 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

23.66min 286.653ppb

response 861301

QEdit

(+) = Expected Retention Time

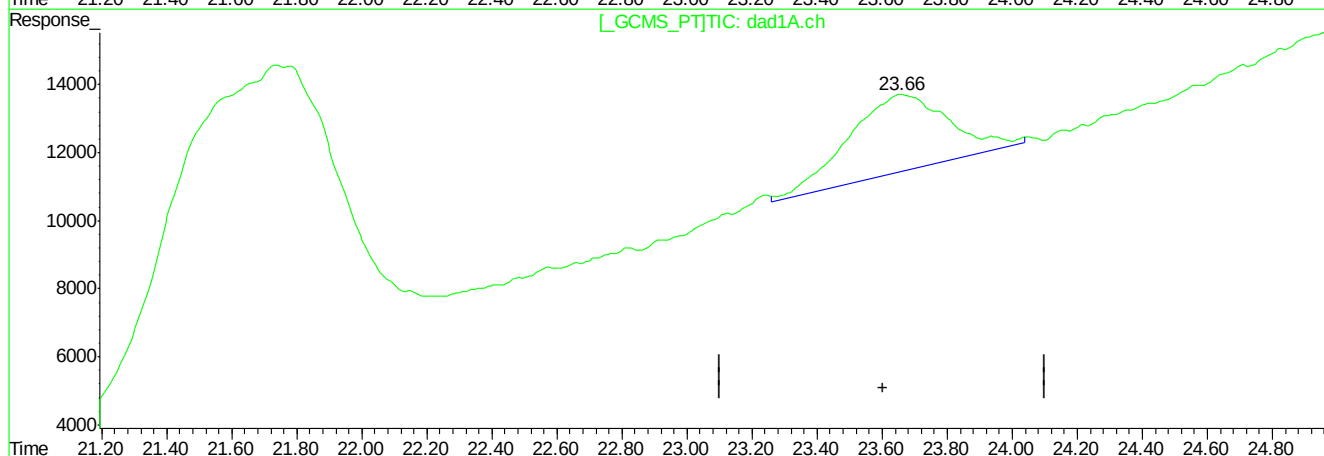
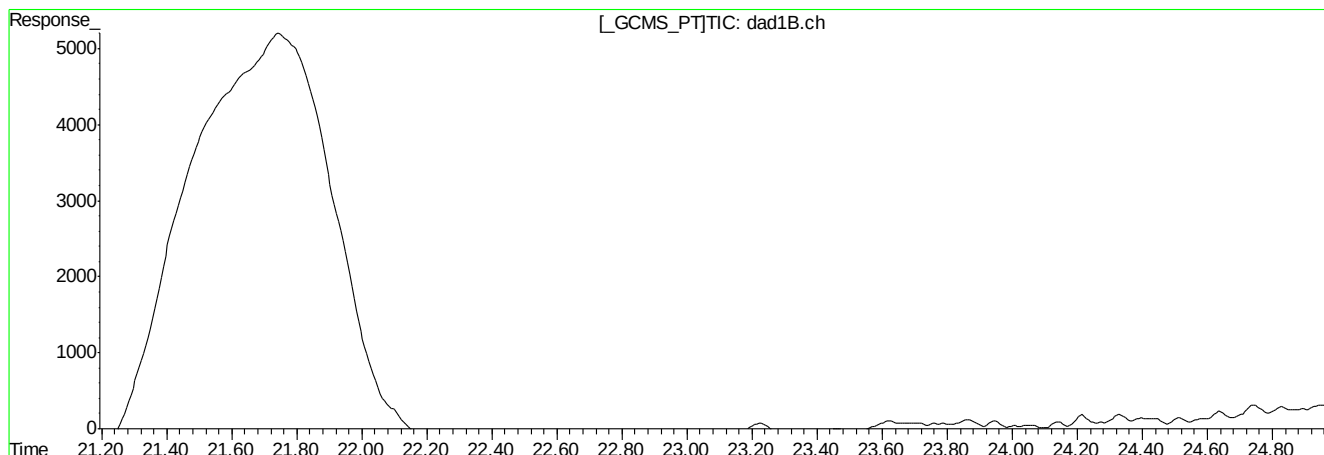
GG626764.D GGG3229_013023.M

Wed Jul 12 08:18:03 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
Sample : ic3298-3 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:15 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

23.66min 163.140ppb m

response 490183

(+) = Expected Retention Time

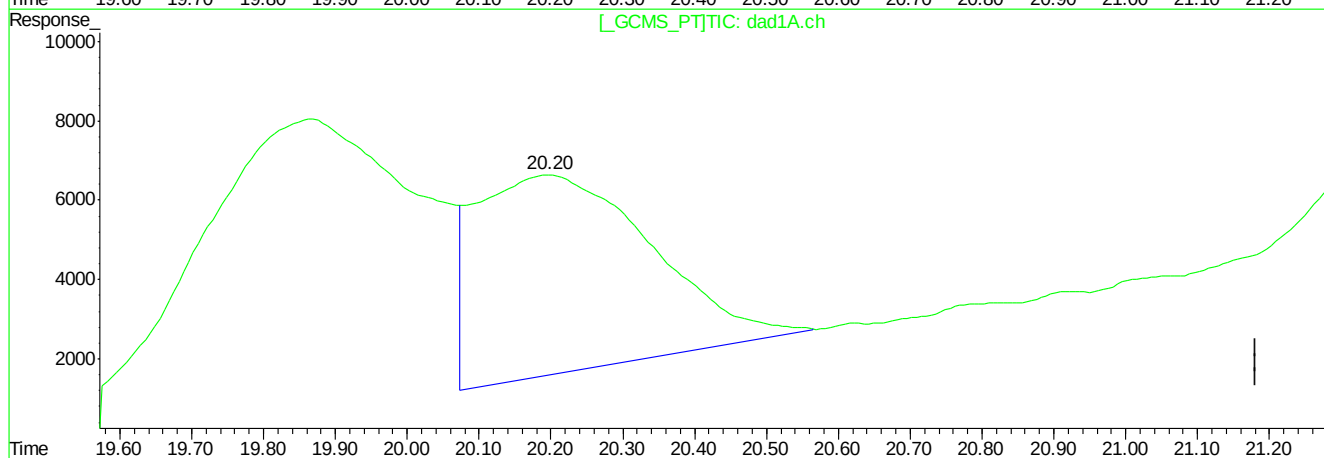
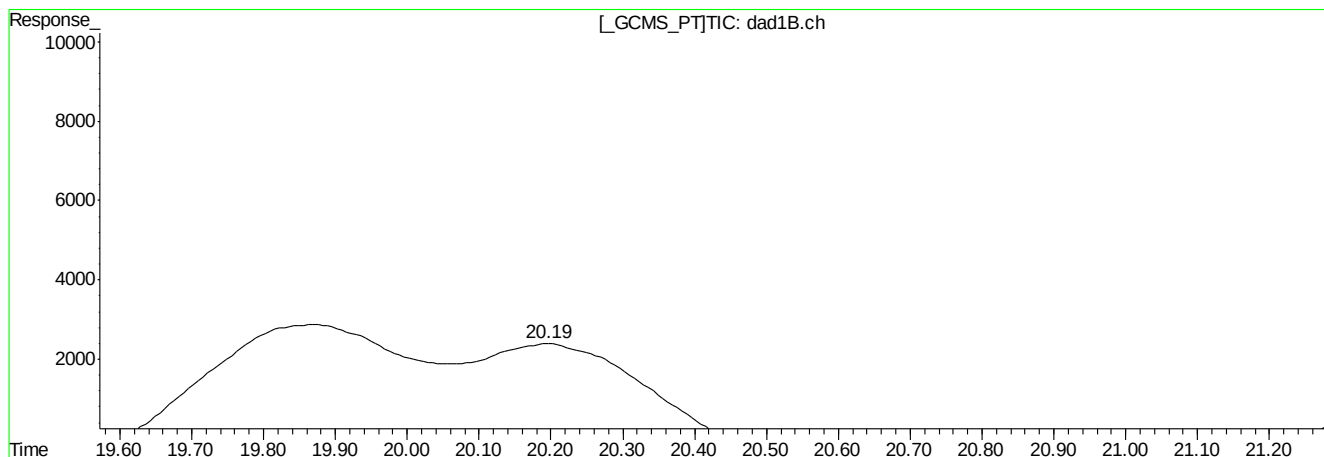
GG626764.D GGG3229_013023.M

Wed Jul 12 08:18:08 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
Sample : ic3298-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:18 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:48:42 2023
Response via : Multiple Level Calibration



(19) m-Nitrotoluene
20.19min 113.908ppb m
response 561854

(19) m-Nitrotoluene #2
20.20min 103.556ppb m
response 853917

(+) = Expected Retention Time

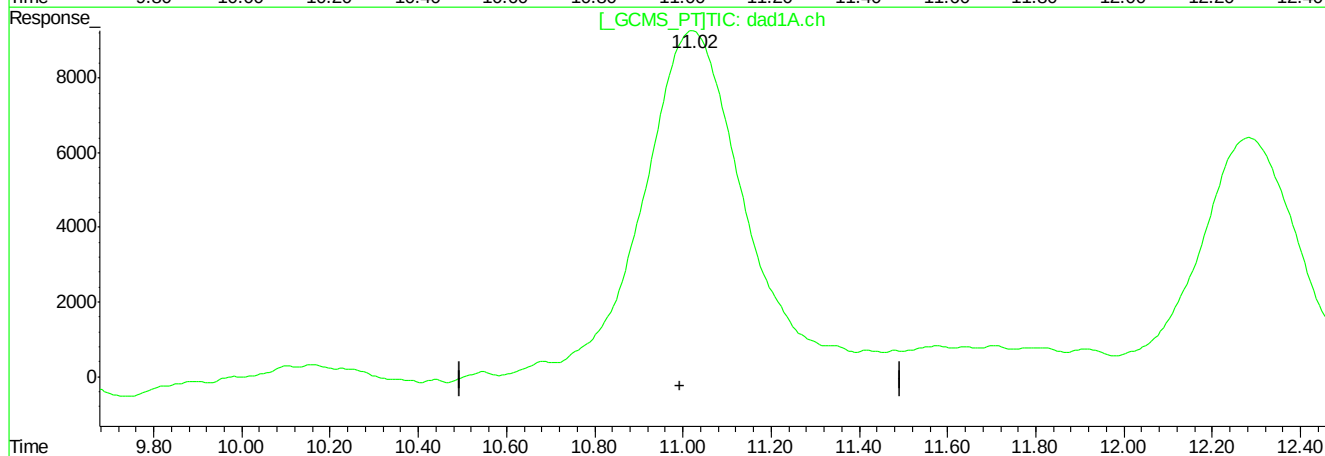
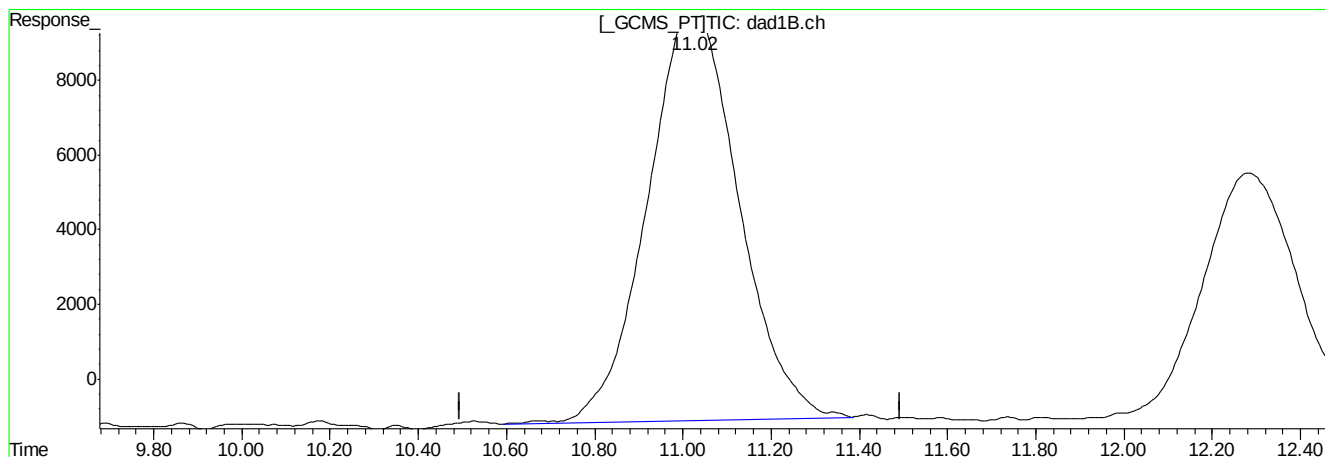
GG626764.D GGG3229_071123.M

Wed Jul 12 10:01:59 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
Sample : ic3298-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

11.02min 112.536ppb

response 1572439

(7) 1,3-Dinitrobenzene #2

11.02min 245.298ppb

response 2670861

(+) = Expected Retention Time

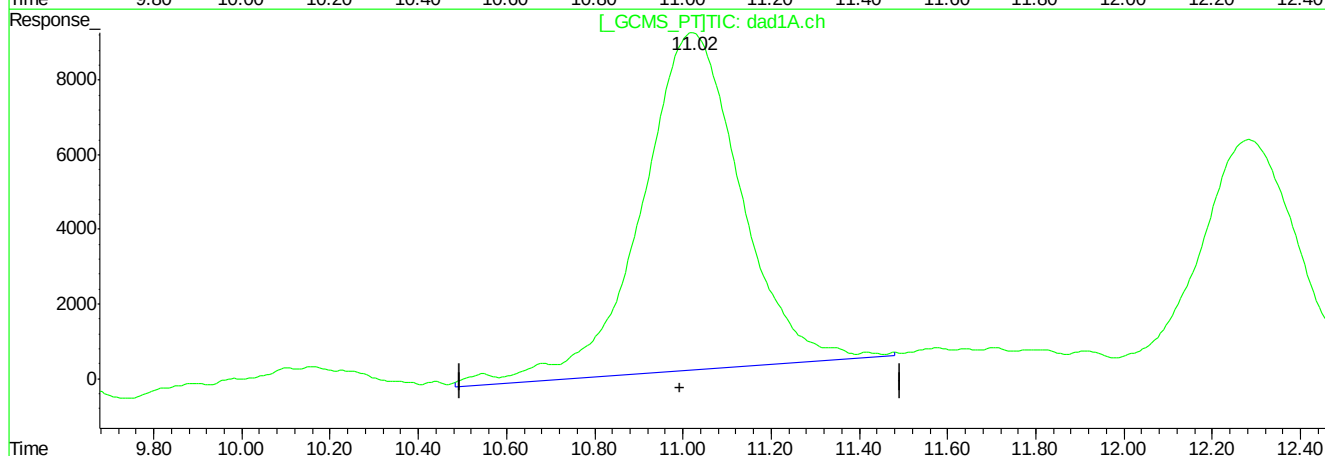
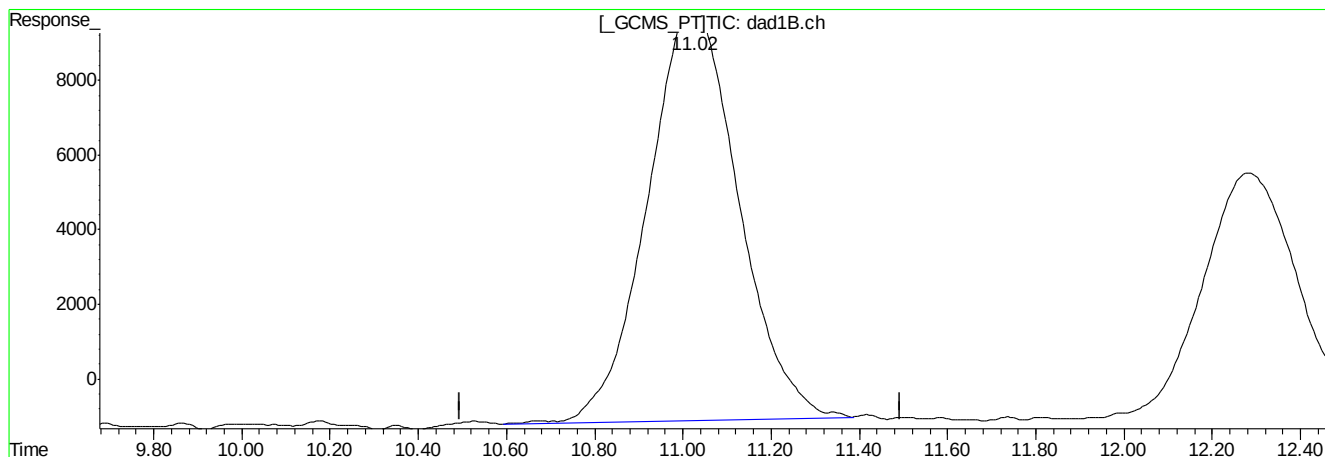
GG626764.D GGG3229_071123.M

Wed Jul 12 10:51:16 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
Sample : ic3298-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

11.02min 112.536ppb

response 1572439

(7) 1,3-Dinitrobenzene #2

11.02min 130.824ppb m

response 1424439

QEdit

(+) = Expected Retention Time

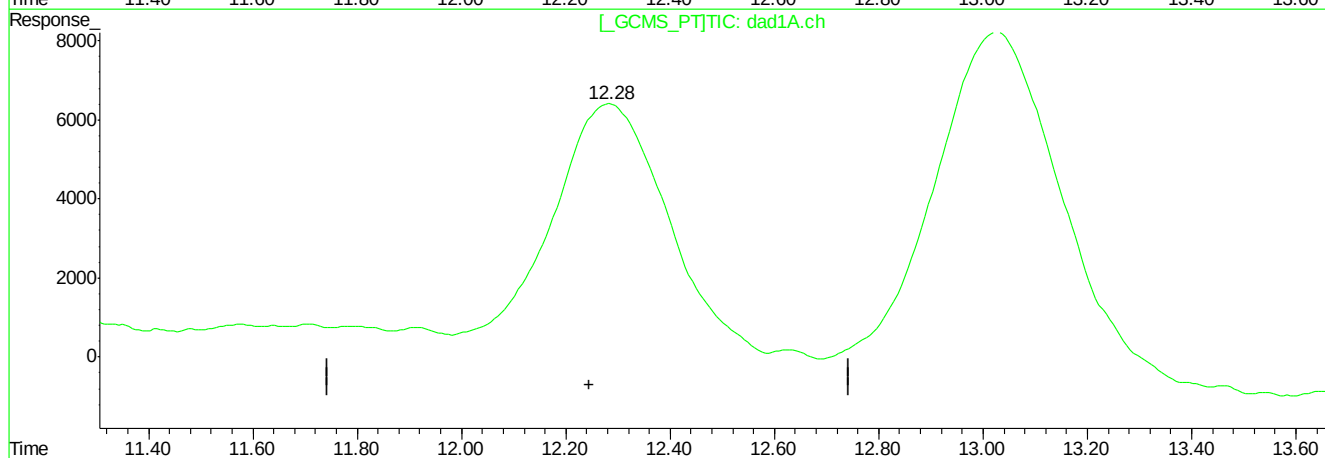
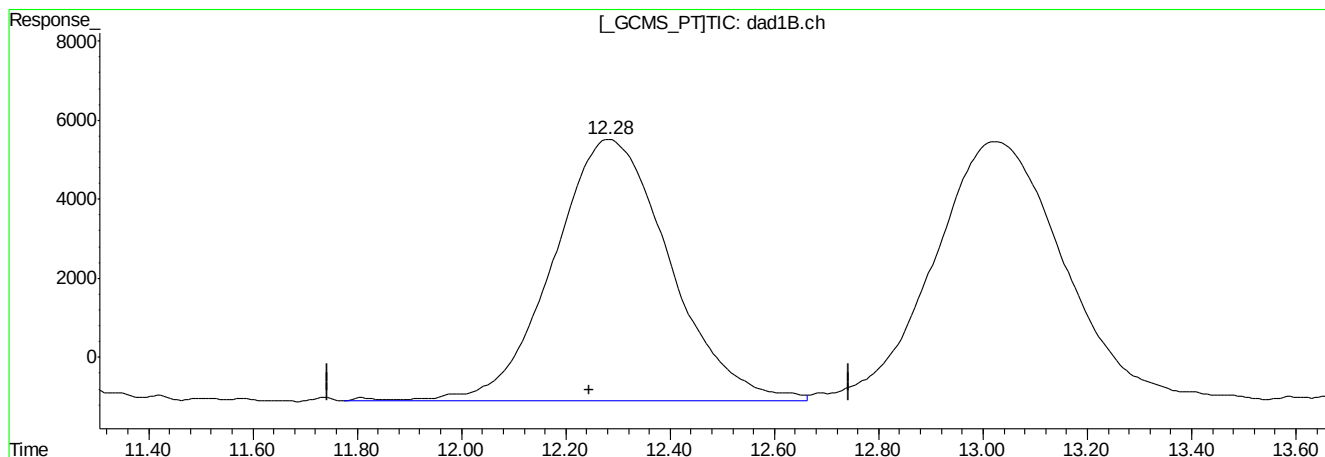
GG626764.D GGG3229_071123.M

Wed Jul 12 10:51:22 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
Sample : ic3298-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene

12.28min 117.281ppb

response 1023302

(8) Nitrobenzene #2

12.28min 230.785ppb

response 1923296

(+) = Expected Retention Time

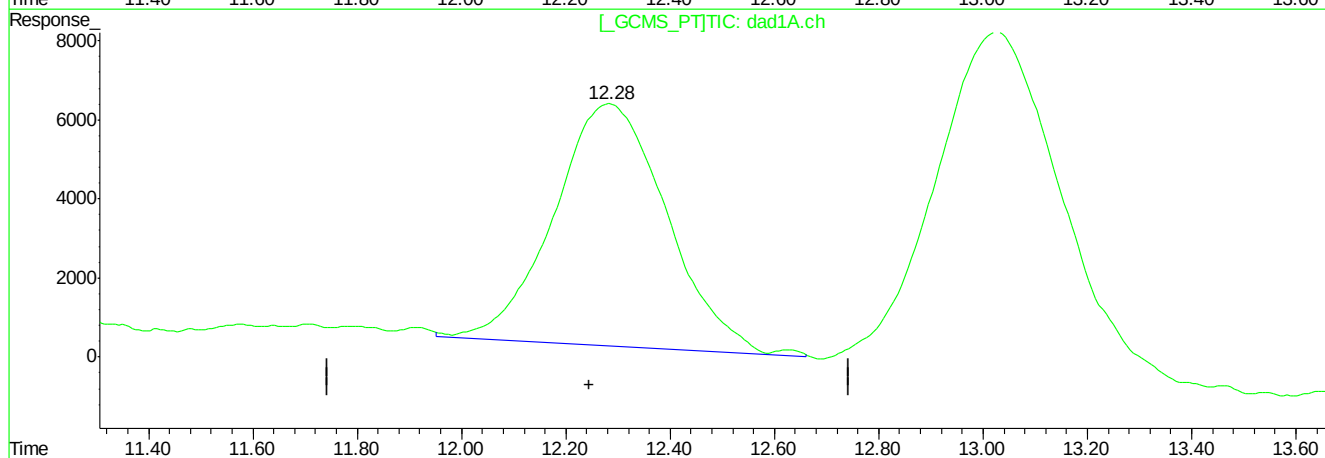
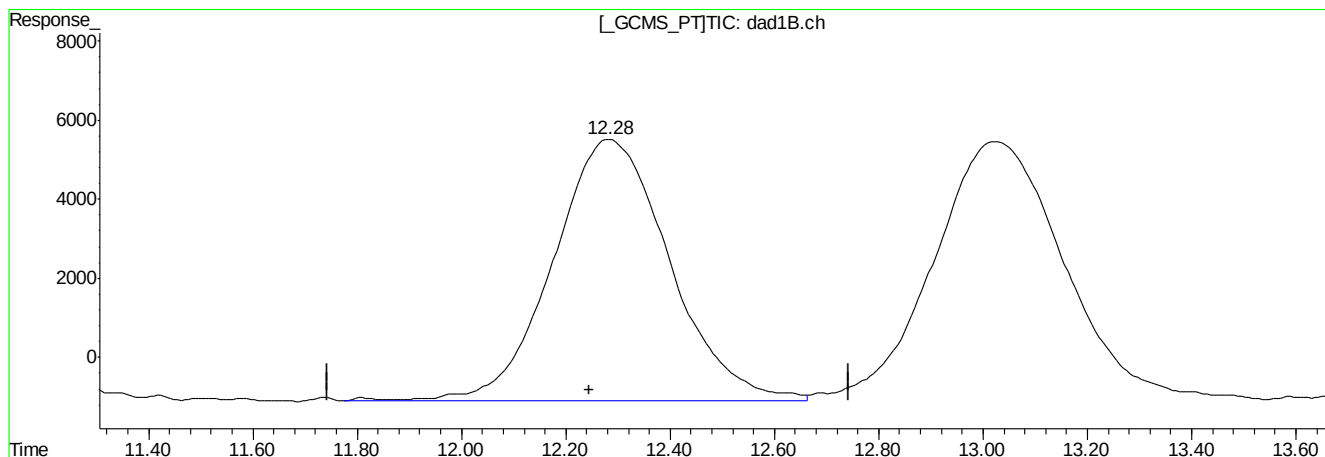
GG626764.D GGG3229_071123.M

Wed Jul 12 10:51:27 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
Sample : ic3298-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene

12.28min 117.281ppb

response 1023302

(8) Nitrobenzene #2

12.28min 111.514ppb m

response 929325

(+) = Expected Retention Time

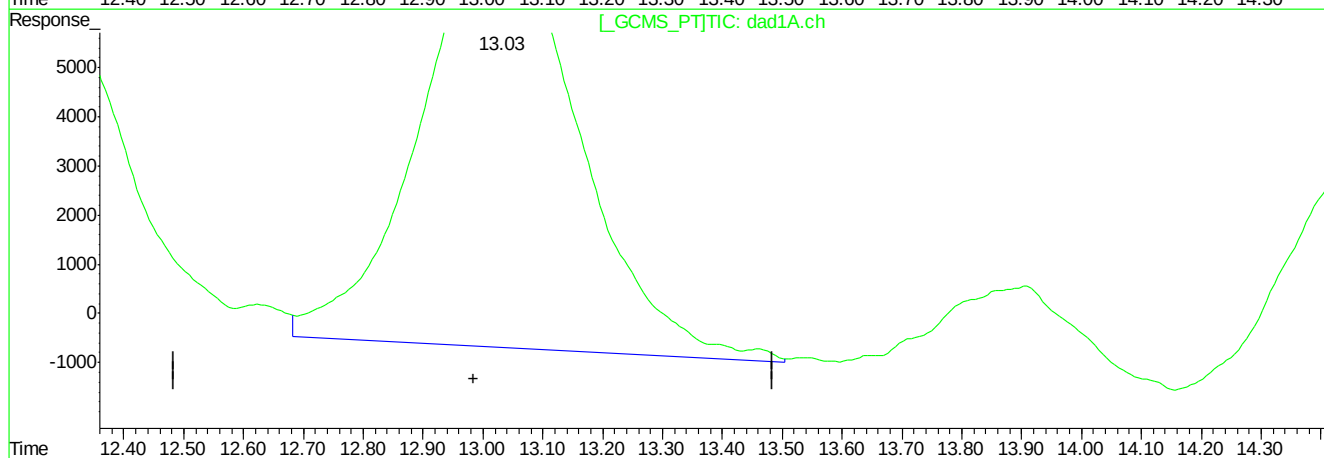
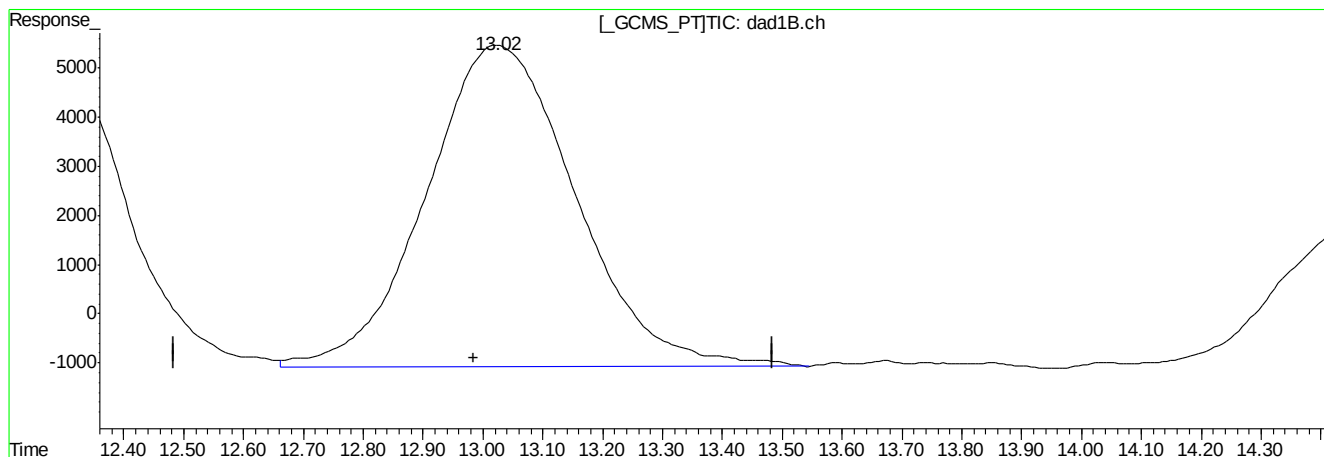
GG626764.D GGG3229_071123.M

Wed Jul 12 10:51:32 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
Sample : ic3298-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



QEdit

(9) 2,4,6-Trinitrotoluene

13.02min 114.739ppb

response 1137474

(9) 2,4,6-Trinitrotoluene #2

13.03min 120.180ppb m

response 1573560

(+) = Expected Retention Time

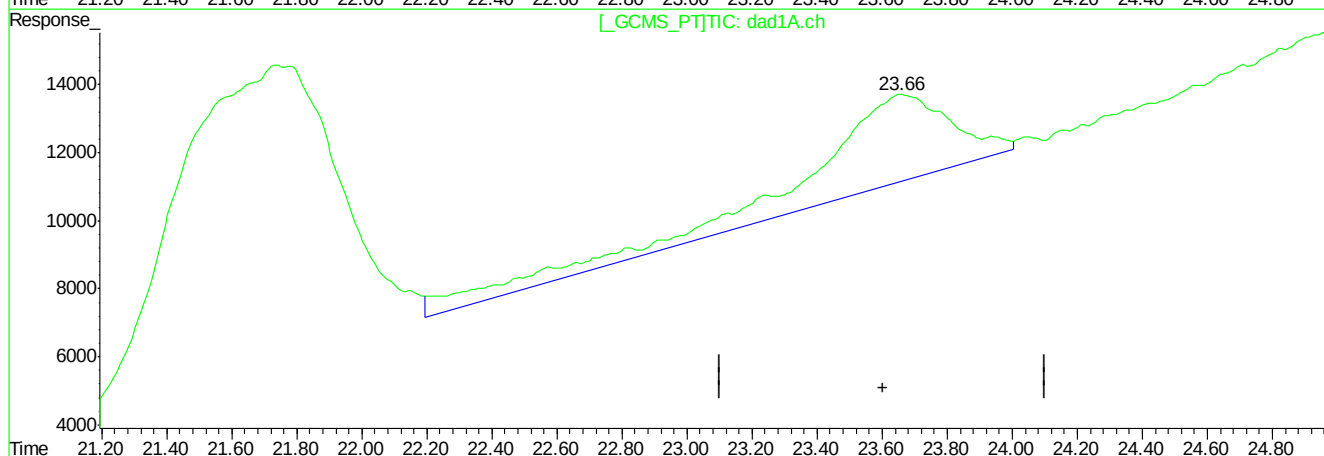
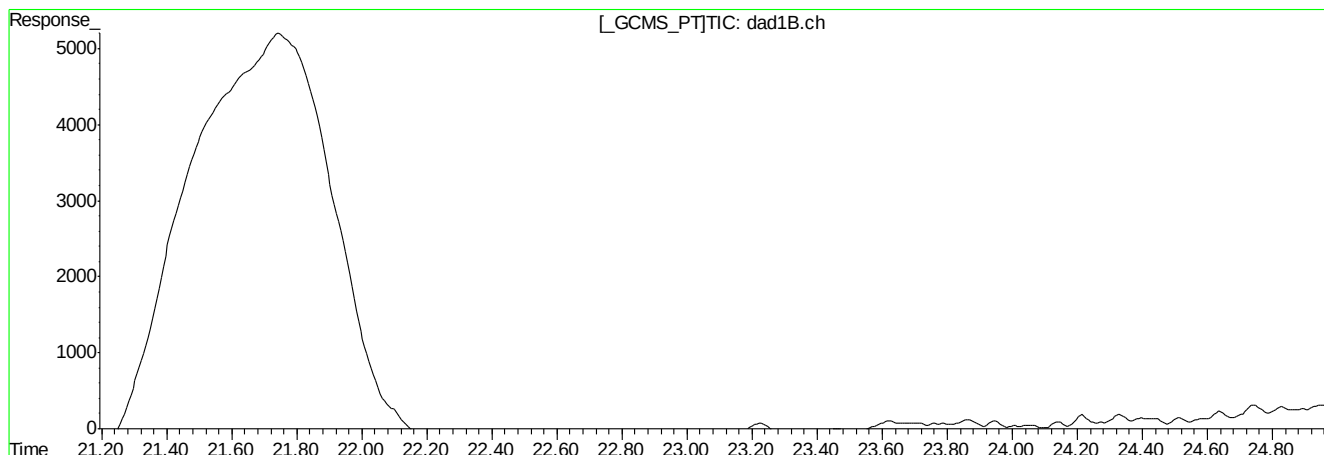
GG626764.D GGG3229_071123.M

Wed Jul 12 10:51:44 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
Sample : ic3298-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

23.66min 234.610ppb

response 861301

(+) = Expected Retention Time

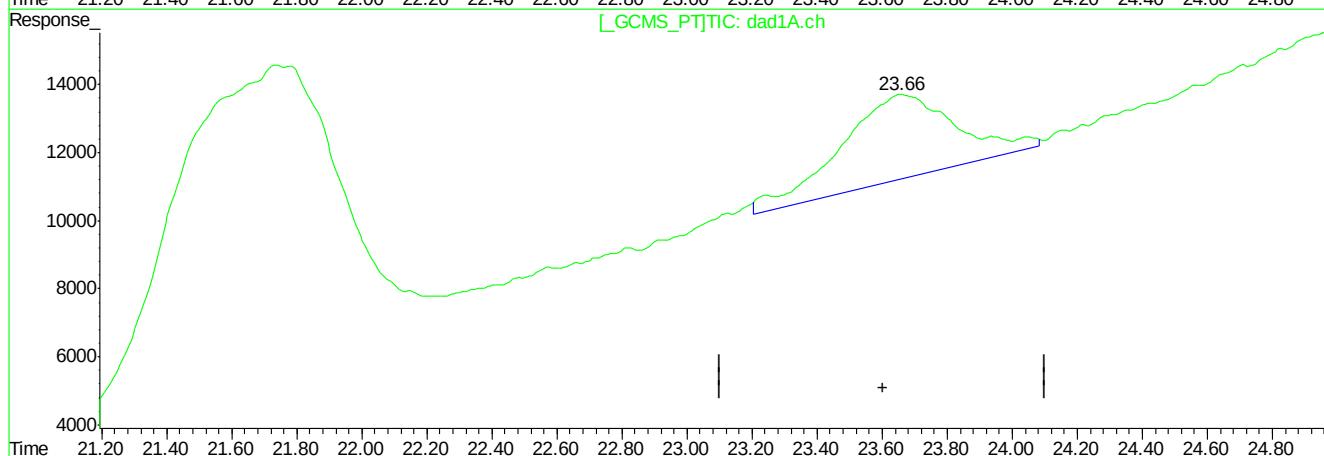
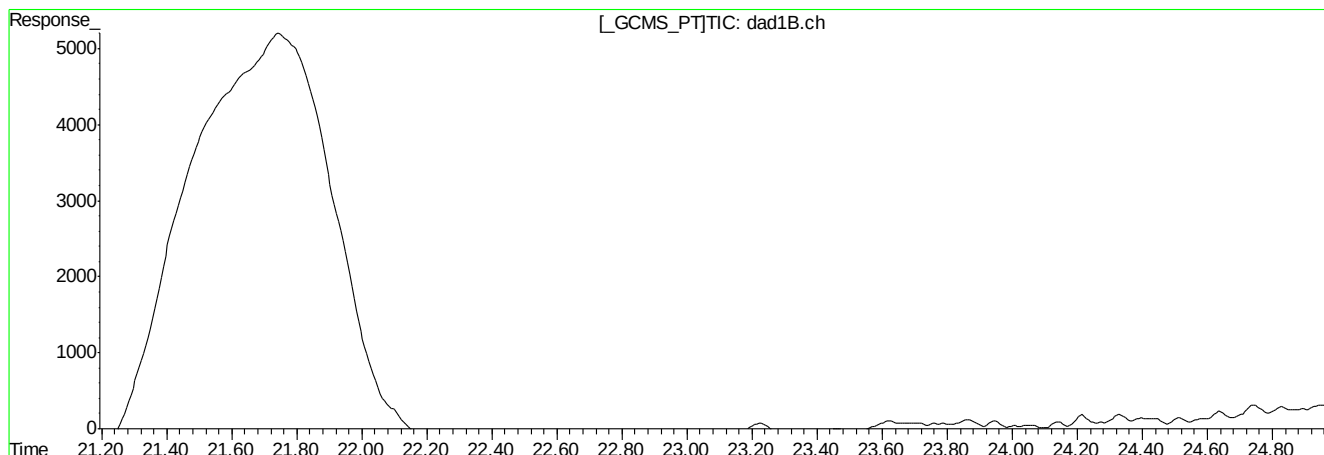
GG626764.D GGG3229_071123.M

Wed Jul 12 10:52:12 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1B.ch Vial: 5
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626764.D\dad1A.ch
Acq On : 11-Jul-2023, 16:52:22 Operator: fouads
Sample : ic3298-100 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

23.66min 166.351ppb m

response 610709

(+) = Expected Retention Time

GG626764.D GGG3229_071123.M

Wed Jul 12 10:52:17 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1B.ch Vial: 6
 Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1A.ch
 Acq On : 11-Jul-2023, 17:24:46 Operator: fouads
 Sample : ic3298-200 Inst : G1315B
 Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 12 10:09:25 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 12 10:08:59 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	15.97	15.96	1132211	2172174	189.045	187.777
Spiked Amount	500.000	Range	70 - 136	Recovery	=	37.81%# 37.56%#
Target Compounds						
1) TNX	5.28	5.28	944939	947983	92.236	91.937
2) HMX	5.69	5.69	665766	666846	185.857	185.470
3) DNx	5.96	5.96	1600395	1602382	191.222	190.922
4) MNX	7.26	7.26	1655597	1722756	221.270	227.061
5) 1,3,5-Trinitrobe	8.32	8.32	1962999	1980081	192.640	190.708
6) RDX	8.72	8.72	932454	932197	192.032	182.817
7) 1,3-Dinitrobenze	11.02	11.02	2794443	2028956	199.992	186.344m
8) Nitrobenzene	12.28	12.28	1729346	1692117	198.201	203.045m
9) 2,4,6-Trinitroto	13.03	13.02	1916172	2668579	193.288	203.811m
10) Nitroglycerin	0.00	13.87	0	1019896	N.D.	291.459m#
11) Tetryl	14.49	14.48	1226185	2074756	166.789	164.722m
13) 2,6-Dinitrotolue	16.37	16.37	1267511	1752111	186.713	178.071
14) 2,4-Dinitrotolue	17.07	17.06	2445208	1543486	192.582	170.931
15) 3,5-Dinitroanili	17.82	17.82	2065968	3160692	191.071	177.636
16) o-Nitrotoluene	19.12	19.12	1103678	1389163	201.533	169.728
17) p-Nitrotoluene	19.87	19.88	1293127	2433539	385.009	362.804
18) 4-Amino-2,6-Dini	19.87	19.88	1293127	2433539	515.582	604.379
19) m-Nitrotoluene	20.20	20.20	1022842	1398786	66.044	58.433
20) 2-Amino-4,6-Dini	21.76	21.75	3076356	4671661	198.636	196.508
21) PETN	0.00	23.66	0	547906	N.D.	149.244 #

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG626765.D GGG3229_071123.M Wed Jul 12 15:48:14 2023

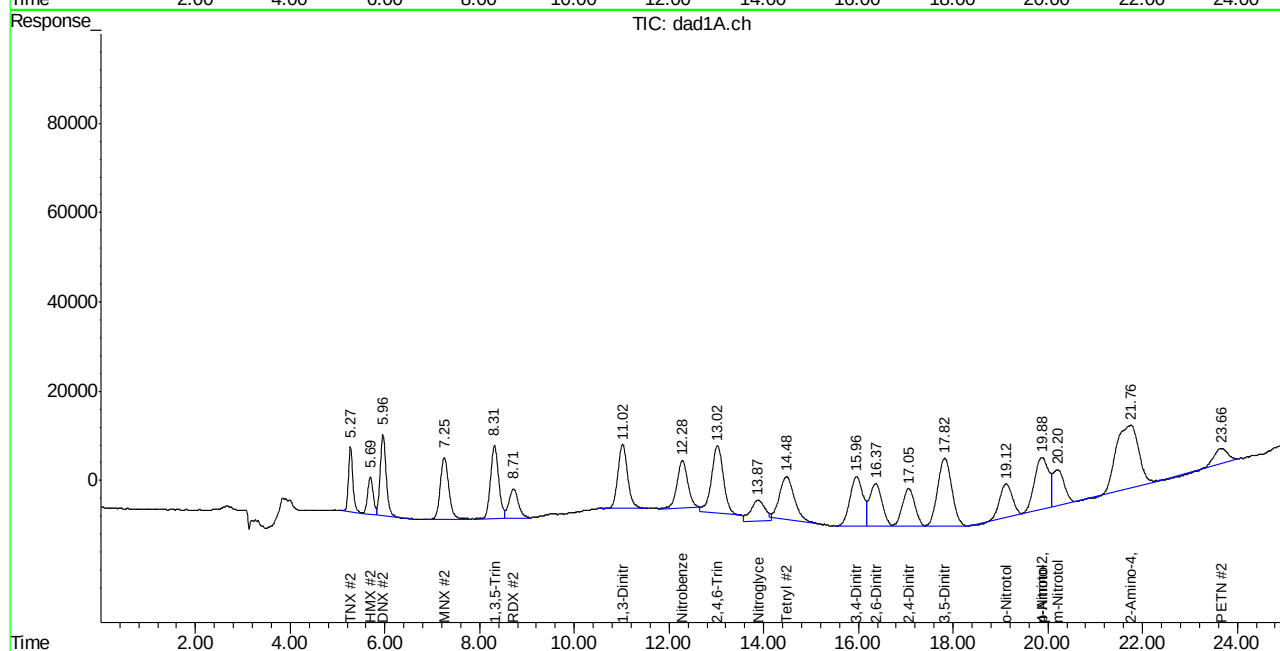
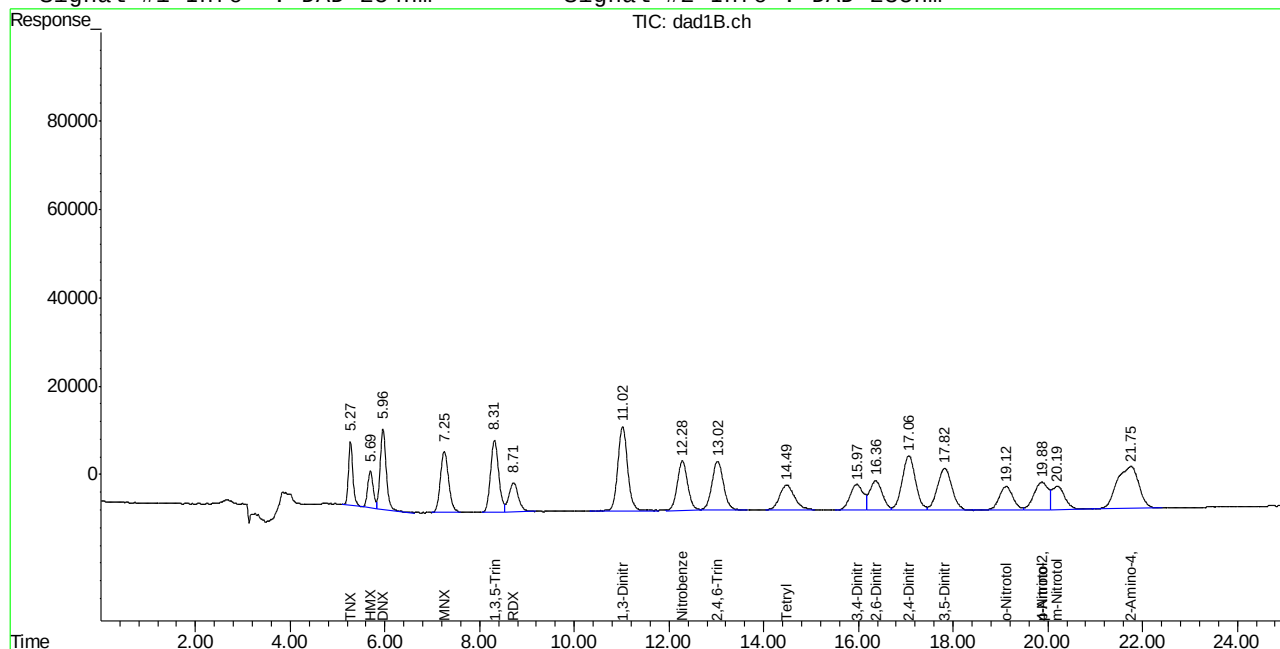
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1A.ch
Acq On : 11-Jul-2023, 17:24:46 Operator: fouads
Sample : ic3298-200 Inst : G1315B
Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 15:47 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number:

GGG3298-IC3298

Method:

SW846 8330A

Lab FileID:

GG626765.D

Analyst approved:

07/12/23 15:50 Fouad Sekkar

Injection Time:

07/11/23 17:24

Supervisor approved:

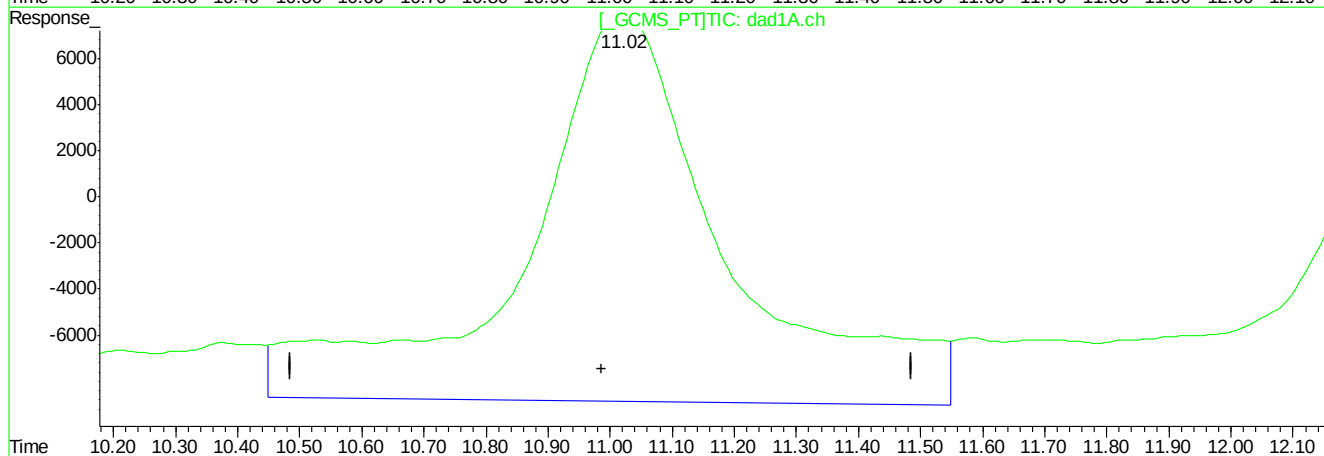
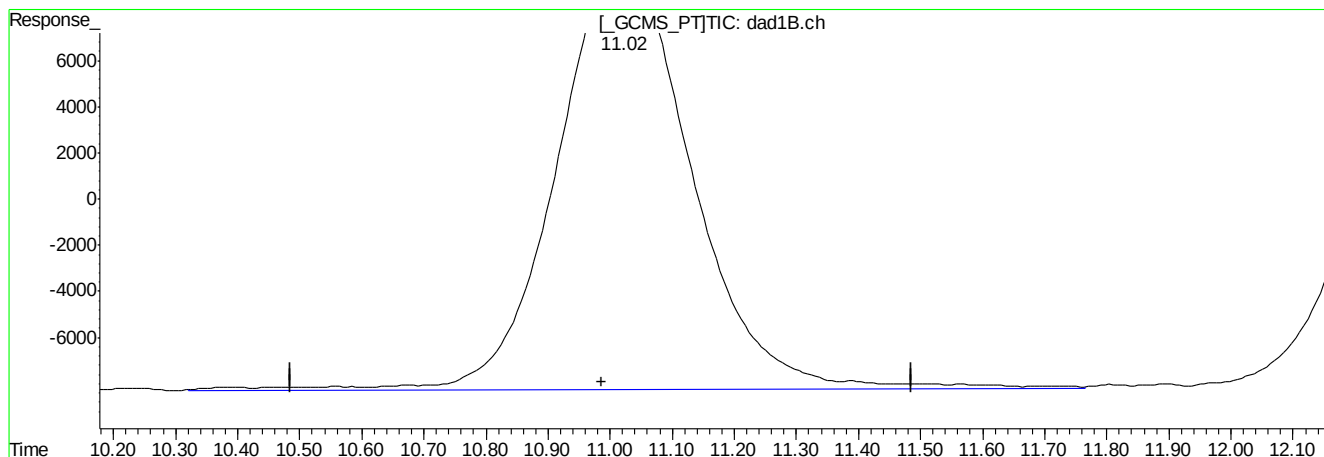
07/13/23 18:08 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3-Dinitrobenzene	99-65-0	2	11.02	Poor instrument integration
Nitrobenzene	98-95-3	2	12.28	Poor instrument integration
2,4,6-Trinitrotoluene	118-96-7	2	13.02	Poor instrument integration
Nitroglycerine	55-63-0	2	13.87	Poor instrument integration
Tetryl	479-45-8	2	14.48	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1A.ch
Acq On : 11-Jul-2023, 17:24:46 Operator: fouads
Sample : ic3298-4 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:19 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

11.02min 228.643ppb

response 2794443

(7) 1,3-Dinitrobenzene #2

11.02min 427.184ppb

response 3766539

(+) = Expected Retention Time

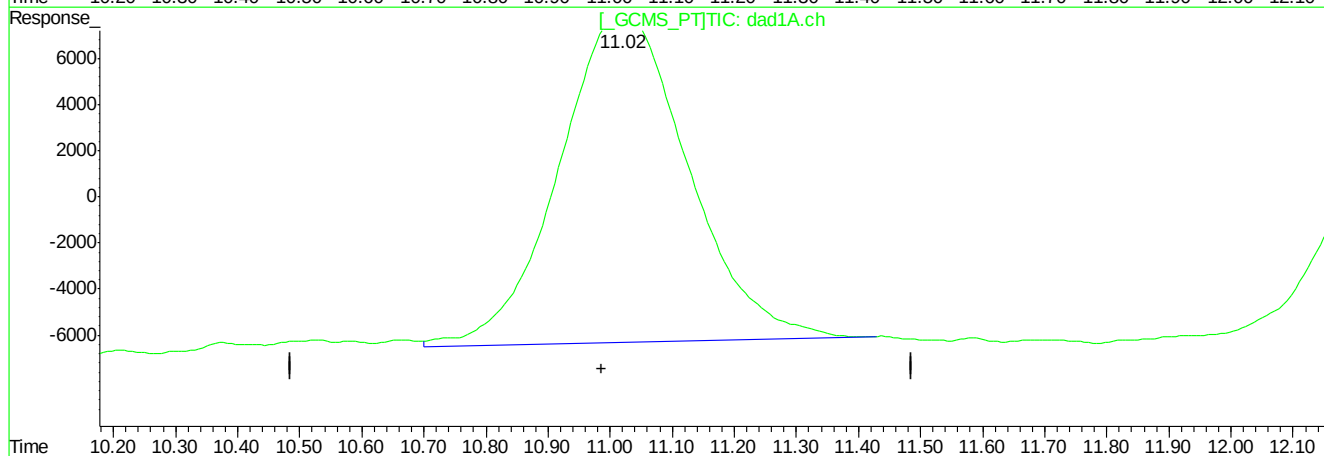
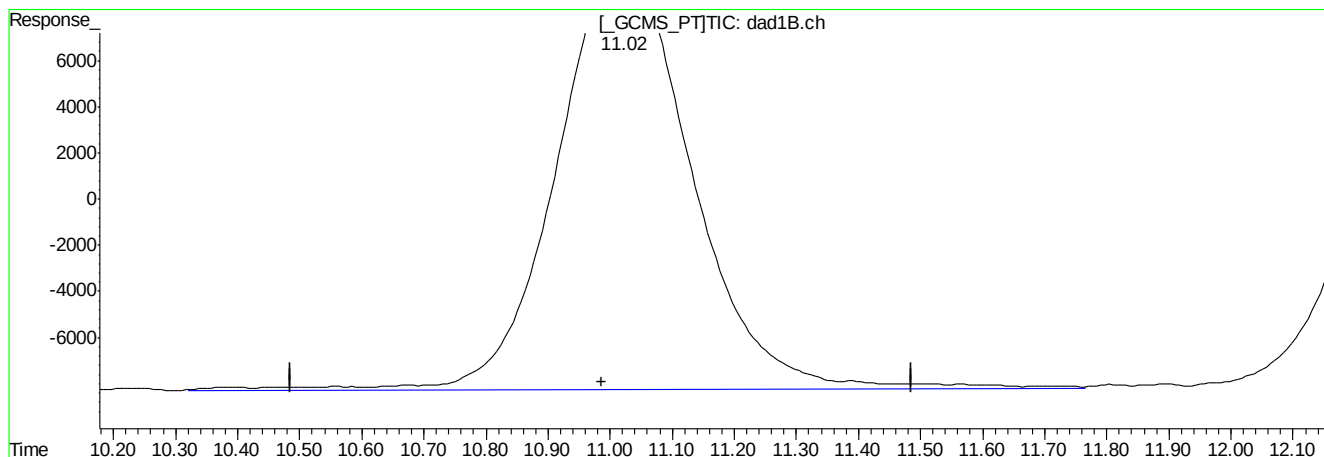
GG626765.D GGG3229_013023.M

Wed Jul 12 08:20:22 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1A.ch
Acq On : 11-Jul-2023, 17:24:46 Operator: fouads
Sample : ic3298-4 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:19 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

11.02min 228.643ppb

response 2794443

(7) 1,3-Dinitrobenzene #2

11.02min 232.609ppb m

response 2050944

(+) = Expected Retention Time

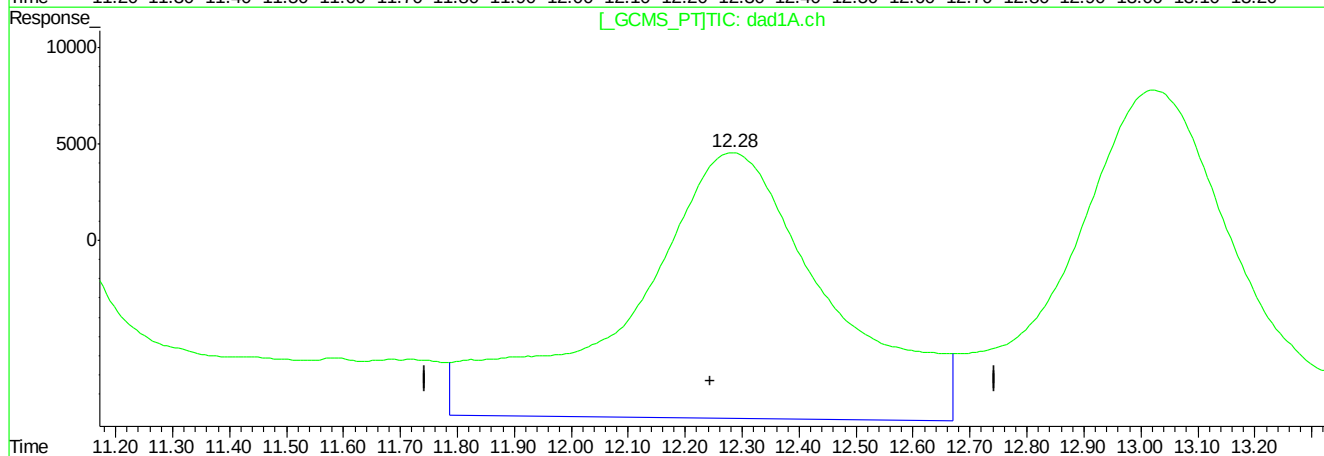
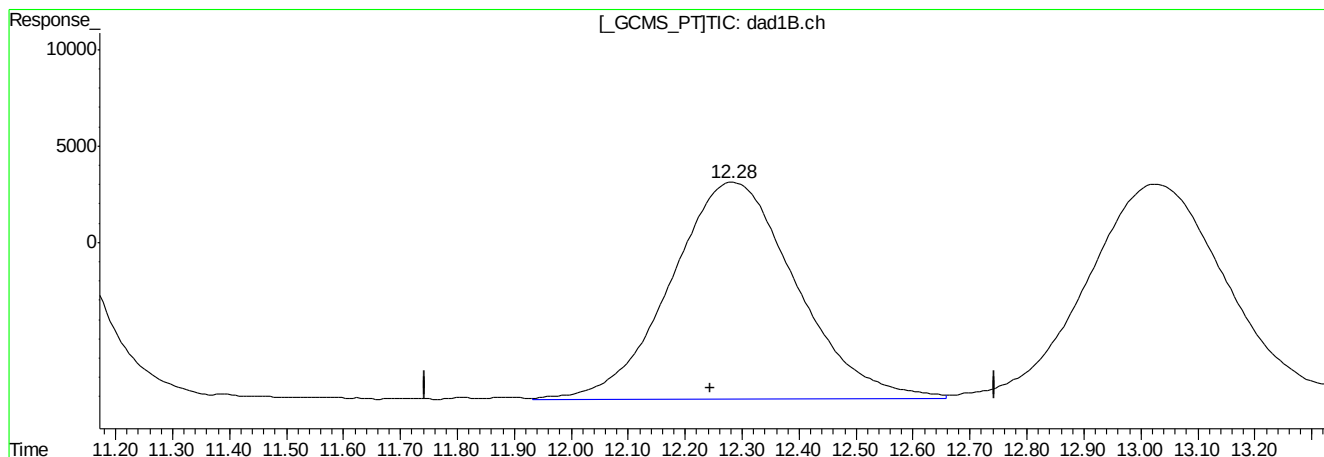
GG626765.D GGG3229_013023.M

