Final

Former Gun and Mortar Range Munitions Response Site (RFAAP-002-R-01) Site Investigation at Radford Army Ammunition Plant, Virginia

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ACRONYMS AND ABBREVIATIONS

AVS	assisted visual survey
bgs	below ground surface
BSEn	Bering Sea Environmental Inc.
CAMBL	Continuous Automated Multi-Base Line
CCV	continuing calibration verification
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHE	Chemical Warfare Material Hazard Evaluation
cm	centimeter(s)
cm^3/g	cubic centimeters per gram
COC	chain-of-custody
CSM	Conceptual Site Model
DMM	discarded military munitions
DoD	Department of Defense
DOE	Department of Energy
DQO	data quality objective
DU	decision unit
EcoSSL	Ecological Soil Screening Level
EHE	Explosive Hazard Evaluation
EM	Engineer Manual
EOD	Explosive Ordnance Disposal
Fe^{+2}	ferrous iron
GOCO	Government-Owned/Contractor-Operated
GPS	Global Positioning System
HDR	HDR Environmental, Operations and Construction, Inc.
Hc	Henry's Law Constant
HE	high explosive
HHE	Health Hazard Evaluation
HQ	hazard quotient
HRR	Historical Records Review
IAW	in accordance with
ICB	initial calibration blank
ID	identification
IS	internal standard
ISM	Incremental Sampling Methodology
Kd	Soil/Water Partition Coefficient
Koc	Organic Carbon/Water Partition Coefficient
LCS/LSCD	laboratory control sample/laboratory control sample duplicate
LOD	limit of detection
MB	method blank

MC	munitions constituents
MD	munitions debris
MDL	method detection limit
MEC	munitions and explosives of concern
mg/kg	milligrams per kilogram
mm	millimeter
MMRP	Military Munitions Response Program
Mn^{+2}	dissolved Manganese
MPPEH	Material Potentially Presenting an Explosive Hazard
MRS	Munitions Response Site
MRSPP	Munitions Response Site Prioritization Protocol
MS/MSD	matrix spike/matrix spike duplicate
NG	nitroglycerin
NO_3	nitrate
PARCCS	Precision, Accuracy, Representativeness, Completeness, Comparability and Sensitivity
PDS	post-digestion spike
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
RFAAP	Radford Army Ammunition Plant
RCRA	Resource Conservation and Recovery Act
RDX	Royal Demolition Explosives (Hexahydro-1,3,5-trinitro-1,3,5-triazine)
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RPD	relative percent difference
RSL	regional screening level
SAP	Sampling and Analysis Plan
SI	Site Investigation
SIM	Simple Ion Monitoring
SLERA	Screening Level Ecological Risk Assessment
SO_4^{2-}	sulfate
SU	sampling unit
SVOC	semi-volatile organic compound
SWMU	solid waste management unit
TNT	trinitrotoluene
TOC	total organic carbon
THI	target hazard index
TPP	Technical Project Planning
TR	target risk
USACE	U.S. Army Corps of Engineers

U.S.C.	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UTL	Upper Tolerance Limit
UXO	Unexploded Ordnance
VA	Virginia
VDEQ	Virginia Department of Environmental Quality
WWII	World War II
µg/L	micrograms per liter

GLOSSARY OF TERMS

Closed Range – A military range that has been taken out of service as a range and that either has been put to new uses that are incompatible with range activities or is not considered by the military to be a potential range area. A closed range is still under the control of a Department of Defense (DoD) component.

Defense Site – Locations that are or were owned by, leased to, or otherwise possessed or used by the DoD. The term does not include any operational range, operating storage, or manufacturing facility, or facility that is used for or was permitted for the treatment or disposal of military munitions.

Discarded Military Munitions (DMM) – Military munitions that have been abandoned without proper disposal or removed from storage in a military magazine or other storage area for the purpose of disposal. The term does not include unexploded ordnance (UXO), military munitions that are being held for future use or planned disposal, or military munitions that have been properly disposed of, consistent with applicable environmental laws and regulations.

Explosives Safety – A condition where operational capability and readiness, people, property, and the environment are protected from the unacceptable effects of risks of potential mishaps involving military munitions.

Military Munitions – All ammunition products and components produced for or used by the armed forces for national defense and security, including ammunition products or components under the control of the DoD, United States Coast Guard, Department of Energy (DOE), and National Guard. The term includes confined gaseous, liquid, and solid propellants; explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries, including bulk explosives and chemical warfare agents; chemical munitions; rockets; guided and ballistic missiles; bombs; warheads; mortar rounds; artillery ammunition; small arms ammunition; grenades; mines; torpedoes; depth charges; cluster munitions and dispensers; demolition charges; and devices and components thereof. The term does not include wholly inert items; improvised explosive devices; and nuclear weapons, nuclear devices, and nuclear components other than nonnuclear components of nuclear devices that are managed under the nuclear weapons program of the DOE after all required sanitization operations under the Atomic Energy Act of 1954 (42 United States Code [U.S.C.] 2011 et seq.) have been completed.

Munitions Constituents (MC) – Any materials originating from unexploded ordnance, DMM or other military munitions, including explosive and non-explosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions.

GLOSSARY OF TERMS (continued)

Munitions Debris – Remnants of munitions (e.g., fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal.

Munitions and Explosives of Concern (MEC) – This term, which distinguishes specific categories of military munitions that may pose unique explosives safety risks means: (A) UXO, as defined in 10 U.S.C. 101 (e)(5); (B) DMM, as defined in 10 U.S.C. 2710(e)(2); or (C) munitions constituents (e.g., trinitrotoluene [TNT], cyclotrimethylene trinitramine [RDX]), as defined in 10 U.S.C. 2710(e)(3), present in high enough concentrations to pose an explosive hazard.

Munitions Response Site (MRS) – A discrete location within a Munitions Response Area that is known to require a munitions response.

Range – A designated land or water area set aside, managed, and used for range activities of the DoD. The term includes firing lines and positions, maneuver areas, firing lanes, test pads, detonation pads, impact areas, electronic scoring sites, buffer zones with restricted access, and exclusionary areas. The term also includes airspace areas designated for military use in accordance with regulations and procedures prescribed by the Administrator of the Federal Aviation Administration.

Unexploded Ordnance (UXO) – Military munitions that: (a) have been primed, fused, armed, or otherwise prepared for action; (b) have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material; and (c) remain unexploded either by malfunction, design, or any other cause.

EXECUTIVE SUMMARY

A Site Investigation (SI) was conducted at the Former Gun and Mortar Range Munitions Response Site (MRS) (RFAAP-002-R-01) at the Radford Army Ammunition Plant (RFAAP) in Radford, Virginia (VA). The Former Gun and Mortar Range MRS (RFAAP-002-R-01) consists of 115 acres and is comprised of two adjacent ranges: the Former Gun Range (28 acres) and the Former Trench Mortar Range (87 acres). Both ranges began operations in 1941 and ceased operations after the end of World War II. The Former Gun Range was historically used to test projectile propellant by test-firing projectiles into a hillside. The location of the hillside was not identified during the records search or through the interview process. The 8-acre Active Test Range within the Former Gun Range contains the Inert Gun Testing Facility currently used by Orbital ATK to test propellants. The 8-acre Active Test Range was considered to be an operational range and was, therefore, not included in the SI.

The Former Trench Mortar Range, currently closed, was used to test-fire various 4.2 inch, 60mm, and 81mm mortars to verify the quality of the propellants manufactured at the facility. No information is available regarding the exact procedures employed or locations used to test the mortar propellants. Information gathered during the HRR and interview process suggests that the test mortars did not contain high explosives (HE). Anecdotal information that a white phosphorus mortar round was found on the MRS was never confirmed. Inert mortar projectiles frequently contained a wax filler, referred to as Halowax, as a weight replacement for HE. Based on information collected during the interview process, the mortar propellant tested consisted of 52 percent cellulose, 38 percent nitroglycerin (NG), and a small fraction (exact amount was not disclosed) of potassium nitrate. Other mortar components with potential munitions constituents (MC) sources included the ignition cartridge and percussion primer. The ignition cartridge typically contained ballisite (nitrocellulose and NG) or double base powder (nitrocellulose). The percussion primers were a formulation that contained between 25 and 53 percent lead thiocyanate within 4 grains of primer mix.

Mortars were reportedly observed during the construction and maintenance of the active production and Continuous Automated Multi-Base Line (CAMBL) facilities. Furthermore, evidence of a 60mm mortar was observed lying exposed in a drainage ditch during the reconnaissance site walk performed on May 28, 2014. At the time of discovery, it could not be determined if the mortar was inert or contained HE. EOD responded to the mortar find and disposed of the mortar in accordance with existing RFAAP procedures. Because the type and condition of the mortars historically discovered were not definitively identified, these mortars cannot be definitively considered MEC.

SI field activities were performed over 107 acres of the Former Gun and Mortar Range MRS (RFAAP-002-R-01) from 3 – 7 October 2016. Activities included Assisted Visual Survey (AVS) data collection, Incremental Sampling Method [ISM] sample collection, and discrete sediment sample collection. AVS data were collected from approximately 4.0 linear miles and 6.48 acres.

Three ISM surface soil samples (one parent and two replicates) were collected from each of two Decision Units (DUs). Four discrete sediment samples were collected from drainages adjacent to and down gradient of the DUs. The data quality objectives (DQOs) outlined in the Final Work Plan, Former Gun and Mortar Range Munitions Response Site (RFAAP-002-R-01) SI at RFAAP, VA, dated July 2016, were met.

The results and findings of the SI field activities are summarized below:

- No munitions and explosives of concern (MEC), discarded military munitions (DMM), Material Potentially Presenting an Explosive Hazard (MPPEH), or munitions debris (MD) were found during the AVS data collection or during the collection of ISM and discrete sediment samples.
- No apparent firing, impact, or other range related features were identified during AVS or soil sampling activities.
- No explosives, perchlorate, or semi-volatile organic compounds (SVOCs) were detected in soil or sediment samples at concentrations exceeding the method detection limit (MDL).
- The mean lead concentration in ISM sample DU 1 (1,909 milligrams per kilogram [mg/kg]) exceeded the background level (26.8 mg/kg), USEPA RSL Composite Worker (800 milligrams per kilogram [mg/kg]) and soil invertebrates (1,700 mg/kg), mammalian wildlife (56 mg/kg), avian wildlife (11 mg/kg), and plants (120 mg/kg) EcoSSLs.
- The mean antimony concentration in ISM sample DU 1 (5.13 mg/kg) exceeded the EcoSSL for mammalian wildlife (0.27 mg/kg); the mean manganese concentration (513.33 mg/kg) exceeded the EcoSSLs for plants (220 mg/kg) and soil invertebrates (450 mg/kg); and the mean vanadium concentration (22.4 mg/kg) exceeded the EcoSSL for avian wildlife (7.8 mg/kg). The mean manganese and vanadium concentrations were less than their respective background levels (2,543 mg/kg and 108 mg/kg). No background level was established for antimony.
- The mean cadmium concentration in ISM sample DU 2 (0.387 mg/kg) exceeded the EcoSSL for mammalian wildlife (0.36 mg/kg); the mean lead concentration (11.43 mg/kg) exceeded the EcoSSL for avian wildlife (11 mg/kg); and the mean vanadium concentration (20 mg/kg) exceeded the EcoSSL for avian wildlife (7.8 mg/kg). The mean lead and vanadium concentrations were less than their respective background concentrations (26.8 mg/kg and 108 mg/kg). No background level was established for cadmium.
- The concentration of lead in discrete sediment sample RFAAP-FGMR-SSD-001 (451 mg/kg, 475 mg/kg duplicate) exceeded the RFAAP background level (26.8 mg/kg) and EcoSSLs for mammalian wildlife (56 mg/kg), avian wildlife (11 mg/kg), and plants (120 mg/kg).
- Antimony, selenium, and vanadium exceeded one or more of the EcoSSLs in all four

discrete sediment samples.

- Lead and manganese exceeded one or more EcoSSLs in two discrete sediment samples.
- Only lead, was detected in discrete sediment samples at a concentration that exceeded the RFAAP background level (26.8 mg/kg).
- The surface MEC exposure pathway of handle/tread underfoot is considered potentially complete for Current and Future Visitors, Site Workers, Construction Workers, and Trespassers. The subsurface MEC exposure pathway of handle/tread underfoot is considered potentially complete for Current and Future Construction Workers.
- The surface MC exposure pathways of ingestion, dermal contact, and inhalation (dust) are considered complete for Current and Future Visitors, Site Workers, Construction Workers, and Trespassers and biota. The subsurface MC exposure pathways of ingestion, dermal contact, and inhalation (dust) are considered potentially complete for Current and Future Construction Workers and biota. The MC vegetation food chain pathway is considered potentially complete for biota. The MC wildlife food chain pathway is considered potentially complete for Current and Future Site Workers and Trespassers and biota.

Based on the SI historical research and findings of the SI field investigation, the following recommendations are presented for the Former Gun and Mortar Range MRS (RFAAP-002-R-01).

- While no MEC, MPPEH, and/or MD were discovered during the SI field activities, anecdotal and physical evidence indicates that 60mm, 81mm, and 4.2 inch mortars have been found at the MRS. Information gathered during the HRR and interview process suggests that the mortars tested and discovered at the MRS did not contain HE. However, because the type and condition of the mortars historically discovered were not recorded, these mortars cannot be definitively identified as MEC. Therefore, investigation of the MRS to determine the nature and extent of MEC in surface and subsurface soils and sediment on the MRS is recommended.
- The observation of the 60mm mortar in a drainage ditch discovered indicates that the exposure and movement of MEC by erosive forces is likely. Additional investigation is recommended to determine if MEC have migrated to the steep slope and potentially into the New River.
- The mean concentration of lead in the ISM DU 1 exceeded the USEPA RSL and EcoSSL. Mean concentrations of cadmium, lead, and vanadium in ISM sample DU 2 exceeded several EcoSSLs. Per the DQOs developed in the SI Work Plan, additional MC investigation is needed to determine the extent of MC in surface soils and potentially subsurface soils and whether the presence of MC in surface and/or subsurface soil presents an unacceptable risk to human health and the environment.
- Because the source of the lead detected in DU1 surface soil could not be definitively determined, additional investigation is needed to determine the source of the lead.

- Discrete sediment sample RFAAP-FGMR-SSD-001 had a lead concentration of 451 mg/kg that exceeded the RFAAP background value and all three USEPA EcoSSLs. Per the DQOs developed in the SI Work Plan, additional MC investigation is needed to determine the extent of MC in surface water/sediment migration routes, whether the MC is migrating off the MRS, and whether the presence of MC in sediment presents an unacceptable risk to human health and the environment.

Table ES 1. Site Investigation and Recommendations

MRS Name	Range Inventory Acreage	HRR Acreage	SI Acreage	Recommendation	Basis for MEC Recommendation	Basis for MC Recommendation
Former Gun and Mortar Range MRS (RFAAP-002-R-01)	115	115	107 Eight acres of the 115-acre MRS consist of the Active Test Range and were not thought to be part of the MRS.	Additional investigation for MEC in surface and subsurface soil and sediment within the 115-acre MRS. Additional investigation for MEC on the steep slope and in the New River. Additional investigation of MC in surface and subsurface soil and sediment within the 115-acre MRS.	Presence of 60mm, 81mm, and 4.2 inch mortars on the surface and in the subsurface historically documented at the MRS. Position of mortar observed during SI suggests potential for MEC to migrate to steep slope and possibly to the New River.	Mean surface soil metals concentrations exceeded human health and/or USEPA EcoSSLs. Lead in discrete sediment sample RFAAP-FGMR-SSD-001 exceeded RFAAP background value and USEPA EcoSSLs.

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1.0 Introduction

This Site Investigation (SI) Report (the Report) was developed in support of the United States Army Corps of Engineers (USACE) Military Munitions Response Program (MMRP). The Report summarizes the SI activities conducted at the Former Gun and Mortar Range Munitions Response Site (MRS) (RFAAP-002-R-01) located at the Radford Army Ammunition Plant (RFAAP), Virginia (VA). Overall coordination of activities described within this Report is provided by the USACE Baltimore District. Bering Sea Environmental, LLC (BSEn) is the contractor performing this work on behalf of the USACE Baltimore District. HDR Environmental, Operations and Construction, Inc. (HDR) is a sub-contractor to BSEn.

1.1 Regulatory Overview

RFAAP operates under a Resource Conservation and Recovery Act (RCRA) Corrective Action Permit (USEPA, 2000); however, RCRA has no special provisions for dealing with explosive safety. The Department of Defense (DoD) primarily uses the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) to perform munitions responses. Therefore, the activities conducted at RFAAP are referred to as SI activities and this report is entitled SI Report. SI activities were conducted in accordance with the RFAAP Master Work Plan (URS, 2003), whenever possible, to avoid conflicts between this SI and other environmental work being performed at RFAAP. Furthermore, the SI field activities were conducted in accordance with the Final Work Plan for the Former Gun and Mortar Range MRS (RFAAP-002-R-01) SI (BSEn, 2016). The Final Work Plan was developed in accordance with requirements provided in the Engineer Manual (EM) EM-200-1-3, Requirements for the Preparation of Sampling and Analysis Plans (SAPs) (USACE, 2001).

The presence of material potentially presenting an explosive hazard (MPPEH) at the Former Gun and Mortar Range MRS (RFAAP-002-R-01) was established during the pre-SI reconnaissance site walk performed in May 2014 when a 60 millimeter (mm) mortar was discovered lying exposed in a drainage ditch. EOD responded to the mortar find and disposed of the mortar in accordance with existing RFAAP procedures. Previous finds of mortars, along with anecdotal evidence gathered from RFAAP employees, have also been documented at the MRS. Information regarding historical mortar finds was shared with the Virginia Department of Environmental Quality (VDEQ). VDEQ determined that additional investigative work is required to evaluate the potential presence of MEC at the MRS. As presented in **Section 7.0**, additional investigation of the MRS beyond the activities reported in this SI are required to characterize the nature and extent of MEC at the Former Gun and Mortar Range MRS (RFAAP-002-R-01).

1.2 Purpose, Scope, and Objectives

The purpose of this SI is to determine if MEC, munitions constituents (MC), and/or Discarded Military Munitions (DMM), are present at the Former Gun and Mortar Range MRS (RFAAP-002-R-01). To accomplish this purpose, the scope of the SI consisted of an assisted visual survey (AVS)

of the MRS to determine the presence or absence of MEC; the collection of soil samples to evaluate the presence or absence of diffuse MC; and the collection of discrete sediment samples to evaluate the MC migration potential. Because 8 acres of the 28-acre Former Gun Range were considered an Active Test Range, these 8 acres were thought to be operational range and, therefore, not part of the MRS. As a result, SI activities were conducted over the remaining 107 acres of the MRS.

The primary objective of this SI is to gather sufficient information to identify potential types of MEC, MC, and DMM to support recommendations for further MRS characterization activities in the form of a RCRA Facility Investigation (RFI) or CERCLA Remedial Investigation (RI). It is not the intent of this SI to identify all types of MEC present or to define the nature and extent of MEC or MC contamination.

1.3 Report Organization

In addition to Section 1, this SI includes the following sections:

- **Section 2: Site Description.** This section presents an overview of RFAAP and the Former Gun and Mortar Range MRS (RFAAP-002-R-01) site conditions; description of the local physiography, geology, and hydrology; description of surface water present at the MRS; and a summary of previous investigations.
- **Section 3: Site Investigation Field Activities.** This section provides a summary of the SI field activities performed and any deviations from the SAP, Field Sampling Plan, or Quality Assurance Project Plan (QAPP) that occurred. The section presents the data quality objectives (DQOs); AVS, incremental sampling methodology (ISM), and discrete sediment sampling procedures; and field quality assurance/quality control (QA/QC) steps.
- **Section 4: Site Investigation Findings.** This section presents a summary of the AVS and ISM/discrete sediment chemical analytical results, as well as a data usability assessment.
- **Section 5: Conceptual Site Model.** This section presents a conceptual site model (CSM) that describes potential sources of contamination, transport mechanisms, current and future receptors, and complete exposure pathways.
- **Section 6: Summary and Conclusions.** This section presents a summary of the findings and conclusions based on those findings.
- **Section 7: Recommendations.** This section provides recommendations for conducting future investigations at the Former Gun and Mortar Range MRS (RFAAP-002-R-01) to address the known presence of MEC and potential presence of MC soil contamination.
- **Section 8: References.** This section provides a list of references to pertinent documents cited in this SI.

2.0 Site Description

RFAAP is a government-owned/contractor-operated (GOCO) facility that lies in one of a series of narrow valleys typical of the eastern range of the Appalachian Mountains. Oriented in a northeast-southwest direction, the valley is approximately 25 miles long, is 8 miles in width at the southeast end, and narrows to 2 miles in width in the northeast end. RFAAP lies along the New River in the relatively narrow northeastern corner of the valley. The location of RFAAP is depicted in **Figure 2-1.** The Horseshoe Area of RFAAP, named due to its horseshoe shape within a meander of the New River, is part of the Main Manufacturing Area of RFAAP. The Former Gun and Mortar Range MRS (RFAAP-002-R-01) lies within the Horseshoe Area (see **Figure 2-1**).

The primary mission of RFAAP, the manufacturing of propellants, began in 1941 and continues today. BAE Systems was awarded the RFAAP Operating Contract in 2011. GOCO tenants on RFAAP include Orbital ATK, Alexander Arms, and Pyrotechnique by Grucci. All RFAAP tenants are involved with industrial enterprises and none of them are commercial businesses with customer traffic, such as a Post Exchange or post office. Since 1968, RFAAP has also produced trinitrotoluene (TNT) on an intermittent basis. The RFAAP property has controlled and monitored entry and 24-hour surveillance. There are approximately 2,500 buildings within a 2-mile radius, including RFAAP manufacturing and residential buildings. Land usage surrounding RFAAP is primarily agricultural with some residential and industrial use. Land usage in and near RFAAP is not projected to change (URS, 2003).

2.1 Former Gun and Mortar Range MRS (RFAAP-002-R-01)

The Former Gun and Mortar Range MRS (RFAAP-002-R-01) consists of 115 acres and is comprised of two adjacent ranges: the Former Gun Range (28 acres) and the Former Trench Mortar Range (87 acres). The MRS is depicted in **Figure 2-1a**. The Former Gun Range and Former Trench Mortar Ranges are depicted in **Figure 2-1b**. Both ranges began operations in 1941. Based on information gathered from RFAAP employee interviews, operations were discontinued after the end of World War II (WWII). The Former Trench Mortar Range was used to test-fire 4.2 inch, 60mm, and 81mm mortar rounds to verify the quality of propellants manufactured at the facility. According to the interviewees, the propellant manufactured at RFAAP during the 1940's was comprised of 52 percent cellulose, 38 percent nitroglycerin (NG), and a small fraction (exact amount not disclosed) of potassium nitrate.

Available information gathered during the Historical Records Review (HRR) and interview process provides no information on the exact test procedures employed or the location of the range firing point(s), munitions storage area(s), or impact zone(s). However, information gathered from interviews with RFAAP personnel indicates that the mortars were generally fired in an upward direction for testing, suggesting the impact area was near the firing point.

Information gathered during the HRR and interview process suggests that the test mortars were not filled with high explosive (HE), but rather various fillers including concrete, gravel, Halowax, and possibly antifreeze. It was disclosed during the interview process that, while constructing the active production and Continuous Automated Multi-Base Line (CAMBL) facilities on the MRS, numerous "piles" of mortars were discovered and disposed by RFAAP personnel. Standard operating procedures at the time were such that the mortars were considered inert and safe to handle and dispose. The location of the final disposition site is not known. Since at least 2006, the discovery and handling of mortars or other munitions has been treated as containing energetic material requiring an Explosive Ordnance Disposal (EOD) team response. Several interviewees stated that one round discovered between 2011 and 2012 may have contained white phosphorus. The presence of white phosphorus filler was never confirmed through testing and analysis or documented in RFAAP safety reports or Explosive Ordnance Incident Reports. Inert mortar projectiles frequently contain a wax filler, referred to as Halowax, as a weight replacement for HE. It is likely the filler was degraded Halowax. One interviewee described a 4.2 inch mortar found on the MRS as containing a liquid that "sloshed" when moved. The 4.2 mortar was disposed by demolition.

Three Explosive Ordnance Incident Reports dated April 10, 2012, September 9, 2012, and May 28, 2014 were made available by BAE Systems. The incident reports detailed findings of two 60mm mortars and one unknown round within the Former Gun and Mortar Range MRS (RFAAP-002-R-01) and the subsequent actions taken to resolve the incidents. For each finding, an Explosive Ordnance Disposal (EOD) unit was called in from Fort Bragg in North Carolina to handle the removal of the munition.

The April 10, 2012 report states that an unidentified item (referred to as unexploded ordnance [UXO]) was found and disposed of with no additional details presented in the report. The September 9, 2012 report states that an inert 60mm mortar was discovered in the active production facility within the Former Gun and Mortar Range MRS (RFAAP-002-R- 01). The mortar was reported to likely be filled with concrete. The May 28, 2014 EOD Report states that an unidentifiable 60mm item (referred to as UXO) was safely removed from the active production facility and disposed of via demolition at an undisclosed location on RFAAP.

Based on the evidence gathered from the HRR and interview process, there is no definitive information that clearly states MEC has been discovered at the MRS.

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Figure 2-1. Radford Army Ammunition Plant and Former Gun and Mortar Range MRS (RFAAP-002-R-01) Location

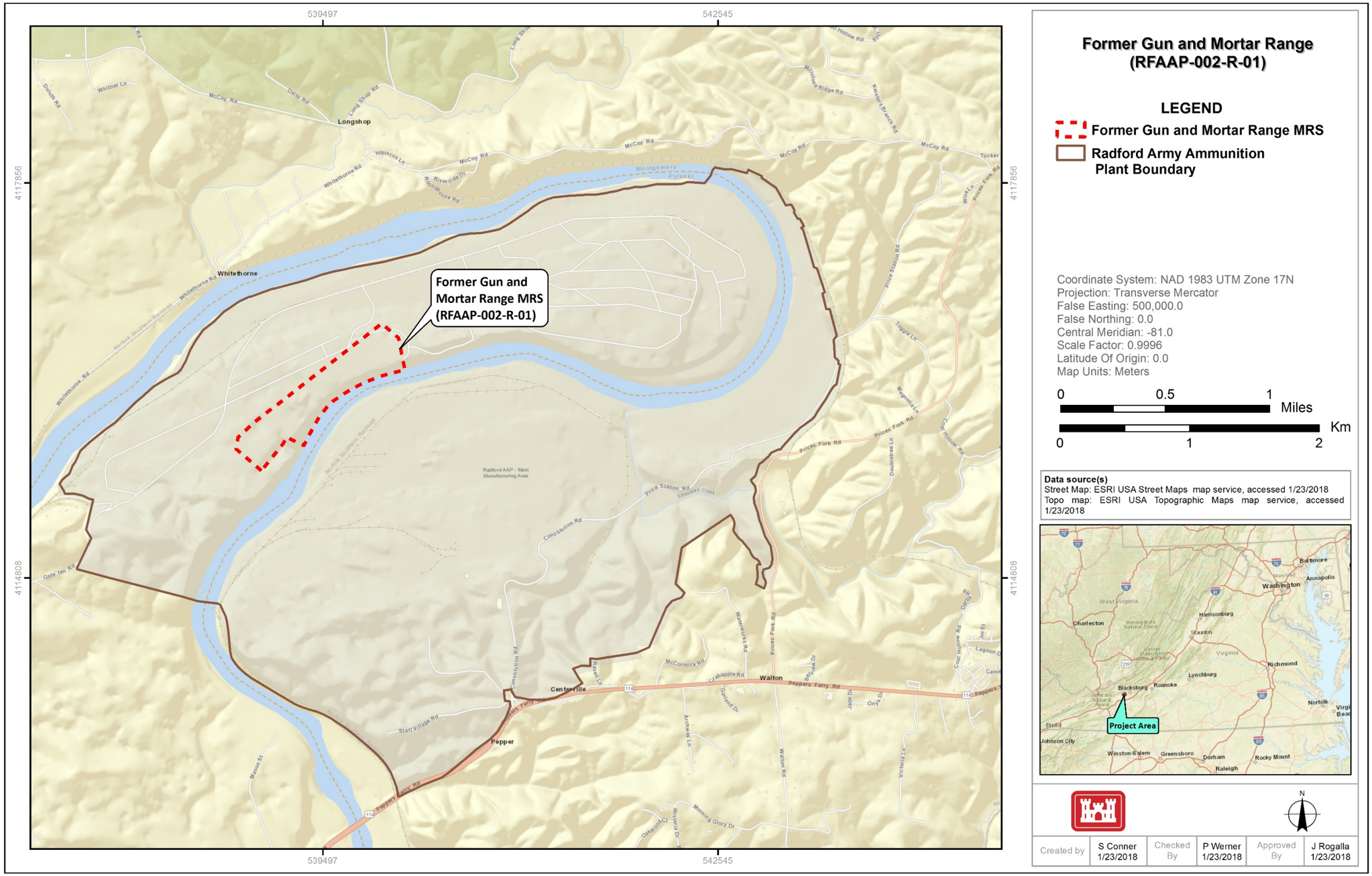

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Figure 2-1a. Former Gun and Mortar Range MRS (RFAAP-002-R-01) Boundary

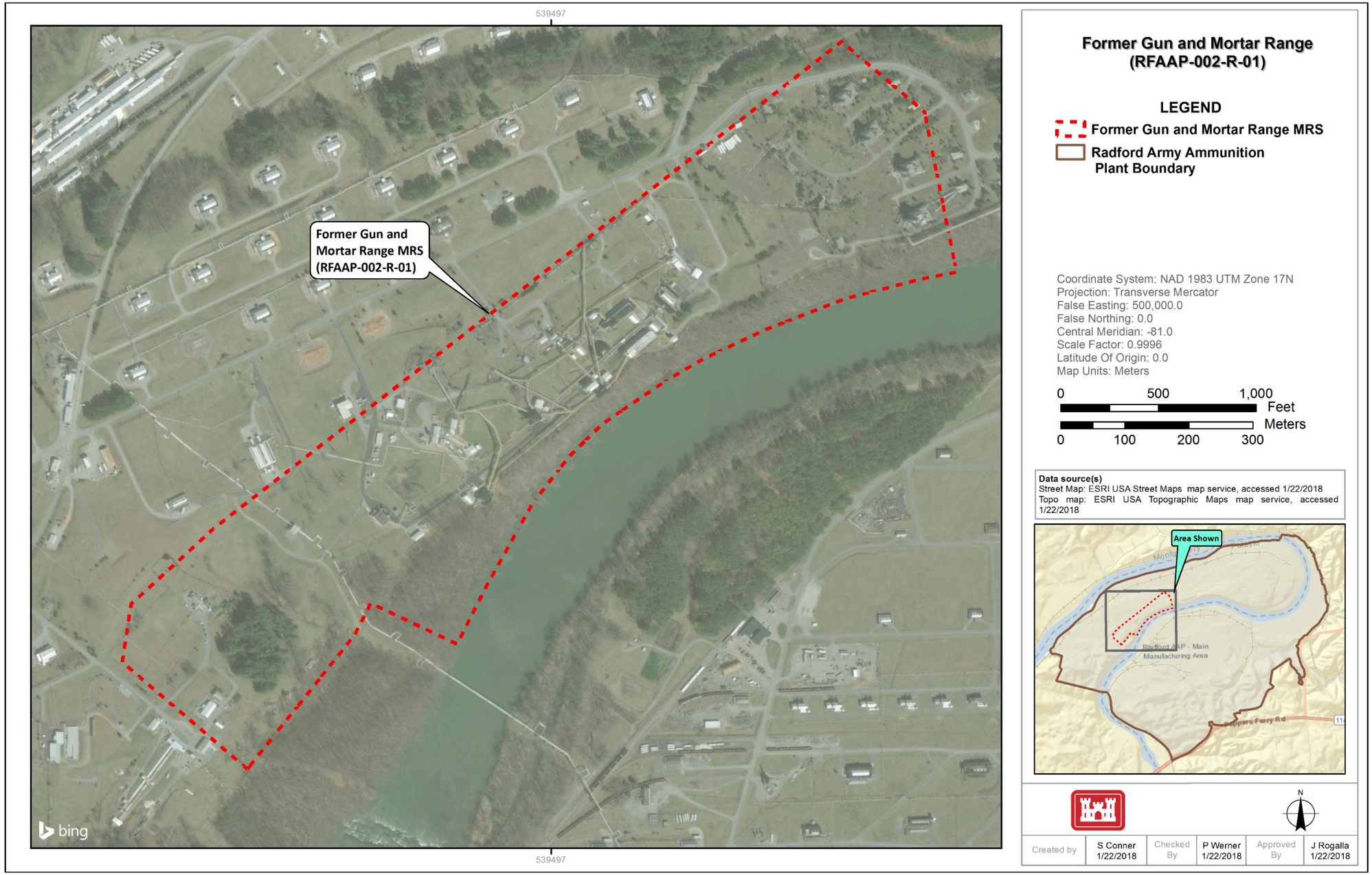

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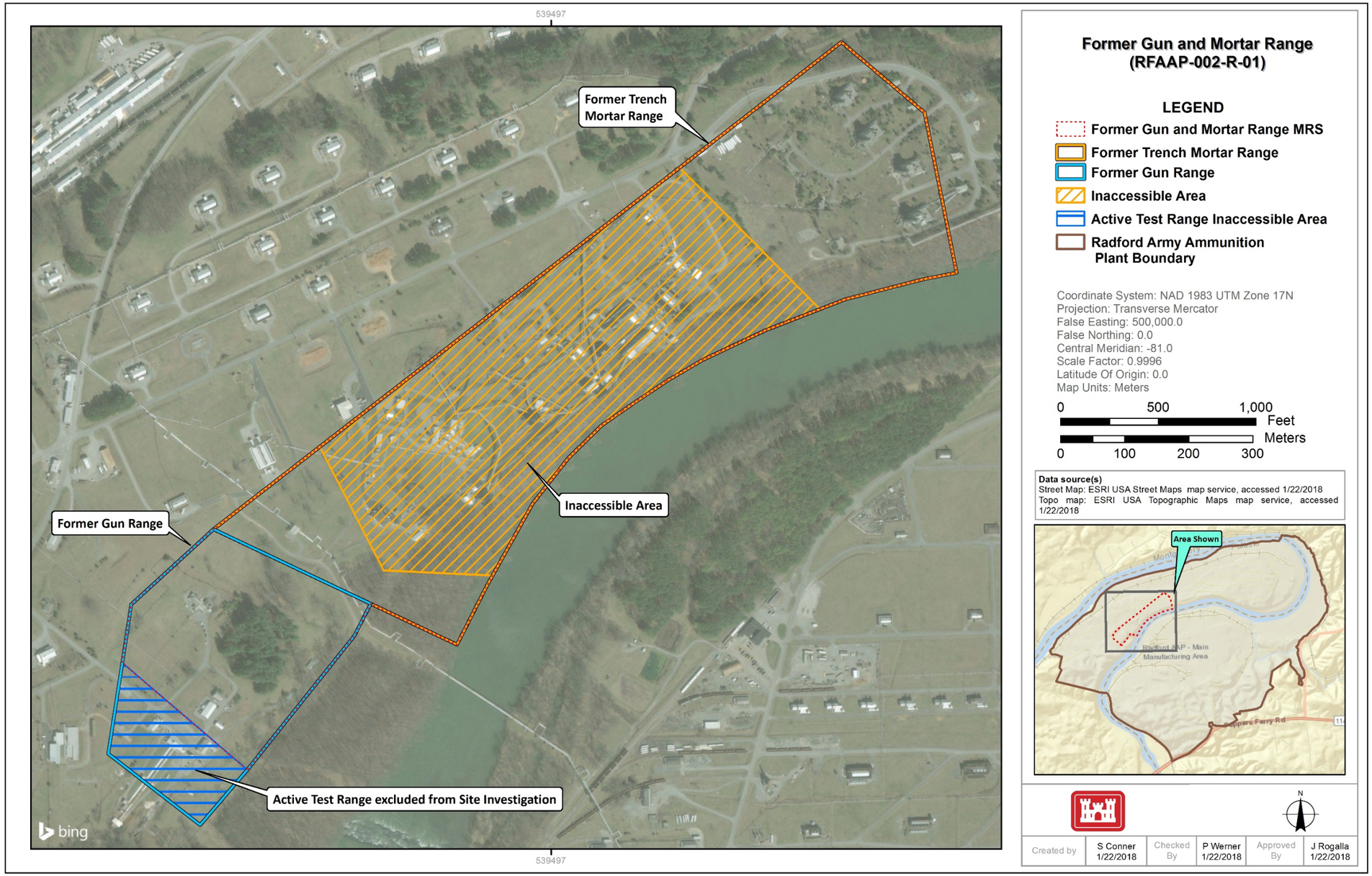
Figure 2-1b. Former Gun and Mortar Range MRS (RFAAP-002-R-01) Boundary and Inaccessible Areas



The Former Gun Range was historically used to test projectile propellant by test-firing projectiles into a hillside using howitzers and/or cannons. Apparently, holes were dug (caves) into the hillside and filled with sand to reduce the impact of the rounds. The only reported ordnance test fired was 100-pound shells. No information on the type(s) of propellant tested was contained in the HRR or obtained during the interview process. Furthermore, no information was found to indicate the location of the sand-filled caves. As stated previously, the 8-acre Active Test Range within the Former Gun Range was not included in the SI. The Active Test Range contains the Inert Gun Testing Facility that is currently used by Orbital ATK to test propellant by firing inert projectiles. It is not known if this 8 acres includes the hillside used for test-firing.

No information presented in the HRR or gathered during the interview process indicates that munitions (e.g., 100-pound shells) have ever been discovered that could be associated with the Former Gun Range. This includes munitions lying on the ground surface or unearthed by erosion or excavation.

Due to the extensive development of the Former Gun and Mortar Range MRS (RFAAP-002-R-01) after its discontinued use, the firing point(s) and impact area(s) may well be located underneath existing process facilities and/or infrastructure. The existing process facilities on the MRS consist of an active production facility and the defunct CAMBL facility. Although the CAMBL facility was built, it never went into production and is being scrapped. Due to the construction of these process facilities, considerable earthwork was conducted at the MRS including grading to level uneven terrain, burial of process tanks, and creation of earthen berms to serve as blast walls. **Figures 2-2a, 2-2b, and 2-2c** provide the layout of the Former Gun and Mortar Range MRS (RFAAP-002-R-01).

A summary of the CSM developed and presented in the SI Work Plan is provided below (BSEn, 2016):

- Potential receptors at the MRS include RFAAP workers, construction workers, trespassers, visitors, and biota.
- Current and Future Site Worker receptors include all personnel working at the Former Gun and Mortar Range MRS (RFAAP-002-R-01) that are part of daily RFAAP GOCO operations.
- Current and Future Site Workers have the potential to tread on and handle MEC on the ground surface and MEC that have been exposed from the subsurface as a result of erosion, construction activities, or frost heave.
- Current and Future Site Workers may come into contact with MC in surface soil via the dermal contact, incidental ingestion, and inhalation (dust) exposure routes. Dermal contact with MC may occur when handling MC contaminated surface or subsurface soils on the MRS.

- Current and Future Construction Worker receptors include all those personnel involved in construction, excavation, demolition, or repair to current or future infrastructure or facilities inside the fence line at the Former Gun and Mortar Range MRS (RFAAP-002-R-01).
- Current and Future Construction Workers have the potential to tread on and handle MEC on the ground surface and MPPEH and MEC that have been exposed from the subsurface as a result of erosion, construction activities, or frost heave.
- Current and Future Construction Workers have the potential to excavate, tread on, and handle subsurface MEC during performance of construction, excavation, demolition or repair to infrastructure and facilities at the MRS.
- Current and Future Construction Workers have the potential to come into contact with MC in surface and subsurface soil via the dermal contact, incidental ingestion, and inhalation (dust) exposure routes.
- Current and Future Construction Workers also have the potential to come into contact with MC in surface water in drainage ditches via dermal contact or incidental ingestion of runoff from the MRS.
- Current and Future Trespass receptors include all those individuals who may access the Former Gun and Mortar Range MRS (RFAAP-002-R-01) without authorization.
- Current and Future Trespassers have the potential to tread on and handle MPPEH and MEC on the ground surface, and MEC that have been exposed from the subsurface as a result of erosion, construction activities, or frost heave.
- Current and Future Trespassers have the potential to come into contact with MC in surface soil via the dermal contact, incidental ingestion, and inhalation (dust) exposure routes.
- Current and Future Trespassers also have the potential to come into contact with MC in surface water in drainage ditches via dermal contact or incidental ingestion of runoff from the MRS.
- Current and Future Visitors are able to access the MRS, but must be cleared through RFAAP Security, and must be escorted at all times while on the MRS itself.
- Current and Future Visitors have the potential to tread on and handle MEC on the ground surface, and MEC that have been exposed from the subsurface as a result of erosion, construction activities, or frost heave.
- Current and Future Visitors may come into contact with MC in surface soil via the dermal contact, incidental ingestion, and inhalation (dust) exposure routes.

Figure 2-2a. Former Gun and Mortar Range MRS (RFAAP-002-R-01) Southern Section

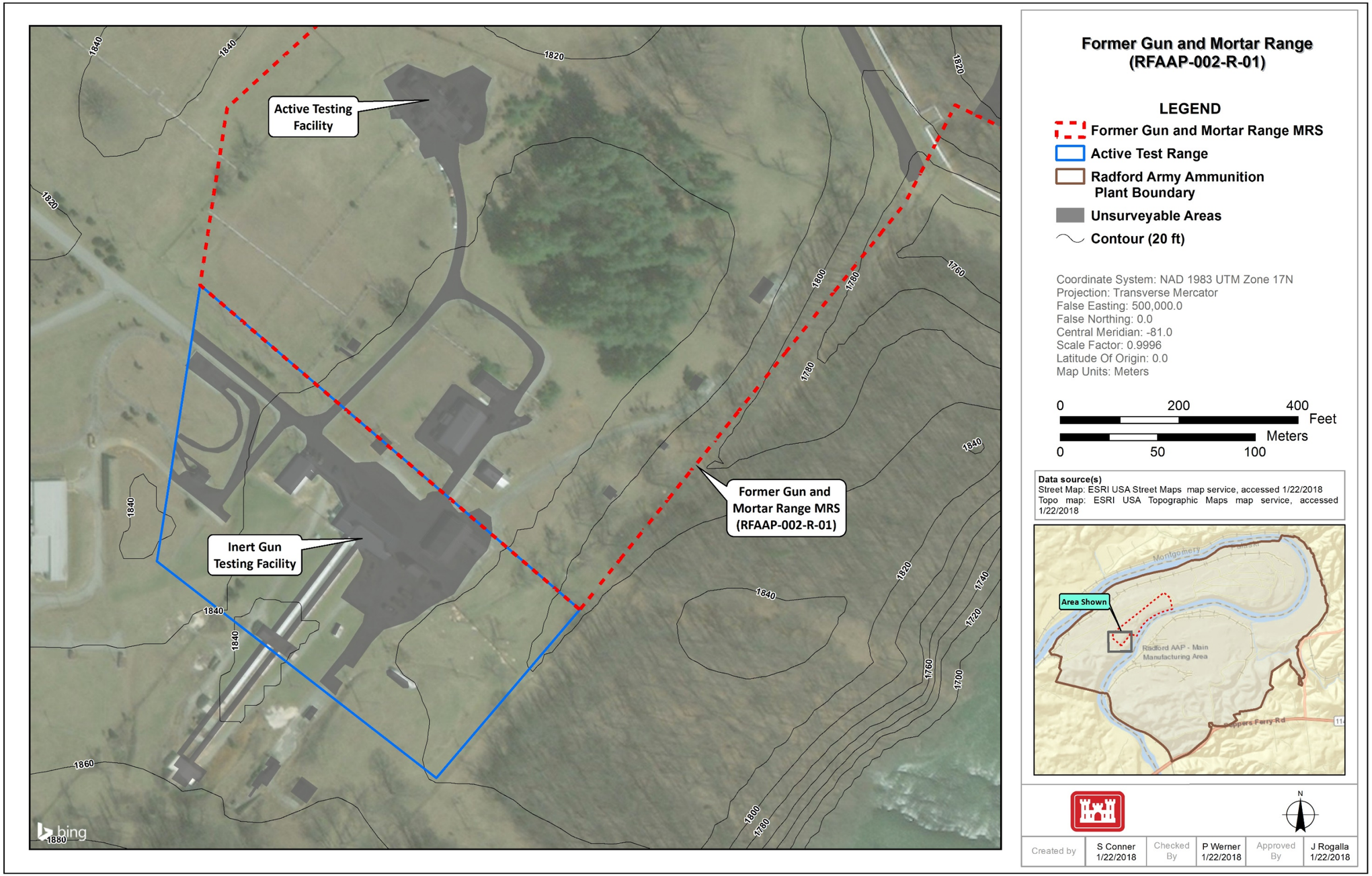


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Figure 2-2b. Former Gun and Mortar Range MRS (RFAAP-002-R-01) Middle Section (Active Production Facility)

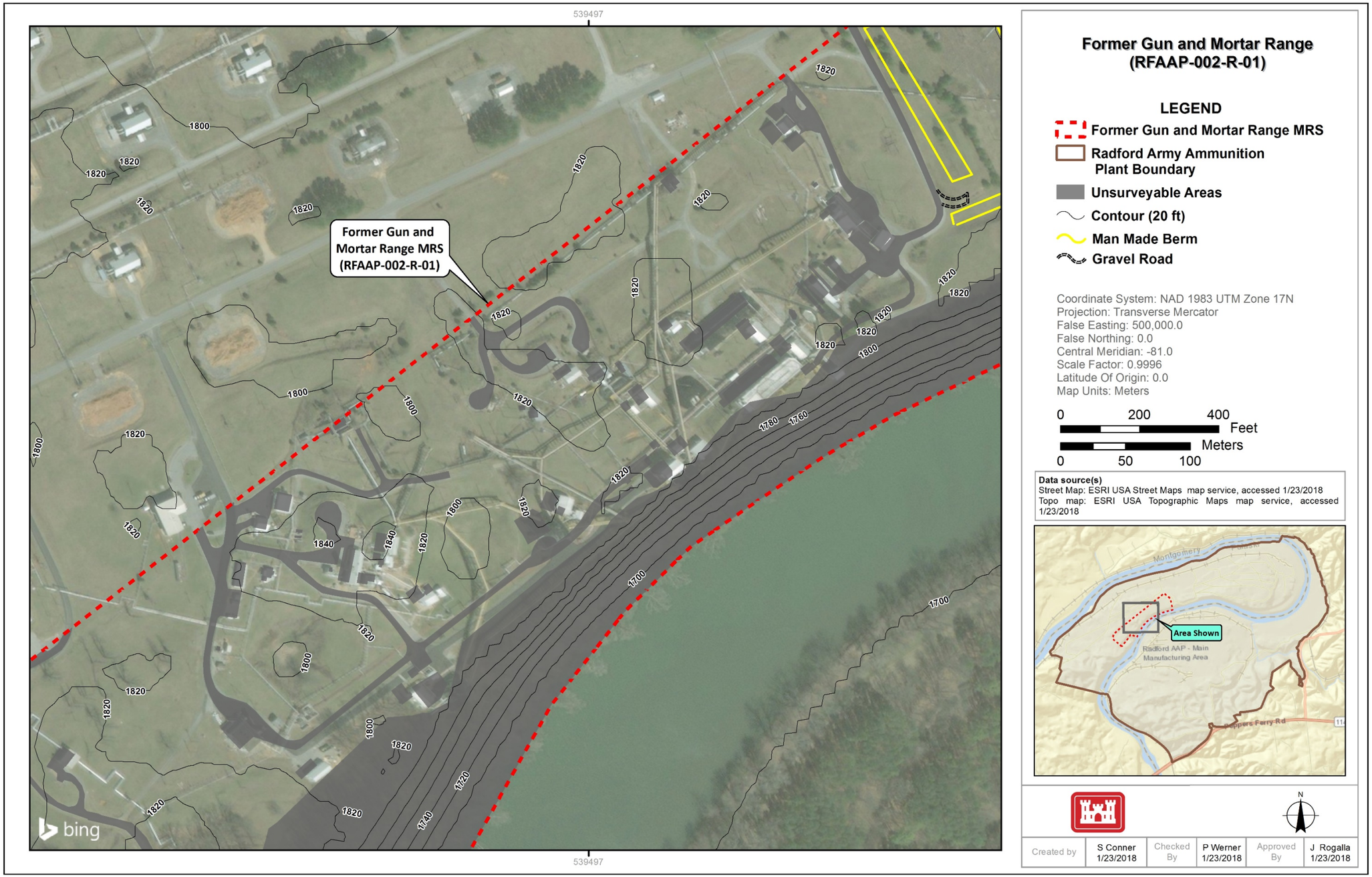

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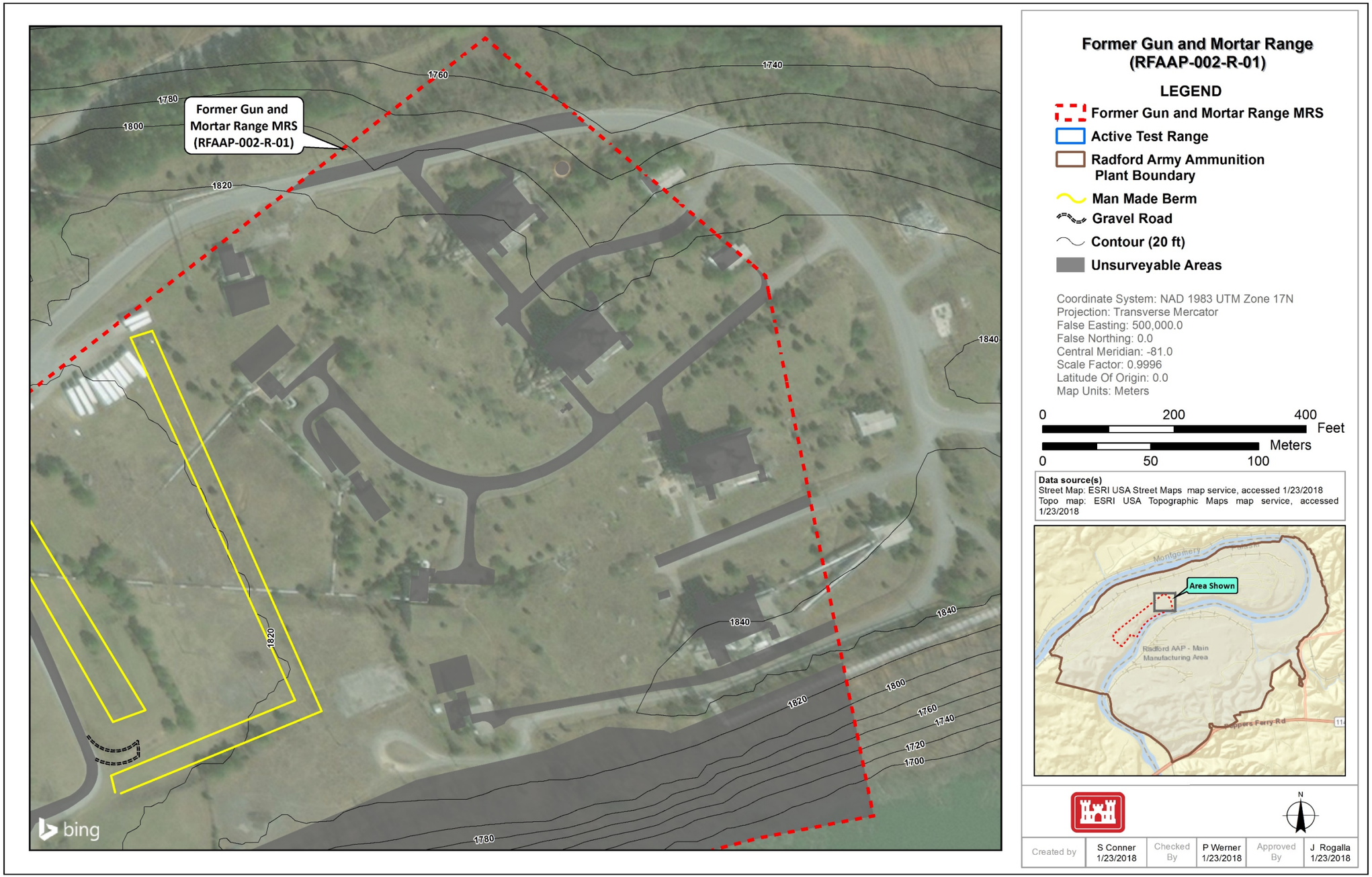
Figure 2-2c. Former Gun and Mortar Range MRS (RFAAP-002-R-01) Northern Section (CAMBL Facility)



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- Current and Future Visitors also have the potential to come into contact with MC in surface water in drainage ditches via dermal contact or incidental ingestion of runoff from the MRS.
- The U.S. Fish and Wildlife Service (USFWS) does not list any critical habitat for threatened or endangered species within the boundaries of, or in the nearby vicinity of, the Former Gun and Mortar Range MRS (RFAAP-002-R-01).
- Notwithstanding, biota receptors have the potential to come into contact with MC in surface/subsurface soil, surface water, and via the food chain.
- The SI Work Plan CSM also identified a subset of receptors associated with the Current and Future Site Worker and Trespasser groups; this subset consisted of both authorized (RFAAP Workers) and unauthorized (trespassers) hunters. Current and Future Hunters would have the potential to contact MEC and MC as the parent groups listed above.

2.2 Topography, Geology, and Hydrogeology

Environmental investigations of the Former Gun and Mortar Range MRS (RFAAP-002-R-01) have not been conducted prior to this SI. As such, site specific information describing the geologic and hydrogeologic conditions at the MRS was not available. However, numerous environmental investigations have been completed at the RFAAP property that includes soil, surface water, and groundwater investigations. Therefore, information on the geology and hydrogeology was taken from the *Facility-Wide Background Study Report* (IT, 2001) and *Building 4343 RFI/CMS Report, Final Document*. (Shaw, 2004). Considering the corresponding geology at the MRS to the rest of the facility, it is a fair assumption that the hydrogeology would be consistent.

RFAAP is located in the New River Valley, at the northwest terminus of the southern Valley and Ridge Province. The Valley is covered by river flood plain and terrace deposits. Karst topography is dominant, with features that include sinkholes, caverns, and springs caused by the dissolution of calcium carbonate. The greatest areas of karst features are controlled by bedrock.

The Former Gun and Mortar Range MRS (RFAAP-002-R-01) is located within a portion of the Main Manufacturing Area that is characterized by gently to steeply sloping ridges. The physiography at RFAAP is typical of karst topography. The southern boundary of the Former Gun and Mortar Range MRS (RFAAP-002-R-01) abuts a steep bluff that drops down to the New River. The original topography at the MRS was altered significantly with the construction of processing facilities. The resulting topography and current condition can best be described as hummocky. During the construction of the facilities, the process buildings and containment vessels were partially buried, while soil was mounded around the remaining exposed exterior walls to contain a catastrophic event. Large mounds of soil were also constructed between buildings that serve as blast berms to limit the impact of a catastrophic event to surrounding buildings. In addition, several portions of the Former Gun and Mortar Range MRS (RFAAP-002-R-01) (e.g., Decision Unit [DU]

2) were graded to create level areas used for administrative offices and storage areas.

The Former Gun and Mortar Range MRS (RFAAP-002-R-01) is located in the New River Valley, which crosses the Valley and Ridge Province. The subsurface geology consists of alluvium and residual deposits comprised of clay and silt with some sand and gravel overlying bedrock. The MRS is underlain by the Braddock Loam soil type. This soil type has a variable slope between 2% and 30% and does not have a seasonal high water table within six feet of the surface. Based on the depth of trenches and washed out gullies located within the active production facility on the MRS observed during the SI field activities, the clays and silts extend to a minimum depth of 10 feet below ground surface (bgs). Soils within forested areas of the MRS were observed to be dark brown silty. Permeability of the Braddock Loam soil is moderate and organic matter content is moderately low. This soil type is generally acidic or very strongly acidic with a pH range of 4.5–5.5.

A saprolitic layer, formed from in situ weathering of the carbonate bedrock, immediately overlies the competent bedrock. The saprolite is up to 10 feet in thickness and consists of yellowish-red and red clay. The clay has low to medium plasticity. Bedrock consists of the Elbrook Formation. Depth to bedrock ranges from 18 to more than 60 ft bgs. The Elbrook Formation is highly fractured and is composed of thickly bedded, blue-gray dolomite interspersed with blue-gray to white limestone; brown, green, and red shale; argillaceous limestone; and brecciated limestone. The Max Meadows Breccia is evident in outcrops along the slope leading to the river. In the outcrop along the slope, the tectonic breccias and the limestone and dolostone are highly weathered with many solution cavities.

The hydrogeologic framework at RFAAP 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 dimension. 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 would otherwise be rapidly diverted to overland flow. It also 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 locality) is one of the major karstlands in the eastern United States.

Groundwater supplies in the Valley and Ridge Province are generally good quality compared to surface water supplies (Parsons, 1996). However, due to 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. There is, however, no evidence of sinkholes on the MRS.

2.3 Surface Water

No permanent surface water bodies are present within the Former Gun and Mortar Range MRS (RFAAP-002-R-01). Storm water drainage occurs primarily via infiltration and overland flow in ditches along engineered roadways. The Former Gun and Mortar Range MRS (RFAAP-002-R-01) borders the New River, which flows along the southern boundary of the MRS. The river flow varies due to water management at Claytor Dam, approximately 9 miles upstream (south) of RFAAP (URS, 2003).

2.4 Previous Investigations

Although there have been no previous investigations of the Former Gun and Mortar Range MRS (RFAAP-002-R-01), there have been numerous environmental investigations of the surrounding RFAAP property. These investigations include soil, surface water, and groundwater investigations. Efforts are underway to delineate the occurrence and flow of groundwater at RFAAP. The efforts are complicated by the presence of karst geology consisting of highly fractured and channelized limestone.

Surface water samples have previously been collected from the New River. The sampling and associated analytical results are summarized in Solid Waste Management Unit (SWMU) 54 RCRA Facility Investigation/Corrective Measures Study Report, Final 2008 (USACE, 2008). The baseline analytical parameters included explosives; perchlorate; total organic carbon (TOC) and dissolved inorganic carbon; dissolved ferrous iron (Fe^{+2}) and dissolved manganese (Mn^{+2}) using field test methods; nitrate (NO_3); and sulfate (SO_4^{2-}). None of the surface water samples collected to date at RFAAP have indicated releases of contaminants, including MC, to the New River. All samples were collected from locations downstream of Areas A and B of SMWU 54, which is downstream from the Former Gun and Mortar Range MRS (RFAAP-002-R-01).

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3.0 Site Investigation Field Activities

SI tasks conducted for the Former Gun and Mortar Range MRS (RFAAP-002-R-01) began with compiling and reviewing historical reports and information to lay the framework for developing a work plan. A Technical Project Planning (TPP) meeting was held to coordinate with stakeholders. A TPP Memorandum was issued following the meeting to document known MRS information, DQOs, data gaps, and stakeholder decisions. Following issuance of the TPP Memorandum, the Former Gun and Mortar Range MRS (RFAAP-002-R-01) SI Work Plan was prepared to define the SI field activities required to collect the information needed to address the data gaps and achieve the DQOs (BSEn, 2016).

The presence of potential MEC at the MRS was established during the pre-SI reconnaissance site walk performed in May 2014 when a 60mm mortar was discovered lying exposed in a drainage ditch. At the time of discovery, it could not be determined if the mortar was inert or contained HE. EOD responded to the mortar find and disposed of the mortar in accordance with existing RFAAP procedures. The presence of mortars was documented during facility operations and construction activities conducted on the MRS. During the conduct of SI field work, BAE personnel stated mortars have been observed in drainage ditches after precipitation events. Personnel interviews and records indicate the Former Gun and Mortar Range MRS (RFAAP-002-R-01) was used as a testing range for mortar and artillery to evaluate propellant charges.

SI field work was conducted at the MRS from 3 to 7 October 2016. The SI field work activities consisted of:

- The performance of an AVS survey to identify potential types of MEC, MEC disposal areas (areas with DMM lying on the ground surface), impact areas, and discrete sample locations based on MEC findings;
- The collection of biased discrete samples from drainages to evaluate the potential migration of MC from the MRS; and
- The collection of ISM samples to determine the presence or absence of diffuse MC contamination related to historical activities conducted at the MRS.

The AVS was performed along the southern boundary (ridgeline) of the MRS adjacent to the New River and around occupied buildings in the active production facility. Discrete sediment samples were collected from drainages leading from the MRS to the New River. Two ISM samples and replicates were collected from two DUs to determine the presence or absence of diffuse MC contamination.

DQOs for the SI were developed in accordance with the procedures outlined in the USEPA DQOs Process for Hazardous Waste SIs (USEPA, 2000). **Table 3-1** depicts the DQO process for the Former Gun and Mortar Range MRS (RFAAP-002-R-01) at RFAAP.

Table 3-1. DQO Process

Step	Description	DQO for RFAAP
Step 1. State the Problem	Define the problem that necessitates the study; identify the planning team, examine budget, schedule.	The Former Gun and Mortar Range MRS (RFAAP-002-R-01) at RFAAP requires an SI due to the discovery of mortars at the MRS in the past. The preliminary CSM indicates that there is potential for exposure of MEC and MC to human receptors, and MC to ecological receptors. The planning team for this SI includes the USACE Baltimore District (Project Management) and the executing contractors. Stakeholders include the VDEQ, the USEPA Region 3, and RFAAP.
Step 2. Identify the Goal of the Study	State how environmental data will be used in meeting objectives and solving the problem, identify study questions, define alternative outcomes.	Environmental data collected during this investigation will be utilized to determine answers to the following study questions: 1) what types of MEC are present on the ground surface and can be inferred for the subsurface; 2) can MEC disposal or impact areas be identified; 3) has MC been released to drainages on the MRS and, if so, is there potential for MC to migrate off the MRS; and 4) is diffuse MC contamination present as a result of the presence of MEC and are levels of MC (if present) of a sufficient concentration to warrant additional investigations for MC at the MRS? Dependent on the findings of the soil investigation, several outcomes may be possible, including eliminating from consideration surface diffuse MC contamination from future investigations and focusing of future MC subsurface investigations.
Step 3. Identify Informati on Inputs	Identify data & information needed to answer study questions.	An HRR and interviews have been conducted for the MRS. Visual surveys will be performed by a team consisting of a UXO Technician III (who will act as team leader and Site Safety and Health Officer) and either an Environmental Professional or second UXO Technician. The UXO personnel will be equipped with metal detectors (a process referred to as AVS) to determine the presence or absence of MEC and/or Munitions Debris (MD) lying on the ground surface in areas with dense vegetation being sampled for MC and around buildings within the active production facility, and to identify potential sample locations biased toward drainage features to see if MC is potentially migrating off the MRS towards the unsurveyable area adjacent to the New River. The AVS will also include the ridgeline adjacent to the New River and unsurveyable slope to identify additional drainages. Soil sampling will be conducted to evaluate the presence or absence of diffuse MC (ISM samples), MC migration (discrete), and point source MC (discrete) where compromised MEC is discovered. USEPA Method SW846 8330B will be used for explosives. USEPA Method SW846 6010C/7471A will be used for target analyte list metals. USEPA Method SW846 8270D will be used for a short list of semi-volatile organic compounds (SVOCs), and USEPA Method SW846-6850 will be used for perchlorate analysis. The ISM analytical results will be compared to USEPA Regional Screening Levels (RSLs) and Ecological Soil Screening Levels (EcoSSLs), while discrete sample results will be compared to RSLs, EcoSSLs, and RFAAP-specific metal background levels to assess potential risks to human health and the environment.

Table 3-1. DQO Process (Continued)

Step	Description	DQO for RFAAP
Step 4. Define the Boundaries of the Study	Specify the target population & characteristics of interest, define spatial & temporal limits, scale of influence.	The target population for MEC are those items present on the ground surface and in the subsurface contained within the MRS boundaries. The characteristics of interest include the hazards associated with contact with MEC. AVSs for MEC/MD will be performed only within the areas being sampled for MC, around buildings within the active production facility, to identify potential sample locations biased toward drainage features to see if MC is potentially migrating off the accessible areas of the MRS towards the unsurveyable area adjacent to the New River, and the ridgeline adjacent to the New River to identify additional drainages. The boundary of the MEC study area is 107 acres, excluding the very steep unsurveyable slopes. AVSs will not be conducted on the steep slopes. The target populations for MC include the concentration of diffuse MC in surface soil across the MRS, concentration of MC where compromised MEC or MPPEH is discovered, and the concentration of MC in sediment within potential surface water and sediment migration routes. All field work will occur during favorable climatic conditions void of snow cover or frozen surface soils that could impede AVS and surface soil sampling activities. The boundary of the MC study area includes ~ 107 acres.
Step 5. Develop the Analytic Approach	Define the parameter of interest, specify the type of inference, and develop the logic for drawing conclusions from findings.	The focus of this SI is to identify the types of MEC, locations of potential MEC disposal areas (areas with DMM lying on the ground surface), impact areas, and to determine the potential of MC migrating off the accessible areas of the MRS towards the unsurveyable area adjacent to the New River. Characteristics of disposal areas (areas with DMM) will be noted to determine if they are indicative of a firing point to support and concentrate future investigations. Since the presence of MEC has already been established, future investigations will be required. The presence of MC concentrations in incremental samples that exceed RSLs, or Project Comparison Values, is of primary interest. The presence of ISM and discrete MC concentrations in surface soils exceeding RSLs will require the subsequent determination of the extent of MC in surface soils and potentially subsurface soils, and whether the presence of MC in surface and/or subsurface soil presents an unacceptable risk to human health and the environment. Incremental surface soil sample MC results that are below RSLs will be interpreted to indicate that diffuse soil contamination is not present. The presence of MC concentrations in surface sediment exceeding RSLs will require the subsequent determination of the extent of MC in surface water/sediment migration routes, whether the MC is migrating off the MRS, and whether the presence of MC in sediment presents an unacceptable risk to human health and the environment. Sediment sample MC results that are below RSLs will be interpreted to indicate that MC are not migrating off the MRS. The presence of MC concentrations in soil samples collected adjacent to compromised surface MEC exceeding RSLs will require the subsequent determination of the extent of MC in the soils surrounding the compromised MEC and whether the presence of MC in these soils present an unacceptable risk to human health and the environment. MC soil sample results from compromised surface MEC that are below RSLs will be interpreted to indicate that MC soil contamination is not present.

Table 3-1. DQO Process (Continued)

Step	Description	DQO for RFAAP
Step 6. Specify Performance or Acceptance Criteria	Specify probability limits for false rejection and false acceptance decision errors. Develop performance criteria for new data being collected or acceptable criteria for existing data being considered for use.	AVS activities will be performed IAW the procedures set forth in **Section 5.1.1 of the SI Work Plan** and QA/QC standards presented in **Appendix C** of the same document. Sampling and analysis will be performed IAW the procedures set forth in **Section 5.1.2** and **Section 6.0** and the QA/QC standards presented in **Appendix C** of the SI Work Plan. Data need to be capable of accurately characterizing the presence of contaminants less than the comparison values. All data are anticipated to be definitive. Samples will be analyzed by an analytical laboratory following USEPA SW-846 methodologies specified in the QAPP worksheets. Sample results sent off-site for analysis will undergo data verification and validation IAW the National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2014b) and Inorganic Superfund Data Review (USEPA, 2014a) to assure its usability for making decisions regarding the MRS. Data qualified as rejected (R) will not be used. Data usability will be determined by evaluating sample collection and analysis results to the precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) parameters as discussed in Worksheet #37 of the QAPP.
Step 7. Develop the Plan for Obtaining Data.	Select the resource-effective sampling and analysis plan that meets the performance criteria.	The field sampling activities are presented in **Section 6.0**. QA/QC procedures for data collection are presented in **Appendix C** of the SI Work Plan.

3.1 Assisted Visual Surveys

The MEC AVS was conducted to gather sufficient information to identify potential types of MEC, MEC disposal areas (areas with DMM lying on the ground surface), and impact areas. The MEC AVS was also conducted to identify potential sample locations biased toward drainage features to determine the potential for MC to migrate off the accessible areas of the MRS toward the unsurveyable area adjacent to the New River. The AVS survey covered the top of the ridgeline adjacent to the New River and around occupied buildings in the active production facility.

Selected portions of the Former Gun and Mortar Range MRS (RFAAP-002-R-01) were visually surveyed as part of the SI field activities. The field inspection team was comprised of a UXO Technician III, a senior geologist, and a BSEn Project Manager. The UXO Technician III also acted as Site Safety and Health Officer and Team Leader. As a result of terrain and manmade obstructions, the team walked a meandering path along the ridgeline and around the active production facility buildings. Due to BAE safety requirements, a 10-foot buffer was maintained between the field inspection team and the buildings in the active production facility at all times.

The meandering AVS surveys were led by the UXO Technician III, followed by the remaining team members.

The area surrounding the production buildings was predominantly covered by grass or impervious surfaces such as concrete or asphalt. The meandering path AVS was completed in single file along the ridgeline on the southern boundary of the MRS due to the narrow space before the drop off to the New River and other obstructions. The majority of the ground surface along the ridgeline was barren of any vegetation. Due to technical issues with the Trimble GeoXT global positioning system (GPS) unit, the AVS path was recorded using a Garmin GPS receiver and an Android cell phone employing a GPS tracking application.

Within the DUs, the AVS was conducted in transects from one increment location to another. Increment locations were nominally spaced at 10 meters apart, with the separation distance dictated by the layout of the DU, terrain, and vegetation cover. The UXO Technician III, followed by the sample team, walked a straight line between increment locations, visually observing and scanning the ground surface with the Schonstedt GA-52Cx analog metal detector.

Due to technical difficulties with the Trimble GeoXT GPS unit, the field team used a Garmin GPS receiver and a cell phone that employed a tracking application to record the track of each individual transect. The Android phone application had an accuracy of 8-10 meters. Using ArcGIS, a 10-foot buffer was applied to the track log from the application MyMaps. Additionally, in areas of dense ground cover (e.g., vegetation or leaves), a Schonstedt GA-52Cx analog metal detector was used as a safety measure to aid in the search for munitions and related debris lying on the ground surface. The UXO technician used the handheld metal detector to sweep the area in front of the survey team to alert them of any ferrous anomalies as they walked the transects. Intrusive investigation of subsurface anomalies was not included in the scope of this SI.

3.2 ISM and Discrete Sediment Sampling

The objective of the ISM sampling was to determine the presence or absence of diffuse MC contamination related to historical activities conducted at the MRS. Discrete sediment sample locations were biased toward drainage features to determine the potential for MC to migrate from the accessible areas of the MRS toward the unsurveyable slope adjacent to the New River. Additional discrete samples were planned if compromised surface MEC was discovered. Because no compromised surface MEC was observed during the SI field activities, no additional discrete samples were collected. The intent of the additional discrete samples was to determine if a release of MC had occurred from the compromised MEC item.

Discrete sediment samples RFAAP-FGMR-SSD-001 and RFAAP-FGMR-SSD-002 were collected in a drainage leading off the MRS at DU 2 along the southern ridgeline. Discrete sediment sample RFAAP-FGMR-SSD-003 was collected in a drainage along the southern ridgeline leading off the MRS downgradient from DU 1. Discrete sediment sample RFAAP-FGMR-SSD-004 was collected in a drainage leading off the MRS downgradient and southwest

from DU 1. Discrete sediment samples were collected at a depth interval of 0-6 inches bgs, while the ISM increments were collected from a depth of 0-2.5 centimeters (cm) bgs. Prior to collection, vegetation and any root mass were removed from the discrete sediment samples. In accordance with the Former Gun and Mortar Range MRS (RFAAP-002-R-01) SI Work Plan and Interstate Technology Regulatory Council (ITRC) ISM guidance (ITRC, 2012), vegetation and root mass were not removed during the collection of ISM increments.

ISM sampling was conducted at two DUs located in the northern and southern sections of the undeveloped portions of the Former Gun and Mortar Range MRS (RFAAP-002-R-01). The DU locations were sited in areas potentially undisturbed by previous construction. DU 1 was situated on a hillside partly covered with thick weeds. The majority of DU 1 was within a mixed hardwood and pine forest. The 100 soil increments collected from DU 1 were generally homogenous and consisted of a fine grained dark brown silty loam. Soil particle size was consistent throughout the 100 increments collected.

DU 2 was situated in a level area that was heavily vegetated with weeds. Although not readily visible through the weeds, the underlying surface consisted of a 6-inch layer of gravel that extended over the entire DU. The 50 ISM soil increments were collected from beneath the gravel layer and were generally homogenous consisting of a fine grained grey silty sand. Soil particle size was consistent throughout the 50 increments collected.

The ISM sampling was performed using a systematic random sampling pattern. Three corners of DU 1 were established using the Trimble GeoXT GPS unit. A fourth corner could not be established due to canopy interference and technical difficulties with the GPS unit. Subsequent transects were then based off the three established corners using the GPS and a tape measure. The ISM sample grid at DU 2 was reduced in size from 100 meters by 100 meters to 50 meters by 100 meters. The DU 2 size was reduced because blast berms and fences were located within the proposed DU 2 ISM sample grid, which would have hindered sample collection. The field change in the size of the DU was a deviation from the SI Work Plan, which stated that the DU would measure 100 meters by 100 meters. For DU 1, 100 ISM soil increments were collected and combined for each of the three replicate samples. For DU 2, 50 ISM soil increments were collected and combined for each of the three replicates. According to guidance provided in the ITRC ISM guidance (ITRC, 2012), 50 increments is a defensible number to estimate the mean contaminant concentration.

ISM soil and discrete sediment samples were collected and analyzed for explosives, perchlorate, SVOCs, and metals in conformance with the SI Work Plan. The ISM soil samples were collected with a dedicated step probe set to collect soil from the top 2.5 cm. Both DU 1 and DU 2 were comprised of a single sampling unit (SU). Therefore, one dedicated step probe was used per DU to collect all replicate samples. Three replicate ISM samples were collected from each DU. One replicate was identified as the parent sample and designated SSI-001A at DU 1 and SSI-002A at

DU 2. The other two replicates were identified as replicates and designated as SSI-001B and SSI-001C at DU 1 and SSI-002B and SSI-002C at DU 2. Once the ISM increment was collected, it was placed in a 5-gallon Ziplock® bag along with other increments dedicated for that replicate. Three Ziplock® bags were filled for each DU. The increments were not disturbed or mixed in the field. The entire Ziploc® bag was submitted to the laboratory where the replicates were individually dried and sieved. The replicates were then ground using a puck mill. The fully dried, sieved, and ground portion of each replicate was analyzed.

Each replicate increment was offset 1 meter from the parent increment. Replicate B increments were collected 150 degrees SE of the parent increments. Replicate C increments were collected 240 degrees SW of the parent increments. To measure the replicate increment locations, a stake with a 1 meter length of string attached was placed on the parent increment location. A compass was then used to acquire the appropriate heading in relation to the parent increment. The 1 meter string was fully extended from the stake in the direction for each respective replicate increment and the soil increment was collected at each of those locations. The staking and compass reading procedure was repeated at every ISM increment location in both DUs to ensure consistency throughout the sample collection process.

Discrete sediment samples were collected from drainages leading from the two DUs. A total of four discrete samples were collected. Samples were collected using clean disposable plastic sampling scoops from the top 6 inches of sediment. The use of clean disposable scoops avoided potential cross-contamination of the samples. Again, since compromised MEC was not discovered, discrete soil samples were not collected to evaluate possible MC point sources.

Once the ISM and discrete sediment samples had been collected, a chain-of-custody (COC) form was completed and the samples and COC were packaged into hard case coolers for transport to a local FedEx office for overnight delivery. Temperature blanks and ice were added as required to each cooler. All sample collection, handling, and packaging were performed in compliance with the SI Work Plan. Copies of the COC forms are provided in **Appendix A** and documentation of sample handling and shipping is provided in **Appendix D**.

The UXO Technician III inspected each prospective ISM increment location and discrete sediment sample location with a handheld metal detector prior to sample collection. The inspection was conducted to determine if each increment and sample location was free of subsurface anomalies and sampling activities could be safely conducted. In addition, the UXO Technician III inspected the transects between each ISM increment.

The soil sampling team consisted of the same team members as the AVS team. Sampling collection and sampling procedures were in conformance with the SI Work Plan and ITRC ISM protocols (ITRC, 2012). Deviations from the SI Work Plan are presented in **Section 3.4**. Field notes of the SI sampling activities are provided in **Appendix C**. Photographs of the activities are provided in **Appendix D**.

3.3 Field and Laboratory Quality Assurance/Quality Control

Field QC measures were performed by collecting a duplicate for discrete sediment samples and temperature blanks. In accordance with QAPP requirements, a field duplicate of a discrete sediment sample was collected to evaluate field and laboratory precision. In order to meet the percent specified in the Work Plan, one duplicate discrete sediment sample was collected. Temperature blanks provided by the laboratory were inserted into each sample cooler shipped to the laboratory with samples. The temperature blank is analyzed to verify that the temperature of the samples during transportation remains at or below 4 degrees Celsius.

Laboratory QA/QC measures consisted of matrix spike/matrix spike duplicates (MS/MSD), method blanks (MBs), internal standards, second source standards, laboratory duplicates, surrogate spikes, control samples, initial calibrations, and continuing calibrations. One sample MS/MSD pair was collected for use by the laboratory to measure matrix interference. MBs, internal standards, second source standards, laboratory duplicates, surrogate spikes, control samples, initial calibrations, and continuing calibrations are performed by the lab as part of the analysis and calibration procedures. See **Section 4.3** for additional details. Laboratory data QA was performed by reviewing for verification, validation, and usability to ensure that only scientifically sound data of known and documented quality are used in the decision making process.

3.4 Deviation from SI Work Plan

Several deviations from the SI Work Plan were made in the field. These deviations are discussed below, along with field modifications.

The Trimble GeoXT experienced poor connectivity/satellite coverage during the collection of ISM samples at DU 1 and while performing the meandering AVS along the top of the ridgeline. The problem was attributed to satellite geometry; that is, too few satellites were present above the local horizon. The GPS unit also experienced low battery levels after extended use. To continue locating and establishing DU 1 increment points, a compass and tape measure were used to provide direction and distance, respectively. A Garmin and Android cell phone were used to provide coordinate data, although the level of precision was well above sub-meter accuracy. It was determined that the accuracy rates for the Garmin and Android were approximately 3 and 10 meters, respectively.

Three increment locations were relocated because of a tree and the discovery of an anomaly. Increments A1 and A2 of DU 1 were offset 5 meters to the SE and 1 meter to the NW, respectively, due to the presence of a tree. Increment C1 of DU 1 was offset 1 meter to the SE due to the detection of a buried anomaly.

The size of the DU 2 sample grid was reduced to 50 meters by 100 meters because blast berms and fences were present within the proposed DU footprint. The size of the DU was reduced such that the berms bounded the DU on three sides. As a result of the decrease in size, the number of

increments collected for each of the three replicates was reduced to 50.

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4.0 Site Investigation Findings

4.1 Assisted Visual Surveys

DU 1

An AVS transect survey was conducted in conjunction with the ISM sampling. During the AVS, no MEC, MPPEH, or MD was observed lying on the ground surface. However, a subsurface anomaly was detected by the Schonstedt GA-52Cx analog metal detector at increment location C1 in DU 1. Due to dig restrictions for this SI, no further action was taken to investigate the nature of the anomaly. In total, AVS data were collected from 0.62 linear miles and 2.5 acres at DU 1. Total linear miles and acreage covered during the AVS performed at DU 1 are provided in **Table 4-1**.

DU 2

Similarly, an AVS transect survey was conducted at DU 2 in conjunction with the ISM sampling. During the AVS, no evidence of MEC, MPPEH, or MD was observed on the ground surface and no anomalies were detected by the Schonstedt GA-52Cx analog metal detector. In total, AVS data were collected from 0.31 linear miles and 1.25 acres at DU 2. Total linear miles and acreage covered during the AVS performed at DU 2 are provided in **Table 4-1**.

Table 4-1. Linear Miles/Acreage of Completed Assisted Visual Surveys

Buildings	Survey Date	Total Acreage	Total Linear Miles
Active Production Facility	10/6/2016	1.39	1.17
MRS Boundary	**Survey Date**	**Total Acreage**	**Total Linear Miles**
Southern Boundary Along Ridgeline	10/6/2016	1.34	1.9
Decision Units	**Survey Date**	**Total Acreage**	**Total Linear Miles**
DU 1	10/4 – 10/5/2016	2.5	0.62
DU 2	10/7/2016	1.25	0.31
Total Acreage and Line Miles		6.48	4.0

Ridgeline and Active Production Facility Buildings

Meandering AVS paths were completed around several active production facility buildings, and the area where the 60mm mortar was discovered (37° 11’ 30.451” N, 80° 33’ 13.276”) during the May 2014 pre-SI reconnaissance site walk.

Approximately 1.167 linear miles of AVS data were gathered around the active production facility buildings within the MRS. No visual evidence of MEC, MPPEH, or MD found lying on the ground surface or partially exposed was noted. Approximately 1.9 linear miles of AVS data were collected from the southern ridgeline. During the AVS, no evidence of MEC, MPPEH, or MD lying on the ground surface, partially exposed, or lying within any drainage was observed. Furthermore, no buried anomalies were detected by the Schonstedt GA-52Cx analog metal detector around the active production facility buildings or along the southern ridgeline. **Figures 4-1a**, **4-1b**, **4-1c,** and

4-1d provide the AVS transects completed at the two DUs (DU 1 and DU 2) and the meandering AVS paths completed along the ridgeline adjacent to the southern boundary and around the active production facility buildings within the Former Gun and Mortar Range MRS (RFAAP-002-R-01).

4.2 Soil Chemical Analytical Results

The mean concentrations of DU 1 and DU 2 were compared to United States Environmental Protection Agency (USEPA) RSLs Composite Worker screening values and USEPA EcoSSLs as established by the DQOs presented in the SI Work Plan (BSEn, 2016). The DQOs established in the SI Work Plan did not include the comparison of ISM analytical results to RFAAP-specific metal background levels. Subsequent to preparation of the SI Work Plan, it was discovered that these background levels reflect the 95% Upper Tolerance Limit (UTL) of 79 discrete samples distributed throughout RFAAP, allowing a qualitative comparison of ISM mean soil sample results against these background levels. In many instances, the EcoSSL value is much lower than the corresponding RFAAP-specific background levels. The MRS is highly developed and is not likely to provide much in the way of viable ecological habitat. Therefore, in order to provide additional qualitative perspective on the ISM analytical results, ISM mean soil sample results are also compared to RFAAP-specific background levels. The individual ISM replicate analytical results are summarized in **Tables 4-2** and **Table 4-3.** The mean concentrations of DU 1 and DU 2 are provided in **Tables 4-4** and **4-5**. **Figures 4-2a** and **4-2b** provide the ISM increment sample locations in DU 1 and DU 2, respectively.

Concentrations of explosives, perchlorate, and SVOCs in DU 1 replicate samples RFAAP-FGMR-SSI-001A (parent), RFAAP-FGMR-SSI-001B (replicate), or RFAAP-FGMR-SSI-001C (replicate) were not detected above the method detection limit (MDL). Metals were detected in the majority of replicate samples collected from DU 1. The metal results are discussed in greater detail below.

Figure 4-1a. Assisted Visual Survey Tracks Completed at the Former Gun and Mortar Range MRS (RFAAP-002-R-01) Southern Area

Former Gun and Mortar Range (RFAAP-002-R-01)

LEGEND

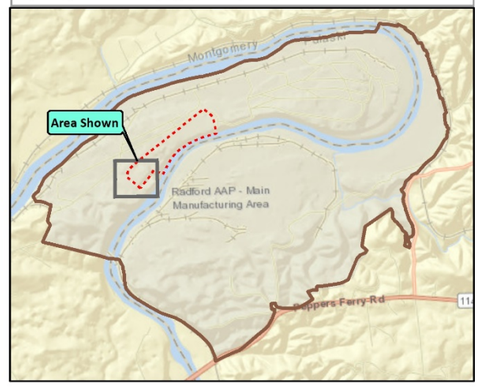
- Former Gun and Mortar Range MRS
- Active Test Range
- Radford Army Ammunition Plant Boundary
- Unsurveyable Areas
- Contour (20 ft)
- Meandering AVS Tracks
- Decision Unit AVS Transects
- ISM Increment
- Discrete Sediment Sampling Point

Coordinate System: NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
False Easting: 500,000.0
False Northing: 0.0
Central Meridian: -81.0
Scale Factor: 0.9996
Latitude Of Origin: 0.0
Map Units: Meters

0 200 400 Feet

0 50 100 Meters

Data source(s)
Street Map: ESRI USA Street Maps map service, accessed 1/23/2018
Topo map: ESRI USA Topographic Maps map service, accessed 1/23/2018



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Created by	S Conner 1/23/2018	Checked By	P Werner 1/23/2018	Approved By	J Rogalla 1/23/2018

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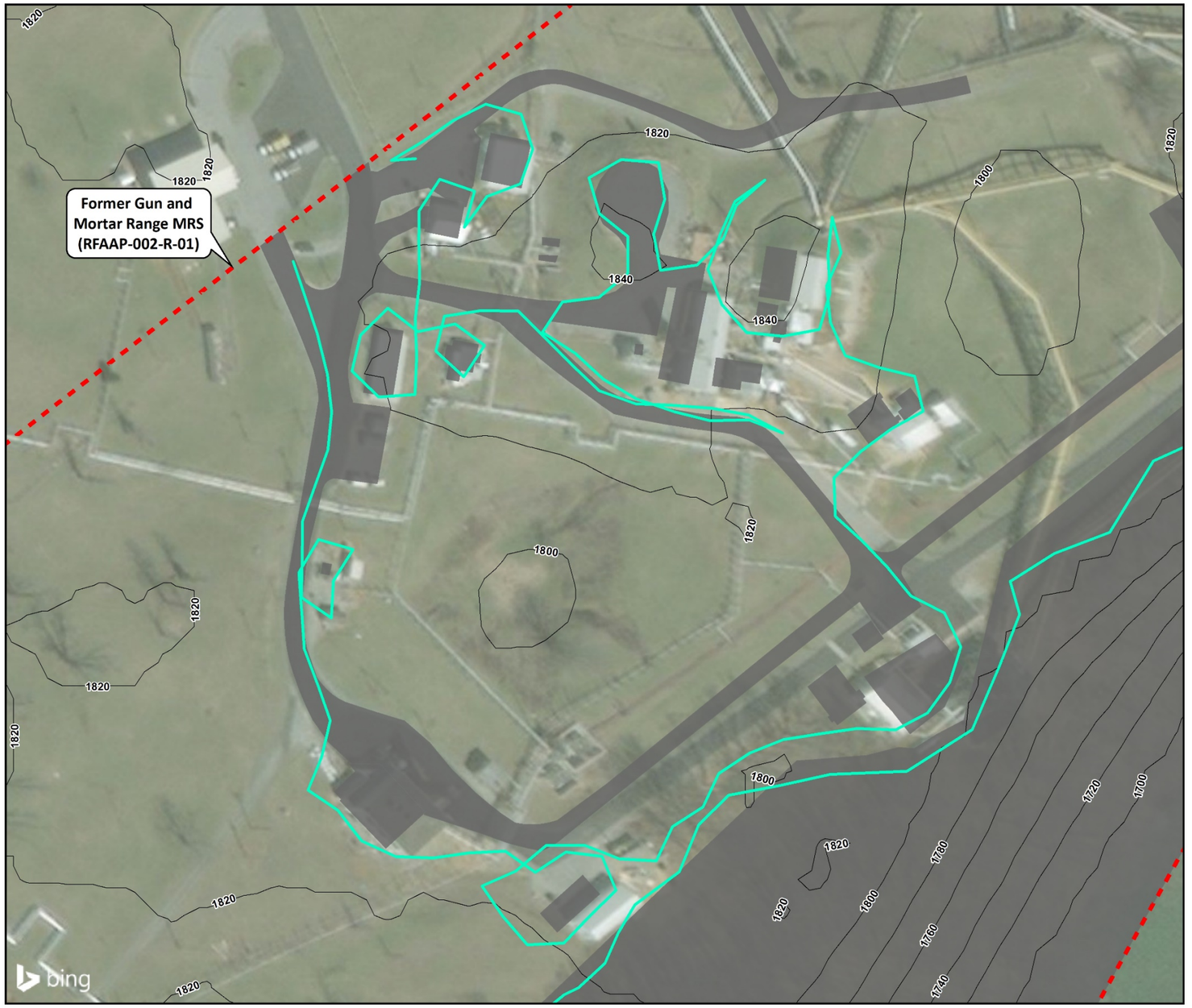
Figure 4-1b. Assisted Visual Survey Tracks Completed at the Former Gun and Mortar Range MRS (RFAAP-002-R-01) Active Production Facility Southern Section



Former Gun and Mortar Range (RFAAP-002-R-01)

LEGEND

- Former Gun and Mortar Range MRS
- Radford Army Ammunition Plant Boundary
- Unsurveyable Areas
- Contour (20 ft)
- Meandering AVS Tracks
- Decision Unit AVS Transects
- ISM Increment
- Discrete Sediment Sampling Point

Coordinate System: NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
False Easting: 500,000.0
False Northing: 0.0
Central Meridian: -81.0
Scale Factor: 0.9996
Latitude Of Origin: 0.0
Map Units: Meters

0 100 200 Feet
0 25 50 Meters

Data source(s)
Street Map: ESRI USA Street Maps map service, accessed 1/23/2018
Topo map: ESRI USA Topographic Maps map service, accessed 1/23/2018

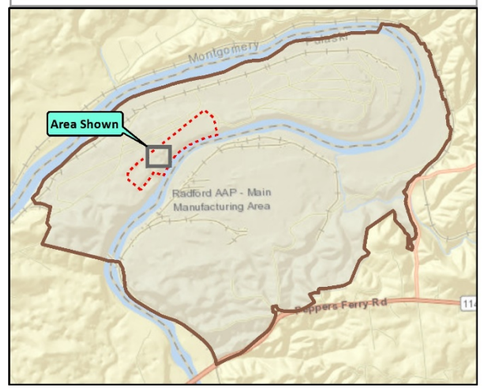


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Figure 4-1c. Assisted Visual Survey Tracks Completed at the Former Gun and Mortar Range MRS (RFAAP-002-R-01) Active Production Facility Northern Section

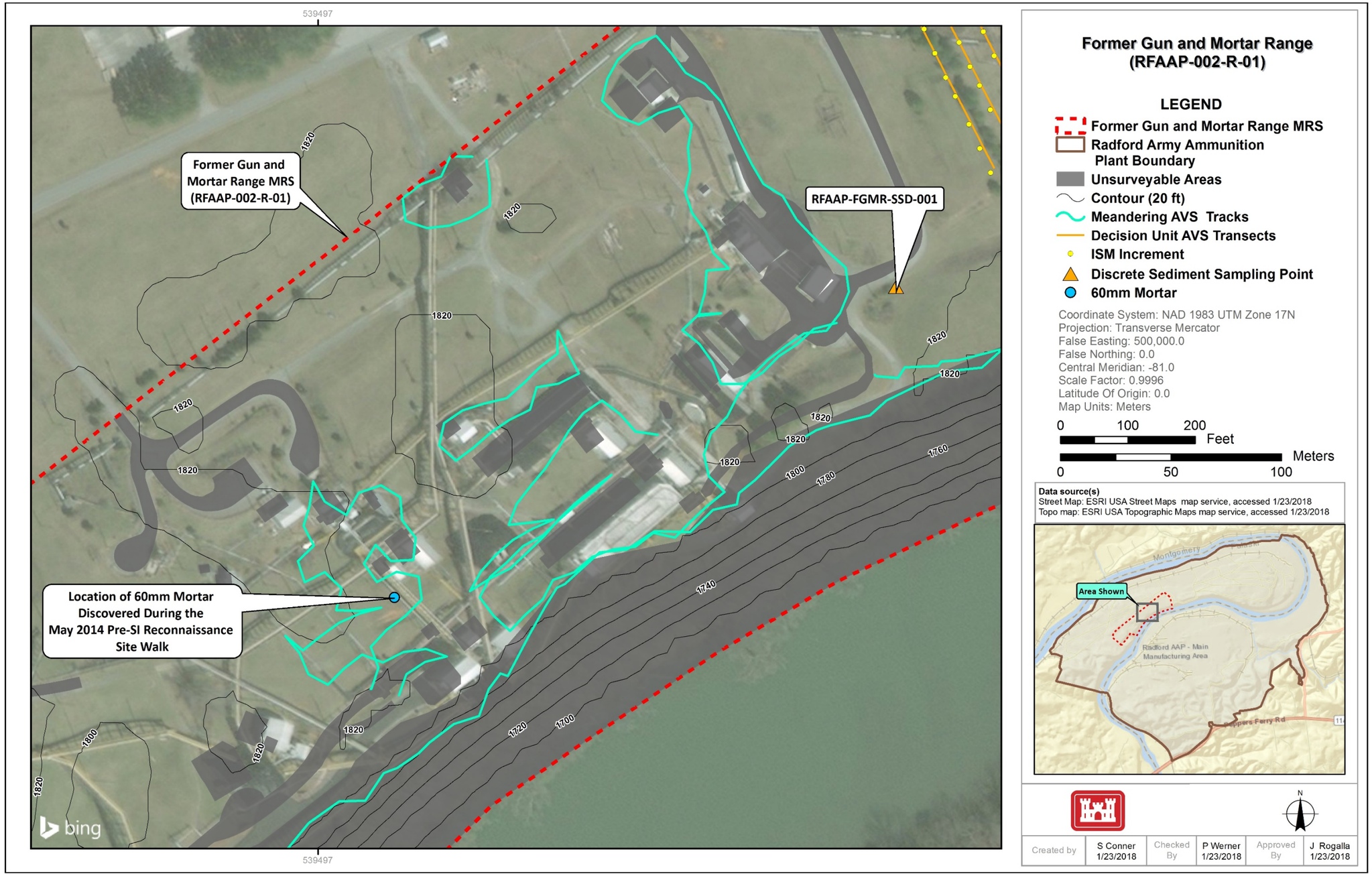

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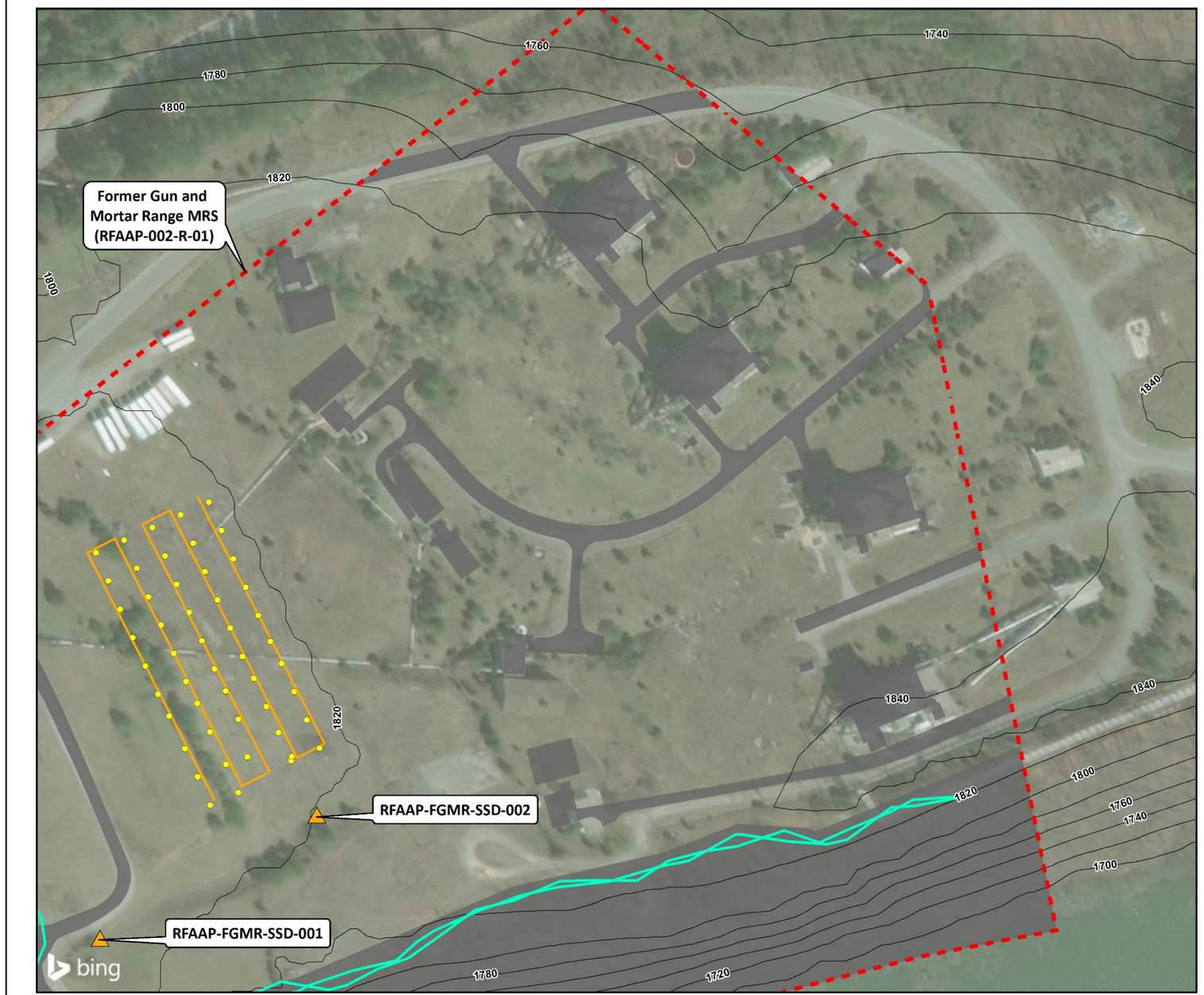
Figure 4-1d. Assisted Visual Survey Tracks Completed at the Former Gun and Mortar Range MRS (RFAAP-002-R-01) CAMBL Facility



Former Gun and Mortar Range (RFAAP-002-R-01)

LEGEND

- Former Gun and Mortar Range MRS
- Radford Army Ammunition Plant Boundary
- Unsurveyable Areas
- Contour (20 ft)
- Meandering AVS Tracks
- Decision Unit AVS Transects
- ISM Increment
- Discrete Sediment Sampling Point

Coordinate System: NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
False Easting: 500,000.0
False Northing: 0.0
Central Meridian: -81.0
Scale Factor: 0.9996
Latitude Of Origin: 0.0
Map Units: Meters

0 100 200 Feet
0 25 50 Meters

Data source(s)
Street Map: ESRI USA Street Maps map service, accessed 1/23/2018
Topo map: ESRI USA Topographic Maps map service, accessed 1/23/2018

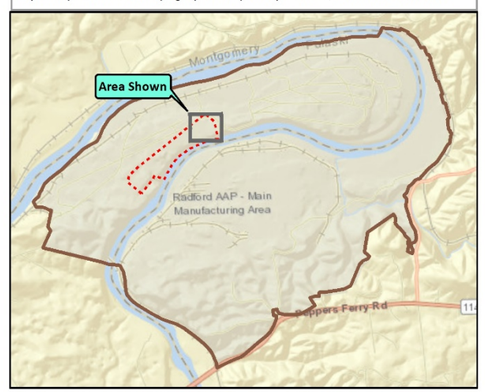


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Table 4-2. Project Analyte Explosives, Perchlorate, and SVOCs List: ISM Replicate Soil Sample Summary Results

Analyte	Abbrev.	Sample ID					
		RFAAP-FGMR-SSI-001A	*RFAAP-FGMR-SSI-001B*	*RFAAP-FGMR-SSI-001C*	*RFAAP-FGMR-SSI-002A*	*RFAAP-FGMR-SSI-002B*	*RFAAP-FGMR-SSI-002C*
Explosives, USEPA SW-846 Method 8330B (mg/kg)							
1,3,5-trinitrobenzene	1,3,5-TNB	<0.3 UJ	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,3-dinitrobenzene	1,3-DNB	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
2,4,6-trinitrotoluene	2,4,6-TNT	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
2,4-dinitrotoluene	2,4-DNT	<0.2 UJ	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
2,6-dinitrotoluene	2,6-DNT	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
2-amino-4,6-dinitrotoluene	2-Am-DNT	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
2-nitrotoluene	2-NT	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
3,5-dinitroaniline	3,5-DNA	<0.2 UJ	<0.2 UJ	<0.2 UJ	<0.2 UJ	<0.2 UJ	<0.2 UJ
3-nitrotoluene	3-NT	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
4-amino-2,6-dinitrotoluene	4-Am-DNT	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
4-nitrotoluene	4-NT	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
Nitrobenzene	NB	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
Nitroglycerin	NG	<1.2 U	<1.2 U	<1.2 U	<1.2 U	<1.2 U	<1.2 U
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	HMX	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
Pentaerythritol tetranitrate	PETN	<1.2 U	<1.2 U	<1.2 U	<1.2 U	<1.2 U	<1.2 U
Trinitrophenylmethyl-nitramine	Tetryl	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
Perchlorate, USEPA SW-846 Method 6850 (µg/kg)							
Perchlorate		<1.97 U	<1.99 U	<2.02 U	<2.02 U	<2.04 U	<2.04 U
Semi-volatile Organic Compounds (SVOCs), USEPA SW-846 Method 8270D SIM (µg/kg)							
Di-n-butylphthalate		<120 U	<120 U	<120 U	<120 U	<120 U	<120 U
Diphenylamine[5]		<120 U	<120 U	<120 U	<120 U	<120 U	<120 U
N-Nitrosodiphenylamine[5]		<120 U	<120 U	<120 U	<120 U	<120 U	<120 U
2-Chloronaphthalene		<61 U	<60 U	<61 U	<61 U	<62 U	<61 U

UJ = The analyte was not detected above the limit of detection (LOD); the LOD is estimated due to discrepancies in meeting certain analyte-specific QC criteria.
U = Undetected: The analyte was analyzed for but not detected above the LOD.
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram

Table 4-3. Project Analyte Metals List: ISM Soil Sample Replicate Summary Results

Analyte	Abbrev.	Sample ID					
		RFAAP-FGMR-SSI-001A	*RFAAP-FGMR-SSI-001B*	*RFAAP-FGMR-SSI-001C*	*RFAAP-FGMR-SSI-002A*	*RFAAP-FGMR-SSI-002B*	*RFAAP-FGMR-SSI-002C*
Metals, USEPA SW-846 Method 6010C/7471A (mg/kg)							
Antimony	Sb	5.3 J	0.7 J	9.4	0.31 J	0.3 J	0.34 J
Beryllium	Be	0.45	0.44	0.42	0.31	0.29	0.28
Cadmium	Cd	<0.021 UJ	<0.021 U	<0.020 U	0.68	0.48	0.37
Chromium	Cr	16.6 J	17.8	16	29.9	20.5	18.2
Cobalt	Co	3.7 J	3.8	4	3.6	3.4	3.2
Copper	Cu	7.2	6.4	20.8	10.6	9	7.7
Lead	Pb	*454*	*173*	*5100*	12	11.7	10.6
Lithium	Li	4.7 J	4	4.1	9.9	11.1	9.7
Manganese	Mn	526	524	490	239	245	224
Molybdenum	Mo	0.62	0.54	0.57	0.99	0.81	0.75
Nickel	Ni	8 J	4.5	5	15.8	9.8	10.8
Selenium	Se	0.71 J	0.39 J	0.64 J	<0.21 U	<0.20 U	<0.20 U
Silver	Ag	<0.053 UJ	<0.052 U	0.052 J	<0.052 U	<0.049 U	<0.050 U
Strontium	Sr	8.3	7.6	7.1	23.7	20.8	22.3
Thallium	Ti	<0.25 UJ	<0.25 U	<0.24 U	0.099 J	0.089 J	0.091 J
Tin	Sn	1.2	0.89	1.2	1.2	1	0.94
Vanadium	V	22.2	22.3	22.8	30.9	29.1	24.5
Zinc	Zn	23.6 J	24.4	23.7	26	33.8	22.5
Mercury	Hg	0.043	0.035	0.034	0.034	0.036	0.04

UJ = The analyte was not detected above the limit of detection (LOD); the LOD is estimated due to discrepancies in meeting certain analyte-specific QC criteria.
U = Undetected: The analyte was analyzed for but not detected above the LOD.
J = Detected, the result is estimated.

Table 4-4. Project Analyte Explosives, Perchlorate, and SVOCs List and Comparison Values: DU ISM Mean Soil Sample Results

Analyte	Abbrev.	RSL Carcinogenic SL[1] (mg/kg)	RSL Non-Carcinogenic SL[2] (mg/kg)	Ecological SSL (mg/kg)[3]	Decision Unit Mean Concentration	
					DU 1	*DU 2*
Explosives, SEPA SW-846 Method 8330B(mg/kg)						
1,3,5-trinitrobenzene	1,3,5-TNB	N/A	32,000	N/A	<0.3 mg/kg	<0.3 mg/kg
1,3-dinitrobenzene	1,3-DNB	N/A	82	N/A	<0.2 mg/kg	<0.2 mg/kg
2,4,6-trinitrotolene	2,4,6-TNT	96	510	N/A	<0.2 mg/kg	<0.2 mg/kg
2,4-dinitrotolene	2,4-DNT	7.4	1,600	N/A	<0.2 mg/kg	<0.2 mg/kg
2,6-dinitrotolene	2,6-DNT	1.5	250	N/A	<0.2 mg/kg	<0.2 mg/kg
2-amino-4,6-dinitrotolene	2-Am-DNT	N/A	2,300	N/A	<0.2 mg/kg	<0.2 mg/kg
2-nitrotolene	2-NT	15	1,100	N/A	<0.2 mg/kg	<0.2 mg/kg
3,5-dinitroaniline	3,5-DNA	N/A	N/A	N/A	<0.2 mg/kg	<0.2 mg/kg
3-nitrotolene	3-NT	N/A	82	N/A	<0.3 mg/kg	<0.3 mg/kg
4-amino-2,6-dinitrotolene	4-Am-DNT	N/A	2,300	N/A	<0.2 mg/kg	<0.2 mg/kg
4-nitrotolene	4-NT	140	3,300	N/A	<0.2 mg/kg	<0.2 mg/kg
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	28	3,300	N/A	<0.3 mg/kg	<0.3 mg/kg
Nitrobenzene	NB	22	1,300	N/A	<0.2 mg/kg	<0.2 mg/kg
Nitroglycerin	NG	140	82	N/A	<1.2 mg/kg	<1.2 mg/kg
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	HMX	N/A	57,000	N/A	<0.3 mg/kg	<0.3 mg/kg
Pentaerythritol tetranitrate	PETN	570	1,600	N/A	<1.2 mg/kg	<1.2 mg/kg
Trinitrophenylmethyl-nitramine	Tetryl	N/A	2,300	N/A	<0.2 mg/kg	<0.2 mg/kg
Perchlorate, USEPA SW-846 Method 6850 (µg/kg)						
Perchlorate		N/A	820	N/A	<1.99 µg/kg	<2.03 µg/kg
Semi-volatile Organic Compounds (SVOCs), SEPA SW-846 Method 8270D SIM(µg/kg)						
Di-n-butylphthalate		N/A	82,000	N/A	<120 µg/kg	<120 µg/kg
Diphenylamine[4]		N/A	21,000	N/A	<120 µg/kg	<120 µg/kg
N-Nitrosodiphenylamine[4]		470	N/A	N/A	<120 µg/kg	<120 µg/kg
2-Chloronaphthalene		N/A	60,000	N/A	<60.6 µg/kg	<61 µg/kg

[1] From the RSL Composite Worker Soil Table (Target Risk [TR]=1E-6, Hazard Quotient [HQ]=1) ne 2015, Carcinogenic Screening Level.
[2] From the RSL Composite Worker Soil Table (TR=1E-6, HQ=1) ne 2015, Non-Carcinogenic Screening Level, Target Hazard Index (THI)=1.
[3] From Ecological Soil Screening Levels, Interim Final, OSWER Directive 9285.7, 2005.
[4] Analytes coelute and will be reported as a total.
N/A indicates that the value is not available (i.e., no RSL, EcoSSL has been established).

Table 4-5. Project Analyte Metals List and Comparison Values: DU ISM Mean Soil Sample Results

Analyte	Abbrev.	RSL Carcinogenic SL[1] (mg/kg)	RFAAP Background Level (mg/kg)[2]	RSL Non-Carcinogenic SL[3] (mg/kg)	Ecological SSL (mg/kg)[4]	Decision Unit Mean Concentration	
						DU 1	*DU 2*
Metals, SEPA SW-846 Method 6010C/7471A							
Antimony	Sb	N/A	N/A	470	Soil Invertebrates: 78 *Mammalian Wildlife: 0.27*	*5.13* mg/kg	0.20 mg/kg
Beryllium	Be	6,900	1.02	2,300	Soil Invertebrates: 40 Mammalian Wildlife: 21	0.43 mg/kg	0.29 mg/kg
Cadmium	Cd	9,300	N/A	980	Soil Invertebrates: 140 *Mammalian Wildlife: 0.36* Avian Wildlife: 0.77 Plants: 32	0.021 mg/kg	*0.387* mg/kg
Chromium	Cr	N/A	65.3	N/A	As Cr(III): Mammalian Wildlife: 34 Avian Wildlife: 26	16.8 mg/kg	12.9 mg/kg
Cobalt	Co	1,900	72.3	350	Mammalian Wildlife: 230 Avian Wildlife: 120 Plants: 13	3.83 mg/kg	3.4 mg/kg
Copper	C	N/A	53.5	47,000	Soil Invertebrates: 80 Mammalian Wildlife: 49 Avian Wildlife: 28 Plants: 70	11.46 mg/kg	9.1 mg/kg
Lead	Pb	N/A	26.8	800	*Soil Invertebrates: 1,700* *Mammalian Wildlife: 56* *Avian Wildlife: 11* *Plants: 120*	*1909.0* mg/kg	*11.43* mg/kg
Lithium	Li	N/A	N/A	2,300	N/A	4.26 mg/kg	10.23 mg/kg
Manganese	Mn	N/A	2,543	26,000	*Soil Invertebrates: 450* Mammalian Wildlife: 4,000 Avian Wildlife: 4,300 *Plants: 220*	*513.33* mg/kg	161.33 mg/kg
Molybdenum	Mo	N/A	N/A	5,800	N/A	0.57 mg/kg	0.85 mg/kg
Nickel	Ni	64,000	62.8	22,000	Soil Invertebrates: 280 Mammalian Wildlife: 130 Avian Wildlife: 210 Plants: 38	5.83 mg/kg	12.13 mg/kg
Selenium	Se	N/A	N/A	5,800	Invertebrates: 4.1 Mammalian wildlife: 0.63 Avian Wildlife: 1.2 Plants: 0.52	0.34 mg/kg	0.2 mg/kg
Silver	Ag	N/A	N/A	5,800	Mammalian Wildlife: 14 Avian Wildlife: 4.2 Plants: 560	0.1 mg/kg	0.05 mg/kg

Table 4-5. Project Analyte Metals List and Comparison Values: DU ISM Mean Soil Sample Results (Continued)

Analyte	Abbrev.	RSL Carcinogenic SL[1] (mg/kg)	RFAAP Background Level (mg/kg)[2]	RSL Non-Carcinogenic SL[3] (mg/kg)	Ecological SSL (mg/kg)[4]	Decision Unit Mean Concentration	
Strontium	Sr	N/A	N/A	700,000	N/A	7.7 mg/kg	22.26 mg/kg
Thallium	Ti	N/A	2.11	12	N/A	0.2 mg/kg	0.09 mg/kg
Tin	Sn	N/A	N/A	700,000	N/A	1.1 mg/kg	1.04 mg/kg
Vanadium	V	N/A	108	5,800	Mammalian Wildlife: 280 *Avian Wildlife: 7.8*	*22.4* mg/kg	*20* mg/kg
Zinc	Zn	N/A	202	350,000	Soil Invertebrates: 120 Mammalian Wildlife: 79 Avian Wildlife: 46 Plants: 160	23.9 mg/kg	27.43 mg/kg
Mercury	Hg	N/A	0.13	46	N/A	0.0 mg/kg	0.03 mg/kg

[1] From the RSL Composite Worker Soil Table (TR=1E-6, HQ=1) ne 2015, Carcinogenic Screening Level.
[2] 95% upper tolerance limit (UTL) background level from Facility-Wide Background Study Report (IT Corporation, 2001). A comparison with background values are used only to provide a qualitative perspective on the magnitude of the ISM values (see Section 4.2 for additional explanation).
[3] From the RSL Composite Worker Soil Table (TR=1E-6, HQ=1) ne 2015, Non-Carcinogenic Screening Level, THI=1.
[4] From Ecological Soil Screening Levels, Interim Final, OSWER Directive 9285.7, 2005.
N/A indicates that the value is not available (i.e., no RSL, EcoSSL value has been established).
Italicized Results = Exceeds Screening Value(s).

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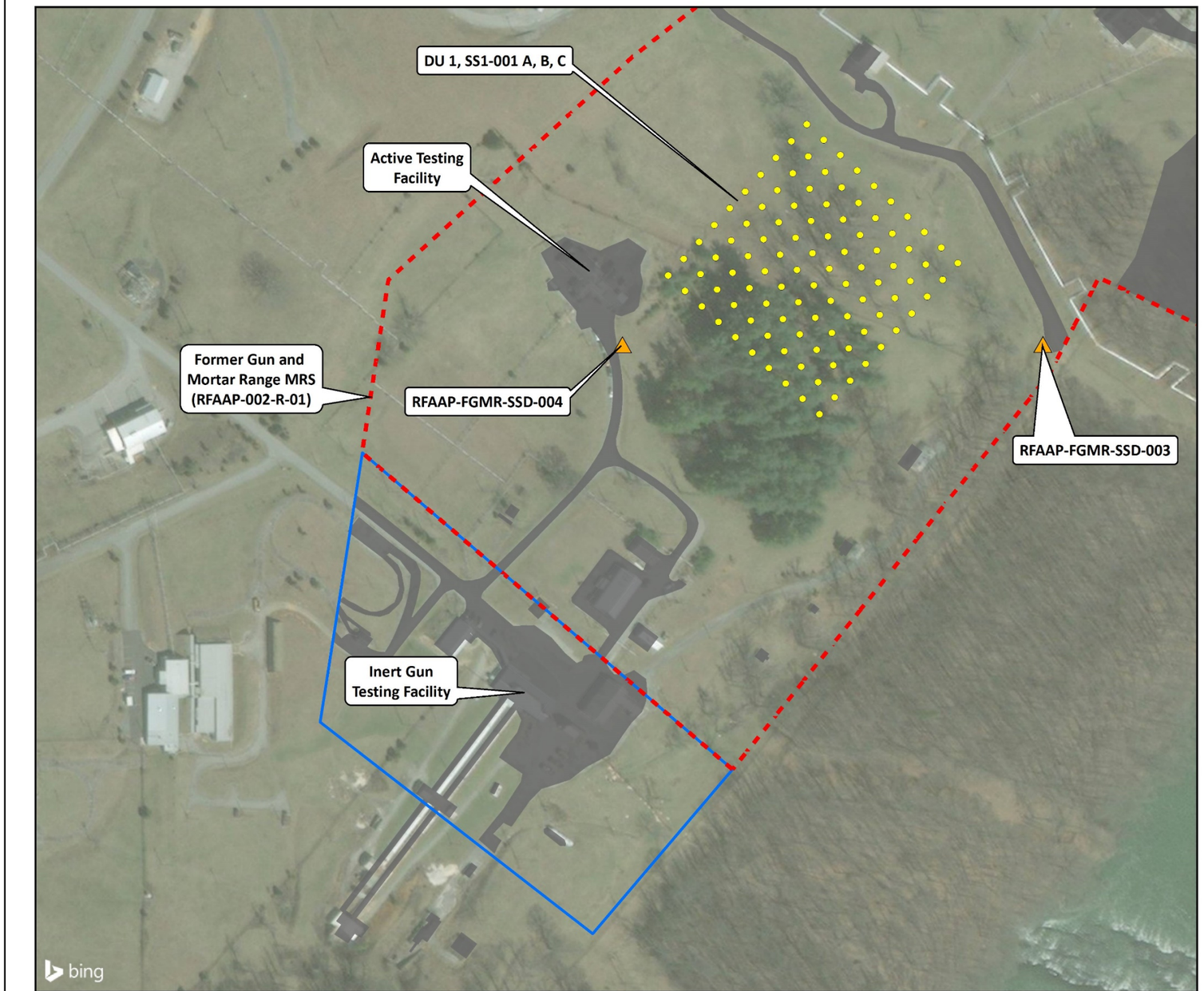
Figure 4-2a. ISM and Discrete Sediment Sample Locations: Decision Unit 1 and Discrete Sediment Samples RFAAP-FGMR-SSD-003 and -004



Former Gun and Mortar Range (RFAAP-002-R-01)

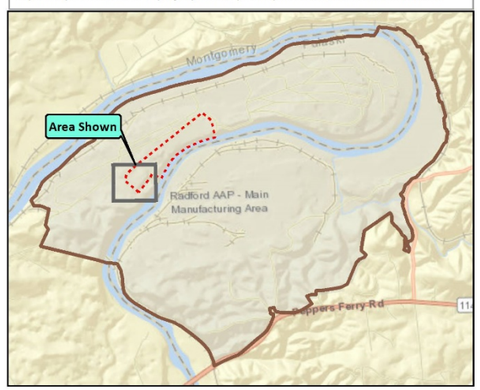
LEGEND

- Former Gun and Mortar Range MRS
- Active Test Range
- Radford Army Ammunition Plant Boundary
- Unsurveyable Areas
- ISM Increment
- Discrete Sediment Sampling Point

Coordinate System: NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
False Easting: 500,000.0
False Northing: 0.0
Central Meridian: -81.0
Scale Factor: 0.9996
Latitude Of Origin: 0.0
Map Units: Meters

0 200 400 Feet
0 50 100 Meters

Data source(s)
Street Map: ESRI USA Street Maps map service, accessed 2/2/2018
Topo map: ESRI USA Topographic Maps map service, accessed 2/2/2018



Created by	S Conner 2/2/2018	Checked By	P Werner 2/2/2018	Approved By	J Rogalla 2/2/2018

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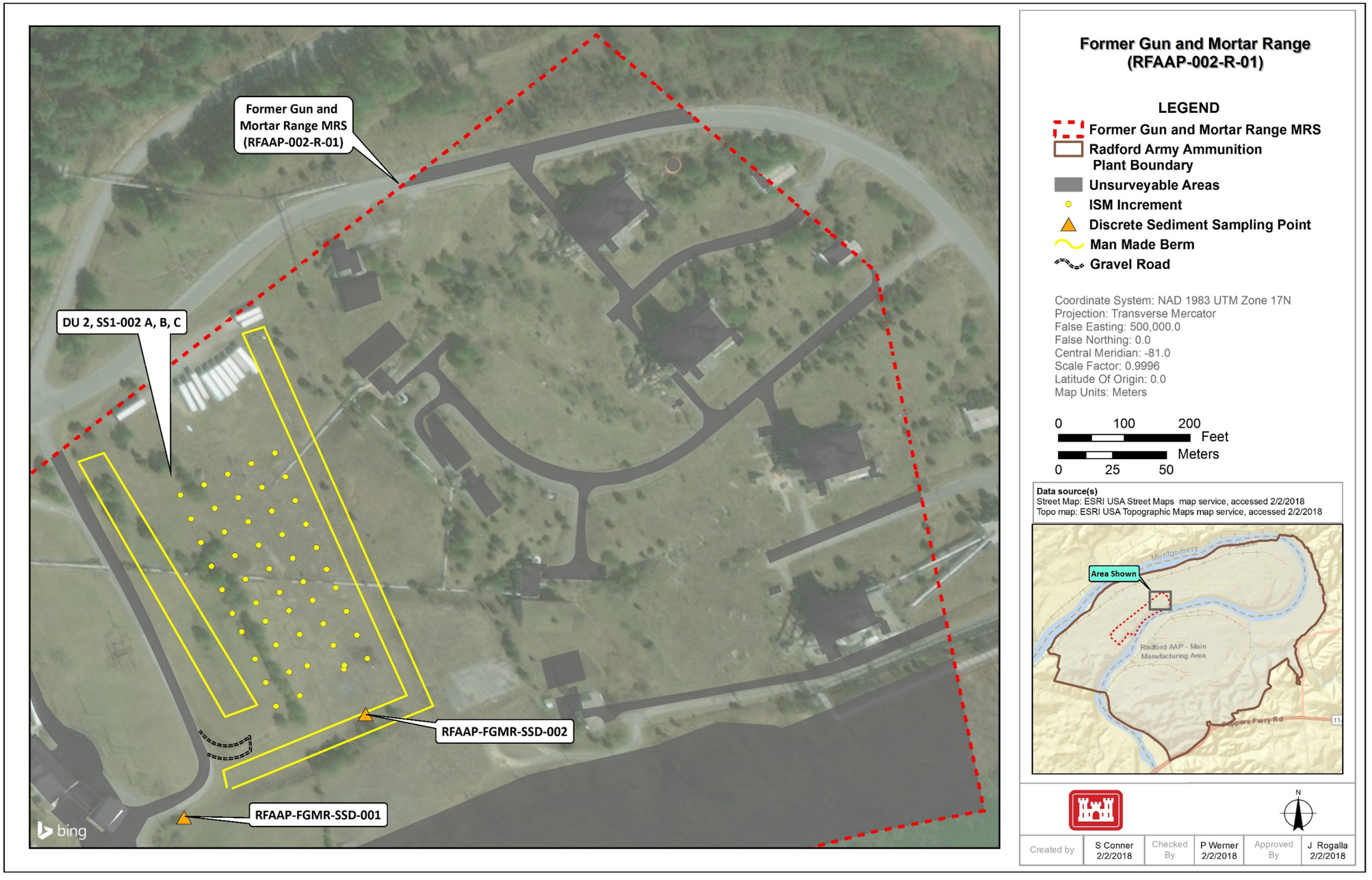
Figure 4-2b. ISM and Discrete Sediment Sample Locations: Decision Unit 2 and Discrete Sediment Samples RFAAP-FGMR-SSD-001 and -002



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Similar to the findings at DU 1, explosives, perchlorate, and SVOCs were not detected above the MDL in DU 2 replicate samples RFAAP-FGMR-SSI-002A (parent), RFAAP-FGMR-SSI-002B (replicate), or RFAAP-FGMR-SSI-002C (replicate). Metals were detected in the majority of replicate samples collected from DU 2. The metal detections are discussed in greater detail below.

Per the ITRC ISM guidance, when replicates are collected from a DU, the mean of the replicates is calculated and compared to the RSLs and EcoSSLs. The rationale is that a mean concentration from replicate samples is likely to be closer to the true mean of the DU than the individual replicate results (ITRC, 2012).

Because explosives, perchlorate, and SVOCs were not detected, the mean concentrations were calculated using the MDL value for each compound. The mean DU 1 and DU 2 concentrations did not exceed the RSLs or EcoSSLs. The mean concentrations of antimony, cadmium, lead, manganese, and vanadium in DU 1exceeded the screening levels. The following bullets list the mean metal concentrations and screening levels exceeded at DU 1.

- The mean antimony concentration (5.13 milligrams per kilogram [mg/kg]) exceeded the EcoSSL for mammalian wildlife (0.27 mg/kg). No background level was established for antimony.
- The mean lead concentration (1,909.0 mg/kg) exceeded the RFAAP background level (26.8 mg/kg) and USEPA RSL Composite Worker (800 mg/kg) and EcoSSLs for soil invertebrates (1,700 mg/kg), mammalian wildlife (56 mg/kg), avian wildlife (11 mg/kg), and plants (120 mg/kg).
- The mean manganese concentration (513.33 mg/kg) exceeded the EcoSSLs for plants (220 mg/kg) and soil invertebrates (450 mg/kg), but was less than the background level (2,543 mg/kg).
- The mean vanadium concentration (22.4 mg/kg) exceeded the EcoSSL for avian wildlife (7.8 mg/kg), but was less than the background level (108 mg/kg).

Cadmium, lead, and vanadium mean concentrations exceeded EcoSSLs at DU 2. The following bullets list the mean metal concentrations and screening levels that were exceeded at DU 2.

- The mean cadmium concentration (0.387 mg/kg) exceeded the EcoSSL for mammalian wildlife (0.36 mg/kg). No background level was established for cadmium.
- The mean lead concentration (11.43 mg/kg) exceeded the EcoSSL for avian wildlife (11 mg/kg) but was less than the background level (26.8 mg/kg).
- The mean vanadium concentration (20 mg/kg) exceeded the EcoSSL for avian wildlife (7.8 mg/kg) but was less than the background level (108 mg/kg).

The discrete sediment sample results were compared to USEPA RSLs Composite Worker, USEPA EcoSSLs, and RFAAP-specific metal background levels to determine if further investigation

relative to MC in drainage ditches is warranted as established in the SI Work Plan (BSEn, 2016). Discrete sediment sample analytical results are summarized in **Tables 4-6** and **4-7.** Discrete sediment sample locations are provided in **Figures 4-2a** and **4-2b**. The Summary of Samples and Analyses is included in **Table 4-8**.

Concentrations of explosives, perchlorate, and SVOCs were not detected above the MDL in discrete sediment samples RFAAP-FGMR-SSD-001, RFAAP-FGMR-SSD-002, RFAAP-FGMR-SSD-003, or RFAAP-FGMR-SSD-004. The concentrations of antimony, lead, manganese, selenium, and vanadium exceeded the screening levels. The following bullets are a list of metals and screening levels exceeded by the discrete sediment concentrations.

- The concentration of antimony exceeded the mammalian wildlife EcoSSL of 0.27 mg/kg in all four sediment samples (RFAAP-FGMR-SSD-001 [0.34 mg/kg], RFAAP-FGMR-SSD-002 [0.39 mg/kg], RFAAP-FGMR-SSD-003 [0.63 mg/kg], and RFAAP-FGMR-SSD-004 [0.33 mg/kg]).
- The concentration of lead exceeded the facility background level (26.8 mg/kg) and EcoSSLs for mammalian wildlife (56 mg/kg), avian wildlife (11 mg/kg), and plants (120 mg/kg) in discrete sediment sample RFAAP-FGMR-SSD-001 (451.0 mg/kg). Discrete sediment sample RFAAP-FGMR-SSD-004 (18.0 mg/kg) had a lead concentration that exceeded the avian wildlife EcoSSL of 11 mg/kg.
- The concentration of manganese exceeded the plant EcoSSL of 220 mg/kg in discrete sediment samples RFAAP-FGMR-SSD-001 (237 mg/kg) and RFAAP-FGMR-SSD-003 (398 mg/kg), but was less than the background level (2,542 mg/kg).
- The concentration of selenium exceeded the EcoSSLs for mammalian wildlife (0.63 mg/kg), avian wildlife (1.2 mg/kg), and plants (0.52 mg/kg) in discrete sediment samples RFAAP-FGMR-SSD-001 (1.3 mg/kg) and RFAAP-FGMR-SSD-003 (1.5 mg/kg). Discrete sediment samples RFAAP-FGMR-SSD-002 (0.99 mg/kg) and RFAAP-FGMR-SSD-004 (0.97 mg/kg) had selenium concentrations that exceeded the EcoSSLs for mammalian wildlife and plants.
- The concentrations of vanadium exceeded the avian wildlife EcoSSL of 7.8 mg/kg in all four sediment samples (RFAAP-FGMR-SSD-001 [32.7 mg/kg], RFAAP-FGMR-SSD-002 [18.7 mg/kg], RFAAP-FGMR-SSD-003 [26.0 mg/kg], and RFAAP-FGMR-SSD-004 [20.5 mg/kg]). All four sediment sample concentrations were less than the background level (108 mg/kg).

Table 4-6. Project Analyte Explosives, Perchlorate, and SVOCs List and Comparison Values: Discrete Sediment Sample Summary Results

Analyte	Abbrev.	Background Level[1] (mg/kg)	RSL Carcinogenic SL[2] (mg/kg)	RSL Non-Carcinogenic SL[3] (mg/kg)	Ecological SSL (mg/kg)[4]	Sample ID				
						RFAAP-FGMR-SSD-001	*RFAAP-FGMR-DUP1[6]*	*RFAAP-FGMR-SSD-002*	*RFAAP-FGMR-SSD-003*	*RFAAP-FGMR-SSD-004*
Explosives, USEPA SW-846 Method 8330B (mg/kg)										
1,3,5-trinitrobenzene	1,3,5-TNB	N/A	N/A	32,000	N/A	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,3-dinitrobenzene	1,3-DNB	N/A	N/A	82	N/A	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
2,4,6-trinitrotoluene	2,4,6-TNT	N/A	96	510	N/A	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
2,4-dinitrotoluene	2,4-DNT	N/A	7.4	1,600	N/A	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
2,6-dinitrotoluene	2,6-DNT	N/A	1.5	250	N/A	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
2-amino-4,6-dinitrotoluene	2-Am-DNT	N/A	N/A	2,300	N/A	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
2-nitrotoluene	2-NT	N/A	15	1,100	N/A	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
3,5-dinitroaniline	3,5-DNA	N/A	N/A	N/A	N/A	<0.2 U	<0.2 U	<0.2 UJ	<0.2 U	<0.2 U
3-nitrotoluene	3-NT	N/A	N/A	82	N/A	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
4-amino-2,6-dinitrotoluene	4-Am-DNT	N/A	N/A	2,300	N/A	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
4-nitrotoluene	4-NT	N/A	140	3,300	N/A	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	N/A	28	3,300	N/A	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
Nitrobenzene	NB	N/A	22	1,300	N/A	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
Nitroglycerin	NG	N/A	140	82	N/A	<1.2 U	<1.2 U	<1.2 U	<1.2 U	<1.2 U
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	HMX	N/A	N/A	57,000	N/A	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
Pentaerythritol tetranitrate	PETN	N/A	570	1,600	N/A	<1.2 U	<1.2 U	<1.2 U	<1.2 U	<1.2 U
Trinitrophenylmethyl-nitramine	Tetryl	N/A	N/A	2,300	N/A	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
Perchlorate, USEPA SW-846 Method 6850 (µg/kg)										
Perchlorate		N/A	N/A	820	N/A	<2.72 U	<2.66 U	<2/74 U	<3.4 U	<3.0 U
Semi-volatile Organic Compounds (SVOCs), USEPA SW-846 Method 8270D SIM (µg/kg)										
Di-n-butylphthalate		N/A	N/A	82,000	N/A	<160 U	<150 U	<150 U	<160 U	<150 U
Diphenylamine[5]		N/A	N/A	21,000	N/A	<80 U	<76 U	<75 U	<81 U	<75 U
N-Nitrosodiphenylamine[5]		N/A	470	N/A	N/A	<160 U	<150 U	<150 U	<160 U	<150 U
2-Chloronaphthalene		N/A	N/A	60,000	N/A	<160 U	<150 U	<150 U	<160 U	<150 U

[1] 95% upper tolerance limit (UTL) background level from Facility-Wide Background Study Report (IT Corporation, 2001).
[2] From the RSL Composite Worker Soil Table (Target Risk [TR]=1E-6, Hazard Quotient [HQ]=1) June 2015, Carcinogenic Screening Level
[3] From the RSL Composite Worker Soil Table (TR=1E-6, HQ=1) June 2015, Non-Carcinogenic Screening Level, Target Hazard Index (THI)=1
[4] From Ecological Soil Screening Levels, Interim Final, OSWER Directive 9285.7, 2005
[5]Analytes coelute and will be reported as a total.
[6] Duplicate sample, parent sample is RFAAP-FGMR-SSD-001.
N/A indicates that the a value is not available (i.e., no RSL, EcoSSL or background value has been established)

Table 4-7. Project Analyte Metals List and Comparison Values: Discrete Sediment Sample Summary Results

Analyte	Abbrev.	Background Level[1] (mg/kg)	RSL Carcinogenic SL[2] (mg/kg)	RSL Non-Carcinogenic SL[3] (mg/kg)	Ecological SSL (mg/kg)[4]	Sample ID				
						RFAAP-FGMR-SSD-001	*RFAAP-FGMR-DUP1[5]*	*RFAAP-FGMR-SSD-002*	*RFAAP-FGMR-SSD-003*	*RFAAP-FGMR-SSD-004*
Metals, USEPA SW-846 Method 6010C/7471A (mg/kg)										
Antimony	Sb	N/A	N/A	470	Soil Invertebrates: 78 *Mammalian Wildlife: 0.27*	*0.34*	*0.33*	*0.39 J*	*0.63*	*0.33*
Beryllium	Be	1.02	6,900	2,300	Soil Invertebrates: 40 Mammalian Wildlife: 21	0.09	0.095	0.023	0.22	0.18
Cadmium	Cd	N/A	9,300	980	Soil Invertebrates: 140 Mammalian Wildlife: 0.36 Avian Wildlife: 0.77 Plants: 32	<0.026 U	<0.024 U	<0.023 UJ	<0.026 U	<0.026 U
Chromium	Cr	65.3	N/A	N/A	As Cr(III): Mammalian Wildlife: 34 Avian Wildlife: 26	15.7	16	10.9 J	14.6	11.6
Cobalt	Co	72.3	1,900	350	Mammalian Wildlife: 230 Avian Wildlife: 120 Plants: 13	4.4	4.2	2.9	5.8	3.1
Copper	Cu	53.5	N/A	47,000	Soil Invertebrates: 80 Mammalian Wildlife: 49 Avian Wildlife: 28 Plants: 70	9.3	8.5	3	8.9	5.1
Lead	Pb	26.8	N/A	800	Soil Invertebrates: 1,700 Mammalian Wildlife: 56 *Avian Wildlife: 11* Plants: 120	*451*	*475*	8.6	8.9	*18*
Lithium	Li	N/A	N/A	2,300	N/A	7.2	6.8	2.3	10.7	3.3
Manganese	Mn	2,543	N/A	26,000	Soil Invertebrates: 450 Mammalian Wildlife: 4,000 Avian Wildlife: 4,300 Plants: 220	*237*	*228*	193	*398*	183
Molybdenum	Mo	N/A	N/A	5,800	N/A	0.42 J	0.37 J	0.29 J	0.24 J	0.41 J
Nickel	Ni	62.8	64,000	22,000	Soil Invertebrates: 280 Mammalian Wildlife: 130 Avian Wildlife: 210 Plants: 38	4.6	4.4	2	6.5	2.6
Selenium	Se	N/A	N/A	5,800	Invertebrates: 4.1 *Mammalian wildlife: 0.63* *Avian Wildlife: 1.2* *Plants: 0.52*	*1.3*	*1.6*	*0.99*	*1.5*	*0.97*

Table 4-7. Project Analyte Metals List and Comparison Values: Discrete Sediment Sample Summary Results (Continued)

Analyte	Abbrev.	Background Level[1] (mg/kg)	RSL Carcinogenic SL[2] (mg/kg)	RSL Non-Carcinogenic SL[3] (mg/kg)	Ecological SSL (mg/kg)[4]	Sample ID				
						RFAAP-FGMR-SSD-001	***RFAAP-FGMR-DUP1[5]***	***RFAAP-FGMR-SSD-002***	***RFAAP-FGMR-SSD-003***	***RFAAP-FGMR-SSD-004***
Silver	Ag	N/A	N/A	5,800	Mammalian Wildlife: 14 Avian Wildlife: 4.2 Plants: 560	<0.065 U	<0.059 U	<0.059 U	<0.064 U	<0.065 U
Strontium	Sr	N/A	N/A	700,000	N/A	8.3	7.5	2.3	6.9	4.2
Thallium	Ti	2.11	N/A	12	N/A	0.68	0.75	0.26	0.69	0.35
Tin	Sn	N/A	N/A	700,000	N/A	1.3	1.2	0.99 J	1.3	1.1
Vanadium	V	108	N/A	5,800	Mammalian Wildlife: 280 *Avian Wildlife: 7.8*	*32.7*	*28*	*18.7 J*	*26*	*20.5*
Zinc	Zn	202	N/A	350,000	Soil Invertebrates: 120 Mammalian Wildlife: 79 Avian Wildlife: 46 Plants: 160	41.5	37.7	13	23.5	21.8
Mercury	Hg	0.13	N/A	46	N/A	0.07	0.077	0.044 J	0.042	0.044

[1] Background level from Facility-Wide Background Study Report (IT Corporation, 2001).

[2] From the RSL Composite Worker Soil Table (TR=1E-6, HQ=1) June 2015, Carcinogenic Screening Level

[3] From the RSL Composite Worker Soil Table (TR=1E-6, HQ=1) June 2015, Non-Carcinogenic Screening Level, THI=1

[4] From Ecological Soil Screening Levels, Interim Final, OSWER Directive 9285.7, 2005

N/A indicates that the a value is not available (i.e., no RSL, EcoSSL or background value has been established)

Italicized Results = Exceeds Screening Value(s).

***Bold** = Greater than Background Level.*

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Table 4-8. Summary of Sample and Analyses

Sample ID	Matrix	EXPL	PERC	Hg	MET	SVOC
RFAAP-FGMR-SSI-001A	SOIL	X	X	X	X	X
RFAAP-FGMR-SSI-001B	SOIL	X	X	X	X	X
RFAAP-FGMR-SSI-001C	SOIL	X	X	X	X	X
RFAAP-FGMR-SSD-001	SOIL	X	X	X	X	X
RFAAP-FGMR-DUP1	SOIL	X	X	X	X	X
RFAAP-FGMR-SSD-002	SOIL	X	X	X	X	X
RFAAP-FGMR-SSD-003	SOIL	X	X	X	X	X
RFAAP-FGMR-SSD-004	SOIL	X	X	X	X	X
RFAAP-FGMR-SSI-002A	SOIL	X	X	X	X	X
RFAAP-FGMR-SSI-002B	SOIL	X	X	X	X	X
RFAAP-FGMR-SSI-002C	SOIL	X	X	X	X	X

4.3 Lab Analysis, Data Validation, and Reporting

The RFAAP sampling effort was conducted in October 2016. ISM soil samples were collected in accordance with the SI Work Plan and associated QAPP. Data validation was performed in accordance with the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (USEPA, 2014a) and USEPA Contract Laboratory Program National Functional Guidelines for Organic Superfund Data Review (USEPA, 2014b).

Documentation pertaining to COC and sample condition was filed in field and laboratory records (See **Appendices A** and **D**). A review of the field logs and daily QC reports indicates that sample collection, handling, and laboratory QA/QC procedures were conducted in compliance with the sampling SOPs and QAPP specifications. A Field Sampling Systems Audit was not conducted during the SI field work.

The COC forms were completed as the samples were packaged into coolers for transport. Temperature blanks and ice were added as required. The samples were placed into coolers at the time of collection and were kept chilled until delivery to the laboratory

The analytical data were reviewed for consistency with the specifications in the QAPP to ensure that the data set met project DQOs and was usable for the purposes of the project. Laboratory documentation was completed and is included in this report for each of the data packages. Any anomalies to the requirements for PARCCS are discussed below and the data were flagged where appropriate.

Application of Data Flags

General data qualifier conventions in **Table 4-9** were used to indicate QC anomalies. Data were qualified, where appropriate, in accordance with the QAPP data validation procedures as incorporated in the Data Review Checklist, as specified in the project QAPP.

Table 4-9. Data Qualifiers

Qualifier	Description
R	Rejected: The result is rejected due to deficiencies in the analytical system or the inability to meet QC criteria. (Not Used)
M	Matrix effect: The concentration is estimated due to a matrix effect. (Not Used)
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. (Not Used)
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. (Not Used)
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.

Qualifiers of "Y" and "Q" were applied by the lab during their internal review of the data to indicate when QA parameters were not met. In this case, the "Q" signified that lab control sample results were outside acceptance limits and the "Y" signified that the replicate/duplicate precision was outside acceptance limits. These lab qualifiers alert the data validator to exceedances, which the validator then assesses against the project QAPP and applies final qualifiers, accordingly, as presented in **Table 4-9**. A data quality summary is provided below.

Preservation, Temperature, and Hold Time

- All sample preservation requirements were met.
- All sample analyses were within holding times.
- All temperature requirements were met upon arrival at the laboratory.

4.3.1 Precision

Precision is the degree of agreement among repeated measurements of the same characteristic on the same sample or on separate samples collected as close as possible in time and place. Field sampling precision was measured from the relative percent difference (RPD) between the parent sample and the field duplicate. Laboratory precision is measured with calibration verification, laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) and the RPD of the MS/MSD pairs.

Field Duplicates

The QAPP specified one field duplicate for every ten samples or fewer per matrix and method for discrete sediment samples. Metals and mercury methods specify one lab duplicate for every ten samples or fewer per matrix. Parent, field duplicate and lab duplicate samples are identified in **Table 4-10**.

Table 4-10. Field Duplicate and Lab Duplicate

Parent Sample	Type of Duplicate Sample	Duplicate Sample	Analyses
RFAAP-FGMR-SSD-001	Field Duplicate	RFAAP-FGMR-DUP1	Metals Mercury SVOCs Perchlorate Explosives
RFAAP-FGMR-SSD-002	Lab Duplicate	RFAAP-FGMR-SSD-002 DUP	Metals Mercury
RFAAP-FGMR-SSI-001A		RFAAP-FGMR-SSI-001A DUP	Metals Mercury

One lab duplicate result, as shown in **Table 4-11**, exceeded the project DQO of 35 percent.

Table 4-11. Field Duplicate and Lab Duplicate Precision Results (Exceedances in Bold)

Sample/Method	Analyte	Primary	Duplicate	Flag	RPD (%)
Field Duplicate Metals RFAAP-FGMR-SSD-001	Antimony	0.34 J mg/kg	0.33 J mg/kg	None	NA
	Beryllium	0.090 mg/kg	0.095 mg/kg	None	5%
	Cadmium	ND	ND	None	NA
	Chromium	0.18 mg/kg	0.17 mg/kg	None	6%
	Cobalt	4.4 mg/kg	4.2 mg/kg	None	5%
Field Duplicate Metals RFAAP-FGMR-SSD-001 (cont'd)	Copper	9.3 mg/kg	8.5 mg/kg	None	9%
	Lead	451 mg/kg	475 mg/kg	None	5%
	Lithium	7.2 mg/kg	6.8 mg/kg	None	6%
	Manganese	237 mg/kg	228 mg/kg	None	4%
	Mercury	0.070 mg/kg	0.077 mg/kg	None	10%
	Molybdenum	0.42 J mg/kg	0.37 J mg/kg	None	NA
	Nickel	4.6 mg/kg	4.4 mg/kg	None	4%
	Selenium	1.3 mg/kg	1.6 mg/kg	None	21%
	Silver	ND	ND	None	NA
	Strontium	8.3 mg/kg	7.5 mg/kg	None	10%
	Thallium	0.68 mg/kg	0.75 mg/kg	None	10%
	Tin	1.3 mg/kg	1.2 mg/kg	None	8%
	Vanadium	32.7 mg/kg	28.0 mg/kg	None	15%
	Zinc	41.5 mg/kg	37.7 mg/kg	None	10%
Field Duplicate Perchlorate	Perchlorate	ND	ND	None	NA
Field Duplicate Explosives	All	ND	ND	None	NA
Field Duplicate SVOCs	2-Chloronaphthalene	ND	ND	None	NA
	N-nitrosodiphenylamine / Diphenylamine	ND	ND	None	NA
	Di-n-butylphthalate	ND	ND	None	NA

Table 4-11. Field Duplicate and Lab Duplicate Precision Results (Continued)

Sample/Method	Analyte	Primary	Duplicate	Flag	RPD (%)
Metals Lab Duplicate RFAAP-FGMR-SSD-002	Antimony	0.39 J mg/kg	0.35 J mg/kg	None	NA
	Beryllium	0.023 J mg/kg	ND	None	NA
	Cadmium	ND	ND	None	NA
	Chromium	10.9 mg/kg	10.9 mg/kg	None	0%
	Cobalt	2.9 mg/kg	2.3 mg/kg	None	23%
	Copper	3.0 mg/kg	2.7 mg/kg	None	11%
	Lead	8.6 mg/kg	6.8 mg/kg	None	23%
	Lithium	2.3 mg/kg	2.1 mg/kg	None	9%
	Manganese	193 mg/kg	148 mg/kg	None	26%
	Mercury	0.044 mg/kg	0.040 mg/kg	None	10%
	Molybdenum	0.29 mg/kg	0.27 J mg/kg	None	7%
Metals Lab Duplicate RFAAP-FGMR-SSD-002 (cont'd)	Nickel	2.0 mg/kg	1.8 mg/kg	None	11%
	Selenium	0.99 mg/kg	0.80 mg/kg	None	21%
	Silver	ND	ND	None	NA
	Strontium	2.3 mg/kg	2.3 mg/kg	None	0%
	Thallium	0.26 J mg/kg	0.36 J mg/kg	None	NA
	Tin	0.99 mg/kg	0.99 mg/kg	None	0%
	Vanadium	18.7 mg/kg	17.5 mg/kg	None	7%
	Zinc	13.0 mg/kg	13.5 mg/kg	None	4%
Metals Lab Duplicate RFAAP-FGMR-SSI-001A	Antimony	5.3 mg/kg	4.4 mg/kg	None	19%
	Beryllium	0.45 mg/kg	0.46 mg/kg	None	2%
	Cadmium	ND	0.039 J mg/kg	None	NA
	Chromium	16.6 mg/kg	16.6 mg/kg	None	0%
	Cobalt	3.7 mg/kg	3.8 mg/kg	None	3%
	Copper	7.2 mg/kg	7.6 mg/kg	None	5%
	Lead	454 mg/kg	431 mg/kg	None	5%
	Lithium	4.7 mg/kg	4.7 mg/kg	None	0%
	Manganese	526 mg/kg	510 mg/kg	None	3%
	Mercury	0.043 mg/kg	0.040 mg/kg	None	7%
	Molybdenum	0.62 mg/kg	0.57 mg/kg	None	8%
	Nickel	**8.0 mg/kg**	**5.6 mg/kg**	**J / J**	**35%**
	Selenium	0.71 mg/kg	0.65 mg/kg	None	9%
	Silver	ND	ND	None	NA
	Strontium	8.3 mg/kg	8.3 mg/kg	None	0%
	Thallium	ND	ND	None	NA
	Tin	1.2 mg/kg	1.2 mg/kg	None	0%
	Vanadium	22.2 mg/kg	23.3 mg/kg	None	5%
	Zinc	23.6 mg/kg	23.0 mg/kg	None	3%

Laboratory Control Sample and Duplicate and Matrix Spike and Duplicate RPD

- There were no LCS/LCSD RPD failures.
- There were no MS/MSD RPD failures.

4.3.2 Accuracy

Accuracy was measured from laboratory QC sample percent recoveries including LCS, LCSD, MS, MSD, and surrogates. Accuracy was also evaluated by determining whether any deviations to method or laboratory requirements for internal standard (IS) and continuing calibration verification (CCV) recoveries were noted in the case narrative(s).

Laboratory Control Sample and Duplicate and Matrix Spike and Duplicate

Table 4-12 presents LCS/LCSD percent recoveries outside control limits. All perchlorate, SVOC and metals LCS and LCSD recoveries were within control limits and no flags were required.

Table 4-12. LCS/LCSD Recovery Exceedances

Sample ID	Prep Batch	Method	Analyte	Flag	Recovery (%)	LCL (%)	UCL (%)
All ISM samples: RFAAP-FGMR-SSI-001A RFAAP-FGMR-SSI-001B RFAAP-FGMR-SSI-001C RFAAP-FGMR-SSI-002A RFAAP-FGMR-SSI-002B RFAAP-FGMR-SSI-002C	59528	8330B	3,5-Dinitro-aniline	UJ	84%	86%	118%

3,5-Dinitroaniline was reported as non-detect down to the limit of detection (LOD) of 0.2 mg/kg. **Table 4-13** lists the samples where 3,5-dinitroaniline was flagged based on LCS recovery; there were no screening levels for this analyte. The lack of other non-qualified explosive detections, along with the lack of screening levels, indicate the qualified results for 3,5-dinitroaniline do not add unacceptable uncertainty to any conclusions reached regarding 3,5-dinitroaniline.

Table 4-13. Samples Flagged Based on LCS Recovery

Sample ID	Laboratory ID	Analyte	Result	Flag
RFAAP-FGMR-SSI-001A	784496	3,5-Dinitroaniline	ND	UJ
RFAAP-FGMR-SSI-001B	784515		ND	UJ
RFAAP-FGMR-SSI-001C	784516		ND	UJ
RFAAP-FGMR-SSI-002A	785308		ND	UJ
RFAAP-FGMR-SSI-002B	785309		ND	UJ
RFAAP-FGMR-SSI-002C	785310		ND	UJ

Table 4-14 presents MS/MSD and post-digestion spike (PDS) 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. All perchlorate and SVOC MS/MSD recoveries were within control limits and no flags were required. Data were not flagged in cases where the parent sample concentration was greater than four times the spike concentration. Parent samples only were qualified.

Table 4-14. MS/MSD and PDS Recovery Exceedances

Sample ID	Lab ID	Analyte	Recovery (%)	LCL (%)	UCL (%)	Parent Flag
RFAAP-FGMR-SSD-002	784853 MS/MSD	3,5-Dinitroaniline	77% / 73%	86%	118%	UJ
		1,3,5-Trinitrobenzene	OK / 78%	80%	116%	UJ
		2,4-Dinitrotoluene	OK / 73%	75%	121%	UJ
		Mercury	133% / 126%	82%	119%	J
		Antimony	28% / 30%	79%	114%	J
		Cadmium	68% / 72%	82%	113%	UJ
		Manganese	Sample >4X spike			None
		Tin	79% / OK	80%	120%	J
	784853 PDS	Cadmium	74%	80%	120%	UJ
		Chromium	77%	80%	120%	J
		Manganese	Sample >4X spike			None
		Vanadium	75%	80%	120%	J
RFAAP-FGMR-SSI-001A	784496 MS/MSD	3,5-Dinitroaniline	80% / 77%	86%	118%	UJ
		Antimony	33% / 50%	79%	114%	J
		Cadmium	81% / OK	82%	113%	UJ
		Chromium	OK / 117%	85%	113%	J
		Cobalt	OK / 82%	85%	112%	J
		Lead	Sample >4X spike			None
		Lithium	120%	85%	112%	J
		Manganese	Sample >4X spike			None

Sample ID	Lab ID	Analyte	Recovery (%)	LCL (%)	UCL (%)	Parent Flag
		Selenium	OK / 80%	83%	113%	J
		Silver	77% / 81%	82%	112%	UJ
		Thallium	76% / 77%	85%	111%	UJ
	784496 PDS	Chromium	73%	80%	120%	J
		Lead	Sample >4X spike			None
		Manganese	Sample >4X spike			None
		Nickel	76%	80%	120%	J
		Silver	79%	80%	120%	UJ
		Thallium	77%	80%	120%	UJ
		Zinc	70%	80%	120%	J

ID – identification
LCL – lower control limit
UCL – upper control limit

Surrogates

All surrogate recoveries were within acceptable control limits for all associated analysis.

Internal Standards

Internal standards were within control limits for associated analysis. See Data Validation Report (**Appendix B**) for specific analysis.

Continuing Calibration Verification

There were no associated CCV results noted in the case narratives as being outside QC limits.

4.3.3 Representativeness

Representativeness qualitatively expresses the degree to which data accurately reflect conditions at the MRS. Factors that affect the representativeness of analytical data include appropriate sample population definitions, proper sample collection and preservation techniques, analytical holding times, use of standard analytical methods, and determination of matrix or analyte interferences. Requirements for representativeness were generally meant and data deliverables were consistent with the work plan. Samples were collected from predetermined locations specified in the approved work plan.

QA field calibrations were not required for the instruments used during the SI field work. The Trimble GeoXT GPS receiver, however, was checked at a known location prior to the start of work each day to verify instrument consistency and to note any significant variance in location information. In addition, the UXO Technician III performed a daily function check of the Schonstedt GA-52Cx analog magnetic locator prior to the start of the work day. These daily checks indicated the instruments were in good working order.

The Trimble GeoXT experienced poor connectivity/satellite coverage during the collection of ISM

samples at DU 1. To continue locating and establishing DU 1 increment points, a compass and tape measure were used to provide direction and distance, respectively. A Garmin and Android cell phone were used to provide coordinate data, although the level of precision was well above sub-meter accuracy. It was determined that the accuracy rates for the Garmin and Android were approximately 3 and 10 meters, respectively. Given the procedures used to establish increment locations, little impact on the representativeness of the ISM replicate samples collected from DU 1 is expected. This expectation is based on the premise that ISM sampling produces an estimate of the mean contaminant concentration in soil within a specified volume (ITRC, 2012) and the methods used to establish the DU and increment locations. At least three corners of each DU were established using the Trimble GeoXT GPS and replicate increment locations were measured using the same stake and string process. With the systematic random sampling performed, only the initial grid cell sampling location was randomly determined. The same relative increment location was sampled in each of the other grid cells (ITRC, 2012).

Representativeness for the ISM sampling was achieved by employing dedicated sampling equipment and consistent sampling procedures. Each replicate ISM soil sample was collected with a dedicated step probe set to collect soil from the top 2.5 cm. Use of the standard soil sampler ensured the collection of consistent sample volume for each replicate. Use of the dedicated sampler for each replicate avoided the potential for cross-contamination between replicates. Each replicate increment was offset 1 meter from the parent increment.by using the same stake with a 1 meter length of string attached. The staking and compass reading procedure was repeated at every ISM increment location in both DUs to ensure consistency throughout the sample collection process.

The size of the proposed DU 2 sample grid was reduced to 50 meters by 100 meters due to the presence of blast berms and fences. As a result of the decrease in size, the number of increments collected for the three replicates was reduced to 50. According to the ITRC ISM guidance (ITRC, 2012), 50 increments is a defensible number to estimate the mean contaminant concentration. As such, no impact on the representativeness of the ISM replicates in DU 2 is expected.

Three increment locations were relocated due to an obstruction (tree) and the discovery of an anomaly. Little to no impact on the representativeness of the ISM replicates is expected based on the premise that ISM sampling produces an estimate of the mean and less than 2 percent of the increments in any one ISM replicate sample were relocated.

The mean and %RSD for each analyte for each DU is presented in **Table 4-15** below. If the total %RSD (total error) between field replicates from the same DU is less than 35 percent as established in the QAPP, then the sampling design and execution are likely to be adequate and the distribution of replicate results can be assumed to be approximately normal (USACE, 2009).

The replicates for antimony, copper and lead in DU 1 had %RSD values above 35 percent. The %RSDs for antimony, copper, and lead indicate the replicate values for these metals are not normally distributed.

Table 4-15. Replicate Results for ISM Samples

ISM Sample Location	Analysis	Analyte	Low / High Concentrations	Mean Concentration	%RSD
RFAAP-FGMR-SSI-001	Metals	**Antimony**	**0.7 / 9.4 mg/kg**	**5.1 mg/kg**	**70%**
		Beryllium	0.42 / 0.45 mg/kg	0.44 mg/kg	2.8%
		Cadmium	< or at LOD	<LOD	NA
		Chromium	16.0 / 17.8 mg/kg	16.8 mg/kg	4.5%
		Cobalt	3.7 / 4.0 mg/kg	3.8 mg/kg	3.3%
		Copper	**6.4 / 20.8 mg/kg**	**11.5 mg/kg**	**57%**

Table 4-15. Replicate Results for ISM Samples (Continued)

ISM Sample Location	Analysis	Analyte	Low / High Concentrations	Mean Concentration	%RSD
RFAAP-FGMR-SSI-001 (cont'd)		**Lead**	**173 / 5100 mg/kg**	**1909 mg/kg**	**118%**
		Lithium	4.0 / 4.7 mg/kg	4.3 mg/kg	7.2%
		Manganese	490 / 526 mg/kg	513 mg/kg	3.2%
		Mercury	0.034 / 0.043 mg/kg	0.037 mg/kg	11%
		Molybdenum	0.054 / 0.062 mg/kg	0.058 mg/kg	5.7%
		Nickel	4.5 / 8.0 mg/kg	5.8 mg/kg	27%
		Selenium	0.39 / 0.71 mg/kg	0.58 mg/kg	24%
		Silver	< or at LOD	<LOD	NA
		Strontium	7.1 / 8.3 mg/kg	7.7 mg/kg	6.4%
		Thallium	<LOD	<LOD	NA
		Tin	0.89 / 1.2 mg/kg	1.1 mg/kg	13%
		Vanadium	22.2 / 22.8 mg/kg	22.4 mg/kg	1.2%
		Zinc	23.6 / 24.4 mg/kg	23.9 mg/kg	1.5%
	Explosives	All	<LOD (All <1.2 mg/kg)	<LOD (All <1.2 mg/kg)	NA
	Perchlorate	All	<LOD (All <2.05 mg/kg)	<LOD (All <2.05 mg/kg)	NA
	SVOCs	All	<LOD (All <0.120 mg/kg)	<LOD (All <0.120 mg/kg)	NA
	% Solid	% Solid	98.4 / 98.6%	98.5%	0.1%
RFAAP-FGMR-SSI-002	Metals	Antimony	0.30 / 0.34 mg/kg	0.32 mg/kg	5.3%
		Beryllium	0.28 / 0.31 mg/kg	0.29 mg/kg	4.3 %
		Cadmium	0.37 / 0.68 mg/kg	0.51 mg/kg	25 %
		Chromium	8.2 / 29.9 mg/kg	22.9 mg/kg	22%
		Cobalt	3.2 / 3.6 mg/kg	3.4 mg/kg	4.8%
		Copper	7.7 / 10.6 mg/kg	11.4 mg/kg	13%
		Lead	10.6 / 12.0 mg/kg	11.4 mg/kg	5.3%
		Lithium	9.7 / 11.1 mg/kg	10.2 mg/kg	6.1%
		Manganese	224 / 245 mg/kg	236 mg/kg	3.7%
		Mercury	0.034 / 0.040 mg/kg	0.037 mg/kg	6.7%
		Molybdenum	0.054 / 0.062 mg/kg	0.058 mg/kg	5.7%
		Nickel	9.8 / 15.8 mg/kg	12.1 mg/kg	22%
		Selenium	<LOD	<LOD	NA
		Silver	<LOD	<LOD	NA
		Strontium	20.8 / 23.7 mg/kg	22.3 mg/kg	5.3%
		Thallium	0.089 / 0.099 mg/kg	0.093 mg/kg	4.6%
		Tin	0.94 / 1.2 mg/kg	1.1 mg/kg	11%
		Vanadium	24.5 / 30.9 mg/kg	28.2 mg/kg	9.6%
		Zinc	22.5 / 33.8 mg/kg	27.4 mg/kg	17%

Table 4-15. Replicate Results for ISM Samples (Continued)

ISM Sample Location	Analysis	Analyte	Low / High Concentrations	Mean Concentration	%RSD
RFAAP-FGMR-SSI-002 (cont'd)	Explosives	All	<LOD (All <1.2 mg/kg)	<LOD (All <1.2 mg/kg)	NA
	Perchlorate	All	<LOD (All <2.05 mg/kg)	<LOD (All <2.05 mg/kg)	NA
	SVOCs	All	<LOD (All <0.120 mg/kg)	<LOD (All <0.120 mg/kg)	NA

Discrete sediment samples were collected using clean disposable plastic sampling scoops from the top 6-inches of sediment. The use of clean disposable scoops avoided potential cross-contamination of the samples.

4.3.4 Comparability

Comparability refers to the equivalency of two sets of data. This goal is achieved through the use of standard or similar techniques to collect and analyze representative samples. Comparability is normally dependent upon the other data quality elements. The same preparatory and analytical methods were applied to all samples by the same laboratory. Comparability for the ISM replicates within each DU was maintained by using the same positioning and sampling equipment and employing the same sampling procedures as established in the SI Work Plan and associated QAPP. Use of the standard soil sampler ensured the collection of consistent sample volume for each ISM replicate. Use of the dedicated sampler for each replicate avoided the potential for cross-contamination between replicates. Each replicate increment was offset 1 meter from the parent increment.by using the same stake with a 1 meter length of string attached. The staking and compass reading procedure was repeated at every ISM increment location in both DUs to ensure consistency throughout the sample collection process. Comparability for the discrete sediment samples was maintained by using the same type of disposable plastic sampling scoop for each sample.

The results from the two DUs are not directly comparable due to the difference in DU sizes and %RSD values. Qualitatively, however, the data indicate that concentrations of explosives, perchlorate, and SVOCs in replicates from both DUs were not detected above MDLs. Only metals were detected above MDLs in both DUs. Only certain metals exceeded one or more screening levels in both DUs. Based on the %RSD values, only the distribution of replicate results from DU 2 is assumed to be approximately normal for each metal detected. The distribution of replicate results for DU 2 is assumed to be approximately normal for the metals detected except for antimony, copper, and lead.

4.3.5 Completeness

Completeness was measured as the number of usable results versus the total number of results. The data set was 100 percent complete with no omissions or rejections with respect to analysis.

As established in the SI Work Plan, up to 10 discrete samples were to be collected, depending on field observations. Four samples and a field duplicate were collected. Completeness for the discrete samples is considered to be 100 percent because each sampling location identified in the field was sampled.

For the ISM samples collected at DU 1, three replicates consisting of 100 increments were planned. All replicates and increments were collected. Completeness for the ISM samplings at DU 1 is 100 percent.

For the ISM samples collected at DU 2, three replicates consisting of 100 increments were planned. Due to the presence of blast berms and fences within the proposed DU footprint, only 50 increments were collected over an area approximately half the size of the planned area. Completeness for the ISM increments at DU 2 is 50 percent of planned increments. Completeness at DU 2 for the number of replicates is 100 percent.

4.3.6 Sensitivity

Sensitivity was measured by evaluating whether the method or instrument was able to detect the target analyte at the level of interest. In order to meet the project specific DQOs, the definitive data were compared to the project comparison values and laboratory-specific detection/quantitation limits listed in worksheet 15-1 through 15-5 of the QAPP. Additionally, sensitivity was evaluated by determining whether MB and trip blank results were less than the project comparison values and laboratory-specific detection/quantitation limits.

Blanks (Method, Initial and Continuing Calibration Blank)

Various blanks are analyzed and assessed against the field sample results to determine whether the sample result may have been influenced by a source of contamination (e.g., from the instrument or sample preparation). One MB was analyzed with every batch of twenty samples or fewer for each matrix. An initial calibration blank (ICB) was analyzed after the initial calibration and continuing calibration blanks were analyzed after every 10 analytical runs.

Table 4-16 presents samples flagged for blank results. In this project, sample qualifications were all due to analyte detections in ICBs. The ICB results are in micrograms per liter (µg/L), whereas the sample results are in mg/kg. Sample results less than five times the blank concentration were qualified as estimated (J). Sample results greater than five times the blank concentration were not qualified. Non-detect results in the same analytical batch as the blank were not qualified.

Table 4-16. Blank Flags

Sample ID	Method	Analyte	Blank Result	Sample Result	Flag
RFAAP-FGMR-SSI-001A	Metals	Selenium Analytical batch 131140	4.39 µg/L	0.71 mg/kg	J
RFAAP-FGMR-SSI-001B				0.39 mg/kg	J
RFAAP-FGMR-SSI-001C				0.64 mg/kg	J
RFAAP-FGMR-SSI-001C	Metals	Silver Analytical batch 131140	1.24 µg/L	0.052 mg/kg	J
RFAAP-FGMR-SSD-001	Metals	Molybdenum Analytical batch 131140	1.96 µg/L	0.42 mg/kg	J
RFAAP-FGMR-DUP1				0.37 mg/kg	J
RFAAP-FGMR-SSD-002				0.29 mg/kg	J
RFAAP-FGMR-SSD-003				0.24 mg/kg	J
RFAAP-FGMR-SSD-004				0.41 mg/kg	J

Reporting Limits

Nominal reporting limits, before adjustments for percent solids, were below the screening levels noted in the project Work Plan. Only lead in sample RFAAP-FGMR-SSI-001C was reported from a diluted analysis. The reporting limit for this analysis at 2.6 mg/kg is also well below the screening levels.

Summary

In summary, all data were considered usable with the qualifications discussed above. No data were rejected and the completeness goals for the project were met. The data were considered of sufficient quality for the project goals.

5.0 Conceptual Site Model

A CSM was developed for the Former Gun and Mortar Range MRS (RFAAP-002-R-01) SI Work Plan (BSEn, 2016). The Work Plan CSM was relied on to develop the AVS and ISM and discrete sampling programs. The Work Plan CSM identified the complete, potentially complete, and incomplete source-receptor interactions for the Former Gun and Mortar Range MRS (RFAAP-002-R-01) for both current and reasonably anticipated future land uses. The SI Work Plan CSM was updated with information gathered during the SI field work.

The Former Gun and Mortar Range MRS (RFAAP-002-R-01) is 115 acres in size and is comprised of two adjacent ranges: the Former Gun Range (28 acres) and the Former Trench Mortar Range (87 acres). As stated previously, the 8-acre Range within the Former Gun Range was not included in the SI. Both ranges began operations in 1941 and, based on anecdotal evidence, use of both ranges was discontinued after the end of WWII. The MRS currently contains an active production facility and the defunct CAMBL facility. Although the CAMBL facility was built, it never went into production and is being scrapped.

The Former Trench Mortar Range was used to test-fire various mortar rounds to verify the quality of propellants manufactured at the facility. Based on RFAAP employee interviews, the mortars tested included 4.2 inch, 60mm, and 81mm rounds. The propellant manufactured at RFAAP during the 1940s was apparently comprised of 52 percent cellulose, 38 percent NG, and a small fraction (exact amount was not disclosed) of potassium nitrate. Information gathered during the HRR and interview process suggests that the test mortars were not filled with HE, but rather various fillers including concrete, gravel, Halowax, and possibly antifreeze. Information gathered during the interview process suggested that numerous “piles” of mortars were discovered while constructing the active production and CAMBL facilities. The majority of the mortars were discovered buried. The mortars discovered were subsequently handled and disposed by RFAAP personnel. Reports of a white phosphorus round found on the MRS were never confirmed. It was reported by RFAAP personnel that the majority of rounds discovered on the MRS were so weathered that any distinguishing markings had deteriorated beyond recognition. Again, the majority of this information is anecdotal, having been collected during the interview process.

No information has been obtained indicating the location of the test firing point(s) and impact areas on the MRS. The Former Gun and Mortar Range MRS (RFAAP-002-R-01) has been extensively developed and any firing point(s) and/or impact areas may well be located beneath process facilities or infrastructure or obliterated all together.

Based on the evidence gathered from the HRR and interview process, there is no definitive confirmation of the presence of MEC on the MRS. During the pre-SI reconnaissance site walk in May 2014, a 60mm mortar was discovered lying exposed in a drainage ditch. The mortar was not inspected to determine its condition. EOD responded to the mortar find and disposed of the mortar in accordance with existing RFAAP procedures. During the course of the AVS field work, no

MEC, MPPEH, or DMM were discovered lying on the ground surface in surveyed areas. A subsurface anomaly was detected in DU 1 at the location of Increment C1. Based on historical information and observations during the SI process, the presence of MEC on the ground surface and in the subsurface cannot be discounted. MEC may also be exposed on the surface due to erosion and freeze/thaw cycles.

The Former Gun and Mortar Range MRS (RFAAP-002-R-01) includes a steep slope, shown on **Figures 4-1a through 4-1d**. This slope is unsafe to access without rappelling equipment and fall protection. The slope was considered unsurveyable during the SI and AVS was not performed on the slope.

Surface water samples have previously been collected from the New River and are summarized in SWMU 54 RCRA Facility Investigation/Corrective Measures Study Report, Final 2008 (USACE, 2008). The baseline analytical parameters included: explosives; perchlorate; TOC and dissolved inorganic carbon; Fe^{+2} and Mn^{+2} using field test methods; NO_3^{1-}; and SO_4^{2-}. None of the surface water samples collected to date from the New River have indicated releases of contaminants, including MC, to the New River. All samples were collected from locations downstream of Areas A and B of SMWU 54, which is downstream from the Former Gun and Mortar Range MRS (RFAAP-002-R-01).

No explosives, perchlorate, or SVOCs were detected at levels greater than the MDL in the ISM or discrete sediment samples. Six metals were detected in the ISM DU 1, DU 2 and discrete sediment samples at concentrations that exceeded screening levels. These metals were antimony (ISM and sediment), cadmium (ISM), lead (ISM and sediment), manganese (ISM and sediment), selenium (sediment), and vanadium (ISM and sediment). With the exception of lead, these metals only exceeded EcoSSLs. The ISM lead mean concentration in DU 1 exceeded USEPA RSL Composite Worker and all EcoSSLs.

The source of the lead concentrations in discrete sediment sample RFAAP-FGMR-SSD-001 and ISM DU 1 could not be definitively determined. Based on information collected during the interview process, the propellant tested consisted of 52 percent cellulose, 38 percent NG, and a small fraction (exact amount was not disclosed) of potassium nitrate. The percussion primers contained a formulation that contained between 25 and 53 percent lead thiocyanate within 4 grains of primer mix. (MAC, 1970, DoD, 1994). Because subsurface sampling was not within the scope of this SI, potential subsurface MC contamination cannot be dismissed.

5.1 Potential Human and Ecological Receptors

Potential human receptors include RFAAP workers, construction workers, trespassers, visitors, and biota. Biota, however, are not considered potential receptors for MEC (EM 200-1-12). All potential access and activities were considered in evaluating human receptor interactions at the MRS. These include everyday operations by RFAAP site workers assigned to the active production facility, construction activities by construction workers, visitors touring or working at the active

production facility, and trespassers who may illegally enter or hunt on the MRS. The exposure pathways considered for MEC at the Former Gun and Mortar Range MRS (RFAAP-002-R-01) are handling and treading underfoot MEC lying on the ground surface and contacting MEC in the subsurface. Exposure pathways for MC include dermal contact, incidental ingestion, and inhalation for all human receptors. The food chain pathway is evaluated for hunters, a subset of the Current and Future Trespassers receptor category. Exposure pathways evaluated for biota are dermal contact, incidental ingestion, inhalation, and food chain. The exposure scenarios for each category of receptors are discussed below.

5.1.1 Current and Future Site Workers

The Current and Future RFAAP Worker receptor includes those personnel working at the Former Gun and Mortar Range MRS (RFAAP-002-R-01) that are part of daily RFAAP GOCO operations. This group of receptors includes BAE Systems personnel, Orbital ATK personnel, U.S. Army personnel, and other personnel involved in the day-to-day activities occurring in the active production or testing facilities. Current and Future RFAAP Workers are anticipated to only encounter surficial MEC. Because the presence of surface MEC has not been confirmed but is suspected, this pathway is considered potentially complete. Workers who are engaged in construction and excavation activities and, therefore, may contact subsurface MEC, are addressed as Current and Future Construction Workers.

Current and Future Site Workers can come into contact with MC in surface soil via the dermal contact, incidental ingestion, and inhalation (dust) exposure routes. Dermal contact, incidental ingestion, and inhalation exposure with MC may occur when contaminated surface soil is disturbed. Because Current and Future Site workers have access to the MRS and MC concentrations exceeded screening levels in surface soil and sediment, the dermal contact, incidental ingestion, and inhalation exposure pathways are considered complete. Because Current and Future Site workers are not expected to be involved in intrusive activities that will disturb subsurface soil or sediment, all subsurface MC pathways are considered incomplete. Surface water is present in drainage ditches after precipitation events and only for short durations. Therefore, surface water is not considered to be an exposure medium.

5.1.2 Current and Future Construction Workers

The Current and Future Construction Worker receptor includes those personnel involved in construction, excavation, demolition, or repair of current or future infrastructure at facilities present on the Former Gun and Mortar Range MRS (RFAAP-002-R-01). Current and Future Construction Workers have the potential to tread on and handle MEC on the ground surface or encounter buried MEC while performing intrusive activities. Because MEC may be present on the surface and in the subsurface and Construction Workers have access to the MRS, the surface and subsurface MEC pathways are considered potentially complete.

Current and Future Construction Workers can come into contact with MC in surface and

subsurface soil via the dermal contact, incidental ingestion, and inhalation (dust) exposure routes. Dermal contact, incidental ingestion, and/or inhalation may potentially occur when disturbing MC contaminated soil. This would include activities including grading, excavating, or handling and disposal of MC contaminated surface soil. Because metals were detected in surface soil and sediment above screening levels, the surface MC exposure pathways are considered complete. Because no subsurface samples were collected, but metals were detected in surface soil and sediment above screening levels, the subsurface MC exposure pathways are considered potentially complete.

5.1.3 Current and Future Trespassers

The Current and Future Trespasser receptor includes those individuals who may access the Former Gun and Mortar Range MRS (RFAAP-002-R-01) without authorization. Potential motivations for unauthorized access to RFAAP could include theft, vandalism, or unauthorized hunting activities. A potential avenue of MRS access is from the New River. Accessing the MRS from the New River, however, would require climbing the steep slope, and either climbing over or cutting through the fence.

Current and Future Trespassers can come into contact with MEC lying on the ground surface through treading on and handling MEC lying on the ground surface or MEC exposed from anthropogenic (excavation) or natural processes (erosion, frost heave). Because surface MEC has not been confirmed but is suspected, the surface exposure pathway is considered potentially complete. Current and Future Trespassers are not expected to encounter subsurface MEC, since this group is not expected to engage in digging within the MRS. As such, the subsurface MEC pathway is considered incomplete.

Current and Future Trespassers can come into contact with MC in surface soil via the dermal contact, incidental ingestion, and inhalation (dust) exposure routes. Current and Future Trespassers also can come into contact with MC in sediment in drainage ditches via dermal contact, incidental ingestion, and inhalation of fugitive dust. Because Current and Future Trespassers may access the MRS and MC concentrations exceeded screening levels in surface soil and sediment, the dermal contact, incidental ingestion, and inhalation exposure pathways are considered complete. Because Current and Future Trespassers are not expected to be involved in intrusive activities that will disturb subsurface soil or sediment, all subsurface pathways are considered incomplete. Surface water is present in drainage ditches after precipitation events and only for short durations. Therefore, surface water is not considered to be an exposure medium.

Hunters, a subset of the Current and Future Trespasser receptor category, may be exposed to MC through the ingestion of game animals harvested from on or near the MRS that have bioaccumulated MC. Hunting is allowed on a limited basis at RFAAP. Hunting conducted at RFAAP is not suspected to be for subsistence purposes, but it is assumed that game animals harvested from RFAAP are consumed. Because metals have been detected in surface soil and

sediment above ecological screening levels, the wildlife food chain pathway is considered complete for hunters.

5.1.4 Current and Future Visitors

Visitors are able to access the MRS, but do not have unrestricted access. Visitors must be cleared through RFAAP Security and must be escorted at all times while on the MRS itself. Although unlikely, Current and Future Visitors may encounter surficial MEC. Current and Future Visitors have the potential to tread on and handle MEC lying on the ground surface and MEC that have been exposed from the subsurface as a result of anthropogenic (excavation) or natural processes (erosion or frost heave). Because surface MEC has not been confirmed but is suspected, the surface MEC exposure pathway is considered potentially complete for Current and Future Visitors. Current and Future Visitors are not expected to encounter subsurface MEC because this group is not expected to engage in digging within the MRS. As such, the subsurface MEC pathway is considered incomplete.

Current and Future Visitors may contact MC in surface soil via the dermal contact, incidental ingestion, and inhalation (dust) exposure routes. Current and Future Visitors can come into contact with MC in surface sediment in drainage ditches via dermal contact, incidental ingestion, or inhalation of fugitive dust. Because Current and Future Visitors have access to the MRS and MC concentrations exceeded screening levels in surface soil and sediment, the dermal contact, incidental ingestion, and inhalation exposure pathways are considered complete. Because Current and Future Visitors are not expected to be involved in intrusive activities that will disturb subsurface soil or sediment, all subsurface pathways are considered incomplete. Surface water is present in drainage ditches after precipitation events and only for short durations. Therefore, surface water is not considered to be an exposure medium.

5.2 Ecological Receptors

The USFWS does not list any critical habitat for threatened or endangered species within the boundaries of, or in the nearby vicinity of, the Former Gun and Mortar Range MRS (RFAAP-002-R-01). The USFWS Environmental Conservation Online System lists the species identified in **Table 5-1** as present in Pulaski and/or Montgomery Counties based on published historical range and population (USFWS, 2014). However, previous biological surveys conducted at RFAAP and within the MRS have not documented the presence of any of the species listed in **Table 5-1** (URS, 2003).

Table 5-1. Threatened and Endangered Species in Montgomery and Pulaski Counties, Virginia

Species	Listing Name	Status	Notes
Animals			
Bat, Indiana	Myotis sodalis	E	The Indiana bat is found along small to medium stream corridors with well-developed riparian woods; woodlots within 1 to 3 miles of small to medium streams; and upland forests. Caves and mines are critical for hibernation.
Bat, Virginia big-eared	Corynorhinus (=Plecotus) townsendii virginianus	E	The Virginia big-eared bat is known to occur in Bath, Bland, Buchanan, Floyd, Highland, Pulaski, Rockingham, Scott, Shenandoah, Tazewell, Warren, and Washington counties in Virginia. Caves are critical for this species for hibernation and for rearing their young.
Bean, Cumberland (pearlymussel)	Villosa trabalis	E	The Cumberland Bean pearlymussel is known to occur in Virginia; however, critical habitat has not been designated. As an aquatic organism, it would not be present on the MRS, but may be present in the adjacent New River.
Logperch, Roanoke	Percina rex	E	The Roanoke Logperch prefers large sized, warm, clear streams and riffles, runs, and pools with sand, gravel, and boulders. It is known to occur in Goose Creek in Virginia, as well as in Montgomery County. As an aquatic species, the Roanoke Logperch would not be present on the MRS.
Snail, Virginia Fringed Mountain	Polygyriscus virginianus	E	The Virginia fringed mounted snail is found exclusively below dolostone bluffs on the west side of the New River in Pulaski County near Fairlawn, Virginia, mostly beneath scree or in talus on the lower or foot of slopes. Fairlawn, Virginia is approximately 2 miles from the MRS. Therefore, this snail is not expected to be present on the MRS.
Spinymussel, James	Pleurobema collina	E	This fresh water mussel is found in the James River drainage and the Dan/Mayo River systems within the Roanoke River drainage in Virginia, North Carolina, and West Virginia, and is known to occur in Montgomery County. No critical habitat has been designated for this species.
Plants			
Coneflower, Smooth	Echinacea laevigata	En	The Smooth Coneflower is known to occur in both Montgomery and Pulaski counties in Virginia. No critical habitat has been designated for this species.

E = Endangered

In 2001, as part of the RCRA permitting process, a Screening Level Ecological Risk Assessment (SLERA) was performed at RFAAP for the VDEQ (Franklin Engineering Group, 2001). The SLERA developed a list of receptors potentially present at RFAAP. **Table 5-2** presents a partial table from the 2001 SLERA (aquatic animals have not been included).

Table 5-2. Common Ecological Receptors Present at Radford Army Ammunition Plant

Receptor Category	Receptor Species	Critical Ecological Attributes	Exposure Scenario
Soil Invertebrates	Arachnida, Diplopoda, Insecta, Chilopoda	Soil invertebrates provide an important food source for many higher trophic level species. As decomposers/detritivores they play a critical role in nutrient cycling. They also aid in soil aeration and infiltration by increasing macro, and micro porosity.	Uptake and Burrowing in contaminated soil. Bioaccumulation of MC from contaminated soil.
Herbivorous Mammals	Meadow vole, White-tailed deer, Eastern fox squirrel, Eastern chipmunk, Eastern gray squirrel, Woodchuck, Meadow jumping mouse	Herbivorous mammals are an important prey item for many higher trophic level predators. They provide an important link for energy transfer between primary producers and higher trophic level consumers. In addition, these organisms generally comprise the majority of the terrestrial tissue biomass, and are important in seed dispersal and pollination for many plant species.	Burrowing in MC contaminated soil. Consumption of plants that have absorbed and bioaccumulated MC from contaminated soil.
Herbivorous Birds	Mourning dove, Canada goose, Wild turkey, Chipping sparrow, Northern cardinal	Herbivorous birds are an important prey item for many higher trophic level predators. They are important in seed dispersal for many plants in both terrestrial and aquatic ecosystems. Aquatic herbivorous birds may also play an important role in egg dispersion for fish and invertebrate species.	Consumption of plant seeds that have absorbed and bioaccumulated MC from contaminated soil.
Omnivorous Mammals	Least shrew, Virginia opossum, Striped skunk, Northern short-tailed shrew	Omnivorous mammals are an important prey item for higher trophic level predators, and influence lower trophic level populations through predation. They play an important role in seed dispersal for many types of terrestrial vegetation and aquatic plants.	Burrowing in MC contaminated soil. Consumption of plants and animals that have absorbed and bioaccumulated MC from contaminated soil.
Omnivorous Birds	American robin, Mallard, Carolina wren, Blue jay, American crow, Yellow warbler, Pileated woodpecker	Omnivorous birds are an important prey item for higher trophic level predators. They play an important role in seed dispersal and pollination for many types of terrestrial vegetation and aquatic plants. In addition, aquatic species provide egg dispersal for some fish and invertebrate species.	Consumption of plants and animals that have absorbed and bioaccumulated MC from contaminated soil.

The species identified in **Table 5-2** have the potential to come into contact with MC contaminated surface soil and sediment. Because metals were detected in surface soil and sediment above ecological screening levels, surface soil/sediment dermal contact, incidental ingestion, and inhalation exposure pathways are considered complete.

The soil invertebrate group is known to spend the majority of their time burrowing in the ground, while the mammals listed in **Table 5-2** either dig their own burrows or inhabit dens abandoned by

other animals. Because no subsurface samples were collected but metals screening level exceedances were detected in surface soils and sediment, the subsurface soil/sediment exposure pathways are considered potentially complete.

Additional exposure for mammals and birds could come from the consumption of MC bioaccumulated in plants, insects, or other animals. Because metals were detected in surface soil and sediment above ecological screening levels but no biological sampling was conducted, the food chain exposure pathways are considered potentially complete.

5.3 Pathway Analysis

The information presented in the CSM 1s used to identify the complete, potentially complete, and incomplete source-receptor interactions for the Former Gun and Mortar Range MRS (RFAAP-002-R-01) for both current and reasonably anticipated future land uses. An exposure pathway is the course a chemical or physical agent takes from a source to a receptor. Each MEC pathway includes a source, access, activity, and a receptor. Each MC pathway includes a source, an exposure medium, an exposure route, and a receptor. The MC pathways may also include a release mechanism (e.g., volatilization) and a transport medium (e.g., air) if the point of exposure is not at the same location as the source. **Figure 5-1** and **Figure 5-2** represent graphical representations of the CSM, transport mechanisms, and exposure routes between the source contaminants and receptors. MC receptors are human and ecological. MEC receptors are human only.

5.3.1 Transport Processes

Transport processes at the Former Gun and Mortar Range MRS (RFAAP-002-R-01) for MEC include excavation, erosion of drainages, and potentially frost heave. Excavation to repair or construct new infrastructure at production facilities in the MRS has uncovered potential MEC in the past. During a pre-SI reconnaissance site walk in May 2014, a 60mm mortar was discovered lying exposed in a drainage ditch. Because of its location, it is expected that the mortar was uncovered as the banks of the drainage eroded. Winter temperatures in the New River Valley routinely fall below freezing. The area has a reported frost line that extends up to 30 inches in depth (MCPSA, 2015). Because information was not available that identified the depth of mortars uncovered at the MRS, the potential for MEC to be buried above the frost line cannot be discounted. If MEC does exist above the frost line, the potential exists that frost heave may cause the upward migration of MEC at the MRS.

Figure 5-1. Conceptual Site Model for Munitions Constituents Exposure at the Former Gun and Mortar Range MRS (RFAAP-002-R-01)

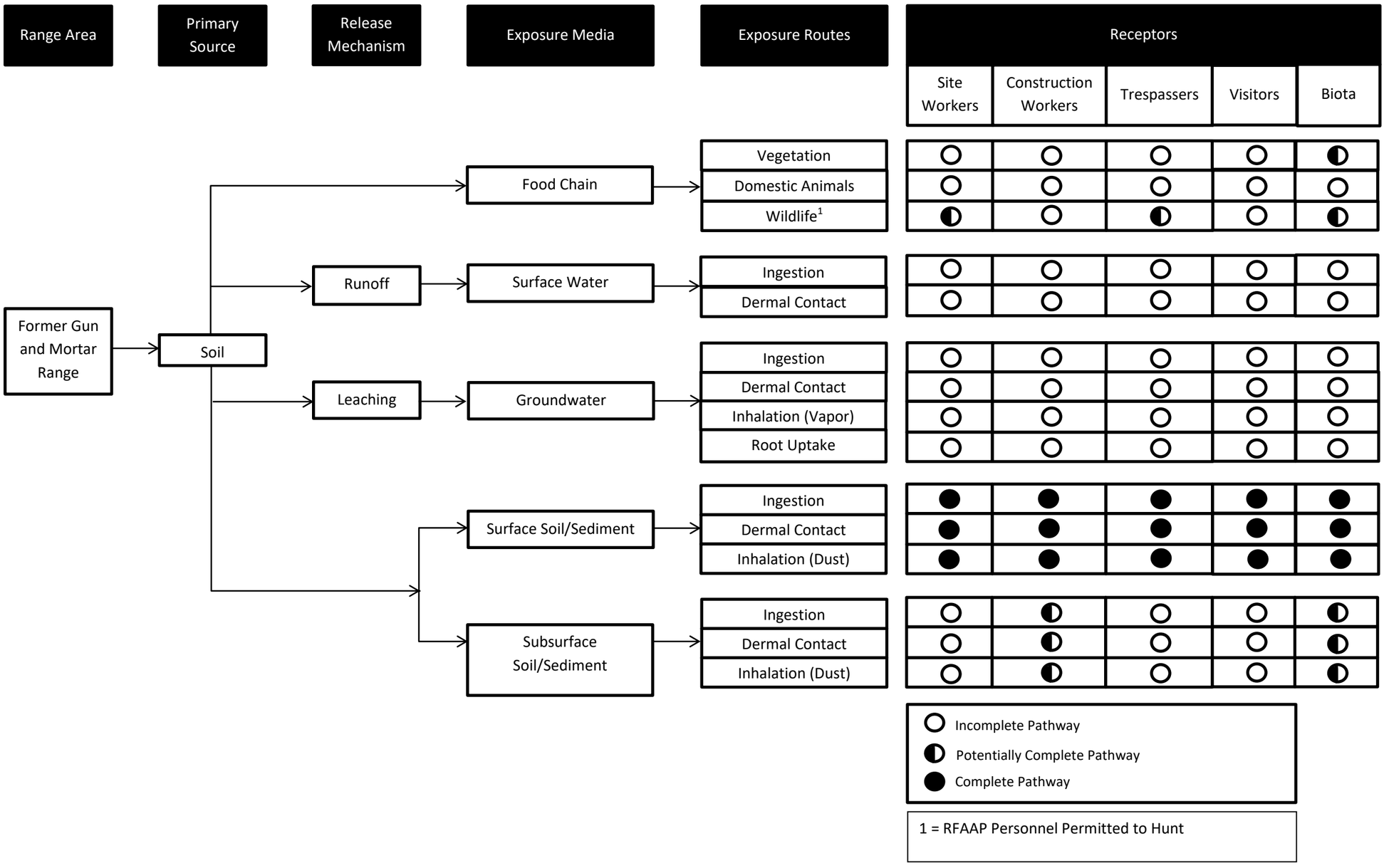

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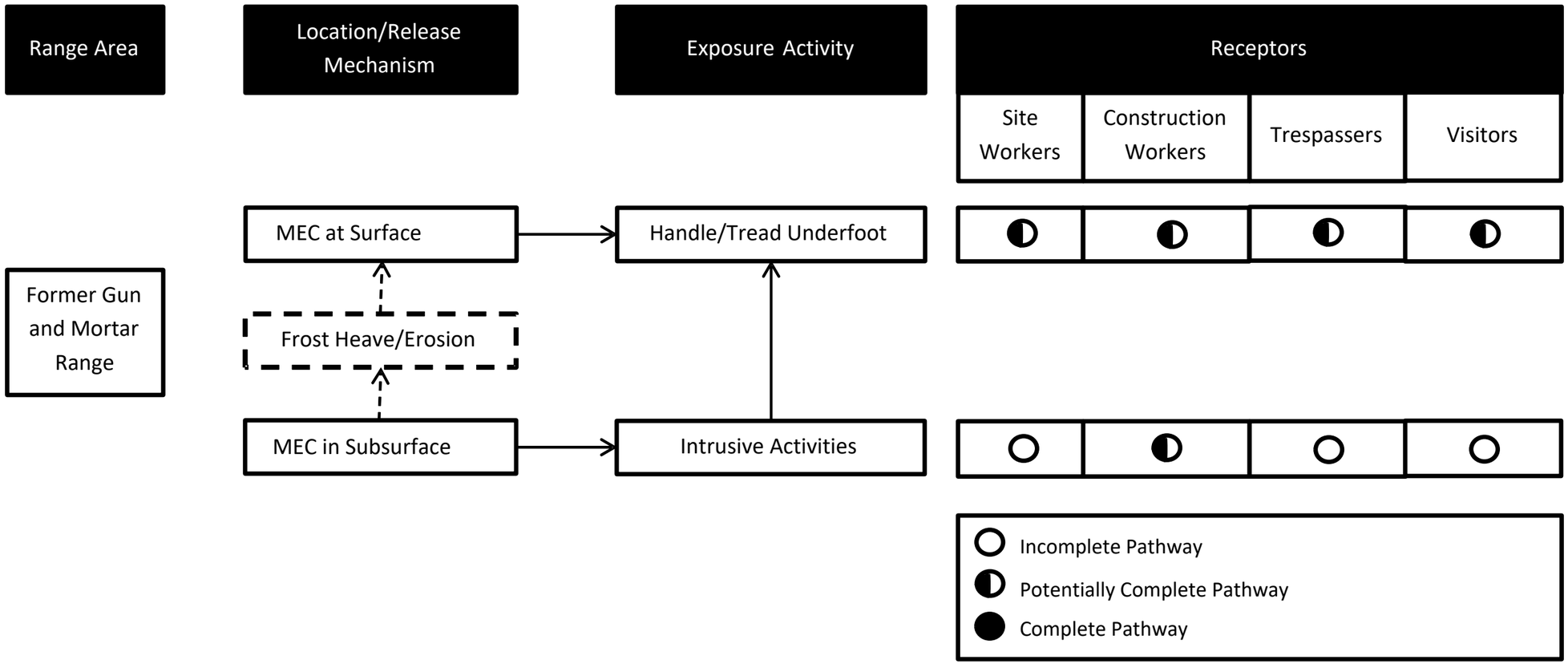
Figure 5-2. Conceptual Site Model for Munitions and Explosives of Concern at the Former Gun and Mortar Range MRS (RFAAP-002-R-01)



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The potential MC sources at the Former Gun and Mortar Range MRS (RFAAP-002-R-01) include the firing points and impact areas. At the firing points, MC would be released to the ground surface and air from propellant exhaust discharged from the mortar tube. The exhaust may include residue from the detonation of the percussion primer. Because definitive information was not found that states HE was used at the MRS, explosives or other MC are not expected to be present at the impact areas. The inert mortar projectiles frequently contain a wax filler, referred to as Halowax, as a weight replacement for HE.

In general, MC migration pathways involve movement via air and water and the interfaces between these media. The potential migration of surface soil/sediment metals MC by aquatic and atmospheric pathways is limited by the grass, impervious paved roads and parking areas, buildings, and forest that cover most of the Former Gun and Mortar Range MRS (RFAAP-002-R-01). Soils within the MRS are a mixture of red clays and silt.

The potential fate and transport of MC at the Former Gun and Mortar Range MRS (RFAAP-002-R-01) is strongly influenced by the physical and chemical properties of the MC, as well as by environmental factors such as vadose zone characteristics. Metals have relatively high values of Henry's Law Constant (Hc) and the organic carbon/water partition coefficient (Koc) (or Kd). Hc is a measure of the volatility of a compound from water and is related to the vapor pressure and water solubility of the compound. Compounds exhibiting high vapor pressures and low water solubility tend to have high volatilization rates from water and therefore, high Hc values. The Koc value is a measure of the tendency of an organic chemical to partition to the organic fraction of soil from water. The soil/water partition coefficient (Kd) value is an analogous value for whole soil used for metals. The higher the values, the greater is the sorption potential of the compound. Lead typically has a large sorption potential and would be expected to bind to soil particles. Some explosives and oxidizer constituents have a greater solubility than metals. The Koc values for explosives such as RDX (195 cubic centimeters per gram [cm^3/g]) indicate a limited potential for leaching to groundwater. Movement of MC from surface soil to subsurface soil is generally mediated by infiltration of precipitation, with the greatest movement expected for the compounds with higher water solubility. Even relatively insoluble compounds such as metals, can be transported to subsurface soils via mixing of the soil column by soil invertebrates and burrowing animals. Plant roots and invertebrate and mammal burrows/tunnels create preferential infiltration pathways along which downward transport of particle-bound contaminants can occur

In the terrestrial environment, if a contaminant is released to soil, it can volatilize, adhere to the soil by sorption, leach into the groundwater with precipitation, or degrade due to chemical (abiotic) or biological (biotic) processes. No volatile MC were detected in the samples collected. Therefore, volatilization is not expected to be transport mechanism for surface soil/sediment MC

In the atmospheric environment, MC may be transported while adhered to suspended particulate matter. This transport relies mostly on wind currents and continues until the contaminants are

returned to the earth by wet or dry deposition.

The average depth to groundwater at RFAAP is approximately 70 feet bgs (URS, 2003). Along ridgelines, where the MRS is located, the depth to groundwater averages around 100 feet bgs.

5.3.2 Exposure Media and Accessibility

Environmental contaminants often undergo various processes (e.g., migration) such that media at locations other than the source area can become contaminated. The primary exposure media at the Former Gun and Mortar Range MRS (RFAAP-002-R-01) are surface soils, subsurface soils, and sediment in drainage ditches. Again, explosives, perchlorate, and SVOCs were not detected in any of the ISM DU or discrete sediment samples. Lead was detected in DU 1 and discrete sediment sample RFAAP-FGMR-SSD-001.

MC in surface soil and sediment are accessible to all RFAAP human receptors. Only Site Construction Workers have access to subsurface soil and sediment. All potential biological receptors have access to surface soil and sediment. Only burrowing animals have access to MC in subsurface soil and sediment.

There are no perennial surface water bodies located on the MRS and groundwater is present a minimum of 100 feet bgs. There are no springs located within the MRS. The nearest surface water body to the MRS is the New River. No MC were detected in samples previously collected from the New River. The New River is not located on the MRS; however, drainage ditches that discharge off the MRS lead into the New River.

5.3.3 MEC Migration Pathway Analysis

The majority of the mortars discovered on the MRS have been in the subsurface. Subsurface MEC can move from the subsurface to the surface via excavation, frost heave, and erosion. The reported frost line extends up to 30 inches bgs. Because the depth of historical mortar discoveries is unknown, the potential for MEC above the frost line to migrate to the surface cannot be discounted. The observation of the 60mm mortar in a drainage ditch discovered during a pre-SI reconnaissance site walk indicates that movement of MEC by erosion is likely. The position of the 60mm mortar also indicates the potential for exposed MEC to be moved by surface water runoff during storm events.

5.3.4 Groundwater Migration Pathway Analysis for Munitions Constituents

There is no current human exposure to groundwater at RFAAP, and site conditions including depth to groundwater, no detected explosives, and extremely limited potential for lead to migrate to depth indicate that there is extremely low probability of appreciable groundwater impact from MC. This is supported by the following:

- The aquifers beneath RFAAP consist of an alluvial aquifer in the New River floodplain (shallow aquifer) and a fractured bedrock/karst aquifer (deep bedrock aquifer). Depth to groundwater is approximately 70 feet bgs in the shallow aquifer (URS, 2003) and 100 feet bgs along the ridgelines in the deeper bedrock aquifer.
- The soils consist of clays and silts down to approximately 10 feet bgs. These soil types have low permeability, which limits or prevents migration to depth.
- There are no known springs located within the MRS that could provide a direct connection from the surface to groundwater.
- The RFAAP facility draws water for domestic and industrial purposes from the New River. There are currently no plans to change the status of RFAAP from an industrial facility to other uses. As such, the installation of wells (domestic or industrial) within the foreseeable future is not likely at the MRS or within the installation down gradient of the MRS.
- Metals generally have limited mobility in soil, due to low solubility and their tendency to bind to soil particles. Some of the explosives and propellant compounds associated with potential MEC have greater solubility, and therefore greater potential to migrate to groundwater. K_{oc} values for MC compounds are on the order of 100 cm^3/g or higher.
- Because explosives, perchlorate, and SVOCs were not detected in the ISM or sediment samples, the potential impacts to groundwater from these constituents are not a concern.
- Migration of lead to groundwater is not expected to be a concern due to depth of groundwater and the low solubility and high sorption rate of lead.
- There are no drinking water or industrial wells located on the MRS. Water is supplied from the water treatment area located in the eastern part of the Main Manufacturing Area. Therefore, while some leaching from soil might occur over time, the potential for migration to groundwater at 70 feet bgs is negligible.

5.3.5 Surface Water Migration Pathway Analysis for Munitions Constituents

The presence of lead in sediment sample RFAAP-FGMR-SSD-001 above RFAAP background indicates a potential for MC adhered to soil particles to be transported via surface water runoff, however, due to the short duration of runoff events and contact time with sediment in drainage ditches, the transport of dissolved MC within and off the MRS via surface water in a dissolved state is not expected to be a concern. This is supported by the following:

- There are no surface water bodies located on the MRS. Surface water at the Former Gun and Mortar Range MRS (RFAAP-002-R-01) consists solely of runoff during and

immediately following heavy rains.

- The runoff flows through drainage ditches located on the MRS toward the steep slope adjacent to the New River. Any surface water runoff present in drainage ditches after precipitation events is present only for short durations. Consequently, the contact time between the surface water and any MC in sediment is also short.
- None of the surface water samples collected to date from the New River have indicated releases of contaminants (including MC) to the New River.

5.3.6 Soil Migration Pathway Analysis for Munitions Constituents

MC in surface and subsurface soils can be redistributed in the soil column during construction, excavation, demolition, or infrastructure repairs at the MRS. Metals generally have limited mobility in soil due to low solubility and their tendency to bind to soil particles. No subsurface soil or sediment samples were collected, however. Metals were detected in surface soil above screening levels, so migration of MC from surface to subsurface soil at the MRS cannot be discounted. Explosives and propellant compounds have greater solubility and, therefore, a greater potential to migrate from surface soil to subsurface soil. No explosives or propellants were detected in any of the ISM soil or discrete sediment samples collected at the MRS.

6.0 Summary and Conclusions

SI field activities were performed over 107 acres of the Former Gun and Mortar Range MRS (RFAAP-002-R-01) from 3 – 7 October 2016. Activities consisted of AVS data collection and ISM soil and discrete sediment sample collection. AVS data were collected from approximately 4.0 linear miles and 6.48 acres, while three ISM samples (one parent and two replicates) were collected from each of the two DUs. A total of four discrete sediment samples were collected from drainages adjacent and down gradient of the DUs. All DQOs for this project as outlined in the Final Work Plan for the Former Gun and Mortar Range MRS (RFAAP-002-R-01) SI, dated July 2016, were met. The following conclusions are based on information gathered during the HRR and interview process, and findings from the SI field activities at the Former Gun and Mortar Range MRS (RFAAP-002-R-01).

Personnel interviews and records indicate the Former Gun and Mortar Range MRS (RFAAP-002-R-01) was used as a testing range for mortar rounds and artillery to evaluate propellant charges. Based on the historical research conducted during the development of the SI Work Plan, munitions items that have been identified as present at the Former Gun and Mortar Range MRS (RFAAP-002-R-01) include 60mm, 81mm, and 4.2 inch mortars. The presence of mortars has been documented during the conduct of facility operations, construction activities, and exposed by heavy rains.

Based on information collected during the interview process, the propellant manufactured at RFAAP during the 1940s was comprised of 52 percent cellulose, 38 percent NG, and a small fraction (exact amount was not disclosed) of potassium nitrate. The percussion primers, a component of mortar rounds, contained between 25 and 53 percent lead thiocyanate within 4 grains of primer mix. Information gathered during the interview process suggests that the test mortars were not filled with HE, but rather various fillers including concrete, gravel, Halowax, and possibly antifreeze.

6.1 Results and Findings

The results and findings of the SI field activities are summarized below:

- No MEC, DMM, MPPEH, or MD were found during the AVS data collection or during the collection of ISM and discrete sediment samples. However, the presence of 60mm, 81mm, and 4.2 inch mortars has previously been documented as present at the MRS. The majority of these discoveries were made during construction and/or maintenance activities performed at the production facilities.
- No apparent firing, impact, or other range related features were identified during the AVS data collection or collection of media samples.
- Chemical results revealed that explosives, perchlorate, and SVOCs are not present at the MRS at concentrations exceeding the MDL, USEPA RSLs, or USEPA EcoSSLs.

- The mean lead concentration in ISM sample DU 1 exceeded the exceeded the background level (26.8 mg/kg), USEPA RSL Composite Worker RSL (800 mg/kg) and EcoSSLs for soil invertebrates (1,700 mg/kg), mammalian wildlife (56 mg/kg), avian wildlife (11 mg/kg), and plants (120 mg/kg).
- The mean antimony concentration in ISM sample DU 1 exceeded the EcoSSL for mammalian wildlife (0.27 mg/kg); the mean manganese concentration exceeded the EcoSSL for plants (220 mg/kg) and soil invertebrates (450 mg/kg); and the mean vanadium concentration exceeded the EcoSSL for avian wildlife (7.8 mg/kg). The mean manganese and vanadium concentrations were less than their respective background levels (2,543 mg/kg and 108 mg/kg). No background level was established for antimony.
- The mean cadmium concentration in ISM sample DU 2 exceeded the EcoSSL for mammalian wildlife (0.36 mg/kg); the mean lead concentration exceeded the EcoSSL for avian wildlife (11 mg/kg); and the mean vanadium concentration exceeded the EcoSSL for avian wildlife (7.8 mg/kg). The mean lead and vanadium concentrations were less than their respective background concentrations (26.8 mg/kg and 108 mg/kg). No background level was established for cadmium.
- The lead concentration in discrete sediment sample RFAAP-FGMR-SSD-001 exceeded the RFAAP background level (26.8 mg/kg) and EcoSSLs for mammalian wildlife (56 mg/kg), avian wildlife (11 mg/kg), and plants (120 mg/kg).
- Antimony, selenium, and vanadium concentrations in all four discrete sediment samples exceeded one or more of the EcoSSLs.
- Lead and manganese concentrations exceeded one or more of the EcoSSLs in two discrete sediment samples.
- Only lead was detected in discrete sediment samples at a concentration that exceeded the RFAAP background level (26.8 mg/kg).
- The surface MEC exposure pathway of handle/tread underfoot is considered potentially complete for Current and Future Visitors, Site Workers, Construction Workers, and Trespassers. The subsurface MEC exposure pathway of handle/tread underfoot is considered potentially complete for Current and Future Construction Workers.
- The surface MC exposure pathways of ingestion, dermal contact, and inhalation (dust) are considered complete for Current and Future Visitors, Site Workers, Construction Workers, and Trespassers and biota. The subsurface MC exposure pathways of ingestion, dermal contact, and inhalation (dust) are considered potentially complete for Current and Future Construction Workers and biota. The MC vegetation food chain pathway is considered potentially complete for biota. The MC wildlife food chain pathway is considered potentially complete for Current and Future Site Workers and Trespassers and biota.

6.2 Munitions Response Site Prioritization Protocol

In response to a 2002 National Defense Authorization Act requirement, DoD developed the Munitions Response Site Prioritization Protocol (MRSPP) as the methodology for prioritizing MRSs for response actions. In 2005, the Final Rule for the MRSPP was issued and codified at 32 Code of Federal Regulations (CFR) Part 179. The MRSPP was applied during the SI in accordance with 32 CFR Part 179 and the guidance provided in the DoD MRSPP Draft Primer (DoD, 2007).

The MRSPP consists of the following three modules to evaluate the unique characteristics of each hazard type at an MRS: Explosive Hazard Evaluation (EHE), Chemical Warfare Materiel Hazard Evaluation (CHE), and Health Hazard Evaluation (HHE). Each of the modules is scored from 38 to 100 and is assigned a rating from "G" (lowest) to "A" (highest), with alternative ratings of Evaluation Pending, No Known or Suspected Hazard, or No Longer Required. The composite rating of the three modules is used to assign an MRS priority ranking for the MRS ranging from 1 to 8. Priority 1is the highest relative priority and Priority 8 is the lowest. The MRSPP for the Former Gun and Mortar Range MRS (RFAAP-002-R-01) is provided in **Appendix E** and summarized in **Table 6-1** below.

Table 6-1. MRSPP Priority, Former Gun and Mortar Range MRS (RFAAP-002-R-01)

Modules	Score
EHE Module	6
CHE Module	No Known or Suspected Chemical Hazard
HHE Module	4
MRSPP PRIORITY	**4**

Notes:
CHE = Chemical Warfare Materiel Hazard Evaluation
EHE = Explosive Hazard Evaluation
HHE = Health Hazard Evaluation
MRS = Munitions Response Site
MRSPP = Munition Response Site Prioritization Protocol

7.0 Recommendations

The following are the recommendations for the Former Gun and Mortar Range MRS (RFAAP-002-R-01) based on historical information and data collected during the SI field activities. These recommendations are also summarized in **Table 7-1**.

- While no MEC, MPPEH, or MD were discovered during the SI field activities, anecdotal and physical evidence indicates that 60mm, 81mm, and 4.2 inch mortars have been found at the MRS. Information gathered during the HRR and interview process suggests that the mortars tested and discovered at the MRS did not contain HE. However, because the type and condition of the mortars historically discovered were not recorded, these mortars cannot be definitively identified as MEC. Therefore, investigation of the MRS to determine the nature and extent of MEC in surface and subsurface soils and sediment on the MRS is recommended.
- The observation of the 60mm mortar in a drainage ditch discovered indicates that the exposure and movement of MEC by erosive forces is likely. Additional investigation is recommended to determine if MEC have migrated to the steep slope and potentially into the New River.
- The mean concentration of lead in the ISM DU 1 exceeded the USEPA RSL, and EcoSSL. Mean concentrations of cadmium, lead, and vanadium in ISM sample DU 2 exceeded several EcoSSLs. Per the DQOs developed in the SI Work Plan, additional MC investigation is needed to determine the extent of MC in surface soils and potentially subsurface soils and whether the presence of MC in surface and/or subsurface soil presents an unacceptable risk to human health and the environment.
- Because the source of the lead detected in DU1 surface soil could not be definitively determined, additional investigation is needed to determine the source of the lead.
- Discrete sediment sample RFAAP-FGMR-SSD-001 had a lead concentration of 451 mg/kg that exceeded the RFAAP background value and all three USEPA EcoSSLs. Per the DQOs developed in the SI Work Plan, additional MC investigation is needed to determine the extent of MC in surface water/sediment migration routes, whether the MC is migrating off the MRS, and whether the presence of MC in sediment presents an unacceptable risk to human health and the environment.

Table 7-1. Site Investigation Recommendations

MRS Name	Range Inventory Acreage	HRR Acreage	SI Acreage	Recommendation	Basis for MEC Recommendation	Basis for MC Recommendation
Former Gun and Mortar Range MRS (RFAAP-002-R-01)	115	115	107 Eight acres of the 115-acre MRS consist of the Active Test Range and were not thought to be part of the MRS.	Additional investigation for MEC in surface andsubsurface soil and sediment within the 115 acre MRS. Additional investigation for MEC on the steep slope and in the New River. Additional investigation of MC in surface and subsurface soil and sediment within the 115 acre MRS.	Presence of 60mm, 81mm, and 4.2 inch mortars on the surface and in the subsurface historically documented at the MRS. Position of mortar observed during SI suggests potential for MEC to migrate to steep slope and possibly to the New River.	Mean surface soil metals concentrations exceeded human health and/or USEPA EcoSSLs. Lead in discrete sediment sample RFAAP-FGMR-SSD-001 exceeded RFAAP background value and USEPA EcoSSLs.

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Appendix A

Analytical Data

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ANALYTICAL RESULTS FOR:

S JULIA LIU
BERING SEA ENVIRONMENTAL
615 E 82ND AVENUE, #200
ANCHORAGE, AL 99518

PROJECT SITE:	RAAP, RADFORD, VA
PROJECT #:	313010-001
SDG:	122704
FOLDERS:	(122704, 122724, & 122746)
PREPARED:	November 10, 2016
DOCUMENT PAGES:	1955

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 Szymanski
PROJECT MANAGER

Certifications: IL (NELAP 200073), KS (NELAP E-10368), WI (157066030), DOD ELAP (A2LA 3806.01), VA (NELAP 4602038), MD (WI 00061), LA (NELAP ACC20160002), ISO17025 (A2LA 3806.01), GA EDP Stipulation (Accreditor: LA NELAP, ACC#: ACC20160002, Scope: Non-potable water solid and chemical materials, biological tissue, Effective: 12/10/2014, Expires: annually)

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Case Narrative

Client: Bering Sea Environmental
Project: RAAP, Radford, VA
Sample Receipt Date(s): 10/06/2016, 10/07/2016, & 10/08/2016
SDG #: 122704 (Folders 122704, 122724, & 122746)

Six ISM and five discrete soil samples were received and analyzed for SVOCs, Explosives, Metals, and Perchlorate. The Perchlorate analyses were subcontracted to Microbac in Marietta, OH. 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.

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

Semi-Volatile Analysis:

The samples were analyzed using US EPA Method 8270D (SVOC). All samples were analyzed within the holding time. The following summaries of quality control procedures are included:

Surrogate Recovery Data
Matrix Spike/Matrix Spike Duplicate Recovery Data
Laboratory Control Spike Data
Method Blank Data
Initial Calibration Summary
Calibration Check Summary
Analysis Run Log
Prep Log
Chromatograms

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

SVOC (8270D) Soil Analysis

Detailed reports were provided for the 8270 data for all detected compounds, as well as, for those compounds manually integrated (if applicable). Compounds not reported on the form 1's were either not detected or did not meet identification criteria so they were reported as non-detects.

Samples were analyzed for di-n-butyl phthalate, 2-chloronaphthalene and n-nitrosodiphenylamine and diphenylamine.

Analytical Run # 131383

The Method Blank (MB) had low responses of internal standard 5 and 6. These internal standards were not used in the quantitation of the reported analytes.

The RPD limit between the Matrix Spike (MS) and the Matrix Spike Duplicate (MSD) was exceeded for di-n-butylphthalate. This compound was qualified with a "Y" flag on parent sample.

Analytical Run #131574

The RPD limit between the spikes was exceeded for n-nitrosodiphenylamine&diphenylamine. This compound was qualified with a "Y" flag on parent sample.

Explosives Analysis:

The samples were analyzed using US EPA Method 8330B (Explosives). All samples were analyzed within the holding time. The following summaries of quality control procedures are included:

Surrogate Recovery Data
Matrix Spike/Matrix Spike Duplicate Recovery Data
Laboratory Control Spike Data
Method Blank Data
Initial Calibration Summary
Calibration Check Summary
Analysis Run Log
Prep Log
Chromatograms

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

Explosives (8330B) Soil Analysis

Analytical Run # 131499

The Laboratory Control Sample (LCS) had a low recovery for 3,5-dinitroaniline (35-DNA). This analyte was qualified with a “Q” flag on all associated samples.

The MS had a low recovery of 35-DNA. The MSD had low recovery of 35-DNA, 1,3,5-trinitrobenzene (135-TNB), and 2,4-dinitrotoluene (24-DNT). These analytes were qualified with an "M" flag in the parent sample (#784496).

The grinding blank was prepared as the MB. The surrogate recovery in the MBS was marginally low in the primary analysis, but high in the confirmation analysis. The surrogate was reported from the primary analysis and qualified with an "S" flag.

Analytical Run # 131500

The MS and MSD for sample # 784853 had a low recovery of 35-DNA. This analyte was qualified with an "M" flag in the parent sample.

Surrogate values on the primary analysis of all samples were within the acceptable QC range. Surrogate values in the confirmation analysis were high. All surrogates were reported from the primary analysis.

Metals Analysis:

The samples were analyzed using US EPA Methods 6010C (ICP Metals) and 7471B (Mercury). 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) Soil 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.

<u>Analytical Run # 131140</u>

Manganese, molybdenum, silver, and tin were detected in the MB greater than the Method Detection Limit (MDL) but less than ½ the Reporting Limit (RL). Affected samples were reported and qualified with a "B" flag when the MB raw results were greater than 1/10th of the sample raw results.

The Serial Dilution (L) for sample # 784853 was not applicable for multiple elements because the parent sample raw results were less than 50 times the Limit of Quantitation (LOQ). A Post Digestion Spike (PDS) was analyzed and was acceptable for cadmium. The parent sample was reported and qualified with an "M" flag for the failing element.

The Duplicate (DUP) for sample # 784853 was not applicable for multiple elements because the parent sample results were less than five times the LOQ. A MSD was analyzed to demonstrate precision and was acceptable. The parent sample was reported and not qualified.

The DUP for sample # 784853 was not acceptable for cobalt, lead, and manganese because the results exceeded the Relative Percent Difference (RPD) limit. The parent sample was reported and qualified with a "Y" flag for the failing elements.

The MS and/or MSD for sample # 784853 exceeded the recovery limit for tin, antimony, cadmium, and manganese. A PDS was analyzed and was unacceptable for cadmium and manganese. The parent sample was reported and qualified with an "M" flag for the failing elements.

Analytical Run # 131318

Selenium and silver were detected in the MB greater than the MDL but less than ½ the RL. Affected samples were reported and qualified with a "B" flag when the MB raw results were greater than 1/10th of the sample raw results.

Vanadium was detected in the MB above the MDL and greater than ½ the RL. The samples were reported and not reanalyzed because the MB result was less than 1/10th of the sample results.

The L for sample # 784496 was not applicable for multiple elements because the parent sample raw results were less than 50 times the LOQ. A PDS was analyzed and was unacceptable for silver and thallium. The parent sample was reported and qualified with an "M" flag for the failing elements.

The L for sample # 784496 was not acceptable for multiple elements because the results exceeded the RPD limit. A PDS was analyzed and was unacceptable for chromium, manganese, nickel, and lead. The parent sample was reported and qualified with an "M" flag for the failing elements.

The DUP for sample # 784496 was not applicable for multiple elements because the parent sample results were less than five times the LOQ. An MSD was analyzed to demonstrate precision and was acceptable. The parent sample was reported and not qualified.

The DUP for sample # 784496 was not acceptable for nickel because the result exceeded the RPD limit. The parent sample was reported and qualified with a "Y" flag for the failing element.

The MS and MSD for sample # 784496 exceeded the recovery limit for multiple elements. A PDS was analyzed and was unacceptable for silver, chromium, manganese, nickel, lead, and thallium. The parent sample was reported and qualified with an "M" flag for the failing elements.

CVAA Mercury (7471B) Soil Analysis

Analytical Run # 131258

The DUP for sample # 784853 was not applicable for mercury because the parent sample result was less than five times the LOQ. An MSD was analyzed to demonstrate precision and was acceptable. The parent sample was reported and not qualified.

The MS and MSD for sample # 784853 exceeded the recovery limit for mercury. The parent sample was reported and qualified with an "M" flag for mercury.

Analytical Run # 131437

The DUP for sample # 784496 was not applicable for mercury because the parent sample result was less than five times the LOQ. An MSD was analyzed to demonstrate precision and was acceptable. The parent sample was reported and not qualified.

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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.

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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.

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Sample Delivery Group

122704

BERING SEA ENVIRONMENTAL
S. JULIA LIU
615 E. 82ND AVE
#200
ANCHORAGE, AK 99518

Project Name: RADFORD AAP
Project #: 313010-001

	CT Sample #	Folder #	Client Sample #	Sample Description	Matrix	Date Sampled	Date Received
1	784496	122704		RFAAP-FGMR-SSI-001A	SOIL	10/04/2016	10/06/2016
2	784515	122704		RFAAP-FGMR-SSI-001B	SOIL	10/04/2016	10/06/2016
3	784516	122704		RFAAP-FGMR-SSI-001C	SOIL	10/04/2016	10/06/2016
4	784783	122724		RFAAP-FGMR-SSD-001	SOIL	10/06/2016	10/07/2016
5	784852	122724		RFAAP-FGMR-DUP1	SOIL	10/06/2016	10/07/2016
6	784853	122724		RFAAP-FGMR-SSD-002	SOIL	10/06/2016	10/07/2016
7	784854	122724		RFAAP-FGMR-SSD-003	SOIL	10/06/2016	10/07/2016
8	784855	122724		RFAAP-FGMR-SSD-004	SOIL	10/06/2016	10/07/2016
9	785308	122746		RFAAP-FGMR-SSI-002A	SOIL	10/07/2016	10/08/2016
10	785309	122746		RFAAP-FGMR-SSI-002B	SOIL	10/07/2016	10/08/2016
11	785310	122746		RFAAP-FGMR-SSI-002C	SOIL	10/07/2016	10/08/2016

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QC Batch Cross Reference Summary

BERING SEA ENVIRONMENTAL
S. JULIA LIU
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#200
ANCHORAGE, AK 99518

Project Name:	RADFORD AAP
Project #:	313010-001
Report Date:	11/10/2016
Date Received:	10/06/2016
SDG #:	122704

Inorganic Parameters

CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
784496	Solids, Percent	EPA 8000C	SOIL		131419
784515	Solids, Percent	EPA 8000C	SOIL		131419
784516	Solids, Percent	EPA 8000C	SOIL		131419
784783	Solids, Percent	EPA 8000C	SOIL		131419
784852	Solids, Percent	EPA 8000C	SOIL		131419
784853	Solids, Percent	EPA 8000C	SOIL		131419
784854	Solids, Percent	EPA 8000C	SOIL		131419
784855	Solids, Percent	EPA 8000C	SOIL		131419
785308	Solids, Percent	EPA 8000C	SOIL		131419
785309	Solids, Percent	EPA 8000C	SOIL		131419
785310	Solids, Percent	EPA 8000C	SOIL		131419

Metal Parameters

CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
784496	ICP Metals, List 2 QSM 5.0	EPA 6010C	SOIL	59503	131318
784515	ICP Metals, List 2 QSM 5.0	EPA 6010C	SOIL	59503	131318
784516	ICP Metals, List 2 QSM 5.0	EPA 6010C	SOIL	59503	131318
784783	ICP Metals, List 2 QSM 5.0	EPA 6010C	SOIL	59424	131140
784852	ICP Metals, List 2 QSM 5.0	EPA 6010C	SOIL	59424	131140
784853	ICP Metals, List 2 QSM 5.0	EPA 6010C	SOIL	59424	131140
784854	ICP Metals, List 2 QSM 5.0	EPA 6010C	SOIL	59424	131140
784855	ICP Metals, List 2 QSM 5.0	EPA 6010C	SOIL	59424	131140
785308	ICP Metals, List 2 QSM 5.0	EPA 6010C	SOIL	59503	131318
785309	ICP Metals, List 2 QSM 5.0	EPA 6010C	SOIL	59503	131318

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Project Name: RADFORD AAP
Project #: 313010-001
SDG #: 122704

CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
785310	ICP Metals, List 2 QSM 5.0	EPA 6010C	SOIL	59503	131318

CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
784496	ICP Metals QSM 5.0	EPA 6010C	SOIL	59503	131318
784515	ICP Metals QSM 5.0	EPA 6010C	SOIL	59503	131318
784516	ICP Metals QSM 5.0	EPA 6010C	SOIL	59503	131318
784783	ICP Metals QSM 5.0	EPA 6010C	SOIL	59424	131140
784852	ICP Metals QSM 5.0	EPA 6010C	SOIL	59424	131140
784853	ICP Metals QSM 5.0	EPA 6010C	SOIL	59424	131140
784854	ICP Metals QSM 5.0	EPA 6010C	SOIL	59424	131140
784855	ICP Metals QSM 5.0	EPA 6010C	SOIL	59424	131140
785308	ICP Metals QSM 5.0	EPA 6010C	SOIL	59503	131318
785309	ICP Metals QSM 5.0	EPA 6010C	SOIL	59503	131318
785310	ICP Metals QSM 5.0	EPA 6010C	SOIL	59503	131318
784516	ICP Metals QSM 5.0	EPA 6010C	SOIL	59503	131318

CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
784496	Mercury QSM 5.0	EPA 7471B	SOIL	59544	131437
784515	Mercury QSM 5.0	EPA 7471B	SOIL	59544	131437
784516	Mercury QSM 5.0	EPA 7471B	SOIL	59544	131437
784783	Mercury QSM 5.0	EPA 7471B	SOIL	59473	131258
784852	Mercury QSM 5.0	EPA 7471B	SOIL	59473	131258
784853	Mercury QSM 5.0	EPA 7471B	SOIL	59473	131258
784854	Mercury QSM 5.0	EPA 7471B	SOIL	59473	131258
784855	Mercury QSM 5.0	EPA 7471B	SOIL	59473	131258
785308	Mercury QSM 5.0	EPA 7471B	SOIL	59544	131437
785309	Mercury QSM 5.0	EPA 7471B	SOIL	59544	131437
785310	Mercury QSM 5.0	EPA 7471B	SOIL	59544	131437

Organic Parameters

CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
784496	Homogenization/Multi Incremental P	LAB SOP	SOIL		131230
784515	Homogenization/Multi Incremental P	LAB SOP	SOIL		131230
784516	Homogenization/Multi Incremental P	LAB SOP	SOIL		131230
785308	Homogenization/Multi Incremental P	LAB SOP	SOIL		131230
785309	Homogenization/Multi Incremental P	LAB SOP	SOIL		131230
785310	Homogenization/Multi Incremental P	LAB SOP	SOIL		131230

CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
784496	SVOC 8270 QSM	EPA 8270D	SOIL	59524	131574

CT LABORATORIES
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Project Name: RADFORD AAP
Project #: 313010-001
SDG #: 122704

CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
784515	SVOC 8270 QSM	EPA 8270D	SOIL	59524	131574
784516	SVOC 8270 QSM	EPA 8270D	SOIL	59524	131574
784783	SVOC 8270 QSM	EPA 8270D	SOIL	59434	131383
784852	SVOC 8270 QSM	EPA 8270D	SOIL	59434	131383
784853	SVOC 8270 QSM	EPA 8270D	SOIL	59434	131383
784854	SVOC 8270 QSM	EPA 8270D	SOIL	59434	131383
784855	SVOC 8270 QSM	EPA 8270D	SOIL	59434	131383
785308	SVOC 8270 QSM	EPA 8270D	SOIL	59524	131574
785309	SVOC 8270 QSM	EPA 8270D	SOIL	59524	131574
785310	SVOC 8270 QSM	EPA 8270D	SOIL	59524	131574

CTI LAB#:	Parameter	Method	Matrix	Prep Batch #	Analytical Run #
784496	Explosives by 8330	EPA 8330B	SOIL	59528	131499
784515	Explosives by 8330	EPA 8330B	SOIL	59528	131499
784516	Explosives by 8330	EPA 8330B	SOIL	59528	131499
784783	Explosives by 8330	EPA 8330B	SOIL	59529	131500
784852	Explosives by 8330	EPA 8330B	SOIL	59529	131500
784853	Explosives by 8330	EPA 8330B	SOIL	59529	131500
784854	Explosives by 8330	EPA 8330B	SOIL	59529	131500
784855	Explosives by 8330	EPA 8330B	SOIL	59529	131500
785308	Explosives by 8330	EPA 8330B	SOIL	59528	131499
785309	Explosives by 8330	EPA 8330B	SOIL	59528	131499
785310	Explosives by 8330	EPA 8330B	SOIL	59528	131499

SEMI-VOLATILE ORGANIC ANALYSIS
QUALITY CONTROL SUMMARY
DOCUMENTS

CT LABORATORIES
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SEMIVOLATILE ORGANICS ANALYSIS

Sample Description

RFAAP-FGMR-DUP1

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	10.04 (g/L)	CTL Sample ID:	784852
% Solids:	79.0	Date Received:	10/07/2016
Conc. Extract Vol:	1.0 (mL)	Date/Time Prepared:	10/10/2016 / 10:00
Analytical Method:	EPA 8270D	Analytical Prep Batch #	59434
Analytical Run #:	131383	Dilution Factor:	1.00
Date & Time Analyzed:	10/19/2016 / 23:26	GPC Cleanup Date/Time:	10/13/2016 / 10:39
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	1S090816	Concentration Units:	ug/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
91-58-7	2-Chloronaphthalene	76	U	29	76	150	150
84-74-2	Di-n-butylphthalate	150	U	100	150	500	500
86-30-6/122-39-4	N-Nitrosodiphenylamine & Diphn	150	U	63	150	300	300

CT LABORATORIES
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1B

SEMIVOLATILE ORGANICS ANALYSIS

Sample Description

RFAAP-FGMR-SSD-001

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	10.00 (g/L)	CTL Sample ID:	784783
% Solids:	75.4	Date Received:	10/07/2016
Conc. Extract Vol:	1.0 (mL)	Date/Time Prepared:	10/10/2016 / 10:00
Analytical Method:	EPA 8270D	Analytical Prep Batch #	59434
Analytical Run #:	131383	Dilution Factor:	1.00
Date & Time Analyzed:	10/19/2016 / 23:06	GPC Cleanup Date/Time:	10/13/2016 / 10:39
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	1S090816	Concentration Units:	ug/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
91-58-7	2-Chloronaphthalene	80	U	31	80	160	160
84-74-2	Di-n-butylphthalate	160	U	100	160	530	530
86-30-6/122-39-4	N-Nitrosodiphenylamine & Diphn	160	U	66	160	320	320

CT LABORATORIES
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1B

SEMIVOLATILE ORGANICS ANALYSIS

Sample Description

RFAAP-FGMR-SSD-002

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	9.95 (g/L)	CTL Sample ID:	784853
% Solids:	80.3	Date Received:	10/07/2016
Conc. Extract Vol:	1.0 (mL)	Date/Time Prepared:	10/10/2016 / 10:00
Analytical Method:	EPA 8270D	Analytical Prep Batch #	59434
Analytical Run #:	131383	Dilution Factor:	1.00
Date & Time Analyzed:	10/20/2016 / 00:25	GPC Cleanup Date/Time:	10/13/2016 / 10:39
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	1S090816	Concentration Units:	ug/kg

CAS NO.	Analyte	Concentration	Qualifiers			DL	LOD	LOQ	RL
91-58-7	2-Chloronaphthalene	75	U			29	75	150	150
84-74-2	Di-n-butylphthalate	150	U	Y	UJ	99	150	500	500
86-30-6/122-39-4	N-Nitrosodiphenylamine & Diphn	150	U			63	150	300	300

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SEMIVOLATILE ORGANICS ANALYSIS

Sample Description

RFAAP-FGMR-SSD-003

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	10.07 (g/L)	CTL Sample ID:	784854
% Solids:	73.4	Date Received:	10/07/2016
Conc. Extract Vol:	1.0 (mL)	Date/Time Prepared:	10/10/2016 / 10:00
Analytical Method:	EPA 8270D	Analytical Prep Batch #	59434
Analytical Run #:	131383	Dilution Factor:	1.00
Date & Time Analyzed:	10/19/2016 / 23:46	GPC Cleanup Date/Time:	10/13/2016 / 10:39
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	1S090816	Concentration Units:	ug/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
91-58-7	2-Chloronaphthalene	81	U	31	81	160	160
84-74-2	Di-n-butylphthalate	160	U	110	160	540	540
86-30-6/122-39-4	N-Nitrosodiphenylamine & Diphn	160	U	68	160	320	320

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SEMIVOLATILE ORGANICS ANALYSIS

Sample Description

RFAAP-FGMR-SSD-004

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	9.99 (g/L)	CTL Sample ID:	784855
% Solids:	79.9	Date Received:	10/07/2016
Conc. Extract Vol:	1.0 (mL)	Date/Time Prepared:	10/10/2016 / 10:00
Analytical Method:	EPA 8270D	Analytical Prep Batch #	59434
Analytical Run #:	131383	Dilution Factor:	1.00
Date & Time Analyzed:	10/20/2016 / 00:06	GPC Cleanup Date/Time:	10/13/2016 / 10:39
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	1S090816	Concentration Units:	ug/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
91-58-7	2-Chloronaphthalene	75	U	29	75	150	150
84-74-2	Di-n-butylphthalate	150	U	99	150	500	500
86-30-6/122-39-4	N-Nitrosodiphenylamine & Diphn	150	U	63	150	300	300

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SEMIVOLATILE ORGANICS ANALYSIS

Sample Description

RFAAP-FGMR-SSI-001A

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	9.98 (g/L)	CTL Sample ID:	784496
% Solids:	98.6	Date Received:	10/06/2016
Conc. Extract Vol:	1.0 (mL)	Date/Time Prepared:	10/14/2016 / 14:00
Analytical Method:	EPA 8270D	Analytical Prep Batch #	59524
Analytical Run #:	131574	Dilution Factor:	1.00
Date & Time Analyzed:	10/20/2016 / 16:59	GPC Cleanup Date/Time:	/
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	1S090816	Concentration Units:	ug/kg

CAS NO.	Analyte	Concentration	Qualifiers			DL	LOD	LOQ	RL
91-58-7	2-Chloronaphthalene	61	U			23	61	120	120
84-74-2	Di-n-butylphthalate	102	J			80	120	410	410
86-30-6/122-39-4	N-Nitrosodiphenylamine & Diphn	120	U	Y	UJ	51	120	240	240

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SEMIVOLATILE ORGANICS ANALYSIS

Sample Description

RFAAP-FGMR-SSI-001B

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	10.08 (g/L)	CTL Sample ID:	784515
% Solids:	98.4	Date Received:	10/06/2016
Conc. Extract Vol:	1.0 (mL)	Date/Time Prepared:	10/14/2016 / 14:00
Analytical Method:	EPA 8270D	Analytical Prep Batch #	59524
Analytical Run #:	131574	Dilution Factor:	1.00
Date & Time Analyzed:	10/20/2016 / 15:22	GPC Cleanup Date/Time:	/
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	1S090816	Concentration Units:	ug/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
91-58-7	2-Chloronaphthalene	60	U	23	60	120	120
84-74-2	Di-n-butylphthalate	120	U	80	120	400	400
86-30-6/122-39-4	N-Nitrosodiphenylamine & Diphn	120	U	50	120	240	240

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1B

SEMIVOLATILE ORGANICS ANALYSIS

Sample Description

RFAAP-FGMR-SSI-001C

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	9.95 (g/L)	CTL Sample ID:	784516
% Solids:	98.5	Date Received:	10/06/2016
Conc. Extract Vol:	1.0 (mL)	Date/Time Prepared:	10/14/2016 / 14:00
Analytical Method:	EPA 8270D	Analytical Prep Batch #	59524
Analytical Run #:	131574	Dilution Factor:	1.00
Date & Time Analyzed:	10/20/2016 / 15:41	GPC Cleanup Date/Time:	/
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	1S090816	Concentration Units:	ug/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
91-58-7	2-Chloronaphthalene	61	U	23	61	120	120
84-74-2	Di-n-butylphthalate	120	U	81	120	410	410
86-30-6/122-39-4	N-Nitrosodiphenylamine & Diphn	120	U	51	120	240	240

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SEMIVOLATILE ORGANICS ANALYSIS

Sample Description

RFAAP-FGMR-SSI-002A

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	10.08 (g/L)	CTL Sample ID:	785308
% Solids:	97.7	Date Received:	10/08/2016
Conc. Extract Vol:	1.0 (mL)	Date/Time Prepared:	10/14/2016 / 14:00
Analytical Method:	EPA 8270D	Analytical Prep Batch #	59524
Analytical Run #:	131574	Dilution Factor:	1.00
Date & Time Analyzed:	10/20/2016 / 16:01	GPC Cleanup Date/Time:	/
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	1S090816	Concentration Units:	ug/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
91-58-7	2-Chloronaphthalene	61	U	23	61	120	120
84-74-2	Di-n-butylphthalate	120	U	80	120	410	410
86-30-6/122-39-4	N-Nitrosodiphenylamine & Diphn	120	U	51	120	240	240

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1B

SEMIVOLATILE ORGANICS ANALYSIS

Sample Description

RFAAP-FGMR-SSI-002B

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	10.00 (g/L)	CTL Sample ID:	785309
% Solids:	97.3	Date Received:	10/08/2016
Conc. Extract Vol:	1.0 (mL)	Date/Time Prepared:	10/14/2016 / 14:00
Analytical Method:	EPA 8270D	Analytical Prep Batch #	59524
Analytical Run #:	131574	Dilution Factor:	1.00
Date & Time Analyzed:	10/20/2016 / 16:20	GPC Cleanup Date/Time:	/
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	1S090816	Concentration Units:	ug/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
91-58-7	2-Chloronaphthalene	62	U	24	62	120	120
84-74-2	Di-n-butylphthalate	103	J	81	120	410	410
86-30-6/122-39-4	N-Nitrosodiphenylamine & Diphn	120	U	51	120	250	250

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1B

SEMIVOLATILE ORGANICS ANALYSIS

Sample Description

RFAAP-FGMR-SSI-002C

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	10.05 (g/L)	CTL Sample ID:	785310
% Solids:	97.7	Date Received:	10/08/2016
Conc. Extract Vol:	1.0 (mL)	Date/Time Prepared:	10/14/2016 / 14:00
Analytical Method:	EPA 8270D	Analytical Prep Batch #	59524
Analytical Run #:	131574	Dilution Factor:	1.00
Date & Time Analyzed:	10/20/2016 / 16:40	GPC Cleanup Date/Time:	/
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	1S090816	Concentration Units:	ug/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
91-58-7	2-Chloronaphthalene	61	U	23	61	120	120
84-74-2	Di-n-butylphthalate	120	U	80	120	410	410
86-30-6/122-39-4	N-Nitrosodiphenylamine & Diphn	120	U	51	120	240	240

CT LABORATORIES
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1B-2

SEMIVOLATILE ORGANICS ANALYSIS (MB or CC

Sample Description

METHOD BLANK

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:		SDG No.:	122704
Sample wt/vol:	10.00 (g/L)	CTL Sample ID:	785341
% Solids:		Date Received:	10/07/2016
Conc. Extract Vol:	1.0 (mL)	Date/Time Prepared:	10/10/2016 / 10:00
Analytical Method:	EPA 8270D	Analytical Prep Batch #	59434
Analytical Run #:	131383	Dilution Factor:	1.00
Cleanup Date/Time/Type:	10/13/2016 10:39 (GPC)		
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	1S090816	Concentration Units:	ug/kg

CAS NO.	Analyte	Analysis Date/Time		Concentration	Qualifiers	DL/LOD	RL	*Control Limit*
91-58-7	2-Chloronaphthalene	10/19/2016	22:07	23	U	23	120	***60***
84-74-2	Di-n-butylphthalate	10/19/2016	22:07	79	U	79	400	***200***
86-30-6/122-39-4	N-Nitrosodiphenylamine & Diphn	10/19/2016	22:07	50	U	50	240	***120***

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1B-2

SEMIVOLATILE ORGANICS ANALYSIS (MB or CC

Sample Description

METHOD BLANK

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:		SDG No.:	122704
Sample wt/vol:	9.98 (g/L)	CTL Sample ID:	787946
% Solids:		Date Received:	10/06/2016
Conc. Extract Vol:	1.0 (mL)	Date/Time Prepared:	10/14/2016 / 14:00
Analytical Method:	EPA 8270D	Analytical Prep Batch #	59524
Analytical Run #:	131574	Dilution Factor:	1.00
Cleanup Date/Time/Type:	. . ,		
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	1S090816	Concentration Units:	ug/kg

CAS NO.	Analyte	Analysis Date/Time		Concentration	Qualifiers	DL/LOD	RL	*Control Limit*
91-58-7	2-Chloronaphthalene	10/20/2016	14:43	23	U	23	120	***60***
84-74-2	Di-n-butylphthalate	10/20/2016	14:43	79	U	79	400	***200***
86-30-6/122-39-4	N-Nitrosodiphenylamine & Diphn	10/20/2016	14:43	50	U	50	240	***120***

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2D

SOIL SEMI VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Analytical Method:	EPA 8270D	SDG:	122704
Analytical Run #:	131383	ICAL Calibration #:	1S090816

CTLab #	784783				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
Surr: 2,4,6-Tribromophenol	100	44	39	132	
Surr: 2-Fluorobiphenyl	100	82	44	115	
Surr: 2-Fluorophenol	100	66	35	115	
Surr: Nitrobenzene-d5	100	71	37	122	
Surr: Phenol-d5	100	59	33	122	
Surr: Terphenyl-d14	100	90	54	127	

CTLab #	784852				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
Surr: 2,4,6-Tribromophenol	100	64	39	132	
Surr: 2-Fluorobiphenyl	100	72	44	115	
Surr: 2-Fluorophenol	100	60	35	115	
Surr: Nitrobenzene-d5	100	66	37	122	
Surr: Phenol-d5	100	55	33	122	
Surr: Terphenyl-d14	100	85	54	127	

CTLab #	784853				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
Surr: 2,4,6-Tribromophenol	100	68	39	132	
Surr: 2-Fluorobiphenyl	100	69	44	115	
Surr: 2-Fluorophenol	100	73	35	115	
Surr: Nitrobenzene-d5	100	69	37	122	
Surr: Phenol-d5	100	60	33	122	
Surr: Terphenyl-d14	100	77	54	127	

CTLab #	784854				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
Surr: 2,4,6-Tribromophenol	100	39	39	132	
Surr: 2-Fluorobiphenyl	100	46	44	115	
Surr: 2-Fluorophenol	100	44	35	115	
Surr: Nitrobenzene-d5	100	48	37	122	
Surr: Phenol-d5	100	34	33	122	
Surr: Terphenyl-d14	100	49	54	127	*FAIL*

CTLab #	784855				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
Surr: 2,4,6-Tribromophenol	100	89	39	132	
Surr: 2-Fluorobiphenyl	100	79	44	115	
Surr: 2-Fluorophenol	100	69	35	115	
Surr: Nitrobenzene-d5	100	72	37	122	
Surr: Phenol-d5	100	58	33	122	
Surr: Terphenyl-d14	100	99	54	127	

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2D

SOIL SEMI VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Analytical Method:	EPA 8270D	SDG:	122704
Analytical Run #:	131383	ICAL Calibration #:	1S090816

CTLab #	785341	Sample Type:		Method Blank	
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
Surr: 2,4,6-Tribromophenol	100	123	39	132	
Surr: 2-Fluorobiphenyl	100	123	44	115	*FAIL*
Surr: 2-Fluorophenol	100	79.4	35	115	
Surr: Nitrobenzene-d5	100	74.3	37	122	
Surr: Phenol-d5	100	58.5	33	122	
Surr: Terphenyl-d14	100	236	54	127	*FAIL*

CTLab #	785342	Sample Type:		Lab Control Spike	
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
Surr: 2,4,6-Tribromophenol	100	81.6	39	132	
Surr: 2-Fluorobiphenyl	100	78.4	44	115	
Surr: 2-Fluorophenol	100	81.6	35	115	
Surr: Nitrobenzene-d5	100	71.9	37	122	
Surr: Phenol-d5	100	78.0	33	122	
Surr: Terphenyl-d14	100	90.3	54	127	

CTLab #	785344	Sample Type:		Matrix Spike	
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
Surr: 2,4,6-Tribromophenol	100	58.9	39	132	
Surr: 2-Fluorobiphenyl	100	60.2	44	115	
Surr: 2-Fluorophenol	100	54.2	35	115	
Surr: Nitrobenzene-d5	100	58.6	37	122	
Surr: Phenol-d5	100	46.9	33	122	
Surr: Terphenyl-d14	100	64.6	54	127	

CTLab #	785345	Sample Type:		Matrix Spike Duplicate	
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
Surr: 2,4,6-Tribromophenol	100	76.8	39	132	
Surr: 2-Fluorobiphenyl	100	71.9	44	115	
Surr: 2-Fluorophenol	100	63.2	35	115	
Surr: Nitrobenzene-d5	100	69.3	37	122	
Surr: Phenol-d5	100	58.5	33	122	
Surr: Terphenyl-d14	100	92.0	54	127	

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SOIL SEMI VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Analytical Method:	EPA 8270D	SDG:	122704
Analytical Run #:	131574	ICAL Calibration #:	1S090816

CTLab #	784496				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
Surr: 2,4,6-Tribromophenol	100	69	39	132	
Surr: 2-Fluorobiphenyl	100	74	44	115	
Surr: 2-Fluorophenol	100	72	35	115	
Surr: Nitrobenzene-d5	100	67	37	122	
Surr: Phenol-d5	100	74	33	122	
Surr: Terphenyl-d14	100	85	54	127	

CTLab #	784515				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
Surr: 2,4,6-Tribromophenol	100	68	39	132	
Surr: 2-Fluorobiphenyl	100	66	44	115	
Surr: 2-Fluorophenol	100	70	35	115	
Surr: Nitrobenzene-d5	100	64	37	122	
Surr: Phenol-d5	100	69	33	122	
Surr: Terphenyl-d14	100	66	54	127	

CTLab #	784516				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
Surr: 2,4,6-Tribromophenol	100	57	39	132	
Surr: 2-Fluorobiphenyl	100	58	44	115	
Surr: 2-Fluorophenol	100	56	35	115	
Surr: Nitrobenzene-d5	100	58	37	122	
Surr: Phenol-d5	100	61	33	122	
Surr: Terphenyl-d14	100	58	54	127	

CTLab #	785308				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
Surr: 2,4,6-Tribromophenol	100	57	39	132	
Surr: 2-Fluorobiphenyl	100	57	44	115	
Surr: 2-Fluorophenol	100	51	35	115	
Surr: Nitrobenzene-d5	100	53	37	122	
Surr: Phenol-d5	100	52	33	122	
Surr: Terphenyl-d14	100	67	54	127	

CTLab #	785309				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
Surr: 2,4,6-Tribromophenol	100	67	39	132	
Surr: 2-Fluorobiphenyl	100	68	44	115	
Surr: 2-Fluorophenol	100	70	35	115	
Surr: Nitrobenzene-d5	100	64	37	122	
Surr: Phenol-d5	100	70	33	122	
Surr: Terphenyl-d14	100	73	54	127	

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SOIL SEMI VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Analytical Method:	EPA 8270D	SDG:	122704
Analytical Run #:	131574	ICAL Calibration #:	1S090816

CTLab #	785310				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
Surr: 2,4,6-Tribromophenol	100	63	39	132	
Surr: 2-Fluorobiphenyl	100	63	44	115	
Surr: 2-Fluorophenol	100	68	35	115	
Surr: Nitrobenzene-d5	100	59	37	122	
Surr: Phenol-d5	100	61	33	122	
Surr: Terphenyl-d14	100	75	54	127	

CTLab #	787946	Sample Type:	Method Blank		
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
Surr: 2,4,6-Tribromophenol	100	64.4	39	132	
Surr: 2-Fluorobiphenyl	100	52.5	44	115	
Surr: 2-Fluorophenol	100	56.5	35	115	
Surr: Nitrobenzene-d5	100	49.8	37	122	
Surr: Phenol-d5	100	53.7	33	122	
Surr: Terphenyl-d14	100	78.2	54	127	

CTLab #	787947	Sample Type:	Lab Control Spike		
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
Surr: 2,4,6-Tribromophenol	100	90.4	39	132	
Surr: 2-Fluorobiphenyl	100	95.1	44	115	
Surr: 2-Fluorophenol	100	97.0	35	115	
Surr: Nitrobenzene-d5	100	97.2	37	122	
Surr: Phenol-d5	100	98.7	33	122	
Surr: Terphenyl-d14	100	99.0	54	127	

CTLab #	787949	Sample Type:	Matrix Spike		
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
Surr: 2,4,6-Tribromophenol	100	70.9	39	132	
Surr: 2-Fluorobiphenyl	100	64.3	44	115	
Surr: 2-Fluorophenol	100	71.4	35	115	
Surr: Nitrobenzene-d5	100	73.9	37	122	
Surr: Phenol-d5	100	68.3	33	122	
Surr: Terphenyl-d14	100	72.1	54	127	

CTLab #	787950	Sample Type:	Matrix Spike Duplicate		
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
Surr: 2,4,6-Tribromophenol	100	60.8	39	132	
Surr: 2-Fluorobiphenyl	100	58.9	44	115	
Surr: 2-Fluorophenol	100	57.7	35	115	
Surr: Nitrobenzene-d5	100	63.7	37	122	
Surr: Phenol-d5	100	59.6	33	122	
Surr: Terphenyl-d14	100	60.7	54	127	

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Sample Description

SOIL SEMIVOLATILE MATRIX SPIKE RECOVERY

RFAAP-FGMR-SSI-001A

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Matrix: SOIL SDG No.: 122704

Analytical Method: EPA 8270D Concentration Units: ug/kg

Analytical Run #: 131574 Sample No.: 787949 Parent Sample No.: 784496

Analytical Prep Batch #: 59524 Analytical Preparation Date/Time: 10/14/2016 14:00

ICAL Calibration #: 1S090816

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	Parent Result	Spike Amount	%R
2-Chloronaphthalene	10/20/2016	17:19	41-114	1200	BDL	2010	60
Di-n-butylphthalate	10/20/2016	17:19	51-128	1290	102	2010	59
N-Nitrosodiphenylamine & Diphn	10/20/2016	17:19	38-127	2550	BDL	4020	63

Spike Recovery: 0 out of 3 outside QC limits

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Sample Description

SOIL SEMIVOLATILE MATRIX SPIKE RECOVERY

RFAAP-FGMR-SSD-002

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Matrix: SOIL SDG No.: 122704

Analytical Method: EPA 8270D Concentration Units: ug/kg

Analytical Run #: 131383 Sample No.: 785344 Parent Sample No.: 784853

Analytical Prep Batch #: 59434 Analytical Preparation Date/Time: 10/10/2016 10:00

ICAL Calibration #: 1S090816

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	Parent Result	Spike Amount	%R
2-Chloronaphthalene	10/20/2016	00:45	41-114	1430	BDL	2480	58
Di-n-butylphthalate	10/20/2016	00:45	51-128	1410	BDL	2480	57
N-Nitrosodiphenylamine & Diphn	10/20/2016	00:45	38-127	2030	BDL	4950	41

Spike Recovery: 0 out of 3 outside QC limits

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Sample Description

RFAAP-FGMR-SSI-001A

SOIL SEMIVOLATILE MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Matrix: SOIL SDG No.: 122704

Analytical Method: EPA 8270D Concentration Units: ug/kg

Analytical Run #: 131574 Sample No.: 787950 Parent Sample No.: 787949

Analytical Prep Batch #: 59524 Analytical Preparation Date/Time: 10/14/2016 14:00

ICAL Calibration #: 1S090816

Analyte	Analysis Date/Time		Spike Result	Spike Amount	%R	%RPD	Control Limits (%R)	Control Limits (%RPD)	
2-Chloronaphthalene	10/20/2016	17:38	1070	2010	53	12	41-114	20	
Di-n-butylphthalate	10/20/2016	17:38	1160	2010	53	10	51-128	20	
N-Nitrosodiphenylamine & Diphn	10/20/2016	17:38	1900	4020	47	29	38-127	20	*FAIL*

RPD or Spike Recovery: 1 out of 3 outside QC limits

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Sample Description

RFAAP-FGMR-SSD-002

SOIL SEMIVOLATILE MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Matrix: SOIL SDG No.: 122704

Analytical Method: EPA 8270D Concentration Units: ug/kg

Analytical Run #: 131383 Sample No.: 785345 Parent Sample No.: 785344

Analytical Prep Batch #: 59434 Analytical Preparation Date/Time: 10/10/2016 10:00

ICAL Calibration #: 1S090816

Analyte	Analysis Date/Time		Spike Result	Spike Amount	%R	%RPD	Control Limits (%R)	Control Limits (%RPD)	
2-Chloronaphthalene	10/20/2016	01:05	1710	2500	68	16	41-114	20	
Di-n-butylphthalate	10/20/2016	01:05	1880	2500	75	28	51-128	20	*FAIL*
N-Nitrosodiphenylamine & Diphn	10/20/2016	01:05	2350	5010	47	14	38-127	20	

RPD or Spike Recovery: 1 out of 3 outside QC limits

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3D

Sample Description

LCS

SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: CT Laboratories
Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP
Sample No.: 785342
SDG No.: 122704
Analytical Method: EPA 8270D
Concentration Units: ug/kg

Sample No.: 785342
Parent Sample No.: 0
Analytical Prep Batch #: 59434
Analytical Preparation Date/Time: 10/10/2016 10:00
Analytical Run #: 131383
ICAL Calibration #: 1S090816

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	Parent Result	Spike Amount	%R
2-Chloronaphthalene	10/19/2016	22:46	41-114	1500		2000	75
Di-n-butylphthalate	10/19/2016	22:46	51-128	1620		2000	81
N-Nitrosodiphenylamine & Diphn	10/19/2016	22:46	38-127	3080		4000	77

Spike Recovery: 0 out of 3 outside limits

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3D

Sample Description

LCS

SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: CT Laboratories
Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP
Sample No.: 787947
SDG No.: 122704
Analytical Method: EPA 8270D
Concentration Units: ug/kg

Sample No.: 787947
Parent Sample No.: 0
Analytical Prep Batch #: 59524
Analytical Preparation Date/Time: 10/14/2016 14:00
Analytical Run #: 131574
ICAL Calibration #: 1S090816

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	Parent Result	Spike Amount	%R
2-Chloronaphthalene	10/20/2016	15:02	41-114	1750		2000	88
Di-n-butylphthalate	10/20/2016	15:02	51-128	1830		2000	92
N-Nitrosodiphenylamine & Diphn	10/20/2016	15:02	38-127	3380		4000	84

Spike Recovery: 0 out of 3 outside limits

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4B

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Sample ID:	785341	SDG No.:	122704
Matrix:	SOLID	Date Extracted:	10/10/2016
Date Analyzed:	10/19/2016	Time Analyzed:	22:07
Analytical Method:	EPA 8270D	Extraction Method:	SW3546
Analytical Run #:	131383	Extraction Batch #:	59434
		ICAL Calibration #:	1S090816

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES AND QC:

SEQUENCE	SAMPLE DESCRIPTION	SAMPLE ID	DATE/TIME ANALYZED	CALIBRATION # ID
1	MBS	785341	10/19/2016 22:07	1S090816
2	LCSS	785342	10/19/2016 22:46	1S090816
3	RFAAP-FGMR-SSD-001	784783	10/19/2016 23:06	1S090816
4	RFAAP-FGMR-DUP1	784852	10/19/2016 23:26	1S090816
5	RFAAP-FGMR-SSD-003	784854	10/19/2016 23:46	1S090816
6	RFAAP-FGMR-SSD-004	784855	10/20/2016 00:06	1S090816
7	RFAAP-FGMR-SSD-002	784853	10/20/2016 00:25	1S090816
8	RFAAP-FGMR-SSD-002MSS	785344	10/20/2016 00:45	1S090816
9	RFAAP-FGMR-SSD-002MSDS	785345	10/20/2016 01:05	1S090816

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4B

SEMIVOLATILE METHOD BLANK SUMMARY

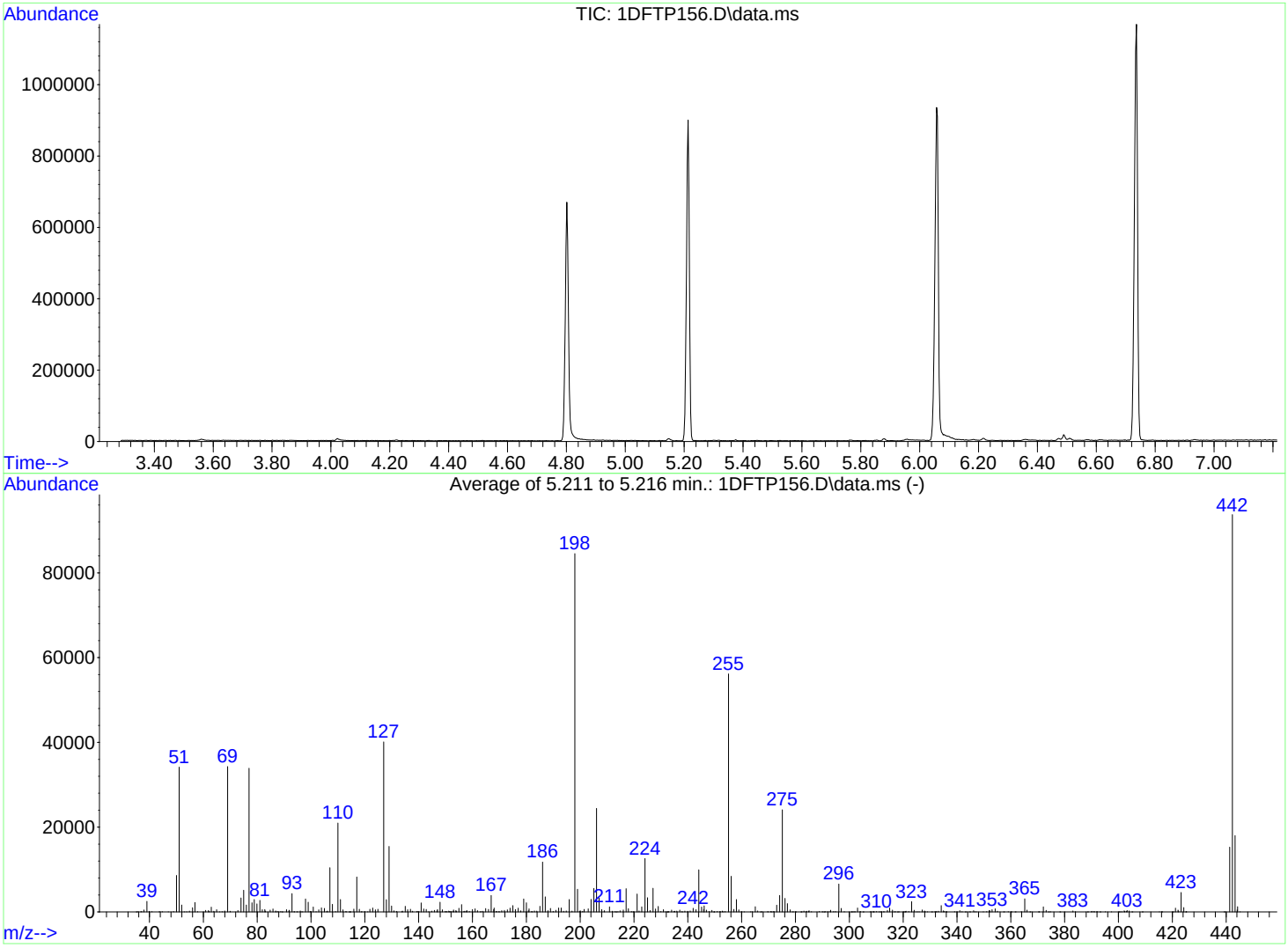
Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Sample ID:	787946	SDG No.:	122704
Matrix:	SOLID	Date Extracted:	10/14/2016
Date Analyzed:	10/20/2016	Time Analyzed:	14:43
Analytical Method:	EPA 8270D	Extraction Method:	SW3546
Analytical Run #:	131574	Extraction Batch #:	59524
		ICAL Calibration #:	1S090816

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES AND QC:

SEQUENCE	SAMPLE DESCRIPTION	SAMPLE ID	DATE/TIME ANALYZED	CALIBRATION # ID
1	MBS	787946	10/20/2016 14:43	1S090816
2	LCSS	787947	10/20/2016 15:02	1S090816
3	RFAAP-FGMR-SSI-001B	784515	10/20/2016 15:22	1S090816
4	RFAAP-FGMR-SSI-001C	784516	10/20/2016 15:41	1S090816
5	RFAAP-FGMR-SSI-002A	785308	10/20/2016 16:01	1S090816
6	RFAAP-FGMR-SSI-002B	785309	10/20/2016 16:20	1S090816
7	RFAAP-FGMR-SSI-002C	785310	10/20/2016 16:40	1S090816
8	RFAAP-FGMR-SSI-001A	784496	10/20/2016 16:59	1S090816
9	RFAAP-FGMR-SSI-001AMSS	787949	10/20/2016 17:19	1S090816
10	RFAAP-FGMR-SSI-001AMSDS	787950	10/20/2016 17:38	1S090816

Data File : C:\INSTARCH\Data\1S090816\1DFTP156.D Vial: 1
Acq On : 8 Sep 2016 10:28 Operator: RPN
Sample : DFTPP TUNE SVMS7090 Inst : SVMS1
Misc : SVMS1,25 ug DFTPP Multiplr: 1.00
Integrator: RTE

Method : C:\INSTARCH\Methods\1DFTPP.M
Title : DFTPP TUNE Method
Last Update : Tue Aug 30 17:01:21 2016



AutoFind: Scans 678, 679, 680; Background Corrected with Scan 670

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	442	10	80	36.4	34157	PASS
68	69	0.00	2	0.7	227	PASS
70	69	0.00	2	0.5	172	PASS
127	442	10	80	42.8	40096	PASS
197	198	0.00	2	0.3	217	PASS
198	442	50	100	90.2	84546	PASS
199	198	5	9	6.3	5355	PASS
275	442	10	60	25.7	24085	PASS
365	198	1	100	3.7	3095	PASS
441	442	0.01	24	16.3	15279	PASS
442	442	50	100	100.0	93744	PASS
443	442	15	24	19.2	18026	PASS

Injection Log Summary Report

Method : X:\METHODS\1S090816.M (RTE Integrator)
Title : Method for 8270 analysis
Start (Tune) File ID : X:\DATA\1S090816\1DFTP156.D
Injection Date : 8 Sep 2016 Log Time Period (hrs) : ALL
Injection Time : 10:28 Total files within period : 19
Sample Directory : X:\DATA\1S090816\

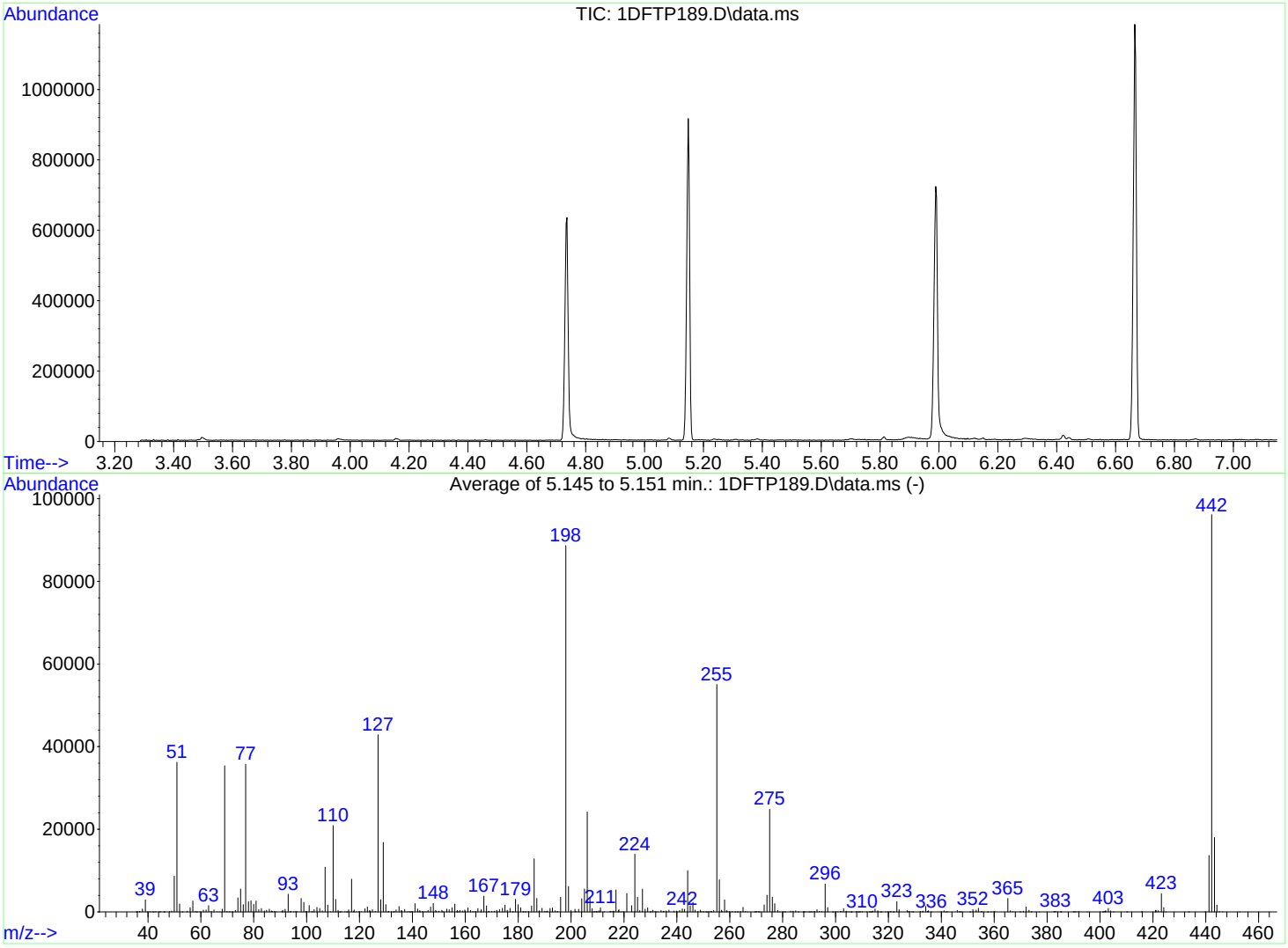
Injection Log Summary Table

File ID	Multiplier I	S	T	Sample Name / Misc Info	Date	Time
1IB03	1.00	1.00	1.00	InstrumentBlank 500uL+5ul IS S3516B	8 Sep 2016	14:45
1ICAL7	1.00	1.00	1.00	ICAL 50ug/ml SVMS7191 500uL+5ul IS S3516B	8 Sep 2016	15:05
1ICAL6	1.00	1.00	1.00	ICAL40ug/ml SVMS7190 500uL+5ul IS S3516B	8 Sep 2016	15:25
1ICAL5	1.00	1.00	1.00	ICAL30ug/ml SVMS7189 500uL+5ul IS S3516B	8 Sep 2016	15:45
1ICAL4	1.00	1.00	1.00	ICAL20ug/ml SVMS7188 500uL+5ul IS S3516B	8 Sep 2016	16:19
1ICAL3	1.00	1.00	1.00	ICAL10ug/ml SVMS7187 500uL+5ul IS S3516B	8 Sep 2016	16:38
1ICAL2	1.00	1.00	1.00	ICAL5ug/ml SVMS7186 500uL+5ul IS S3516B	8 Sep 2016	16:58
1ICAL1	1.00	1.00	1.00	ICAL1ug/ml SVMS7185 500uL+5ul IS S3516B	8 Sep 2016	17:18
1ICV1	1.00	1.00	1.00	ICV 20ug/ml SVMS7192 500uL+5ul IS S3516B	8 Sep 2016	17:38
1ICV2	1.00	1.00	1.00	ICV 40ug/ml SVMS7193 500uL+5ul IS S3516B	8 Sep 2016	17:58

DFTPP

Data File : C:\INSTARCH\Data\1S101916\1DFTP189.D Vial: 1
Acq On : 19 Oct 2016 15:19 Operator: JJY
Sample : DFTPP TUNE SVMS7090 Inst : SVMS1
Misc : SVMS1,25 ug DFTPP Multiplr: 1.00
Integrator: RTE

Method : C:\INSTARCH\Methods\1DFTPP.M
Title : DFTPP TUNE Method
Last Update : Wed Oct 19 15:31:26 2016



AutoFind: Scans 655, 656, 657; Background Corrected with Scan 646

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	442	10	80	37.7	36247	PASS
68	69	0.00	2	1.9	682	PASS
70	69	0.00	2	0.4	146	PASS
127	442	10	80	44.6	42880	PASS
197	198	0.00	2	0.0	0	PASS
198	442	50	100	92.2	88645	PASS
199	198	5	9	7.0	6181	PASS
275	442	10	60	25.9	24861	PASS
365	198	1	100	3.7	3259	PASS
441	442	0.01	24	14.2	13666	PASS
442	442	50	100	100.0	96146	PASS
443	442	15	24	18.7	18006	PASS

Injection Log Summary Report

Method : X:\METHODS\1S090816.M (RTE Integrator)
Title : Method for 8270 analysis
Start (Tune) File ID : X:\DATA\1S101916\1DFTP189.D
Injection Date : 19 Oct 2016 Log Time Period (hrs) : ALL
Injection Time : 15:19 Total files within period : 33
Sample Directory : X:\DATA\1S101916\

Injection Log Summary Table

File ID	Multiplier I	S	T	Sample Name / Misc Info	Date	Time
1CCV214	1.00	1.00	1.00	CCV20ug/ml SVMS7217 500uL+5ul IS S3516D	19 Oct 2016	15:34
1CCV215	1.00	1.00	1.00	CCV20ug/ml SVMS7194 500uL+5ul IS S3516D	19 Oct 2016	15:54
1MRL01	1.00	1.00	1.00	MRL 1/5ug/ml SVMS7241 500uL+5ul IS S3516D	19 Oct 2016	16:13
1MRL01A	1.00	1.00	1.00	MRL 1ug/ml SVMS7195 500uL+5ul IS S3516D	19 Oct 2016	16:33
1MDL01	1.00	1.00	1.00	MDL 0.5/2.5ug/ml SVMS7242 500uL+5ul IS S3516D	19 Oct 2016	16:53
1MBW01	1.00	1.00	1.00	131496,MBW, 785323,500uL+5ul IS S3516	19 Oct 2016	17:12
1LCSW01	1.00	1.00	1.00	131496,LCSW, 785324,500uL+5ul IS S3516	19 Oct 2016	17:32
788094	1.00	1.00	1.00	131496,788094, 500uL+5ul IS S3516D	19 Oct 2016	17:51
1MRL02	1.00	1.00	1.00	MRL 1/5ug/ml SVMS7241 500uL+5ul IS S3516D	19 Oct 2016	18:11
1MRL02A	1.00	1.00	1.00	MRL 1ug/ml SVMS7195 500uL+5ul IS S3516D	19 Oct 2016	18:30
1MDL02	1.00	1.00	1.00	MDL 0.5/2.5ug/ml SVMS7242 500uL+5ul IS S3516D	19 Oct 2016	18:50
783337R	1.00	1.00	1.00	131413,783337, 500uL+5ul IS S3516D	19 Oct 2016	19:09
784884	1.00	1.00	1.00	131496,784884, 500uL+5ul IS S3516D	19 Oct 2016	19:29
785421	1.00	1.00	1.00	131496,785421, 500uL+5ul IS S3516D	19 Oct 2016	19:49
787198	1.00	1.00	1.00	131496,787198, 500uL+5ul IS S3516D	19 Oct 2016	20:09
787199	1.00	1.00	1.00	131496,787199, 500uL+5ul IS S3516D	19 Oct 2016	20:29
787200	1.00	1.00	1.00	131496,787200, 500uL+5ul IS S3516D	19 Oct 2016	20:48
784879	1.00	1.00	1.00	131496,784879, 500uL+5ul IS S3516D	19 Oct 2016	21:08
784879MS	1.00	1.00	1.00	131496,MSW784879, 785326,500uL+5ul IS S3516	19 Oct 2016	21:28
784879SD	1.00	1.00	1.00	131496,MSDW784879, 785327,500uL+5ul IS S3516	19 Oct 2016	21:47
1MBS01	1.00	1.00	1.00	131383,MBS, 785341,500uL+5ul IS S3516	19 Oct 2016	22:07
1MBS01D	1.00	1.00	1.00	131383,MBS,10 785341,500uL+5ul IS S3516	19 Oct 2016	22:27

Injection Log Summary Report

Method : X:\METHODS\1S090816.M (RTE Integrator)
Title : Method for 8270 analysis
Start (Tune) File ID : X:\DATA\1S101916\1DFTP189.D
Injection Date : 19 Oct 2016 Log Time Period (hrs) : ALL
Injection Time : 15:19 Total files within period : 33
Sample Directory : X:\DATA\1S101916\

Injection Log Summary Table

File ID	Multiplier I	S	T	Sample Name / Misc Info	Date	Time
1LCSS01	1.00	1.00	1.00	131383,LCSS, 785342,500uL+5ul IS S3516	19 Oct 2016	22:46
784783	1.00	1.00	1.00	131383,784783, 500uL+5ul IS S3516D	19 Oct 2016	23:06
784852	1.00	1.00	1.00	131383,784852, 500uL+5ul IS S3516D	19 Oct 2016	23:26
784854	1.00	1.00	1.00	131383,784854, 500uL+5ul IS S3516D	19 Oct 2016	23:46
784855	1.00	1.00	1.00	131383,784855, 500uL+5ul IS S3516D	20 Oct 2016	00:06
784853	1.00	1.00	1.00	131383,784853, 500uL+5ul IS S3516D	20 Oct 2016	00:25
784853MS	1.00	1.00	1.00	131383,MSS784853, 785344,500uL+5ul IS S3516	20 Oct 2016	00:45
784853SD	1.00	1.00	1.00	131383,MSDS784853, 785345,500uL+5ul IS S3516	20 Oct 2016	01:05
783337D	1.00	1.00	1.00	131413,783337,10 500uL+5ul IS S3516D	20 Oct 2016	01:24
1CCV216	1.00	1.00	1.00	CCV20ug/ml SVMS7217 500uL+5ul IS S3516D	20 Oct 2016	01:44
1CCV217	1.00	1.00	1.00	CCV20ug/ml SVMS7194 500uL+5ul IS S3516D	20 Oct 2016	02:04

8B
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : Contract :
Project : Site : Location : Group :
Lab File ID (Standard): 1ICAL4.D Date Analyzed : 8 Sep 2016
Instrument ID : SVMS1 Time Analyzed : 16:19
GC Column : ID : (mm) Heated Purge (Y:N) :

	IS1 (DCB)		IS2 (NPT)		IS3 (ANT)	
	Area #	RT #	Area #	RT #	Area #	RT #
12 HOUR STD	46433	4.06	188439	5.71	102760	7.30
UPPER LIMIT	92866	4.56	376878	6.21	205520	7.80
LOWER LIMIT	23217	3.56	94220	5.21	51380	6.80
File ID Sample						
1CCV214 CCV20ug/m	49086	3.97	204675	5.63	112283	7.24
1CCV215 CCV20ug/m	48231	3.97	182272	5.62	101108	7.24
1CCV216 CCV20ug/m	56426	3.97	236481	5.63	134735	7.24
1CCV217 CCV20ug/m	43208	3.97	198936	5.62	111775	7.24
1LCSS01 131383,LC	46363	3.97	194172	5.62	110625	7.24
1LCSW01 131496,LC	48504	3.97	195332	5.62	118094	7.23
1MBS01 131383,MB	49006	3.97	199531	5.62	73579	7.24
1MBS01D 131383,MB	54304	3.97	216839	5.62	99893	7.24
1MBW01 131496,MB	43045	3.97	172472	5.62	102424	7.23
1MDL01 MDL 0.5/2	40074	3.97	174361	5.62	77554	7.24
1MDL02 MDL 0.5/2	43213	3.97	177804	5.62	78836	7.23
1MRL01 MRL 1/5ug	39258	3.97	159591	5.62	77151	7.24
1MRL01A MRL 1ug/m	43649	3.97	190788	5.62	107220	7.23
1MRL02 MRL 1/5ug	38663	3.97	165017	5.62	76057	7.23
1MRL02A MRL 1ug/m	44639	3.97	195673	5.62	112043	7.24
783337D 131413,78	44836	3.97	206430	5.62	122631	7.23
783337R 131413,78	51520	3.97	196626	5.62	96498	7.24
784783 131383,78	47327	3.97	200696	5.62	113947	7.24
784852 131383,78	46414	3.97	189573	5.62	111949	7.24
784853 131383,78	52903	3.97	242212	5.62	139189	7.23
784853MS 131383,MS	55057	3.97	232718	5.62	135000	7.24
784853SD 131383,MS	52010	3.97	216100	5.62	135655	7.24
784854 131383,78	59717	3.97	242200	5.62	144543	7.24
784855 131383,78	47902	3.97	199951	5.62	115683	7.24
784879 131496,78	45674	3.97	185661	5.62	116434	7.24

IS1 (DCB) = 14Diclbenzd4
IS2 (NPT) = Naphthalened8
IS3 (ANT) = Acenaphthened10

AREA UPPER LIMIT = 200% of internal standard area
AREA LOWER LIMIT = 50% of internal standard area
RT UPPER LIMIT = 0.5 minutes of internal standard RT
RT LOWER LIMIT = -0.5 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk
* Values outside of contract required QC limits

8B
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : Contract :
Project : Site : Location : Group :
Lab File ID (Standard): 1ICAL4.D Date Analyzed : 8 Sep 2016
Instrument ID : SVMS1 Time Analyzed : 16:19
GC Column : ID : (mm) Heated Purge (Y:N) :

	IS1 (DCB)		IS2 (NPT)		IS3 (ANT)	
	Area #	RT #	Area #	RT #	Area #	RT #
12 HOUR STD	46433	4.06	188439	5.71	102760	7.30
UPPER LIMIT	92866	4.56	376878	6.21	205520	7.80
LOWER LIMIT	23217	3.56	94220	5.21	51380	6.80
File ID Sample						
784879MS 131496,MS	47394	3.97	193791	5.62	113354	7.23
784879SD 131496,MS	45966	3.97	195200	5.62	118141	7.24
784884 131496,78	46844	3.97	199485	5.62	115508	7.23
785421 131496,78	43412	3.97	198954	5.62	115464	7.24
787198 131496,78	47666	3.97	197361	5.62	111021	7.23
787199 131496,78	45588	3.97	193710	5.62	117062	7.24
787200 131496,78	49346	3.97	192346	5.62	111523	7.23
788094 131496,78	44046	3.97	193187	5.62	110698	7.23

IS1 (DCB) = 14Diclbenzd4
IS2 (NPT) = Naphthalened8
IS3 (ANT) = Acenaphthened10

AREA UPPER LIMIT = 200% of internal standard area
AREA LOWER LIMIT = 50% of internal standard area
RT UPPER LIMIT = 0.5 minutes of internal standard RT
RT LOWER LIMIT = -0.5 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk
* Values outside of contract required QC limits

8B
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : Contract :
Project : Site : Location : Group :
Lab File ID (Standard): 1ICAL4.D Date Analyzed : 8 Sep 2016
Instrument ID : SVMS1 Time Analyzed : 16:19
GC Column : ID : (mm) Heated Purge (Y:N) :

	IS4 (PHN)		IS5 (CRY)		IS6 (PRY)	
	Area #	RT #	Area #	RT #	Area #	RT #
12 HOUR STD	179545	8.24	182954	9.65	193135	10.55
UPPER LIMIT	359090	8.74	365908	10.15	386270	11.05
LOWER LIMIT	89773	7.74	91477	9.15	96568	10.05
File ID Sample						
1CCV214 CCV20ug/m	203042	8.19	172160	9.58	169832	10.47
1CCV215 CCV20ug/m	174602	8.19	167298	9.58	170003	10.47
1CCV216 CCV20ug/m	241827	8.19	215104	9.59	196284	10.48
1CCV217 CCV20ug/m	195035	8.19	183057	9.58	165476	10.48
1LCSS01 131383,LC	197940	8.19	171099	9.58	161396	10.47
1LCSW01 131496,LC	210221	8.18	183576	9.59	183851	10.48
1MBS01 131383,MB	167661	8.19	62086 *	9.58	6527 *	10.47
1MBS01D 131383,MB	219620	8.19	117294	9.58	22929 *	10.47
1MBW01 131496,MB	180990	8.18	171956	9.58	173315	10.48
1MDL01 MDL 0.5/2	163447	8.19	138065	9.58	144250	10.47
1MDL02 MDL 0.5/2	162065	8.18	138052	9.58	142858	10.48
1MRL01 MRL 1/5ug	155991	8.19	128233	9.58	143637	10.47
1MRL01A MRL 1ug/m	187656	8.18	178662	9.58	170662	10.48
1MRL02 MRL 1/5ug	159512	8.18	135270	9.58	137383	10.48
1MRL02A MRL 1ug/m	196277	8.19	165165	9.58	170961	10.47
783337D 131413,78	220526	8.18	200420	9.58	180210	10.48
783337R 131413,78	207519	8.19	162708	9.58	22609 *	10.47
784783 131383,78	204787	8.18	184272	9.58	164168	10.48
784852 131383,78	198692	8.19	178351	9.58	160216	10.47
784853 131383,78	249270	8.18	222575	9.59	182953	10.48
784853MS 131383,MS	241484	8.19	213212	9.58	176924	10.48
784853SD 131383,MS	237466	8.18	206899	9.59	188813	10.48
784854 131383,78	257929	8.19	227312	9.58	173998	10.48
784855 131383,78	206468	8.19	184177	9.58	166919	10.47
784879 131496,78	203607	8.18	185168	9.58	172566	10.47

IS4 (PHN) = Phenanthrd10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = 200% of internal standard area
AREA LOWER LIMIT = 50% of internal standard area
RT UPPER LIMIT = 0.5 minutes of internal standard RT
RT LOWER LIMIT = -0.5 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk
* Values outside of contract required QC limits

8B
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : Contract :
Project : Site : Location : Group :
Lab File ID (Standard): 1ICAL4.D Date Analyzed : 8 Sep 2016
Instrument ID : SVMS1 Time Analyzed : 16:19
GC Column : ID : (mm) Heated Purge (Y:N) :

	IS4 (PHN)		IS5 (CRY)		IS6 (PRY)	
	Area #	RT #	Area #	RT #	Area #	RT #
12 HOUR STD	179545	8.24	182954	9.65	193135	10.55
UPPER LIMIT	359090	8.74	365908	10.15	386270	11.05
LOWER LIMIT	89773	7.74	91477	9.15	96568	10.05
File ID Sample						
784879MS 131496,MS	192315	8.18	188635	9.59	181729	10.48
784879SD 131496,MS	193690	8.19	185263	9.58	182886	10.48
784884 131496,78	205051	8.18	184366	9.58	181504	10.48
785421 131496,78	203211	8.19	185896	9.58	168383	10.47
787198 131496,78	208709	8.18	184391	9.58	179710	10.48
787199 131496,78	207176	8.19	174729	9.58	167917	10.47
787200 131496,78	189893	8.18	177721	9.58	188342	10.48
788094 131496,78	199459	8.18	175527	9.58	174666	10.48

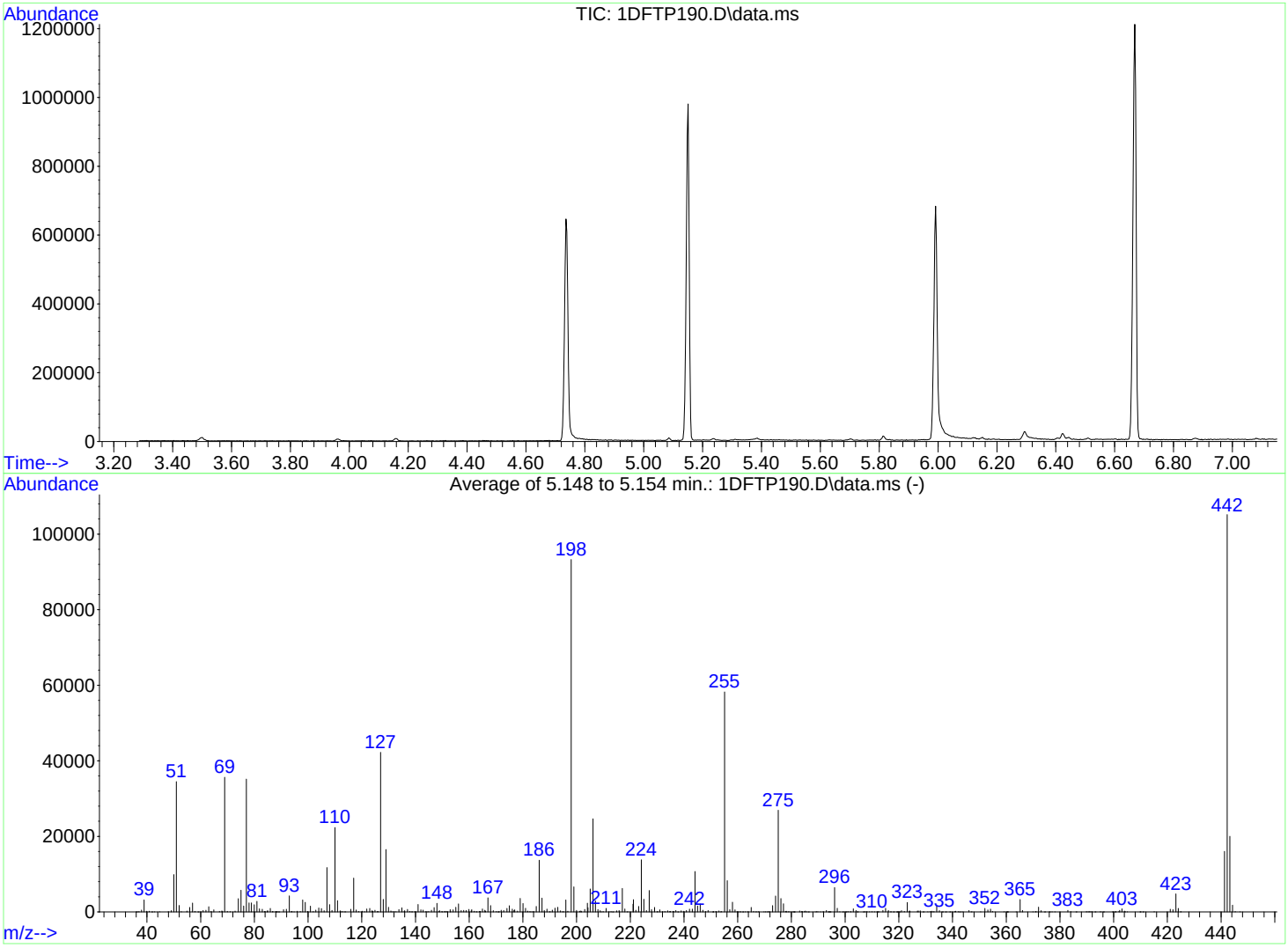
IS4 (PHN) = Phenanthrd10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = 200% of internal standard area
AREA LOWER LIMIT = 50% of internal standard area
RT UPPER LIMIT = 0.5 minutes of internal standard RT
RT LOWER LIMIT = -0.5 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk
* Values outside of contract required QC limits

Data File : C:\INSTARCH\Data\1S102016\1DFTP190.D Vial: 1
Acq On : 20 Oct 2016 12:31 Operator: JJY
Sample : DFTPP TUNE SVMS7090 Inst : SVMS1
Misc : SVMS1,25 ug DFTPP Multiplr: 1.00
Integrator: RTE

Method : C:\INSTARCH\Methods\1DFTPP.M
Title : DFTPP TUNE Method
Last Update : Wed Oct 19 15:31:26 2016



AutoFind: Scans 656, 657, 658; Background Corrected with Scan 647

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	442	10	80	32.8	34480	PASS
68	69	0.00	2	0.7	256	PASS
70	69	0.00	2	0.5	171	PASS
127	442	10	80	40.2	42242	PASS
197	198	0.00	2	0.2	200	PASS
198	442	50	100	88.7	93258	PASS
199	198	5	9	7.1	6632	PASS
275	442	10	60	25.6	26928	PASS
365	198	1	100	3.5	3269	PASS
441	442	0.01	24	15.2	16022	PASS
442	442	50	100	100.0	105165	PASS
443	442	15	24	19.0	20013	PASS

Injection Log Summary Report

Method : X:\METHODS\1S090816.M (RTE Integrator)
Title : Method for 8270 analysis
Start (Tune) File ID : X:\DATA\1S102016\1DFTP190.D
Injection Date : 20 Oct 2016 Log Time Period (hrs) : ALL
Injection Time : 12:31 Total files within period : 17
Sample Directory : X:\DATA\1S102016\

Injection Log Summary Table

File ID	Multiplier I	S	T	Sample Name / Misc Info	Date	Time
1CCV218	1.00	1.00	1.00	CCV20ug/ml SVMS7217 500uL+5ul IS S3516D	20 Oct 2016	12:46
1MBW02	1.00	1.00	1.00	131519,MBW, 785291,500uL+5ul IS S3516	20 Oct 2016	13:05
1LCSW02	1.00	1.00	1.00	131519,LCSW, 785292,500uL+5ul IS S3516	20 Oct 2016	13:25
785049	1.00	1.00	1.00	131519,785049,5 500uL+5ul IS S3516D	20 Oct 2016	13:44
785099	1.00	1.00	1.00	131519,785099,5 500uL+5ul IS S3516D	20 Oct 2016	14:04
1IB02	1.00	1.00	1.00	InstrumentBlank 500uL+5ul IS S3516D	20 Oct 2016	14:23
1MBS02	1.00	1.00	1.00	131574,MBS, 787946,500uL+5ul IS S3516	20 Oct 2016	14:43
1LCSS02	1.00	1.00	1.00	131574,LCSS, 787947,500uL+5ul IS S3516	20 Oct 2016	15:02
784515	1.00	1.00	1.00	131574,784515, 500uL+5ul IS S3516D	20 Oct 2016	15:22
784516	1.00	1.00	1.00	131574,784516, 500uL+5ul IS S3516D	20 Oct 2016	15:41
785308	1.00	1.00	1.00	131574,785308, 500uL+5ul IS S3516D	20 Oct 2016	16:01
785309	1.00	1.00	1.00	131574,785309, 500uL+5ul IS S3516D	20 Oct 2016	16:20
785310	1.00	1.00	1.00	131574,785310, 500uL+5ul IS S3516D	20 Oct 2016	16:40
784496	1.00	1.00	1.00	131574,784496, 500uL+5ul IS S3516D	20 Oct 2016	16:59
784496MS	1.00	1.00	1.00	131574,MSS784496, 787949,500uL+5ul IS S3516	20 Oct 2016	17:19
784496SD	1.00	1.00	1.00	131574,MSDS784496, 787950,500uL+5ul IS S3516	20 Oct 2016	17:38
1CCV219	1.00	1.00	1.00	CCV20ug/ml SVMS7217 500uL+5ul IS S3516D	20 Oct 2016	17:58

8B
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : Contract :
Project : Site : Location : Group :
Lab File ID (Standard): 1ICAL4.D Date Analyzed : 8 Sep 2016
Instrument ID : SVMS1 Time Analyzed : 16:19
GC Column : ID : (mm) Heated Purge (Y:N) :

	IS1 (DCB)		IS2 (NPT)		IS3 (ANT)	
	Area #	RT #	Area #	RT #	Area #	RT #
12 HOUR STD	46433	4.06	188439	5.71	102760	7.30
UPPER LIMIT	92866	4.56	376878	6.21	205520	7.80
LOWER LIMIT	23217	3.56	94220	5.21	51380	6.80
File ID Sample						
1CCV218 CCV20ug/m	49852	3.97	219613	5.62	124769	7.24
1CCV219 CCV20ug/m	61699	3.97	249284	5.62	146345	7.24
1LCSS02 131574,LC	48808	3.96	207304	5.62	116571	7.24
1LCSW02 131519,LC	46960	3.96	212656	5.61	111670	7.23
1MBS02 131574,MB	46993	3.96	208997	5.61	123231	7.23
1MBW02 131519,MB	51624	3.97	216963	5.62	123423	7.24
784496 131574,78	54223	3.96	226424	5.61	128930	7.23
784496MS 131574,MS	54756	3.97	201689	5.62	132487	7.23
784496SD 131574,MS	55271	3.97	212430	5.62	134551	7.23
784515 131574,78	48253	3.97	204586	5.61	120387	7.23
784516 131574,78	51482	3.97	209158	5.62	124995	7.24
785049 131519,78	47698	3.97	206409	5.62	118476	7.24
785099 131519,78	46336	3.97	206731	5.61	122348	7.23
785308 131574,78	48506	3.97	188017	5.61	121114	7.23
785309 131574,78	47829	3.97	214003	5.61	125457	7.23
785310 131574,78	45264	3.97	200392	5.62	124563	7.24

IS1 (DCB) = 14Diclbenzd4
IS2 (NPT) = Naphthalened8
IS3 (ANT) = Acenaphthened10

AREA UPPER LIMIT = 200% of internal standard area
AREA LOWER LIMIT = 50% of internal standard area
RT UPPER LIMIT = 0.5 minutes of internal standard RT
RT LOWER LIMIT = -0.5 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk
* Values outside of contract required QC limits

8B
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : Contract :
Project : Site : Location : Group :
Lab File ID (Standard): 1ICAL4.D Date Analyzed : 8 Sep 2016
Instrument ID : SVMS1 Time Analyzed : 16:19
GC Column : ID : (mm) Heated Purge (Y:N) :

	IS4 (PHN)		IS5 (CRY)		IS6 (PRY)	
	Area #	RT #	Area #	RT #	Area #	RT #
12 HOUR STD	179545	8.24	182954	9.65	193135	10.55
UPPER LIMIT	359090	8.74	365908	10.15	386270	11.05
LOWER LIMIT	89773	7.74	91477	9.15	96568	10.05
File ID Sample						
1CCV218 CCV20ug/m	221115	8.19	199437	9.58	201065	10.48
1CCV219 CCV20ug/m	258814	8.18	235837	9.59	218846	10.48
1LCSS02 131574,LC	211867	8.19	196617	9.58	197951	10.47
1LCSW02 131519,LC	214937	8.18	170863	9.58	21705 *	10.47
1MBS02 131574,MB	221808	8.18	197065	9.58	196158	10.48
1MBW02 131519,MB	224074	8.18	202619	9.58	202108	10.47
784496 131574,78	231257	8.18	216674	9.59	184479	10.48
784496MS 131574,MS	240659	8.18	225033	9.59	194640	10.48
784496SD 131574,MS	247980	8.18	227108	9.59	194033	10.48
784515 131574,78	211395	8.18	207137	9.58	200050	10.48
784516 131574,78	222093	8.18	210126	9.58	202794	10.48
785049 131519,78	210797	8.19	188488	9.58	193634	10.47
785099 131519,78	217653	8.18	195181	9.58	196705	10.48
785308 131574,78	215512	8.18	193285	9.58	153539	10.48
785309 131574,78	231005	8.18	211932	9.59	189886	10.48
785310 131574,78	230250	8.18	208869	9.58	184051	10.48

IS4 (PHN) = Phenanthrd10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = 200% of internal standard area
AREA LOWER LIMIT = 50% of internal standard area
RT UPPER LIMIT = 0.5 minutes of internal standard RT
RT LOWER LIMIT = -0.5 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk
* Values outside of contract required QC limits

SEMI - VOLATILE ORGANIC ANALYSIS
SAMPLE DATA
DOCUMENTS

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\784783.D Vial: 25
Acq On : 19 Oct 2016 23:06 Operator: JJY
Sample : 131383,784783, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 13:53:31 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.966	152	47327	20.00	ug/mL	0.00
21) Naphthalened8	5.617	136	200696	20.00	ug/mL	0.00
39) Acenaphthened10	7.237	164	113947	20.00	ug/mL	0.00
63) Phenanthrd10	8.183	188	204787	20.00	ug/mL	0.00
75) Chrysene-d12	9.584	240	184272	20.00	ug/mL	0.00
86) Perylene-d12	10.476	264	164168	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.830	112	68719	66.08	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 66.08%			
7) SURRPhenol-d5	3.614	99	78494	59.24	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 59.24%			
22) SURRNitrbenzened5	4.625	82	45209	71.27	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 71.27%			
44) SURR2Flbiphenyl	6.742	172	129450	82.09	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 82.09%			
62) SURR246Tribrphenl	7.757	330	23042	44.36	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 44.36%			
78) SURRTerphenyl-d14	8.970	244	132907	90.03	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 90.03%			
Target Compounds						Qvalue
13) Benzyl alcoho	4.202	108	315	0.7467	ug/mL#	58
30) Benzoic acid	5.356	122	3885	4.0542	ug/mL	78
37) 2Methylnaphth	6.404	142	1126	0.1588	ug/mL#	62
38) 1Methylnaphth	6.495	141	691	0.1131	ug/mL	91
45) 2Clnaphthalen	6.873	162	2593	0.3729	ug/mL#	42
46) 2Nitroaniline	6.870	65	2565	1.3174	ug/mL#	19
47) Acnaphthylene	7.131	152	524	0.0443	ug/mL	80
48) Dimethylphtha	7.066	163	919	0.1135	ug/mL	97
51) 3Nitroaniline	7.237	138	100	0.0562	ug/mL#	1
53) Dibenzofuran	7.461	168	2678	0.2578	ug/mL#	40
54) 24Dinitrotolu	7.384	165	311	0.1297	ug/mL#	81
55) 4-Nitrophenol	7.367	65	4017	2.5706	ug/mL#	17
60) Diethylphthal	7.541	149	4598	0.5526	ug/mL	94
61) 4Nitroaniline	7.541	138	818	0.4709	ug/mL#	52
65) Ntrsdiphlam&Diphlam	7.683	169	210	0.0362	ug/mL#	67
66) Azobenz&12Diphlhyd	7.754	182	4259	2.2969	ug/mL#	1
70) Phenanthrene	8.194	178	1661	0.1485	ug/mL	86
71) Anthracene	8.194	178	2037	0.1777	ug/mL	91
73) Dinbtylphthal	8.461	149	6377	0.5138	ug/mL	97
77) Pyrene	8.896	202	1702	0.1492	ug/mL	77
79) Btylbzylphth	9.234	149	668	0.1333	ug/mL	88
84) bis2Ethlhxlph	9.581	149	3860	0.5256	ug/mL	92
87) B[b]fluoranth	10.240	252	1722	0.1692	ug/mL	91
88) B[k]fluoranth	10.240	252	1722	0.1802	ug/mL	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

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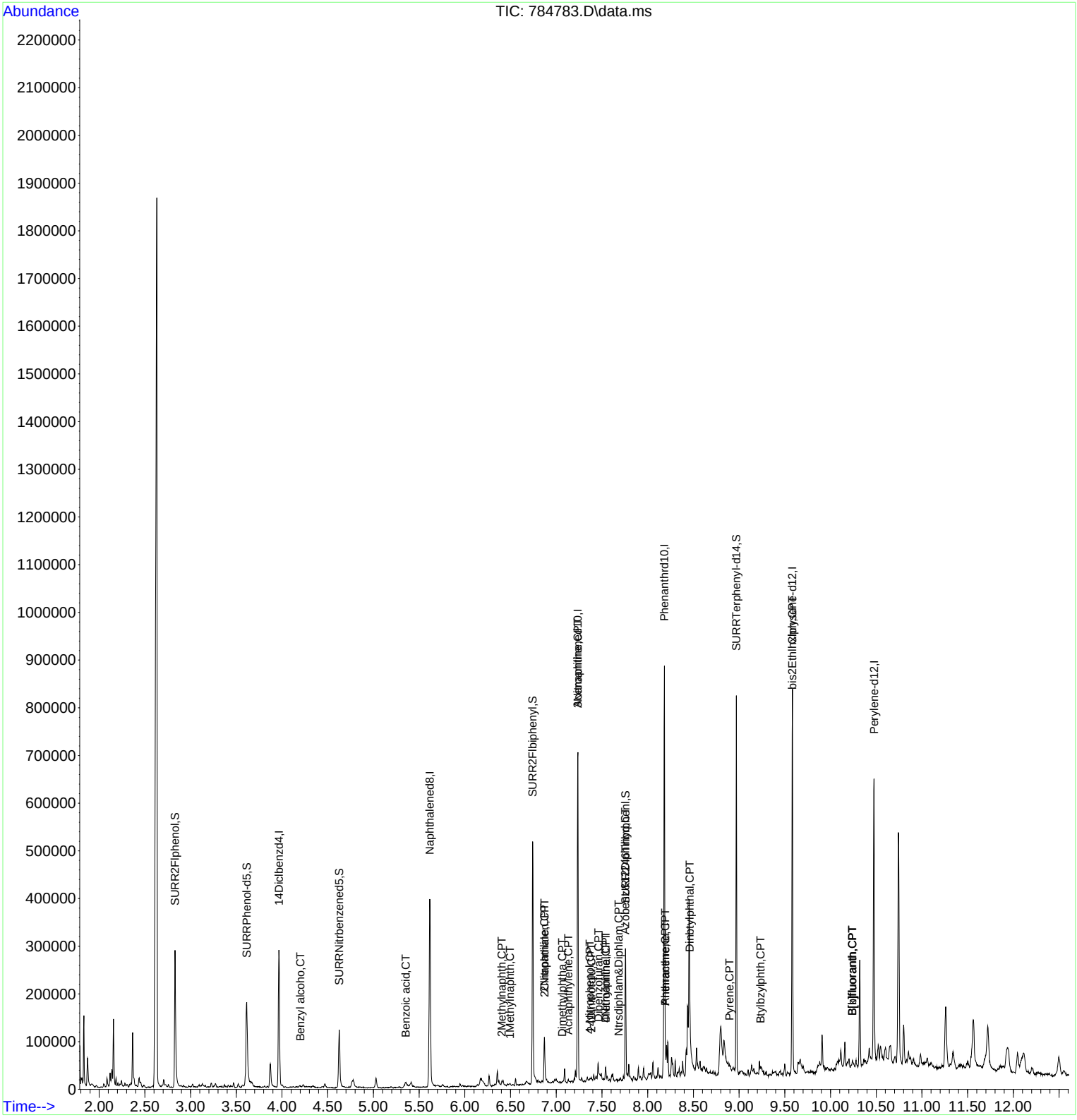
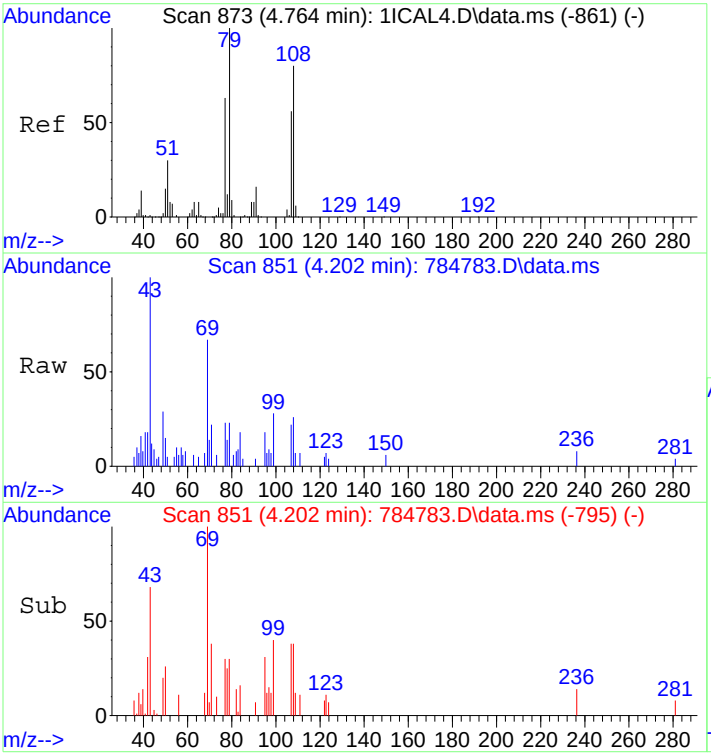
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 13:53:31 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

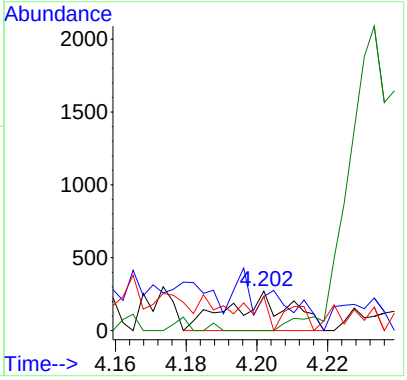


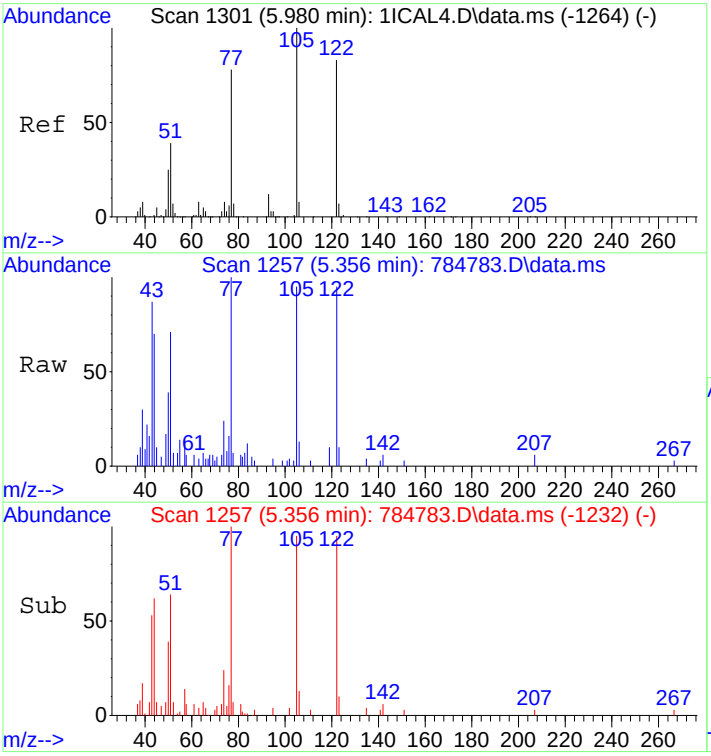


#13
Benzyl alcoho
Concen: 0.75 ug/mL
RT: 4.202 min Scan# 851
Delta R.T. 0.060 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:108 Resp: 315

Ion	Ratio	Lower	Upper
108	100		
79	68.4	91.8	151.8#
77	48.5	45.6	105.6
91	0.0	0.0	52.1

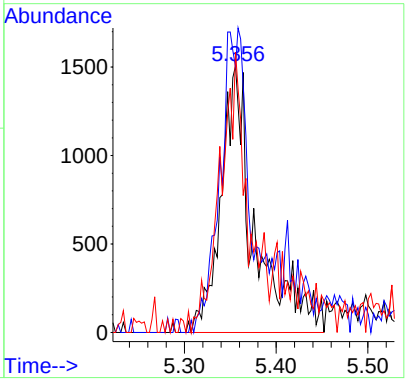


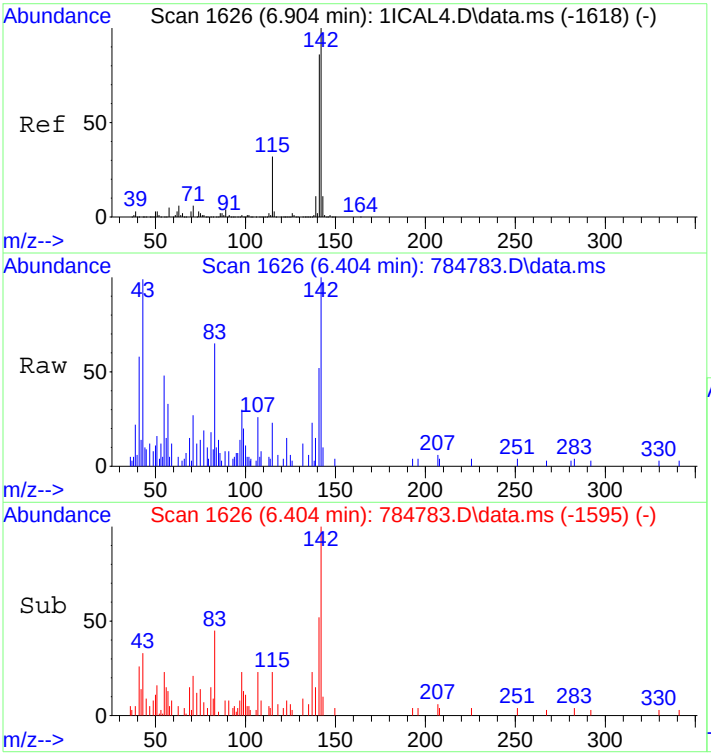


#30
Benzoic acid
Concen: 4.05 ug/mL
RT: 5.356 min Scan# 1257
Delta R.T. -0.080 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:122 Resp: 3885

Ion	Ratio	Lower	Upper
122	100		
105	99.6	95.2	155.2
77	108.4	57.8	117.8

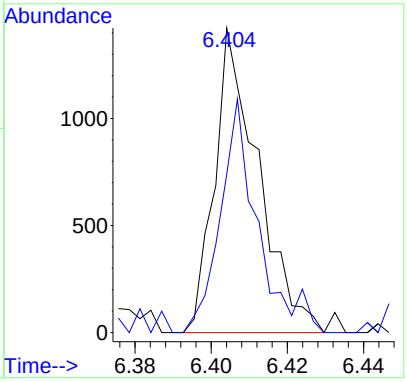


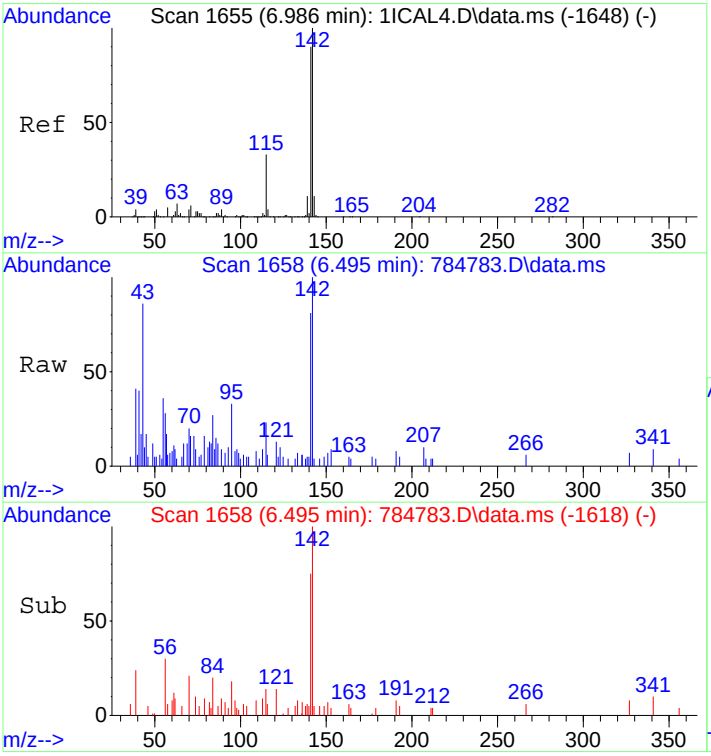


#37
2Methylnaphth
Concen: 0.16 ug/mL
RT: 6.404 min Scan# 1626
Delta R.T. -0.011 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:142 Resp: 1126

Ion	Ratio	Lower	Upper
142	100		
141	52.0	56.7	116.7#

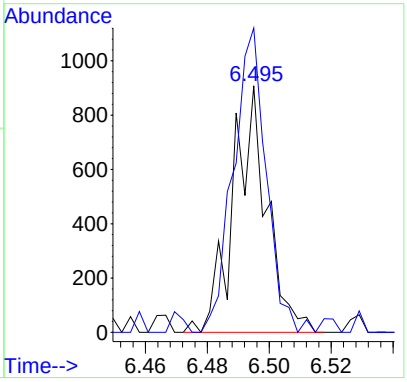


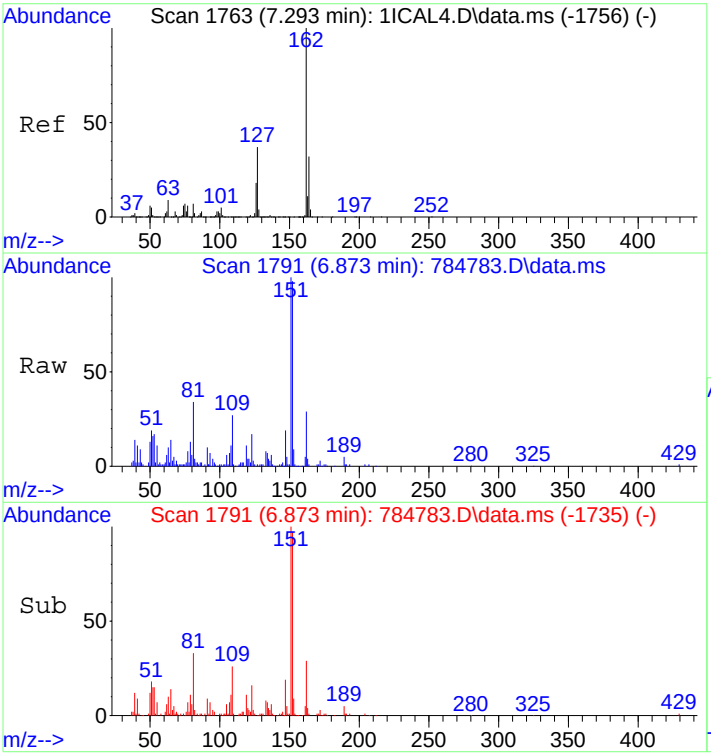


#38
1Methylnaphth
Concen: 0.11 ug/mL
RT: 6.495 min Scan# 1658
Delta R.T. -0.006 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:141 Resp: 691

Ion	Ratio	Lower	Upper
141	100		
142	118.3	78.9	138.9

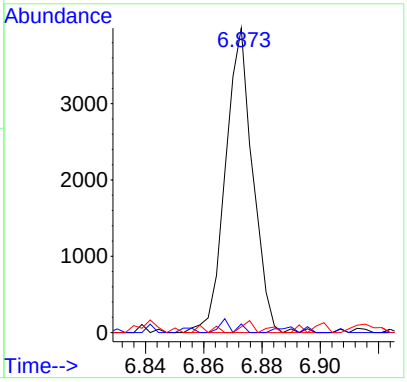


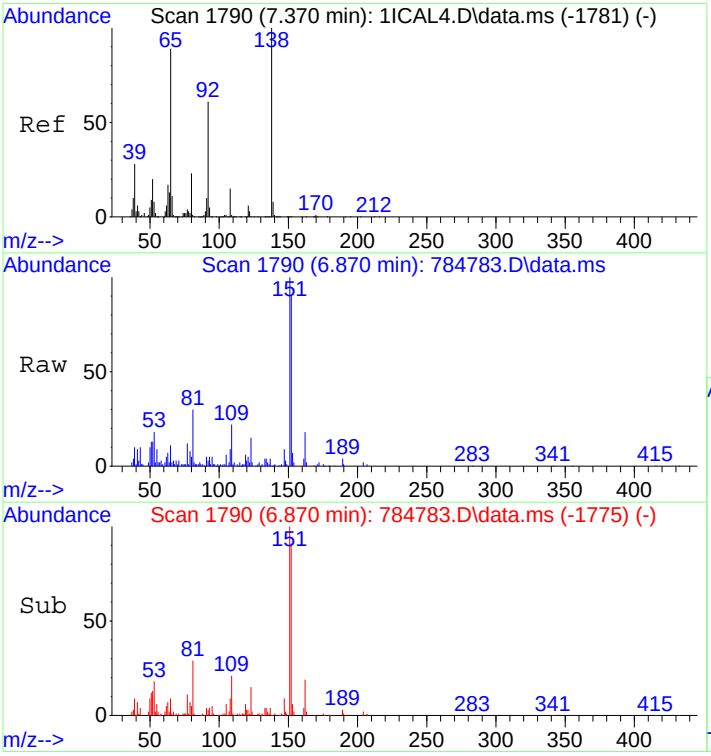


#45
2Clnaphthalen
Concen: 0.37 ug/mL
RT: 6.873 min Scan# 1791
Delta R.T. 0.045 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:162 Resp: 2593