Wed Jul 12 08:20:27 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1A.ch
Acq On : 11-Jul-2023, 17:24:46 Operator: fouads
Sample : ic3298-4 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:19 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene
12.28min 221.862ppb
response 1729346

(8) Nitrobenzene #2
12.28min 430.884ppb
response 3322164

(+) = Expected Retention Time

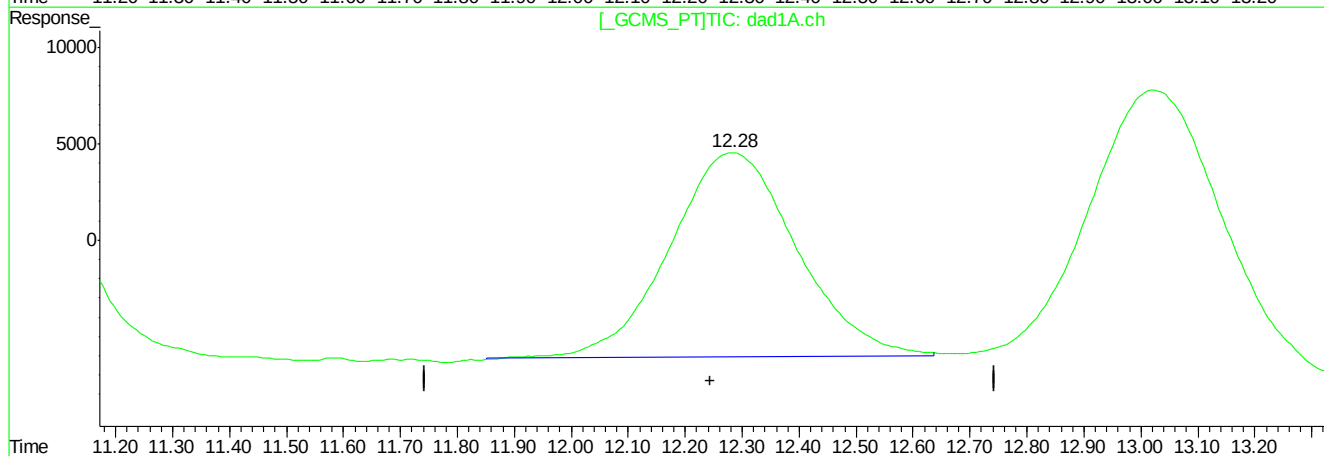
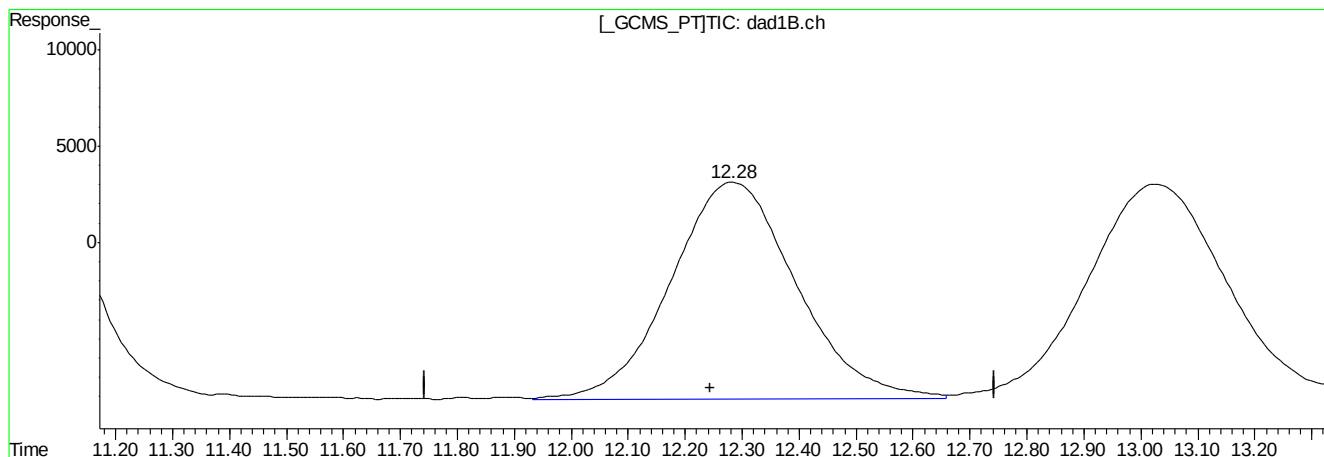
GG626765.D GGG3229_013023.M

Wed Jul 12 08:20:34 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1A.ch
Acq On : 11-Jul-2023, 17:24:46 Operator: fouads
Sample : ic3298-4 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:19 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene

12.28min 221.862ppb

response 1729346

(8) Nitrobenzene #2

12.28min 212.189ppb m

response 1635998

(+) = Expected Retention Time

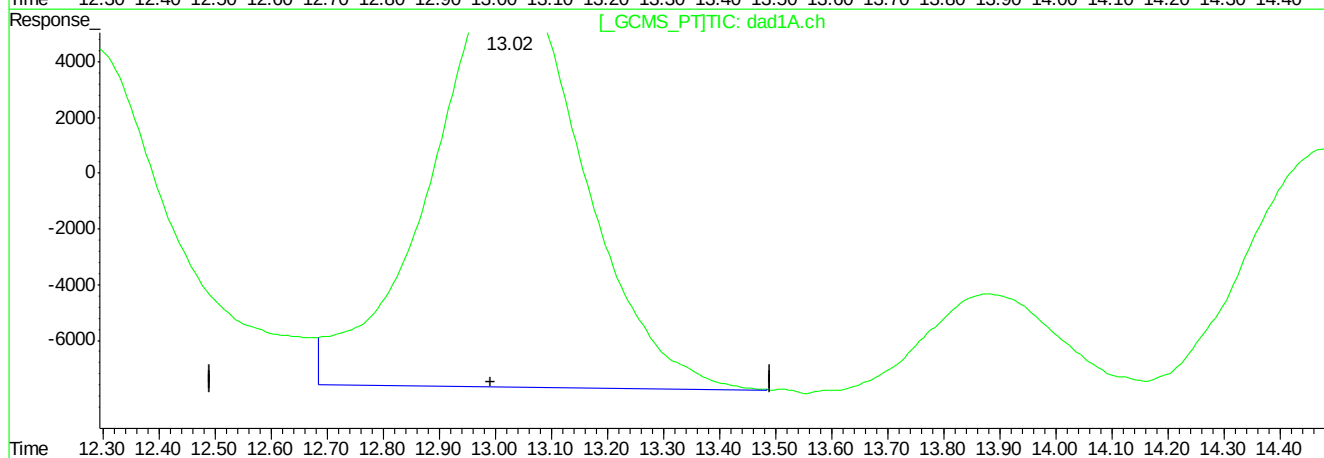
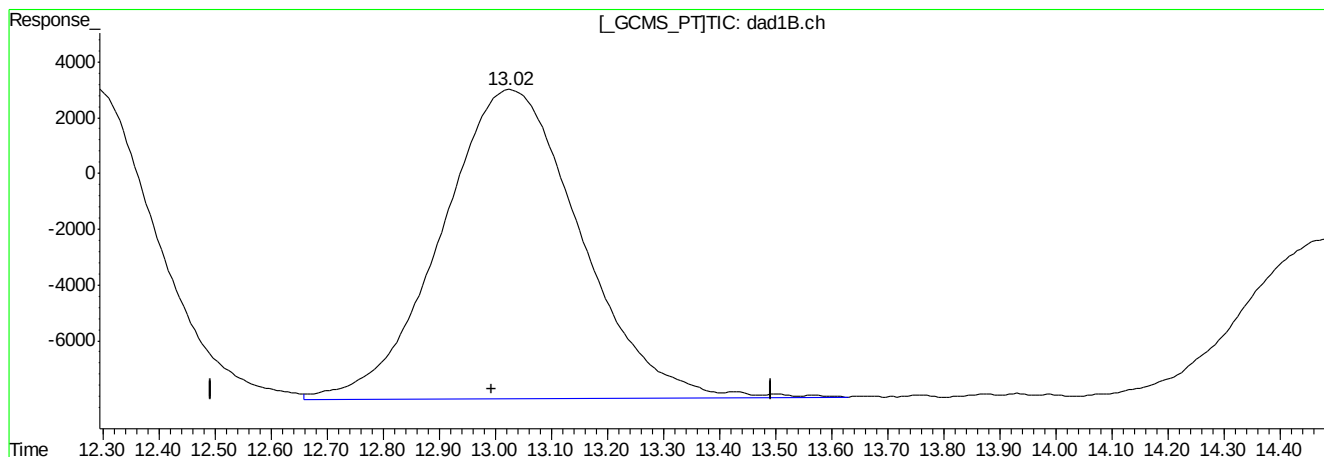
GG626765.D GGG3229_013023.M

Wed Jul 12 08:20:39 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1A.ch
Acq On : 11-Jul-2023, 17:24:46 Operator: fouads
Sample : ic3298-4 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:19 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



QEdit

(9) 2,4,6-Trinitrotoluene

13.03min 218.097ppb

response 1916172

(9) 2,4,6-Trinitrotoluene #2

13.02min 232.820ppb m

response 2802459

(+) = Expected Retention Time

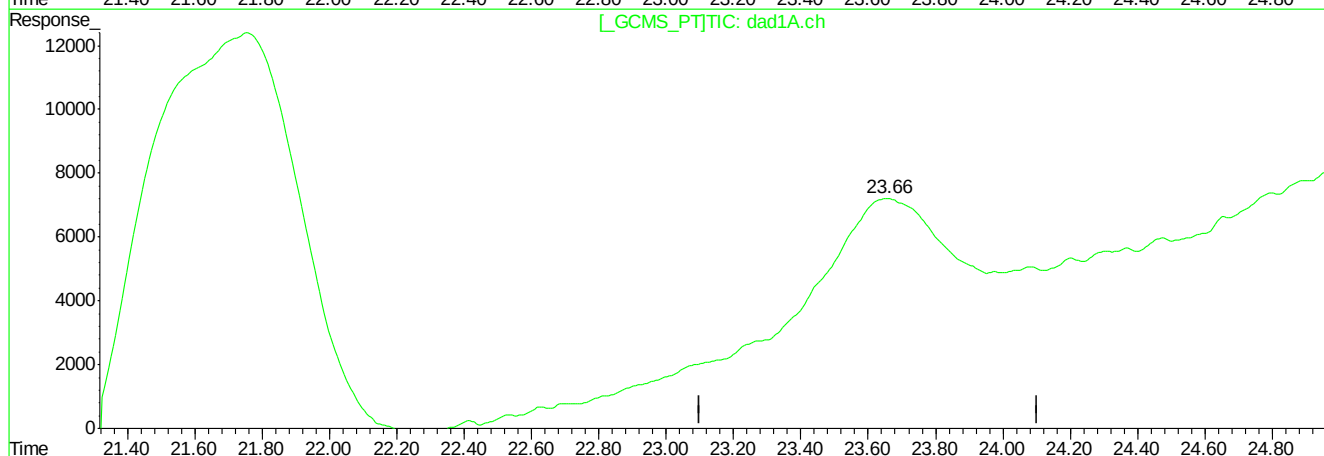
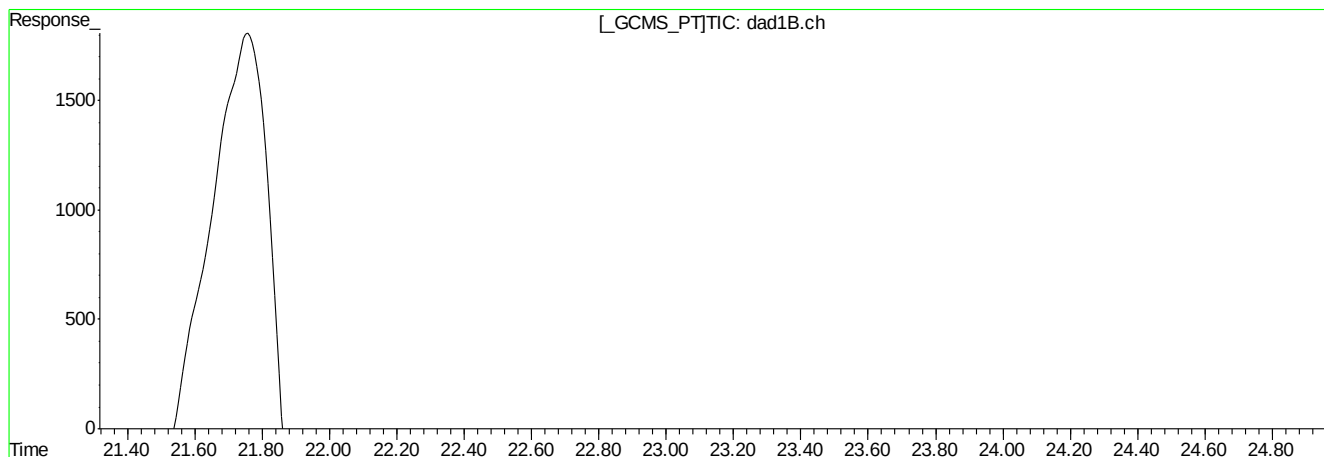
GG626765.D GGG3229_013023.M

Wed Jul 12 08:20:52 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1A.ch
Acq On : 11-Jul-2023, 17:24:46 Operator: fouads
Sample : ic3298-4 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:19 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

23.66min 182.351ppb

response 547906

QEdit

(+) = Expected Retention Time

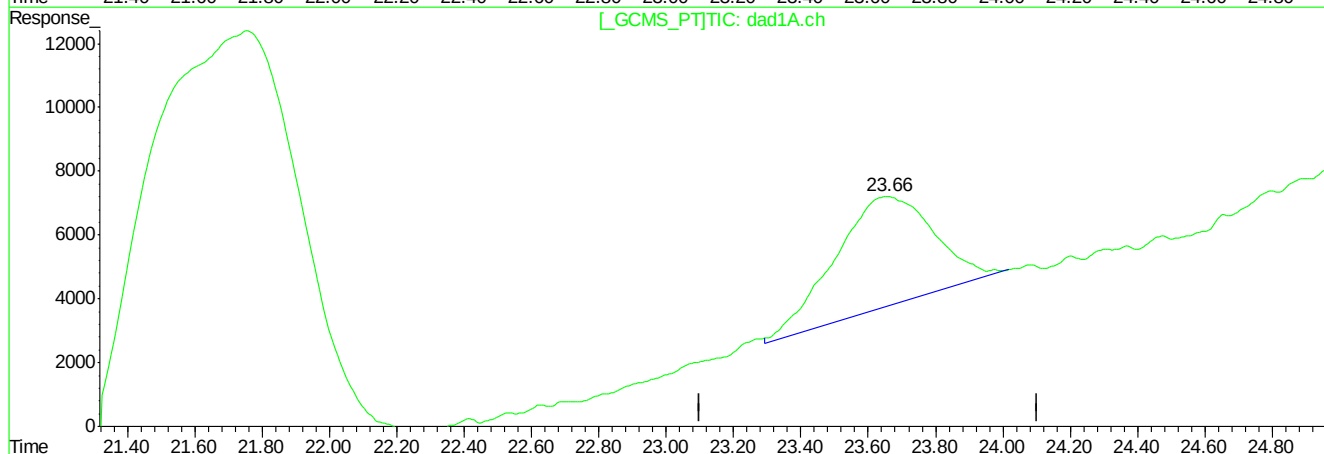
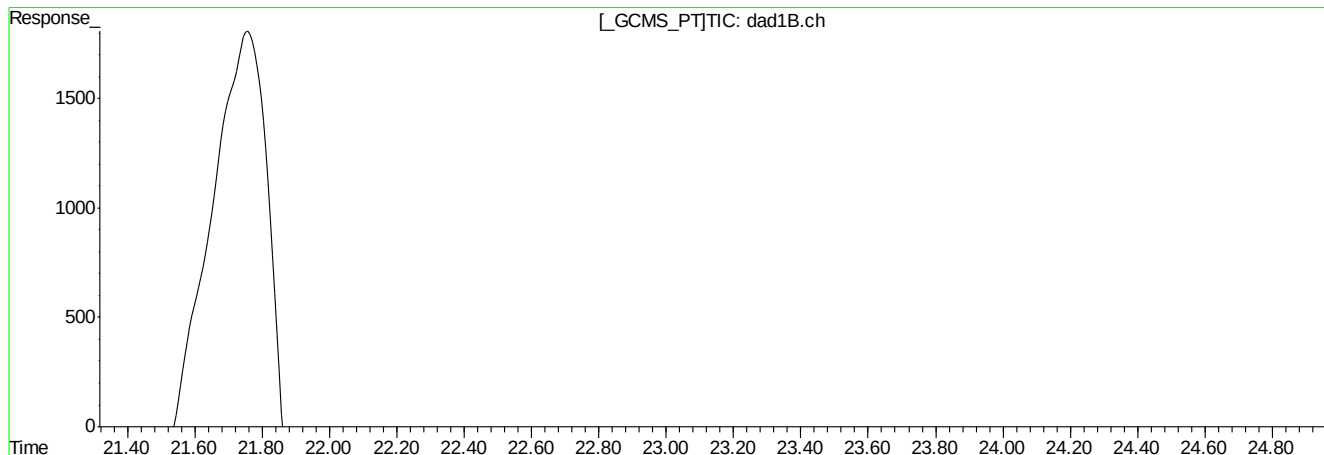
GG626765.D GGG3229_013023.M

Wed Jul 12 08:22:06 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1A.ch
Acq On : 11-Jul-2023, 17:24:46 Operator: fouads
Sample : ic3298-4 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:19 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_013023.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:06:54 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

23.66min 237.333ppb m

response 713111

QEdit

(+) = Expected Retention Time

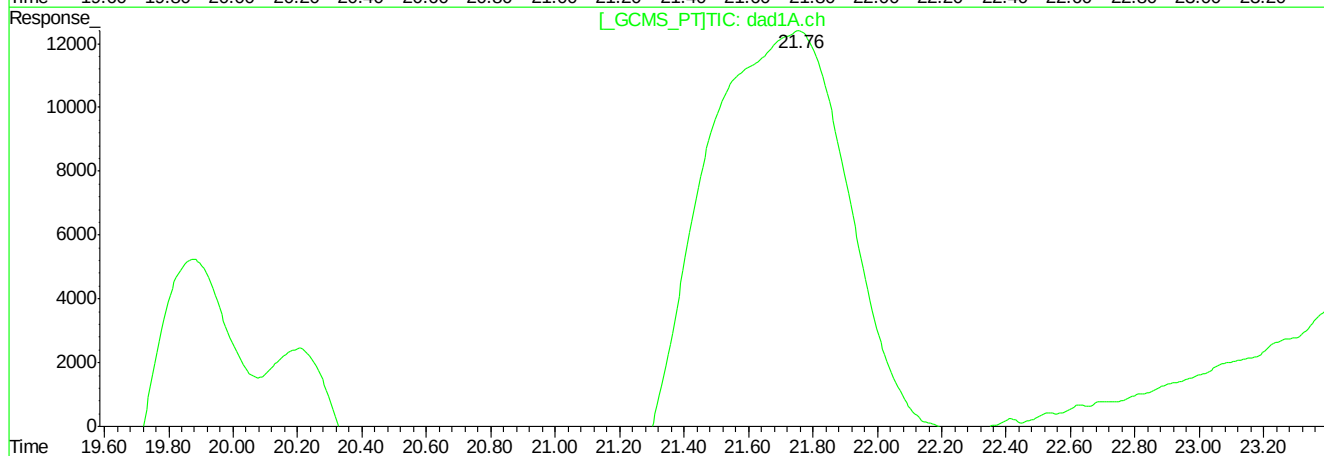
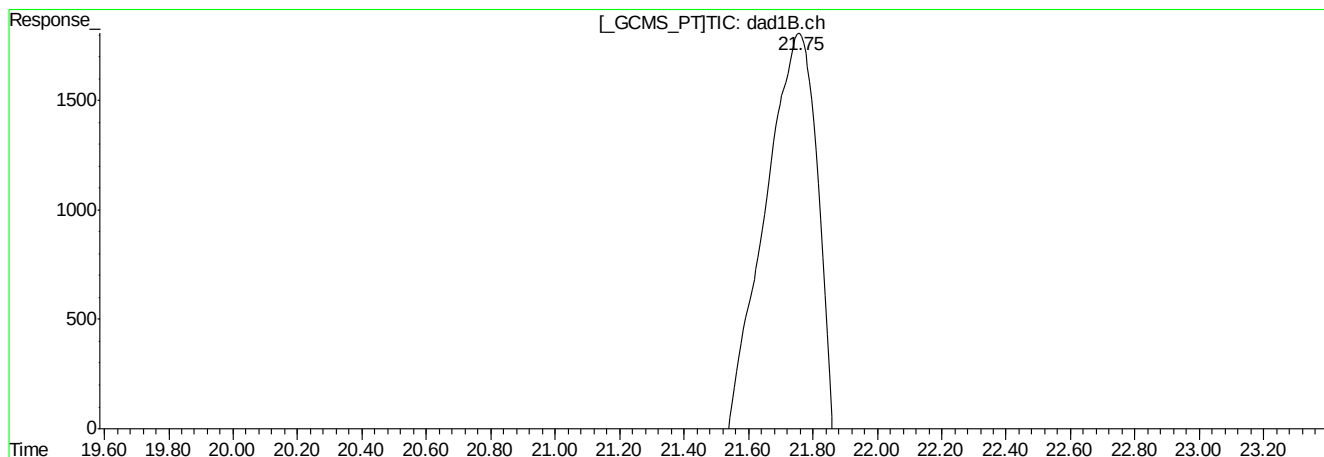
GG626765.D GGG3229_013023.M

Wed Jul 12 08:22:19 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1A.ch
Acq On : 11-Jul-2023, 17:24:46 Operator: fouads
Sample : ic3298-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:22 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:48:42 2023
Response via : Multiple Level Calibration



(19) m-Nitrotoluene
21.76min 623.690ppb
response 3076356

(19) m-Nitrotoluene #2
21.75min 566.541ppb
response 4671661

(+) = Expected Retention Time

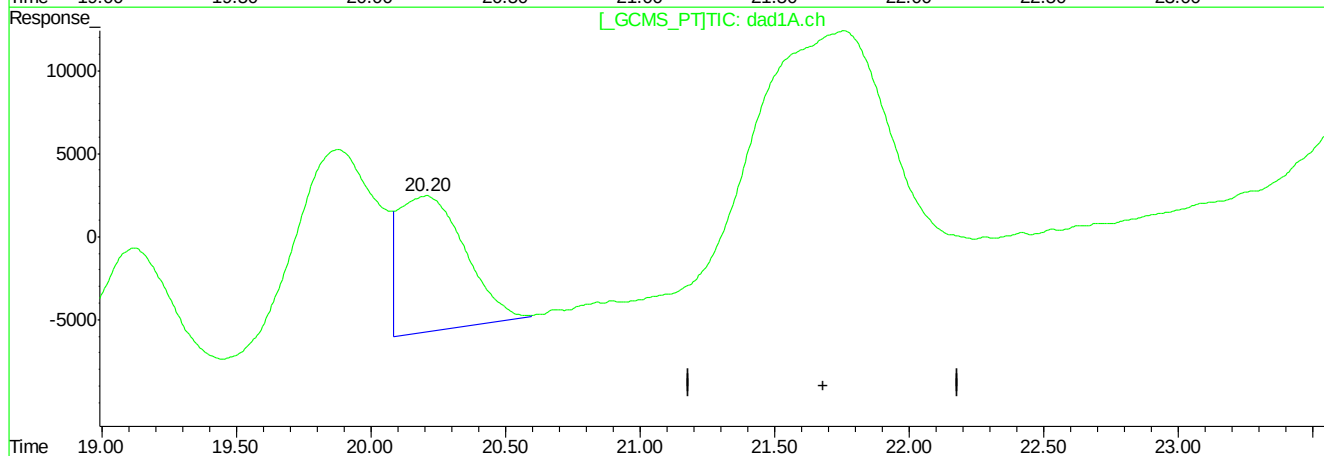
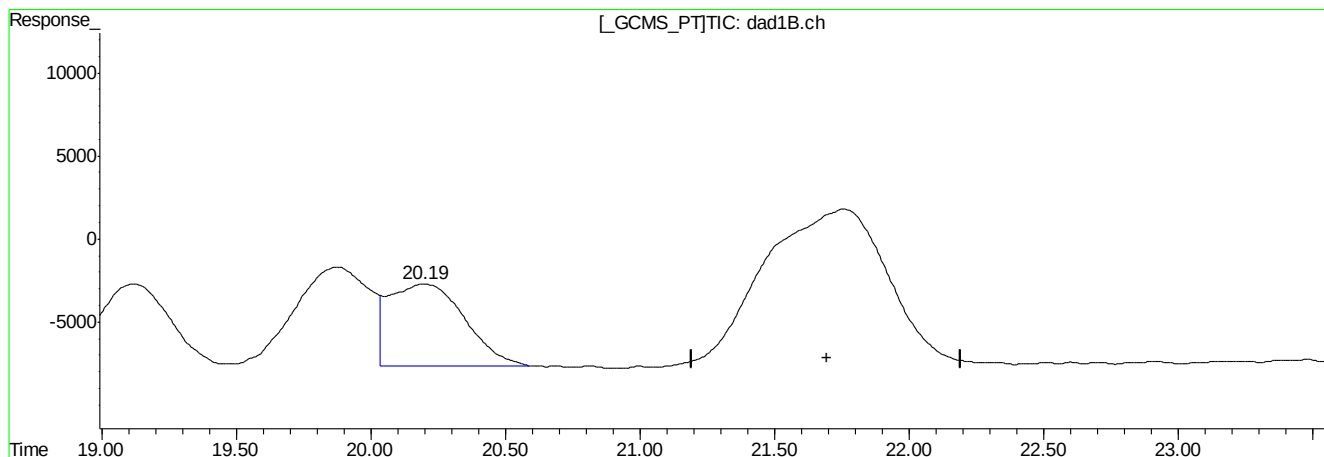
GG626765.D GGG3229_071123.M

Wed Jul 12 10:02:38 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1A.ch
Acq On : 11-Jul-2023, 17:24:46 Operator: fouads
Sample : ic3298-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:22 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:48:42 2023
Response via : Multiple Level Calibration



QEdit

(19) m-Nitrotoluene

20.19min 197.641ppb m

response 974864

(19) m-Nitrotoluene #2

20.20min 170.696ppb m

response 1407544

(+) = Expected Retention Time

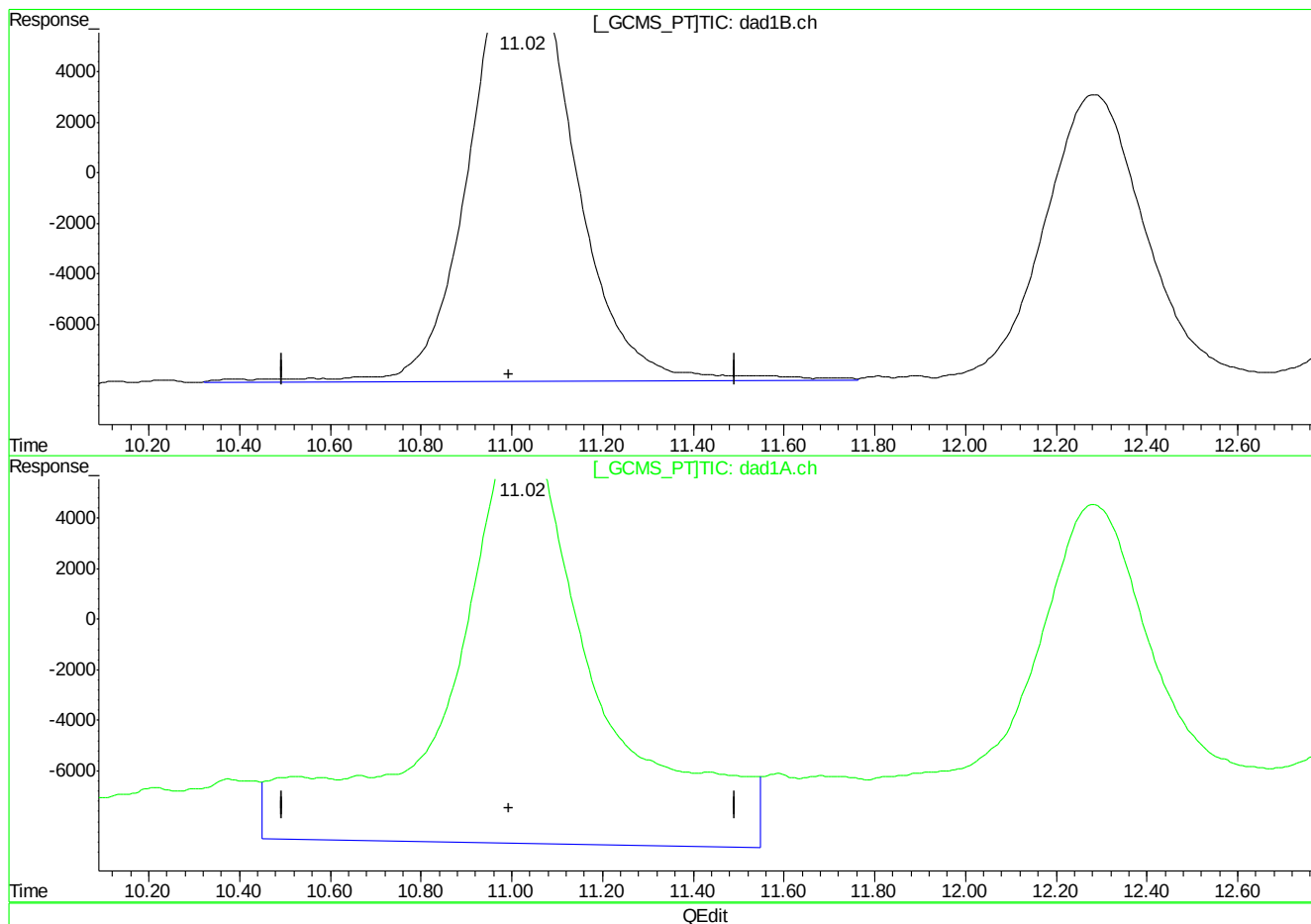
GG626765.D GGG3229_071123.M

Wed Jul 12 10:03:02 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1A.ch
Acq On : 11-Jul-2023, 17:24:46 Operator: fouads
Sample : ic3298-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

11.02min 199.992ppb

response 2794443

(7) 1,3-Dinitrobenzene #2

11.02min 345.928ppb

response 3766539

(+) = Expected Retention Time

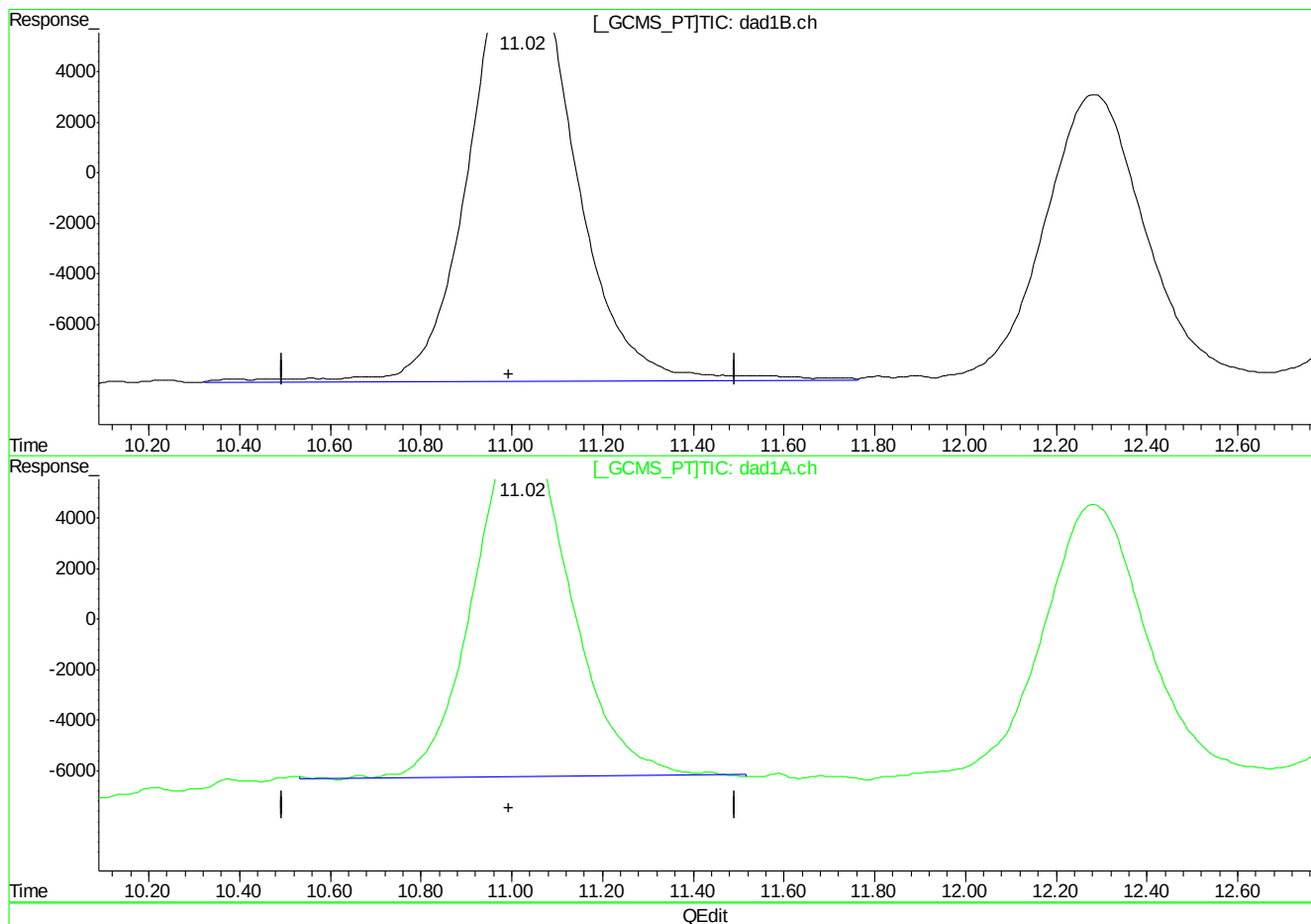
GG626765.D GGG3229_071123.M

Wed Jul 12 10:53:00 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1A.ch
Acq On : 11-Jul-2023, 17:24:46 Operator: fouads
Sample : ic3298-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

11.02min 199.992ppb

response 2794443

(7) 1,3-Dinitrobenzene #2

11.02min 186.344ppb m

response 2028956

(+) = Expected Retention Time

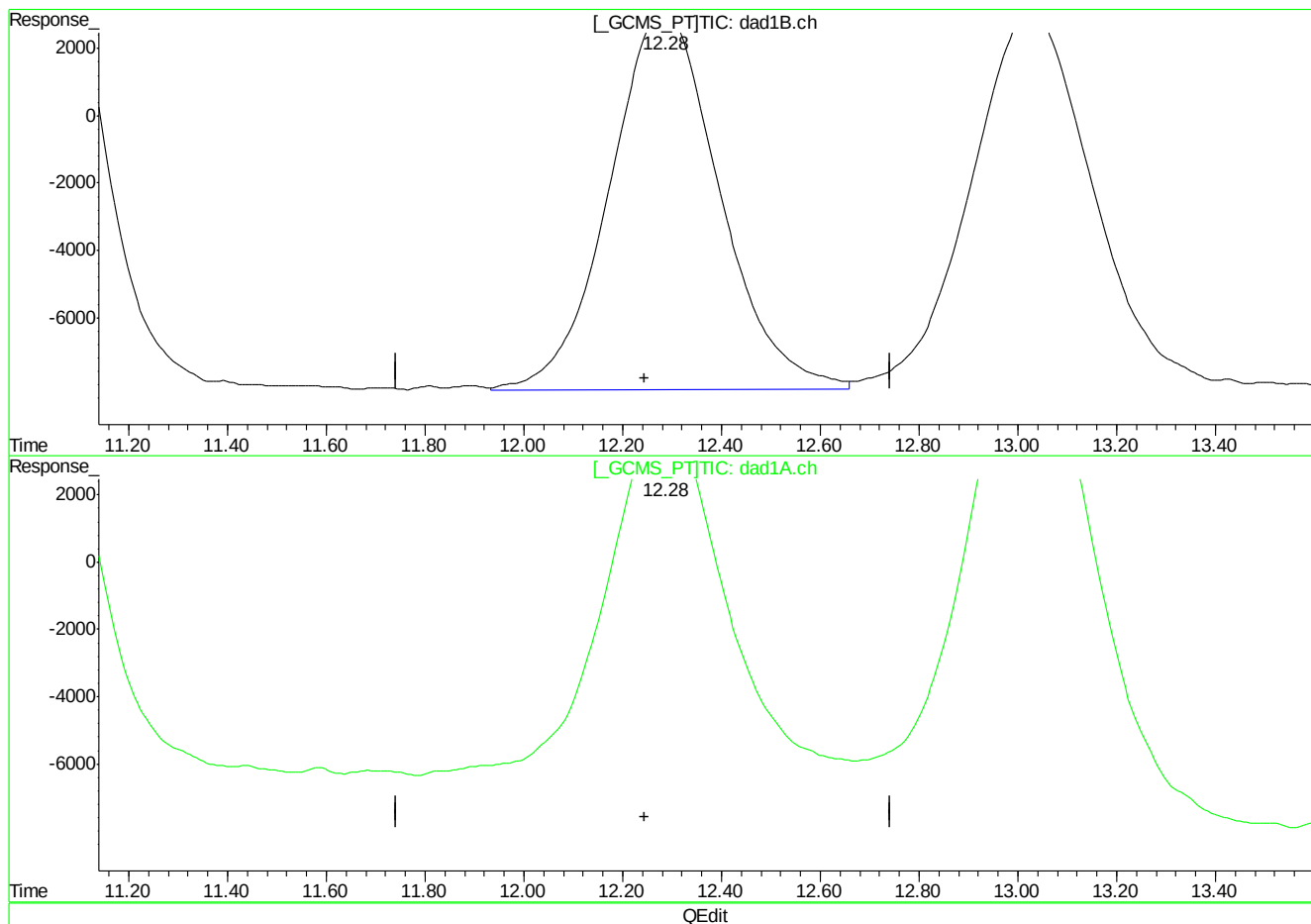
GG626765.D GGG3229_071123.M

Wed Jul 12 10:53:05 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1A.ch
Acq On : 11-Jul-2023, 17:24:46 Operator: fouads
Sample : ic3298-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



(8) Nitrobenzene
12.28min 198.201ppb
response 1729346

(8) Nitrobenzene #2
12.28min 398.641ppb
response 3322164

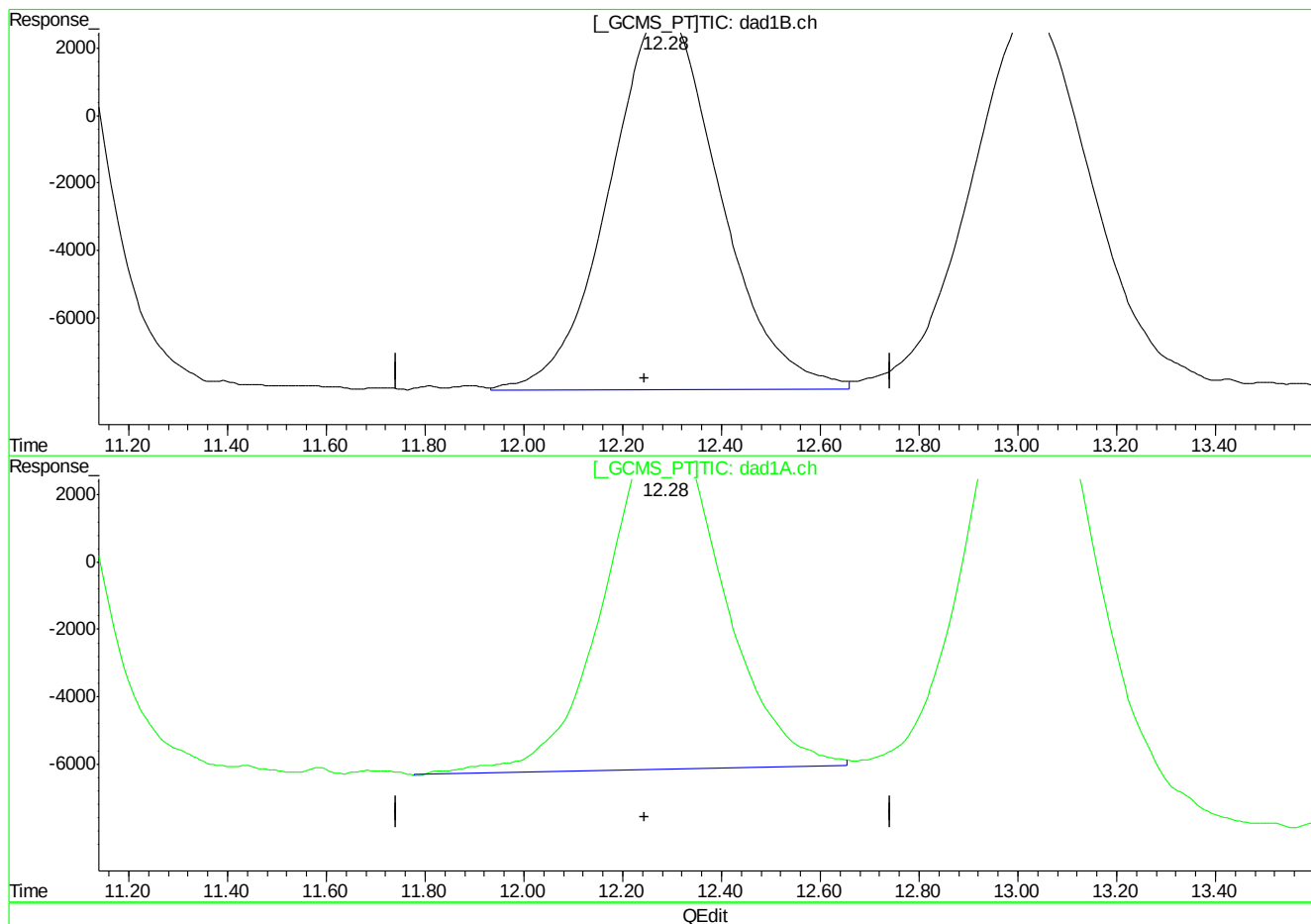
(+) = Expected Retention Time
GG626765.D GGG3229_071123.M

Wed Jul 12 10:53:11 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1A.ch
Acq On : 11-Jul-2023, 17:24:46 Operator: fouads
Sample : ic3298-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



(8) Nitrobenzene
12.28min 198.201ppb
response 1729346

(8) Nitrobenzene #2
12.28min 203.045ppb m
response 1692117

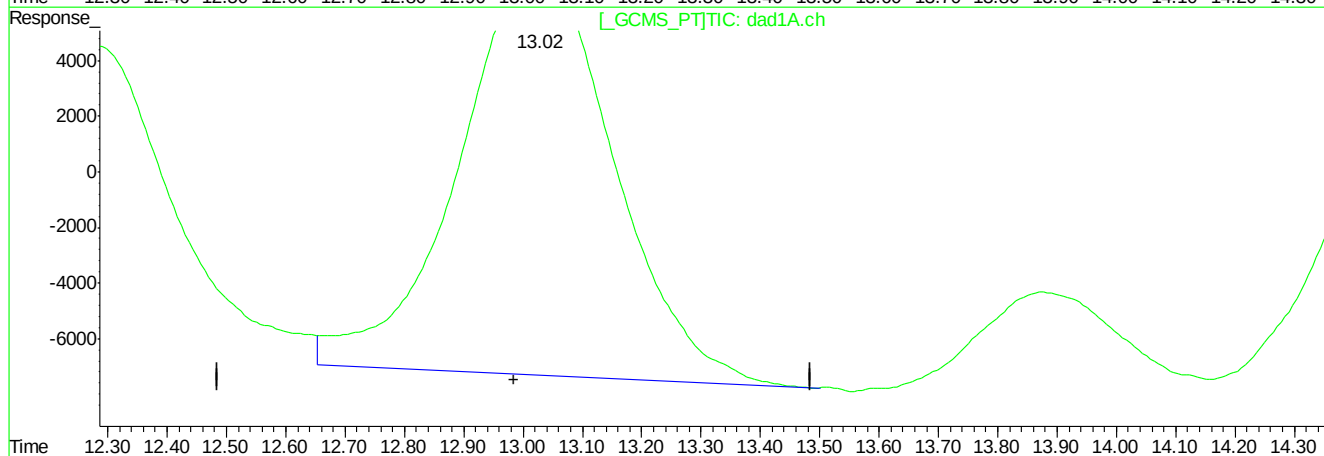
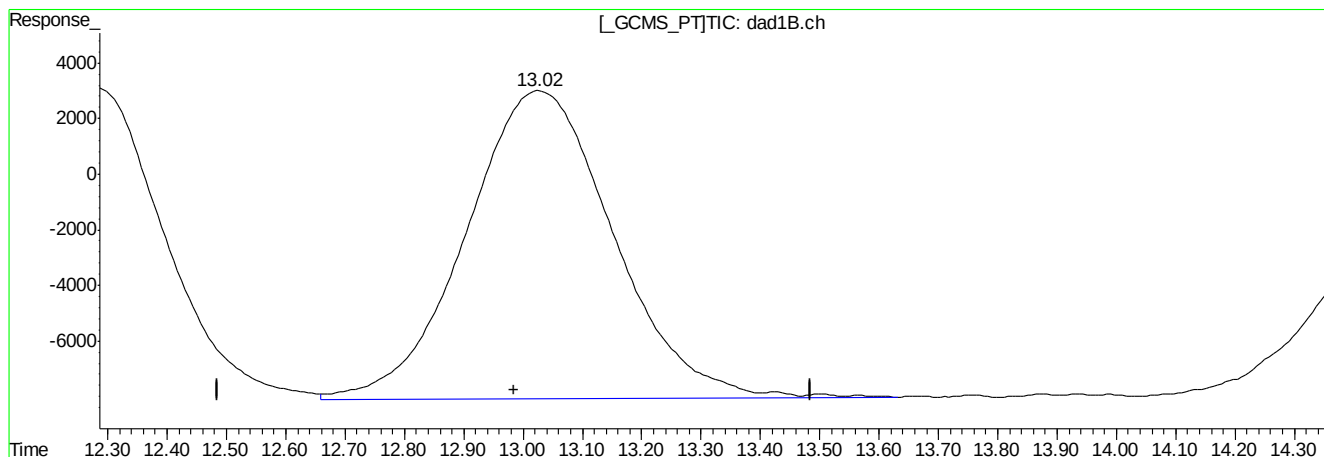
(+) = Expected Retention Time
GG626765.D GGG3229_071123.M

Wed Jul 12 10:53:18 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1A.ch
Acq On : 11-Jul-2023, 17:24:46 Operator: fouads
Sample : ic3298-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



QEdit

(9) 2,4,6-Trinitrotoluene

13.03min 193.288ppb

response 1916172

(9) 2,4,6-Trinitrotoluene #2

13.02min 203.811ppb m

response 2668579

(+) = Expected Retention Time

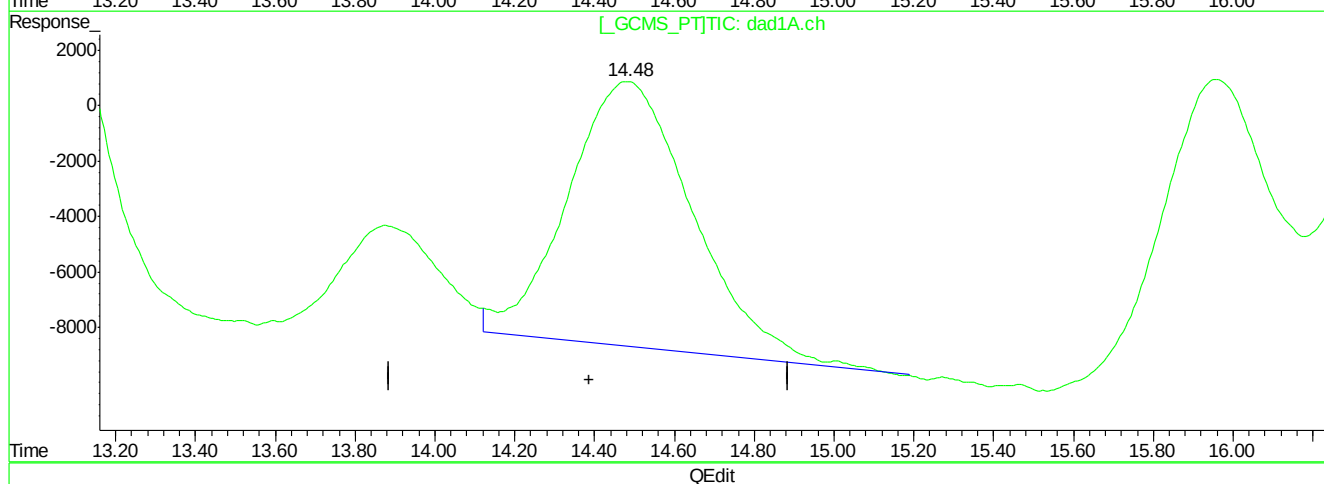
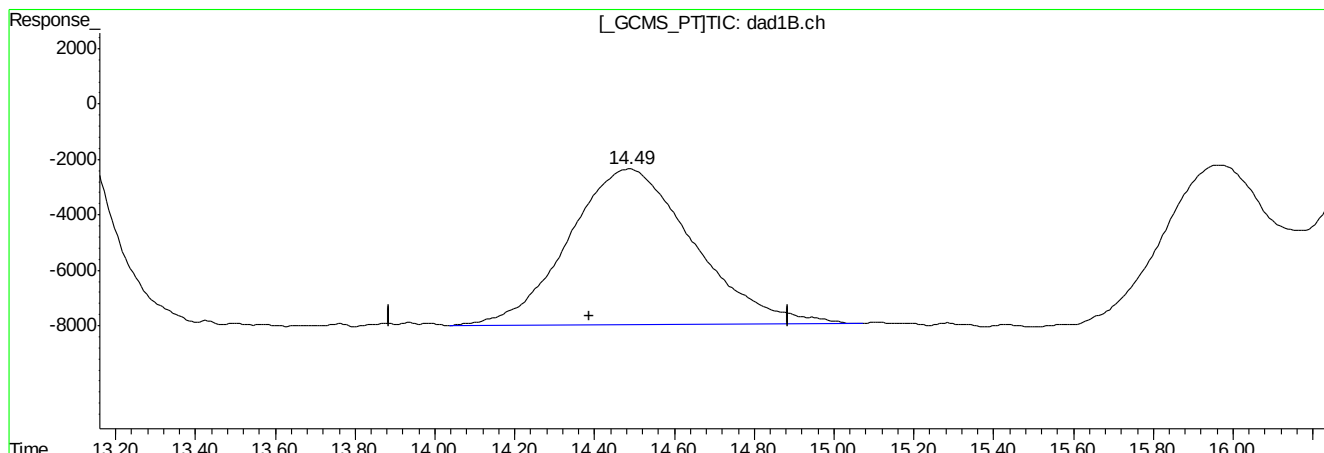
GG626765.D GGG3229_071123.M

Wed Jul 12 10:53:26 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1A.ch
Acq On : 11-Jul-2023, 17:24:46 Operator: fouads
Sample : ic3298-200 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



(11) Tetryl

14.49min 166.789ppb

response 1226185

(11) Tetryl #2

14.48min 164.722ppb m

response 2074756

(+) = Expected Retention Time

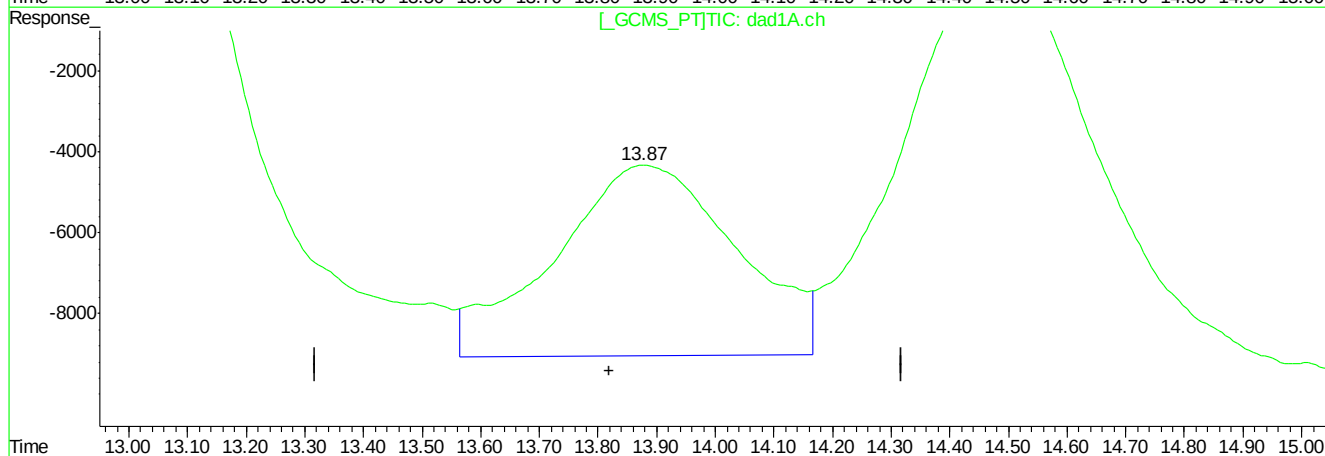
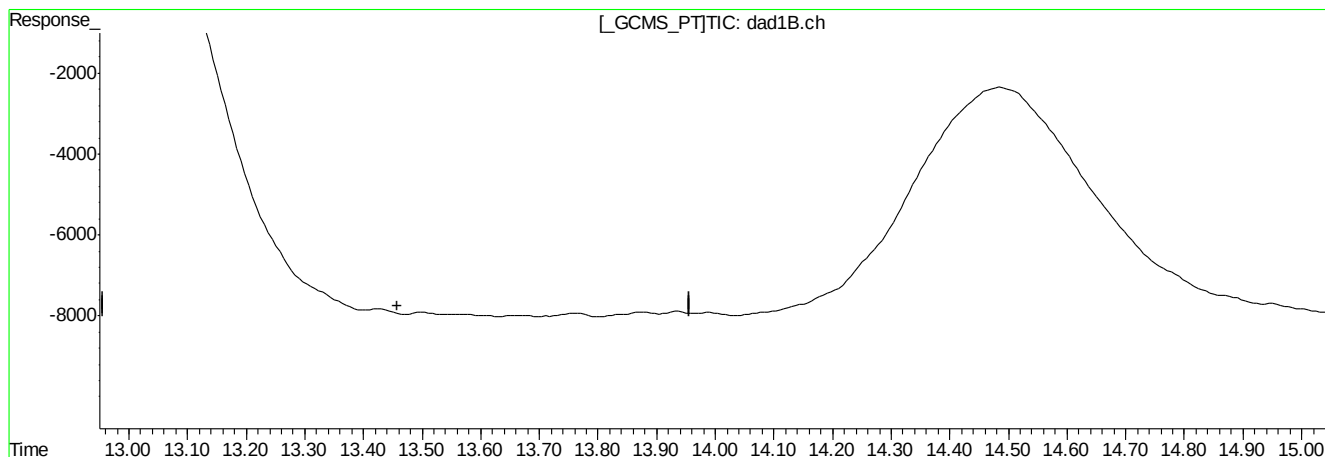
GG626765.D GGG3229_071123.M

Wed Jul 12 10:53:57 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1B.ch Vial: 6
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626765.D\dad1A.ch
Acq On : 11-Jul-2023, 17:24:46 Operator: fouads
Sample : ic3298-200 Inst : G1315B
Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:53 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 11:10:21 2023
Response via : Multiple Level Calibration



QEdit

(10) Nitroglycerin

0.00min 0.000ppb

response 0

(10) Nitroglycerin #2

13.87min 291.459ppb m

response 1019896

(+) = Expected Retention Time

GG626765.D GGG3229_071123.M

Wed Jul 12 15:48:04 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626766.D\dad1B.ch Vial: 7
 Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626766.D\dad1A.ch
 Acq On : 11-Jul-2023, 17:57:11 Operator: fouads
 Sample : ic3298-500 Inst : G1315B
 Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 12 10:09:26 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 12 10:08:59 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	15.97	15.97	2990008	5740324	499.240	496.231
Spiked Amount	500.000	Range	70 - 136	Recovery	=	99.85% 99.25%
Target Compounds						
1) TNX	5.28	5.28	2489330	2478308	242.986	240.351
2) HMX	5.69	5.69	1801087	1795392	502.795	499.352
3) DNx	5.96	5.96	4262769	4267382	509.334	508.454
4) MNX	7.25	7.25	4451623	4472525	594.958	589.485
5) 1,3,5-Trinitrobe	8.32	8.32	5175400	5220958	507.892	502.848
6) RDX	8.72	8.72	2482097	2572440	511.170	504.491
7) 1,3-Dinitrobenze	11.03	11.03	7075454	5309916	506.375	487.675m
8) Nitrobenzene	12.29	12.29	4414283	4192011	505.922	503.018m
9) 2,4,6-Trinitroto	13.04	13.04	4961281	7391978	500.454	564.558
10) Nitroglycerin	0.00	13.89	0	2015479	N.D.	575.970 #
11) Tetryl	14.50	14.50	3452828	6269426	469.663	497.750
13) 2,6-Dinitrotolue	16.37	16.37	3402185	4903148	501.165	498.317
14) 2,4-Dinitrotolue	17.05	17.05	6379935	4321719	502.478	478.601
15) 3,5-Dinitroanili	17.78	17.78	5433640	8814089	502.530	495.365
16) o-Nitrotoluene	19.07	19.07	2777232	4038690	507.127	493.446
17) p-Nitrotoluene	19.80	19.80	3425255	6839679	1019.818	1019.692
18) 4-Amino-2,6-Dini	19.80	19.80	3425255	6839679	1365.683	1698.660
19) m-Nitrotoluene	20.16	20.15	2554653	4033283	164.951	168.487
20) 2-Amino-4,6-Dini	21.68	21.65	7926231	11987554	511.786	504.242
21) PETN	0.00	23.61	0	1880993	N.D. d	512.364m#