Ion	Ratio	Lower	Upper
162	100		
164	2.8	2.4	62.4
127	1.9	9.8	69.8#

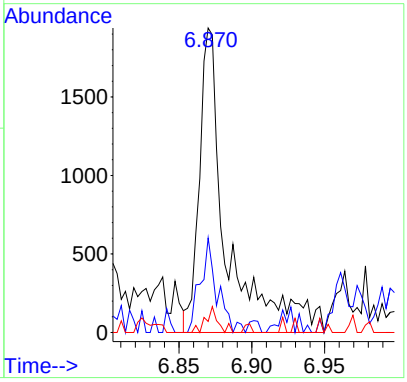


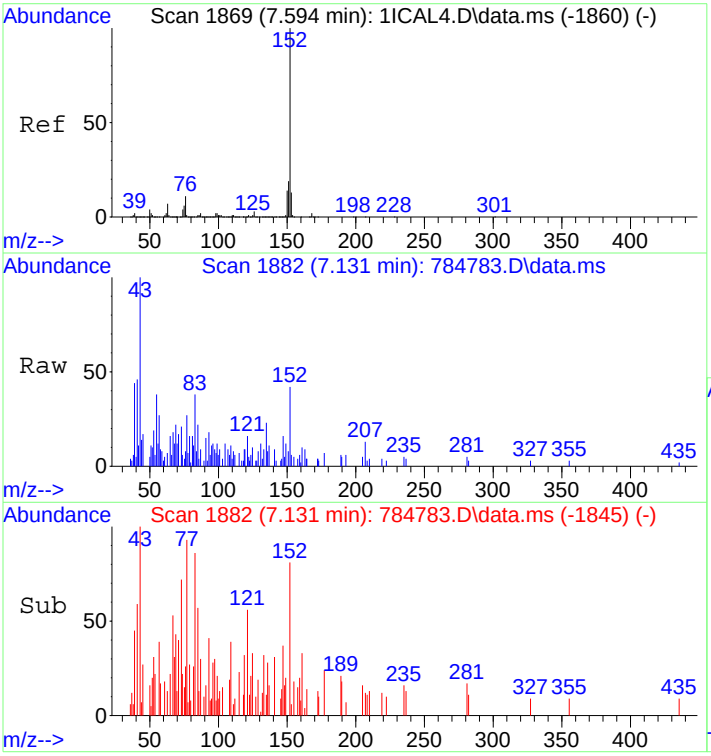


#46
2Nitroaniline
Concen: 1.32 ug/mL
RT: 6.870 min Scan# 1790
Delta R.T. -0.057 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion: 65 Resp: 2565

Ion	Ratio	Lower	Upper
65	100		
92	31.0	39.4	99.4#
138	3.6	83.7	143.7#

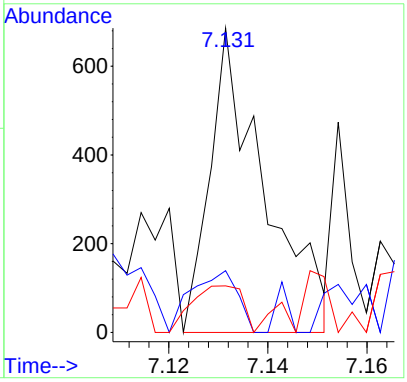


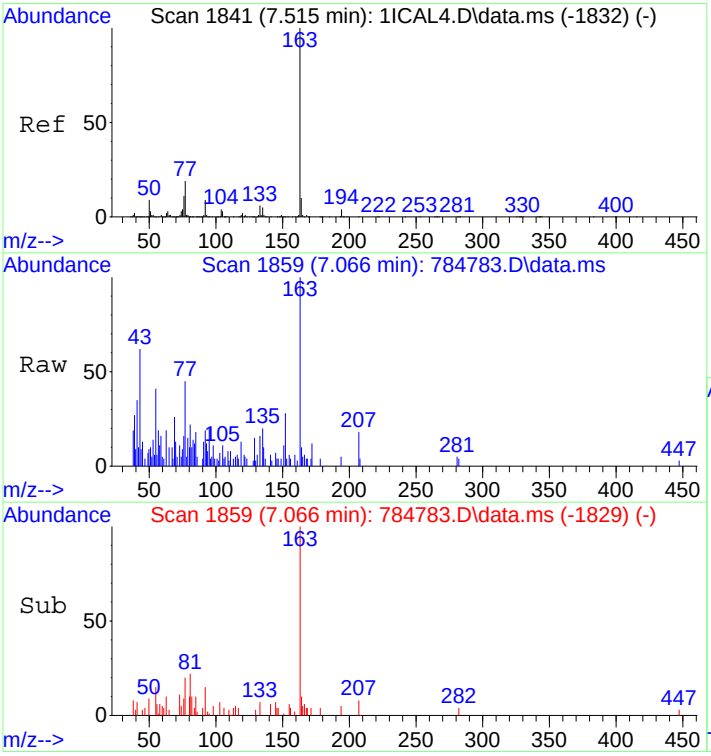


#47
Acnaphthylene
Concen: 0.04 ug/mL
RT: 7.131 min Scan# 1882
Delta R.T. -0.009 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:152 Resp: 524

Ion	Ratio	Lower	Upper
152	100		
151	7.9	0.0	49.3
153	8.2	0.0	43.8

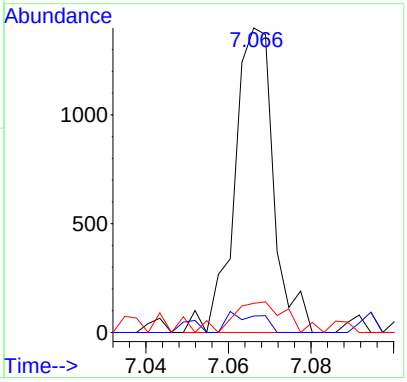


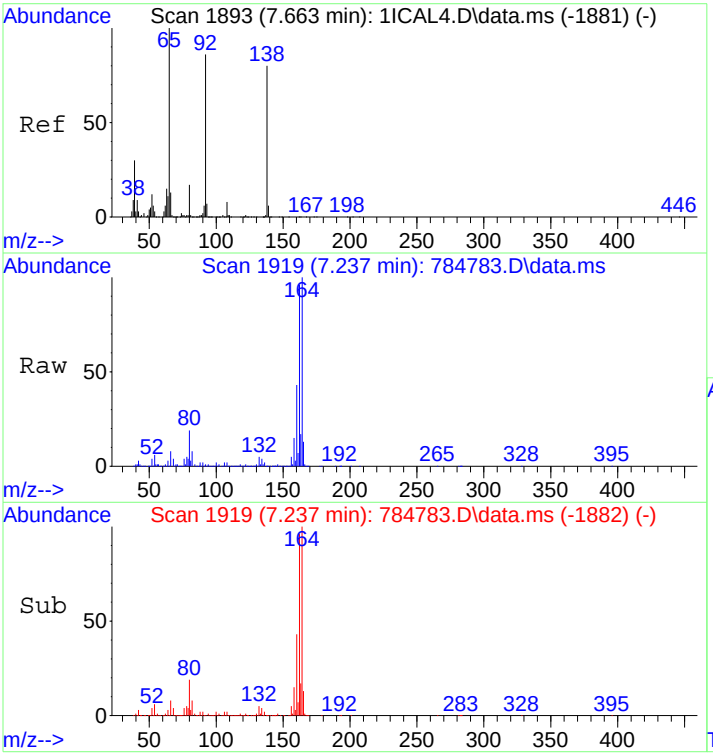


#48
Dimethylphtha
Concen: 0.11 ug/mL
RT: 7.066 min Scan# 1859
Delta R.T. -0.014 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:163 Resp: 919

Ion	Ratio	Lower	Upper
163	100		
194	5.4	0.0	33.9
164	9.6	0.0	40.5

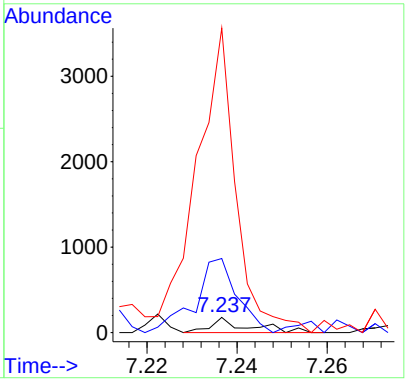


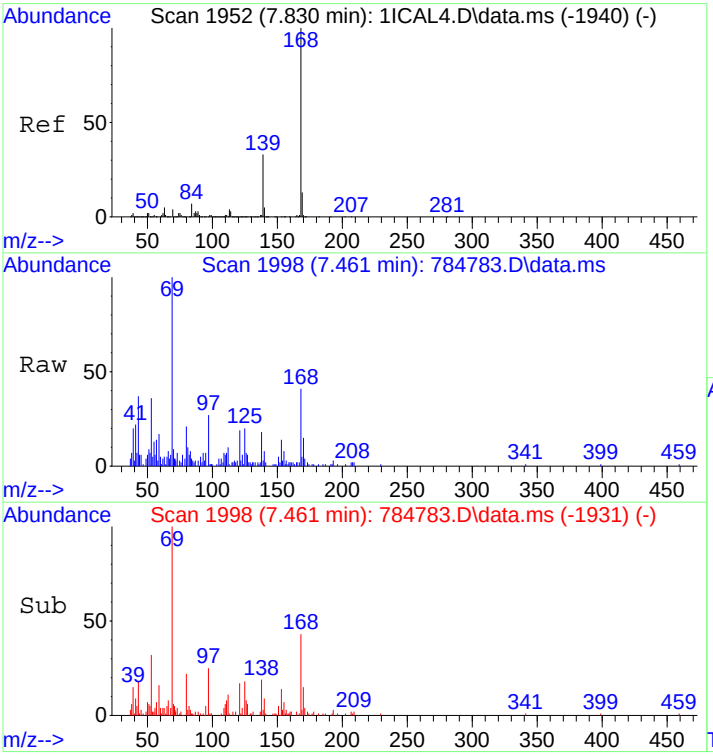


#51
3Nitroaniline
Concen: 0.06 ug/mL
RT: 7.237 min Scan# 1919
Delta R.T. 0.006 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:138 Resp: 100

Ion	Ratio	Lower	Upper
138	100		
92	487.1	72.2	132.2#
108	1921.9	0.0	30.3#

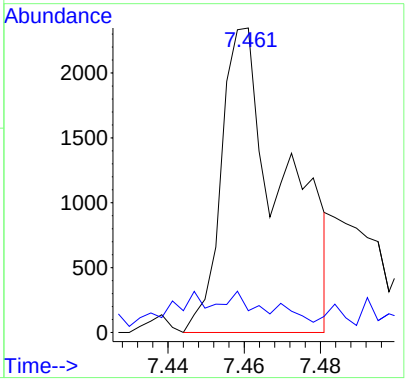


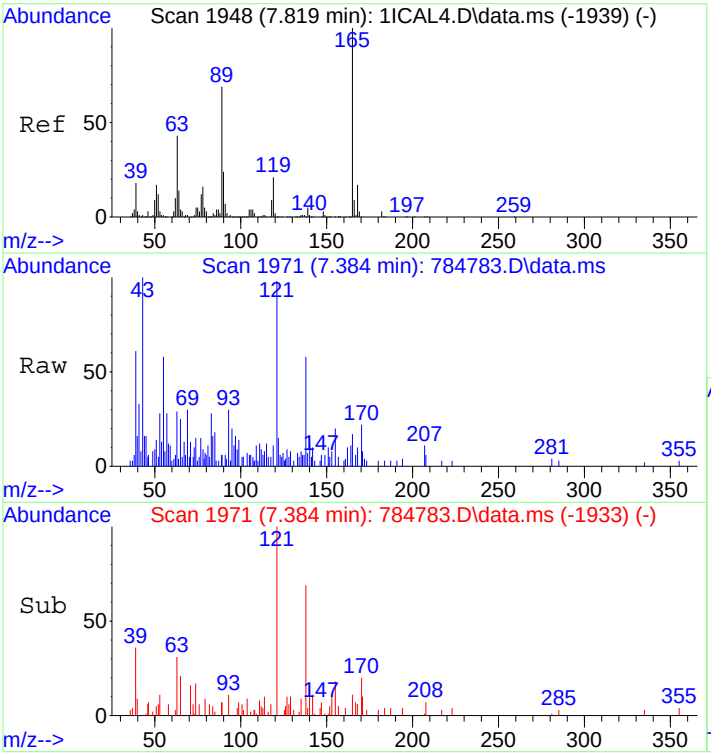


#53
Dibenzofuran
Concen: 0.26 ug/mL
RT: 7.461 min Scan# 1998
Delta R.T. 0.077 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:168 Resp: 2678

Ion	Ratio	Lower	Upper
168	100		
139	1.9	7.7	67.7#

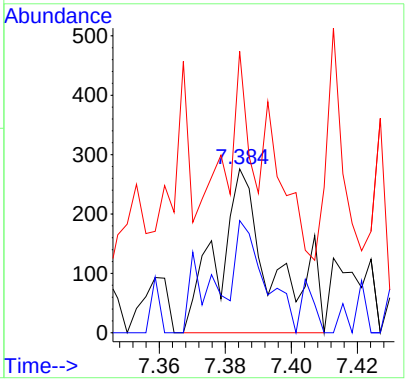


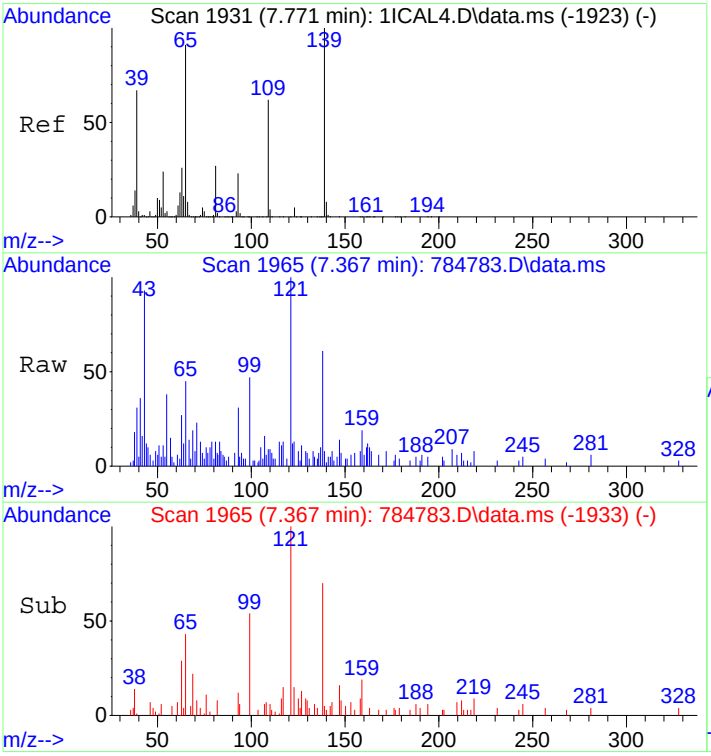


#54
24Dinitrotolu
Concen: 0.13 ug/mL
RT: 7.384 min Scan# 1971
Delta R.T. -0.006 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:165 Resp: 311

Ion	Ratio	Lower	Upper
165	100		
89	68.5	45.7	105.7
63	83.0	39.2	79.2#

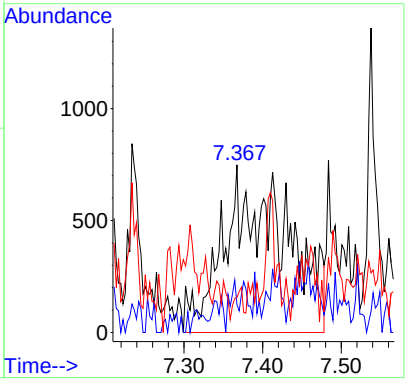


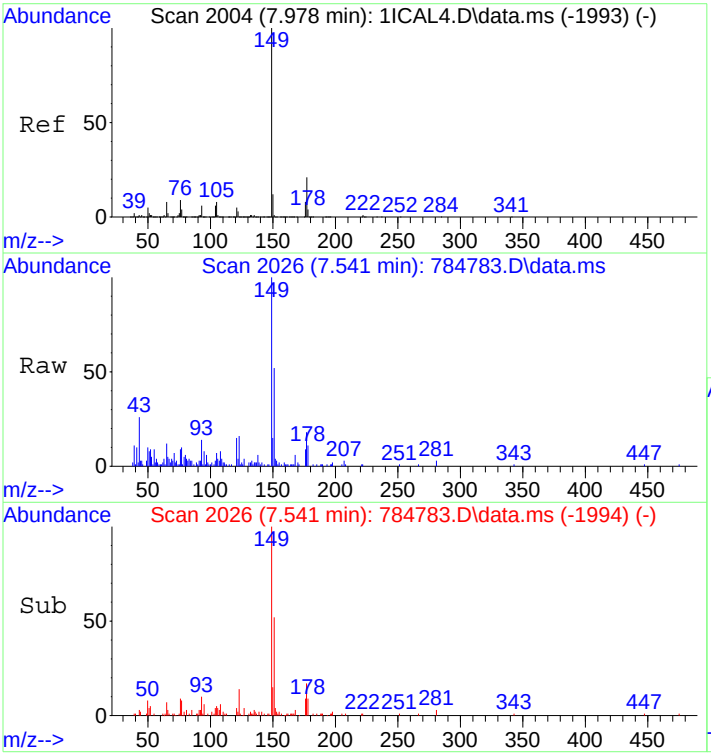


#55
4-Nitrophenol
Concen: 2.57 ug/mL
RT: 7.367 min Scan# 1965
Delta R.T. -0.009 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion: 65 Resp: 4017

Ion	Ratio	Lower	Upper
65	100		
139	16.7	73.5	133.5#
109	8.4	58.3	98.3#

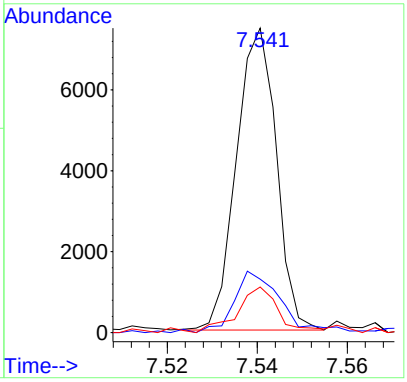


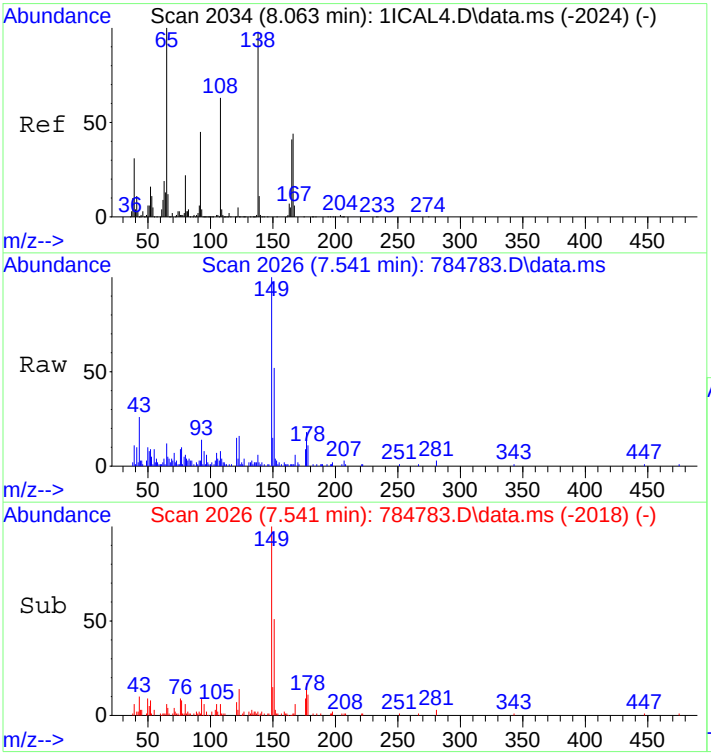


#60
Diethylphthal
Concen: 0.55 ug/mL
RT: 7.541 min Scan# 2026
Delta R.T. -0.009 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:149 Resp: 4598

Ion	Ratio	Lower	Upper
149	100		
177	16.6	0.0	49.5
150	14.4	0.0	42.0

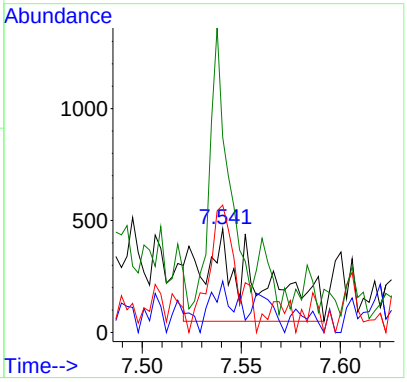


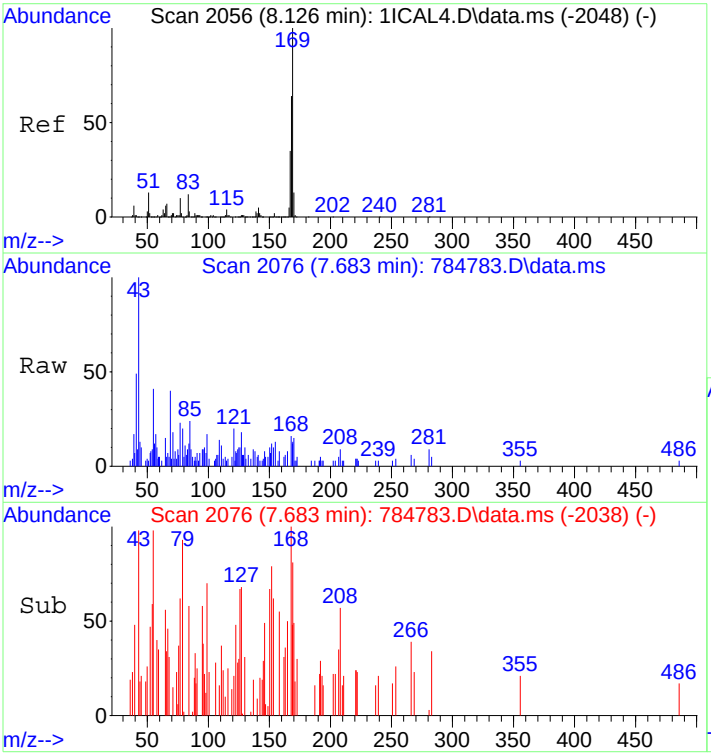


#61
4Nitroaniline
Concen: 0.47 ug/mL
RT: 7.541 min Scan# 2026
Delta R.T. -0.097 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:138 Resp: 818

Ion	Ratio	Lower	Upper
138	100		
92	35.1	12.7	72.7
108	137.8	46.1	106.1#
65	146.5	71.6	131.6#

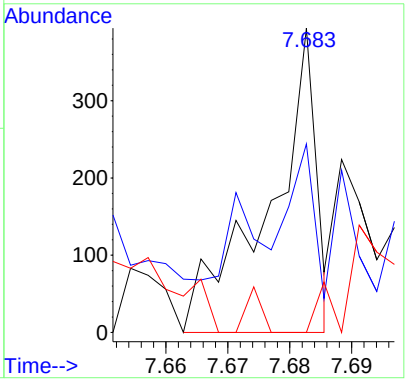


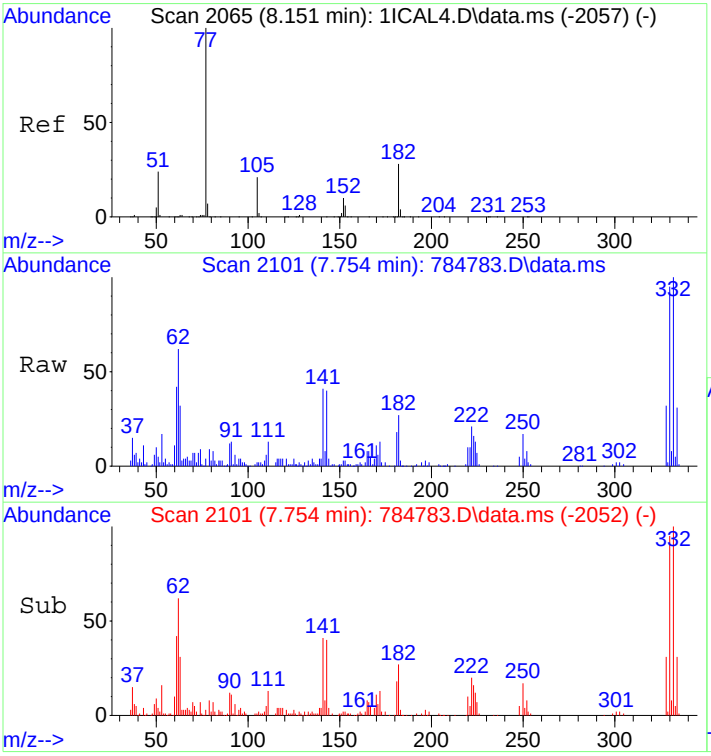


#65
Ntrsdiphlam&Diphlam
Concen: 0.04 ug/mL
RT: 7.683 min Scan# 2076
Delta R.T. -0.011 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:169 Resp: 210

Ion	Ratio	Lower	Upper
169	100		
168	50.8	35.5	95.5
167	0.0	5.2	65.2#

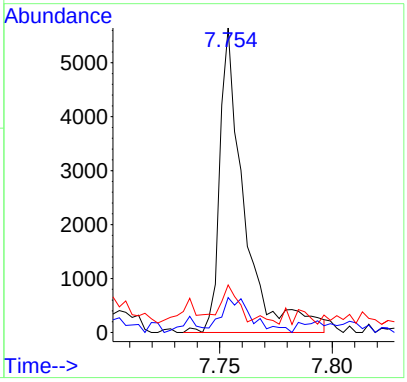


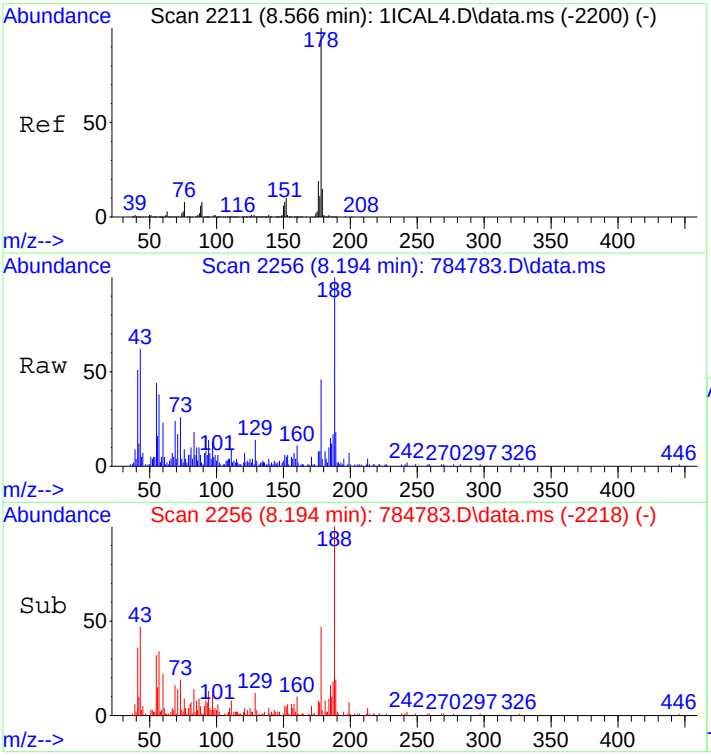


#66
Azobenz&12Diphlhyd
Concen: 2.30 ug/mL
RT: 7.754 min Scan# 2101
Delta R.T. 0.040 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:182 Resp: 4259

Ion	Ratio	Lower	Upper
182	100		
152	9.3	7.0	67.0
77	9.9	330.8	390.8#

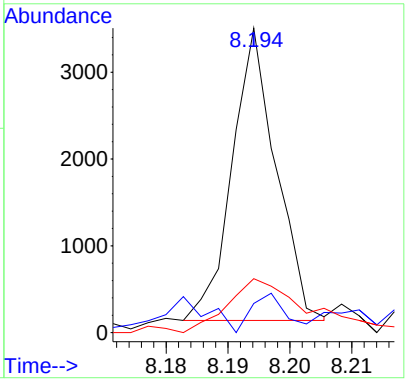


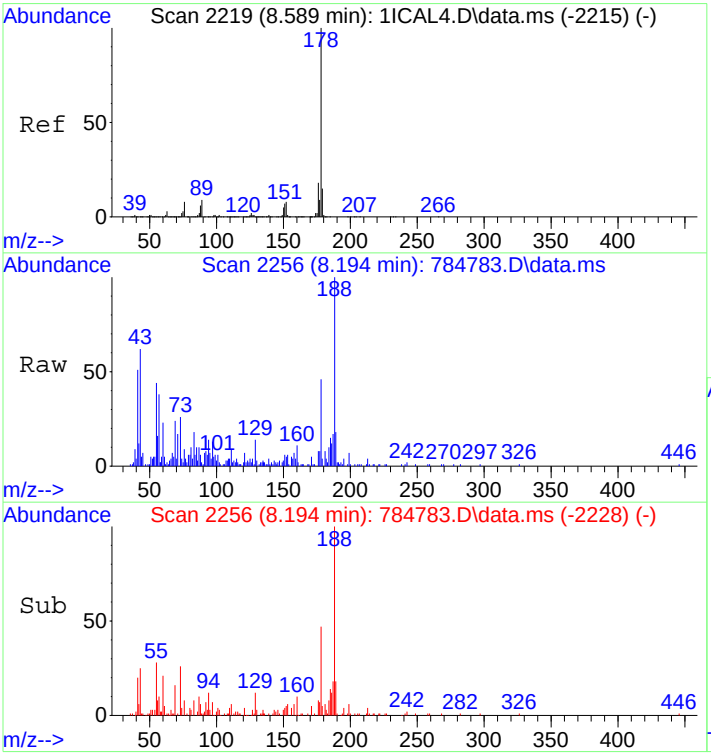


#70
Phenanthrene
Concen: 0.15 ug/mL
RT: 8.194 min Scan# 2256
Delta R.T. -0.006 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:178 Resp: 1661

Ion	Ratio	Lower	Upper
178	100		
179	3.1	0.0	45.3
176	18.4	0.0	49.4

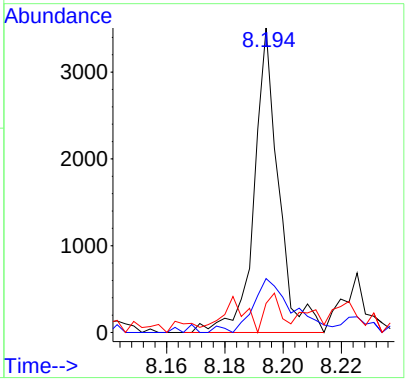


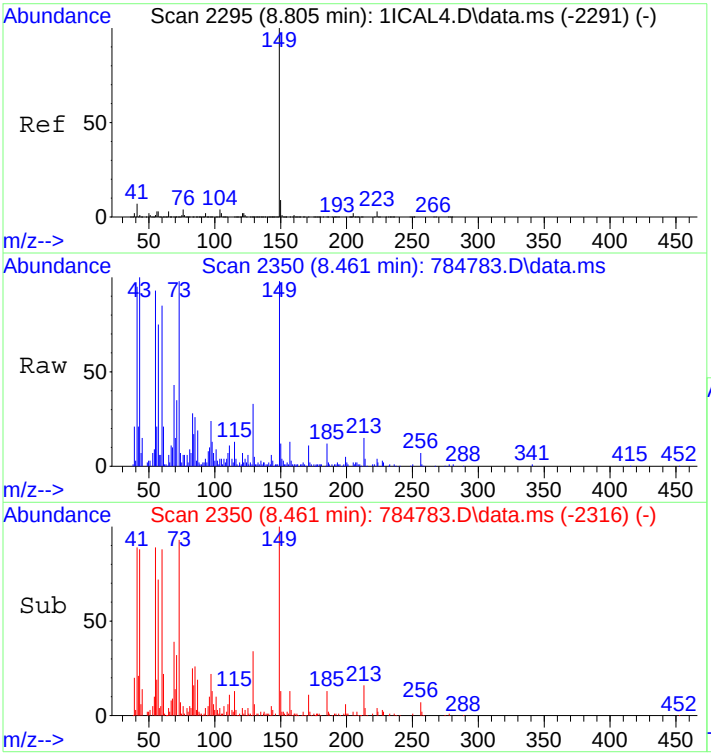


#71
Anthracene
Concen: 0.18 ug/mL
RT: 8.194 min Scan# 2256
Delta R.T. -0.034 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:178 Resp: 2037

Ion	Ratio	Lower	Upper
178	100		
176	17.7	0.0	47.3
179	7.0	0.0	44.6

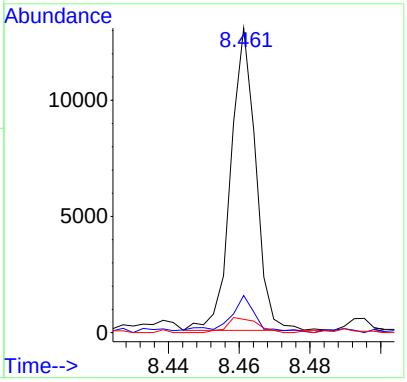


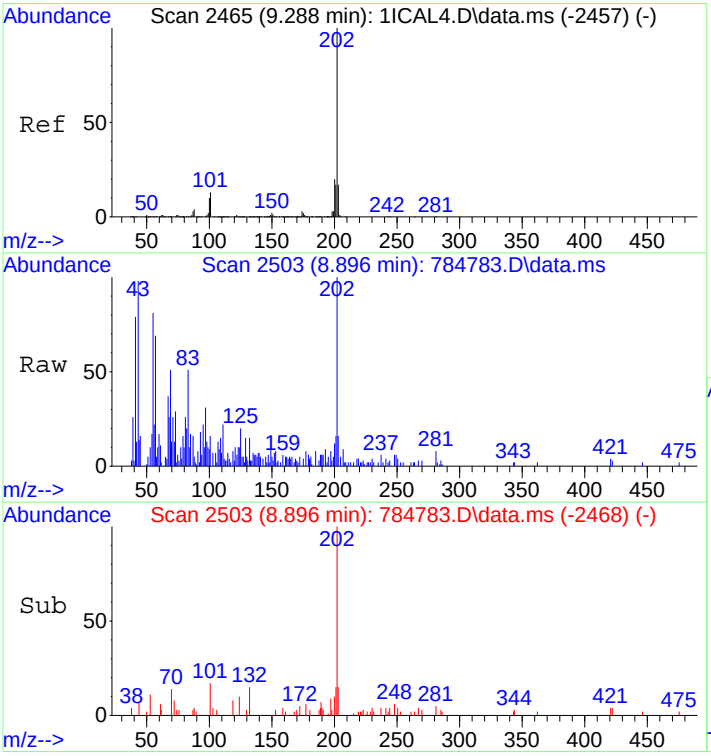


#73
Dinbtylphthal
Concen: 0.51 ug/mL
RT: 8.461 min Scan# 2350
Delta R.T. -0.003 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:149 Resp: 6377

Ion	Ratio	Lower	Upper
149	100		
150	11.4	0.0	39.8
104	4.4	0.0	34.5

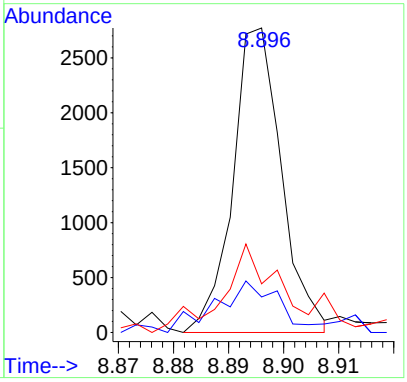


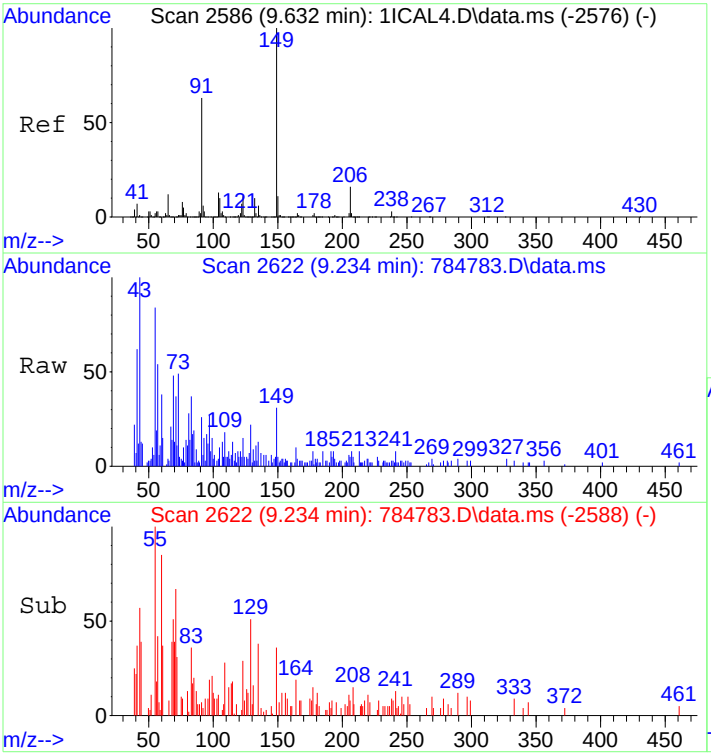


#77
Pyrene
Concen: 0.15 ug/mL
RT: 8.896 min Scan# 2503
Delta R.T. -0.000 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:202 Resp: 1702

Ion	Ratio	Lower	Upper
202	100		
200	8.9	0.0	49.6
203	7.4	0.0	47.1

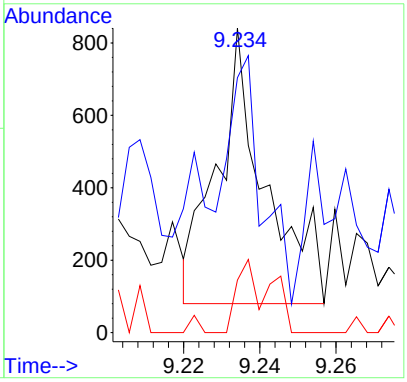


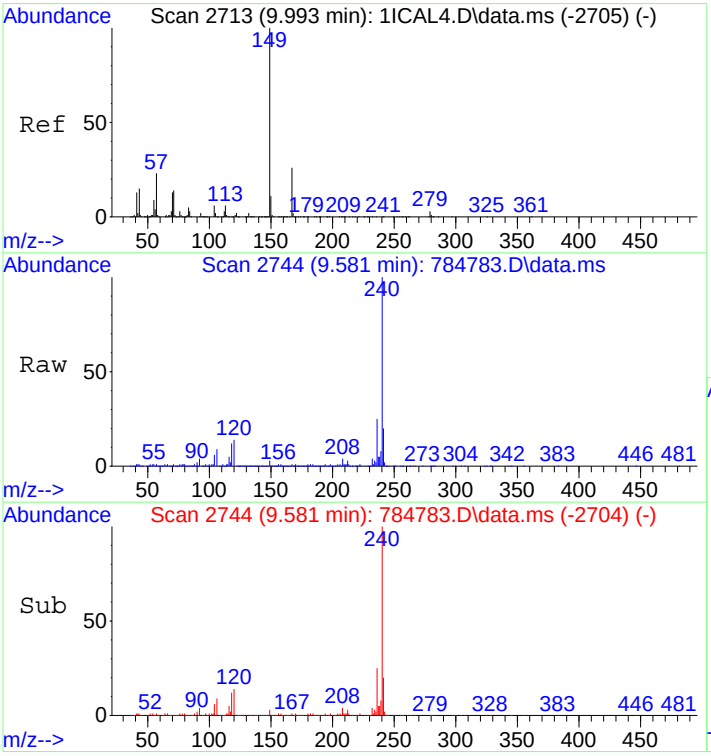


#79
Btylbzylphth
Concen: 0.13 ug/mL
RT: 9.234 min Scan# 2622
Delta R.T. -0.003 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:149 Resp: 668

Ion	Ratio	Lower	Upper
149	100		
91	53.2	33.5	93.5
206	19.1	0.0	46.3

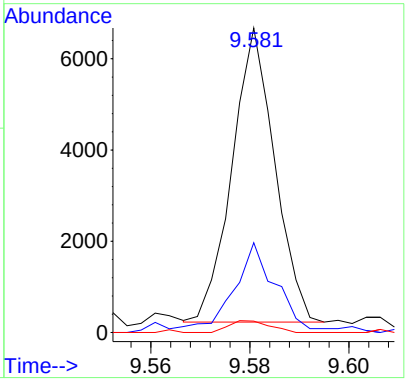


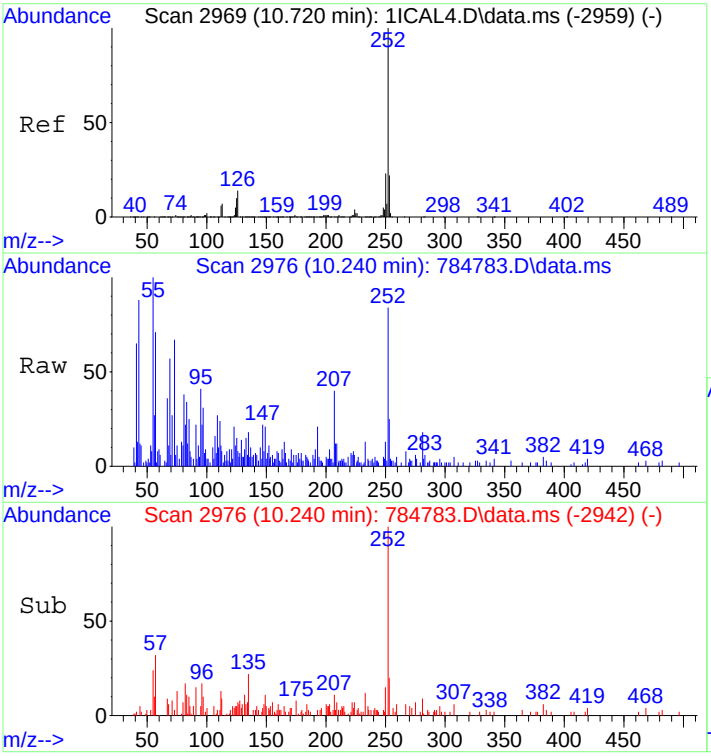


#84
bis2Ethlhxlph
Concen: 0.53 ug/mL
RT: 9.581 min Scan# 2744
Delta R.T. -0.000 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:149 Resp: 3860

Ion	Ratio	Lower	Upper
149	100		
167	29.2	0.0	54.6
279	3.9	0.0	33.1

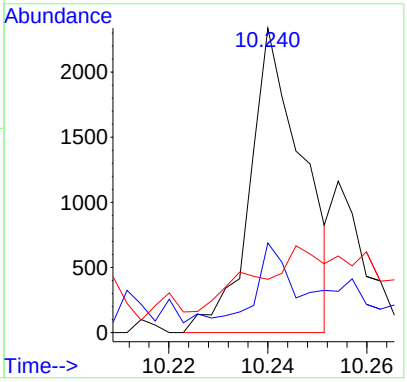


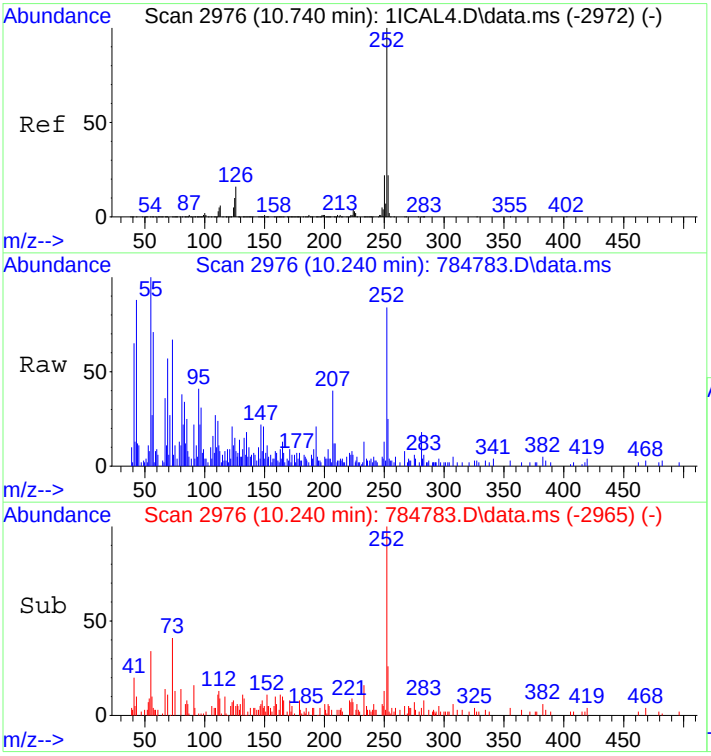


#87
B[b]fluoranth
Concen: 0.17 ug/mL
RT: 10.240 min Scan# 2976
Delta R.T. -0.003 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:252 Resp: 1722

Ion	Ratio	Lower	Upper
252	100		
253	26.2	0.0	50.7
125	10.7	0.0	42.5

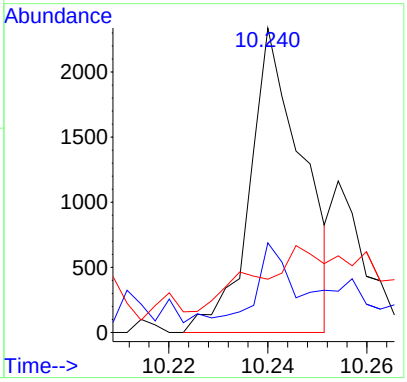




#88
B[k]fluoranth
Concen: 0.18 ug/mL
RT: 10.240 min Scan# 2976
Delta R.T. -0.020 min
Lab File: 784783.D
Acq: 19 Oct 16 11:06 pm

Tgt Ion:252 Resp: 1722

Ion	Ratio	Lower	Upper
252	100		
253	26.2	0.0	52.6
125	10.7	0.0	41.7



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\784852.D Vial: 26
Acq On : 19 Oct 2016 23:26 Operator: JJY
Sample : 131383,784852, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 14:43:58 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

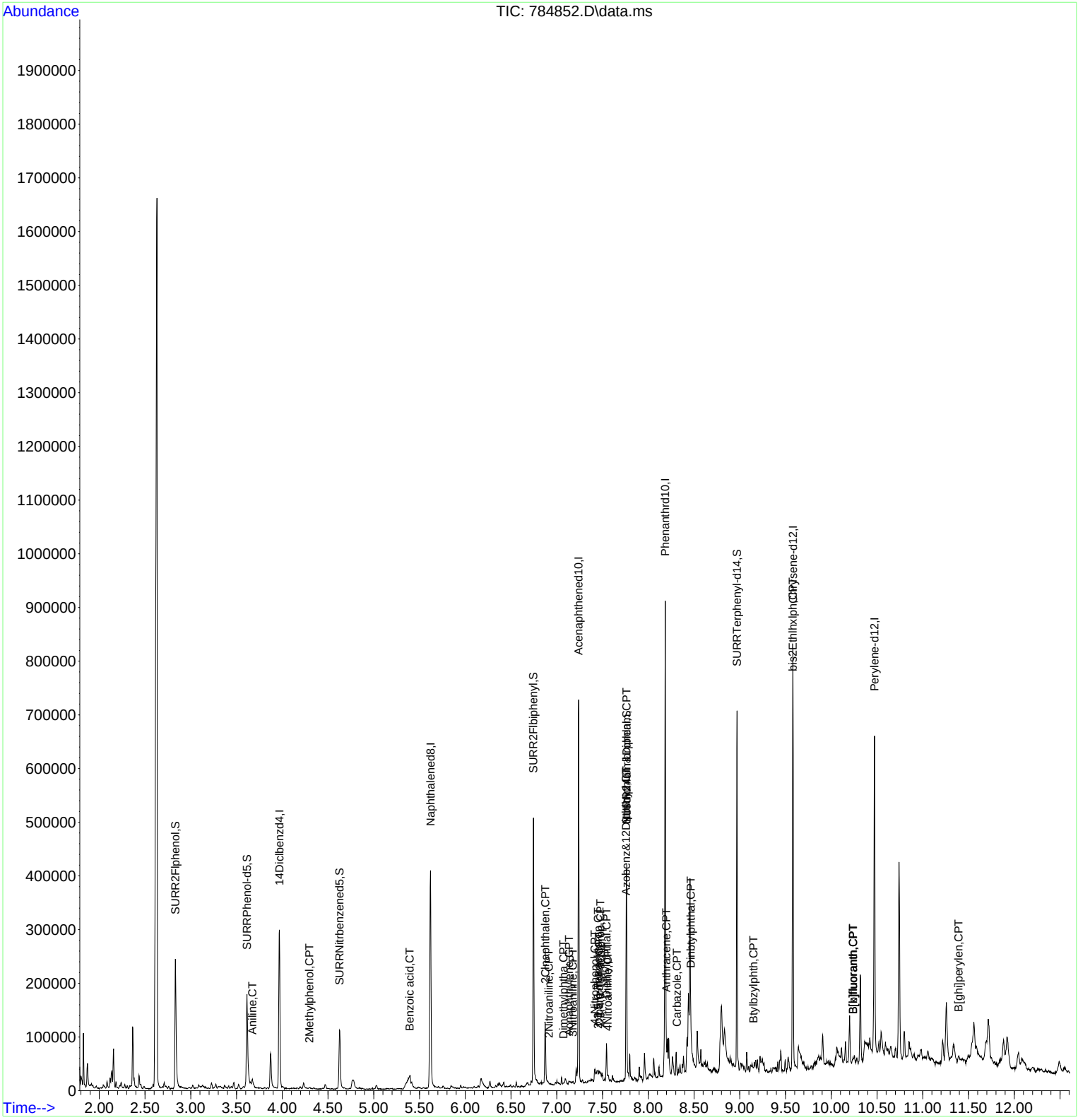
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.969	152	46414	20.00	ug/mL	0.00
21) Naphthalened8	5.620	136	189573	20.00	ug/mL	0.00
39) Acenaphthened10	7.239	164	111949	20.00	ug/mL	0.00
63) Phenanthrd10	8.186	188	198692	20.00	ug/mL	0.00
75) Chrysene-d12	9.581	240	178351	20.00	ug/mL	0.00
86) Perylene-d12	10.473	264	160216	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.832	112	60950	59.76	%REC	0.01
Spiked Amount 100.000	Range 20 - 110		Recovery = 59.76%			
7) SURRPhenol-d5	3.614	99	71067	54.69	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 54.69%			
22) SURRNitrbenzened5	4.625	82	39384	65.73	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 65.73%			
44) SURR2Flbiphenyl	6.745	172	110959	71.62	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 71.62%			
62) SURR246Tribrphenl	7.762	330	32860	64.39	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 64.39%			
78) SURRTerphenyl-d14	8.970	244	120757	84.51	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 84.51%			
Target Compounds						Qvalue
5) Aniline	3.673	93	252	0.0591	ug/mL#	64
15) 2Methylphenol	4.296	107	275	0.1146	ug/mL#	61
30) Benzoic acid	5.393	122	13394	8.7035	ug/mL	86
45) 2Clnaphthalen	6.876	162	2180	0.3191	ug/mL#	38
46) 2Nitroaniline	6.913	65	355	0.1856	ug/mL#	28
47) Acnaphthylene	7.134	152	507	0.0436	ug/mL	75
48) Dimethylphtha	7.072	163	517	0.0650	ug/mL	79
51) 3Nitroaniline	7.177	138	103	0.0590	ug/mL#	40
53) Dibenzofuran	7.461	168	1911	0.1872	ug/mL	90
55) 4-Nitrophenol	7.416	65	8280	5.3931	ug/mL#	72
56) 2,3,5,6-Tetrachlorop	7.450	232	640	0.3143	ug/mL	77
57) 2,3,4,6-Tetrachlorop	7.475	232	551	0.2428	ug/mL	95
60) Diethylphthal	7.544	149	13300	1.6269	ug/mL	95
61) 4Nitroaniline	7.558	138	949	0.5561	ug/mL#	61
65) Ntrsdiphlam&Diphlam	7.762	169	1032	0.1833	ug/mL#	37
66) Azobenz&12Diphlhyd	7.757	182	7402	4.1145	ug/mL#	1
71) Anthracene	8.197	178	1452	0.1306	ug/mL	83
72) Carbazole	8.314	167	622	0.0660	ug/mL	87
73) Dinbtylphthal	8.464	149	3448	0.2863	ug/mL	96
79) Btylbzylphth	9.149	149	515	0.1062	ug/mL	76
84) bis2Ethlhxlph	9.578	149	5631	0.7922	ug/mL	94
87) B[b]fluoranth	10.240	252	1519	0.1530	ug/mL	87
88) B[k]fluoranth	10.240	252	1519	0.1628	ug/mL	85
92) B[ghi]perylen	11.391	276	5083	0.5376	ug/mL	84

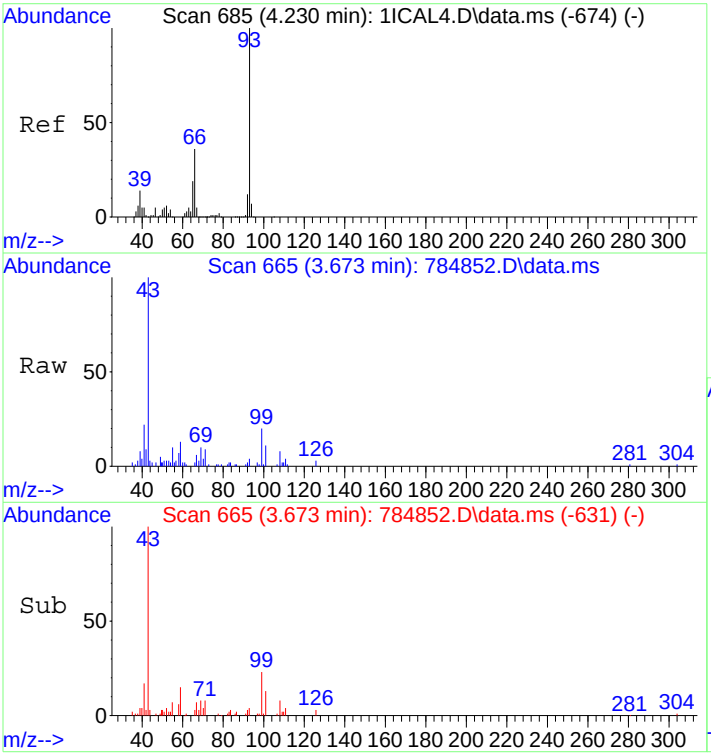
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\784852.D Vial: 26
Acq On : 19 Oct 2016 23:26 Operator: JJY
Sample : 131383,784852, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 14:43:58 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

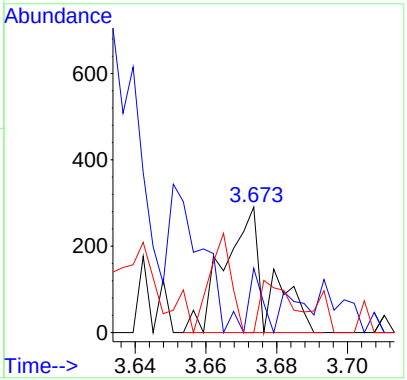


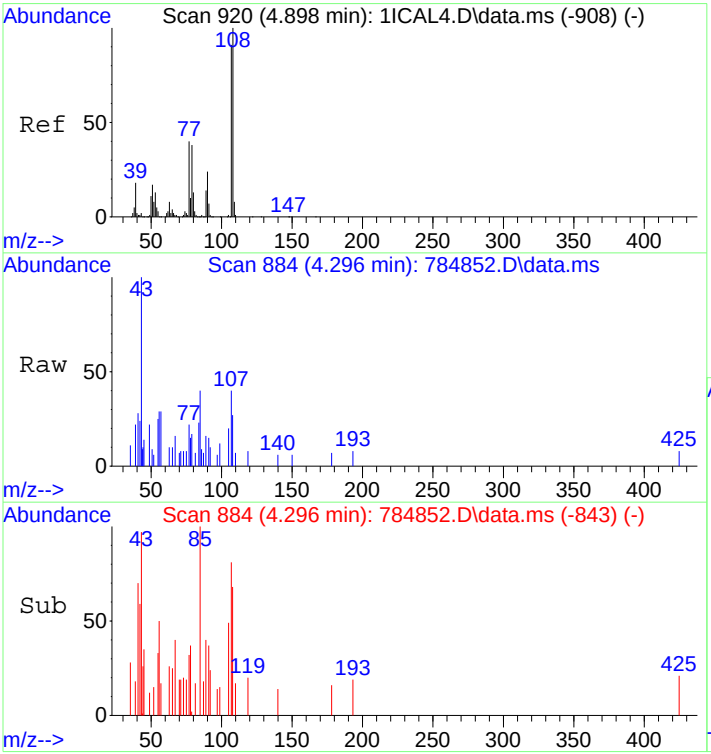


#5
Aniline
Concen: 0.06 ug/mL
RT: 3.673 min Scan# 665
Delta R.T. 0.045 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion: 93 Resp: 252

Ion	Ratio	Lower	Upper
93	100		
66	85.3	41.5	101.5
65	0.0	12.9	72.9#

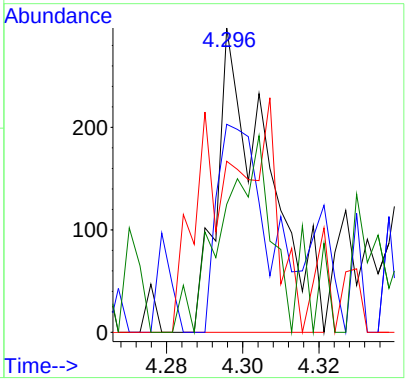


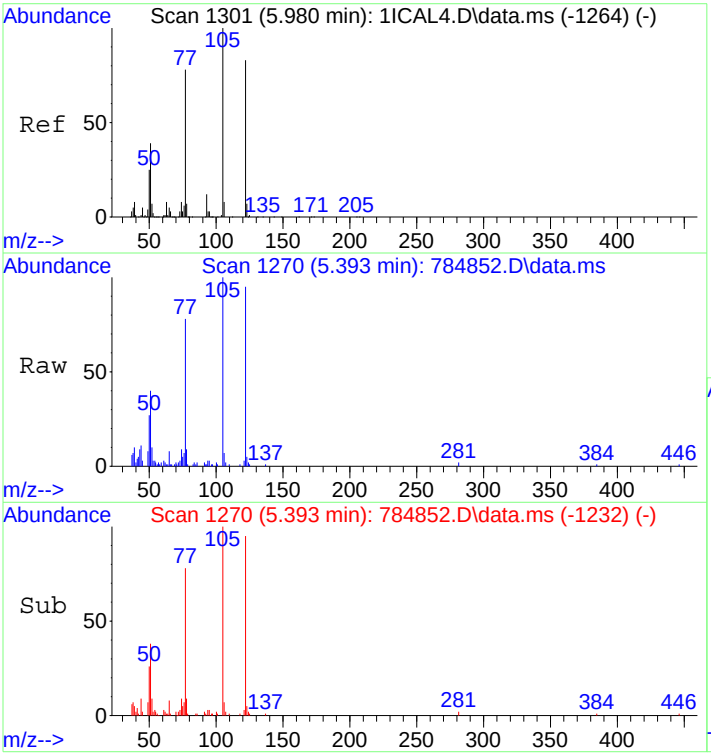


#15
2Methylphenol
Concen: 0.11 ug/mL
RT: 4.296 min Scan# 884
Delta R.T. 0.003 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:107 Resp: 275

Ion	Ratio	Lower	Upper
107	100		
108	68.4	81.7	141.7#
77	21.9	33.2	73.2#
79	26.6	23.5	63.5

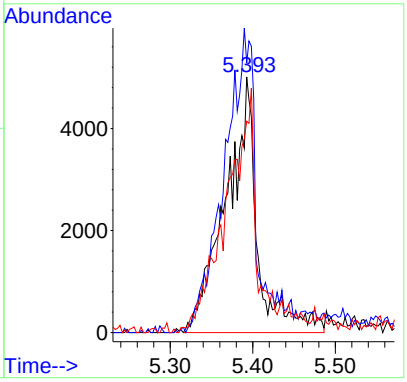


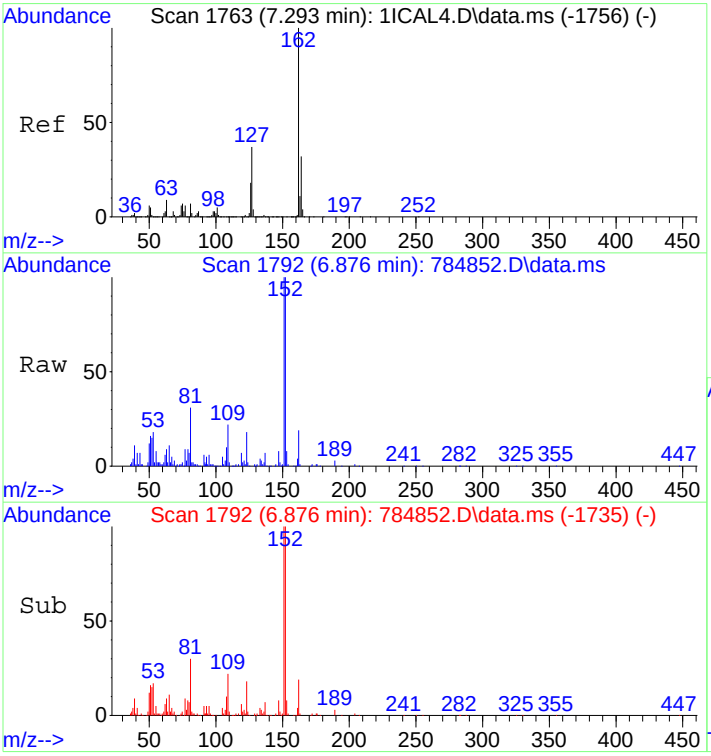


#30
Benzoic acid
Concen: 8.70 ug/mL
RT: 5.393 min Scan# 1270
Delta R.T. -0.043 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:122 Resp: 13394

Ion	Ratio	Lower	Upper
122	100		
105	103.4	95.2	155.2
77	80.7	57.8	117.8

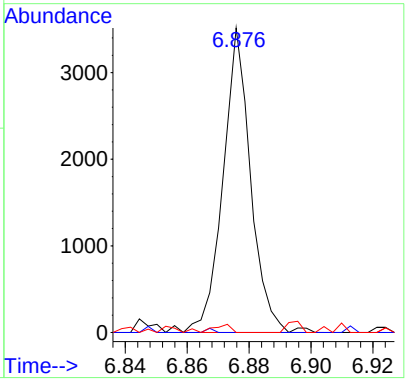


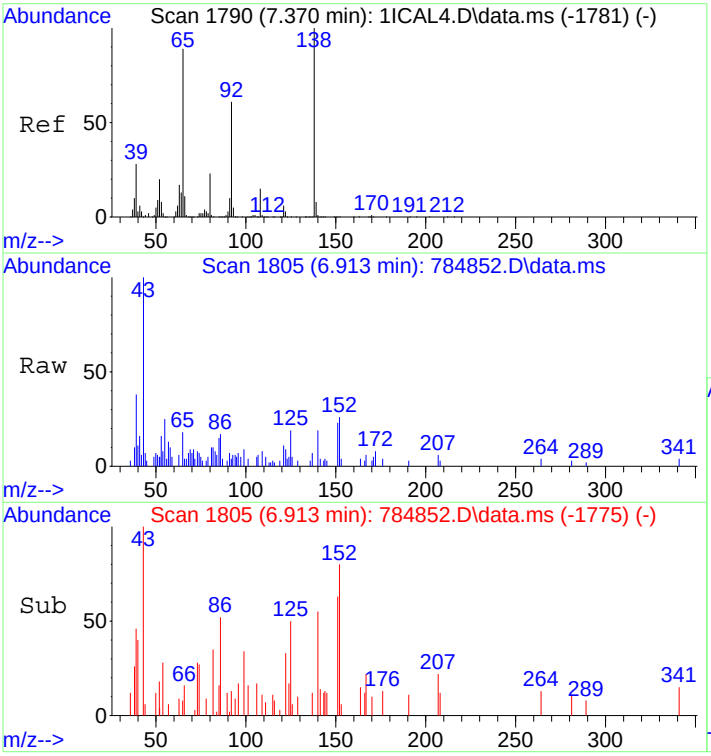


#45
2Clnaphthalen
Concen: 0.32 ug/mL
RT: 6.876 min Scan# 1792
Delta R.T. 0.048 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:162 Resp: 2180

Ion	Ratio	Lower	Upper
162	100		
164	0.0	2.4	62.4#
127	0.0	9.8	69.8#

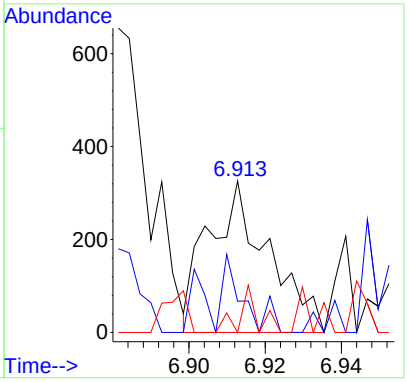


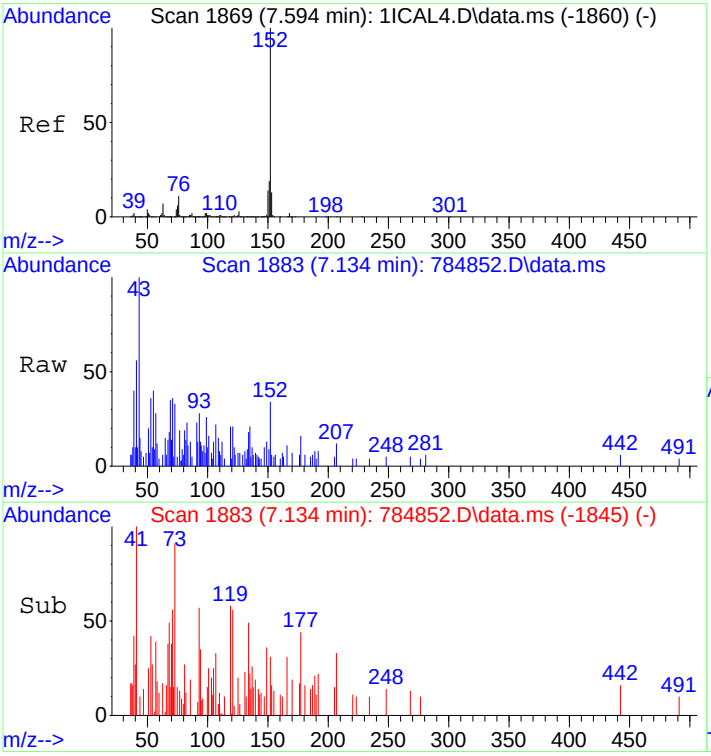


#46
2Nitroaniline
Concen: 0.19 ug/mL
RT: 6.913 min Scan# 1805
Delta R.T. -0.014 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion: 65 Resp: 355

Ion	Ratio	Lower	Upper
65	100		
92	55.8	39.4	99.4
138	0.0	83.7	143.7#

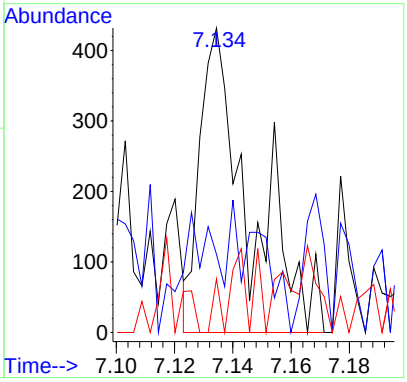


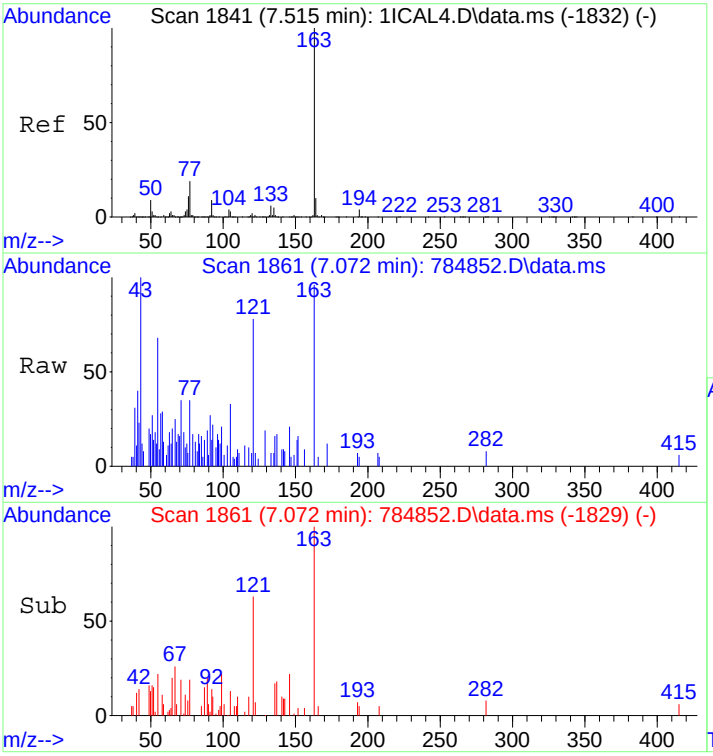


#47
Acnaphthylene
Concen: 0.04 ug/mL
RT: 7.134 min Scan# 1883
Delta R.T. -0.006 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:152 Resp: 507

Ion	Ratio	Lower	Upper
152	100		
151	6.0	0.0	49.3
153	5.8	0.0	43.8

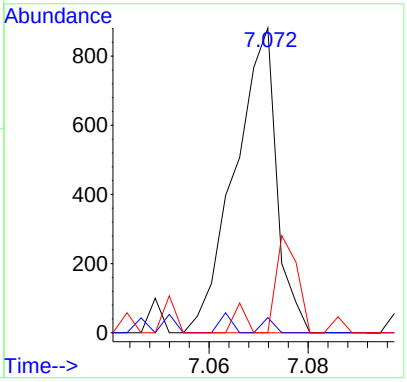


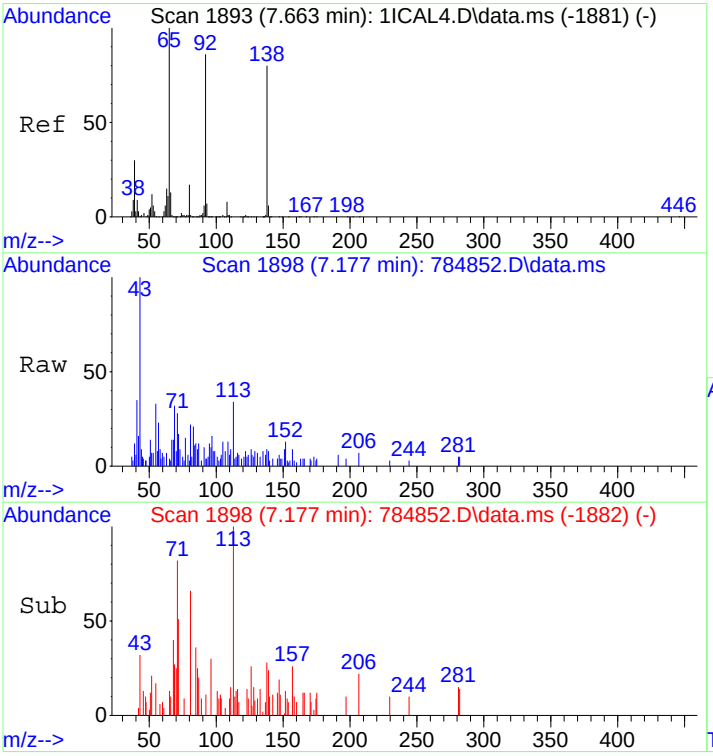


#48
Dimethylphtha
Concen: 0.06 ug/mL
RT: 7.072 min Scan# 1861
Delta R.T. -0.009 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:163 Resp: 517

Ion	Ratio	Lower	Upper
163	100		
194	5.0	0.0	33.9
164	0.0	0.0	40.5

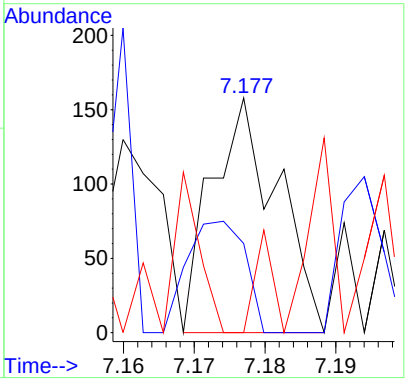


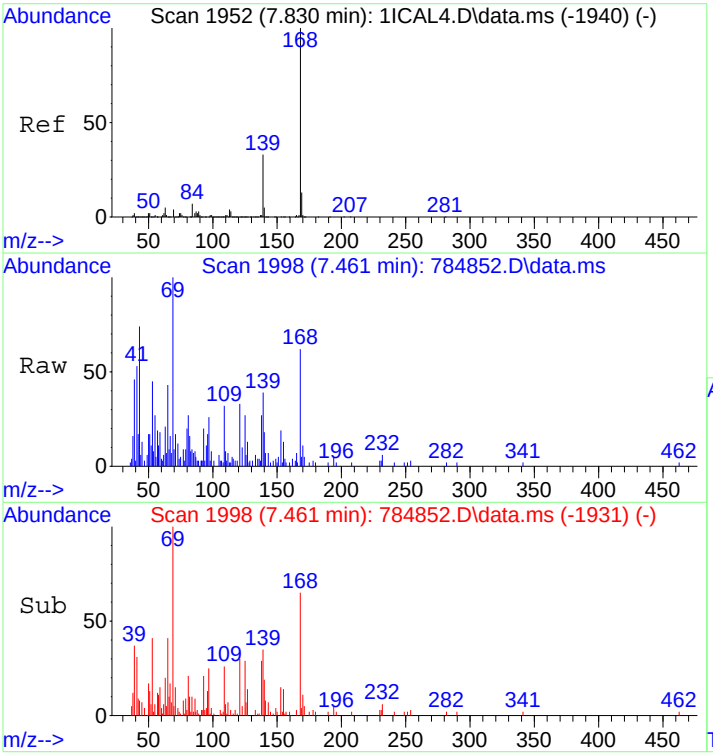


#51
3Nitroaniline
Concen: 0.06 ug/mL
RT: 7.177 min Scan# 1898
Delta R.T. -0.054 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:138 Resp: 103

Ion	Ratio	Lower	Upper
138	100		
92	38.0	72.2	132.2#
108	0.0	0.0	30.3

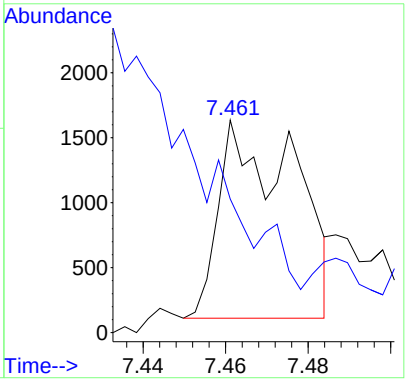


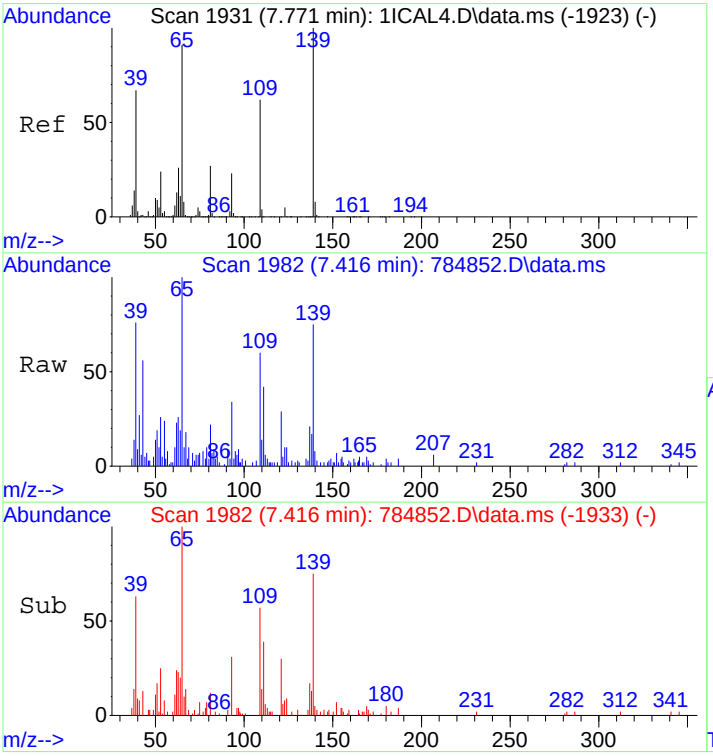


#53
Dibenzofuran
Concen: 0.19 ug/mL
RT: 7.461 min Scan# 1998
Delta R.T. 0.077 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:168 Resp: 1911

Ion	Ratio	Lower	Upper
168	100		
139	31.8	7.7	67.7

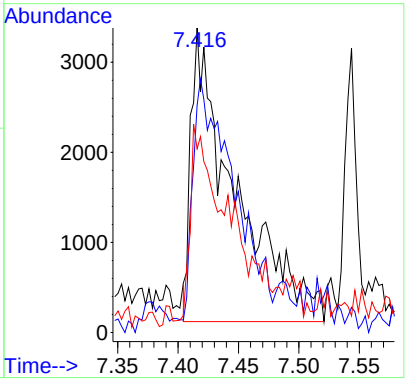


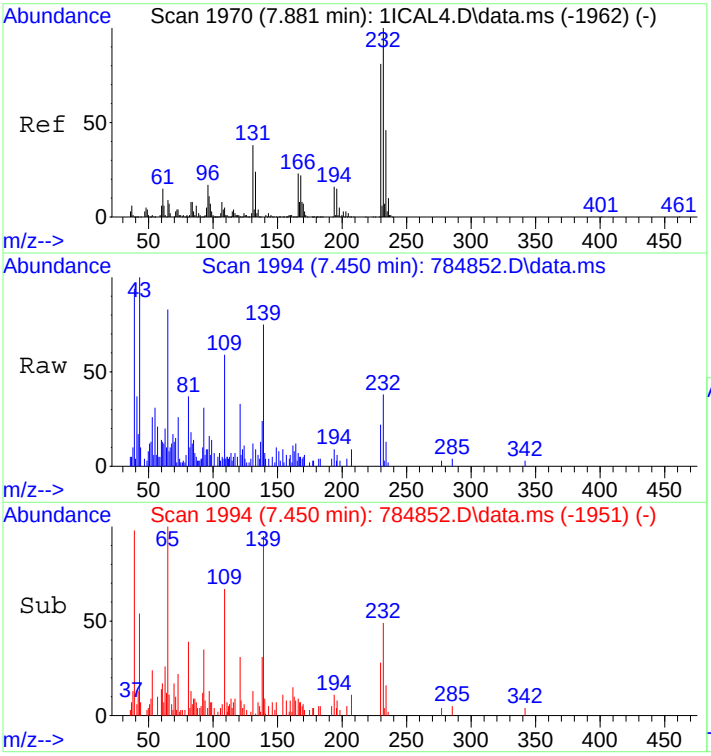


#55
4-Nitrophenol
Concen: 5.39 ug/mL
RT: 7.416 min Scan# 1982
Delta R.T. 0.040 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion: 65 Resp: 8280

Ion	Ratio	Lower	Upper
65	100		
139	73.2	73.5	133.5#
109	56.7	58.3	98.3#

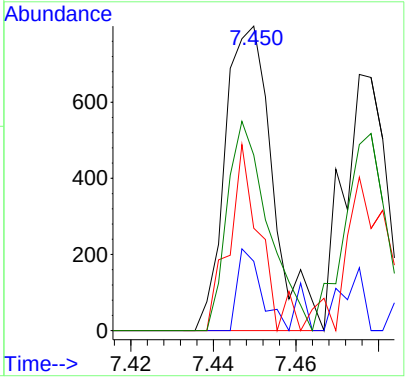


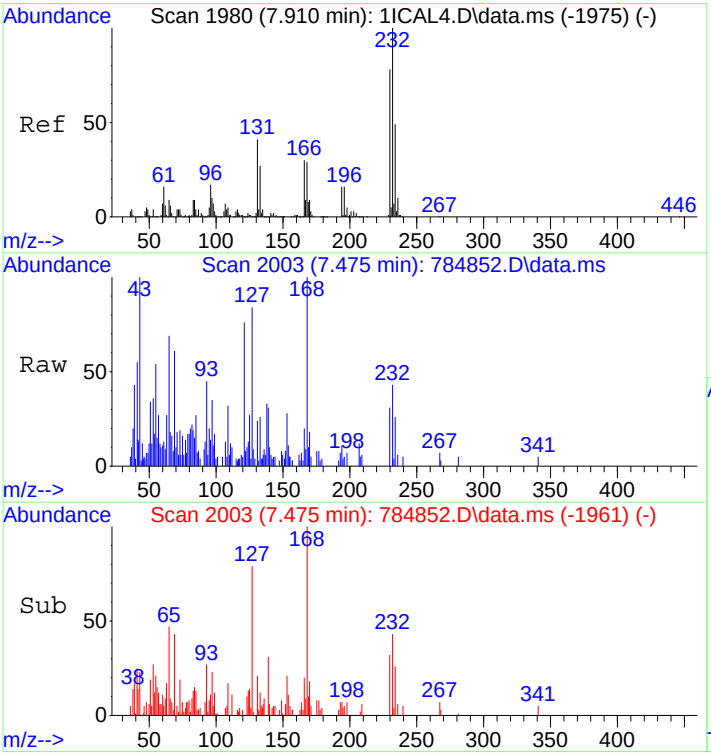


#56
2,3,5,6-Tetrachlorop
Concen: 0.31 ug/mL
RT: 7.450 min Scan# 1994
Delta R.T. 0.003 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:232 Resp: 640

Ion	Ratio	Lower	Upper
232	100		
194	21.1	0.0	46.4
234	31.1	17.0	77.0
230	53.4	45.0	105.0

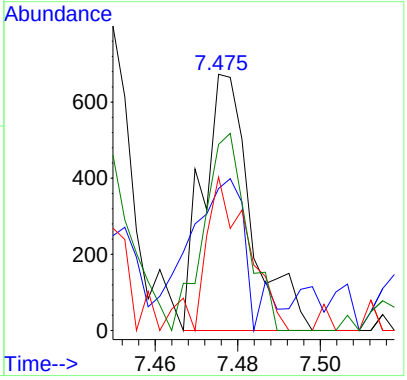


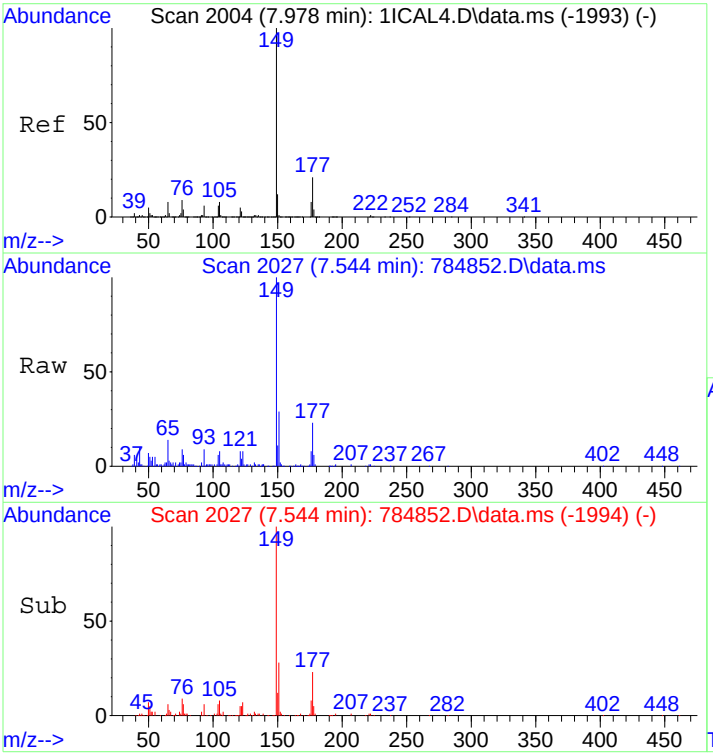


#57
2,3,4,6-Tetrachlorop
Concen: 0.24 ug/mL
RT: 7.475 min Scan# 2003
Delta R.T. -0.000 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:232 Resp: 551

Ion	Ratio	Lower	Upper
232	100		
131	48.3	13.2	73.2
234	49.6	14.7	74.7
230	72.7	45.0	105.0

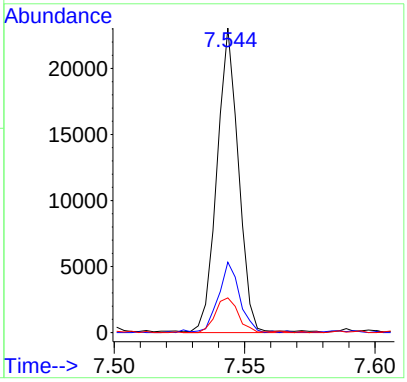


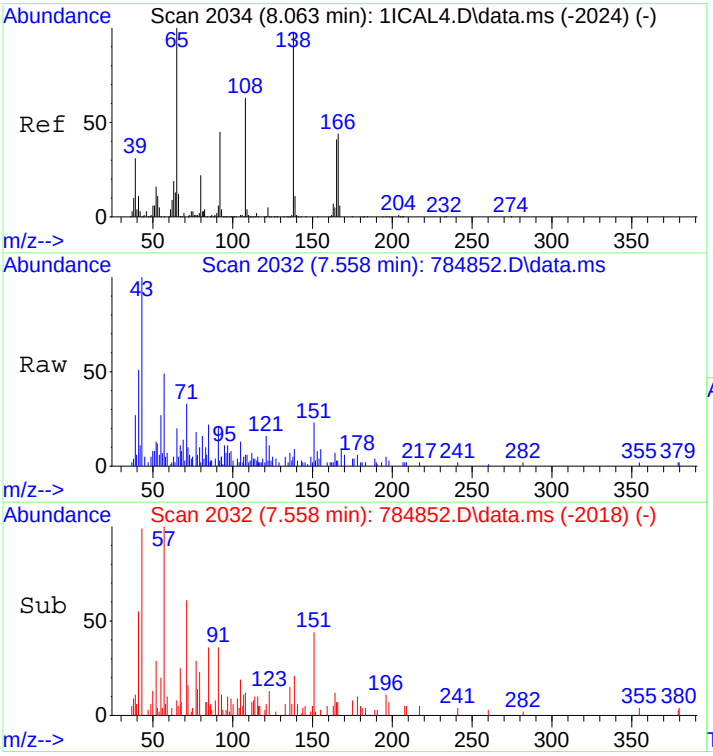


#60
Diethylphthal
Concen: 1.63 ug/mL
RT: 7.544 min Scan# 2027
Delta R.T. -0.006 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:149 Resp: 13300

Ion	Ratio	Lower	Upper
149	100		
177	22.9	0.0	49.5
150	11.4	0.0	42.0

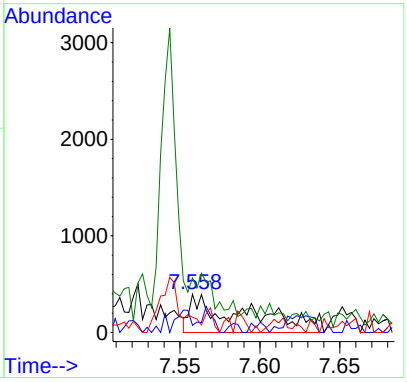


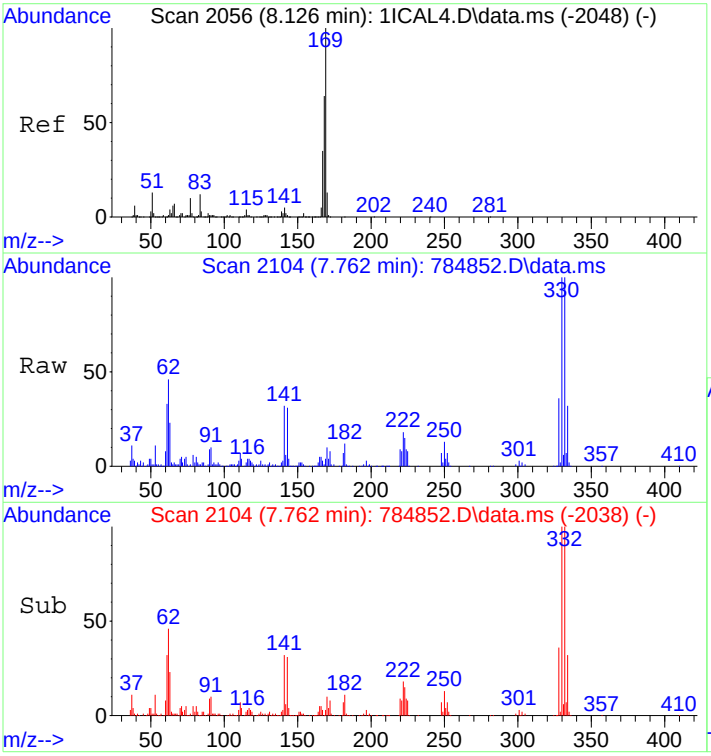


#61
4Nitroaniline
Concen: 0.56 ug/mL
RT: 7.558 min Scan# 2032
Delta R.T. -0.080 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:138 Resp: 949

Ion	Ratio	Lower	Upper
138	100		
92	18.7	12.7	72.7
108	3.5	46.1	106.1#
65	95.5	71.6	131.6

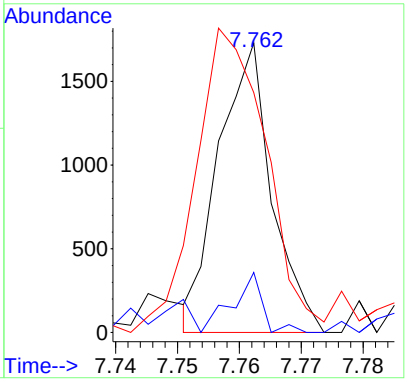


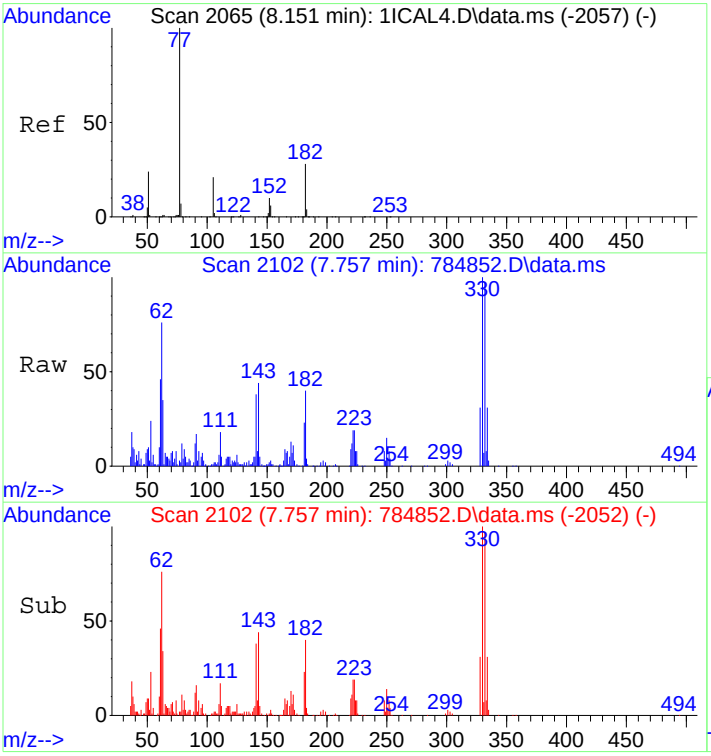


#65
Ntrsdiphlam&Diphlam
Concen: 0.18 ug/mL
RT: 7.762 min Scan# 2104
Delta R.T. 0.068 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:169 Resp: 1032

Ion	Ratio	Lower	Upper
169	100		
168	20.8	35.5	95.5#
167	79.2	5.2	65.2#

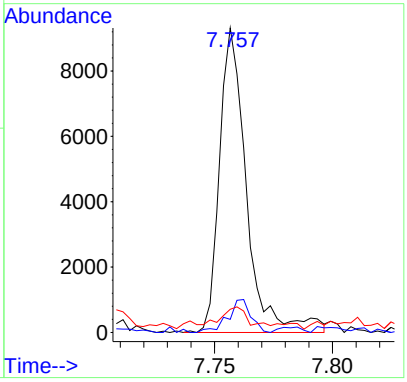


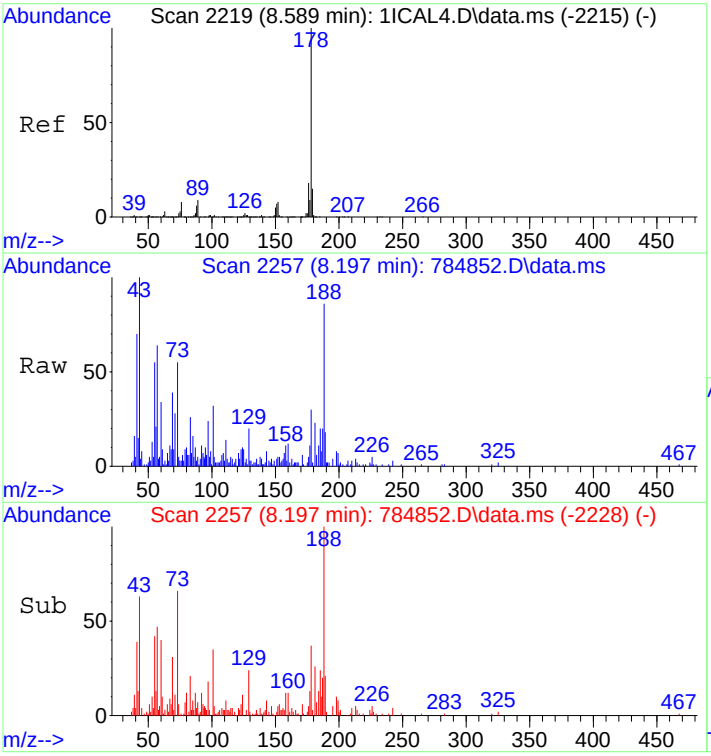


#66
Azobenz&12Diphlhyd
Concen: 4.11 ug/mL
RT: 7.757 min Scan# 2102
Delta R.T. 0.043 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:182 Resp: 7402

Ion	Ratio	Lower	Upper
182	100		
152	3.3	7.0	67.0#
77	5.2	330.8	390.8#

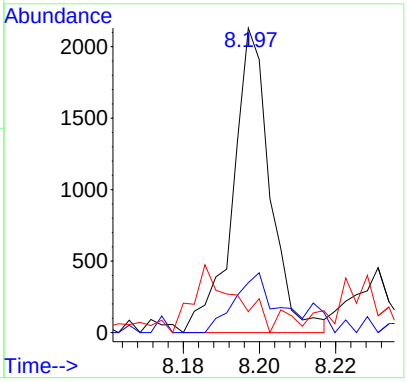


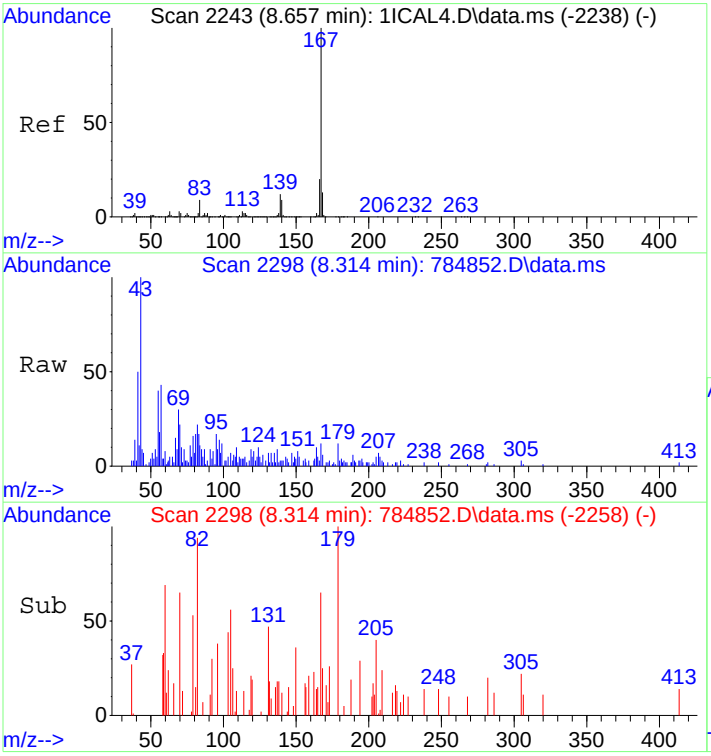


#71
Anthracene
Concen: 0.13 ug/mL
RT: 8.197 min Scan# 2257
Delta R.T. -0.031 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:178 Resp: 1452

Ion	Ratio	Lower	Upper
178	100		
176	16.4	0.0	47.3
179	0.0	0.0	44.6

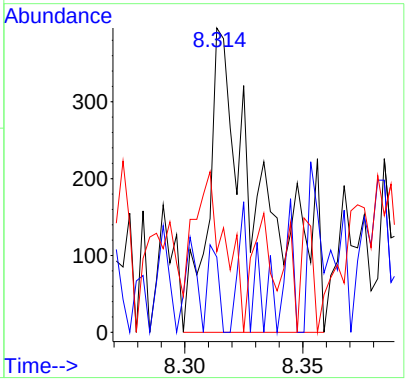


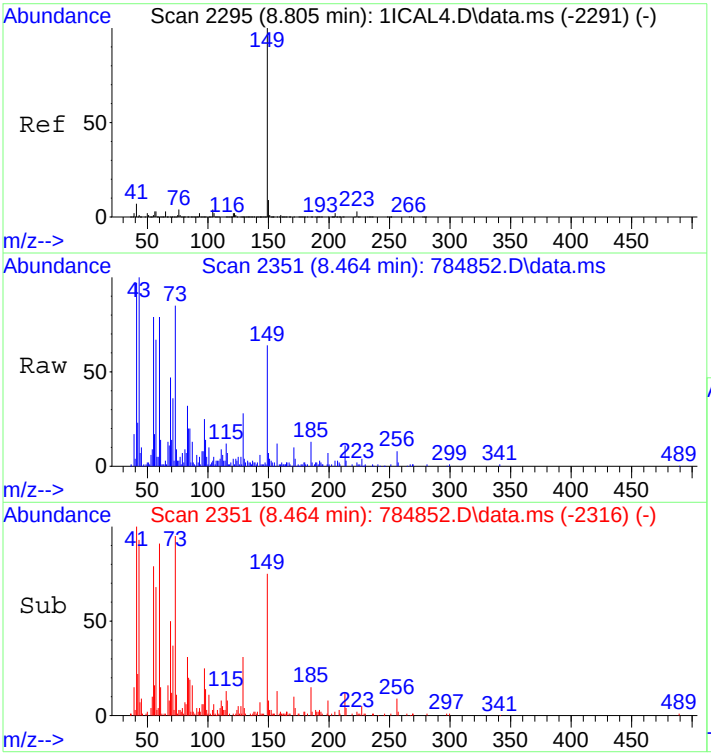


#72
Carbazole
Concen: 0.07 ug/mL
RT: 8.314 min Scan# 2298
Delta R.T. -0.000 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:167 Resp: 622

Ion	Ratio	Lower	Upper
167	100		
166	12.4	0.0	49.8
139	14.6	0.0	41.7

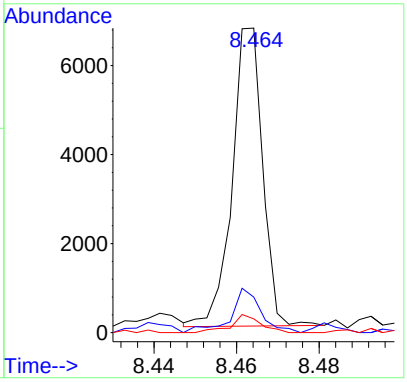


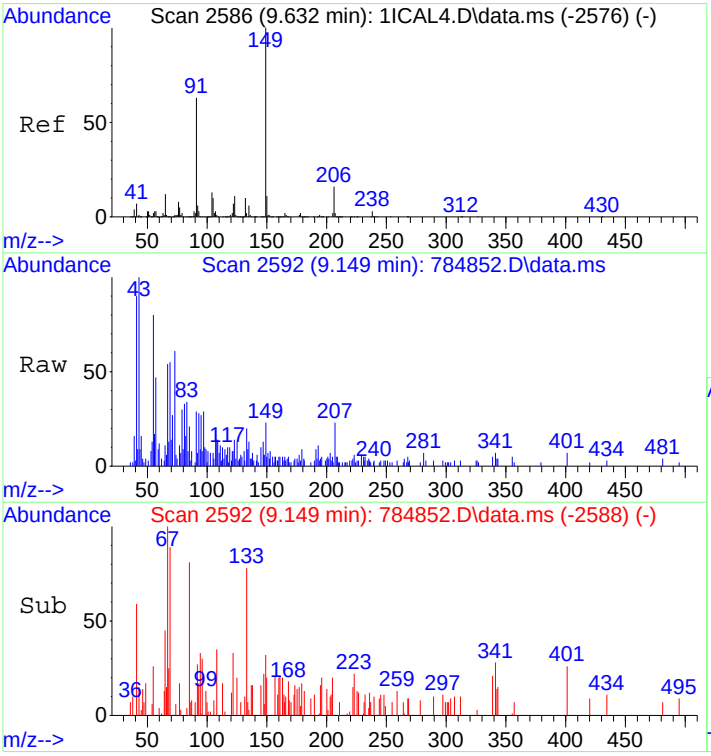


#73
Dinbtylphthal
Concen: 0.29 ug/mL
RT: 8.464 min Scan# 2351
Delta R.T. -0.000 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:149 Resp: 3448

Ion	Ratio	Lower	Upper
149	100		
150	11.9	0.0	39.8
104	4.6	0.0	34.5

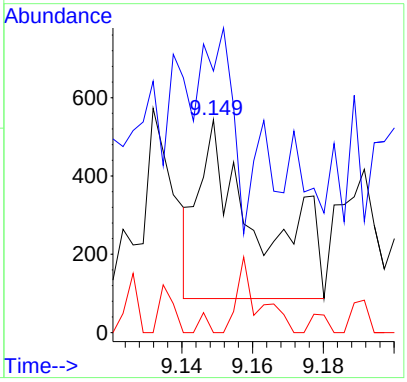


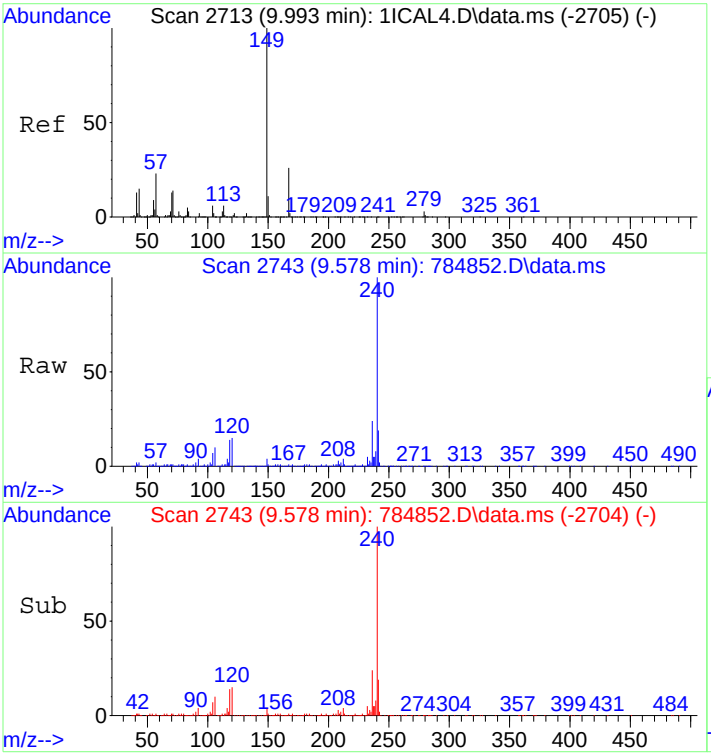


#79
Btylbzylphth
Concen: 0.11 ug/mL
RT: 9.149 min Scan# 2592
Delta R.T. -0.088 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:149 Resp: 515

Ion	Ratio	Lower	Upper
149	100		
91	79.4	33.5	93.5
206	0.0	0.0	46.3

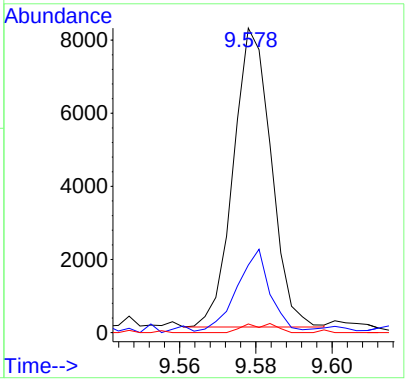


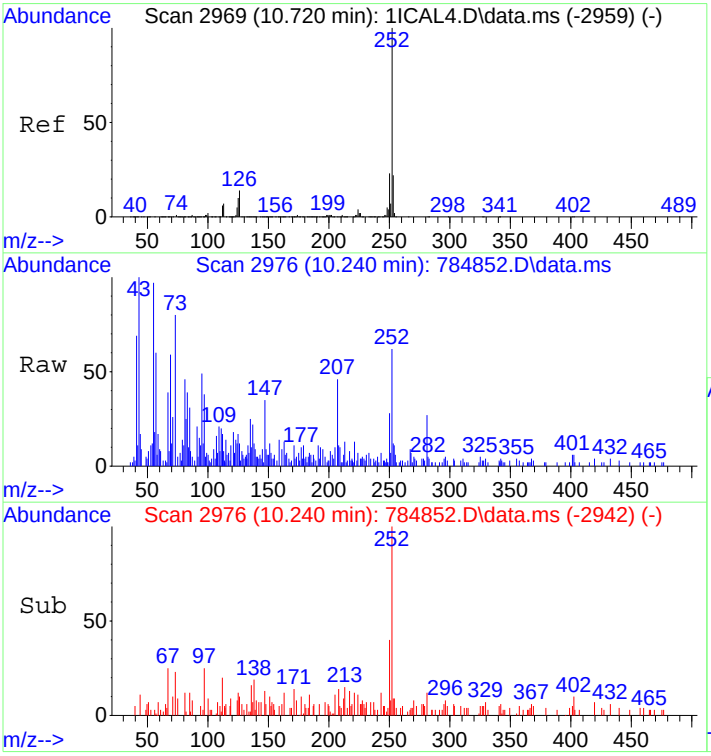


#84
bis2Ethlhxlph
Concen: 0.79 ug/mL
RT: 9.578 min Scan# 2743
Delta R.T. -0.003 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:149 Resp: 5631

Ion	Ratio	Lower	Upper
149	100		
167	21.0	0.0	54.6
279	2.9	0.0	33.1

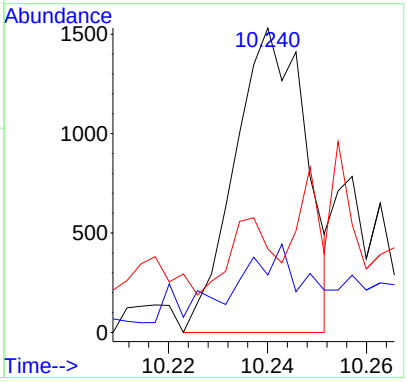


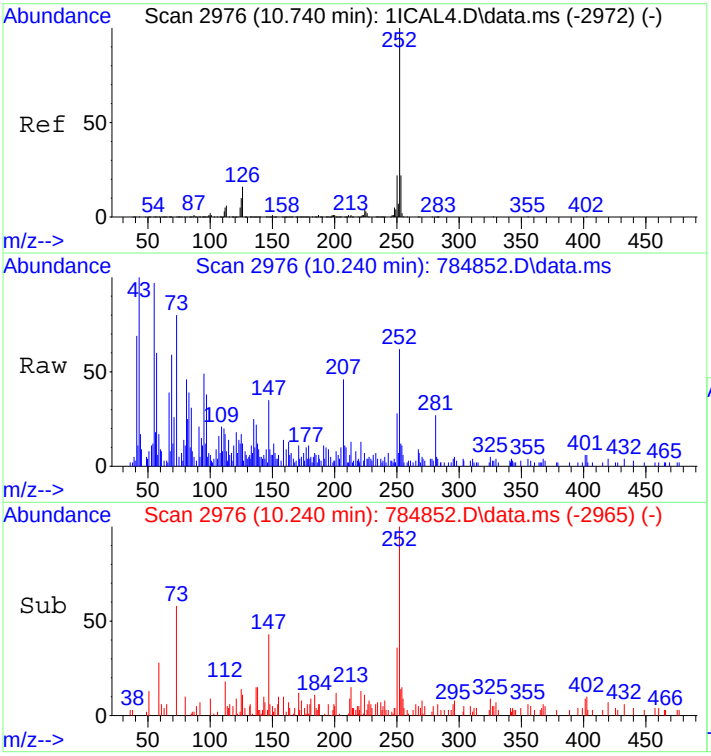


#87
B[b]fluoranth
Concen: 0.15 ug/mL
RT: 10.240 min Scan# 2976
Delta R.T. -0.003 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:252 Resp: 1519

Ion	Ratio	Lower	Upper
252	100		
253	13.9	0.0	50.7
125	8.2	0.0	42.5

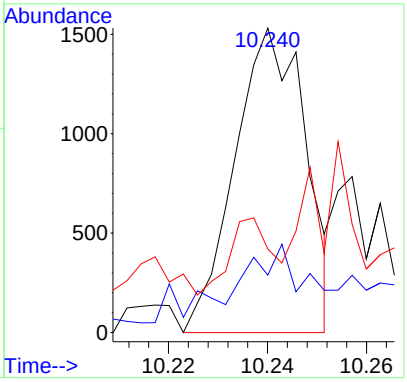


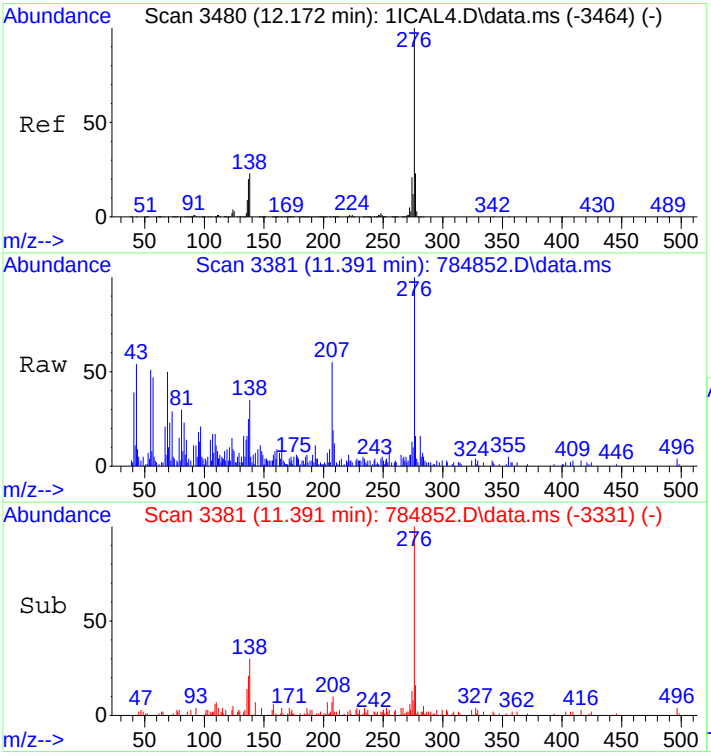


#88
B[k]fluoranth
Concen: 0.16 ug/mL
RT: 10.240 min Scan# 2976
Delta R.T. -0.020 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:252 Resp: 1519

Ion	Ratio	Lower	Upper
252	100		
253	13.9	0.0	52.6
125	8.2	0.0	41.7

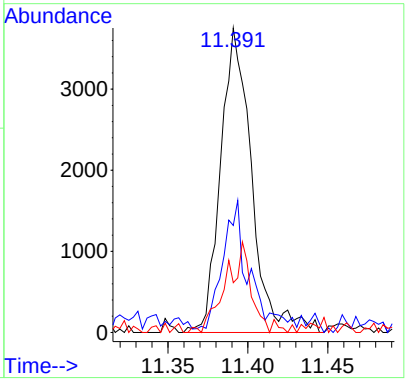




#92
B[ghi]perylen
Concen: 0.54 ug/mL
RT: 11.391 min Scan# 3381
Delta R.T. -0.009 min
Lab File: 784852.D
Acq: 19 Oct 16 11:26 pm

Tgt Ion:276 Resp: 5083

Ion	Ratio	Lower	Upper
276	100		
138	35.1	0.0	54.9
277	16.4	0.0	52.0



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\784853.D Vial: 29
Acq On : 20 Oct 2016 00:25 Operator: JJY
Sample : 131383,784853, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 14:53:48 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

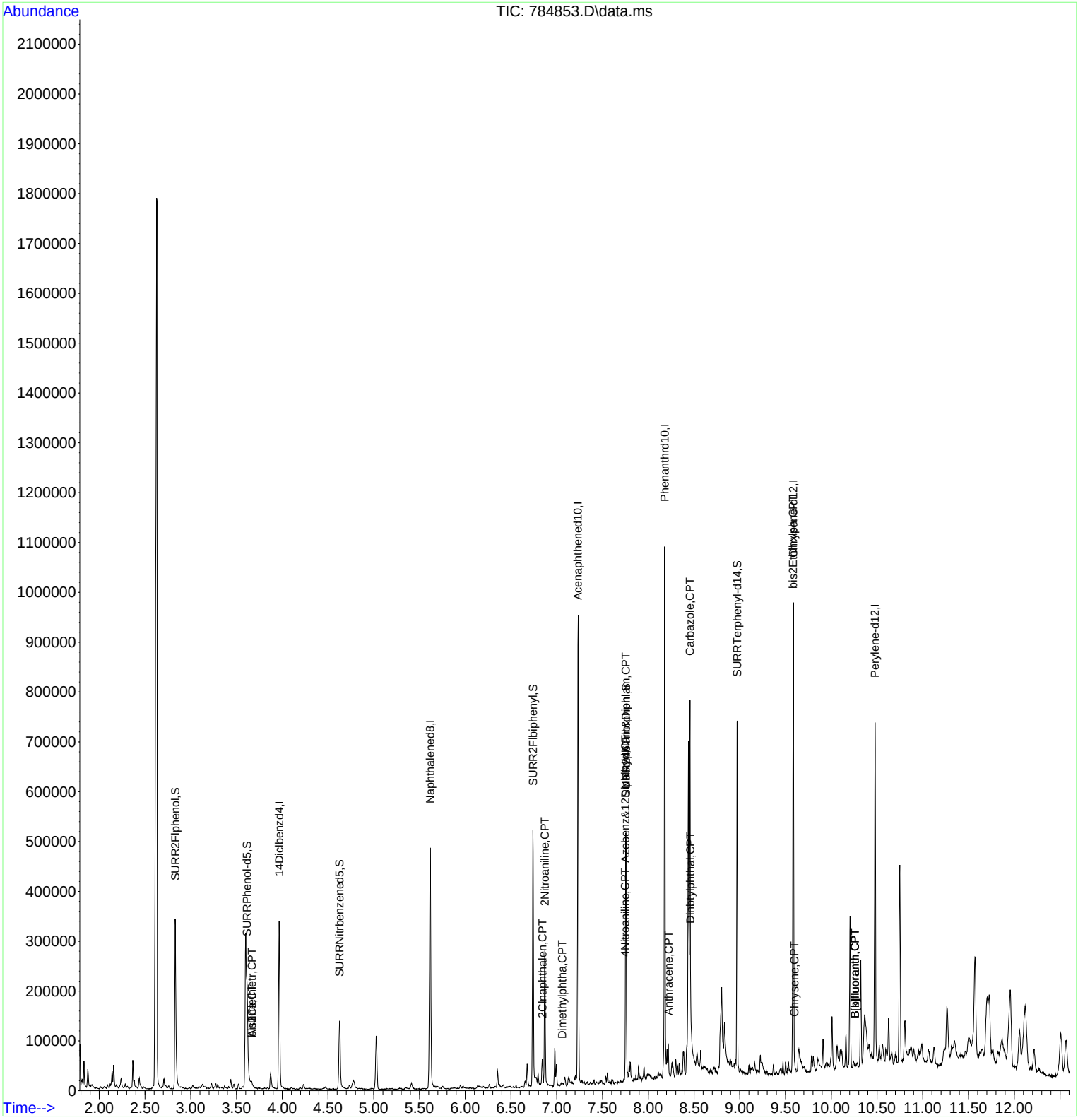
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.966	152	52903	20.00	ug/mL	0.00
21) Naphthalened8	5.617	136	242212	20.00	ug/mL	0.00
39) Acenaphthened10	7.231	164	139189	20.00	ug/mL	-0.01
63) Phenanthrd10	8.180	188	249270	20.00	ug/mL	0.00
75) Chrysene-d12	9.587	240	222575	20.00	ug/mL	0.00
86) Perylene-d12	10.479	264	182953	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.832	112	84601	72.78	%REC	0.01
Spiked Amount 100.000	Range 20 - 110		Recovery = 72.78%			
7) SURRPhenol-d5	3.614	99	89374	60.34	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 60.34%			
22) SURRNitrbenzened5	4.625	82	53053	69.30	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 69.30%			
44) SURR2Flbiphenyl	6.739	172	133023	69.06	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 69.06%			
62) SURR246Tribrphenl	7.757	330	43013	67.79	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 67.79%			
78) SURRTerphenyl-d14	8.973	244	137676	77.21	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 77.21%			
Target Compounds						Qvalue
5) Aniline	3.668	93	776	0.1596	ug/mL#	1
6) bis2Clethletr	3.668	93	768	0.2555	ug/mL#	22
45) 2Clnaphthalen	6.845	162	792	0.0932	ug/mL	58
46) 2Nitroaniline	6.870	65	2639	1.1096	ug/mL#	24
48) Dimethylphtha	7.061	163	662	0.0669	ug/mL	95
61) 4Nitroaniline	7.748	138	250	0.1178	ug/mL#	38
65) Ntrsdiphlam&Diphlam	7.754	169	1484	0.2101	ug/mL#	22
66) Azobenz&12Diphlhyd	7.751	182	5464	2.4209	ug/mL#	1
71) Anthracene	8.223	178	540	0.0387	ug/mL	98
72) Carbazole	8.456	167	523	0.0443	ug/mL#	1
73) Dinbtylphthal	8.461	149	4339	0.2872	ug/mL	92
83) Chrysene	9.598	228	2090	0.1661	ug/mL	96
84) bis2Ethlhxlph	9.584	149	2689	0.3031	ug/mL	93
87) B[b]fluoranth	10.260	252	1697	0.1497	ug/mL	82
88) B[k]fluoranth	10.260	252	1697	0.1593	ug/mL	85

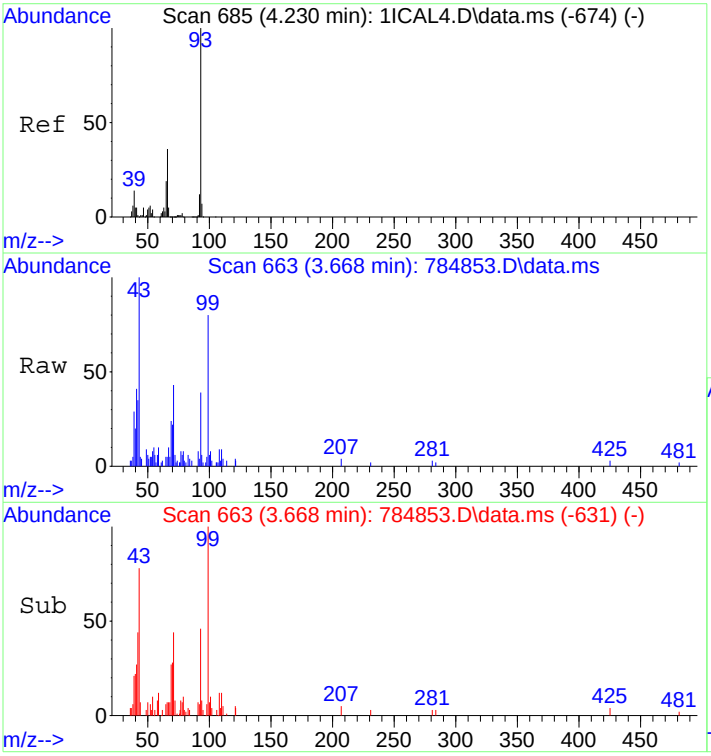
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\784853.D Vial: 29
Acq On : 20 Oct 2016 00:25 Operator: JJY
Sample : 131383,784853, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 14:53:48 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

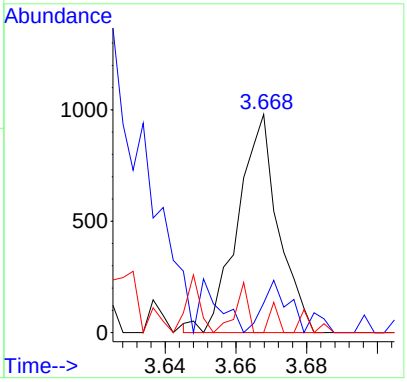


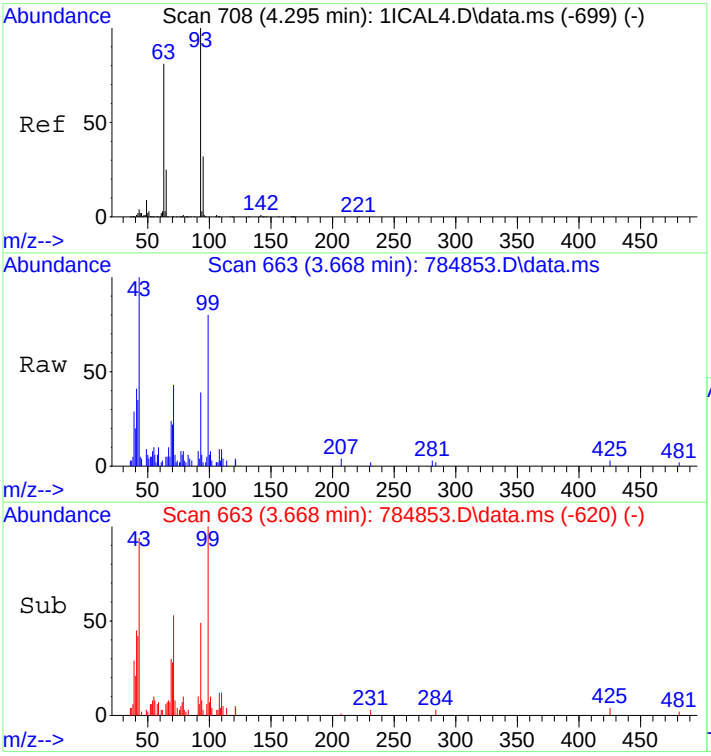


#5
Aniline
Concen: 0.16 ug/mL
RT: 3.668 min Scan# 663
Delta R.T. 0.040 min
Lab File: 784853.D
Acq: 20 Oct 16 12:25 am

Tgt Ion: 93 Resp: 776

Ion	Ratio	Lower	Upper
93	100		
66	542.5	41.5	101.5#
65	91.5	12.9	72.9#

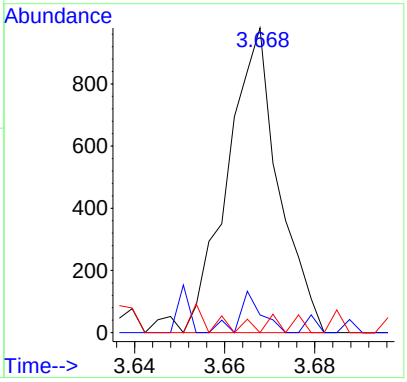


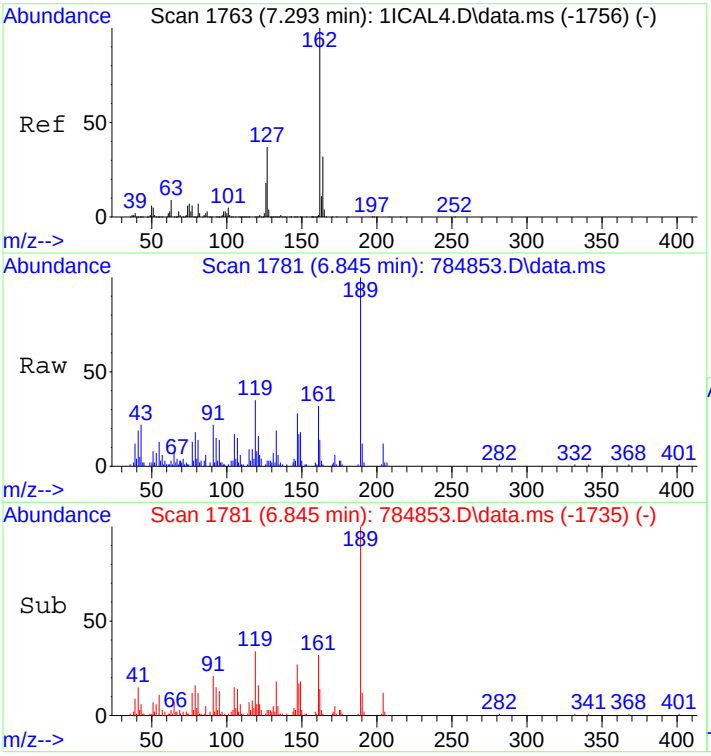


#6
bis2Clethletr
Concen: 0.26 ug/mL
RT: 3.668 min Scan# 663
Delta R.T. -0.028 min
Lab File: 784853.D
Acq: 20 Oct 16 12:25 am

Tgt Ion: 93 Resp: 768

Ion	Ratio	Lower	Upper
93	100		
95	5.8	3.2	63.2
63	0.0	59.9	99.9#

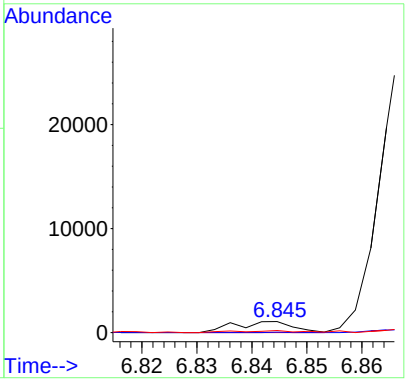


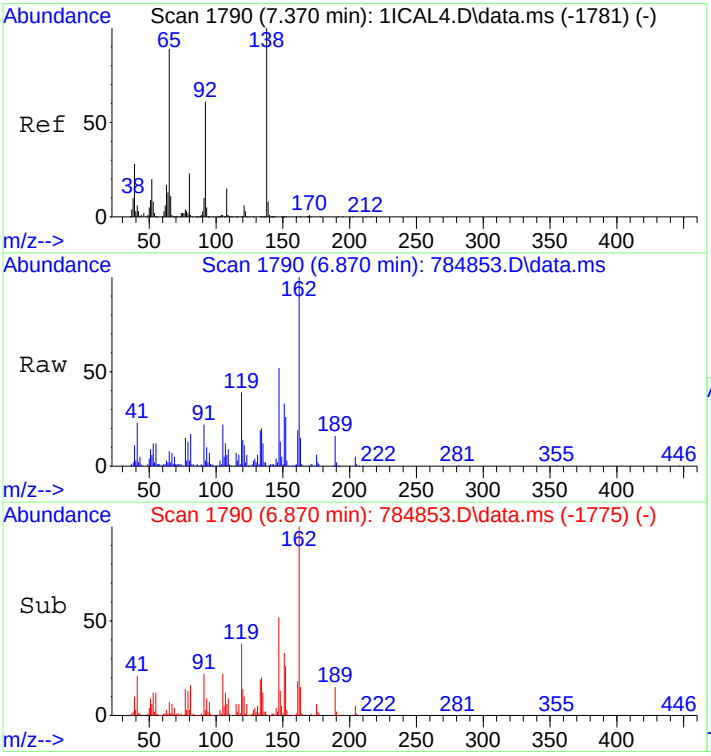


#45
2Clnaphthalen
Concen: 0.09 ug/mL
RT: 6.845 min Scan# 1781
Delta R.T. 0.017 min
Lab File: 784853.D
Acq: 20 Oct 16 12:25 am

Tgt Ion:162 Resp: 792

Ion	Ratio	Lower	Upper
162	100		
164	3.8	2.4	62.4
127	18.2	9.8	69.8

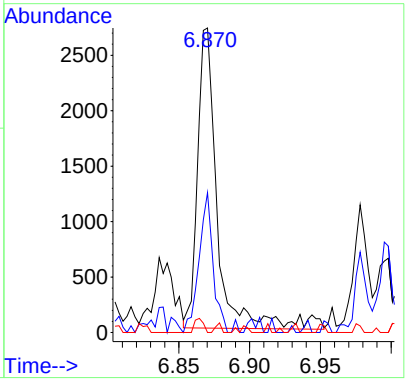


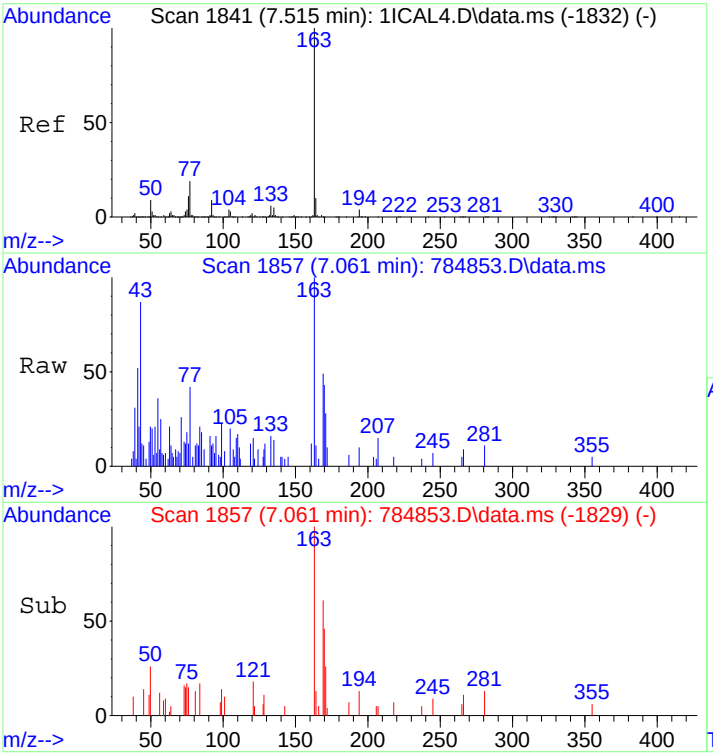


#46
2Nitroaniline
Concen: 1.11 ug/mL
RT: 6.870 min Scan# 1790
Delta R.T. -0.057 min
Lab File: 784853.D
Acq: 20 Oct 16 12:25 am

Tgt Ion: 65 Resp: 2639

Ion	Ratio	Lower	Upper
65	100		
92	46.7	39.4	99.4
138	0.0	83.7	143.7#

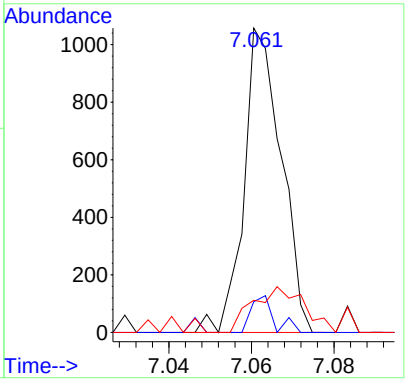


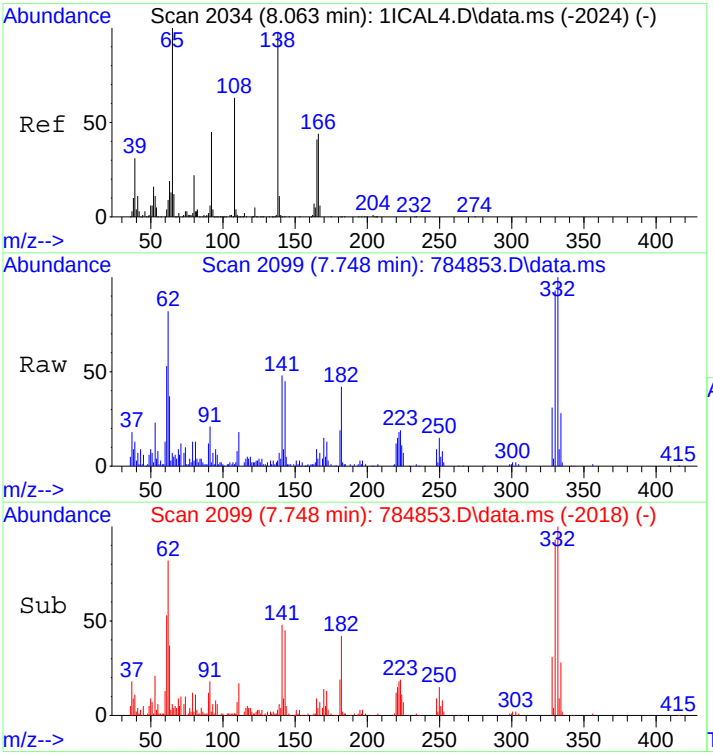


#48
Dimethylphtha
Concen: 0.07 ug/mL
RT: 7.061 min Scan# 1857
Delta R.T. -0.020 min
Lab File: 784853.D
Acq: 20 Oct 16 12:25 am

Tgt Ion:163 Resp: 662

Ion	Ratio	Lower	Upper
163	100		
194	10.1	0.0	33.9
164	10.6	0.0	40.5

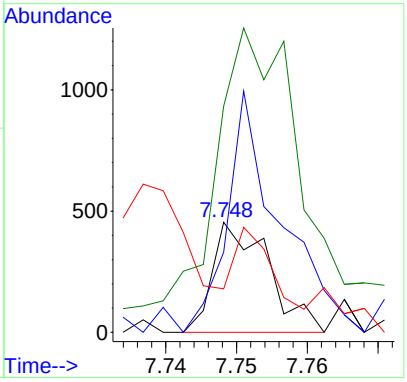


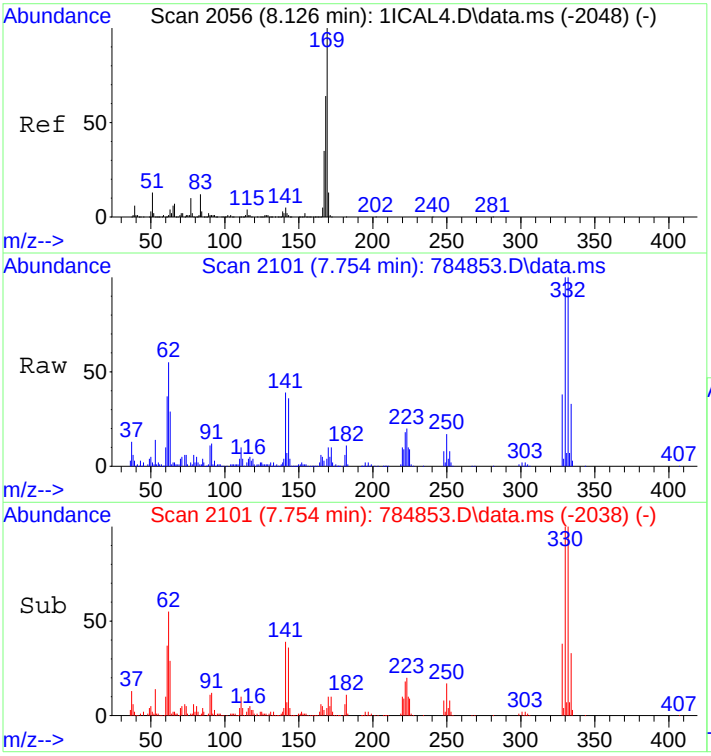


#61
4Nitroaniline
Concen: 0.12 ug/mL
RT: 7.748 min Scan# 2099
Delta R.T. 0.111 min
Lab File: 784853.D
Acq: 20 Oct 16 12:25 am

Tgt Ion:138 Resp: 250

Ion	Ratio	Lower	Upper
138	100		
92	72.9	12.7	72.7#
108	0.0	46.1	106.1#
65	150.0	71.6	131.6#

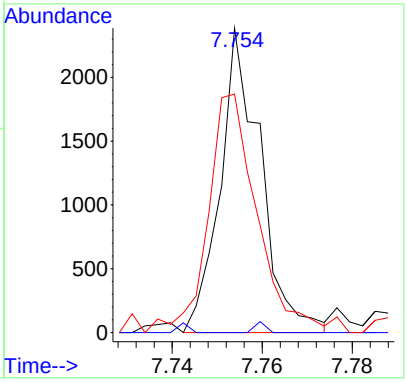


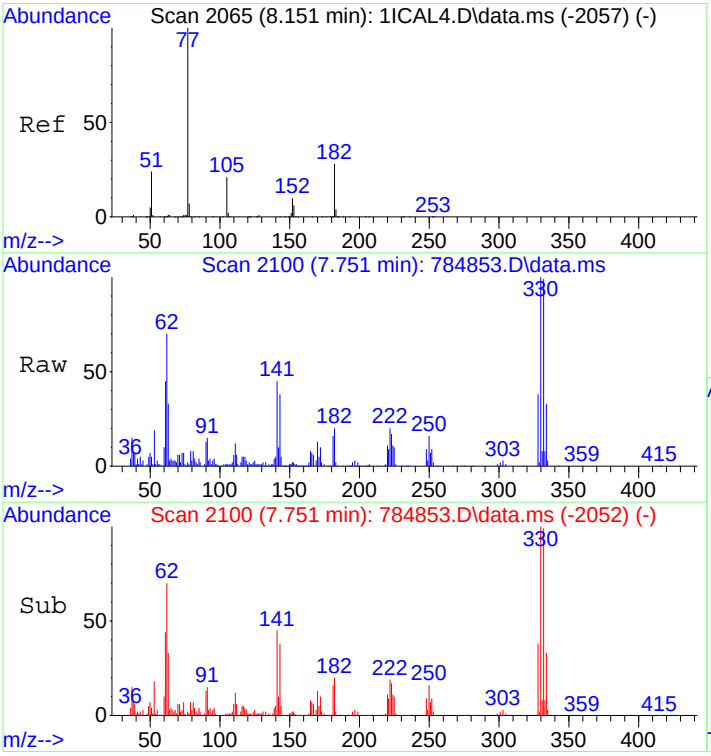


#65
Ntrsdiphlam&Diphlam
Concen: 0.21 ug/mL
RT: 7.754 min Scan# 2101
Delta R.T. 0.060 min
Lab File: 784853.D
Acq: 20 Oct 16 12:25 am

Tgt Ion:169 Resp: 1484

Ion	Ratio	Lower	Upper
169	100		
168	0.0	35.5	95.5#
167	76.2	5.2	65.2#

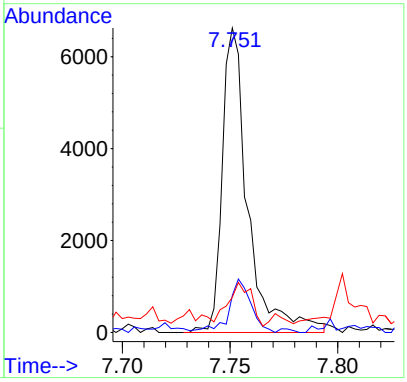


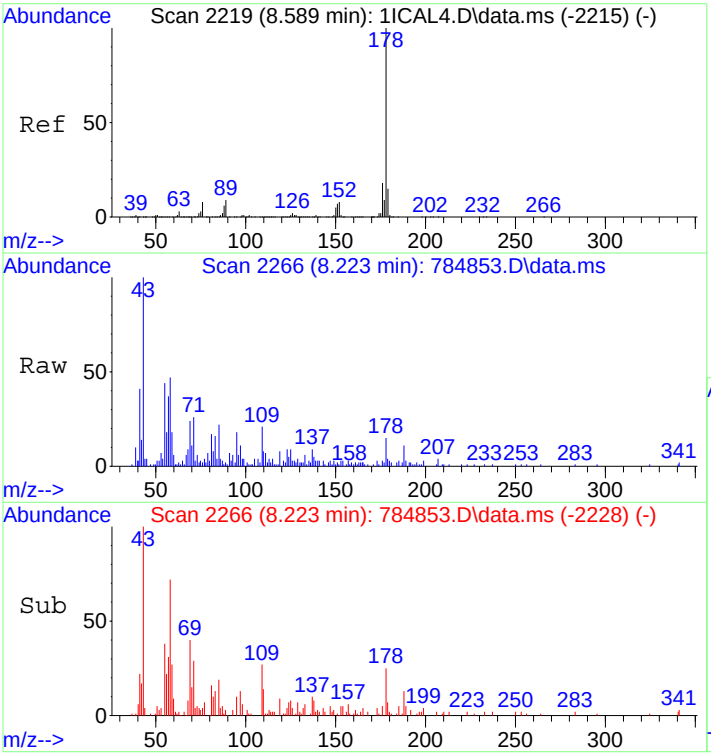


#66
Azobenz&12Diphlhyd
Concen: 2.42 ug/mL
RT: 7.751 min Scan# 2100
Delta R.T. 0.037 min
Lab File: 784853.D
Acq: 20 Oct 16 12:25 am

Tgt Ion:182 Resp: 5464

Ion	Ratio	Lower	Upper
182	100		
152	10.9	7.0	67.0
77	6.6	330.8	390.8#

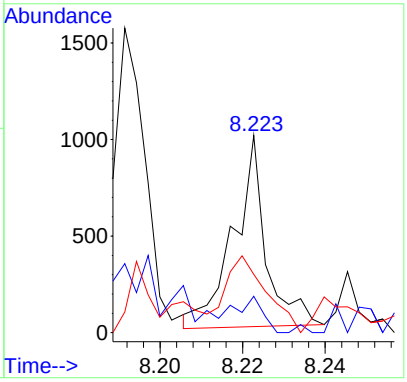


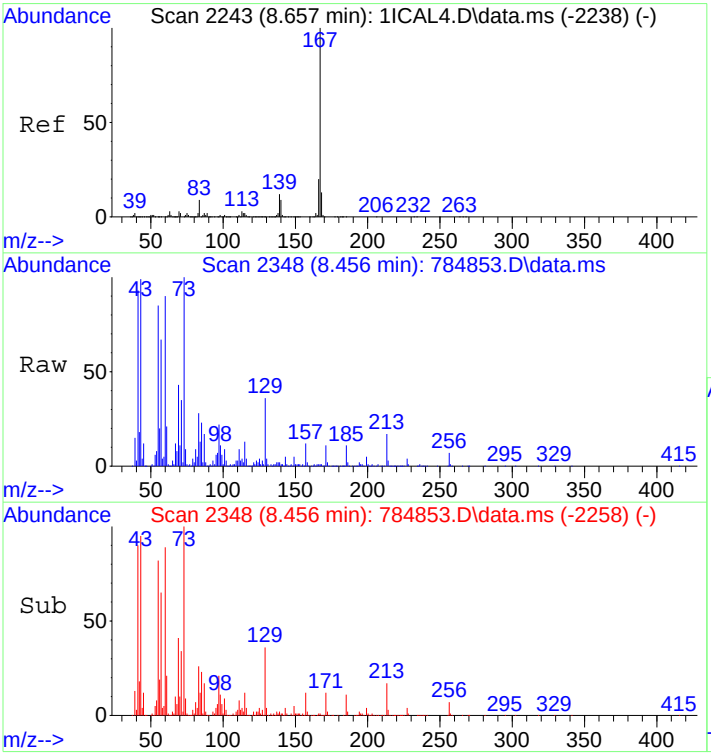


#71
Anthracene
Concen: 0.04 ug/mL
RT: 8.223 min Scan# 2266
Delta R.T. -0.006 min
Lab File: 784853.D
Acq: 20 Oct 16 12:25 am

Tgt Ion:178 Resp: 540

Ion	Ratio	Lower	Upper
178	100		
176	19.2	0.0	47.3
179	14.5	0.0	44.6

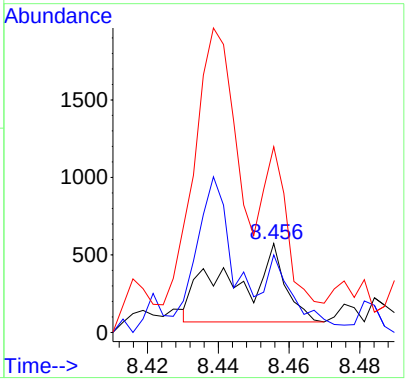


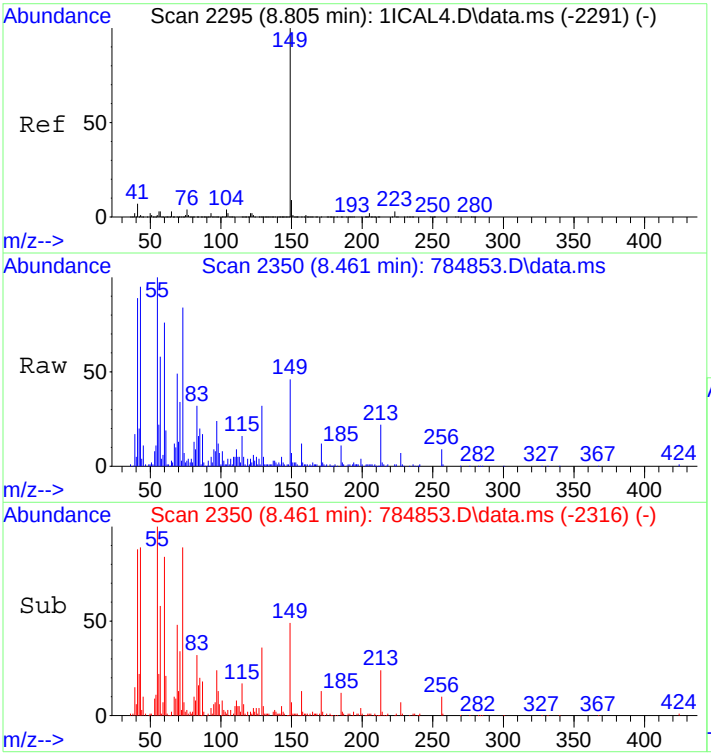


#72
Carbazole
Concen: 0.04 ug/mL
RT: 8.456 min Scan# 2348
Delta R.T. 0.142 min
Lab File: 784853.D
Acq: 20 Oct 16 12:25 am

Tgt Ion:167 Resp: 523

Ion	Ratio	Lower	Upper
167	100		
166	82.0	0.0	49.8#
139	199.4	0.0	41.7#

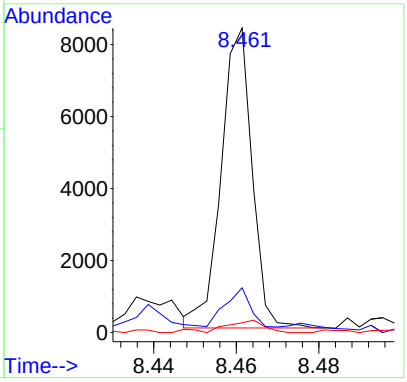


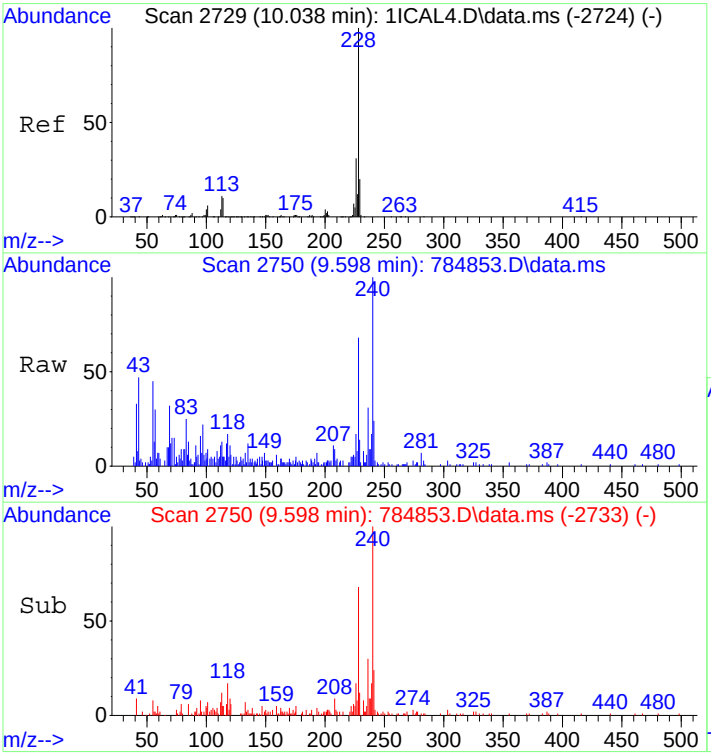


#73
Dinbtylphthal
Concen: 0.29 ug/mL
RT: 8.461 min Scan# 2350
Delta R.T. -0.003 min
Lab File: 784853.D
Acq: 20 Oct 16 12:25 am

Tgt Ion:149 Resp: 4339

Ion	Ratio	Lower	Upper
149	100		
150	13.2	0.0	39.8
104	2.4	0.0	34.5

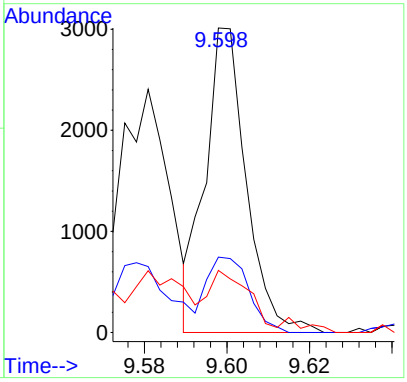


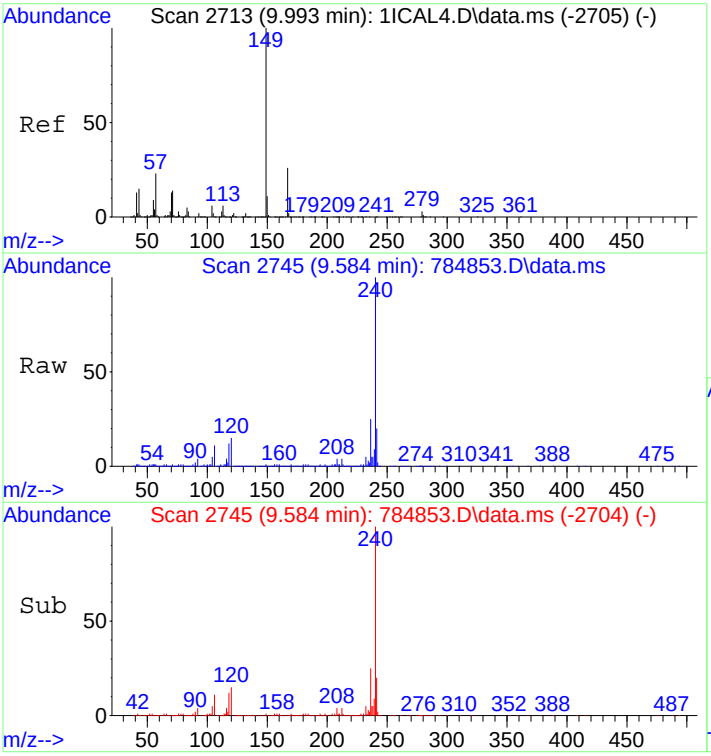


#83
Chrysene
Concen: 0.17 ug/mL
RT: 9.598 min Scan# 2750
Delta R.T. -0.003 min
Lab File: 784853.D
Acq: 20 Oct 16 12:25 am

Tgt Ion:228 Resp: 2090

Ion	Ratio	Lower	Upper
228	100		
226	24.7	0.0	58.0
229	18.6	0.0	49.4

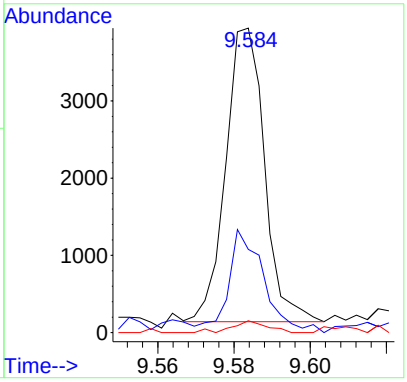


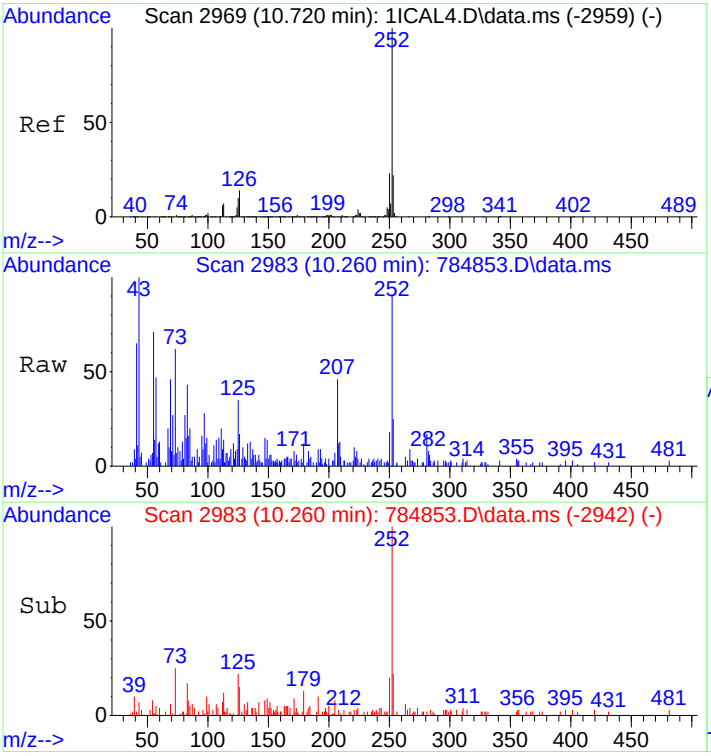


#84
bis2Ethlhxlph
Concen: 0.30 ug/mL
RT: 9.584 min Scan# 2745
Delta R.T. 0.003 min
Lab File: 784853.D
Acq: 20 Oct 16 12:25 am

Tgt Ion:149 Resp: 2689

Ion	Ratio	Lower	Upper
149	100		
167	28.4	0.0	54.6
279	4.0	0.0	33.1

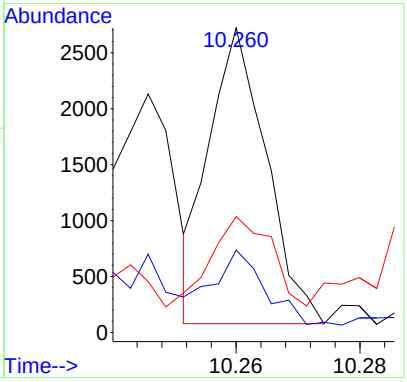


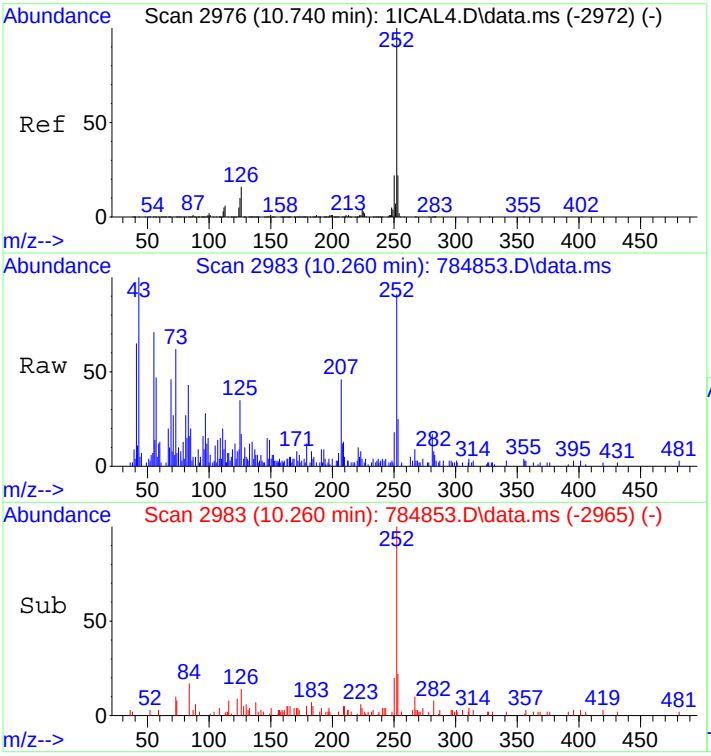


#87
B[b]fluoranth
Concen: 0.15 ug/mL
RT: 10.260 min Scan# 2983
Delta R.T. 0.017 min
Lab File: 784853.D
Acq: 20 Oct 16 12:25 am

Tgt Ion:252 Resp: 1697

Ion	Ratio	Lower	Upper
252	100		
253	24.4	0.0	50.7
125	25.9	0.0	42.5

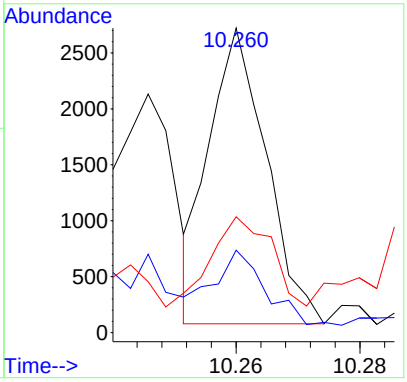




#88
B[k]fluoranth
Concen: 0.16 ug/mL
RT: 10.260 min Scan# 2983
Delta R.T. -0.000 min
Lab File: 784853.D
Acq: 20 Oct 16 12:25 am

Tgt Ion:252 Resp: 1697

Ion	Ratio	Lower	Upper
252	100		
253	24.4	0.0	52.6
125	25.9	0.0	41.7



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\784854.D Vial: 27
Acq On : 19 Oct 2016 23:46 Operator: JJY
Sample : 131383,784854, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 14:48:06 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

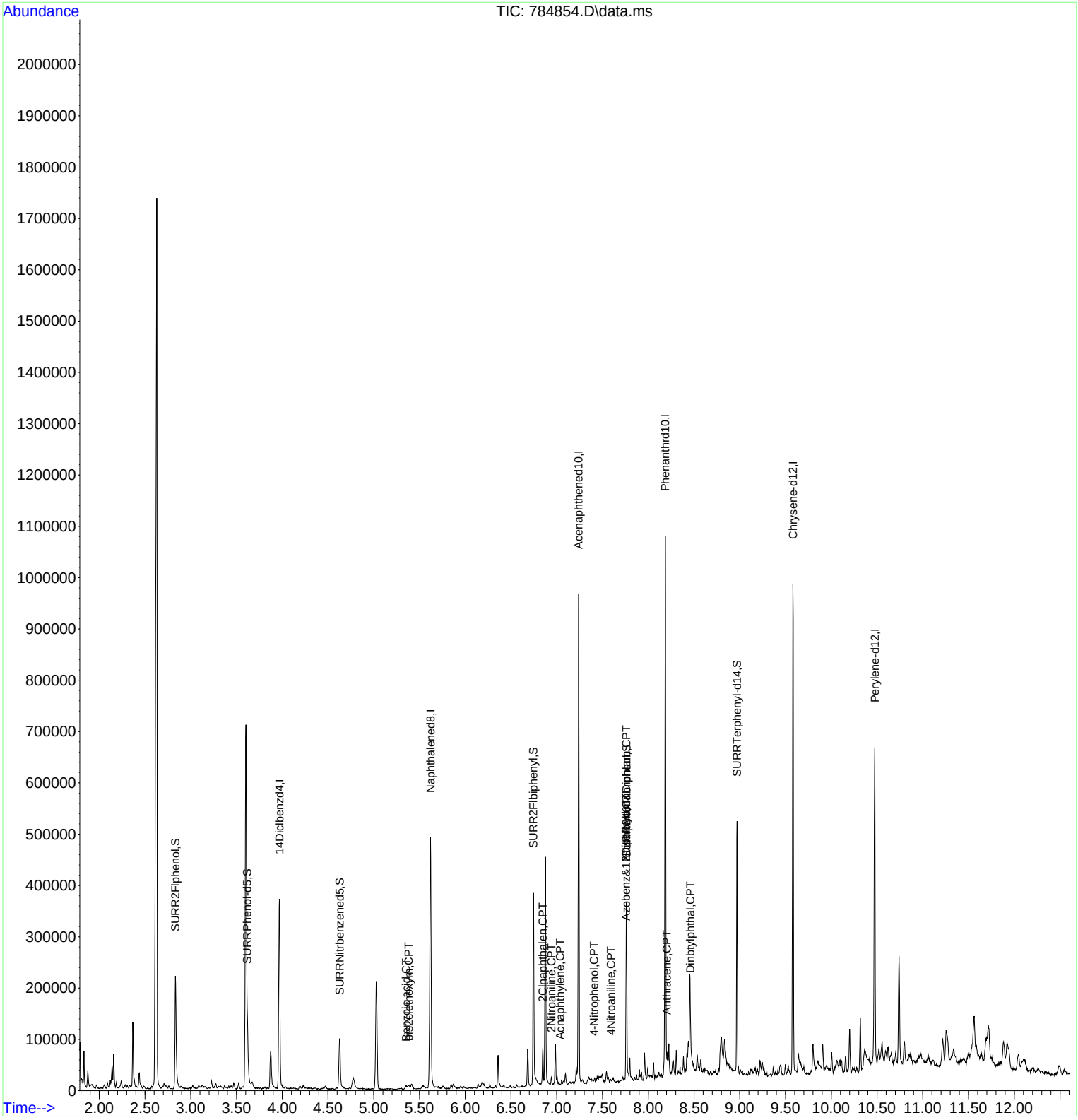
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.969	152	59717	20.00	ug/mL	0.00
21) Naphthalened8	5.620	136	242200	20.00	ug/mL	0.00
39) Acenaphthened10	7.239	164	144543	20.00	ug/mL	0.00
63) Phenanthrd10	8.186	188	257929	20.00	ug/mL	0.00
75) Chrysene-d12	9.581	240	227312	20.00	ug/mL	0.00
86) Perylene-d12	10.476	264	173998	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.832	112	57437	43.77	%REC	0.01
Spiked Amount 100.000	Range 20 - 110		Recovery = 43.77%			
7) SURRPhenol-d5	3.617	99	57662	34.49	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 34.49%			
22) SURRNitrbenzened5	4.628	82	37101	48.46	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 48.46%			
44) SURR2Flbiphenyl	6.745	172	91467	45.73	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 45.73%#			
62) SURR246Tribrphenl	7.762	330	25920	39.34	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 39.34%#			
78) SURRTerphenyl-d14	8.970	244	89790	49.31	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 49.31%#			
Target Compounds						Qvalue
27) bis2clethoxym	5.381	93	500	0.1095	ug/mL#	54
30) Benzoic acid	5.356	122	2013	3.0579	ug/mL#	61
45) 2Clnaphthalen	6.847	162	724	0.0821	ug/mL#	38
46) 2Nitroaniline	6.941	65	344	0.1393	ug/mL#	17
47) Acnaphthylene	7.038	152	2265	0.1509	ug/mL	81
55) 4-Nitrophenol	7.407	65	4125	2.0809	ug/mL#	31
61) 4Nitroaniline	7.592	138	1386	0.6290	ug/mL#	42
65) Ntrsdiphlam&Diphlam	7.759	169	859	0.1175	ug/mL#	1
66) Azobenz&12Diphlhyd	7.757	182	11285	4.8322	ug/mL#	1
71) Anthracene	8.203	178	731	0.0506	ug/mL	73
73) Dinbtylphthal	8.461	149	3493	0.2235	ug/mL	92

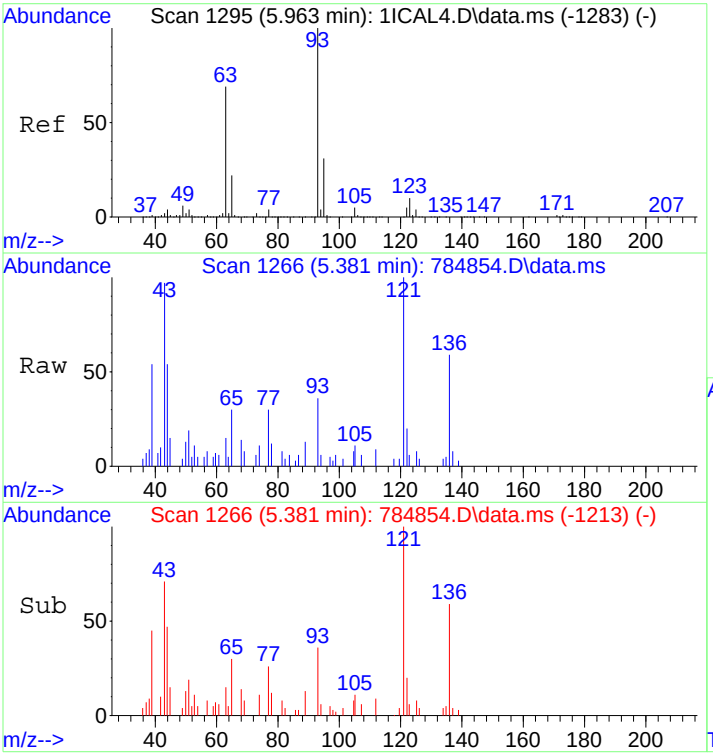
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\784854.D Vial: 27
Acq On : 19 Oct 2016 23:46 Operator: JJY
Sample : 131383,784854, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 14:48:06 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

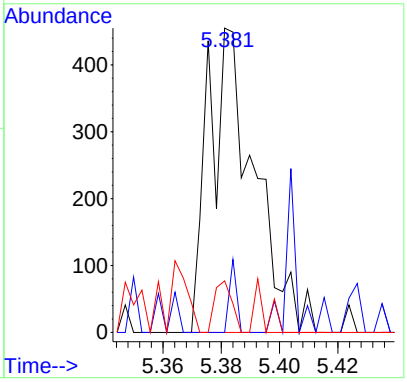


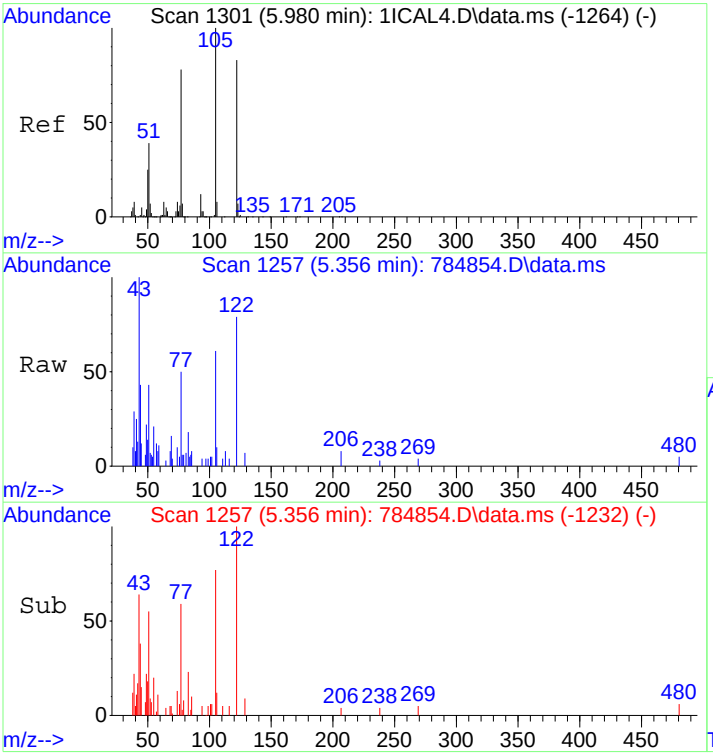


#27
bis2clethoxym
Concen: 0.11 ug/mL
RT: 5.381 min Scan# 1266
Delta R.T. 0.037 min
Lab File: 784854.D
Acq: 19 Oct 16 11:46 pm

Tgt Ion: 93 Resp: 500

Ion	Ratio	Lower	Upper
93	100		
95	0.0	1.4	61.4#
123	16.9	0.0	40.9

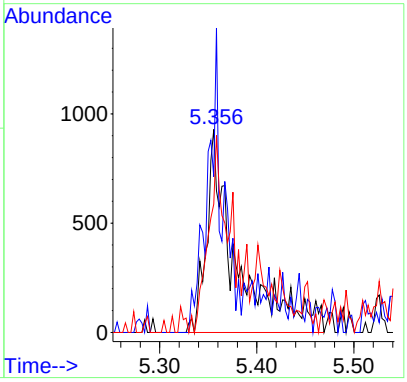


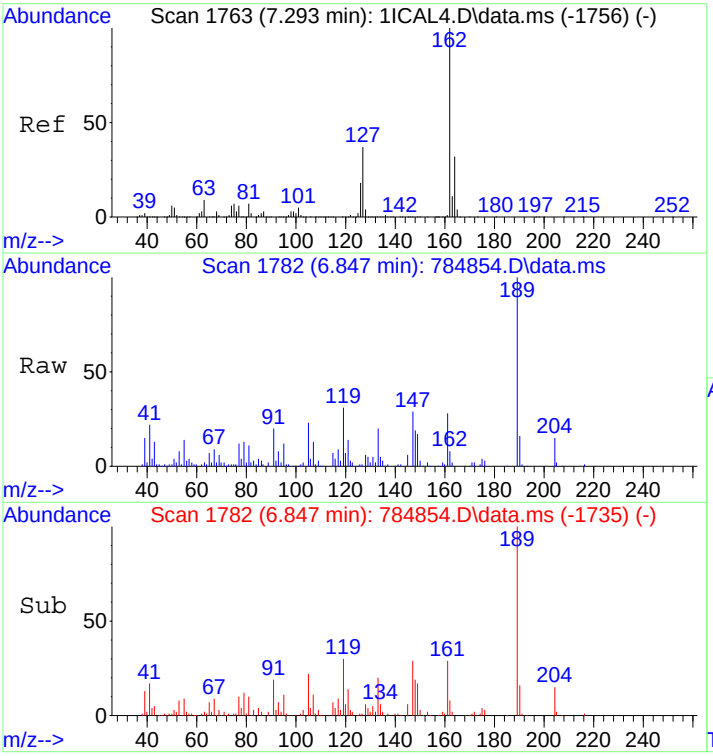


#30
Benzoic acid
Concen: 3.06 ug/mL
RT: 5.356 min Scan# 1257
Delta R.T. -0.080 min
Lab File: 784854.D
Acq: 19 Oct 16 11:46 pm

Tgt Ion:122 Resp: 2013

Ion	Ratio	Lower	Upper
122	100		
105	76.7	95.2	155.2#
77	56.9	57.8	117.8#

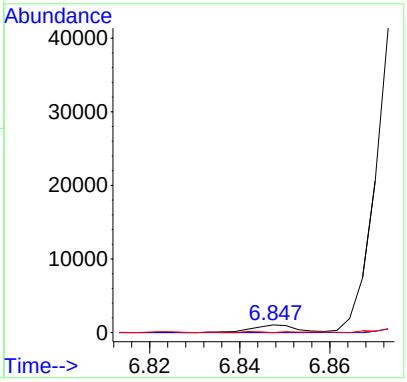


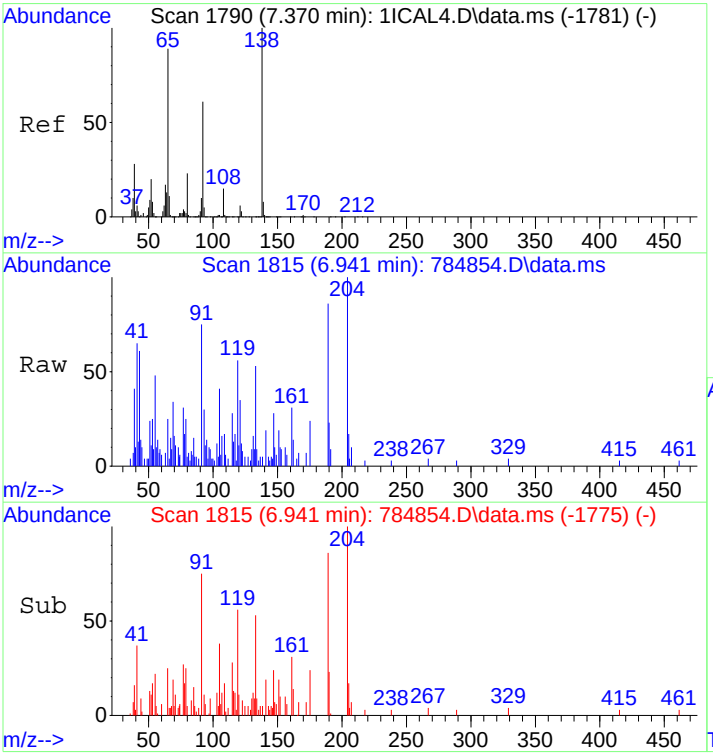


#45
2Clnaphthalen
Concen: 0.08 ug/mL
RT: 6.847 min Scan# 1782
Delta R.T. 0.020 min
Lab File: 784854.D
Acq: 19 Oct 16 11:46 pm

Tgt Ion:162 Resp: 724

Ion	Ratio	Lower	Upper
162	100		
164	0.0	2.4	62.4#
127	0.0	9.8	69.8#

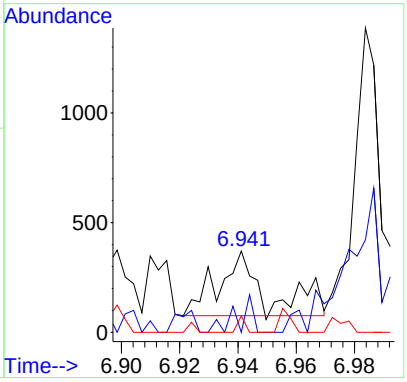


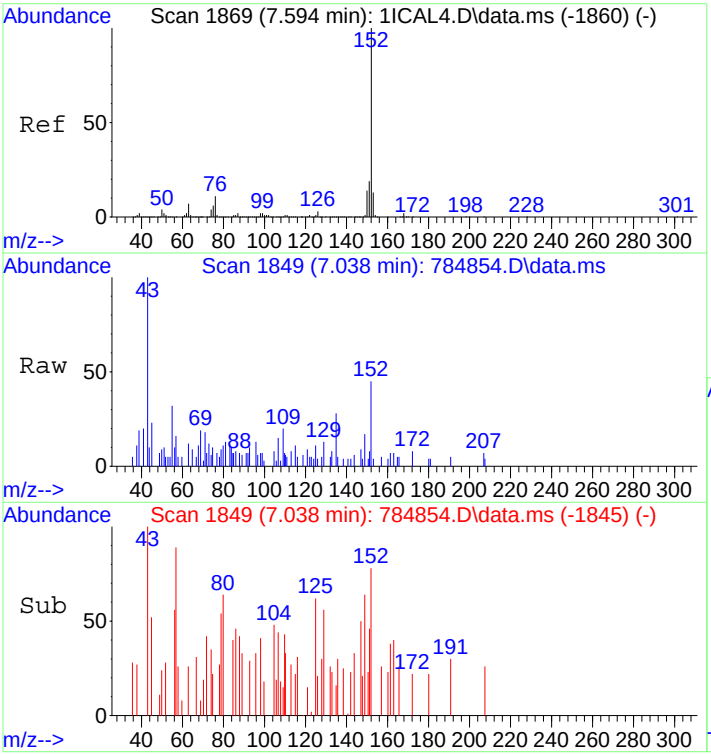


#46
2Nitroaniline
Concen: 0.14 ug/mL
RT: 6.941 min Scan# 1815
Delta R.T. 0.014 min
Lab File: 784854.D
Acq: 19 Oct 16 11:46 pm

Tgt Ion: 65 Resp: 344

Ion	Ratio	Lower	Upper
65	100		
92	0.0	39.4	99.4#
138	25.4	83.7	143.7#

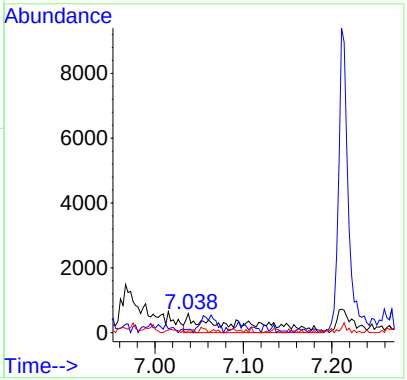


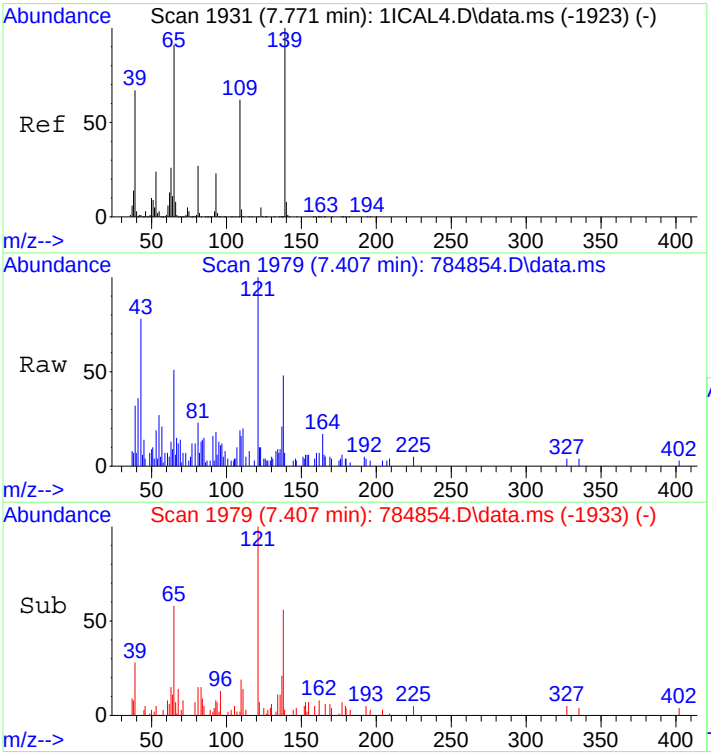


#47
Acnaphthylene
Concen: 0.15 ug/mL
RT: 7.038 min Scan# 1849
Delta R.T. -0.102 min
Lab File: 784854.D
Acq: 19 Oct 16 11:46 pm

Tgt Ion:152 Resp: 2265

Ion	Ratio	Lower	Upper
152	100		
151	8.2	0.0	49.3
153	8.9	0.0	43.8

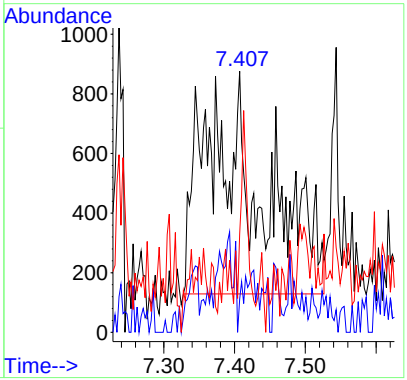


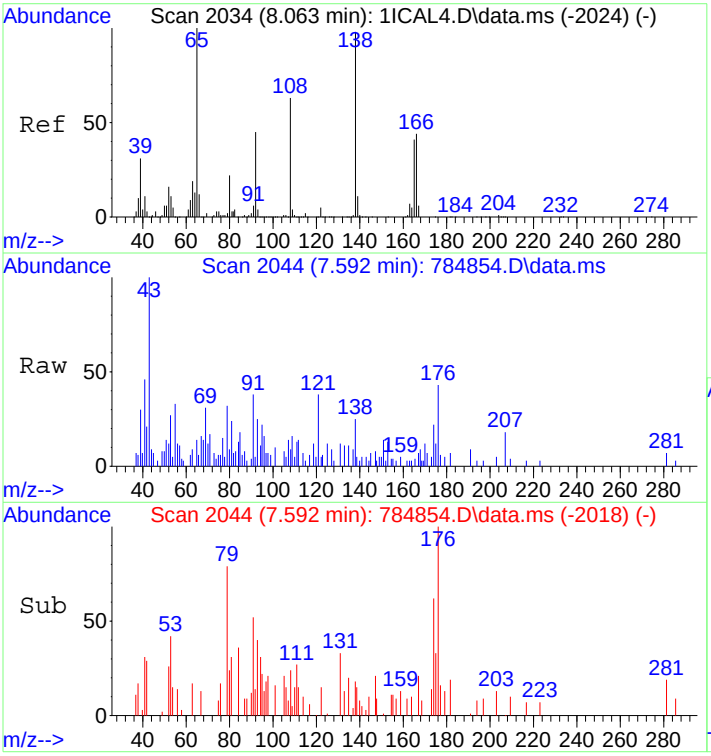


#55
4-Nitrophenol
Concen: 2.08 ug/mL
RT: 7.407 min Scan# 1979
Delta R.T. 0.031 min
Lab File: 784854.D
Acq: 19 Oct 16 11:46 pm

Tgt Ion: 65 Resp: 4125

Ion	Ratio	Lower	Upper
65	100		
139	8.3	73.5	133.5#
109	46.2	58.3	98.3#

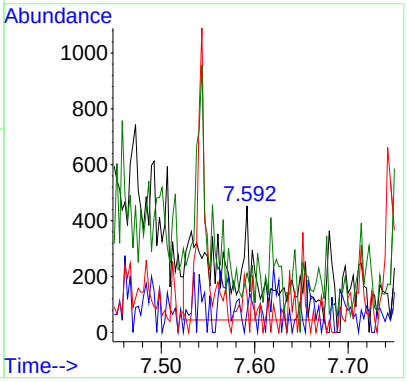


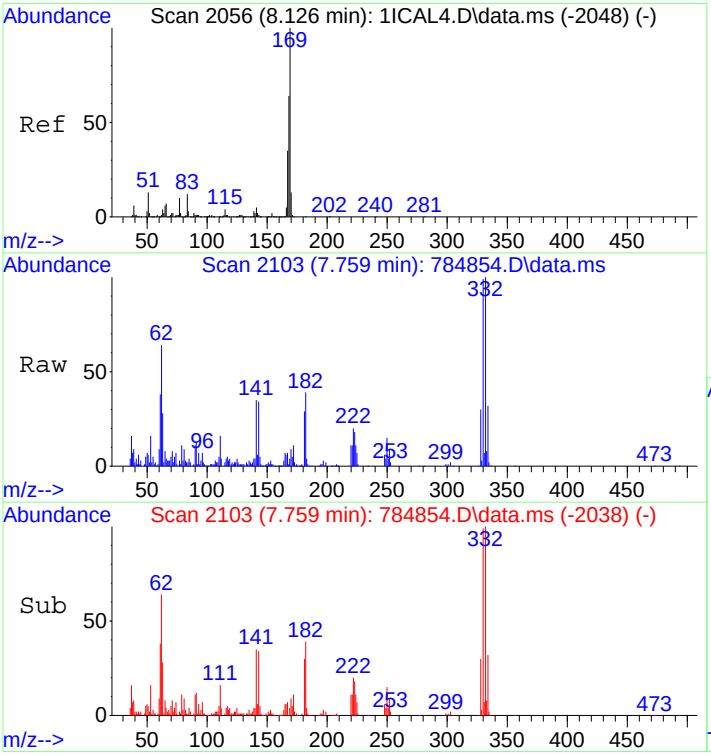


#61
4Nitroaniline
Concen: 0.63 ug/mL
RT: 7.592 min Scan# 2044
Delta R.T. -0.046 min
Lab File: 784854.D
Acq: 19 Oct 16 11:46 pm

Tgt Ion:138 Resp: 1386

Ion	Ratio	Lower	Upper
138	100		
92	18.4	12.7	72.7
108	14.7	46.1	106.1#
65	44.9	71.6	131.6#

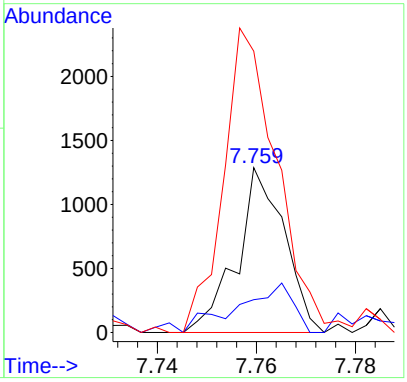


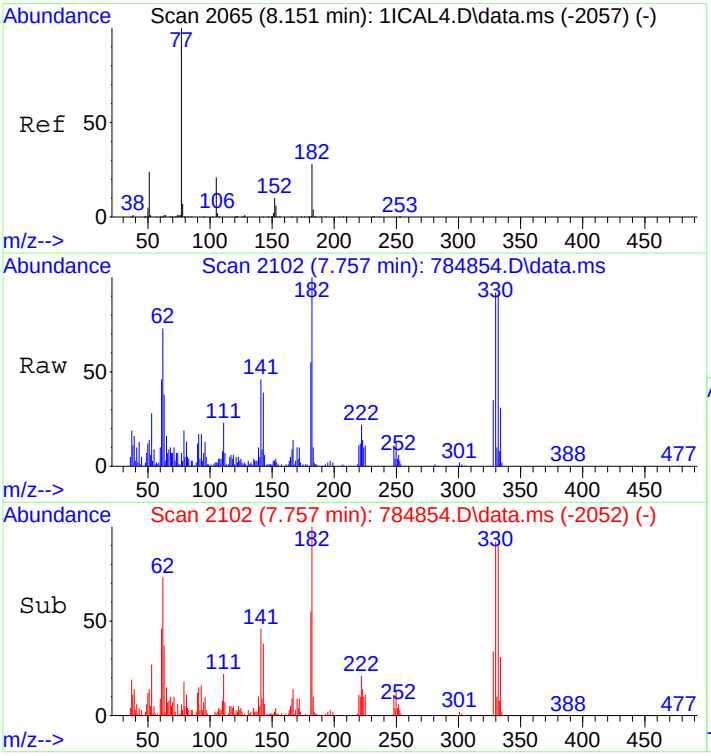


#65
Ntrsdiphlam&Diphlam
Concen: 0.12 ug/mL
RT: 7.759 min Scan# 2103
Delta R.T. 0.065 min
Lab File: 784854.D
Acq: 19 Oct 16 11:46 pm

Tgt Ion:169 Resp: 859

Ion	Ratio	Lower	Upper
169	100		
168	20.0	35.5	95.5#
167	170.7	5.2	65.2#

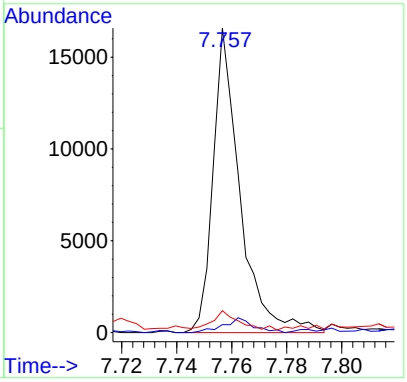


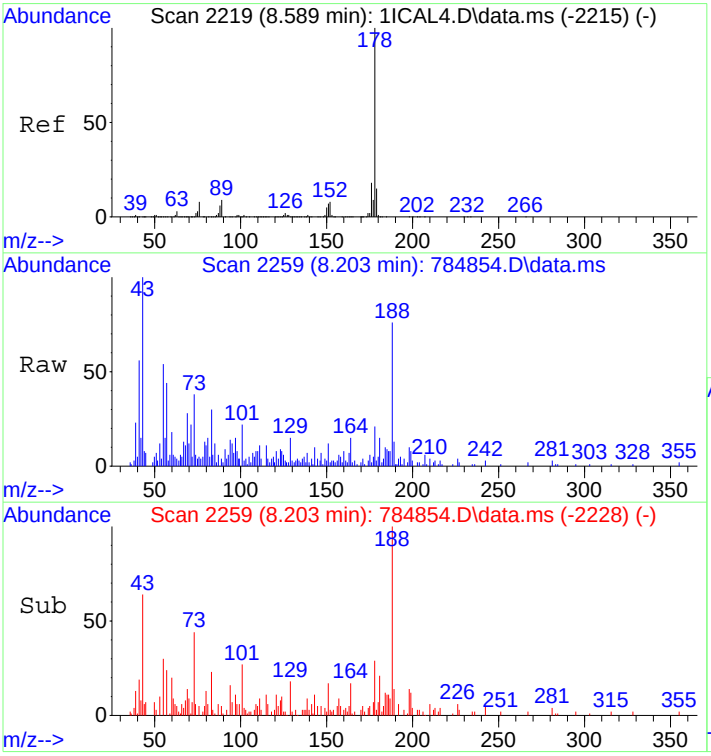


#66
Azobenz&12Diphlhyd
Concen: 4.83 ug/mL
RT: 7.757 min Scan# 2102
Delta R.T. 0.043 min
Lab File: 784854.D
Acq: 19 Oct 16 11:46 pm

Tgt Ion:182 Resp: 11285

Ion	Ratio	Lower	Upper
182	100		
152	2.6	7.0	67.0#
77	6.0	330.8	390.8#

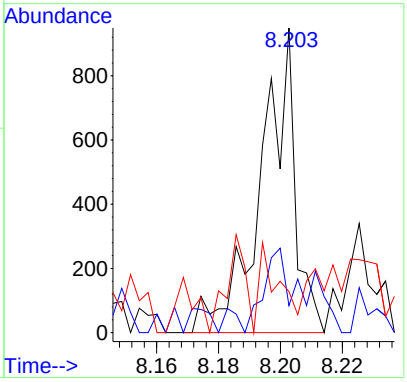


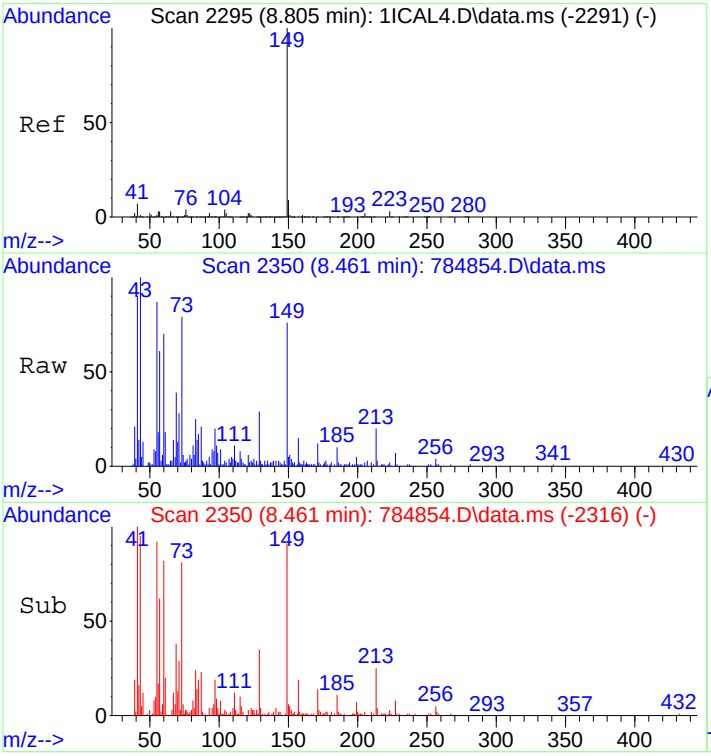


#71
Anthracene
Concen: 0.05 ug/mL
RT: 8.203 min Scan# 2259
Delta R.T. -0.026 min
Lab File: 784854.D
Acq: 19 Oct 16 11:46 pm

Tgt Ion:178 Resp: 731

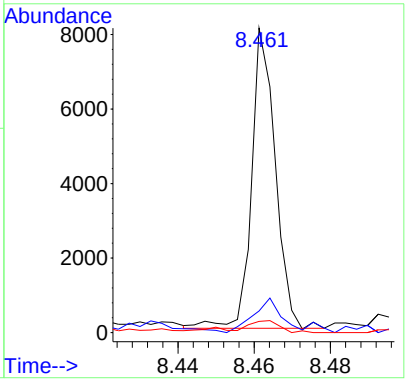
Ion	Ratio	Lower	Upper
178	100		
176	8.9	0.0	47.3
179	0.0	0.0	44.6





#73
Dinbtylphthal
Concen: 0.22 ug/mL
RT: 8.461 min Scan# 2350
Delta R.T. -0.003 min
Lab File: 784854.D
Acq: 19 Oct 16 11:46 pm

Tgt Ion:149	Resp:	3493	
Ion	Ratio	Lower	Upper
149	100		
150	5.9	0.0	39.8
104	3.7	0.0	34.5



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\784855.D Vial: 28
Acq On : 20 Oct 2016 00:06 Operator: JJY
Sample : 131383,784855, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 14:51:01 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.966	152	47902	20.00	ug/mL	0.00
21) Naphthalened8	5.620	136	199951	20.00	ug/mL	0.00
39) Acenaphthened10	7.239	164	115683	20.00	ug/mL	0.00
63) Phenanthrd10	8.186	188	206468	20.00	ug/mL	0.00
75) Chrysene-d12	9.584	240	184177	20.00	ug/mL	0.00
86) Perylene-d12	10.473	264	166919	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.830	112	72761	69.13	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 69.13%			
7) SURRPhenol-d5	3.614	99	78084	58.22	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 58.22%			
22) SURRNitrbenzened5	4.625	82	45384	71.81	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 71.81%			
44) SURR2Flbiphenyl	6.745	172	126782	79.20	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 79.20%			
62) SURR246Tribrphenl	7.762	330	46980	89.09	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 89.09%			
78) SURRTerphenyl-d14	8.970	244	146145	99.05	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 99.05%			
Target Compounds						Qvalue
15) 2Methylphenol	4.301	107	282	0.1139	ug/mL#	68
28) 24Diclphenol	5.492	162	922	0.3119	ug/mL#	60
30) Benzoic acid	5.401	122	19055	10.9507	ug/mL	94
31) Naphthalene	5.645	128	1873	0.1760	ug/mL	93
37) 2Methylnaphth	6.415	142	1178	0.1668	ug/mL#	59
38) 1Methylnaphth	6.498	141	720	0.1183	ug/mL	74
45) 2Clnaphthalen	6.876	162	11065	1.5675	ug/mL#	40
46) 2Nitroaniline	6.873	65	1659	0.8393	ug/mL#	27
47) Acnaphthylene	7.137	152	1894	0.1576	ug/mL	93
51) 3Nitroaniline	7.163	138	114	0.0631	ug/mL#	6
53) Dibenzofuran	7.475	168	2279	0.2161	ug/mL	50
55) 4-Nitrophenol	7.418	65	7302	4.6026	ug/mL	88
56) 2,3,5,6-Tetrachlorop	7.450	232	724	0.3441	ug/mL	67
57) 2,3,4,6-Tetrachlorop	7.475	232	669	0.2853	ug/mL	84
58) Fluorene	7.606	166	1221	0.1458	ug/mL	86
61) 4Nitroaniline	7.663	138	612	0.3471	ug/mL#	30
65) Ntrsdiphlam&Diphlam	7.722	169	155	0.0265	ug/mL	93
66) Azobenz&12Diphlhyd	7.708	182	1011	0.5408	ug/mL#	1
70) Phenanthrene	8.200	178	44429	3.9408	ug/mL	98
71) Anthracene	8.228	178	5916	0.5120	ug/mL	95
72) Carbazole	8.313	167	3350	0.3423	ug/mL	95
73) Dinbtylphthal	8.464	149	4194	0.3352	ug/mL	91
74) Fluoranthene	8.780	202	116575	9.5710	ug/mL	99
77) Pyrene	8.896	202	97448	8.5455	ug/mL	99
82) B[a]anthracen	9.575	228	44780	3.9351	ug/mL	96
83) Chrysene	9.598	228	48996	4.7058	ug/mL	97
84) bis2Ethlhxlph	9.581	149	3605	0.4911	ug/mL	86
87) B[b]fluoranth	10.240	252	67091	6.4848	ug/mL	96
88) B[k]fluoranth	10.254	252	20654	2.1254	ug/mL	92
89) Benz[a]pyrene	10.439	252	39831	3.9920	ug/mL	98
90) Indeno-pyrene	11.189	276	20819	1.7572	ug/mL	94
91) Dib[ah]anthr	11.198	278	5579	0.5688	ug/mL	82
92) B[ghi]perylen	11.394	276	16082	1.6326	ug/mL	94

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\784855.D Vial: 28
Acq On : 20 Oct 2016 00:06 Operator: JJY
Sample : 131383,784855, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 14:51:01 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

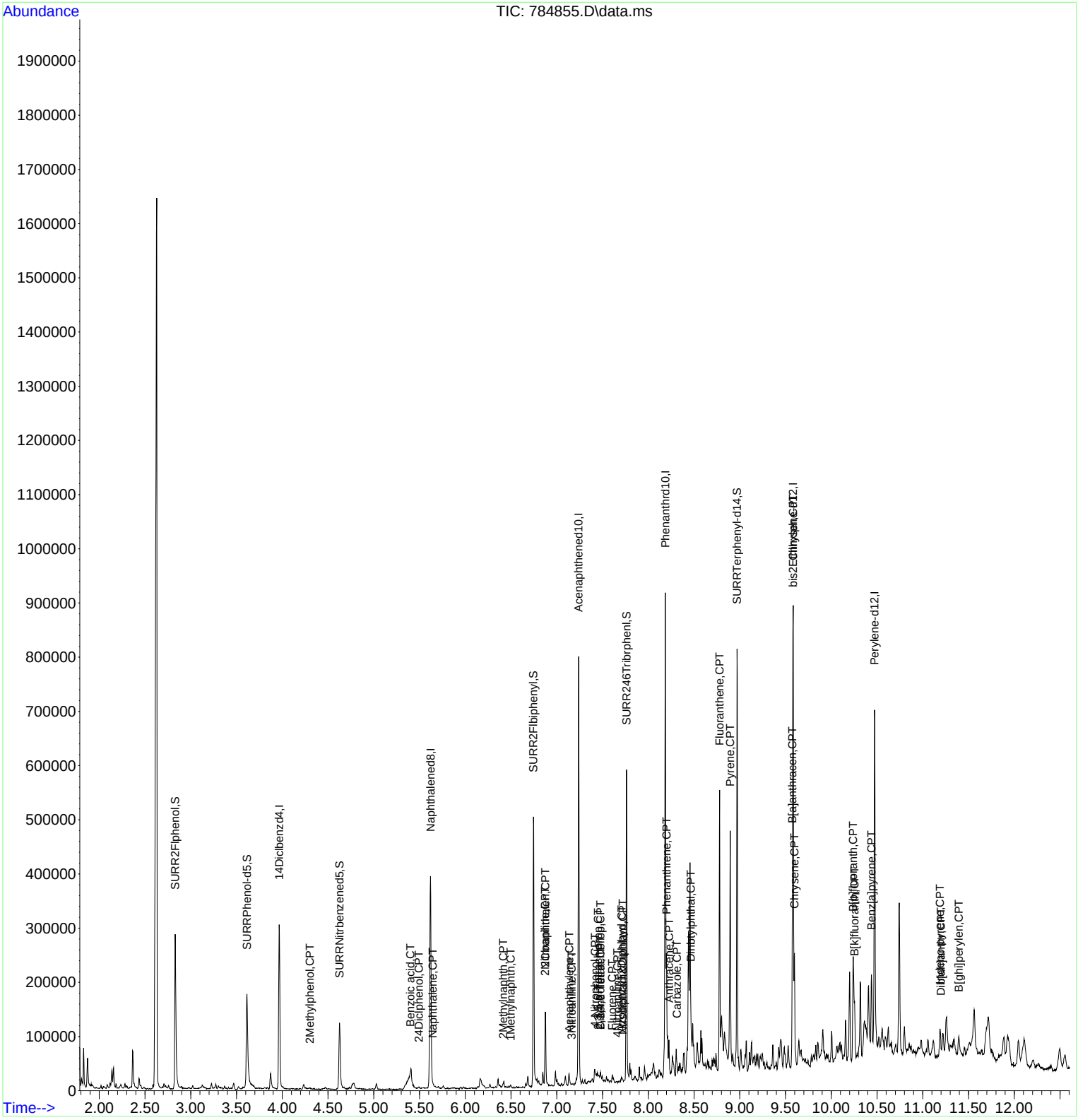
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

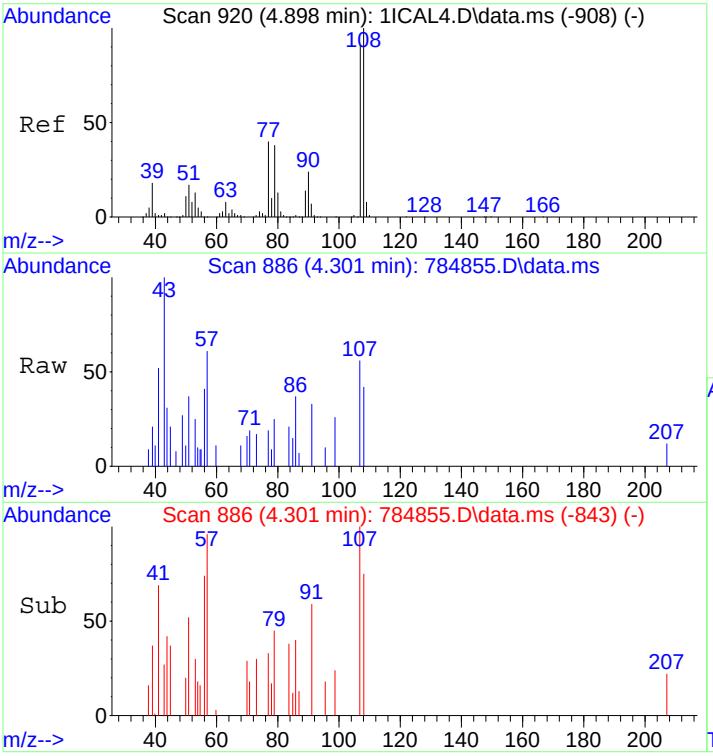
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\784855.D Vial: 28
Acq On : 20 Oct 2016 00:06 Operator: JJY
Sample : 131383,784855, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 14:51:01 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

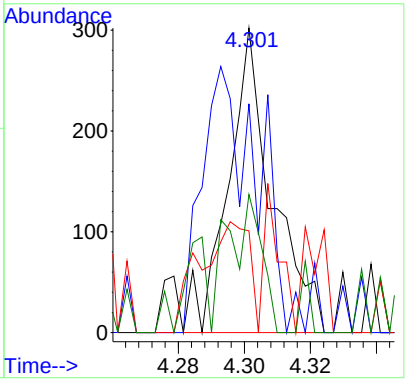


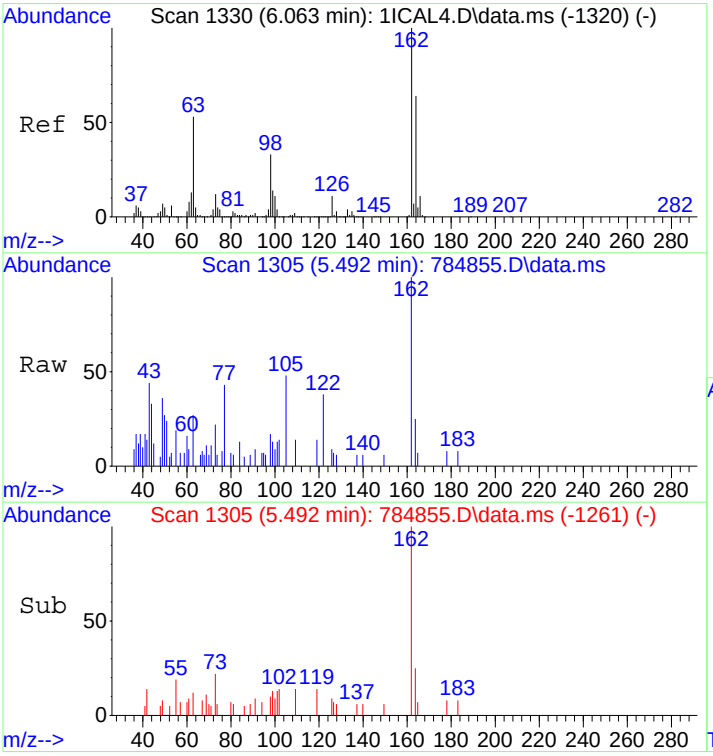


#15
2Methylphenol
Concen: 0.11 ug/mL
RT: 4.301 min Scan# 886
Delta R.T. 0.008 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:107 Resp: 282

Ion	Ratio	Lower	Upper
107	100		
108	75.2	81.7	141.7#
77	16.6	33.2	73.2#
79	45.4	23.5	63.5

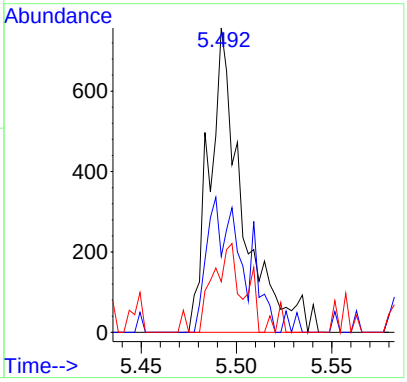


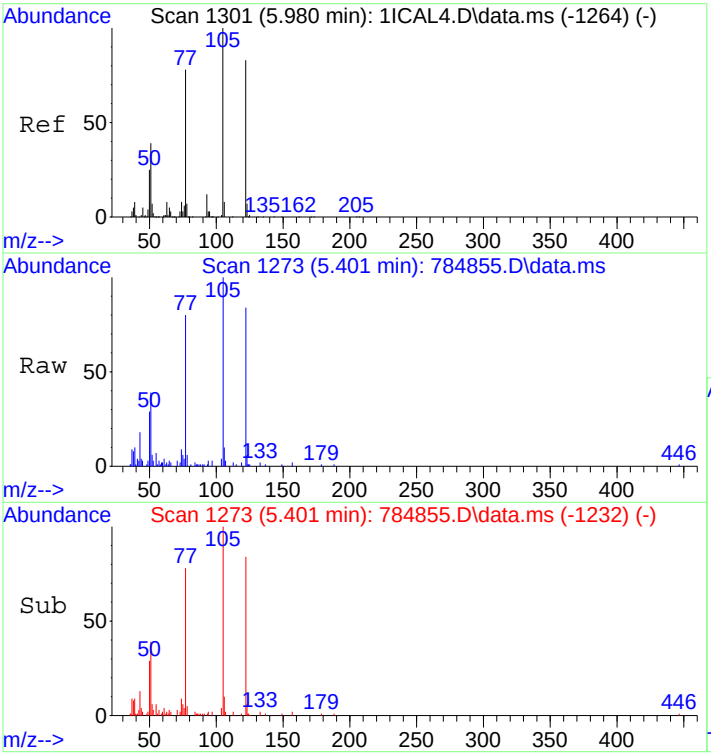


#28
24Diclphenol
Concen: 0.31 ug/mL
RT: 5.492 min Scan# 1305
Delta R.T. 0.025 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:162 Resp: 922

Ion	Ratio	Lower	Upper
162	100		
164	25.0	29.6	89.6#
98	16.6	3.9	63.9

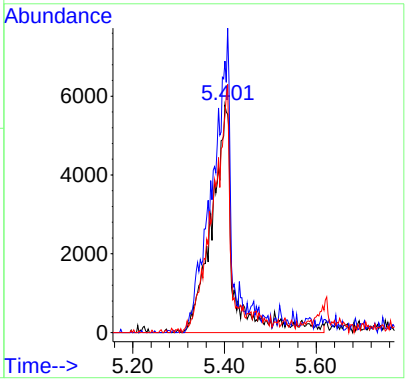


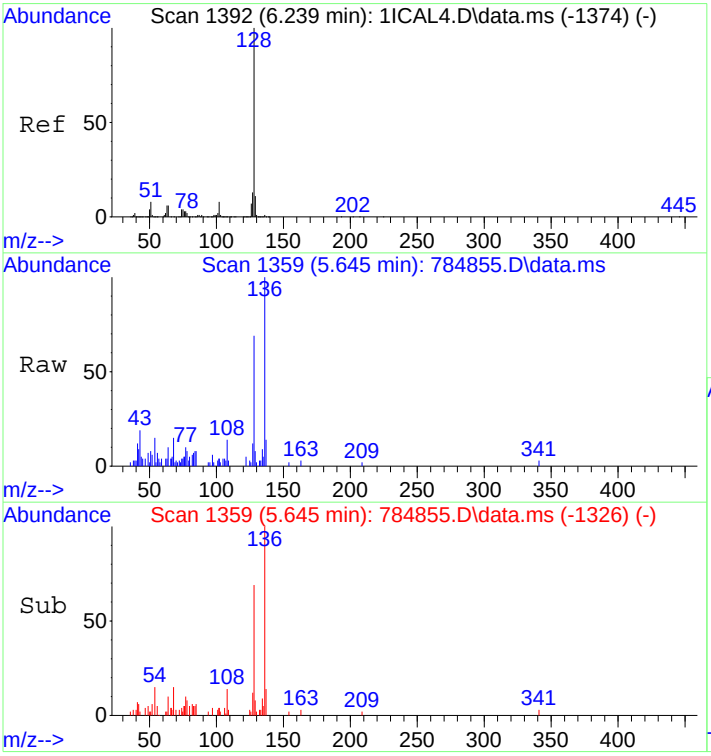


#30
Benzoic acid
Concen: 10.95 ug/mL
RT: 5.401 min Scan# 1273
Delta R.T. -0.034 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:122 Resp: 19055

Ion	Ratio	Lower	Upper
122	100		
105	119.1	95.2	155.2
77	94.1	57.8	117.8

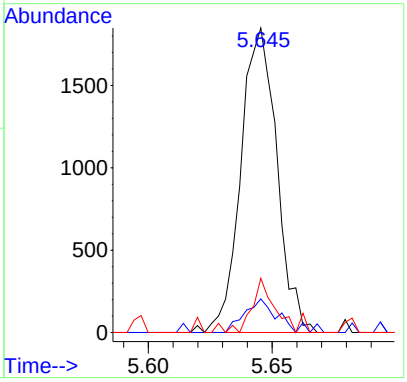


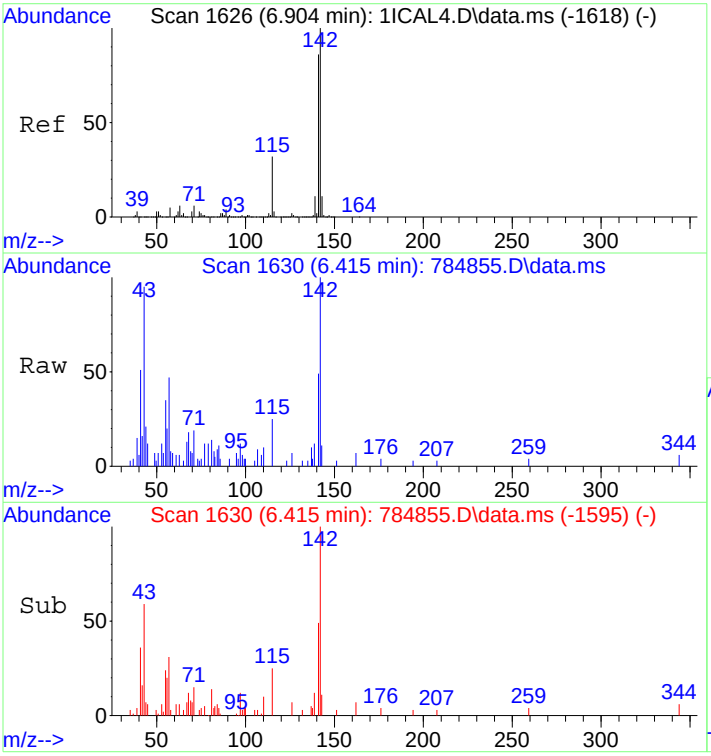


#31
Naphthalene
Concen: 0.18 ug/mL
RT: 5.645 min Scan# 1359
Delta R.T. -0.006 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:128 Resp: 1873

Ion	Ratio	Lower	Upper
128	100		
129	11.0	0.0	40.7
127	17.8	0.0	43.2

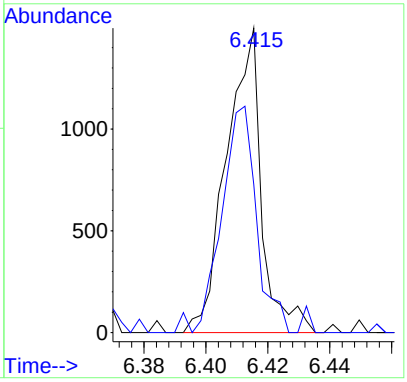


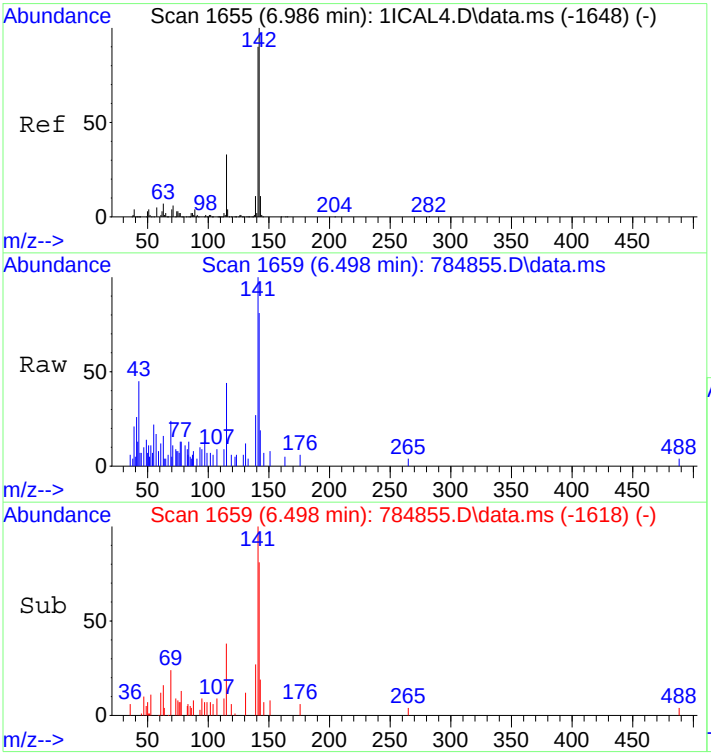


#37
2Methylnaphth
Concen: 0.17 ug/mL
RT: 6.415 min Scan# 1630
Delta R.T. -0.000 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:142 Resp: 1178

Ion	Ratio	Lower	Upper
142	100		
141	48.7	56.7	116.7#

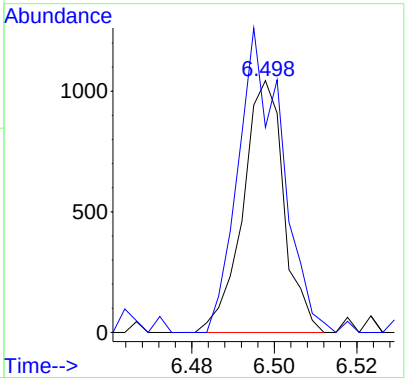


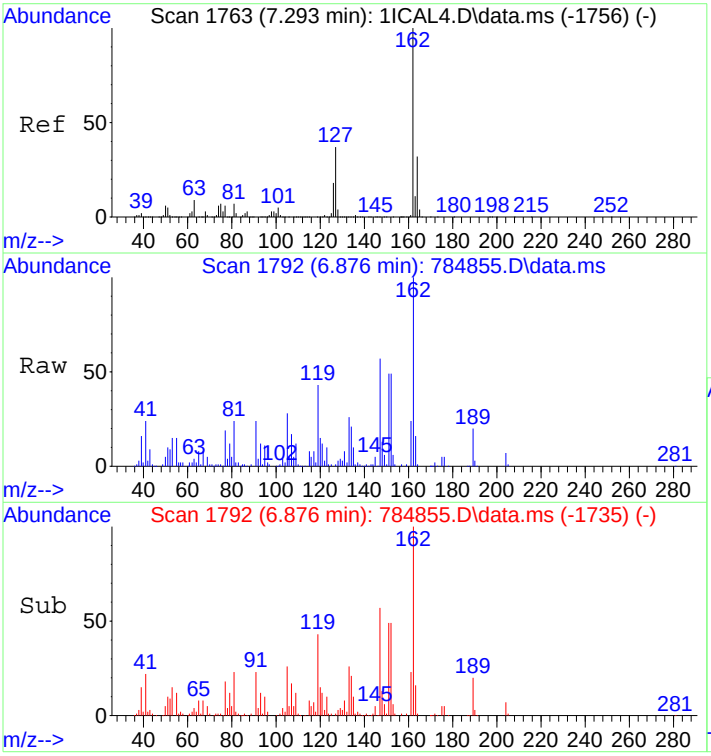


#38
1Methylnaphth
Concen: 0.12 ug/mL
RT: 6.498 min Scan# 1659
Delta R.T. -0.003 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:141 Resp: 720

Ion	Ratio	Lower	Upper
141	100		
142	81.4	78.9	138.9

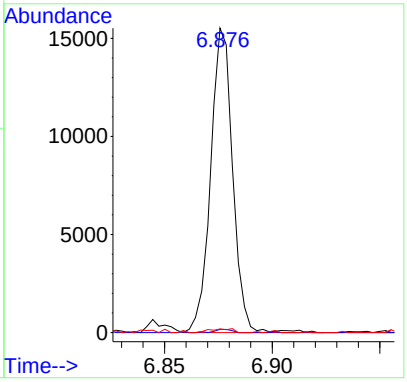


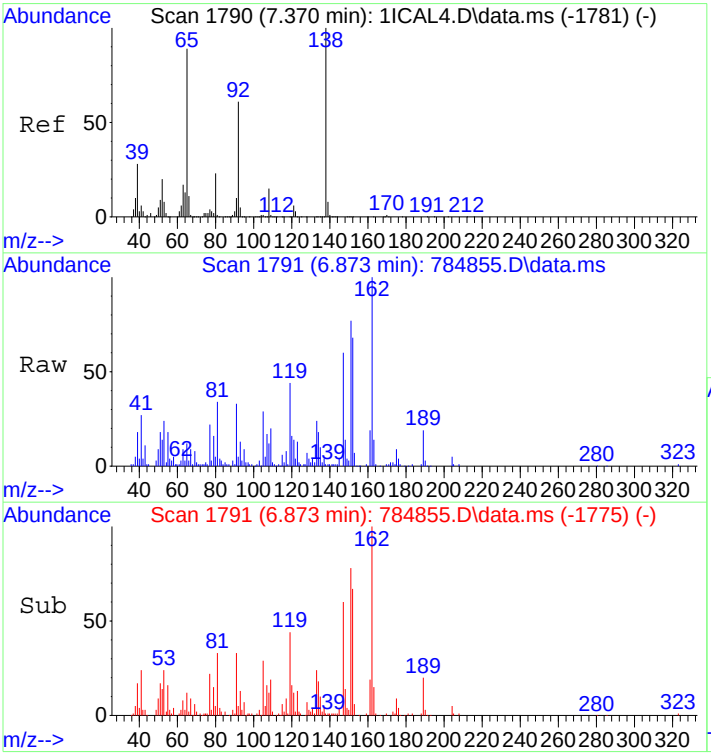


#45
2Clnaphthalen
Concen: 1.57 ug/mL
RT: 6.876 min Scan# 1792
Delta R.T. 0.048 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:162 Resp: 11065

Ion	Ratio	Lower	Upper
162	100		
164	0.8	2.4	62.4#
127	1.2	9.8	69.8#

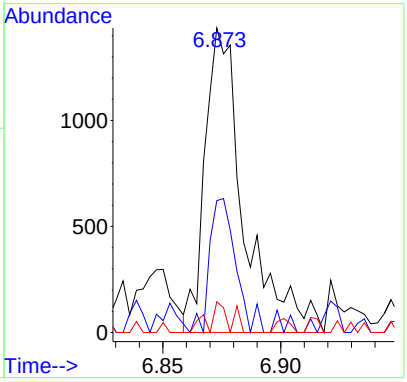


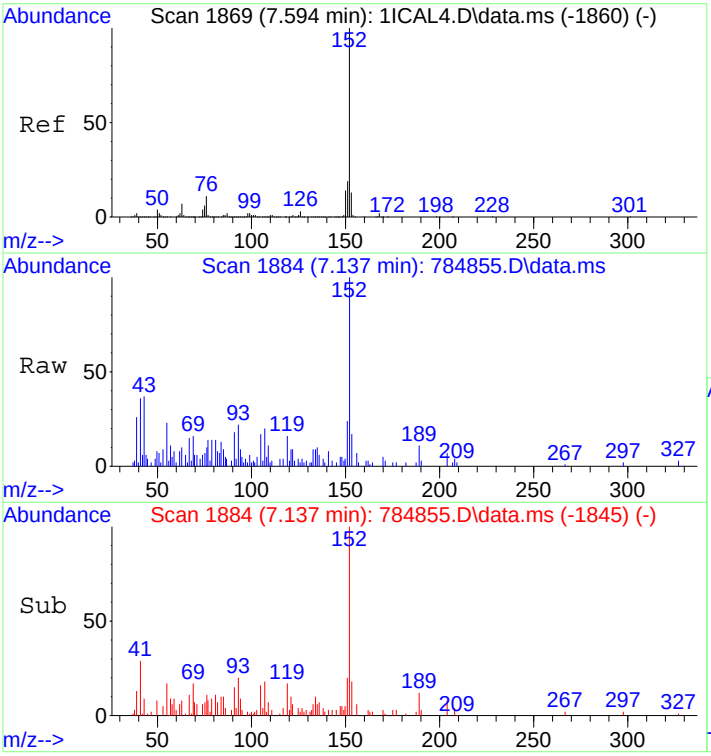


#46
2Nitroaniline
Concen: 0.84 ug/mL
RT: 6.873 min Scan# 1791
Delta R.T. -0.054 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion: 65 Resp: 1659

Ion	Ratio	Lower	Upper
65	100		
92	40.5	39.4	99.4
138	10.1	83.7	143.7#

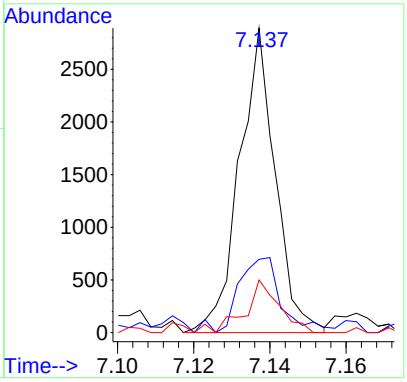


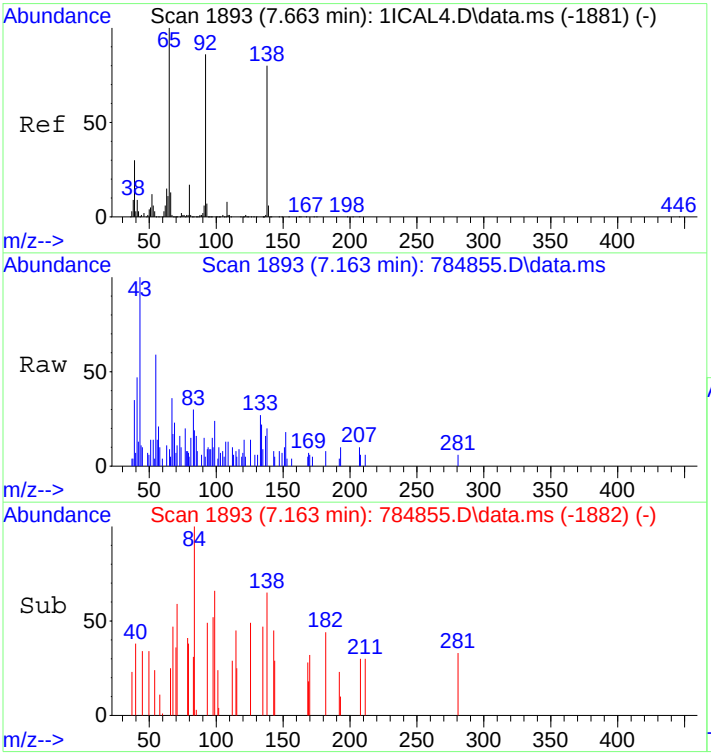


#47
Acnaphthylene
Concen: 0.16 ug/mL
RT: 7.137 min Scan# 1884
Delta R.T. -0.003 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:152 Resp: 1894

Ion	Ratio	Lower	Upper
152	100		
151	22.3	0.0	49.3
153	17.3	0.0	43.8

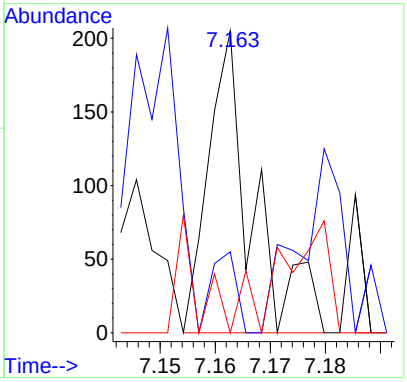


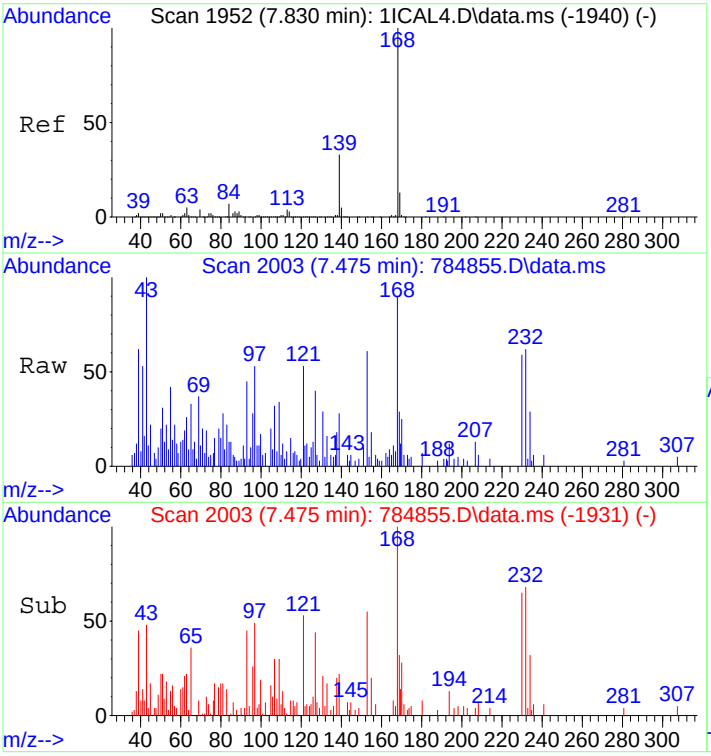


#51
3Nitroaniline
Concen: 0.06 ug/mL
RT: 7.163 min Scan# 1893
Delta R.T. -0.068 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:138 Resp: 114

Ion	Ratio	Lower	Upper
138	100		
92	0.0	72.2	132.2#
108	0.0	0.0	30.3

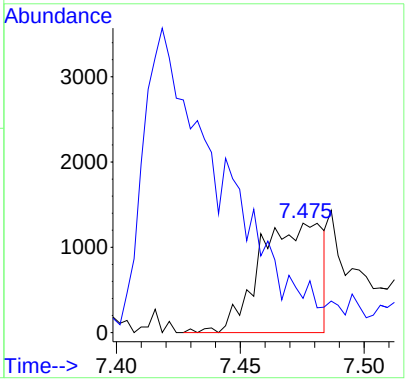


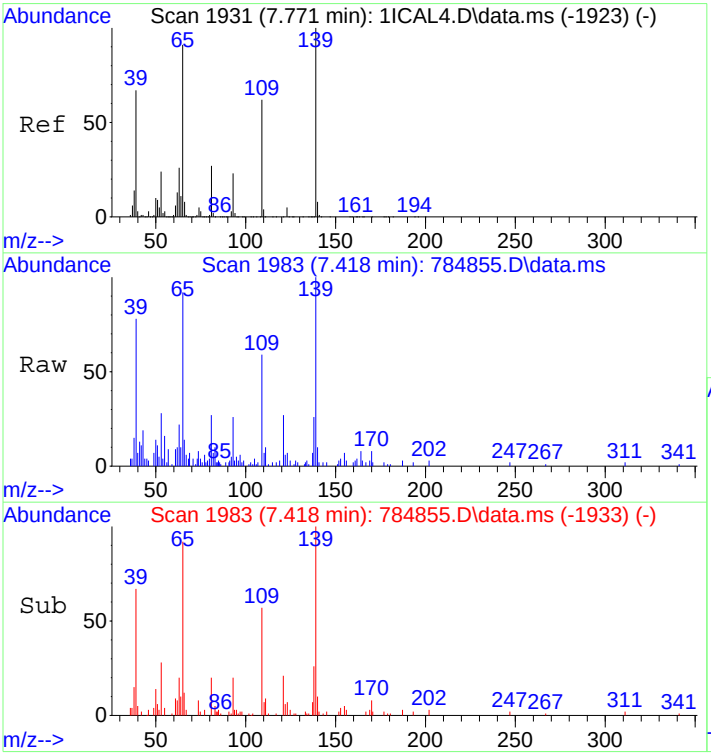


#53
Dibenzofuran
Concen: 0.22 ug/mL
RT: 7.475 min Scan# 2003
Delta R.T. 0.091 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:168 Resp: 2279

Ion	Ratio	Lower	Upper
168	100		
139	8.0	7.7	67.7

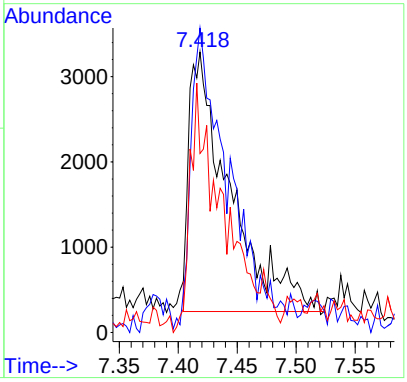


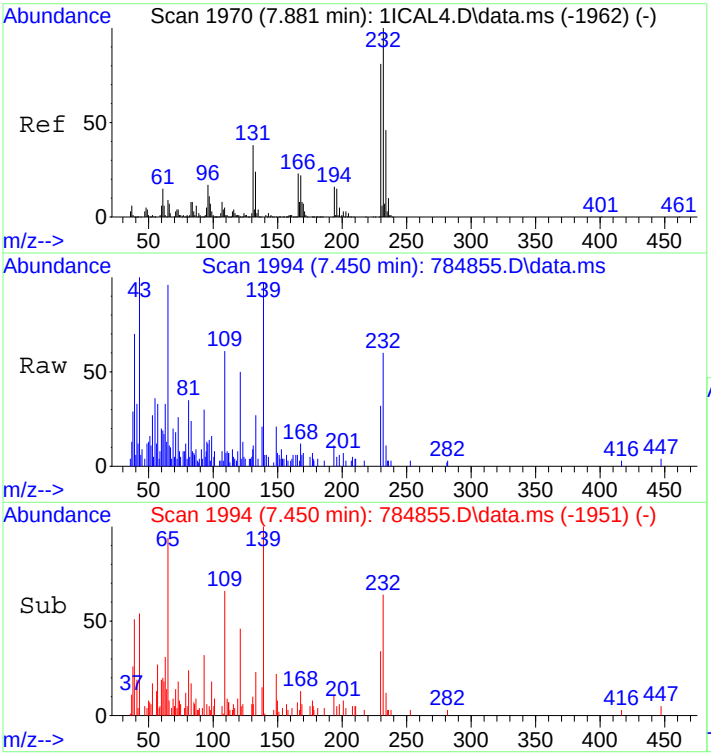


#55
4-Nitrophenol
Concen: 4.60 ug/mL
RT: 7.418 min Scan# 1983
Delta R.T. 0.043 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion: 65 Resp: 7302

Ion	Ratio	Lower	Upper
65	100		
139	108.7	73.5	133.5
109	60.0	58.3	98.3

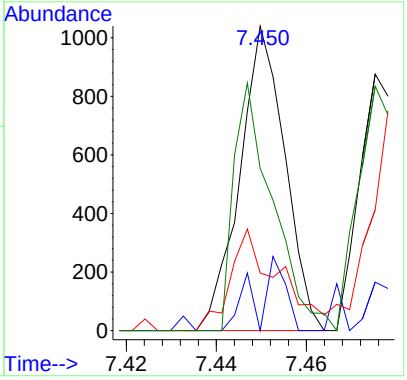


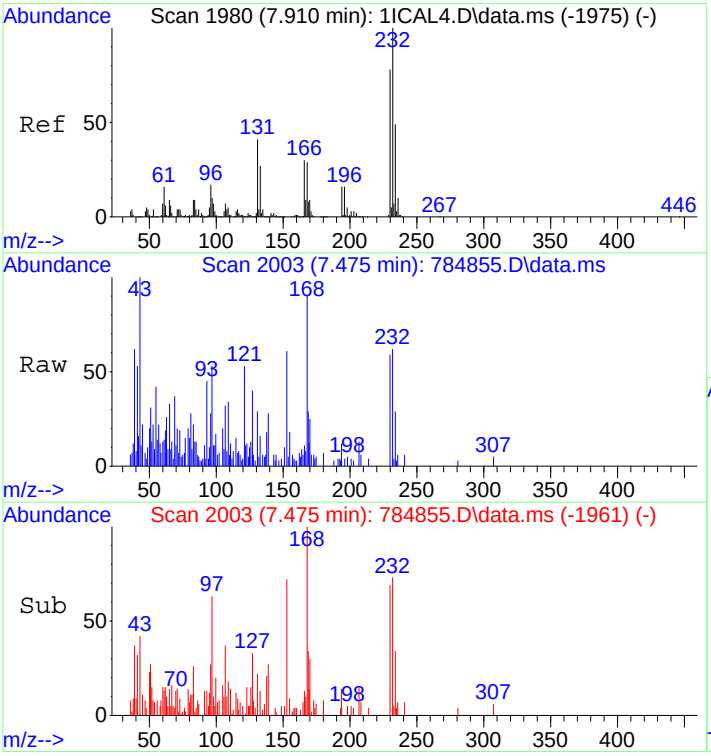


#56
2,3,5,6-Tetrachlorop
Concen: 0.34 ug/mL
RT: 7.450 min Scan# 1994
Delta R.T. 0.003 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:232 Resp: 724

Ion	Ratio	Lower	Upper
232	100		
194	0.0	0.0	46.4
234	18.9	17.0	77.0
230	53.3	45.0	105.0

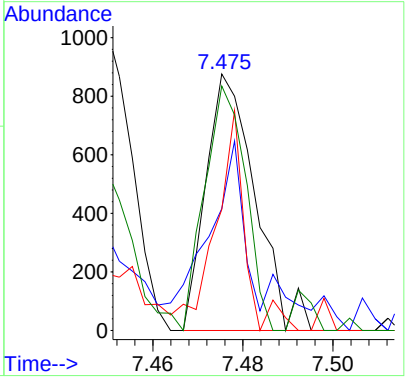


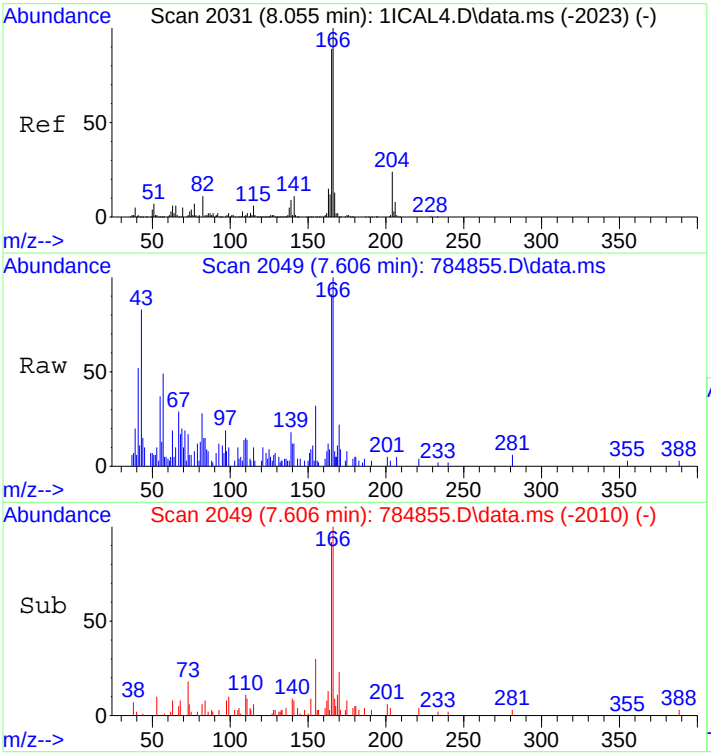


#57
2,3,4,6-Tetrachlorop
Concen: 0.29 ug/mL
RT: 7.475 min Scan# 2003
Delta R.T. -0.000 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:232 Resp: 669

Ion	Ratio	Lower	Upper
232	100		
131	33.9	13.2	73.2
234	41.9	14.7	74.7
230	95.3	45.0	105.0

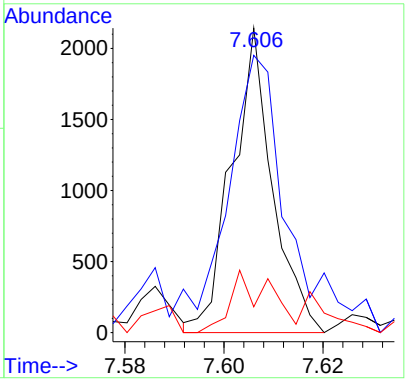


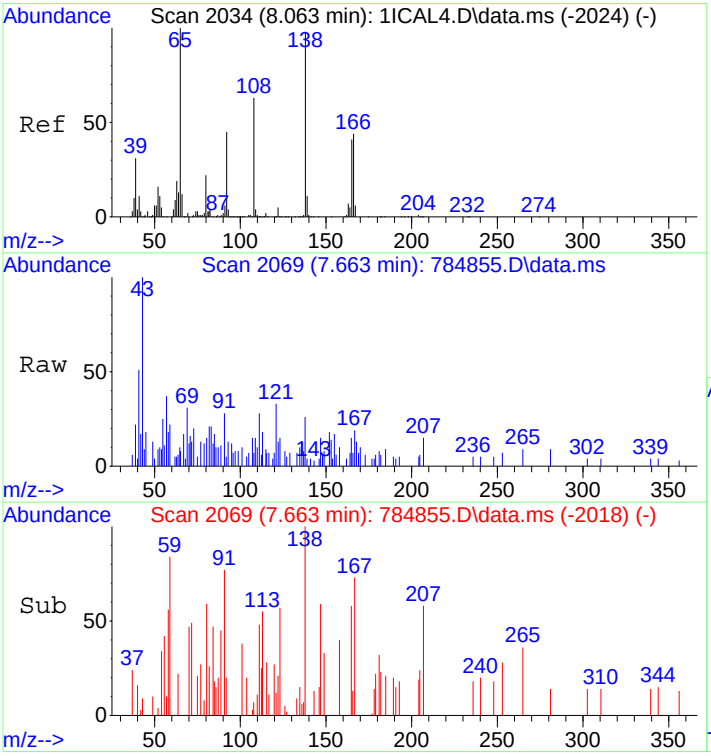


#58
Fluorene
Concen: 0.15 ug/mL
RT: 7.606 min Scan# 2049
Delta R.T. -0.003 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:166 Resp: 1221

Ion	Ratio	Lower	Upper
166	100		
165	79.4	65.0	125.0
167	14.2	0.0	43.9

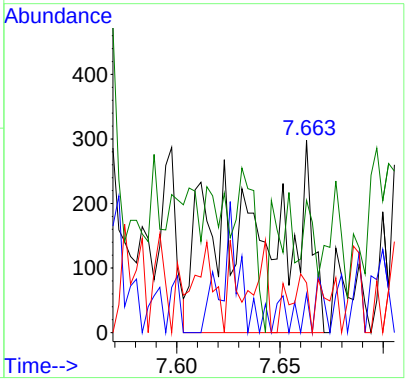


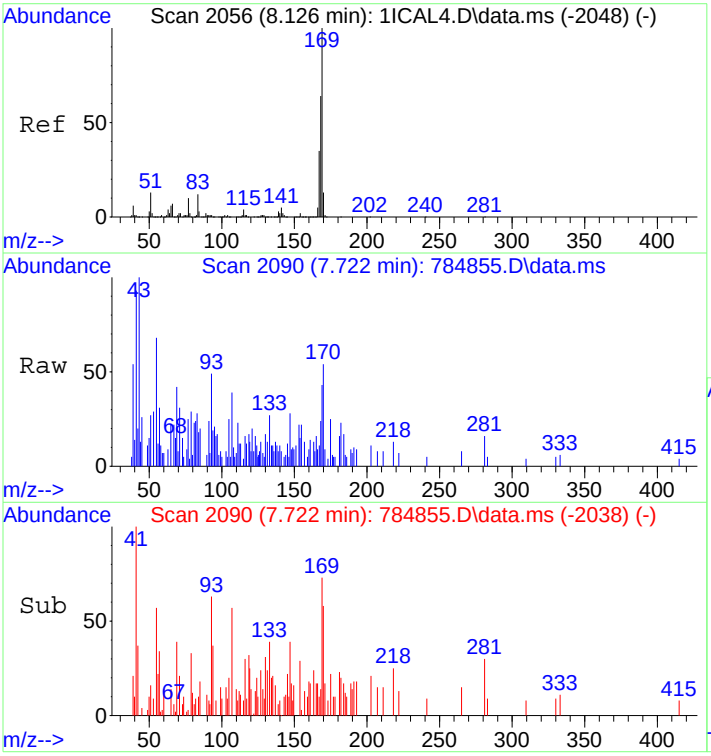


#61
4Nitroaniline
Concen: 0.35 ug/mL
RT: 7.663 min Scan# 2069
Delta R.T. 0.025 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:138 Resp: 612

Ion	Ratio	Lower	Upper
138	100		
92	20.1	12.7	72.7
108	7.7	46.1	106.1#
65	23.5	71.6	131.6#

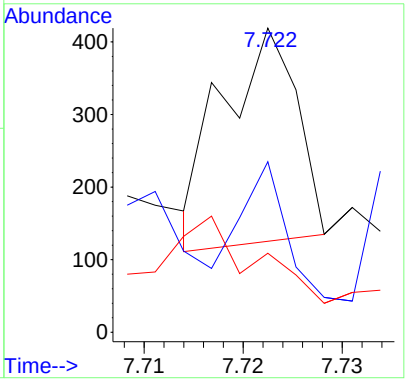


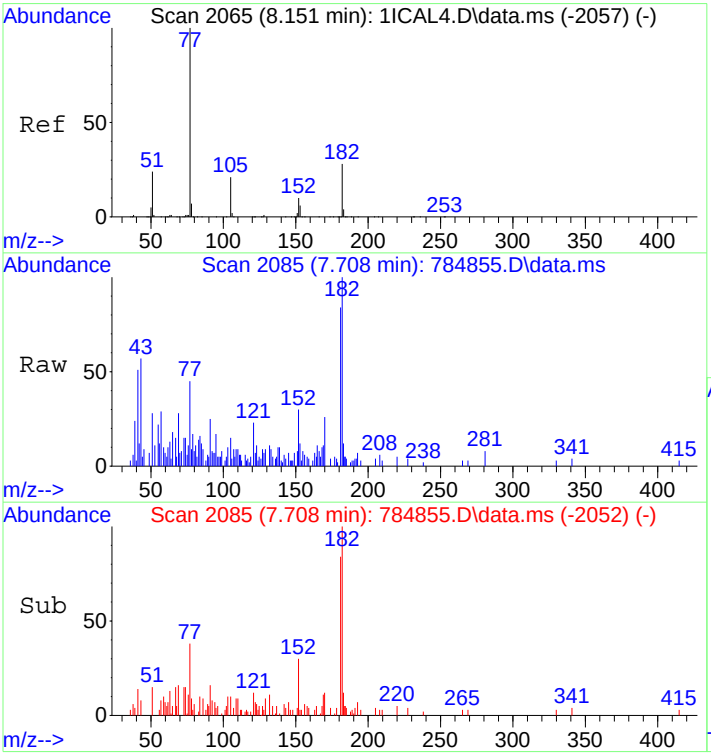


#65
Ntrsdiphlam&Diphlam
Concen: 0.03 ug/mL
RT: 7.722 min Scan# 2090
Delta R.T. 0.028 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:169 Resp: 155

Ion	Ratio	Lower	Upper
169	100		
168	65.8	35.5	95.5
167	24.3	5.2	65.2

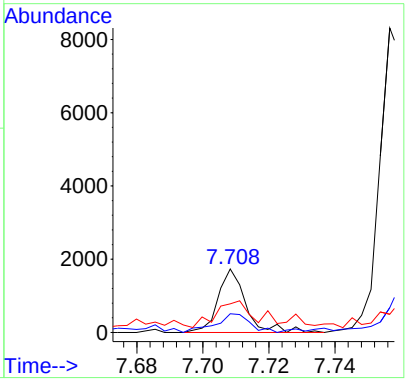


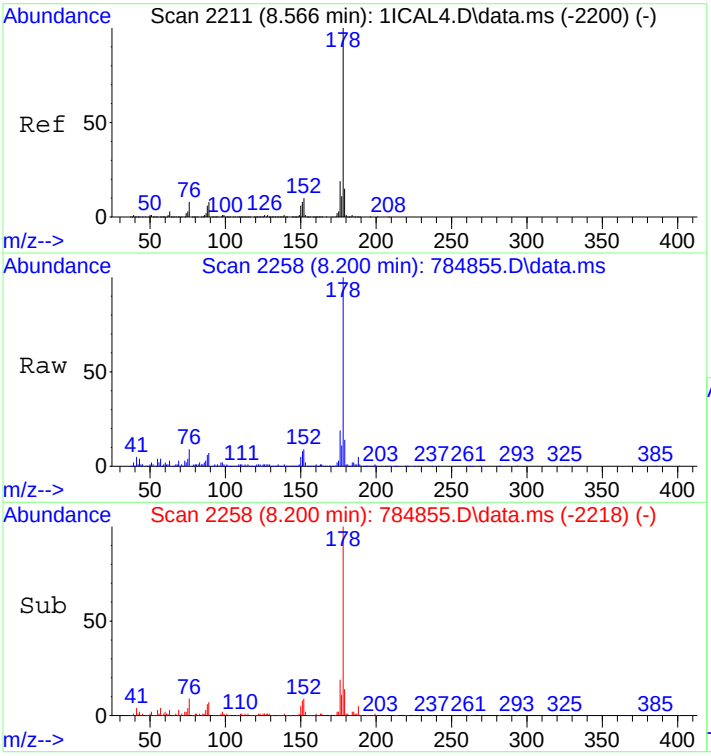


#66
Azobenz&12Diphlhyd
Concen: 0.54 ug/mL
RT: 7.708 min Scan# 2085
Delta R.T. -0.006 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:182 Resp: 1011

Ion	Ratio	Lower	Upper
182	100		
152	29.6	7.0	67.0
77	33.3	330.8	390.8#

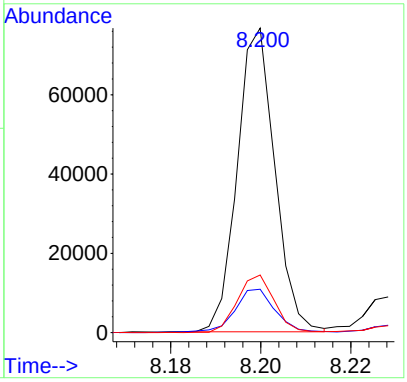


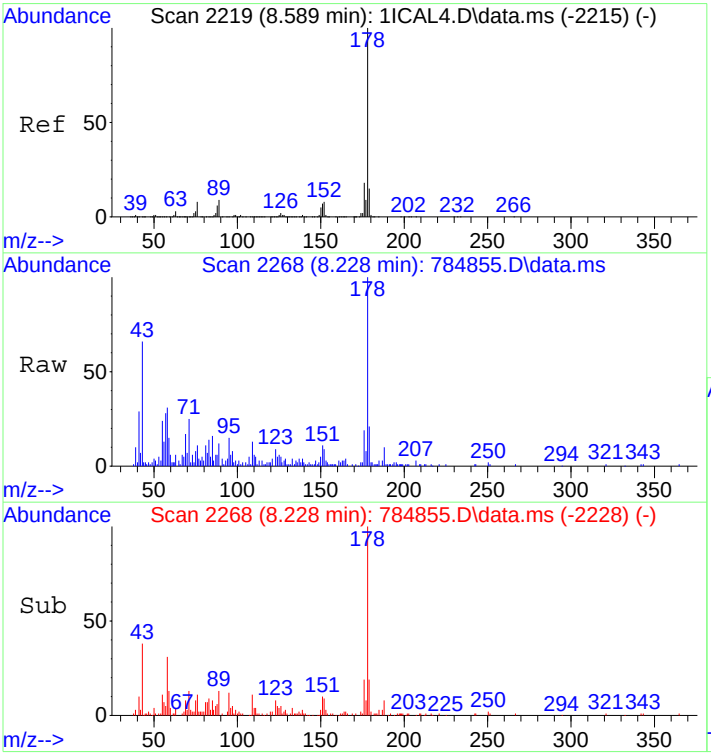


#70
Phenanthrene
Concen: 3.94 ug/mL
RT: 8.200 min Scan# 2258
Delta R.T. -0.000 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:178 Resp: 44429

Ion	Ratio	Lower	Upper
178	100		
179	14.0	0.0	45.3
176	19.0	0.0	49.4

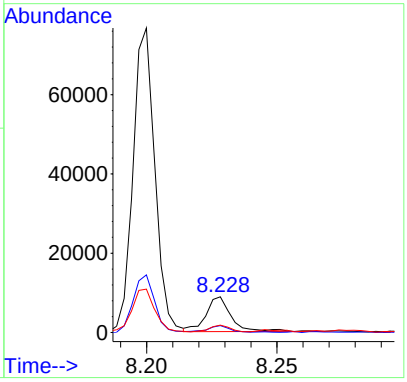


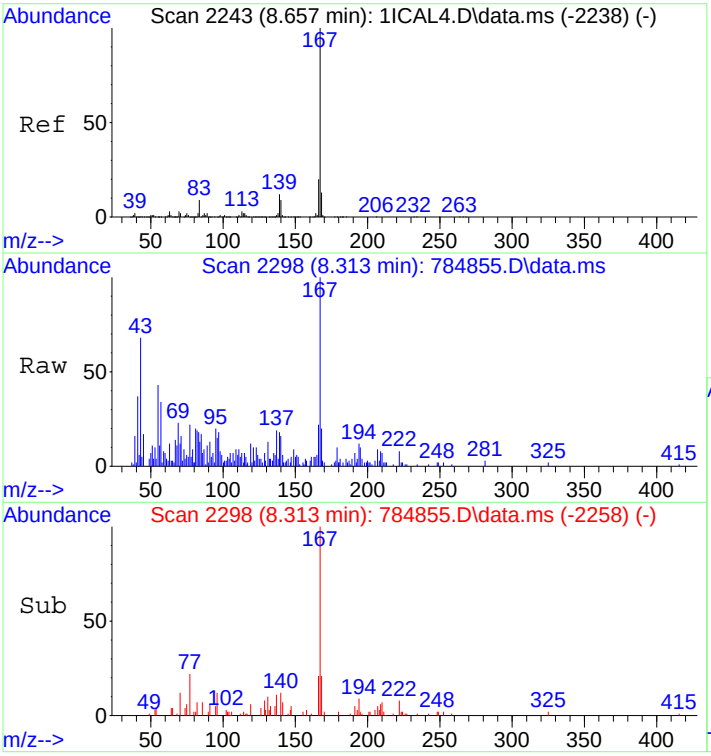


#71
Anthracene
Concen: 0.51 ug/mL
RT: 8.228 min Scan# 2268
Delta R.T. -0.000 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:178 Resp: 5916

Ion	Ratio	Lower	Upper
178	100		
176	18.3	0.0	47.3
179	18.2	0.0	44.6

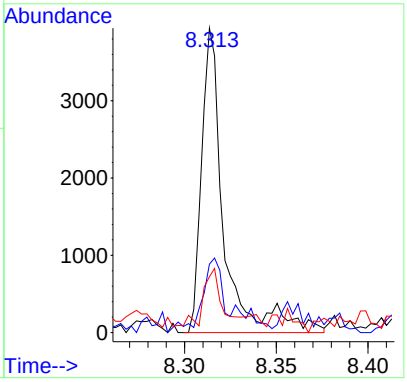


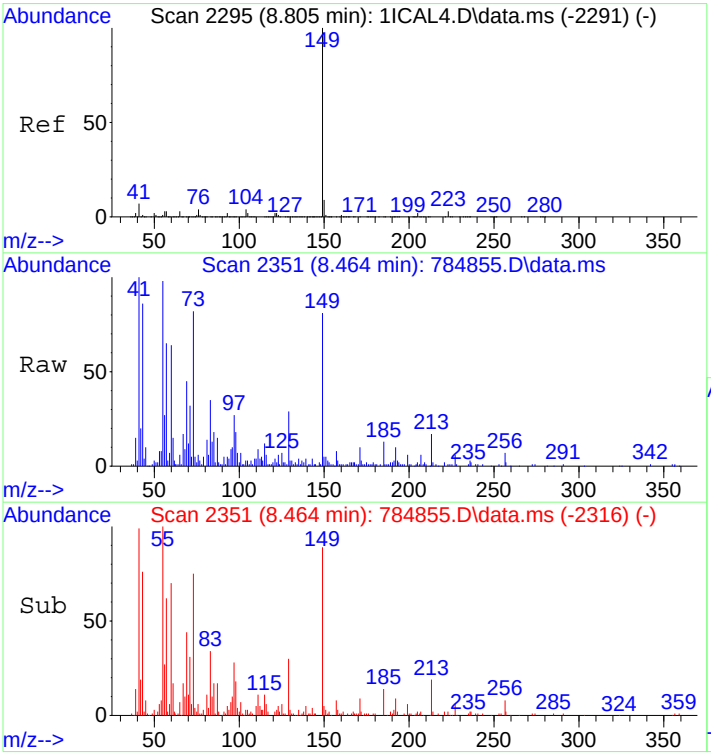


#72
Carbazole
Concen: 0.34 ug/mL
RT: 8.313 min Scan# 2298
Delta R.T. -0.000 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:167 Resp: 3350

Ion	Ratio	Lower	Upper
167	100		
166	20.5	0.0	49.8
139	16.1	0.0	41.7

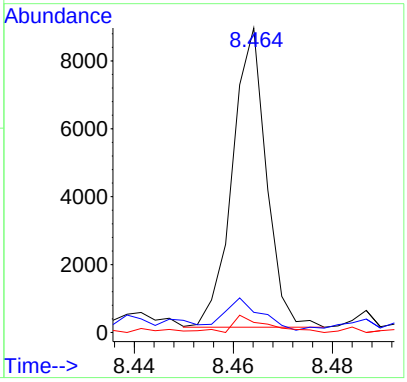


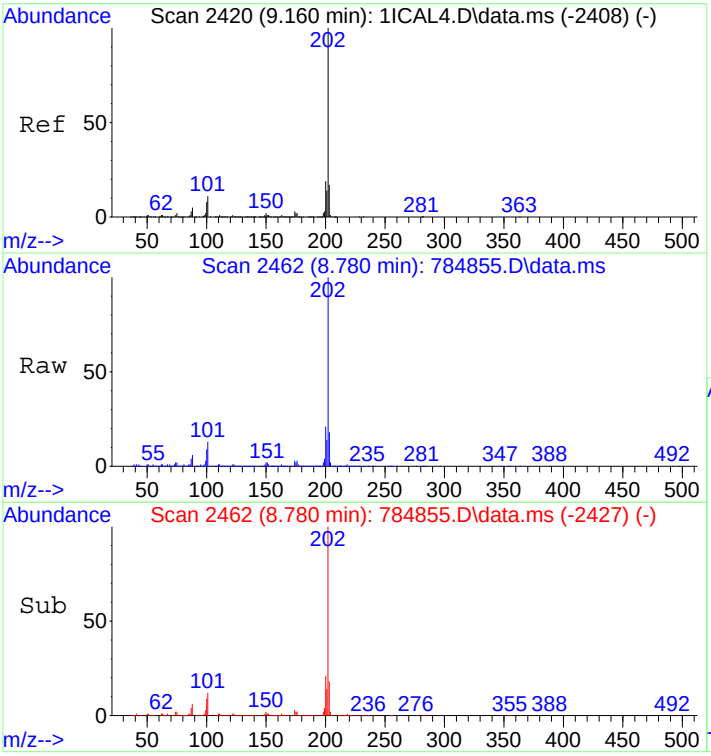


#73
Dinbtylphthal
Concen: 0.34 ug/mL
RT: 8.464 min Scan# 2351
Delta R.T. -0.000 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:149 Resp: 4194

Ion	Ratio	Lower	Upper
149	100		
150	5.3	0.0	39.8
104	3.4	0.0	34.5

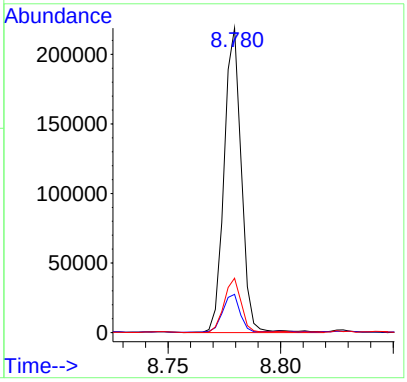


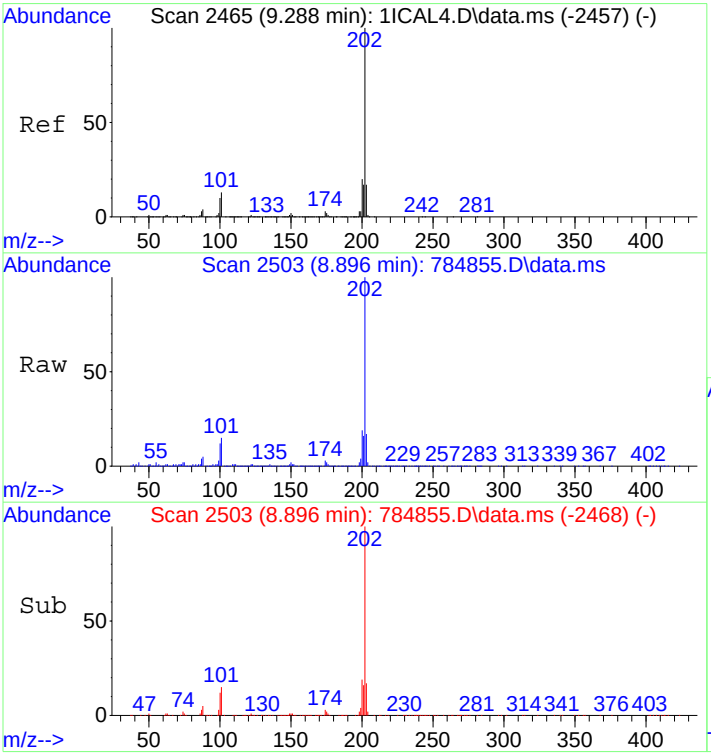


#74
Fluoranthene
Concen: 9.57 ug/mL
RT: 8.780 min Scan# 2462
Delta R.T. -0.000 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:202 Resp: 116575

Ion	Ratio	Lower	Upper
202	100		
101	12.5	0.0	42.0
203	17.8	0.0	37.4

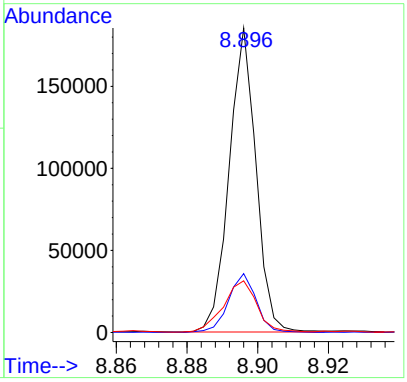


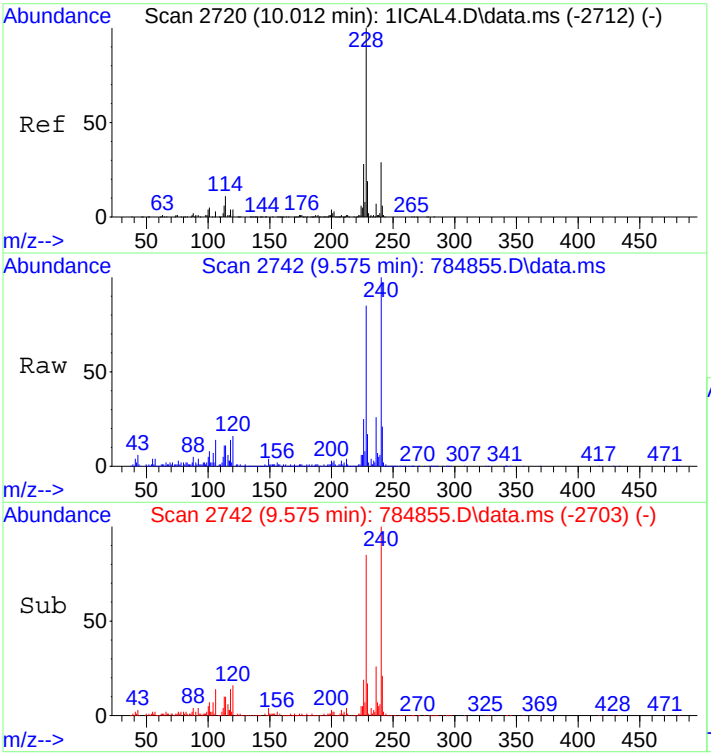


#77
Pyrene
Concen: 8.55 ug/mL
RT: 8.896 min Scan# 2503
Delta R.T. -0.000 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:202 Resp: 97448

Ion	Ratio	Lower	Upper
202	100		
200	19.3	0.0	49.6
203	16.8	0.0	47.1

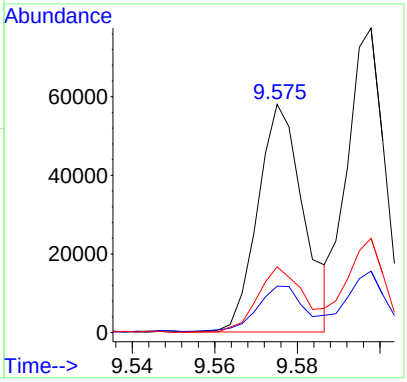


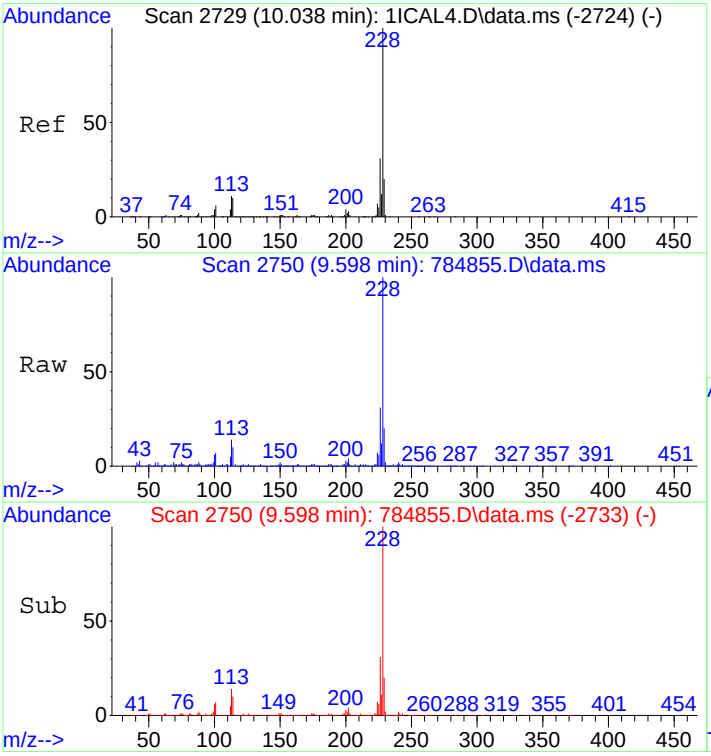


#82
B[a]anthracen
Concen: 3.94 ug/mL
RT: 9.575 min Scan# 2742
Delta R.T. -0.003 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:228 Resp: 44780

Ion	Ratio	Lower	Upper
228	100		
229	19.9	0.0	48.5
226	28.7	0.0	56.4

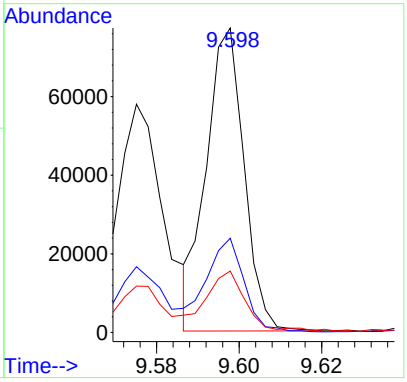


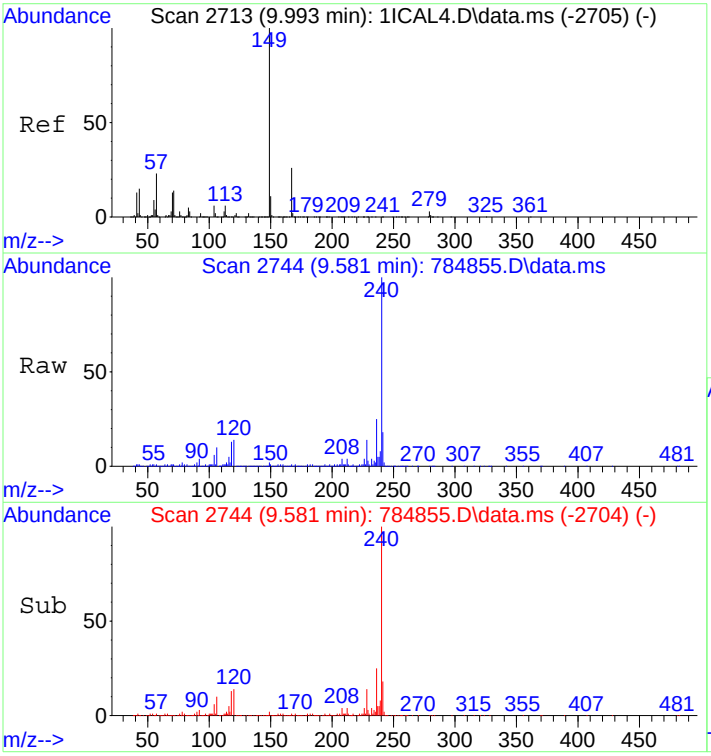


#83
Chrysene
Concen: 4.71 ug/mL
RT: 9.598 min Scan# 2750
Delta R.T. -0.003 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:228 Resp: 48996

Ion	Ratio	Lower	Upper
228	100		
226	30.9	0.0	58.0
229	19.3	0.0	49.4

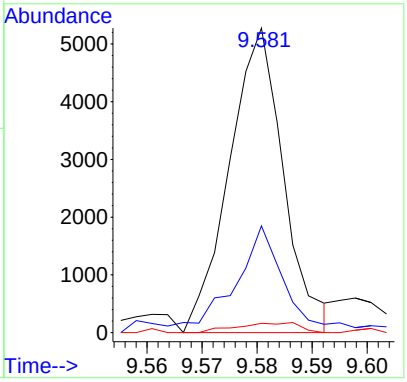


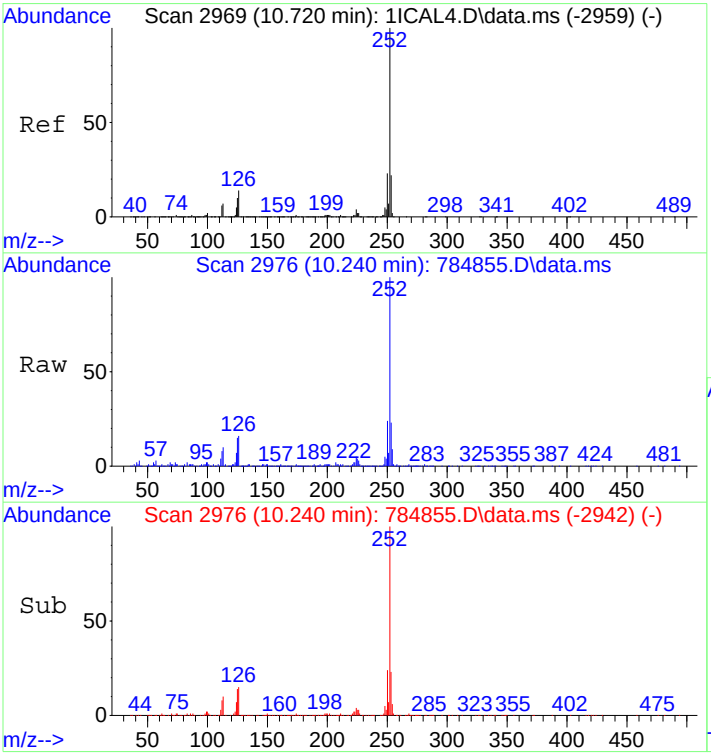


#84
bis2Ethlhxlph
Concen: 0.49 ug/mL
RT: 9.581 min Scan# 2744
Delta R.T. -0.000 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:149 Resp: 3605

Ion	Ratio	Lower	Upper
149	100		
167	32.3	0.0	54.6
279	3.1	0.0	33.1

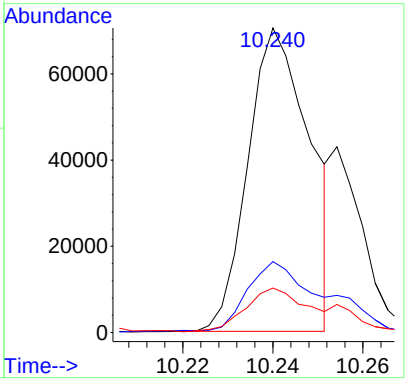


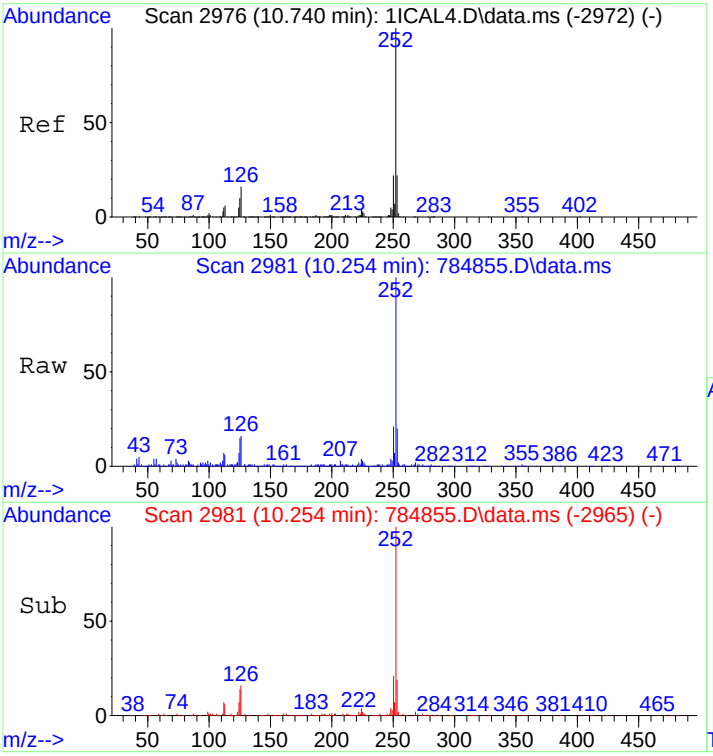


#87
B[b]fluoranth
Concen: 6.48 ug/mL
RT: 10.240 min Scan# 2976
Delta R.T. -0.003 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:252 Resp: 67091

Ion	Ratio	Lower	Upper
252	100		
253	22.7	0.0	50.7
125	14.5	0.0	42.5

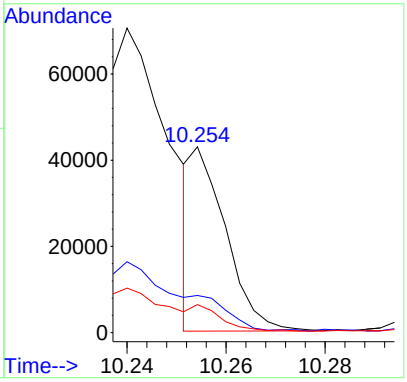


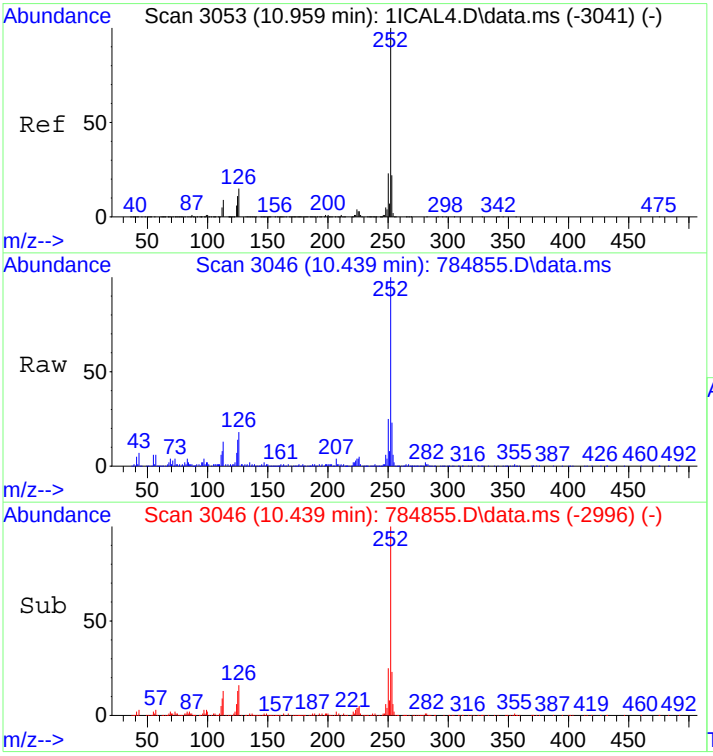


#88
B[k]fluoranth
Concen: 2.13 ug/mL
RT: 10.254 min Scan# 2981
Delta R.T. -0.006 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:252 Resp: 20654

Ion	Ratio	Lower	Upper
252	100		
253	18.4	0.0	52.6
125	14.4	0.0	41.7

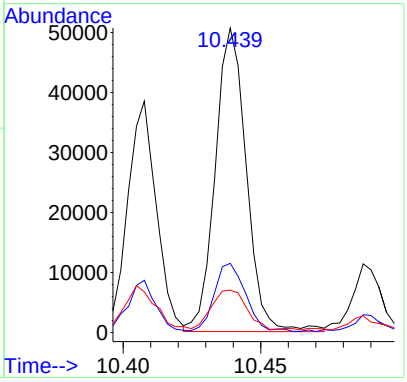


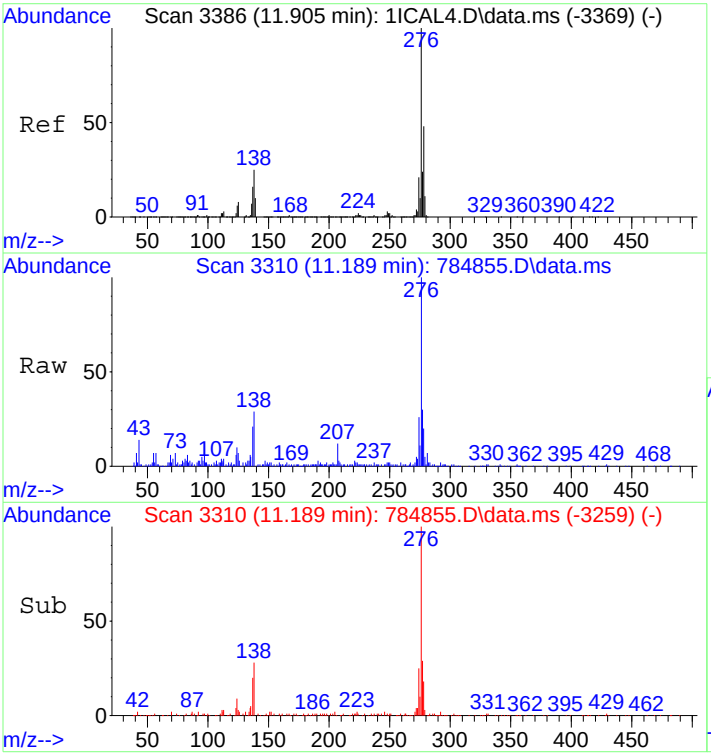


#89
Benz[a]pyrene
Concen: 3.99 ug/mL
RT: 10.439 min Scan# 3046
Delta R.T. -0.003 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:252 Resp: 39831

Ion	Ratio	Lower	Upper
252	100		
253	22.3	0.0	51.0
125	12.9	0.0	42.3

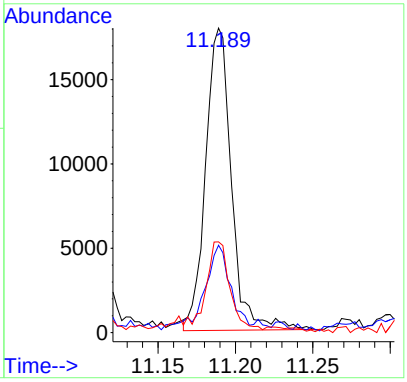


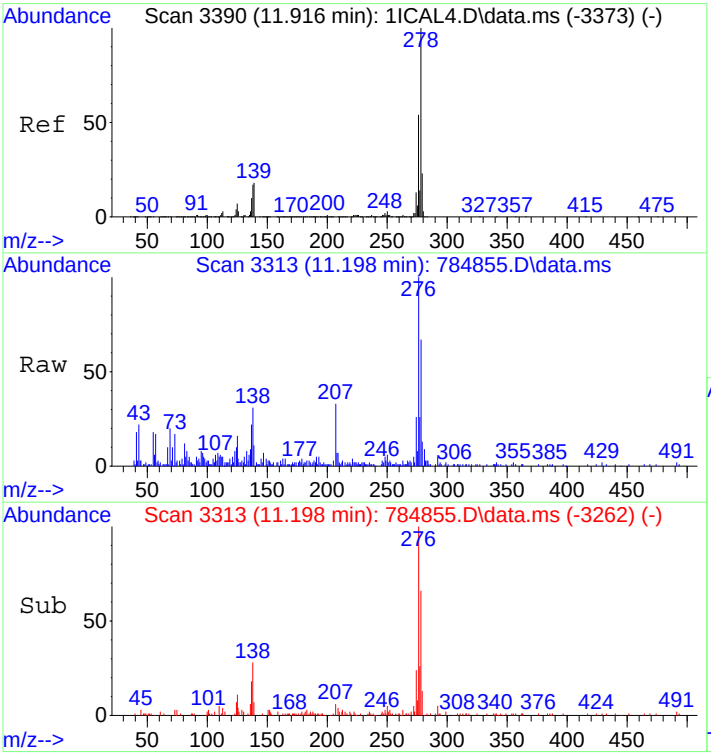


#90
Indeno-pyrene
Concen: 1.76 ug/mL
RT: 11.189 min Scan# 3310
Delta R.T. -0.006 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:276 Resp: 20819

Ion	Ratio	Lower	Upper
276	100		
138	26.9	0.0	58.7
277	29.7	5.3	45.3

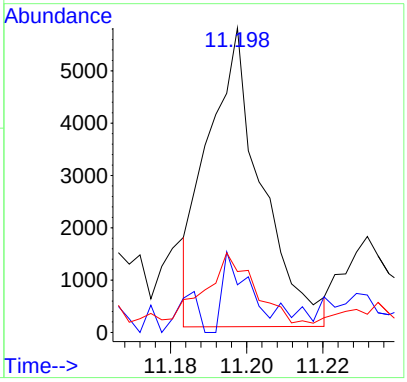


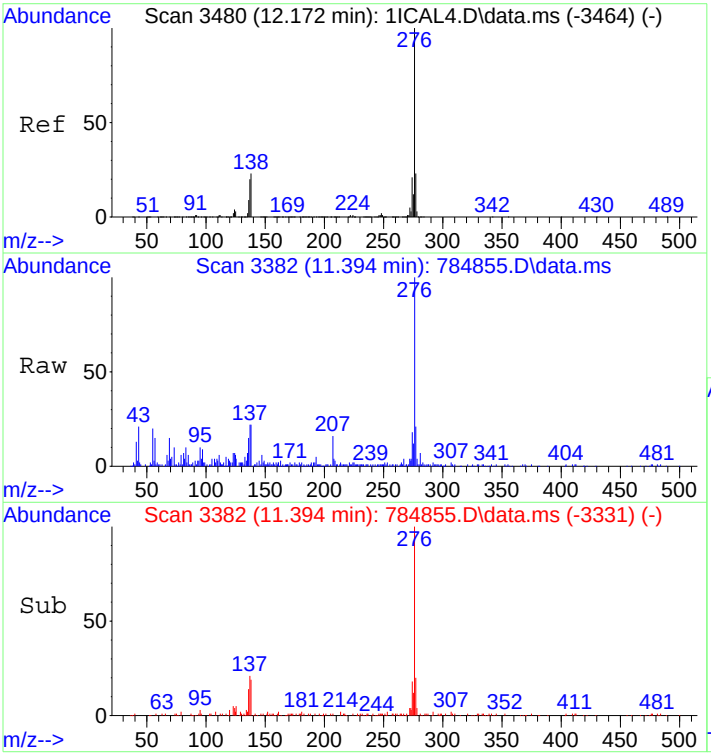


#91
Dib[ah]anthr
Concen: 0.57 ug/mL
RT: 11.198 min Scan# 3313
Delta R.T. -0.006 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:278 Resp: 5579

Ion	Ratio	Lower	Upper
278	100		
139	5.0	0.0	46.5
279	17.1	0.0	52.3

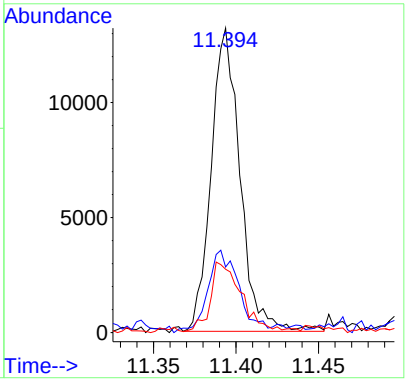




#92
B[ghi]perylen
Concen: 1.63 ug/mL
RT: 11.394 min Scan# 3382
Delta R.T. -0.006 min
Lab File: 784855.D
Acq: 20 Oct 16 12:06 am

Tgt Ion:276 Resp: 16082

Ion	Ratio	Lower	Upper
276	100		
138	20.2	0.0	54.9
277	20.6	0.0	52.0



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\784515.D Vial: 10
Acq On : 20 Oct 2016 15:22 Operator: JJY
Sample : 131574,784515, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:37:37 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

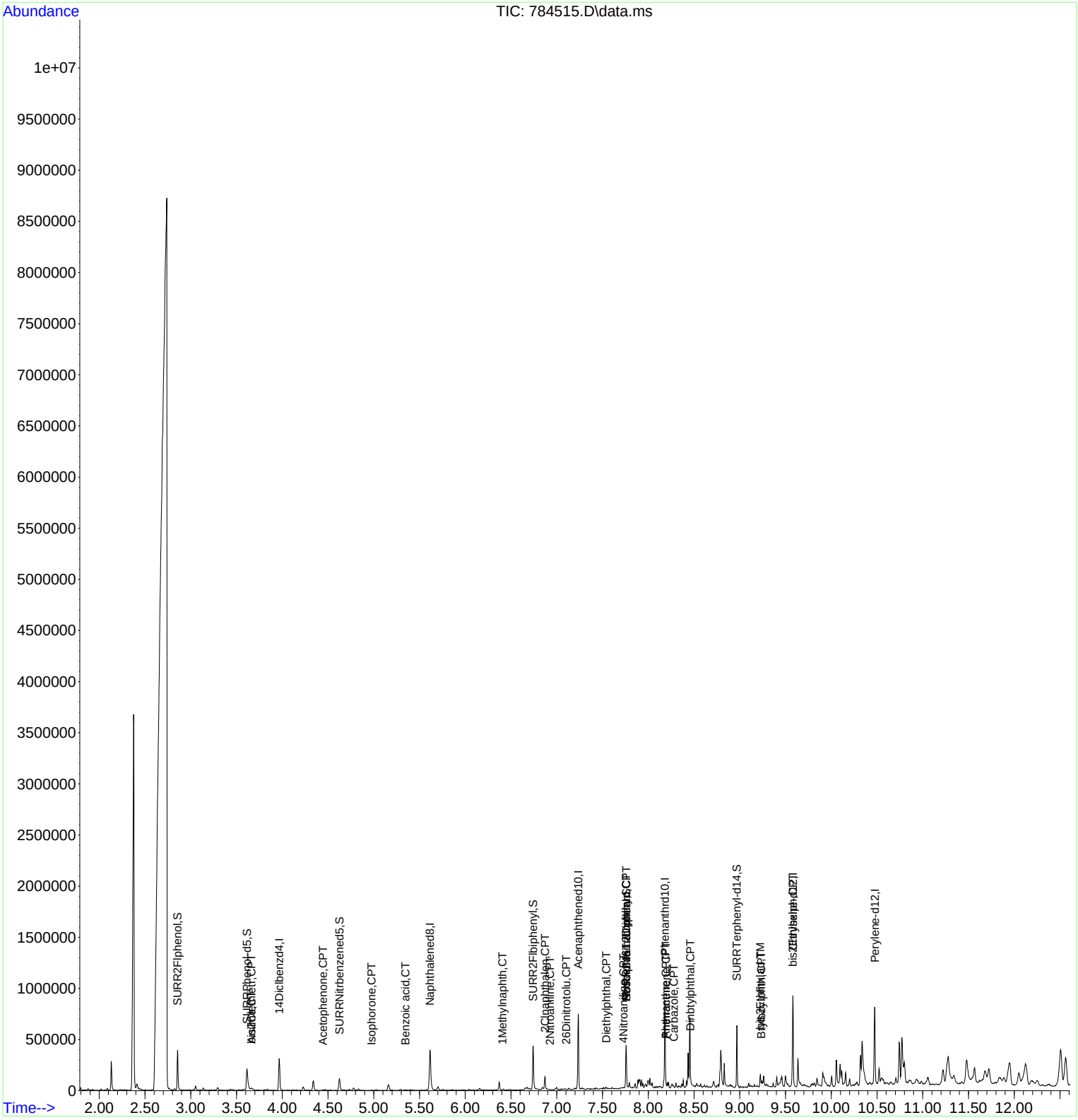
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.966	152	48205	20.00	ug/mL	0.00
21) Naphthalened8	5.614	136	204958	20.00	ug/mL	0.00
39) Acenaphthened10	7.234	164	120692	20.00	ug/mL	0.00
63) Phenanthrd10	8.183	188	211395	20.00	ug/mL	0.00
75) Chrysene-d12	9.581	240	206981	20.00	ug/mL	0.00
86) Perylene-d12	10.476	264	200193	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.855	112	73833	69.71	%REC	0.03
Spiked Amount 100.000	Range 20 - 110		Recovery = 69.71%			
7) SURRPhenol-d5	3.614	99	93171	69.03	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 69.03%			
22) SURRNitrbenzened5	4.625	82	41349	63.83	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 63.83%			
44) SURR2Flbiphenyl	6.742	172	110663	66.26	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 66.26%			
62) SURR246Tribrphenl	7.760	330	37403	67.99	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 67.99%			
78) SURRTerphenyl-d14	8.967	244	110093	66.39	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 66.39%			
Target Compounds						Qvalue
5) Aniline	3.662	93	2296	0.5182	ug/mL#	34
6) bis2Clethletr	3.662	93	2252	0.8221	ug/mL#	22
17) Acetophenone	4.446	105	551	0.1286	ug/mL	78
24) Isophorone	4.975	82	1731	0.2858	ug/mL	97
30) Benzoic acid	5.347	122	1057	2.7738	ug/mL	81
38) 1Methylnaphth	6.407	141	665	0.1066	ug/mL	78
45) 2Clnaphthalen	6.873	162	10487	1.4240	ug/mL#	41
46) 2Nitroaniline	6.927	65	237	0.1149	ug/mL#	19
49) 26Dinitrotolu	7.103	165	216	0.1163	ug/mL#	47
60) Diethylphthal	7.541	149	1593	0.1808	ug/mL	93
61) 4Nitroaniline	7.728	138	262	0.1424	ug/mL#	38
65) Ntrsdiphlam&Diphlam	7.760	169	1415	0.2362	ug/mL#	36
66) Azobenz&12Diphlhyd	7.757	182	1732	0.9049	ug/mL#	1
70) Phenanthrene	8.194	178	1784	0.1545	ug/mL	83
71) Anthracene	8.194	178	2162	0.1828	ug/mL	83
72) Carbazole	8.280	167	794	0.0792	ug/mL	81
73) Dinbtylphthal	8.461	149	7697	0.6008	ug/mL	96
79) Btylbzylphth	9.234	149	869	0.1544	ug/mL#	56
80) bis2Ethlhxlad	9.226	129	2744	0.6033	ug/mL#	1
84) bis2Ethlhxlph	9.578	149	2879	0.3490	ug/mL	93

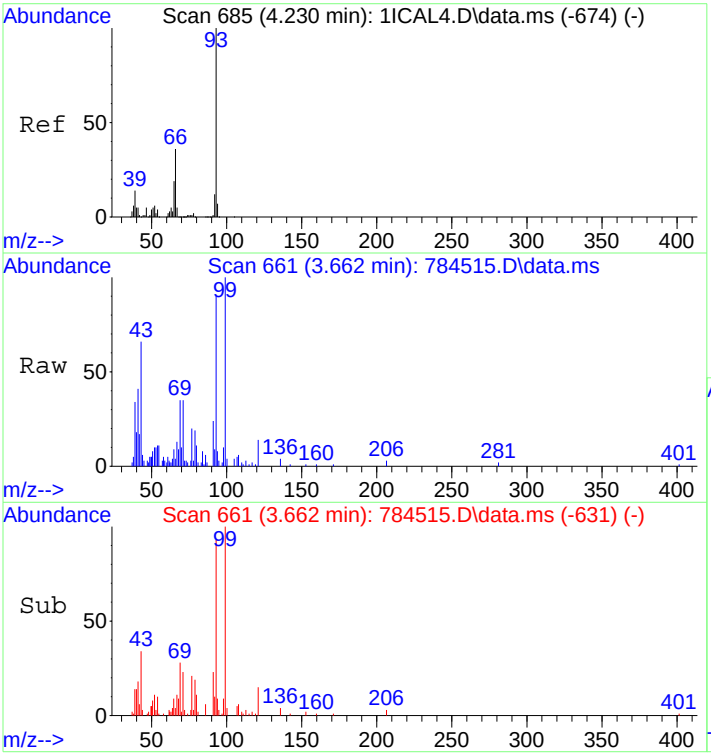
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\784515.D Vial: 10
Acq On : 20 Oct 2016 15:22 Operator: JJY
Sample : 131574,784515, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:37:37 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

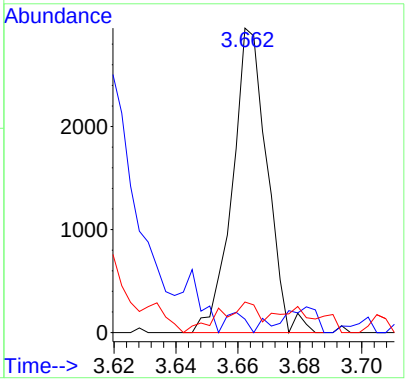


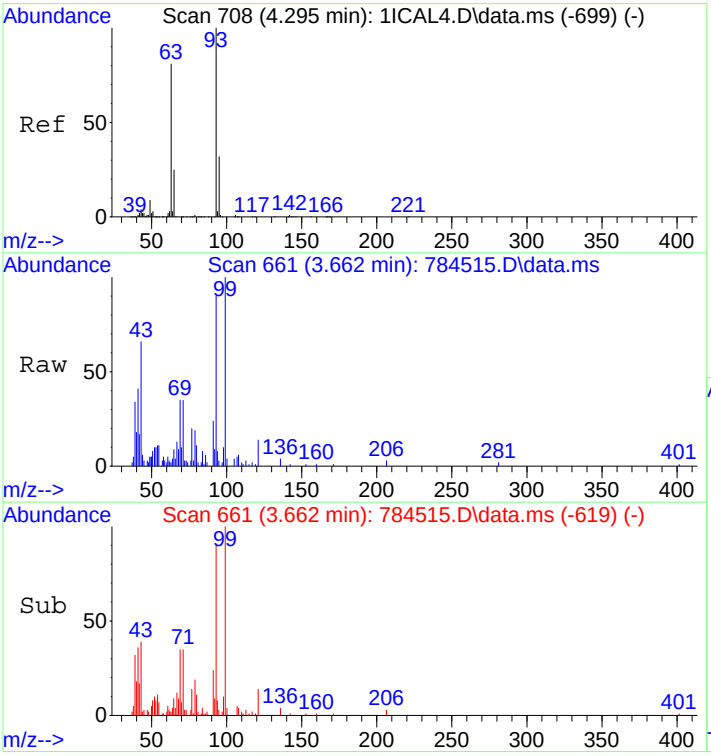


#5
Aniline
Concen: 0.52 ug/mL
RT: 3.662 min Scan# 661
Delta R.T. 0.034 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion: 93 Resp: 2296

Ion	Ratio	Lower	Upper
93	100		
66	0.0	41.5	101.5#
65	21.4	12.9	72.9

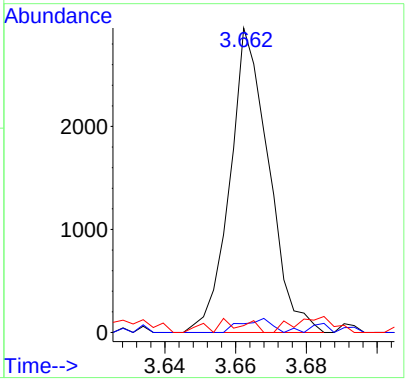


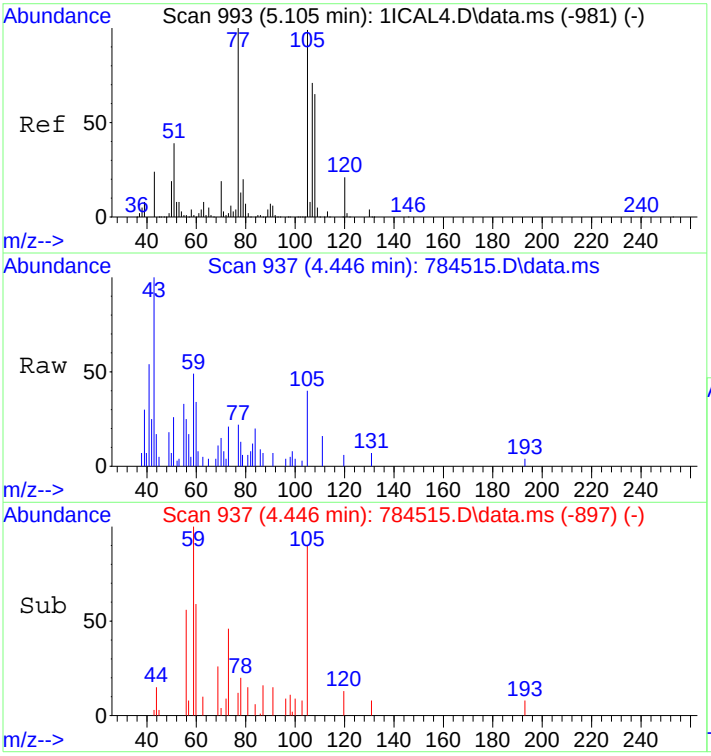


#6
bis2Clethletr
Concen: 0.82 ug/mL
RT: 3.662 min Scan# 661
Delta R.T. -0.031 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion: 93 Resp: 2252

Ion	Ratio	Lower	Upper
93	100		
95	2.9	3.2	63.2#
63	2.2	59.9	99.9#

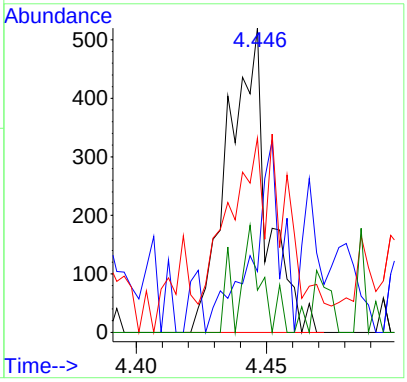


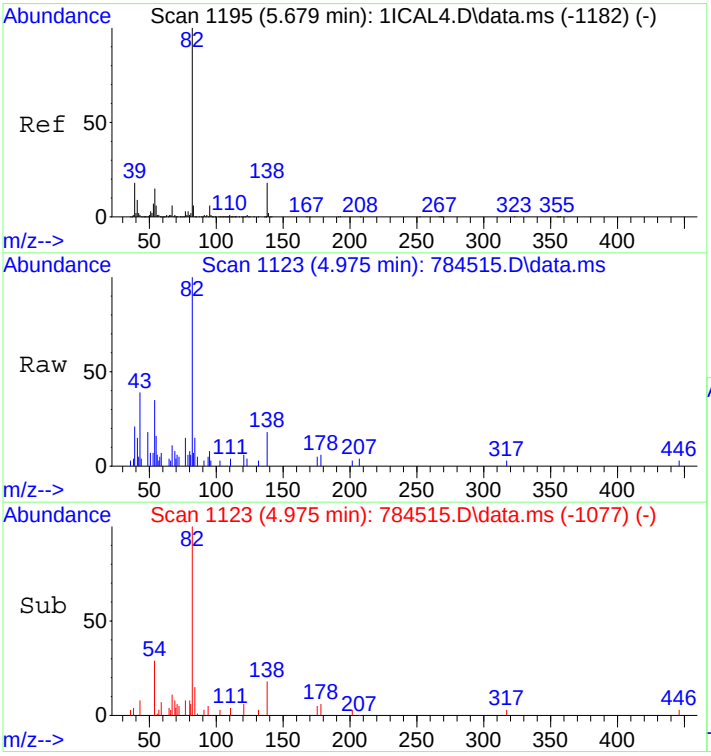


#17
Acetophenone
Concen: 0.13 ug/mL
RT: 4.446 min Scan# 937
Delta R.T. -0.003 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion:105 Resp: 551

Ion	Ratio	Lower	Upper
105	100		
71	12.1	0.0	30.7
51	43.2	2.3	62.3
120	6.4	0.0	38.3

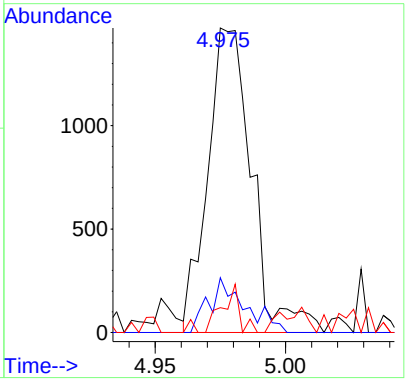


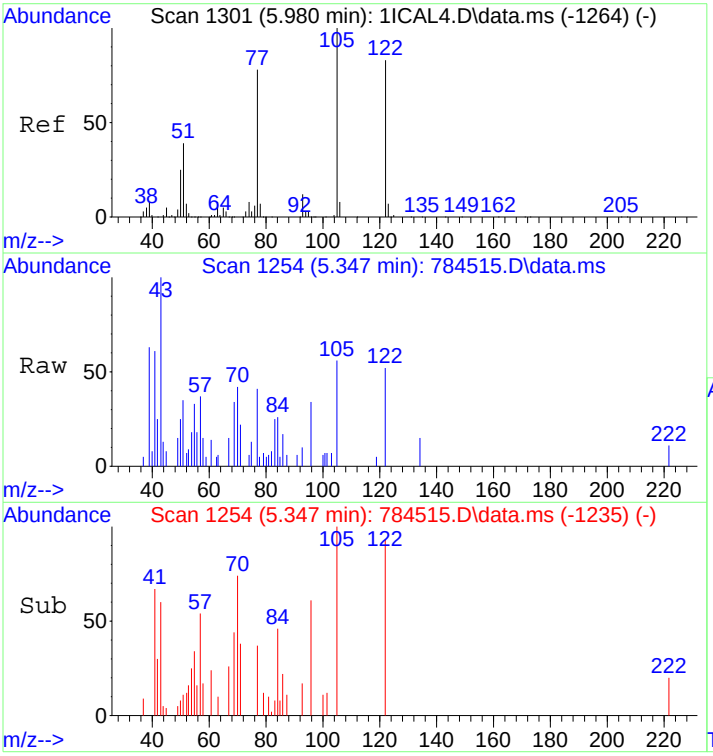


#24
Isophorone
Concen: 0.29 ug/mL
RT: 4.975 min Scan# 1123
Delta R.T. -0.014 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion: 82 Resp: 1731

Ion	Ratio	Lower	Upper
82	100		
138	18.0	0.0	46.9
95	8.2	0.0	26.8

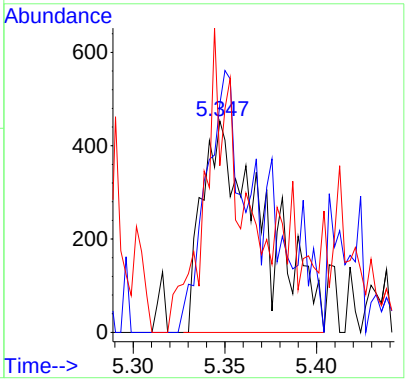


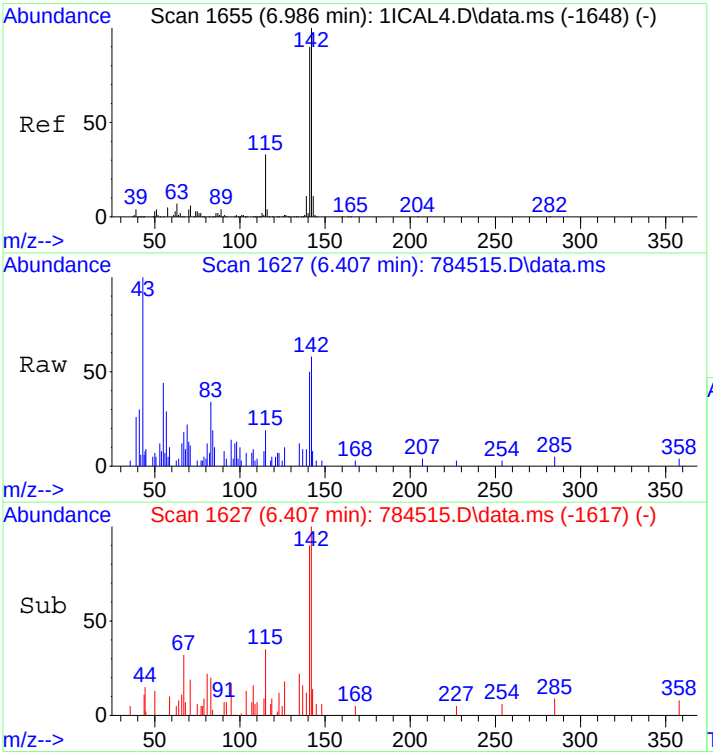


#30
Benzoic acid
Concen: 2.77 ug/mL
RT: 5.347 min Scan# 1254
Delta R.T. -0.097 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion:122 Resp: 1057

Ion	Ratio	Lower	Upper
122	100		
105	107.9	95.2	155.2
77	65.6	57.8	117.8

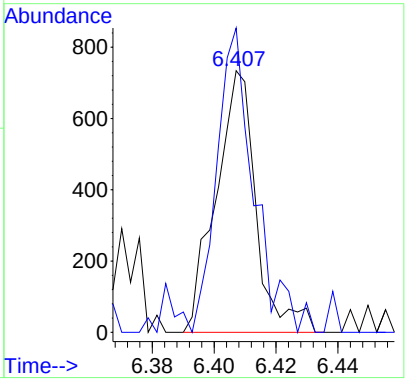


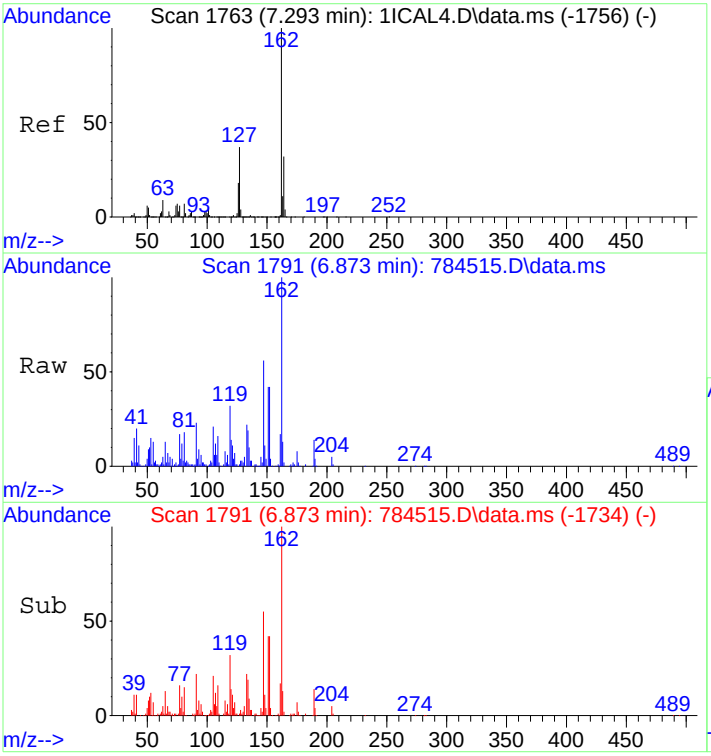


#38
1Methylnaphth
Concen: 0.11 ug/mL
RT: 6.407 min Scan# 1627
Delta R.T. -0.091 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion:141 Resp: 665

Ion	Ratio	Lower	Upper
141	100		
142	132.3	78.9	138.9

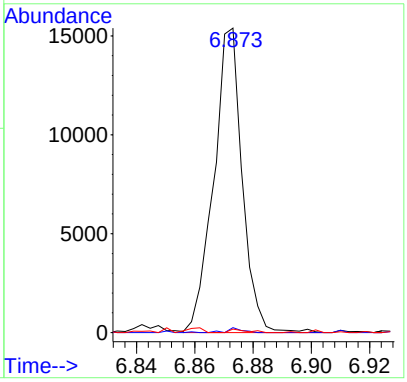


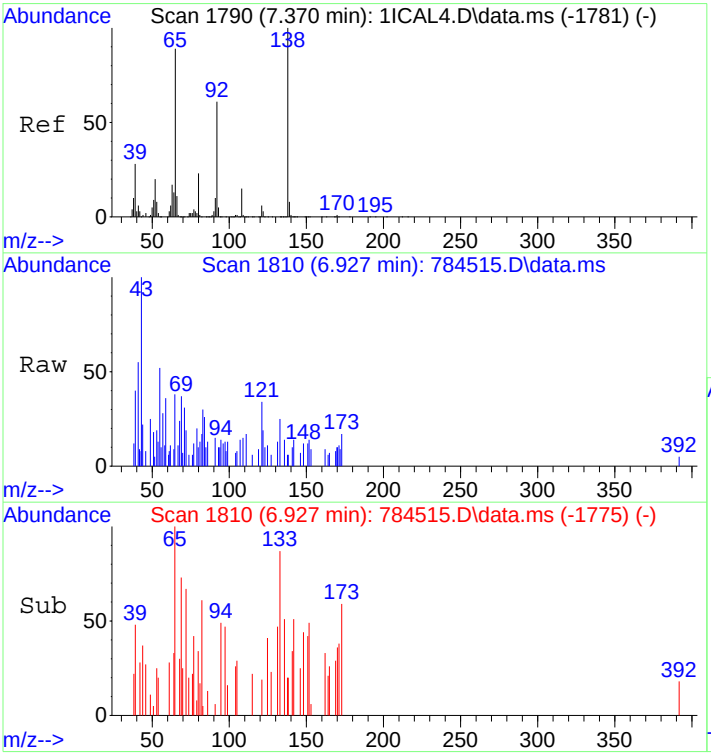


#45
2Clnaphthalen
Concen: 1.42 ug/mL
RT: 6.873 min Scan# 1791
Delta R.T. 0.046 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion:162 Resp: 10487

Ion	Ratio	Lower	Upper
162	100		
164	1.6	2.4	62.4#
127	0.8	9.8	69.8#

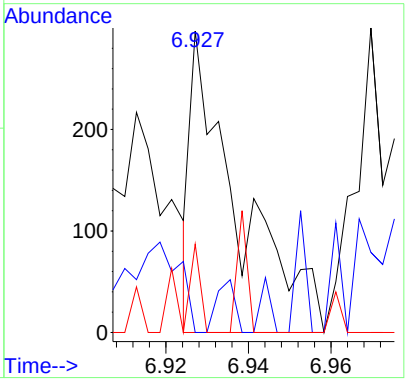


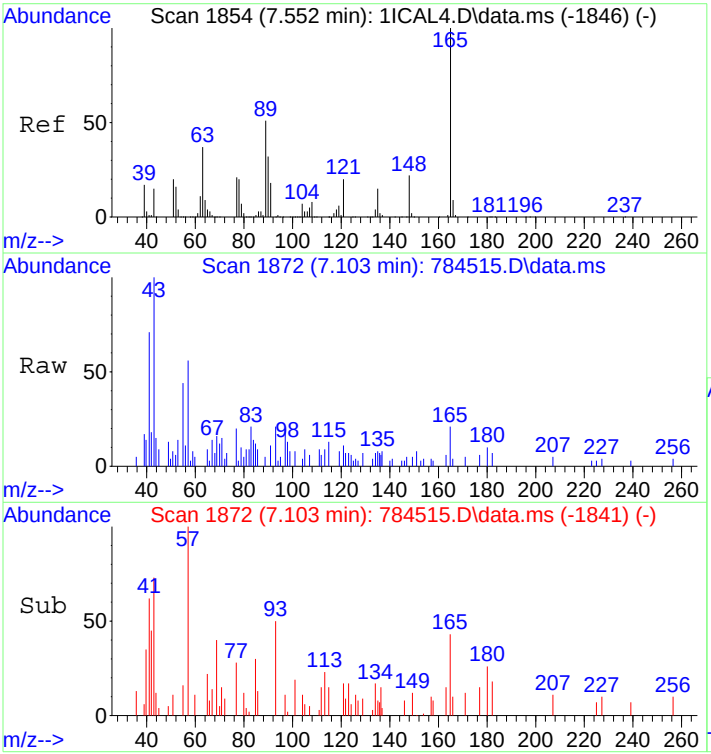


#46
2Nitroaniline
Concen: 0.11 ug/mL
RT: 6.927 min Scan# 1810
Delta R.T. 0.000 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion: 65 Resp: 237

Ion	Ratio	Lower	Upper
65	100		
92	0.0	39.4	99.4#
138	29.3	83.7	143.7#

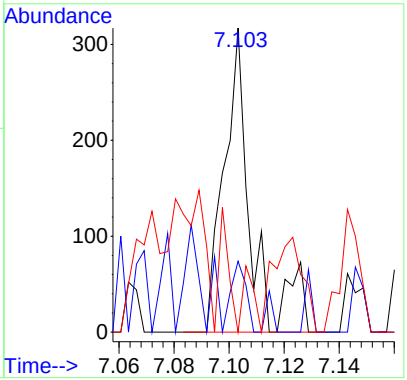


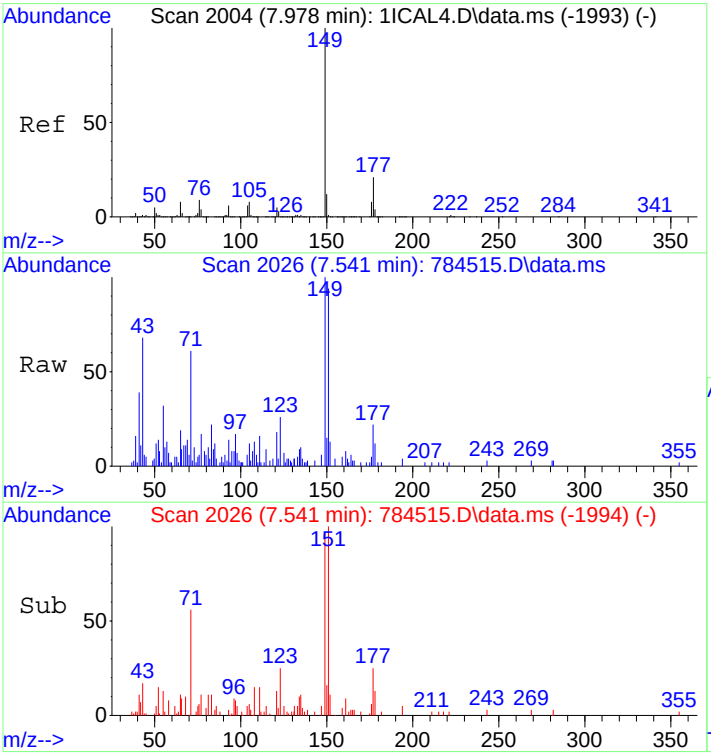


#49
26Dinitrotolu
Concen: 0.12 ug/mL
RT: 7.103 min Scan# 1872
Delta R.T. -0.011 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion:165 Resp: 216