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG626766.D GGG3229_071123.M Wed Jul 12 15:27:53 2023

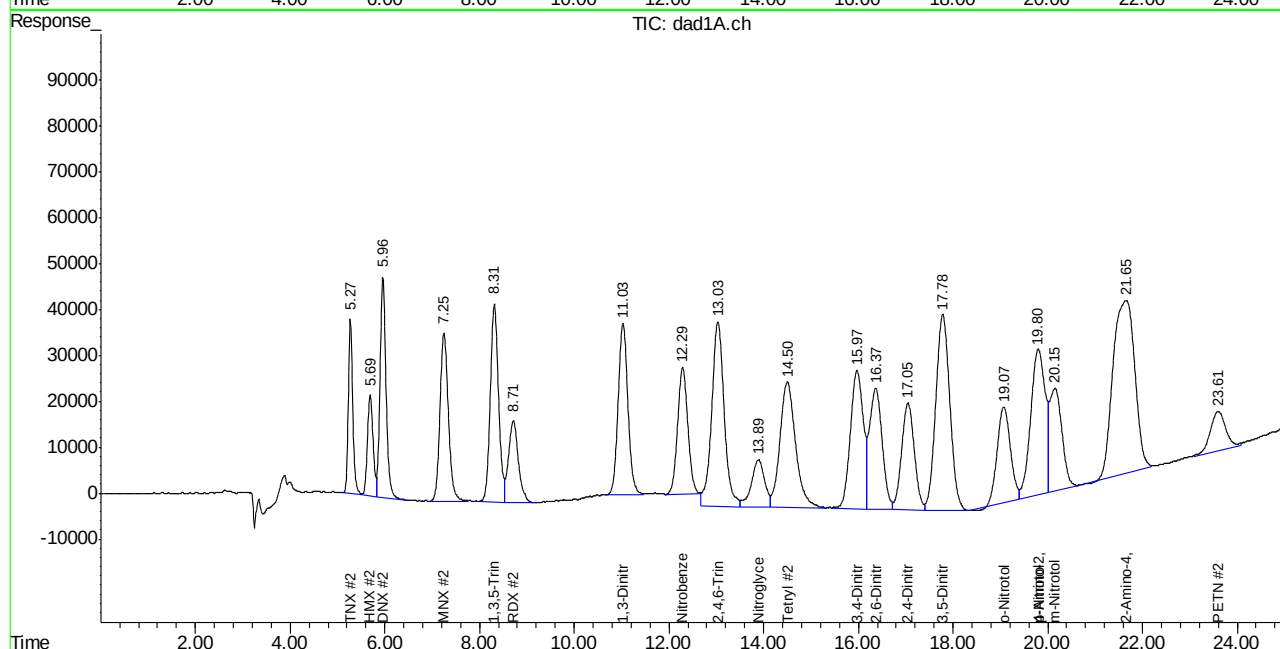
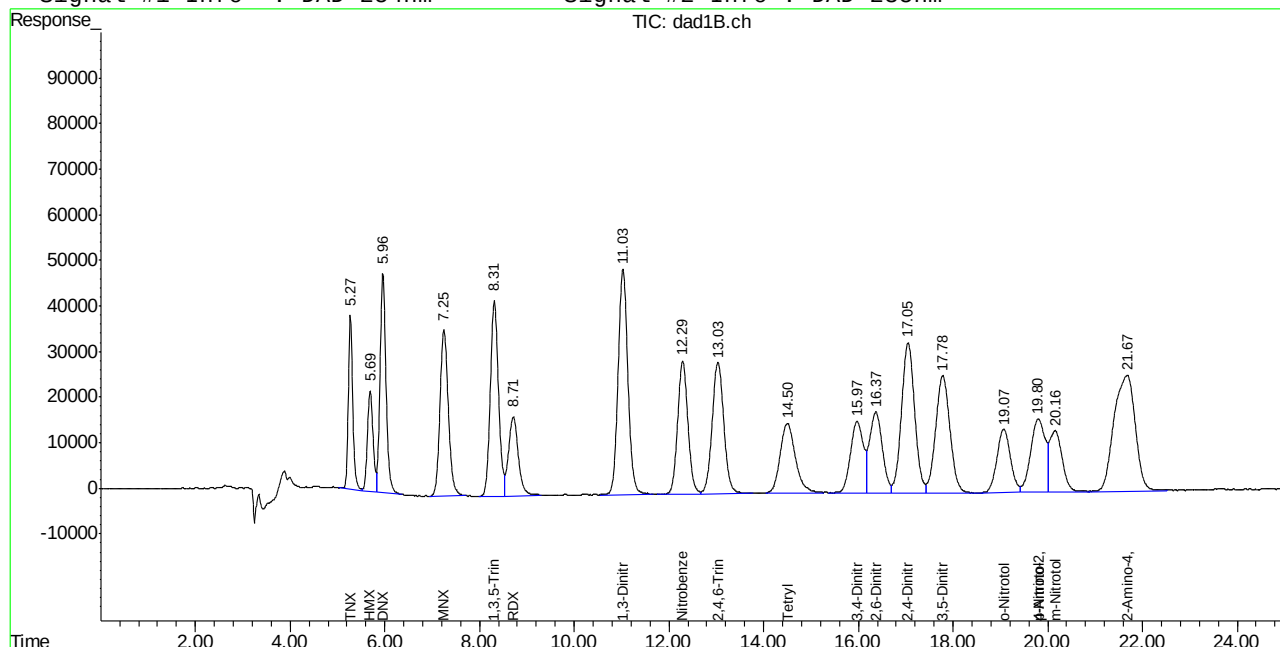
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626766.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626766.D\dad1A.ch
Acq On : 11-Jul-2023, 17:57:11 Operator: fouads
Sample : ic3298-500 Inst : G1315B
Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:55 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number:

GGG3298-IC3298

Method:

SW846 8330A

Lab FileID:

GG626766.D

Analyst approved:

07/12/23 15:40 Fouad Sekkar

Injection Time:

07/11/23 17:57

Supervisor approved:

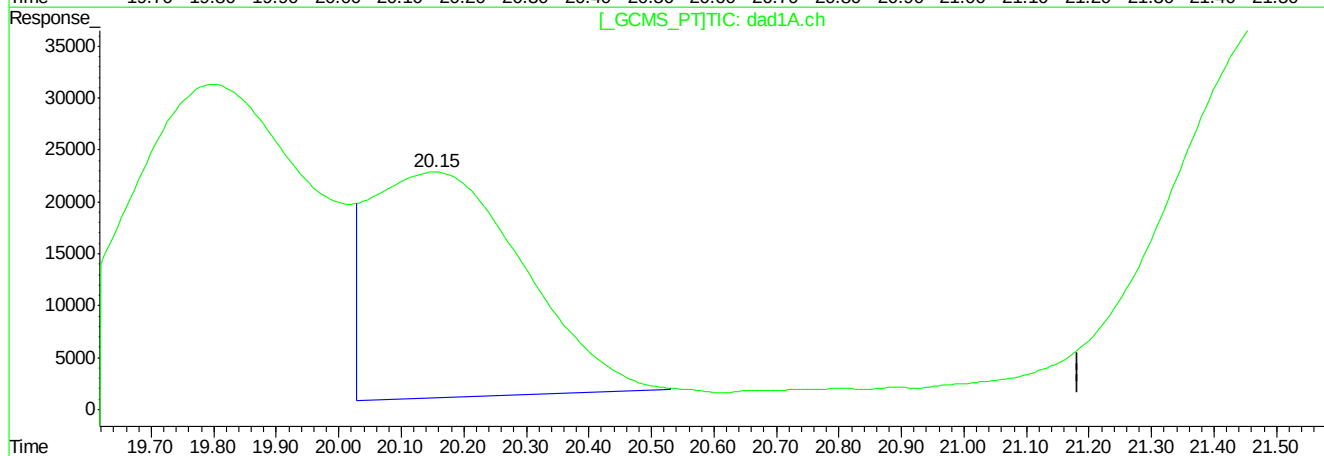
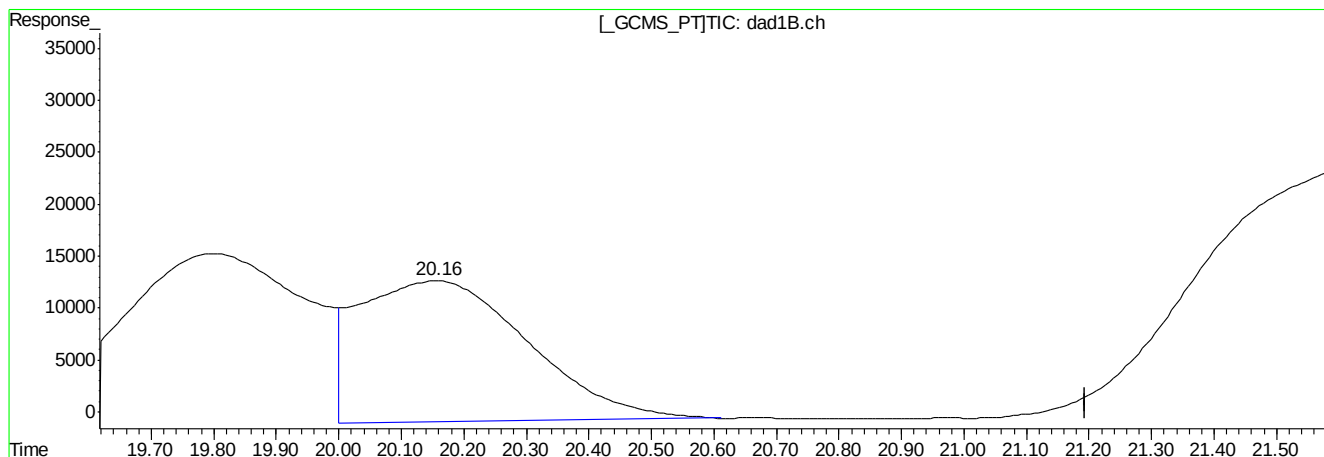
07/13/23 18:08 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3-Dinitrobenzene	99-65-0	2	11.03	Poor instrument integration
Nitrobenzene	98-95-3	2	12.29	Poor instrument integration
PETN	78-11-5	2	23.61	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626766.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626766.D\dad1A.ch
Acq On : 11-Jul-2023, 17:57:11 Operator: fouads
Sample : ic3298-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:46 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:48:42 2023
Response via : Multiple Level Calibration



(19) m-Nitrotoluene

20.16min 516.364ppb m

response 2546972

(19) m-Nitrotoluene #2

20.15min 449.955ppb m

response 3710296

(+) = Expected Retention Time

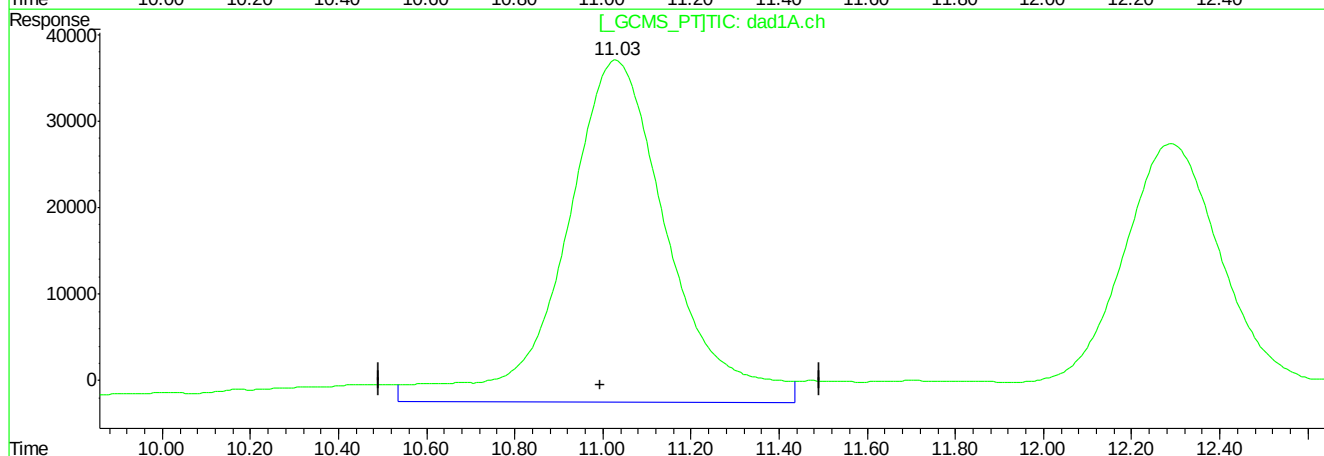
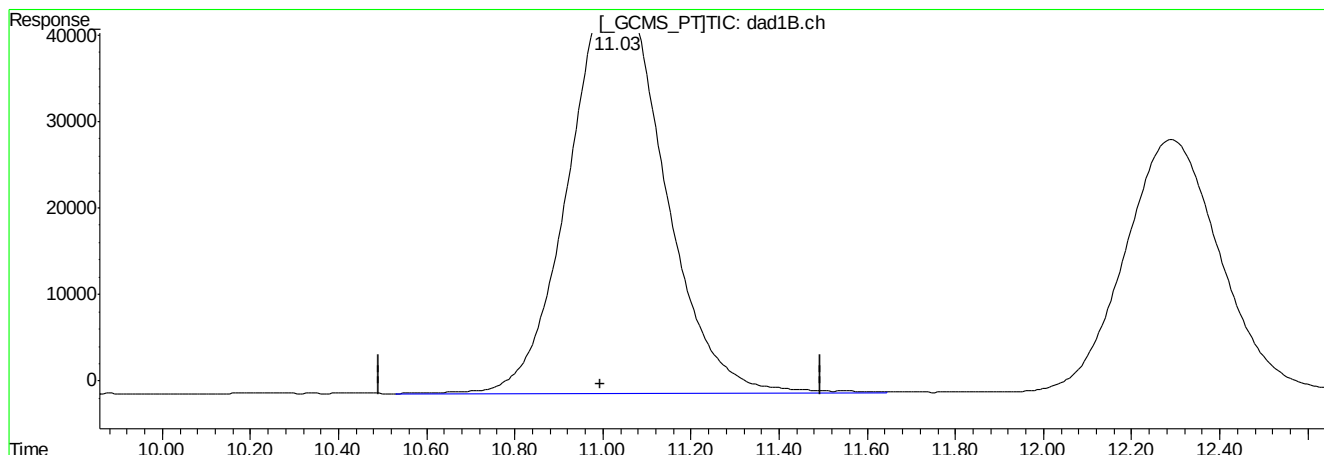
GG626766.D GGG3229_071123.M

Wed Jul 12 10:03:46 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626766.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626766.D\dad1A.ch
Acq On : 11-Jul-2023, 17:57:11 Operator: fouads
Sample : ic3298-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

11.03min 506.375ppb

response 7075454

(7) 1,3-Dinitrobenzene #2

11.03min 592.378ppb

response 6449943

(+) = Expected Retention Time

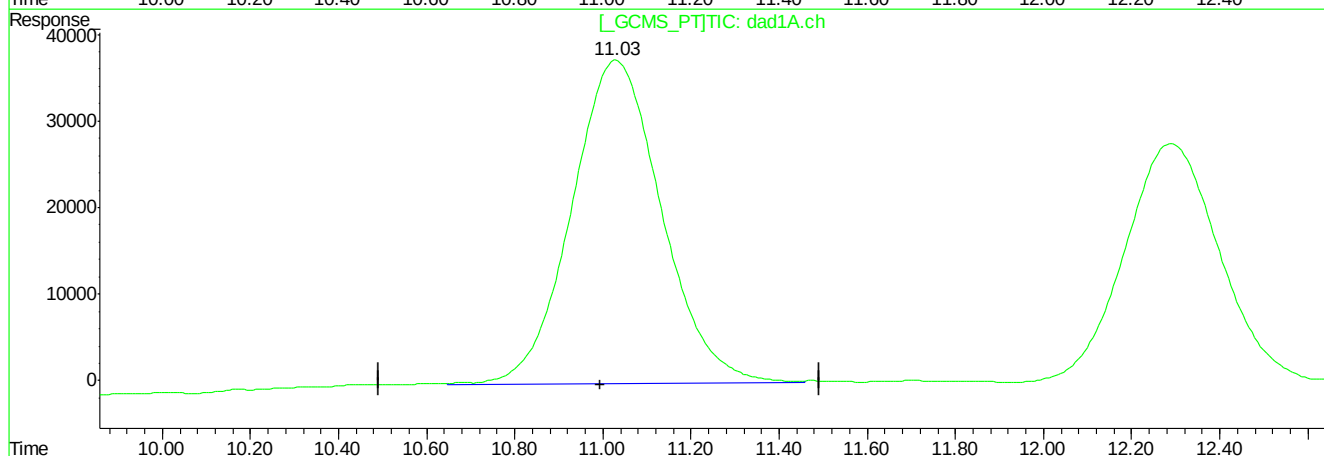
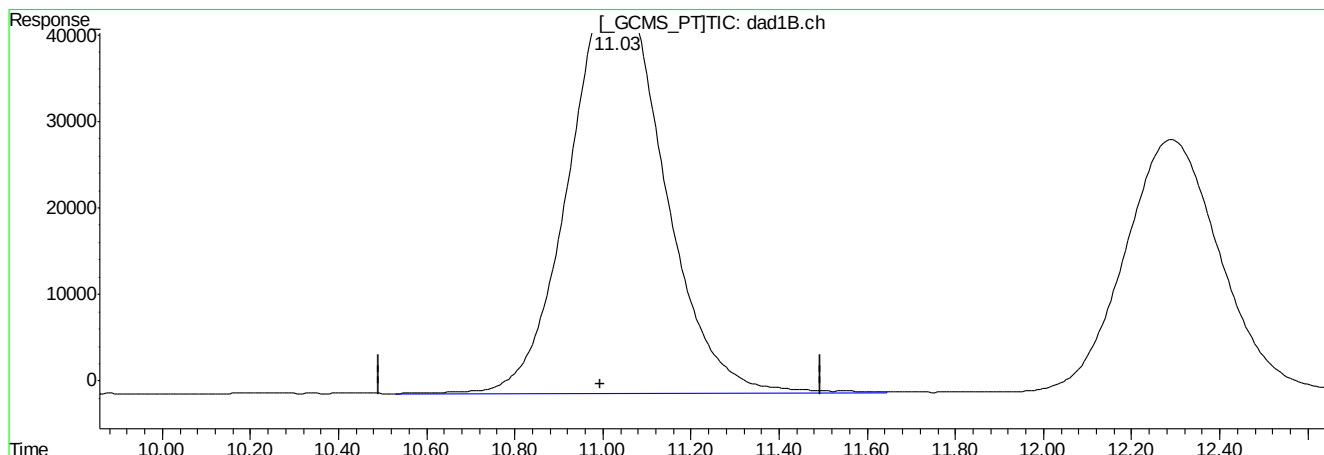
GG626766.D GGG3229_071123.M

Wed Jul 12 10:55:02 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626766.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626766.D\dad1A.ch
Acq On : 11-Jul-2023, 17:57:11 Operator: fouads
Sample : ic3298-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

11.03min 506.375ppb

response 7075454

(7) 1,3-Dinitrobenzene #2

11.03min 487.675ppb m

response 5309916

QEdit

(+) = Expected Retention Time

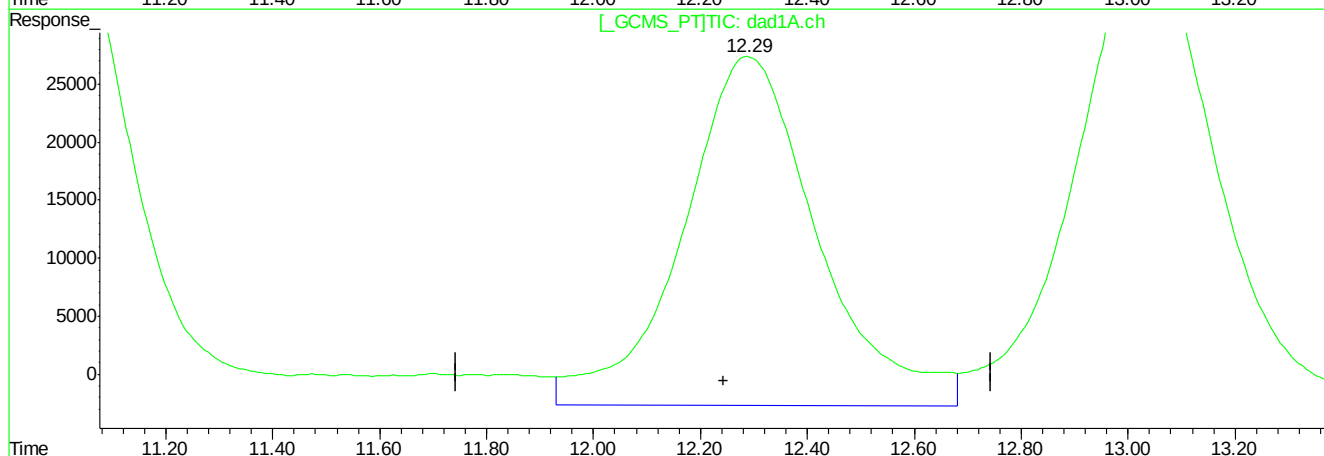
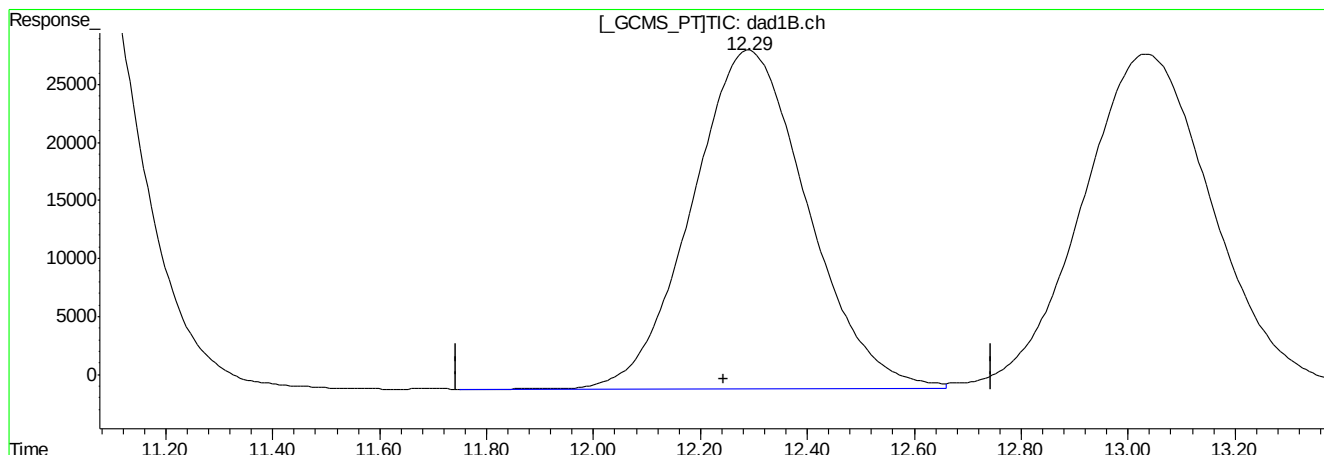
GG626766.D GGG3229_071123.M

Wed Jul 12 10:55:08 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626766.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626766.D\dad1A.ch
Acq On : 11-Jul-2023, 17:57:11 Operator: fouads
Sample : ic3298-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene

12.29min 505.922ppb

response 4414283

(8) Nitrobenzene #2

12.29min 634.383ppb

response 5286777

(+) = Expected Retention Time

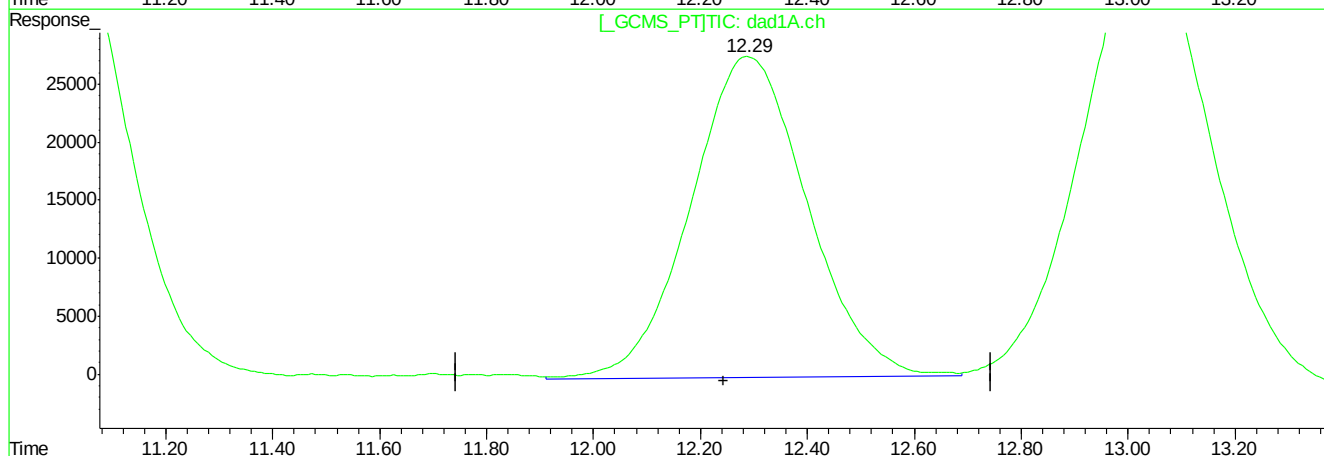
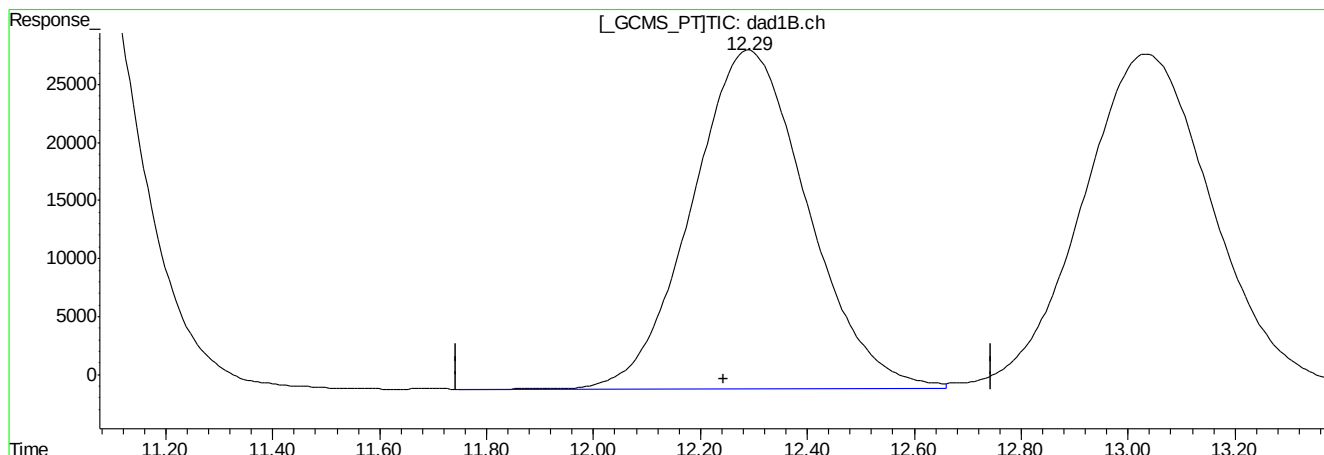
GG626766.D GGG3229_071123.M

Wed Jul 12 10:55:15 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626766.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626766.D\dad1A.ch
Acq On : 11-Jul-2023, 17:57:11 Operator: fouads
Sample : ic3298-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



QEdit

(8) Nitrobenzene

12.29min 505.922ppb

response 4414283

(8) Nitrobenzene #2

12.29min 503.018ppb m

response 4192011

(+) = Expected Retention Time

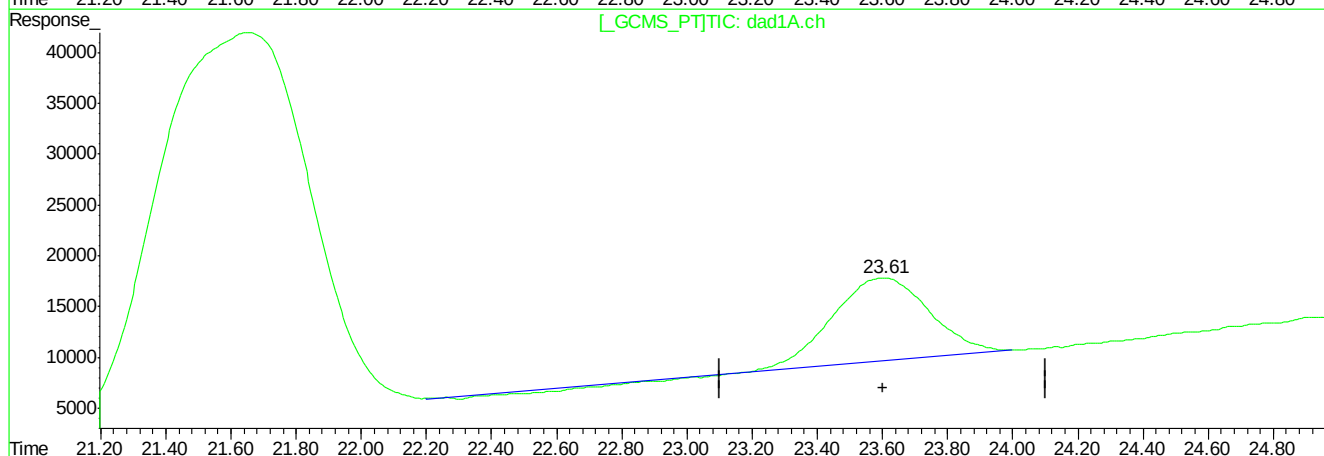
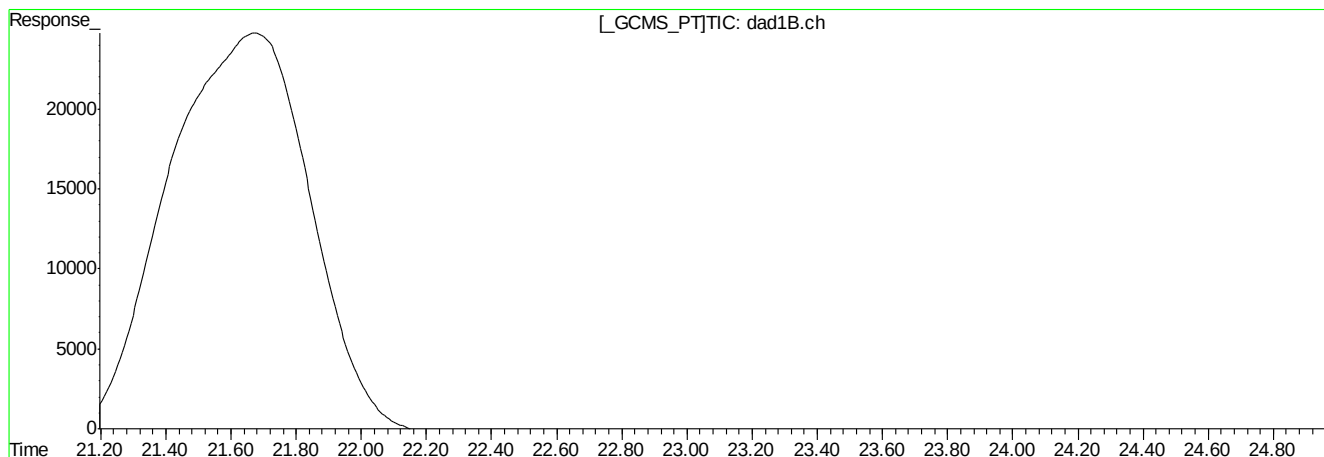
GG626766.D GGG3229_071123.M

Wed Jul 12 10:55:20 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626766.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626766.D\dad1A.ch
Acq On : 11-Jul-2023, 17:57:11 Operator: fouads
Sample : ic3298-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

23.63min 3463.157ppb

response 51770

(21) PETN #2

23.60min 437.878ppb

response 1607540

(+) = Expected Retention Time

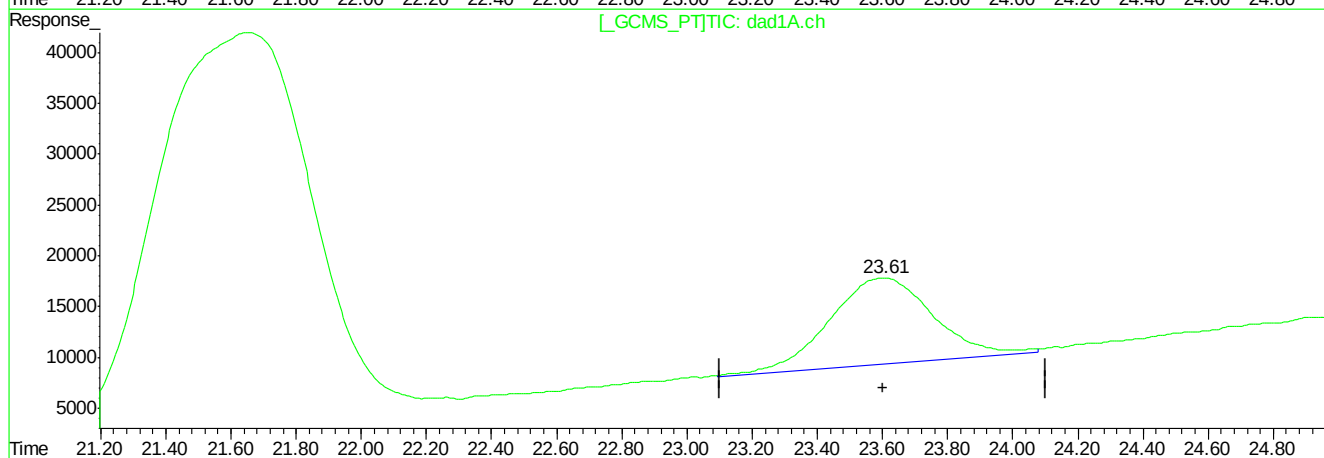
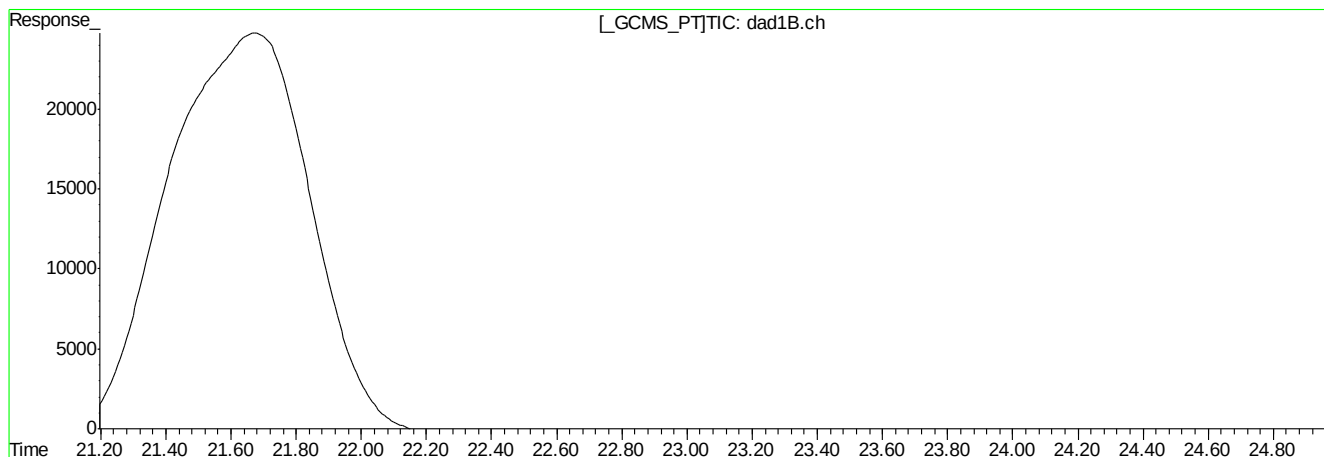
GG626766.D GGG3229_071123.M

Wed Jul 12 10:55:42 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626766.D\dad1B.ch Vial: 7
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626766.D\dad1A.ch
Acq On : 11-Jul-2023, 17:57:11 Operator: fouads
Sample : ic3298-500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 10:09 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration



QEdit

(21) PETN

23.63min 3463.157ppb

response 51770

(21) PETN #2

23.61min 512.364ppb m

response 1880993

(+) = Expected Retention Time

GG626766.D GGG3229_071123.M

Wed Jul 12 10:55:48 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626767.D\dad1B.ch Vial: 8
 Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626767.D\dad1A.ch
 Acq On : 11-Jul-2023, 18:29:37 Operator: fouads
 Sample : icc3298-1000 Inst : G1315B
 Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 12 10:09:27 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 12 10:08:59 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	15.94	15.94	5961376	11586501	995.368	1001.614
Spiked Amount	500.000	Range	70 - 136	Recovery	= 199.07%#	200.32%#
Target Compounds						
1) TNX	5.26	5.26	4975756	5070993	485.689	491.795
2) HMX	5.67	5.67	3593086	3641664	1003.053	1012.855
3) DNx	5.94	5.94	8599434	8658289	1027.498	1031.625
4) MNX	7.23	7.23	8984341	9140493	1200.755	1204.729
5) 1,3,5-Trinitrobe	8.30	8.30	10237486	10417603	1004.663	1003.355
6) RDX	8.68	8.68	4922881	5116743	1013.831	1003.464
7) 1,3-Dinitrobenze	10.99	10.99	14071198	10657125	1007.045	978.776m
8) Nitrobenzene	12.25	12.25	8845764	9651133	1013.816	1158.082
9) 2,4,6-Trinitroto	13.00	13.00	9934915	14088484	1002.154	1075.999
10) Nitroglycerin	0.00	13.85	0	3884520	N.D.	1110.093 #
11) Tetryl	14.44	14.44	7131033	12752416	969.983	1012.455
13) 2,6-Dinitrotolue	16.35	16.35	6786324	9806413	999.671	996.647
14) 2,4-Dinitrotolue	17.05	17.05	12693035	8931583	999.692	989.113
15) 3,5-Dinitroanili	17.80	17.80	10789792	17745008	997.894	997.297
16) o-Nitrotoluene	19.10	19.10	5542951	8222832	1012.151	1004.664
17) p-Nitrotoluene	19.83	19.83	6781404	13651857	2019.061	2035.284
18) 4-Amino-2,6-Dini	19.83	19.83	6781404	13651857	2703.813	3390.491
19) m-Nitrotoluene	20.18	20.17	5041998	7856708	325.555	328.208
20) 2-Amino-4,6-Dini	21.70	21.68	15623011	23995276	1008.757	1009.332
21) PETN	0.00	23.60	0	3633540	N.D. d	989.741 #

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG626767.D GGG3229_071123.M Wed Jul 12 15:52:37 2023

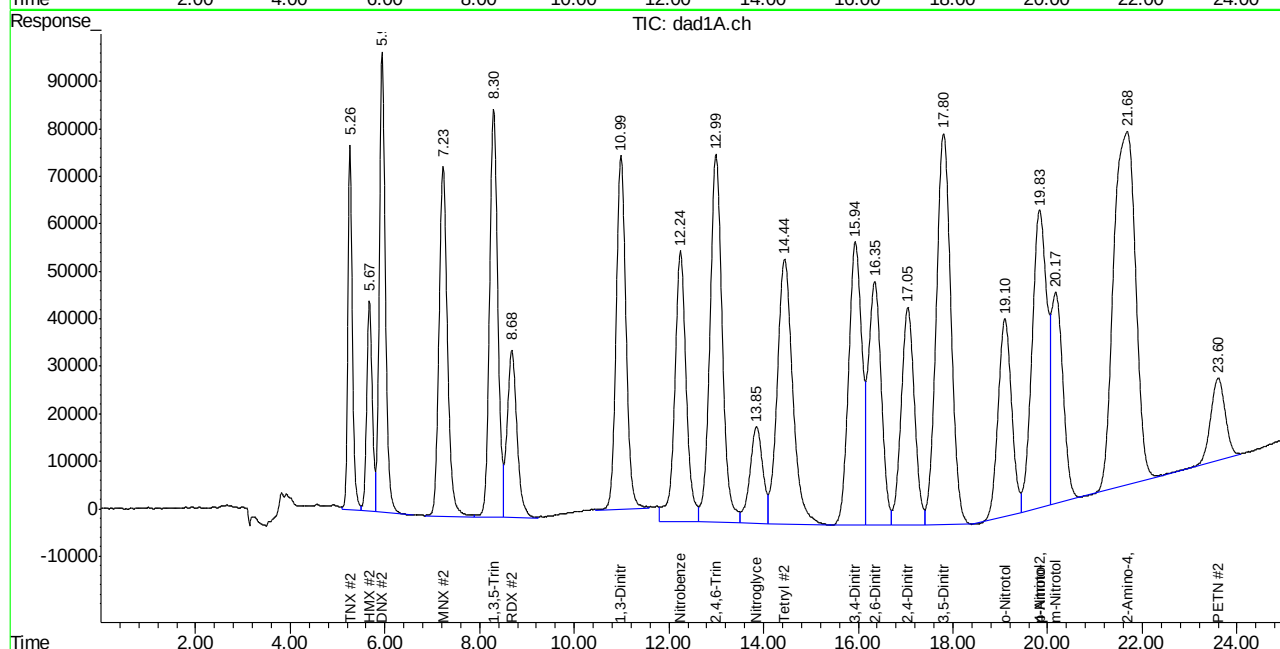
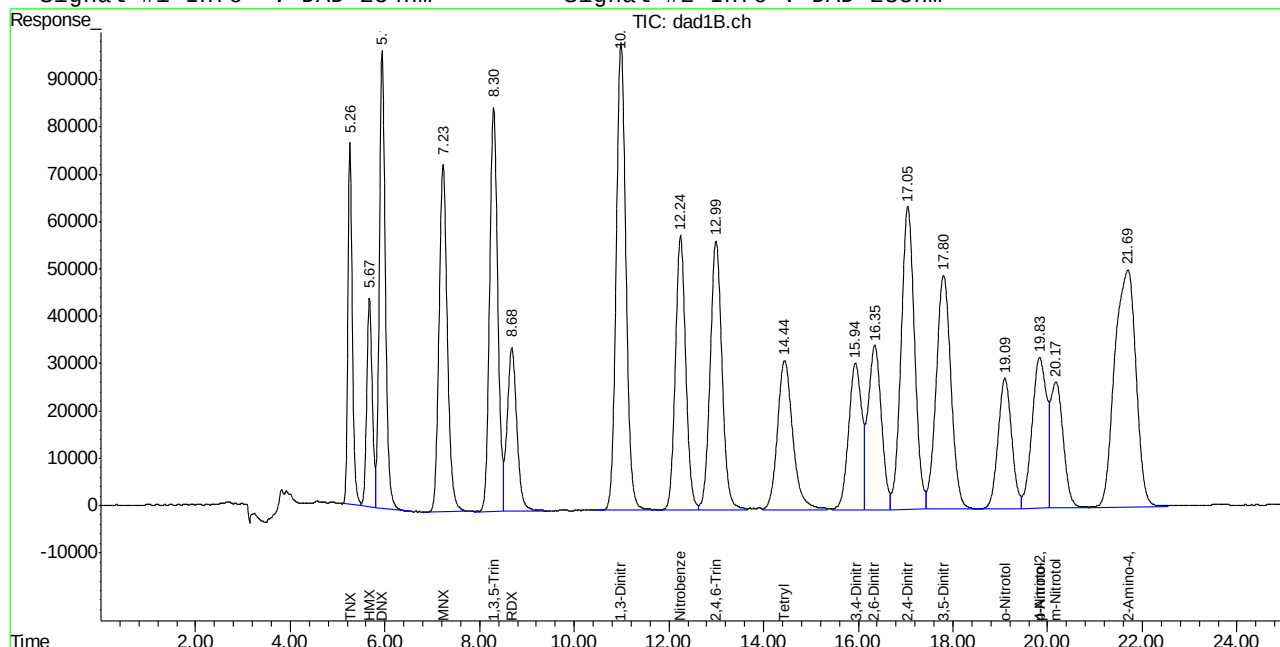
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626767.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626767.D\dad1A.ch
Acq On : 11-Jul-2023, 18:29:37 Operator: fouads
Sample : icc3298-1000 Inst : G1315B
Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 15:52 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number: GGG3298-ICC3298

Method: SW846 8330A

Lab FileID: GG626767.D

Analyst approved: 07/12/23 15:54 Fouad Sekkar

Injection Time: 07/11/23 18:29

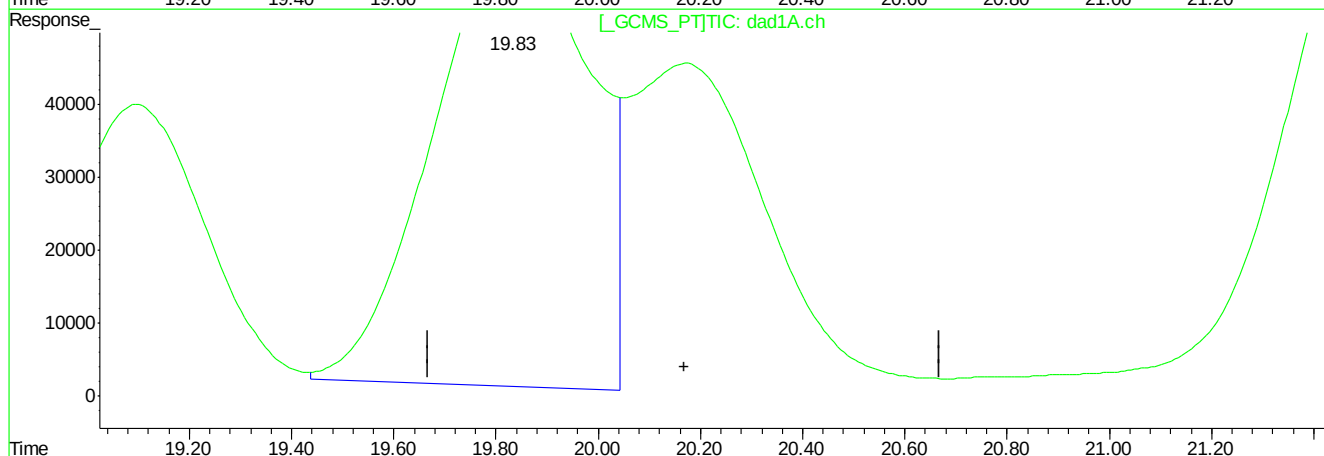
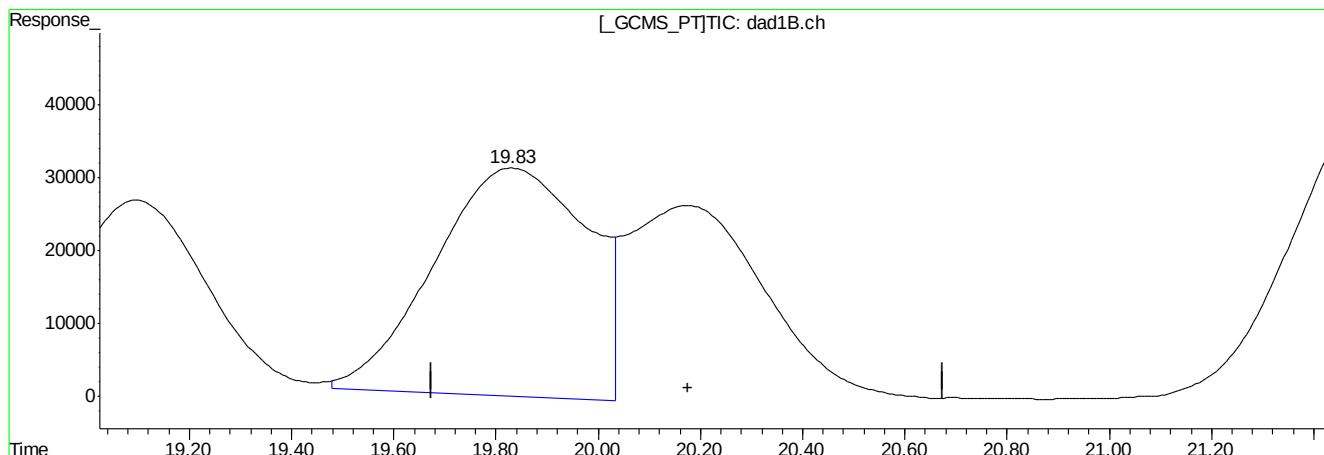
Supervisor approved: 07/13/23 18:08 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3-Dinitrobenzene	99-65-0	2	10.99	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626767.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626767.D\dad1A.ch
Acq On : 11-Jul-2023, 18:29:37 Operator: fouads
Sample : icc3298-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:34 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:48:42 2023
Response via : Multiple Level Calibration



QEdit

(18) 4-Amino-2,6-Dinitrotoluene

19.83min 1322.536ppb m

response 6451511

(18) 4-Amino-2,6-Dinitrotoluene #2

19.83min 1452.052ppb m

response 13021298

(+) = Expected Retention Time

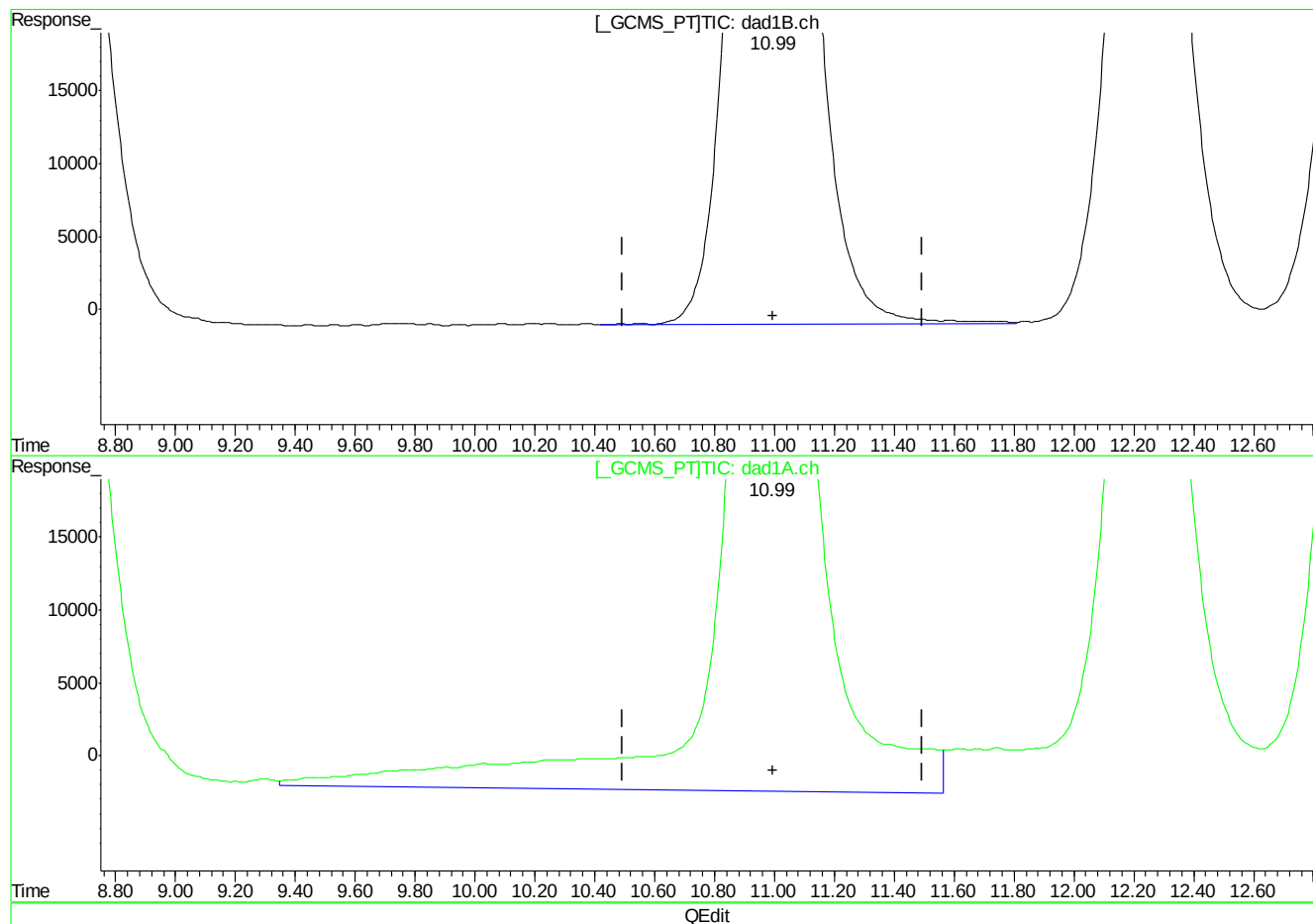
GG626767.D GGG3229_071123.M

Wed Jul 12 09:58:33 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626767.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626767.D\dad1A.ch
Acq On : 11-Jul-2023, 18:29:37 Operator: fouads
Sample : icc3298-1000 Inst : G1315B
Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 11:06 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 11:10:21 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

10.99min 1007.045ppb

response 14071198

(7) 1,3-Dinitrobenzene #2

10.99min 1200.531ppb

response 13071636

(+) = Expected Retention Time

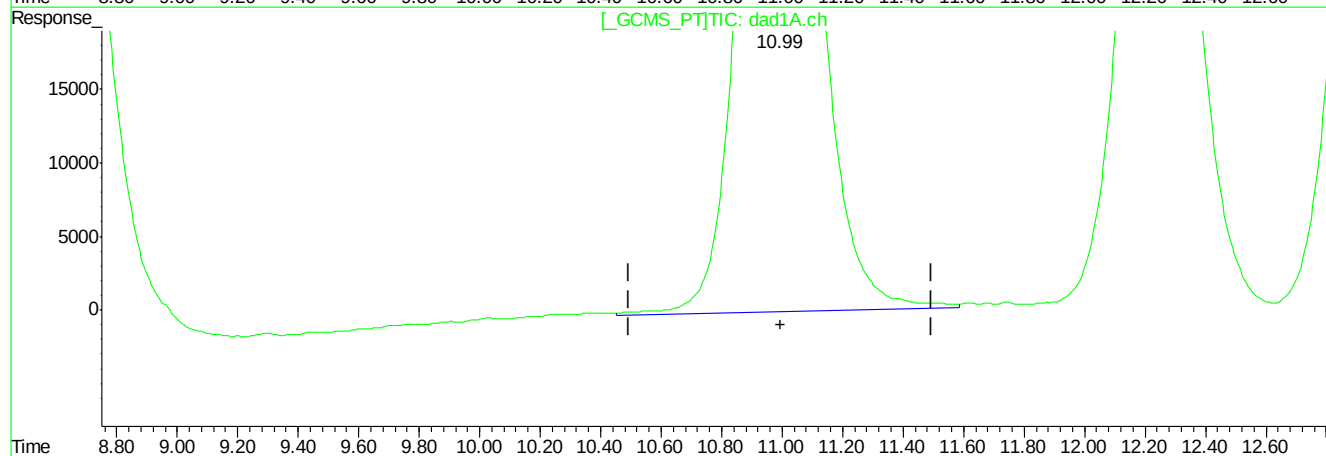
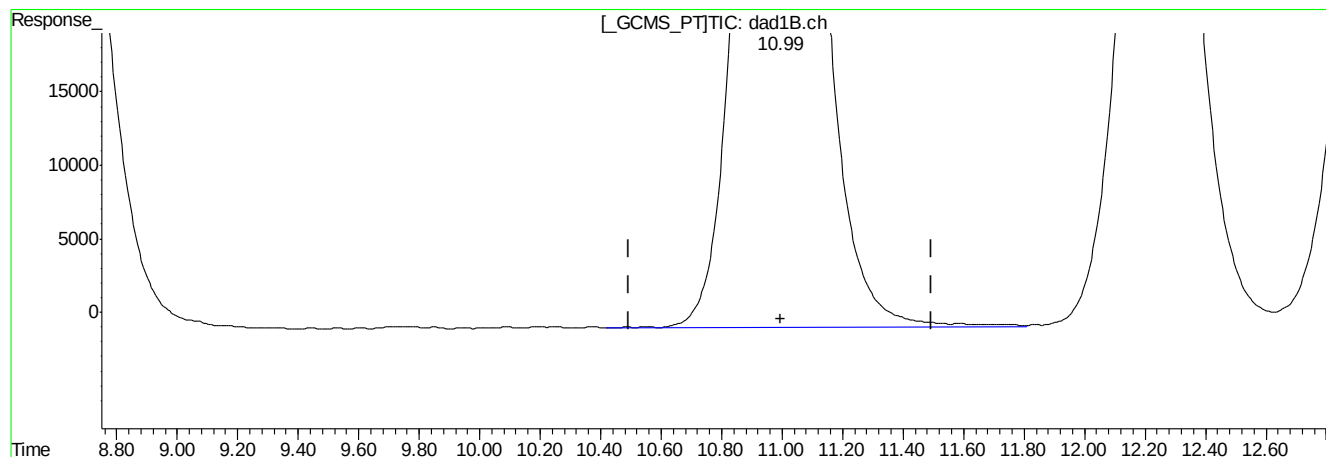
GG626767.D GGG3229_071123.M

Wed Jul 12 15:52:04 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626767.D\dad1B.ch Vial: 8
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626767.D\dad1A.ch
Acq On : 11-Jul-2023, 18:29:37 Operator: fouads
Sample : icc3298-1000 Inst : G1315B
Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 11:06 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 11:10:21 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