Ion	Ratio	Lower	Upper
165	100		
89	23.3	22.5	82.5
63	0.0	23.3	63.3#

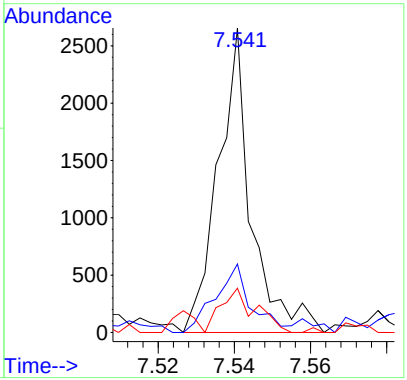


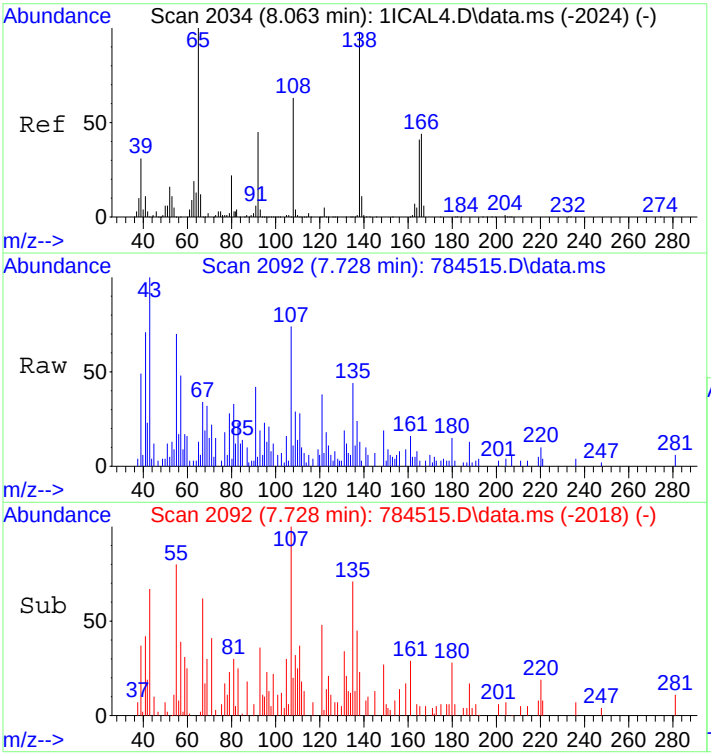


#60
Diethylphthal
Concen: 0.18 ug/mL
RT: 7.541 min Scan# 2026
Delta R.T. -0.008 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion:149 Resp: 1593

Ion	Ratio	Lower	Upper
149	100		
177	22.5	0.0	49.5
150	14.5	0.0	42.0

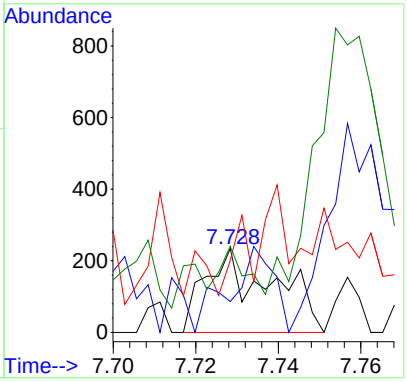


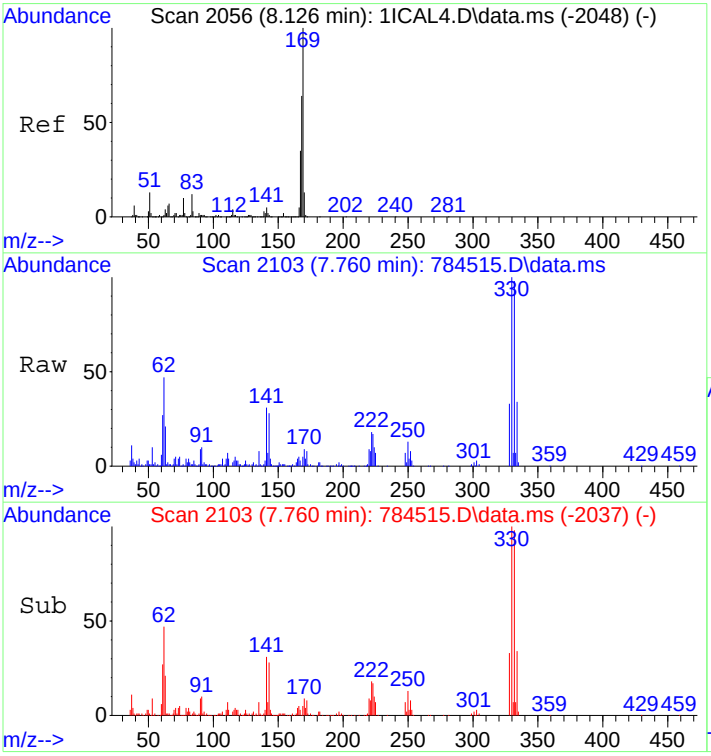


#61
4Nitroaniline
Concen: 0.14 ug/mL
RT: 7.728 min Scan# 2092
Delta R.T. 0.091 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion:138 Resp: 262

Ion	Ratio	Lower	Upper
138	100		
92	0.0	12.7	72.7#
108	42.7	46.1	106.1#
65	23.5	71.6	131.6#

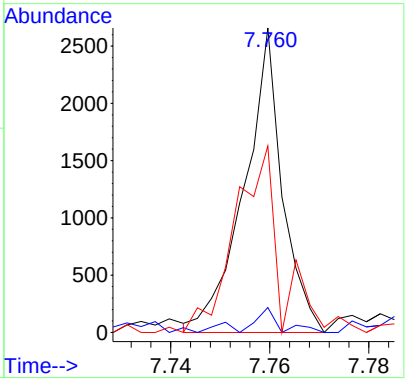


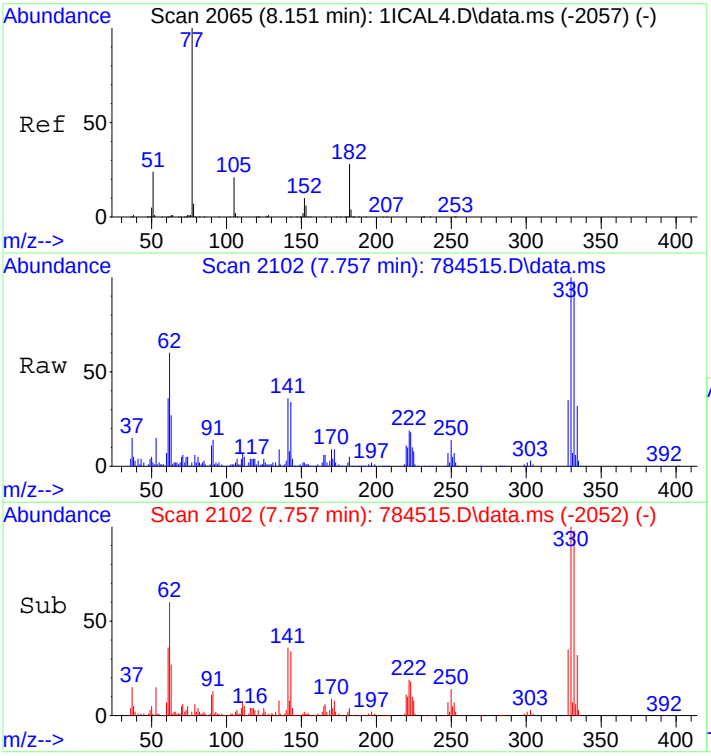


#65
Ntrsdiphlam&Diphlam
Concen: 0.24 ug/mL
RT: 7.760 min Scan# 2103
Delta R.T. 0.068 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion:169 Resp: 1415

Ion	Ratio	Lower	Upper
169	100		
168	8.4	35.5	95.5#
167	63.2	5.2	65.2

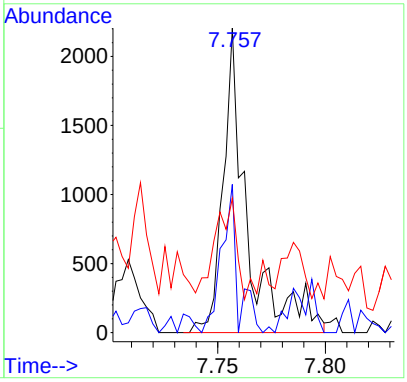


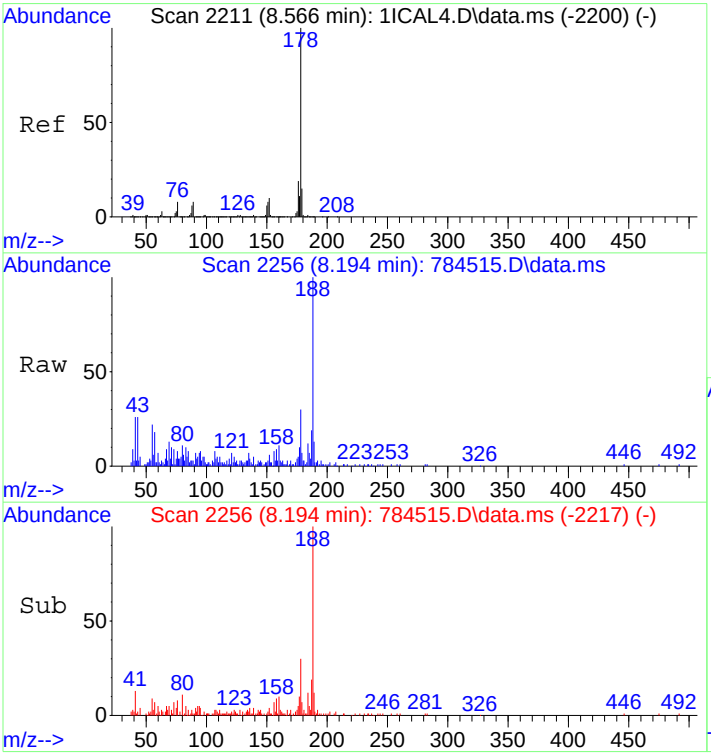


#66
Azobenz&12Diphlhyd
Concen: 0.90 ug/mL
RT: 7.757 min Scan# 2102
Delta R.T. 0.043 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion:182 Resp: 1732

Ion	Ratio	Lower	Upper
182	100		
152	48.7	7.0	67.0
77	33.0	330.8	390.8#

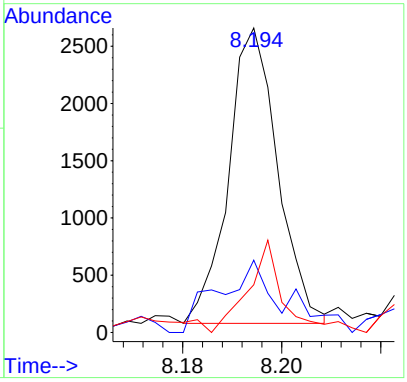


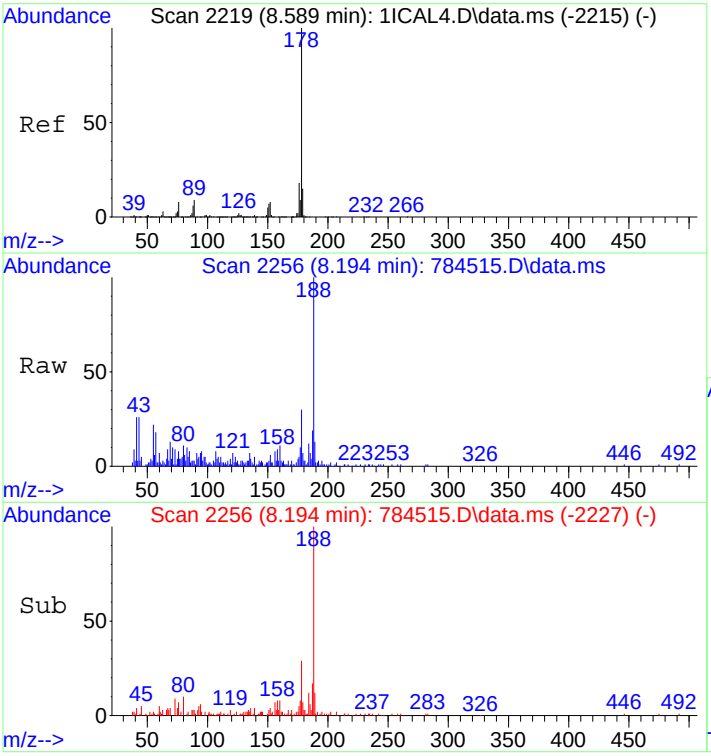


#70
Phenanthrene
Concen: 0.15 ug/mL
RT: 8.194 min Scan# 2256
Delta R.T. -0.006 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion:178 Resp: 1784

Ion	Ratio	Lower	Upper
178	100		
179	24.4	0.0	45.3
176	13.4	0.0	49.4

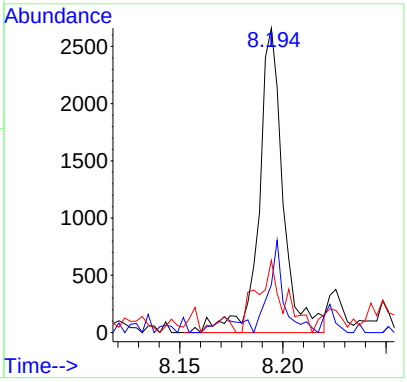


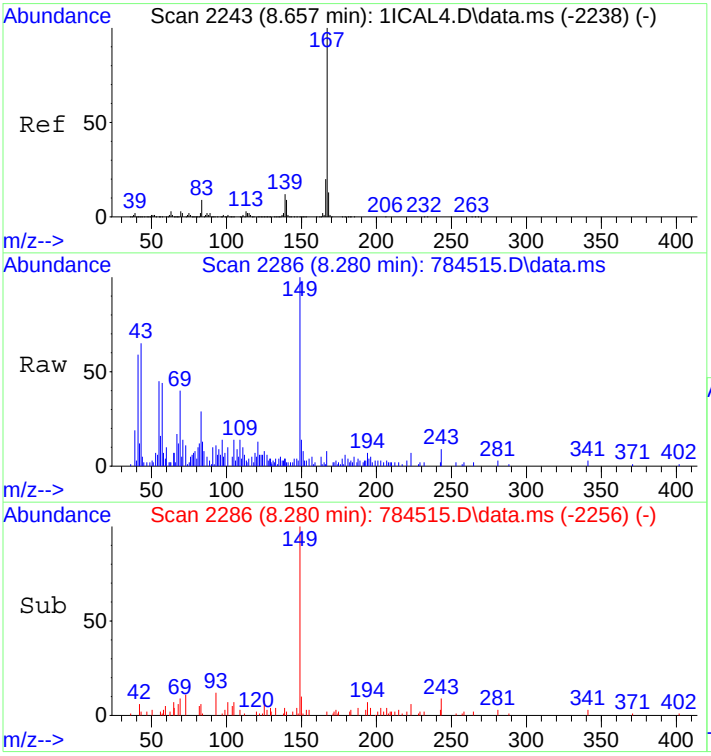


#71
Anthracene
Concen: 0.18 ug/mL
RT: 8.194 min Scan# 2256
Delta R.T. -0.034 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion:178 Resp: 2162

Ion	Ratio	Lower	Upper
178	100		
176	10.9	0.0	47.3
179	22.3	0.0	44.6

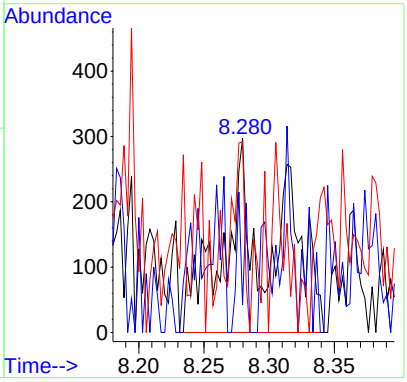


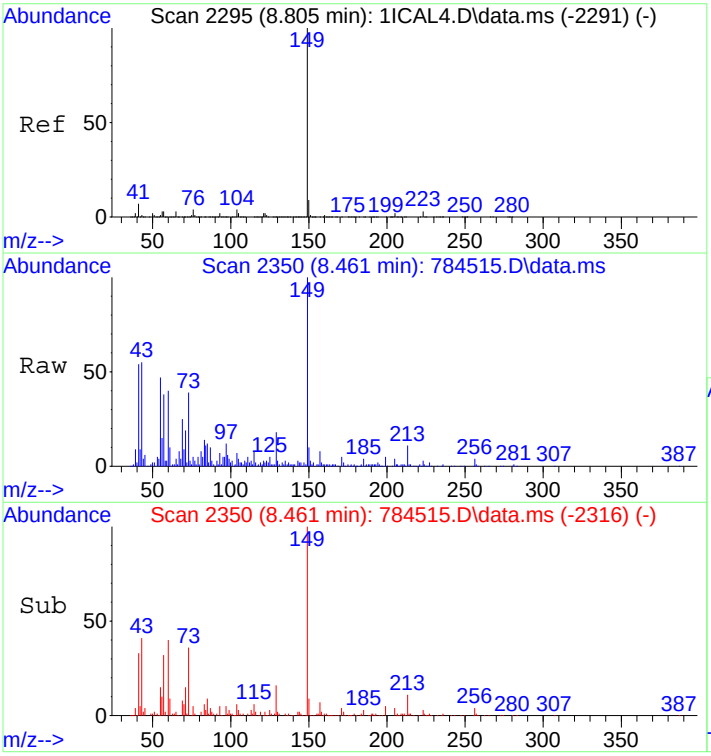


#72
Carbazole
Concen: 0.08 ug/mL
RT: 8.280 min Scan# 2286
Delta R.T. -0.031 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion:167 Resp: 794

Ion	Ratio	Lower	Upper
167	100		
166	14.1	0.0	49.8
139	23.6	0.0	41.7

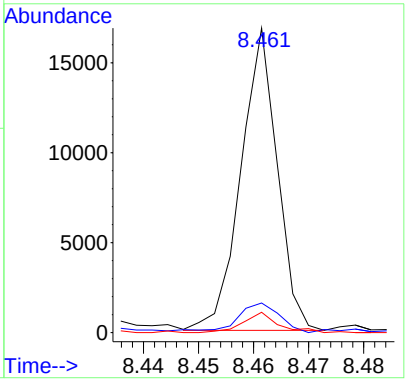


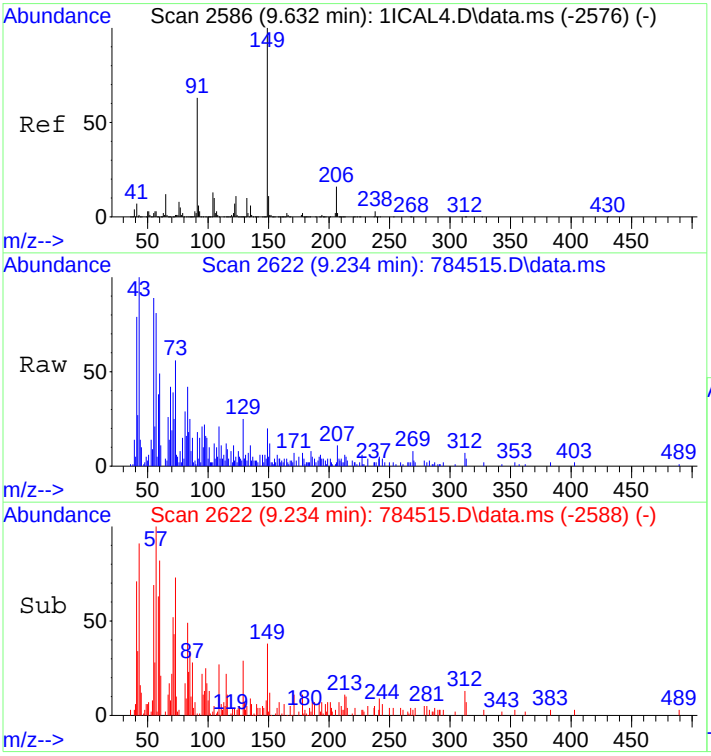


#73
Dinbtylphthal
Concen: 0.60 ug/mL
RT: 8.461 min Scan# 2350
Delta R.T. -0.003 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion:149 Resp: 7697

Ion	Ratio	Lower	Upper
149	100		
150	8.9	0.0	39.8
104	6.7	0.0	34.5

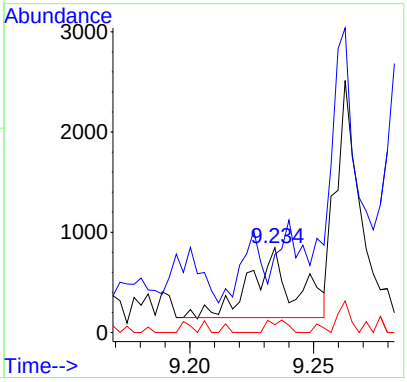


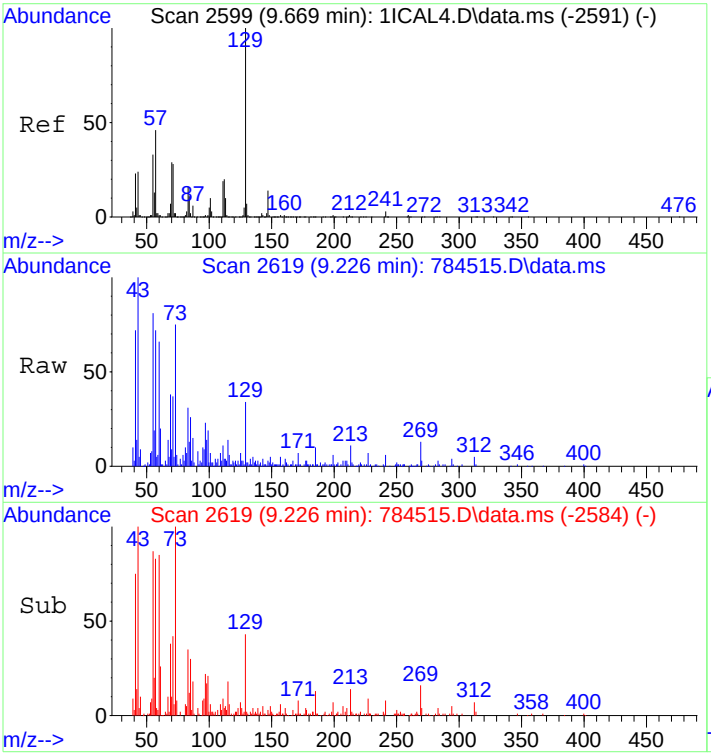


#79
Btylbzylphth
Concen: 0.15 ug/mL
RT: 9.234 min Scan# 2622
Delta R.T. -0.003 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion:149 Resp: 869

Ion	Ratio	Lower	Upper
149	100		
91	25.9	33.5	93.5#
206	4.7	0.0	46.3

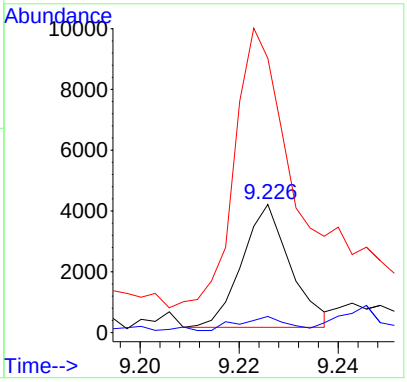


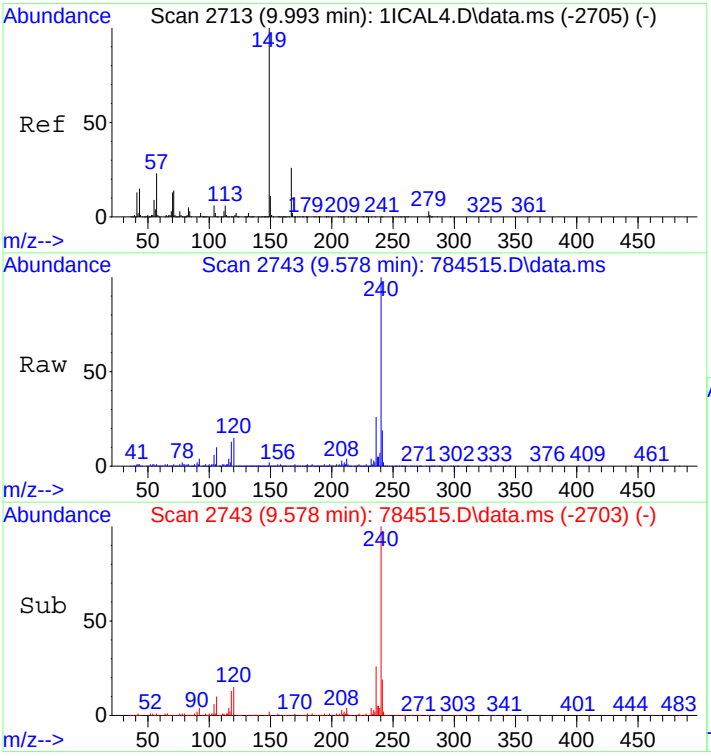


#80
bis2Ethlhxlad
Concen: 0.60 ug/mL
RT: 9.226 min Scan# 2619
Delta R.T. -0.051 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion:129 Resp: 2744

Ion	Ratio	Lower	Upper
129	100		
112	0.0	15.2	22.8#
57	258.3	39.4	59.0#

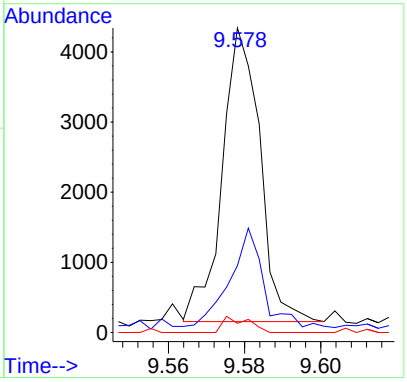




#84
bis2Ethlhxlph
Concen: 0.35 ug/mL
RT: 9.578 min Scan# 2743
Delta R.T. -0.003 min
Lab File: 784515.D
Acq: 20 Oct 16 3:22 pm

Tgt Ion:149 Resp: 2879

Ion	Ratio	Lower	Upper
149	100		
167	20.7	0.0	54.6
279	3.1	0.0	33.1



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\784516.D Vial: 11
Acq On : 20 Oct 2016 15:41 Operator: JJY
Sample : 131574,784516, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:40:55 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

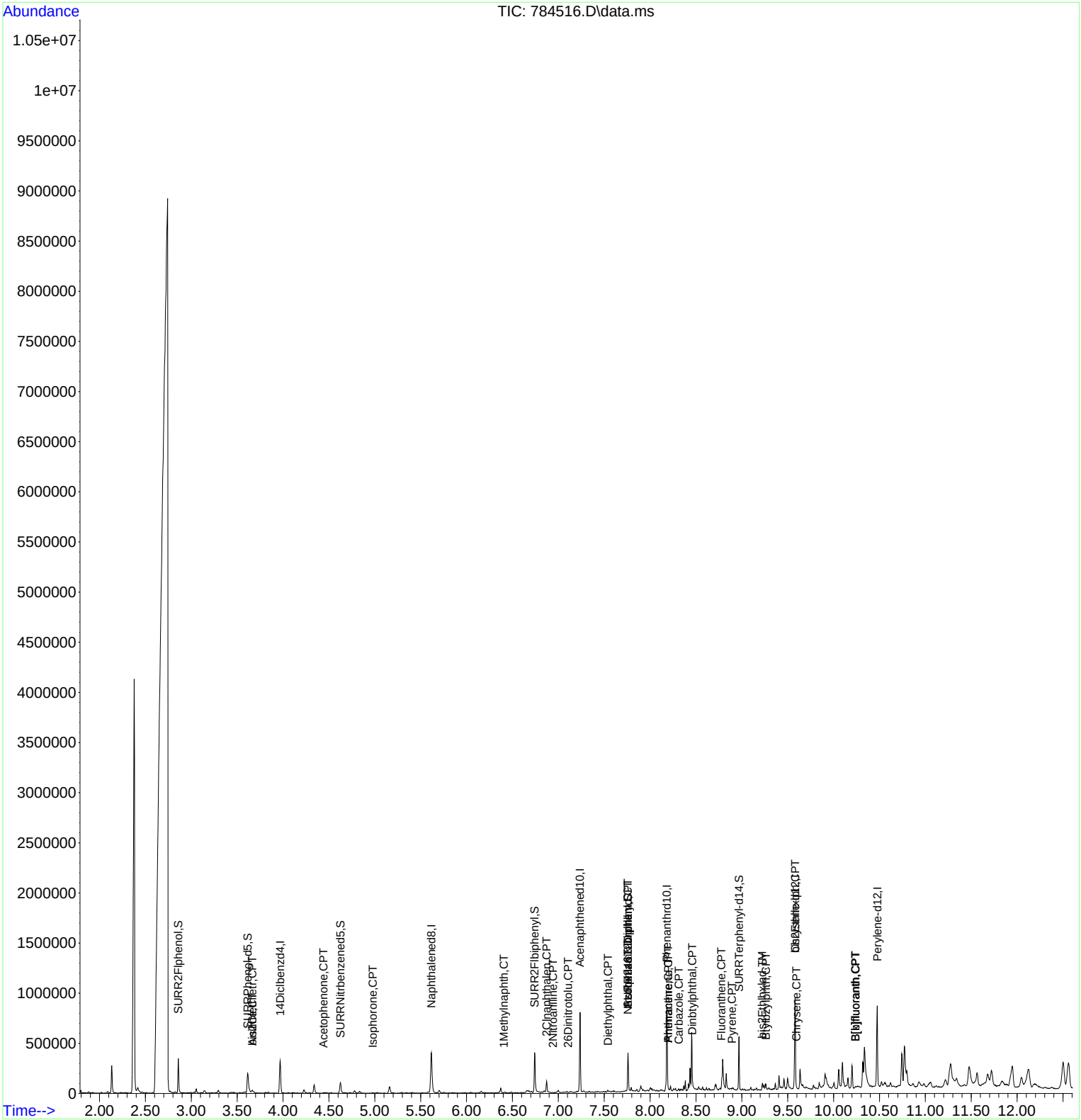
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.969	152	51455	20.00	ug/mL	0.00
21) Naphthalened8	5.617	136	209338	20.00	ug/mL	0.00
39) Acenaphthened10	7.237	164	125354	20.00	ug/mL	0.00
63) Phenanthrd10	8.183	188	222093	20.00	ug/mL	0.00
75) Chrysene-d12	9.581	240	210133	20.00	ug/mL	0.00
86) Perylene-d12	10.476	264	202794	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.858	112	62816	55.56	%REC	0.04
Spiked Amount 100.000	Range 20 - 110		Recovery = 55.56%			
7) SURRPhenol-d5	3.614	99	88169	61.20	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 61.20%			
22) SURRNitrbenzened5	4.625	82	38312	57.90	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 57.90%			
44) SURR2Flbiphenyl	6.742	172	100789	58.10	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 58.10%			
62) SURR246Tribrphenl	7.760	330	32801	57.40	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 57.40%			
78) SURRTerphenyl-d14	8.970	244	97279	57.78	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 57.78%			
Target Compounds						Qvalue
5) Aniline	3.665	93	4436	0.9380	ug/mL#	28
6) bis2Clethletr	3.665	93	4340	1.4843	ug/mL#	19
17) Acetophenone	4.441	105	637	0.1393	ug/mL	89
24) Isophorone	4.978	82	2060	0.3330	ug/mL	89
38) 1Methylnaphth	6.407	141	521	0.0818	ug/mL	83
45) 2Clnaphthalen	6.873	162	8984	1.1745	ug/mL#	42
46) 2Nitroaniline	6.941	65	209	0.0976	ug/mL#	31
49) 26Dinitrotolu	7.106	165	212	0.1099	ug/mL#	29
60) Diethylphthal	7.541	149	1733	0.1893	ug/mL	90
65) Ntrsdiphlam&Diphlam	7.757	169	1127	0.1791	ug/mL#	38
66) Azobenz&12Diphlhyd	7.760	182	1548	0.7698	ug/mL#	1
70) Phenanthrene	8.197	178	2298	0.1895	ug/mL	95
71) Anthracene	8.197	178	2542	0.2045	ug/mL	99
72) Carbazole	8.314	167	526	0.0500	ug/mL#	37
73) Dinbtylphthal	8.461	149	8355	0.6207	ug/mL	99
74) Fluoranthene	8.777	202	4267	0.3257	ug/mL	91
77) Pyrene	8.893	202	3621	0.2783	ug/mL	97
79) Btylbzylphth	9.263	149	1265	0.2214	ug/mL	62
80) bis2Ethlhxlad	9.223	129	1727	0.3740	ug/mL#	1
83) Chrysene	9.595	228	2880	0.2424	ug/mL	93
84) bis2Ethlhxlph	9.581	149	3732	0.4456	ug/mL	98
87) B[b]fluoranth	10.240	252	2911	0.2316	ug/mL	97
88) B[k]fluoranth	10.240	252	2911	0.2466	ug/mL	99

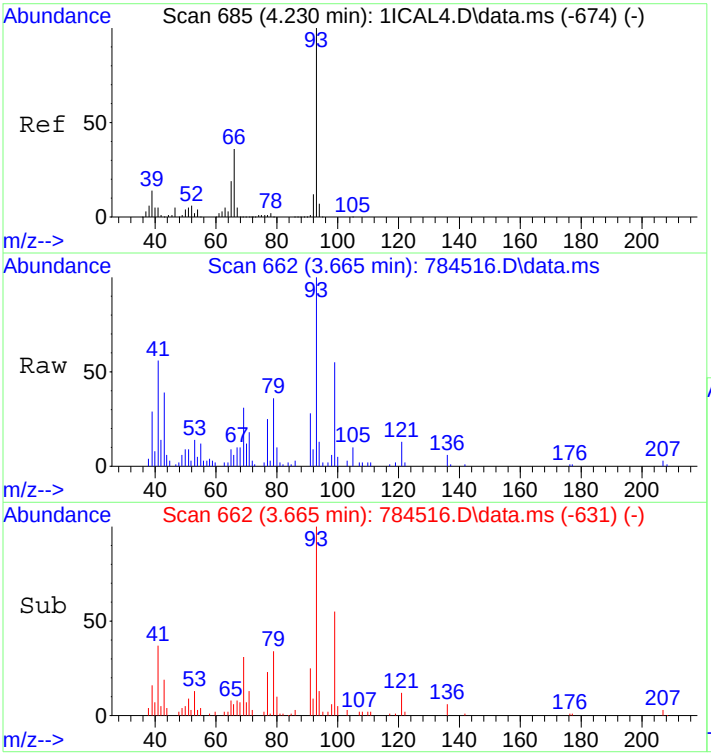
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\784516.D Vial: 11
Acq On : 20 Oct 2016 15:41 Operator: JJY
Sample : 131574,784516, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:40:55 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

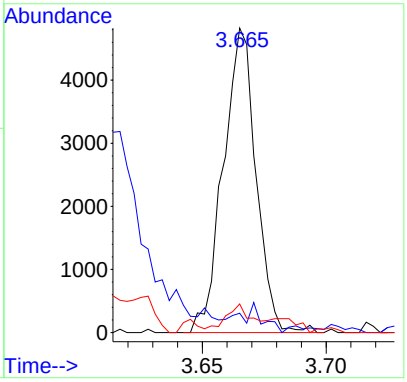


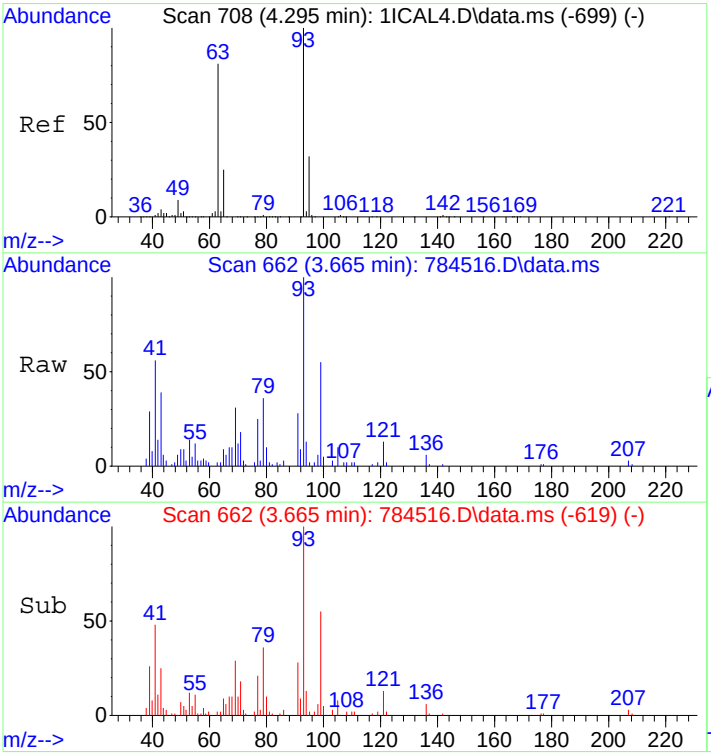


#5
Aniline
Concen: 0.94 ug/mL
RT: 3.665 min Scan# 662
Delta R.T. 0.037 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion: 93 Resp: 4436

Ion	Ratio	Lower	Upper
93	100		
66	0.0	41.5	101.5#
65	12.5	12.9	72.9#

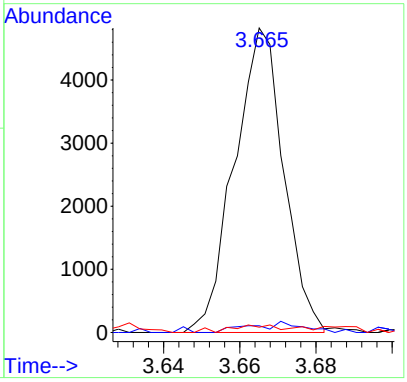


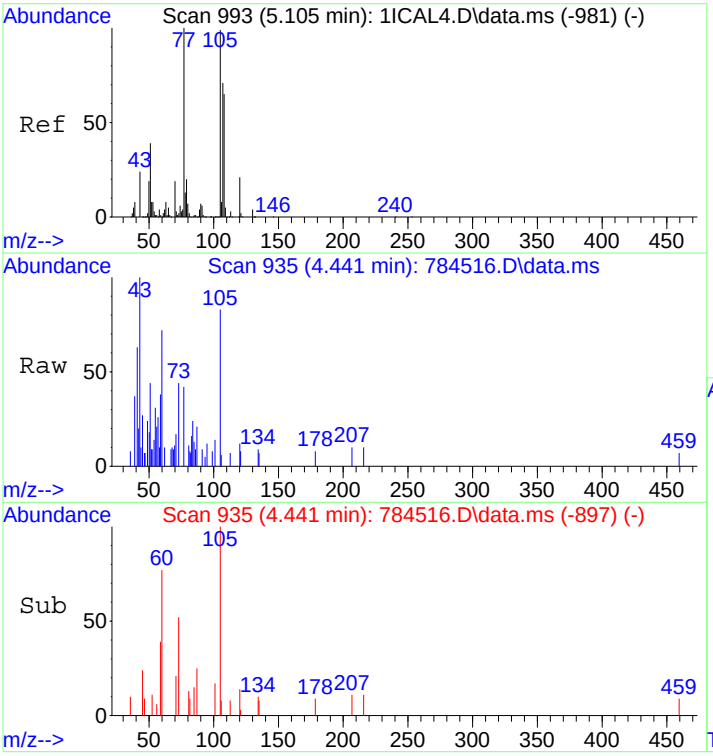


#6
bis2Clethletr
Concen: 1.48 ug/mL
RT: 3.665 min Scan# 662
Delta R.T. -0.028 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion: 93 Resp: 4340

Ion	Ratio	Lower	Upper
93	100		
95	1.0	3.2	63.2#
63	0.0	59.9	99.9#

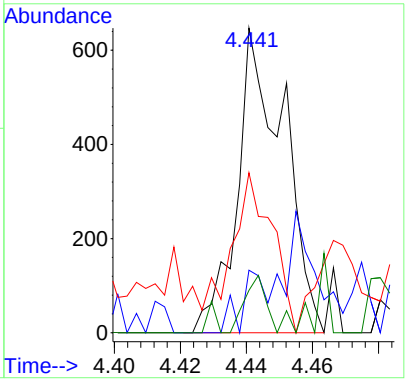


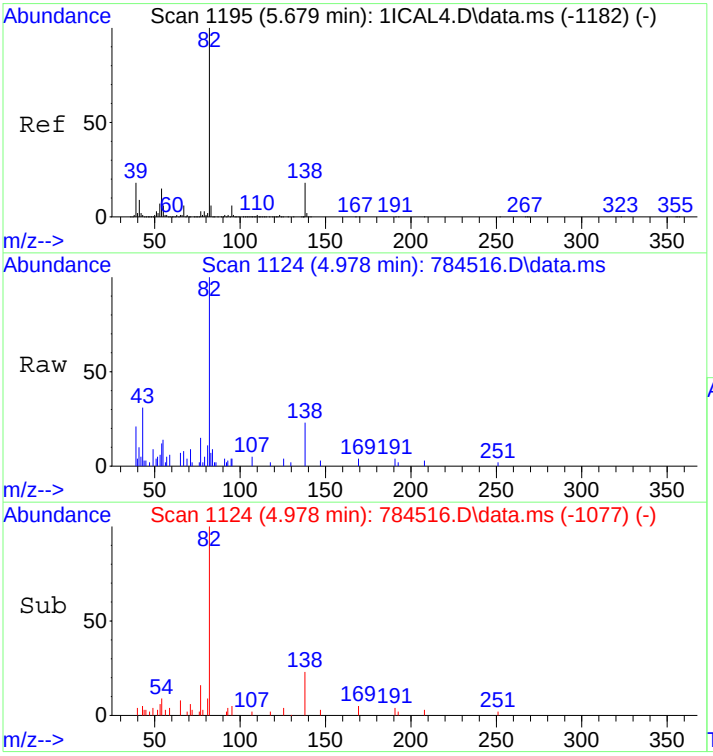


#17
Acetophenone
Concen: 0.14 ug/mL
RT: 4.441 min Scan# 935
Delta R.T. -0.008 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion:105 Resp: 637

Ion	Ratio	Lower	Upper
105	100		
71	15.1	0.0	30.7
51	36.1	2.3	62.3
120	10.9	0.0	38.3

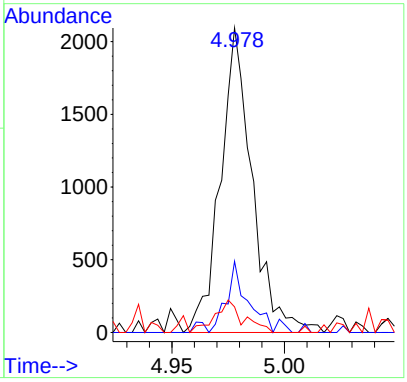


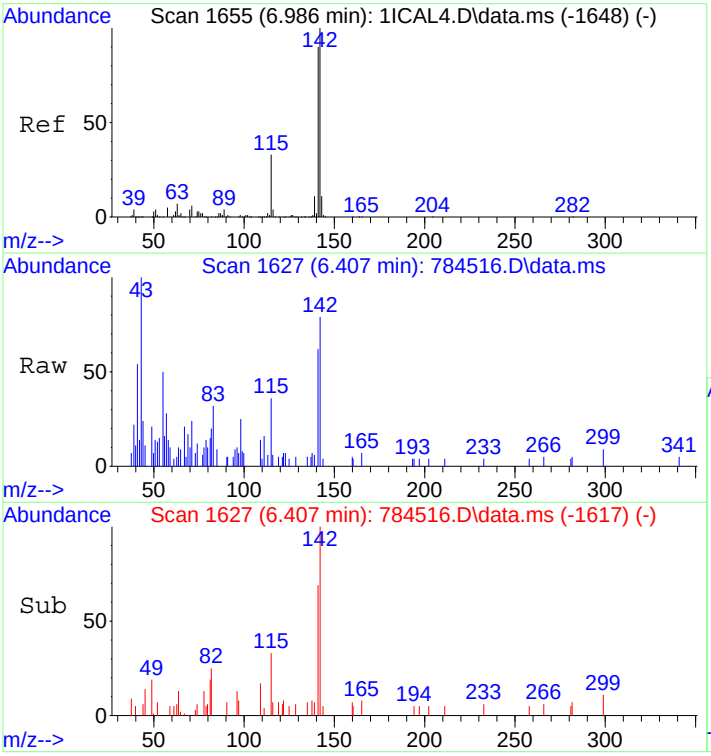


#24
Isophorone
Concen: 0.33 ug/mL
RT: 4.978 min Scan# 1124
Delta R.T. -0.011 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion: 82 Resp: 2060

Ion	Ratio	Lower	Upper
82	100		
138	23.4	0.0	46.9
95	5.9	0.0	26.8

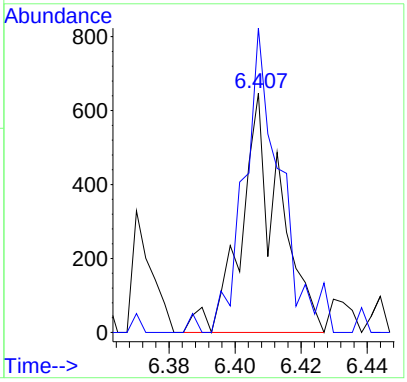


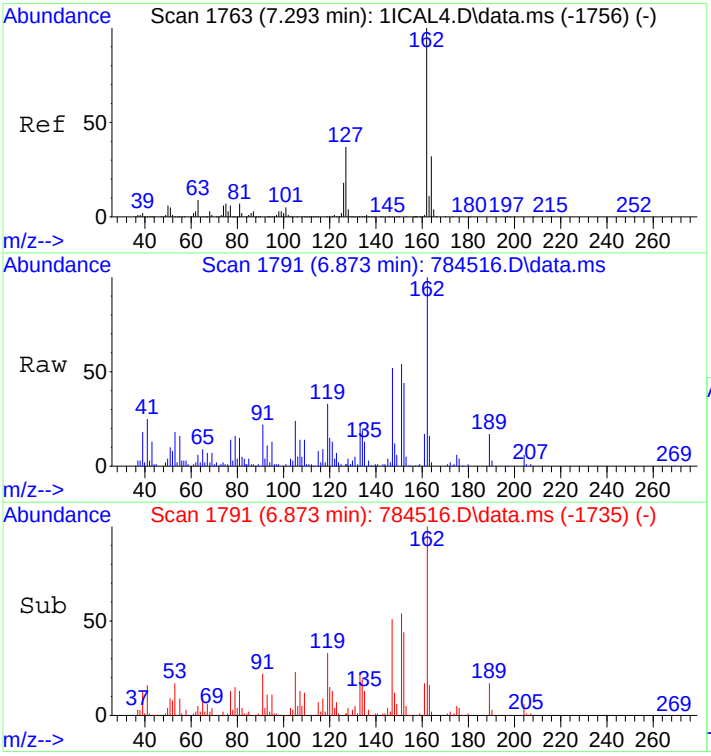


#38
1Methylnaphth
Concen: 0.08 ug/mL
RT: 6.407 min Scan# 1627
Delta R.T. -0.091 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion:141 Resp: 521

Ion	Ratio	Lower	Upper
141	100		
142	127.2	78.9	138.9

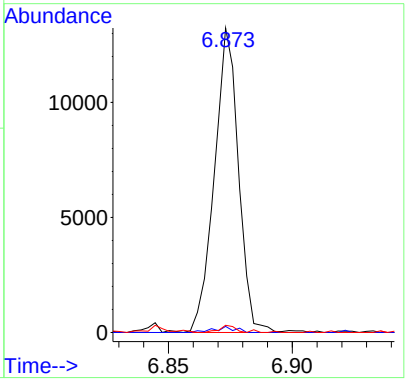


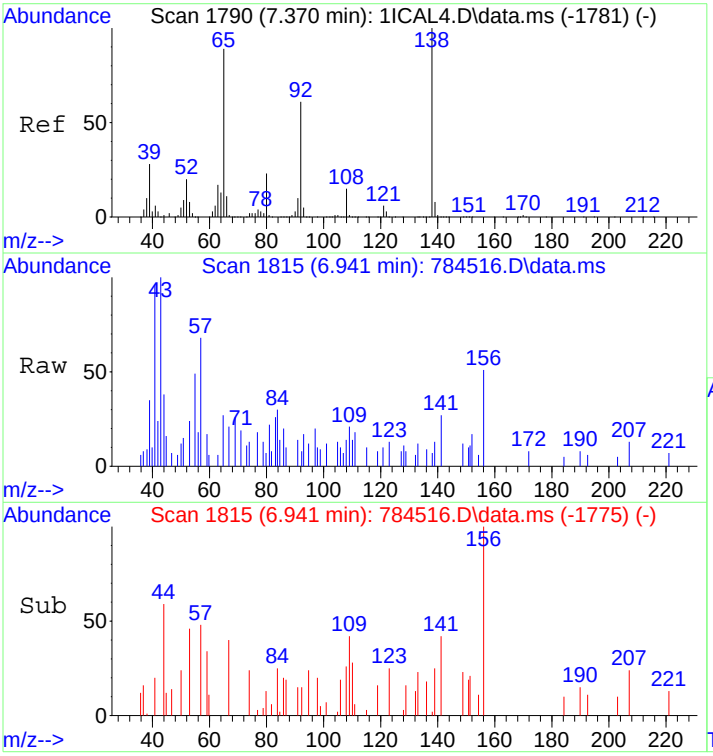


#45
2Clnaphthalen
Concen: 1.17 ug/mL
RT: 6.873 min Scan# 1791
Delta R.T. 0.046 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion:162 Resp: 8984

Ion	Ratio	Lower	Upper
162	100		
164	2.0	2.4	62.4#
127	2.4	9.8	69.8#

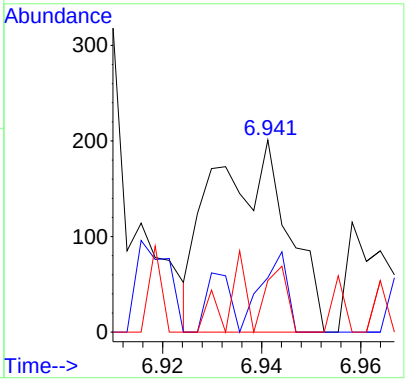


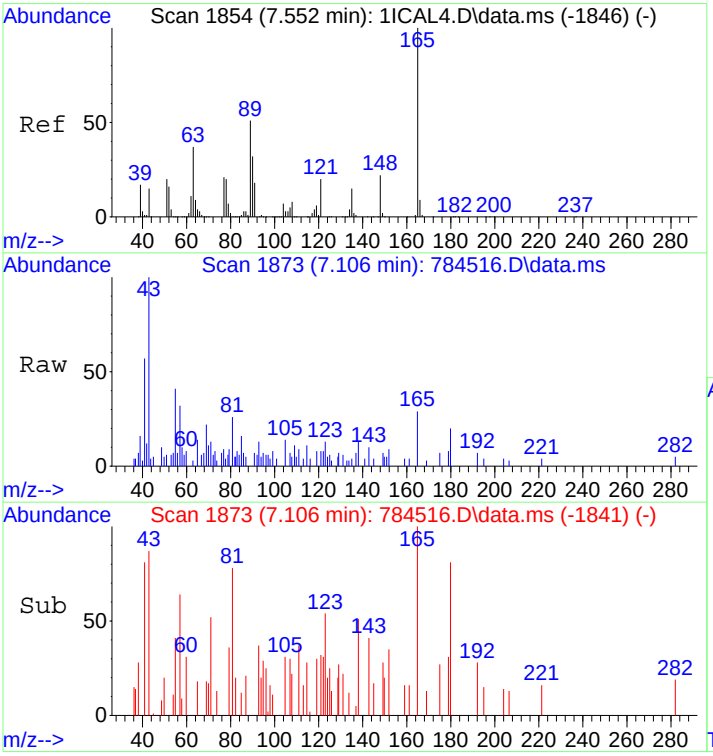


#46
2Nitroaniline
Concen: 0.10 ug/mL
RT: 6.941 min Scan# 1815
Delta R.T. 0.014 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion: 65 Resp: 209

Ion	Ratio	Lower	Upper
65	100		
92	28.4	39.4	99.4#
138	26.9	83.7	143.7#

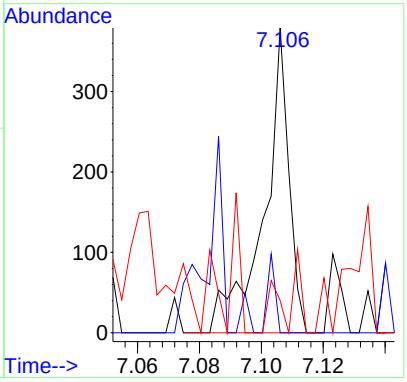


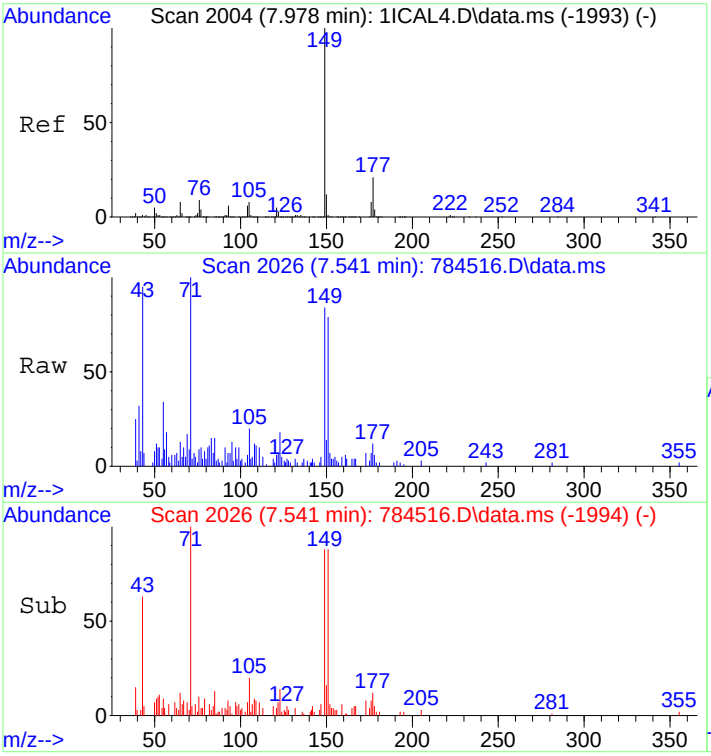


#49
26Dinitrotolu
Concen: 0.11 ug/mL
RT: 7.106 min Scan# 1873
Delta R.T. -0.008 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion:165 Resp: 212

Ion	Ratio	Lower	Upper
165	100		
89	0.0	22.5	82.5#
63	0.0	23.3	63.3#

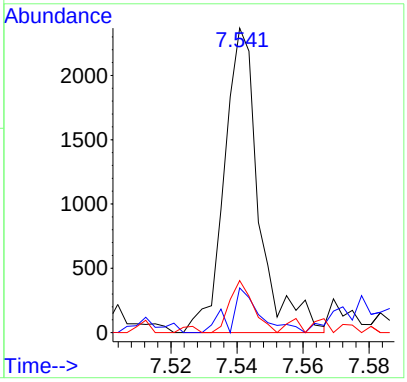


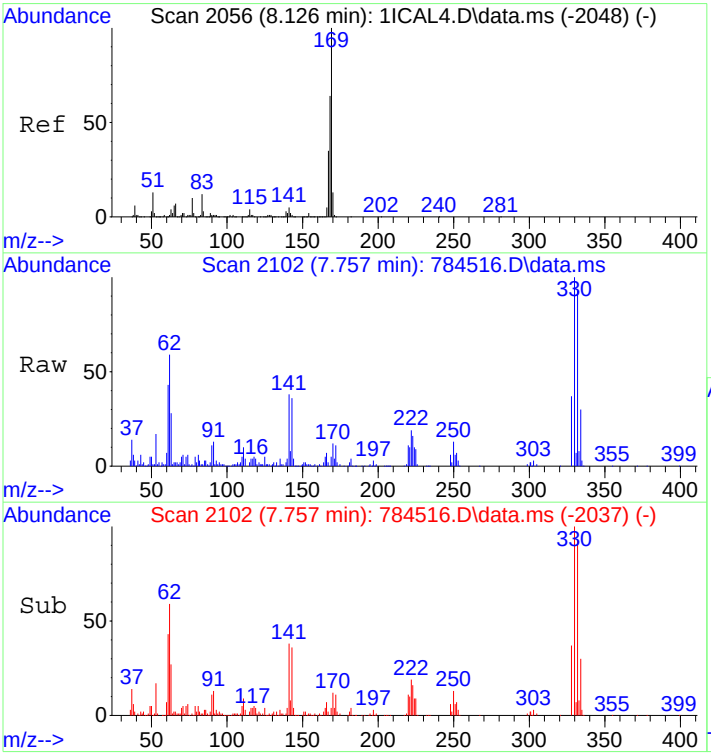


#60
Diethylphthal
Concen: 0.19 ug/mL
RT: 7.541 min Scan# 2026
Delta R.T. -0.008 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion:149 Resp: 1733

Ion	Ratio	Lower	Upper
149	100		
177	14.7	0.0	49.5
150	15.3	0.0	42.0

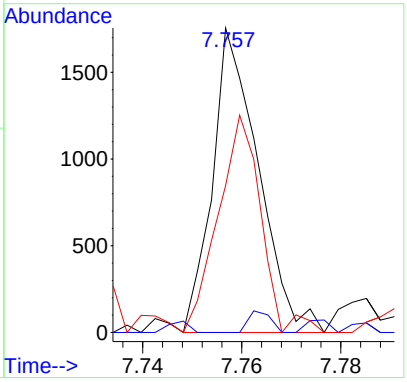


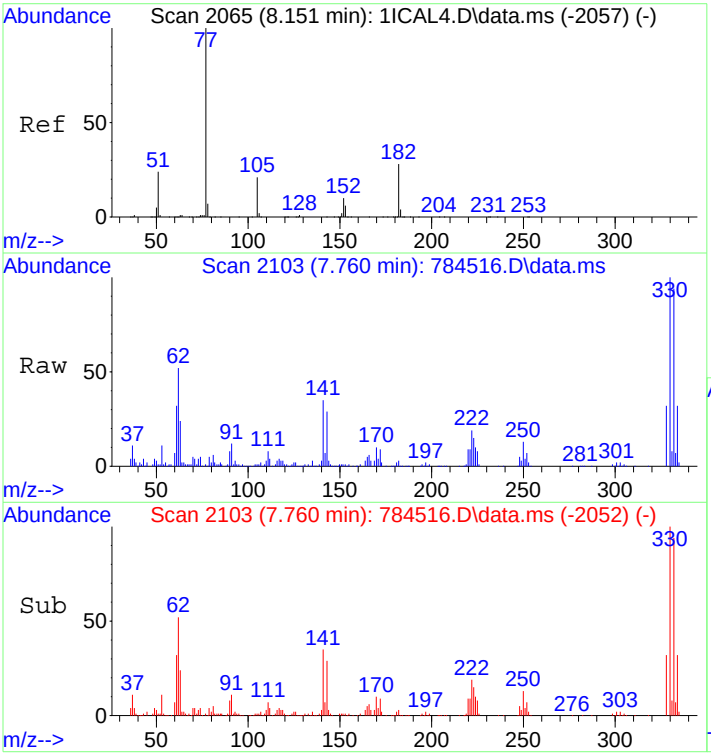


#65
Ntrsdiphlam&Diphlam
Concen: 0.18 ug/mL
RT: 7.757 min Scan# 2102
Delta R.T. 0.065 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion:169 Resp: 1127

Ion	Ratio	Lower	Upper
169	100		
168	0.0	35.5	95.5#
167	48.2	5.2	65.2

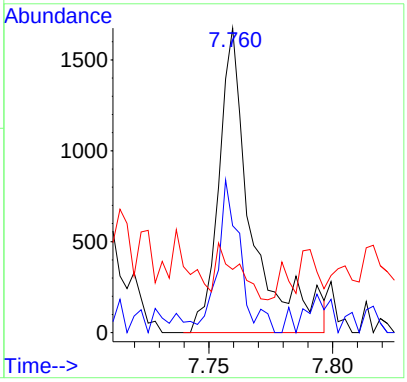


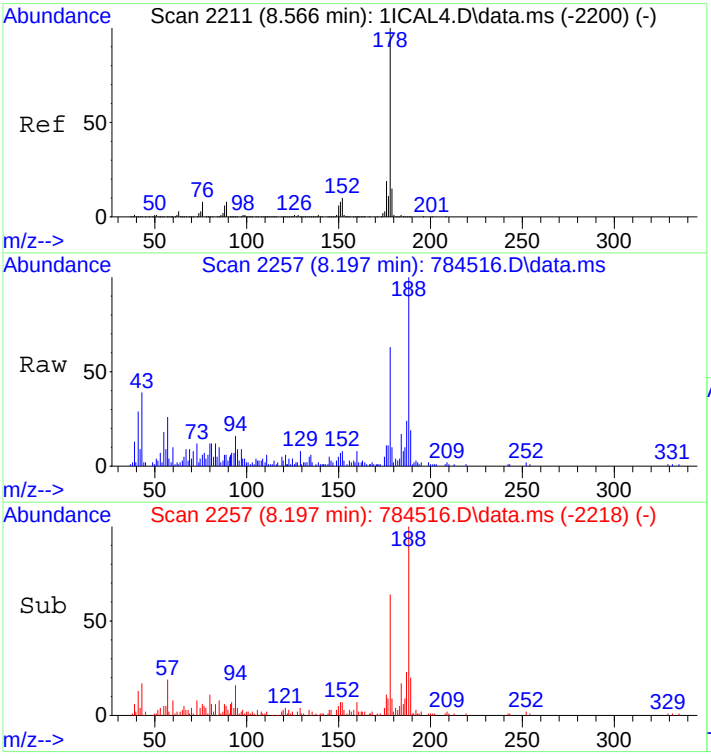


#66
Azobenz&12Diphlhyd
Concen: 0.77 ug/mL
RT: 7.760 min Scan# 2103
Delta R.T. 0.046 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion:182 Resp: 1548

Ion	Ratio	Lower	Upper
182	100		
152	31.7	7.0	67.0
77	6.4	330.8	390.8#

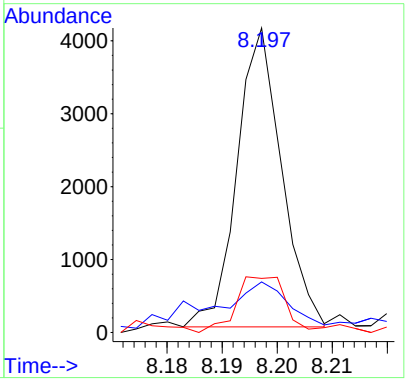


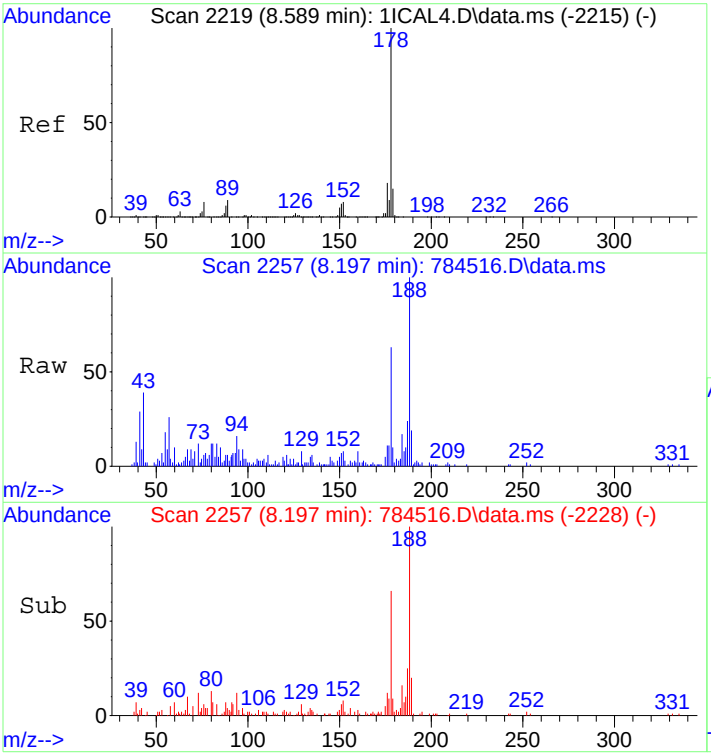


#70
Phenanthrene
Concen: 0.19 ug/mL
RT: 8.197 min Scan# 2257
Delta R.T. -0.003 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion:178 Resp: 2298

Ion	Ratio	Lower	Upper
178	100		
179	14.4	0.0	45.3
176	16.4	0.0	49.4

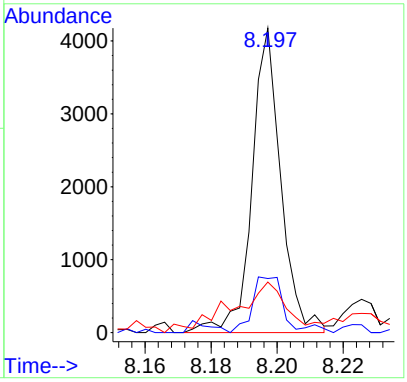


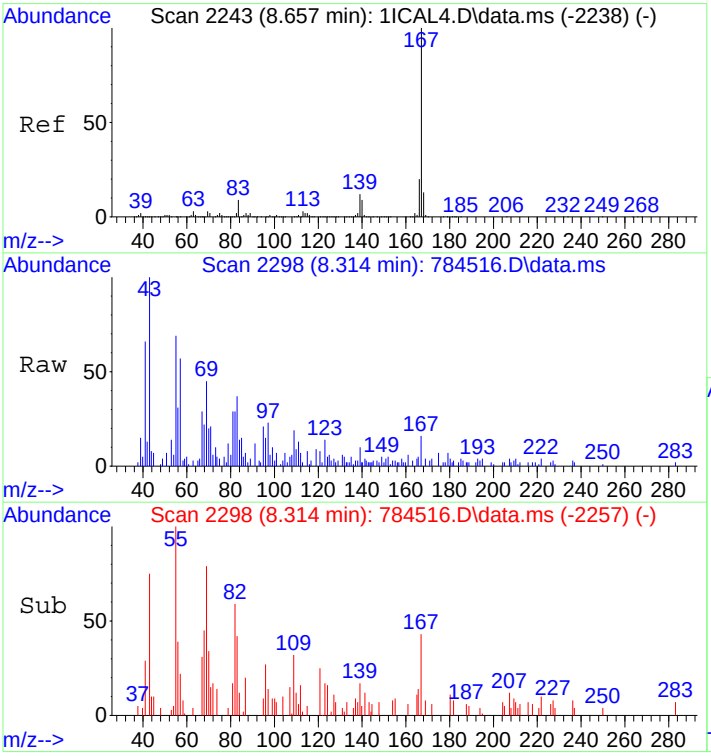


#71
Anthracene
Concen: 0.20 ug/mL
RT: 8.197 min Scan# 2257
Delta R.T. -0.031 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion:178 Resp: 2542

Ion	Ratio	Lower	Upper
178	100		
176	17.7	0.0	47.3
179	14.6	0.0	44.6

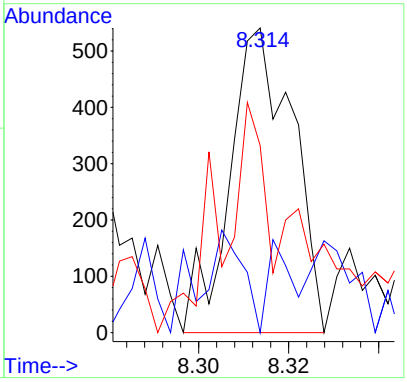


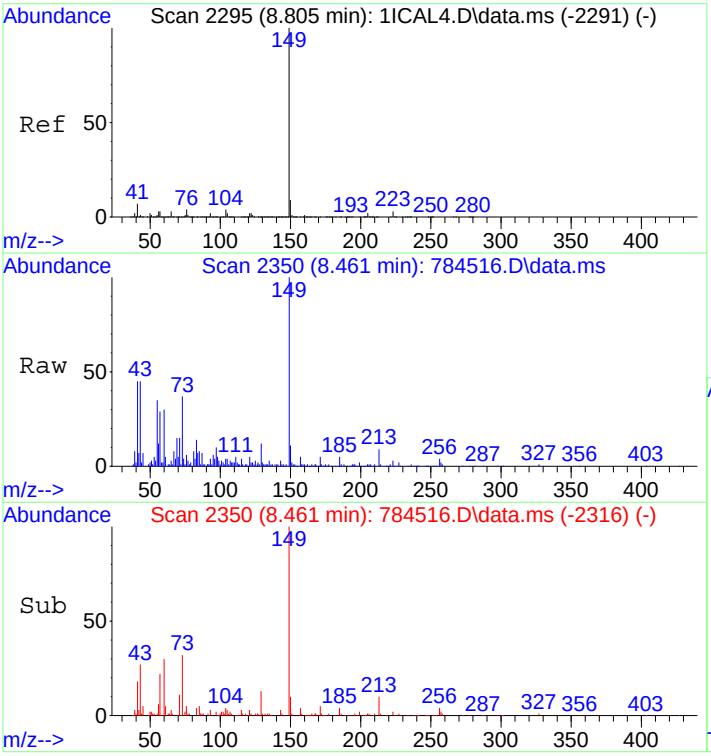


#72
Carbazole
Concen: 0.05 ug/mL
RT: 8.314 min Scan# 2298
Delta R.T. 0.003 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion:167 Resp: 526

Ion	Ratio	Lower	Upper
167	100		
166	0.0	0.0	49.8
139	48.4	0.0	41.7#

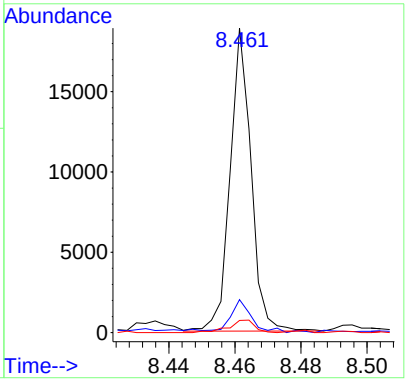


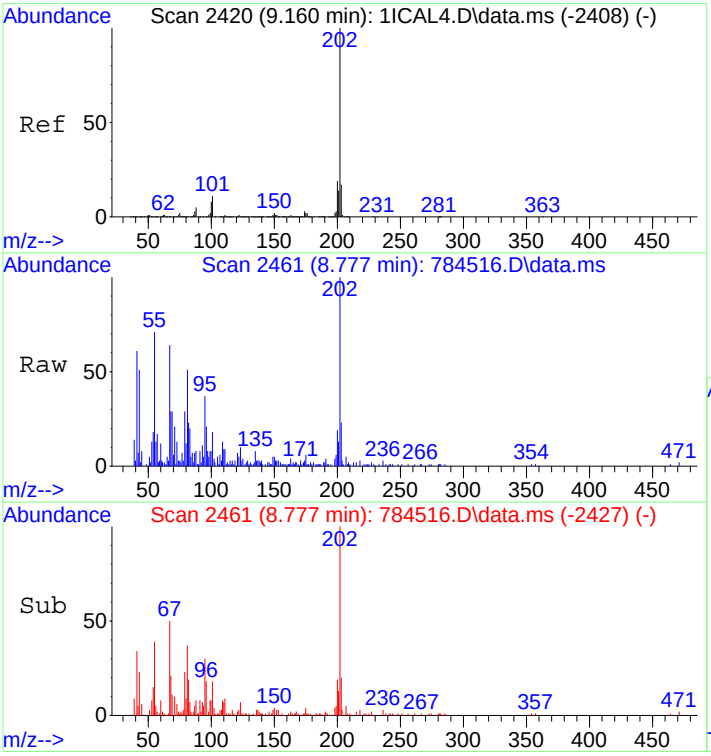


#73
Dinbtylphthal
Concen: 0.62 ug/mL
RT: 8.461 min Scan# 2350
Delta R.T. -0.003 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion:149 Resp: 8355

Ion	Ratio	Lower	Upper
149	100		
150	10.2	0.0	39.8
104	4.0	0.0	34.5

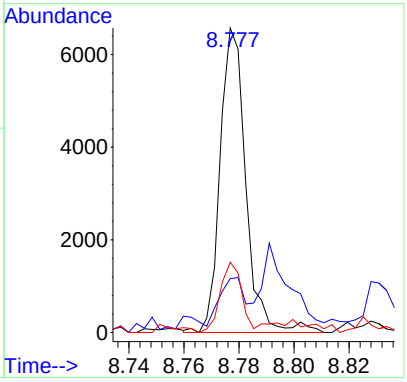


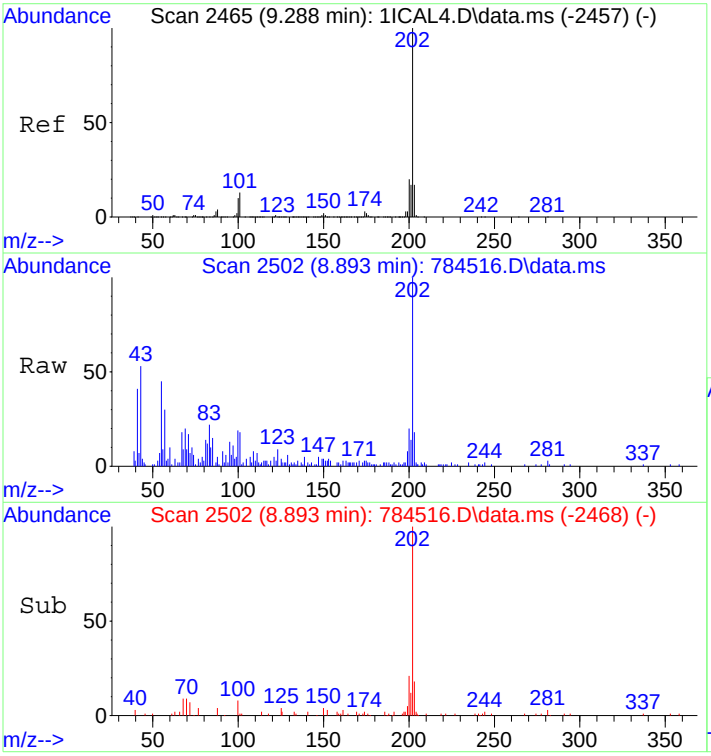


#74
Fluoranthene
Concen: 0.33 ug/mL
RT: 8.777 min Scan# 2461
Delta R.T. -0.003 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion:202 Resp: 4267

Ion	Ratio	Lower	Upper
202	100		
101	14.5	0.0	42.0
203	21.9	0.0	37.4

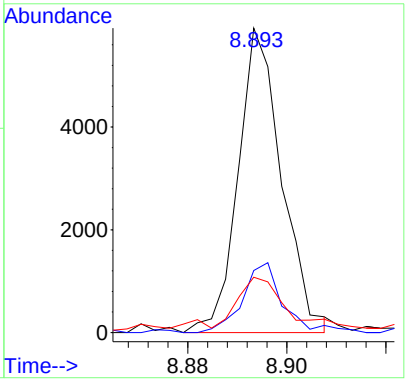


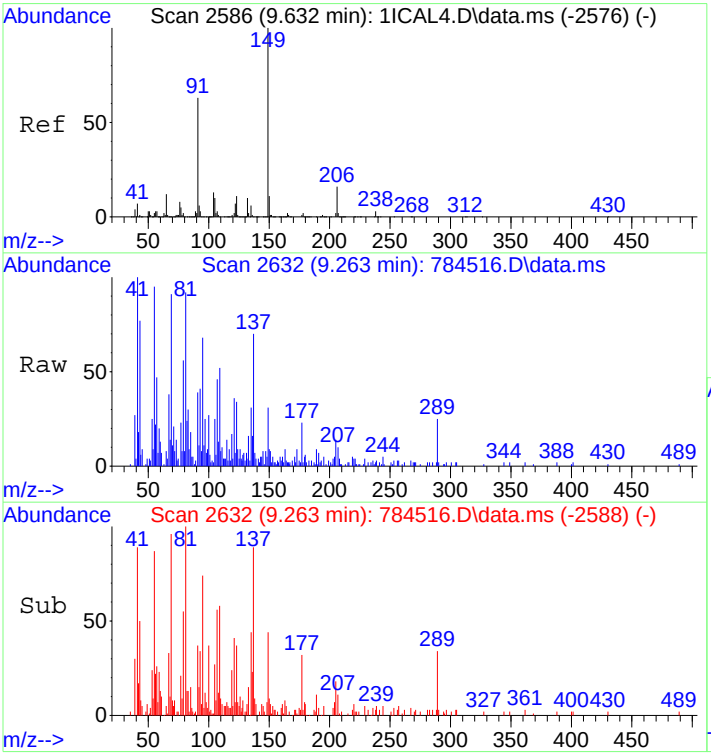


#77
Pyrene
Concen: 0.28 ug/mL
RT: 8.893 min Scan# 2502
Delta R.T. -0.003 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion:202 Resp: 3621

Ion	Ratio	Lower	Upper
202	100		
200	20.4	0.0	49.6
203	15.4	0.0	47.1

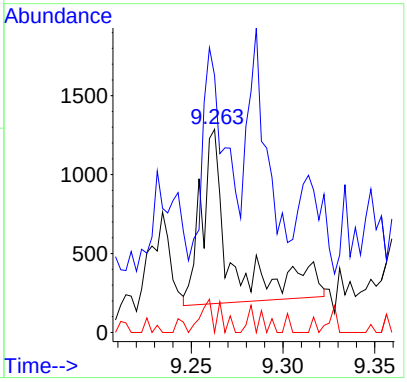


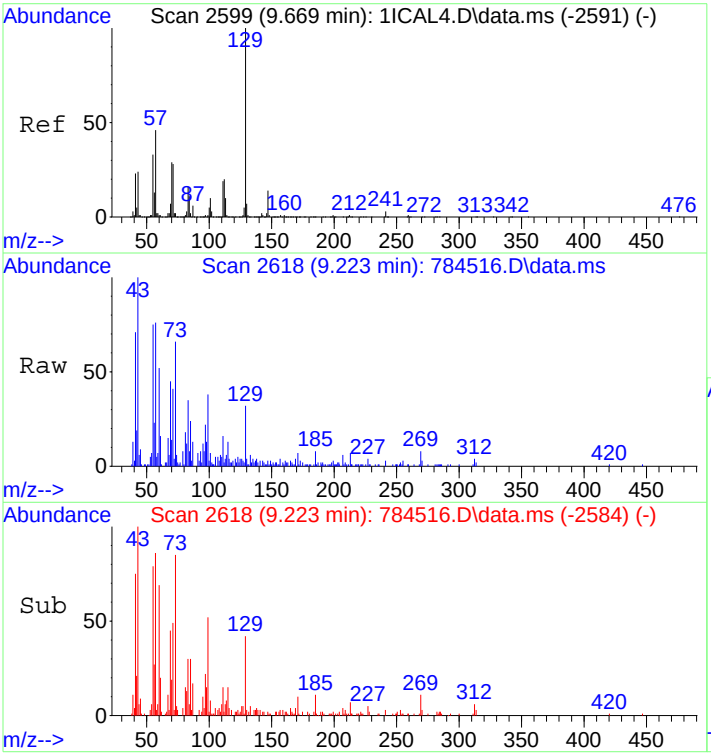


#79
Btylbzylphth
Concen: 0.22 ug/mL
RT: 9.263 min Scan# 2632
Delta R.T. 0.026 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion:149 Resp: 1265

Ion	Ratio	Lower	Upper
149	100		
91	93.1	33.5	93.5
206	0.0	0.0	46.3

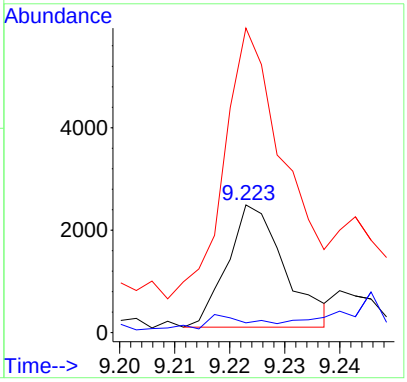


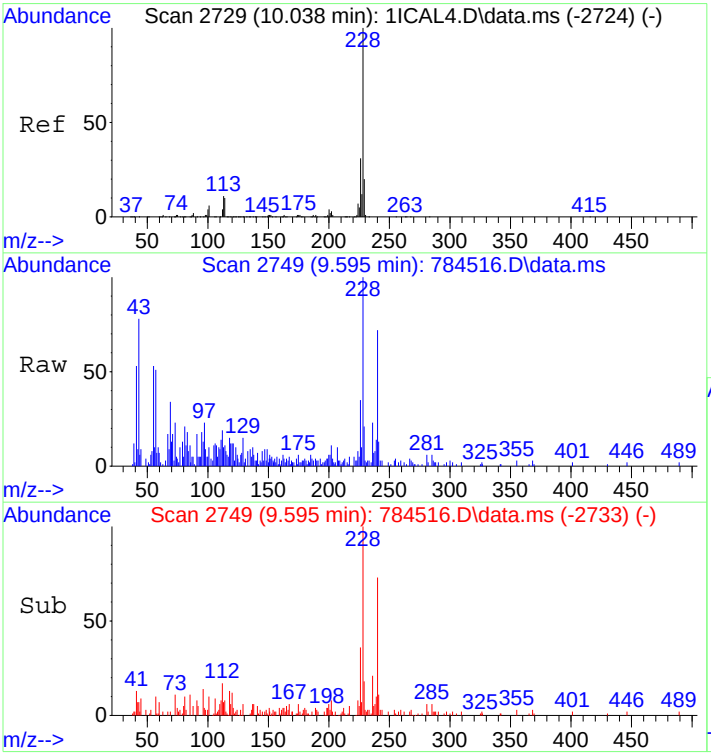


#80
bis2Ethlhxlad
Concen: 0.37 ug/mL
RT: 9.223 min Scan# 2618
Delta R.T. -0.054 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion:129 Resp: 1727

Ion	Ratio	Lower	Upper
129	100		
112	0.0	15.2	22.8#
57	232.5	39.4	59.0#

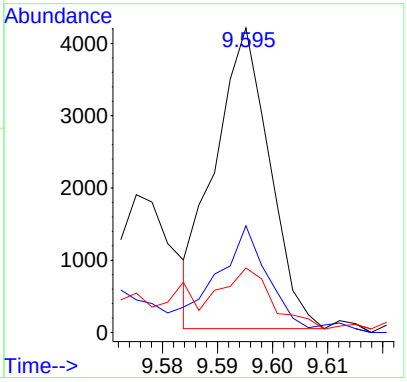


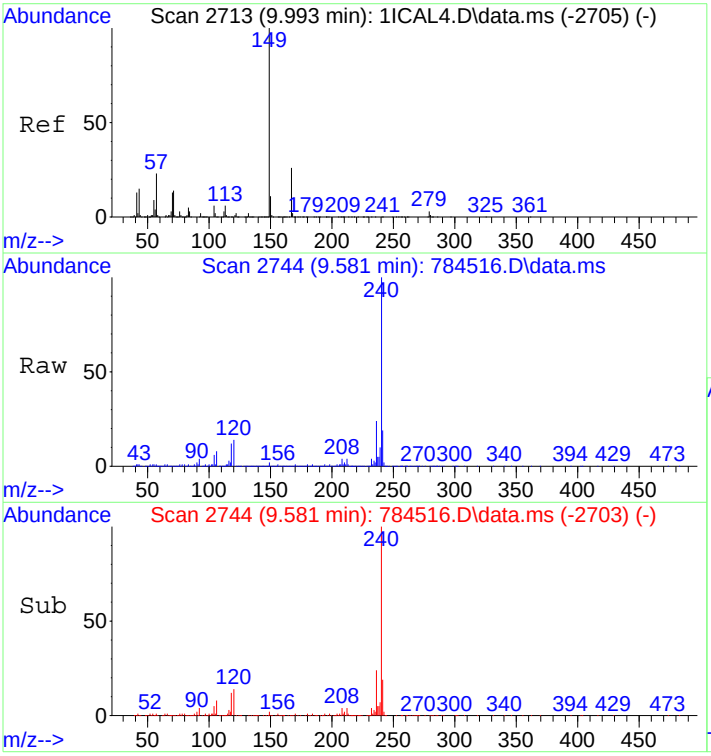


#83
Chrysene
Concen: 0.24 ug/mL
RT: 9.595 min Scan# 2749
Delta R.T. -0.006 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion:228 Resp: 2880

Ion	Ratio	Lower	Upper
228	100		
226	33.1	0.0	58.0
229	20.3	0.0	49.4

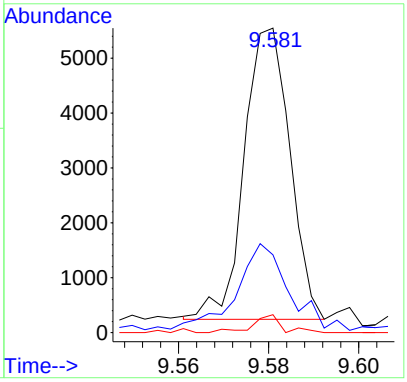


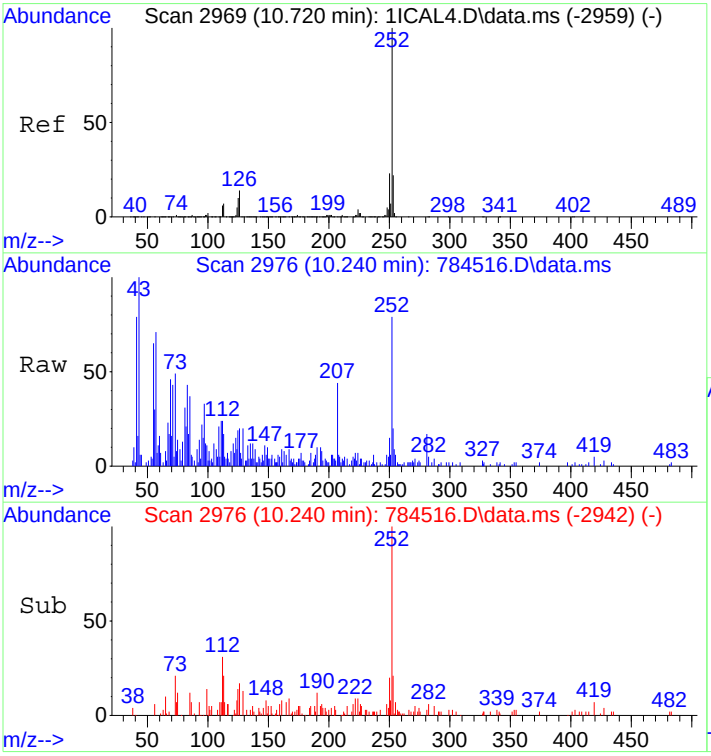


#84
bis2Ethlhxlph
Concen: 0.45 ug/mL
RT: 9.581 min Scan# 2744
Delta R.T. 0.000 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion:149 Resp: 3732

Ion	Ratio	Lower	Upper
149	100		
167	25.2	0.0	54.6
279	6.2	0.0	33.1

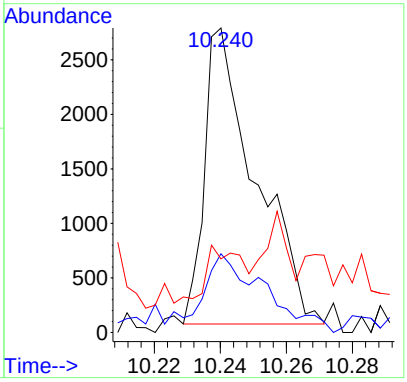


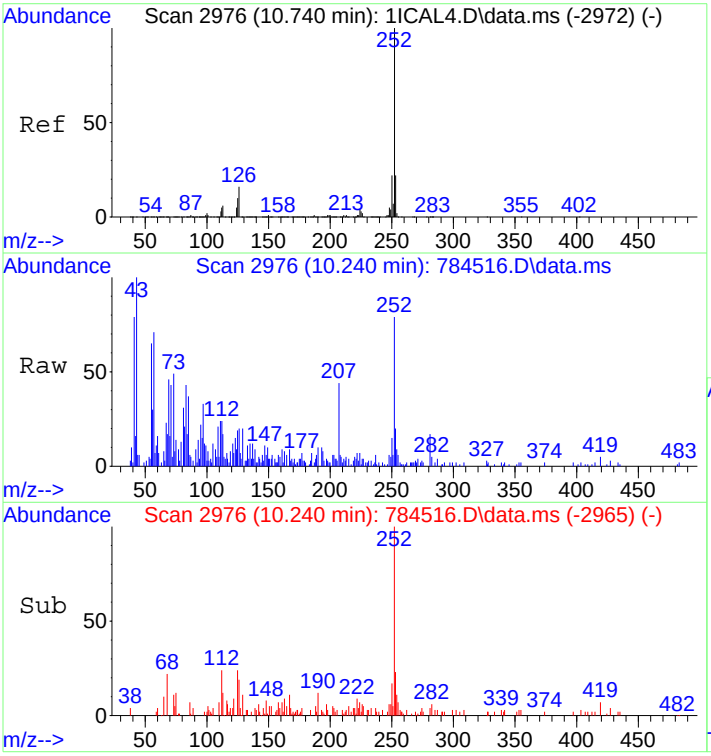


#87
B[b]fluoranth
Concen: 0.23 ug/mL
RT: 10.240 min Scan# 2976
Delta R.T. -0.003 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion:252 Resp: 2911

Ion	Ratio	Lower	Upper
252	100		
253	22.9	0.0	50.7
125	12.9	0.0	42.5

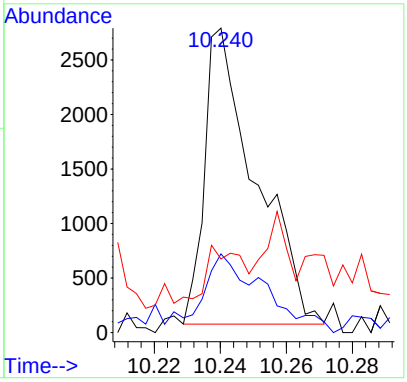




#88
B[k]fluoranth
Concen: 0.25 ug/mL
RT: 10.240 min Scan# 2976
Delta R.T. -0.020 min
Lab File: 784516.D
Acq: 20 Oct 16 3:41 pm

Tgt Ion:252 Resp: 2911

Ion	Ratio	Lower	Upper
252	100		
253	22.9	0.0	52.6
125	12.9	0.0	41.7



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\785308.D Vial: 12
Acq On : 20 Oct 2016 16:01 Operator: JJY
Sample : 131574,785308, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:44:03 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

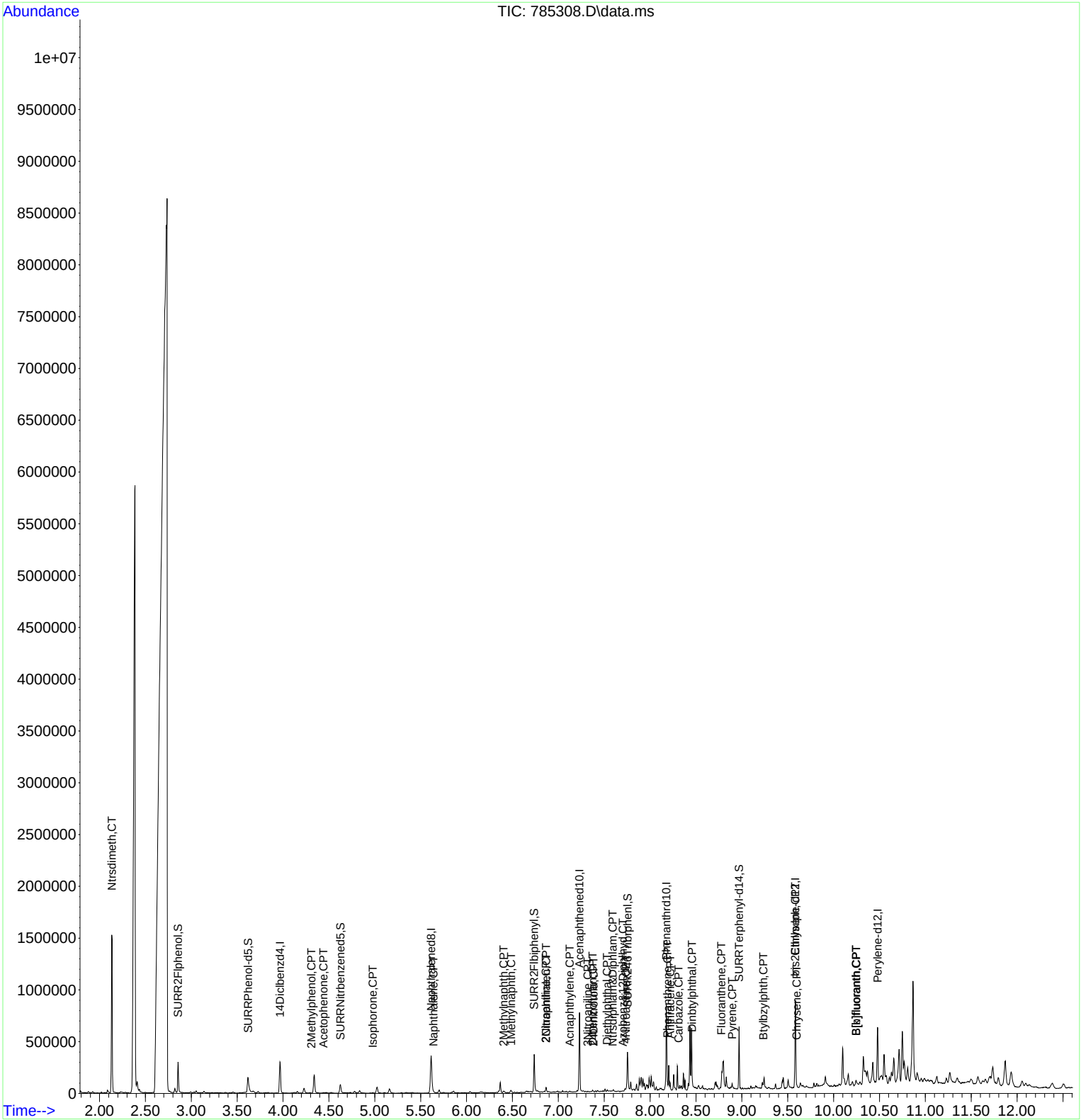
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.966	152	48506	20.00	ug/mL	0.00
21) Naphthalened8	5.614	136	188017	20.00	ug/mL	0.00
39) Acenaphthened10	7.231	164	121440	20.00	ug/mL	0.00
63) Phenanthrd10	8.177	188	215512	20.00	ug/mL	0.00
75) Chrysene-d12	9.584	240	193078	20.00	ug/mL	0.00
86) Perylene-d12	10.482	264	153602	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.855	112	54858	51.47	%REC	0.03
Spiked Amount 100.000	Range 20 - 110		Recovery = 51.47%			
7) SURRPhenol-d5	3.620	99	70991	52.27	%REC	0.01
Spiked Amount 100.000	Range 10 - 115		Recovery = 52.27%			
22) SURRNitrbenzened5	4.625	82	31245	52.58	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 52.58%			
44) SURR2Flbiphenyl	6.737	172	95066	56.57	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 56.57%			
62) SURR246Tribrphenl	7.754	330	31738	57.33	%REC	-0.01
Spiked Amount 100.000	Range 40 - 125		Recovery = 57.33%			
78) SURRTerphenyl-d14	8.970	244	103400	66.85	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 66.85%			
Target Compounds						Qvalue
2) Ntrsdimeth	2.134	74	517	0.3046	ug/mL#	1
15) 2Methylphenol	4.310	107	267	0.1065	ug/mL#	18
17) Acetophenone	4.441	105	560	0.1299	ug/mL	58
24) Isophorone	4.978	82	2127	0.3829	ug/mL	90
31) Naphthalene	5.640	128	2021	0.2020	ug/mL	80
37) 2Methylnaphth	6.404	142	3014	0.4538	ug/mL	88
38) 1Methylnaphth	6.487	141	1774	0.3100	ug/mL#	58
45) 2Clnaphthalen	6.867	162	3352	0.4523	ug/mL#	40
46) 2Nitroaniline	6.865	65	967	0.4660	ug/mL#	12
47) Acnaphthylene	7.126	152	1356	0.1075	ug/mL	85
51) 3Nitroaniline	7.319	138	110	0.0580	ug/mL#	36
53) Dibenzofuran	7.373	168	4460	0.4028	ug/mL	90
54) 24Dinitrotolu	7.385	165	210	0.0822	ug/mL	74
60) Diethylphthal	7.532	149	2012	0.2269	ug/mL	89
61) 4Nitroaniline	7.737	138	512	0.2766	ug/mL#	41
65) Ntrsdiphlam&Diphlam	7.592	169	130	0.0213	ug/mL	89
66) Azobenz&12Diphlhyd	7.703	182	822	0.4213	ug/mL#	1
70) Phenanthrene	8.191	178	13074	1.1110	ug/mL	96
71) Anthracene	8.220	178	741	0.0614	ug/mL	91
72) Carbazole	8.311	167	1307	0.1279	ug/mL	89
73) Dinbtylphthal	8.459	149	7672	0.5874	ug/mL	98
74) Fluoranthene	8.777	202	13450	1.0579	ug/mL	96
77) Pyrene	8.896	202	8422	0.7045	ug/mL	98
79) Btylbzylphth	9.234	149	2095	0.3990	ug/mL	92
83) Chrysene	9.598	228	5000	0.4581	ug/mL	96
84) bis2Ethlhxlph	9.581	149	6323	0.8217	ug/mL	99
87) B[b]fluoranth	10.246	252	6046	0.6350	ug/mL	88
88) B[k]fluoranth	10.246	252	6046	0.6761	ug/mL	90

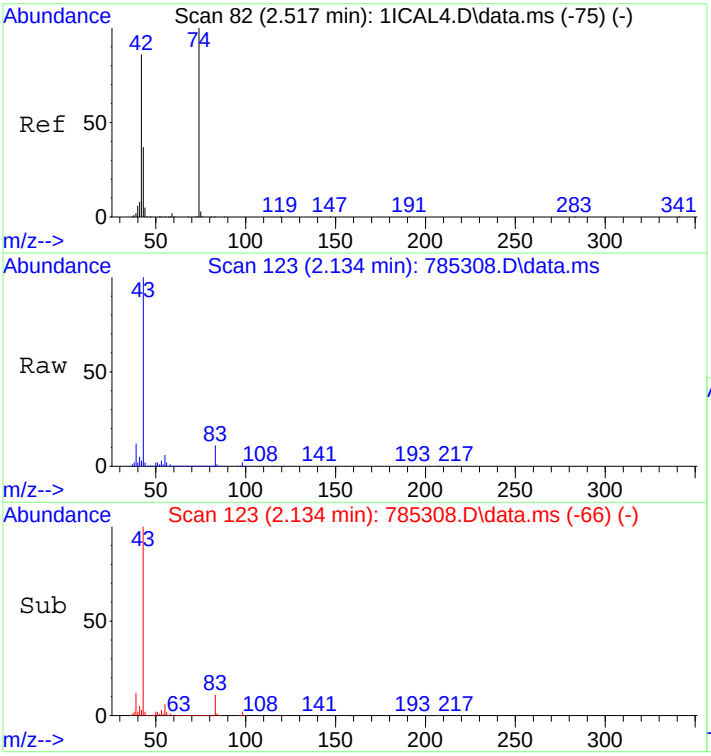
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\785308.D Vial: 12
Acq On : 20 Oct 2016 16:01 Operator: JJY
Sample : 131574,785308, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:44:03 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

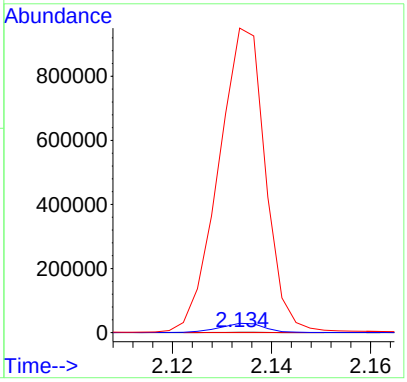


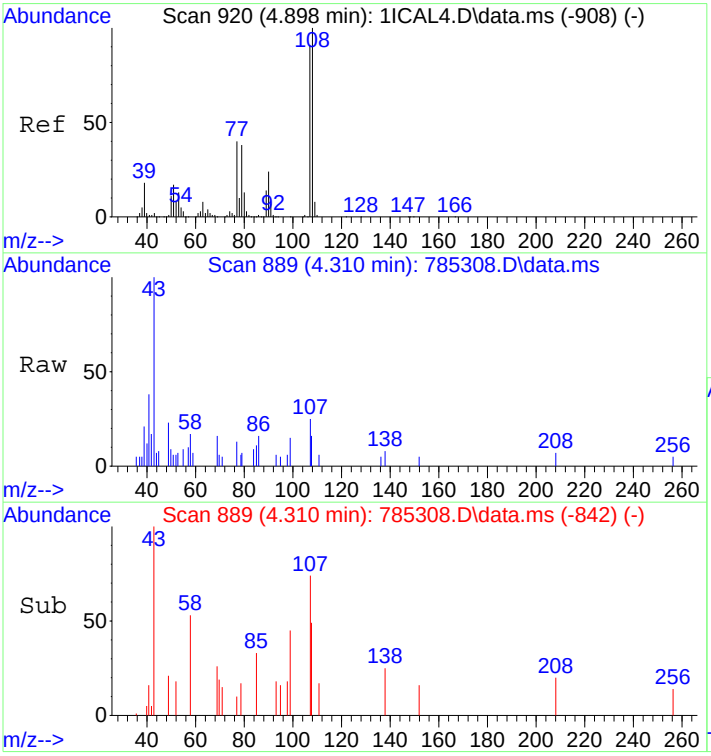


#2
Ntrsdimeth
Concen: 0.30 ug/mL
RT: 2.134 min Scan# 123
Delta R.T. 0.063 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion: 74 Resp: 517

Ion	Ratio	Lower	Upper
74	100		
42	3182.5	61.8	121.8#
43	104902.6	5.5	65.5#

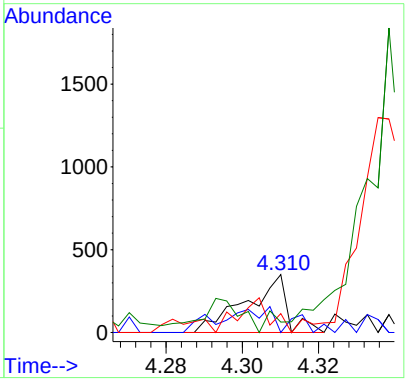


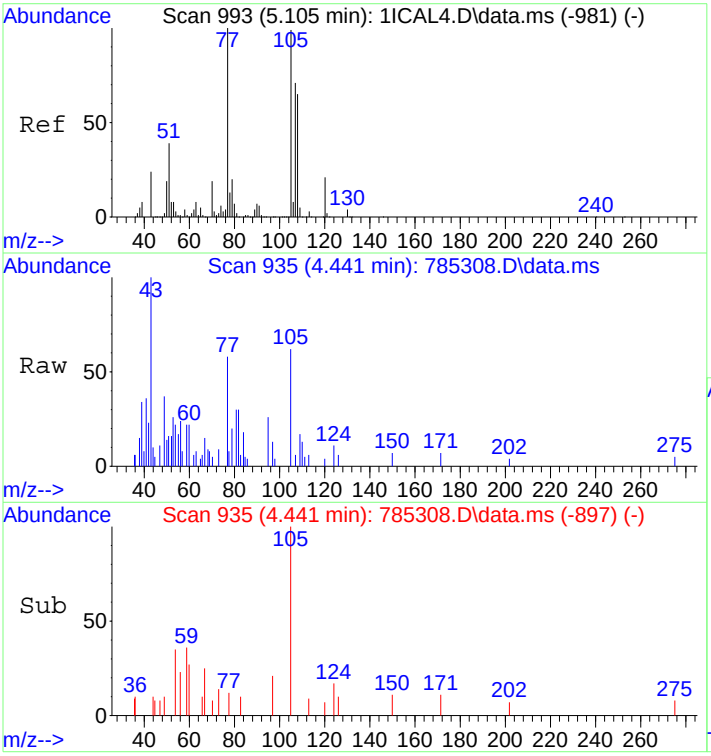


#15
2Methylphenol
Concen: 0.11 ug/mL
RT: 4.310 min Scan# 889
Delta R.T. 0.017 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:107 Resp: 267

Ion	Ratio	Lower	Upper
107	100		
108	0.0	81.7	141.7#
77	18.6	33.2	73.2#
79	1.1	23.5	63.5#

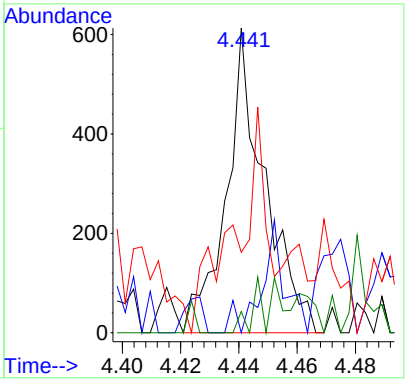


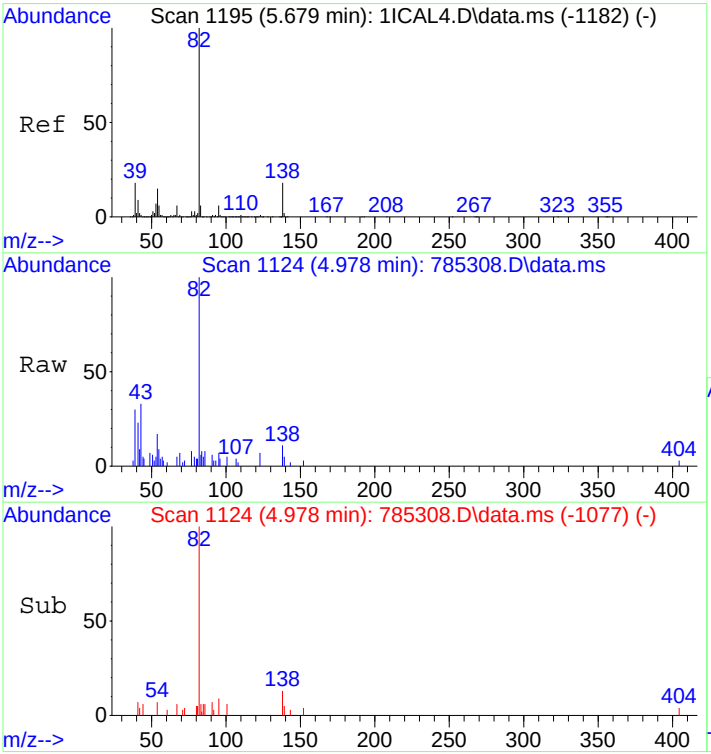


#17
Acetophenone
Concen: 0.13 ug/mL
RT: 4.441 min Scan# 935
Delta R.T. -0.008 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:105 Resp: 560

Ion	Ratio	Lower	Upper
105	100		
71	0.0	0.0	30.7
51	3.1	2.3	62.3
120	7.0	0.0	38.3

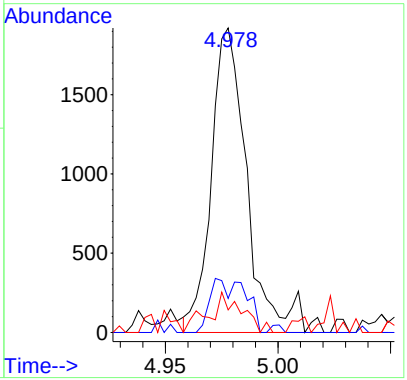


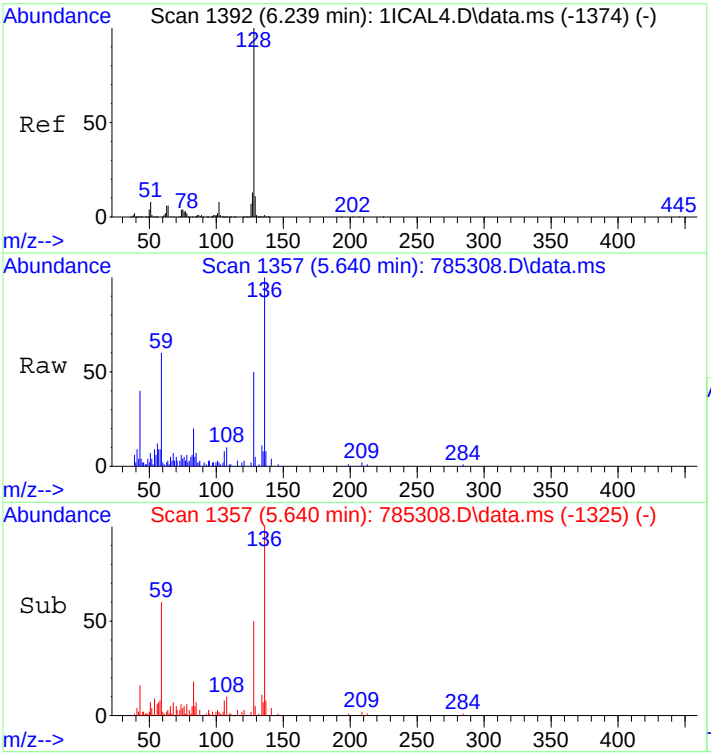


#24
Isophorone
Concen: 0.38 ug/mL
RT: 4.978 min Scan# 1124
Delta R.T. -0.011 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion: 82 Resp: 2127

Ion	Ratio	Lower	Upper
82	100		
138	11.2	0.0	46.9
95	7.4	0.0	26.8

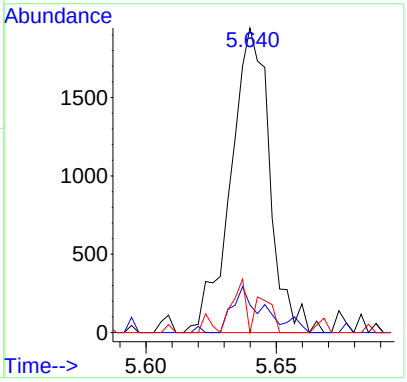


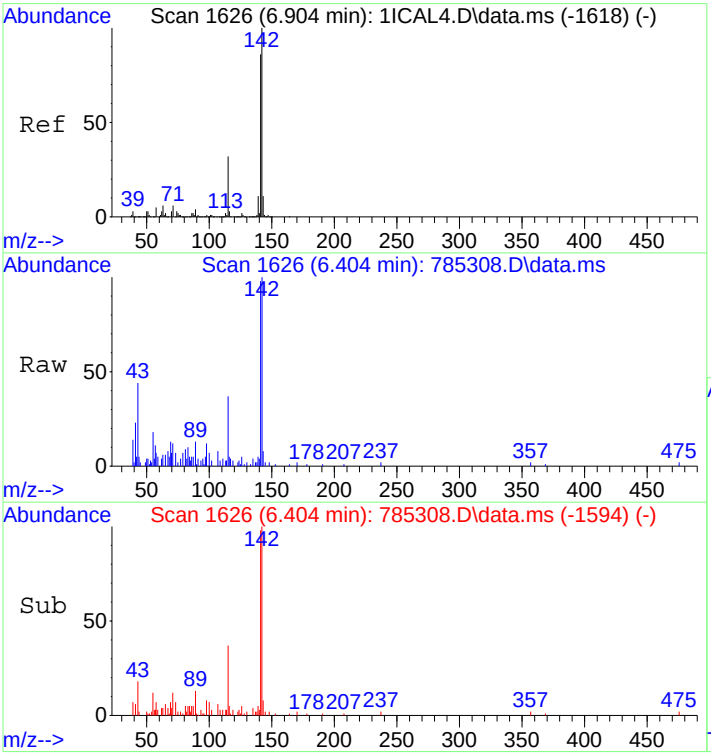


#31
Naphthalene
Concen: 0.20 ug/mL
RT: 5.640 min Scan# 1357
Delta R.T. -0.008 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:128 Resp: 2021

Ion	Ratio	Lower	Upper
128	100		
129	9.1	0.0	40.7
127	0.0	0.0	43.2

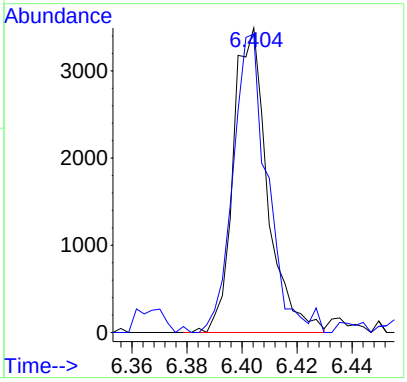


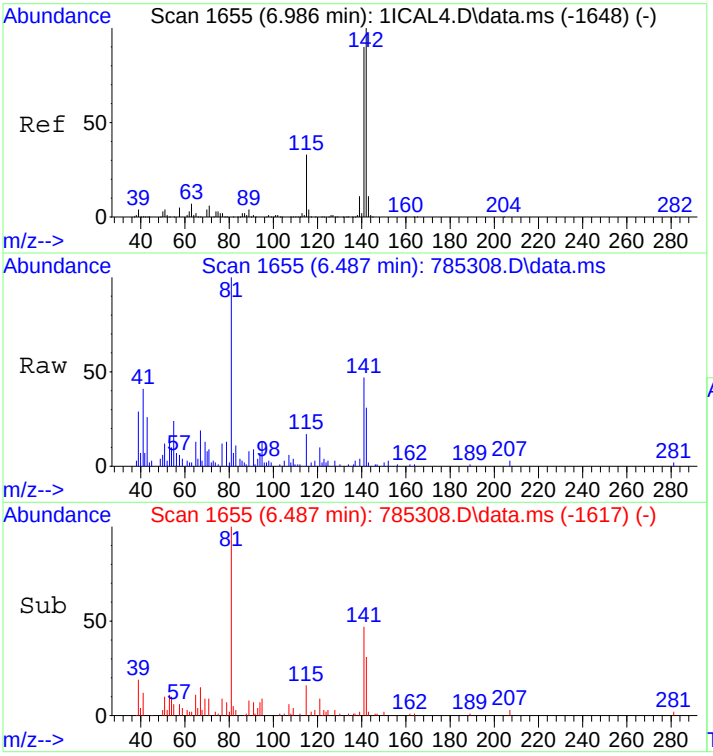


#37
2Methylnaphth
Concen: 0.45 ug/mL
RT: 6.404 min Scan# 1626
Delta R.T. -0.008 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:142 Resp: 3014

Ion	Ratio	Lower	Upper
142	100		
141	98.0	56.7	116.7

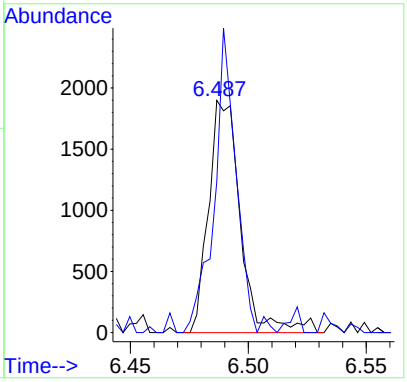


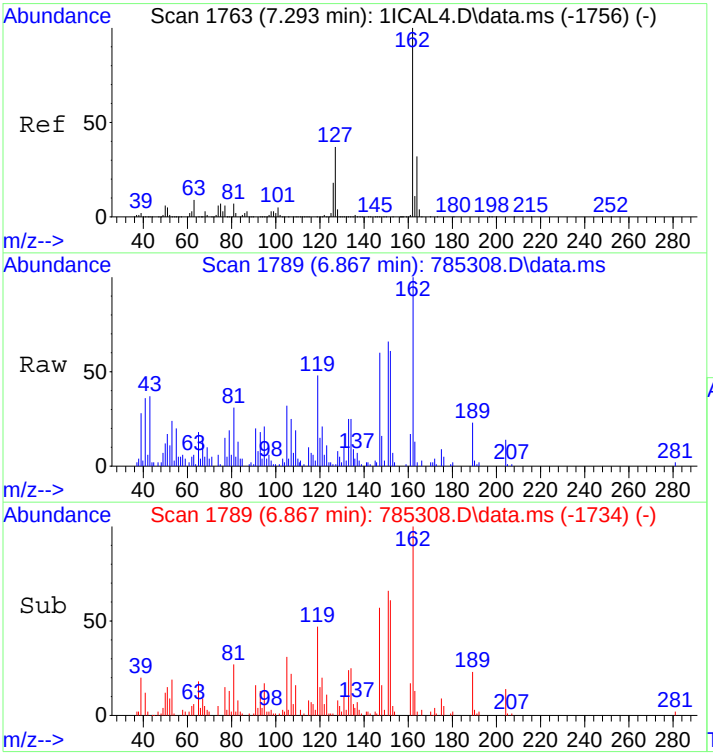


#38
1Methylnaphth
Concen: 0.31 ug/mL
RT: 6.487 min Scan# 1655
Delta R.T. -0.011 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:141 Resp: 1774

Ion	Ratio	Lower	Upper
141	100		
142	65.1	78.9	138.9#

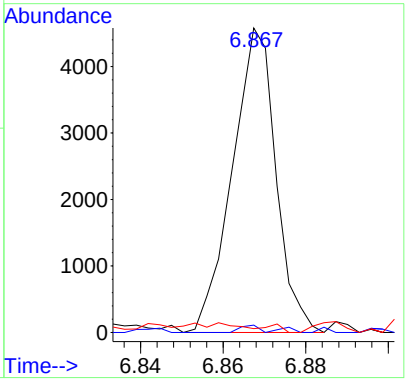


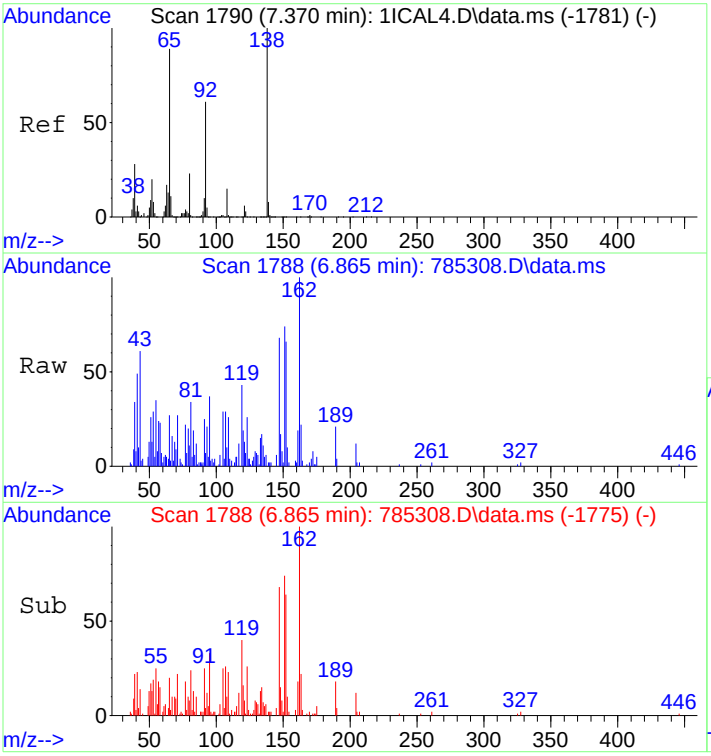


#45
2Clnaphthalen
Concen: 0.45 ug/mL
RT: 6.867 min Scan# 1789
Delta R.T. 0.040 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:162 Resp: 3352

Ion	Ratio	Lower	Upper
162	100		
164	2.4	2.4	62.4
127	0.0	9.8	69.8#

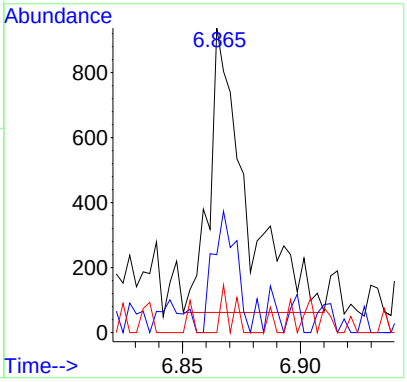


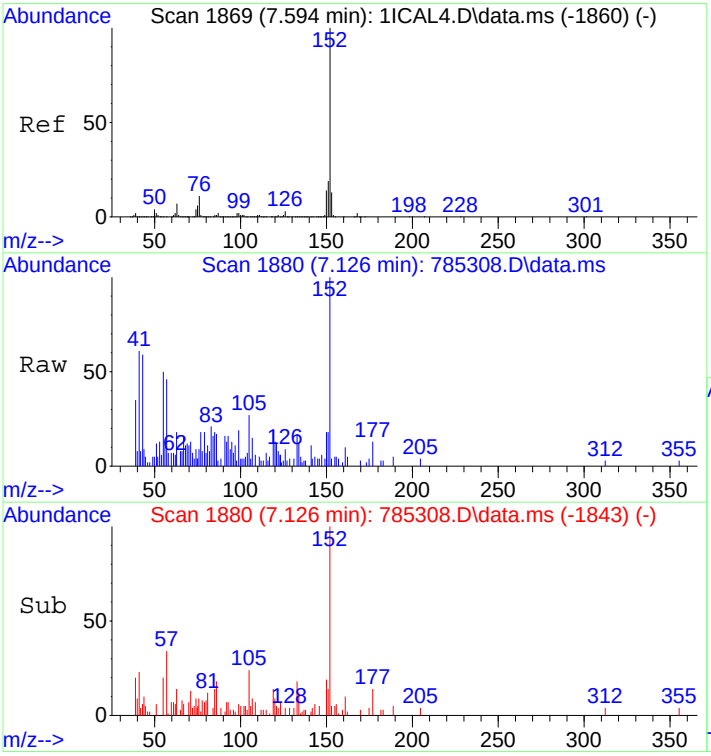


#46
2Nitroaniline
Concen: 0.47 ug/mL
RT: 6.865 min Scan# 1788
Delta R.T. -0.062 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion: 65 Resp: 967

Ion	Ratio	Lower	Upper
65	100		
92	20.9	39.4	99.4#
138	0.0	83.7	143.7#

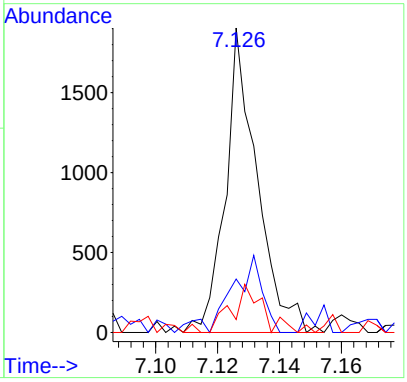


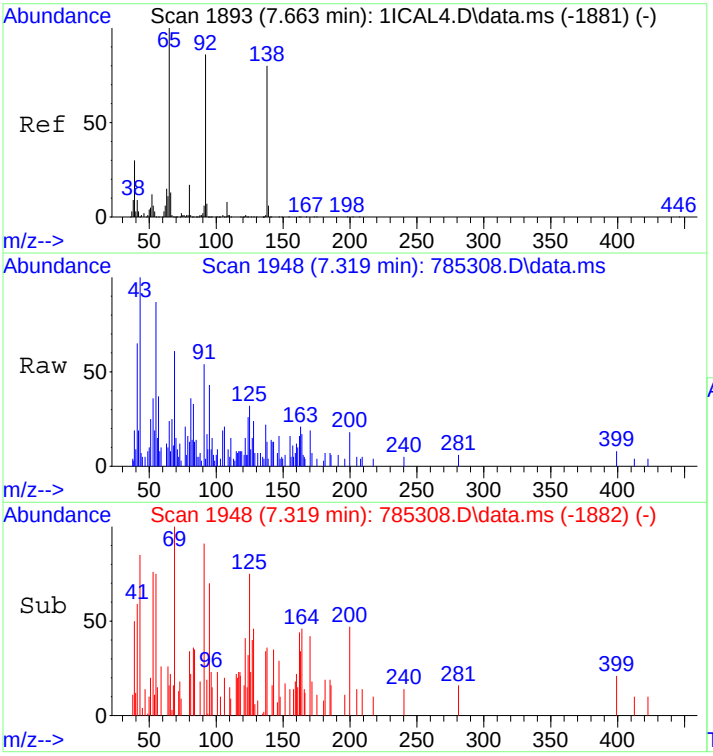


#47
Acnaphthylene
Concen: 0.11 ug/mL
RT: 7.126 min Scan# 1880
Delta R.T. -0.011 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:152 Resp: 1356

Ion	Ratio	Lower	Upper
152	100		
151	15.0	0.0	49.3
153	4.3	0.0	43.8

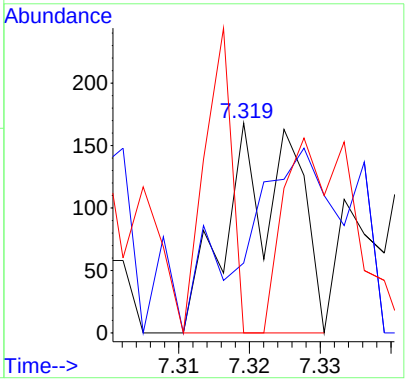


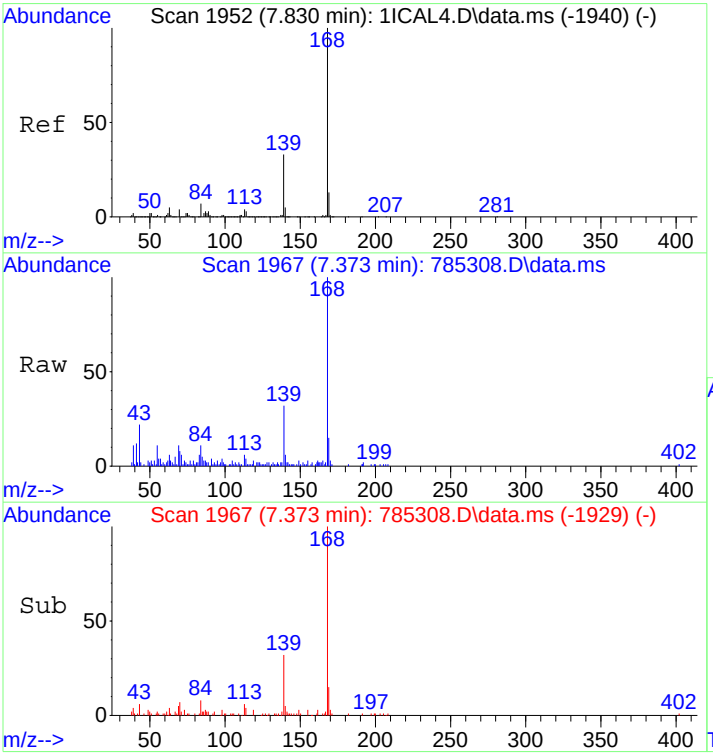


#51
3Nitroaniline
Concen: 0.06 ug/mL
RT: 7.319 min Scan# 1948
Delta R.T. 0.088 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:138 Resp: 110

Ion	Ratio	Lower	Upper
138	100		
92	33.3	72.2	132.2#
108	0.0	0.0	30.3

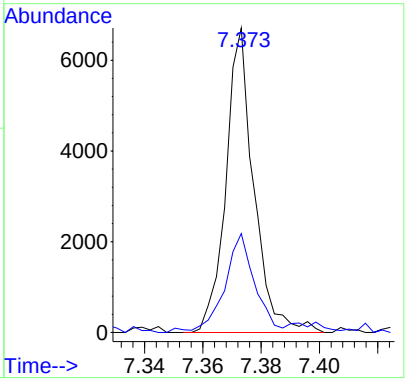


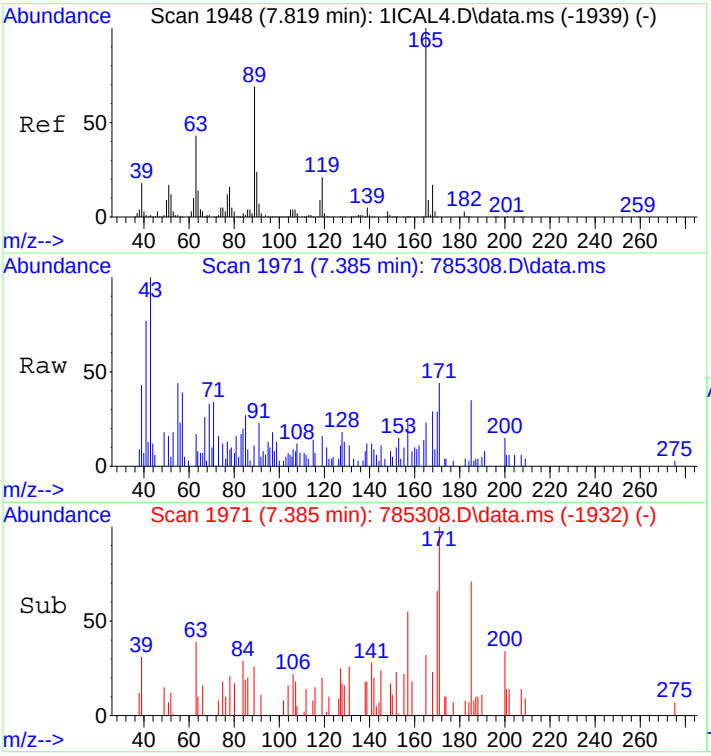


#53
Dibenzofuran
Concen: 0.40 ug/mL
RT: 7.373 min Scan# 1967
Delta R.T. -0.008 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:168 Resp: 4460

Ion	Ratio	Lower	Upper
168	100		
139	31.6	7.7	67.7

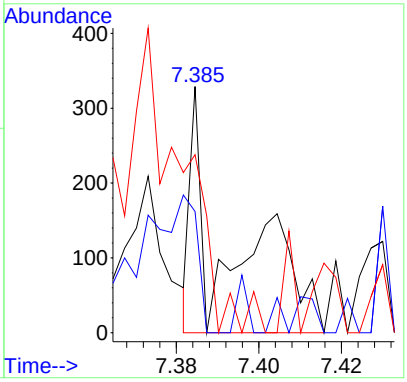


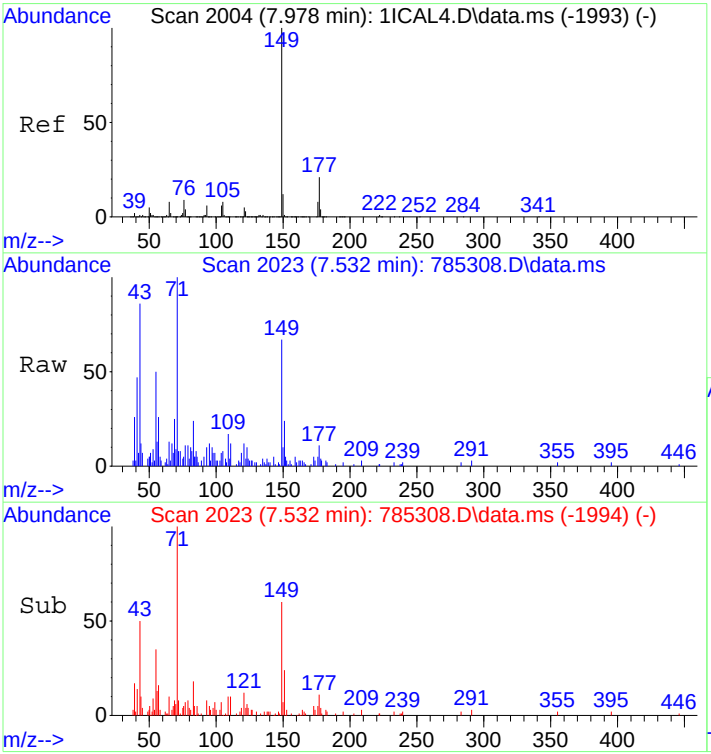


#54
24Dinitrotolu
Concen: 0.08 ug/mL
RT: 7.385 min Scan# 1971
Delta R.T. -0.006 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:165 Resp: 210

Ion	Ratio	Lower	Upper
165	100		
89	49.2	45.7	105.7
63	44.1	39.2	79.2

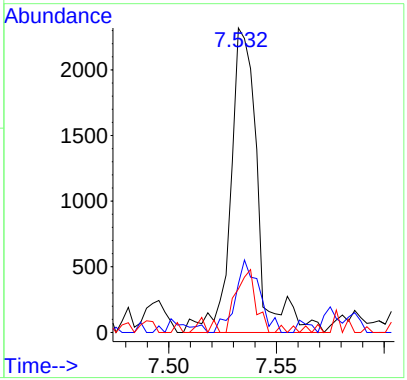


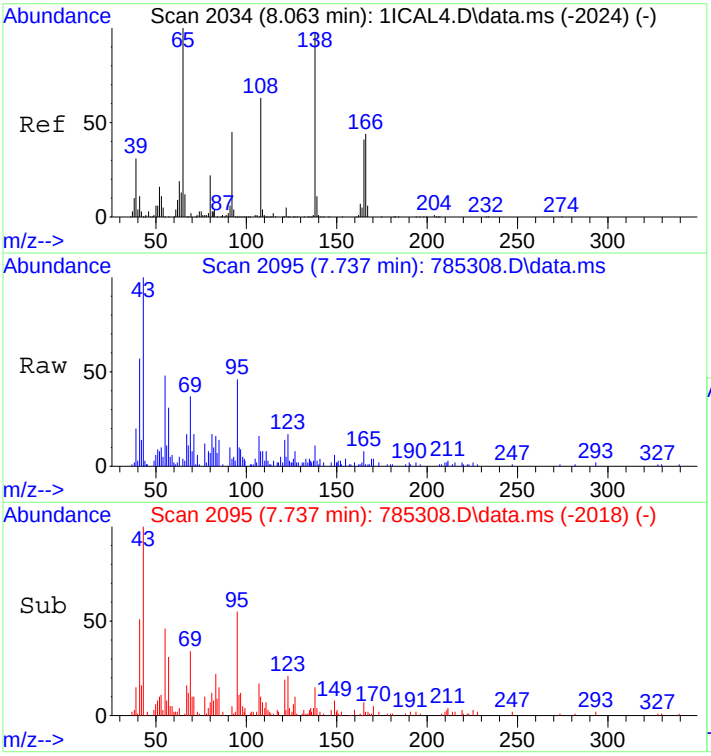


#60
Diethylphthal
Concen: 0.23 ug/mL
RT: 7.532 min Scan# 2023
Delta R.T. -0.017 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:149 Resp: 2012

Ion	Ratio	Lower	Upper
149	100		
177	13.4	0.0	49.5
150	14.3	0.0	42.0

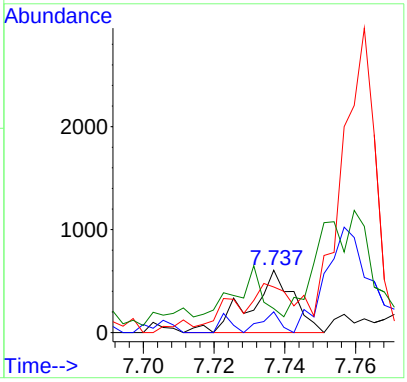


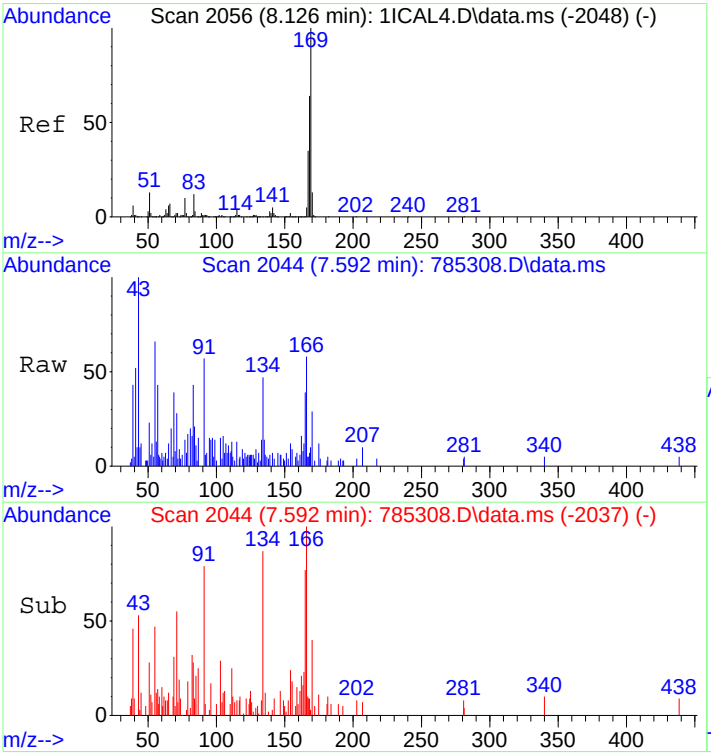


#61
4Nitroaniline
Concen: 0.28 ug/mL
RT: 7.737 min Scan# 2095
Delta R.T. 0.100 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:138 Resp: 512

Ion	Ratio	Lower	Upper
138	100		
92	33.2	12.7	72.7
108	52.6	46.1	106.1
65	0.0	71.6	131.6#

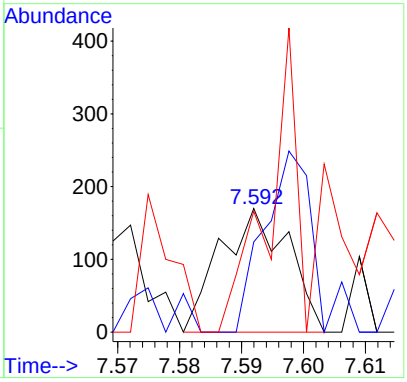


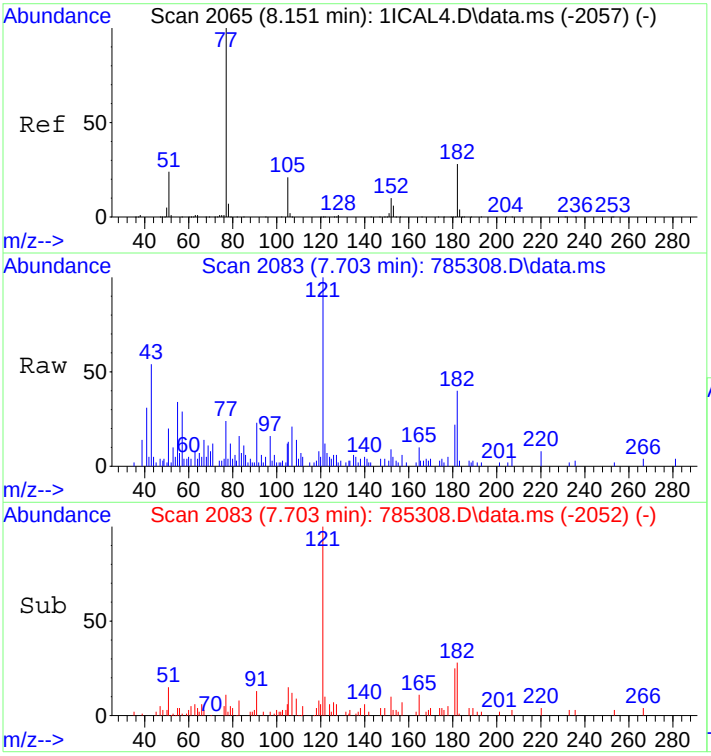


#65
Ntrsdiphlam&Diphlam
Concen: 0.02 ug/mL
RT: 7.592 min Scan# 2044
Delta R.T. -0.099 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:169 Resp: 130

Ion	Ratio	Lower	Upper
169	100		
168	72.9	35.5	95.5
167	42.9	5.2	65.2

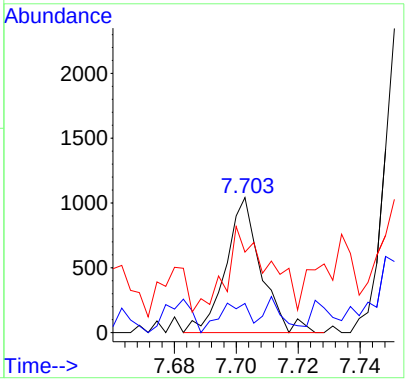


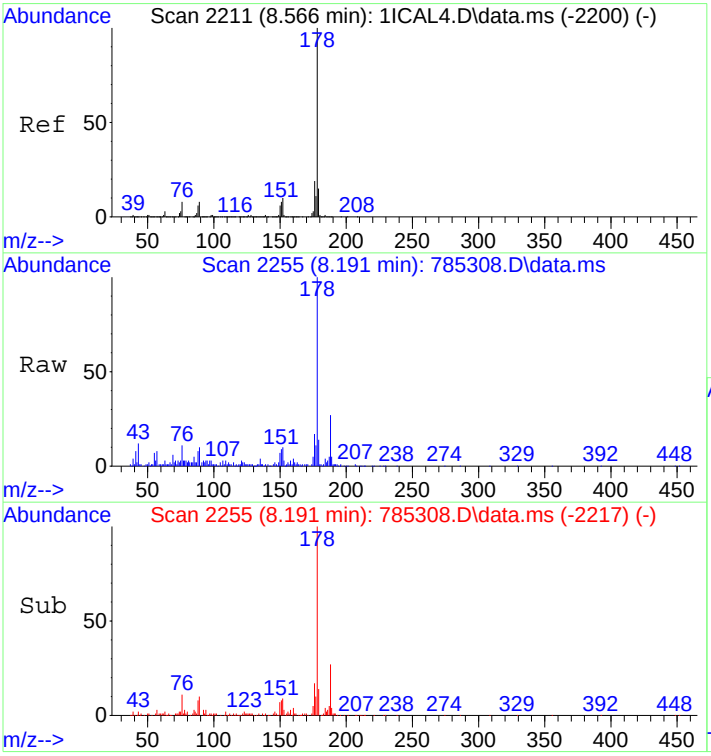


#66
Azobenz&12Diphlhyd
Concen: 0.42 ug/mL
RT: 7.703 min Scan# 2083
Delta R.T. -0.011 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:182 Resp: 822

Ion	Ratio	Lower	Upper
182	100		
152	3.3	7.0	67.0#
77	12.0	330.8	390.8#

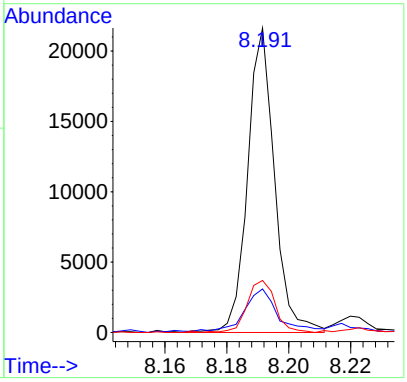


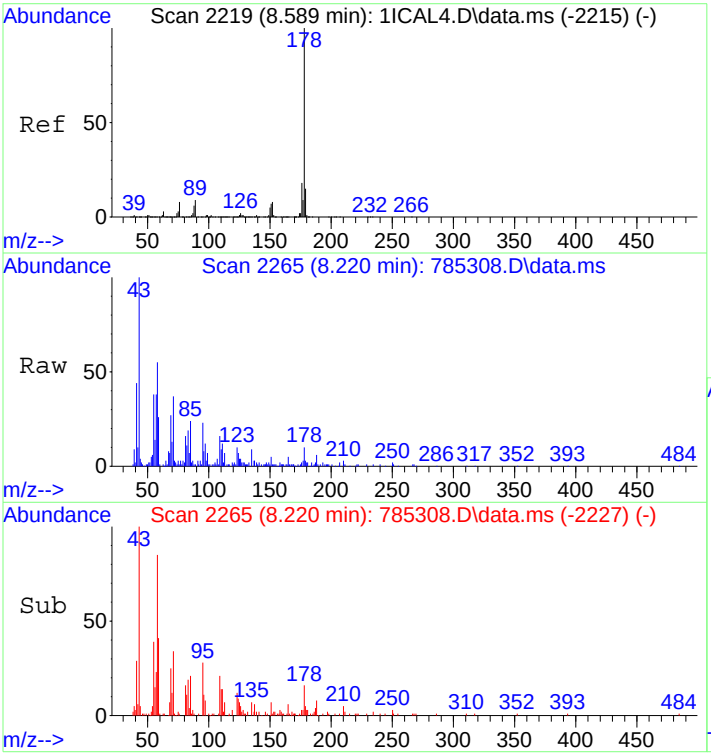


#70
Phenanthrene
Concen: 1.11 ug/mL
RT: 8.191 min Scan# 2255
Delta R.T. -0.008 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:178 Resp: 13074

Ion	Ratio	Lower	Upper
178	100		
179	13.9	0.0	45.3
176	17.1	0.0	49.4

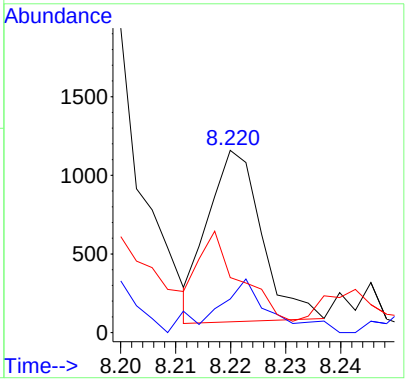


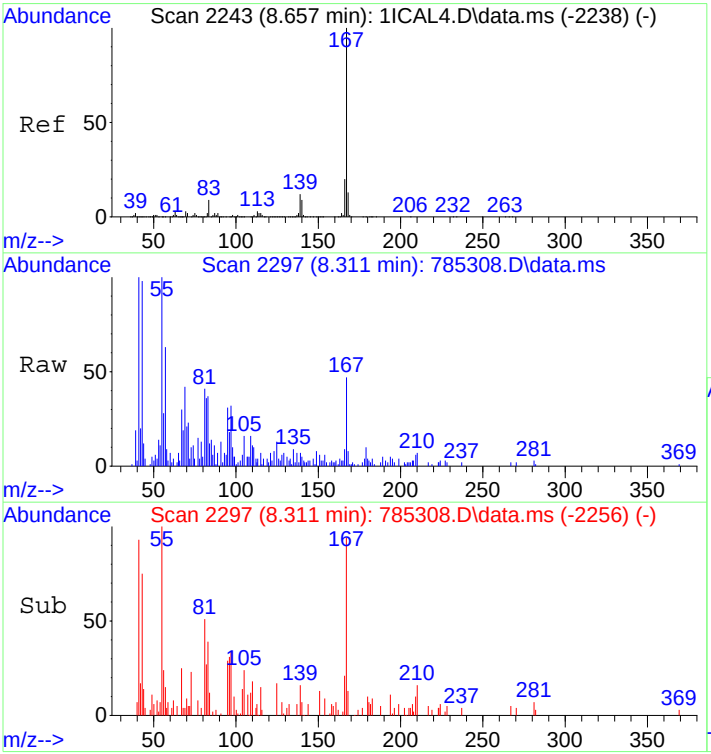


#71
Anthracene
Concen: 0.06 ug/mL
RT: 8.220 min Scan# 2265
Delta R.T. -0.008 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:178 Resp: 741

Ion	Ratio	Lower	Upper
178	100		
176	13.2	0.0	47.3
179	10.9	0.0	44.6

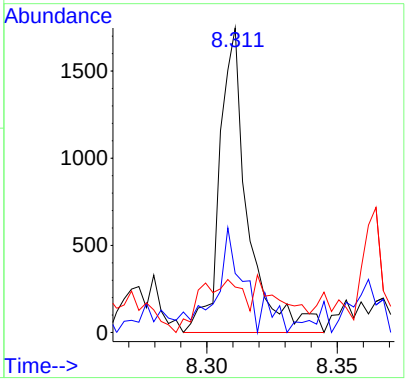


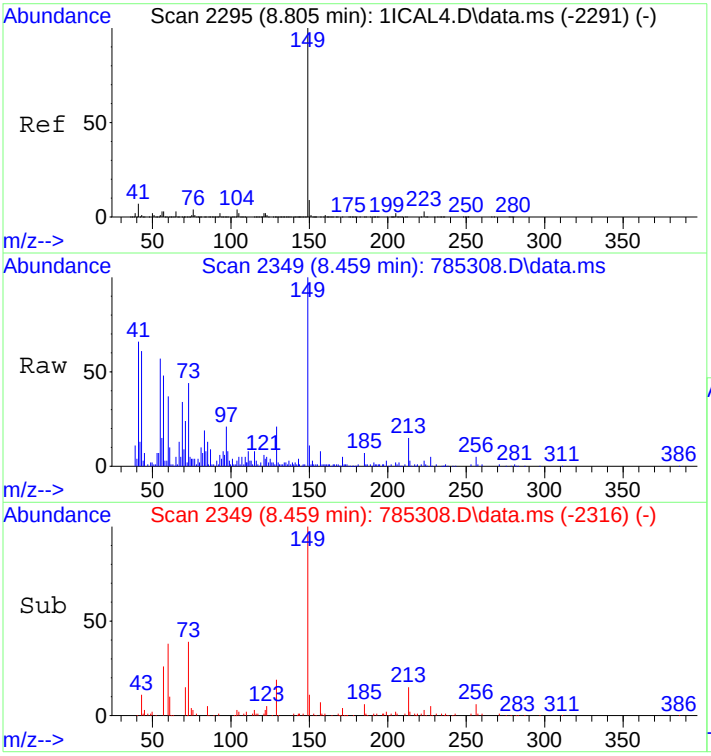


#72
Carbazole
Concen: 0.13 ug/mL
RT: 8.311 min Scan# 2297
Delta R.T. 0.000 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:167 Resp: 1307

Ion	Ratio	Lower	Upper
167	100		
166	12.7	0.0	49.8
139	10.5	0.0	41.7

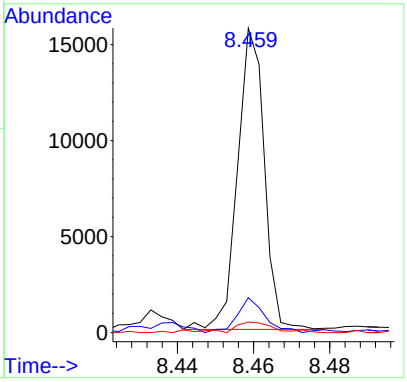


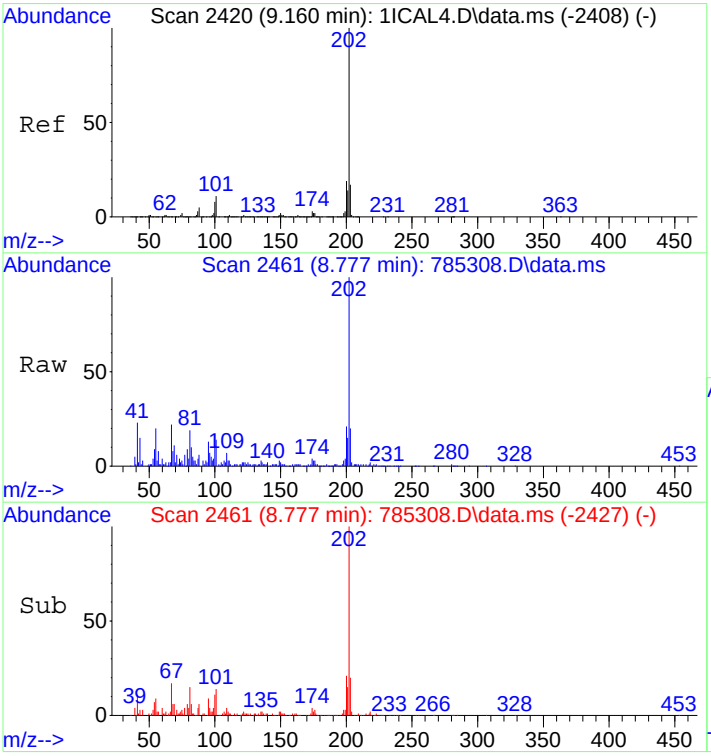


#73
Dinbtylphthal
Concen: 0.59 ug/mL
RT: 8.459 min Scan# 2349
Delta R.T. -0.006 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:149 Resp: 7672

Ion	Ratio	Lower	Upper
149	100		
150	10.6	0.0	39.8
104	3.5	0.0	34.5

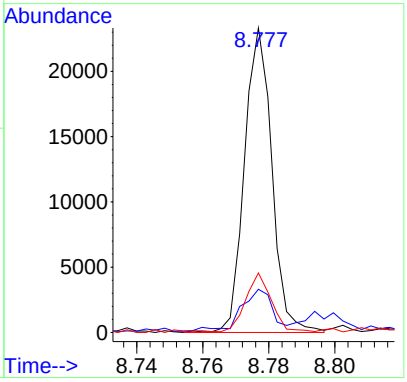


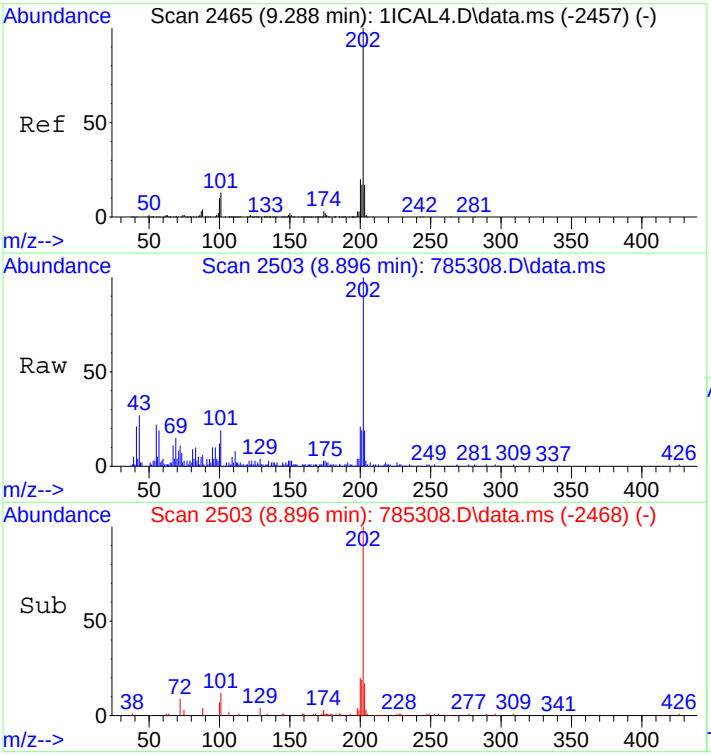


#74
Fluoranthene
Concen: 1.06 ug/mL
RT: 8.777 min Scan# 2461
Delta R.T. -0.003 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:202 Resp: 13450

Ion	Ratio	Lower	Upper
202	100		
101	13.8	0.0	42.0
203	19.0	0.0	37.4

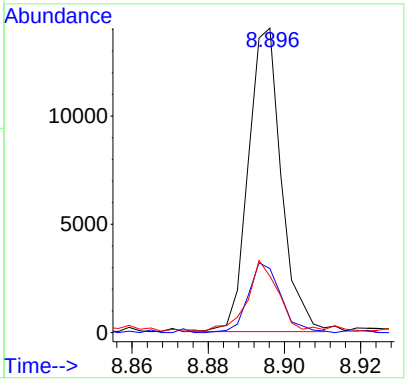


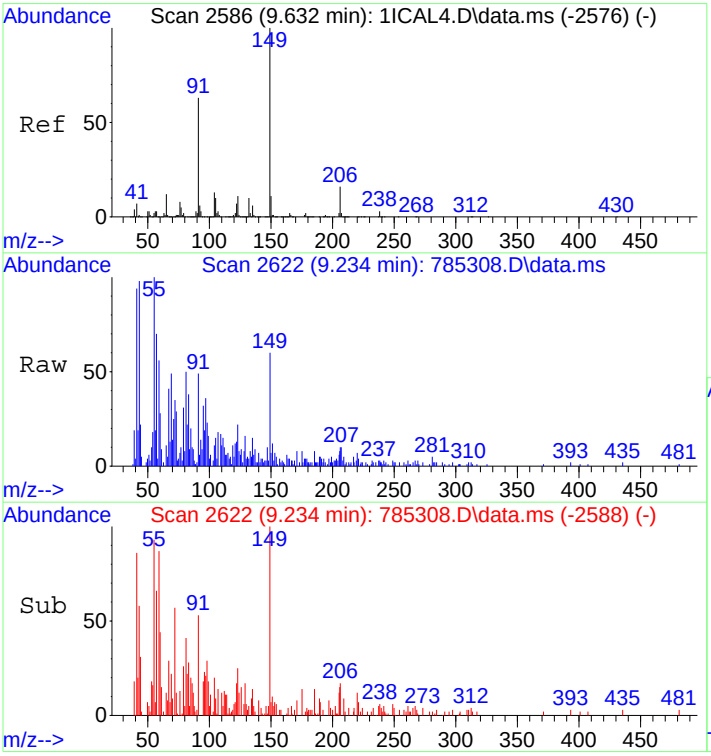


#77
Pyrene
Concen: 0.70 ug/mL
RT: 8.896 min Scan# 2503
Delta R.T. 0.000 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:202 Resp: 8422