10.99min 1007.045ppb

response 14071198

(7) 1,3-Dinitrobenzene #2

10.99min 978.776ppb m

response 10657125

(+) = Expected Retention Time

GG626767.D GGG3229_071123.M

Wed Jul 12 15:52:14 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626768.D\dad1B.ch Vial: 9
 Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626768.D\dad1A.ch
 Acq On : 11-Jul-2023, 19:02:03 Operator: fouads
 Sample : ic3298-2500 Inst : G1315B
 Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 12 10:09:28 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 12 10:08:59 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	15.91	15.91	14964464	28900567	2498.610	2498.356
Spiked Amount	500.000	Range	70 - 136	Recovery	= 499.72%#	499.67%#
Target Compounds						
1) TNX	5.27	5.27	12487524	12608948	1218.920	1222.841
2) HMX	5.68	5.68	8980660	9031996	2507.059	2512.066
3) DNx	5.94	5.94	21654025	21719224	2587.316	2587.821
4) MNX	7.21	7.21	22599273	22581115	3020.386	2976.220
5) 1,3,5-Trinitrobe	8.29	8.29	25571573	25704588	2509.485	2475.697
6) RDX	8.66	8.66	12194157	12516780	2511.297	2454.713
7) 1,3-Dinitrobenze	10.98	10.98	35081951	27588442	2510.739	2533.789
8) Nitrobenzene	12.23	12.23	22005405	21919051	2522.046	2630.163
9) 2,4,6-Trinitroto	12.98	12.98	24834252	33234808	2505.079	2538.288
10) Nitroglycerin	0.00	13.83	0	8755764	N.D.	2502.165 #
11) Tetryl	14.41	14.41	18253735	31356736	2482.925	2489.512
13) 2,6-Dinitrotolue	16.31	16.31	16986062	24557215	2502.161	2495.802
14) 2,4-Dinitrotolue	17.01	17.01	31786511	22568360	2503.478	2499.295
15) 3,5-Dinitroanili	17.73	17.73	27016082	44690231	2498.583	2511.660
16) o-Nitrotoluene	19.05	19.05	13687580	20606304	2499.373	2517.674
17) p-Nitrotoluene	19.76	19.76	16789198	33607569	4998.731	5010.378
18) 4-Amino-2,6-Dini	19.76	19.76	16789198	33607569	6694.020	8346.568
19) m-Nitrotoluene	20.13	20.13	12600835	20323831	813.619	849.012
20) 2-Amino-4,6-Dini	21.63	21.60	38778014	59827687	2503.844	2516.580
21) PETN	0.00	23.58	0	9276298	N.D. d	2526.774 #

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG626768.D GGG3229_071123.M Wed Jul 12 15:27:55 2023

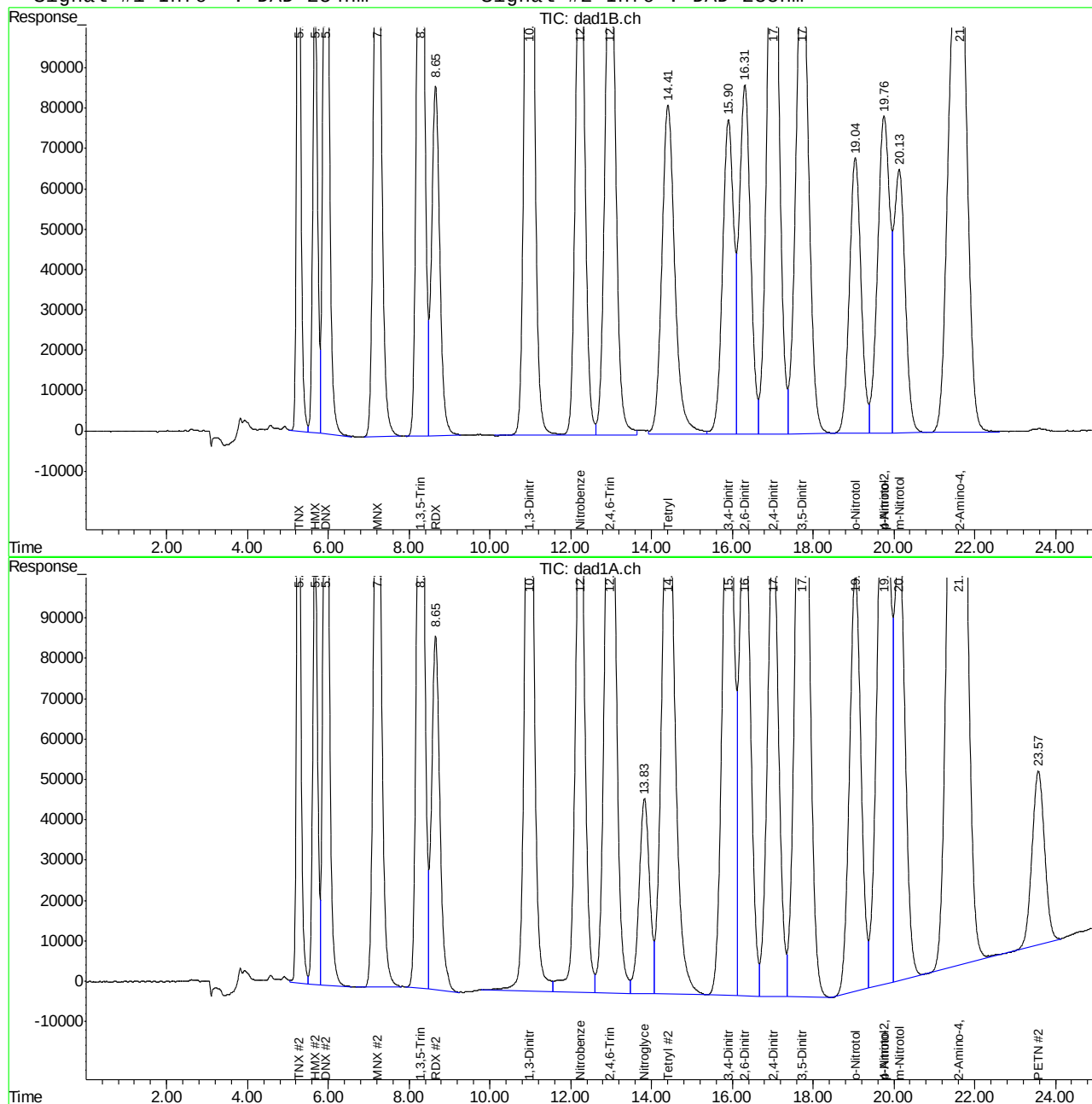
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626768.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626768.D\dad1A.ch
Acq On : 11-Jul-2023, 19:02:03 Operator: fouads
Sample : ic3298-2500 Inst : G1315B
Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 11:06 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

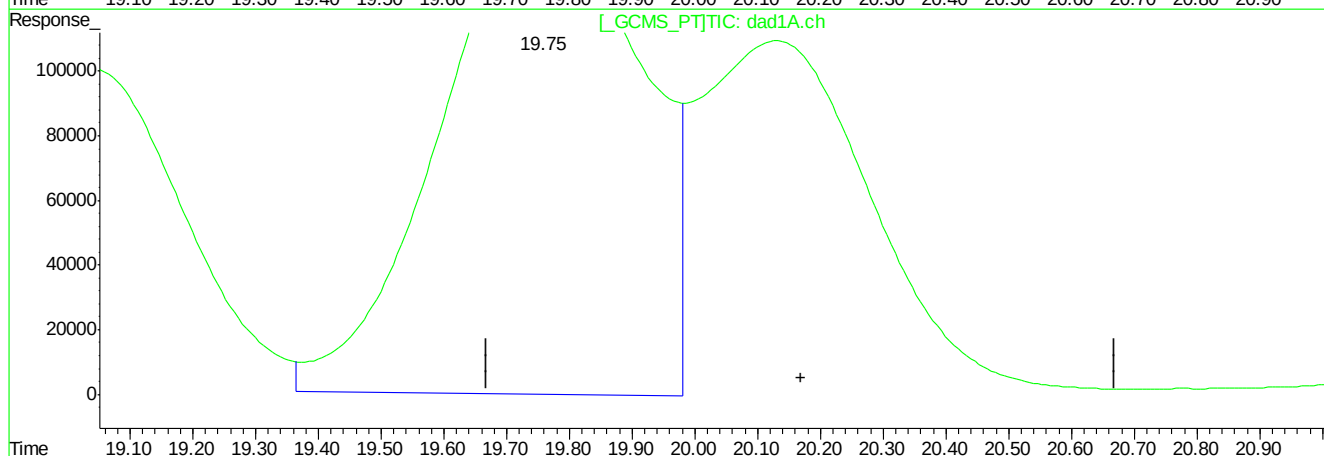
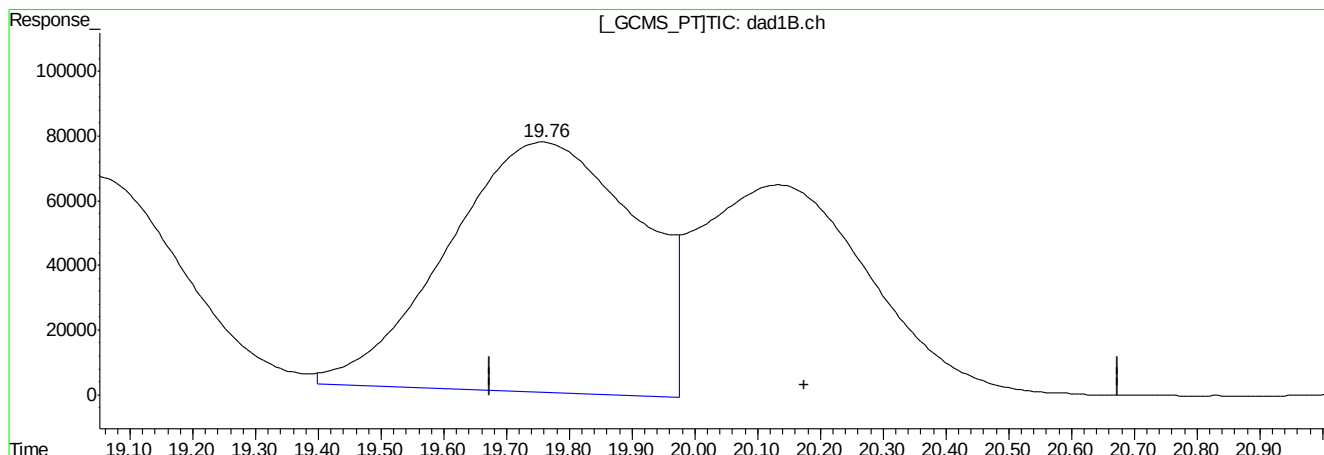
Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626768.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626768.D\dad1A.ch
Acq On : 11-Jul-2023, 19:02:03 Operator: fouads
Sample : ic3298-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:27 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:48:42 2023
Response via : Multiple Level Calibration



QEdit

(18) 4-Amino-2,6-Dinitrotoluene

19.76min 3358.246ppb m

response 16381982

(18) 4-Amino-2,6-Dinitrotoluene #2

19.75min 3711.892ppb m

response 33286452

(+) = Expected Retention Time

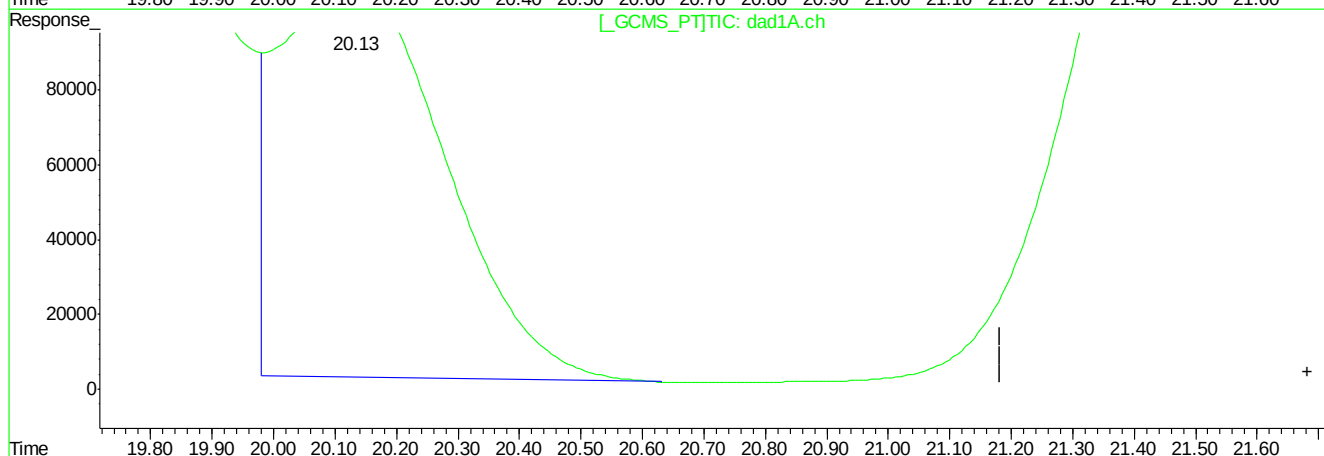
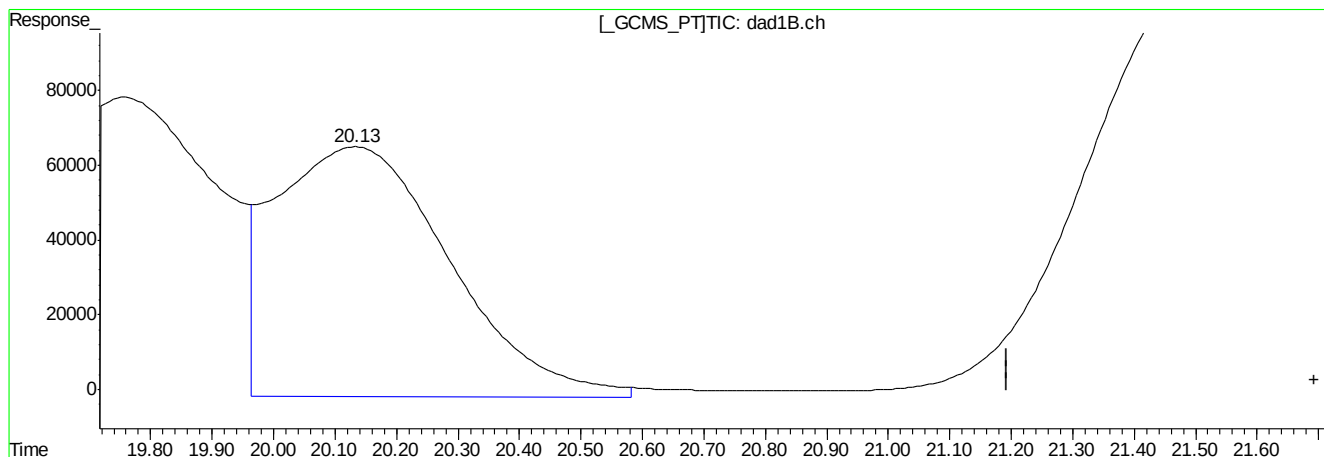
GG626768.D GGG3229_071123.M

Wed Jul 12 10:04:25 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626768.D\dad1B.ch Vial: 9
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626768.D\dad1A.ch
Acq On : 11-Jul-2023, 19:02:03 Operator: fouads
Sample : ic3298-2500 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:27 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:48:42 2023
Response via : Multiple Level Calibration



QEdit

(19) m-Nitrotoluene

20.13min 2683.216ppb m

response 13234987

(19) m-Nitrotoluene #2

20.13min 2390.773ppb m

response 19714151

(+) = Expected Retention Time

GG626768.D GGG3229_071123.M

Wed Jul 12 10:04:40 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626769.D\dad1B.ch Vial: 10
 Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626769.D\dad1A.ch
 Acq On : 11-Jul-2023, 19:34:33 Operator: fouads
 Sample : ic3298-5000 Inst : G1315B
 Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 12 10:57:45 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 12 10:08:59 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	15.86	15.86	29956884	57851922	5001.887	5001.102
Spiked Amount	500.000	Range	70 - 136	Recovery	= 1000.38%#	1000.22%#
Target Compounds						
1) TNX	5.27	5.27	23932641	24056674	2336.089	2333.065
2) HMX	5.68	5.68	17896131	17947189	4995.919	4991.646
3) DNx	5.95	5.95	41414175	41522266	4948.345	4947.331
4) MNX	7.23	7.23	43152585	43922122	5767.331	5788.993
5) 1,3,5-Trinitrobe	8.30	8.30	50881711	52027916	4993.313	5010.986
6) RDX	8.69	8.69	24231748	25605962	4990.350	5021.682
7) 1,3-Dinitrobenze	10.99	10.99	69753689	53717878	4992.121	4933.580
8) Nitrobenzene	12.24	12.24	43496165	40747737	4985.109	4889.499
9) 2,4,6-Trinitroto	12.99	12.98	49535195	64919159	4996.710	4958.161
10) Nitroglycerin	0.00	13.82	0	17355364	N.D.	4959.702 #
11) Tetryl	14.39	14.39	36897843	63000182	5018.949	5001.786
13) 2,6-Dinitrotolue	16.27	16.27	33935561	49231360	4998.937	5003.488
14) 2,4-Dinitrotolue	16.97	16.97	63458586	45202083	4997.943	5005.828
15) 3,5-Dinitroanili	17.69	17.69	54071020	88889563	5000.759	4995.730
16) o-Nitrotoluene	19.01	19.01	27362703	40857064	4996.471	4991.907
17) p-Nitrotoluene	19.73	19.73	33567592	66985035	9994.245	9986.451
18) 4-Amino-2,6-Dini	19.73	19.73	33567592	66985035	13383.732	16635.990
19) m-Nitrotoluene	20.10	20.10	25037476	40215169	1616.636	1679.957
20) 2-Amino-4,6-Dini	21.59	21.56	77354973	118.6E6	4994.707	4988.865
21) PETN	0.00	23.55	0	18334761	N.D. d	4994.212 #

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG626769.D GGG3229_071123.M Wed Jul 12 15:27:56 2023

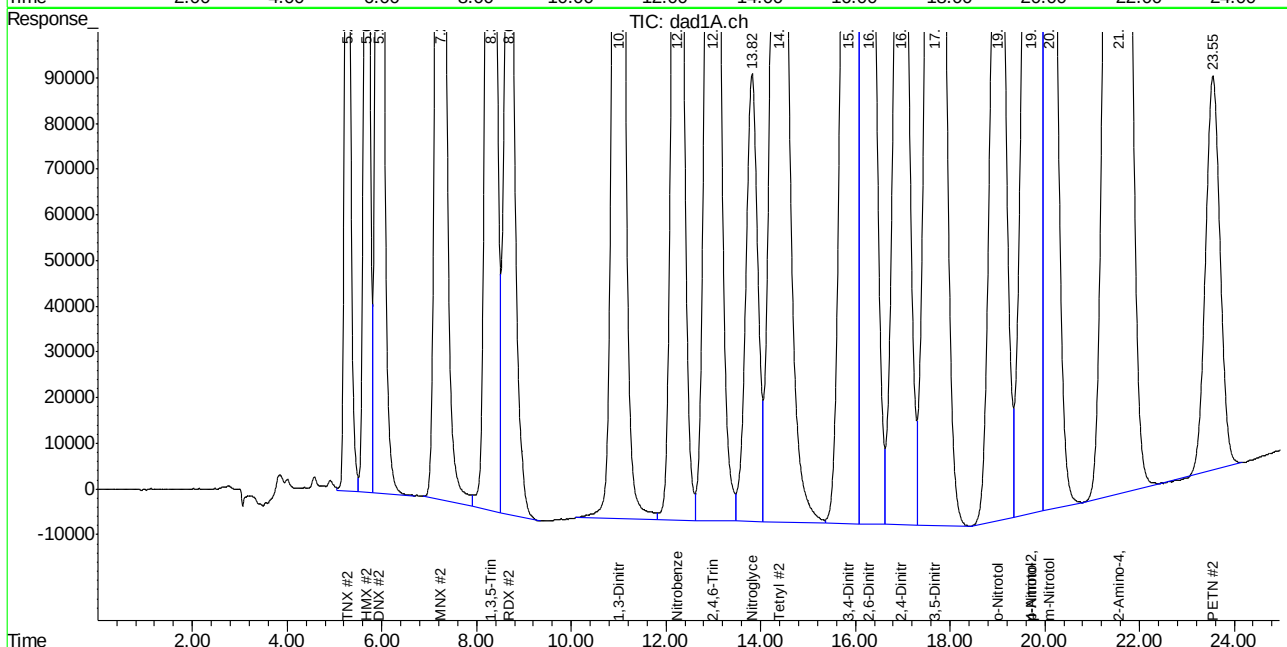
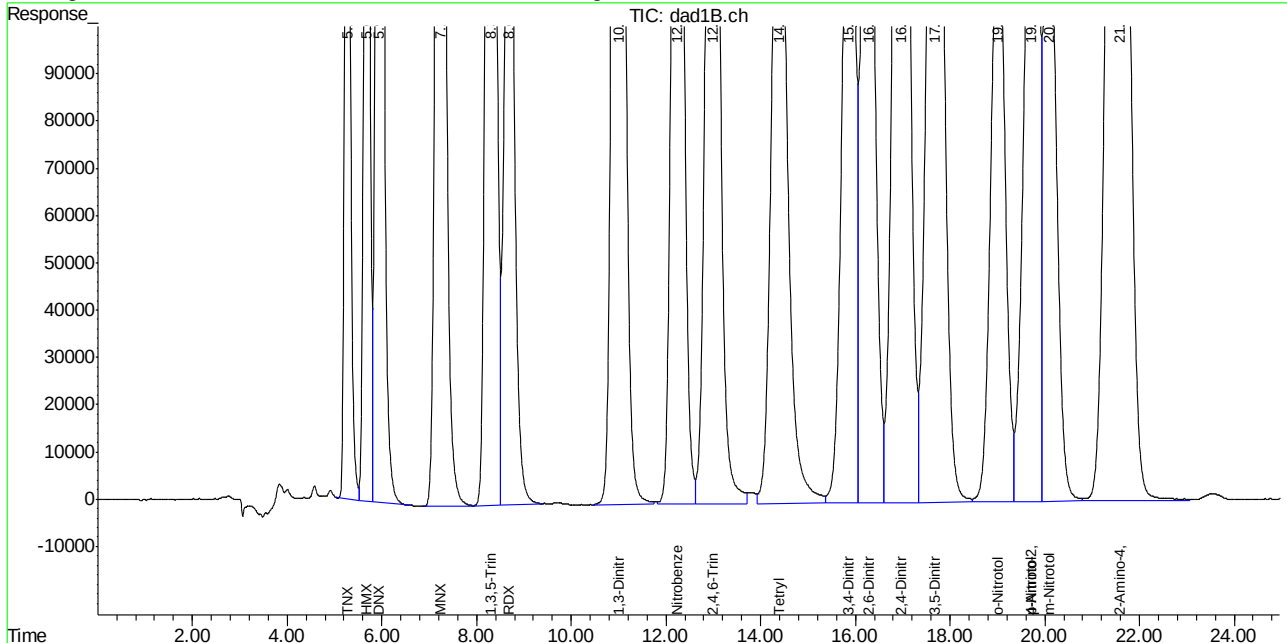
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626769.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626769.D\dad1A.ch
Acq On : 11-Jul-2023, 19:34:33 Operator: fouads
Sample : ic3298-5000 Inst : G1315B
Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 11:06 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 10:08:59 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

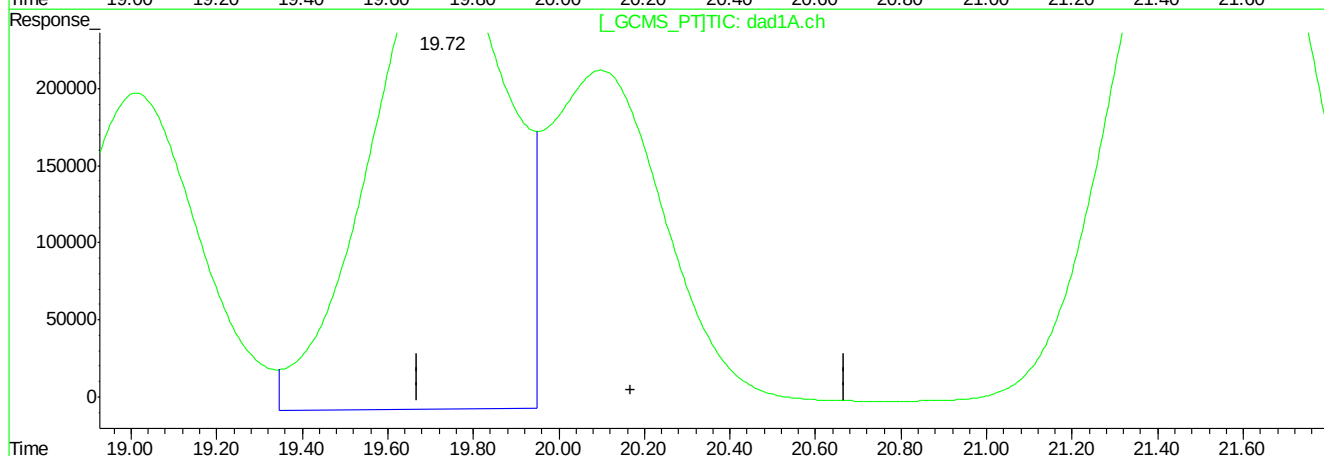
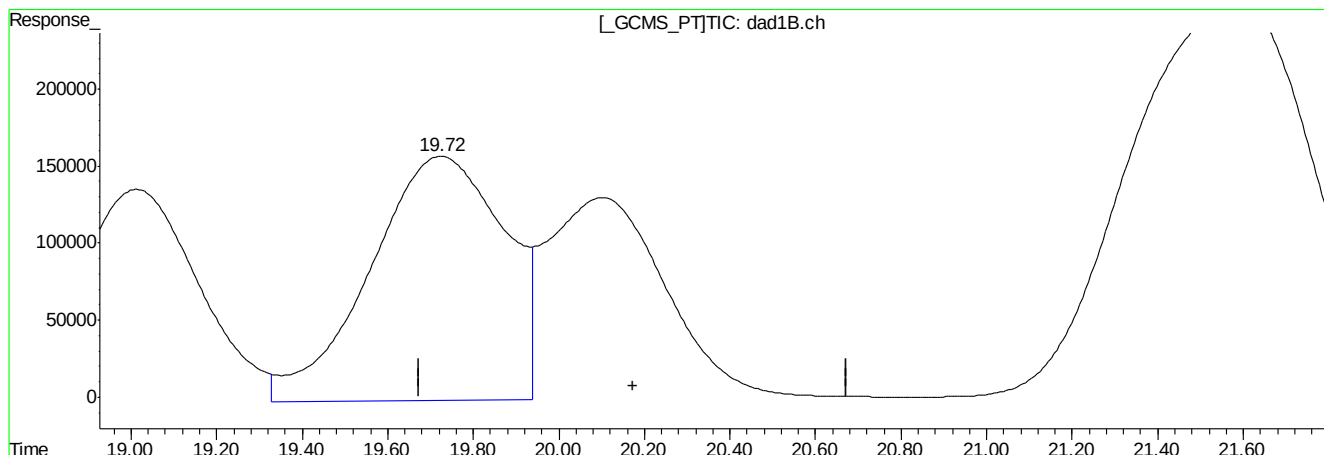
Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626769.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626769.D\dad1A.ch
Acq On : 11-Jul-2023, 19:34:33 Operator: fouads
Sample : ic3298-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:26 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:48:42 2023
Response via : Multiple Level Calibration



QEdit

(18) 4-Amino-2,6-Dinitrotoluene

19.72min 7010.488ppb m

response 34198114

(18) 4-Amino-2,6-Dinitrotoluene #2

19.72min 7518.024ppb m

response 67418005

(+) = Expected Retention Time

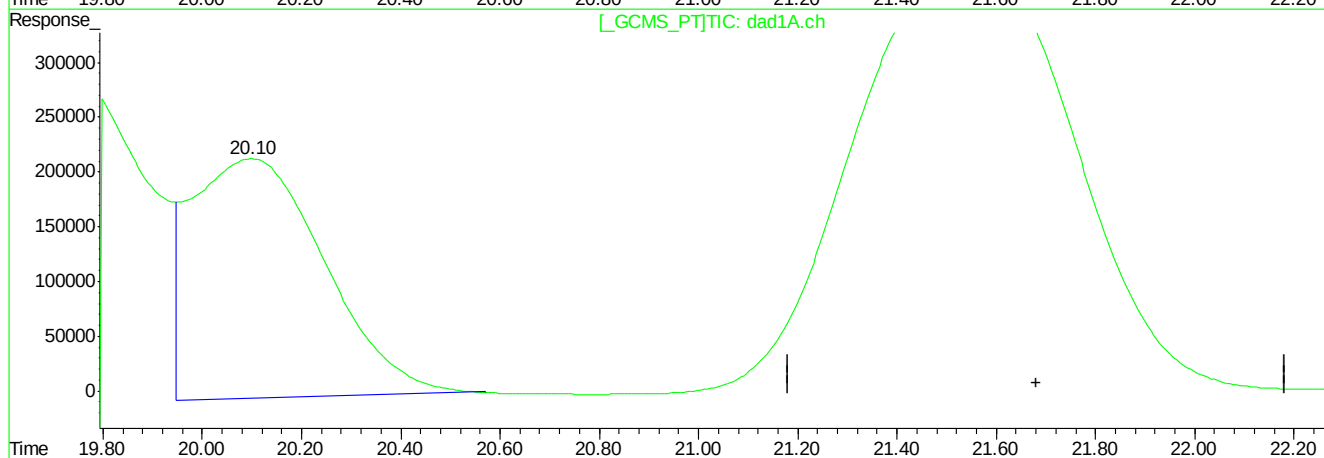
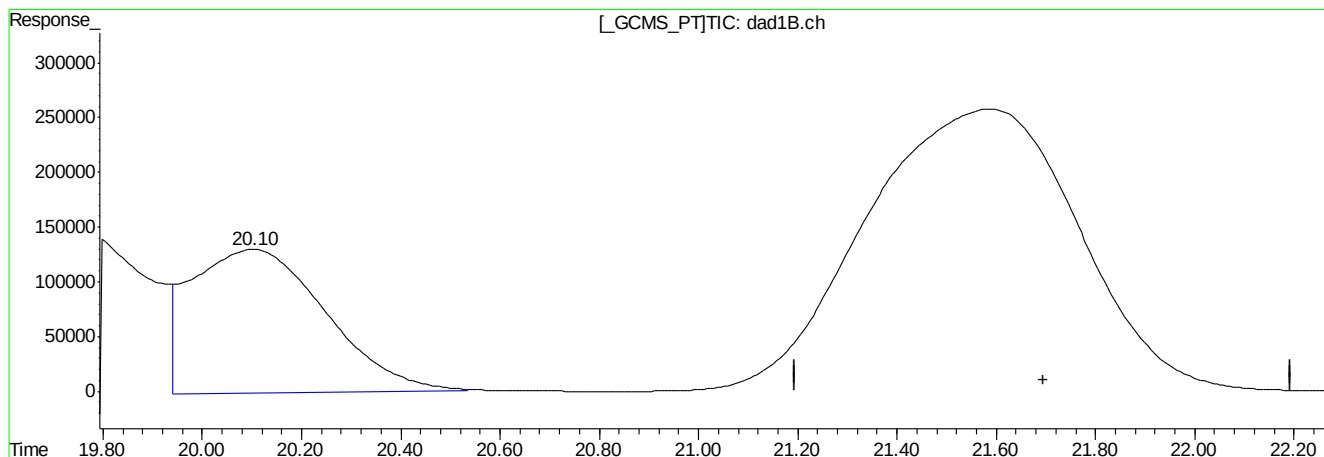
GG626769.D GGG3229_071123.M

Wed Jul 12 10:05:18 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3298\GG626769.D\dad1B.ch Vial: 10
Signal #2 : C:\HPCHEM\1\DATA\GGG3298\GG626769.D\dad1A.ch
Acq On : 11-Jul-2023, 19:34:33 Operator: fouads
Sample : ic3298-5000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 8:26 2023 Quant Results File: GGG3229_013023.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 08:48:42 2023
Response via : Multiple Level Calibration



QEdit

(19) m-Nitrotoluene

20.10min 4999.340ppb m

response 24659293

(19) m-Nitrotoluene #2

20.10min 4918.699ppb m

response 40559257

(+) = Expected Retention Time

GG626769.D GGG3229_071123.M

Wed Jul 12 10:05:55 2023

Naresh Jiawan
07/13/23 18:08

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3299\GG626774.D\dad1B.ch Vial: 3
 Signal #2 : C:\HPCHEM\1\DATA\GGG3299\GG626774.D\dad1A.ch
 Acq On : 12-Jul-2023, 11:59:39 Operator: fouads
 Sample : icv3298-1000 Inst : G1315B
 Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 12 15:58:45 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 12 15:57:06 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	0.00	0.00	0	0	N.D. d	N.D. d
Spiked Amount	500.000	Range	70 - 136	Recovery	=	0.00%# 0.00%#
Target Compounds						
1) TNX	5.27	5.27	4050242	4064358	395.348	394.170
2) HMX	5.69	5.69	3946898	3951522	1054.716	1045.939
3) DNx	5.96	5.96	7026949	7036142	839.610	838.348
4) MNX	7.26	7.26	7271933	7479898	971.892	985.860
5) 1,3,5-Trinitrobe	8.31	8.31	11300222	11724097	1108.955	1129.188
6) RDX	8.73	8.73	5363426	5816244	1011.802	1140.585
7) 1,3-Dinitrobenze	11.04	11.03	15589458	12345945	1009.117	1143.488m
8) Nitrobenzene	12.29	12.29	10140473	10503044	1162.199	1107.018
9) 2,4,6-Trinitroto	13.03	13.03	10772189	14865781	1086.611	1135.410
10) Nitroglycerin	0.00	13.89	0	4216842	N.D.	1205.600 #
11) Tetryl	14.50	14.50	7727642	13514766	1098.035	1073.323
13) 2,6-Dinitrotolue	16.41	16.41	7384913	10633819	1087.847	1009.507
14) 2,4-Dinitrotolue	17.10	17.10	14117943	9969181	1025.721	1104.020
15) 3,5-Dinitroanili	17.89	17.89	11844946	19315771	998.422	1020.637
16) o-Nitrotoluene	19.14	19.14	6524257	10083493	1070.528	1230.220
17) p-Nitrotoluene	19.94	19.94	7405702	15503473	2204.936	2119.786
18) 4-Amino-2,6-Dini	19.94	19.94	7405702	15503473	2204.936	2119.786
19) m-Nitrotoluene	20.21	20.19	5880310	8899319	1055.916	1106.993
20) 2-Amino-4,6-Dini	21.82	21.82	17553968	27063705	1027.772	1033.891m
21) PETN	0.00	23.64	0	4023746	N.D. d	1094.988 #

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG626774.D GGG3229_071123.M Thu Jul 13 11:39:36 2023

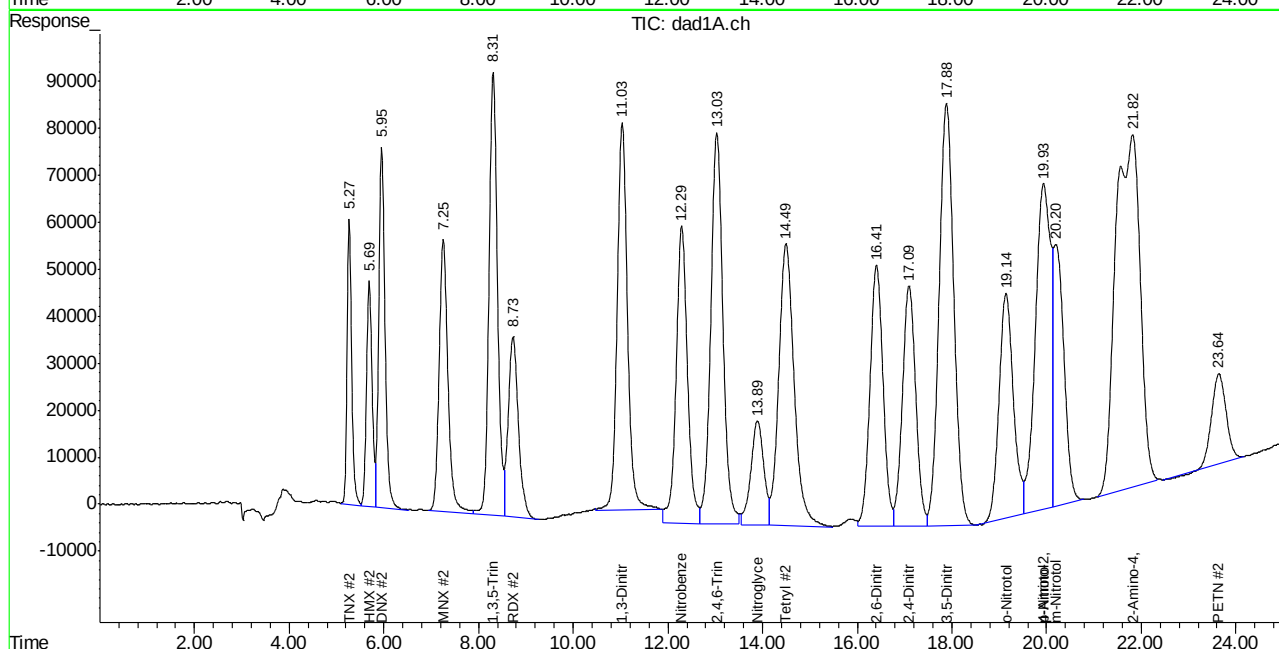
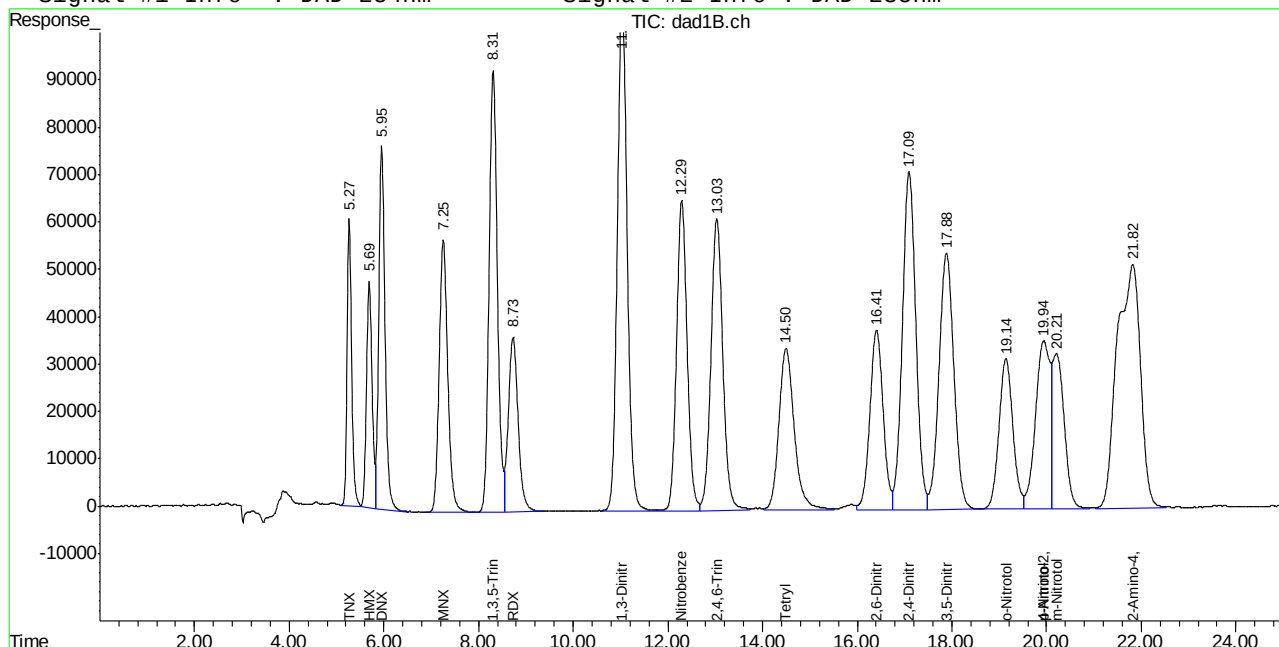
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3299\GG626774.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3299\GG626774.D\dad1A.ch
Acq On : 12-Jul-2023, 11:59:39 Operator: fouads
Sample : icv3298-1000 Inst : G1315B
Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 16:00 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 15:57:06 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number:

GGG3298-ICV3298

Method:

SW846 8330A

Lab FileID:

GG626774.D

Analyst approved:

07/12/23 16:03 Fouad Sekkar

Injection Time:

07/12/23 11:59

Supervisor approved:

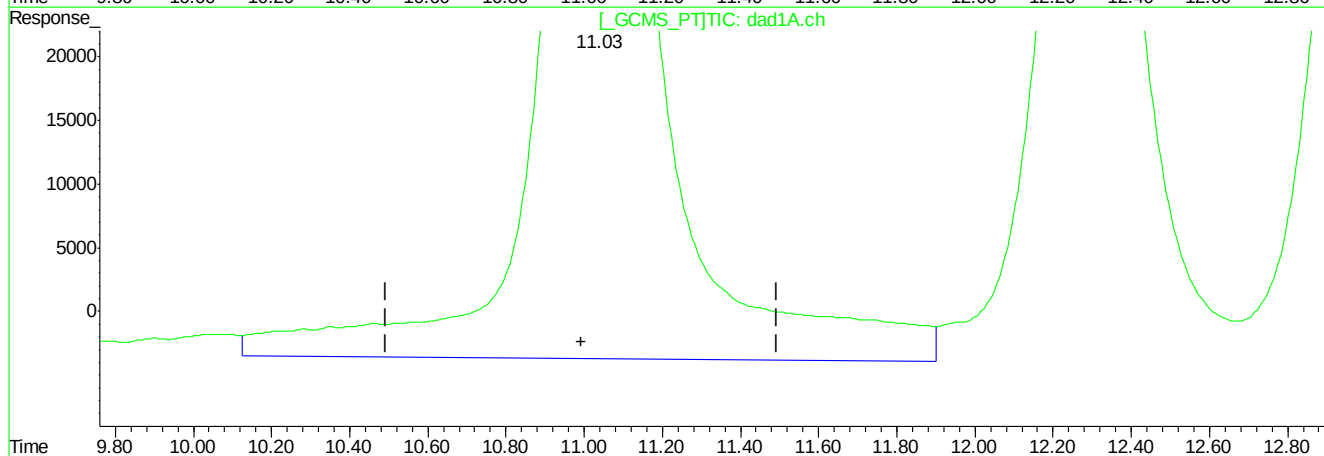
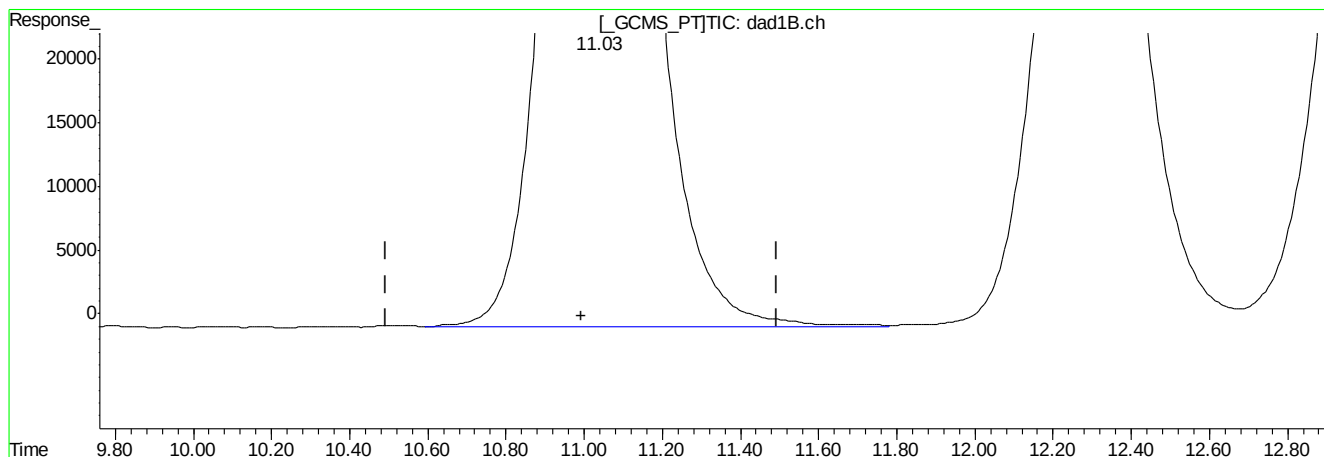
07/13/23 18:08 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
1,3-Dinitrobenzene	99-65-0	2	11.03	Poor instrument integration
2-amino-4,6-Dinitrotoluene	35572-78-2	2	21.82	Split peak

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3299\GG626774.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3299\GG626774.D\dad1A.ch
Acq On : 12-Jul-2023, 11:59:39 Operator: fouads
Sample : icv3298-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 12:25 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 11:10:21 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

11.04min 1009.117ppb

response 15589458

(7) 1,3-Dinitrobenzene #2

11.04min 1377.937ppb

response 14979437

(+) = Expected Retention Time

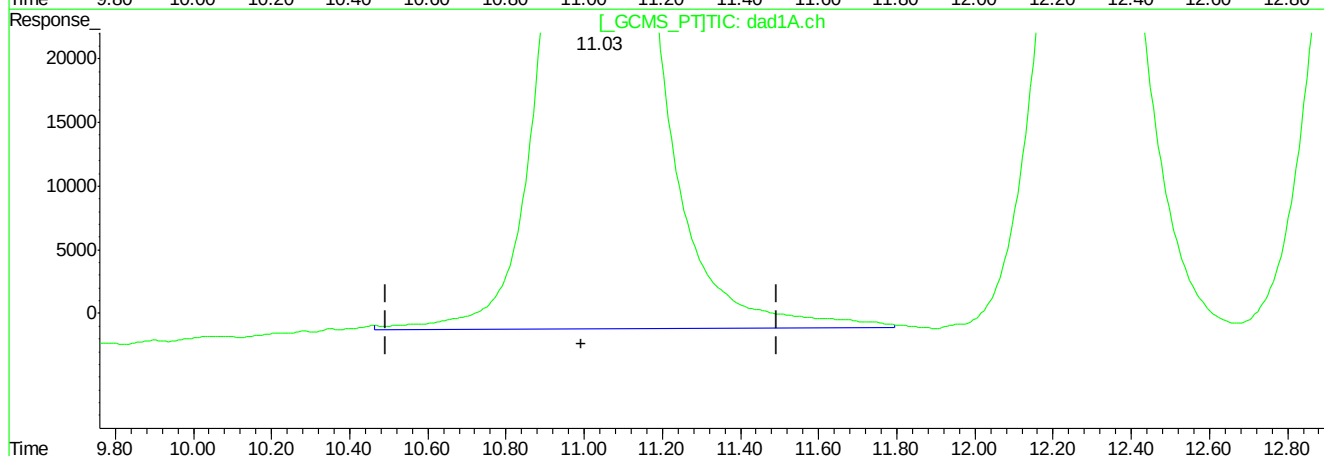
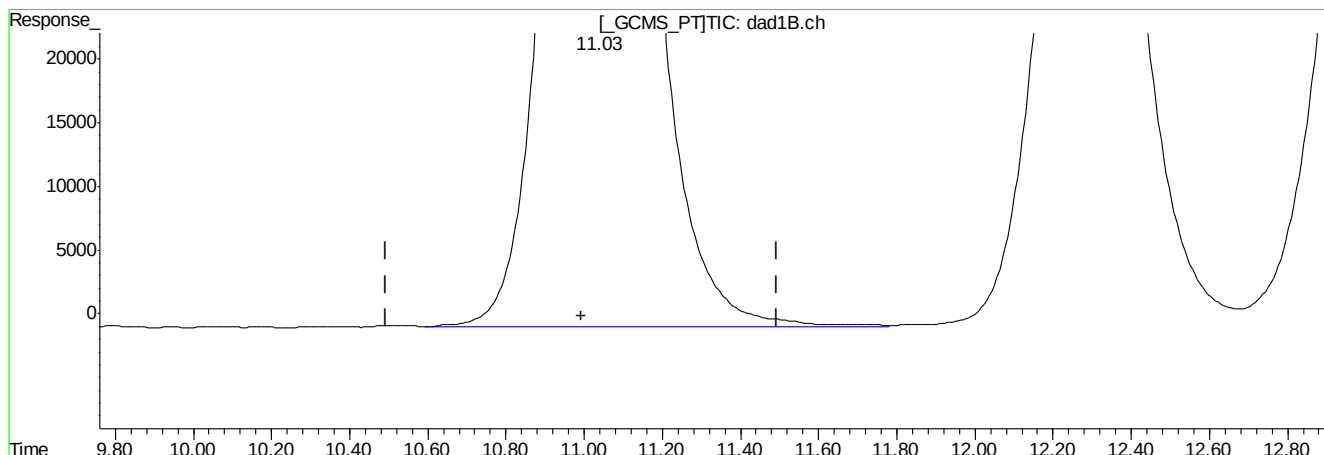
GG626774.D GGG3229_071123.M

Wed Jul 12 12:26:39 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3299\GG626774.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3299\GG626774.D\dad1A.ch
Acq On : 12-Jul-2023, 11:59:39 Operator: fouads
Sample : icv3298-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 12:25 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 11:10:21 2023
Response via : Multiple Level Calibration



QEdit

(7) 1,3-Dinitrobenzene

11.04min 1009.117ppb

response 15589458

(7) 1,3-Dinitrobenzene #2

11.03min 1139.275ppb m

response 12384963

(+) = Expected Retention Time

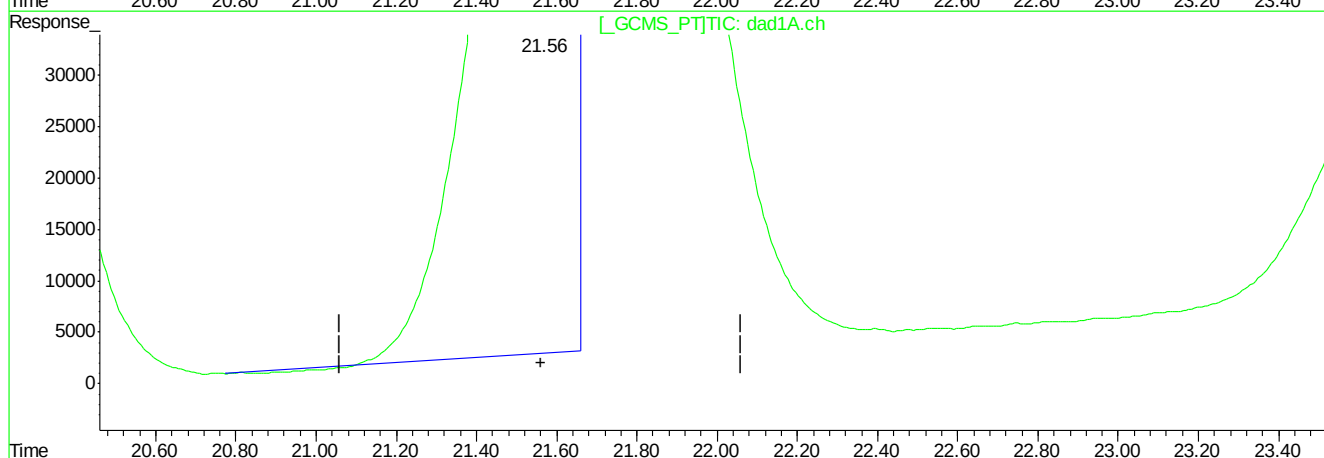
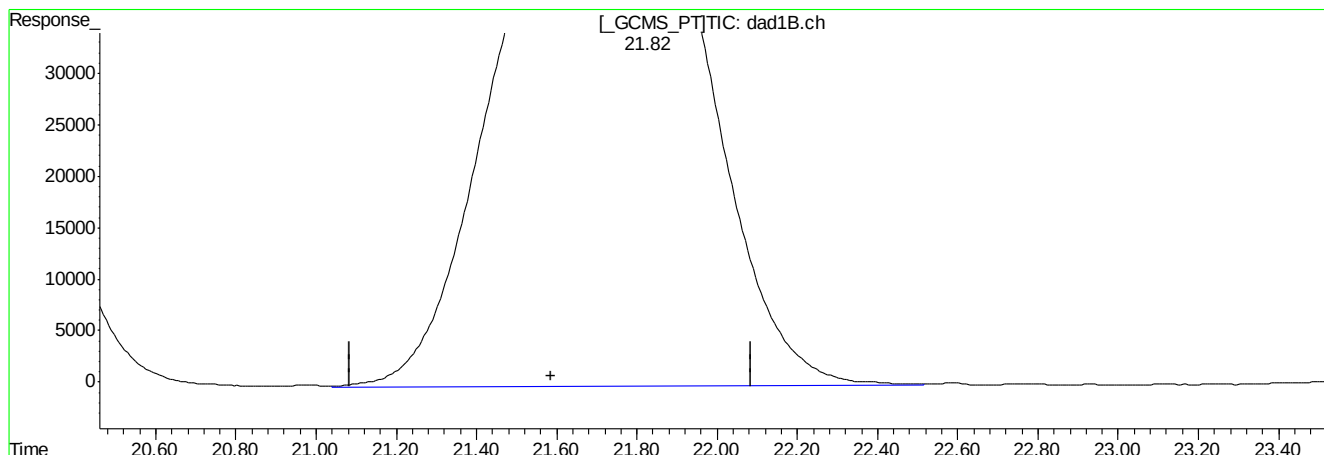
GG626774.D GGG3229_071123.M

Wed Jul 12 12:26:49 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3299\GG626774.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3299\GG626774.D\dad1A.ch
Acq On : 12-Jul-2023, 11:59:39 Operator: fouads
Sample : icv3298-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 12:25 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 11:10:21 2023
Response via : Multiple Level Calibration



(20) 2-Amino-4,6-Dinitrotoluene

21.82min 1027.772ppb

response 17553968

(20) 2-Amino-4,6-Dinitrotoluene #2

21.57min 434.936ppb

response 11385129

(+) = Expected Retention Time

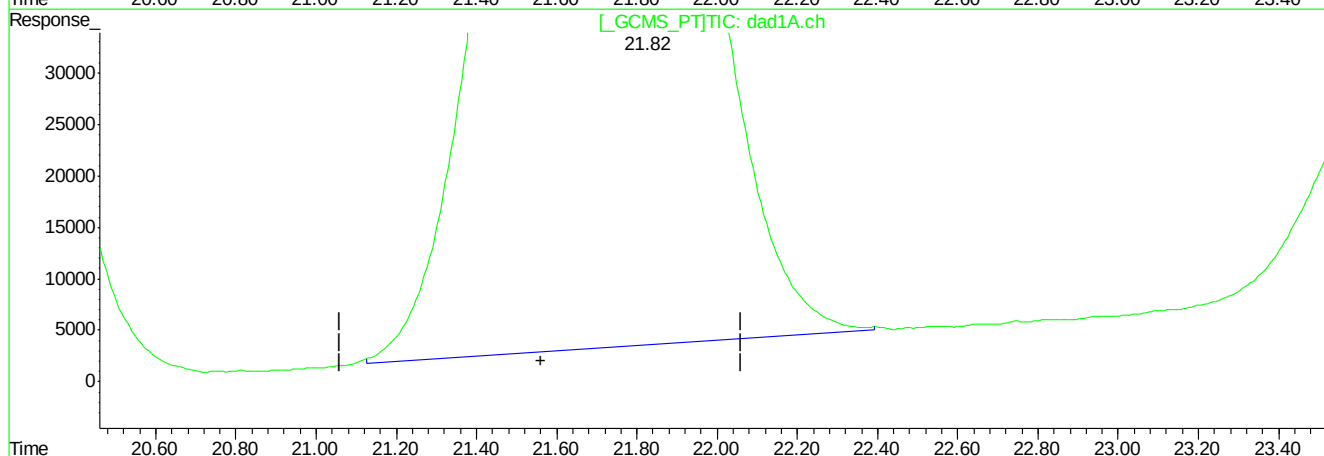
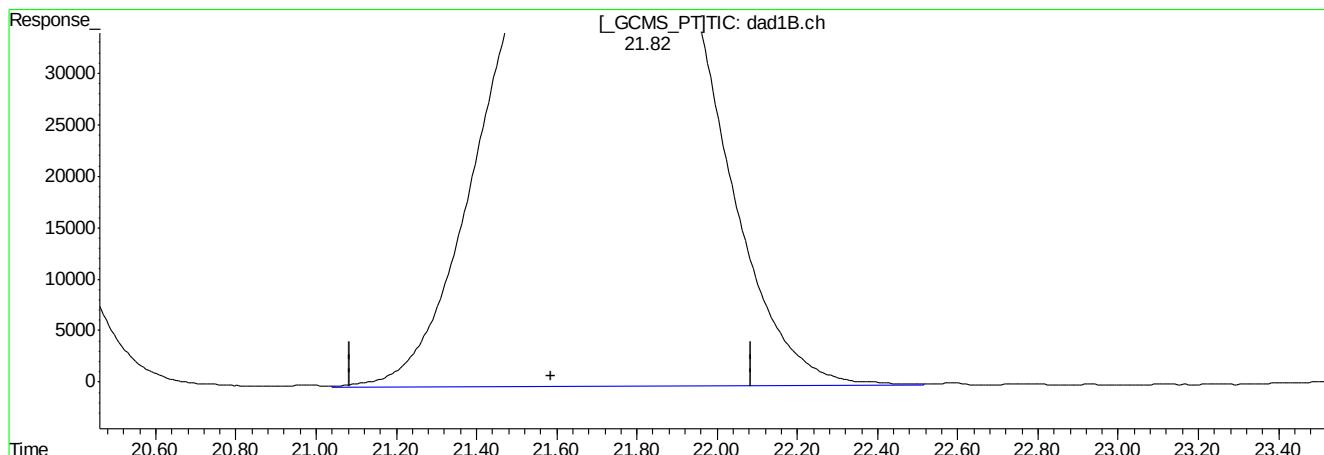
GG626774.D GGG3229_071123.M

Wed Jul 12 12:28:02 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3299\GG626774.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3299\GG626774.D\dad1A.ch
Acq On : 12-Jul-2023, 11:59:39 Operator: fouads
Sample : icv3298-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 12:25 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 11:10:21 2023
Response via : Multiple Level Calibration



QEdit

(20) 2-Amino-4,6-Dinitrotoluene

21.82min 1027.772ppb

response 17553968

(20) 2-Amino-4,6-Dinitrotoluene #2

21.82min 1034.781ppb m

response 27087021

(+) = Expected Retention Time

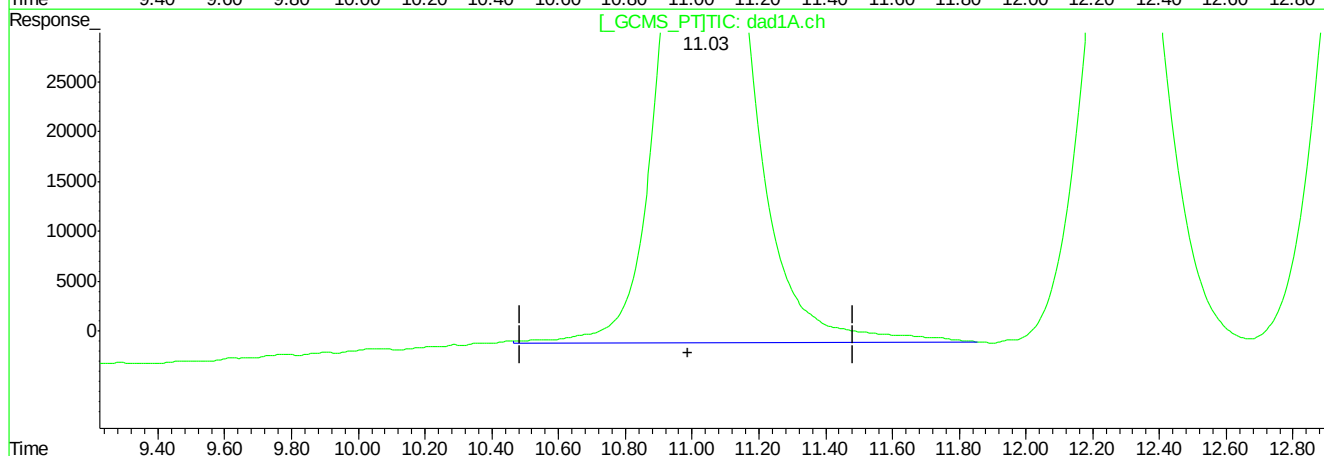
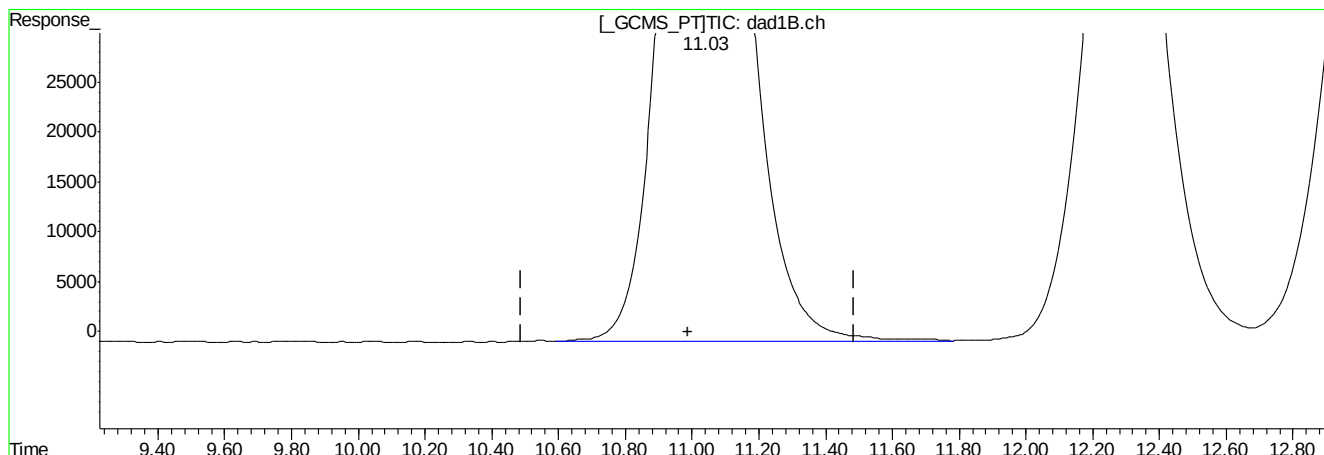
GG626774.D GGG3229_071123.M

Wed Jul 12 12:28:07 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3299\GG626774.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3299\GG626774.D\dad1A.ch
Acq On : 12-Jul-2023, 11:59:39 Operator: fouads
Sample : icv3298-1000 Inst : G1315B
Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 15:58 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 15:57:06 2023
Response via : Multiple Level Calibration



(7) 1,3-Dinitrobenzene

11.04min 1009.117ppb

response 15589458

(7) 1,3-Dinitrobenzene #2

11.03min 1143.488ppb m

response 12345945

(+) = Expected Retention Time

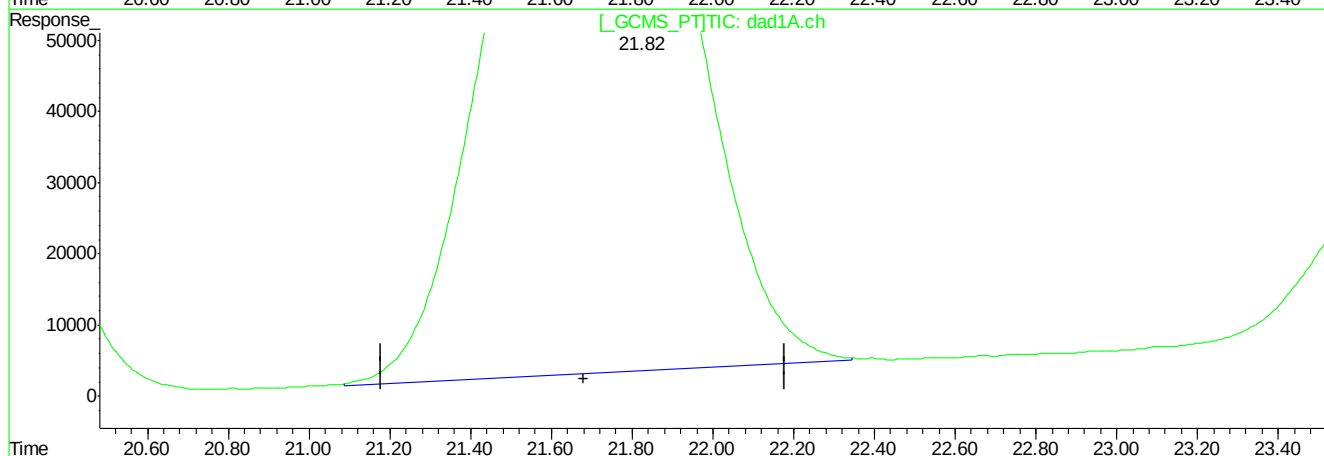
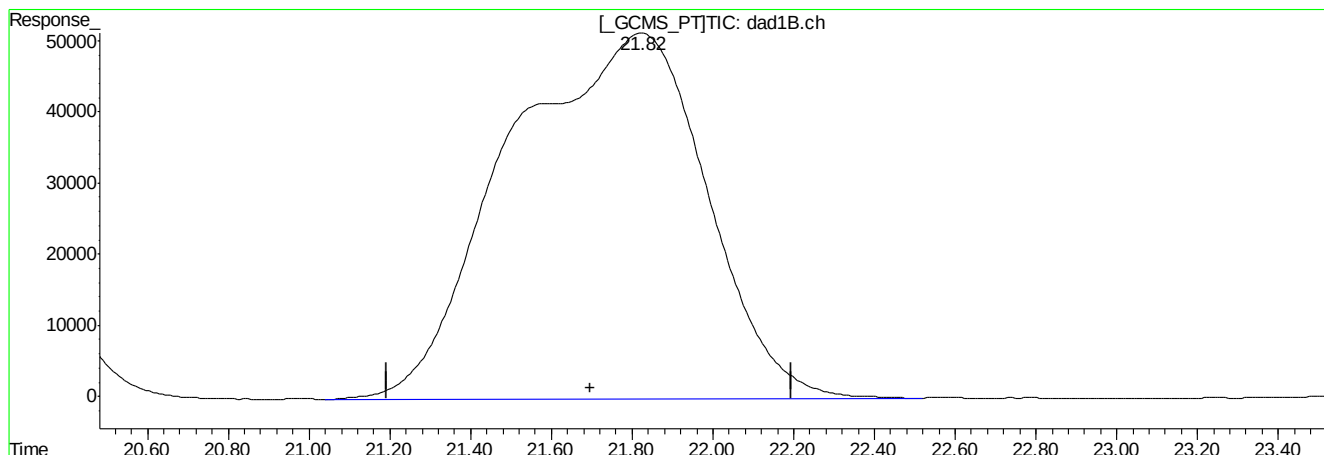
GG626774.D GGG3229_071123.M

Wed Jul 12 15:59:32 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3299\GG626774.D\dad1B.ch Vial: 3
Signal #2 : C:\HPCHEM\1\DATA\GGG3299\GG626774.D\dad1A.ch
Acq On : 12-Jul-2023, 11:59:39 Operator: fouads
Sample : icv3298-1000 Inst : G1315B
Misc : op97623,GGG3298,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 12 15:58 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 12 15:57:06 2023
Response via : Multiple Level Calibration



(20) 2-Amino-4,6-Dinitrotoluene

21.82min 1027.772ppb

response 17553968

(20) 2-Amino-4,6-Dinitrotoluene #2

21.82min 1033.891ppb m

response 27063705

(+) = Expected Retention Time

GG626774.D GGG3229_071123.M

Wed Jul 12 16:00:45 2023

Naresh Jiawan
07/20/23 10:43

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626835.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626835.D\dad1A.ch
 Acq On : 19-Jul-2023, 08:19:21 Operator: fouads
 Sample : cc3298-1000 Inst : G1315B
 Misc : op97623,GGG3302,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 19 08:50:09 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	15.55	15.54	5612931	11250599	879.817	914.562
Spiked Amount	500.000	Range	70 - 136	Recovery	=	175.96%# 182.91%#
Target Compounds						
1) TNX	5.23	5.23	4424627	4520933	431.892	438.449
2) HMX	5.64	5.64	3438145	3474316	918.763	919.626
3) DNX	5.89	5.89	7636439	7666649	912.435	913.472
4) MNX	7.11	7.11	7939643	8004682	1061.131	1055.027
5) 1,3,5-Trinitrobe	8.21	8.21	9864271	9998558	968.037	962.995
6) RDX	8.52	8.52	4611911	4829573	870.030	947.095
7) 1,3-Dinitrobenze	10.79	10.78	13450331	12626158	870.650	1169.441
8) Nitrobenzene	11.94	11.94	7915684	8822648	907.216	929.905
9) 2,4,6-Trinitroto	12.78	12.77	9472531	14104487	955.512	1077.265
10) Nitroglycerin	0.00	13.62	0	3846490	N.D.	1099.716 #
11) Tetryl	14.13	14.13	6885454	12444056	978.367	988.289
13) 2,6-Dinitrotolue	15.90	15.90	6534303	9459557	962.547	898.030
14) 2,4-Dinitrotolue	16.61	16.61	12217958	8720183	887.680	965.702
15) 3,5-Dinitroanili	17.24	17.24	10301429	17090297	868.317	903.044
16) o-Nitrotoluene	18.49	18.49	4908646	7161668	805.432	873.748
17) p-Nitrotoluene	19.23	19.23	6538524	12944236	1946.747	1769.862
18) 4-Amino-2,6-Dini	19.23	19.23	6538524	12944236	1946.747	1769.862
19) m-Nitrotoluene	19.58	19.57	4455531	7060365	800.071	878.244
20) 2-Amino-4,6-Dini	21.13	21.12	14558678	22444656	852.400m	857.433m
21) PETN	0.00	23.39	0	3401881	N.D.	925.759 #

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG626835.D GGG3229_071123.M Thu Jul 20 08:37:31 2023

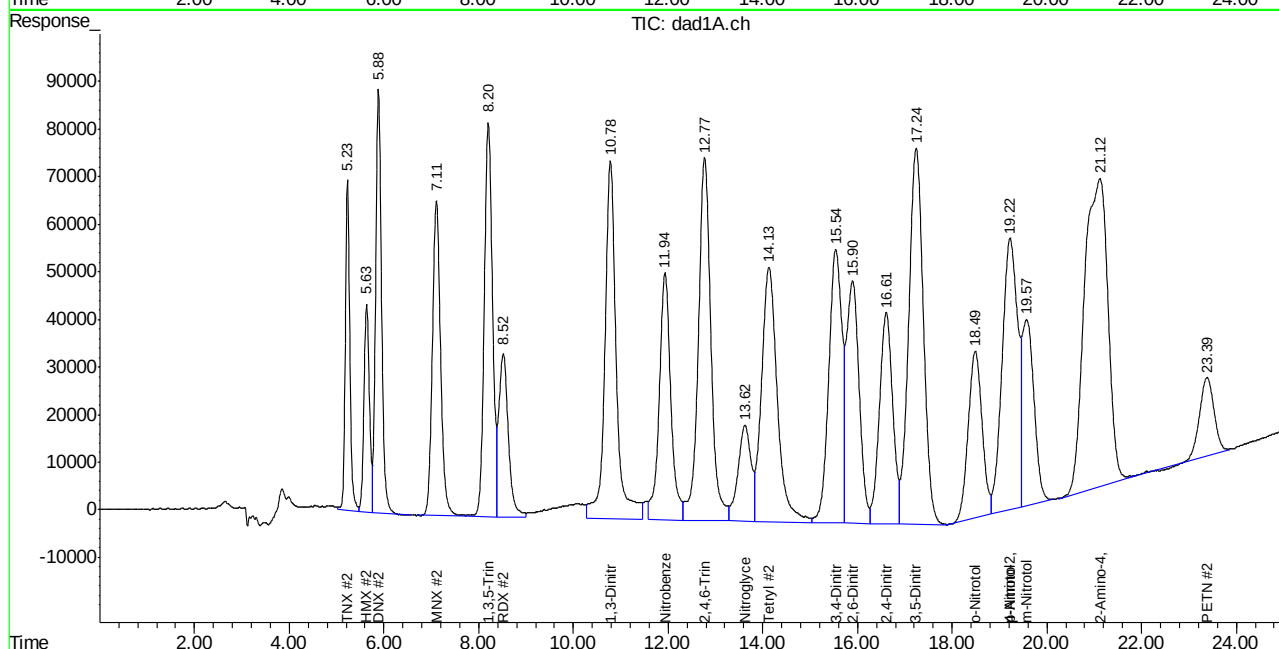
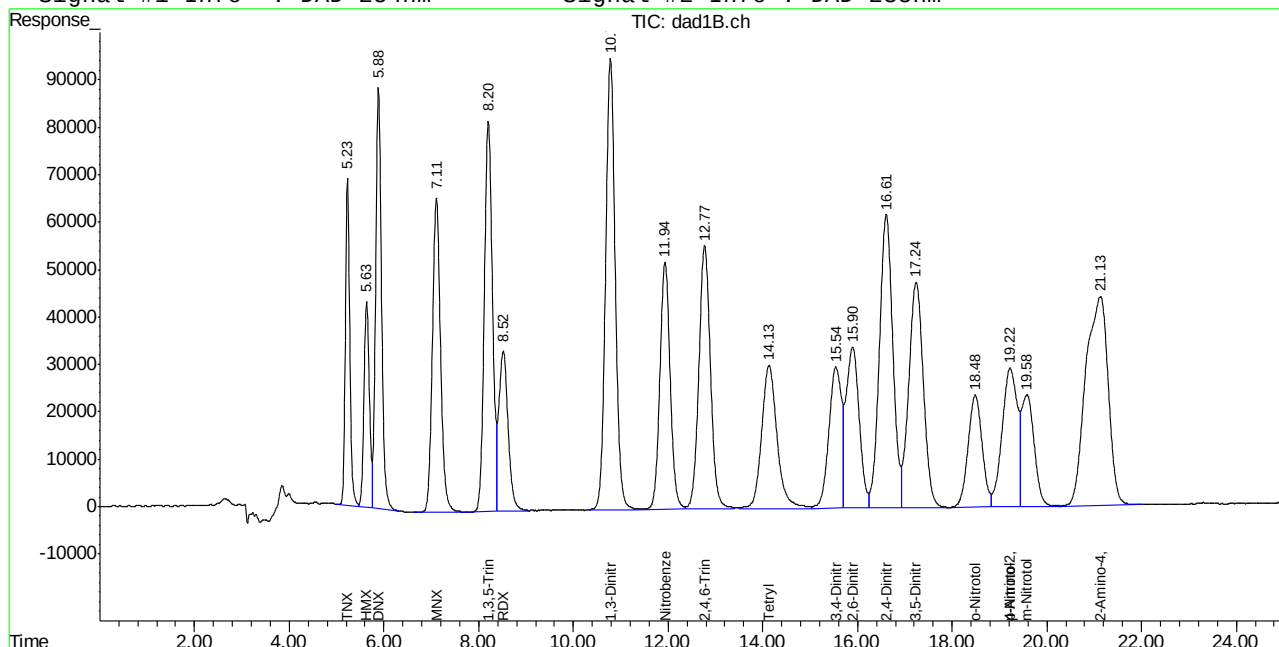
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626835.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626835.D\dad1A.ch
Acq On : 19-Jul-2023, 08:19:21 Operator: fouads
Sample : cc3298-1000 Inst : G1315B
Misc : op97623,GGG3302,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 19 8:51 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A, 8330B, 8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Manual Integration Approval Summary

Sample Number:

GGG3302-CC3298

Method:

SW846 8330A

Lab FileID:

GG626835.D

Analyst approved:

07/20/23 09:50 Fouad Sekkar

Injection Time:

07/19/23 08:19

Supervisor approved:

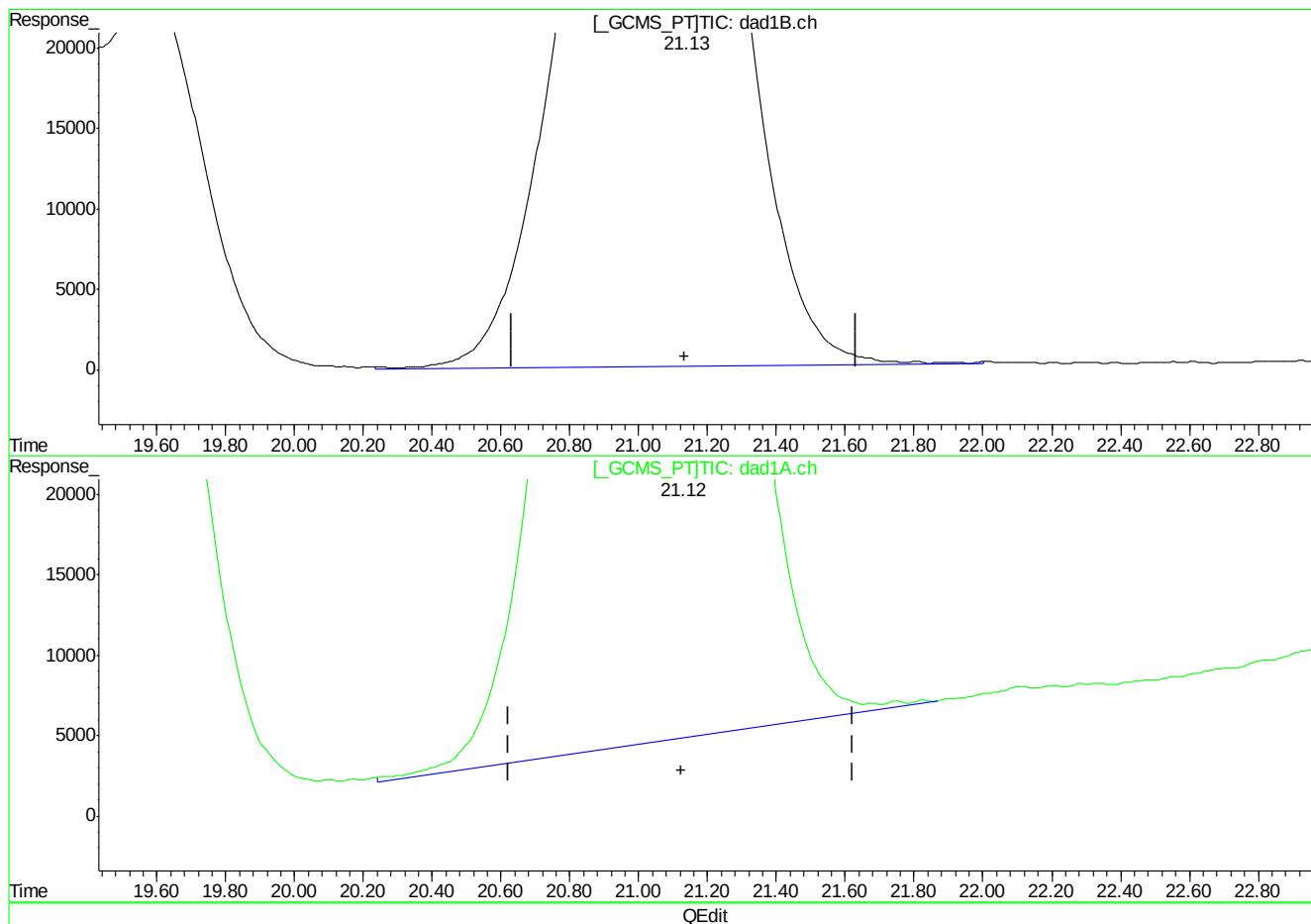
07/20/23 10:43 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
2-amino-4,6-Dinitrotoluene	35572-78-2	2	21.12	Poor instrument integration
2-amino-4,6-Dinitrotoluene	35572-78-2	1	21.13	Poor instrument integration

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626835.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626835.D\dad1A.ch
Acq On : 19-Jul-2023, 08:19:21 Operator: fouads
Sample : cc3298-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 19 8:50 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration



(20) 2-Amino-4,6-Dinitrotoluene

21.13min 852.400ppb m

response 14558678

(20) 2-Amino-4,6-Dinitrotoluene #2

21.12min 857.433ppb m

response 22444656

(+) = Expected Retention Time

GG626835.D GGG3229_071123.M

Wed Jul 19 08:51:35 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626846.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626846.D\dad1A.ch
 Acq On : 19-Jul-2023, 14:37:32 Operator: fouads
 Sample : ecc3298-1000 Inst : G1315B
 Misc : op97623,GGG3302,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 19 15:17:45 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Wed Jul 19 08:49:59 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	15.55	15.55	5763212	11601472	903.373	943.084
Spiked Amount	500.000	Range	70 - 136	Recovery	= 180.67%#	188.62%#
Target Compounds						
1) TNX	5.24	5.24	4468722	4548292	436.196	441.103
2) HMX	5.65	5.65	3478886	3518129	929.651	931.223
3) DNX	5.90	5.90	7717914	7776560	922.170	926.568
4) MNX	7.12	7.12	8031825	8117848	1073.451	1069.943
5) 1,3,5-Trinitrobe	8.22	8.22	10046319	10125568	985.903	975.228
6) RDX	8.51	8.51	4667095	4767136	880.441	934.851
7) 1,3-Dinitrobenze	10.79	10.79	13690226	13205703	886.178	1223.119
8) Nitrobenzene	11.96	11.96	7738621	8901750	886.923	938.242
9) 2,4,6-Trinitroto	12.79	12.79	9613824	13952183	969.765	1065.632
10) Nitroglycerin	0.00	13.64	0	3881359	N.D.	1109.685 #
11) Tetryl	14.10	14.10	7096698	12934478	1008.383	1027.237
13) 2,6-Dinitrotolue	15.91	15.91	6524404	9554165	961.089	907.011
14) 2,4-Dinitrotolue	16.62	16.62	12408631	8947568	901.533	990.883
15) 3,5-Dinitroanili	17.16	17.16	10339777	17504046	871.550	924.906
16) o-Nitrotoluene	18.52	18.52	4802325	7091123	787.986	865.141
17) p-Nitrotoluene	19.16	19.16	6579946	12938823	1959.080	1769.122
18) 4-Amino-2,6-Dini	19.16	19.16	6579946	12938823	1959.080	1769.122
19) m-Nitrotoluene	19.62	19.62	4442561	7169286	797.742	891.793
20) 2-Amino-4,6-Dini	21.03	21.01	14514788	22209891	849.830	848.465
21) PETN	0.00	23.38	0	3276154	N.D.	891.544 #

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG626846.D GGG3229_071123.M Thu Jul 20 08:37:41 2023

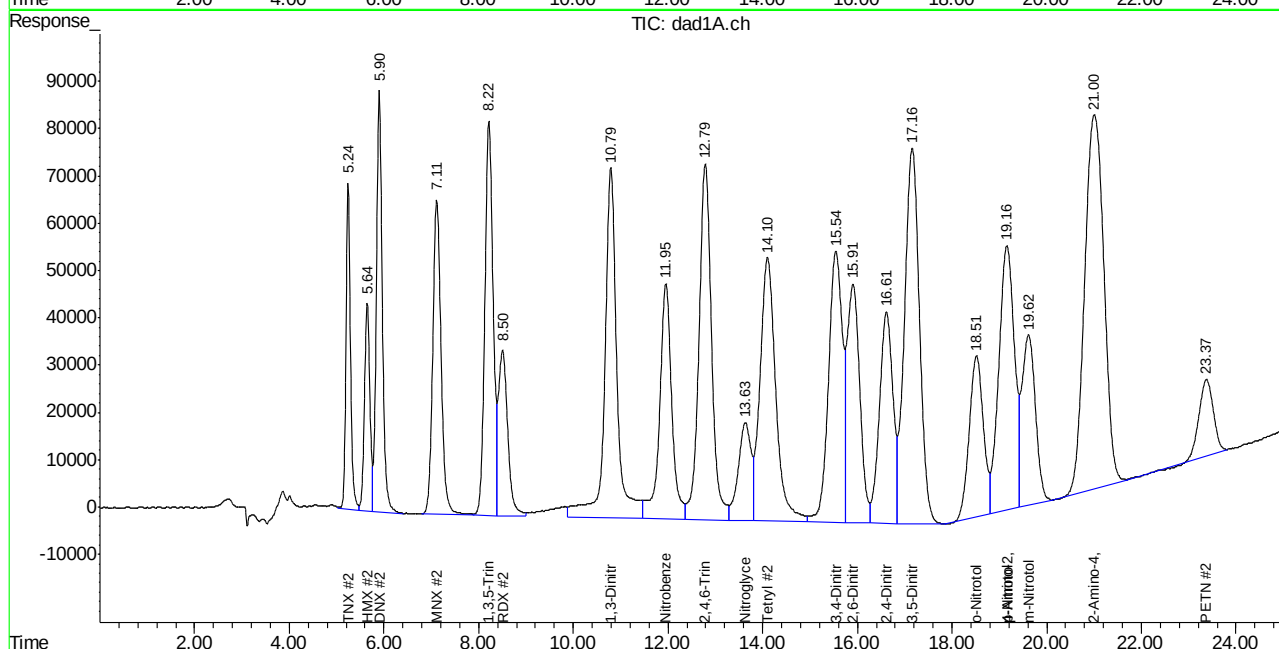
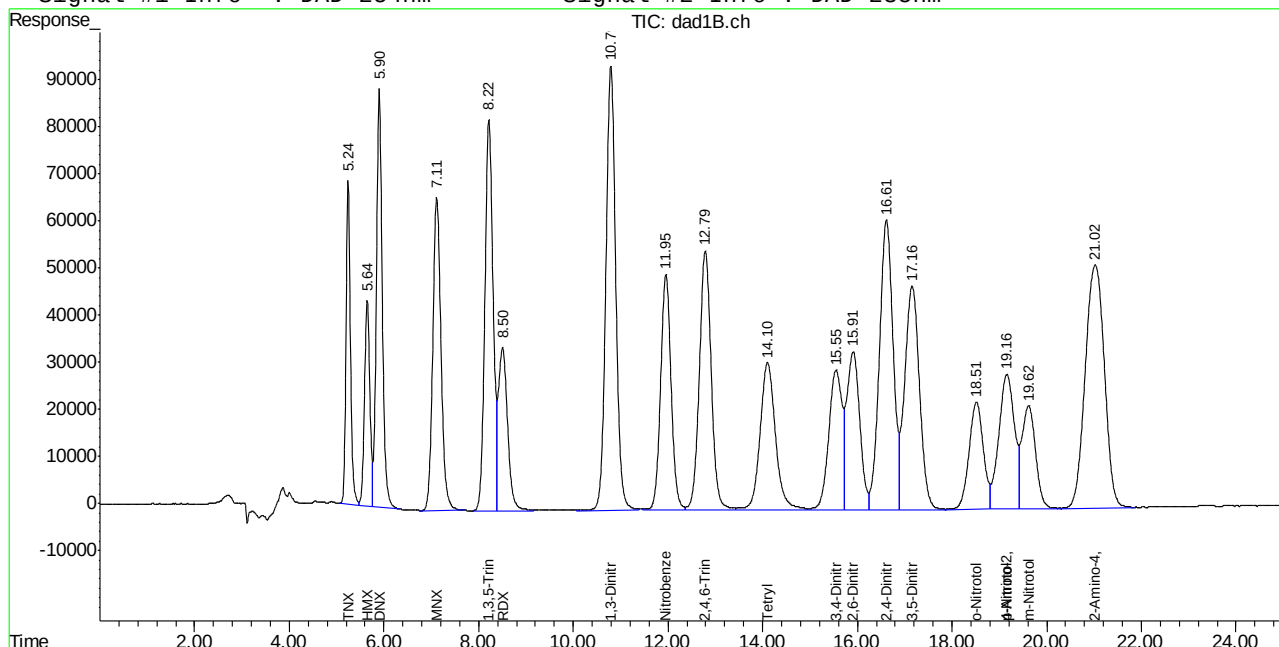
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3302\GG626846.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3302\GG626846.D\dad1A.ch
Acq On : 19-Jul-2023, 14:37:32 Operator: fouads
Sample : ecc3298-1000 Inst : G1315B
Misc : op97623,GGG3302,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 19 15:17 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626848.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626848.D\dad1A.ch
 Acq On : 20-Jul-2023, 12:19:44 Operator: fouads
 Sample : cc3298-1000 Inst : G1315B
 Misc : op97623,GGG3303,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 21 10:06:41 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Jul 21 10:06:31 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

	Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds							
12) S	3,4-Dinitrotolue	15.39	15.39	6110881	12246414	957.870	995.511
	Spiked Amount	500.000	Range	70 - 136	Recovery	= 191.57%#	199.10%#
Target Compounds							
1)	TNX	5.23	5.23	4816658	4826676	470.159	468.101
2)	HMX	5.61	5.61	3771501	3772850	1007.845	998.646
3)	DNX	5.87	5.87	8276163	8281327	988.872	986.711
4)	MNX	7.07	7.07	8627080	8661274	1153.007	1141.567
5)	1,3,5-Trinitrobe	8.15	8.15	10785726	10902500	1058.465	1050.057
6)	RDX	8.44	8.44	4919139	5106818	927.988	1001.464
7)	1,3-Dinitrobenze	10.72	10.72	14541493	13125529	941.282	1215.693
8)	Nitrobenzene	11.88	11.88	8256971	9439644	946.331	994.936
9)	2,4,6-Trinitroto	12.68	12.68	10262614	15032144	1035.210	1148.117
10)	Nitroglycerin	0.00	13.49	0	4210068	N.D.	1203.663 #
11)	Tetryl	13.94	13.95	7620317	14295161	1082.785	1135.301
13)	2,6-Dinitrotolue	15.79	15.79	6998968	10392848	1030.995	986.631
14)	2,4-Dinitrotolue	16.48	16.48	13275141	9491655	964.488	1051.137
15)	3,5-Dinitroanili	17.05	17.05	11165012	18613770	941.110	983.544
16)	o-Nitrotoluene	18.36	18.37	5191781	7539287	851.890	919.819
17)	p-Nitrotoluene	19.01	19.01	7088292	13867514	2110.432	1896.102
18)	4-Amino-2,6-Dini	19.01	19.01	7088292	13867514	2110.432	1896.102
19)	m-Nitrotoluene	19.46	19.46	4803447	7804563	862.546	970.816
20)	2-Amino-4,6-Dini	20.87	20.85	15672759	23880891	917.629	912.300
21)	PETN	0.00	23.11	0	3846681	N.D.	1046.803 #

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG626848.D GGG3229_071123.M Fri Jul 21 10:09:26 2023

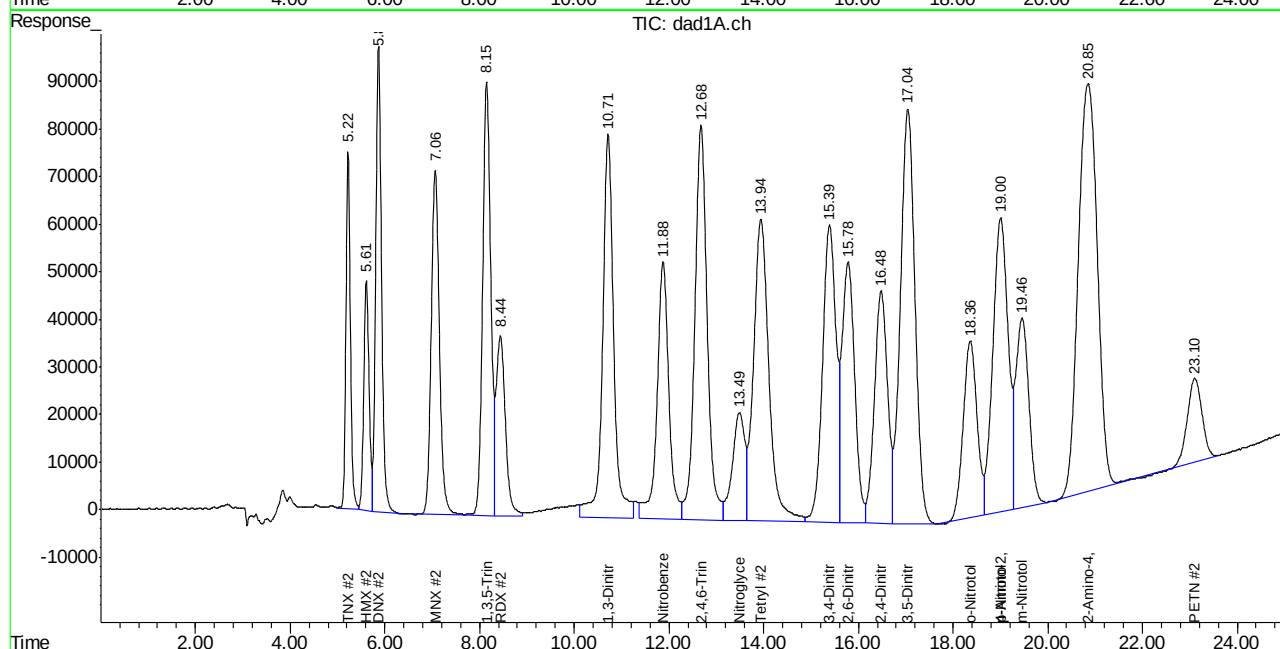
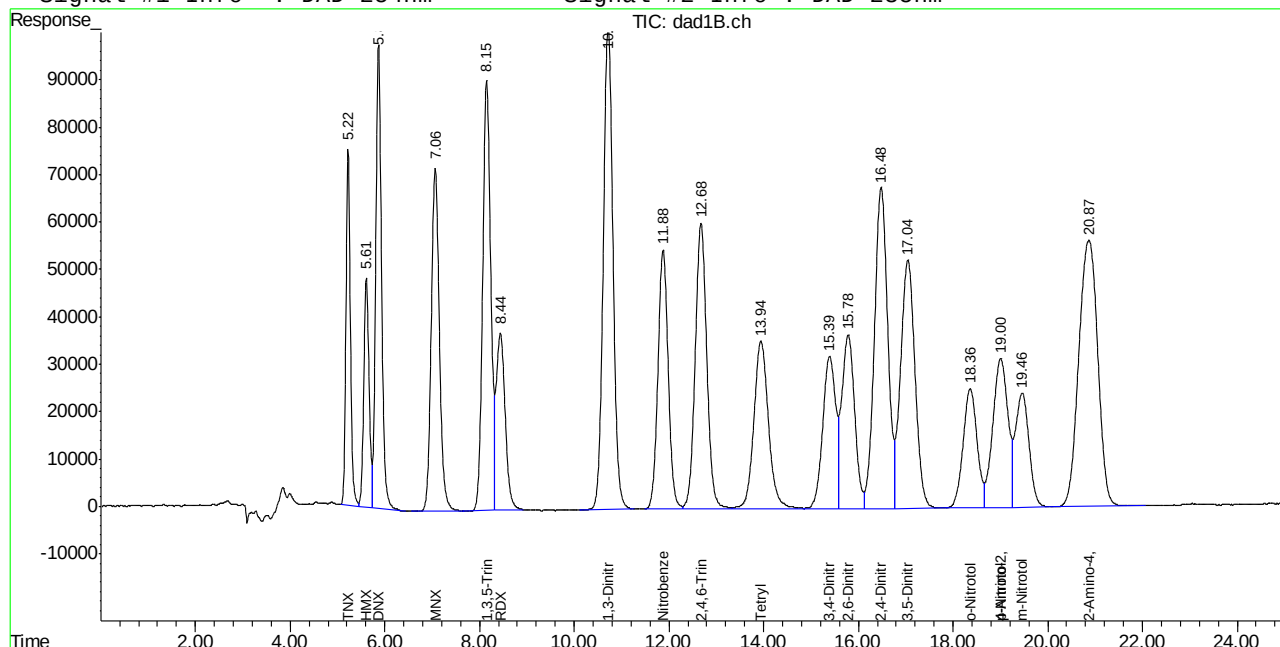
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626848.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626848.D\dad1A.ch
Acq On : 20-Jul-2023, 12:19:44 Operator: fouads
Sample : cc3298-1000 Inst : G1315B
Misc : op97623,GGG3303,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 21 10:06 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 21 10:06:31 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

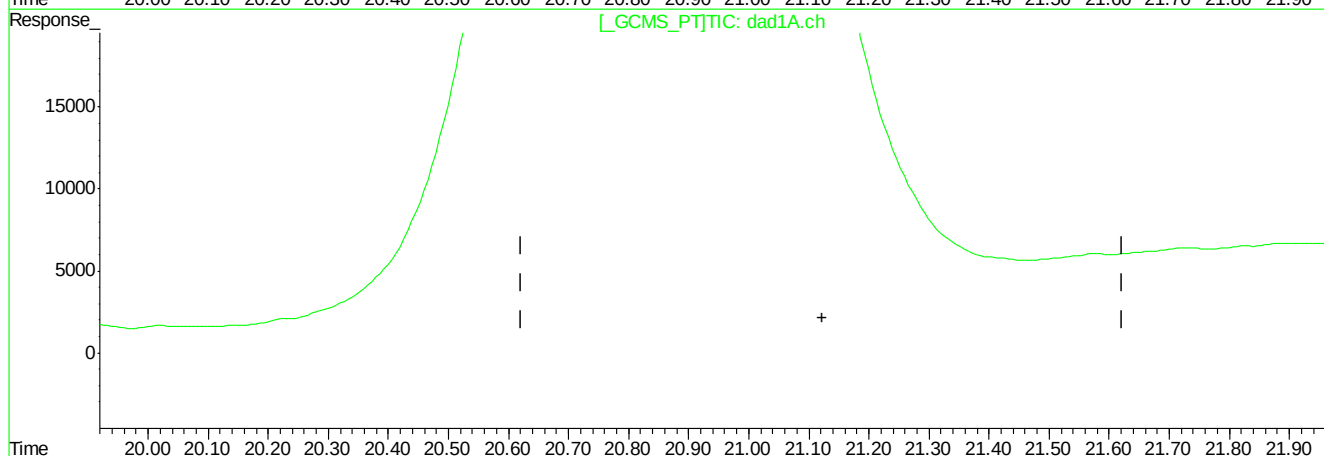
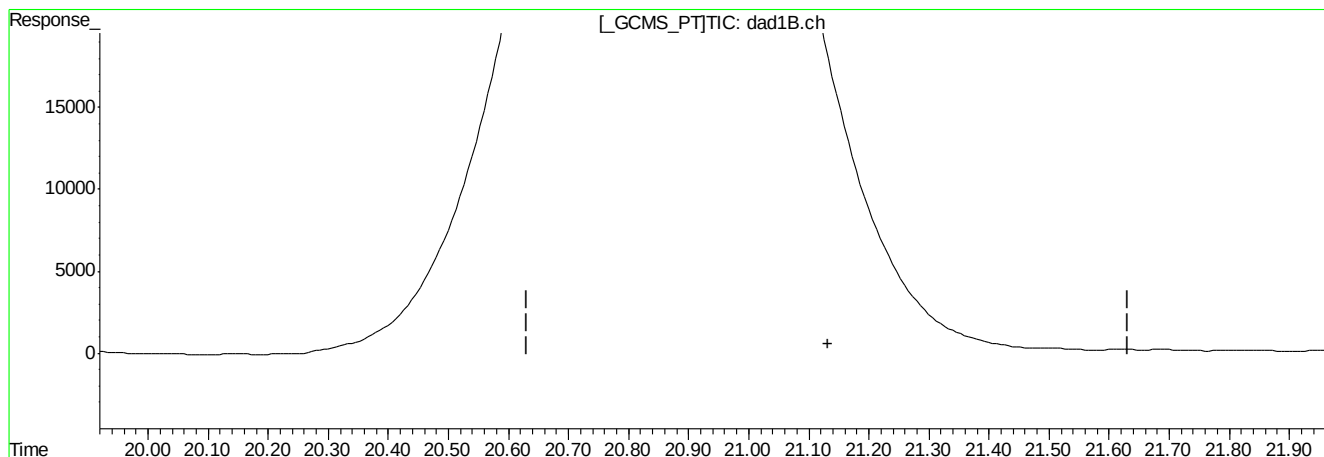
Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626848.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626848.D\dad1A.ch
Acq On : 20-Jul-2023, 12:19:44 Operator: fouads
Sample : cc3298-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 20 12:51 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration



QEdit

(20) 2-Amino-4,6-Dinitrotoluene

0.00min 0.000ppb

response 0

(20) 2-Amino-4,6-Dinitrotoluene #2

0.00min 0.000ppb

response 0

(+) = Expected Retention Time

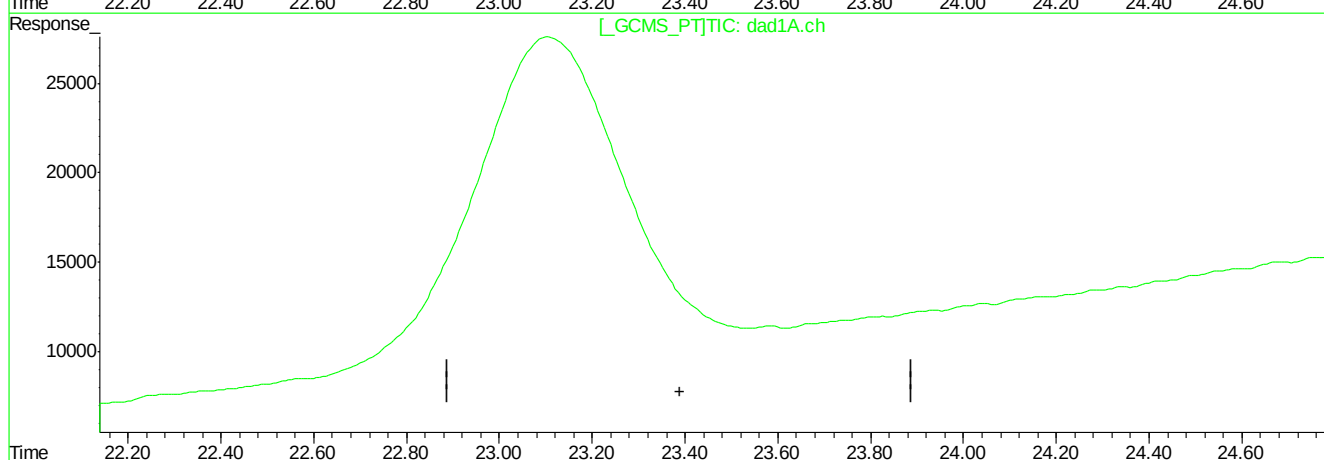
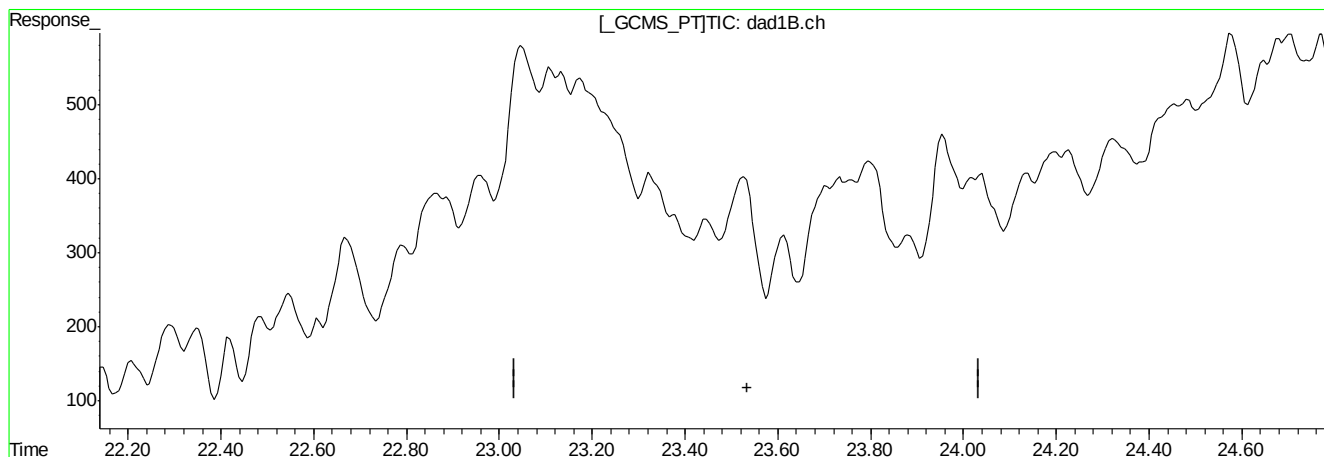
GG626848.D GGG3229_071123.M

Fri Jul 21 10:00:15 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626848.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626848.D\dad1A.ch
Acq On : 20-Jul-2023, 12:19:44 Operator: fouads
Sample : cc3298-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 20 12:51 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

0.00min 0.000ppb

response 0

QEdit

(+) = Expected Retention Time

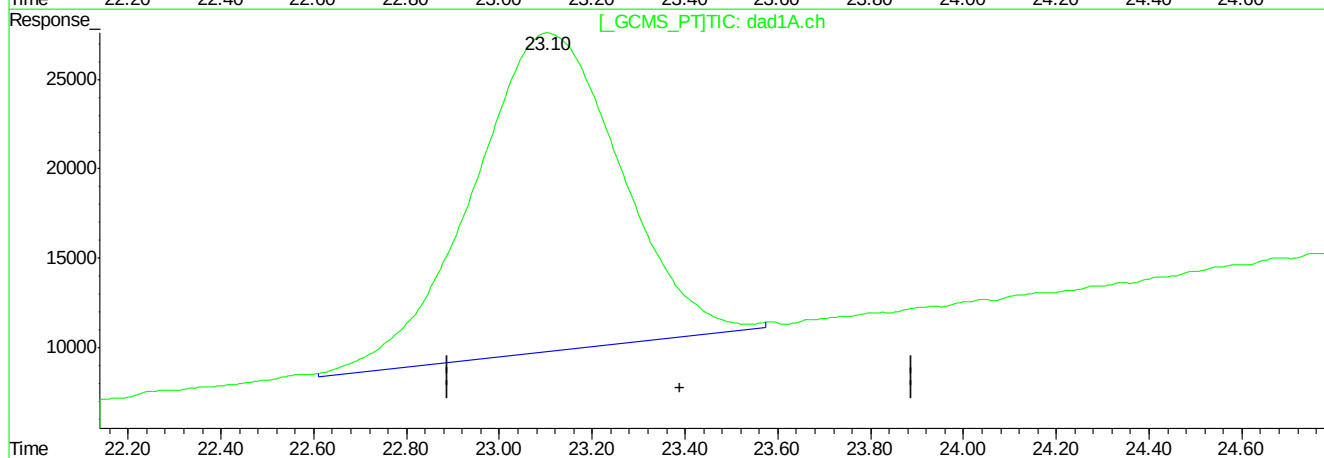
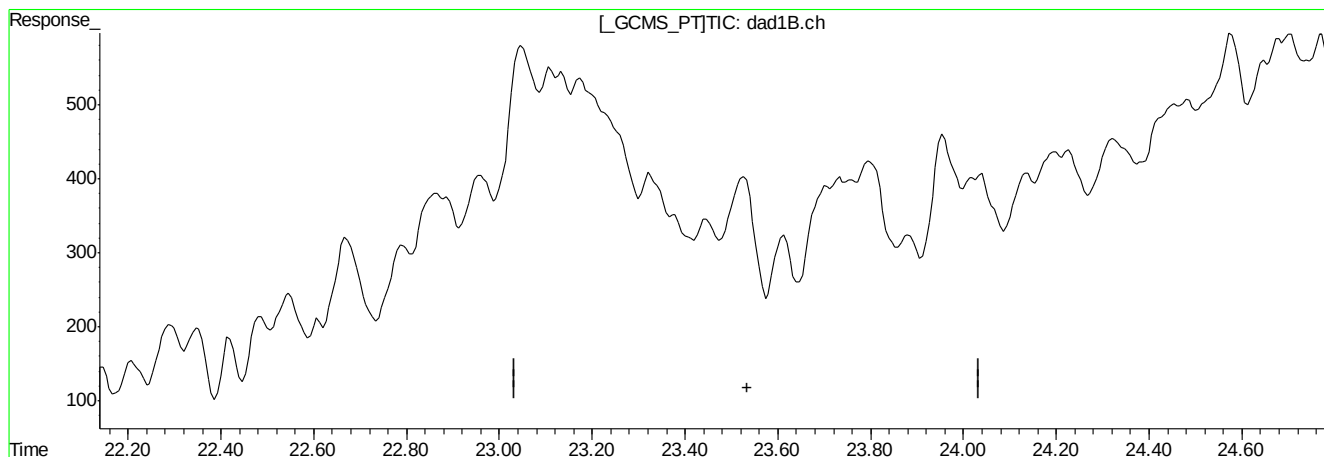
GG626848.D GGG3229_071123.M

Fri Jul 21 10:00:26 2023

Quantitation Report (Qedit)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626848.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626848.D\dad1A.ch
Acq On : 20-Jul-2023, 12:19:44 Operator: fouads
Sample : cc3298-1000 Inst : G1315B
Misc : Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 20 12:51 2023 Quant Results File: GGG3229_071123.RES

Method : C:\MSDCHEM\1\METHODS\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Wed Jul 19 08:49:59 2023
Response via : Multiple Level Calibration



(21) PETN

0.00min 0.000ppb

response 0

(21) PETN #2

23.10min 1070.564ppb m

response 3933996

QEdit

(+) = Expected Retention Time

GG626848.D GGG3229_071123.M

Fri Jul 21 10:00:31 2023

Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626853.D\dad1B.ch Vial: 2
 Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626853.D\dad1A.ch
 Acq On : 20-Jul-2023, 15:34:46 Operator: fouads
 Sample : ecc3298-1000 Inst : G1315B
 Misc : op97623,GGG3303,1000,,,10,1,water Multiplr: 1.00
 IntFile Signal #1: events3.e IntFile Signal #2: events2.e
 Quant Time: Jul 21 10:07:02 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
 Title : Explosives by 8330A,8330B,8332
 Last Update : Fri Jul 21 10:06:31 2023
 Response via : Initial Calibration
 DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
 Signal #1 Phase : Bonus RP Signal #2 Phase: Bonus RP
 Signal #1 Info : DAD 254nm Signal #2 Info : DAD 235nm

Compound	RT#1	RT#2	Resp#1	Resp#2	ppb	ppb

System Monitoring Compounds						
12) S 3,4-Dinitrotolue	15.51	15.51	6169225	12134916	967.015	986.448
Spiked Amount	500.000	Range	70 - 136	Recovery	= 193.40%#	197.29%#
Target Compounds						
1) TNX	5.24	5.24	4846466	4846043	473.068	469.979
2) HMX	5.64	5.64	3784563	3783727	1011.336	1001.525
3) DNX	5.90	5.90	8345087	8347113	997.107	994.549
4) MNX	7.11	7.11	8694149	8710381	1161.971	1148.040
5) 1,3,5-Trinitrobe	8.20	8.20	10811601	10891301	1061.004	1048.978
6) RDX	8.50	8.50	5044030	5156075	951.549	1011.123
7) 1,3-Dinitrobenze	10.78	10.78	14774146	13699468	956.341	1268.852
8) Nitrobenzene	11.95	11.95	8197203	9295299	939.481	979.722
9) 2,4,6-Trinitroto	12.76	12.76	10402509	15170216	1049.321	1158.662
10) Nitroglycerin	0.00	13.59	0	4056282	N.D.	1159.696 #
11) Tetryl	14.06	14.05	7749291	13910257	1101.111	1104.732
13) 2,6-Dinitrotolue	15.89	15.89	7092557	10292313	1044.781	977.087
14) 2,4-Dinitrotolue	16.58	16.58	13409352	9479173	974.239	1049.755
15) 3,5-Dinitroanili	17.13	17.13	11226270	18771361	946.273	991.871
16) o-Nitrotoluene	18.49	18.49	5111379	7414454	838.697	904.588
17) p-Nitrotoluene	19.13	19.13	7104604	13961540	2115.289	1908.958
18) 4-Amino-2,6-Dini	19.13	19.13	7104604	13961540	2115.289	1908.958
19) m-Nitrotoluene	19.59	19.59	4772576	7657589	857.002	952.533
20) 2-Amino-4,6-Dini	20.99	20.98	15620070	23811819	914.544	909.662
21) PETN	0.00	23.25	0	3640621	N.D.	990.727 #

 (f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
 GG626853.D GGG3229_071123.M Fri Jul 21 10:09:30 2023

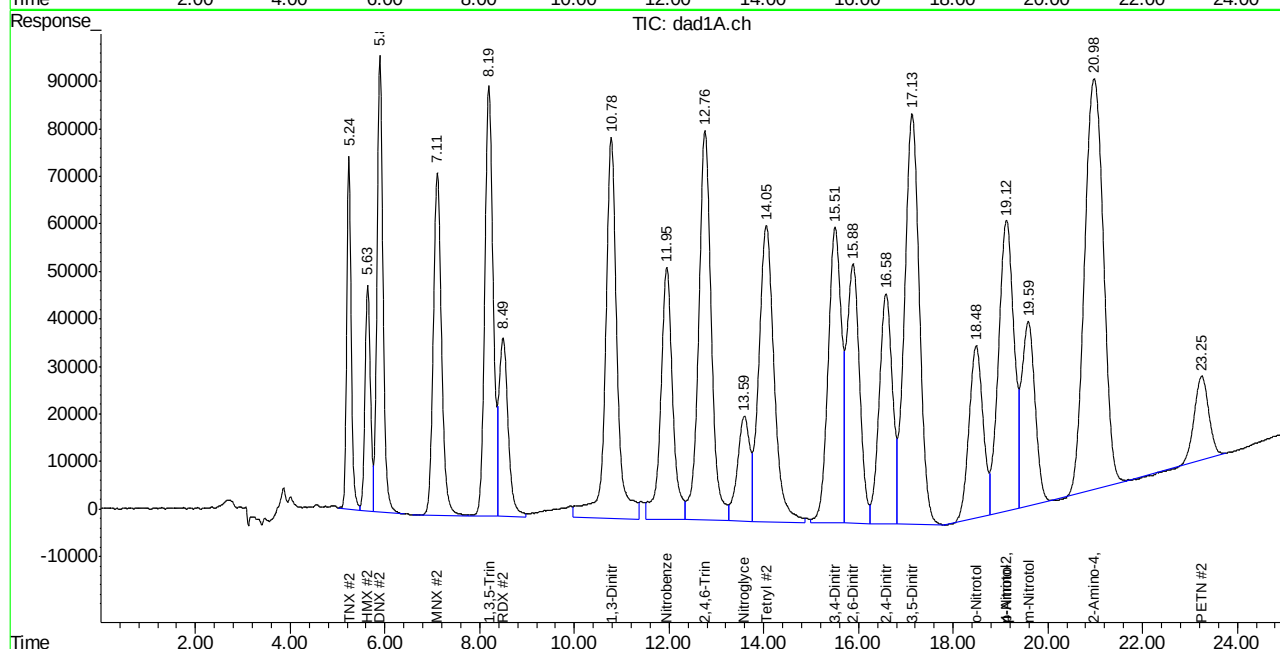
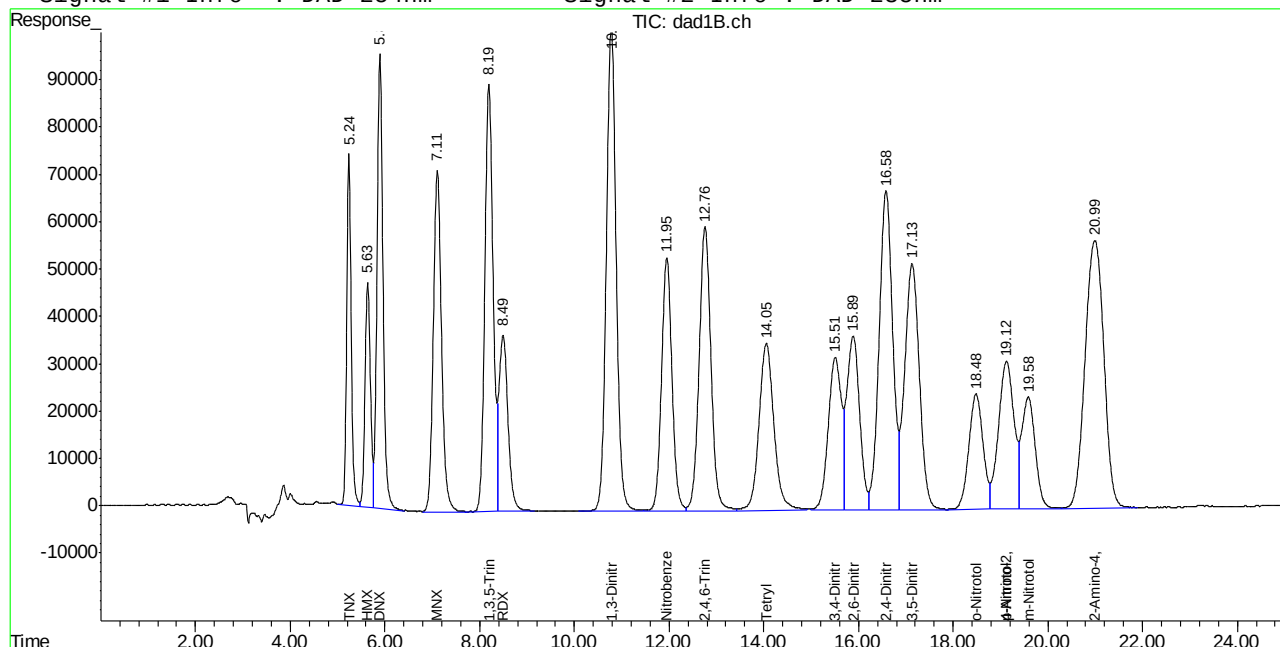
Quantitation Report (QT Reviewed)