Ion	Ratio	Lower	Upper
202	100		
200	20.6	0.0	49.6
203	17.8	0.0	47.1

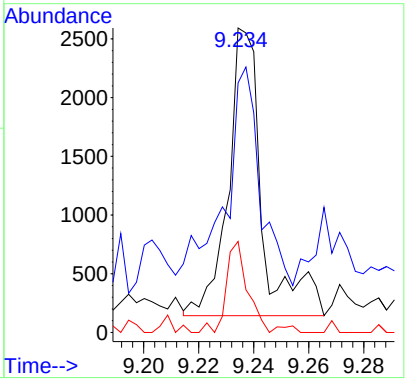


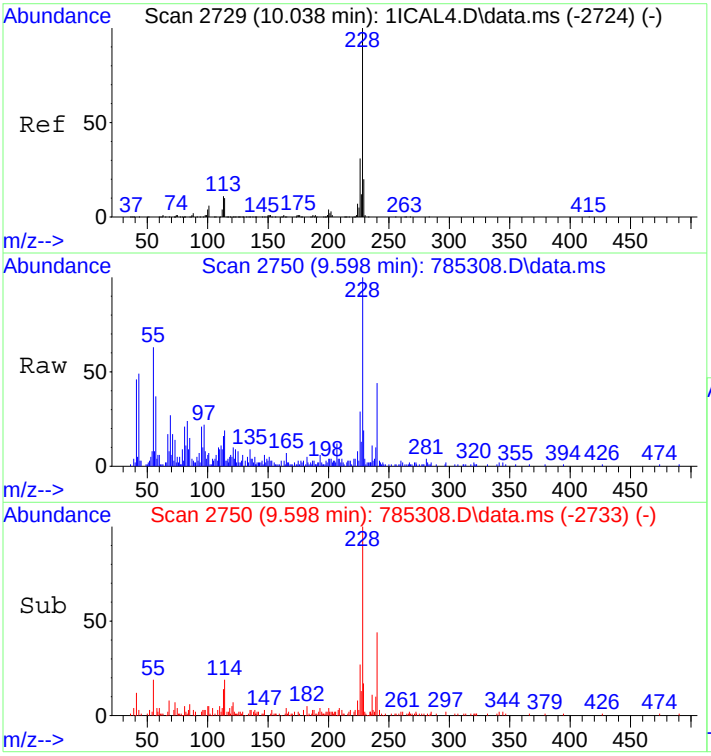


#79
Btylbzylphth
Concen: 0.40 ug/mL
RT: 9.234 min Scan# 2622
Delta R.T. -0.003 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:149 Resp: 2095

Ion	Ratio	Lower	Upper
149	100		
91	62.9	33.5	93.5
206	31.6	0.0	46.3

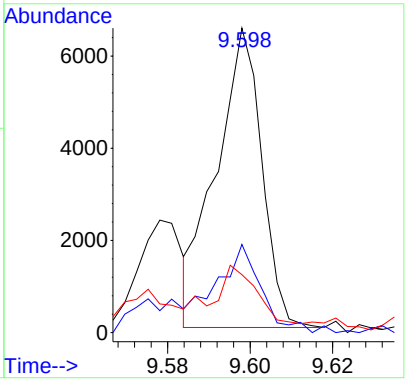


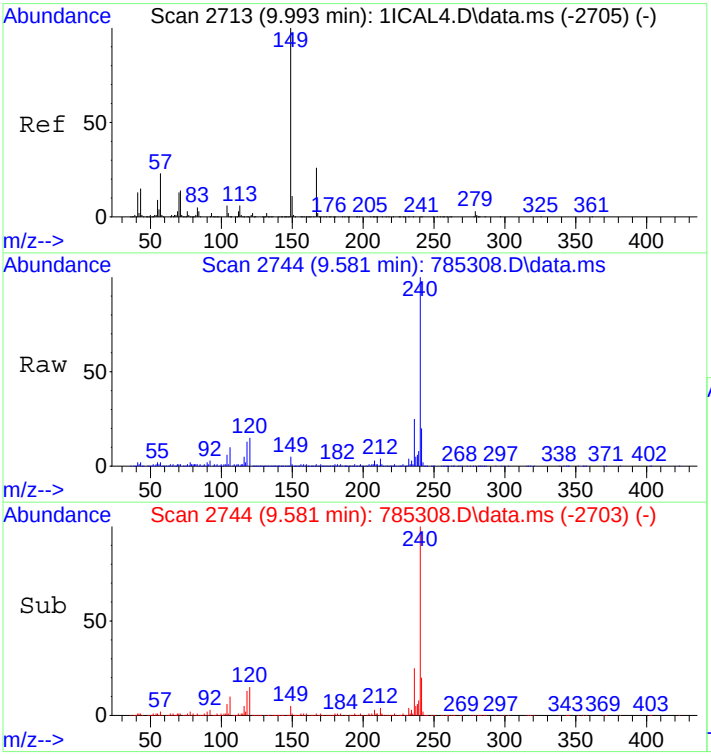


#83
Chrysene
Concen: 0.46 ug/mL
RT: 9.598 min Scan# 2750
Delta R.T. -0.003 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:228 Resp: 5000

Ion	Ratio	Lower	Upper
228	100		
226	27.2	0.0	58.0
229	16.2	0.0	49.4

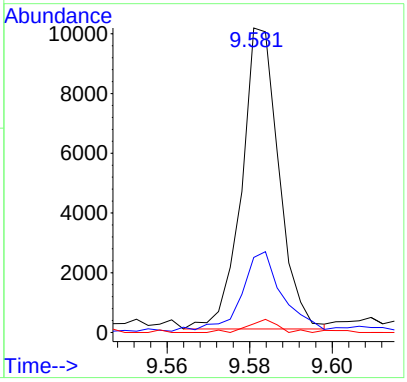


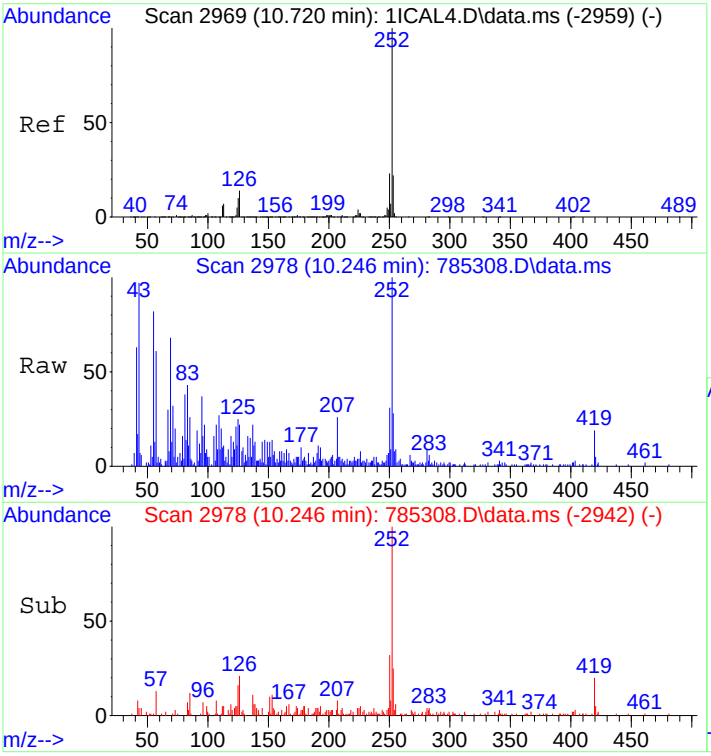


#84
bis2Ethlhxlph
Concen: 0.82 ug/mL
RT: 9.581 min Scan# 2744
Delta R.T. 0.000 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:149 Resp: 6323

Ion	Ratio	Lower	Upper
149	100		
167	23.9	0.0	54.6
279	2.9	0.0	33.1

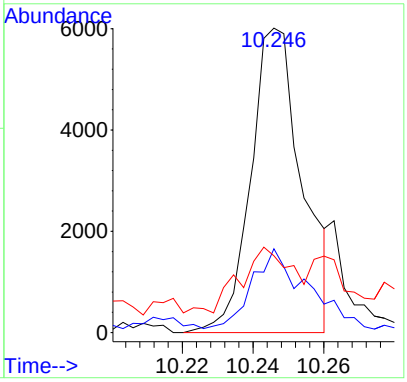


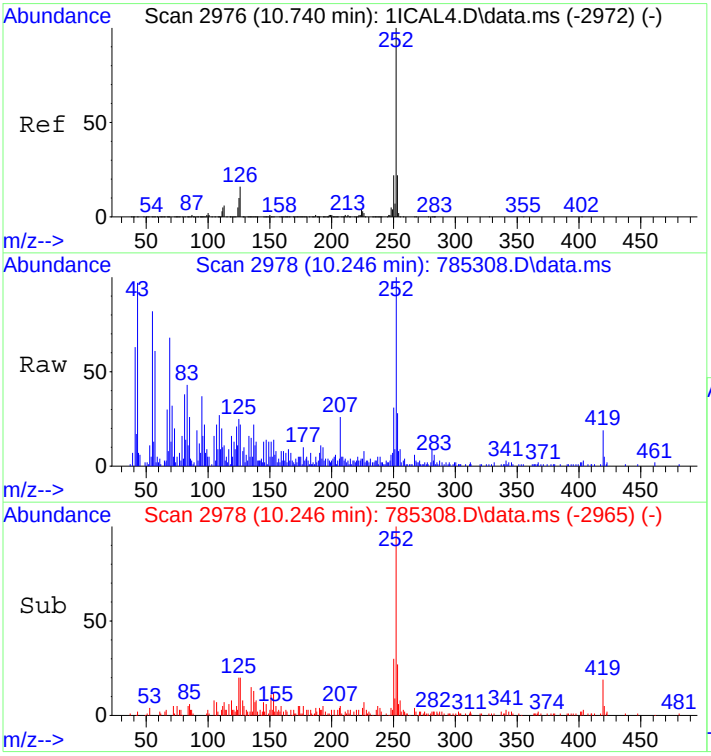


#87
B[b]fluoranth
Concen: 0.64 ug/mL
RT: 10.246 min Scan# 2978
Delta R.T. 0.003 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:252 Resp: 6046

Ion	Ratio	Lower	Upper
252	100		
253	25.3	0.0	50.7
125	18.8	0.0	42.5

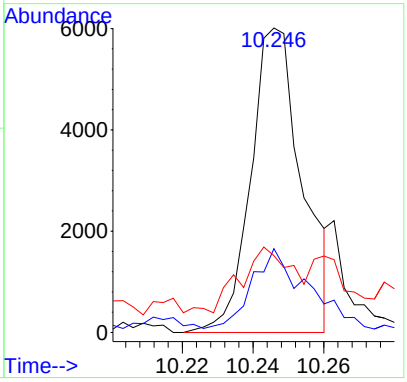




#88
B[k]fluoranth
Concen: 0.68 ug/mL
RT: 10.246 min Scan# 2978
Delta R.T. -0.014 min
Lab File: 785308.D
Acq: 20 Oct 16 4:01 pm

Tgt Ion:252 Resp: 6046

Ion	Ratio	Lower	Upper
252	100		
253	25.3	0.0	52.6
125	18.8	0.0	41.7



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\785309.D Vial: 13
Acq On : 20 Oct 2016 16:20 Operator: JJY
Sample : 131574,785309, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:46:57 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.966	152	47829	20.00	ug/mL	0.00
21) Naphthalened8	5.614	136	214003	20.00	ug/mL	0.00
39) Acenaphthened10	7.231	164	125457	20.00	ug/mL	0.00
63) Phenanthrd10	8.177	188	231005	20.00	ug/mL	0.00
75) Chrysene-d12	9.586	240	212113	20.00	ug/mL	0.00
86) Perylene-d12	10.482	264	190028	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.849	112	73241	69.69	%REC	0.03
Spiked Amount 100.000	Range 20 - 110		Recovery = 69.69%			
7) SURRPhenol-d5	3.617	99	94289	70.41	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 70.41%			
22) SURRNitrbenzened5	4.622	82	43423	64.19	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 64.19%			
44) SURR2Flbiphenyl	6.739	172	118312	68.15	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 68.15%			
62) SURR246Tribrphenl	7.754	330	38570	67.44	%REC	-0.01
Spiked Amount 100.000	Range 40 - 125		Recovery = 67.44%			
78) SURRTerphenyl-d14	8.970	244	123698	72.79	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 72.79%			
Target Compounds						Qvalue
2) Ntrsdimeth	2.133	74	252	0.1506	ug/mL#	1
5) Aniline	3.676	93	296	0.0673	ug/mL#	15
13) Benzyl alcoho	4.168	108	242	0.7028	ug/mL#	46
15) 2Methylphenol	4.299	107	385	0.1558	ug/mL#	38
17) Acetophenone	4.446	105	1071	0.2520	ug/mL	80
24) Isophorone	4.980	82	2485	0.3930	ug/mL	92
31) Naphthalene	5.643	128	1877	0.1648	ug/mL	93
37) 2Methylnaphth	6.404	142	1755	0.2322	ug/mL	99
38) 1Methylnaphth	6.492	141	1015	0.1558	ug/mL	99
45) 2Clnaphthalen	6.870	162	2491	0.3254	ug/mL#	40
46) 2Nitroaniline	6.867	65	878	0.4096	ug/mL#	18
47) Acnaphthylene	7.126	152	1038	0.0797	ug/mL	95
48) Dimethylphtha	7.060	163	6201	0.6954	ug/mL	95
51) 3Nitroaniline	7.217	138	108	0.0552	ug/mL#	82
53) Dibenzofuran	7.370	168	2108	0.1843	ug/mL	93
54) 24Dinitrotolu	7.379	165	847	0.3208	ug/mL	81
60) Diethylphthal	7.535	149	2212	0.2415	ug/mL	73
61) 4Nitroaniline	7.734	138	449	0.2348	ug/mL#	31
65) Ntrsdiphlam&Diphlam	7.597	169	135	0.0206	ug/mL	79
66) Azobenz&12Diphlhyd	7.703	182	819	0.3916	ug/mL#	1
70) Phenanthrene	8.191	178	20592	1.6325	ug/mL	97
71) Anthracene	8.220	178	1554	0.1202	ug/mL	82
72) Carbazole	8.308	167	2507	0.2290	ug/mL	87
73) Dinbtylphthal	8.461	149	14062	1.0044	ug/mL	99
74) Fluoranthene	8.777	202	28151	2.0657	ug/mL	96
77) Pyrene	8.896	202	17854	1.3595	ug/mL	95
79) Btylbzylphth	9.237	149	1152	0.1997	ug/mL#	56
80) bis2Ethlhxlad	9.228	129	1531	0.3284	ug/mL#	1
82) B[a]anthracen	9.601	228	5688	0.4340	ug/mL	93
83) Chrysene	9.601	228	9792	0.8166	ug/mL	97
84) bis2Ethlhxlph	9.584	149	6210	0.7346	ug/mL	77
87) B[b]fluoranth	10.246	252	9018	0.7656	ug/mL	81
88) B[k]fluoranth	10.260	252	3630	0.3281	ug/mL	86
89) Benz[a]pyrene	10.410	252	4925	0.4336	ug/mL	96

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\785309.D Vial: 13
Acq On : 20 Oct 2016 16:20 Operator: JJY
Sample : 131574,785309, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:46:57 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

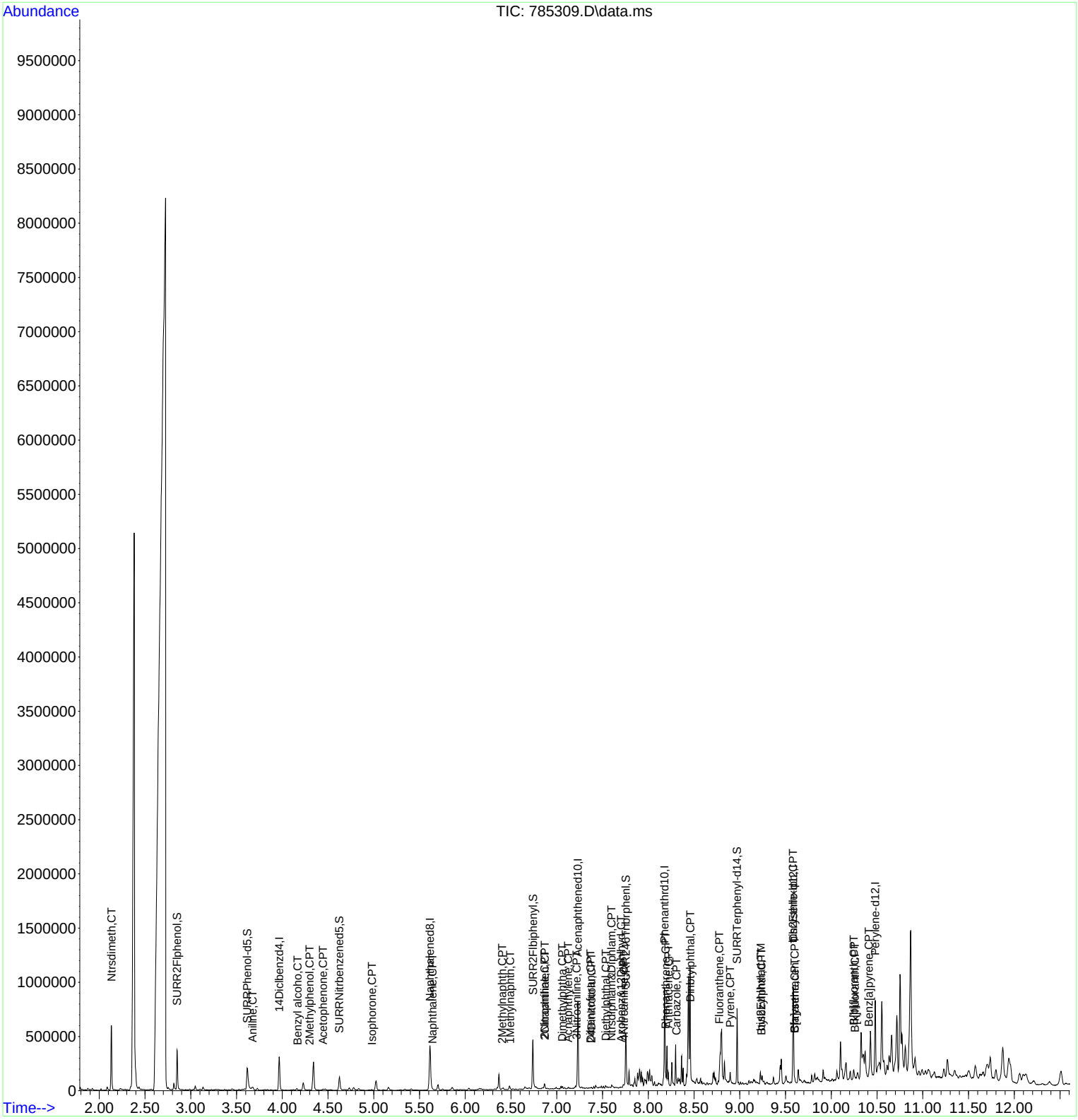
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

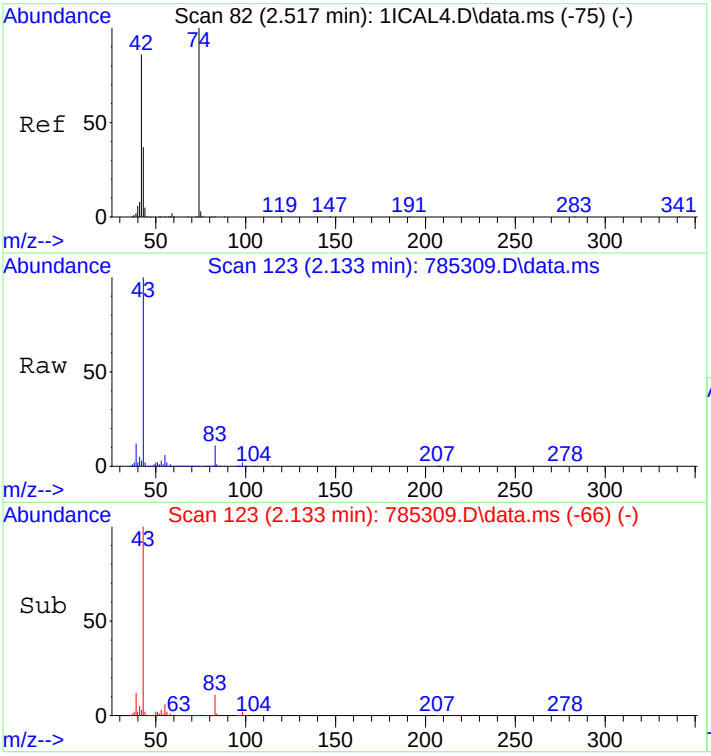
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\785309.D Vial: 13
Acq On : 20 Oct 2016 16:20 Operator: JJY
Sample : 131574,785309, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:46:57 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

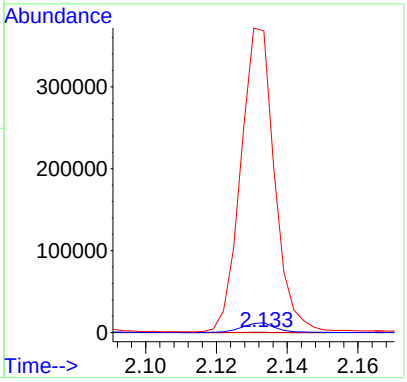


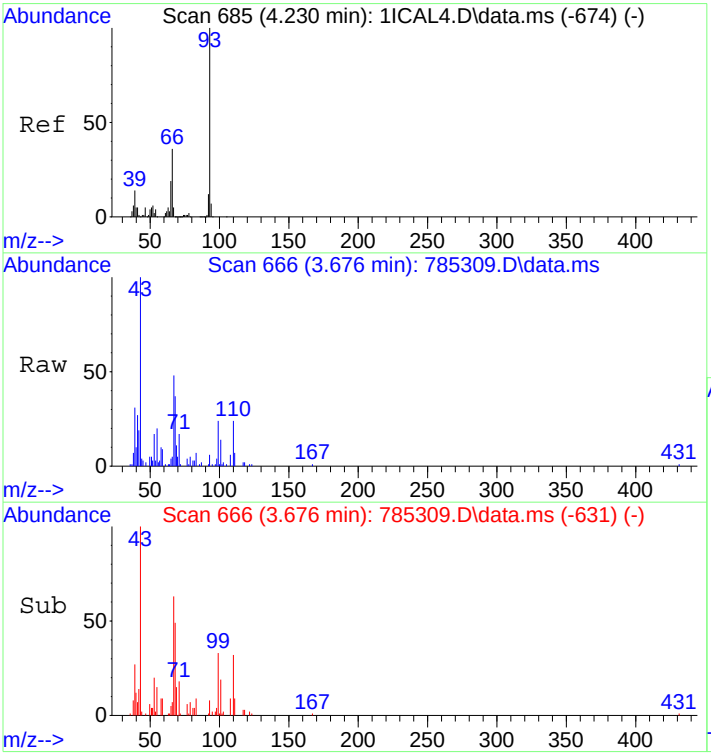


#2
Ntrsdimeth
Concen: 0.15 ug/mL
RT: 2.133 min Scan# 123
Delta R.T. 0.062 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion: 74 Resp: 252

Ion	Ratio	Lower	Upper
74	100		
42	2807.2	61.8	121.8#
43	85794.9	5.5	65.5#

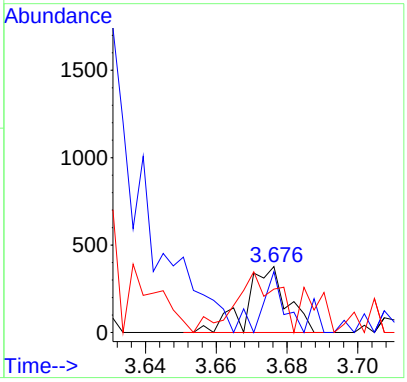


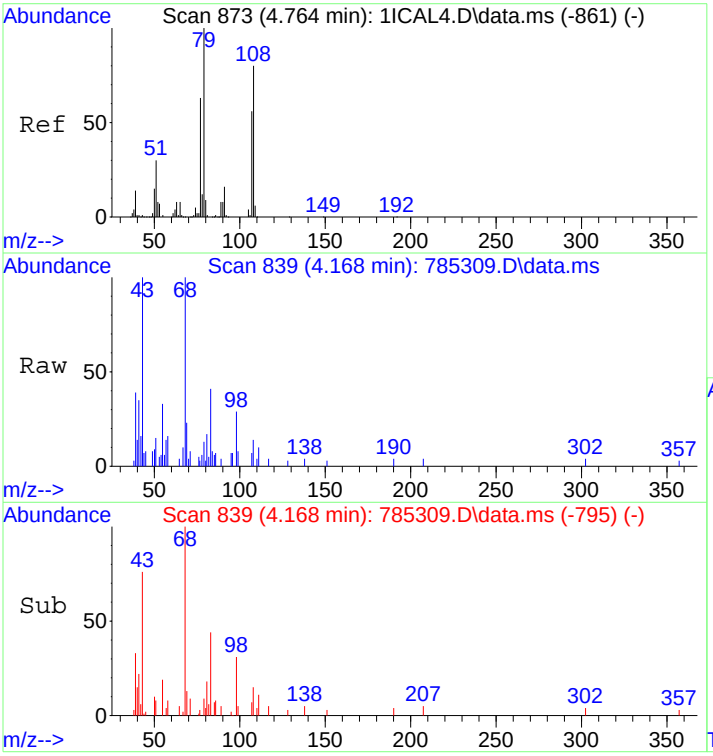


#5
Aniline
Concen: 0.07 ug/mL
RT: 3.676 min Scan# 666
Delta R.T. 0.048 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion: 93 Resp: 296

Ion	Ratio	Lower	Upper
93	100		
66	0.0	41.5	101.5#
65	96.3	12.9	72.9#

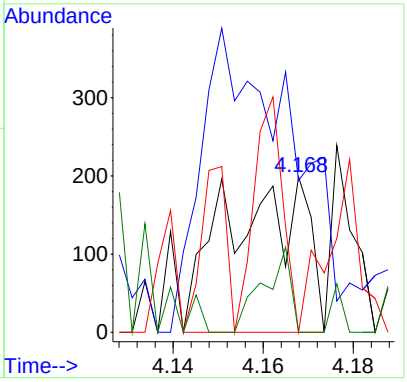


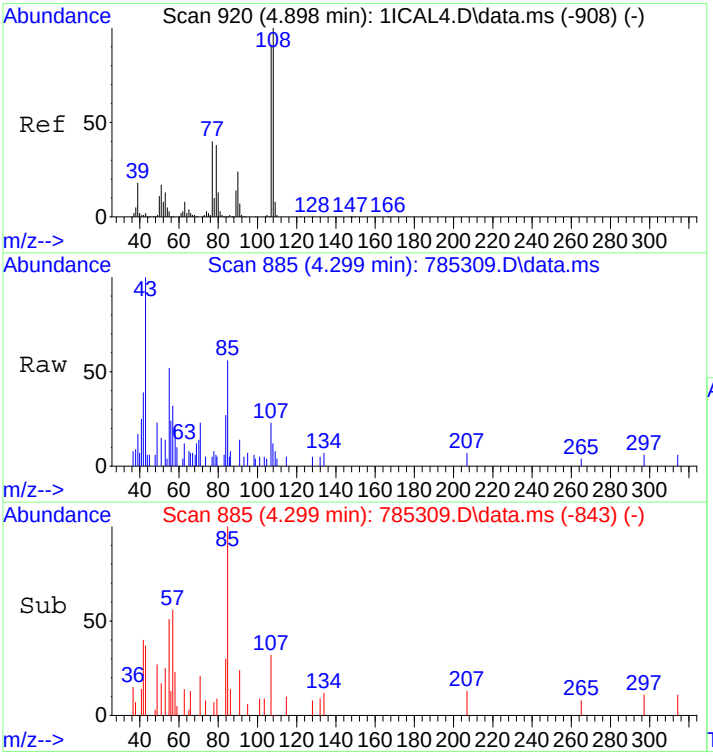


#13
Benzyl alcoho
Concen: 0.70 ug/mL
RT: 4.168 min Scan# 839
Delta R.T. 0.026 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:108 Resp: 242

Ion	Ratio	Lower	Upper
108	100		
79	45.7	91.8	151.8#
77	46.7	45.6	105.6
91	0.0	0.0	52.1

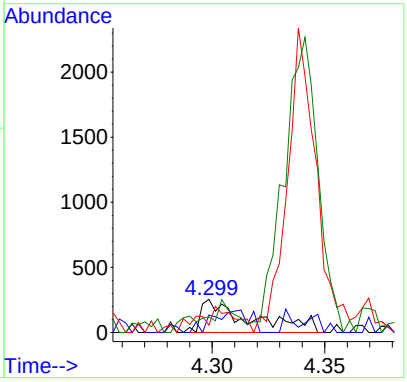


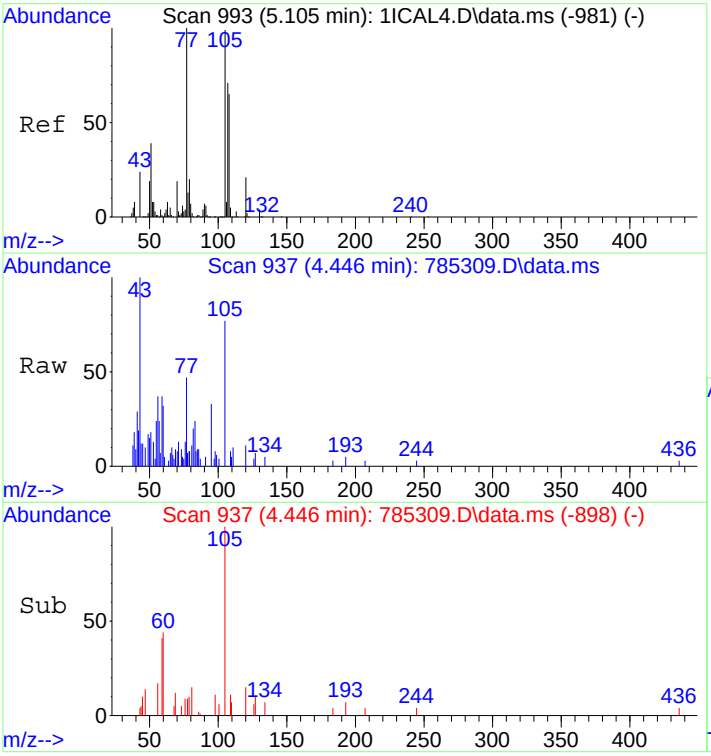


#15
2Methylphenol
Concen: 0.16 ug/mL
RT: 4.299 min Scan# 885
Delta R.T. 0.006 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:107 Resp: 385

Ion	Ratio	Lower	Upper
107	100		
108	52.8	81.7	141.7#
77	0.0	33.2	73.2#
79	3.1	23.5	63.5#

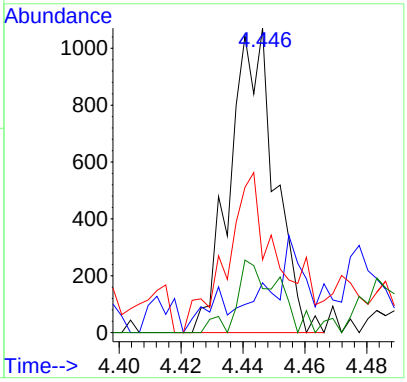


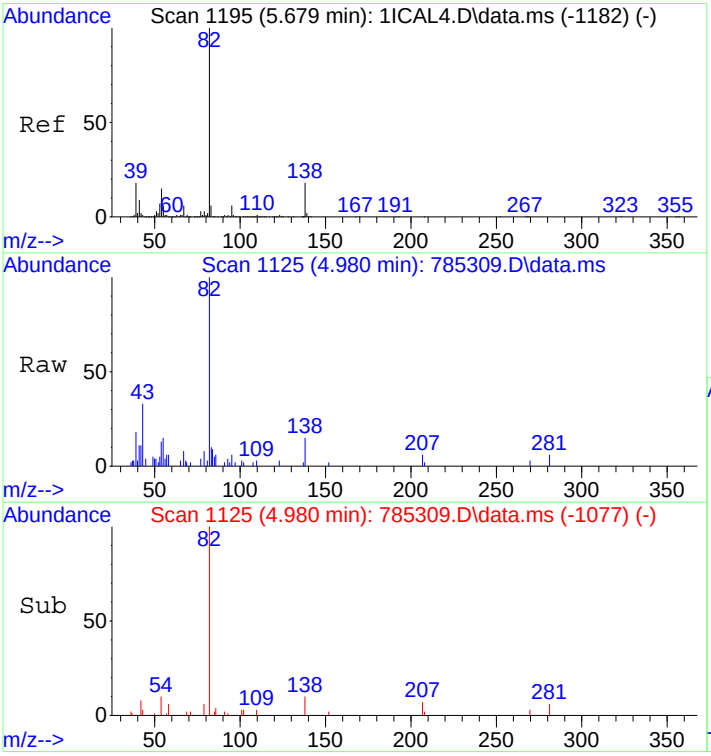


#17
Acetophenone
Concen: 0.25 ug/mL
RT: 4.446 min Scan# 937
Delta R.T. -0.003 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:105 Resp: 1071

Ion	Ratio	Lower	Upper
105	100		
71	8.3	0.0	30.7
51	18.7	2.3	62.3
120	12.6	0.0	38.3

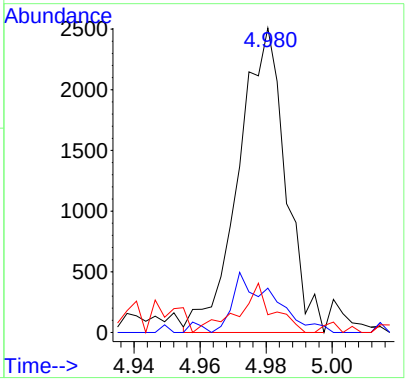


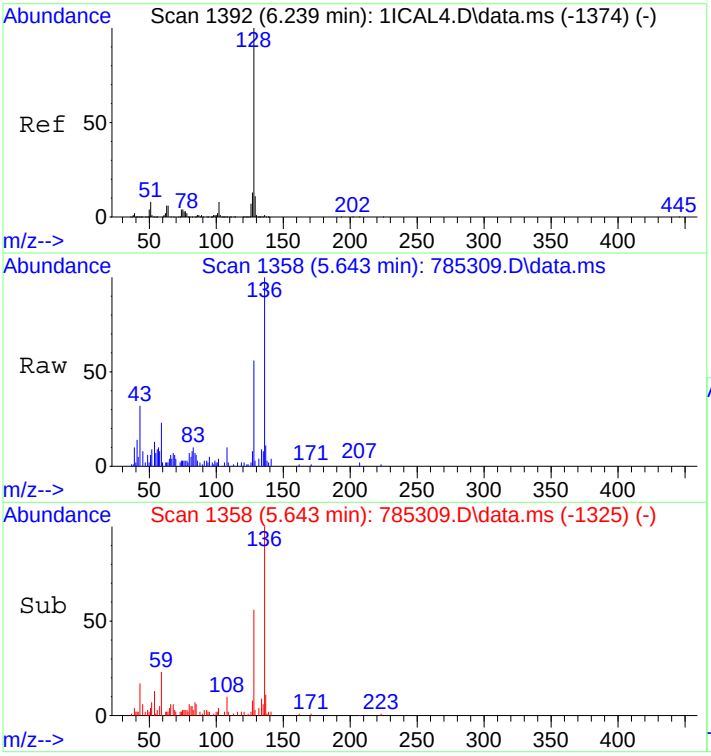


#24
Isophorone
Concen: 0.39 ug/mL
RT: 4.980 min Scan# 1125
Delta R.T. -0.009 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion: 82 Resp: 2485

Ion	Ratio	Lower	Upper
82	100		
138	14.6	0.0	46.9
95	2.0	0.0	26.8

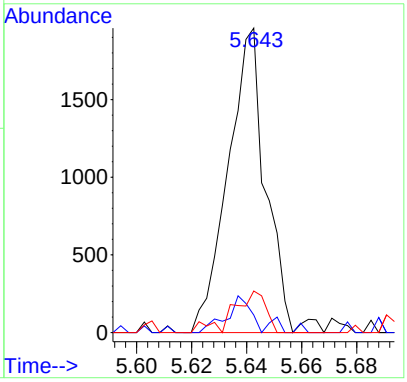


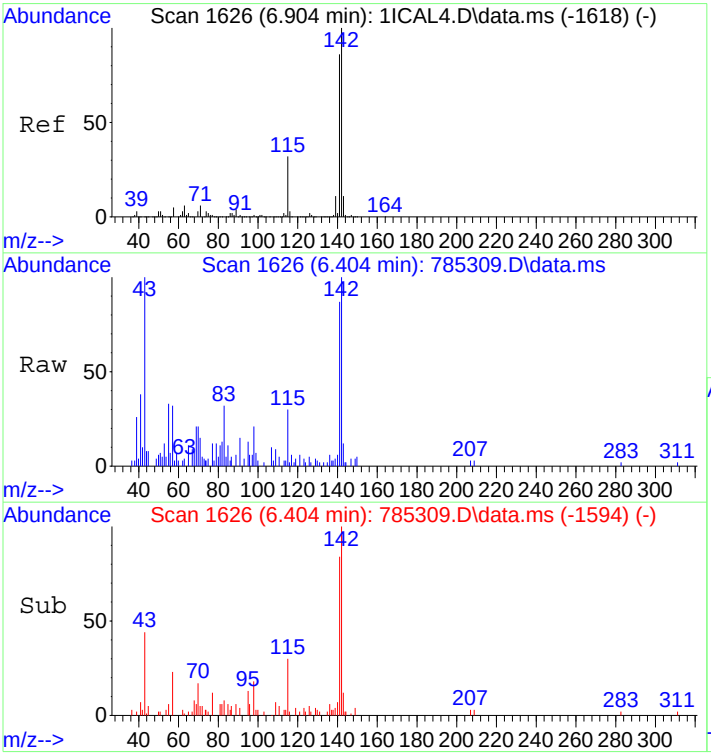


#31
Naphthalene
Concen: 0.16 ug/mL
RT: 5.643 min Scan# 1358
Delta R.T. -0.006 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:128 Resp: 1877

Ion	Ratio	Lower	Upper
128	100		
129	5.8	0.0	40.7
127	13.7	0.0	43.2

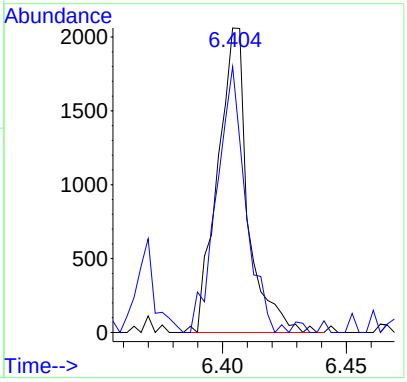


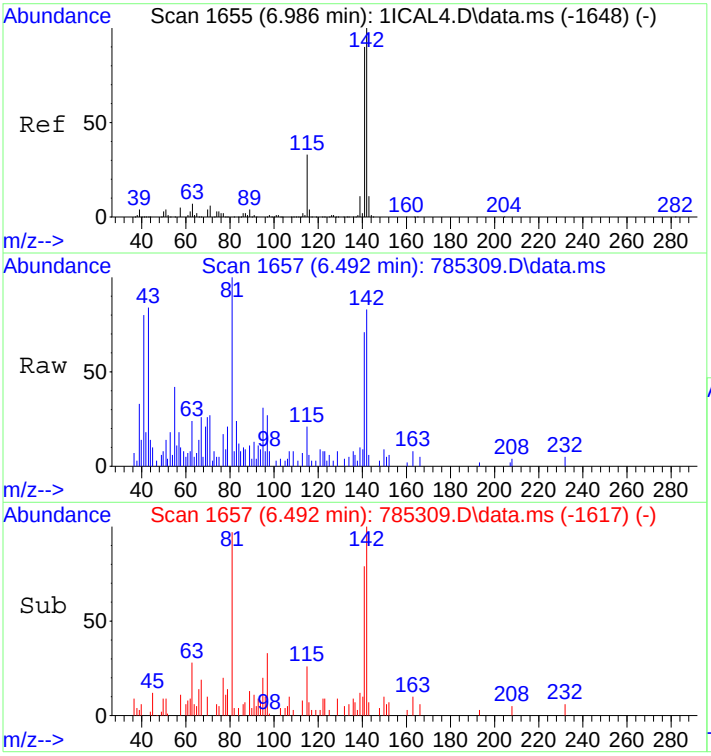


#37
2Methylnaphth
Concen: 0.23 ug/mL
RT: 6.404 min Scan# 1626
Delta R.T. -0.009 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:142 Resp: 1755

Ion	Ratio	Lower	Upper
142	100		
141	87.3	56.7	116.7

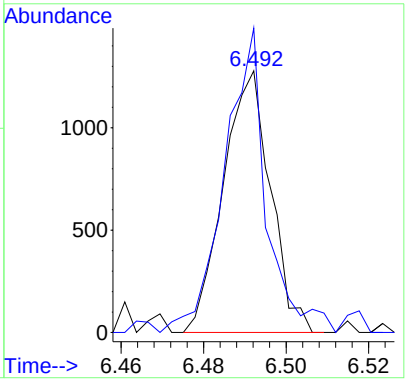


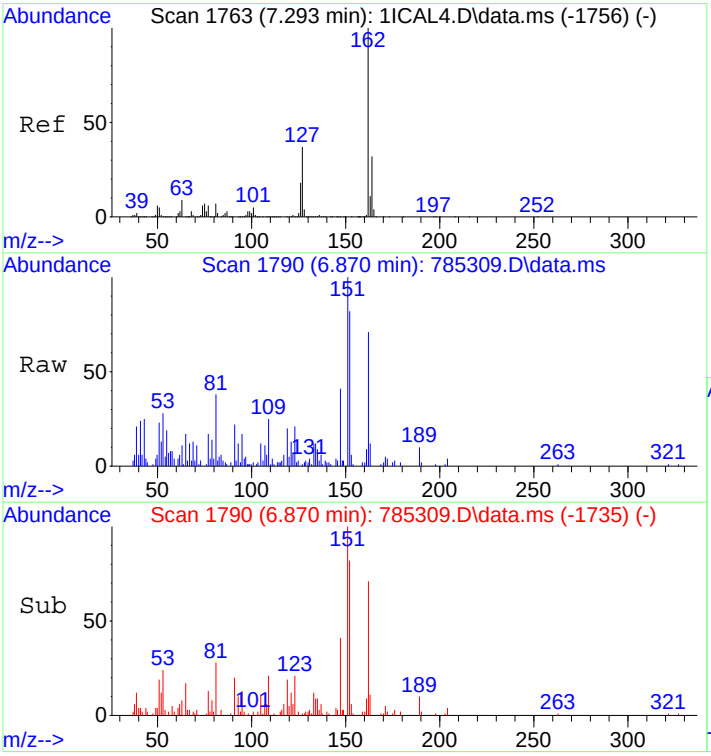


#38
1Methylnaphth
Concen: 0.16 ug/mL
RT: 6.492 min Scan# 1657
Delta R.T. -0.006 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:141 Resp: 1015

Ion	Ratio	Lower	Upper
141	100		
142	110.2	78.9	138.9

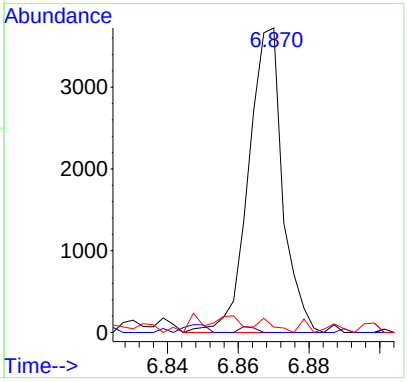


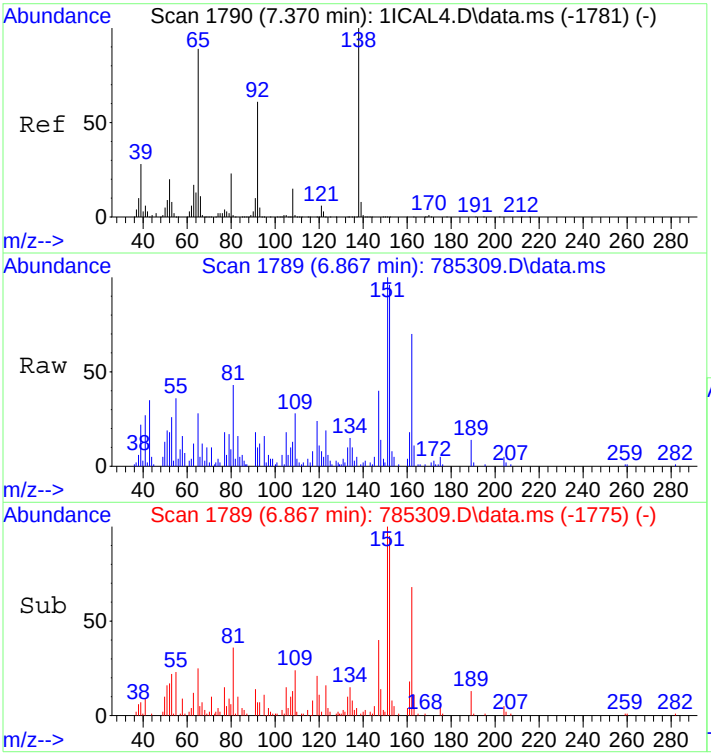


#45
2Clnaphthalen
Concen: 0.33 ug/mL
RT: 6.870 min Scan# 1790
Delta R.T. 0.043 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:162 Resp: 2491

Ion	Ratio	Lower	Upper
162	100		
164	0.0	2.4	62.4#
127	1.8	9.8	69.8#

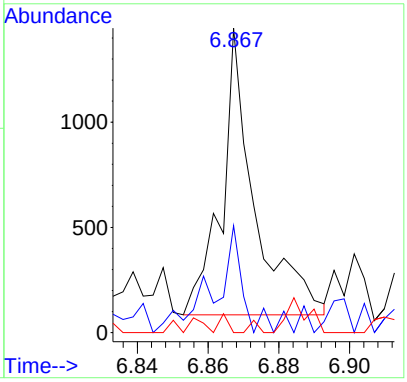


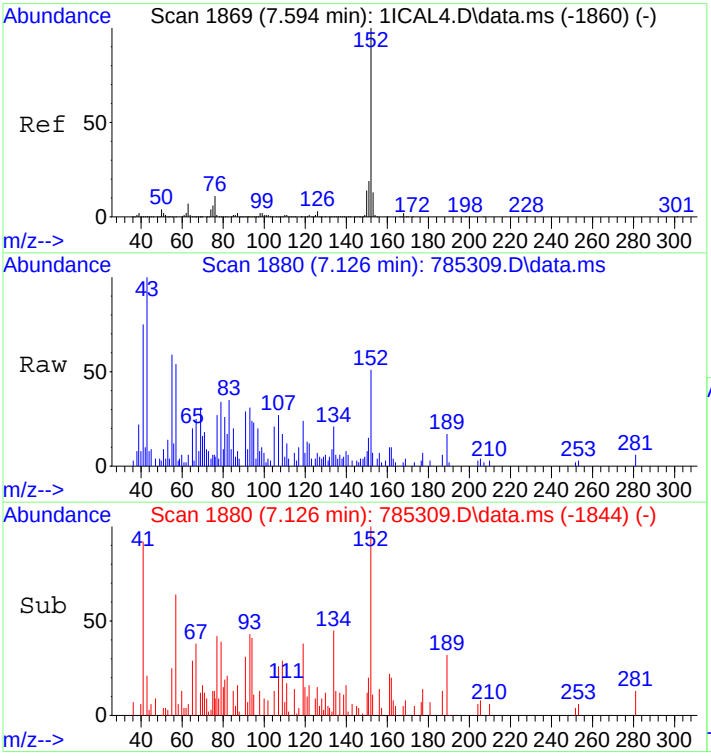


#46
2Nitroaniline
Concen: 0.41 ug/mL
RT: 6.867 min Scan# 1789
Delta R.T. -0.060 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion: 65 Resp: 878

Ion	Ratio	Lower	Upper
65	100		
92	33.5	39.4	99.4#
138	0.0	83.7	143.7#

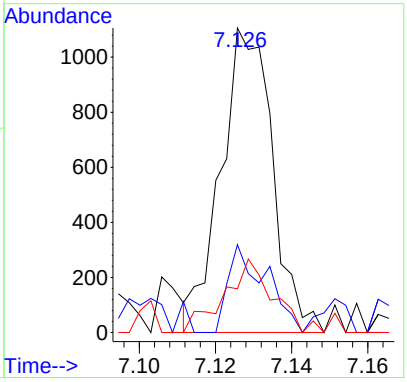


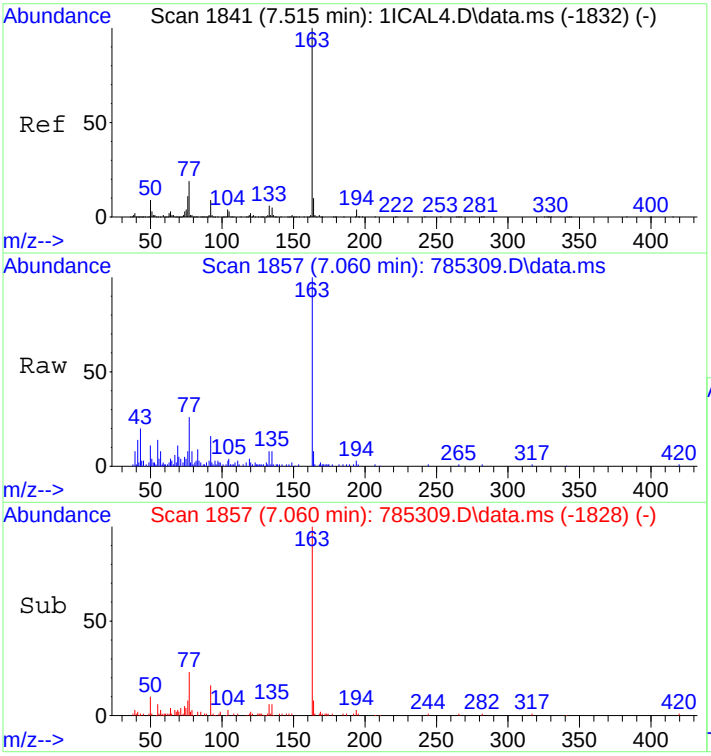


#47
Acnaphthylene
Concen: 0.08 ug/mL
RT: 7.126 min Scan# 1880
Delta R.T. -0.011 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:152 Resp: 1038

Ion	Ratio	Lower	Upper
152	100		
151	22.4	0.0	49.3
153	14.4	0.0	43.8

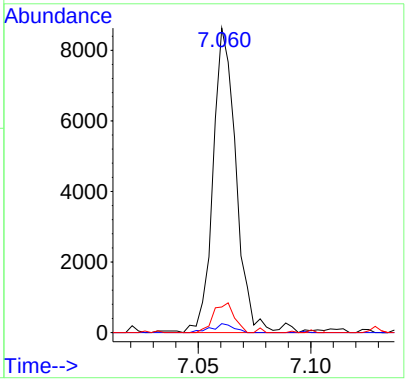


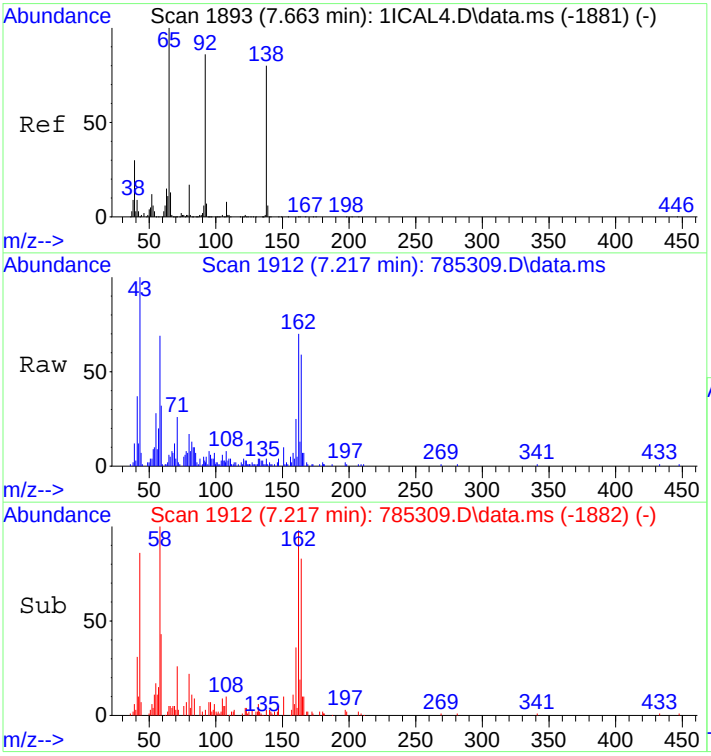


#48
Dimethylphtha
Concen: 0.70 ug/mL
RT: 7.060 min Scan# 1857
Delta R.T. -0.017 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:163 Resp: 6201

Ion	Ratio	Lower	Upper
163	100		
194	2.9	0.0	33.9
164	8.4	0.0	40.5

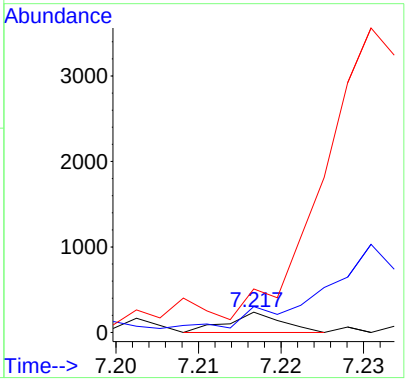


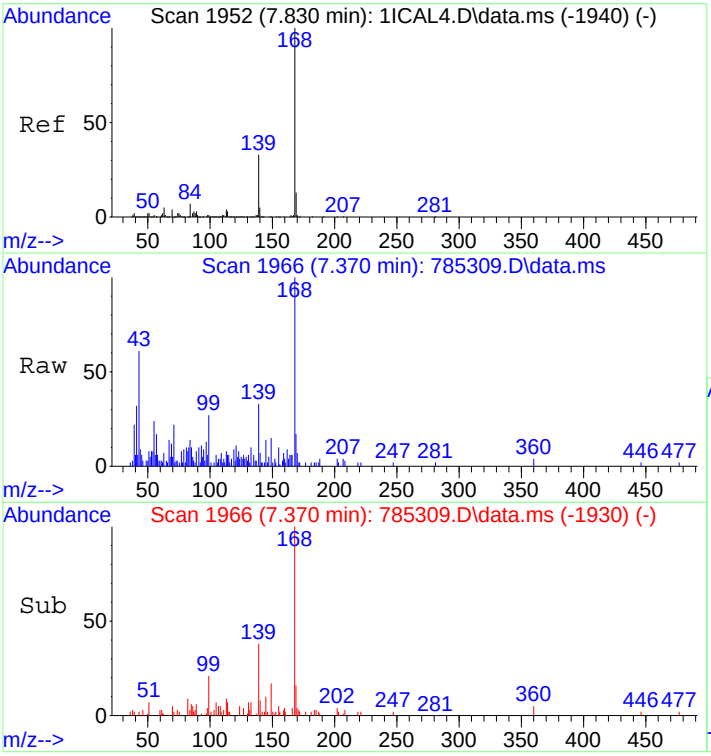


#51
3Nitroaniline
Concen: 0.06 ug/mL
RT: 7.217 min Scan# 1912
Delta R.T. -0.014 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:138 Resp: 108

Ion	Ratio	Lower	Upper
138	100		
92	92.0	72.2	132.2
108	44.5	0.0	30.3#

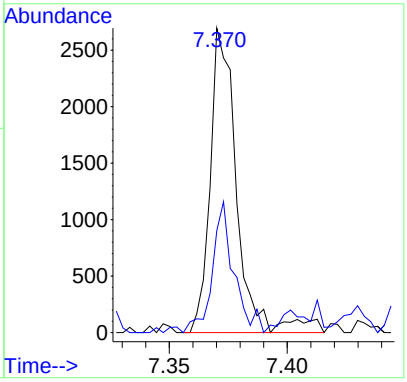


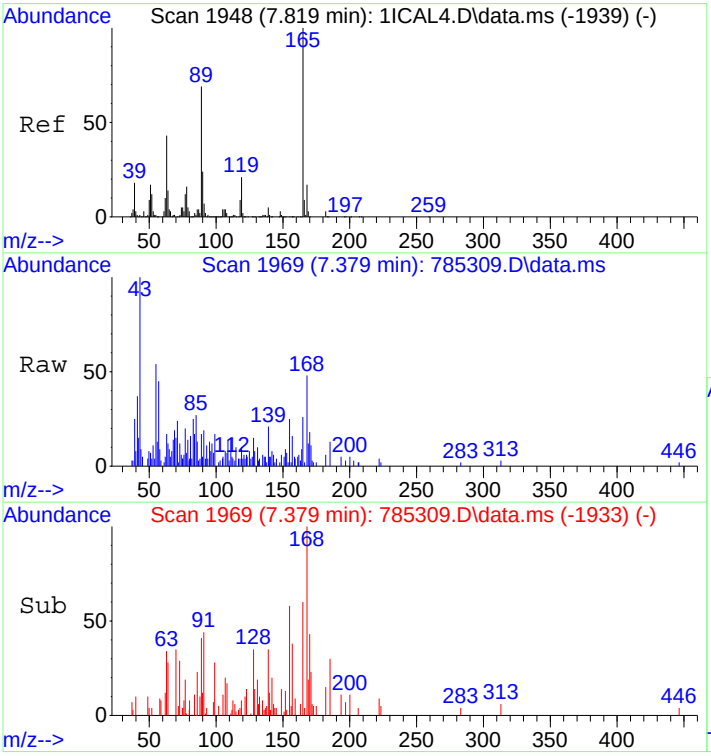


#53
Dibenzofuran
Concen: 0.18 ug/mL
RT: 7.370 min Scan# 1966
Delta R.T. -0.011 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:168 Resp: 2108

Ion	Ratio	Lower	Upper
168	100		
139	33.5	7.7	67.7

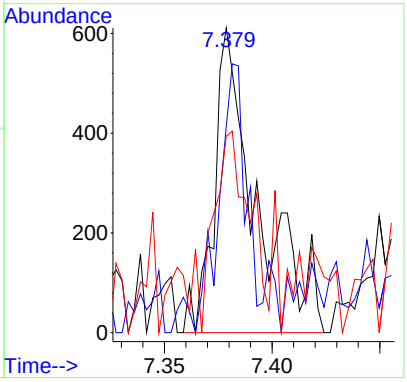


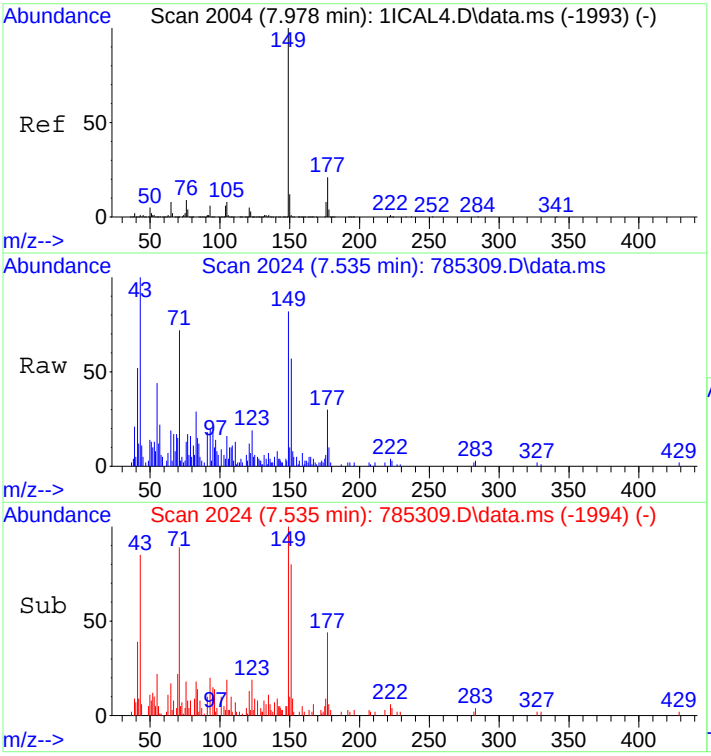


#54
24Dinitrotolu
Concen: 0.32 ug/mL
RT: 7.379 min Scan# 1969
Delta R.T. -0.011 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:165 Resp: 847

Ion	Ratio	Lower	Upper
165	100		
89	59.1	45.7	105.7
63	45.7	39.2	79.2

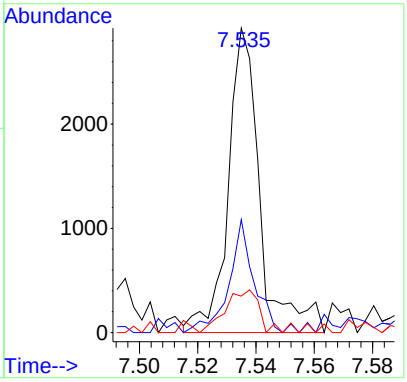


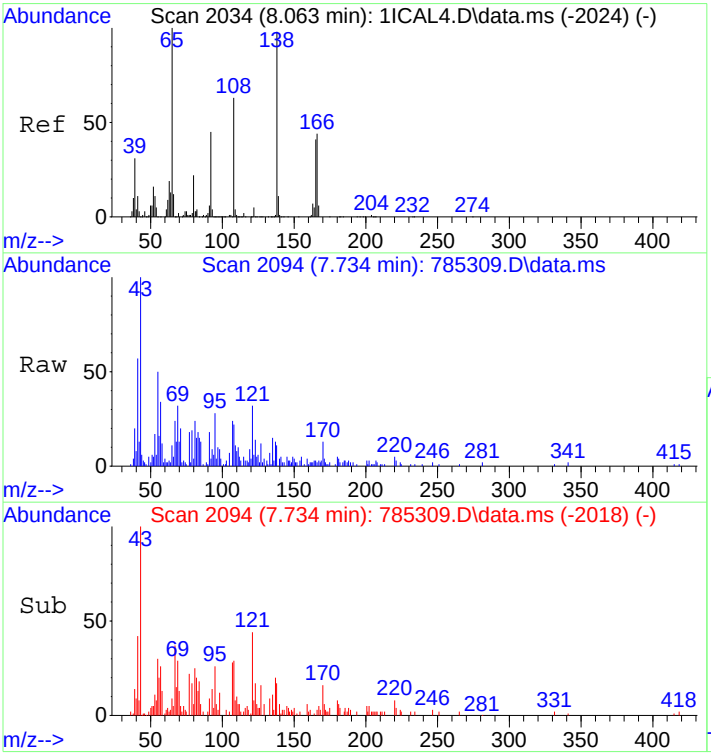


#60
Diethylphthal
Concen: 0.24 ug/mL
RT: 7.535 min Scan# 2024
Delta R.T. -0.014 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:149 Resp: 2212

Ion	Ratio	Lower	Upper
149	100		
177	37.1	0.0	49.5
150	9.1	0.0	42.0

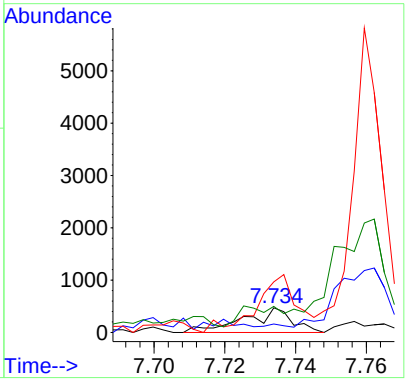


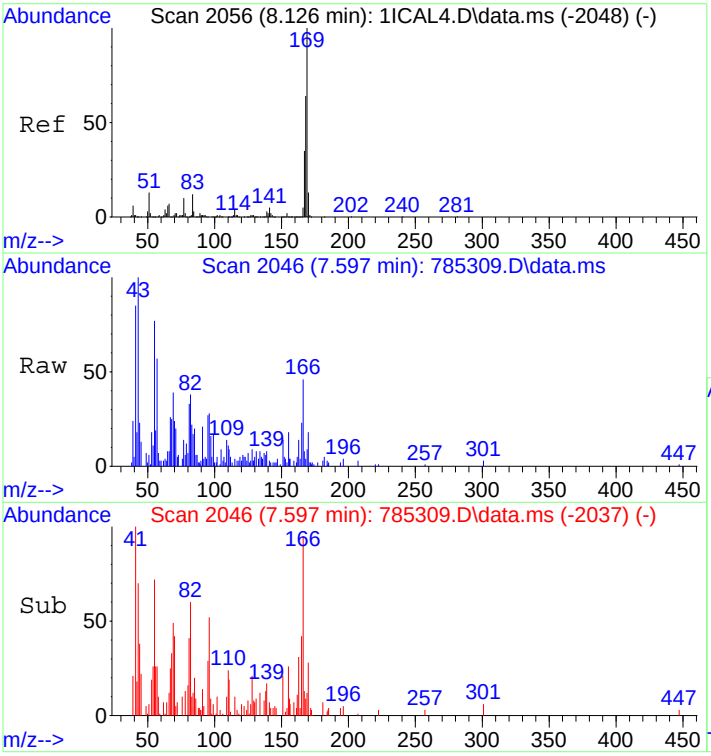


#61
4Nitroaniline
Concen: 0.23 ug/mL
RT: 7.734 min Scan# 2094
Delta R.T. 0.097 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:138 Resp: 449

Ion	Ratio	Lower	Upper
138	100		
92	0.0	12.7	72.7#
108	167.8	46.1	106.1#
65	59.9	71.6	131.6#

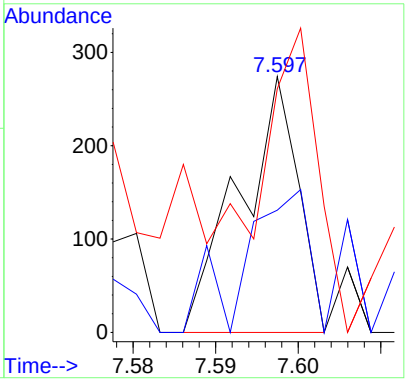


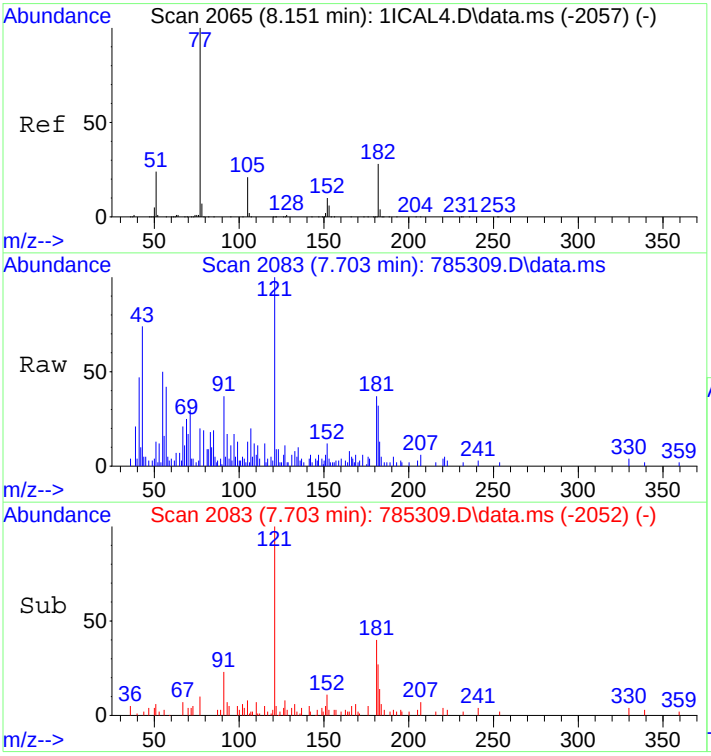


#65
Ntrsdiphlam&Diphlam
Concen: 0.02 ug/mL
RT: 7.597 min Scan# 2046
Delta R.T. -0.094 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:169 Resp: 135

Ion	Ratio	Lower	Upper
169	100		
168	47.8	35.5	95.5
167	46.0	5.2	65.2

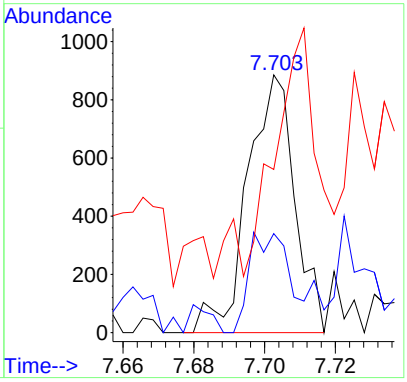


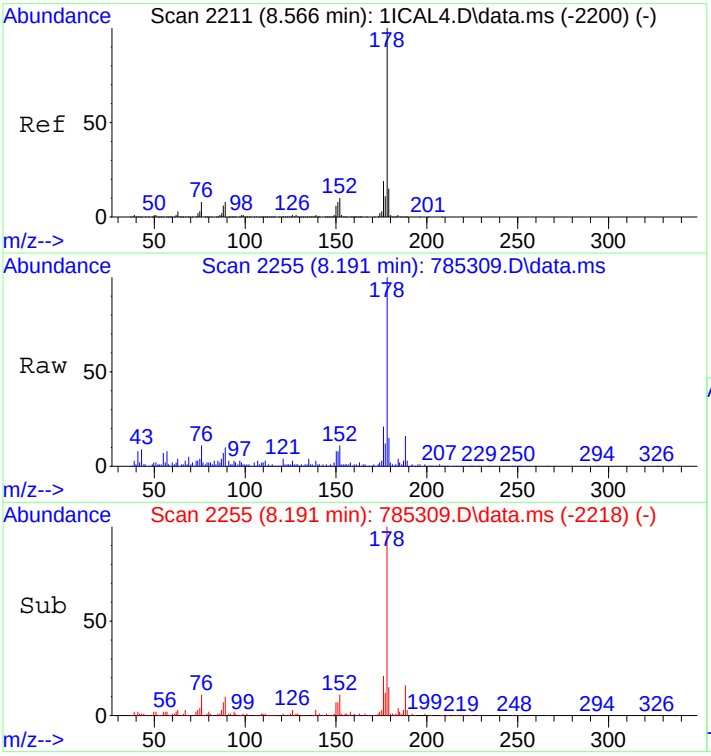


#66
Azobenz&12Diphlhyd
Concen: 0.39 ug/mL
RT: 7.703 min Scan# 2083
Delta R.T. -0.011 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:182 Resp: 819

Ion	Ratio	Lower	Upper
182	100		
152	38.4	7.0	67.0
77	29.8	330.8	390.8#

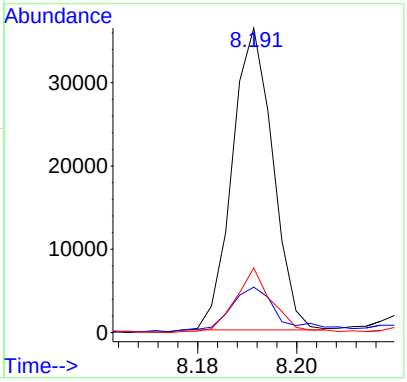


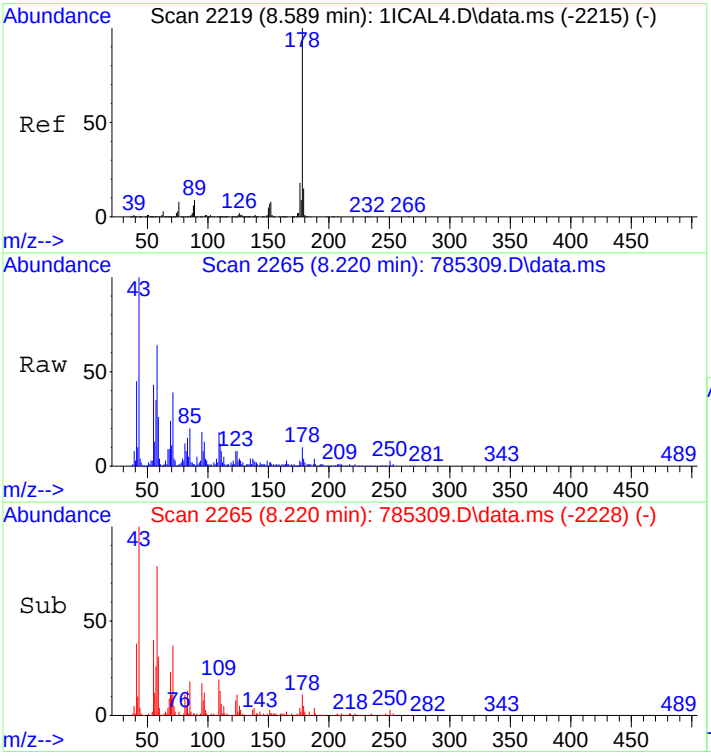


#70
Phenanthrene
Concen: 1.63 ug/mL
RT: 8.191 min Scan# 2255
Delta R.T. -0.009 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:178 Resp: 20592

Ion	Ratio	Lower	Upper
178	100		
179	14.1	0.0	45.3
176	21.1	0.0	49.4

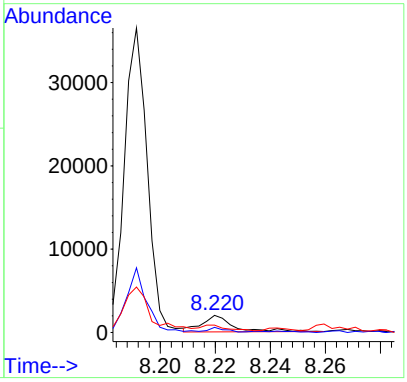


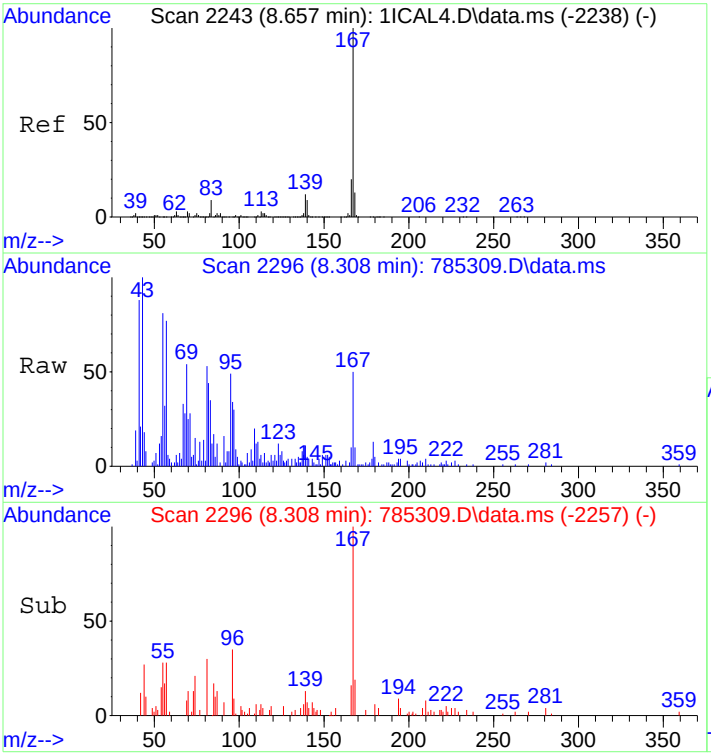


#71
Anthracene
Concen: 0.12 ug/mL
RT: 8.220 min Scan# 2265
Delta R.T. -0.009 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:178 Resp: 1554

Ion	Ratio	Lower	Upper
178	100		
176	28.5	0.0	47.3
179	10.7	0.0	44.6

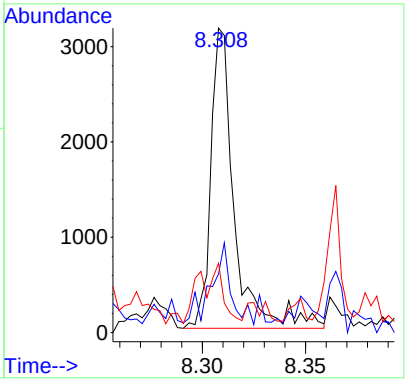


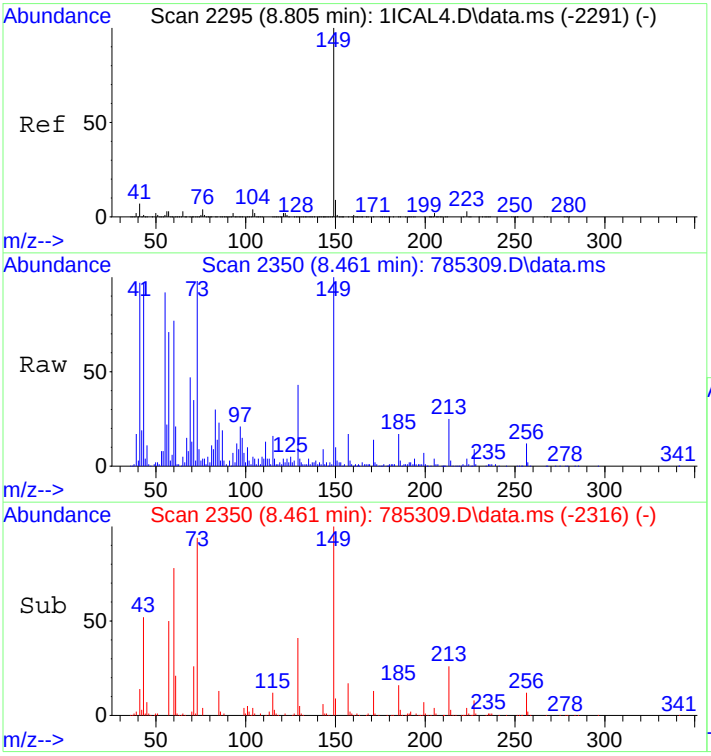


#72
Carbazole
Concen: 0.23 ug/mL
RT: 8.308 min Scan# 2296
Delta R.T. -0.003 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:167 Resp: 2507

Ion	Ratio	Lower	Upper
167	100		
166	16.4	0.0	49.8
139	20.1	0.0	41.7

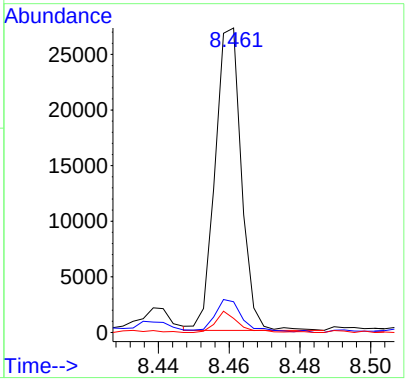


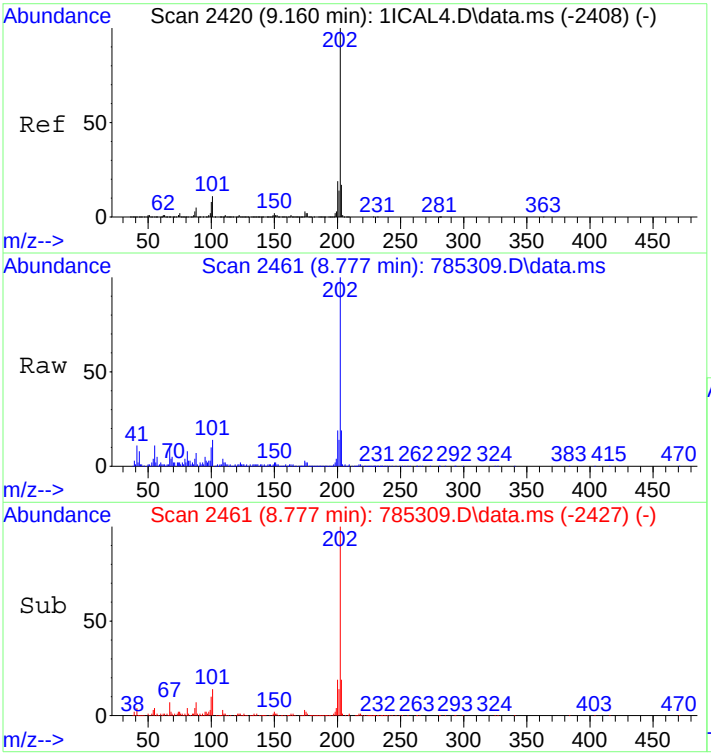


#73
Dinbtylphthal
Concen: 1.00 ug/mL
RT: 8.461 min Scan# 2350
Delta R.T. -0.003 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:149 Resp: 14062

Ion	Ratio	Lower	Upper
149	100		
150	10.2	0.0	39.8
104	4.7	0.0	34.5

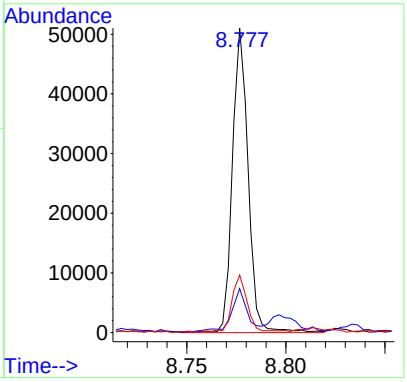


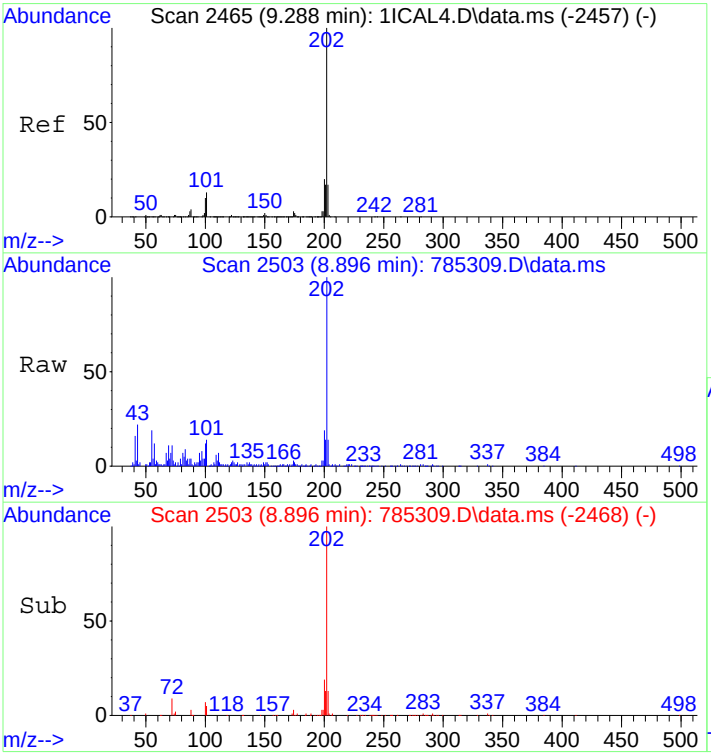


#74
Fluoranthene
Concen: 2.07 ug/mL
RT: 8.777 min Scan# 2461
Delta R.T. -0.003 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:202 Resp: 28151

Ion	Ratio	Lower	Upper
202	100		
101	14.2	0.0	42.0
203	18.6	0.0	37.4

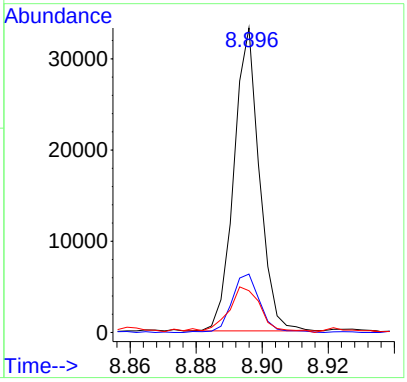


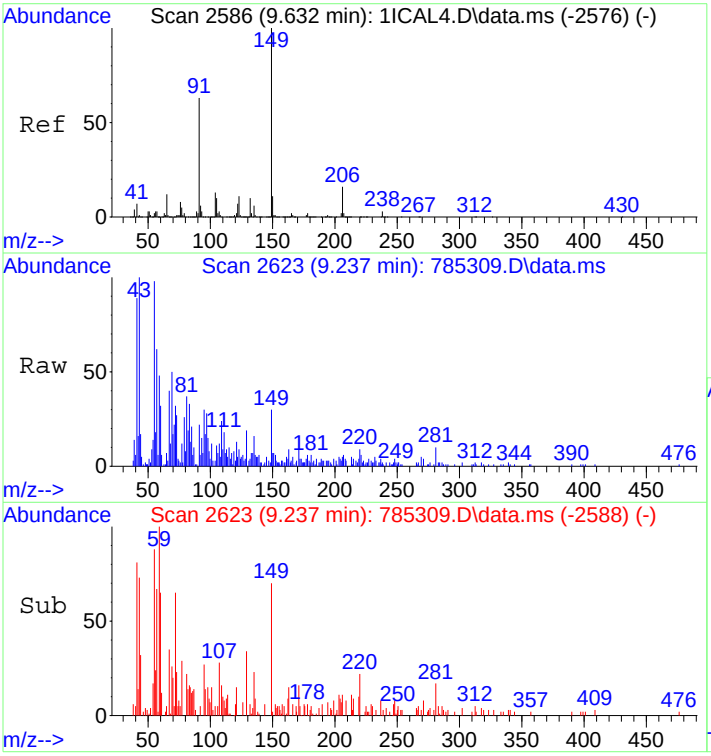


#77
Pyrene
Concen: 1.36 ug/mL
RT: 8.896 min Scan# 2503
Delta R.T. -0.000 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:202 Resp: 17854

Ion	Ratio	Lower	Upper
202	100		
200	19.3	0.0	49.6
203	13.2	0.0	47.1

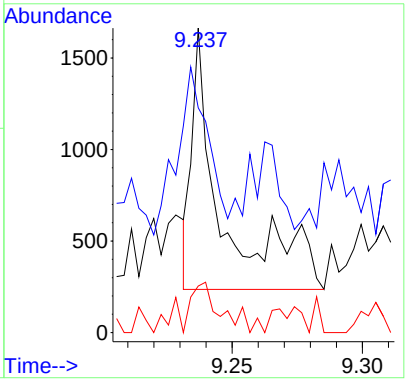


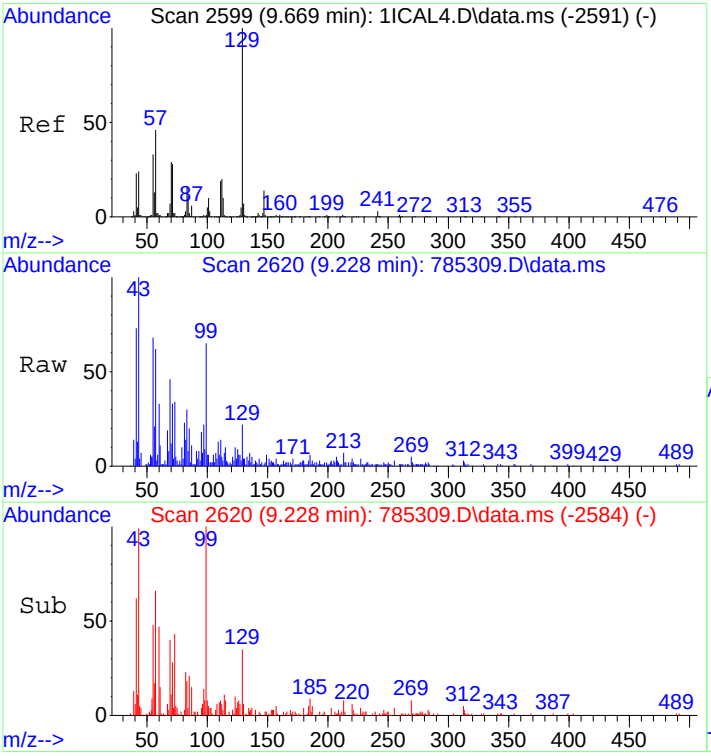


#79
Btylbzylphth
Concen: 0.20 ug/mL
RT: 9.237 min Scan# 2623
Delta R.T. -0.000 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:149 Resp: 1152

Ion	Ratio	Lower	Upper
149	100		
91	21.1	33.5	93.5#
206	17.8	0.0	46.3

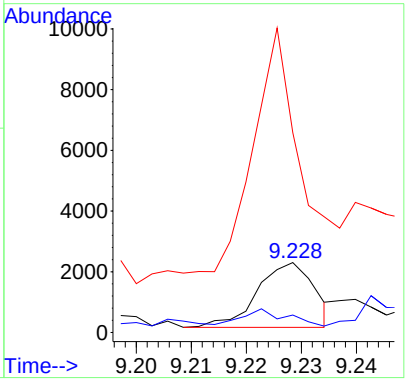


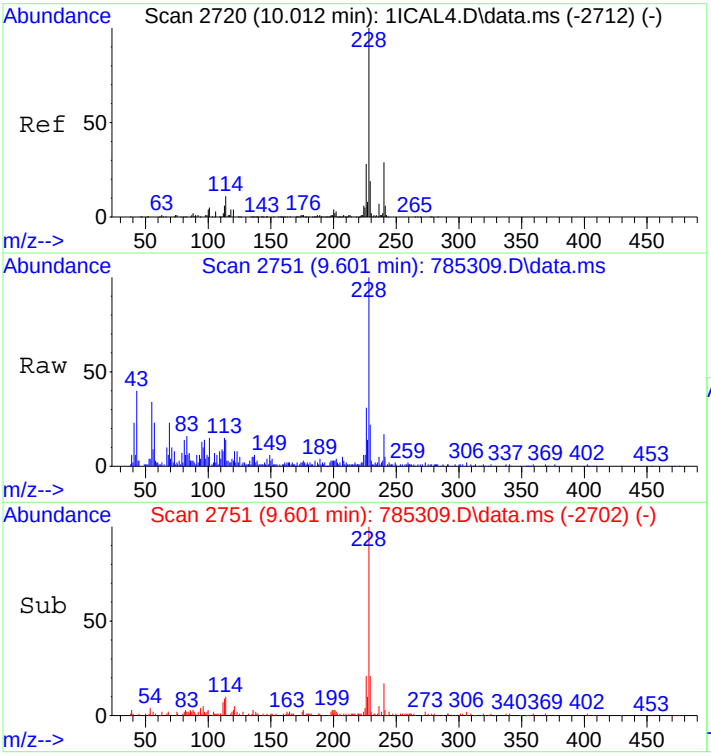


#80
bis2Ethlhxlad
Concen: 0.33 ug/mL
RT: 9.228 min Scan# 2620
Delta R.T. -0.048 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:129 Resp: 1531

Ion	Ratio	Lower	Upper
129	100		
112	0.0	15.2	22.8#
57	305.7	39.4	59.0#

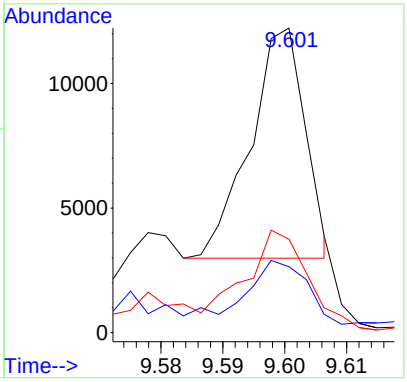


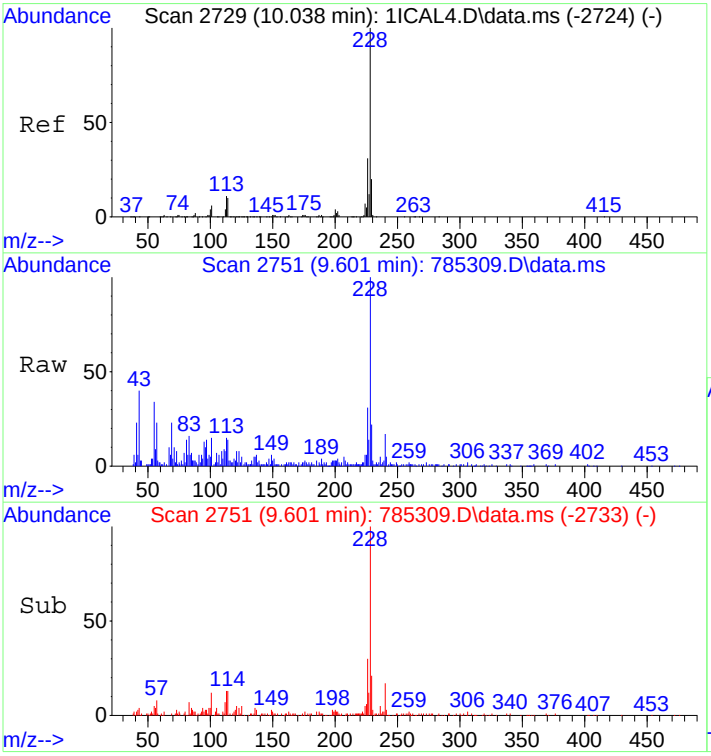


#82
B[a]anthracen
Concen: 0.43 ug/mL
RT: 9.601 min Scan# 2751
Delta R.T. 0.026 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:228 Resp: 5688

Ion	Ratio	Lower	Upper
228	100		
229	21.4	0.0	48.5
226	29.9	0.0	56.4

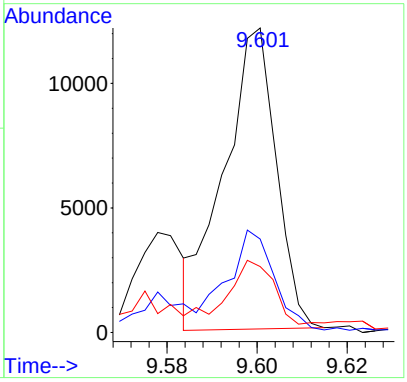


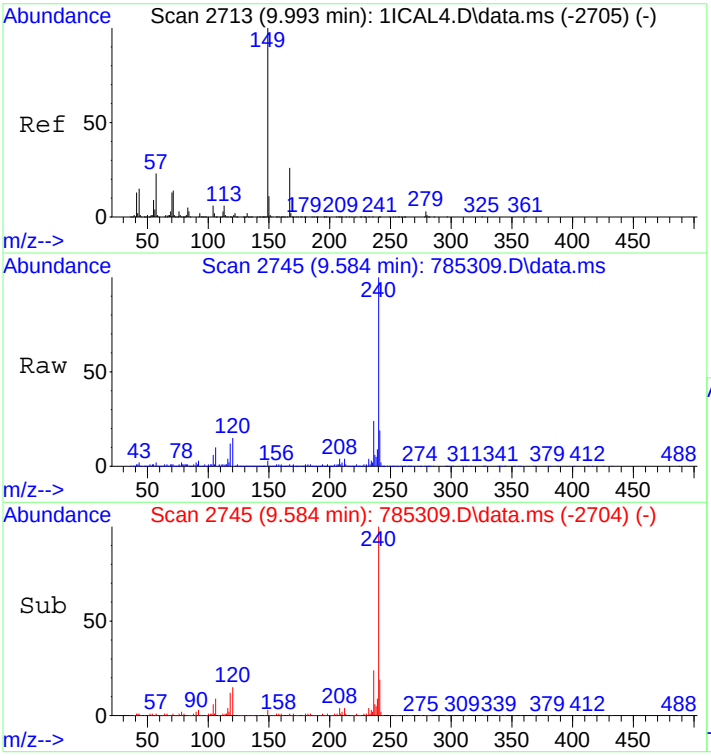


#83
Chrysene
Concen: 0.82 ug/mL
RT: 9.601 min Scan# 2751
Delta R.T. -0.000 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:228 Resp: 9792

Ion	Ratio	Lower	Upper
228	100		
226	30.3	0.0	58.0
229	18.8	0.0	49.4

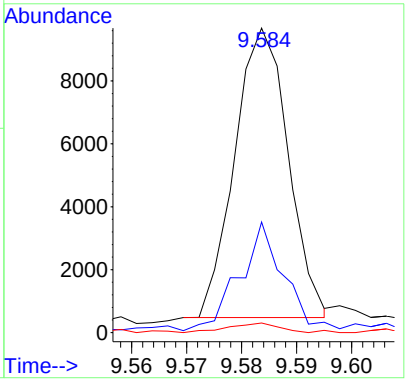


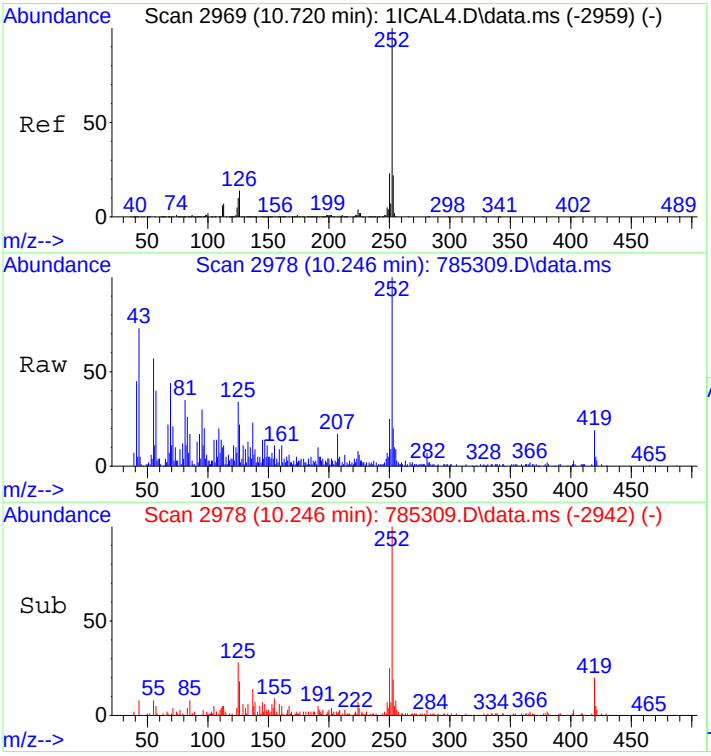


#84
bis2Ethlhxlph
Concen: 0.73 ug/mL
RT: 9.584 min Scan# 2745
Delta R.T. 0.003 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:149 Resp: 6210

Ion	Ratio	Lower	Upper
149	100		
167	37.5	0.0	54.6
279	3.3	0.0	33.1

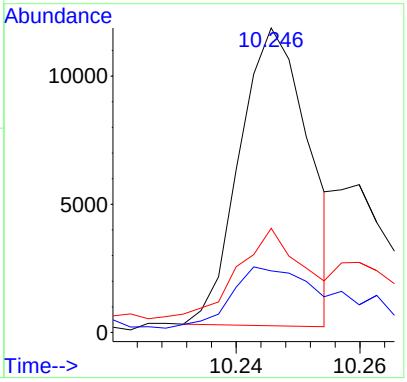


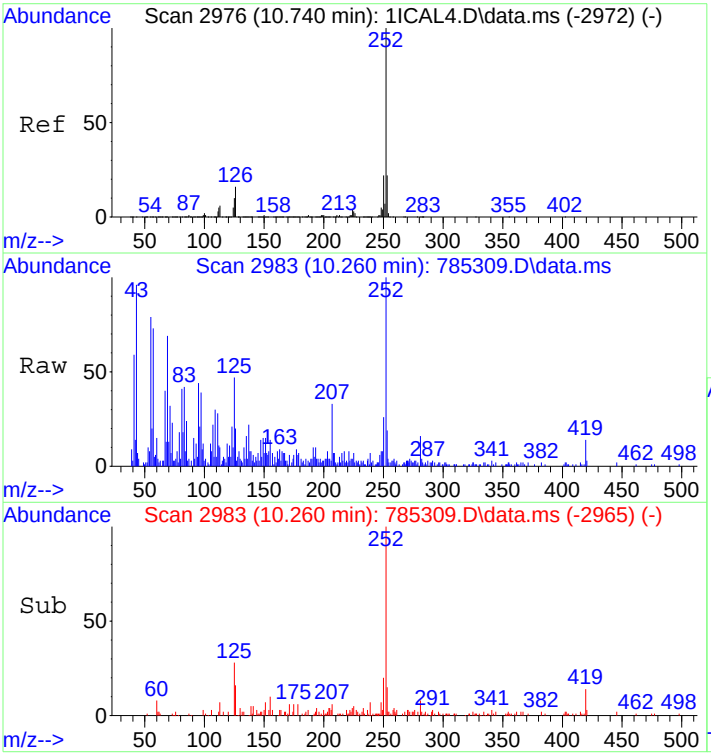


#87
B[b]fluoranth
Concen: 0.77 ug/mL
RT: 10.246 min Scan# 2978
Delta R.T. 0.003 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:252 Resp: 9018

Ion	Ratio	Lower	Upper
252	100		
253	18.1	0.0	50.7
125	29.0	0.0	42.5

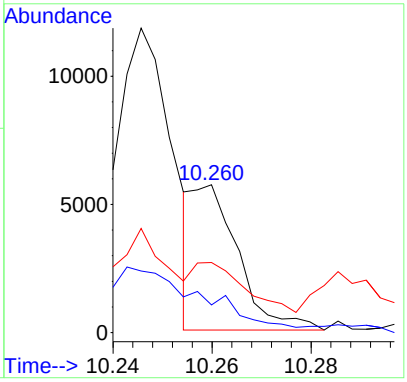


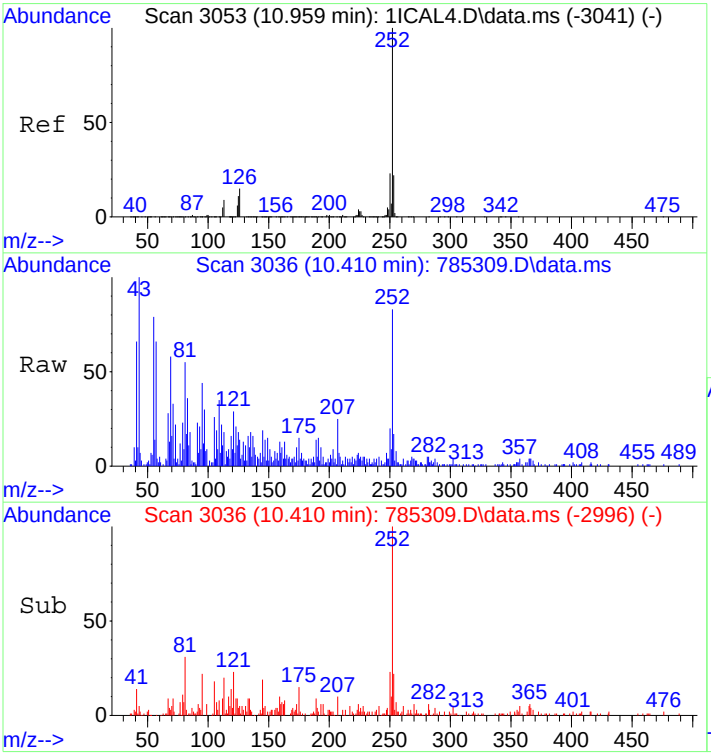


#88
B[k]fluoranth
Concen: 0.33 ug/mL
RT: 10.260 min Scan# 2983
Delta R.T. -0.000 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:252 Resp: 3630

Ion	Ratio	Lower	Upper
252	100		
253	14.8	0.0	52.6
125	15.8	0.0	41.7

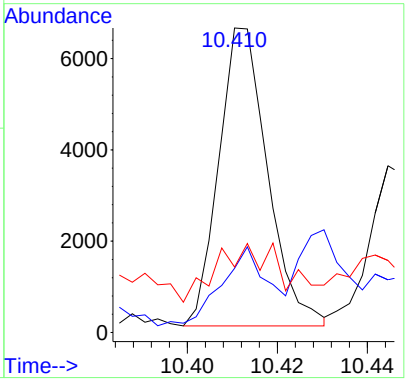




#89
Benz[a]pyrene
Concen: 0.43 ug/mL
RT: 10.410 min Scan# 3036
Delta R.T. -0.031 min
Lab File: 785309.D
Acq: 20 Oct 16 4:20 pm

Tgt Ion:252 Resp: 4925

Ion	Ratio	Lower	Upper
252	100		
253	18.4	0.0	51.0
125	11.8	0.0	42.3



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\785310.D Vial: 14
Acq On : 20 Oct 2016 16:40 Operator: JJY
Sample : 131574,785310, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:50:17 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

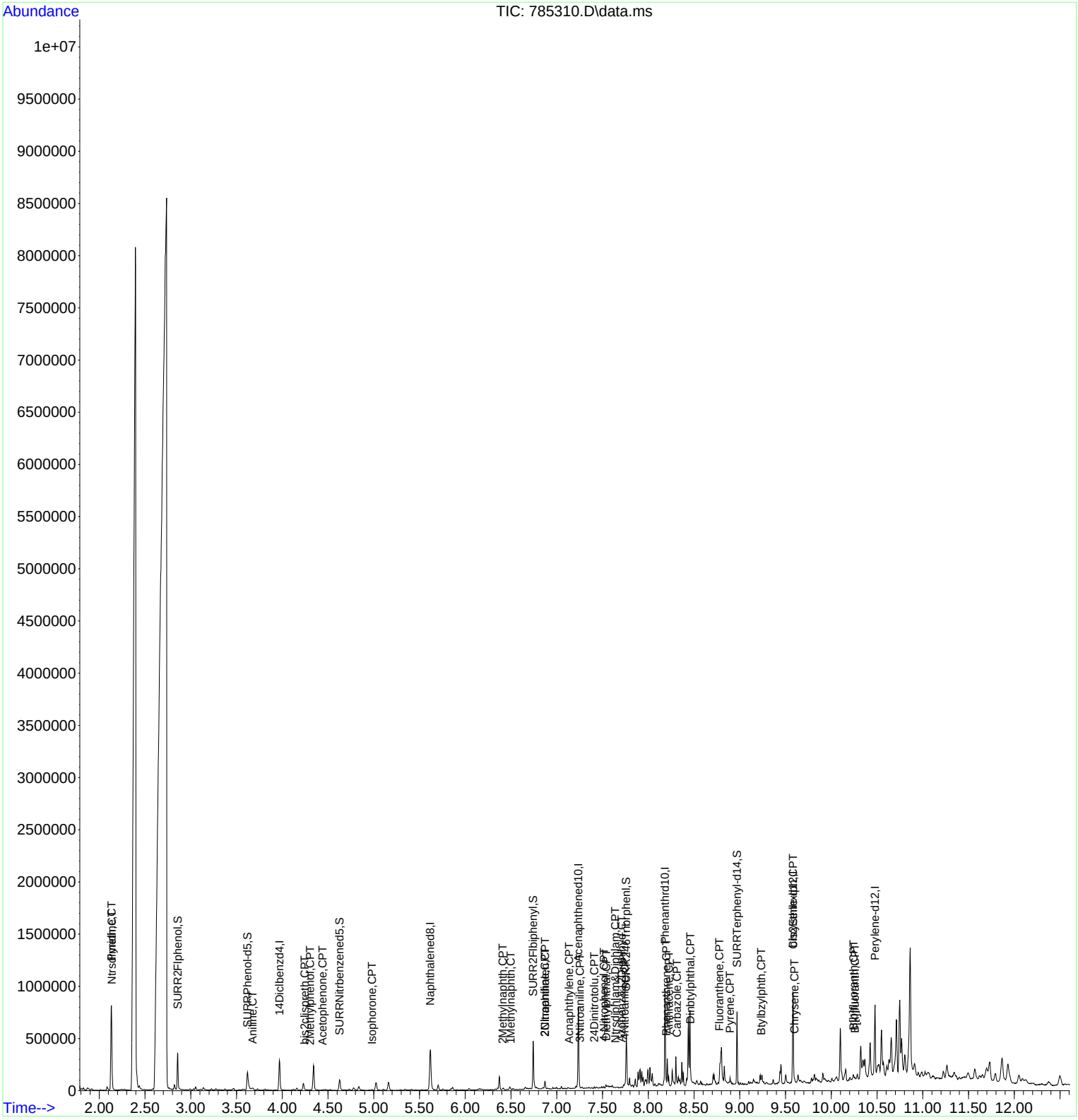
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.969	152	45264	20.00	ug/mL	0.00
21) Naphthalened8	5.617	136	200392	20.00	ug/mL	0.00
39) Acenaphthened10	7.237	164	124563	20.00	ug/mL	0.00
63) Phenanthrd10	8.183	188	230250	20.00	ug/mL	0.00
75) Chrysene-d12	9.584	240	208869	20.00	ug/mL	0.00
86) Perylene-d12	10.479	264	184091	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.858	112	67147	67.51	%REC	0.04
Spiked Amount 100.000	Range 20 - 110		Recovery = 67.51%			
7) SURRPhenol-d5	3.620	99	77474	61.13	%REC	0.01
Spiked Amount 100.000	Range 10 - 115		Recovery = 61.13%			
22) SURRNitrbenzened5	4.625	82	37402	59.05	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 59.05%			
44) SURR2Flbiphenyl	6.742	172	108394	62.88	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 62.88%			
62) SURR246Tribrphenl	7.759	330	36052	63.49	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 63.49%			
78) SURRTerphenyl-d14	8.970	244	125563	75.04	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 75.04%			
Target Compounds						Qvalue
2) Ntrsdimeth	2.136	74	337	0.2127	ug/mL#	1
3) Pyridine	2.133	79	584	0.2079	ug/mL#	1
5) Aniline	3.676	93	260	0.0625	ug/mL#	1
14) bis2clispreth	4.245	45	841	0.2086	ug/mL	68
15) 2Methylphenol	4.304	107	483	0.2065	ug/mL#	60
17) Acetophenone	4.441	105	507	0.1261	ug/mL	77
24) Isophorone	4.981	82	2615	0.4416	ug/mL	94
37) 2Methylnaphth	6.410	142	1004	0.1418	ug/mL	95
38) 1Methylnaphth	6.498	141	761	0.1248	ug/mL	82
45) 2Clnaphthalen	6.873	162	5388	0.7089	ug/mL#	42
46) 2Nitroaniline	6.870	65	1522	0.7151	ug/mL#	6
47) Acnaphthylene	7.134	152	580	0.0448	ug/mL	83
51) 3Nitroaniline	7.254	138	186	0.0957	ug/mL#	1
54) 24Dinitrotolu	7.410	165	244	0.0931	ug/mL#	54
55) 4-Nitrophenol	7.515	65	1083	0.6340	ug/mL#	32
60) Diethylphthal	7.541	149	2508	0.2757	ug/mL	90
61) 4Nitroaniline	7.742	138	983	0.5177	ug/mL#	36
65) Ntrsdiphlam&Diphlam	7.640	169	115	0.0176	ug/mL#	25
66) Azobenz&12Diphlhyd	7.708	182	531	0.2547	ug/mL#	1
70) Phenanthrene	8.197	178	7616	0.6058	ug/mL	95
71) Anthracene	8.225	178	1296	0.1006	ug/mL	84
72) Carbazole	8.314	167	2262	0.2073	ug/mL	82
73) Dinbtylphthal	8.461	149	10772	0.7719	ug/mL	99
74) Fluoranthene	8.777	202	11256	0.8287	ug/mL	94
77) Pyrene	8.893	202	7334	0.5671	ug/mL	95
79) Btylbzylphth	9.234	149	1792	0.3155	ug/mL	88
83) Chrysene	9.598	228	4709	0.3988	ug/mL	94
84) bis2Ethlhxlph	9.581	149	4627	0.5559	ug/mL	83
87) B[b]fluoranth	10.243	252	5674	0.4973	ug/mL	90
88) B[k]fluoranth	10.260	252	1586	0.1480	ug/mL	91

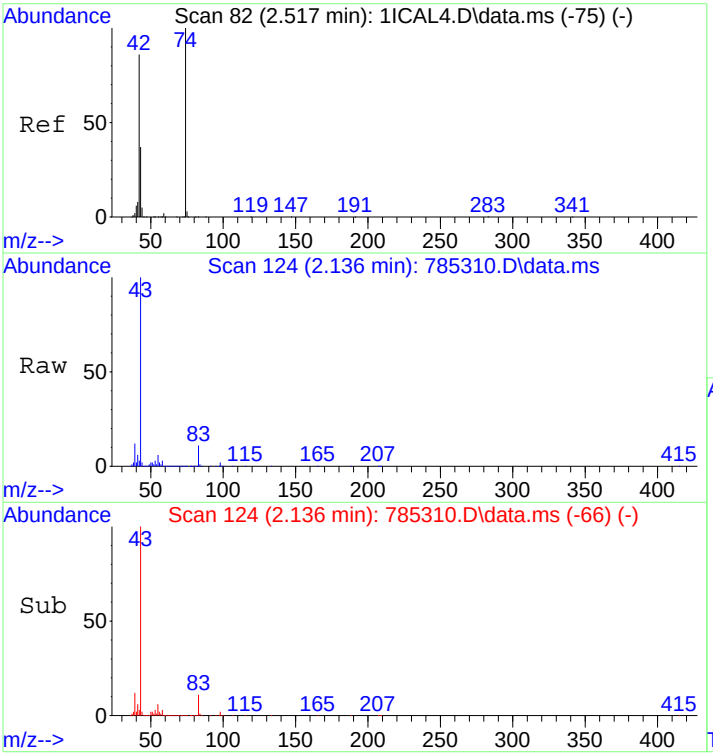
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\785310.D Vial: 14
Acq On : 20 Oct 2016 16:40 Operator: JJY
Sample : 131574,785310, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:50:17 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

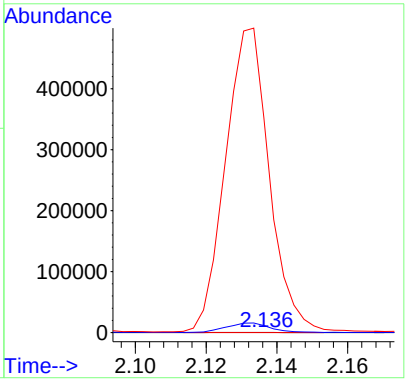


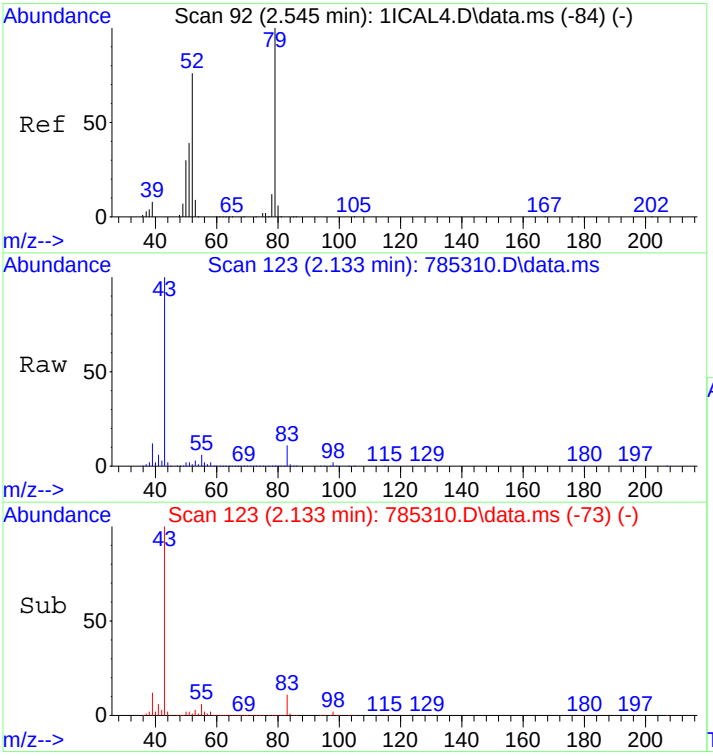


#2
Ntrsdimeth
Concen: 0.21 ug/mL
RT: 2.136 min Scan# 124
Delta R.T. 0.065 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion: 74 Resp: 337

Ion	Ratio	Lower	Upper
74	100		
42	2823.0	61.8	121.8#
43	86900.5	5.5	65.5#

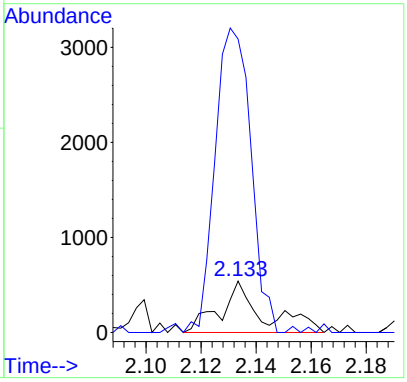


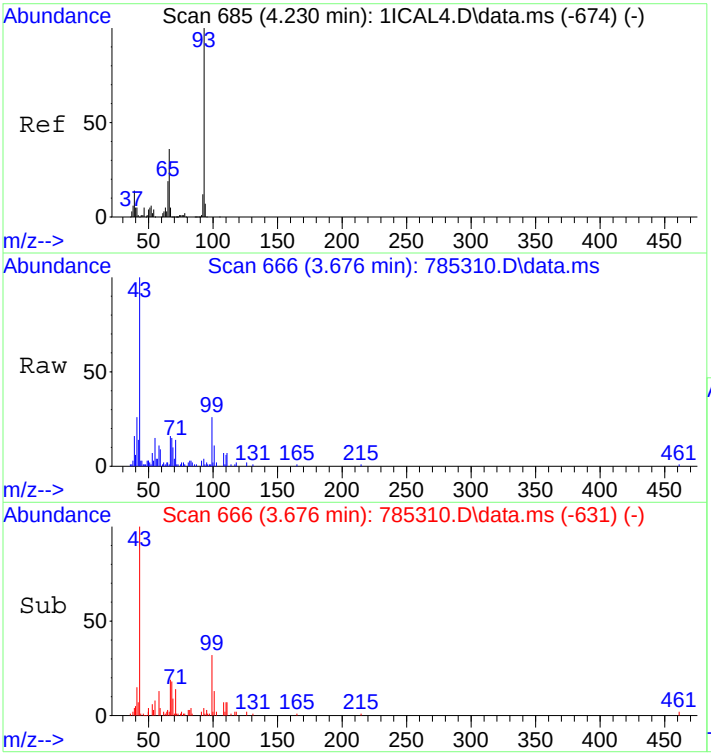


#3
Pyridine
Concen: 0.21 ug/mL
RT: 2.133 min Scan# 123
Delta R.T. 0.043 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion: 79 Resp: 584

Ion	Ratio	Lower	Upper
79	100		
52	571.9	44.1	104.1#

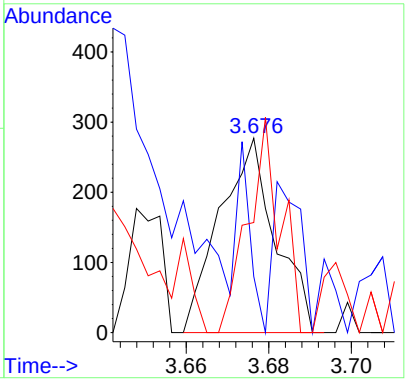


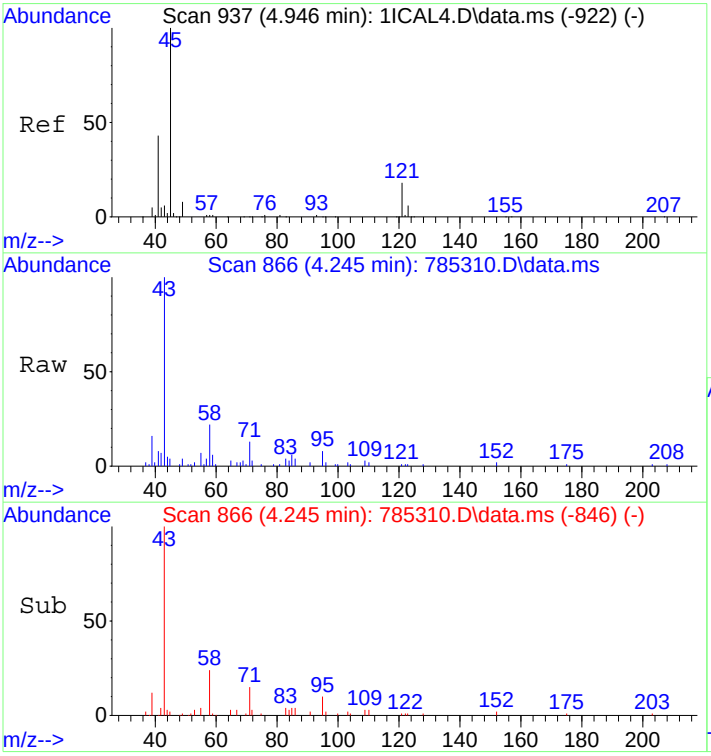


#5
Aniline
Concen: 0.06 ug/mL
RT: 3.676 min Scan# 666
Delta R.T. 0.048 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion: 93 Resp: 260

Ion	Ratio	Lower	Upper
93	100		
66	1413.8	41.5	101.5#
65	330.8	12.9	72.9#

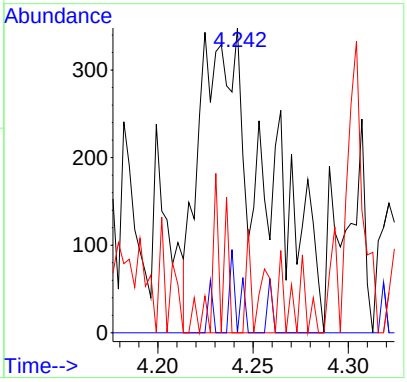


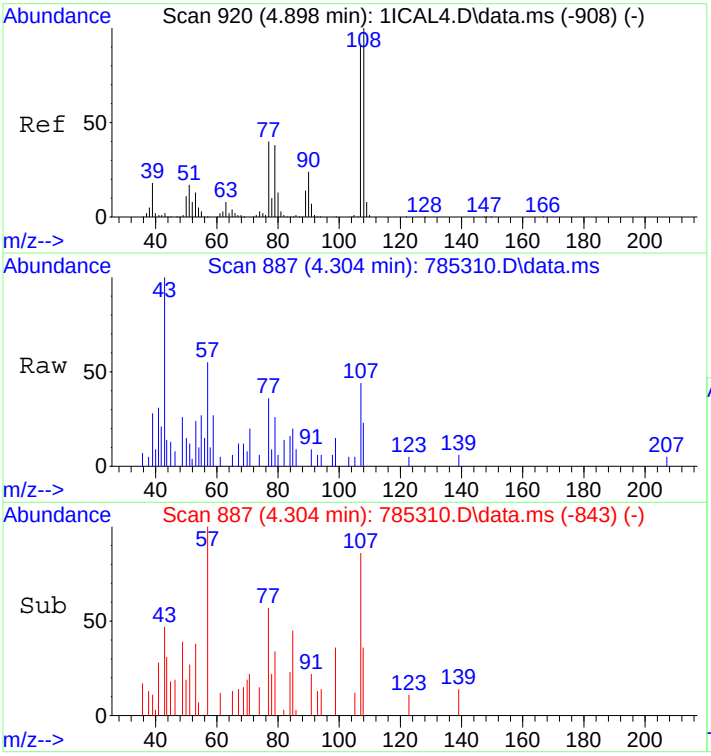


#14
bis2clispreth
Concen: 0.21 ug/mL
RT: 4.245 min Scan# 866
Delta R.T. -0.059 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion: 45 Resp: 841

Ion	Ratio	Lower	Upper
45	100		
121	31.2	0.0	47.8
77	0.0	0.0	34.1

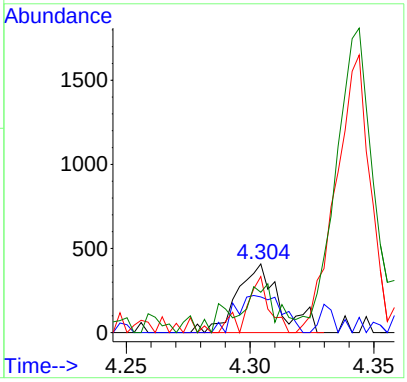


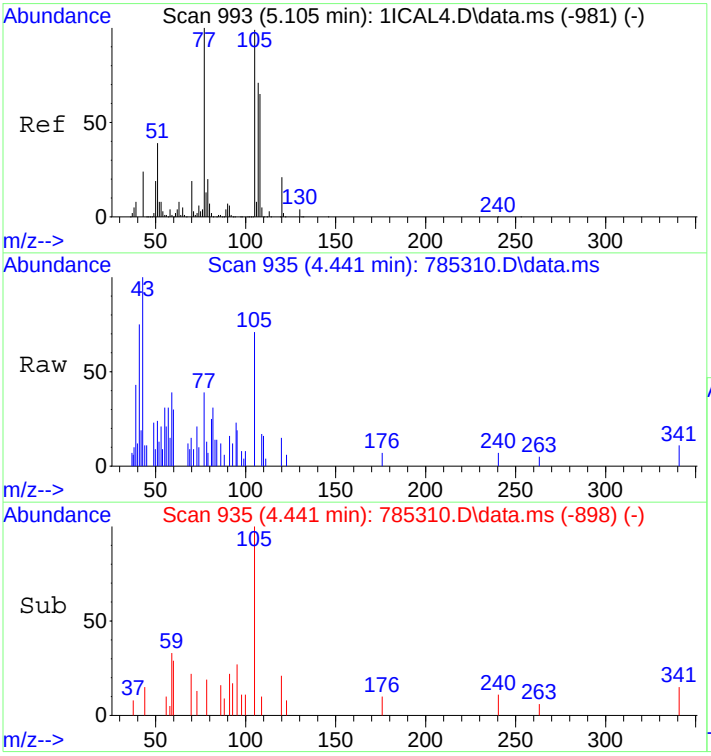


#15
2Methylphenol
Concen: 0.21 ug/mL
RT: 4.304 min Scan# 887
Delta R.T. 0.011 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:107 Resp: 483

Ion	Ratio	Lower	Upper
107	100		
108	52.0	81.7	141.7#
77	81.6	33.2	73.2#
79	43.6	23.5	63.5

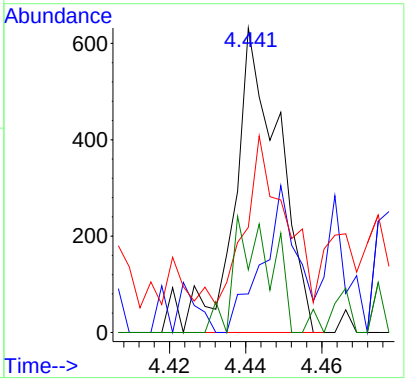


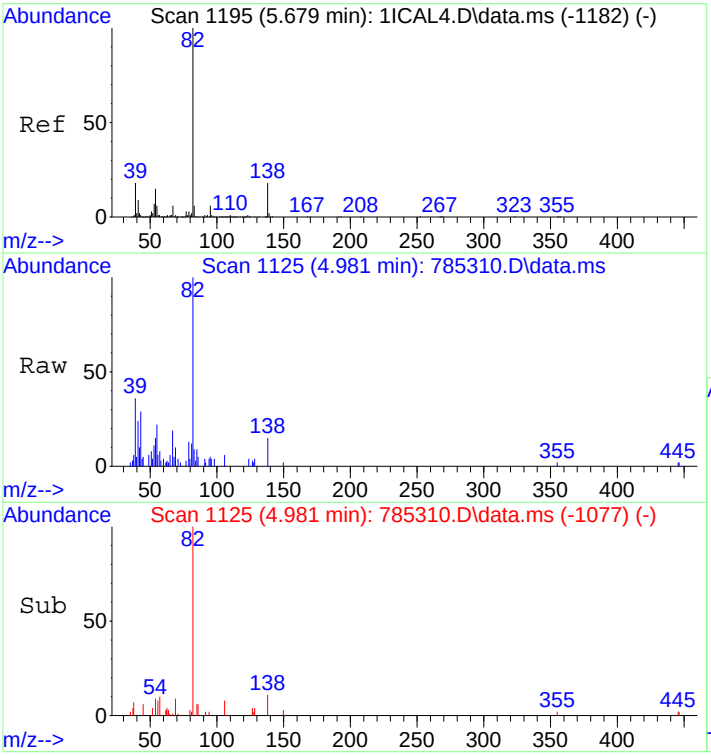


#17
Acetophenone
Concen: 0.13 ug/mL
RT: 4.441 min Scan# 935
Delta R.T. -0.009 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:105 Resp: 507

Ion	Ratio	Lower	Upper
105	100		
71	0.0	0.0	30.7
51	13.3	2.3	62.3
120	20.6	0.0	38.3

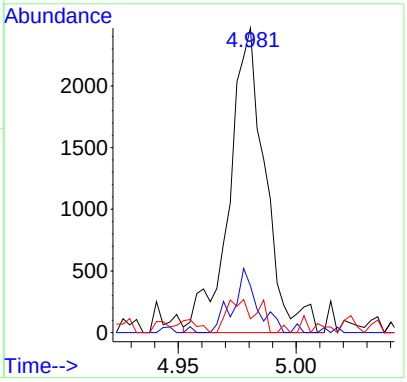


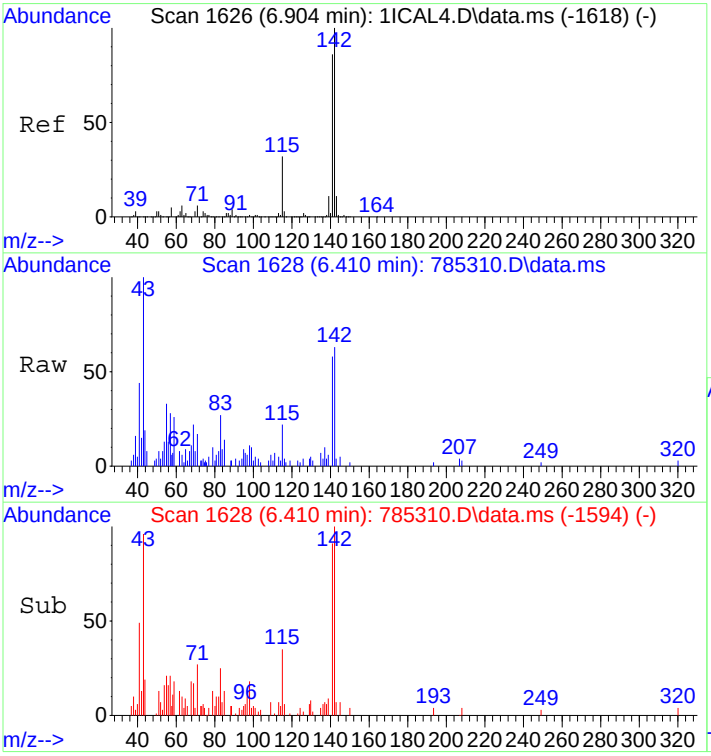


#24
Isophorone
Concen: 0.44 ug/mL
RT: 4.981 min Scan# 1125
Delta R.T. -0.009 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion: 82 Resp: 2615

Ion	Ratio	Lower	Upper
82	100		
138	15.4	0.0	46.9
95	2.7	0.0	26.8

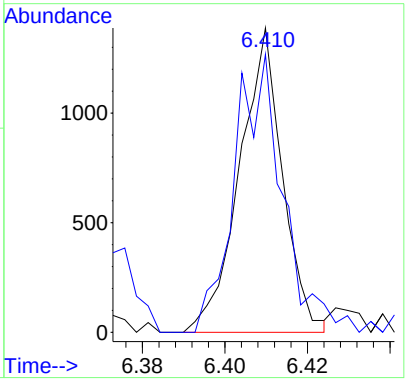


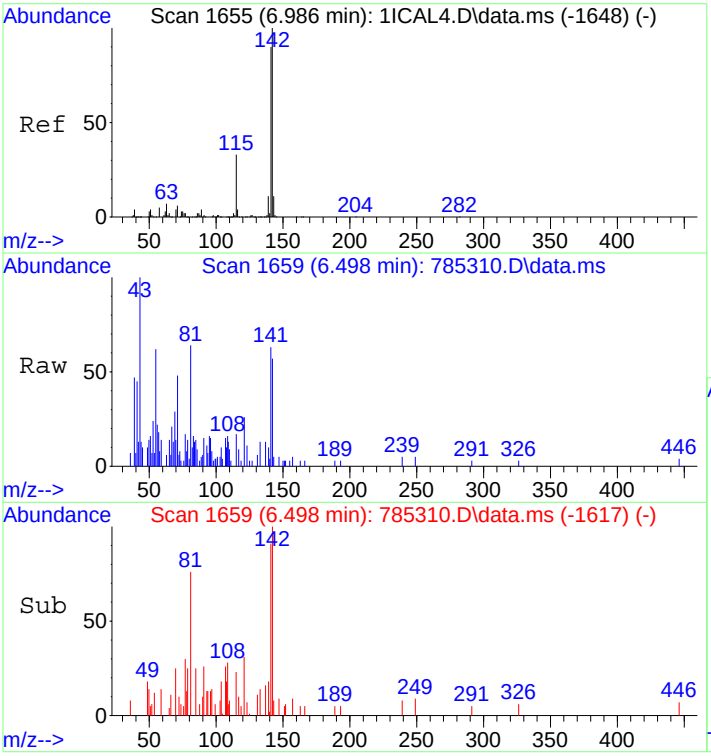


#37
2Methylnaphth
Concen: 0.14 ug/mL
RT: 6.410 min Scan# 1628
Delta R.T. -0.003 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:142 Resp: 1004

Ion	Ratio	Lower	Upper
142	100		
141	91.4	56.7	116.7

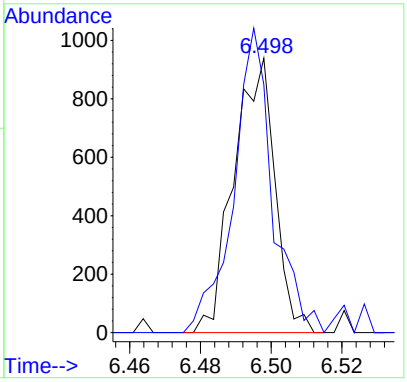


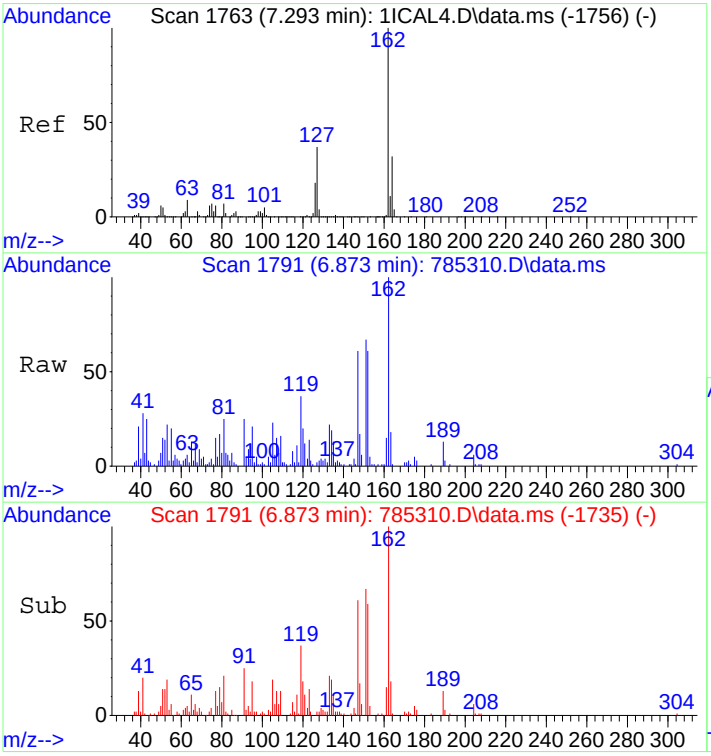


#38
1Methylnaphth
Concen: 0.12 ug/mL
RT: 6.498 min Scan# 1659
Delta R.T. 0.000 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:141 Resp: 761

Ion	Ratio	Lower	Upper
141	100		
142	90.4	78.9	138.9

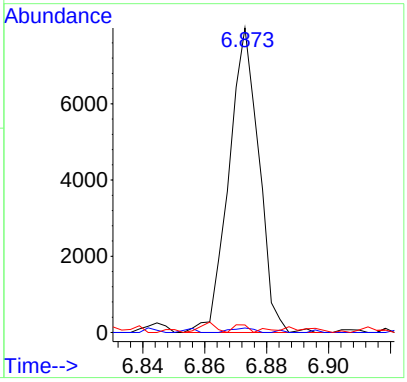


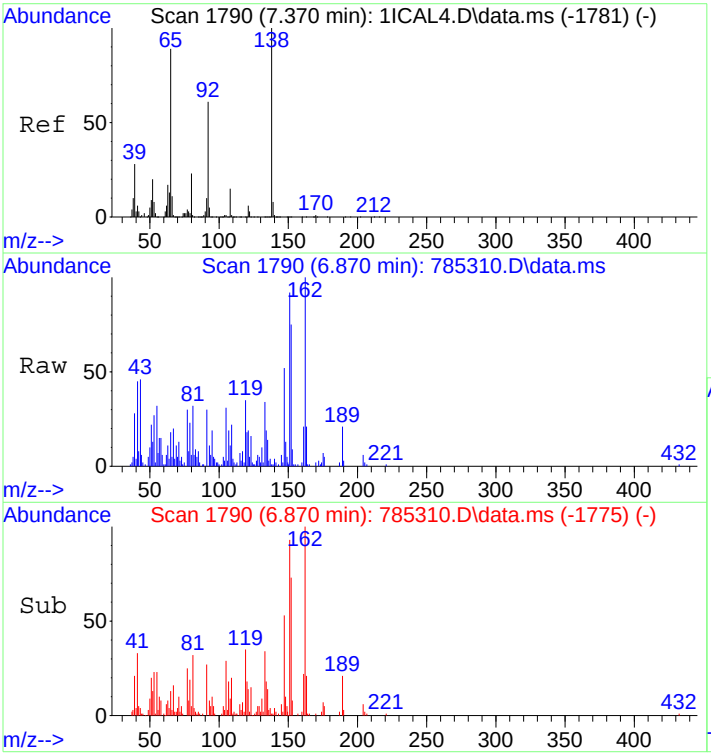


#45
2Clnaphthalen
Concen: 0.71 ug/mL
RT: 6.873 min Scan# 1791
Delta R.T. 0.045 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:162 Resp: 5388

Ion	Ratio	Lower	Upper
162	100		
164	1.5	2.4	62.4#
127	2.5	9.8	69.8#

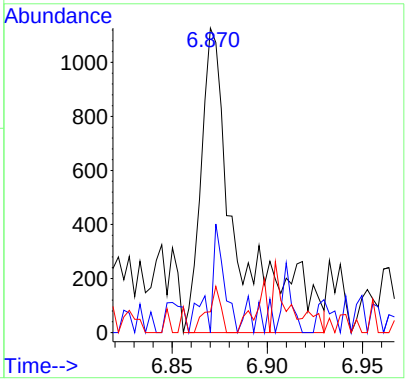


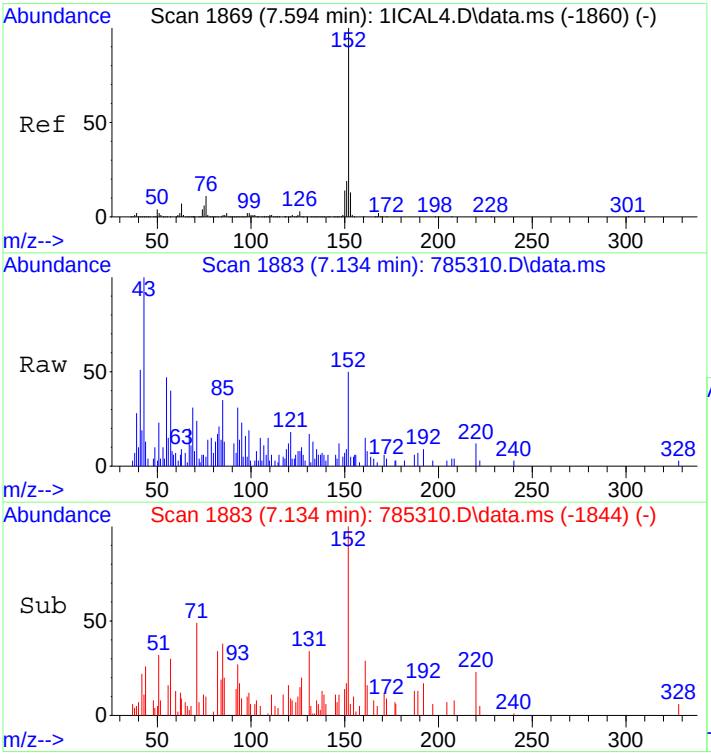


#46
2Nitroaniline
Concen: 0.72 ug/mL
RT: 6.870 min Scan# 1790
Delta R.T. -0.057 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion: 65 Resp: 1522

Ion	Ratio	Lower	Upper
65	100		
92	0.0	39.4	99.4#
138	6.8	83.7	143.7#

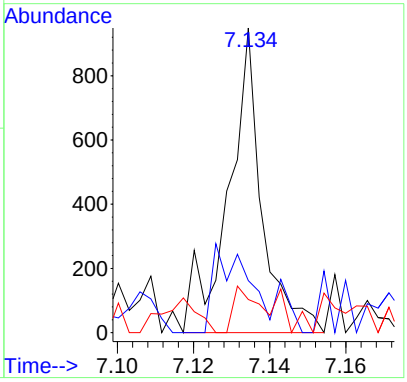


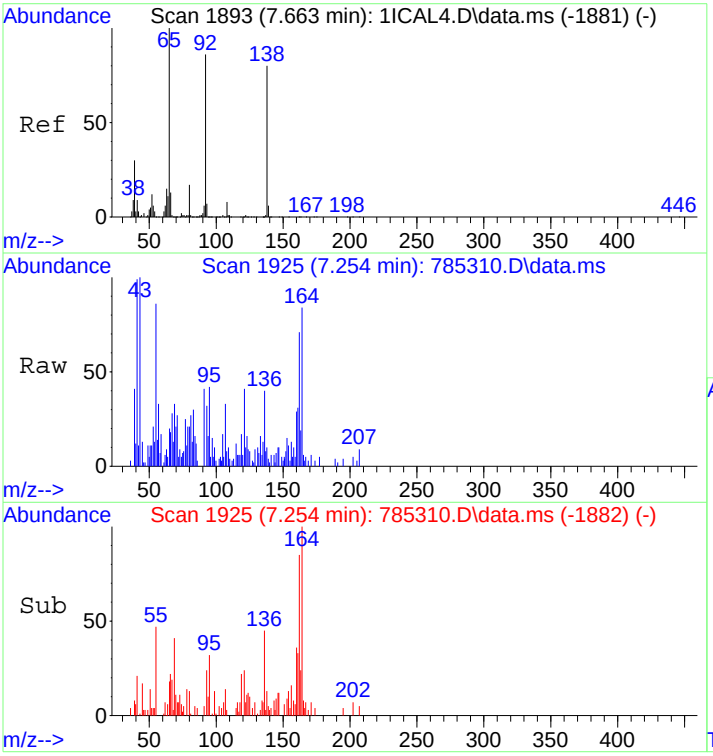


#47
Acnaphthylene
Concen: 0.04 ug/mL
RT: 7.134 min Scan# 1883
Delta R.T. -0.003 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:152 Resp: 580

Ion	Ratio	Lower	Upper
152	100		
151	17.1	0.0	49.3
153	0.0	0.0	43.8

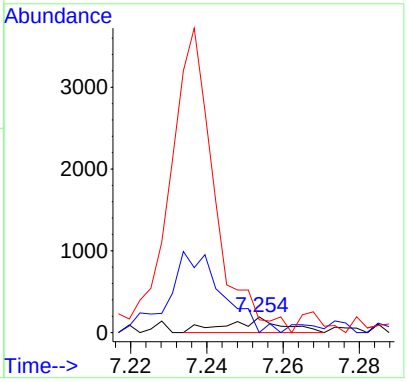


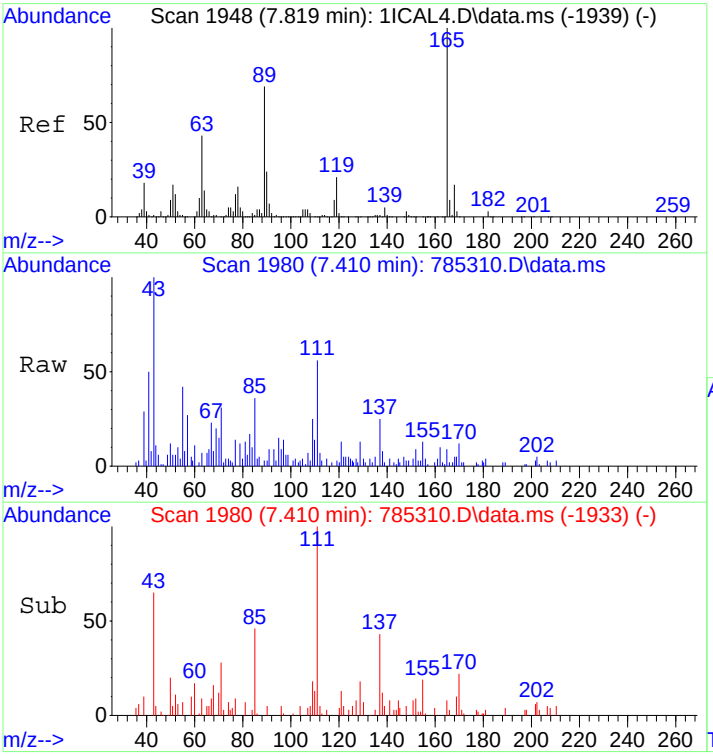


#51
3Nitroaniline
Concen: 0.10 ug/mL
RT: 7.254 min Scan# 1925
Delta R.T. 0.023 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:138 Resp: 186

Ion	Ratio	Lower	Upper
138	100		
92	0.0	72.2	132.2#
108	41.1	0.0	30.3#

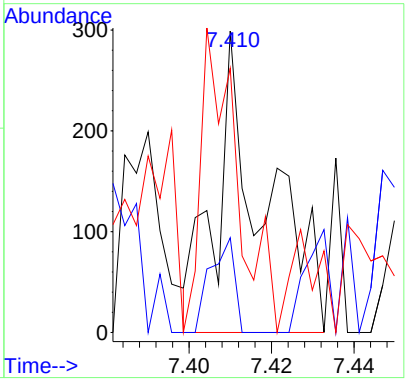


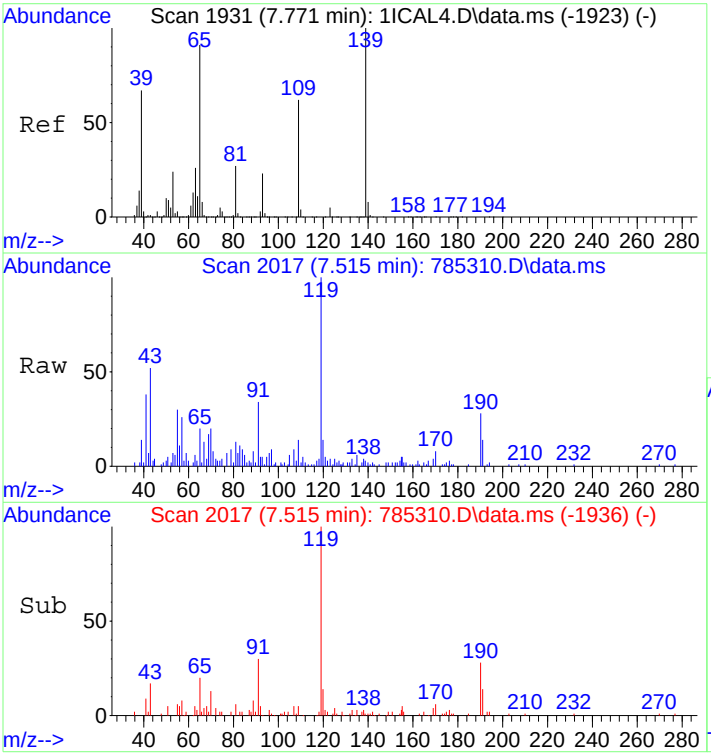


#54
24Dinitrotolu
Concen: 0.09 ug/mL
RT: 7.410 min Scan# 1980
Delta R.T. 0.020 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:165 Resp: 244

Ion	Ratio	Lower	Upper
165	100		
89	31.4	45.7	105.7#
63	87.6	39.2	79.2#

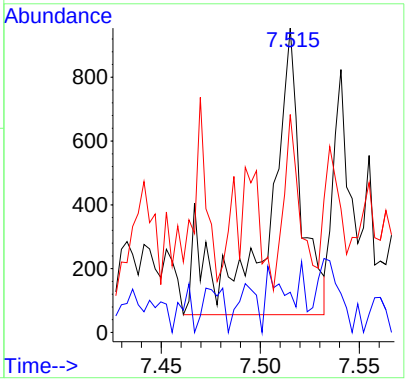


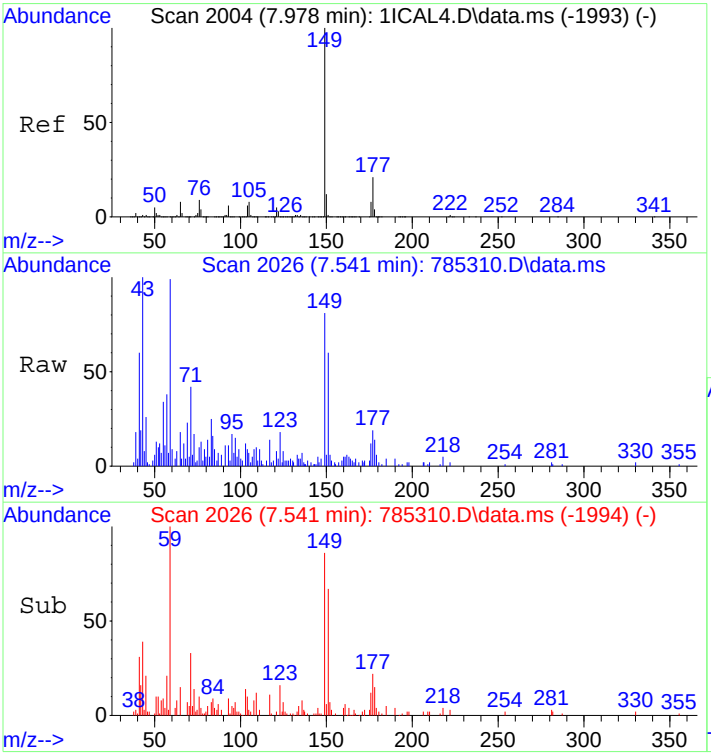


#55
4-Nitrophenol
Concen: 0.63 ug/mL
RT: 7.515 min Scan# 2017
Delta R.T. 0.131 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion: 65 Resp: 1083

Ion	Ratio	Lower	Upper
65	100		
139	6.2	73.5	133.5#
109	51.4	58.3	98.3#

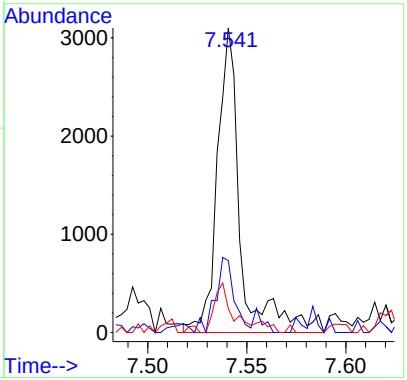


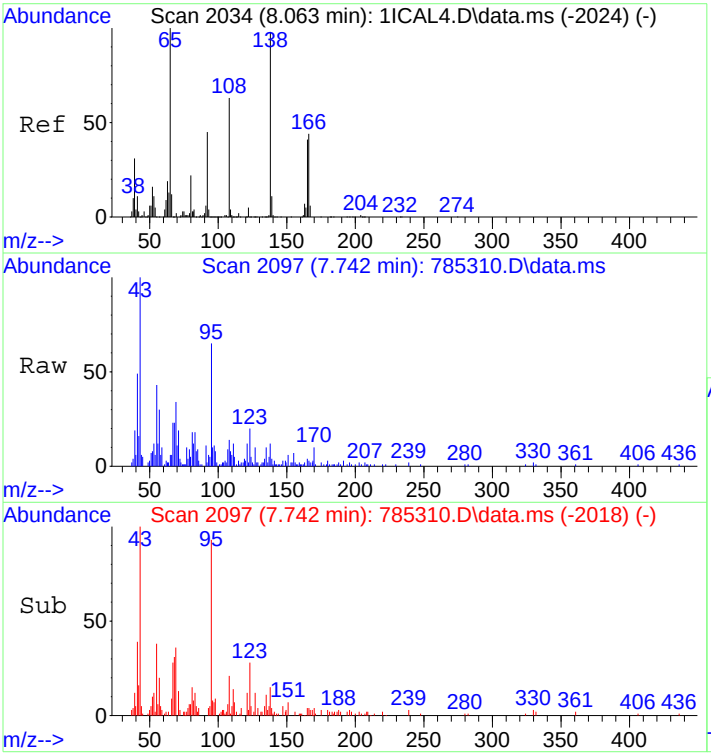


#60
Diethylphthal
Concen: 0.28 ug/mL
RT: 7.541 min Scan# 2026
Delta R.T. -0.009 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:149 Resp: 2508

Ion	Ratio	Lower	Upper
149	100		
177	23.6	0.0	49.5
150	7.8	0.0	42.0

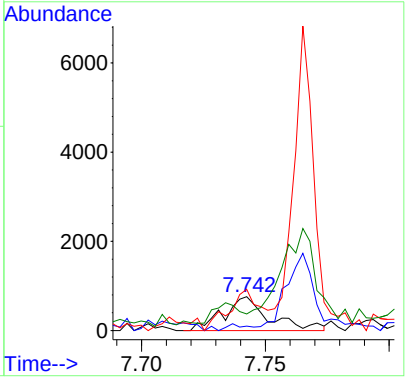


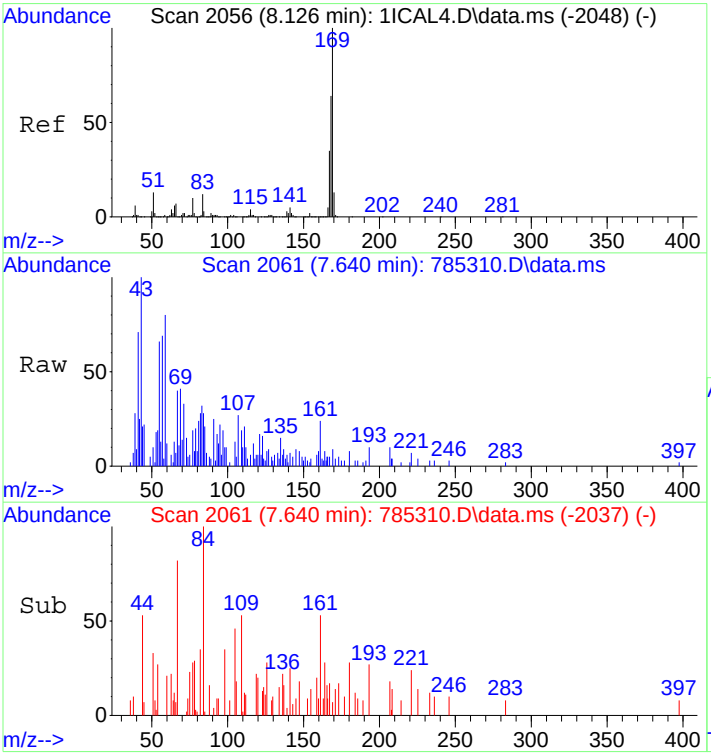


#61
4Nitroaniline
Concen: 0.52 ug/mL
RT: 7.742 min Scan# 2097
Delta R.T. 0.105 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:138 Resp: 983

Ion	Ratio	Lower	Upper
138	100		
92	0.0	12.7	72.7#
108	114.4	46.1	106.1#
65	24.0	71.6	131.6#