Signal #1 : C:\HPCHEM\1\DATA\GGG3303\GG626853.D\dad1B.ch Vial: 2
Signal #2 : C:\HPCHEM\1\DATA\GGG3303\GG626853.D\dad1A.ch
Acq On : 20-Jul-2023, 15:34:46 Operator: fouads
Sample : ecc3298-1000 Inst : G1315B
Misc : op97623,GGG3303,1000,,,10,1,water Multiplr: 1.00
IntFile Signal #1: events3.e IntFile Signal #2: events2.e
Quant Time: Jul 21 10:07 2023 Quant Results File: GGG3229_071123.RES

Quant Method : C:\MSDCHEM\1...\GGG3229_071123.M (Chemstation Integrator)
Title : Explosives by 8330A,8330B,8332
Last Update : Fri Jul 21 10:06:31 2023
Response via : Multiple Level Calibration
DataAcq Meth : 8330RPB3.M

Volume Inj. : 100ul
Signal #1 Phase : Bonus RP
Signal #1 Info : DAD 254nm

Signal #2 Phase: Bonus RP
Signal #2 Info : DAD 235nm



SGS-ORLANDO

HPLC-04 BB

ANALYSIS LOG

DATE	4/14/2023	METHODS	8330	IC/ICC STD LOT	LC11701
COLUMN TYPE	Extend C18	ACQ. METHOD	8330B	ICV STD LOT	LC1706
AMOUNT INJ	100ul	PROC. METHOD	BBB2349_041423.m	SOLVENT	222737
INSTRUMENT	HPLC05-BB	CALIB. DATE	4/14/2023	SOLVENT	258274
ANALYST	fs	RUN BATCH	GBB2349	HEAD PRESSURE	252

DATA FILE	ALS	SAMPLE NAME	METHOD	DF	MISC. INFO	COMMENTS
BB076373	1	ccb	8330	1	op96037,GBB2349,1040,,,10,1,water	/
BB076374	2	cc2324-1000	8330	100/500	op96037,GBB2349,1000,,,10,1,water	passed dod5
BB076375	3	ic2349-20	8330	1	op96339,GBB2349,1000,,,10,1,water	curve passed
BB076376	4	ic2349-50	8330	1	op96339,GBB2349,1000,,,10,1,water	curve passed
BB076377	5	ic2349-100	8330	1	op96339,GBB2349,1000,,,10,1,water	curve passed
BB076378	6	ic2349-200	8330	1	op96339,GBB2349,1000,,,10,1,water	curve passed
BB076379	7	ic2349-500	8330	1	op96339,GBB2349,1000,,,10,1,water	curve passed
BB076380	8	icc2349-1000	8330	1	op96339,GBB2349,1000,,,10,1,water	curve passed
BB076381	9	ic2349-2500	8330	1	op96339,GBB2349,1000,,,10,1,water	curve passed
BB076382	10	ic2349-5000	8330	1	op96339,GBB2349,1000,,,10,1,water	curve passed
BB076383	11	icv2349-1000	8330	1	op96339,GBB2349,1000,,,10,1,water	icv passed
BB076384	12	op96361-bs	8330	1	op96361,GBB2349,1000,,,10,1,water	/
BB076385	13	op96361-mb	8330	1	op96361,GBB2349,1000,,,10,1,water	nd
BB076386	14	fc5106-1	8330	1	op96361,GBB2349,1020,,,10,1,water	\
BB076387	15	op96361-ms	8330	1	op96361,GBB2349,520,,,10,1,water	misinject
BB076356	16	op96361-msd	8330	1	op96361,GBB2349,520,,,10,1,water	\
BB076357	17	fc5108-1	8330	1	op96361,GBB2349,1030,,,10,1,water	cf-HMX,RDX
BB076358	18	fc5108-2	8330	1	op96361,GBB2349,1010,,,10,1,water	\
BB076359	19	fc5069-18	8330	1	op96361,GBB2349,1000,,,10,1,water	10x-RDX cf-HMX
BB076360	20	fc5156-1	8330	1	op96361,GBB2349,1020,,,10,1,water	cf-RDX
BB076361	21	fc5156-2	8330	1	op96361,GBB2349,1010,,,10,1,water	cf-RDX
BB076362	1	ccb	8330	1	op96037,GBB2349,1000,,,10,1,water	
BB076363	8	cc2324-1000	8330	100/500	op96037,GBB2349,1000,,,10,1,water	pass
BB076364	22	fc5030-3	8330	1	op96320,GBB2349,1000,,,10,1,water	cf-HMX,RDX
BB076365	23	fc5069-8	8330	1	op96321,GBB2349,980,,,10,1,water	cf-HMX,MNX,RDX,TNB,2A,4A
BB076366	24	fc5069-14	8330	1	op96321,GBB2349,1010,,,10,1,water	\
BB076367	1	ccb	8330	1	op96037,GBB2349,1040,,,10,1,water	
BB076368	8	ecc2324-1000	8330	100/500	op96037,GBB2349,1000,,,10,1,water	pass

9.6.1
9

SGS-ORLANDO

HPLC-04 BB

ANALYSIS LOG

DATE		7/18/2023	METHODS		8330	IC/ICC STD LOT	LC1712
COLUMN TYPE		Extend C18	ACQ. METHOD		8330B	ICV STD LOT	LC1706
AMOUNT INJ		100ul	PROC. METHOD		BBB2349_041423.m	SOLVENT	222737
INSTRUMENT		HPLC05-BB	CALIB. DATE		4/14/2023	SOLVENT	258274
ANALYST		fs	RUN BATCH		GBB2394	HEAD PRESSURE	190
DATA FILE	ALS	SAMPLE NAME	METHOD	DF	MISC. INFO	COMMENTS	
BB077743	1	ccb	8330	1	op96037,GBB2394,1040,,,10,1,water	/	
BB077744	2	cc2349-1000	8330	200/1000	op96396,GBB2394,1000,,,10,1,water	passed dod5	
BB077745	3	op97885-bs	8330	1	op97885,GBB2394,1000,,,10,1,water	/	
BB077746	4	op97885-MB	8330	1	op97885,GBB2394,1000,,,10,1,water	nd	
BB077747	5	FC7691-1	8330	1	op97885,GBB2394,1000,,,10,1,water	rdx	
BB077748	6	FC7691-2	8330	1	op97885,GBB2394,1000,,,10,1,water	rdx,hmx?	
BB077749	7	FC7686-1	8330	1	op97885,GBB2394,900,,,10,1,water	hmx,rdx,35,2-46,4-26,2,4,6	
BB077750	8	FC7686-2	8330	1	op97885,GBB2394,850,,,10,1,water	hmx,rdx,35,2-46,4-26,2,4,6	
BB077751	9	FC7686-3	8330	1	op97885,GBB2394,970,,,10,1,water	hmx,rdx,35,2-46,4-26,2,4,6	
BB077752	10	FC7686-4	8330	1	op97885,GBB2394,970,,,10,1,water	hmx,rdx,35,2-46,4-26,2,4,6	
BB077753	1	ccb	8330	1	op97885,GBB2394,1040,,,10,1,water	/	
BB077754	2	cc2349-1000	8330	200/1000	op96396,GBB2394,1000,,,10,1,water	passed	
BB077755	11	OP97885-MS	8330	1	op97885,GBB2394,490,,,10,1,water	/	
BB077756	12	OP97885-MSD	8330	1	op97885,GBB2394,490,,,10,1,water	/	
BB077757	13	FC7686-5	8330	1	op97885,GBB2394,900,,,10,1,water	nd	
BB077758	14	FC7648-1	8330	1	op97885,GBB2394,980,,,10,1,water	/petn?	
BB077759	15	FC7648-2	8330	1	op97885,GBB2394,990,,,10,1,water	nd for petn	
BB077760	16	FC7681-23	8330	1	op97885,GBB2394,930,,,10,1,water	nd	
BB077761	17	FC7681-24	8330	1	op97885,GBB2394,960,,,10,1,water	hmx?	
BB077762	18	FC7681-25	8330	1	op97885,GBB2394,950,,,10,1,water	nd	
BB077763	1	ccb	8330	1	op97885,GBB2394,1000,,,10,1,water	/	
BB077764	2	ecc2349-1000	8330	200/1000	op96396,GBB2394,1000,,,10,1,water	passed	

9.6.2
9

SGS-ORLANDO

HPLC-04 BB

ANALYSIS LOG

DATE	7/11/2023	METHODS	8330	IC/ICC STD LOT	LC1733
COLUMN TYPE	Bonus-RP	ACQ. METHOD	8330RPB3	ICV STD LOT	LC1651,
AMOUNT INJ	100uL	PROC. METHOD	GGG3226_071123.M	SOLVENT	222742
INSTRUMENT	HPLC3-GG	CALIB. DATE	7/11/2023	SOLVENT	223231
ANALYST	fs	RUN BATCH	GGG3298	HEAD PRESSURE	187
DATA FILE	ALS	SAMPLE NAME	METHOD	DF	MISC. INFO
GG626759	2	cond std	8330	1	op96122,GGG3298,1000,,,10,1,water
GG626760	2	cond std	8330	100+400	op96361,GGG3298,1000,,,10,1,water
GG626761	1	ccb	8330	1	op97623,GGG3298,960,,,10,1,water
GG626762	3	ic3298-20	8330	1	op97623,GGG3298,960,,,10,1,water
GG626763	4	ic3298-50	8330	1	op97623,GGG3298,950,,,10,1,water
GG626764	5	ic3298-100	8330	1	op97623,GGG3298,970,,,10,1,water
GG626765	6	ic3298-200	8330	1	op97623,GGG3298,910,,,10,1,water
GG626766	7	ic3298-500	8330	1	op97623,GGG3298,950,,,10,1,water
GG626767	8	icc3298-1000	8330	1	op97623,GGG3298,960,,,10,1,water
GG626768	9	ic3298-2500	8330	1	op97623,GGG3298,950,,,10,1,water
GG626769	10	ic3298-5000	8330	100+400	op96361,GGG3298,1000,,,10,1,water
GG626770	11	icv3298-1000	8330	1	op96122,GGG3298,1000,,,10,1,water
				icv high =na (see run ggg3299)	

SGS-ORLANDO

HPLC-04 BB

ANALYSIS LOG

DATE	7/19/2023		METHODS		8330		IC/ICC STD LOT	LC1733
COLUMN TYPE	Bonus-RP		ACQ. METHOD		8330RPB3		ICV STD LOT	LC1734
AMOUNT INJ	100uL		PROC. METHOD		GGG3226_071123.M		SOLVENT	222742
INSTRUMENT	HPLC3-GG		CALIB. DATE		07/112023		SOLVENT	223231
ANALYST	fs		RUN BATCH		GGG3302		HEAD PRESSURE	187
DATA FILE	ALS	SAMPLE NAME	METHOD	DF	MISC. INFO		COMMENTS	
GG626828	1	ccb	8330	1	op97623,GGG3302,1000,,,10,1,water		/	
GG626829	2	cc3298-1000	8330	100+400	op97623,GGG3302,1000,,,10,1,water		passed target cpds	
GG626830	3	op97885-mb	8330	1	op97885,GGG3302,1000,,,10,1,water		nd	
GG626831	4	fc7691-1cf	8330	1	op97885,GGG3302,1000,,,10,1,water		confirmed rdx	
GG626832	5	fc7691-2cf	8330	1	op97885,GGG3302,1000,,,10,1,water		confirmed rdx	
GG626833	6	fc7748-1cf	8330	1	op97885,GGG3302,980,,,10,1,water		confirmed nd	
GG626834	7	fc7686-1cf	8330	1	op97885,GGG3302,900,,,10,1,water		confirmed	
GG626835	8	fc7686-2cf	8330	1	op97885,GGG3302,850,,,10,1,water		confirmed	
GG626836	9	fc7686-3cf	8330	1	op97885,GGG3302,970,,,10,1,water		confirmed	
GG626837	10	fc7686-4cf	8330	1	op97885,GGG3302,970,,,10,1,water		confirmed	
GG626838	11	fc7781-24cf	8330	1	op97885,GGG3302,960,,,10,1,water		confirmed nd	
GG626839	1	ccb	8330	1	op97623,GGG3302,1000,,,10,1,water		/	
GG626840	2	ecc3298-1000	8330	100+400	op97623,GGG3302,1000,,,10,1,water		passed target cpds	

SGS-ORLANDO

HPLC-04 BB

ANALYSIS LOG

DATE	7/20/2023		METHODS		8330		IC/ICC STD LOT	LC1733
COLUMN TYPE	Bonus-RP		ACQ. METHOD	8330RPB3			ICV STD LOT	LC1734
AMOUNT INJ	100uL		PROC. METHOD	GGG3226	071123.M		SOLVENT	222742
INSTRUMENT	HPLC3-GG		CALIB. DATE	07/112023			SOLVENT	223231
ANALYST	fs		RUN BATCH	GGG3303			HEAD PRESSURE	187
DATA FILE	ALS	SAMPLE NAME	METHOD	DF	MISC. INFO		COMMENTS	
GG626847	1	ccb	8330	1	op97623,GGG3303,1000,,10,1,water		/	
GG626848	2	cc3298-1000	8330	100+400	op97623,GGG3303,1000,,10,1,water		passed target cpds	
GG626849	3	fc7686-1cf	8330	1	op97885,GGG3303,900,,10,1,water		confirmed rt shift ,see below	
GG626850	4	fc7686-1cf,4	8330	100+300	op97885,GGG3303,900,,10,4,water		confirmed ,reported	
GG626851	5	fc7686-3cf	8330	1	op97885,GGG3303,970,,10,1,water		confirmed	
GG626852	6	fc7686-3cf,4	8330	100+300	op97885,GGG3303,970,,10,4,water		not needed	
GG626853	2	ecc3298-1000	8330	100+400	op97623,GGG3303,1000,,10,1,water		passed target cpds	

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 7/17/23 9:00
Started (mm/dd/yy 24:00)

Prep Method: 3535A or 537 or 537MOD (circle)

Date/Time: 7/18/23 8:15
Finished (mm/dd/yy 24:00)

Analytical Method: 8330

Batch#: OP97885

Ext. By: JM

Conc. By: —

Viald By: JM

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Manifold ID	Comments
OP97885 MB	X	1000	7	NA	250ul		10ml	AT2	
OP97885 BS	X	1000				250+200 ul			
FC7686-1	2	900							
-2	3	850							
-3	3	970						AT3	
-4	4	970							
-5	2	900							
FC7691-1	1	1000							
-2	2	1000							
FC7748-1	1	980						AT1	
-2	1	990							
FC7781-23	11	930						AT3	
-24	9	960							
-25	9	950							
FC7686-4-MS	9	490	7	NA	250ul	250+200 ul	10ml	AT2	
↓ MSD	9	490	↓	↓	↓	↓	↓	↓	
DUP									

Comments: JM 7/17/23

Surr.1 ID: LC1720	Conc: 20ppm	Exp. Date: 1/31/24	Inj. By: JM	Ver. By: JM
Spk.1 ID: LC1732	Conc: 20ppm	Exp. Date: 1/7/24	Inj. By: JM	Ver. By: JM
Spk.2 ID: LC1700	Conc: 25ppm	Exp. Date: 10/5/23	Inj. By: JM	Ver. By: JM
Spk.3 ID: —	Conc: —	Exp. Date: —	Inj. By: —	Ver. By: —

TurboVap Temp (Therm ID): —	N-Evap Temp (Therm ID): —
Observed Temp °C: —	Corr. Temp °C: —

Methanol Lot # —	SPE Lot # 5214-0134	pH Paper # 205423
Acetonitrile Lot # 220814	Syringe filter Lot # —	Reagent # —
Water Lot# 231331	Pre-filter Lot# —	Reagent # —
Solvent# —	Carbon Lot# —	Other —

Relinquished By: JM

Date: 7/18/23

Accepted By: [Signature]

Date: 07/18/23

ORLD-EXT-0001-3-08-FORM-extwater_spe.xls 032718

**APPENDIX B-2
DATA VALIDATION REPORTS**

VALIDATA

Chemical Services, Inc.

2159 Wynnton Pointe, Duluth, GA 30097

(770) 232-0130

(770) 232-5082 (Fax)

www.datavalidator.com

DATA VALIDATION SUMMARY REPORT

COMPANY: Weston Solutions, Inc.
SITE NAME: Radford Army Ammunitions Plant – January 2023 Sampling
CONTRACTED LAB: CT Laboratories LLC, Eurofins South Bend, SGS Orlando
QA/QC LEVEL: EPA Stage 2B and 4
EPA SOW/METHODS: EPA and SW-846 Methods
VALIDATION GUIDELINES: *Radford Army Ammunitions Plant, Radford Virginia, SWMU 49 Monitored Natural Attenuation Groundwater Monitoring Work Plan, SWMU 54 Interim Measures Work Plan, QSM 5.1, SW 846 Methods, USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, 2017; USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, 2017*

SAMPLE MATRIX: Water
TYPE OF ANALYSIS: Volatile Organics (VOA), Dissolved Gases, Perchlorate, Explosives, Total Metals, Total Mercury, Anions, Total Organic Carbon (TOC), Total Inorganic Carbon (TIC), Chlorate*, Chemical Oxygen Demand (COD), pH

SDG NUMBER: 175065
SAMPLING DATES: January 24-27, 2023

SAMPLES:

Client	Lab			
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>VOA</u>	<u>Dis. Gases</u>
TB-1	1283699	Water	X	
13MW5	1283670	Water	X	X
13MW4	1283671	Water	X	X
13MW3	1283672	Water	X	X
49MW04	1283673	Water	X	X
49TW04	1283674	Water	X	X
13MW2	1283675	Water	X	X

Client	Lab			
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>VOA</u>	<u>Dis. Gases</u>
49MW05	1283676	Water	X	X
TB-2	1284314	Water	X	
48MW7	1284315	Water	X	X
48MW6	1284316	Water	X	X
48MW4	1284317	Water	X	X
48MW1-EQB	1284318	Water	X	X
49MW03	1284319	Water	X	X
49MW2	1284320	Water	X	X
48MW3	1284321	Water	X	X
48TW3	1284322	Water	X	X
49MW01	1284323	Water	X	X
50MW2	1284324	Water	X	
48MW1	1137438	Water	X	X
13MW5	1283670MS	Water	X	X
13MW5MSD	1283670MSD	Water	X	X
48MW6MS	1284316MS	Water	X	
48MW6MSD	1284316MSD	Water	X	

Client	Lab		Total	Total
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>Metals**</u>	<u>Mercury</u>
49IDW	1284325	Water	X	X
49IDWMS	1284325MS	Water	X	
49IDWMSD	1284325MSD	Water	X	

Client	Lab			
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>Anions</u>	<u>TOC</u>
13MW5	1283670	Water	X	X
13MW5DL	1283670DL	Water	X	
13MW4	1283671	Water	X	X
13MW4DL	1283671DL	Water	X	
13MW3	1283672	Water	X	X
13MW3DL	1283672DL	Water	X	
49MW04	1283673	Water	X	X
49TW04	1283674	Water	X	X
13MW2	1283675	Water	X	X
49MW05	1283676	Water	X	X
48MW7	1283979	Water	X	X
48MW6	1283980	Water	X	X
48MW6DL	1283980DL	Water	X	

48MW1	1284317	Water	X	X
48MW1-EQB	1284318	Water	X	X
49MW03	1284319	Water	X	X
48MW2	1284320	Water	X	
48MW3	1284321	Water	X	X
48MW3DL	1284321DL	Water	X	
48TW3	1284322	Water	X	X
48TW3DL	1284322DL	Water	X	
49MW01	1284323	Water	X	
50MW2	1284324	Water	X	X
50MW2DL	1284324DL	Water	X	
13MW5MS	1283670MS	Water	X	X
13MW5MSD	1383670MSD	Water	X	X
48MW7MS	1283979MS	Water	X	
48MW7MSD	1283979MSD	Water	X	
48MW1MS	1284317MS	Water	X	
48MW1MSD	1284317MSD	Water	X	
50MW2MS	1284324MS	Water		X
50MW2MSD	1284324MSD	Water		X

Client	Lab			
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>COD</u>	<u>pH</u>
49IDW	1284325	Water	X	X
49IDWMD	1284325MD	Water		X
49IDWMS	1284325MS	Water	X	
49IDWMSD	1284325MSD	Water	X	

SDG NUMBER: 175012
SAMPLING DATES: January 23 & 25, 2023

SAMPLES:

Client	Lab		Total	Total
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>Metals**</u>	<u>Mercury</u>
54IDW	1282988	Water	X	X
54IDWMS	1282988MS	Water	X	X
54IDWMSD	1282988MSD	Water	X	X

Client	Lab			
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>Anions</u>	<u>TOC</u>
54MW13	1282988	Water	X	X
54TW13	1282989	Water	X	X
54MW10	1282990	Water	X	X
54MW10DL	1282990DL	Water	X	
54MW12	1283772	Water	X	X
54MW1	1283773	Water	X	X
54MW13MS	1282988MS	Water	X	
54MW13MSD	1282988MSD	Water	X	
54MW12MS	1283772MS	Water	X	X
54MW12MSD	1283772MSD	Water	X	X

Client	Lab			
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>TIC</u>	<u>Chlorate*</u>
54MW13	1282988	Water	X	X
54TW13	1282989	Water	X	X
54MW10	1282990	Water	X	X
54MW12	1283772	Water	X	X
54MW1	1283773	Water	X	X
54MW10MS	1282990MS	Water		X
54MW10MSD	1282990MSD	Water		X
54MW12MS	1283772MS	Water		X
54MW12MSD	1283772MSD	Water		X

Client	Lab			
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>COD</u>	<u>pH</u>
54IDW	1282988	Water	X	X
54IDWMS	1282988MS	Water	X	X
54IDWMSD	1282988MSD	Water	X	X

SDG NUMBER: FC2128
SAMPLING DATES: January 23, 2023

SAMPLES:

Client	Lab			
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>Explosives</u>	<u>Perchlorate</u>
54MW13	FC2128-1	Water	X	X
54TW13	FC2128-2	Water	X	X

54MW10	FC2128-3	Water	X	X
54MW13MS	FC2128-1MS	Water	X	
Client	Lab			
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>Explosives</u>	<u>Perchlorate</u>
54MW13MSD	FC2128-1MSD	Water	X	

SDG NUMBER: FC2220
 SAMPLING DATES: January 25, 2023

SAMPLES:

Client	Lab			
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>Explosives</u>	<u>Perchlorate</u>
54MW12	FC2200-1	Water	X	X
54MW1	FC2200-2	Water	X	X
54MW12MS	FC2200-1MS	Water	X	X
54MW12MSD	FC2200-1MSD	Water	X	X

* -Analysis reported chlorate and chlorite

** - analysis was for 22 analytes by Method 6010C.

All fractions were validated at Stage 4, except Metals and Mercury, which were validated at Stage 2B.

Suffix Codes: DL = DILUTION, MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE,
 RA = REANALYSIS

DATA REVIEWERS: Amy L. Hogan, Kevin C. Harmon, Sandra Nacquin

DATA VALIDATION SUMMARY

CT Laboratories LLC – 175065 - Organics & Inorganics

VOLATILE ORGANICS (VOA)

SUMMARY

I.) General:

The analyses for Volatile Organics (VOA) were performed according to SW 846 Method 8260B.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

It was noted in the VOC sample preparation that the pH (7) for sample 48MW7 was greater than the QC limit of 2. Since the sample was analyzed within the 7-day QC limit for unpreserved samples, no data qualification was necessary.

II.) GC / MS Tuning:

All GC / MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

The average RRF for 1,4-dioxane (0.003) for the standards analyzed on 1/3/23 on instrument VMS3 was below 0.010. Since the limit for this compound is advisory and 1,4-dioxane is a known poor performer, citing professional judgment, the validator determined that no data

qualification based on the RRF was necessary.

All other Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification (ICV):

The RRF for 1,4-dioxane (0.0033) for the standards run on 1/3/23 at 17:20 on instrument VMS3 was below 0.010. Since the limit for this compound is advisory and 1,4-dioxane is a known poor performer, citing professional judgment, the validator determined that no data qualification based on the RRF was necessary.

Continuing Calibration:

The RRF for 1,4-dioxane (0.0033) for the standards run on 2/1/23 at 09:47 on instrument VMS3 was below 0.010. Since the limit for this compound is advisory and 1,4-dioxane is a known poor performer, citing professional judgment, the validator determined that no data qualification based on the RRF was necessary.

The Percent Differences (%Ds) for the standards run on 2/1/23 at 09:47 on instrument VMS2 exceeded the 20% QC limit for the following compounds:

Trichlorofluoromethane	-22.5%
Freon 113	-22.0%
Methylcyclohexane	-22.1%

The results for these compounds in the SDG samples, which were all non-detect, were qualified as estimated (UJ).

IV.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Equipment Blank:

The following compounds were reported in associated equipment blank 48MW1-EQB:

Bromodichloromethane	0.65 ug/L
Chloroform	1.2 ug/L
Dibromochloromethane	0.88 ug/L

Since the blank result for chloroform was less than the LOD, the chloroform result for sample

13MW3, which was less than the LOD, was qualified as undetected (U) with the result raised to the LOD. All other associated sample results were either reported as non-detect or were greater than the action level, so no further data qualification based on this blank contamination was necessary.

Trip Blanks:

There were no detections in the associated trip blanks. No data qualification was necessary.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

One LCS was analyzed for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS/ MSD analyses were performed using samples 13MW5 and 48MW6. All criteria were met. No data qualification was necessary.

VIII.) Field Duplicates:

Two sets of field duplicate samples (49MW04 / 49TW04 and 48MW3 / 48TW3) were identified for this SDG. The RPD for carbon tetrachloride (0%) for the first set and carbon tetrachloride (3.7%), chloroform (1.1%) and trichloroethene (9.5%) for the second set were all within the QC limit. No data qualification was necessary.

IX.) Internal Standards Performance (ISTD):

All ISTD criteria were met. No data qualification was necessary.

X.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRQL criteria were met. No data qualification was necessary.

DISSOLVED GASSES

SUMMARY

I.) General:

The analyses for Dissolved Gases were performed according to Method RSK-175.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification (ICV):

All Initial Calibration Verification criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Equipment Blank:

There were no detections reported in the associated equipment blank for this SDG. No data qualification was necessary.

IV.) Surrogate Recoveries:

All Surrogate Recovery criteria were met.

V.) Laboratory Control Samples (LCS):

One LCS was analyzed for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VI.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS/ MSD analyses were performed using sample 13MW5. All criteria were met. No data qualification was necessary.

VII.) Field Duplicates:

Two sets of field duplicate samples (49MW04 / 49TW04 and 48MW3 / 48TW3) were identified for this SDG. There were no calculable Relative Percent Differences. No data qualification was necessary.

VIII.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

IX.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL) criteria were met. No data qualification was necessary.

TOTAL METALS and MERCURY

SUMMARY

I.) General:

The analyses for Total Metals were performed according to SW-846 Method 6010C and the analyses for Total Mercury were performed according to SW-846 Method 7470A.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) LLCCV and CRDL:

All LLCCV and CRDL criteria were met. No data qualification was necessary.

IV.) Blanks:

Method Blanks:

Potassium (286 ug/L) and silver (1.87 ug/L) were reported in associated method blank 1284370. Since the associated sample result for potassium was greater than the action level and the associated silver result was reported as non-detect, no data qualification was necessary.

Calibration Blanks:

Potassium (208 ug/L, 209 ug/L, 249 ug/L) and silver (1.53 ug/L, 1.51 ug/L) were reported in associated calibration blanks for the SDG sample. Since the associated sample result for potassium was greater than the action level and the associated silver result was reported as non-detect, no data qualification was necessary.

Equipment Blank:

There was no associated equipment blank submitted for this fraction of the SDG. No data qualification was necessary.

V.) ICP Interference Check Sample Results:

All Interference Check Sample criteria were met. No data qualification was necessary.

VI.) ICP Serial Dilution Analysis:

Serial dilution analysis was performed using sample 49IDW. The Percent Differences (%Ds) for aluminum (47%), iron (51%) and manganese (20%) exceeded the 10% QC limit. The positive results for these analytes in the SDG samples were qualified as estimated (J).

VII.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No data qualification was necessary.

VIII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using sample 49IDW. The parent sample results for aluminum, iron and manganese were greater than 4X the spike concentration, so the results for these analytes were not considered meaningful. The Percent Recoveries (%Rs) for antimony (70%, 78%), beryllium (114%) and thallium (74%) were outside the QC limits. The post spike %R for thallium (77%) was below the QC limits. The non-detect antimony result for the sample was qualified as estimated (UJ) and the positive thallium result for the sample was qualified as estimated (J). Since the %R for beryllium exceeded the QC limit and the parent sample result was non-detect, no data qualification was necessary for this analyte.

IX.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No data qualification was necessary.

X.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No data qualification was necessary.

ANIONS

SUMMARY

I.) General:

The analyses for Anions were performed according to SW-846 Method 9056A.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

The 52 to 53 hours for samples 13MW3, 13MW4 and 13MW5 exceeded the 48-hour QC limit for nitrate. The positive nitrate results for these samples were qualified as estimated (J).

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Calibration Blanks:

There were no detections in the associated calibration blanks. No data qualification was necessary.

Equipment Blank:

There were no detections reported in the associated equipment blank for this SDG. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No data qualification was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using samples 13MW5, 48MW1 and 48MW7. All criteria were met. No data qualification was necessary.

VI.) Field Duplicates:

Two sets of field duplicate samples (49MW04 / 49TW04 and 48MW3 / 48TW3) were identified for this SDG. The calculable Relative Percent Differences (RPDs) for the first set were chloride (1.6%) and sulfate (0%) and the calculable difference for nitrate was less than 2X the LOQ. The RPDs for the second set were nitrate (0%) and sulfate (8.2%) and the calculable difference for chloride was less than 2X the LOQ. All criteria were met. No data qualification was necessary.

VII.) Sample Result, Calculation/Transcription Verification:

The sulfate and or chloride results for 13MW5, 13MW4, 13MW3, 48MW6, 48MW3, 48TW3 and 50MW2 were reported from dilution analyses. Since only one sulfate result was reported for each sample, no data qualification was necessary.

TOTAL ORGANIC CARBON

SUMMARY

I.) General:

The analyses for Total Organic Carbon (TOC) were performed according to SW-846 Method 9060A.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Calibration Blanks:

There were no detections in the associated calibration blanks. No data qualification was necessary.

Equipment Blank:

There was no detection reported in the associated equipment blank for this SDG. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No data qualification was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using samples 13MW5 and 50MW2. All criteria were met.

No data qualification was necessary.

VI.) Field Duplicates:

Two sets of field duplicate samples (48MW04 / 49TW04 and 48MW3 / 48TW3) were identified for this SDG. There were no calculable RPD or differences, so no data qualification was necessary.

VII.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No data qualification was necessary.

CHEMICAL OXYGEN DEMAND (COD)

SUMMARY

I.) General:

The analyses for Chemical Oxygen Demand (COD) were performed according to EPA Method 410.4.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Calibration Blanks:

There were no detections in the associated calibration blanks. No data qualification was necessary.

Equipment Blank:

There was no associated equipment blank submitted for this fraction of the SDG. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No data qualification was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using sample 49IDW. The Percent Recoveries (%Rs) at 122% and 124% exceeded the QC limits. The positive result for the sample was qualified as estimated (J).

VI.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No data qualification was necessary.

VII.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No data qualification was necessary.

pH

SUMMARY

I.) General:

The analyses for pH were performed according to SW-846 Method 9040C.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

All Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Blanks data were not required for this fraction of the SDG. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

LCS data was not required for this fraction of the SDG. No data qualification was necessary.

V.) Matrix Duplicate (MD):

MD analysis was performed using sample 49IDW. All criteria were met. No data qualification was necessary.

VI.) Field Duplicates:

There were no field duplicate samples identified for this SDG. No data qualification was necessary.

VII.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No data qualification was necessary.

DATA VALIDATION SUMMARY

CT Laboratories LLC – 175012 - Organics & Inorganics

TOTAL METALS and MERCURY

SUMMARY

I.) General:

The analyses for Total Metals were performed according to SW-846 Method 6010C and the analyses for Total Mercury were performed according to SW-846 Method 7470A.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) LLCCV and CRDL:

All LLCCV and CRDL criteria were met. No data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections reported in the associated method blanks. No data qualification was necessary.

Calibration Blanks:

Copper (-5.6 ug/L) and silver (1.10 ug/L, 1.18 ug/L) were reported in associated calibration blanks for the SDG sample. Since the absolute value of the blank result for copper was less than the LOD, the non-detect copper result for the sample was qualified as estimated (UJ). The sample result for silver was non-detect, so no data qualification was necessary for this analyte.

Equipment Blank:

There was no associated equipment blank submitted for this fraction of the SDG. No data qualification was necessary.

V.) ICP Interference Check Sample Results:

All Interference Check Sample criteria were met. No data qualification was necessary.

VI.) ICP Serial Dilution Analysis:

Serial dilution analysis was performed using sample 54IDW. The Percent Differences (%Ds) for calcium (37%) and magnesium (37%) exceeded the 10% QC limit. The positive results for these analytes in the SDG samples were qualified as estimated (J).

VII.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No data qualification was necessary.

VIII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using sample 54IDW. The Percent Recoveries (%Rs) for cobalt (88%) and mercury (46%, 46%) were below the QC limits. All post spike criteria were met. The non-detect cobalt and mercury results for the sample were qualified as estimated (UJ).

IX.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No data qualification was necessary.

X.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No data qualification was necessary.

ANIONS

SUMMARY

I.) General:

The analyses for Anions were performed according to SW-846 Method 9056A.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Calibration Blanks:

There were no detections in the associated calibration blanks. No data qualification was necessary.

Equipment Blank:

There was no associated equipment blank for this SDG. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No data qualification was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using sample 54MW13. The parent sample result for sulfate was greater than 4X the spike concentration, so the sulfate results were not considered meaningful. All other criteria were met. No data qualification was necessary.

VI.) Field Duplicates:

One set of field duplicate samples (54MW13 / 54TW13) was identified for this SDG. The calculable Relative Percent Differences (RPDs) were chloride (1.5%), nitrate (1.8%) and sulfate (5.6%), which were all within the QC limit. No data qualification was necessary.

VII.) Sample Result, Calculation/Transcription Verification:

The sulfate result for sample 54MW10 was reported from a dilution analysis. Since only one sulfate result was reported for the sample, no data qualification was necessary.

TOTAL INORGANIC AND TOTAL ORGANIC CARBON

SUMMARY

I.) General:

The analyses for Total Inorganic Carbon (TIC) and Total Organic Carbon (TOC) were performed according to SW-846 Method 9060A.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Calibration Blanks:

There were no detections in the associated calibration blanks. No data qualification was necessary.

Equipment Blank:

There was no associated equipment blank submitted for this SDG. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No data qualification was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using sample 54MW12. All criteria were met. No data qualification was necessary.

VI.) Field Duplicates:

One set of field duplicate samples (54MW13 / 54TW13) was identified for this SDG. The calculable RPD of 1.1% for TIC was within the QC limit. No data qualification was necessary.

VII.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No data qualification was necessary.

CHEMICAL OXYGEN DEMAND (COD)

SUMMARY

I.) General:

The analyses for Chemical Oxygen Demand (COD) were performed according to EPA Method 410.4.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Calibration Blanks:

There were no detections in the associated calibration blanks. No data qualification was necessary.

Equipment Blank:

There was no associated equipment blank submitted for this fraction of the SDG. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No data qualification was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using sample 54IDW. The Percent Recovery (%R) at 111% for the MSD sample exceeded the QC limits. Since the parent sample result was non-detect, no data qualification was necessary.

VI.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No data qualification was necessary.

VII.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No data qualification was necessary.

pH

SUMMARY

I.) General:

The analyses for pH were performed according to SW-846 Method 9040C.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

All Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Blanks data were not required for this fraction of the SDG. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

LCS data was not required for this fraction of the SDG. No data qualification was necessary.

V.) Matrix Duplicate (MD):

MD analysis was performed using sample 54IDW. All criteria were met. No data qualification was necessary.

VI.) Field Duplicates:

There were no field duplicate samples identified for this SDG. No data qualification was necessary.

VII.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No data qualification was necessary.

CHLORATE / CHLORITE

SUMMARY

I.) General:

The analyses for Chlorate / Chlorite were performed according to EPA Method 300.0.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Calibration Blanks:

There were no detections in the associated calibration blanks. No data qualification was necessary.

Equipment Rinsate Blank:

There was no associated equipment rinsate blank for this SDG. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No data qualification was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using samples 54MW10 and 54MW12. The %Rs for chlorate (86%) for 54MW12 and chlorite (85%, 86%) for 54MW10 were below the QC limits. The non-detect results for these analytes in the parent samples were qualified as estimated (UJ).

VI.) Field Duplicates:

One set of field duplicate samples (54MW13 / 54TW13) was identified for this SDG. There were no calculable Relative Percent Differences (RPDs). No data qualification was necessary.

VII.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No data qualification was necessary.

DATA VALIDATION SUMMARY

SGS Orlando, FL – FC2128 - Organics

EXPLOSIVES

SUMMARY

I.) General:

The analyses for Explosives were performed according to SW 846 Method 8330.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification (ICV):

All Initial Calibration Verification criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

IV.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No data qualification was necessary.

V.) Laboratory Control Samples (LCS):

One LCS was analyzed for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VI.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS/ MSD analyses were performed using sample 54MW13. The Percent Recoveries (%Rs) for m-nitrotoluene (129%, 125%) exceeded the QC limits. Data qualification based on MS / MSD data alone was not required. No data qualification was necessary.

VII.) Field Duplicates:

One set of field duplicate samples (54MW13 / 54TW13) was identified for this SDG. The calculable Relative Percent Differences (RPDs) were:

HMX	3.3%
RDX	3.2%
3,5-dinitroaniline	5.0%
2-amino-4,6-dinitrotoluene	6.1%
4-amino-2,6-dinitrotoluene	8.7%
1,3,5-trinitrobenzene	1.7%
2,4,6-trinitrotoluene	0%

All criteria were met. No data qualification was necessary.

VIII.) TCL Compound Identification:

The Column Relative Percent Difference (RPD) exceeded the 40% QC limit for the following compounds:

<u>Sample</u>	<u>Compound</u>	<u>RPD</u>
54MW13	3,5-dinitroaniline	125.4%

54TW13

3,5-dinitroaniline

122.3%

The positive compound results for the listed samples above were qualified as estimated (J).

IX.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL) criteria were met. No data qualification was necessary.

PERCHLORATE

SUMMARY

I.) General:

The analyses for Perchlorate were performed according to SW-846 Method 6350.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification (ICV):

All Initial Calibration Verification criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

One LCS was analyzed for this fraction of the SDG. All criteria were met. No data qualification was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

Batch MS/ MSD analyses data were submitted for this fraction of the SDG. One %R exceeded the QC limits. Data qualification based on batch QC results was not required. No data qualification was necessary.

VI.) Field Duplicates:

One set of field duplicate samples (54MW13 / 54TW13) was identified for this SDG. The calculable Relative Percent Difference (RPD) at 4.1% was within the QC limit. No data qualification was necessary.

VII.) Internal Standards Performance (ISTD):

All ISTD criteria were met. No data qualification was necessary.

VIII.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

IX.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL) criteria were met. No data qualification was necessary.

DATA VALIDATION SUMMARY

SGS Orlando, FL – FC2200 - Organics

EXPLOSIVES

SUMMARY

I.) General:

The analyses for Explosives were performed according to SW 846 Method 8330.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification (ICV):

All Initial Calibration Verification criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

IV.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No data qualification was necessary.

V.) Laboratory Control Samples (LCS):

One LCS was analyzed for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VI.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS/ MSD analyses were performed using sample 54MW12. All criteria were met. No data qualification was necessary.

VII.) Field Duplicates:

There were no field duplicate samples identified for this SDG. No data qualification was necessary.

VIII.) TCL Compound Identification:

The Column Relative Percent Difference (RPD) exceeded the 40% QC limit for the following compound:

<u>Sample</u>	<u>Compound</u>	<u>RPD</u>
54MW12	3,5-dinitroaniline	83.3%

The positive compound results for the listed sample above was qualified as estimated (J).

IX.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL) criteria were met. No data qualification was necessary.

PERCHLORATE

SUMMARY

I.) General:

The analyses for Perchlorate were performed according to SW-846 Method 6350.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification (ICV):

All Initial Calibration Verification criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

One LCS was analyzed for this fraction of the SDG. All criteria were met. No data qualification

was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS/ MSD analyses were performed using SDG sample 54MW12. The Percent Recovery (%R) at 135% for the MSD sample exceeded the QC limits. Data qualification based on MS / MSD criteria alone was not required. No data qualification was necessary.

VI.) Field Duplicates:

There were no field duplicate samples identified for this SDG. No data qualification was necessary.

VII.) Internal Standards Performance (ISTD):

All ISTD criteria were met. No data qualification was necessary.

VIII.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

IX.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL) criteria were met. No data qualification was necessary.

Appendix A

Qualified Form Is

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW2

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix:	GROUND WATER	SDG No.:	175065
Sample wt/vol:	23.2 (g/mL)	CTL Sample ID:	1283675
% Solids:		Date Received:	01/26/2023
Soil Extract Vol:	23.2 (mL)	Date/Time Prepared:	01/31/2023 / 07:05
Analytical Method:	RSK 175	Analytical Prep Batch #:	128475
Analytical Run #:	268888	Dilution Factor:	1
Date & Time Analyzed:	01/31/2023 / 10:01	GPC (3640A) Cleanup Date/Time:	/

Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG012323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49

Matrix: GROUND WATER SDG No.: 175065

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1283675

% Solids: _____ Date Received: 01/26/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 268886 Dilution Factor: 1

Date & Time Analyzed: 02/01/2023 / 14:43 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1283675
% Solids: Date Received: 01/26/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268886 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 14:43 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U Z UJ	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U Z UJ	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1283675
% Solids: Date Received: 01/26/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268886 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 14:43 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

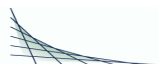
TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U Z JJ	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

ALH 9/19/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

13MW3

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix:	GROUND WATER	SDG No.:	175065
Sample wt/vol:	23.2 (g/mL)	CTL Sample ID:	1283672
% Solids:		Date Received:	01/26/2023
Soil Extract Vol:	23.2 (mL)	Date/Time Prepared:	01/31/2023 / 07:05
Analytical Method:	RSK 175	Analytical Prep Batch #:	128475
Analytical Run #:	268888	Dilution Factor:	1
Date & Time Analyzed:	01/31/2023 / 08:56	GPC (3640A) Cleanup Date/Time:	/

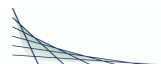
Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG012323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW3

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1283672
% Solids: Date Received: 01/26/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268886 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 13:14 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW3

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1283672
% Solids: Date Received: 01/26/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268886 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 13:14 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	5.4		0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0 --0.57	J-- U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U Z UJ	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U Z UJ	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW3

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1283672
% Solids: Date Received: 01/26/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268886 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 13:14 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

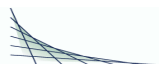
TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	0.88	J	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U Z	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

ALH 9/19/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW4

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix:	GROUND WATER	SDG No.:	175065
Sample wt/vol:	23.2 (g/mL)	CTL Sample ID:	1283671
% Solids:		Date Received:	01/26/2023
Soil Extract Vol:	23.2 (mL)	Date/Time Prepared:	01/31/2023 / 07:05
Analytical Method:	RSK 175	Analytical Prep Batch #:	128475
Analytical Run #:	268888	Dilution Factor:	1
Date & Time Analyzed:	01/31/2023 / 08:46	GPC (3640A) Cleanup Date/Time:	/

Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG012323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.63	J	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW4

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49

Matrix: GROUND WATER SDG No.: 175065

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1283671

% Solids: _____ Date Received: 01/26/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 268886 Dilution Factor: 1

Date & Time Analyzed: 02/01/2023 / 12:44 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW4

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1283671
% Solids: Date Received: 01/26/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268886 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 12:44 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U Z UJ	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U Z UJ	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

ALH 9/19/23

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW4

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1283671
% Solids: Date Received: 01/26/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268886 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 12:44 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	0.91	J	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U Z JJ	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

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Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW5

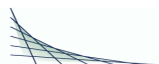
Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: 23.2 (g/mL) CTL Sample ID: 1283670
% Solids: Date Received: 01/26/2023
Soil Extract Vol: 23.2 (mL) Date/Time Prepared: 01/31/2023 / 07:05
Analytical Method: RSK 175 Analytical Prep Batch #: 128475
Analytical Run #: 268888 Dilution Factor: 1
Date & Time Analyzed: 01/31/2023 / 08:29 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: P4DG012323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW5

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49

Matrix: GROUND WATER SDG No.: 175065

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1283670

% Solids: _____ Date Received: 01/26/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 268886 Dilution Factor: 1

Date & Time Analyzed: 02/01/2023 / 12:14 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW5

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1283670
% Solids: Date Received: 01/26/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268886 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 12:14 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U Z UJ	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U Z UJ	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

ALH 9/19/23

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW5

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1283670
% Solids: Date Received: 01/26/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268886 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 12:14 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

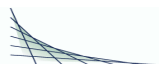
TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U Z UU	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

ALH 9/19/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

48MW1

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix:	GROUND WATER	SDG No.:	175065
Sample wt/vol:	22.6 (g/mL)	CTL Sample ID:	1284317
% Solids:		Date Received:	01/28/2023
Soil Extract Vol:	22.6 (mL)	Date/Time Prepared:	01/31/2023 / 07:15
Analytical Method:	RSK 175	Analytical Prep Batch #:	128476
Analytical Run #:	268889	Dilution Factor:	1
Date & Time Analyzed:	02/01/2023 / 09:58	GPC (3640A) Cleanup Date/Time:	/

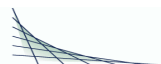
Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG012323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW1

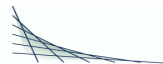
Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284317
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 16:42 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW1

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 175065

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1284317

% Solids: _____ Date Received: 01/28/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: /

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 268887 Dilution Factor: 1

Date & Time Analyzed: 02/01/2023 / 16:42 GPC (3640A) Cleanup Date/Time: /

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U Z UU	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U Z UU	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW1

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284317
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 16:42 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	0.47	J	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U Z JJ	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

ALH 9/9/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW1-EQB

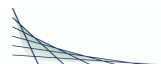
Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: 22.6 (g/mL) CTL Sample ID: 1284318
% Solids: Date Received: 01/28/2023
Soil Extract Vol: 22.6 (mL) Date/Time Prepared: 01/31/2023 / 07:15
Analytical Method: RSK 175 Analytical Prep Batch #: 128476
Analytical Run #: 268889 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 10:03 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: P4DG012323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW1-EQB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284318
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 17:12 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.65		0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW1-EQB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284318
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 17:12 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.2	J	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	0.88	J	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U Z JJ	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U Z JJ	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

ALH 9/19/23



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW1-EQB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284318
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 17:12 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U Z UJ	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

ALH/9/19/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 175065

Sample wt/vol: 22.6 (g/mL) CTL Sample ID: 1284320

% Solids: Date Received: 01/28/2023

Soil Extract Vol: 22.6 (mL) Date/Time Prepared: 01/31/2023 / 07:15

Analytical Method: RSK 175 Analytical Prep Batch #: 128476

Analytical Run #: 268889 Dilution Factor: 1

Date & Time Analyzed: 02/01/2023 / 10:10 GPC (3640A) Cleanup Date/Time: /

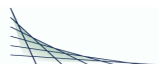
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: P4DG012323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	1.00		0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 175065

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1284320

% Solids: _____ Date Received: 01/28/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 268887 Dilution Factor: 1

Date & Time Analyzed: 02/01/2023 / 18:11 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284320
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 18:11 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	14		0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	2.8		0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U Z JJ	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U Z JJ	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

ALH 9/19/23

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284320
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 18:11 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

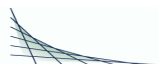
TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	0.71	J	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U Z JJ	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

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Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

48MW3

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 175065

Sample wt/vol: 22.6 (g/mL) CTL Sample ID: 1284321

% Solids: Date Received: 01/28/2023

Soil Extract Vol: 22.6 (mL) Date/Time Prepared: 01/31/2023 / 07:15

Analytical Method: RSK 175 Analytical Prep Batch #: 128476

Analytical Run #: 268889 Dilution Factor: 1

Date & Time Analyzed: 02/01/2023 / 10:17 GPC (3640A) Cleanup Date/Time: /

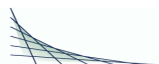
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: P4DG012323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW3

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 175065

Sample wt/vol: (g/mL) CTL Sample ID: 1284321

% Solids: Date Received: 01/28/2023

Soil Extract Vol: (mL) Date/Time Prepared: /

Analytical Method: EPA 8260C Analytical Prep Batch #:

Analytical Run #: 268887 Dilution Factor: 1

Date & Time Analyzed: 02/01/2023 / 18:42 GPC (3640A) Cleanup Date/Time: /

Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW3

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284321
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 18:42 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	53		0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	8.7		0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U Z JJ	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U Z JJ	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

ALH 9/19/23



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

48MW3

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284321
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 18:42 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	10		0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U Z UJ	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

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Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW6

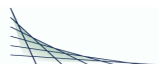
Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: 22.6 (g/mL) CTL Sample ID: 1284316
% Solids: Date Received: 01/28/2023
Soil Extract Vol: 22.6 (mL) Date/Time Prepared: 01/31/2023 / 07:15
Analytical Method: RSK 175 Analytical Prep Batch #: 128476
Analytical Run #: 268889 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 09:54 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: P4DG012323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW6

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 175065

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1284316

% Solids: _____ Date Received: 01/28/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 268887 Dilution Factor: 1

Date & Time Analyzed: 02/01/2023 / 16:13 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.6		0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW6

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284316
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 16:13 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	3.6		0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U Z JJ	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U Z JJ	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW6

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284316
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 16:13 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.8		0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U Z UJ	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

ALA 9/19/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW7

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix:	GROUND WATER	SDG No.:	175065
Sample wt/vol:	22.6 (g/mL)	CTL Sample ID:	1284315
% Solids:		Date Received:	01/28/2023
Soil Extract Vol:	22.6 (mL)	Date/Time Prepared:	01/31/2023 / 07:15
Analytical Method:	RSK 175	Analytical Prep Batch #:	128476
Analytical Run #:	268889	Dilution Factor:	1
Date & Time Analyzed:	02/01/2023 / 09:50	GPC (3640A) Cleanup Date/Time:	/

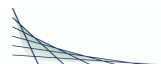
Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG012323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.51	J T	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U T	0.59	1.2	1.4	1.4
74-82-8	Methane	0.93	J T	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW7

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 175065

Sample wt/vol: (g/mL) CTL Sample ID: 1284315

% Solids: Date Received: 01/28/2023

Soil Extract Vol: (mL) Date/Time Prepared: /

Analytical Method: EPA 8260C Analytical Prep Batch #:

Analytical Run #: 268887 Dilution Factor: 1

Date & Time Analyzed: 02/01/2023 / 15:42 GPC (3640A) Cleanup Date/Time: /

Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U T	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U T	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U T	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U T	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U T	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U T	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U T	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U T	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U T	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U T	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U T	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U T	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U T	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U T	34	50	100	100
78-93-3	2-Butanone	10	U T	2.9	10	11	11
591-78-6	2-Hexanone	10	U T	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U T	3.7	10	12	12
67-64-1	Acetone	10	U T	4.1	10	20	20
71-43-2	Benzene	1.0	U T	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U T	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U T	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U T	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW7

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284315
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 15:42 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U T	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U T	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U T	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U T	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U T	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U T	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U T	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U T	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U T	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U T	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U T	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U T	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U T	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U TZ UJ	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U T	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U T	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U T	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U T	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U TZ UJ	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U T	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U T	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U T	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW7

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284315
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 15:42 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U T	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U T	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U T	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U T	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U T	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U TZ	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U T	0.12	0.25	0.50	0.50

ALA 9/19/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48TW3

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix:	GROUND WATER	SDG No.:	175065
Sample wt/vol:	22.6 (g/mL)	CTL Sample ID:	1284322
% Solids:		Date Received:	01/28/2023
Soil Extract Vol:	22.6 (mL)	Date/Time Prepared:	01/31/2023 / 07:15
Analytical Method:	RSK 175	Analytical Prep Batch #:	128476
Analytical Run #:	268889	Dilution Factor:	1
Date & Time Analyzed:	02/01/2023 / 10:48	GPC (3640A) Cleanup Date/Time:	/

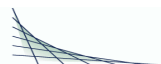
Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG012323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48TW3

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 175065

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1284322

% Solids: _____ Date Received: 01/28/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 268887 Dilution Factor: 1

Date & Time Analyzed: 02/01/2023 / 19:11 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48TW3

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284322
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 19:11 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	55		0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	8.8		0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U Z JJ	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U Z JJ	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

ALH 9/19/23

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48TW3

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284322
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 19:11 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

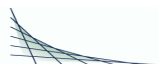
TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	11		0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U Z	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

ALH/9/19/23



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

49MW01

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49</u>
Matrix:	<u>GROUND WATER</u>	SDG No.:	<u>175065</u>
Sample wt/vol:	<u>22.6</u> (g/mL)	CTL Sample ID:	<u>1284323</u>
% Solids:		Date Received:	<u>01/28/2023</u>
Soil Extract Vol:	<u>22.6</u> (mL)	Date/Time Prepared:	<u>01/31/2023 / 07:15</u>
Analytical Method:	<u>RSK 175</u>	Analytical Prep Batch #:	<u>128476</u>
Analytical Run #:	<u>268889</u>	Dilution Factor:	<u>1</u>
Date & Time Analyzed:	<u>02/01/2023 / 11:19</u>	GPC (3640A) Cleanup Date/Time:	<u>/</u>

Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG012323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW01

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
 Matrix: GROUND WATER SDG No.: 175065
 Sample wt/vol: _____ (g/mL) CTL Sample ID: 1284323
 % Solids: _____ Date Received: 01/28/2023
 Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____
 Analytical Method: EPA 8260C Analytical Prep Batch #: _____
 Analytical Run #: 268887 Dilution Factor: 1
 Date & Time Analyzed: 02/01/2023 / 19:40 GPC (3640A) Cleanup Date/Time: _____ / _____
 Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W010323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW01

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: _____ (g/mL) CTL Sample ID: 1284323
% Solids: _____ Date Received: 01/28/2023
Soil Extract Vol: _____ (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #: _____
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 19:40 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	2.6		0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U Z UJ	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U Z UJ	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

ALH 9/19/23

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW01

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284323
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 19:40 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

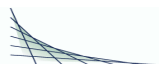
TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U Z JJ	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

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Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

49MW03

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix:	GROUND WATER	SDG No.:	175065
Sample wt/vol:	22.6 (g/mL)	CTL Sample ID:	1284319
% Solids:		Date Received:	01/28/2023
Soil Extract Vol:	22.6 (mL)	Date/Time Prepared:	01/31/2023 / 07:15
Analytical Method:	RSK 175	Analytical Prep Batch #:	128476
Analytical Run #:	268889	Dilution Factor:	1
Date & Time Analyzed:	02/01/2023 / 10:06	GPC (3640A) Cleanup Date/Time:	/

Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG012323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	4.5		0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW03

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 175065

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1284319

% Solids: _____ Date Received: 01/28/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 268887 Dilution Factor: 1

Date & Time Analyzed: 02/01/2023 / 17:43 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW03

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284319
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 17:43 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U Z JJ	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U Z JJ	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

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1A

VOLATILE ORGANICS ANALYSIS

Sample Description

49MW03

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284319
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 17:43 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

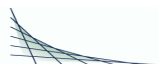
TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U Z JJ	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

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Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

49MW04

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix:	GROUND WATER	SDG No.:	175065
Sample wt/vol:	23.2 (g/mL)	CTL Sample ID:	1283673
% Solids:		Date Received:	01/26/2023
Soil Extract Vol:	23.2 (mL)	Date/Time Prepared:	01/31/2023 / 07:05
Analytical Method:	RSK 175	Analytical Prep Batch #:	128475
Analytical Run #:	268888	Dilution Factor:	1
Date & Time Analyzed:	01/31/2023 / 09:02	GPC (3640A) Cleanup Date/Time:	/

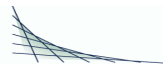
Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG012323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW04

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1283673
% Solids: Date Received: 01/26/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268886 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 13:44 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW04

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1283673
% Solids: Date Received: 01/26/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268886 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 13:44 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.4		0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U Z UJ	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U Z UJ	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW04

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1283673
% Solids: Date Received: 01/26/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268886 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 13:44 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

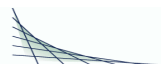
TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U Z UJ	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

ALH 9/19/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW05

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix:	GROUND WATER	SDG No.:	175065
Sample wt/vol:	23.2 (g/mL)	CTL Sample ID:	1283676
% Solids:		Date Received:	01/26/2023
Soil Extract Vol:	23.2 (mL)	Date/Time Prepared:	01/31/2023 / 07:05
Analytical Method:	RSK 175	Analytical Prep Batch #:	128475
Analytical Run #:	268888	Dilution Factor:	1
Date & Time Analyzed:	01/31/2023 / 10:10	GPC (3640A) Cleanup Date/Time:	/

Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG012323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW05

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49

Matrix: GROUND WATER SDG No.: 175065

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1283676

% Solids: _____ Date Received: 01/26/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 268886 Dilution Factor: 1

Date & Time Analyzed: 02/01/2023 / 15:14 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW05

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1283676
% Solids: Date Received: 01/26/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268886 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 15:14 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U Z UJ	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U Z UJ	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

ALH 9/19/23



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW05

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1283676
% Solids: Date Received: 01/26/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268886 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 15:14 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

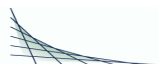
TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U Z JJ	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

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Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TW04

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix:	GROUND WATER	SDG No.:	175065
Sample wt/vol:	23.2 (g/mL)	CTL Sample ID:	1283674
% Solids:		Date Received:	01/26/2023
Soil Extract Vol:	23.2 (mL)	Date/Time Prepared:	01/31/2023 / 07:05
Analytical Method:	RSK 175	Analytical Prep Batch #:	128475
Analytical Run #:	268888	Dilution Factor:	1
Date & Time Analyzed:	01/31/2023 / 09:51	GPC (3640A) Cleanup Date/Time:	/

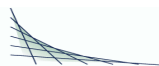
Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG012323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TW04

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49

Matrix: GROUND WATER SDG No.: 175065

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1283674

% Solids: _____ Date Received: 01/26/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 268886 Dilution Factor: 1

Date & Time Analyzed: 02/01/2023 / 14:12 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TW04

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1283674
% Solids: Date Received: 01/26/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268886 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 14:12 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.4		0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U Z UJ	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U Z UJ	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

ALH 9/19/23

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TW04

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1283674
% Solids: Date Received: 01/26/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268886 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 14:12 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U Z JJ	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