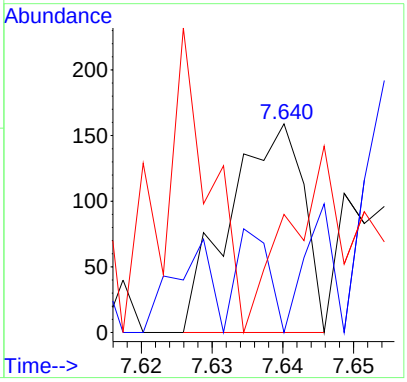


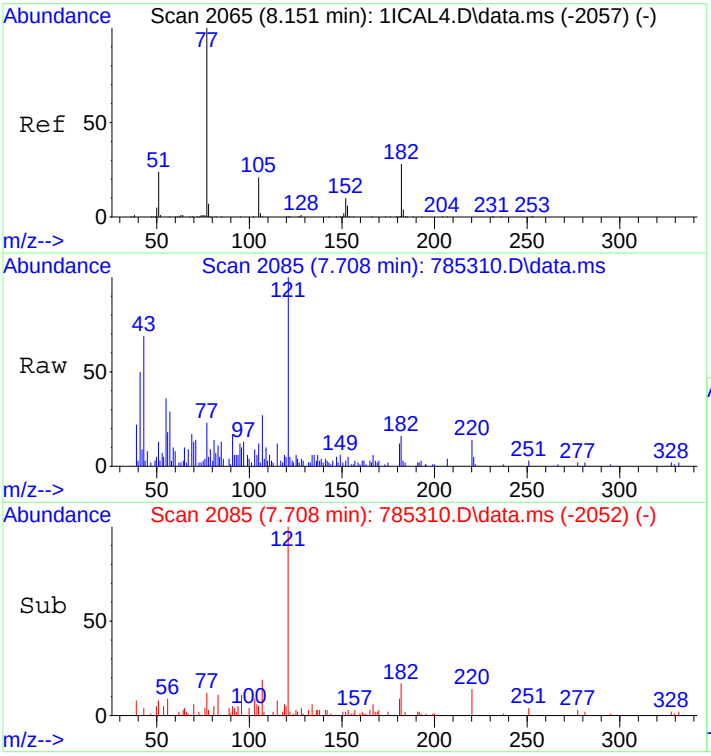


#65
Ntrsdiphlam&Diphlam
Concen: 0.02 ug/mL
RT: 7.640 min Scan# 2061
Delta R.T. -0.051 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:169 Resp: 115

Ion	Ratio	Lower	Upper
169	100		
168	0.0	35.5	95.5#
167	0.0	5.2	65.2#

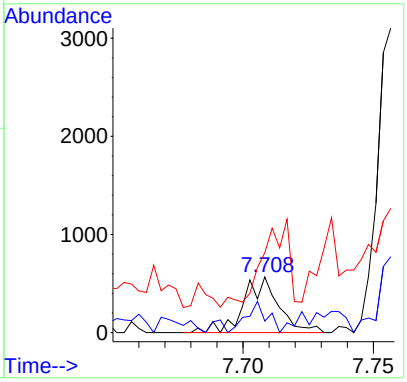


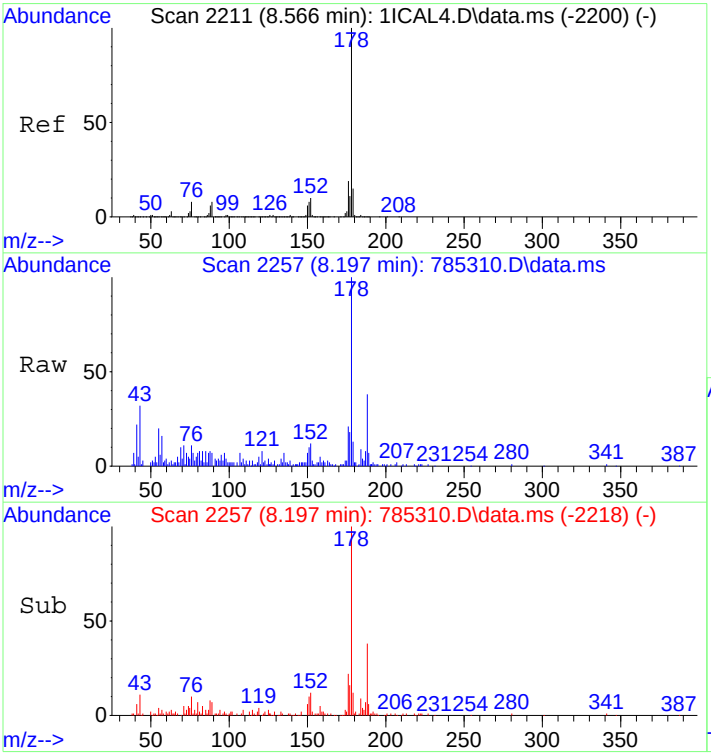


#66
Azobenz&12Diphlhyd
Concen: 0.25 ug/mL
RT: 7.708 min Scan# 2085
Delta R.T. -0.006 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:182 Resp: 531

Ion	Ratio	Lower	Upper
182	100		
152	7.8	7.0	67.0
77	98.6	330.8	390.8#

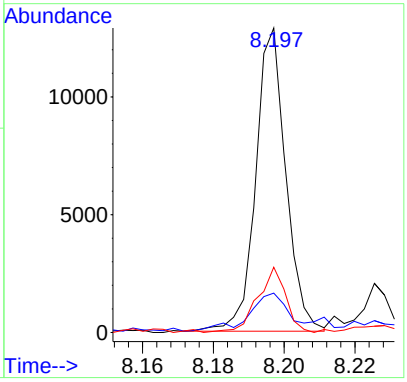


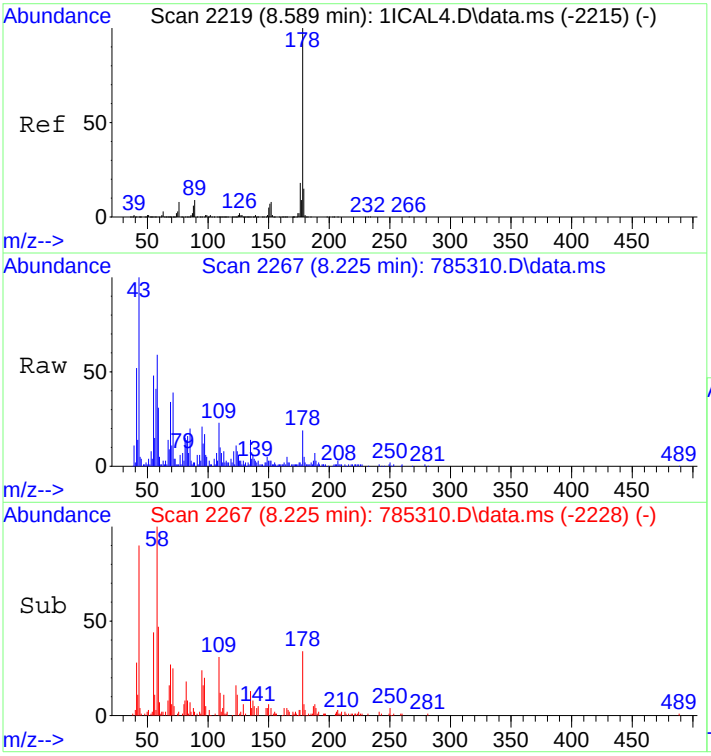


#70
Phenanthrene
Concen: 0.61 ug/mL
RT: 8.197 min Scan# 2257
Delta R.T. -0.003 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:178 Resp: 7616

Ion	Ratio	Lower	Upper
178	100		
179	12.5	0.0	45.3
176	21.0	0.0	49.4

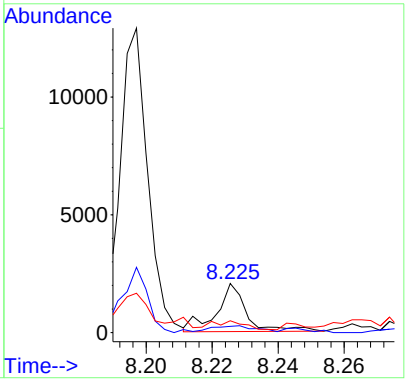


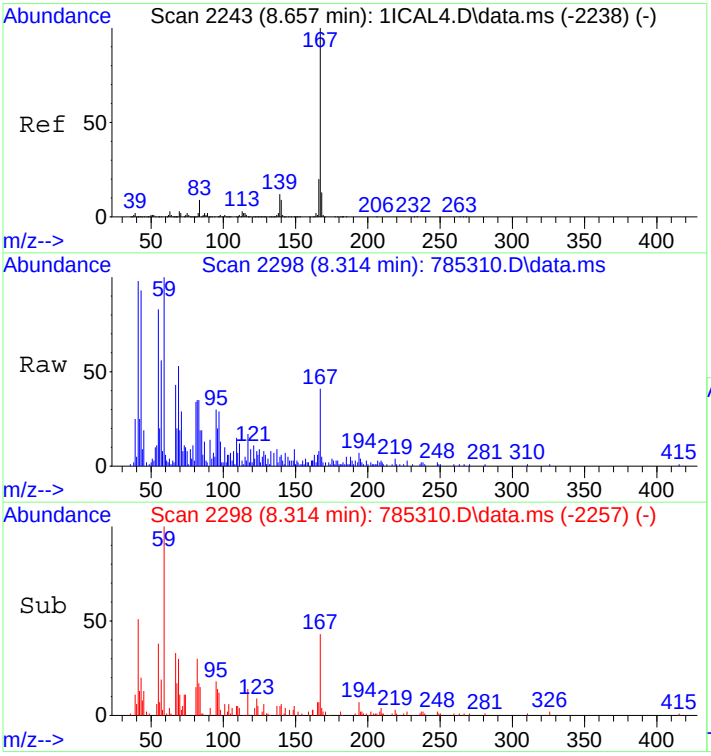


#71
Anthracene
Concen: 0.10 ug/mL
RT: 8.225 min Scan# 2267
Delta R.T. -0.003 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:178 Resp: 1296

Ion	Ratio	Lower	Upper
178	100		
176	7.9	0.0	47.3
179	10.9	0.0	44.6

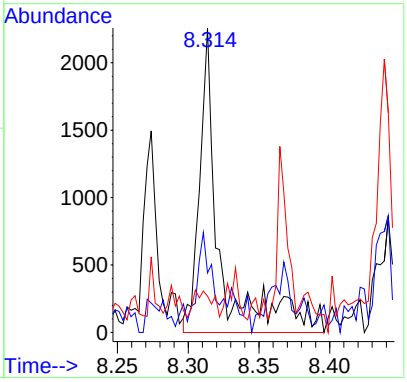


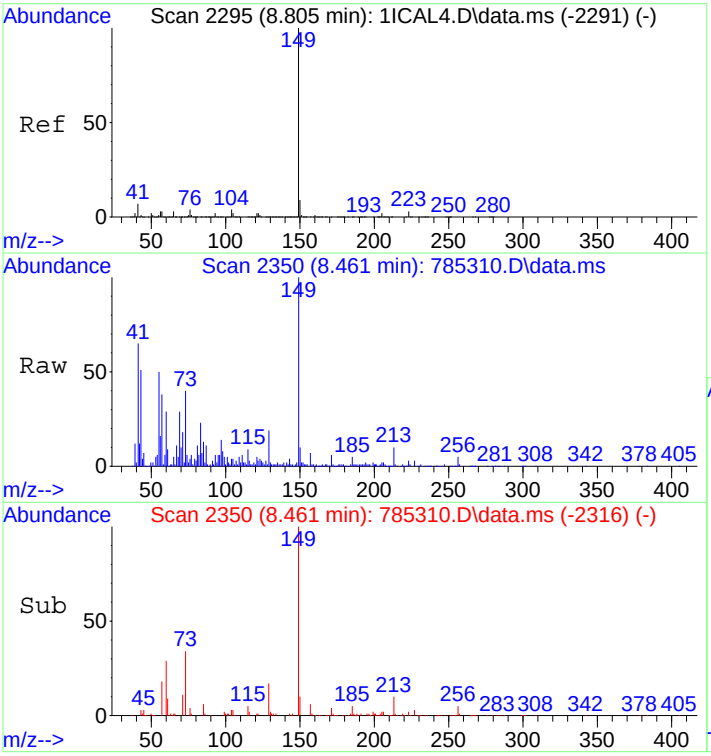


#72
Carbazole
Concen: 0.21 ug/mL
RT: 8.314 min Scan# 2298
Delta R.T. 0.003 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:167 Resp: 2262

Ion	Ratio	Lower	Upper
167	100		
166	10.5	0.0	49.8
139	6.0	0.0	41.7

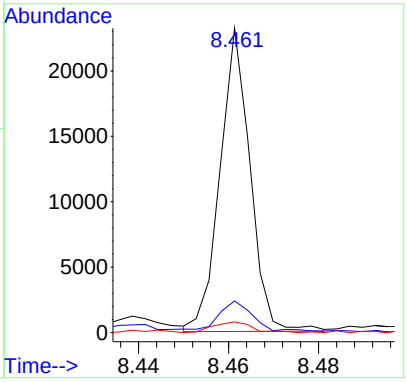


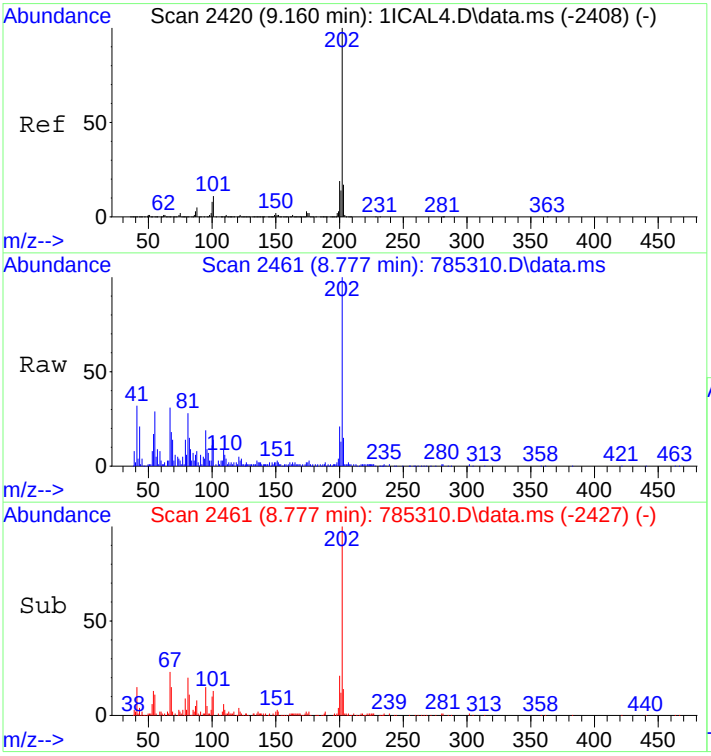


#73
Dinbtylphthal
Concen: 0.77 ug/mL
RT: 8.461 min Scan# 2350
Delta R.T. -0.003 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:149 Resp: 10772

Ion	Ratio	Lower	Upper
149	100		
150	10.0	0.0	39.8
104	3.6	0.0	34.5

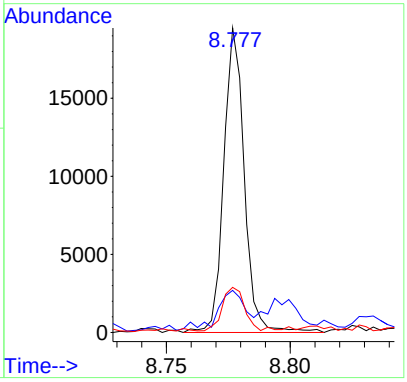


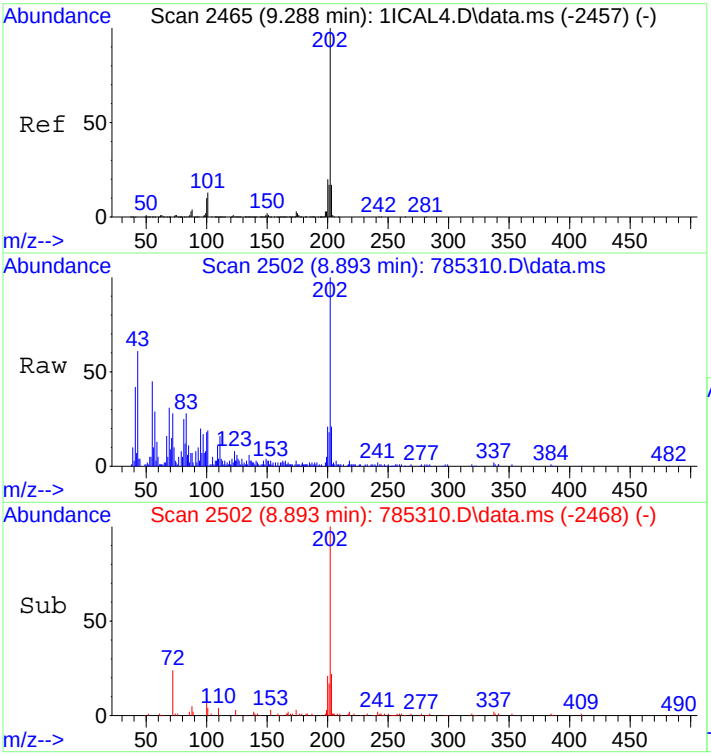


#74
Fluoranthene
Concen: 0.83 ug/mL
RT: 8.777 min Scan# 2461
Delta R.T. -0.003 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:202 Resp: 11256

Ion	Ratio	Lower	Upper
202	100		
101	12.6	0.0	42.0
203	13.5	0.0	37.4

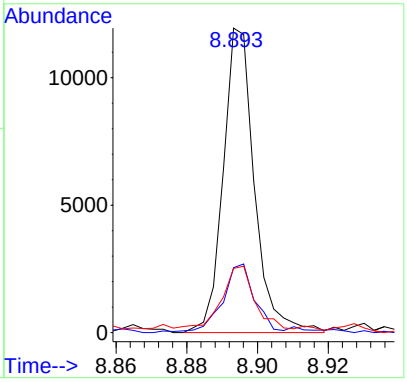


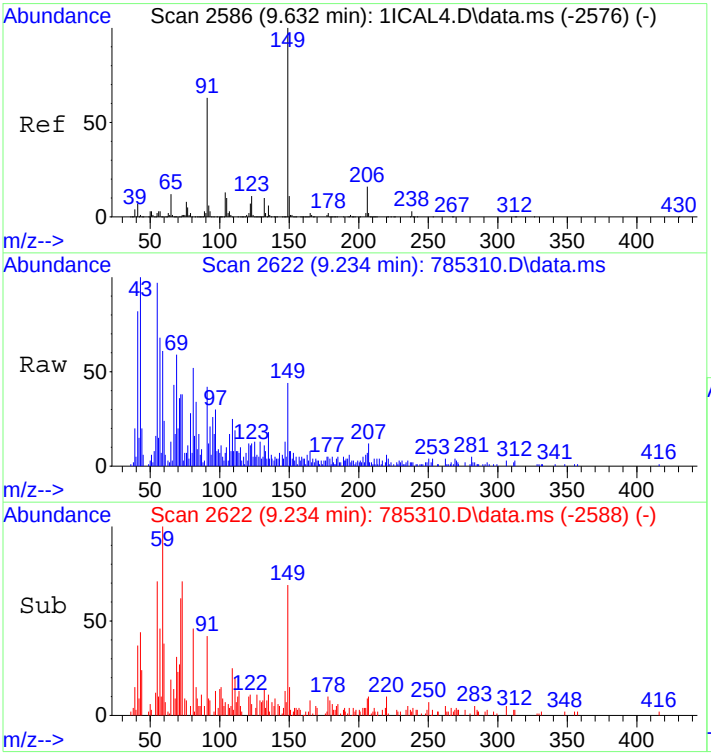


#77
Pyrene
Concen: 0.57 ug/mL
RT: 8.893 min Scan# 2502
Delta R.T. -0.003 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:202 Resp: 7334

Ion	Ratio	Lower	Upper
202	100		
200	20.8	0.0	49.6
203	20.3	0.0	47.1

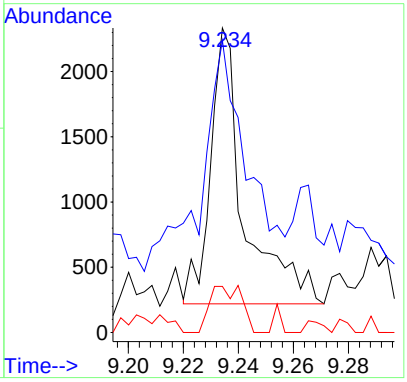


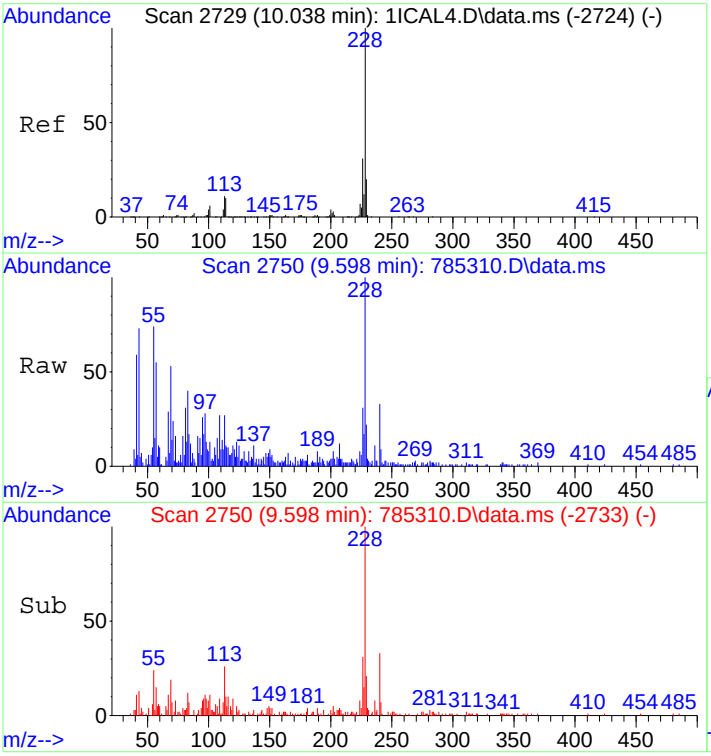


#79
Btylbzylphth
Concen: 0.32 ug/mL
RT: 9.234 min Scan# 2622
Delta R.T. -0.003 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:149 Resp: 1792

Ion	Ratio	Lower	Upper
149	100		
91	75.3	33.5	93.5
206	17.0	0.0	46.3

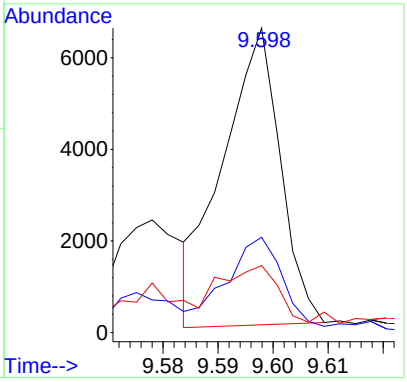


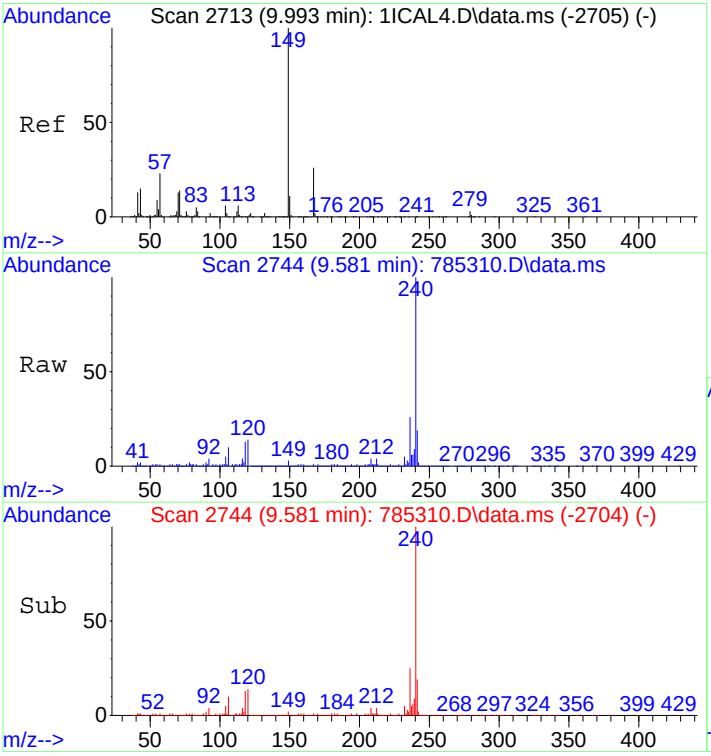


#83
Chrysene
Concen: 0.40 ug/mL
RT: 9.598 min Scan# 2750
Delta R.T. -0.003 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:228 Resp: 4709

Ion	Ratio	Lower	Upper
228	100		
226	30.3	0.0	58.0
229	15.8	0.0	49.4

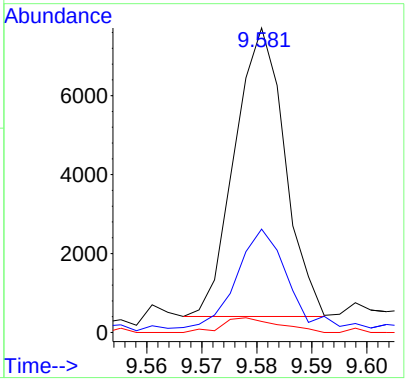


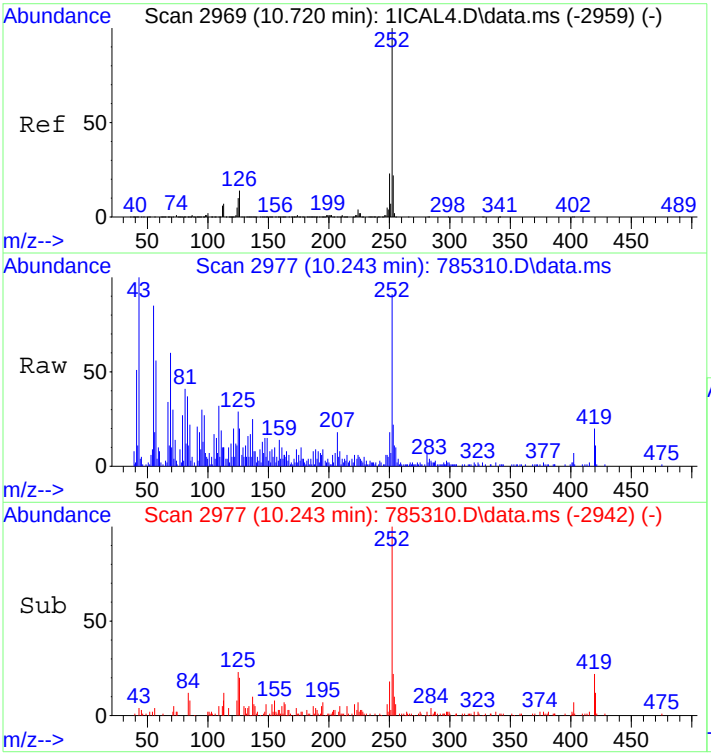


#84
bis2Ethlhxlph
Concen: 0.56 ug/mL
RT: 9.581 min Scan# 2744
Delta R.T. 0.000 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:149 Resp: 4627

Ion	Ratio	Lower	Upper
149	100		
167	34.2	0.0	54.6
279	3.8	0.0	33.1

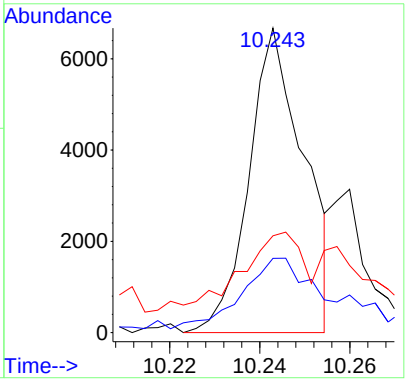


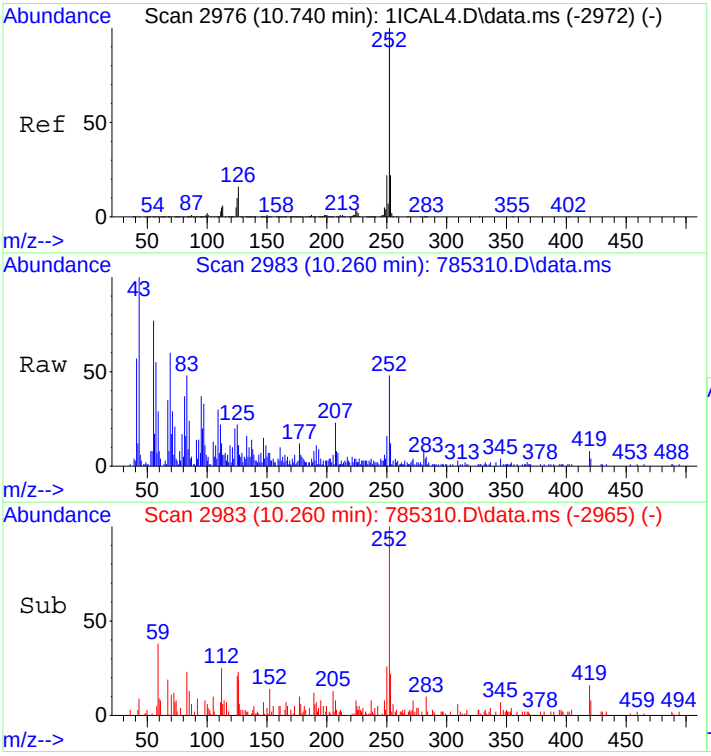


#87
B[b]fluoranth
Concen: 0.50 ug/mL
RT: 10.243 min Scan# 2977
Delta R.T. 0.000 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:252 Resp: 5674

Ion	Ratio	Lower	Upper
252	100		
253	21.2	0.0	50.7
125	22.7	0.0	42.5

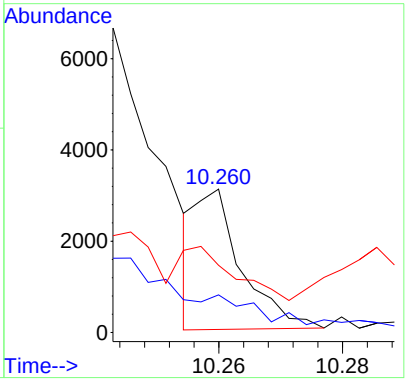




#88
B[k]fluoranth
Concen: 0.15 ug/mL
RT: 10.260 min Scan# 2983
Delta R.T. 0.000 min
Lab File: 785310.D
Acq: 20 Oct 16 4:40 pm

Tgt Ion:252 Resp: 1586

Ion	Ratio	Lower	Upper
252	100		
253	17.9	0.0	52.6
125	8.8	0.0	41.7



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\784496.D Vial: 15
Acq On : 20 Oct 2016 16:59 Operator: JJY
Sample : 131574,784496, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:53:10 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

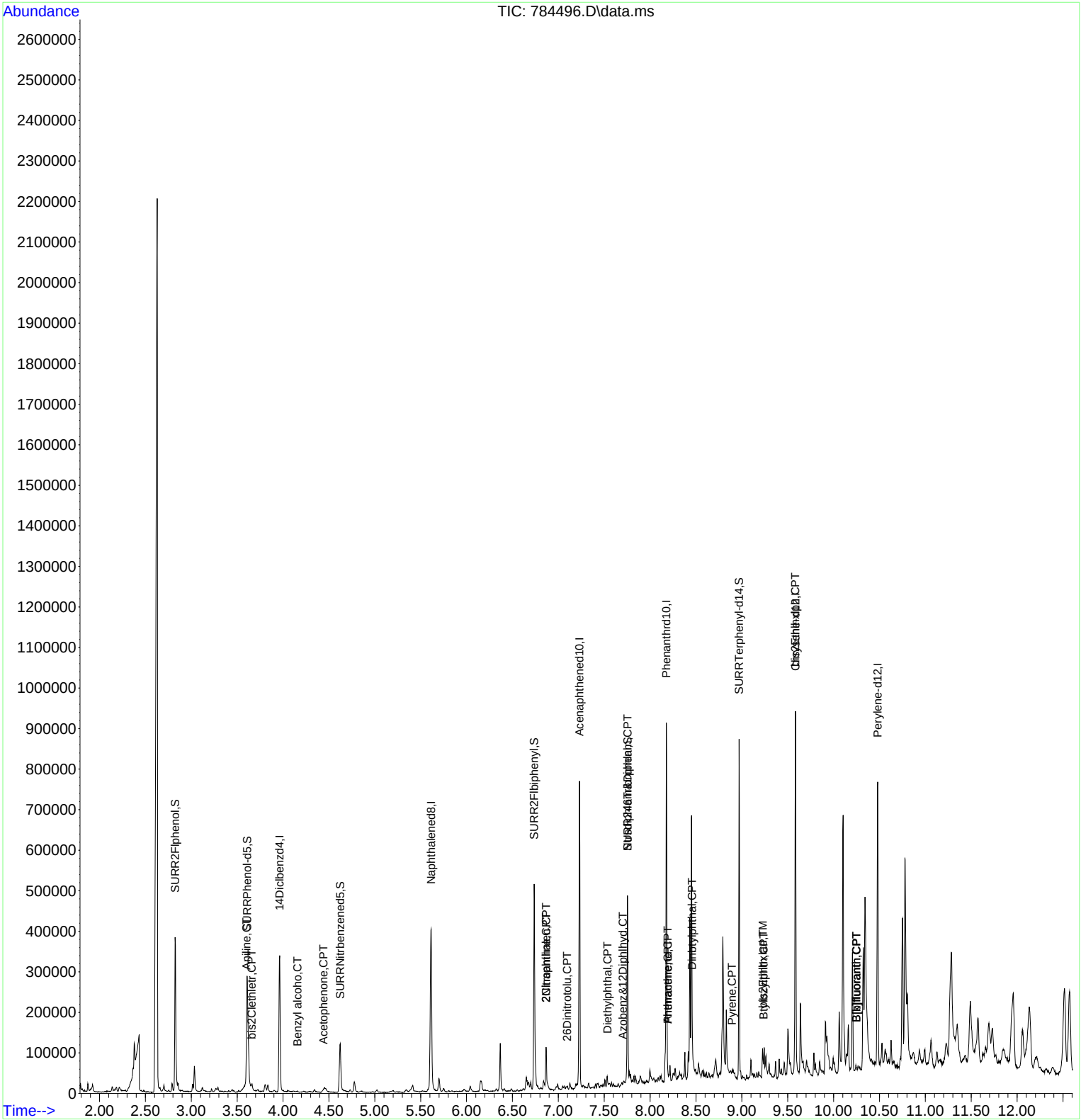
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.963	152	54223	20.00	ug/mL	0.00
21) Naphthalened8	5.614	136	226424	20.00	ug/mL	0.00
39) Acenaphthened10	7.231	164	128930	20.00	ug/mL	0.00
63) Phenanthrd10	8.177	188	231257	20.00	ug/mL	0.00
75) Chrysene-d12	9.587	240	216597	20.00	ug/mL	0.00
86) Perylene-d12	10.482	264	184584	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.824	112	86279	72.42	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 72.42%			
7) SURRPhenol-d5	3.608	99	112963	74.41	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 74.41%			
22) SURRNitrbenzened5	4.623	82	48093	67.20	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 67.20%			
44) SURR2Flbiphenyl	6.737	172	131573	73.74	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 73.74%			
62) SURR246Tribrphenl	7.754	330	40768	69.37	%REC	-0.01
Spiked Amount 100.000	Range 40 - 125		Recovery = 69.37%			
78) SURRTerphenyl-d14	8.970	244	147770	85.16	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 85.16%			
Target Compounds						Qvalue
5) Aniline	3.603	93	248	0.0498	ug/mL#	1
6) bis2Clethletr	3.659	93	2213	0.7182	ug/mL#	24
13) Benzyl alcoho	4.157	108	216	0.6733	ug/mL#	22
17) Acetophenone	4.441	105	546	0.1133	ug/mL	84
45) 2Clnaphthalen	6.867	162	11297	1.4359	ug/mL#	40
46) 2Nitroaniline	6.867	65	1351	0.6132	ug/mL#	12
49) 26Dinitrotolu	7.097	165	499	0.2514	ug/mL#	29
60) Diethylphthal	7.535	149	2380	0.2528	ug/mL	91
65) Ntrsdiphlam&Diphlam	7.754	169	1558	0.2377	ug/mL#	40
66) Azobenz&12Diphlhyd	7.703	182	502	0.2397	ug/mL#	1
70) Phenanthrene	8.191	178	2262	0.1791	ug/mL	94
71) Anthracene	8.191	178	2339	0.1807	ug/mL	90
73) Dinbtylphthal	8.459	149	14085	1.0050	ug/mL	98
77) Pyrene	8.893	202	1890	0.1409	ug/mL	88
79) Btylbzylphth	9.237	149	532	0.0903	ug/mL	91
80) bis2Ethlhxlad	9.229	129	1967	0.4132	ug/mL#	1
84) bis2Ethlhxlph	9.584	149	4282	0.4961	ug/mL	90
87) B[b]fluoranth	10.249	252	1708	0.1493	ug/mL	78
88) B[k]fluoranth	10.249	252	1708	0.1589	ug/mL	75

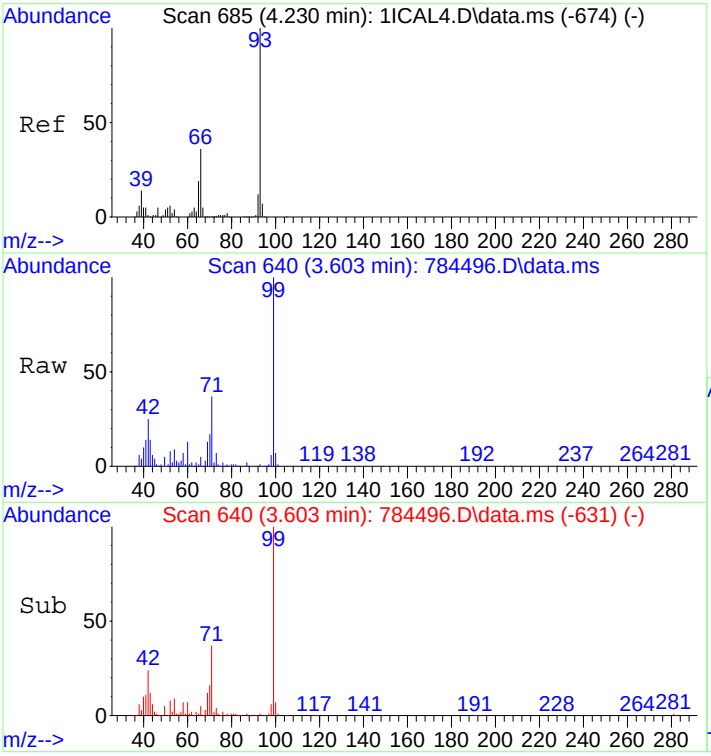
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\784496.D Vial: 15
Acq On : 20 Oct 2016 16:59 Operator: JJY
Sample : 131574,784496, Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:53:10 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

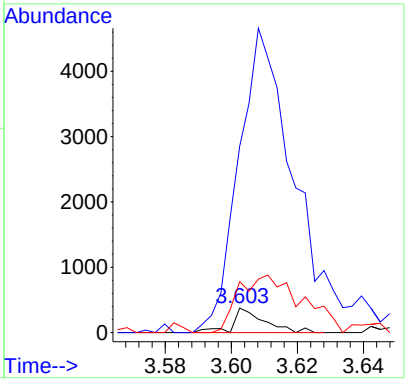


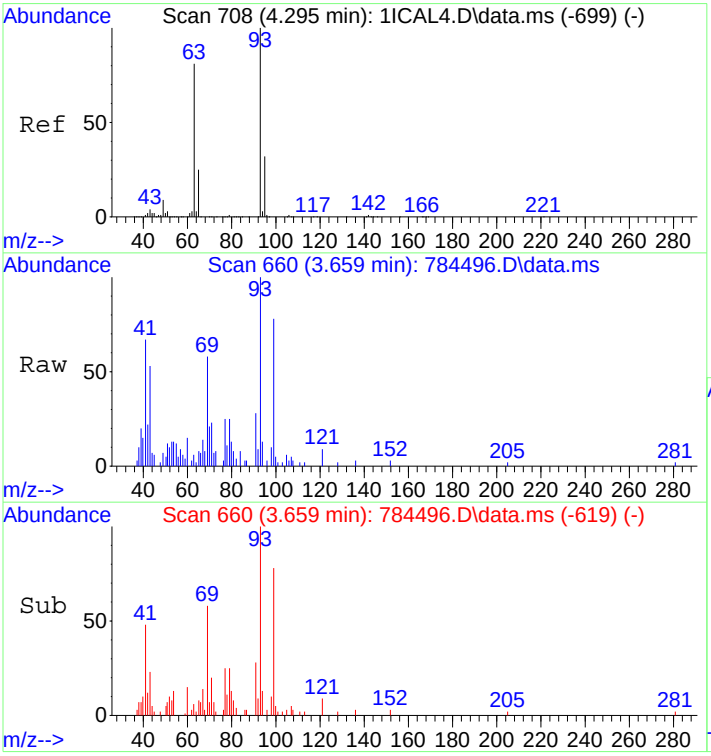


#5
Aniline
Concen: 0.05 ug/mL
RT: 3.603 min Scan# 640
Delta R.T. -0.026 min
Lab File: 784496.D
Acq: 20 Oct 16 4:59 pm

Tgt Ion: 93 Resp: 248

Ion	Ratio	Lower	Upper
93	100		
66	2378.2	41.5	101.5#
65	475.4	12.9	72.9#

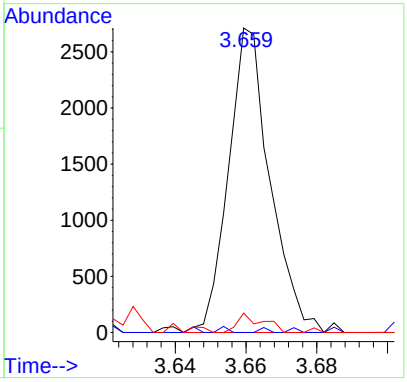


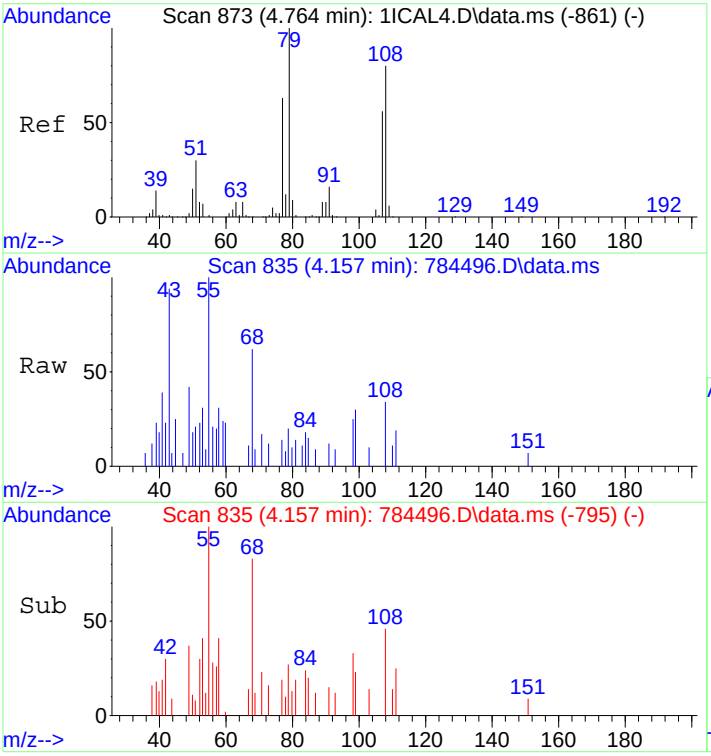


#6
bis2Clethletr
Concen: 0.72 ug/mL
RT: 3.659 min Scan# 660
Delta R.T. -0.034 min
Lab File: 784496.D
Acq: 20 Oct 16 4:59 pm

Tgt Ion: 93 Resp: 2213

Ion	Ratio	Lower	Upper
93	100		
95	0.0	3.2	63.2#
63	6.4	59.9	99.9#

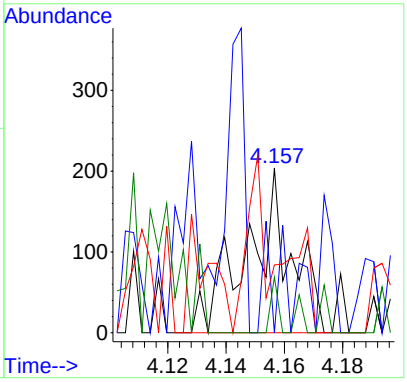


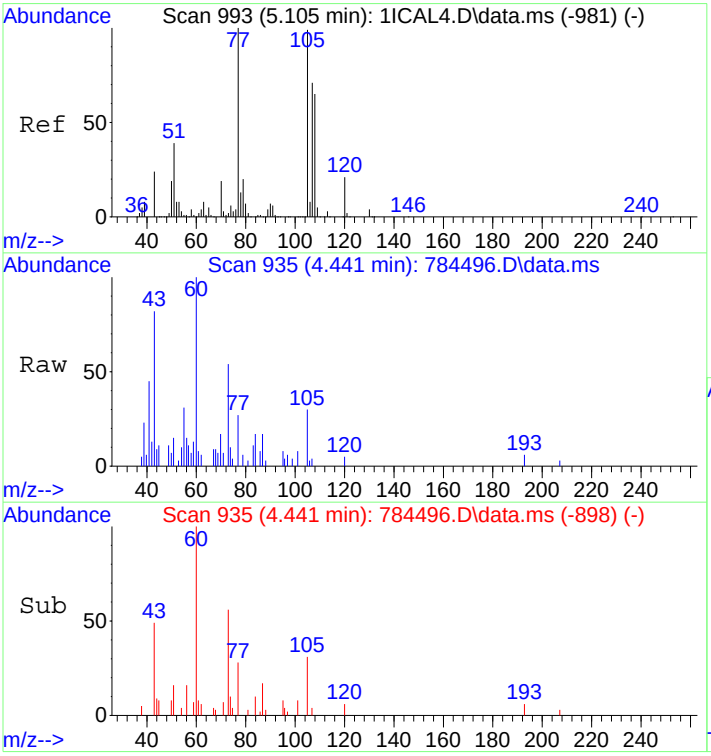


#13
Benzyl alcoho
Concen: 0.67 ug/mL
RT: 4.157 min Scan# 835
Delta R.T. 0.014 min
Lab File: 784496.D
Acq: 20 Oct 16 4:59 pm

Tgt Ion:108 Resp: 216

Ion	Ratio	Lower	Upper
108	100		
79	0.0	91.8	151.8#
77	41.2	45.6	105.6#
91	4.9	0.0	52.1

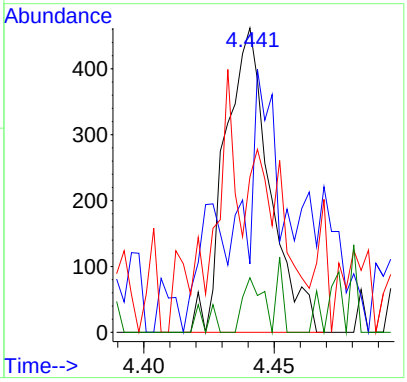


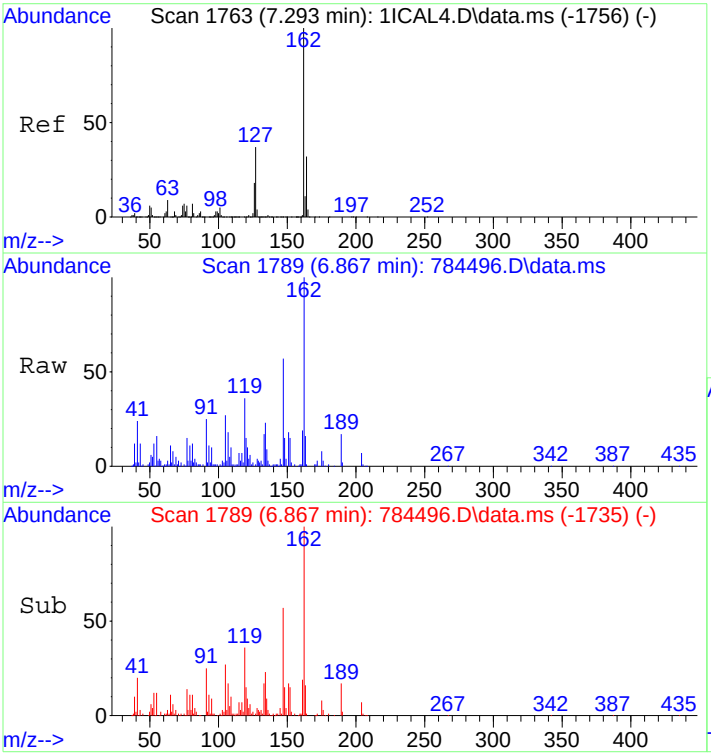


#17
Acetophenone
Concen: 0.11 ug/mL
RT: 4.441 min Scan# 935
Delta R.T. -0.008 min
Lab File: 784496.D
Acq: 20 Oct 16 4:59 pm

Tgt Ion:105 Resp: 546

Ion	Ratio	Lower	Upper
105	100		
71	0.0	0.0	30.7
51	18.0	2.3	62.3
120	18.0	0.0	38.3

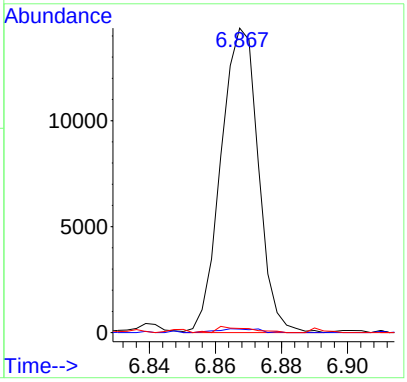


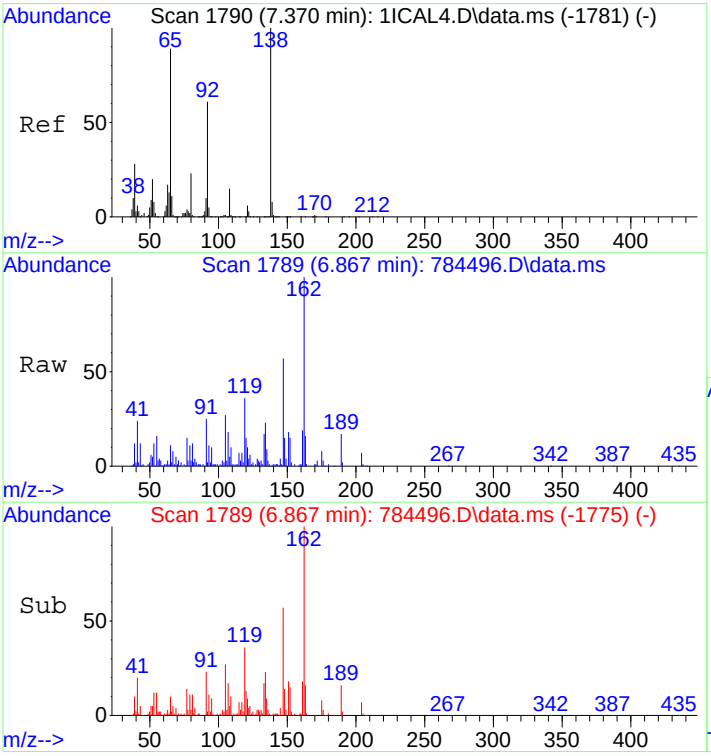


#45
2Clnaphthalen
Concen: 1.44 ug/mL
RT: 6.867 min Scan# 1789
Delta R.T. 0.040 min
Lab File: 784496.D
Acq: 20 Oct 16 4:59 pm

Tgt Ion:162 Resp: 11297

Ion	Ratio	Lower	Upper
162	100		
164	1.1	2.4	62.4#
127	0.8	9.8	69.8#

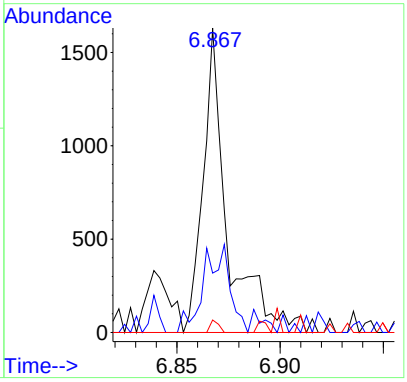


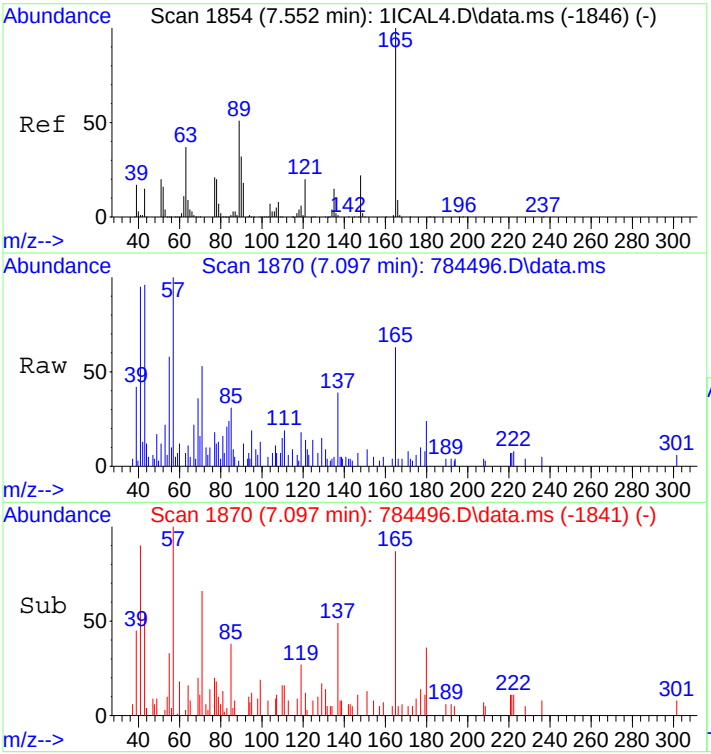


#46
2Nitroaniline
Concen: 0.61 ug/mL
RT: 6.867 min Scan# 1789
Delta R.T. -0.060 min
Lab File: 784496.D
Acq: 20 Oct 16 4:59 pm

Tgt Ion: 65 Resp: 1351

Ion	Ratio	Lower	Upper
65	100		
92	16.0	39.4	99.4#
138	4.1	83.7	143.7#

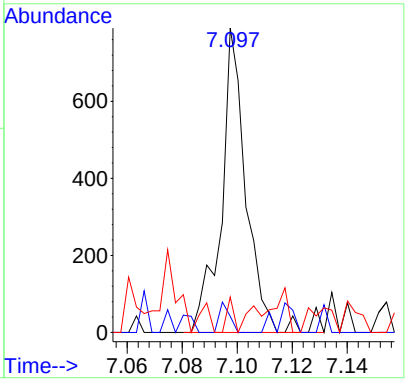


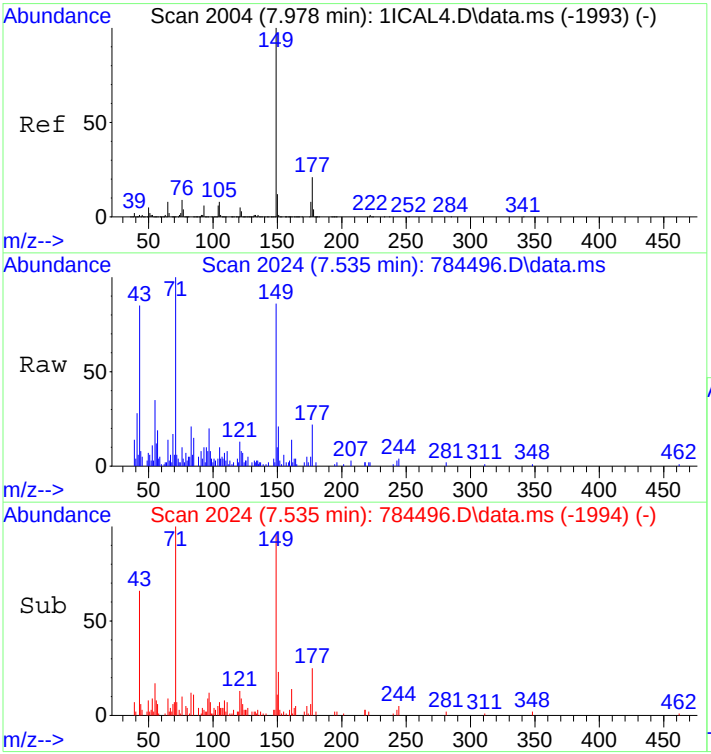


#49
26Dinitrotolu
Concen: 0.25 ug/mL
RT: 7.097 min Scan# 1870
Delta R.T. -0.017 min
Lab File: 784496.D
Acq: 20 Oct 16 4:59 pm

Tgt Ion:165 Resp: 499

Ion	Ratio	Lower	Upper
165	100		
89	0.0	22.5	82.5#
63	0.0	23.3	63.3#

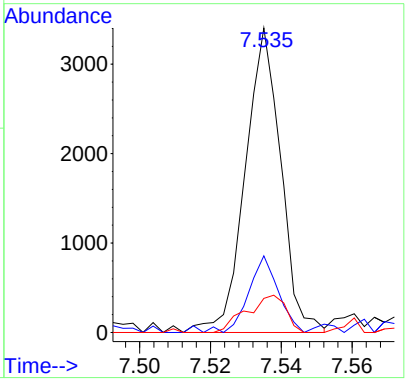


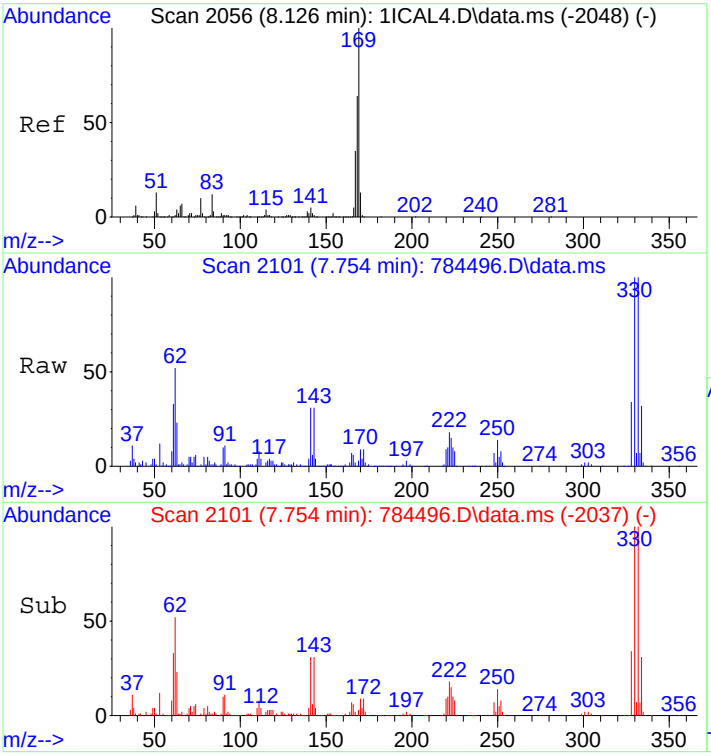


#60
Diethylphthal
Concen: 0.25 ug/mL
RT: 7.535 min Scan# 2024
Delta R.T. -0.014 min
Lab File: 784496.D
Acq: 20 Oct 16 4:59 pm

Tgt Ion:149 Resp: 2380

Ion	Ratio	Lower	Upper
149	100		
177	25.2	0.0	49.5
150	11.2	0.0	42.0

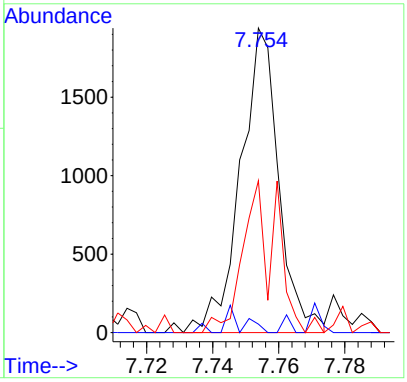


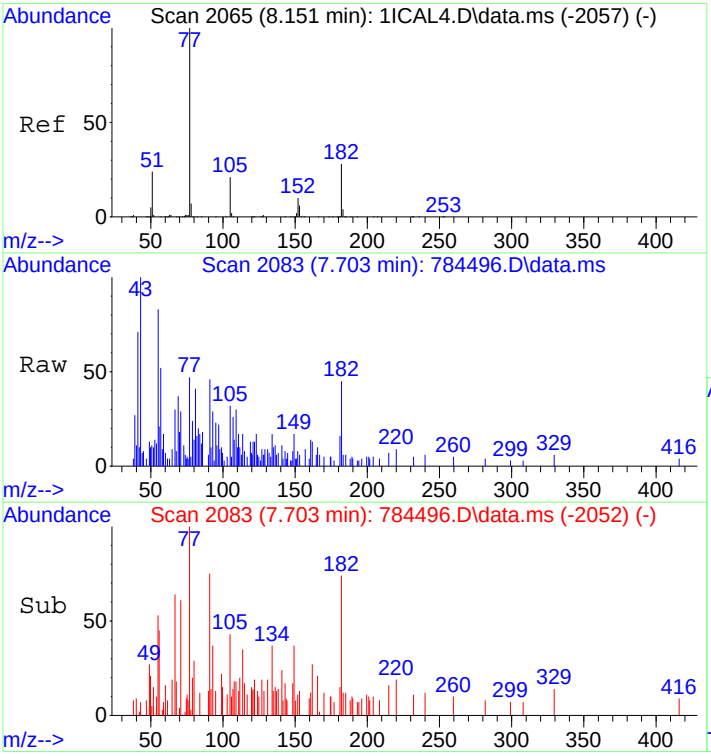


#65
Ntrsdiphlam&Diphlam
Concen: 0.24 ug/mL
RT: 7.754 min Scan# 2101
Delta R.T. 0.063 min
Lab File: 784496.D
Acq: 20 Oct 16 4:59 pm

Tgt Ion:169 Resp: 1558

Ion	Ratio	Lower	Upper
169	100		
168	2.8	35.5	95.5#
167	49.9	5.2	65.2

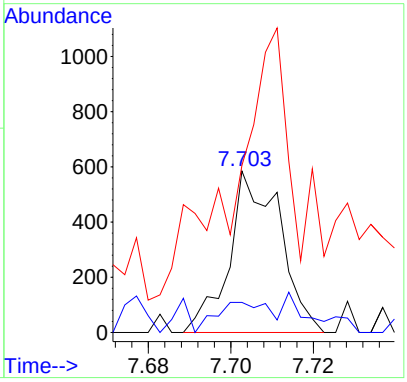


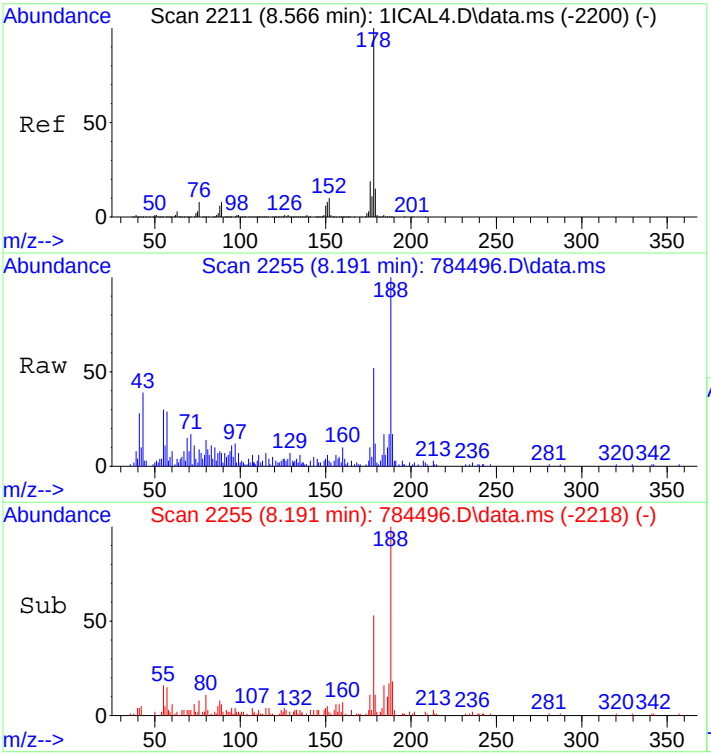


#66
Azobenz&12Diphlhyd
Concen: 0.24 ug/mL
RT: 7.703 min Scan# 2083
Delta R.T. -0.011 min
Lab File: 784496.D
Acq: 20 Oct 16 4:59 pm

Tgt Ion:182 Resp: 502

Ion	Ratio	Lower	Upper
182	100		
152	11.8	7.0	67.0
77	66.7	330.8	390.8#

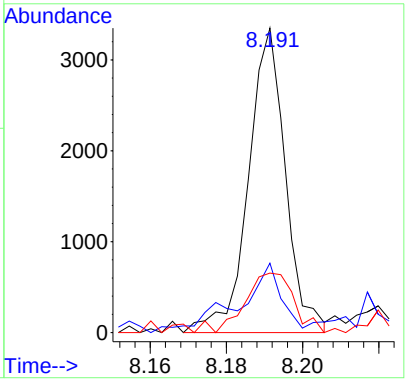


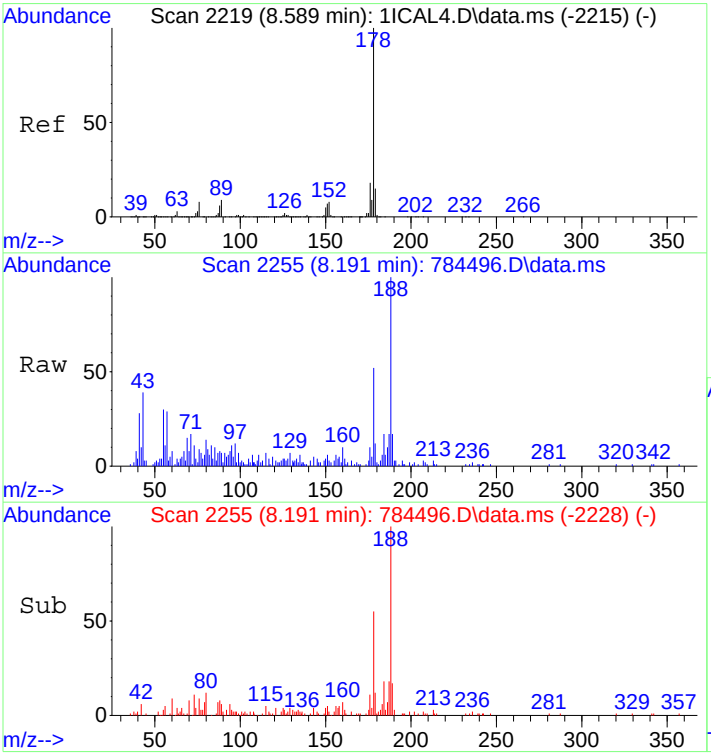


#70
Phenanthrene
Concen: 0.18 ug/mL
RT: 8.191 min Scan# 2255
Delta R.T. -0.008 min
Lab File: 784496.D
Acq: 20 Oct 16 4:59 pm

Tgt Ion:178 Resp: 2262

Ion	Ratio	Lower	Upper
178	100		
179	20.6	0.0	45.3
176	19.6	0.0	49.4

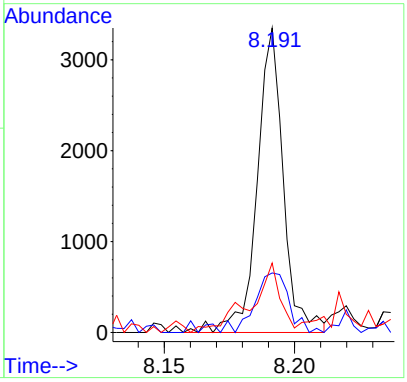


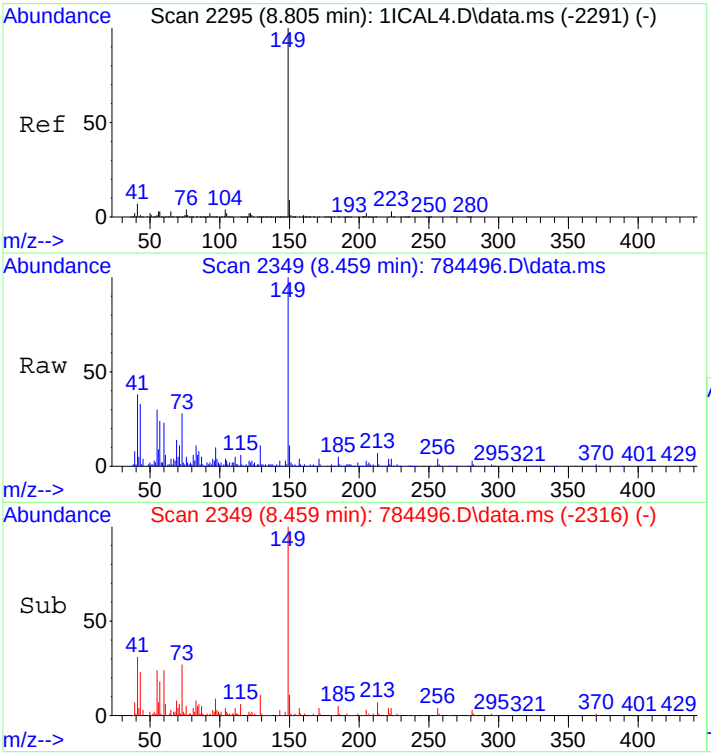


#71
Anthracene
Concen: 0.18 ug/mL
RT: 8.191 min Scan# 2255
Delta R.T. -0.037 min
Lab File: 784496.D
Acq: 20 Oct 16 4:59 pm

Tgt Ion:178 Resp: 2339

Ion	Ratio	Lower	Upper
178	100		
176	19.6	0.0	47.3
179	20.7	0.0	44.6

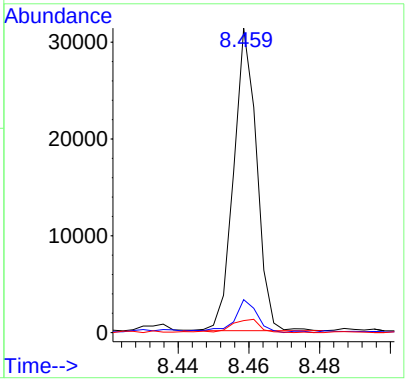


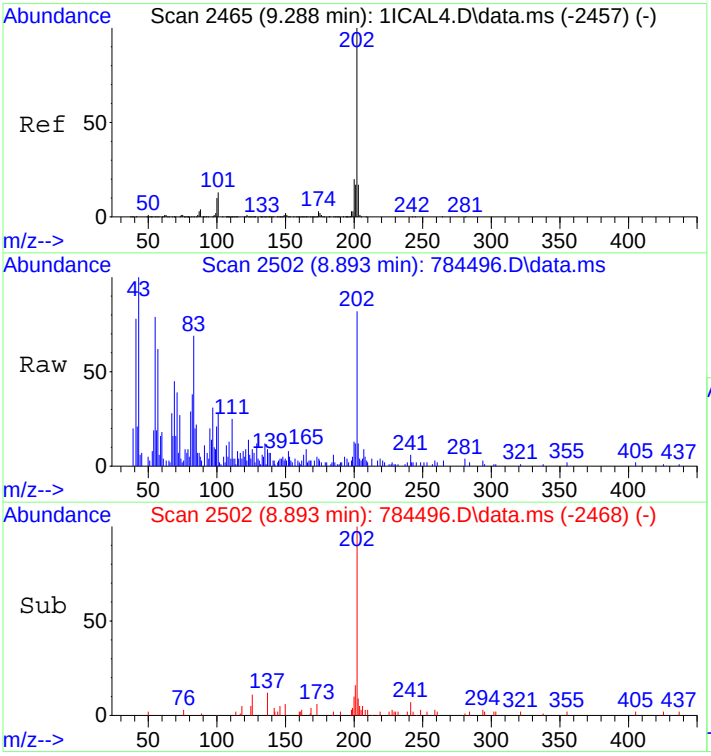


#73
Dinbtylphthal
Concen: 1.00 ug/mL
RT: 8.459 min Scan# 2349
Delta R.T. -0.006 min
Lab File: 784496.D
Acq: 20 Oct 16 4:59 pm

Tgt Ion:149 Resp: 14085

Ion	Ratio	Lower	Upper
149	100		
150	10.4	0.0	39.8
104	3.9	0.0	34.5

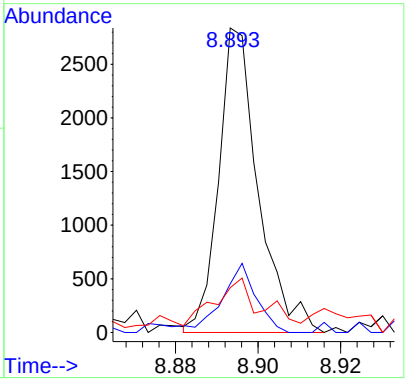


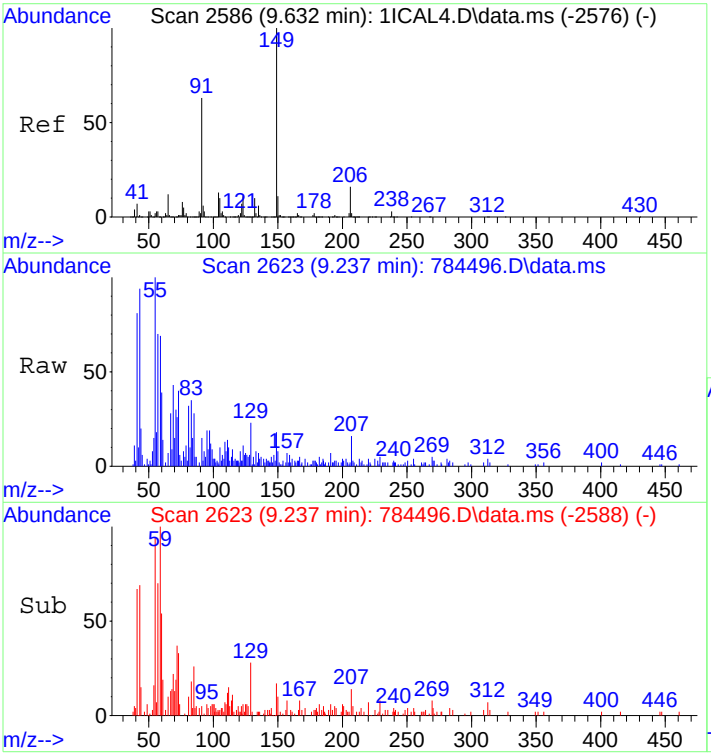


#77
Pyrene
Concen: 0.14 ug/mL
RT: 8.893 min Scan# 2502
Delta R.T. -0.003 min
Lab File: 784496.D
Acq: 20 Oct 16 4:59 pm

Tgt Ion:202 Resp: 1890

Ion	Ratio	Lower	Upper
202	100		
200	13.7	0.0	49.6
203	12.5	0.0	47.1

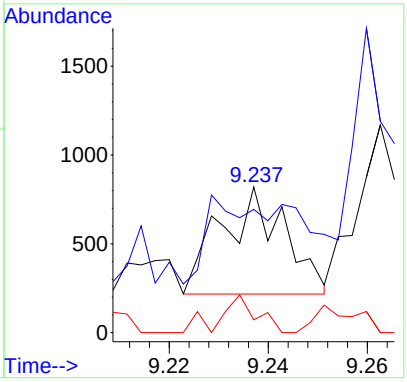


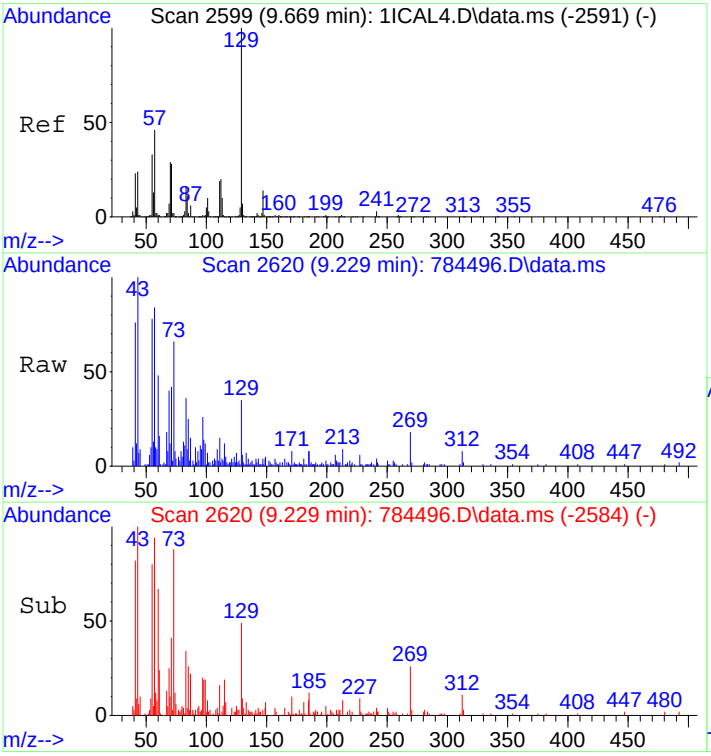


#79
Btylbzylphth
Concen: 0.09 ug/mL
RT: 9.237 min Scan# 2623
Delta R.T. 0.000 min
Lab File: 784496.D
Acq: 20 Oct 16 4:59 pm

Tgt Ion:149 Resp: 532

Ion	Ratio	Lower	Upper
149	100		
91	69.8	33.5	93.5
206	11.9	0.0	46.3

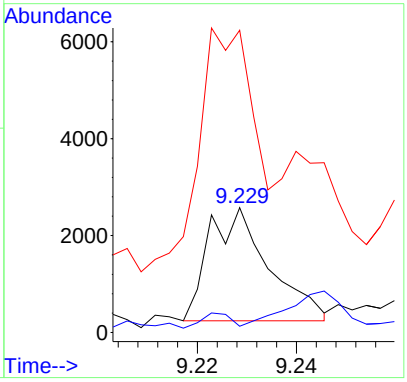


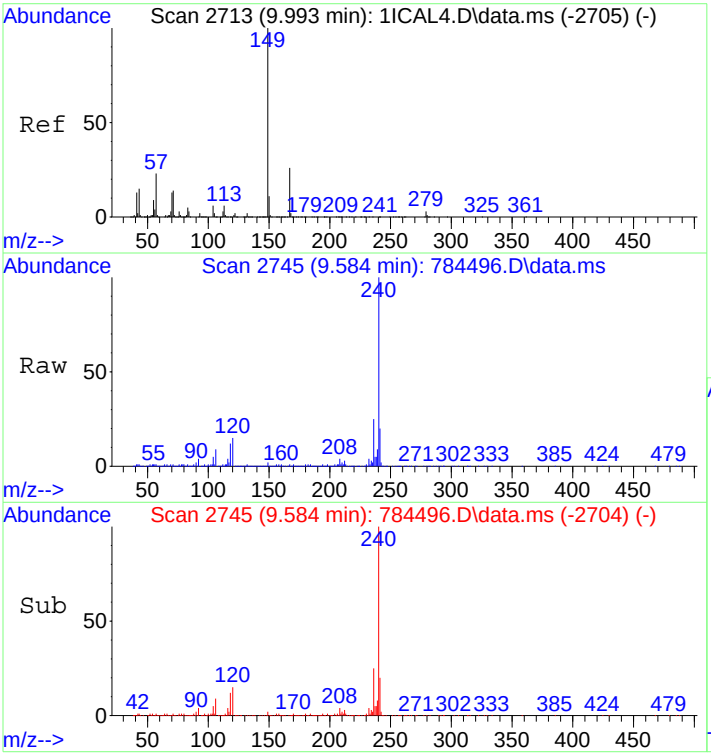


#80
bis2Ethlhxlad
Concen: 0.41 ug/mL
RT: 9.229 min Scan# 2620
Delta R.T. -0.048 min
Lab File: 784496.D
Acq: 20 Oct 16 4:59 pm

Tgt Ion:129 Resp: 1967

Ion	Ratio	Lower	Upper
129	100		
112	0.0	15.2	22.8#
57	199.7	39.4	59.0#

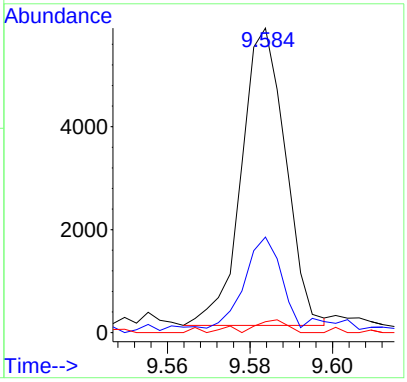


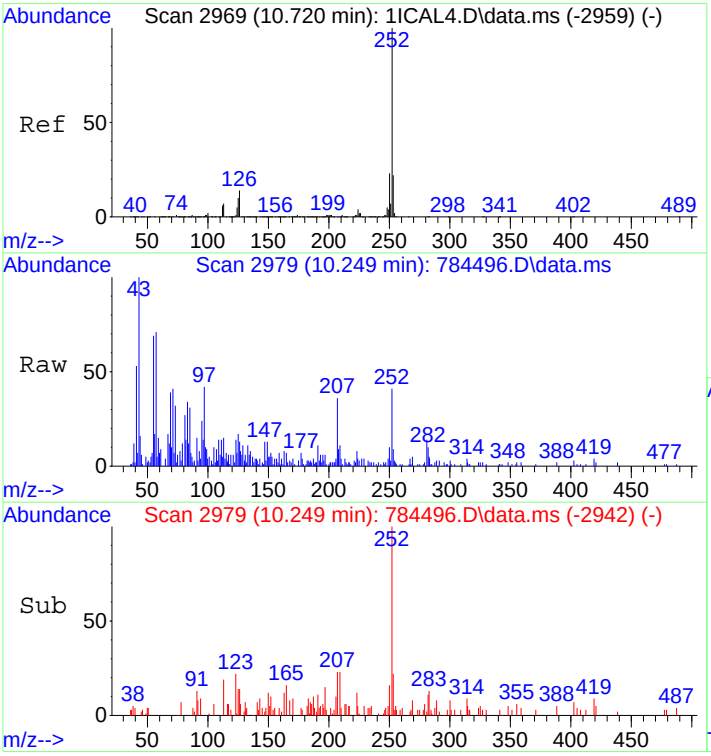


#84
bis2Ethlhxlph
Concen: 0.50 ug/mL
RT: 9.584 min Scan# 2745
Delta R.T. 0.003 min
Lab File: 784496.D
Acq: 20 Oct 16 4:59 pm

Tgt Ion:149 Resp: 4282

Ion	Ratio	Lower	Upper
149	100		
167	30.3	0.0	54.6
279	3.7	0.0	33.1

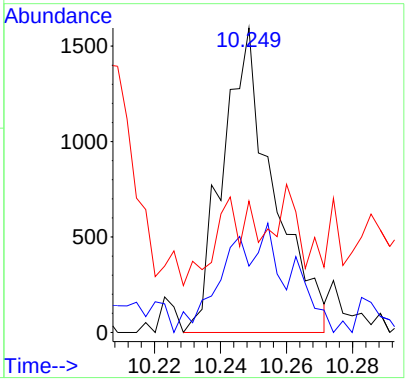


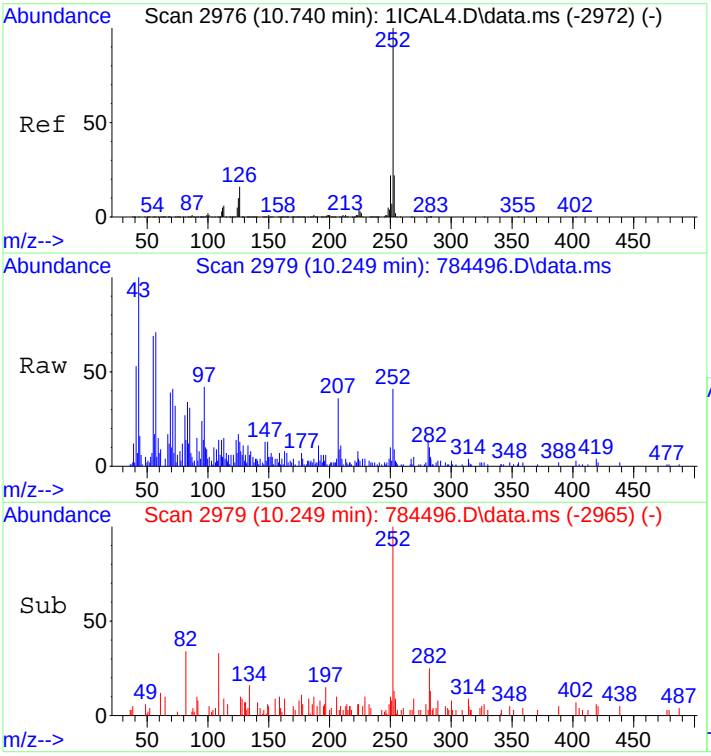


#87
B[b]fluoranth
Concen: 0.15 ug/mL
RT: 10.249 min Scan# 2979
Delta R.T. 0.006 min
Lab File: 784496.D
Acq: 20 Oct 16 4:59 pm

Tgt Ion:252 Resp: 1708

Ion	Ratio	Lower	Upper
252	100		
253	15.0	0.0	50.7
125	27.8	0.0	42.5

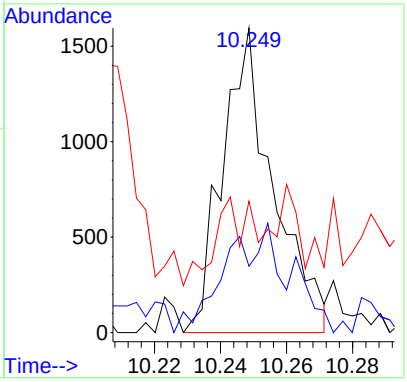




#88
B[k]fluoranth
Concen: 0.16 ug/mL
RT: 10.249 min Scan# 2979
Delta R.T. -0.011 min
Lab File: 784496.D
Acq: 20 Oct 16 4:59 pm

Tgt Ion:252 Resp: 1708

Ion	Ratio	Lower	Upper
252	100		
253	15.0	0.0	52.6
125	27.8	0.0	41.7



SEMI - VOLATILE ORGANIC ANALYSIS
INITIAL CALIBRATION
DOCUMENTS

Injection Log Summary Report

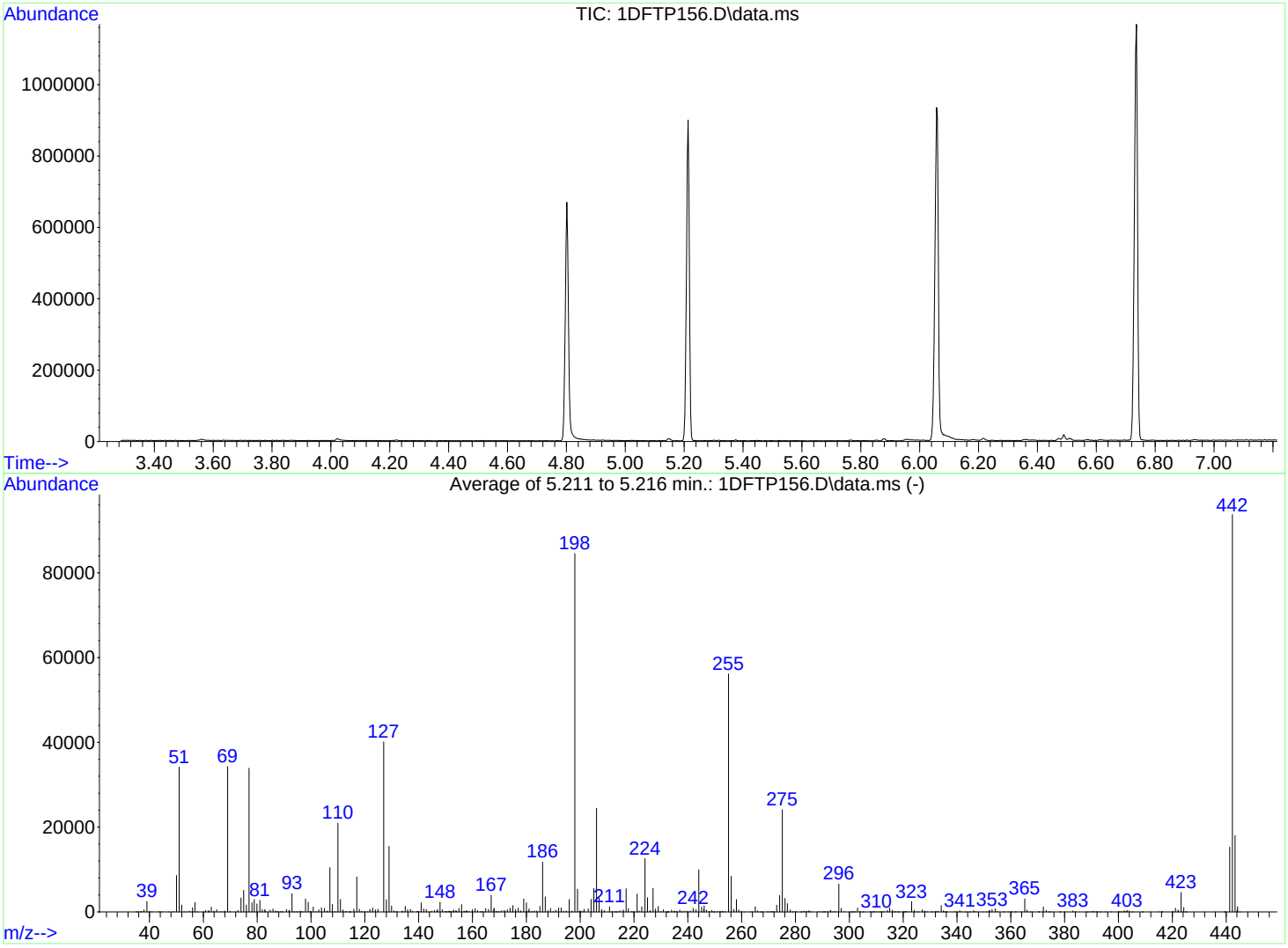
Method : X:\METHODS\1S090816.M (RTE Integrator)
Title : Method for 8270 analysis
Start (Tune) File ID : X:\DATA\1S090816\1DFTP156.D
Injection Date : 8 Sep 2016 Log Time Period (hrs) : ALL
Injection Time : 10:28 Total files within period : 19
Sample Directory : X:\DATA\1S090816\

Injection Log Summary Table

File ID	Multiplier I	S	T	Sample Name / Misc Info	Date	Time
1IB03	1.00	1.00	1.00	InstrumentBlank 500uL+5ul IS S3516B	8 Sep 2016	14:45
1ICAL7	1.00	1.00	1.00	ICAL 50ug/ml SVMS7214 500uL+5ul IS S3516B	8 Sep 2016	15:05
1ICAL6	1.00	1.00	1.00	ICAL40ug/ml SVMS7213 500uL+5ul IS S3516B	8 Sep 2016	15:25
1ICAL5	1.00	1.00	1.00	ICAL30ug/ml SVMS7212 500uL+5ul IS S3516B	8 Sep 2016	15:45
1ICAL4	1.00	1.00	1.00	ICAL20ug/ml SVMS7211 500uL+5ul IS S3516B	8 Sep 2016	16:19
1ICAL3	1.00	1.00	1.00	ICAL10ug/ml SVMS7210 500uL+5ul IS S3516B	8 Sep 2016	16:38
1ICAL2	1.00	1.00	1.00	ICAL5ug/ml SVMS7209 500uL+5ul IS S3516B	8 Sep 2016	16:58
1ICAL1	1.00	1.00	1.00	ICAL1ug/ml SVMS7208 500uL+5ul IS S3516B	8 Sep 2016	17:18
1ICV1	1.00	1.00	1.00	ICV 20ug/ml SVMS7215 500uL+5ul IS S3516B	8 Sep 2016	17:38
1ICV2	1.00	1.00	1.00	ICV 40ug/ml SVMS7216 500uL+5ul IS S3516B	8 Sep 2016	17:58

Data File : C:\INSTARCH\Data\1S090816\1DFTP156.D Vial: 1
Acq On : 8 Sep 2016 10:28 Operator: RPN
Sample : DFTPP TUNE SVMS7090 Inst : SVMS1
Misc : SVMS1,25 ug DFTPP Multiplr: 1.00
Integrator: RTE

Method : C:\INSTARCH\Methods\1DFTPP.M
Title : DFTPP TUNE Method
Last Update : Tue Aug 30 17:01:21 2016



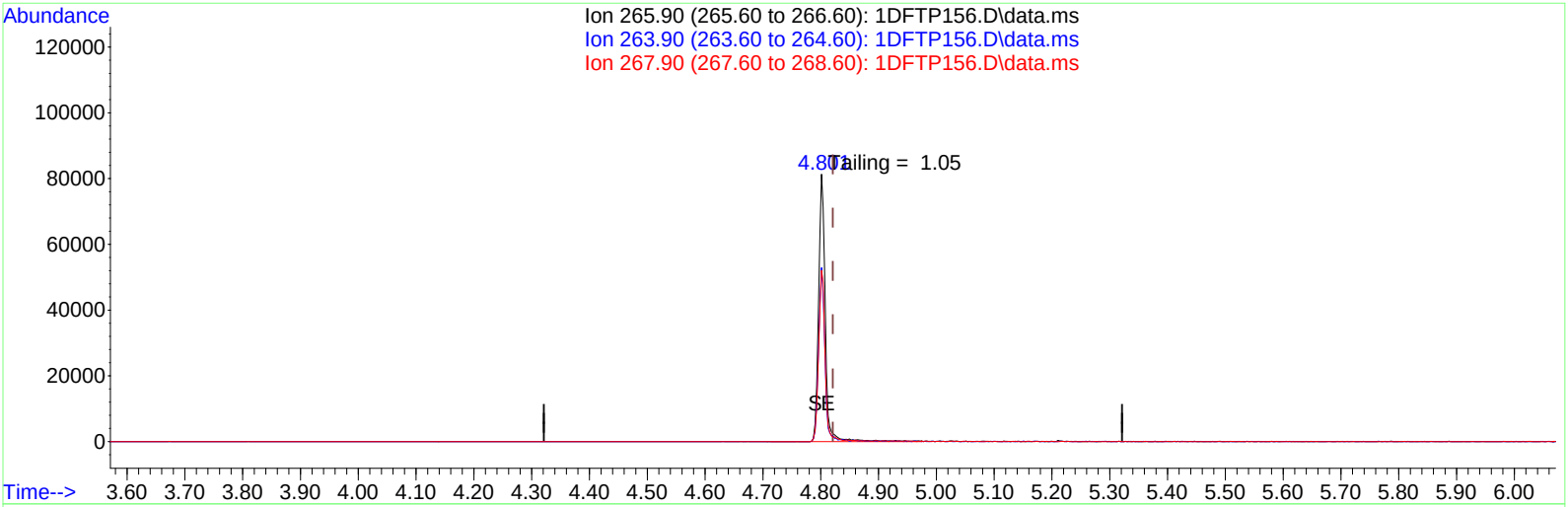
AutoFind: Scans 678, 679, 680; Background Corrected with Scan 670

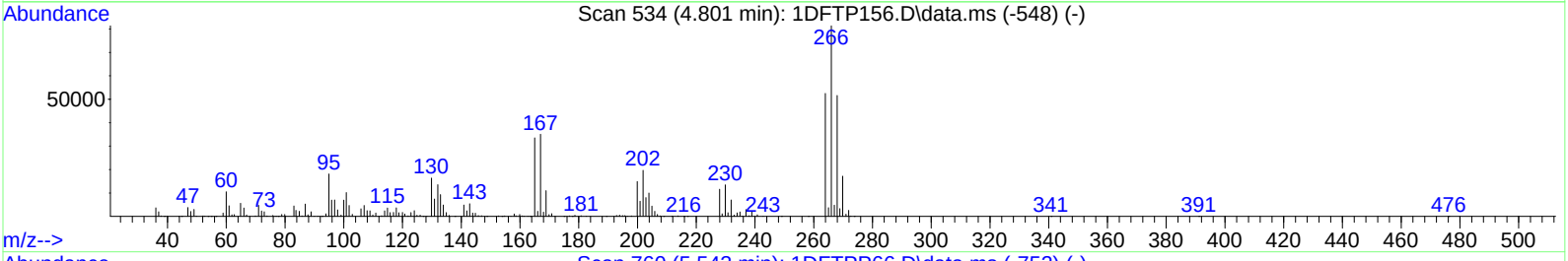
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	442	10	80	36.4	34157	PASS
68	69	0.00	2	0.7	227	PASS
70	69	0.00	2	0.5	172	PASS
127	442	10	80	42.8	40096	PASS
197	198	0.00	2	0.3	217	PASS
198	442	50	100	90.2	84546	PASS
199	198	5	9	6.3	5355	PASS
275	442	10	60	25.7	24085	PASS
365	198	1	100	3.7	3095	PASS
441	442	0.01	24	16.3	15279	PASS
442	442	50	100	100.0	93744	PASS
443	442	15	24	19.2	18026	PASS

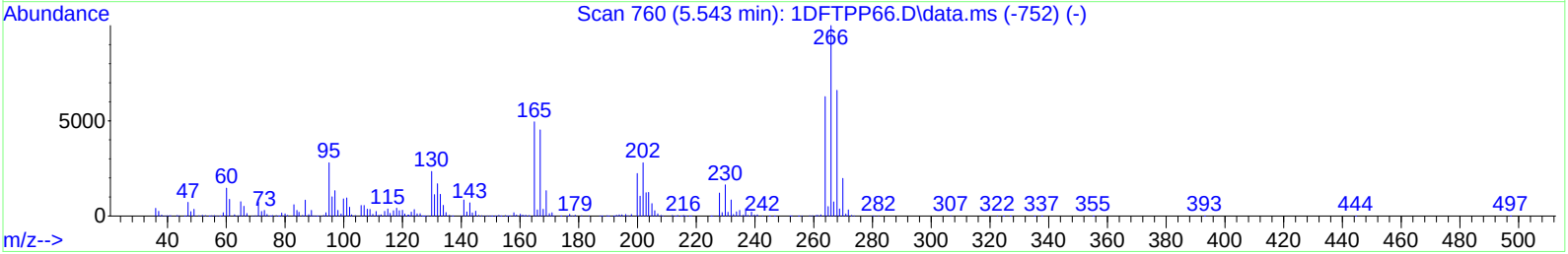
Quantitation Report (Qedit)

Data File : C:\INSTARCH\Data\1S090816\1DFTP156.D Vial: 1
Acq On : 8 Sep 2016 10:28 Operator: RPN
Sample : DFTPP TUNE SVMS7090 Inst : SVMS1
Misc : SVMS1,25 ug DFTPP Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 14 11:57:18 2016

Quant Method : C:\INSTARCH\Methods\1DFTPP.M
Quant Title : DFTPP TUNE Method
QLast Update : Tue Aug 30 17:01:21 2016
Response via : Initial Calibration
DataAcq Meth:1DFTPP.M







TIC: 1DFTP156.D\data.ms

(1) Pentachlorophenol

4.801min (-0.020) 4.27 ng

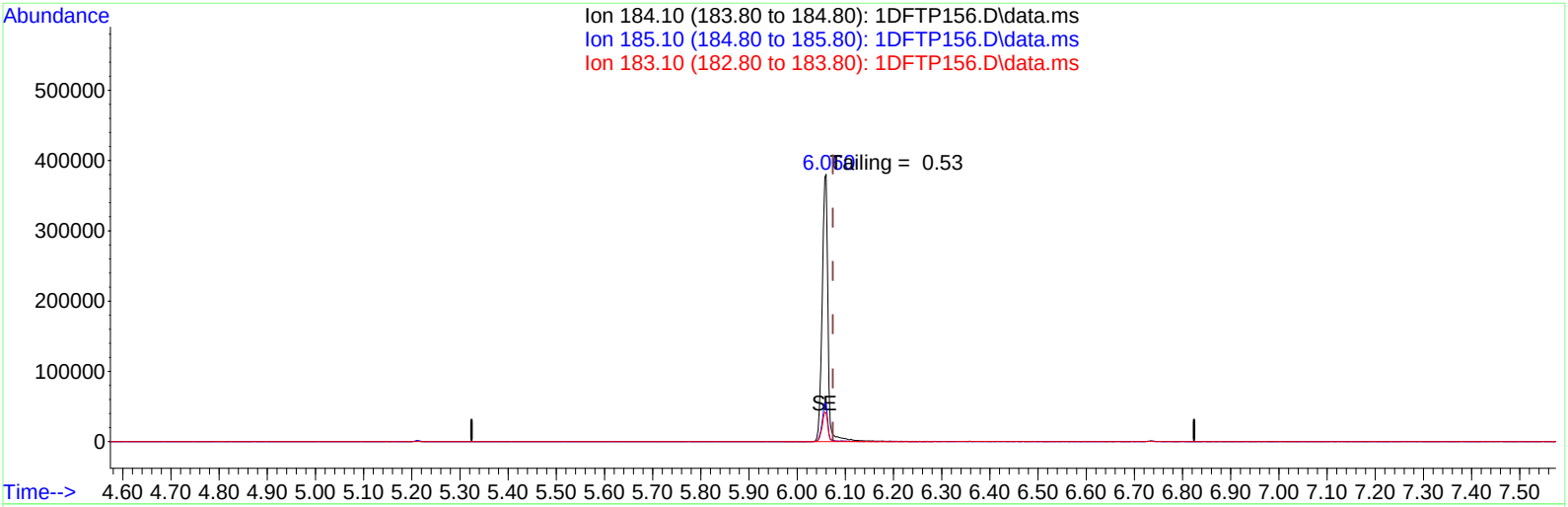
response 63439

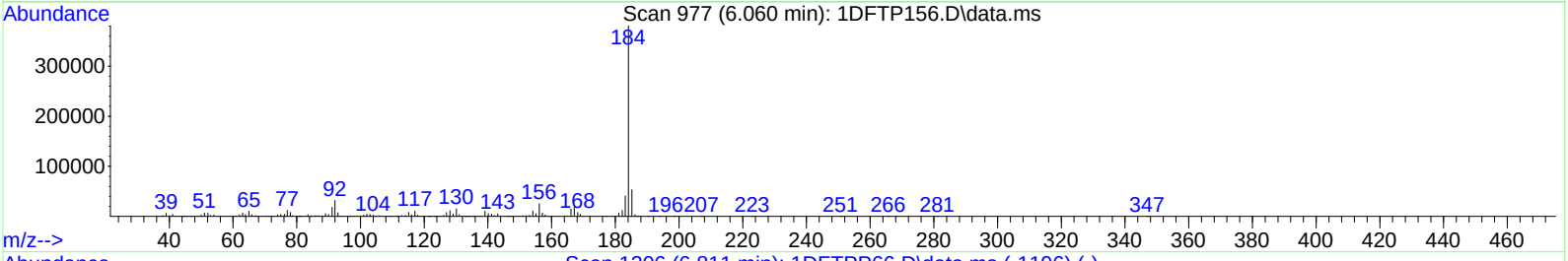
Ion	Exp%	Act%
265.90	100	100
263.90	66.20	65.01
267.90	60.90	63.95
0.00	0.00	0.00

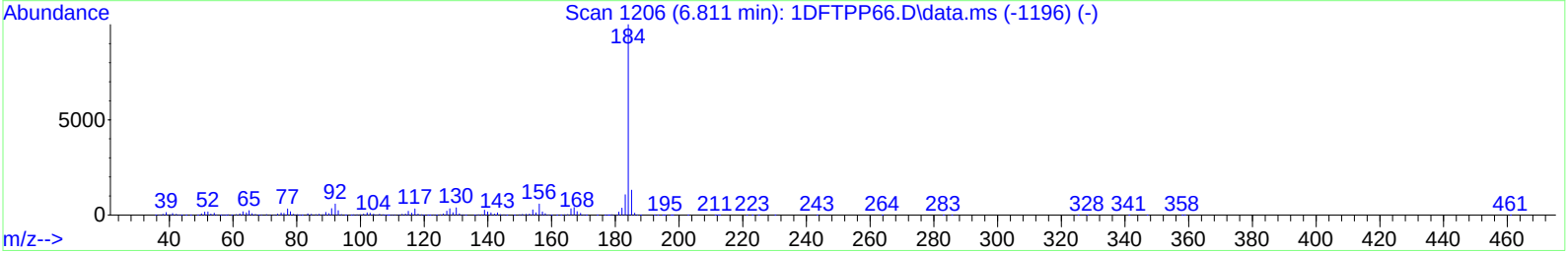
Quantitation Report (Qedit)

Data File : C:\INSTARCH\Data\1S090816\1DFTP156.D Vial: 1
Acq On : 8 Sep 2016 10:28 Operator: RPN
Sample : DFTPP TUNE SVMS7090 Inst : SVMS1
Misc : SVMS1,25 ug DFTPP Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 14 11:57:18 2016

Quant Method : C:\INSTARCH\Methods\1DFTPP.M
Quant Title : DFTPP TUNE Method
QLast Update : Tue Aug 30 17:01:21 2016
Response via : Initial Calibration
DataAcq Meth:1DFTPP.M







TIC: 1DFTP156.D\data.ms

(3) Benzidine

6.060min (-0.014) 3.67 ng

response 321536

Ion	Exp%	Act%
184.10	100	100
185.10	13.80	14.19
183.10	12.20	11.08
0.00	0.00	0.00

Data File	: 1DFTP156.D	Vial Number	: 1
Data File Path	: C:\INSTARCH\Data\1S090816\	Operator	: RPN
Date Acquired	: 9/8/2016 10:28	Instrument Name:	SVMS1
Sample Name	: DFTPP TUNE SVMS7090	Sample Multiplier:	1
Misc Info	: SVMS1,25 ug DFTPP		

Quant Method	: C:\INSTARCH\Methods\1DFTPP.M
Calibration Title	: DFTPP TUNE Method
Last Update	: Tue Aug 30 17:01:21 2016

Compound	R.T.	QIon	Response
1) Pentachlorophenol	4.80	266	63439
2) DFTPP	5.21	198	65617
3) Benzidine	6.06	184	321536
4) DDE	6.21	246	588
5) DDD	6.49	235	3130
6) DDT	6.74	235	176127

DDT %Degradation

$$\frac{DDD + DDE}{DDD + DDE + DDT} \times 100\% = 2.07\ \%$$

Response Factor Report SVMS1

Method Path : C:\INSTARCH\METHODS\
Method File : 1S090816.M
Title : Method for 8270 analysis
Last Update : Thu Sep 08 17:48:30 2016
Response Via : Initial Calibration

Calibration Files
1 =1ICAL1.D 5 =1ICAL2.D 10 =1ICAL3.D 20 =1ICAL4.D 30 =1ICAL5.D 40 =1ICAL6.D 50 =1ICAL7.D

		Compound	1	5	10	20	30	40	50	Avg	%RSD
1)	I	14Diclbenzd4	----------ISTD----------								
2)	CT	Ntrsdimeth	0.580	0.658	0.734	0.667	0.754	0.719	0.787	0.700	9.97
3)	CT	Pyridine	0.890	1.160	1.374	1.195	1.347	1.317	1.406	1.241	14.49
4)	S	SURR2Flphenol	0.315	0.419	0.475	0.429	0.479	0.462	0.498	0.439	13.96
5)	CT	Aniline	1.599	1.710	1.890	1.661	1.996	1.963	2.047	1.838	9.72
6)	CPT	bis2Clethletr	0.983	1.126	1.193	1.094	1.200	1.173	1.186	1.137	6.84
7)	S	SURRPhenol-d5	0.484	0.560	0.579	0.515	0.591	0.578	0.613	0.560	8.09
8)	CPT	Phenol	1.285	1.638	1.731	1.505	1.772	1.714	1.823	1.638	11.40
9)	CPT	2-Cl-phenol	1.274	1.315	1.413	1.311	1.410	1.389	1.458	1.367	4.92
10)	CT	13Diclbenz	1.498	1.577	1.588	1.454	1.610	1.585	1.648	1.566	4.26
11)	CT	14Diclbenz	1.622	1.612	1.680	1.477	1.647	1.594	1.638	1.610	4.03
12)	CT	12Diclbenz	1.617	1.549	1.574	1.388	1.530	1.503	1.586	1.535	4.89
13)	CT	Benzyl alcoho	0.301	0.667	0.736	0.723	0.818	0.808	0.857	0.701	26.81#
14)	CPT	bis2clispreth	1.853	1.886	1.784	1.570	1.809	1.752	1.817	1.782	5.78
15)	CPT	2Methylphenol	0.980	1.107	1.063	0.910	1.049	1.059	1.068	1.034	6.41
16)	CT	Ntrspyrrol	0.411	0.607	0.576	0.526	0.619	0.601	0.652	0.570	14.09
17)	CPT	Acetophenone	1.631	1.902	1.807	1.569	1.832	1.775	1.924	1.777	7.47
18)	CPT	Hexaclethane	0.551	0.650	0.631	0.579	0.634	0.616	0.657	0.617	6.27
19)	CPT	N-Ntrsdinprop	0.859	0.991	0.939	0.805	0.947	0.912	1.008	0.923	7.76
20)	CPT	3&4Methylphenol	1.176	1.426	1.403	1.248	1.415	1.366	1.472	1.358	7.85
21)	I	Naphthalened8	----------ISTD----------								
22)	S	SURRNitrbenzened5	0.059	0.059	0.067	0.060	0.067	0.066	0.064	0.063	5.92
23)	CPT	Nitrobenzene	0.306	0.315	0.358	0.317	0.355	0.351	0.343	0.335	6.51
24)	CPT	Isophorone	0.588	0.574	0.614	0.551	0.622	0.606	0.581	0.591	4.23
25)	CPT	2-Nitrophenol	0.128	0.178	0.197	0.174	0.199	0.197	0.183	0.179	13.79
26)	CPT	24Dimthpheno	0.233	0.235	0.271	0.258	0.291	0.282	0.267	0.263	8.37
27)	CPT	bis2clethoxym	0.361	0.365	0.382	0.362	0.407	0.386	0.376	0.377	4.30
28)	CPT	24Diclphenol	0.261	0.278	0.308	0.290	0.321	0.314	0.298	0.296	7.13
29)	CT	124Triclbenz	0.361	0.346	0.369	0.343	0.362	0.356	0.367	0.358	2.84
30)	CT	Benzoic acid		0.127	0.163	0.186	0.207	0.207	0.199	0.181	17.40
31)	CPT	Naphthalene	1.073	1.050	1.100	1.008	1.097	1.049	1.073	1.064	3.01
32)	CPT	4-Cl-aniline	0.365	0.382	0.421	0.383	0.457	0.427	0.436	0.410	8.23
33)	CT	26Diclphenol	0.247	0.273	0.285	0.262	0.290	0.281	0.281	0.274	5.43
34)	CT	Hexaclprop	0.249	0.250	0.272	0.255	0.285	0.270	0.268	0.264	5.00
35)	CPT	Hexaclbutdien	0.236	0.234	0.244	0.220	0.245	0.238	0.231	0.235	3.59
36)	CPT	4Cl3methylphe	0.243	0.275	0.310	0.291	0.327	0.318	0.304	0.295	9.79
37)	CPT	2Methylnaphth	0.692	0.648	0.749	0.668	0.759	0.737	0.692	0.707	5.99
38)	CT	1Methylnaphth	0.625	0.591	0.628	0.558	0.650	0.622	0.587	0.609	5.16
39)	I	Acenaphthened10	----------ISTD----------								
40)	CPT	Hxclcycpentdi	0.235	0.358	0.383	0.383	0.435	0.426	0.405	0.375	17.96
41)	CPT	1245Tetrclbenz	0.589	0.675	0.700	0.608	0.684	0.680	0.631	0.652	6.54
42)	CPT	246Triclpheno	0.322	0.377	0.400	0.397	0.429	0.425	0.400	0.393	9.13

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43)	CPT	245Triclpheno	0.383	0.455	0.461	0.436	0.469	0.472	0.449	0.446	6.84
44)	S	SURR2Flbiphenyl	0.294	0.283	0.278	0.257	0.277	0.282	0.266	0.277	4.36
45)	CPT	2Clnaphthalen	1.253	1.246	1.218	1.142	1.246	1.241	1.197	1.220	3.26
46)	CPT	2Nitroaniline	0.284	0.354	0.347	0.338	0.357	0.369	0.343	0.342	7.99
47)	CPT	Acnaphthylene	2.149	2.031	2.147	1.966	2.153	2.057	2.038	2.077	3.53
48)	CPT	Dimethylphtha	1.413	1.427	1.497	1.349	1.439	1.420	1.406	1.422	3.11
49)	CPT	26Dinitrotolu	0.260	0.307	0.327	0.298	0.328	0.316	0.318	0.308	7.73
50)	CPT	Acenaphthene	1.273	1.145	1.203	1.096	1.246	1.174	1.183	1.189	5.01
51)	CPT	3Nitroaniline	0.273	0.303	0.317	0.303	0.333	0.328	0.327	0.312	6.72
52)	CPT	24Dinitphenol		0.112	0.172	0.185	0.217	0.213	0.214	0.185	21.88#
53)	CPT	Dibenzofuran	1.898	1.875	1.838	1.703	1.861	1.807	1.781	1.824	3.64
54)	CPT	24Dinitrotolu	0.355	0.438	0.444	0.407	0.446	0.433	0.424	0.421	7.58
55)	CPT	4-Nitrophenol		0.243	0.273	0.260	0.300	0.288	0.283	0.274	7.40
56)	CT	2,3,5,6-Tetrac...	0.299	0.356	0.379	0.354	0.396	0.373	0.389	0.364	8.94
57)	CPT	2,3,4,6-Tetrac...	0.396	0.403	0.419	0.376	0.426	0.411	0.407	0.405	4.01
58)	CPT	Fluorene	1.475	1.473	1.492	1.351	1.506	1.410	1.430	1.448	3.76
59)	CPT	4Clphlphlethr	0.707	0.749	0.752	0.681	0.763	0.694	0.706	0.722	4.45
60)	CPT	Diethylphthal	1.517	1.469	1.484	1.366	1.531	1.426	1.430	1.460	3.95
61)	CPT	4Nitroaniline	0.217	0.314	0.317	0.293	0.338	0.327	0.328	0.305	13.58
62)	S	SURR246Tribrphenl	0.081	0.090	0.096	0.085	0.095	0.097	0.094	0.091	6.72
63)	I	Phenanthrd10	----------ISTD----------								
64)	CPT	46Dinit2mylph		0.113	0.140	0.140	0.150	0.144	0.161	0.141	11.24
65)	CPT	Ntrsdiphlam&Di...	0.564	0.571	0.590	0.549	0.566	0.549	0.579	0.567	2.67
66)	CT	Azobenz&12Diph...	0.161	0.187	0.186	0.179	0.183	0.182	0.189	0.181	5.10
67)	CPT	4Brphlphlethr	0.258	0.242	0.250	0.248	0.243	0.253	0.255	0.250	2.37
68)	CPT	Hexaclbenzene	0.267	0.261	0.286	0.265	0.268	0.274	0.285	0.272	3.55
69)	CPT	Pentaclphenol		0.132	0.144	0.149	0.169	0.169	0.171	0.156	10.58
70)	CPT	Phenanthrene	1.113	1.082	1.115	1.024	1.121	1.087	1.104	1.092	3.07
71)	CPT	Anthracene	1.142	1.111	1.160	1.058	1.141	1.110	1.112	1.119	2.97
72)	CPT	Carbazole	0.984	0.913	0.947	0.952	0.963	0.929	0.946	0.948	2.39
73)	CPT	Dinbtylphthal	1.363	1.200	1.247	1.186	1.184	1.166	1.139	1.212	6.11
74)	CPT	Fluoranthene	1.173	1.160	1.216	1.196	1.188	1.137	1.188	1.180	2.18
75)	I	Chrysene-d12	----------ISTD----------								
76)	CT	Benzidine	0.239	0.240	0.288	0.328	0.381	0.369	0.335	0.312	18.47
77)	CPT	Pyrene	1.237	1.195	1.236	1.186	1.298	1.282	1.234	1.238	3.32
78)	S	SURRTerphenyl-d14	0.172	0.161	0.158	0.150	0.165	0.163	0.153	0.160	4.60
79)	CPT	Btylbzylphth	0.543	0.534	0.541	0.514	0.551	0.561	0.564	0.544	3.14
80)	TM	bis2Ethlhxlad	0.433	0.435	0.423	0.420	0.460	0.452	0.453	0.440	3.59
81)	CPT	33Diclbnzidin	0.446	0.388	0.366	0.325	0.375	0.383	0.395	0.383	9.38
82)	CPT	B[a]anthracen	1.318	1.215	1.250	1.156	1.244	1.226	1.240	1.236	3.90
83)	CPT	Chrysene	1.226	1.064	1.118	1.075	1.152	1.117	1.163	1.131	4.89
84)	CPT	bis2Ethlhxlph	0.824	0.792	0.801	0.750	0.818	0.789	0.806	0.797	3.06
85)	CPT	Dinoctylphthl	1.375	1.310	1.372	1.288	1.465	1.423	1.432	1.381	4.70
86)	I	Perylene-d12	----------ISTD----------								
87)	CPT	B[b]fluoranth	1.243	1.269	1.211	1.195	1.261	1.249	1.250	1.240	2.17
88)	CPT	B[k]fluoranth	1.179	1.100	1.219	1.071	1.245	1.154	1.183	1.164	5.32
89)	CPT	Benz[a]pyrene	1.202	1.186	1.198	1.143	1.237	1.196	1.207	1.196	2.36
90)	CPT	Indeno-pyrene	1.521	1.372	1.410	1.309	1.475	1.398	1.454	1.420	4.95
91)	CPT	Dib[ah]anthr	1.248	1.133	1.168	1.083	1.222	1.155	1.217	1.175	4.91
92)	CPT	B[ghi]perylen	1.241	1.141	1.183	1.124	1.204	1.158	1.210	1.180	3.50

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Method Path : C:\INSTARCH\METHODS\
Method File : 1S090816.M
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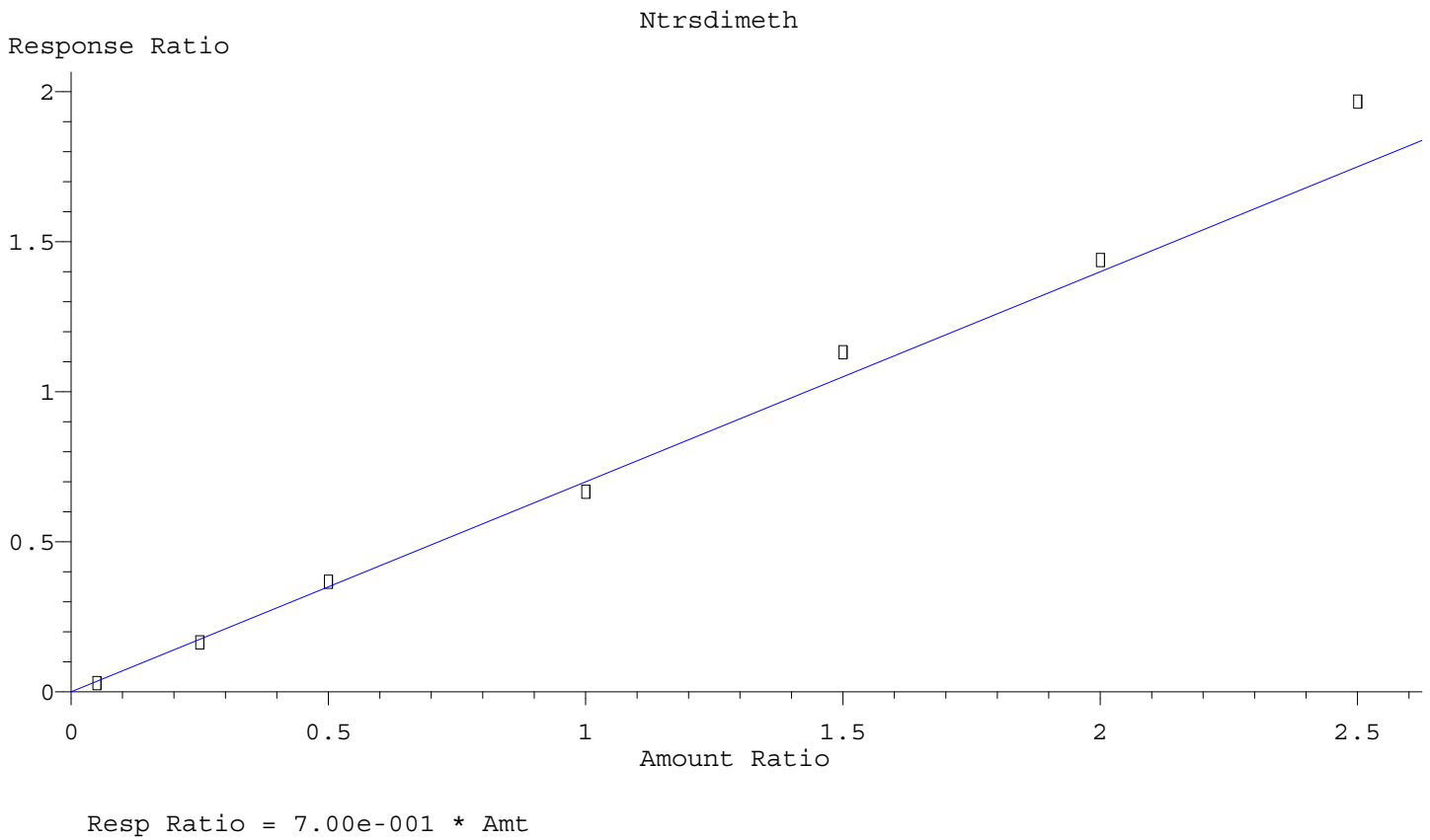
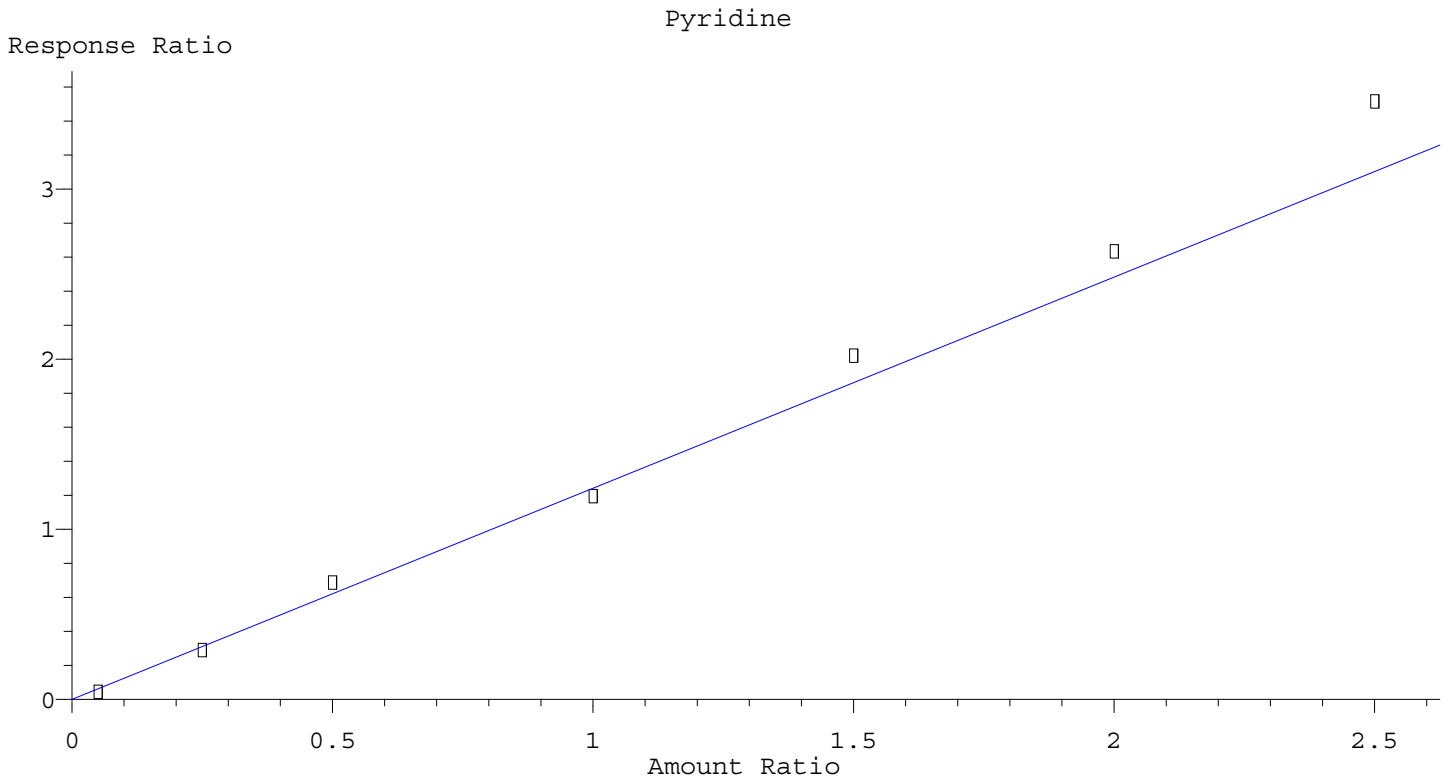


Resp Ratio = 7.00e-001 * Amt
RF Rel Std Dev = 10.0% Curve Fit: Avg RF



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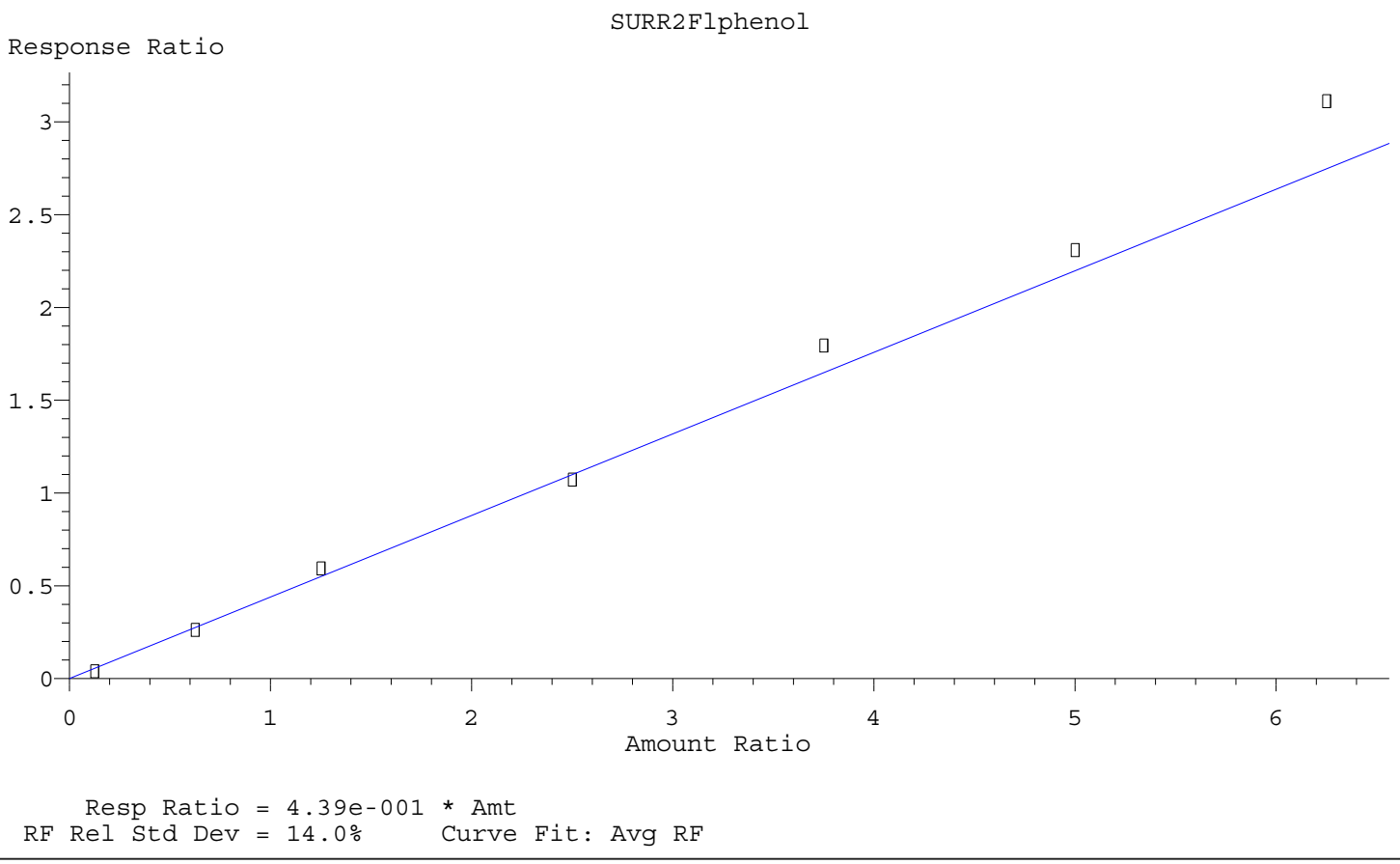

Resp Ratio = 4.39e-001 * Amt
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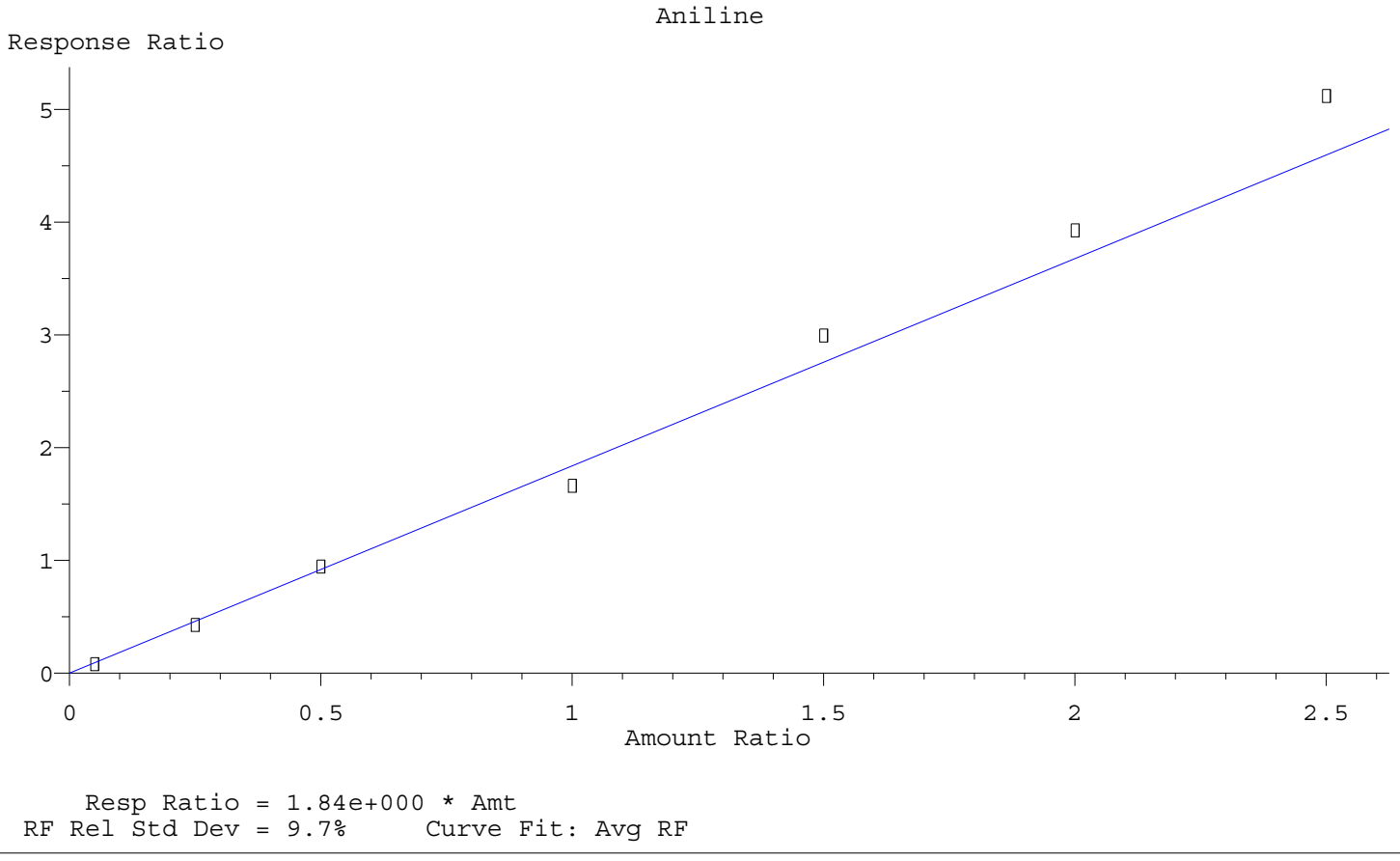

Resp Ratio = 1.84e+000 * Amt
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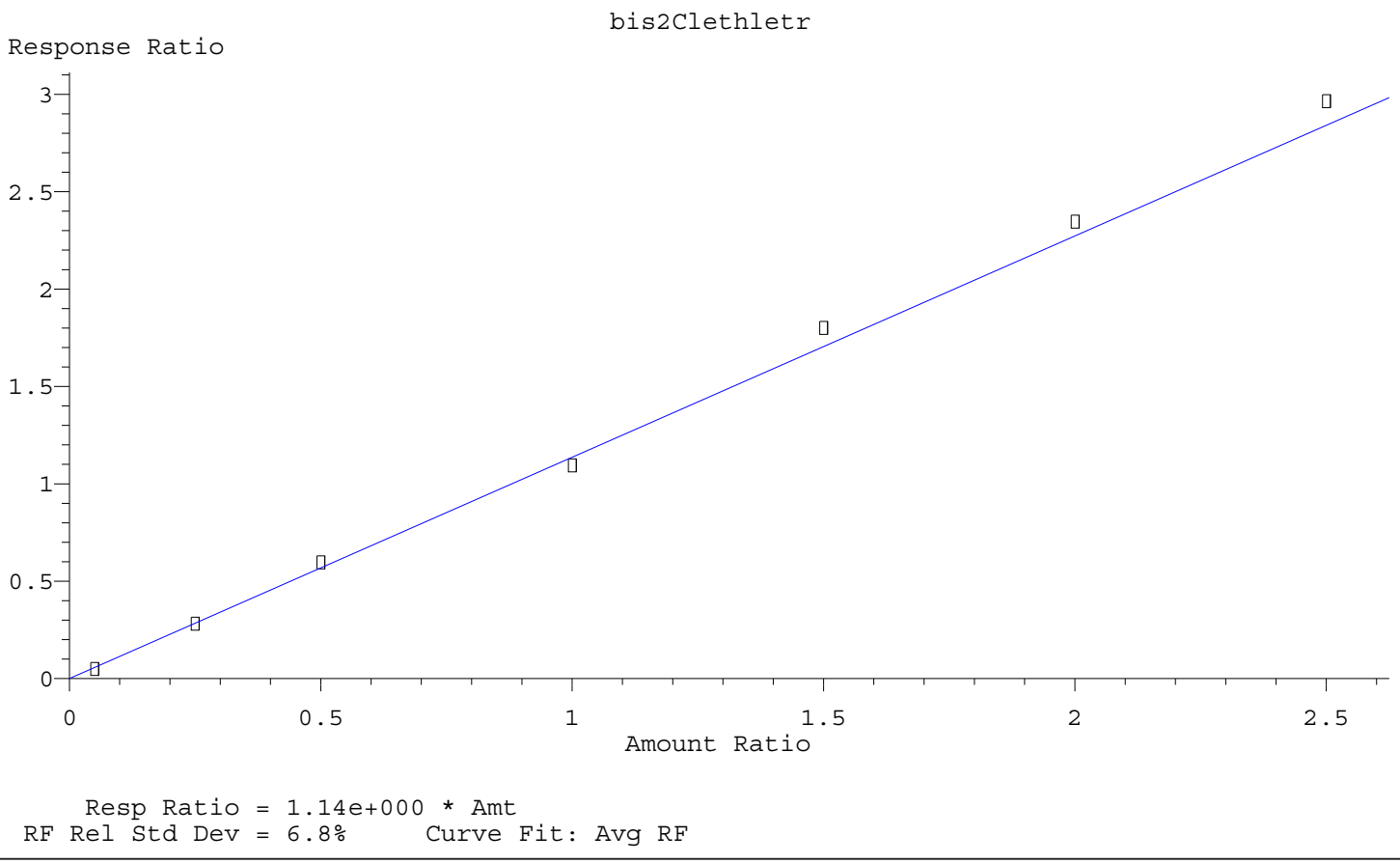
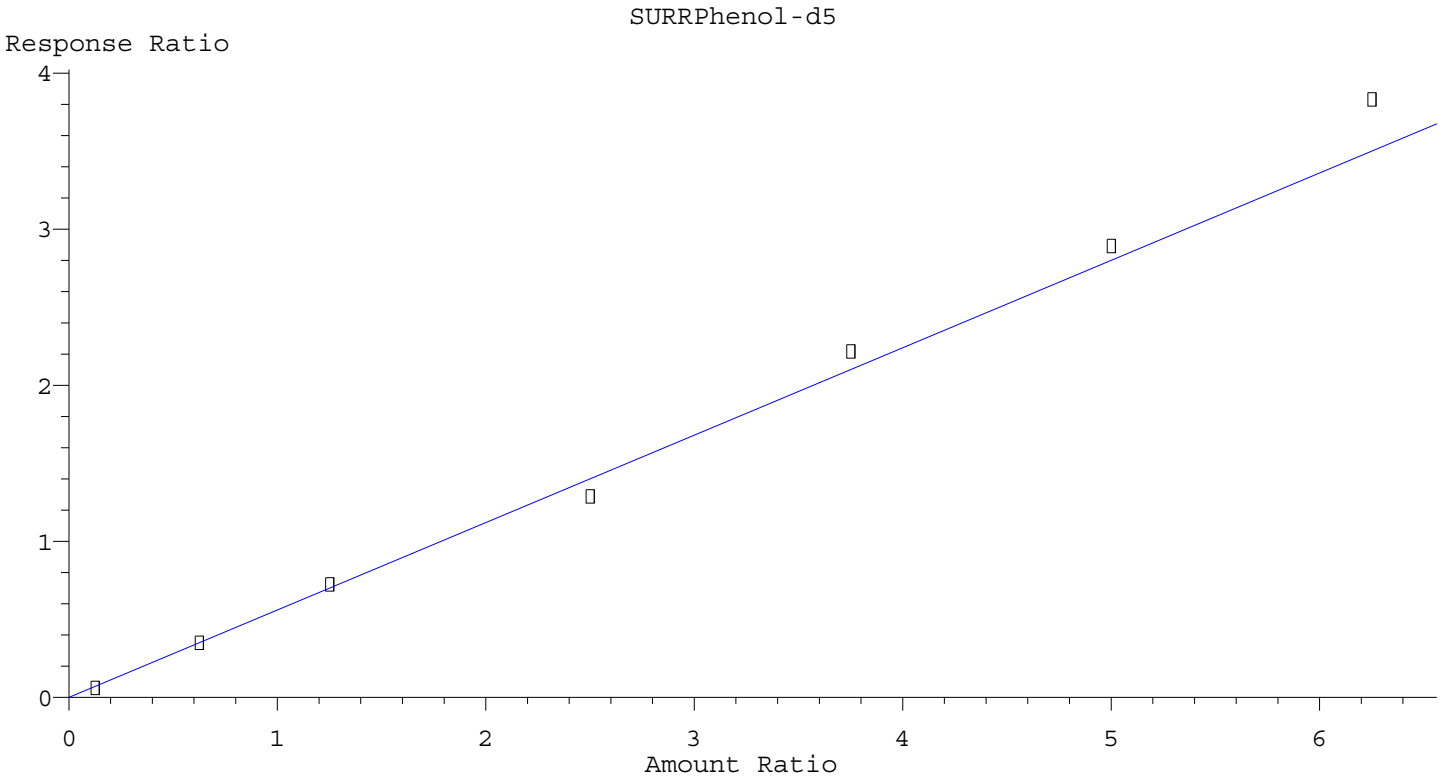


Resp Ratio = 1.14e+000 * Amt
RF Rel Std Dev = 6.8% Curve Fit: Avg RF



Resp Ratio = 5.60e-001 * Amt
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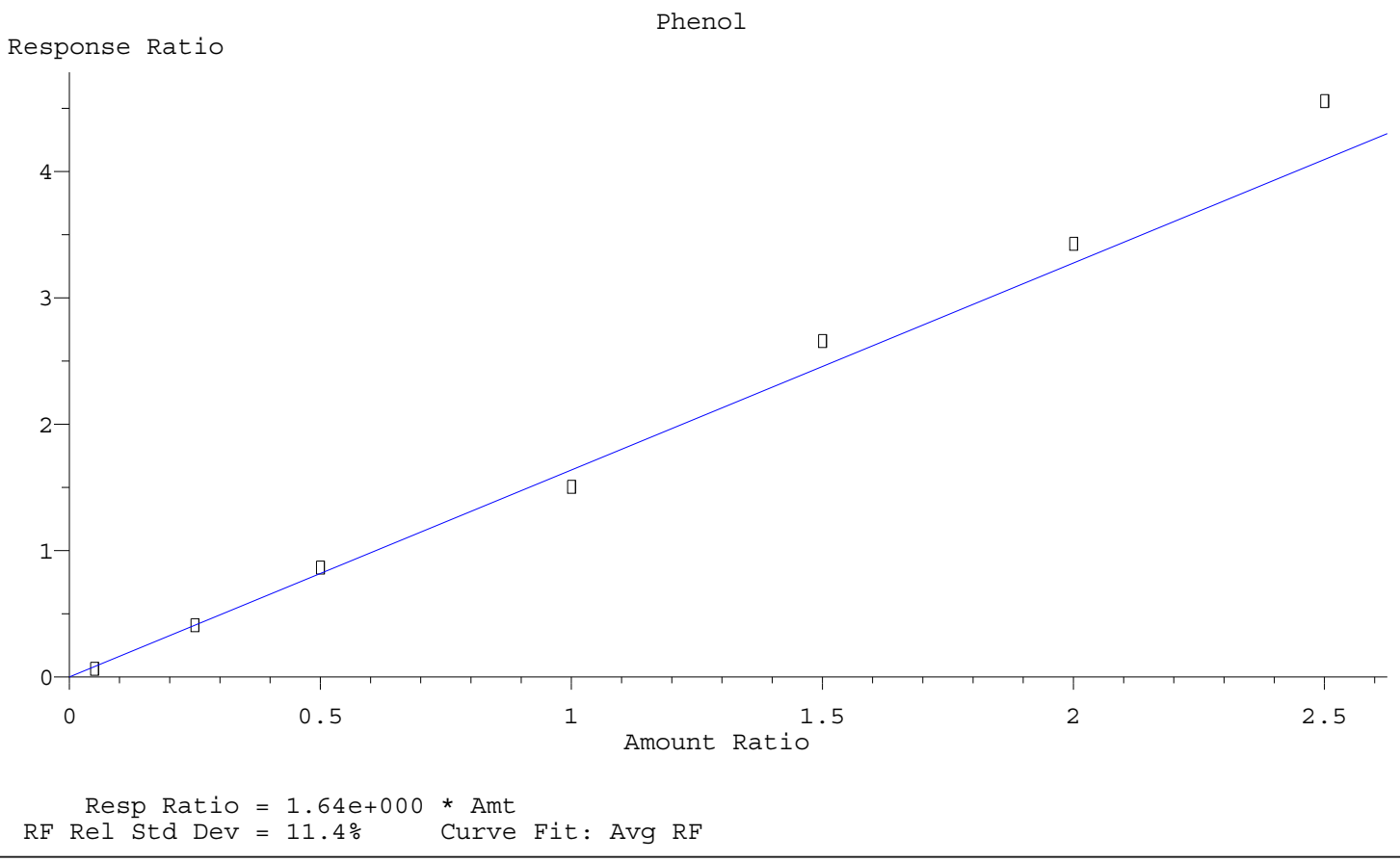

Resp Ratio = 1.64e+000 * Amt
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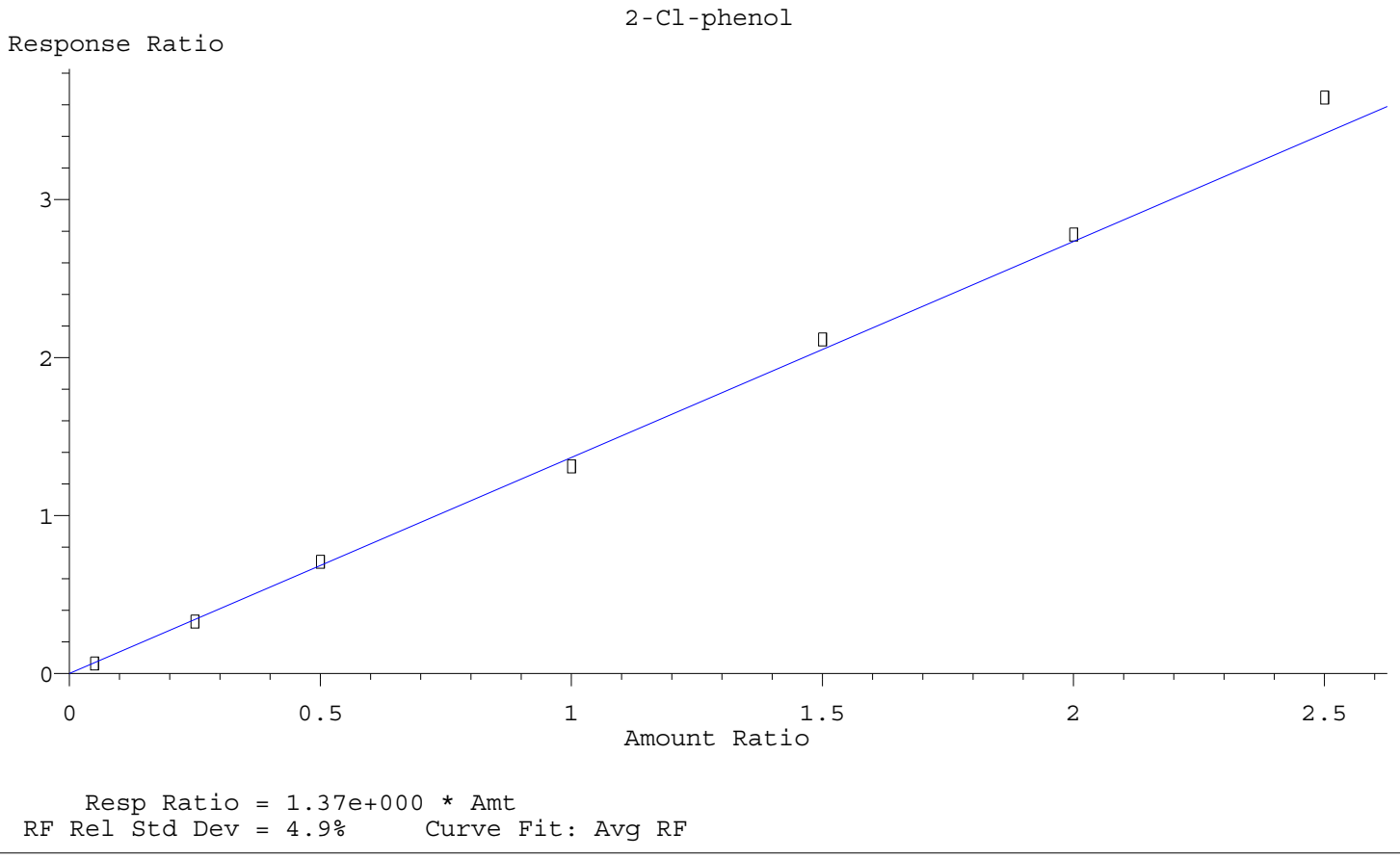

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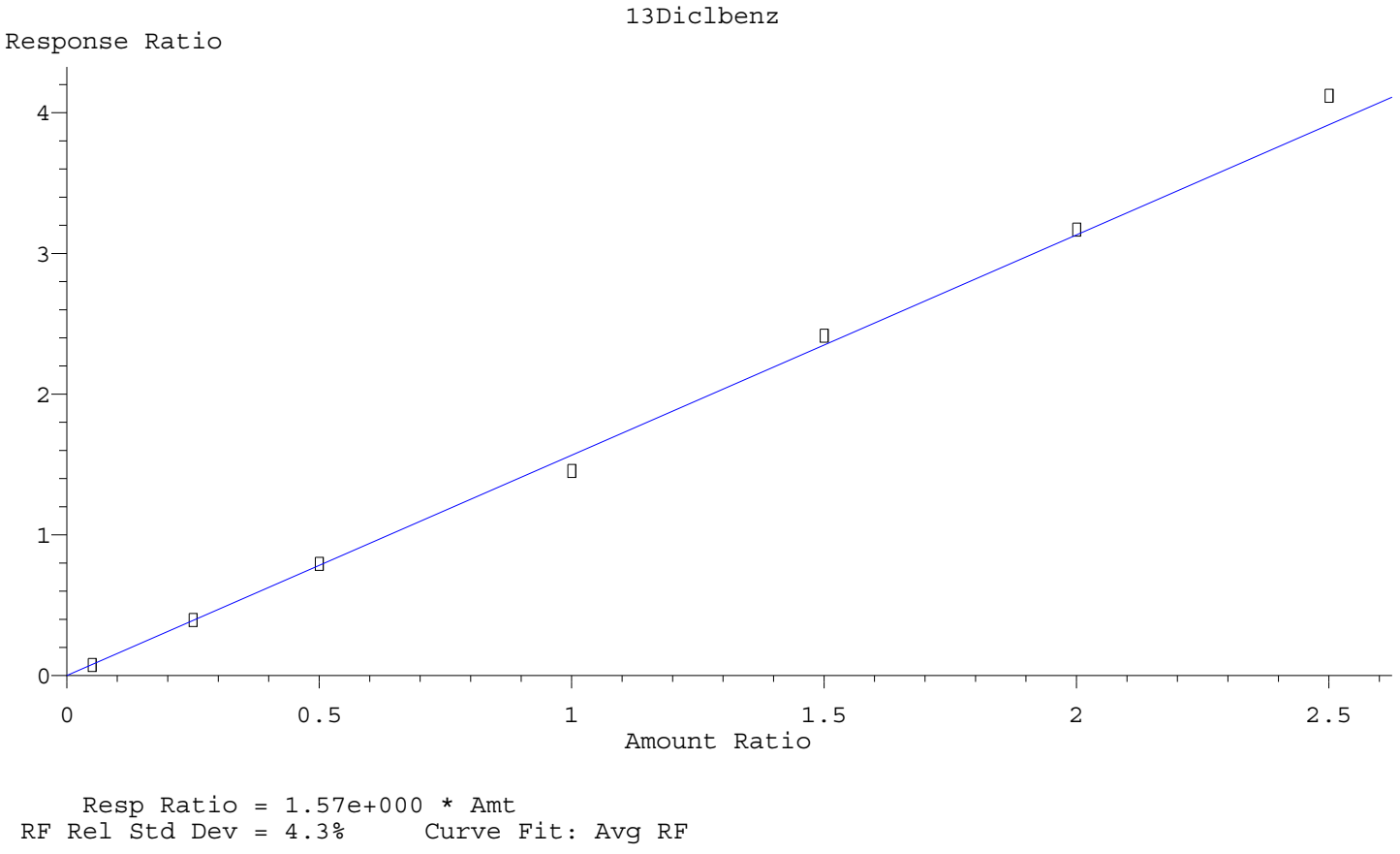
RF Rel Std Dev = 4.9% Curve Fit: Avg RF



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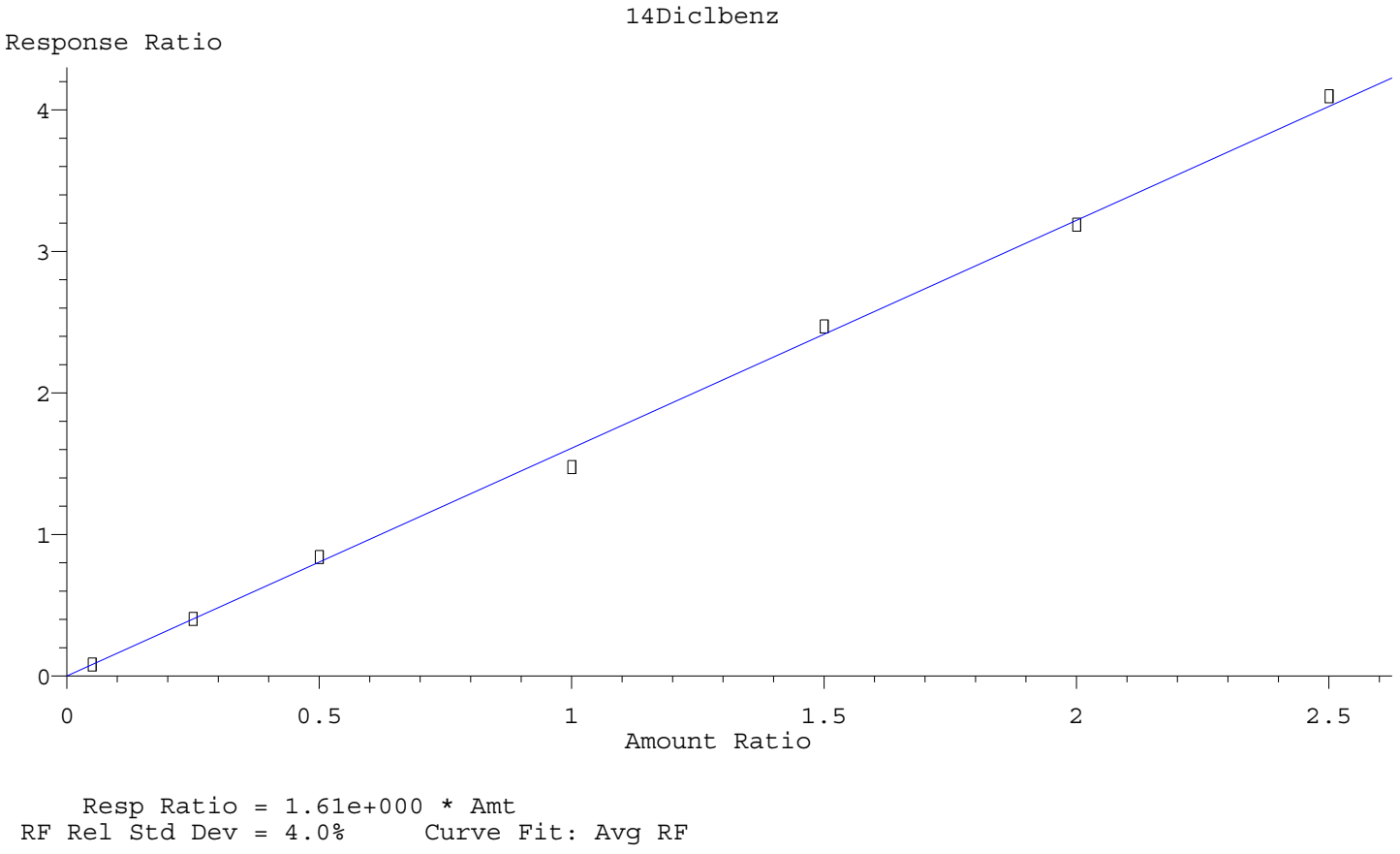