ALA 9/19/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

50MW2

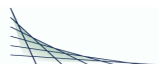
Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: 22.6 (g/mL) CTL Sample ID: 1284324
% Solids: Date Received: 01/28/2023
Soil Extract Vol: 22.6 (mL) Date/Time Prepared: 01/31/2023 / 07:15
Analytical Method: RSK 175 Analytical Prep Batch #: 128476
Analytical Run #: 268889 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 11:23 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: P4DG012323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	1.1		0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

50MW2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 175065

Sample wt/vol: (g/mL) CTL Sample ID: 1284324

% Solids: Date Received: 01/28/2023

Soil Extract Vol: (mL) Date/Time Prepared: /

Analytical Method: EPA 8260C Analytical Prep Batch #:

Analytical Run #: 268887 Dilution Factor: 1

Date & Time Analyzed: 02/01/2023 / 20:10 GPC (3640A) Cleanup Date/Time: /

Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

50MW2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284324
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 20:10 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.3		0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U Z UJ	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U Z UJ	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

50MW2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284324
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 20:10 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

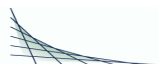
TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	0.83	J	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U Z UJ	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

ALH 9/19/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

TB-1

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49

Matrix: TRIP BLANK SDG No.: 175065

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1283669

% Solids: _____ Date Received: 01/26/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 268886 Dilution Factor: 1

Date & Time Analyzed: 02/01/2023 / 11:16 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W010323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

TB-1

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix: TRIP BLANK SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1283669
% Solids: Date Received: 01/26/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268886 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 11:16 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U Z UJ	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U Z UJ	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

TB-1

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49
Matrix: TRIP BLANK SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1283669
% Solids: Date Received: 01/26/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268886 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 11:16 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

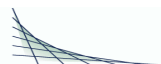
TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U Z JJ	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

ALH 9/19/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

TB-2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: TRIP BLANK SDG No.: 175065

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1284314

% Solids: _____ Date Received: 01/28/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 268887 Dilution Factor: 1

Date & Time Analyzed: 02/01/2023 / 11:44 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W010323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

TB-2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: TRIP BLANK SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284314
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 11:44 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U Z UJ	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U Z UJ	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

TB-2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: TRIP BLANK SDG No.: 175065
Sample wt/vol: (g/mL) CTL Sample ID: 1284314
% Solids: Date Received: 01/28/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 268887 Dilution Factor: 1
Date & Time Analyzed: 02/01/2023 / 11:44 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W010323. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U Z JJ	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

ALA 9/19/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



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INORGANIC ANALYSIS DATA SHEET

Sample Description

49IDW

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175065</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1284325</u>	
Analytical Method:	<u>EPA 7470A</u>	Date Received:	<u>01/28/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>268967</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u>128485</u>	Analysis Date/Time:	<u>02/02/2023</u>	<u>10:40</u>
		Prep. Date/Time:	<u>01/31/2023</u>	<u>14:30</u>

Concentration Units: ug/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-97-6	Total Mercury	0.080	U	0.020	0.080	0.12	0.12

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49IDW

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix (soil/water):	GROUND WATER	SDG No.:	175065
% Solids:		Lab Sample ID:	1284325
Analytical Method:	EPA 6010C	Date Received:	01/28/2023
Dilution Factor:	1	TCLP (1311) /SPLP(1312)	
Analytical Run #:	268912	Extraction Date/time:	
Analytical Prep Batch #:	128482	Analysis Date/Time:	01/31/2023 17:14
		Prep. Date/Time:	01/30/2023 10:30

Concentration Units: ug/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7429-90-5	Total Aluminum	17400	J	29	60	120	120
7440-36-0	Total Antimony	10	U JJ	4.4	10	20	20
7440-38-2	Total Arsenic	8.8	J	7.7	20	40	40
7440-39-3	Total Barium	198		0.71	2.0	4.0	4.0
7440-41-7	Total Beryllium	3.0	U	0.95	3.0	8.0	8.0
7440-43-9	Total Cadmium	1.0	U	0.41	1.0	2.0	2.0
7440-70-2	Total Calcium	138000		17	50	100	100
7440-47-3	Total Chromium	26.1		1.1	2.5	5.0	5.0
7440-48-4	Total Cobalt	12.3		0.55	2.5	5.0	5.0
7440-50-8	Total Copper	32.0	J	5.2	20	40	40
7439-89-6	Total Iron	23100	M J	11	40	80	80
7439-92-1	Total Lead	29.5		1.4	2.0	4.0	4.6
7439-95-4	Total Magnesium	80200		10	25	40	40
7439-96-5	Total Manganese	826	M J	1.4	3.0	5.0	5.0
7440-02-0	Total Nickel	21.7		1.5	3.0	5.0	5.0
7440-09-7	Total Potassium	6060		120	250	500	500
7782-49-2	Total Selenium	20	U	10	20	40	40
7440-22-4	Total Silver	2.5	U	1.1	2.5	5.0	5.0
7440-23-5	Total Sodium	20400		200	500	700	700
7440-28-0	Total Thallium	8.9	J M J	6.8	20	40	40
7440-62-2	Total Vanadium	27.5		1.3	3.0	5.0	5.0
7440-66-6	Total Zinc	82.2		4.5	10	20	20

ALH 9/19/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

13MW2

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1283675	
Analytical Method:	EPA 9056A	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268838	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/26/2023	14:01
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	3.4		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.31	J	0.12	0.20	0.40	0.40
14808-79-8	Sulfate	43		0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

13MW2

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1283675	
Analytical Method:	EPA 9060A	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268891	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	17:15
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

13MW3

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1283672	
Analytical Method:	EPA 9056A	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268838	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/26/2023	15:22
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	4.3		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	2.1	H	0.12	0.20	0.40	0.40

ALH 9/19/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

13MW3

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175065</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1283672</u>	
Analytical Method:	<u>EPA 9060A</u>	Date Received:	<u>01/26/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>268891</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/30/2023</u>	<u>16:35</u>
		Prep. Date/Time:	<u></u>	

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

13MW3

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1283672	
Analytical Method:	EPA 9056A	Date Received:	01/26/2023	
Dilution Factor:	5	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268838	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/26/2023	19:04
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
14808-79-8	Sulfate	110		4.0	7.5	15	15

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

13MW4

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1283671	
Analytical Method:	EPA 9056A	Date Received:	01/26/2023	
Dilution Factor:	5	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268838	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/27/2023	09:33
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
14808-79-8	Sulfate	69		4.0	7.5	15	15

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

13MW4

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1283671	
Analytical Method:	EPA 9056A	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268838	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/26/2023	15:01
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	3.5		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.19	J H J	0.12	0.20	0.40	0.40

ALH 9/19/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

13MW4

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1283671	
Analytical Method:	EPA 9060A	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268891	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	16:17
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

13MW5

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1283670	
Analytical Method:	EPA 9056A	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268838	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/26/2023	14:41
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	4.3		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.79	H J	0.12	0.20	0.40	0.40

ALH 9/19/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

13MW5

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1283670	
Analytical Method:	EPA 9060A	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268891	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	14:44
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

13MW5

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1283670	
Analytical Method:	EPA 9056A	Date Received:	01/26/2023	
Dilution Factor:	5	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268838	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/26/2023	17:43
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
14808-79-8	Sulfate	150		4.0	7.5	15	15

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW1

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1284317	
Analytical Method:	EPA 9056A	Date Received:	01/28/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268885	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/28/2023	14:44
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	5.0		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	1.7		0.12	0.20	0.40	0.40
14808-79-8	Sulfate	53		0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW1

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1284317	
Analytical Method:	EPA 9060A	Date Received:	01/28/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268893	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	20:30
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW1-EQB

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1284318	
Analytical Method:	EPA 9056A	Date Received:	01/28/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268885	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/28/2023	15:04
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	1.5	U	1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.20	U	0.12	0.20	0.40	0.40
14808-79-8	Sulfate	1.5	U	0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW1-EQB

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1284318	
Analytical Method:	EPA 9060A	Date Received:	01/28/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268893	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	20:50
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW2

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1284320	
Analytical Method:	EPA 9056A	Date Received:	01/28/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268885	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/28/2023	15:45
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	1.6	J	1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.74		0.12	0.20	0.40	0.40
14808-79-8	Sulfate	5.6		0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW2

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1284320	
Analytical Method:	EPA 9060A	Date Received:	01/28/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268893	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	21:25
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW3

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175065</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1284321</u>	
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>01/28/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>268885</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/28/2023</u>	<u>16:05</u>
		Prep. Date/Time:	<u></u>	

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	2.6	J	1.0	1.5	3.0	3.2
14808-79-8	Sulfate	35		0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW3

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1284321	
Analytical Method:	EPA 9056A	Date Received:	01/28/2023	
Dilution Factor:	5	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268885	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/28/2023	19:27
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
14797-55-8	Nitrate Nitrogen	6.3		0.60	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW3

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1284321	
Analytical Method:	EPA 9060A	Date Received:	01/28/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268893	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	21:36
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW6

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1283980	
Analytical Method:	EPA 9056A	Date Received:	01/27/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268868	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/27/2023	13:26
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	11		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	2.0		0.12	0.20	0.40	0.40

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW6

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49</u>
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175065</u>
% Solids:	<u></u>	Lab Sample ID:	<u>1283980</u>
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>01/27/2023</u>
Dilution Factor:	<u>5</u>	TCLP (1311) /SPLP(1312)	<u></u>
Analytical Run #:	<u>268868</u>	Extraction Date/time:	<u></u>
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/27/2023 13:46</u>
		Prep. Date/Time:	<u></u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
14808-79-8	Sulfate	120		4.0	7.5	15	15

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW6

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1283980	
Analytical Method:	EPA 9060A	Date Received:	01/27/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268891	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	20:19
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	0.65	J	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW7

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1283979	
Analytical Method:	EPA 9056A	Date Received:	01/27/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268868	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/27/2023	13:05
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	1.3	J	1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.94		0.12	0.20	0.40	0.40
14808-79-8	Sulfate	3.0		0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW7

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1283979	
Analytical Method:	EPA 9060A	Date Received:	01/27/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268891	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	20:02
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48TW3

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1284322	
Analytical Method:	EPA 9056A	Date Received:	01/28/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268885	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/28/2023	16:25
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	2.6	J	1.0	1.5	3.0	3.2
14808-79-8	Sulfate	38		0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48TW3

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1284322	
Analytical Method:	EPA 9056A	Date Received:	01/28/2023	
Dilution Factor:	5	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268885	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/28/2023	19:47
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
14797-55-8	Nitrate Nitrogen	6.3		0.60	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



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INORGANIC ANALYSIS DATA SHEET

Sample Description

48TW3

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1284322	
Analytical Method:	EPA 9060A	Date Received:	01/28/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268893	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	22:28
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49IDW

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1284325	
Analytical Method:	EPA 410.4	Date Received:	01/28/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	269036	Extraction Date/time:		
Analytical Prep Batch #:	128538	Analysis Date/Time:	02/07/2023	13:41
		Prep. Date/Time:	02/04/2023	08:40

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
COD	COD	74	J M J	18	50	75	75

ALH 9/19/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



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INORGANIC ANALYSIS DATA SHEET

Sample Description

49IDW

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175065</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1284325</u>	
Analytical Method:	<u>EPA 9040C</u>	Date Received:	<u>01/28/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>268915</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/30/2023</u>	<u>15:10</u>
		Prep. Date/Time:	<u></u>	

Concentration Units: S.U.

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
PH	pH	7.62		0.1	0.1	0.1	0.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49MW01

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1284323	
Analytical Method:	EPA 9056A	Date Received:	01/28/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268885	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/28/2023	16:45
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	4.8		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.33	J	0.12	0.20	0.40	0.40
14808-79-8	Sulfate	1.9	J	0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49MW01

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49</u>
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175065</u>
% Solids:	<u></u>	Lab Sample ID:	<u>1284323</u>
Analytical Method:	<u>EPA 9060A</u>	Date Received:	<u>01/28/2023</u>
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>
Analytical Run #:	<u>268893</u>	Extraction Date/time:	<u></u>
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/30/2023 22:46</u>
		Prep. Date/Time:	<u></u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49MW03

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175065</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1284319</u>	
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>01/28/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>268885</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/28/2023</u>	<u>15:24</u>
		Prep. Date/Time:	<u></u>	

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	4.5		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	1.0		0.12	0.20	0.40	0.40
14808-79-8	Sulfate	11		0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49MW03

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1284319	
Analytical Method:	EPA 9060A	Date Received:	01/28/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268893	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	21:08
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49MW04

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49</u>
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175065</u>
% Solids:	<u></u>	Lab Sample ID:	<u>1283673</u>
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>01/26/2023</u>
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>
Analytical Run #:	<u>268838</u>	Extraction Date/time:	<u></u>
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/26/2023 13:20</u>
		Prep. Date/Time:	<u></u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	6.3		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.38	J	0.12	0.20	0.40	0.40
14808-79-8	Sulfate	64		0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49MW04

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1283673	
Analytical Method:	EPA 9060A	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268891	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	16:52
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

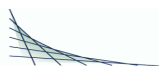
49MW05

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175065</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1283676</u>	
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>01/26/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>268838</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/26/2023</u>	<u>14:21</u>
		Prep. Date/Time:	<u></u>	

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	2.5	J	1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.20	U	0.12	0.20	0.40	0.40
14808-79-8	Sulfate	44		0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



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INORGANIC ANALYSIS DATA SHEET

Sample Description

49MW05

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175065</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1283676</u>	
Analytical Method:	<u>EPA 9060A</u>	Date Received:	<u>01/26/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>268891</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/30/2023</u>	<u>17:34</u>
		Prep. Date/Time:	<u></u>	

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49TW04

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49</u>
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175065</u>
% Solids:	<u></u>	Lab Sample ID:	<u>1283674</u>
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>01/26/2023</u>
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>
Analytical Run #:	<u>268838</u>	Extraction Date/time:	<u></u>
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/26/2023 13:41</u>
		Prep. Date/Time:	<u></u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	6.4		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.39	J	0.12	0.20	0.40	0.40
14808-79-8	Sulfate	64		0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49TW04

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SMWU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1283674	
Analytical Method:	EPA 9060A	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268891	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	17:03
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

50MW2

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49</u>
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175065</u>
% Solids:	<u></u>	Lab Sample ID:	<u>1284324</u>
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>01/28/2023</u>
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>
Analytical Run #:	<u>268885</u>	Extraction Date/time:	<u></u>
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/28/2023 17:05</u>
		Prep. Date/Time:	<u></u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	6.3		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	1.9		0.12	0.20	0.40	0.40

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

50MW2

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1284324	
Analytical Method:	EPA 9056A	Date Received:	01/28/2023	
Dilution Factor:	5	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268885	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/28/2023	20:28
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
14808-79-8	Sulfate	80		4.0	7.5	15	15

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

50MW2

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	175065	
% Solids:		Lab Sample ID:	1284324	
Analytical Method:	EPA 9060A	Date Received:	01/28/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268893	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	22:57
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54 IDW

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1283774	
Analytical Method:	EPA 7470A	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268967	Extraction Date/time:		
Analytical Prep Batch #:	128485	Analysis Date/Time:	02/02/2023	10:37
		Prep. Date/Time:	01/31/2023	14:30

Concentration Units: ug/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-97-6	Total Mercury	0.080	U M UJ	0.020	0.080	0.12	0.12

ALH 9/19/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54 IDW

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1283774	
Analytical Method:	EPA 6010C	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268847	Extraction Date/time:		
Analytical Prep Batch #:	128465	Analysis Date/Time:	01/27/2023	16:43
		Prep. Date/Time:	01/26/2023	13:10

Concentration Units: ug/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7429-90-5	Total Aluminum	461		29	60	120	120
7440-36-0	Total Antimony	10	U	4.4	10	20	20
7440-38-2	Total Arsenic	20	U	7.7	20	40	40
7440-39-3	Total Barium	55.4		0.71	2.0	4.0	4.0
7440-41-7	Total Beryllium	3.0	U	0.95	3.0	8.0	8.0
7440-43-9	Total Cadmium	1.0	U	0.41	1.0	2.0	2.0
7440-70-2	Total Calcium	51900	J	17	50	100	100
7440-47-3	Total Chromium	3.1	J	1.1	2.5	5.0	5.0
7440-48-4	Total Cobalt	2.5	U JJ	0.55	2.5	5.0	5.0
7440-50-8	Total Copper	20	U JJ	5.2	20	40	40
7439-89-6	Total Iron	484		11	40	80	80
7439-92-1	Total Lead	2.0	U	1.4	2.0	4.0	4.6
7439-95-4	Total Magnesium	24300	J	10	25	40	40
7439-96-5	Total Manganese	19.0		1.4	3.0	5.0	5.0
7440-02-0	Total Nickel	3.0	U	1.5	3.0	5.0	5.0
7440-09-7	Total Potassium	1500		120	250	500	500
7782-49-2	Total Selenium	20	U	10	20	40	40
7440-22-4	Total Silver	2.5	U	1.1	2.5	5.0	5.0
7440-23-5	Total Sodium	19400		200	500	700	700
7440-28-0	Total Thallium	20	U	6.8	20	40	40
7440-62-2	Total Vanadium	3.0	U	1.3	3.0	5.0	5.0
7440-66-6	Total Zinc	7.8	J	4.5	10	20	20

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54IDW

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1283774	
Analytical Method:	EPA 410.4	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	269035	Extraction Date/time:		
Analytical Prep Batch #:	128537	Analysis Date/Time:	02/07/2023	13:36
		Prep. Date/Time:	02/04/2023	08:39

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
COD	COD	50	U M	18	50	75	75

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54IDW

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1283774	
Analytical Method:	EPA 9040C	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268842	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/26/2023	15:30
		Prep. Date/Time:		

Concentration Units: S.U.

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
PH	pH	7.76		0.1	0.1	0.1	0.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW1

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1283773	
Analytical Method:	EPA 9060A	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268835	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/27/2023	10:34
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	62		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



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INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW1

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175012</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1283773</u>	
Analytical Method:	<u>EPA 9060A</u>	Date Received:	<u>01/26/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>268891</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/30/2023</u>	<u>19:44</u>
		Prep. Date/Time:	<u></u>	

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW1

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175012</u>
% Solids:	<u></u>	Lab Sample ID:	<u>1283773</u>
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>01/26/2023</u>
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>
Analytical Run #:	<u>268844</u>	Extraction Date/time:	<u></u>
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/26/2023 21:46</u>
		Prep. Date/Time:	<u></u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	2.5	J	1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.20	U	0.12	0.20	0.40	0.40
14808-79-8	Sulfate	30		0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW10

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1282990	
Analytical Method:	EPA 9060A	Date Received:	01/24/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268835	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/27/2023	10:03
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	78		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW10

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1282990	
Analytical Method:	EPA 9060A	Date Received:	01/24/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268891	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	14:27
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW10

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175012</u>
% Solids:	<u></u>	Lab Sample ID:	<u>1282990</u>
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>01/24/2023</u>
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>
Analytical Run #:	<u>268741</u>	Extraction Date/time:	<u></u>
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/24/2023 15:02</u>
		Prep. Date/Time:	<u></u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	4.2		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.20	U	0.12	0.20	0.40	0.40

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW10

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1282990	
Analytical Method:	EPA 9056A	Date Received:	01/24/2023	
Dilution Factor:	5	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268741	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/24/2023	15:22
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
14808-79-8	Sulfate	190		4.0	7.5	15	15

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW12

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1283772	
Analytical Method:	EPA 9060A	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268835	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/27/2023	10:18
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	82		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW12

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1283772	
Analytical Method:	EPA 9060A	Date Received:	01/26/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268891	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	17:52
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW12

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175012</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1283772</u>	
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>01/26/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>268844</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/26/2023</u>	<u>19:44</u>
		Prep. Date/Time:	<u></u>	

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	5.7		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.68		0.12	0.20	0.40	0.40
14808-79-8	Sulfate	30		0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW13

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1282988	
Analytical Method:	EPA 9060A	Date Received:	01/24/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268835	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/27/2023	09:34
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	88		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW13

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1282988	
Analytical Method:	EPA 9060A	Date Received:	01/24/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268891	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	13:54
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW13

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175012</u>
% Solids:	<u></u>	Lab Sample ID:	<u>1282988</u>
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>01/24/2023</u>
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>
Analytical Run #:	<u>268741</u>	Extraction Date/time:	<u></u>
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/24/2023 14:21</u>
		Prep. Date/Time:	<u></u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	6.7		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.57		0.12	0.20	0.40	0.40
14808-79-8	Sulfate	35	M	0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54TW13

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1282989	
Analytical Method:	EPA 9060A	Date Received:	01/24/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268835	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/27/2023	09:49
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	87		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54TW13

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	175012	
% Solids:		Lab Sample ID:	1282989	
Analytical Method:	EPA 9060A	Date Received:	01/24/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	268891	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	01/30/2023	14:09
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54TW13

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>175012</u>
% Solids:	<u></u>	Lab Sample ID:	<u>1282989</u>
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>01/24/2023</u>
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>
Analytical Run #:	<u>268741</u>	Extraction Date/time:	<u></u>
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>01/24/2023 14:41</u>
		Prep. Date/Time:	<u></u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	6.8		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.56		0.12	0.20	0.40	0.40
14808-79-8	Sulfate	37		0.8	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

Client Sample Results

Client: CT Laboratories
Project/Site: 1282988-90 / Chlorite, Chlorate

Job ID: 810-51679-1

Client Sample ID: 54MW13

Date Collected: 01/23/23 13:10

Date Received: 01/27/23 08:45

Lab Sample ID: 810-51679-1

Matrix: Drinking Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	<7.9		10	7.9	ug/L			01/30/23 22:09	1
Chlorite	7.4	J	10	5.9	ug/L			01/30/23 22:09	1

Client Sample ID: 54TW13

Date Collected: 01/23/23 13:10

Date Received: 01/27/23 08:45

Lab Sample ID: 810-51679-2

Matrix: Drinking Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	<7.9		10	7.9	ug/L			01/30/23 22:39	1
Chlorite	<5.9		10	5.9	ug/L			01/30/23 22:39	1

Client Sample ID: 54MW10

Date Collected: 01/23/23 15:20

Date Received: 01/27/23 08:45

Lab Sample ID: 810-51679-3

Matrix: Drinking Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	<7.9		10	7.9	ug/L			01/31/23 00:09	1
Chlorite	<5.9	F1 JJ	10	5.9	ug/L			01/31/23 00:09	1

ALH 9/19/23
Eurofins Eaton South Bend

Client Sample Results

Client: CT Laboratories
Project/Site: 1283772-73 Chlorite, Chlorate

Job ID: 810-51680-1

Client Sample ID: 54MW12

Date Collected: 01/25/23 09:15

Date Received: 01/27/23 08:45

Lab Sample ID: 810-51680-1

Matrix: Drinking Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorite	<10	F1 JJ	10	ug/L			01/27/23 21:59	1
Chlorate	<10		10	ug/L			01/27/23 21:59	1

Client Sample ID: 54MW1

Date Collected: 01/25/23 11:15

Date Received: 01/27/23 08:45

Lab Sample ID: 810-51680-2

Matrix: Drinking Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorite	<10		10	ug/L			01/27/23 23:24	1
Chlorate	<10		10	ug/L			01/27/23 23:24	1

ALH 9/19/23

Eurofins Eaton South Bend

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID:	54MW13	Date Sampled:	01/23/23
Lab Sample ID:	FC2128-1	Date Received:	01/24/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 6850 IN HOUSE		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q100172.D	1	02/06/23 20:42	AL	02/06/23 15:17	OP95334	SQ2133
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.24	0.20	0.10	0.050	ug/l	

U = Not detected

LOQ = Limit of Quantitation

E = Indicates value exceeds calibration range

LOD = Limit of Detection

DL = Detection Limit

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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Client Sample ID:	54MW13	Date Sampled:	01/23/23
Lab Sample ID:	FC2128-1	Date Received:	01/24/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8330B SW846 3535A		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	BB075414.D	1	01/26/23 13:44	FS	01/25/23 08:30	OP95139	GBB2299
Run #2 ^b	GG625707.D	1	01/30/23 17:22	FS	01/25/23 08:30	OP95139	GGG3229

	Initial Volume	Final Volume
Run #1	1000 ml	10.0 ml
Run #2	1000 ml	10.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX	3.1	0.20	0.10	0.080	ug/l	
121-82-4	RDX	0.91	0.20	0.10	0.080	ug/l	
	DNX	0.10 U	0.20	0.10	0.080	ug/l	
	MNX	0.10 U	0.20	0.10	0.080	ug/l	
	TNX	0.10 U	0.20	0.10	0.080	ug/l	
618-87-1	3,5-Dinitroaniline ^c	0.39 J	0.20	0.10	0.080	ug/l	
99-65-0	1,3-Dinitrobenzene	0.10 U	0.20	0.10	0.080	ug/l	
606-20-2	2,6-Dinitrotoluene	0.10 U	0.20	0.10	0.080	ug/l	
121-14-2	2,4-Dinitrotoluene	0.10 U	0.20	0.10	0.080	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	1.7	0.20	0.10	0.080	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	1.2	0.20	0.10	0.080	ug/l	
98-95-3	Nitrobenzene	0.10 U	0.20	0.10	0.097	ug/l	
88-72-2	o-Nitrotoluene	0.10 U	0.20	0.10	0.080	ug/l	
99-08-1	m-Nitrotoluene	0.10 U	0.20	0.10	0.080	ug/l	
99-99-0	p-Nitrotoluene	0.10 U	0.20	0.10	0.080	ug/l	
479-45-8	Tetryl	0.10 U	0.20	0.10	0.080	ug/l	
99-35-4	1,3,5-Trinitrobenzene	11.8	0.20	0.10	0.099	ug/l	
118-96-7	2,4,6-Trinitrotoluene	5.0	0.20	0.10	0.080	ug/l	
55-63-0	Nitroglycerine	1.0 U	2.0	1.0	0.50	ug/l	
78-11-5	PETN	1.0 U	2.0	1.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	99%	99%	70-136%

- (a) All hits confirmed by reanalysis on a dissimilar column.
 (b) Confirmation run.
 (c) Primary and confirmation results differ by more than 40%.

U = Not detected LOD = Limit of Detection
 LOQ = Limit of Quantitation DL = Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	54TW13	Date Sampled:	01/23/23
Lab Sample ID:	FC2128-2	Date Received:	01/24/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 6850 IN HOUSE		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q100173.D	1	02/06/23 20:51	AL	02/06/23 15:17	OP95334	SQ2133
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.25	0.20	0.10	0.050	ug/l	

U = Not detected

LOQ = Limit of Quantitation

E = Indicates value exceeds calibration range

LOD = Limit of Detection

DL = Detection Limit

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

SGS North America Inc.

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Client Sample ID:	54TW13	Date Sampled:	01/23/23
Lab Sample ID:	FC2128-2	Date Received:	01/24/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8330B SW846 3535A		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	BB075431.D	1	01/27/23 11:05	FS	01/25/23 08:30	OP95139	GBB2300
Run #2 ^b	GG625708.D	1	01/30/23 17:54	FS	01/25/23 08:30	OP95139	GGG3229

	Initial Volume	Final Volume
Run #1	1030 ml	10.0 ml
Run #2	1030 ml	10.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX	3.0	0.19	0.097	0.078	ug/l	
121-82-4	RDX	0.94	0.19	0.097	0.078	ug/l	
	DNX	0.097 U	0.19	0.097	0.078	ug/l	
	MNX	0.097 U	0.19	0.097	0.078	ug/l	
	TNX	0.097 U	0.19	0.097	0.078	ug/l	
618-87-1	3,5-Dinitroaniline ^c	0.41 J	0.19	0.097	0.078	ug/l	
99-65-0	1,3-Dinitrobenzene	0.097 U	0.19	0.097	0.078	ug/l	
606-20-2	2,6-Dinitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
121-14-2	2,4-Dinitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	1.6	0.19	0.097	0.078	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	1.1	0.19	0.097	0.078	ug/l	
98-95-3	Nitrobenzene	0.097 U	0.19	0.097	0.094	ug/l	
88-72-2	o-Nitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
99-08-1	m-Nitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
99-99-0	p-Nitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
479-45-8	Tetryl	0.097 U	0.19	0.097	0.078	ug/l	
99-35-4	1,3,5-Trinitrobenzene	12.0	0.19	0.097	0.096	ug/l	
118-96-7	2,4,6-Trinitrotoluene	5.0	0.19	0.097	0.078	ug/l	
55-63-0	Nitroglycerine	0.97 U	1.9	0.97	0.49	ug/l	
78-11-5	PETN	0.97 U	1.9	0.97	0.49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	100%	101%	70-136%

- (a) All hits confirmed by reanalysis on a dissimilar column.
 (b) Confirmation run.
 (c) Primary and confirmation results differ by more than 40%.

U = Not detected LOD = Limit of Detection
 LOQ = Limit of Quantitation DL = Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	54MW10	Date Sampled:	01/23/23
Lab Sample ID:	FC2128-3	Date Received:	01/24/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 6850 IN HOUSE		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q100174.D	1	02/06/23 20:59	AL	02/06/23 15:17	OP95334	SQ2133
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.10 U	0.20	0.10	0.050	ug/l	

U = Not detected

LOQ = Limit of Quantitation

E = Indicates value exceeds calibration range

LOD = Limit of Detection

DL = Detection Limit

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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Client Sample ID:	54MW10	Date Sampled:	01/23/23
Lab Sample ID:	FC2128-3	Date Received:	01/24/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8330B SW846 3535A		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	BB075432.D	1	01/27/23 11:36	FS	01/25/23 08:30	OP95139	GBB2300
Run #2 ^b	GG625709.D	1	01/30/23 18:25	FS	01/25/23 08:30	OP95139	GGG3229

	Initial Volume	Final Volume
Run #1	1020 ml	10.0 ml
Run #2	1020 ml	10.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX	0.50	0.20	0.098	0.078	ug/l	
121-82-4	RDX	0.35	0.20	0.098	0.078	ug/l	
	DNX	0.098 U	0.20	0.098	0.078	ug/l	
	MNX	0.098 U	0.20	0.098	0.078	ug/l	
	TNX	0.098 U	0.20	0.098	0.078	ug/l	
618-87-1	3,5-Dinitroaniline	0.23	0.20	0.098	0.078	ug/l	
99-65-0	1,3-Dinitrobenzene	0.098 U	0.20	0.098	0.078	ug/l	
606-20-2	2,6-Dinitrotoluene	0.098 U	0.20	0.098	0.078	ug/l	
121-14-2	2,4-Dinitrotoluene	0.098 U	0.20	0.098	0.078	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	0.26	0.20	0.098	0.078	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	0.37	0.20	0.098	0.078	ug/l	
98-95-3	Nitrobenzene	0.098 U	0.20	0.098	0.095	ug/l	
88-72-2	o-Nitrotoluene	0.098 U	0.20	0.098	0.078	ug/l	
99-08-1	m-Nitrotoluene	0.098 U	0.20	0.098	0.078	ug/l	
99-99-0	p-Nitrotoluene	0.098 U	0.20	0.098	0.078	ug/l	
479-45-8	Tetryl	0.098 U	0.20	0.098	0.078	ug/l	
99-35-4	1,3,5-Trinitrobenzene	0.098 U	0.20	0.098	0.097	ug/l	
118-96-7	2,4,6-Trinitrotoluene	0.098 U	0.20	0.098	0.078	ug/l	
55-63-0	Nitroglycerine	0.98 U	2.0	0.98	0.49	ug/l	
78-11-5	PETN	0.98 U	2.0	0.98	0.49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	83%	89%	70-136%

(a) All hits confirmed by reanalysis on a dissimilar column.

(b) Confirmation run.

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID:	54MW12	Date Sampled:	01/25/23
Lab Sample ID:	FC2200-1	Date Received:	01/26/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 6850 IN HOUSE		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q100175.D	1	02/06/23 21:08	AL	02/06/23 15:17	OP95334	SQ2133
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.72	0.20	0.10	0.050	ug/l	

U = Not detected

LOQ = Limit of Quantitation

E = Indicates value exceeds calibration range

LOD = Limit of Detection

DL = Detection Limit

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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Client Sample ID:	54MW12	Date Sampled:	01/25/23
Lab Sample ID:	FC2200-1	Date Received:	01/26/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8330B SW846 3535A		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	BB075443.D	1	01/30/23 14:05	FS	01/27/23 12:30	OP95195	GBB2301
Run #2 ^b	GG625720.D	1	01/31/23 00:11	FS	01/27/23 12:30	OP95195	GGG3229

	Initial Volume	Final Volume
Run #1	1030 ml	10.0 ml
Run #2	1030 ml	10.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX	7.3	0.19	0.097	0.078	ug/l	
121-82-4	RDX	0.75	0.19	0.097	0.078	ug/l	
	DNX	0.097 U	0.19	0.097	0.078	ug/l	
	MNX	0.097 U	0.19	0.097	0.078	ug/l	
	TNX	0.097 U	0.19	0.097	0.078	ug/l	
618-87-1	3,5-Dinitroaniline ^c	0.35 J	0.19	0.097	0.078	ug/l	
99-65-0	1,3-Dinitrobenzene	0.097 U	0.19	0.097	0.078	ug/l	
606-20-2	2,6-Dinitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
121-14-2	2,4-Dinitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	2.6	0.19	0.097	0.078	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	2.0	0.19	0.097	0.078	ug/l	
98-95-3	Nitrobenzene	0.097 U	0.19	0.097	0.094	ug/l	
88-72-2	o-Nitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
99-08-1	m-Nitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
99-99-0	p-Nitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
479-45-8	Tetryl	0.097 U	0.19	0.097	0.078	ug/l	
99-35-4	1,3,5-Trinitrobenzene	7.7	0.19	0.097	0.096	ug/l	
118-96-7	2,4,6-Trinitrotoluene	4.5	0.19	0.097	0.078	ug/l	
55-63-0	Nitroglycerine	0.97 U	1.9	0.97	0.49	ug/l	
78-11-5	PETN	0.97 U	1.9	0.97	0.49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	94%	90%	70-136%

- (a) All hits confirmed by reanalysis on a dissimilar column.
(b) Confirmation run.
(c) Primary and confirmation results differ by more than 40%.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

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Client Sample ID: 54MW1		Date Sampled: 01/25/23	
Lab Sample ID: FC2200-2		Date Received: 01/26/23	
Matrix: AQ - Ground Water		Percent Solids: n/a	
Method: SW846 6850 IN HOUSE			
Project: Radford AAP; VA			

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q100178.D	1	02/06/23 21:33	AL	02/06/23 15:17	OP95334	SQ2133
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.10 U	0.20	0.10	0.050	ug/l	

U = Not detected

LOQ = Limit of Quantitation

E = Indicates value exceeds calibration range

LOD = Limit of Detection

DL = Detection Limit

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

SGS North America Inc.

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Client Sample ID:	54MW1	Date Sampled:	01/25/23
Lab Sample ID:	FC2200-2	Date Received:	01/26/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8330B SW846 3535A		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB075447.D	1	01/30/23 16:46	FS	01/27/23 12:30	OP95195	GBB2301
Run #2 ^a	GG625721.D	1	01/31/23 00:43	FS	01/27/23 12:30	OP95195	GGG3229

	Initial Volume	Final Volume
Run #1	1030 ml	10.0 ml
Run #2	1030 ml	10.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX	0.097 U	0.19	0.097	0.078	ug/l	
121-82-4	RDX	0.097 U	0.19	0.097	0.078	ug/l	
	DNX	0.097 U	0.19	0.097	0.078	ug/l	
	MNX	0.097 U	0.19	0.097	0.078	ug/l	
	TNX	0.097 U	0.19	0.097	0.078	ug/l	
618-87-1	3,5-Dinitroaniline	0.097 U	0.19	0.097	0.078	ug/l	
99-65-0	1,3-Dinitrobenzene	0.097 U	0.19	0.097	0.078	ug/l	
606-20-2	2,6-Dinitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
121-14-2	2,4-Dinitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
98-95-3	Nitrobenzene	0.097 U	0.19	0.097	0.094	ug/l	
88-72-2	o-Nitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
99-08-1	m-Nitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
99-99-0	p-Nitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
479-45-8	Tetryl	0.097 U	0.19	0.097	0.078	ug/l	
99-35-4	1,3,5-Trinitrobenzene	0.097 U	0.19	0.097	0.096	ug/l	
118-96-7	2,4,6-Trinitrotoluene	0.097 U	0.19	0.097	0.078	ug/l	
55-63-0	Nitroglycerine	0.97 U	1.9	0.97	0.49	ug/l	
78-11-5	PETN	0.97 U	1.9	0.97	0.49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	92%	87%	70-136%

(a) Confirmation run.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

VALIDATA

Chemical Services, Inc.

2159 Wynnton Pointe, Duluth, GA 30097

(770) 232-0130

(770) 232-5082 (Fax)

www.datavalidator.com

DATA VALIDATION SUMMARY REPORT

COMPANY: Weston Solutions, Inc.
SITE NAME: Radford Army Ammunitions Plant – July 2023 Sampling
CONTRACTED LAB: CT Laboratories LLC, Eurofins South Bend, SGS Orlando
QA/QC LEVEL: EPA Stage 2B and 4
EPA SOW/METHODS: EPA and SW-846 Methods
VALIDATION GUIDELINES: *Radford Army Ammunitions Plant, Radford Virginia, SWMU 49 Monitored Natural Attenuation Groundwater Monitoring Work Plan, SWMU 54 Interim Measures Work Plan, QSM 5.1, SW 846 Methods, USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, 2017; USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, 2017*
SAMPLE MATRIX: Water
TYPE OF ANALYSIS: Volatile Organics (VOA), Dissolved Gases, Perchlorate, Explosives, Total Metals, Total Mercury, Anions, Total Organic Carbon (TOC), Total Inorganic Carbon (TIC), Chlorate*, Chemical Oxygen Demand (COD), pH
SDG NUMBER: 178914
SAMPLING DATES: July 11-14, 2023

SAMPLES:

Client	Lab			
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>VOA</u>	<u>Dis. Gases</u>
49TB-1	1346820	Water	X	
13MW4	1346821	Water	X	X
13MW3	1346822	Water	X	X
49MW04	1346823	Water	X	X
49TW04	1346824	Water	X	X
13MW2	1346825	Water	X	X
49TB-2	1347301	Water	X	

Client	Lab			
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>VOA</u>	<u>Dis. Gases</u>
48MW6	1347302	Water	X	X
49MW01	1347303	Water	X	X
49TW01	1347304	Water	X	X
49MW01-EQB	1347305	Water	X	X
49TB-3	1347757	Water	X	
48MW1	1347758	Water	X	X
50MW2	1347759	Water	X	X
49TB-4	1348130	Water	X	
48MW2	1348146	Water	X	X
48MW3	1348147	Water	X	X
49MW02	1348148	Water	X	X
13MW4MS	1346821MS	Water	X	X
13MW4MSD	1346821MSD	Water	X	X

Client	Lab		Total	Total
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>Metals**</u>	<u>Mercury</u>
49IDW	1348149	Water	X	X
49IDWMS	1348149MS	Water	X	
49IDWMSD	1348149MSD	Water	X	

Client	Lab			
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>Anions</u>	<u>TOC</u>
13MW4	1346821	Water	X	X
13MW3	1346822	Water	X	X
13MW3DL	1346822DL	Water	X	
49MW04	1346823	Water	X	X
49TW04	1346824	Water	X	X
13MW2	1346825	Water	X	X
48MW6	1347302	Water	X	X
48MW6DL	1347302DL	Water	X	
49MW01	1347303	Water	X	X
49TW01	1347304	Water	X	X
49MW01-EQB	1347305	Water	X	X
48MW1	1347758	Water	X	X
50MW2	1347759	Water	X	X
48MW2	1348146	Water	X	X
48MW3	1348147	Water	X	X
49MW02	1348148	Water	X	X
13MW4MS	1346821MS	Water	X	X

Client	Lab			
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>Anions</u>	<u>TOC</u>
13MW4MSD	1346821MSD	Water	X	X
48MW6MS	1347302MS	Water	X	
48MW6MSD	1347302MSD	Water	X	
50MW2MS	1347759MS	Water	X	
50MS2MSD	1347759MSD	Water	X	
48MW2MS	1348146MS	Water	X	X
48MW2MSD	1348146MSD	Water	X	X

Client	Lab			
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>COD</u>	<u>pH</u>
49IDW	1348149	Water	X	X
49IDWMD	1348149MD	Water		X

SDG NUMBER: 178887
SAMPLING DATES: July 10-11, 2023

SAMPLES:

Client	Lab		Total	Total
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>Metals**</u>	<u>Mercury</u>
54IDW	1346384	Water	X	X
54IDWMS	1346384MS	Water	X	X
54IDWMSD	1346384MSD	Water	X	X

Client	Lab			TIC/
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>Anions</u>	<u>TOC</u>
54MW13	1346379	Water	X	X
54TW13	1346380	Water	X	X
54MW10	1346381	Water	X	X
54MW10DL	1346381DL	Water	X	
54MW12	1346382	Water	X	X
54MW1	1346383	Water	X	X
54MW12MS	1346382MS	Water	X	X
54MW12MSD	1346382MSD	Water	X	X

Client	Lab			
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>COD</u>	<u>pH</u>
54IDW	1346384	Water	X	X
54IDWMD	1346384MD	Water		X
54IDWMS	1346384MS	Water	X	
54IDWMSD	1346384MSD	Water	X	

SDG NUMBER: FC7686
 SAMPLING DATES: July 10, 2023

SAMPLES:

Client	Lab			
<u>Sample #</u>	<u>Sample #</u>	<u>Matrix</u>	<u>Explosives</u>	<u>Perchlorate</u>
54MW13	FC7686-1	Water	X	X
54TW13	FC7686-2	Water	X	X
54MW10	FC7686-3	Water	X	X
54MW12	FC7686-4	Water	X	X
54MW1	FC7686-5	Water	X	X
54MW12MS	FC7686-4MS	Water	X	X
54MW12MSD	FC7686-4MSD	Water	X	X

**- analysis was for 22 analytes by Method 6010C.

All fractions were validated at Stage 4, except Metals and Mercury, which were validated at Stage 2B.

Suffix Codes: DL = DILUTION, MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE,
 RA = REANALYSIS

DATA REVIEWERS: Amy L. Hogan, Kevin C. Harmon, Sandra Nacquin

DATA VALIDATION SUMMARY

CT Laboratories LLC – 178914 - Organics & Inorganics

VOLATILE ORGANICS (VOA)

SUMMARY

I.) General:

The analyses for Volatile Organics (VOA) were performed according to SW 846 Method 8260B.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

It was noted in the VOC sample preparation that the pH for samples 49MW01 and 49TW01 were greater than the QC limit of 2. The 8 days between sample collection and analysis for both samples exceeded the 7-day QC limit for improperly preserved samples. The results for both samples were qualified as estimated (J) and (UJ).

II.) GC / MS Tuning:

All GC / MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

The average RRF for 1,4-dioxane (0.003) for the standards analyzed on 7/18/23 on instrument VMS3 was below 0.010. Since the limit for this compound is advisory and 1,4-dioxane is a

known poor performed, citing professional judgment, the validator determined that no data qualification based on the RRF was necessary.

All other Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification (ICV):

The RRF for 1,4-dioxane (0.0033) for the standards run on 7/18/23 at 15:51 on instrument VMS3 was below 0.010. Since the limit for this compound is advisory and 1,4-dioxane is a known poor performed, citing professional judgment, the validator determined that no data qualification based on the RRF was necessary.

Continuing Calibration:

The RRF for 1,4-dioxane (0.0033) for the standards run on 7/21/23 at 14:17 on instrument VMS3 was below 0.010. Since the limit for this compound is advisory and 1,4-dioxane is a known poor performed, citing professional judgment, the validator determined that no data qualification based on the RRF was necessary.

The Percent Difference (%D) for the standards run on 7/21/23 at 14:17 on instrument VMS3 was -25.5% for dichlorodifluoromethane, which exceeded the 20% QC limit. The results for this compound in the SDG samples, which were all non-detect, were qualified as estimated (UJ).

IV.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Equipment Blank:

The following compounds were reported in associated equipment blank 49MW01-EQB:

Acetone	4.9 ug/L
Ethylbenzene	1.1 ug/L
M,p-xylene	2.1 ug/L
o-xylene	1.9 ug/L

Since the blank results were less than the LOD, the positive o-xylene result for sample 48MW1 and the positive ethylbenzene and m,p-xylene for 49TW01, which were less than the LOD, were qualified as undetected (U) with the result raised to the LOD.

Trip Blanks:

There were no detections in the associated trip blanks. No data qualification was necessary.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

One LCS was analyzed for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS/ MSD analyses were performed using sample 13MW4. All criteria were met. No data qualification was necessary.

VIII.) Field Duplicates:

Two sets of field duplicate samples (49MW04 / 49TW04 and 49MW01 / 49TW01) were identified for this SDG. The calculable differences for carbon tetrachloride for the first set and 1,2-dichlorobenzene for the second set were less than 2X the LOD. No data qualification was necessary.

IX.) Internal Standards Performance (ISTD):

All ISTD criteria were met. No data qualification was necessary.

X.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRQL criteria were met. No data qualification was necessary.

DISSOLVED GASSES

SUMMARY

I.) General:

The analyses for Dissolved Gases were performed according to Method RSK-175.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

It was noted in the VOC sample preparation that the pH for samples 49MW01 and 49TW01 were greater than the QC limit of 2. The 8 days between sample collection and analysis for both samples exceeded the 7-day QC limit for improperly preserved samples. The results for both samples were qualified as estimated (J) and (UJ).

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification (ICV):

All Initial Calibration Verification criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Equipment Blank:

There were no detections reported in the associated equipment blank for this SDG. No data qualification was necessary.

IV.) Surrogate Recoveries:

All Surrogate Recovery criteria were met.

V.) Laboratory Control Samples (LCS):

One LCS was analyzed for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VI.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS/ MSD analyses were performed using sample 13MW4. All criteria were met. No data qualification was necessary.

VII.) Field Duplicates:

Two sets of field duplicate samples (49MW04 / 49TW04 and 48MW3 / 48TW3) were identified for this SDG. There were no calculable Relative Percent Differences. No data qualification was necessary.

VIII.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

IX.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL) criteria were met. No data qualification was necessary.

TOTAL METALS and MERCURY

SUMMARY

I.) General:

The analyses for Total Metals were performed according to SW-846 Method 6010C and the analyses for Total Mercury were performed according to SW-846 Method 7470A.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) LLCCV and CRDL:

All LLCCV and CRDL criteria were met. No data qualification was necessary.

IV.) Blanks:

Method Blanks:

Silver (1.13 ug/L) were reported in associated method blank 1349319. Since the associated silver result was reported as non-detect, no data qualification was necessary.

Calibration Blanks:

Potassium (261 ug/L) was reported in the associated initial calibration blank for the SDG sample. Since the associated sample result for potassium was greater than the action level and the associated silver result was reported as non-detect, no data qualification was necessary.

Equipment Blank:

There was no associated equipment blank submitted for this fraction of the SDG. No data qualification was necessary.

V.) ICP Interference Check Sample Results:

All Interference Check Sample criteria were met. No data qualification was necessary.

VI.) ICP Serial Dilution Analysis:

Serial dilution analysis was performed using sample 49IDW. The Percent Differences (%Ds) for aluminum (16%), calcium (11%), iron (13%) and manganese (12%) exceeded the 10% QC limit. The positive results for these analytes in the SDG samples were qualified as estimated (J).

VII.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No data qualification was necessary.

VIII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using sample 49IDW. The parent sample results for aluminum, calcium and iron were greater than 4X the spike concentration, so the results for these analytes were not considered meaningful. The Percent Recoveries (%Rs) for lead (85%), manganese (68%, 62%), thallium (76%), vanadium (79%) and zinc (81%) were outside the QC limits. The post spike %Rs for lead (54%), manganese (75%), thallium (57%), vanadium (62%) and zinc (56%) were the QC limits. The positive and non-detect results for these analytes in the parent sample were qualified as estimated (J) and (UJ).

IX.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No data qualification was necessary.

X.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No data qualification was necessary.

ANIONS

SUMMARY

I.) General:

The analyses for Anions were performed according to SW-846 Method 9056A.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

The 72 to 74 hours for samples 48MW2, 48MW3 and 49MW02 exceeded the 48-hour QC limit for nitrate. The positive nitrate results for these samples were qualified as estimated (J).

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Calibration Blanks:

There were no detections in the associated calibration blanks. No data qualification was necessary.

Equipment Blank:

There were no detections reported in the associated equipment blank for this SDG. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No data qualification was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using samples 13MW4, 48MW6, 48MW2 and 50MW2. The sulfate result for parent sample 13MW4 was greater than 4X the spike concentration, so the sulfate results for this set were not considered meaningful. The Percent Recoveries (%Rs) for sulfate in sample 48MW6MSD (82%), 48MW2 (52%, 51%) and 50MW2 (76%, 71%) were below the QC limits. The sulfate results for the parent samples were qualified as estimated (J).

VI.) Field Duplicates:

Two sets of field duplicate samples (49MW04 / 49TW04 and 49MW01 / 49TW01) were identified for this SDG. The calculable Relative Percent Difference (RPD) for the first set was chloride (0%) and the calculable difference for nitrate and sulfate were less than 2X the LOQ. The calculable RPD for the second set was 6.2% for sulfate and the calculable differences for nitrate and chloride were less than 2X the LOQ. All criteria were met. No data qualification was necessary.

VII.) Sample Result, Calculation/Transcription Verification:

The sulfate and or chloride results for 13MW3 and 48MW6 were reported from dilution analyses. Since only one sulfate result was reported for each sample, no data qualification was necessary.

TOTAL ORGANIC CARBON

SUMMARY

I.) General:

The analyses for Total Organic Carbon (TOC) were performed according to SW-846 Method 9060A.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Calibration Blanks:

There were no detections in the associated calibration blanks. No data qualification was necessary.

Equipment Blank:

There was no detection reported in the associated equipment blank for this SDG. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No data qualification was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using samples 13MW4 and 48MW2. All criteria were met. No data qualification was necessary.

VI.) Field Duplicates:

Two sets of field duplicate samples (48MW04 / 49TW04 and 48MW3 / 48TW3) were identified for this SDG. The calculable difference for the first set was less than 2X the LOQ, so no data qualification was necessary.

VII.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No data qualification was necessary.

CHEMICAL OXYGEN DEMAND (COD)

SUMMARY

I.) General:

The analyses for Chemical Oxygen Demand (COD) were performed according to EPA Method 410.4.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Calibration Blanks:

There were no detections in the associated calibration blanks. No data qualification was necessary.

Equipment Blank:

There was no associated equipment blank submitted for this fraction of the SDG. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No data qualification was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses data was not submitted for this fraction of the SDG. Data qualification based on the absence of MS / MSD data was not required. No data qualification was necessary.

VI.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No data qualification was necessary.

VII.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No data qualification was necessary.

pH

SUMMARY

I.) General:

The analyses for pH were performed according to SW-846 Method 9040C.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

All Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Blanks data were not required for this fraction of the SDG. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

LCS data was not required for this fraction of the SDG. No data qualification was necessary.

V.) Matrix Duplicate (MD):

MD analysis was performed using sample 49IDW. All criteria were met. No data qualification was necessary.

VI.) Field Duplicates:

There were no field duplicate samples identified for this SDG. No data qualification was necessary.

VII.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No data qualification was necessary.

DATA VALIDATION SUMMARY

CT Laboratories LLC – 178887 - Organics & Inorganics

TOTAL METALS and MERCURY

SUMMARY

I.) General:

The analyses for Total Metals were performed according to SW-846 Method 6010C and the analyses for Total Mercury were performed according to SW-846 Method 7470A.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) LLCCV and CRDL:

All LLCCV and CRDL criteria were met. No data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections reported in the associated method blanks. No data qualification was necessary.

Calibration Blanks:

Potassium (251 ug/L, 179 ug/L) was reported in associated calibration blanks for the SDG sample. Since the potassium result for the sample was greater than the action level, no data qualification was necessary.

Equipment Blank:

There was no associated equipment blank submitted for this fraction of the SDG. No data qualification was necessary.

V.) ICP Interference Check Sample Results:

All Interference Check Sample criteria were met. No data qualification was necessary.

VI.) ICP Serial Dilution Analysis:

Serial dilution analysis was performed using sample 54IDW. All criteria were met. No data qualification was necessary.

VII.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No data qualification was necessary.

VIII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using sample 54IDW. The parent sample results for aluminum and iron were greater than 4X the spike concentrations, so the results were not considered meaningful. The Percent Recovery (%R) for vanadium (89%) was below the QC limits. All post spike criteria were met. The positive vanadium result for the sample was qualified as estimated (J).

IX.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No data qualification was necessary.

X.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No data qualification was necessary.

ANIONS

SUMMARY

I.) General:

The analyses for Anions were performed according to SW-846 Method 9056A.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Calibration Blanks:

There were no detections in the associated calibration blanks. No data qualification was necessary.

Equipment Blank:

There was no associated equipment blank for this SDG. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No data qualification was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using sample 54MW12. The Percent Recoveries (%Rs) for sulfate at 81% and 84% were below the QC limits. The positive sulfate result for the parent sample was qualified as estimated (J).

VI.) Field Duplicates:

One set of field duplicate samples (54MW13 / 54TW13) was identified for this SDG. The calculable Relative Percent Differences (RPDs) for chloride (1.6%) and sulfate (3.3%) and the calculable difference for nitrate at less than 2X the LOQ were within the QC limit. No data qualification was necessary.

VII.) Sample Result, Calculation/Transcription Verification:

The sulfate result for sample 54MW10 was reported from a dilution analysis. Since only one sulfate result was reported for the sample, no data qualification was necessary.

TOTAL INORGANIC AND TOTAL ORGANIC CARBON

SUMMARY

I.) General:

The analyses for Total Inorganic Carbon (TIC) and Total Organic Carbon (TOC) were performed according to SW-846 Method 9060A.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Calibration Blanks:

There were no detections in the associated calibration blanks. No data qualification was

necessary.

Equipment Blank:

There was no associated equipment blank submitted for this SDG. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No data qualification was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using sample 54MW12. All criteria were met. No data qualification was necessary.

VI.) Field Duplicates:

One set of field duplicate samples (54MW13 / 54TW13) was identified for this SDG. The calculable RPD of 0% for TIC was within the QC limit. No data qualification was necessary.

VII.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No data qualification was necessary.

CHEMICAL OXYGEN DEMAND (COD)

SUMMARY

I.) General:

The analyses for Chemical Oxygen Demand (COD) were performed according to EPA Method 410.4.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Calibration Blanks:

There were no detections in the associated calibration blanks. No data qualification was necessary.

Equipment Blank:

There was no associated equipment blank submitted for this fraction of the SDG. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No data qualification was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using sample 54IDW. All criteria were met. No data qualification was necessary.

VI.) Field Duplicates:

There were no field duplicate samples identified for this fraction of the SDG. No data qualification was necessary.

VII.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No data qualification was necessary.

pH

SUMMARY

I.) General:

The analyses for pH were performed according to SW-846 Method 9040C.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

All Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Blanks data were not required for this fraction of the SDG. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

LCS data was not required for this fraction of the SDG. No data qualification was necessary.

V.) Matrix Duplicate (MD):

MD analysis was performed using sample 54IDW. All criteria were met. No data qualification was necessary.

VI.) Field Duplicates:

There were no field duplicate samples identified for this SDG. No data qualification was necessary.

VII.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No data qualification was necessary.

DATA VALIDATION SUMMARY

SGS Orlando, FL – FC7686 - Organics

EXPLOSIVES

SUMMARY

I.) General:

The analyses for Explosives were performed according to SW 846 Method 8330.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification (ICV):

All Initial Calibration Verification criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

IV.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No data qualification was necessary.

V.) Laboratory Control Samples (LCS):

One LCS was analyzed for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VI.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS/ MSD analyses were performed using sample 54MW12. All criteria were met. No data qualification was necessary.

VII.) Field Duplicates:

One set of field duplicate samples (54MW13 / 54TW13) was identified for this SDG. The calculable Relative Percent Differences (RPDs) were:

HMX	3.4%
RDX	1.1%
3,5-dinitroaniline	3.5%
2-amino-4,6-dinitrotoluene	7.4%
4-amino-2,6-dinitrotoluene	15%
1,3,5-trinitrobenzene	5.4%
2,4,6-trinitrotoluene	3.4%

All criteria were met. No data qualification was necessary.

VIII.) TCL Compound Identification:

The Column Relative Percent Difference (RPD) exceeded the 40% QC limit for the following compounds:

<u>Sample</u>	<u>Compound</u>	<u>RPD</u>
54MW13	3,5-dinitroaniline	98.2%
	2-amino-4,6-dinitrotoluene	140%

54TW13	4-amino-2,6-dinitrotoluene	90.5%
	3,5-dinitroaniline	101%
	2-amino-4,6-dinitrotoluene	140%
54MW10	4-amino-2,6-dinitrotoluene	102%
	HMX	81.3%
	2-amino-4,6-dinitrotoluene	178%
54MW12	4-amino-2,6-dinitrotoluene	46.2%
	3,5-dinitroaniline	147%
	2-amino-4,6-dinitrotoluene	50.0%
	4-amino-2,6-dinitrotoluene	93.3%

The positive compound results for the listed samples above were qualified as estimated (J).

IX.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL) criteria were met. No data qualification was necessary.

PERCHLORATE

SUMMARY

I.) General:

The analyses for Perchlorate were performed according to SW-846 Method 6350.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification (ICV):

All Initial Calibration Verification criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

III.) Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

One LCS was analyzed for this fraction of the SDG. All criteria were met. No data qualification was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS/ MSD analyses were performed using sample 54MW12. All criteria were met. No data qualification was necessary.

VI.) Field Duplicates:

One set of field duplicate samples (54MW13 / 54TW13) was identified for this SDG. The calculable Relative Percent Difference (RPD) at 9.5% was within the QC limit. No data qualification was necessary.

VII.) Internal Standards Performance (ISTD):

All ISTD criteria were met. No data qualification was necessary.

VIII.) TCL Compound Identification:

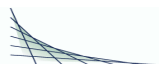
All TCL Compound Identification criteria were met. No data qualification was necessary.

IX.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL) criteria were met. No data qualification was necessary.

Appendix A

Qualified Form Is



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

13MW2

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix:	GROUND WATER	SDG No.:	178914
Sample wt/vol:	22.5 (g/mL)	CTL Sample ID:	1346825
% Solids:		Date Received:	07/12/2023
Soil Extract Vol:	22.5 (mL)	Date/Time Prepared:	07/20/2023 / 08:11
Analytical Method:	RSK 175	Analytical Prep Batch #:	130621
Analytical Run #:	273815	Dilution Factor:	1
Date & Time Analyzed:	07/20/2023 / 10:17	GPC (3640A) Cleanup Date/Time:	/

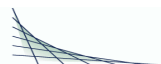
Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG071323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 178914

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1346825

% Solids: _____ Date Received: 07/12/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: /

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 20:18 GPC (3640A) Cleanup Date/Time: /

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1346825
% Solids: Date Received: 07/12/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 20:18 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U Z UJ	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW2

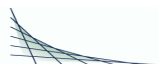
Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1346825
% Solids: Date Received: 07/12/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 20:18 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

13MW3

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 178914

Sample wt/vol: 22.5 (g/mL) CTL Sample ID: 1346822

% Solids: Date Received: 07/12/2023

Soil Extract Vol: 22.5 (mL) Date/Time Prepared: 07/20/2023 / 08:11

Analytical Method: RSK 175 Analytical Prep Batch #: 130621

Analytical Run #: 273815 Dilution Factor: 1

Date & Time Analyzed: 07/20/2023 / 10:05 GPC (3640A) Cleanup Date/Time: /

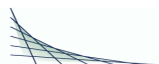
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: P4DG071323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW3

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 178914

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1346822

% Solids: _____ Date Received: 07/12/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 18:54 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW3

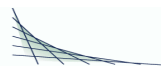
Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1346822
% Solids: Date Received: 07/12/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 18:54 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	5.2		0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	0.54	J	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U Z UJ	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

13MW3

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1346822
% Solids: Date Received: 07/12/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 18:54 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	0.89	J	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW4

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix:	GROUND WATER	SDG No.:	178914
Sample wt/vol:	22.5 (g/mL)	CTL Sample ID:	1346821
% Solids:		Date Received:	07/12/2023
Soil Extract Vol:	22.5 (mL)	Date/Time Prepared:	07/20/2023 / 08:11
Analytical Method:	RSK 175	Analytical Prep Batch #:	130621
Analytical Run #:	273815	Dilution Factor:	1
Date & Time Analyzed:	07/20/2023 / 09:50	GPC (3640A) Cleanup Date/Time:	/

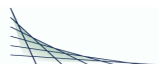
Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG071323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW4

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 178914

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1346821

% Solids: _____ Date Received: 07/12/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 18:27 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

13MW4

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: _____ (g/mL) CTL Sample ID: 1346821
% Solids: _____ Date Received: 07/12/2023
Soil Extract Vol: _____ (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #: _____
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 18:27 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: _____, _____, _____

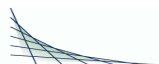
TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U Z JJ	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

ALH 9/21/23



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

13MW4

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 178914

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1346821

% Solids: _____ Date Received: 07/12/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: /

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 18:27 GPC (3640A) Cleanup Date/Time: /

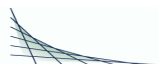
Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	0.95	J	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW1

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix:	GROUND WATER	SDG No.:	178914
Sample wt/vol:	22.5 (g/mL)	CTL Sample ID:	1347758
% Solids:		Date Received:	07/14/2023
Soil Extract Vol:	22.5 (mL)	Date/Time Prepared:	07/20/2023 / 08:11
Analytical Method:	RSK 175	Analytical Prep Batch #:	130621
Analytical Run #:	273815	Dilution Factor:	1
Date & Time Analyzed:	07/20/2023 / 10:41	GPC (3640A) Cleanup Date/Time:	/

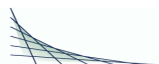
Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG071323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW1

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 178914

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1347758

% Solids: _____ Date Received: 07/14/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: /

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 22:08 GPC (3640A) Cleanup Date/Time: /

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	0.50	J	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	9.4		0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW1

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1347758
% Solids: Date Received: 07/14/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 22:08 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

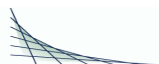
TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	0.60	J	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U Z UJ	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.4		0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.6		0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0 ---1.4	J---U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis.

ALH 9/21/23



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW1

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 178914

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1347758

% Solids: _____ Date Received: 07/14/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: /

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 22:08 GPC (3640A) Cleanup Date/Time: /

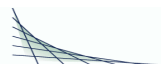
Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	0.41	J	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW2

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix:	GROUND WATER	SDG No.:	178914
Sample wt/vol:	22.5 (g/mL)	CTL Sample ID:	1348146
% Solids:		Date Received:	07/15/2023
Soil Extract Vol:	22.5 (mL)	Date/Time Prepared:	07/20/2023 / 08:11
Analytical Method:	RSK 175	Analytical Prep Batch #:	130621
Analytical Run #:	273815	Dilution Factor:	1
Date & Time Analyzed:	07/20/2023 / 10:58	GPC (3640A) Cleanup Date/Time:	/

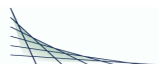
Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG071323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.65	J	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 178914

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1348146

% Solids: _____ Date Received: 07/15/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 23:04 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW2

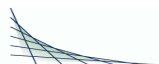
Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1348146
% Solids: Date Received: 07/15/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 23:04 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	19		0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	3.2		0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U Z UJ	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

48MW2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 178914

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1348146

% Solids: _____ Date Received: 07/15/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: /

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 23:04 GPC (3640A) Cleanup Date/Time: /

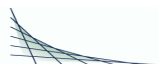
Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.2		0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

48MW3

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix:	GROUND WATER	SDG No.:	178914
Sample wt/vol:	22.5 (g/mL)	CTL Sample ID:	1348147
% Solids:		Date Received:	07/15/2023
Soil Extract Vol:	22.5 (mL)	Date/Time Prepared:	07/20/2023 / 08:11
Analytical Method:	RSK 175	Analytical Prep Batch #:	130621
Analytical Run #:	273815	Dilution Factor:	1
Date & Time Analyzed:	07/20/2023 / 11:02	GPC (3640A) Cleanup Date/Time:	/

Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG071323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW3

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 178914

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1348147

% Solids: _____ Date Received: 07/15/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 23:31 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW3

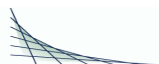
Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1348147
% Solids: Date Received: 07/15/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 23:31 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	76		0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	9.9		0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U Z UJ	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

48MW3

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 178914

Sample wt/vol: (g/mL) CTL Sample ID: 1348147

% Solids: Date Received: 07/15/2023

Soil Extract Vol: (mL) Date/Time Prepared: /

Analytical Method: EPA 8260C Analytical Prep Batch #:

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 23:31 GPC (3640A) Cleanup Date/Time: /

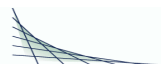
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	13		0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

48MW6

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix:	GROUND WATER	SDG No.:	178914
Sample wt/vol:	22.5 (g/mL)	CTL Sample ID:	1347302
% Solids:		Date Received:	07/13/2023
Soil Extract Vol:	22.5 (mL)	Date/Time Prepared:	07/20/2023 / 08:11
Analytical Method:	RSK 175	Analytical Prep Batch #:	130621
Analytical Run #:	273815	Dilution Factor:	1
Date & Time Analyzed:	07/20/2023 / 10:21	GPC (3640A) Cleanup Date/Time:	/

Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG071323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW6

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 178914

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1347302

% Solids: _____ Date Received: 07/13/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 20:45 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	3.0		0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW6

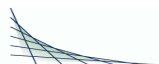
Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1347302
% Solids: Date Received: 07/13/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 20:45 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	5.9		0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U Z UJ	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

48MW6

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 178914

Sample wt/vol: (g/mL) CTL Sample ID: 1347302

% Solids: Date Received: 07/13/2023

Soil Extract Vol: (mL) Date/Time Prepared: /

Analytical Method: EPA 8260C Analytical Prep Batch #:

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 20:45 GPC (3640A) Cleanup Date/Time: /

Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	2.9		0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW01

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: 22.5 (g/mL) CTL Sample ID: 1347303
% Solids: Date Received: 07/13/2023
Soil Extract Vol: 22.5 (mL) Date/Time Prepared: 07/20/2023 / 08:11
Analytical Method: RSK 175 Analytical Prep Batch #: 130621
Analytical Run #: 273815 Dilution Factor: 1
Date & Time Analyzed: 07/20/2023 / 10:25 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: P4DG071323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U T JJ	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U T	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U T	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW01

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1347303
% Solids: Date Received: 07/13/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 21:12 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U T UJ	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U T	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U T	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U T	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U T	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U T	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U T	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U T	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U T	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	0.49	J T J	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U T UJ	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U T	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U T	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U T	34	50	100	100
78-93-3	2-Butanone	10	U T	2.9	10	11	11
591-78-6	2-Hexanone	10	U T	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U T	3.7	10	12	12
67-64-1	Acetone	10	U T	4.1	10	20	20
71-43-2	Benzene	1.0	U T	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U T	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U T	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U T	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW01

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1347303
% Solids: Date Received: 07/13/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 21:12 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U T UJ	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U T	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	0.38	J T	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U T	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U T	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U T	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U T	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U T	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U T	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U T	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U T	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U TZ	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U T	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U T	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U T	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U T	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U T	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U T	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U T	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U T	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U T	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U T	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

ALH 9/21/23

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW01

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1347303
% Solids: Date Received: 07/13/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 21:12 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U T UJ	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U T	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U T	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U T	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U T	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U T	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U T	0.12	0.25	0.50	0.50

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW01-EQB

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix:	GROUND WATER	SDG No.:	178914
Sample wt/vol:	22.5 (g/mL)	CTL Sample ID:	1347305
% Solids:		Date Received:	07/13/2023
Soil Extract Vol:	22.5 (mL)	Date/Time Prepared:	07/20/2023 / 08:11
Analytical Method:	RSK 175	Analytical Prep Batch #:	130621
Analytical Run #:	273815	Dilution Factor:	1
Date & Time Analyzed:	07/20/2023 / 10:36	GPC (3640A) Cleanup Date/Time:	/

Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG071323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW01-EQB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: _____ (g/mL) CTL Sample ID: 1347305
% Solids: _____ Date Received: 07/13/2023
Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____
Analytical Method: EPA 8260C Analytical Prep Batch #: _____
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 17:03 GPC (3640A) Cleanup Date/Time: _____ / _____
Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	4.9	J	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW01-EQB

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1347305
% Solids: Date Received: 07/13/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 17:03 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

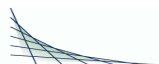
TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U Z JJ	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.1	J	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.1	J	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	1.9	J	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

ALH 9/21/23



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

49MW01-EQB

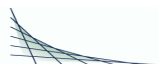
Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49</u>
Matrix:	<u>GROUND WATER</u>	SDG No.:	<u>178914</u>
Sample wt/vol:	<u>(g/mL)</u>	CTL Sample ID:	<u>1347305</u>
% Solids:	<u></u>	Date Received:	<u>07/13/2023</u>
Soil Extract Vol:	<u>(mL)</u>	Date/Time Prepared:	<u>/</u>
Analytical Method:	<u>EPA 8260C</u>	Analytical Prep Batch #:	<u></u>
Analytical Run #:	<u>273706</u>	Dilution Factor:	<u>1</u>
Date & Time Analyzed:	<u>07/21/2023 / 17:03</u>	GPC (3640A) Cleanup Date/Time:	<u>/</u>
Additional Cleanups Date/Time: <u></u> , <u></u> , <u></u>			

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

49MW02

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix:	GROUND WATER	SDG No.:	178914
Sample wt/vol:	22.5 (g/mL)	CTL Sample ID:	1348148
% Solids:		Date Received:	07/15/2023
Soil Extract Vol:	22.5 (mL)	Date/Time Prepared:	07/20/2023 / 08:11
Analytical Method:	RSK 175	Analytical Prep Batch #:	130621
Analytical Run #:	273815	Dilution Factor:	1
Date & Time Analyzed:	07/20/2023 / 11:07	GPC (3640A) Cleanup Date/Time:	/

Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG071323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW02

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 178914

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1348148

% Solids: _____ Date Received: 07/15/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 23:59 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW02

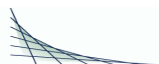
Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1348148
% Solids: Date Received: 07/15/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 23:59 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U Z UU	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

49MW02

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 178914

Sample wt/vol: (g/mL) CTL Sample ID: 1348148

% Solids: Date Received: 07/15/2023

Soil Extract Vol: (mL) Date/Time Prepared: /

Analytical Method: EPA 8260C Analytical Prep Batch #:

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 23:59 GPC (3640A) Cleanup Date/Time: /

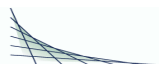
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

49MW04

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix:	GROUND WATER	SDG No.:	178914
Sample wt/vol:	22.5 (g/mL)	CTL Sample ID:	1346823
% Solids:		Date Received:	07/12/2023
Soil Extract Vol:	22.5 (mL)	Date/Time Prepared:	07/20/2023 / 08:11
Analytical Method:	RSK 175	Analytical Prep Batch #:	130621
Analytical Run #:	273815	Dilution Factor:	1
Date & Time Analyzed:	07/20/2023 / 10:09	GPC (3640A) Cleanup Date/Time:	/

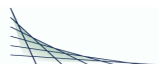
Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG071323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW04

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 178914

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1346823

% Solids: _____ Date Received: 07/12/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 19:21 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW04

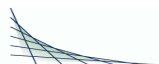
Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1346823
% Solids: Date Received: 07/12/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 19:21 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	0.70	J	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U Z JJ	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49MW04

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1346823
% Solids: Date Received: 07/12/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 19:21 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TB-1

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: TRIP BLANK SDG No.: 178914

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1346820

% Solids: _____ Date Received: 07/12/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 16:08 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TB-1

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: TRIP BLANK SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1346820
% Solids: Date Received: 07/12/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 16:08 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U Z UJ	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TB-1

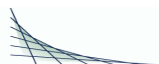
Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: TRIP BLANK SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1346820
% Solids: Date Received: 07/12/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 16:08 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TB-2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
 Matrix: TRIP BLANK SDG No.: 178914
 Sample wt/vol: _____ (g/mL) CTL Sample ID: 1347301
 % Solids: _____ Date Received: 07/13/2023
 Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____
 Analytical Method: EPA 8260C Analytical Prep Batch #: _____
 Analytical Run #: 273706 Dilution Factor: 1
 Date & Time Analyzed: 07/21/2023 / 16:36 GPC (3640A) Cleanup Date/Time: _____ / _____
 Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TB-2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: TRIP BLANK SDG No.: 178914
Sample wt/vol: _____ (g/mL) CTL Sample ID: 1347301
% Solids: _____ Date Received: 07/13/2023
Soil Extract Vol: _____ (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #: _____
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 16:36 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U Z UU	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TB-2

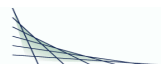
Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: TRIP BLANK SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1347301
% Solids: Date Received: 07/13/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 16:36 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TB-3

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: TRIP BLANK SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1347757
% Solids: Date Received: 07/14/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 17:31 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TB-3

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: TRIP BLANK SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1347757
% Solids: Date Received: 07/14/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 17:31 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

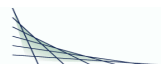
TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U Z UJ	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

ALH 9/21/23



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

49TB-3

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: TRIP BLANK SDG No.: 178914

Sample wt/vol: (g/mL) CTL Sample ID: 1347757

% Solids: Date Received: 07/14/2023

Soil Extract Vol: (mL) Date/Time Prepared: /

Analytical Method: EPA 8260C Analytical Prep Batch #:

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 17:31 GPC (3640A) Cleanup Date/Time: /

Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TB-4

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: TRIP BLANK SDG No.: 178914

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1348130

% Solids: _____ Date Received: 07/15/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: _____ / _____

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 18:00 GPC (3640A) Cleanup Date/Time: _____ / _____

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TB-4

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: TRIP BLANK SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1348130
% Solids: Date Received: 07/15/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 18:00 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

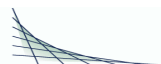
TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U Z UJ	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

ALH 9/21/23



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TB-4

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: TRIP BLANK SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1348130
% Solids: Date Received: 07/15/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 18:00 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TW01

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: 22.5 (g/mL) CTL Sample ID: 1347304
% Solids: Date Received: 07/13/2023
Soil Extract Vol: 22.5 (mL) Date/Time Prepared: 07/20/2023 / 08:11
Analytical Method: RSK 175 Analytical Prep Batch #: 130621
Analytical Run #: 273815 Dilution Factor: 1
Date & Time Analyzed: 07/20/2023 / 10:32 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: P4DG071323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U T UJ	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U T	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U T	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TW01

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1347304
% Solids: Date Received: 07/13/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 21:40 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U T JJ	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U T	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U T	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U T	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U T	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U T	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U T	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U T	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U T	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	0.37	J T J	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U T JJ	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U T	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U T	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U T	34	50	100	100
78-93-3	2-Butanone	10	U T	2.9	10	11	11
591-78-6	2-Hexanone	10	U T	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U T	3.7	10	12	12
67-64-1	Acetone	10	U T	4.1	10	20	20
71-43-2	Benzene	1.0	U T	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U T	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U T	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U T	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TW01

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1347304
% Solids: Date Received: 07/13/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 21:40 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U T UJ	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U T	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.0	U T	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U T	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U T	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U T	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U T	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U T	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U T	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U T	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U T	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U TZ	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0 --0.44	J- T UJ	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U T	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U T	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0 -0.98	J- T UJ	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U T	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U T	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U T	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U T	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U T	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U T	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TW01

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
 Matrix: GROUND WATER SDG No.: 178914
 Sample wt/vol: _____ (g/mL) CTL Sample ID: 1347304
 % Solids: _____ Date Received: 07/13/2023
 Soil Extract Vol: _____ (mL) Date/Time Prepared: /
 Analytical Method: EPA 8260C Analytical Prep Batch #: _____
 Analytical Run #: 273706 Dilution Factor: 1
 Date & Time Analyzed: 07/21/2023 / 21:40 GPC (3640A) Cleanup Date/Time: /
 Additional Cleanups Date/Time: _____, _____, _____

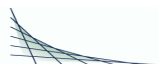
TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U T UJ	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U T	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U T	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U T	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U T	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U T	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U T	0.12	0.25	0.50	0.50

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

ALH 9/21/23



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TW04

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix:	GROUND WATER	SDG No.:	178914
Sample wt/vol:	22.5 (g/mL)	CTL Sample ID:	1346824
% Solids:		Date Received:	07/12/2023
Soil Extract Vol:	22.5 (mL)	Date/Time Prepared:	07/20/2023 / 08:11
Analytical Method:	RSK 175	Analytical Prep Batch #:	130621
Analytical Run #:	273815	Dilution Factor:	1
Date & Time Analyzed:	07/20/2023 / 10:14	GPC (3640A) Cleanup Date/Time:	/

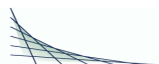
Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG071323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TW04

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 178914

Sample wt/vol: (g/mL) CTL Sample ID: 1346824

% Solids: Date Received: 07/12/2023

Soil Extract Vol: (mL) Date/Time Prepared: /

Analytical Method: EPA 8260C Analytical Prep Batch #:

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 19:50 GPC (3640A) Cleanup Date/Time: /

Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TW04

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1346824
% Solids: Date Received: 07/12/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 19:50 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	0.77	J	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U Z UJ	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

49TW04

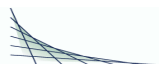
Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1346824
% Solids: Date Received: 07/12/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 19:50 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.0	U	0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A

VOLATILE ORGANICS ANALYSIS

Sample Description

50MW2

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix:	GROUND WATER	SDG No.:	178914
Sample wt/vol:	22.5 (g/mL)	CTL Sample ID:	1347759
% Solids:		Date Received:	07/14/2023
Soil Extract Vol:	22.5 (mL)	Date/Time Prepared:	07/20/2023 / 08:11
Analytical Method:	RSK 175	Analytical Prep Batch #:	130621
Analytical Run #:	273815	Dilution Factor:	1
Date & Time Analyzed:	07/20/2023 / 10:54	GPC (3640A) Cleanup Date/Time:	/

Additional Cleanups Date/Time: _____, _____, _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): _____ / _____

ICAL Calibration #: P4DG071323 Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-84-0	Ethane	0.80	U	0.38	0.80	1.0	1.0
74-85-1	Ethene	1.2	U	0.59	1.2	1.4	1.4
74-82-8	Methane	0.90	U	0.45	0.90	1.0	1.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1A
VOLATILE ORGANICS ANALYSIS

Sample Description

50MW2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49

Matrix: GROUND WATER SDG No.: 178914

Sample wt/vol: _____ (g/mL) CTL Sample ID: 1347759

% Solids: _____ Date Received: 07/14/2023

Soil Extract Vol: _____ (mL) Date/Time Prepared: /

Analytical Method: EPA 8260C Analytical Prep Batch #: _____

Analytical Run #: 273706 Dilution Factor: 1

Date & Time Analyzed: 07/21/2023 / 22:36 GPC (3640A) Cleanup Date/Time: /

Additional Cleanups Date/Time: _____ , _____ , _____

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
71-55-6	1,1,1-Trichloroethane	1.0	U	0.38	1.0	1.2	1.2
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	0.36	1.0	1.1	1.1
79-00-5	1,1,2-Trichloroethane	1.0	U	0.27	1.0	1.1	1.1
75-34-3	1,1-Dichloroethane	1.0	U	0.28	1.0	1.1	1.1
75-35-4	1,1-Dichloroethene	1.0	U	0.49	1.0	2.0	2.0
87-61-6	1,2,3-Trichlorobenzene	1.0	U	0.43	1.0	2.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	2.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U	0.35	1.0	2.0	2.0
106-93-4	1,2-Dibromoethane	1.0	U	0.33	1.0	1.1	1.1
95-50-1	1,2-Dichlorobenzene	1.0	U	0.35	1.0	1.1	1.1
107-06-2	1,2-Dichloroethane	2.0	U	0.69	2.0	2.1	2.1
78-87-5	1,2-Dichloropropane	1.0	U	0.37	1.0	1.2	1.2
541-73-1	1,3-Dichlorobenzene	1.0	U	0.30	1.0	1.1	1.1
123-91-1	1,4-Dioxane	50	U	34	50	100	100
78-93-3	2-Butanone	10	U	2.9	10	11	11
591-78-6	2-Hexanone	10	U	3.3	10	11	11
108-10-1	4-Methyl-2-pentanone	10	U	3.7	10	12	12
67-64-1	Acetone	10	U	4.1	10	20	20
71-43-2	Benzene	1.0	U	0.47	1.0	2.0	2.0
74-97-5	Bromochloromethane	1.0	U	0.26	1.0	1.1	1.1
75-27-4	Bromodichloromethane	0.25	U	0.080	0.25	0.50	0.50
75-25-2	Bromoform	1.0	U	0.50	1.0	2.0	2.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

50MW2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1347759
% Solids: Date Received: 07/14/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 22:36 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
74-83-9	Bromomethane	1.0	U	0.49	1.0	2.0	2.0
75-15-0	Carbon disulfide	2.0	U	0.83	2.0	4.0	4.0
56-23-5	Carbon tetrachloride	1.1	J	0.37	1.0	1.2	1.2
108-90-7	Chlorobenzene	1.0	U	0.37	1.0	1.2	1.2
75-00-3	Chloroethane	1.0	U	0.36	1.0	2.0	2.0
67-66-3	Chloroform	1.0	U	0.46	1.0	1.4	1.4
74-87-3	Chloromethane	1.0	U	0.39	1.0	2.0	2.0
156-59-2	cis-1,2-Dichloroethene	1.0	U	0.41	1.0	1.3	1.3
10061-01-5	cis-1,3-Dichloropropene	1.0	U	0.34	1.0	1.1	1.1
110-82-7	Cyclohexane	2.0	U	0.71	2.0	2.2	2.2
124-48-1	Dibromochloromethane	1.0	U	0.35	1.0	1.1	1.1
75-71-8	Dichlorodifluoromethane	2.0	U Z UJ	0.63	2.0	2.1	2.1
100-41-4	Ethylbenzene	1.0	U	0.42	1.0	1.3	1.3
76-13-1	Freon 113	4.0	U	1.5	4.0	4.5	4.5
98-82-8	Isopropylbenzene	1.0	U	0.39	1.0	1.2	1.2
179601-23-1	m & p-Xylene	2.0	U	0.74	2.0	2.3	2.3
79-20-9	Methyl Acetate	1.0	U	0.34	1.0	2.0	2.0
1634-04-4	Methyl tert-butyl ether	1.0	U	0.28	1.0	1.1	1.1
108-87-2	Methylcyclohexane	2.0	U	0.78	2.0	2.4	2.4
75-09-2	Methylene chloride	4.0	U	1.2	4.0	4.1	4.1
95-47-6	o-Xylene	2.0	U	0.72	2.0	2.2	2.2
100-42-5	Styrene	1.0	U	0.33	1.0	1.1	1.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

1A
VOLATILE ORGANICS ANALYSIS

Sample Description

50MW2

Lab Name: CT Laboratories Contract: WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix: GROUND WATER SDG No.: 178914
Sample wt/vol: (g/mL) CTL Sample ID: 1347759
% Solids: Date Received: 07/14/2023
Soil Extract Vol: (mL) Date/Time Prepared: /
Analytical Method: EPA 8260C Analytical Prep Batch #:
Analytical Run #: 273706 Dilution Factor: 1
Date & Time Analyzed: 07/21/2023 / 22:36 GPC (3640A) Cleanup Date/Time: /
Additional Cleanups Date/Time: , ,

TCLP (1311) / SPLP (1312) / MLP (1320) or ASTM D3987-85 Procedure Extraction Date (if applicable): /

ICAL Calibration #: W071823. Concentration Units: ug/L

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
127-18-4	Tetrachloroethene	1.0	U	0.54	1.0	2.0	2.0
108-88-3	Toluene	1.0	U	0.27	1.0	1.1	1.1
156-60-5	trans-1,2-Dichloroethene	1.0	U	0.35	1.0	1.1	1.1
10061-02-6	trans-1,3-Dichloropropene	2.0	U	0.56	2.0	2.1	2.1
79-01-6	Trichloroethene	1.3		0.39	1.0	1.2	1.2
75-69-4	Trichlorofluoromethane	1.0	U	0.41	1.0	2.0	2.0
75-01-4	Vinyl chloride	0.25	U	0.12	0.25	0.50	0.50

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



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INORGANIC ANALYSIS DATA SHEET

Sample Description

49IDW

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178914</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1348149</u>	
Analytical Method:	<u>EPA 7470A</u>	Date Received:	<u>07/15/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>273833</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u>130488</u>	Analysis Date/Time:	<u>07/21/2023</u>	<u>10:58</u>
		Prep. Date/Time:	<u>07/18/2023</u>	<u>13:20</u>

Concentration Units: ug/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-97-6	Total Mercury	0.080	U	0.020	0.080	0.12	0.12

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49IDW

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix (soil/water):	GROUND WATER	SDG No.:	178914
% Solids:		Lab Sample ID:	1348149
Analytical Method:	EPA 6010C	Date Received:	07/15/2023
Dilution Factor:	1	TCLP (1311) /SPLP(1312)	
Analytical Run #:	273760	Extraction Date/time:	
Analytical Prep Batch #:	130560	Analysis Date/Time:	07/19/2023 13:38
		Prep. Date/Time:	07/18/2023 12:12

Concentration Units: ug/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7429-90-5	Total Aluminum	3340	J	15	60	120	120
7440-36-0	Total Antimony	10	U	4.4	10	20	20
7440-38-2	Total Arsenic	20	U	7.7	20	40	40
7440-39-3	Total Barium	141		0.71	2.0	4.0	4.0
7440-41-7	Total Beryllium	3.0	U	0.75	3.0	8.0	8.0
7440-43-9	Total Cadmium	1.0	U	0.41	1.0	2.0	2.0
7440-70-2	Total Calcium	95200	J	25	50	100	100
7440-47-3	Total Chromium	9.3		1.1	2.5	5.0	5.0
7440-48-4	Total Cobalt	3.9	J	1.0	2.5	5.0	5.0
7440-50-8	Total Copper	11.4	J	5.2	20	40	40
7439-89-6	Total Iron	6570	J	14	40	80	80
7439-92-1	Total Lead	5.7	J M J	1.4	5.0	10	10
7439-95-4	Total Magnesium	46600		10	25	40	40
7439-96-5	Total Manganese	573	M J	1.4	3.0	5.0	5.0
7440-02-0	Total Nickel	7.2		1.5	3.0	5.0	5.0
7440-09-7	Total Potassium	2980		120	250	500	500
7782-49-2	Total Selenium	20	U	10	20	40	40
7440-22-4	Total Silver	2.5	U	1.1	2.5	5.0	5.0
7440-23-5	Total Sodium	26200		200	500	700	700
7440-28-0	Total Thallium	20	U M UJ	6.8	20	40	40
7440-62-2	Total Vanadium	7.1	M J	1.3	3.0	5.0	5.0
7440-66-6	Total Zinc	31.5	M J	4.5	10	20	20

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



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INORGANIC ANALYSIS DATA SHEET

Sample Description

13MW2

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178914</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1346825</u>	
Analytical Method:	<u>EPA 9060A</u>	Date Received:	<u>07/12/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>273651</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>07/14/2023</u>	<u>18:24</u>
		Prep. Date/Time:	<u></u>	

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

13MW2

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49</u>
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178914</u>
% Solids:	<u></u>	Lab Sample ID:	<u>1346825</u>
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>07/12/2023</u>
Dilution Factor:	<u>1.0000</u>	TCLP (1311) /SPLP(1312)	<u></u>
Analytical Run #:	<u>273583</u>	Extraction Date/time:	<u></u>
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>07/12/2023 23:52</u>
		Prep. Date/Time:	<u></u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	2.5	J	1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.32	J	0.12	0.20	0.40	0.40
14808-79-8	Sulfate	41		0.80	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

13MW3

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1346822	
Analytical Method:	EPA 9056A	Date Received:	07/12/2023	
Dilution Factor:	5	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273583	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/13/2023	09:10
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
14808-79-8	Sulfate	99		4.0	7.5	15	15

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



1

INORGANIC ANALYSIS DATA SHEET

Sample Description

13MW3

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178914</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1346822</u>	
Analytical Method:	<u>EPA 9060A</u>	Date Received:	<u>07/12/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>273651</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>07/14/2023</u>	<u>17:50</u>
		Prep. Date/Time:	<u></u>	

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

13MW3

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1346822	
Analytical Method:	EPA 9056A	Date Received:	07/12/2023	
Dilution Factor:	1.0000	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273583	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/12/2023	22:44
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	4.0		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	1.7		0.12	0.20	0.40	0.40

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

13MW4

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1346821	
Analytical Method:	EPA 9060A	Date Received:	07/12/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273651	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/14/2023	17:04
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

13MW4

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1346821	
Analytical Method:	EPA 9056A	Date Received:	07/12/2023	
Dilution Factor:	1.0000	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273583	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/12/2023	22:21
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	3.6		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.32	J	0.12	0.20	0.40	0.40
14808-79-8	Sulfate	57	M	0.80	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW1

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1347758	
Analytical Method:	EPA 9060A	Date Received:	07/14/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273734	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/18/2023	12:17
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW1

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1347758	
Analytical Method:	EPA 9056A	Date Received:	07/14/2023	
Dilution Factor:	1.0000	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273661	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/14/2023	20:21
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	5.7		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	1.6		0.12	0.20	0.40	0.40
14808-79-8	Sulfate	50		0.80	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW2

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1348146	
Analytical Method:	EPA 9056A	Date Received:	07/15/2023	
Dilution Factor:	1.0000	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273708	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/17/2023	10:21
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	1.5	J	1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.76	H J	0.12	0.20	0.40	0.40
14808-79-8	Sulfate	7.3	Y,M J	0.80	1.5	3.0	3.0

ALH 9/21/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



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INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW2

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1348146	
Analytical Method:	EPA 9060A	Date Received:	07/15/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273734	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/18/2023	13:14
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW3

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1348147	
Analytical Method:	EPA 9056A	Date Received:	07/15/2023	
Dilution Factor:	1.0000	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273708	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/17/2023	10:44
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	2.2	J	1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	7.0	H J	0.12	0.20	0.40	0.40
14808-79-8	Sulfate	33		0.80	1.5	3.0	3.0

ALH 9/21/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



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INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW3

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1348147	
Analytical Method:	EPA 9060A	Date Received:	07/15/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273734	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/18/2023	14:04
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW6

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1347302	
Analytical Method:	EPA 9056A	Date Received:	07/13/2023	
Dilution Factor:	1.0000	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273619	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/13/2023	13:33
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	10		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	2.6		0.12	0.20	0.40	0.40

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW6

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1347302	
Analytical Method:	EPA 9060A	Date Received:	07/13/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273651	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/14/2023	18:35
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	0.76	J	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

48MW6

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1347302	
Analytical Method:	EPA 9056A	Date Received:	07/13/2023	
Dilution Factor:	5	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273619	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/17/2023	20:39
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
14808-79-8	Sulfate	120	M J	4.0	7.5	15	15

ALH 9/21/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49IDW

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178914</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1348149</u>	
Analytical Method:	<u>EPA 410.4</u>	Date Received:	<u>07/15/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>273727</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u>130553</u>	Analysis Date/Time:	<u>07/19/2023</u>	<u>11:20</u>
		Prep. Date/Time:	<u>07/18/2023</u>	<u>08:45</u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
COD	COD	45	J	18	50	75	75

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49IDW

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1348149	
Analytical Method:	EPA 9040C	Date Received:	07/15/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273725	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/17/2023	16:00
		Prep. Date/Time:		

Concentration Units: S.U.

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
PH	pH	7.89		0.1	0.1	0.1	0.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49MW01

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49</u>
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178914</u>
% Solids:	<u></u>	Lab Sample ID:	<u>1347303</u>
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>07/13/2023</u>
Dilution Factor:	<u>1.0000</u>	TCLP (1311) /SPLP(1312)	<u></u>
Analytical Run #:	<u>273619</u>	Extraction Date/time:	<u></u>
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>07/13/2023 13:56</u>
		Prep. Date/Time:	<u></u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	4.6		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.34	J	0.12	0.20	0.40	0.40
14808-79-8	Sulfate	0.86	J	0.80	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



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INORGANIC ANALYSIS DATA SHEET

Sample Description

49MW01

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178914</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1347303</u>	
Analytical Method:	<u>EPA 9060A</u>	Date Received:	<u>07/13/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>273651</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>07/14/2023</u>	<u>19:15</u>
		Prep. Date/Time:	<u></u>	

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.2	J	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49MW01-EQB

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1347305	
Analytical Method:	EPA 9056A	Date Received:	07/13/2023	
Dilution Factor:	1.0000	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273619	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/13/2023	14:42
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	1.5	U	1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.20	U	0.12	0.20	0.40	0.40
14808-79-8	Sulfate	1.5	U	0.80	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49MW01-EQB

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1347305	
Analytical Method:	EPA 9060A	Date Received:	07/13/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273651	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/14/2023	19:38
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49MW02

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1348148	
Analytical Method:	EPA 9056A	Date Received:	07/15/2023	
Dilution Factor:	1.0000	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273708	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/17/2023	11:07
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	1.5	J	1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.35	J H	0.12	0.20	0.40	0.40
14808-79-8	Sulfate	13		0.80	1.5	3.0	3.0

INORGANIC ANALYSIS DATA SHEET

Sample Description

49MW02

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1348148	
Analytical Method:	EPA 9060A	Date Received:	07/15/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273734	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/18/2023	14:15
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49MW04

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1346823	
Analytical Method:	EPA 9060A	Date Received:	07/12/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273651	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/14/2023	18:02
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49MW04

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49
Matrix (soil/water):	GROUND WATER	SDG No.:	178914
% Solids:		Lab Sample ID:	1346823
Analytical Method:	EPA 9056A	Date Received:	07/12/2023
Dilution Factor:	1.0000	TCLP (1311) /SPLP(1312)	
Analytical Run #:	273583	Extraction Date/time:	
Analytical Prep Batch #:		Analysis Date/Time:	07/12/2023 23:07
		Prep. Date/Time:	

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	6.4		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.37	J	0.12	0.20	0.40	0.40
14808-79-8	Sulfate	67		0.80	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49TW01

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49</u>
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178914</u>
% Solids:	<u></u>	Lab Sample ID:	<u>1347304</u>
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>07/13/2023</u>
Dilution Factor:	<u>1.0000</u>	TCLP (1311) /SPLP(1312)	<u></u>
Analytical Run #:	<u>273619</u>	Extraction Date/time:	<u></u>
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>07/13/2023 14:19</u>
		Prep. Date/Time:	<u></u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	4.6		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.34	J	0.12	0.20	0.40	0.40
14808-79-8	Sulfate	0.86	J	0.80	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49TW01

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1347304	
Analytical Method:	EPA 9060A	Date Received:	07/13/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273651	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/14/2023	19:27
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.2	J	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



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INORGANIC ANALYSIS DATA SHEET

Sample Description

49TW04

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1346824	
Analytical Method:	EPA 9060A	Date Received:	07/12/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273651	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/14/2023	18:13
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

49TW04

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1346824	
Analytical Method:	EPA 9056A	Date Received:	07/12/2023	
Dilution Factor:	1.0000	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273583	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/12/2023	23:29
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	6.4		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.40		0.12	0.20	0.40	0.40
14808-79-8	Sulfate	63		0.80	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

50MW2

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1347759	
Analytical Method:	EPA 9060A	Date Received:	07/14/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273734	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/18/2023	12:28
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

50MW2

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 49	
Matrix (soil/water):	GROUND WATER	SDG No.:	178914	
% Solids:		Lab Sample ID:	1347759	
Analytical Method:	EPA 9056A	Date Received:	07/14/2023	
Dilution Factor:	1.0000	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273661	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/14/2023	21:07
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	6.8		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	2.0		0.12	0.20	0.40	0.40
14808-79-8	Sulfate	69	M J	0.80	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



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INORGANIC ANALYSIS DATA SHEET

Sample Description

54IDW

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346384	
Analytical Method:	EPA 7470A	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273833	Extraction Date/time:		
Analytical Prep Batch #:	130488	Analysis Date/Time:	07/21/2023	10:52
		Prep. Date/Time:	07/18/2023	13:20

Concentration Units: ug/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-97-6	Total Mercury	0.080	U	0.020	0.080	0.12	0.12

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54IDW

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346384	
Analytical Method:	EPA 6010C	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273608	Extraction Date/time:		
Analytical Prep Batch #:	130497	Analysis Date/Time:	07/13/2023	14:53
		Prep. Date/Time:	07/12/2023	14:07

Concentration Units: ug/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7429-90-5	Total Aluminum	739	Y	15	60	120	120
7440-36-0	Total Antimony	10	U	4.4	10	20	20
7440-38-2	Total Arsenic	20	U	7.7	20	40	40
7440-39-3	Total Barium	77.8		0.71	2.0	4.0	4.0
7440-41-7	Total Beryllium	3.0	U	0.75	3.0	8.0	8.0
7440-43-9	Total Cadmium	1.0	U	0.41	1.0	2.0	2.0
7440-70-2	Total Calcium	79700		25	50	100	100
7440-47-3	Total Chromium	4.0	J	1.1	2.5	5.0	5.0
7440-48-4	Total Cobalt	2.5	U	1.0	2.5	5.0	5.0
7440-50-8	Total Copper	20	U	5.2	20	40	40
7439-89-6	Total Iron	1990		14	40	80	80
7439-92-1	Total Lead	3.1	J	1.4	5.0	10	10
7439-95-4	Total Magnesium	33400		10	25	40	40
7439-96-5	Total Manganese	44.0		1.4	3.0	5.0	5.0
7440-02-0	Total Nickel	3.0	U	1.5	3.0	5.0	5.0
7440-09-7	Total Potassium	1590		120	250	500	500
7782-49-2	Total Selenium	20	U	10	20	40	40
7440-22-4	Total Silver	2.5	U	1.1	2.5	5.0	5.0
7440-23-5	Total Sodium	4630		200	500	700	700
7440-28-0	Total Thallium	20	U	6.8	20	40	40
7440-62-2	Total Vanadium	1.9	J J	1.3	3.0	5.0	5.0
7440-66-6	Total Zinc	14.6	J	4.5	10	20	20

ALH 9/21/23

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54IDW

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346384	
Analytical Method:	EPA 410.4	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273727	Extraction Date/time:		
Analytical Prep Batch #:	130553	Analysis Date/Time:	07/19/2023	11:20
		Prep. Date/Time:	07/18/2023	08:45

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
COD	COD	50	U	18	50	75	75

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



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INORGANIC ANALYSIS DATA SHEET

Sample Description

54IDW

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346384	
Analytical Method:	EPA 9040C	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273548	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/11/2023	14:15
		Prep. Date/Time:		

Concentration Units: S.U.

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
PH	pH	7.62		0.1	0.1	0.1	0.1

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW1

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346383	
Analytical Method:	EPA 9060A	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273604	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/13/2023	11:15
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	66		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW1

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346383	
Analytical Method:	EPA 9060A	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273651	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/14/2023	16:51
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW1

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178887</u>
% Solids:	<u></u>	Lab Sample ID:	<u>1346383</u>
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>07/11/2023</u>
Dilution Factor:	<u>1.0000</u>	TCLP (1311) /SPLP(1312)	<u></u>
Analytical Run #:	<u>273539</u>	Extraction Date/time:	<u></u>
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>07/11/2023 20:42</u>
		Prep. Date/Time:	<u></u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	2.3	J	1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.20	U	0.12	0.20	0.40	0.40
14808-79-8	Sulfate	29		0.80	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW10

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346381	
Analytical Method:	EPA 9056A	Date Received:	07/11/2023	
Dilution Factor:	5	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273539	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/15/2023	03:35
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
14808-79-8	Sulfate	170		4.0	7.5	15	15

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW10

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346381	
Analytical Method:	EPA 9060A	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273604	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/13/2023	10:49
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	84		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



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INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW10

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178887</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1346381</u>	
Analytical Method:	<u>EPA 9060A</u>	Date Received:	<u>07/11/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>273651</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>07/14/2023</u>	<u>15:13</u>
		Prep. Date/Time:	<u></u>	

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW10

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178887</u>
% Solids:	<u></u>	Lab Sample ID:	<u>1346381</u>
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>07/11/2023</u>
Dilution Factor:	<u>1.0000</u>	TCLP (1311) /SPLP(1312)	<u></u>
Analytical Run #:	<u>273539</u>	Extraction Date/time:	<u></u>
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>07/11/2023 20:00</u>
		Prep. Date/Time:	<u></u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	3.9		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.20	U	0.12	0.20	0.40	0.40

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



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INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW12

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178887</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1346382</u>	
Analytical Method:	<u>EPA 9060A</u>	Date Received:	<u>07/11/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>273604</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>07/13/2023</u>	<u>11:02</u>
		Prep. Date/Time:	<u></u>	

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	86		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW12

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346382	
Analytical Method:	EPA 9060A	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273651	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/14/2023	15:25
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW12

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346382	
Analytical Method:	EPA 9056A	Date Received:	07/11/2023	
Dilution Factor:	1.0000	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273539	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/11/2023	20:21
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	6.2		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.71		0.12	0.20	0.40	0.40
14808-79-8	Sulfate	25	M J	0.80	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW13

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346379	
Analytical Method:	EPA 9060A	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273604	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/13/2023	10:23
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	85		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW13

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346379	
Analytical Method:	EPA 9060A	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273651	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/14/2023	14:50
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54MW13

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178887</u>
% Solids:	<u></u>	Lab Sample ID:	<u>1346379</u>
Analytical Method:	<u>EPA 9056A</u>	Date Received:	<u>07/11/2023</u>
Dilution Factor:	<u>1.0000</u>	TCLP (1311) /SPLP(1312)	<u></u>
Analytical Run #:	<u>273539</u>	Extraction Date/time:	<u></u>
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>07/11/2023 19:19</u>
		Prep. Date/Time:	<u></u>

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	6.3		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.56		0.12	0.20	0.40	0.40
14808-79-8	Sulfate	31		0.80	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54TW13

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346380	
Analytical Method:	EPA 9060A	Date Received:	07/11/2023	
Dilution Factor:	1	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273604	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/13/2023	10:36
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TIC	Total Inorganic Carbon	85		0.5	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis



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INORGANIC ANALYSIS DATA SHEET

Sample Description

54TW13

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54</u>	
Matrix (soil/water):	<u>GROUND WATER</u>	SDG No.:	<u>178887</u>	
% Solids:	<u></u>	Lab Sample ID:	<u>1346380</u>	
Analytical Method:	<u>EPA 9060A</u>	Date Received:	<u>07/11/2023</u>	
Dilution Factor:	<u>1</u>	TCLP (1311) /SPLP(1312)	<u></u>	
Analytical Run #:	<u>273651</u>	Extraction Date/time:	<u></u>	
Analytical Prep Batch #:	<u></u>	Analysis Date/Time:	<u>07/14/2023</u>	<u>15:02</u>
		Prep. Date/Time:	<u></u>	

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
TOC	Total Organic Carbon	1.5	U	0.4	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

INORGANIC ANALYSIS DATA SHEET

Sample Description

54TW13

Lab Name:	CT Laboratories	Contract:	WESTON SOLUTIONS, INC.-RADFORD AAP SWMU 54	
Matrix (soil/water):	GROUND WATER	SDG No.:	178887	
% Solids:		Lab Sample ID:	1346380	
Analytical Method:	EPA 9056A	Date Received:	07/11/2023	
Dilution Factor:	1.0000	TCLP (1311) /SPLP(1312)		
Analytical Run #:	273539	Extraction Date/time:		
Analytical Prep Batch #:		Analysis Date/Time:	07/11/2023	19:40
		Prep. Date/Time:		

Concentration Units: mg/L

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
16887-00-6	Chloride	6.2		1.0	1.5	3.0	3.2
14797-55-8	Nitrate Nitrogen	0.57		0.12	0.20	0.40	0.40
14808-79-8	Sulfate	30		0.80	1.5	3.0	3.0

Unless noted to the contrary, i.e., no % solids reported, then analytical results for solid matrices are reported on a dry weight basis

SGS North America Inc.

Report of Analysis

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Client Sample ID:	54MW13	Date Sampled:	07/10/23
Lab Sample ID:	FC7686-1	Date Received:	07/11/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 6850 IN HOUSE		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q104111.D	1	07/20/23 12:09	AL	07/20/23 10:12	OP97971	SQ2217
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.30	0.20	0.10	0.050	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

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SGS North America Inc.

Report of Analysis

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Client Sample ID:	54MW13	Date Sampled:	07/10/23
Lab Sample ID:	FC7686-1	Date Received:	07/11/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8330B SW846 3535A		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	BB077749.D	1	07/18/23 11:28	FS	07/17/23 09:00	OP97885	GBB2394
Run #2 ^b	GG626850.D	4	07/20/23 13:57	FS	07/17/23 09:00	OP97885	GGG3303

	Initial Volume	Final Volume
Run #1	900 ml	10.0 ml
Run #2	900 ml	10.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX	2.9	0.22	0.11	0.089	ug/l	
121-82-4	RDX	0.90	0.22	0.11	0.089	ug/l	
	DNX	0.11 U	0.22	0.11	0.089	ug/l	
	MNX	0.11 U	0.22	0.11	0.089	ug/l	
	TNX	0.11 U	0.22	0.11	0.089	ug/l	
618-87-1	3,5-Dinitroaniline ^c	0.58 J	0.22	0.11	0.089	ug/l	
99-65-0	1,3-Dinitrobenzene	0.11 U	0.22	0.11	0.089	ug/l	
606-20-2	2,6-Dinitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
121-14-2	2,4-Dinitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene ^c	1.4 J	0.22	0.11	0.089	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene ^c	0.98 J	0.22	0.11	0.089	ug/l	
98-95-3	Nitrobenzene	0.11 U	0.22	0.11	0.11	ug/l	
88-72-2	o-Nitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
99-08-1	m-Nitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
99-99-0	p-Nitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
479-45-8	Tetryl	0.11 U	0.22	0.11	0.089	ug/l	
99-35-4	1,3,5-Trinitrobenzene	14.3	0.22	0.11	0.11	ug/l	
118-96-7	2,4,6-Trinitrotoluene	8.8	0.22	0.11	0.089	ug/l	
55-63-0	Nitroglycerine	1.1 U	2.2	1.1	0.56	ug/l	
78-11-5	PETN	1.1 U	2.2	1.1	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	90%	94%	70-136%

- (a) All hits confirmed by reanalysis on a dissimilar column.
(b) Confirmation run.
(c) Primary and confirmation results differ by more than 40%.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

ALH 9/20/23

SGS North America Inc.

Report of Analysis

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Client Sample ID: 54TW13		Date Sampled: 07/10/23	
Lab Sample ID: FC7686-2		Date Received: 07/11/23	
Matrix: AQ - Ground Water		Percent Solids: n/a	
Method: SW846 6850 IN HOUSE			
Project: Radford AAP; VA			

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q104112.D	1	07/20/23 12:16	AL	07/20/23 10:12	OP97971	SQ2217
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.33	0.20	0.10	0.050	ug/l	

U = Not detected

LOQ = Limit of Quantitation

E = Indicates value exceeds calibration range

LOD = Limit of Detection

DL = Detection Limit

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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SGS North America Inc.

Report of Analysis

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Client Sample ID:	54TW13	Date Sampled:	07/10/23
Lab Sample ID:	FC7686-2	Date Received:	07/11/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8330B SW846 3535A		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	BB077750.D	1	07/18/23 11:59	FS	07/17/23 09:00	OP97885	GBB2394
Run #2 ^b	GG626841.D	1	07/19/23 11:44	FS	07/17/23 09:00	OP97885	GGG3302

	Initial Volume	Final Volume
Run #1	850 ml	10.0 ml
Run #2	850 ml	10.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX	3.0	0.24	0.12	0.094	ug/l	
121-82-4	RDX	0.91	0.24	0.12	0.094	ug/l	
	DNX	0.12 U	0.24	0.12	0.094	ug/l	
	MNX	0.12 U	0.24	0.12	0.094	ug/l	
	TNX	0.12 U	0.24	0.12	0.094	ug/l	
618-87-1	3,5-Dinitroaniline ^c	0.56 J	0.24	0.12	0.094	ug/l	
99-65-0	1,3-Dinitrobenzene	0.12 U	0.24	0.12	0.094	ug/l	
606-20-2	2,6-Dinitrotoluene	0.12 U	0.24	0.12	0.094	ug/l	
121-14-2	2,4-Dinitrotoluene	0.12 U	0.24	0.12	0.094	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene ^c	1.3 J	0.24	0.12	0.094	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene ^c	0.84 J	0.24	0.12	0.094	ug/l	
98-95-3	Nitrobenzene	0.12 U	0.24	0.12	0.11	ug/l	
88-72-2	o-Nitrotoluene	0.12 U	0.24	0.12	0.094	ug/l	
99-08-1	m-Nitrotoluene	0.12 U	0.24	0.12	0.094	ug/l	
99-99-0	p-Nitrotoluene	0.12 U	0.24	0.12	0.094	ug/l	
479-45-8	Tetryl	0.12 U	0.24	0.12	0.094	ug/l	
99-35-4	1,3,5-Trinitrobenzene	15.1	0.24	0.12	0.12	ug/l	
118-96-7	2,4,6-Trinitrotoluene	9.1	0.24	0.12	0.094	ug/l	
55-63-0	Nitroglycerine	1.2 U	2.4	1.2	0.59	ug/l	
78-11-5	PETN	1.2 U	2.4	1.2	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	93%	103%	70-136%

- (a) All hits confirmed by reanalysis on a dissimilar column.
 (b) Confirmation run.
 (c) Primary and confirmation results differ by more than 40%.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

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Client Sample ID:	54MW10	Date Sampled:	07/10/23
Lab Sample ID:	FC7686-3	Date Received:	07/11/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 6850 IN HOUSE		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q104113.D	1	07/20/23 12:24	AL	07/20/23 10:12	OP97971	SQ2217
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.10 U	0.20	0.10	0.050	ug/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID:	54MW10	Date Sampled:	07/10/23
Lab Sample ID:	FC7686-3	Date Received:	07/11/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8330B SW846 3535A		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	BB077751.D	1	07/18/23 12:30	FS	07/17/23 09:00	OP97885	GBB2394
Run #2 ^b	GG626851.D	1	07/20/23 14:29	FS	07/17/23 09:00	OP97885	GGG3303

	Initial Volume	Final Volume
Run #1	970 ml	10.0 ml
Run #2	970 ml	10.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX ^c	0.45 J	0.21	0.10	0.082	ug/l	
121-82-4	RDX	0.34	0.21	0.10	0.082	ug/l	
	DNX	0.10 U	0.21	0.10	0.082	ug/l	
	MNX	0.10 U	0.21	0.10	0.082	ug/l	
	TNX	0.10 U	0.21	0.10	0.082	ug/l	
618-87-1	3,5-Dinitroaniline	0.27	0.21	0.10	0.082	ug/l	
99-65-0	1,3-Dinitrobenzene	0.10 U	0.21	0.10	0.082	ug/l	
606-20-2	2,6-Dinitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
121-14-2	2,4-Dinitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene ^c	0.29 J	0.21	0.10	0.082	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene ^c	0.25 J	0.21	0.10	0.082	ug/l	
98-95-3	Nitrobenzene	0.10 U	0.21	0.10	0.10	ug/l	
88-72-2	o-Nitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
99-08-1	m-Nitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
99-99-0	p-Nitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
479-45-8	Tetryl	0.10 U	0.21	0.10	0.082	ug/l	
99-35-4	1,3,5-Trinitrobenzene	0.16	0.21	0.10	0.10	ug/l	J
118-96-7	2,4,6-Trinitrotoluene	0.56	0.21	0.10	0.082	ug/l	
55-63-0	Nitroglycerine	1.0 U	2.1	1.0	0.52	ug/l	
78-11-5	PETN	1.0 U	2.1	1.0	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	87%	94%	70-136%

- (a) All hits confirmed by reanalysis on a dissimilar column.
 (b) Confirmation run.
 (c) Primary and confirmation results differ by more than 40%.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

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Client Sample ID:	54MW12	Date Sampled:	07/10/23
Lab Sample ID:	FC7686-4	Date Received:	07/11/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 6850 IN HOUSE		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q104114.D	1	07/20/23 12:31	AL	07/20/23 10:12	OP97971	SQ2217
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.61	0.20	0.10	0.050	ug/l	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID:	54MW12	Date Sampled:	07/10/23
Lab Sample ID:	FC7686-4	Date Received:	07/11/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8330B SW846 3535A		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	BB077752.D	1	07/18/23 13:01	FS	07/17/23 09:00	OP97885	GBB2394
Run #2 ^b	GG626843.D	1	07/19/23 12:49	FS	07/17/23 09:00	OP97885	GGG3302

	Initial Volume	Final Volume
Run #1	970 ml	10.0 ml
Run #2	960 ml	10.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX	11.8	0.21	0.10	0.082	ug/l	
121-82-4	RDX	0.27	0.21	0.10	0.082	ug/l	
	DNX	0.10 U	0.21	0.10	0.082	ug/l	
	MNX	0.10 U	0.21	0.10	0.082	ug/l	
	TNX	0.10 U	0.21	0.10	0.082	ug/l	
618-87-1	3,5-Dinitroaniline ^c	0.20 J	0.21	0.10	0.082	ug/l	J
99-65-0	1,3-Dinitrobenzene	0.10 U	0.21	0.10	0.082	ug/l	
606-20-2	2,6-Dinitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
121-14-2	2,4-Dinitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene ^c	3.0 J	0.21	0.10	0.082	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene ^c	2.0 J	0.21	0.10	0.082	ug/l	
98-95-3	Nitrobenzene	0.10 U	0.21	0.10	0.10	ug/l	
88-72-2	o-Nitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
99-08-1	m-Nitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
99-99-0	p-Nitrotoluene	0.10 U	0.21	0.10	0.082	ug/l	
479-45-8	Tetryl	0.10 U	0.21	0.10	0.082	ug/l	
99-35-4	1,3,5-Trinitrobenzene	5.3	0.21	0.10	0.10	ug/l	
118-96-7	2,4,6-Trinitrotoluene	4.0	0.21	0.10	0.082	ug/l	
55-63-0	Nitroglycerine	1.0 U	2.1	1.0	0.52	ug/l	
78-11-5	PETN	1.0 U	2.1	1.0	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	87%	95%	70-136%

- (a) All hits confirmed by reanalysis on a dissimilar column.
 (b) Confirmation run.
 (c) Primary and confirmation results differ by more than 40%.

U = Not detected LOD = Limit of Detection
 LOQ = Limit of Quantitation DL = Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	54MW1	Date Sampled:	07/10/23
Lab Sample ID:	FC7686-5	Date Received:	07/11/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 6850 IN HOUSE		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q104117.D	1	07/20/23 12:53	AL	07/20/23 10:12	OP97971	SQ2217
Run #2							

	Initial Volume	Final Volume
Run #1	10.0 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
14797-73-0	Perchlorate	0.10 U	0.20	0.10	0.050	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

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Client Sample ID:	54MW1	Date Sampled:	07/10/23
Lab Sample ID:	FC7686-5	Date Received:	07/11/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8330B SW846 3535A		
Project:	Radford AAP; VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB077757.D	1	07/18/23 16:25	FS	07/17/23 09:00	OP97885	GBB2394
Run #2							

	Initial Volume	Final Volume
Run #1	900 ml	10.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
2691-41-0	HMX	0.11 U	0.22	0.11	0.089	ug/l	
121-82-4	RDX	0.11 U	0.22	0.11	0.089	ug/l	
	DNX	0.11 U	0.22	0.11	0.089	ug/l	
	MNX	0.11 U	0.22	0.11	0.089	ug/l	
	TNX	0.11 U	0.22	0.11	0.089	ug/l	
618-87-1	3,5-Dinitroaniline	0.11 U	0.22	0.11	0.089	ug/l	
99-65-0	1,3-Dinitrobenzene	0.11 U	0.22	0.11	0.089	ug/l	
606-20-2	2,6-Dinitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
121-14-2	2,4-Dinitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
35572-78-2	2-amino-4,6-Dinitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
19406-51-0	4-amino-2,6-Dinitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
98-95-3	Nitrobenzene	0.11 U	0.22	0.11	0.11	ug/l	
88-72-2	o-Nitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
99-08-1	m-Nitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
99-99-0	p-Nitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
479-45-8	Tetryl	0.11 U	0.22	0.11	0.089	ug/l	
99-35-4	1,3,5-Trinitrobenzene	0.11 U	0.22	0.11	0.11	ug/l	
118-96-7	2,4,6-Trinitrotoluene	0.11 U	0.22	0.11	0.089	ug/l	
55-63-0	Nitroglycerine	1.1 U	2.2	1.1	0.56	ug/l	
78-11-5	PETN	1.1 U	2.2	1.1	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
610-39-9	3,4-Dinitrotoluene	86%		70-136%

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**APPENDIX C
MANN-KENDALL TEST RESULTS**