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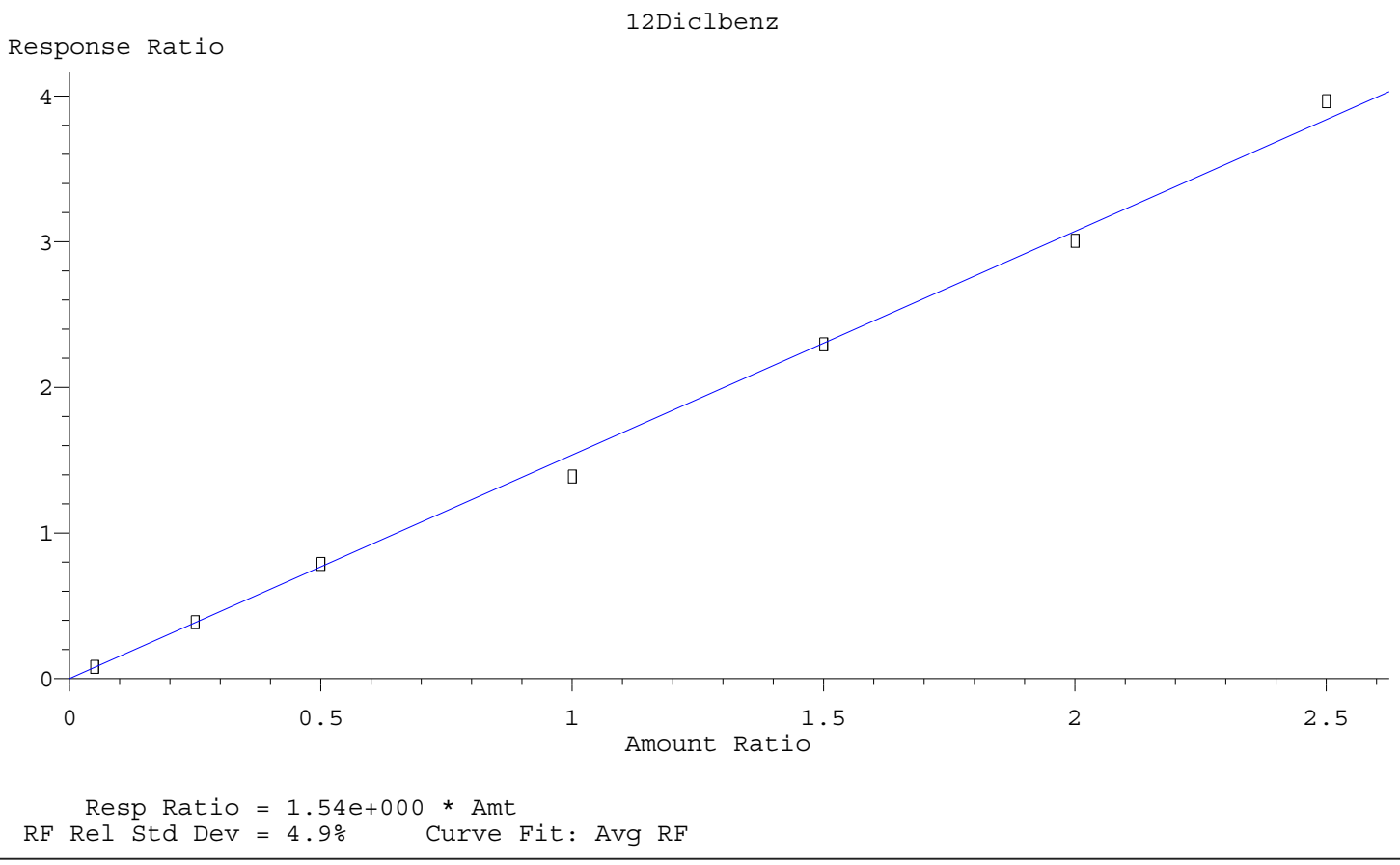

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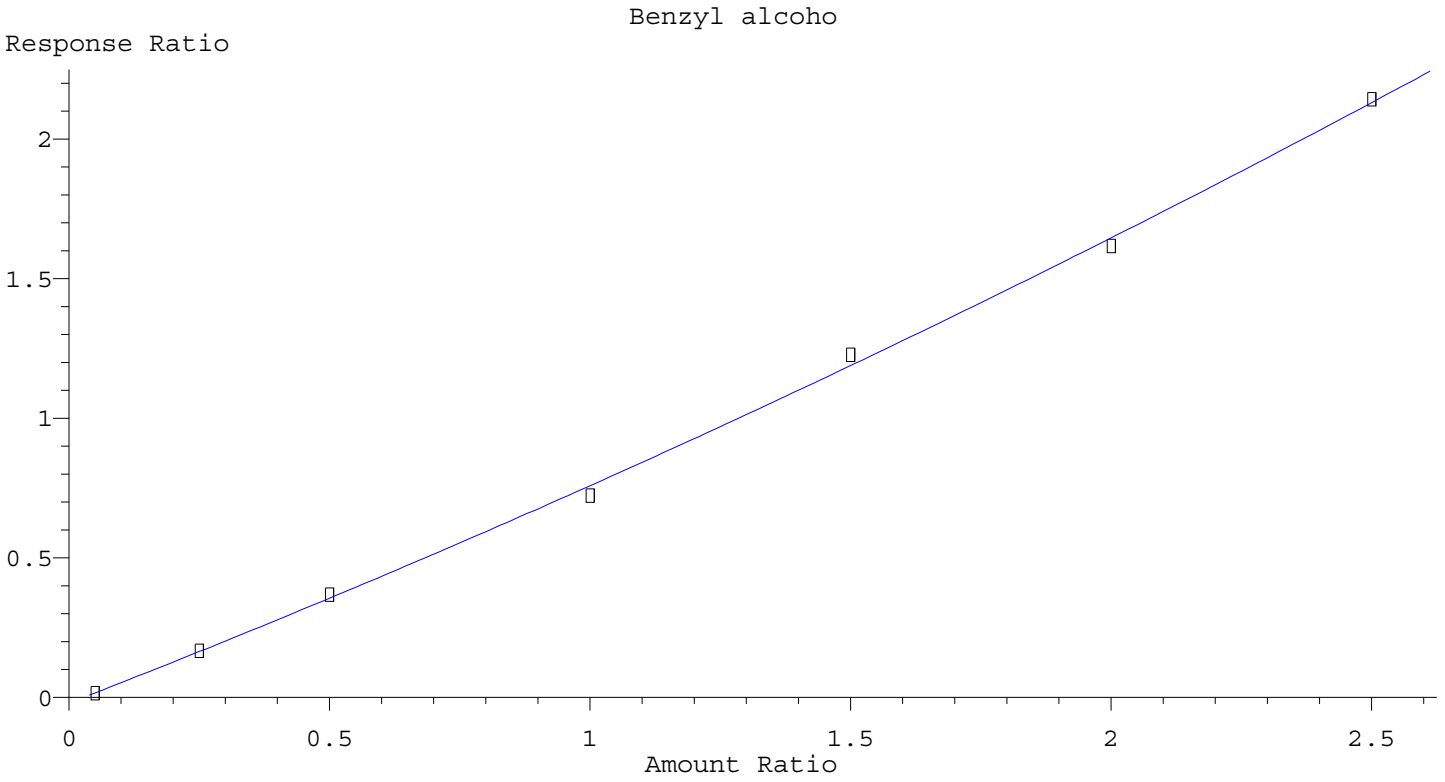
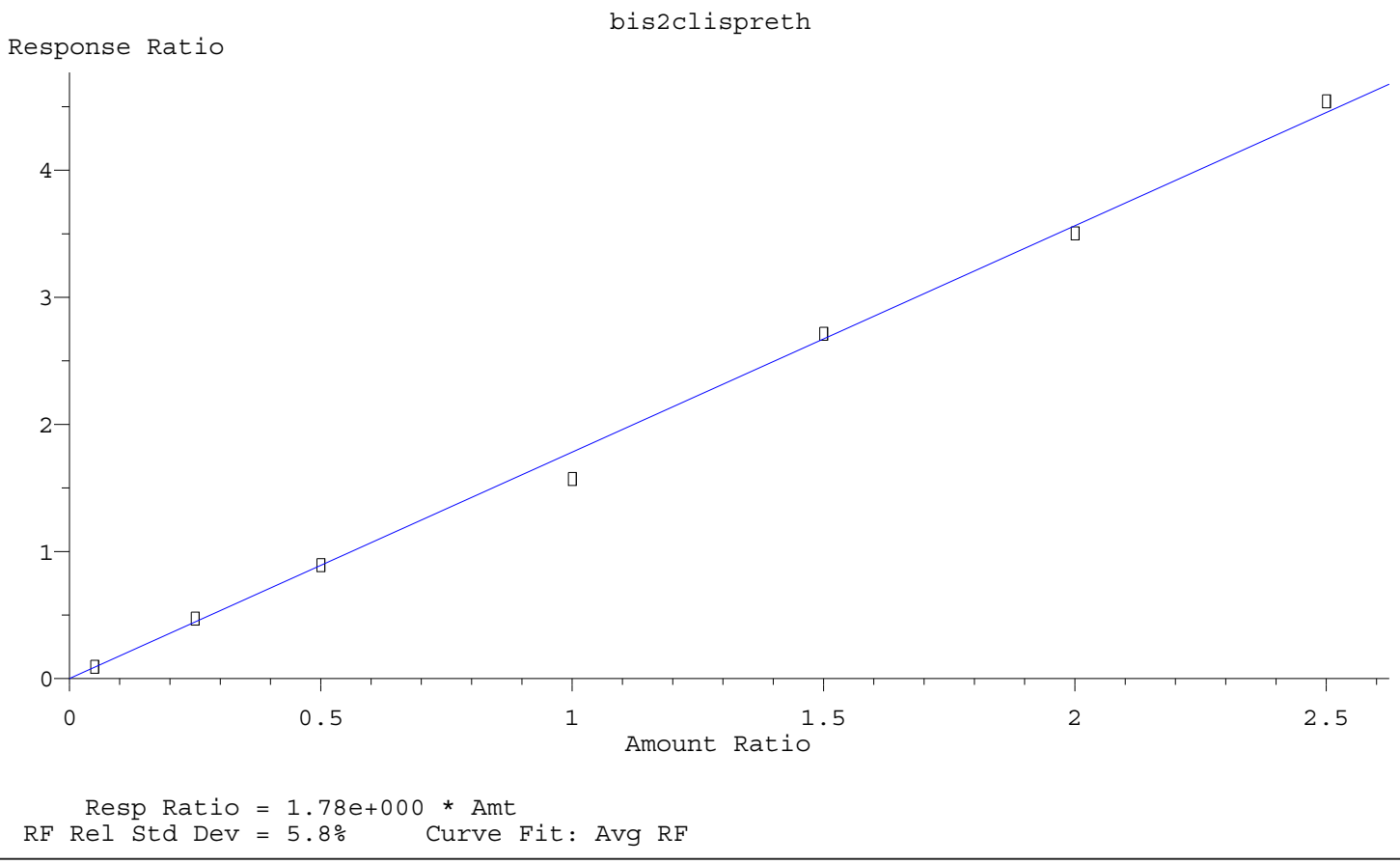
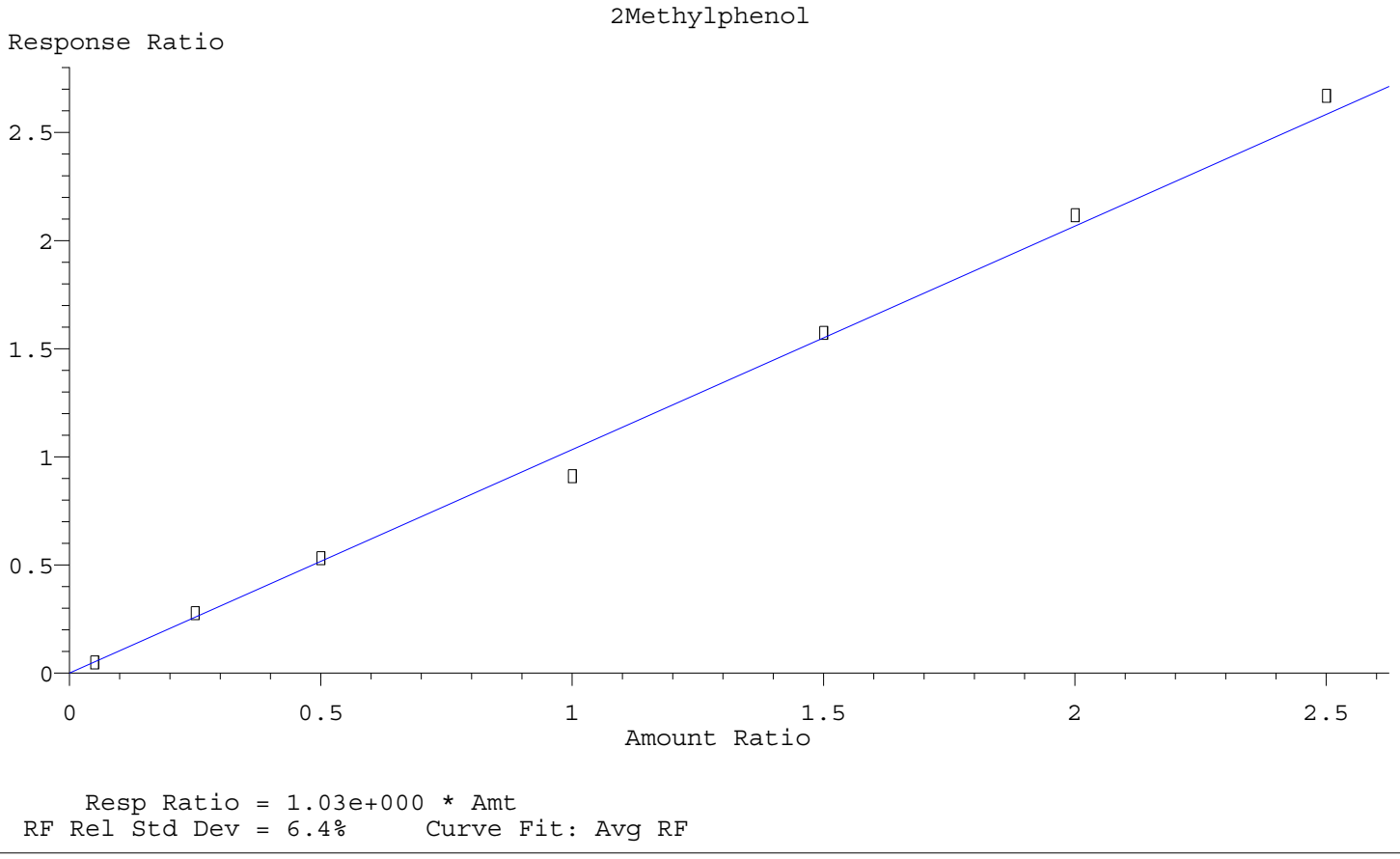
RF Rel Std Dev = 4.9% Curve Fit: Avg RF



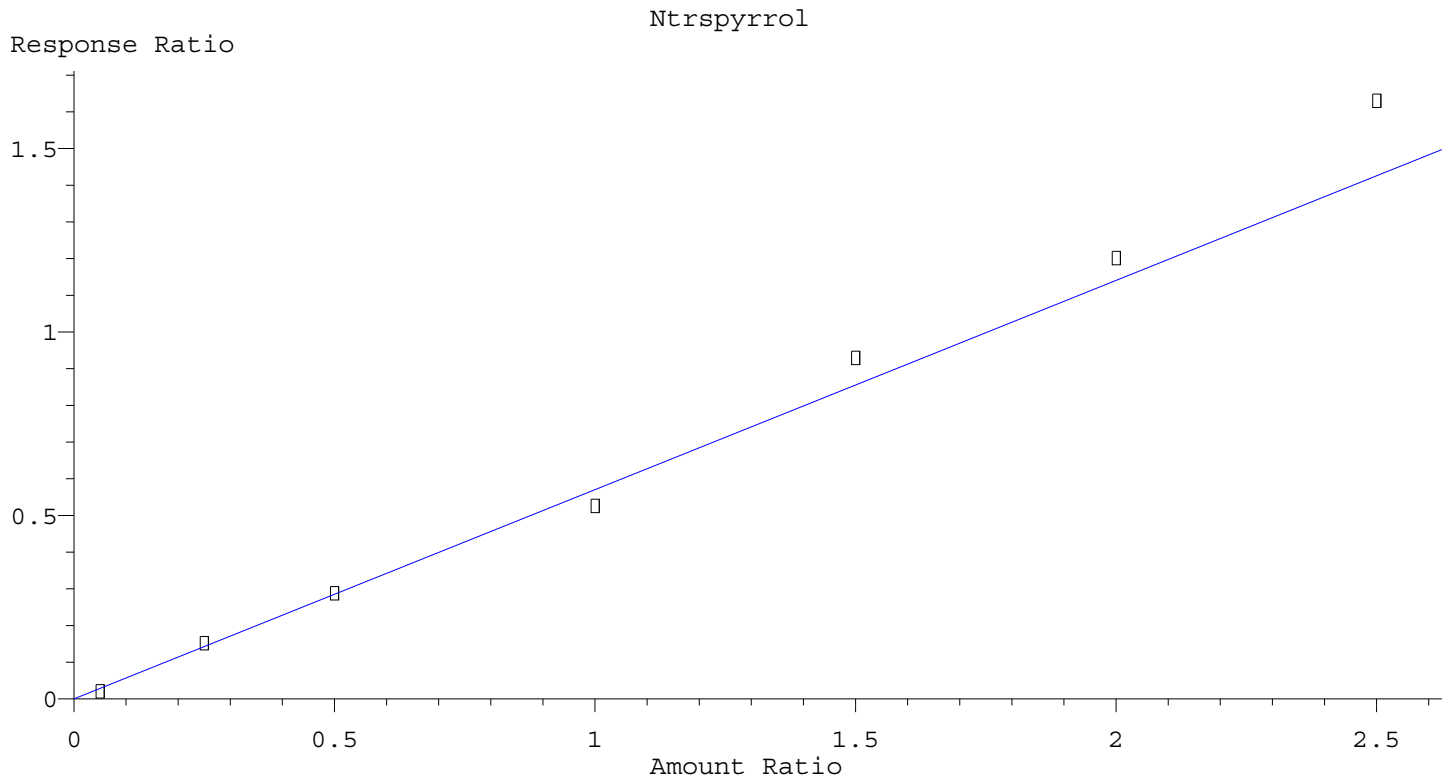
R = 5.45e-002 A*A + 7.24e-001 A - 2.05e-002
Coef of Det (r^2) = 0.999 Curve Fit: Quadratic w(1/a)



Resp Ratio = 1.78e+000 * Amt
RF Rel Std Dev = 5.8% Curve Fit: Avg RF



Resp Ratio = 1.03e+000 * Amt
RF Rel Std Dev = 6.4% Curve Fit: Avg RF



Resp Ratio = 5.70e-001 * Amt
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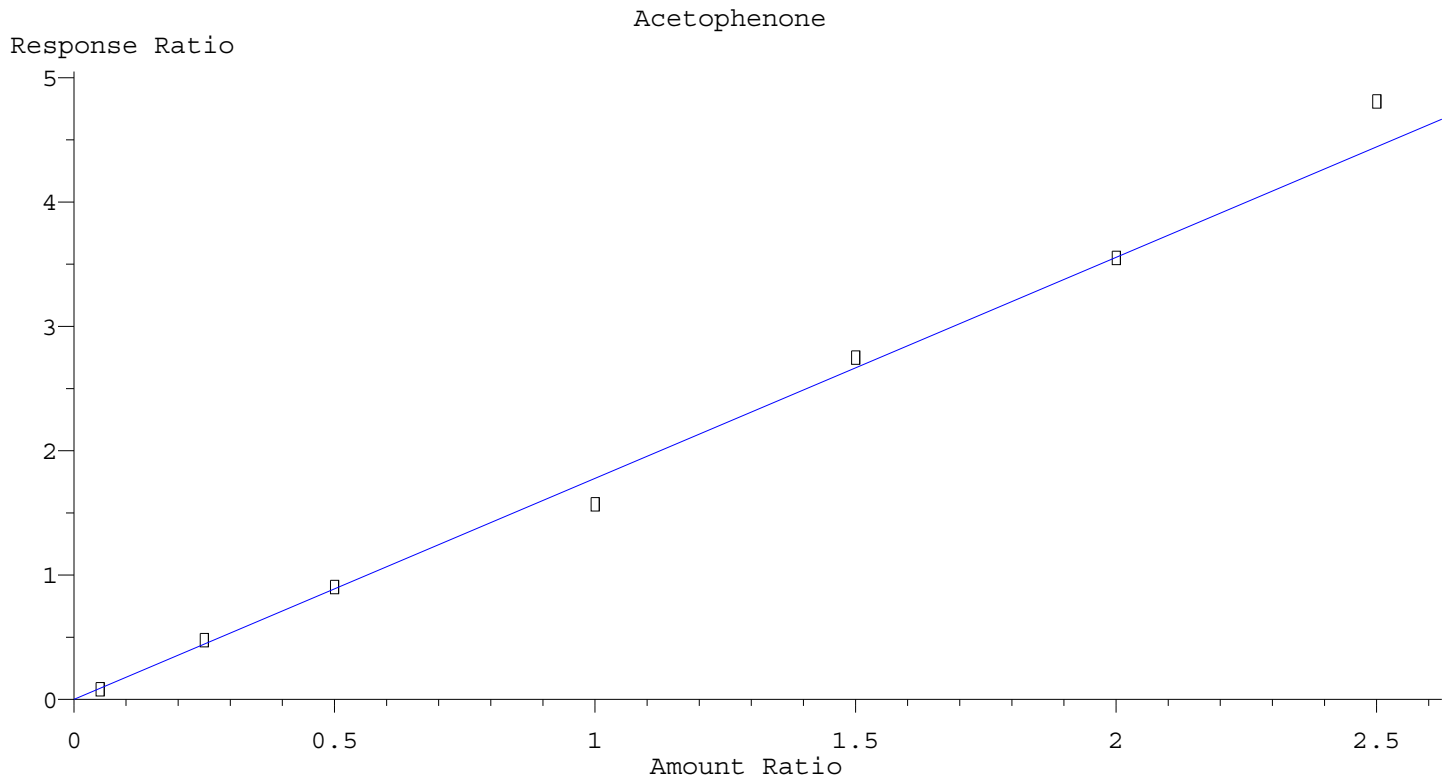
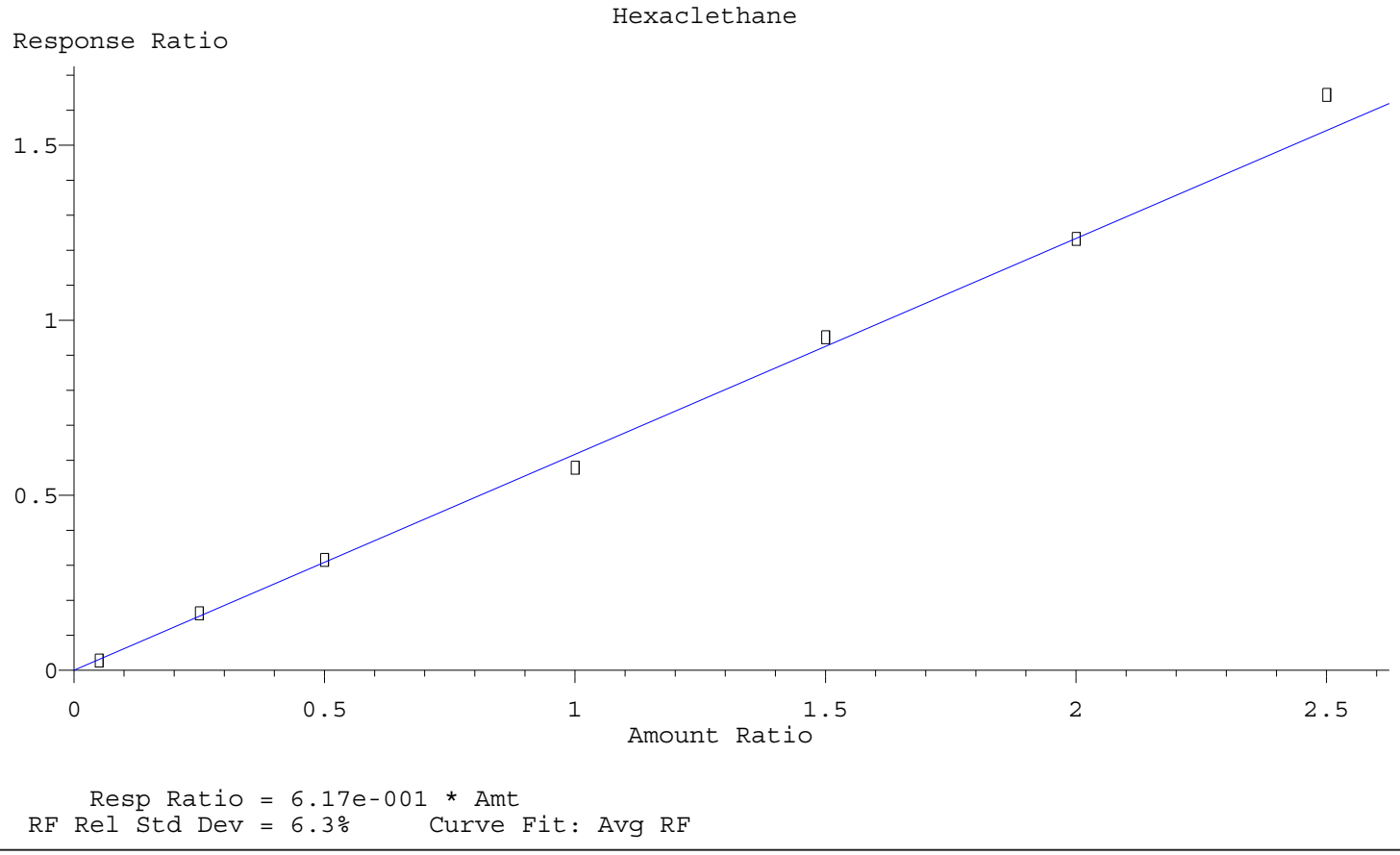
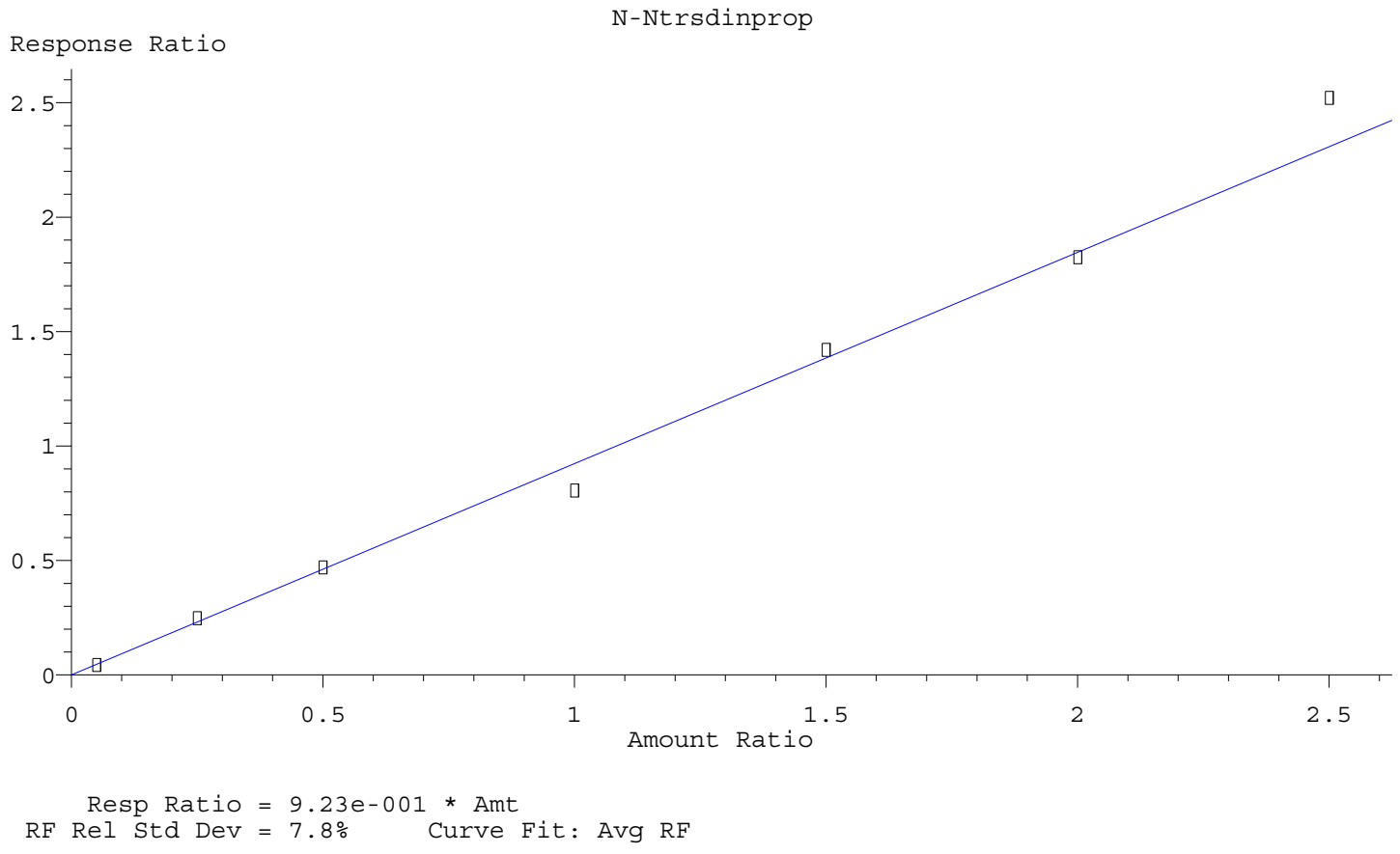


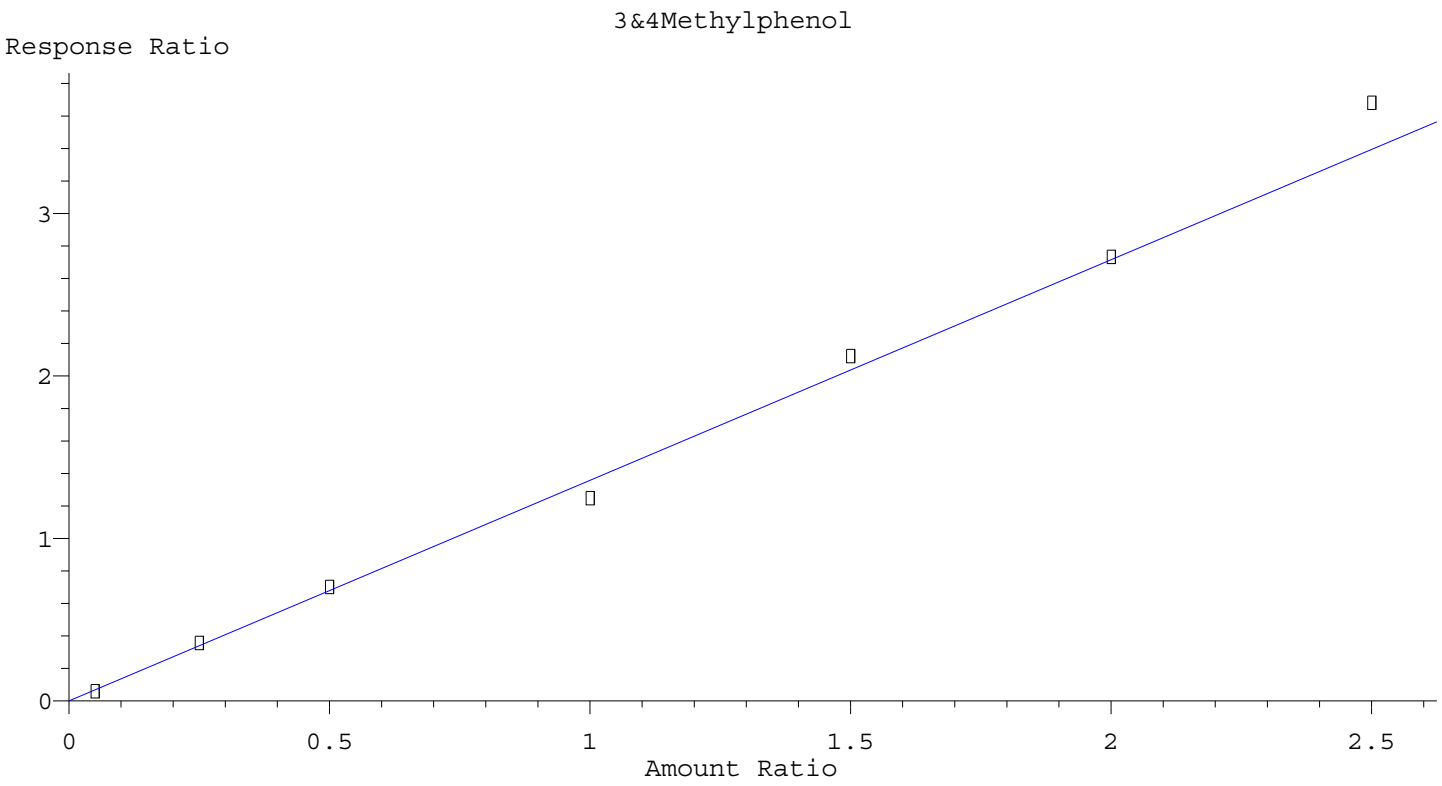
Resp Ratio = 1.78e+000 * Amt
RF Rel Std Dev = 7.5% Curve Fit: Avg RF



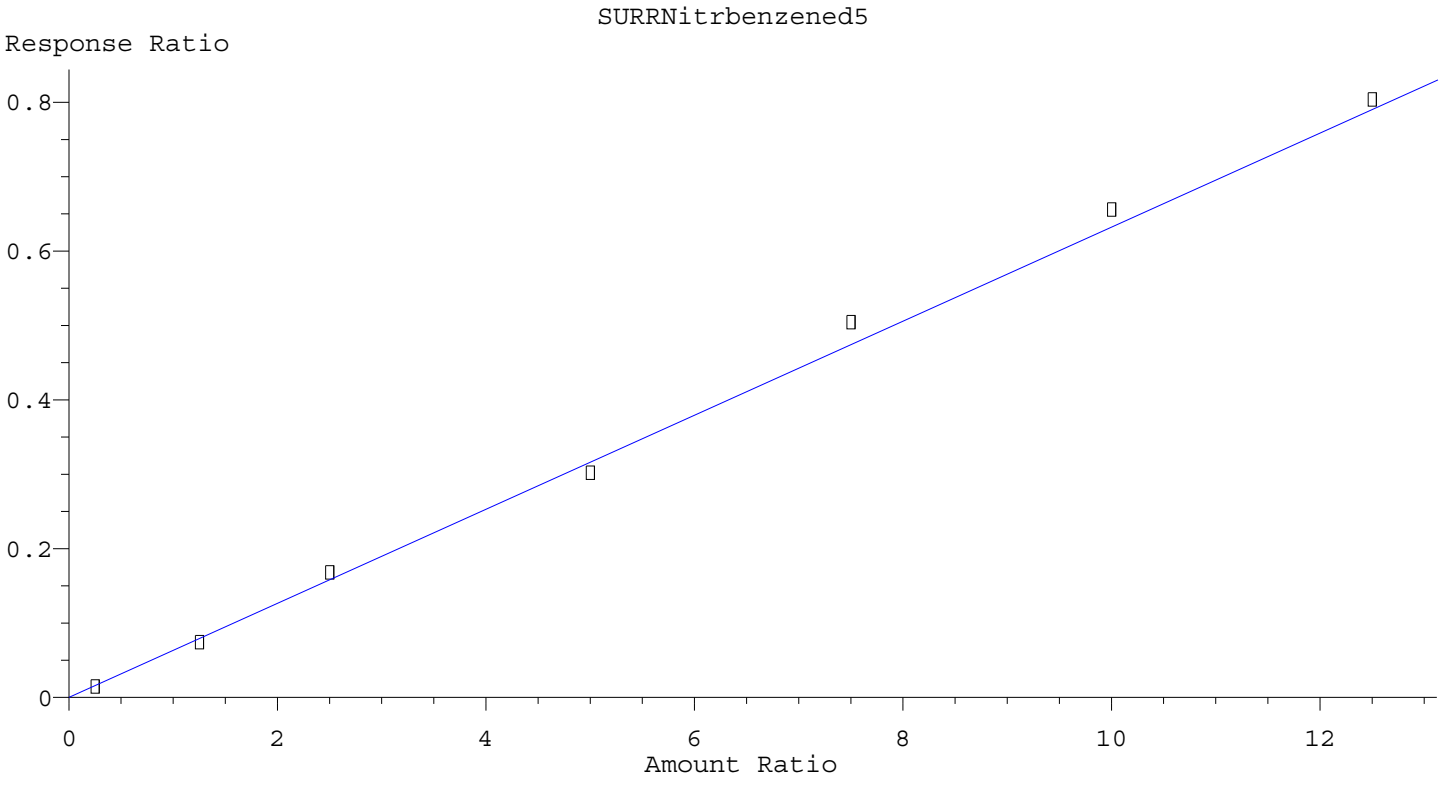
Resp Ratio = 6.17e-001 * Amt
RF Rel Std Dev = 6.3% Curve Fit: Avg RF



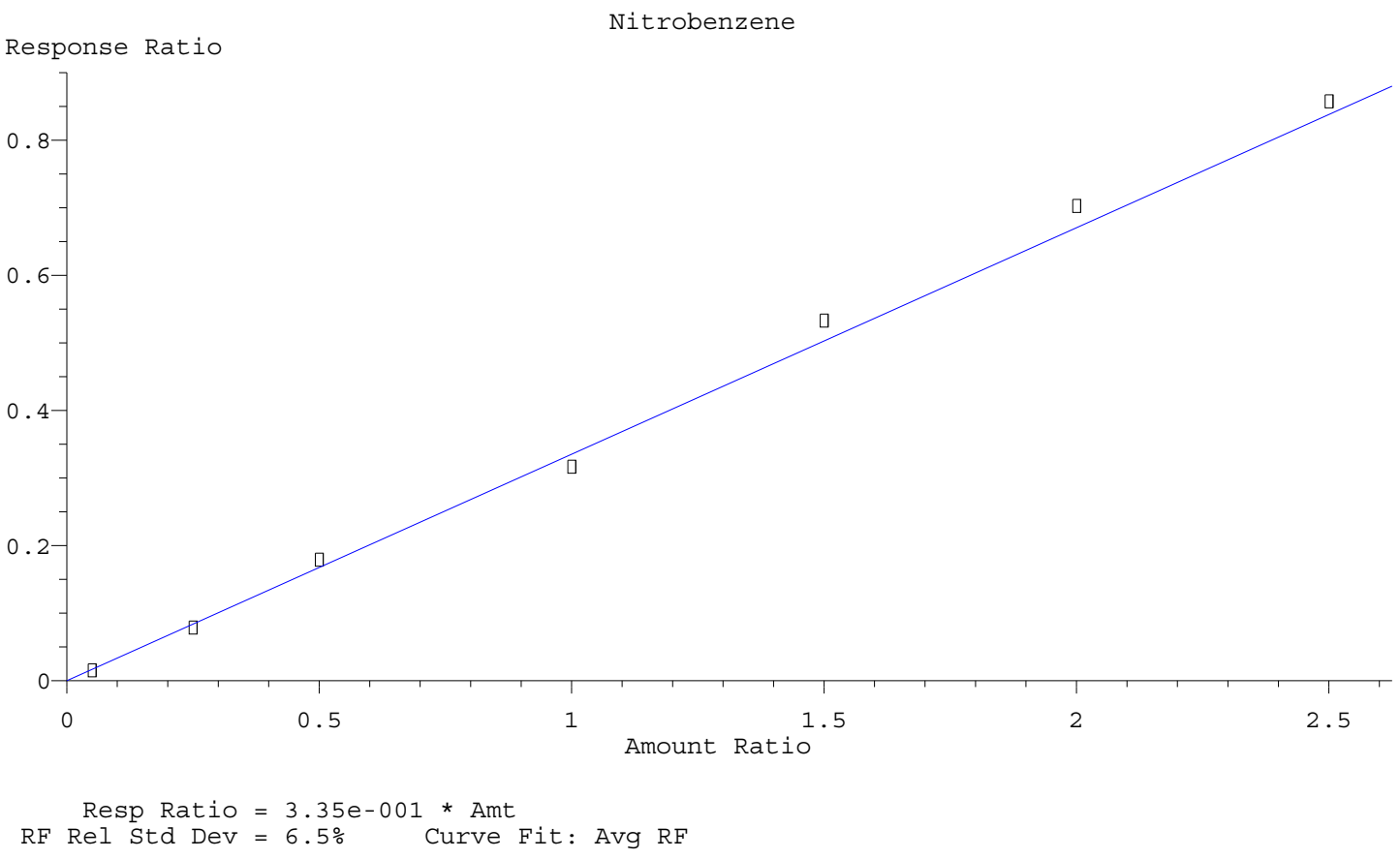
Resp Ratio = 9.23e-001 * Amt
RF Rel Std Dev = 7.8% Curve Fit: Avg RF



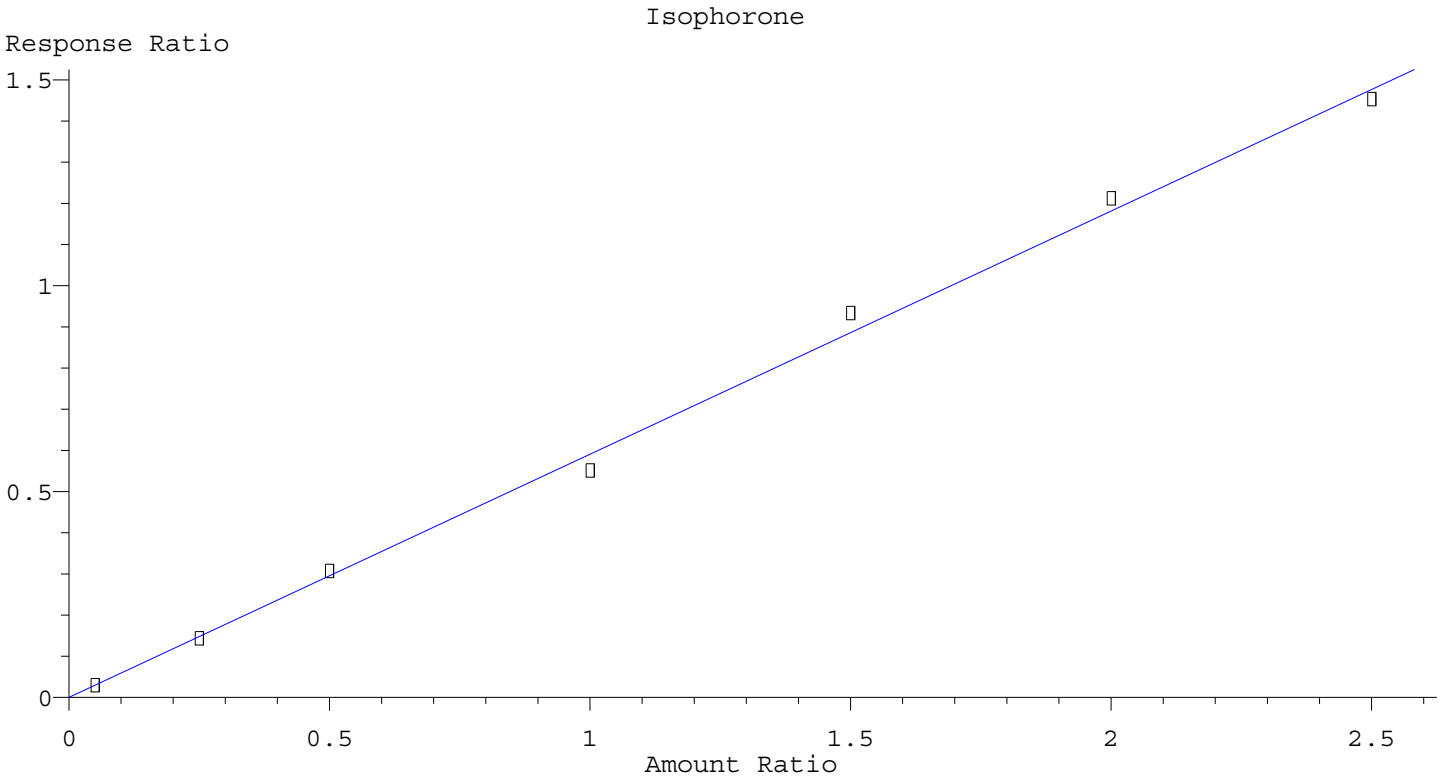
Resp Ratio = 1.36e+000 * Amt
RF Rel Std Dev = 7.8% Curve Fit: Avg RF



Resp Ratio = 6.32e-002 * Amt
RF Rel Std Dev = 5.9% Curve Fit: Avg RF

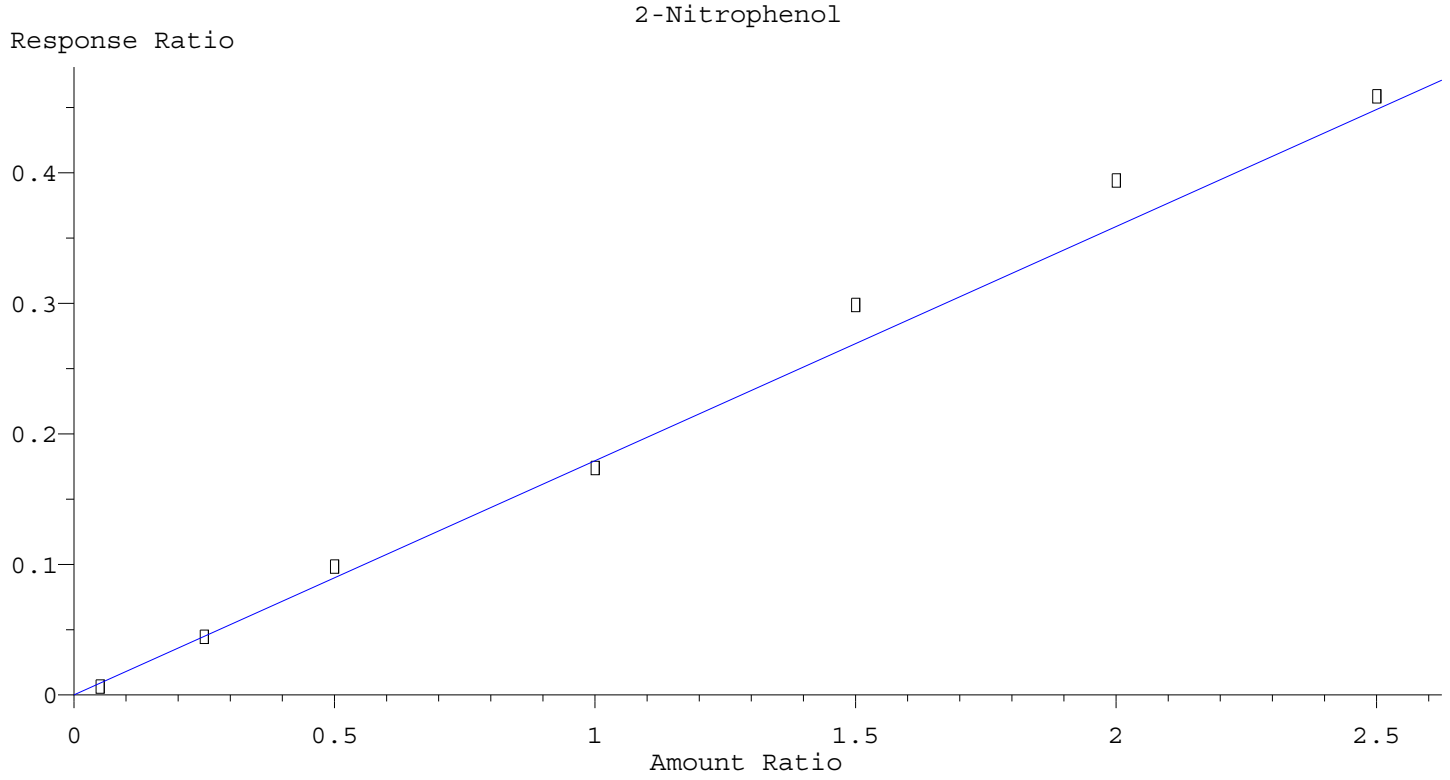


Resp Ratio = 3.35e-001 * Amt
RF Rel Std Dev = 6.5% Curve Fit: Avg RF



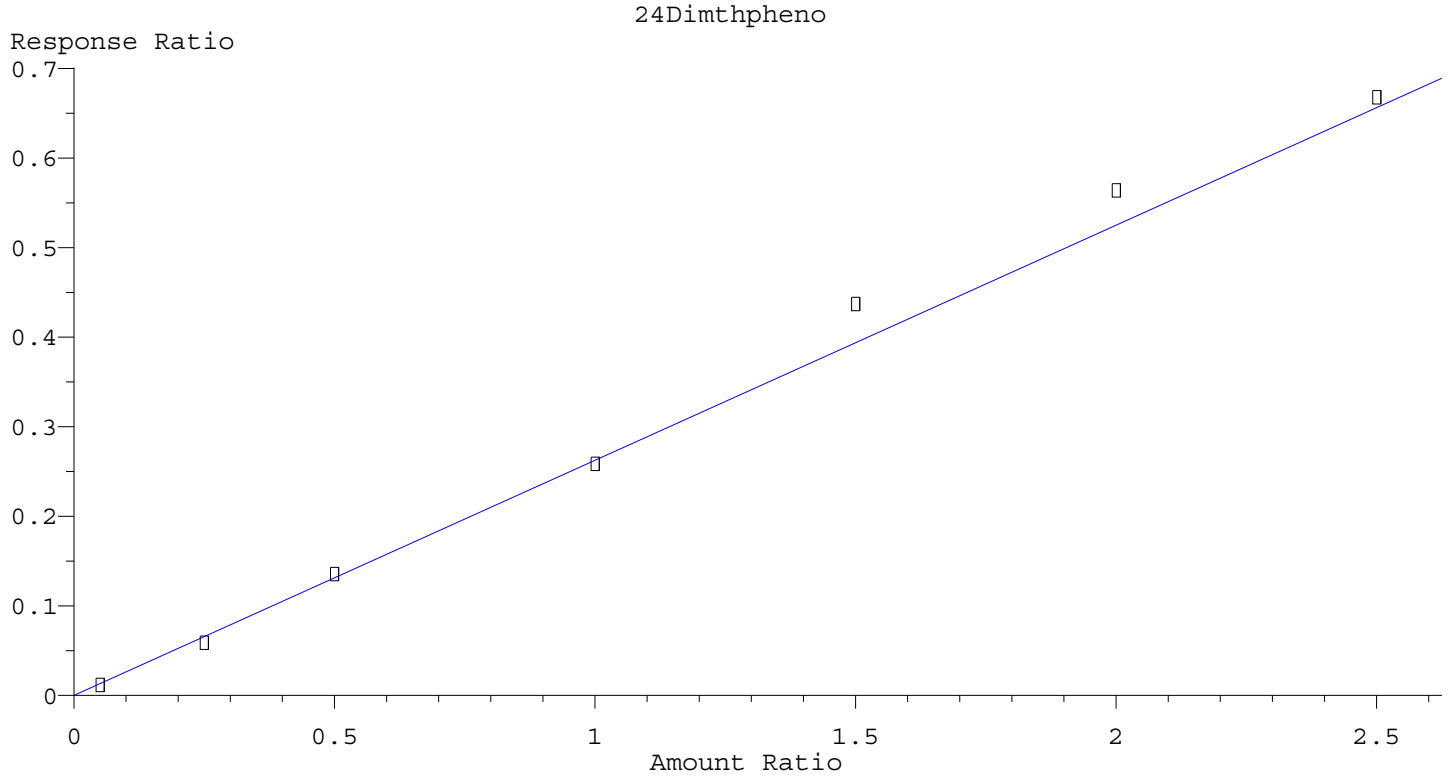
Resp Ratio = 5.91e-001 * Amt
RF Rel Std Dev = 4.2% Curve Fit: Avg RF

2-Nitrophenol



Resp Ratio = 1.79e-001 * Amt
RF Rel Std Dev = 13.8% Curve Fit: Avg RF

24Dimthpheno



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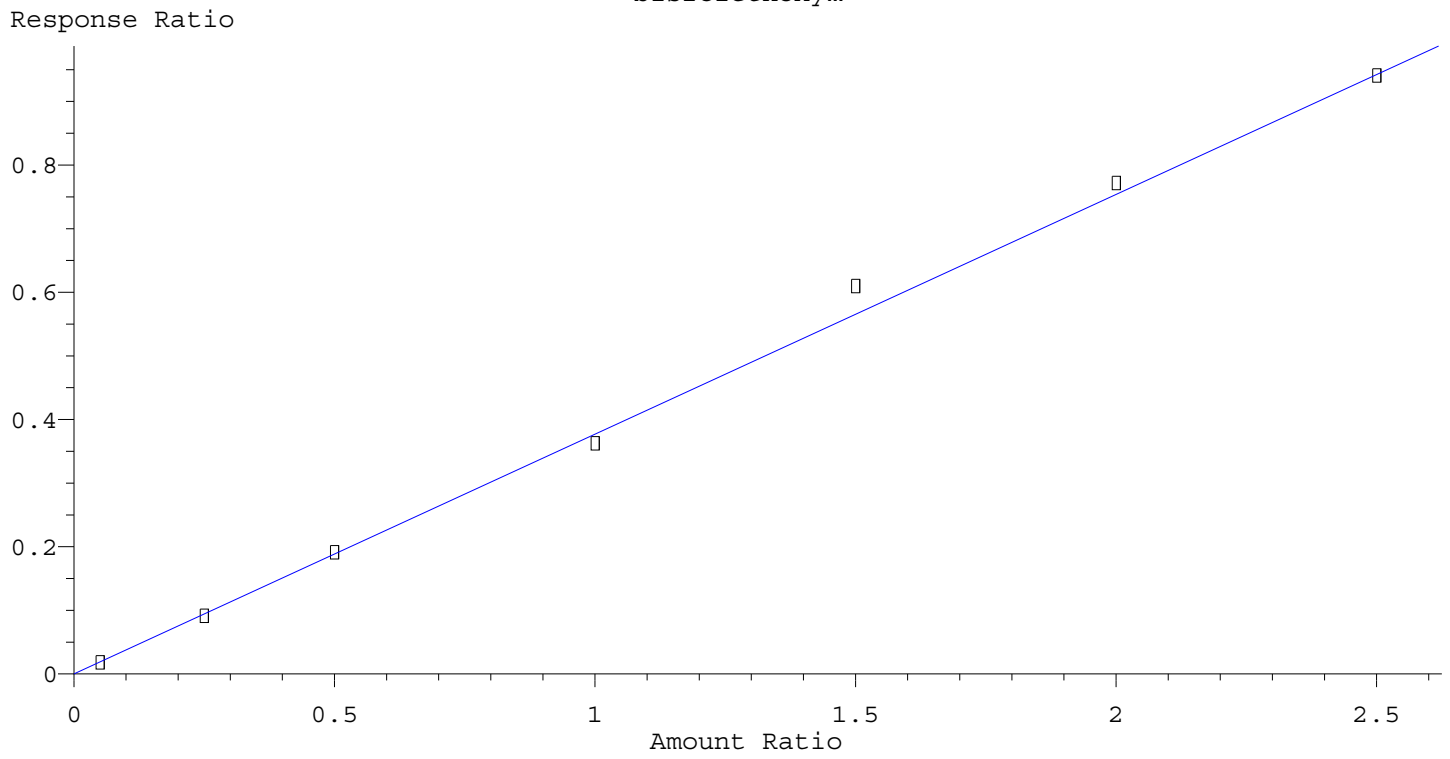
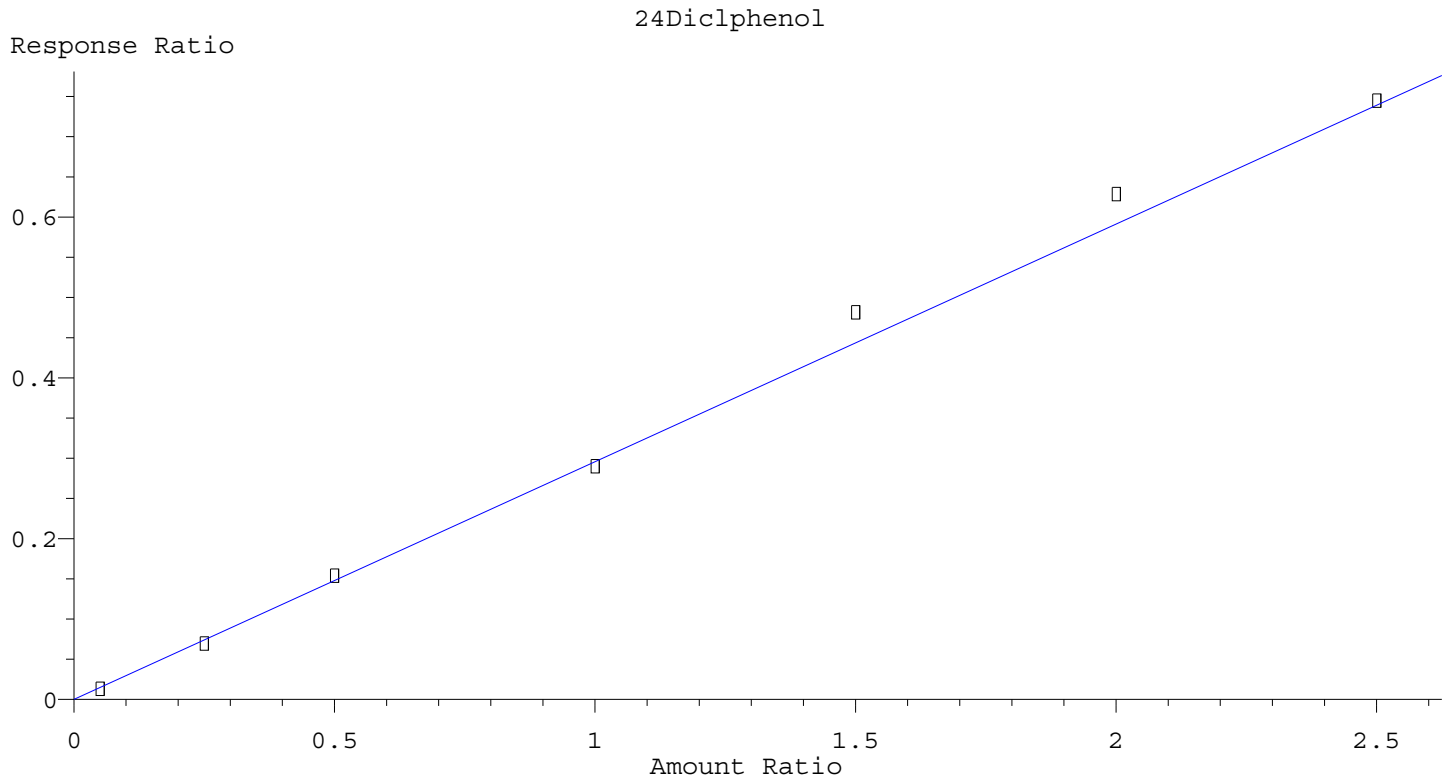
RF Rel Std Dev = 8.4% Curve Fit: Avg RF

bis2clethoxym

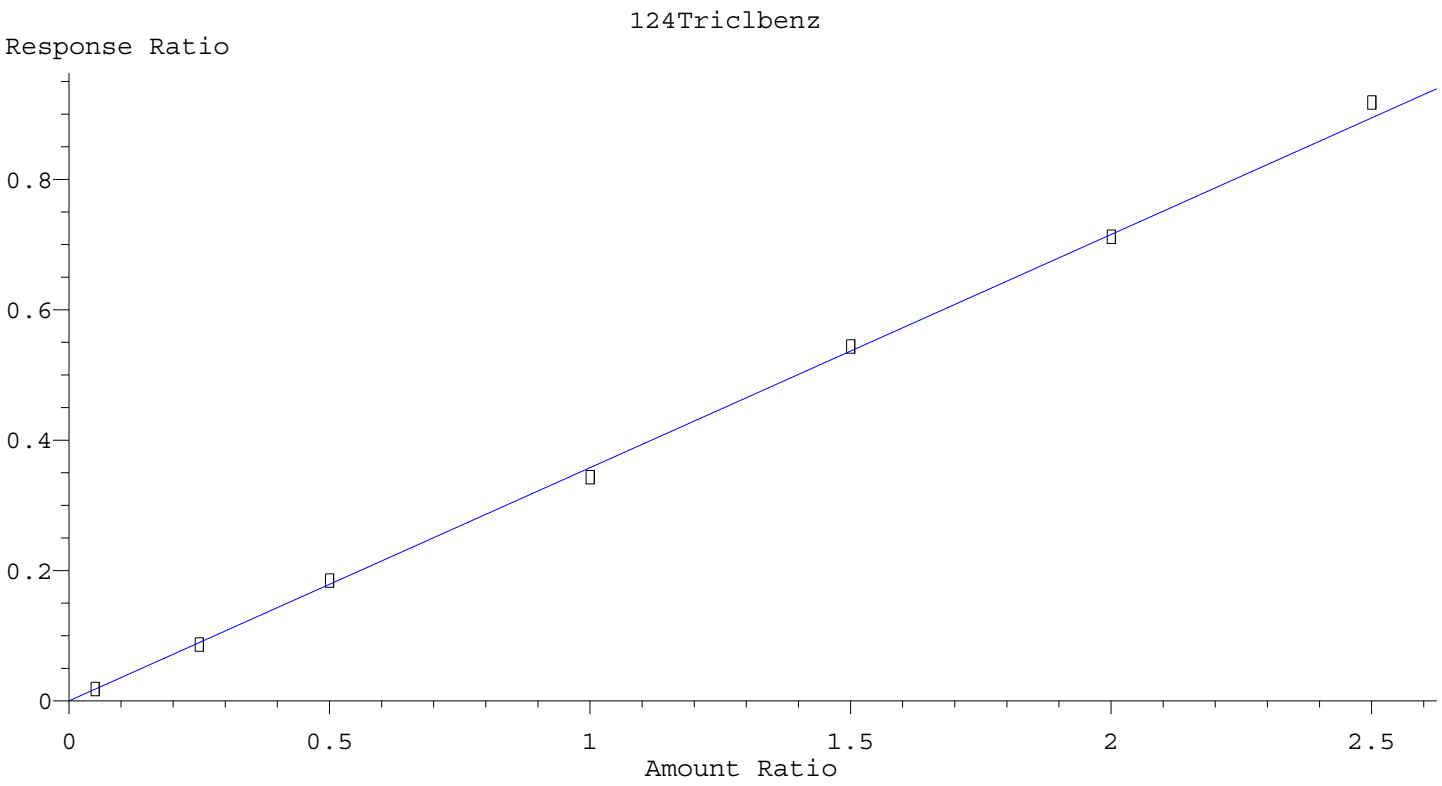


Resp Ratio = 3.77e-001 * Amt
RF Rel Std Dev = 4.3% Curve Fit: Avg RF

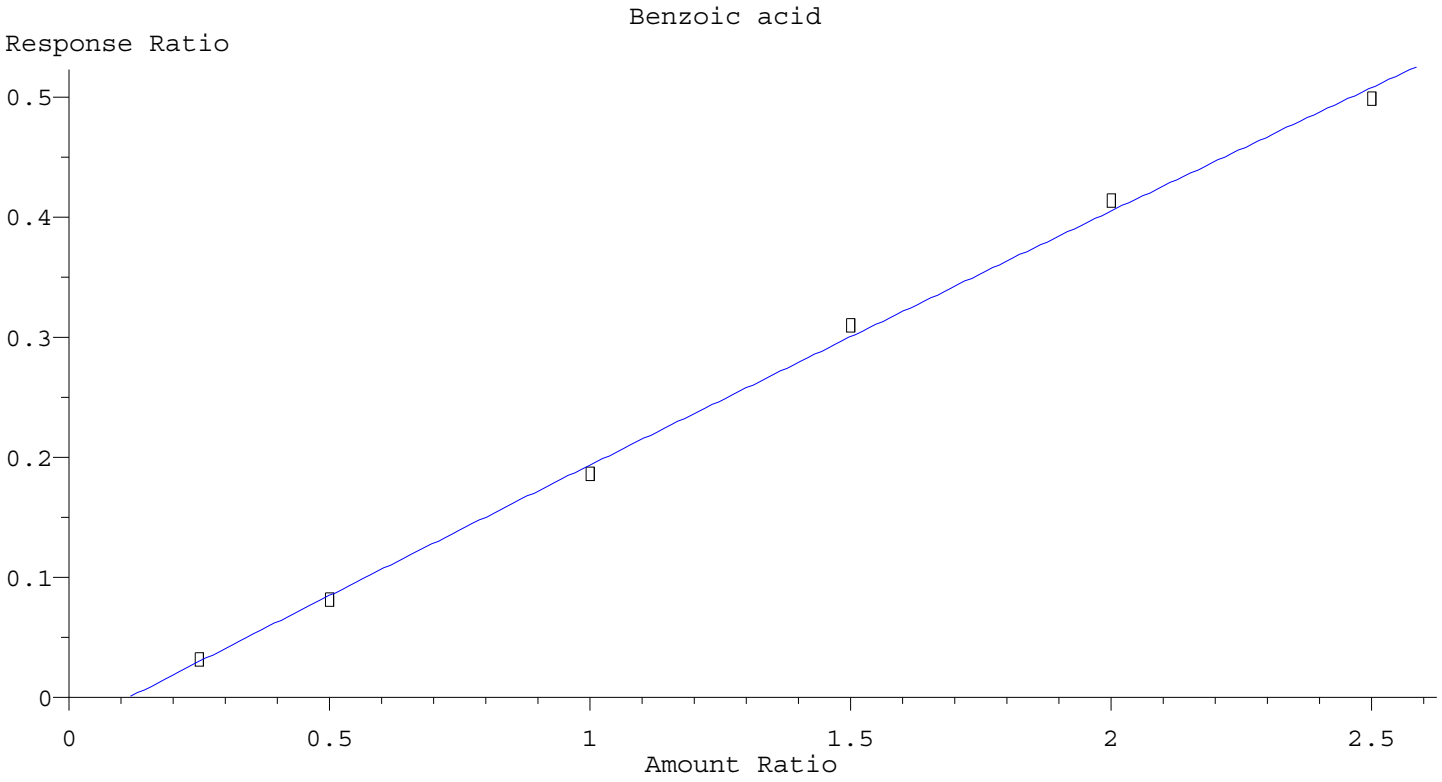
24Diclphenol



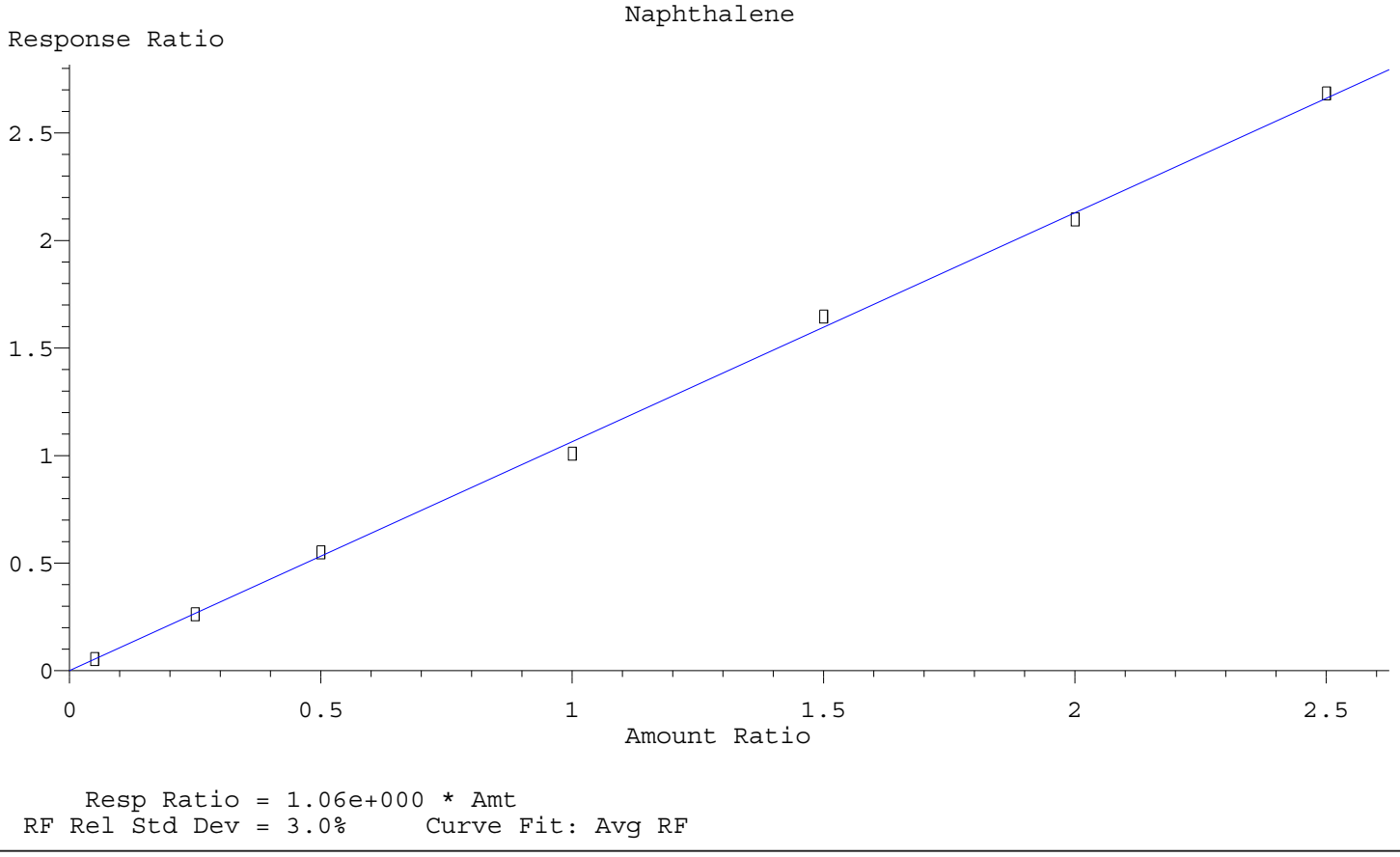
Resp Ratio = 2.96e-001 * Amt
RF Rel Std Dev = 7.1% Curve Fit: Avg RF



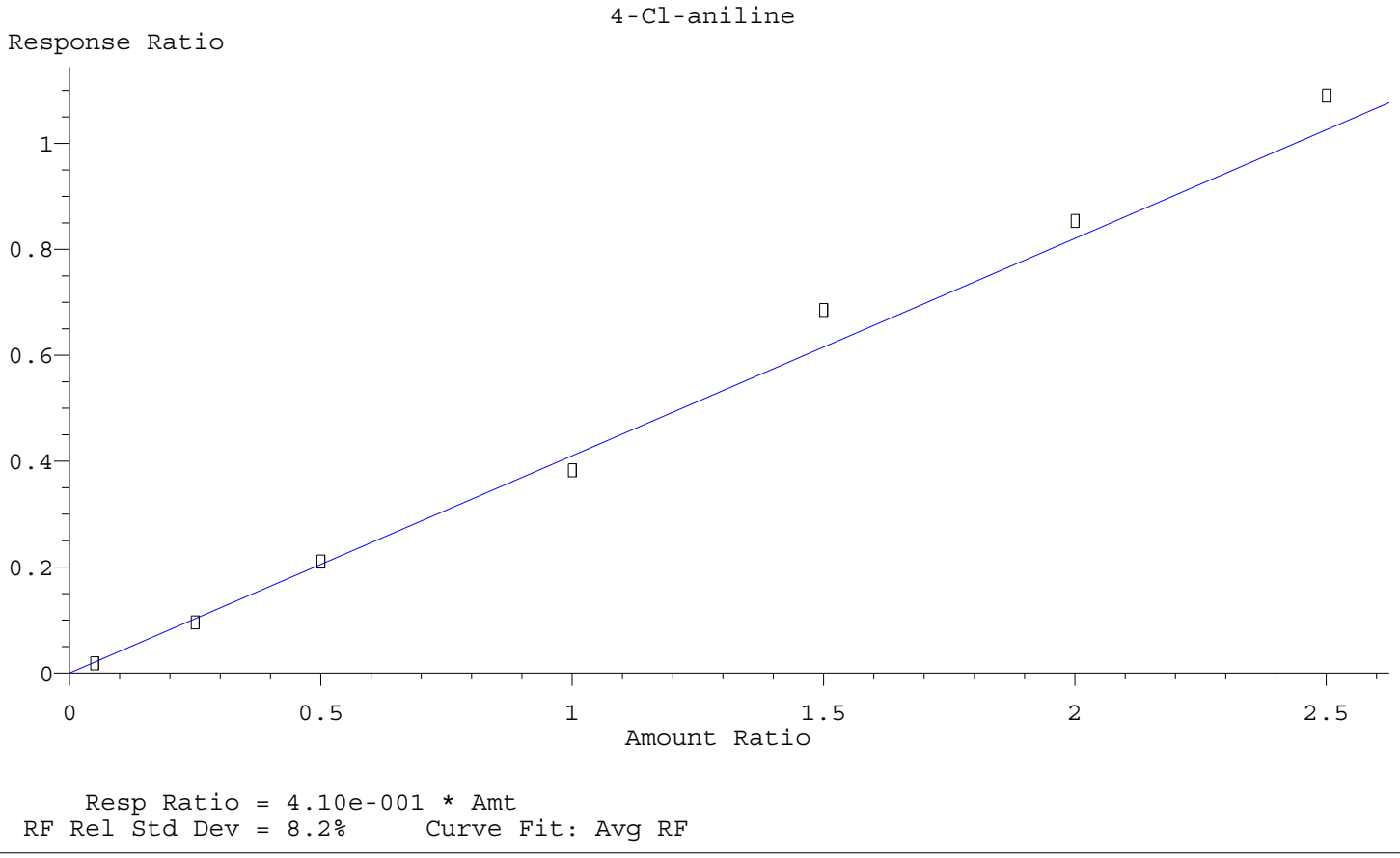
Resp Ratio = 3.58e-001 * Amt
RF Rel Std Dev = 2.8% Curve Fit: Avg RF



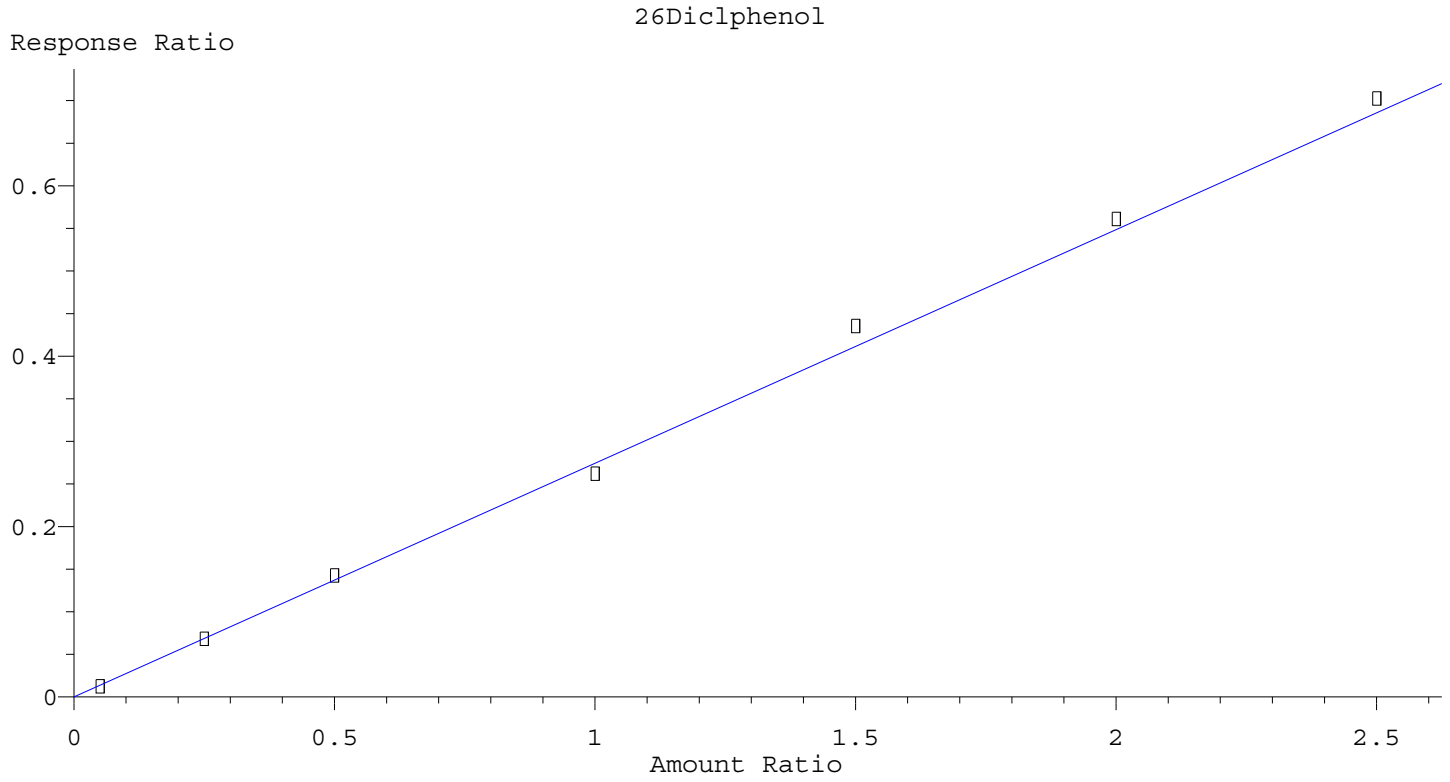
R = -3.85e-003 A*A + 2.23e-001 A - 2.57e-002
Coef of Det (r^2) = 0.999 Curve Fit: Quadratic w(1/a)



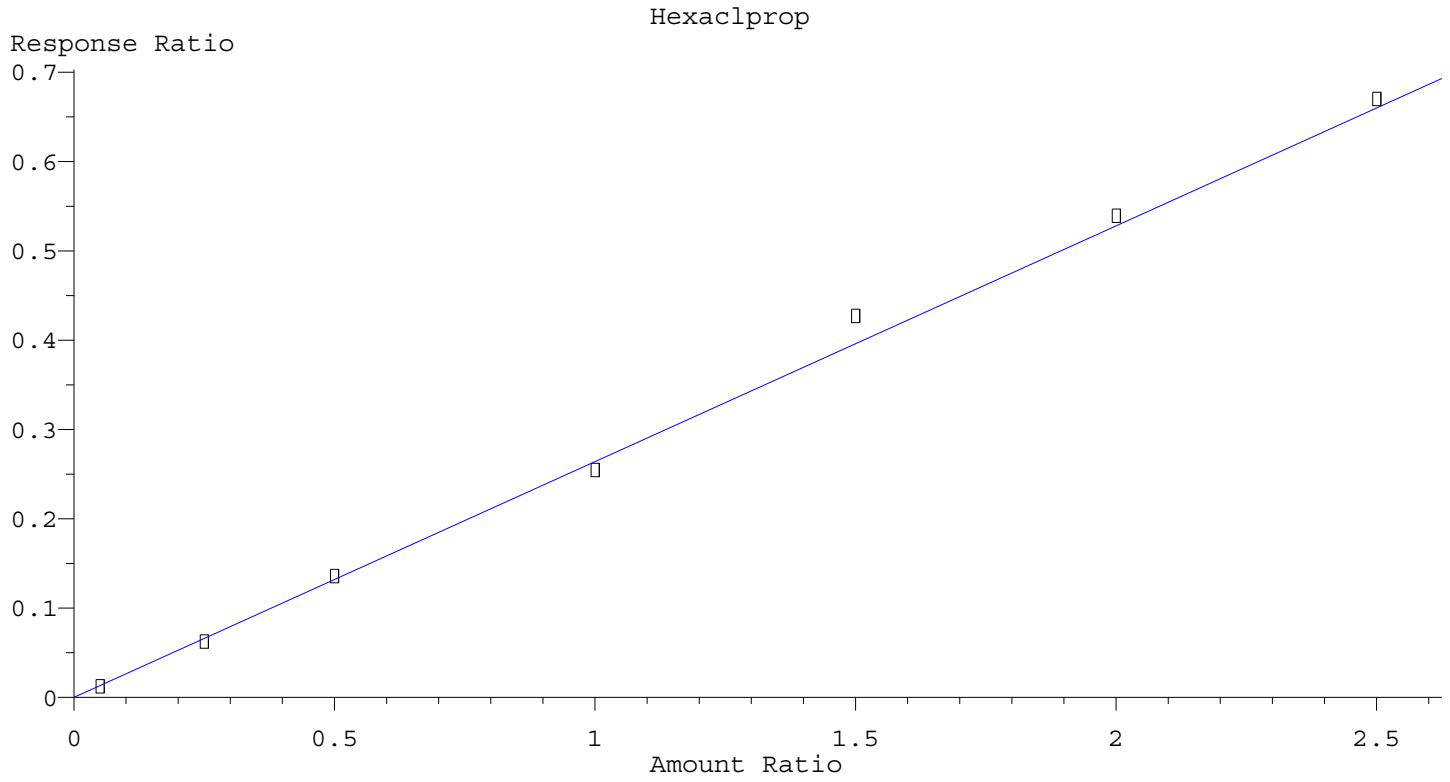
Resp Ratio = 1.06e+000 * Amt
RF Rel Std Dev = 3.0% Curve Fit: Avg RF



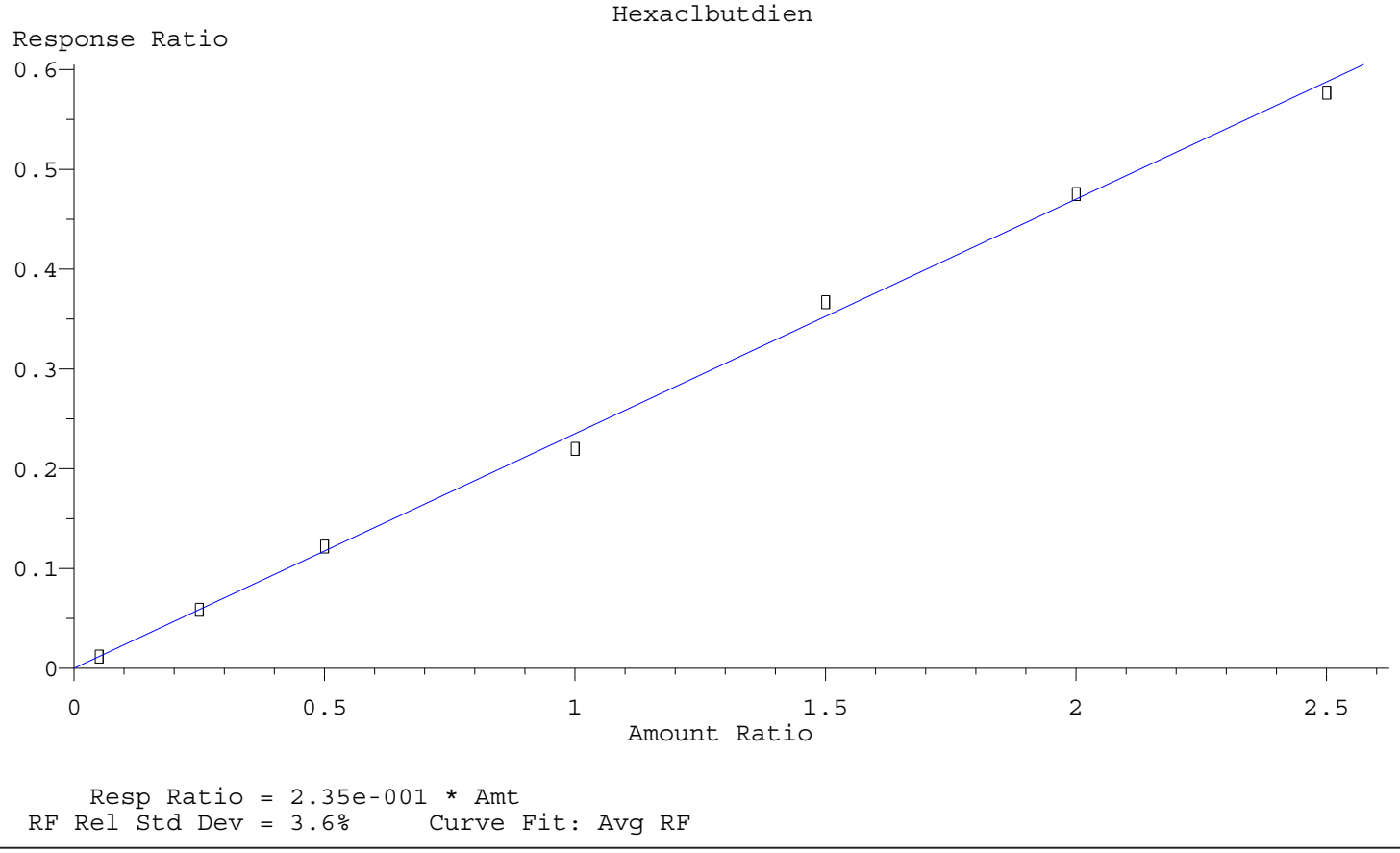
Resp Ratio = 4.10e-001 * Amt
RF Rel Std Dev = 8.2% Curve Fit: Avg RF



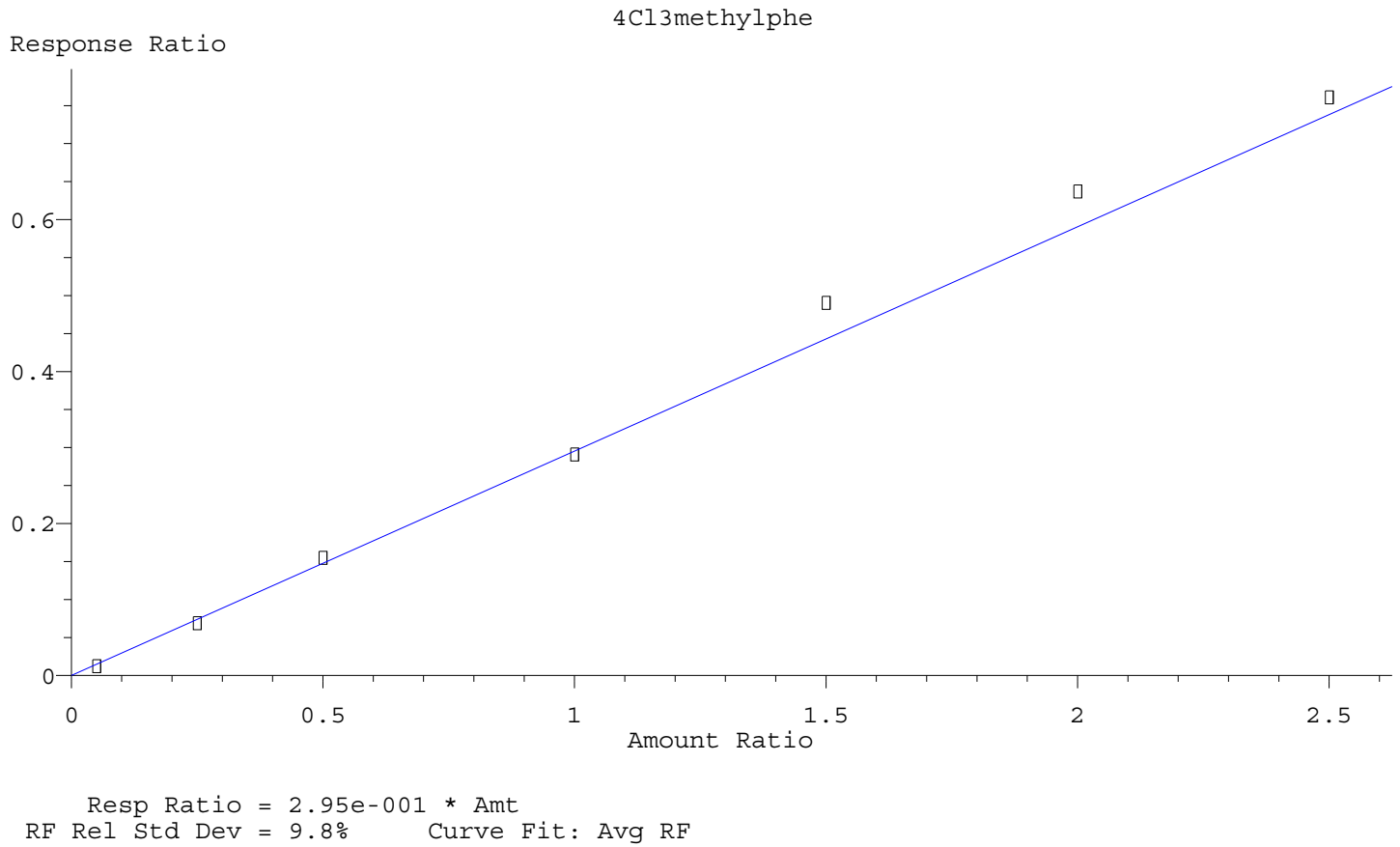
Resp Ratio = 2.74e-001 * Amt
RF Rel Std Dev = 5.4% Curve Fit: Avg RF



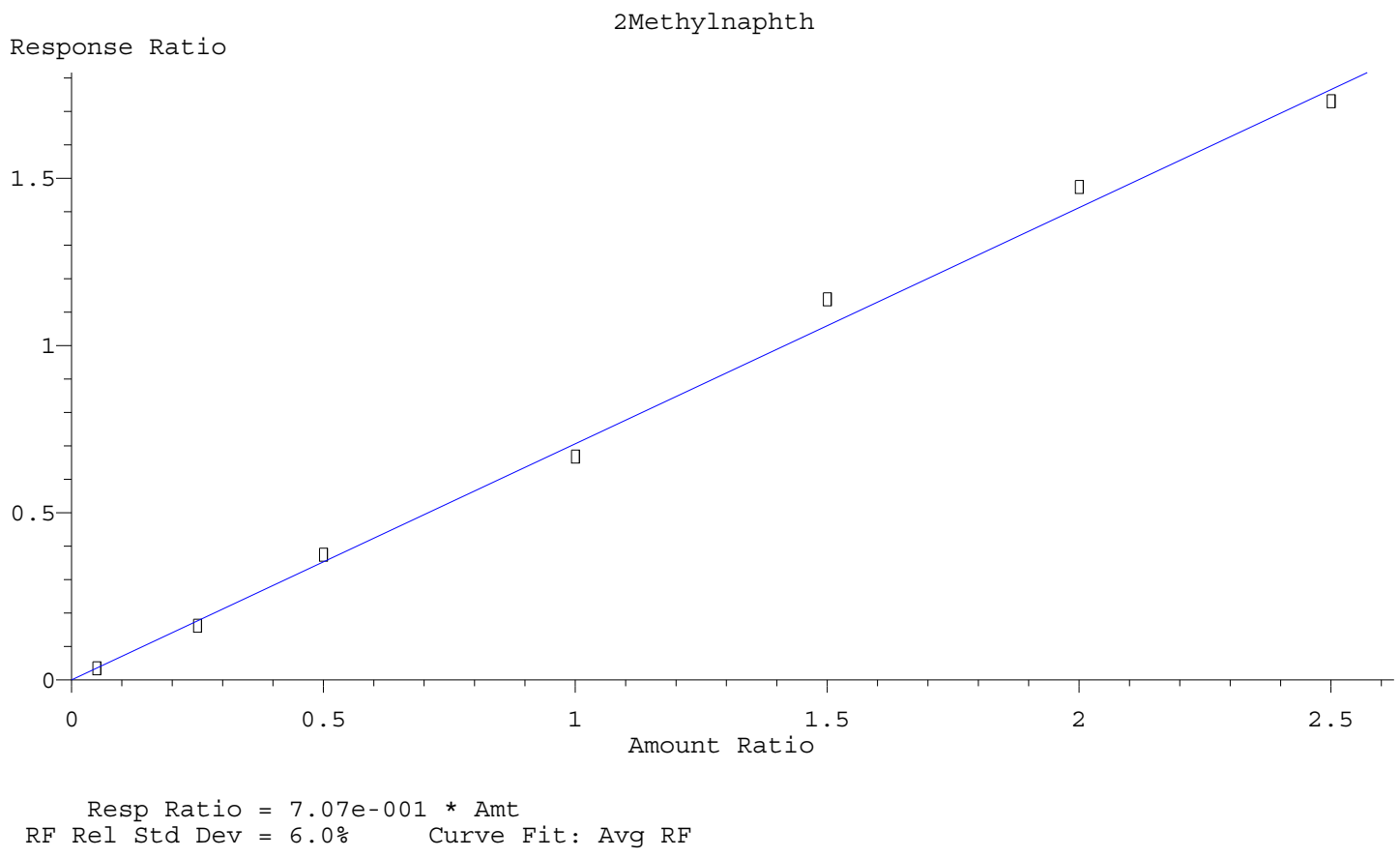
Resp Ratio = 2.64e-001 * Amt
RF Rel Std Dev = 5.0% Curve Fit: Avg RF



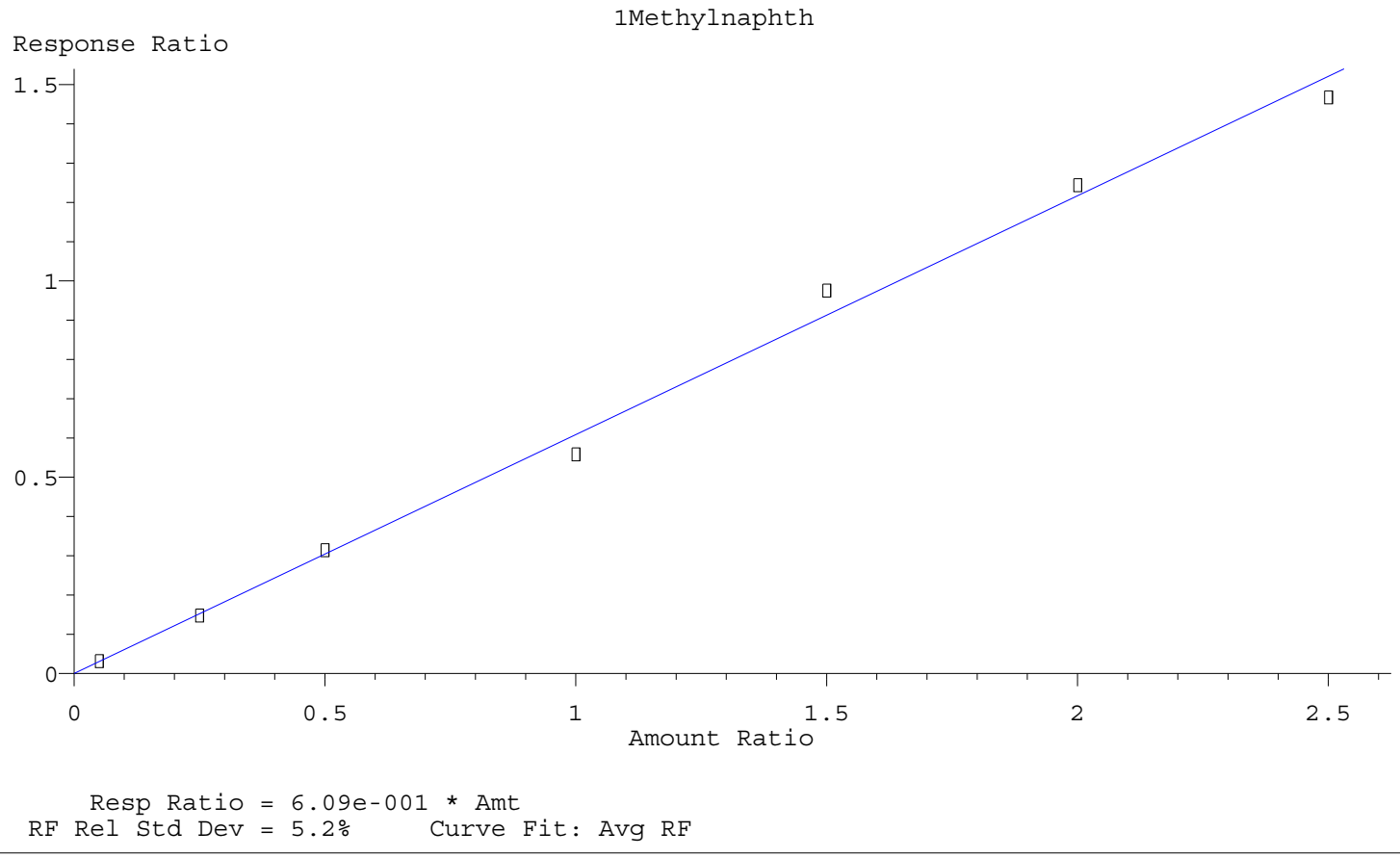
Resp Ratio = 2.35e-001 * Amt
RF Rel Std Dev = 3.6% Curve Fit: Avg RF



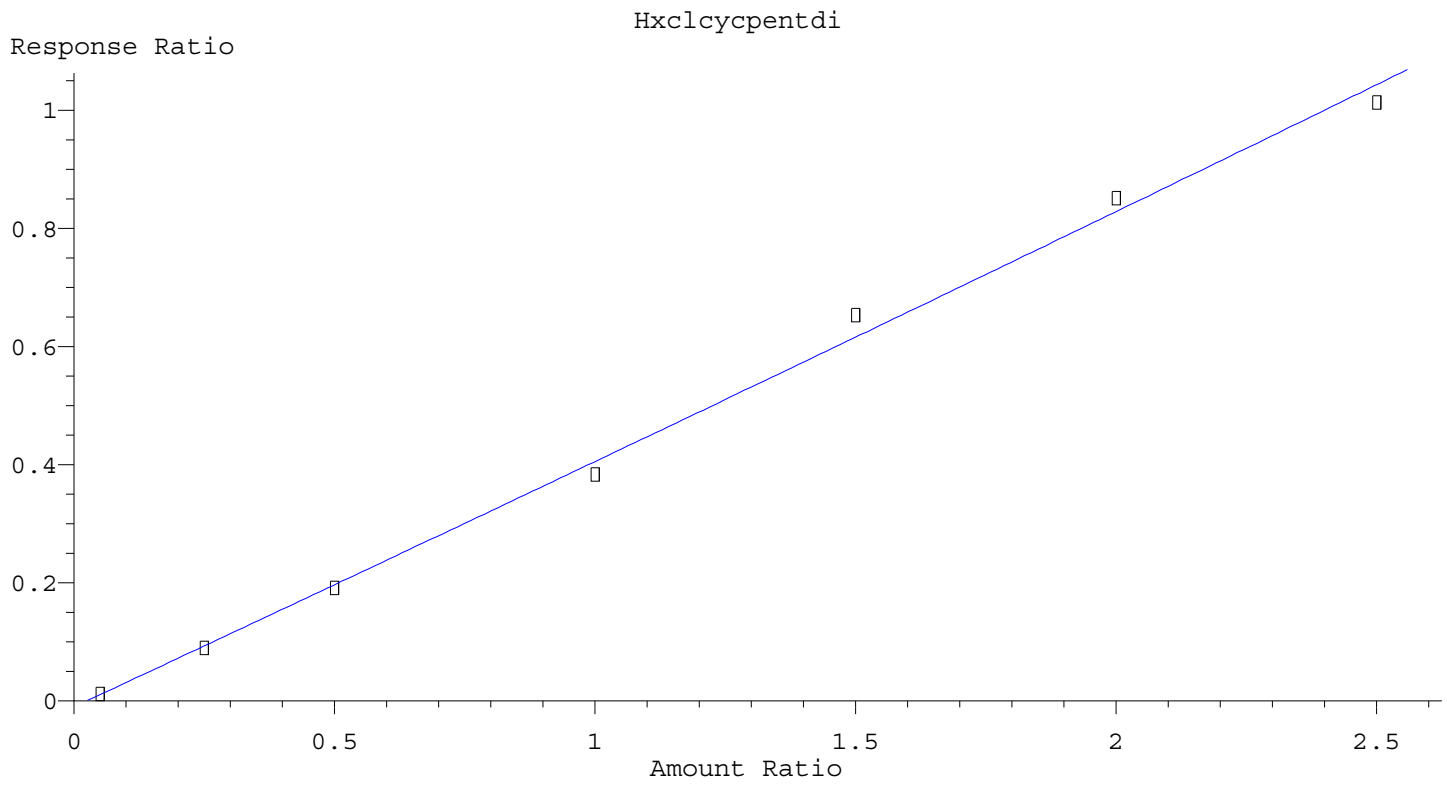
Resp Ratio = 2.95e-001 * Amt
RF Rel Std Dev = 9.8% Curve Fit: Avg RF



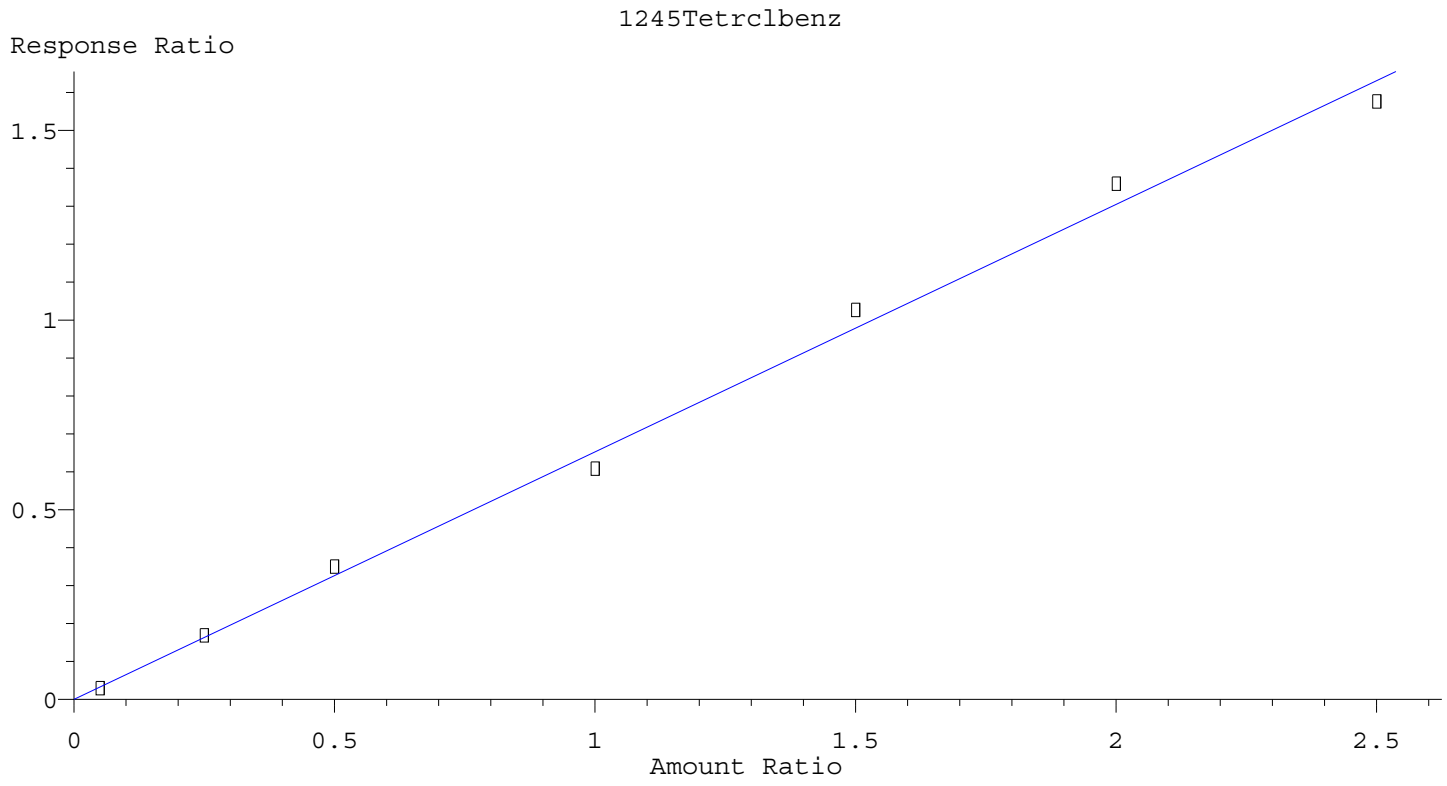
Resp Ratio = 7.07e-001 * Amt
RF Rel Std Dev = 6.0% Curve Fit: Avg RF



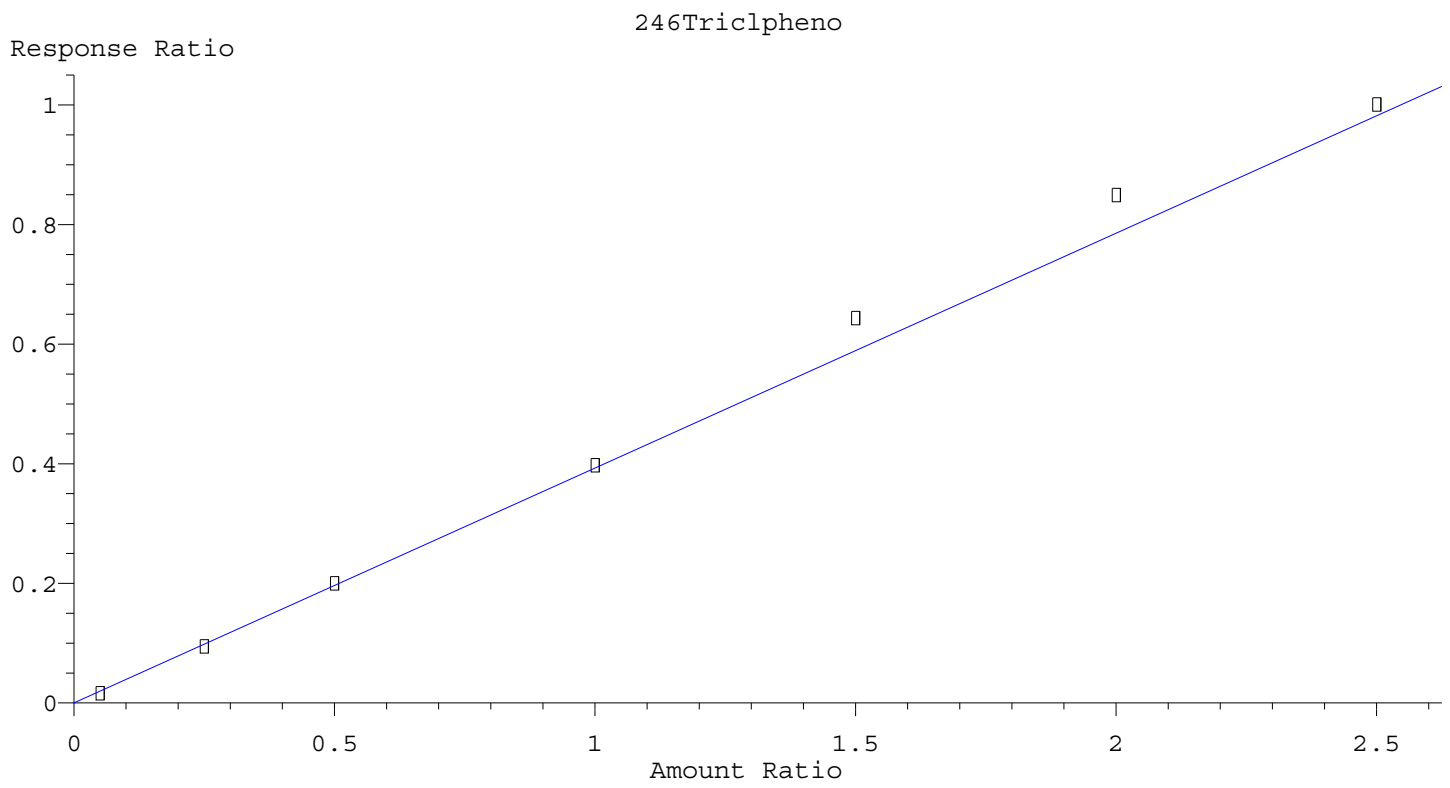
Resp Ratio = 6.09e-001 * Amt
RF Rel Std Dev = 5.2% Curve Fit: Avg RF



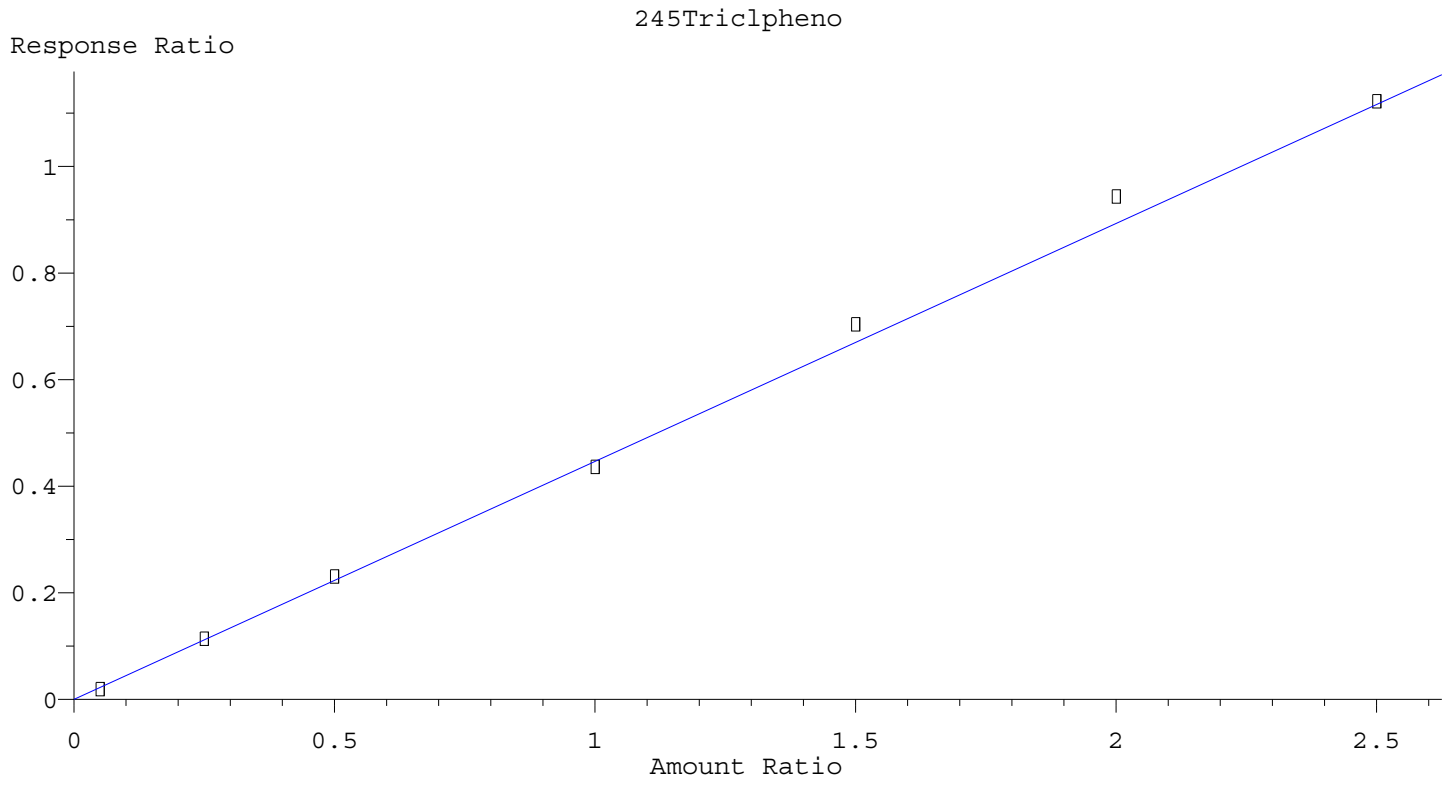
R = 4.07e-003 A*A + 4.11e-001 A - 9.95e-003
Coef of Det (r^2) = 0.998 Curve Fit: Quadratic w(1/a)



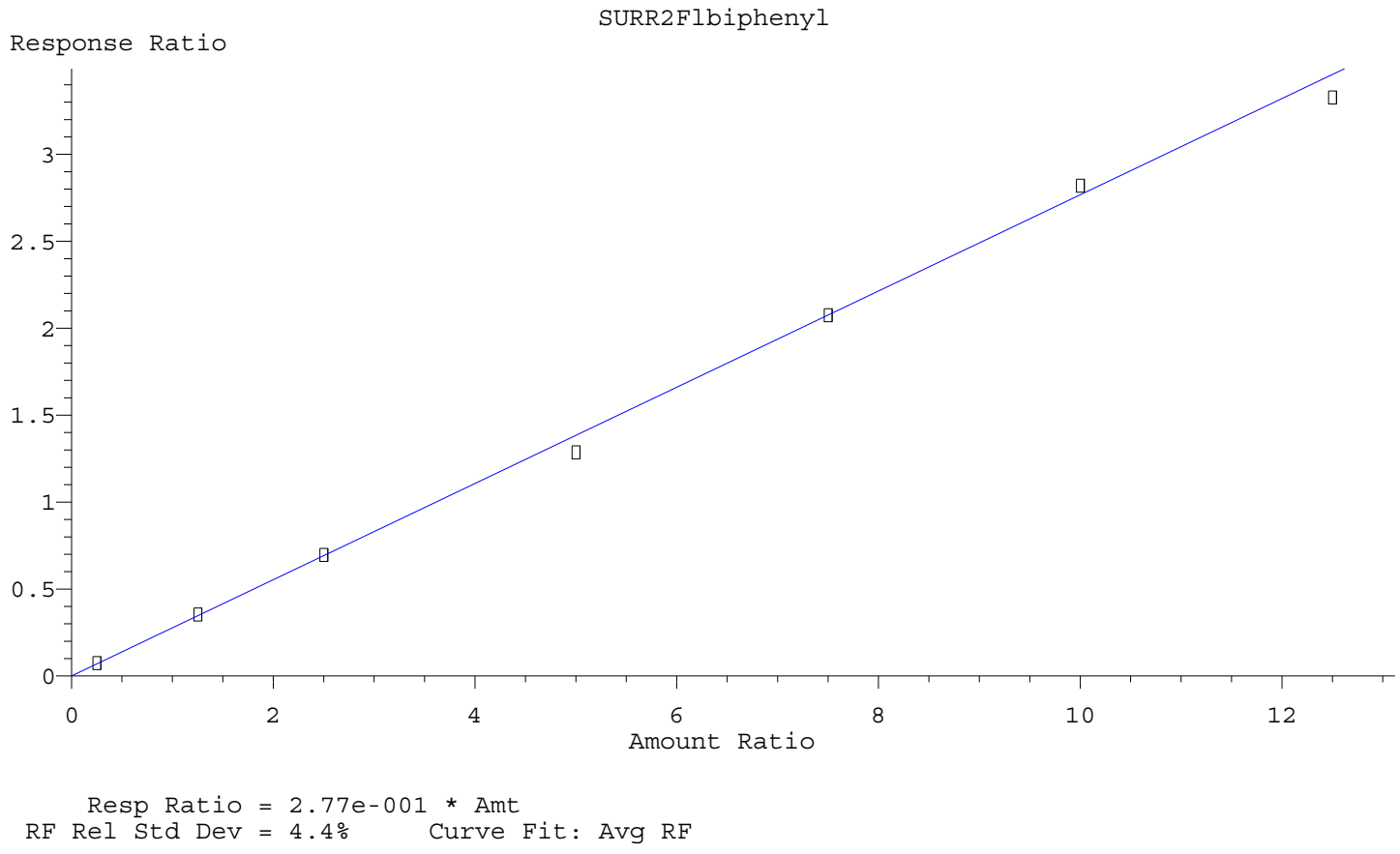
Resp Ratio = 6.52e-001 * Amt
RF Rel Std Dev = 6.5% Curve Fit: Avg RF



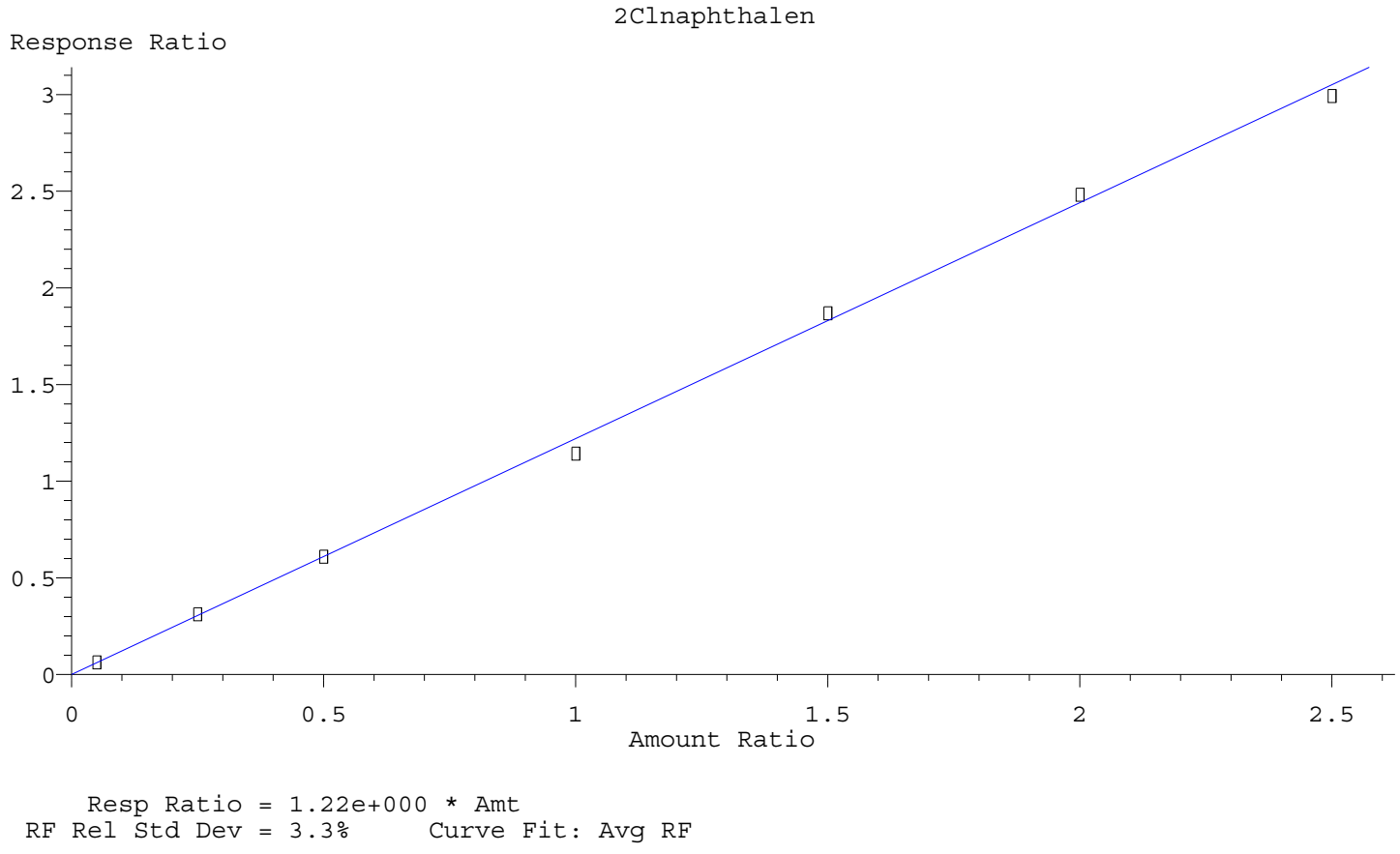
Resp Ratio = 3.93e-001 * Amt
RF Rel Std Dev = 9.1% Curve Fit: Avg RF



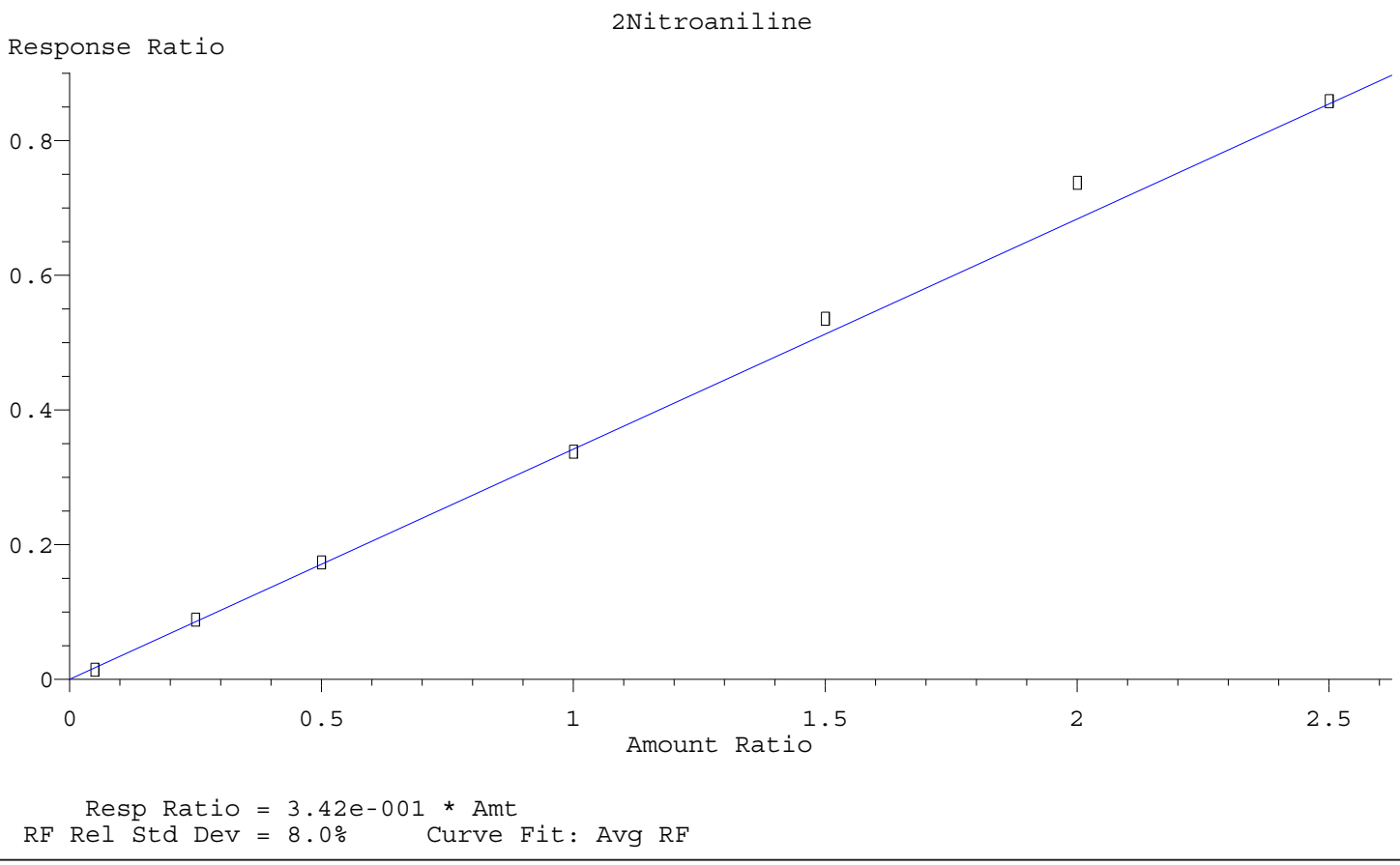
Resp Ratio = 4.46e-001 * Amt
RF Rel Std Dev = 6.8% Curve Fit: Avg RF



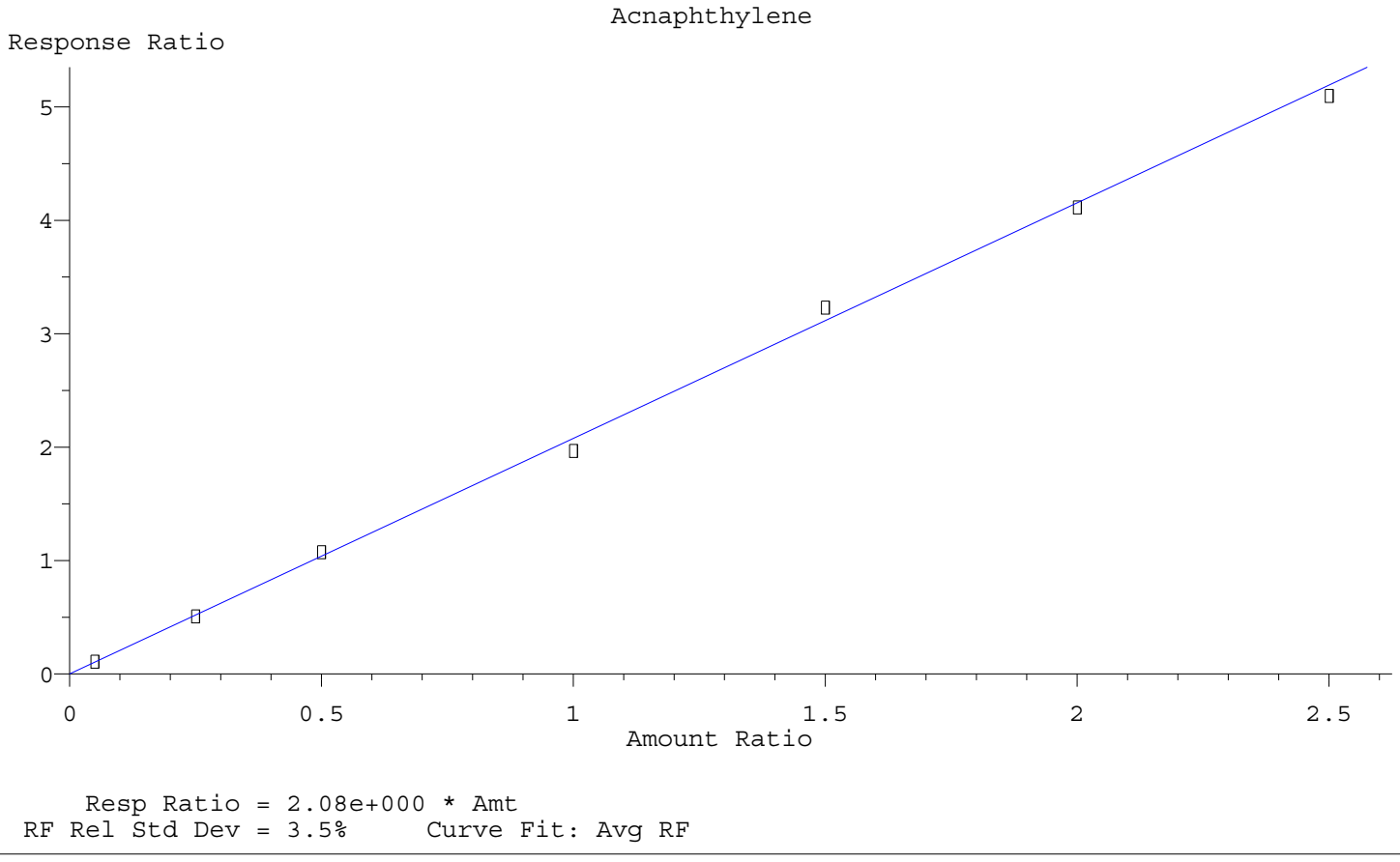
Resp Ratio = 2.77e-001 * Amt
RF Rel Std Dev = 4.4% Curve Fit: Avg RF



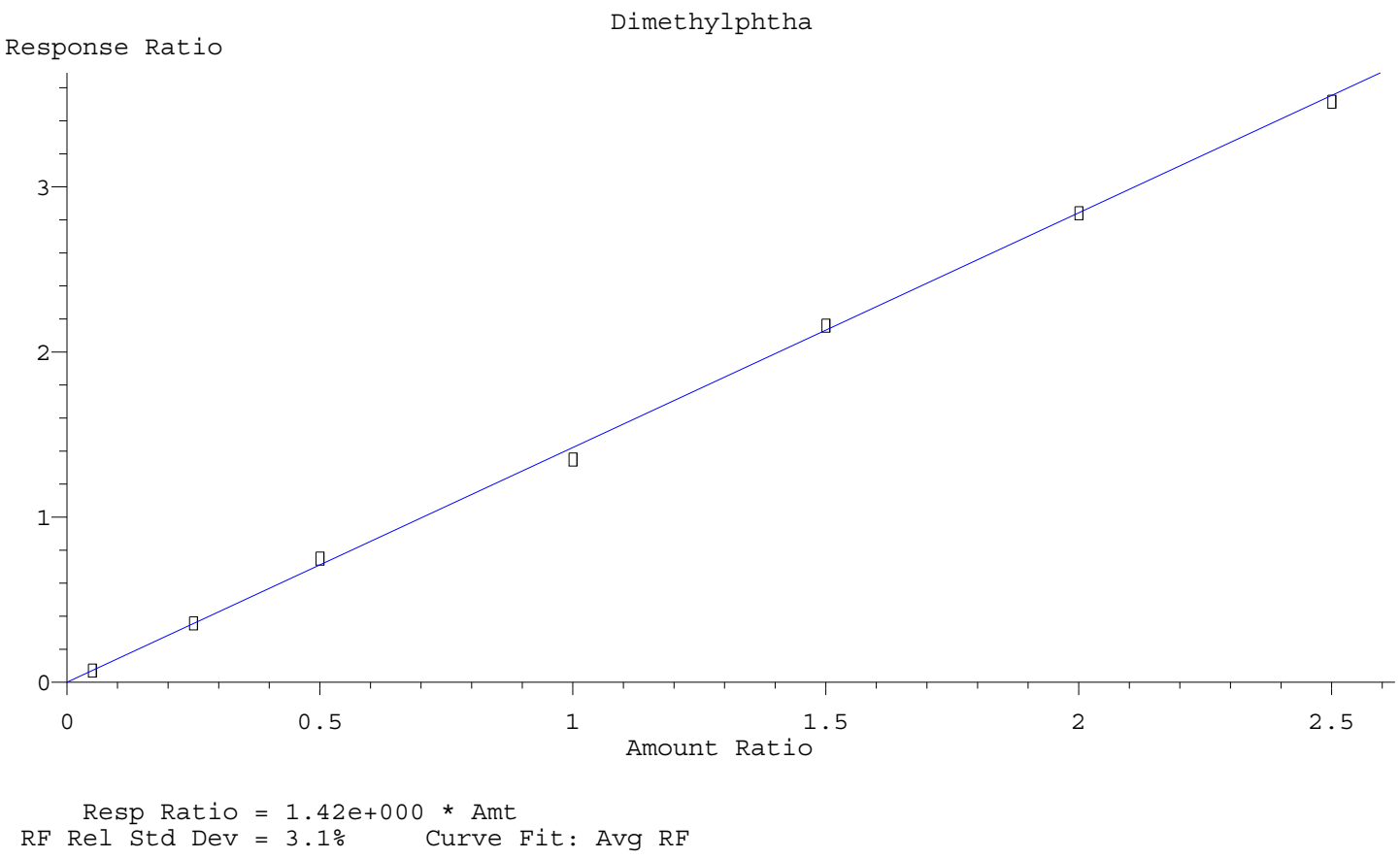
Resp Ratio = 1.22e+000 * Amt
RF Rel Std Dev = 3.3% Curve Fit: Avg RF



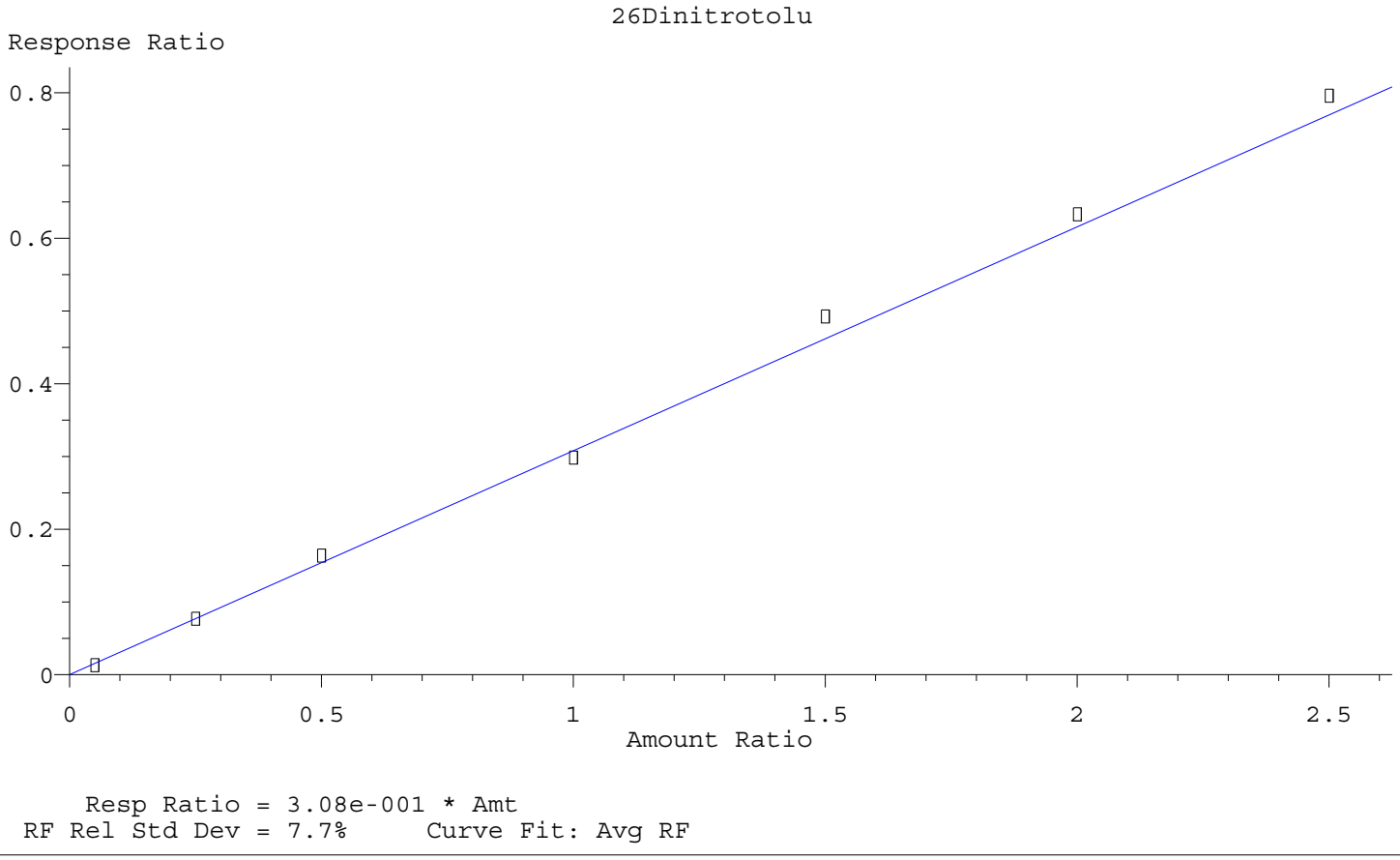
Resp Ratio = 3.42e-001 * Amt
RF Rel Std Dev = 8.0% Curve Fit: Avg RF



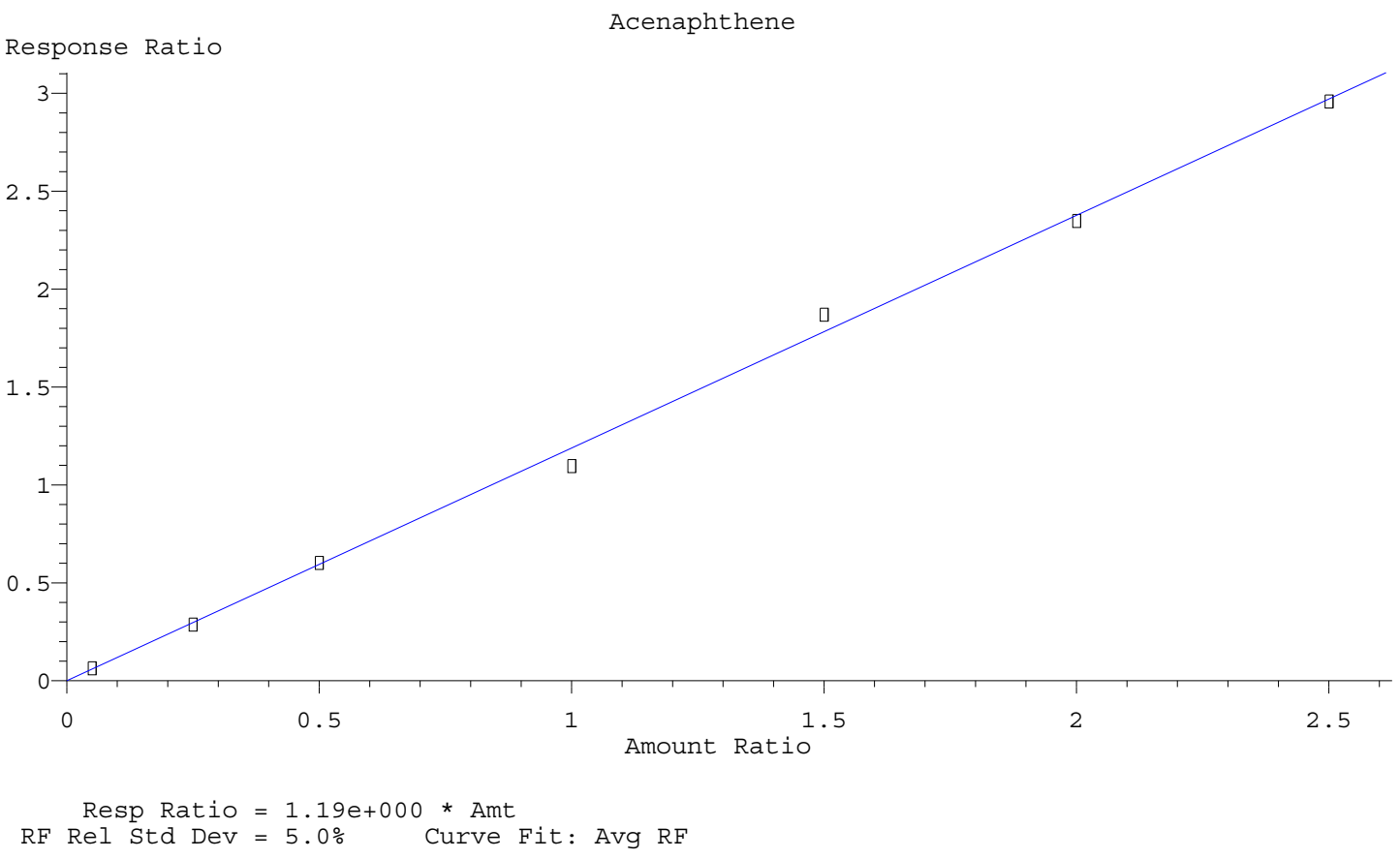
Resp Ratio = 2.08e+000 * Amt
RF Rel Std Dev = 3.5% Curve Fit: Avg RF



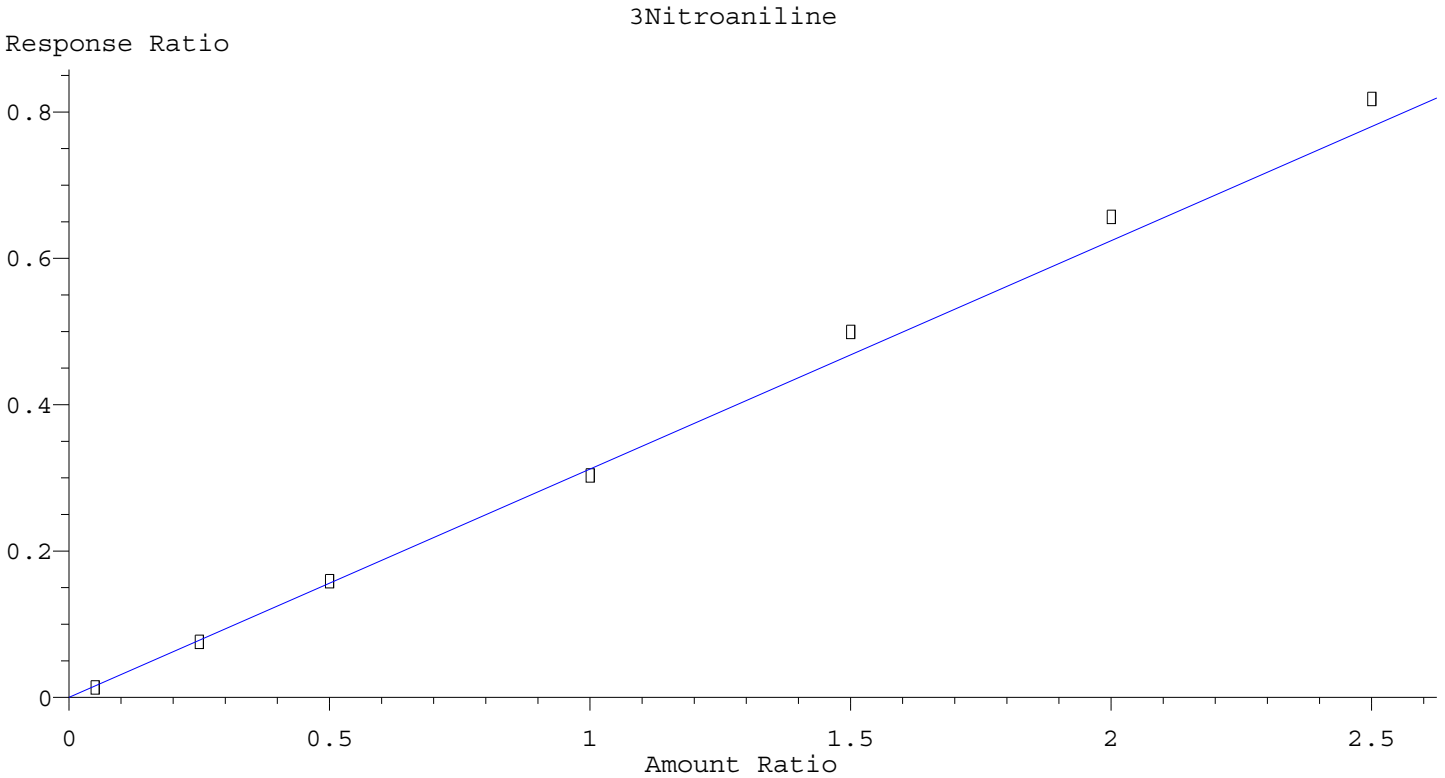
Resp Ratio = 1.42e+000 * Amt
RF Rel Std Dev = 3.1% Curve Fit: Avg RF



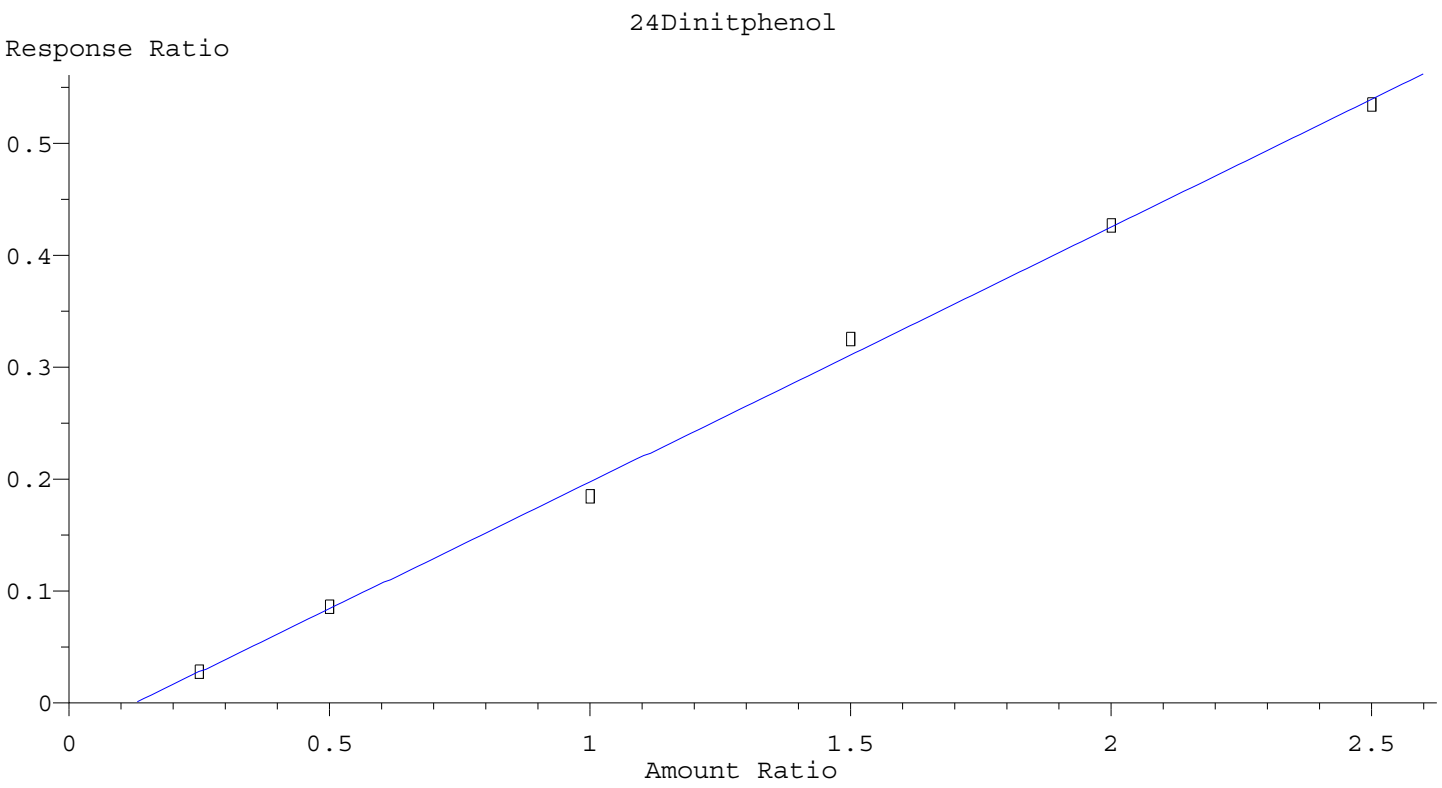
Resp Ratio = 3.08e-001 * Amt
RF Rel Std Dev = 7.7% Curve Fit: Avg RF



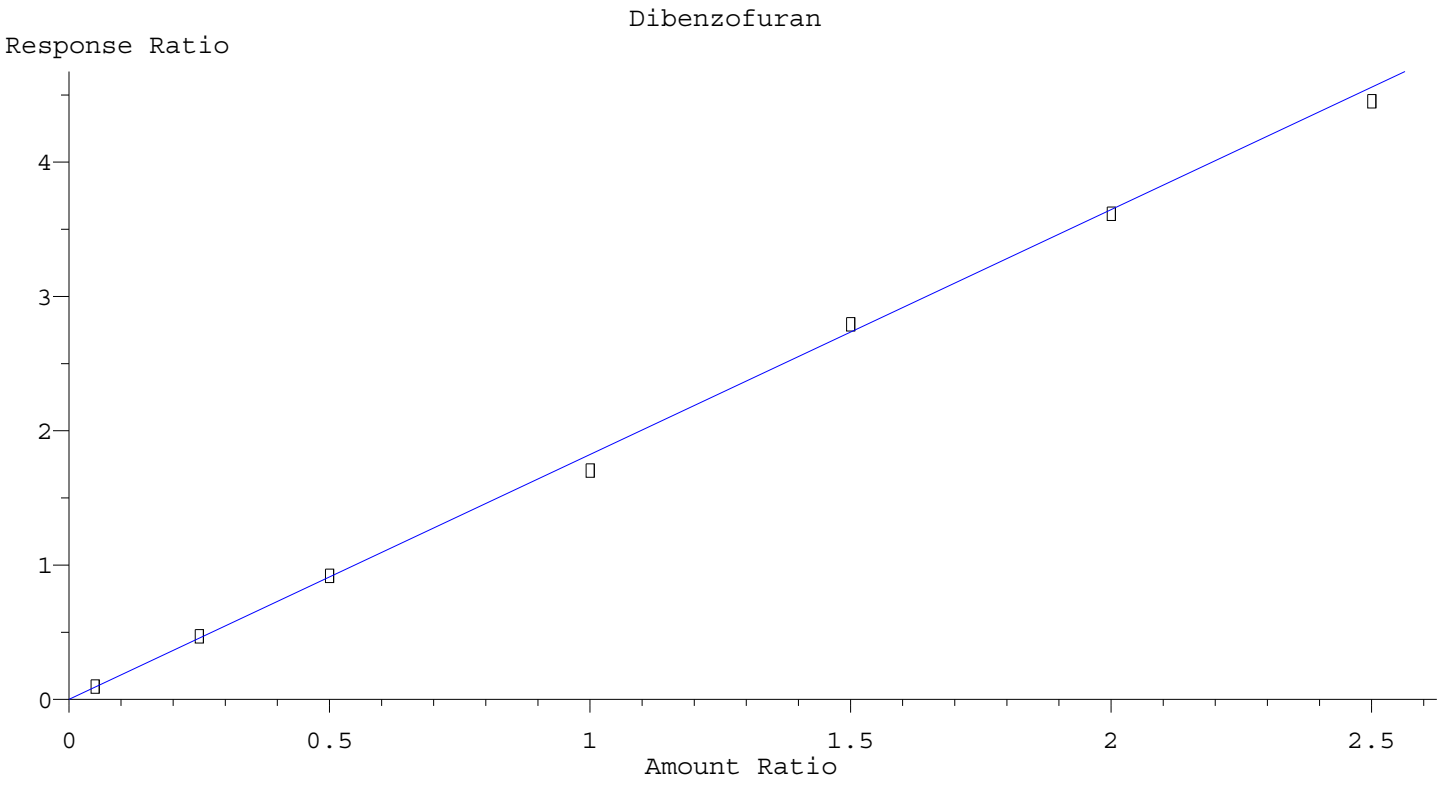
Resp Ratio = 1.19e+000 * Amt
RF Rel Std Dev = 5.0% Curve Fit: Avg RF



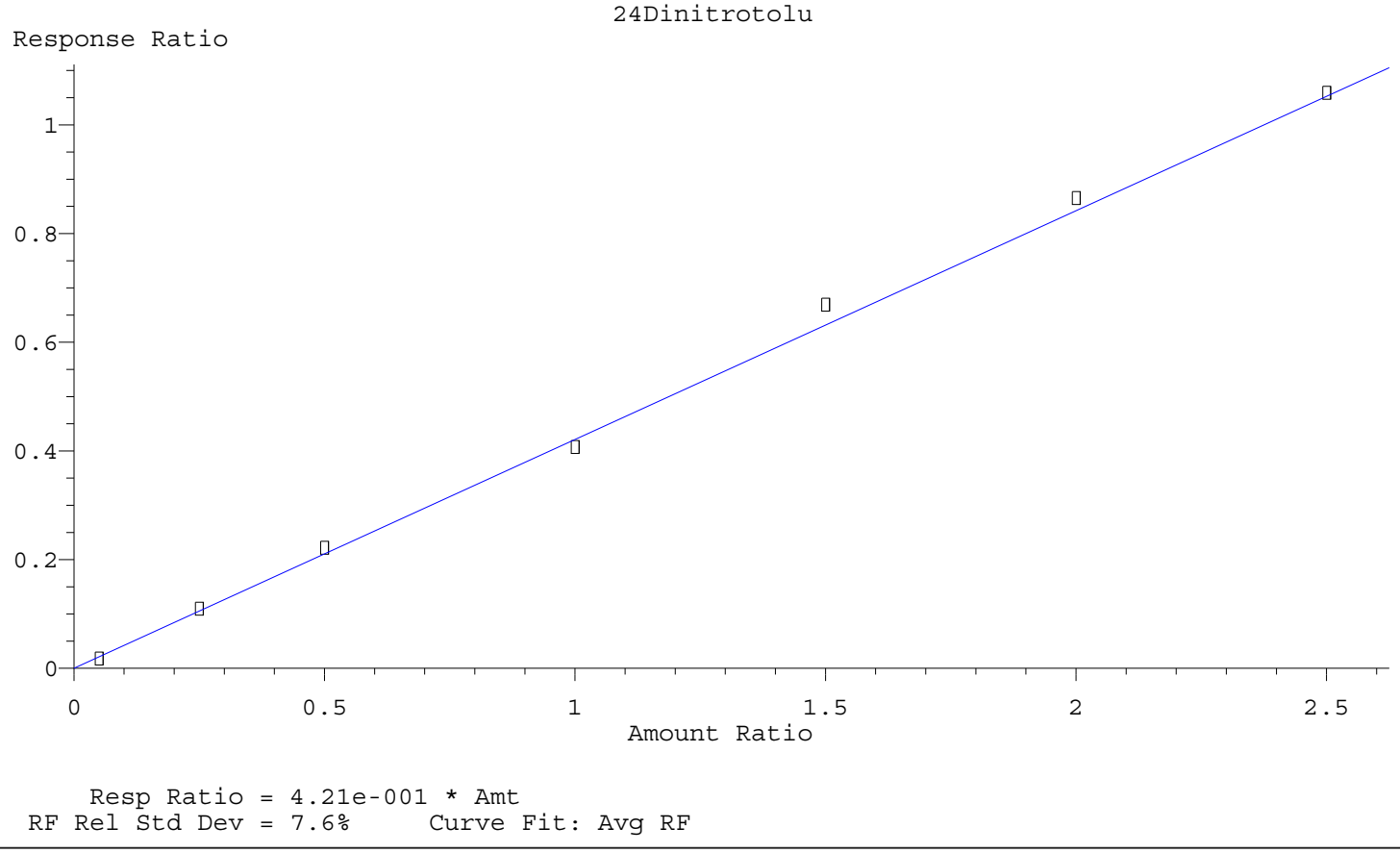
Resp Ratio = 3.12e-001 * Amt
RF Rel Std Dev = 6.7% Curve Fit: Avg RF



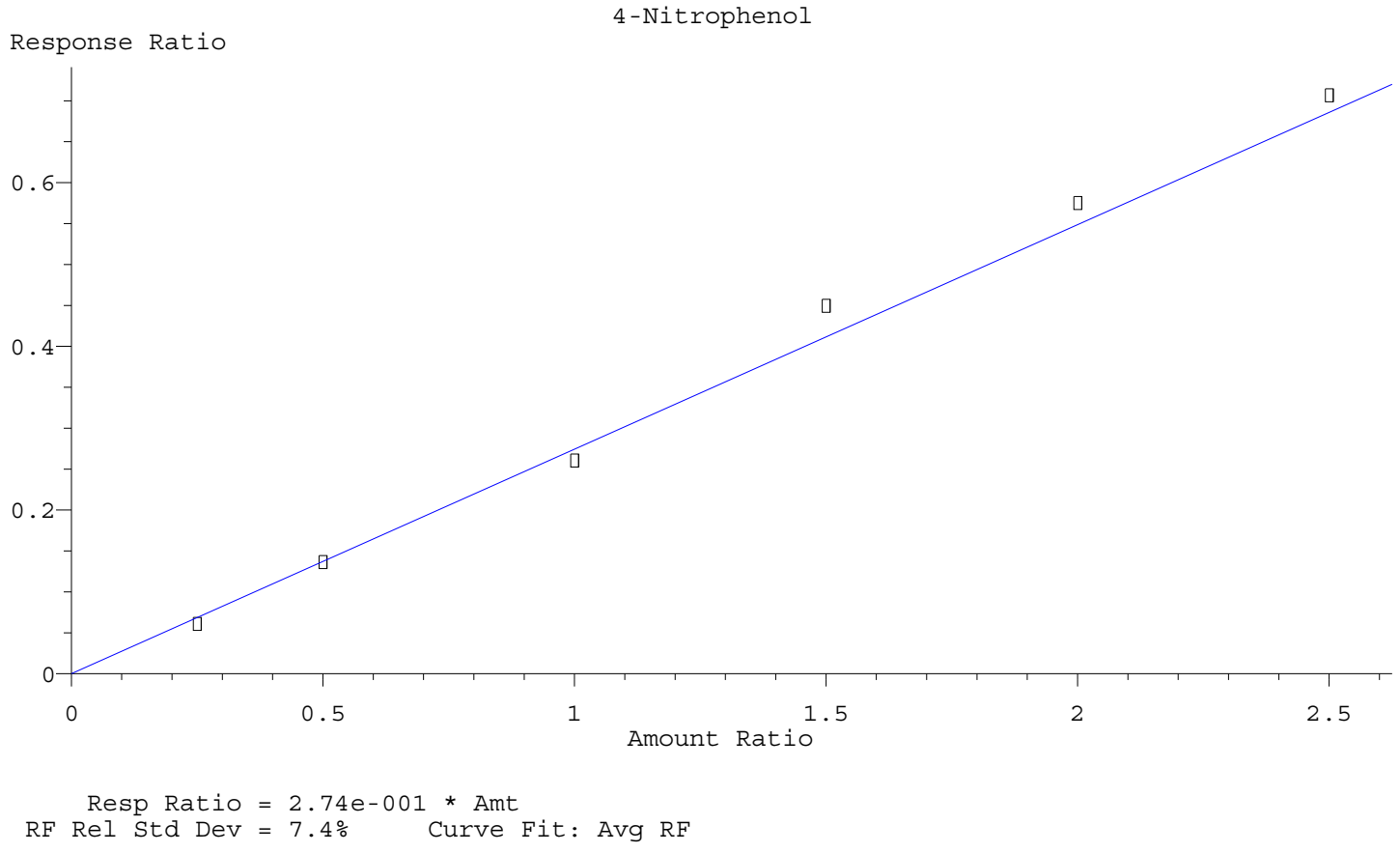
R = 9.79e-004 A*A + 2.25e-001 A - 2.86e-002
Coef of Det (r^2) = 0.998 Curve Fit: Quadratic w(1/a)



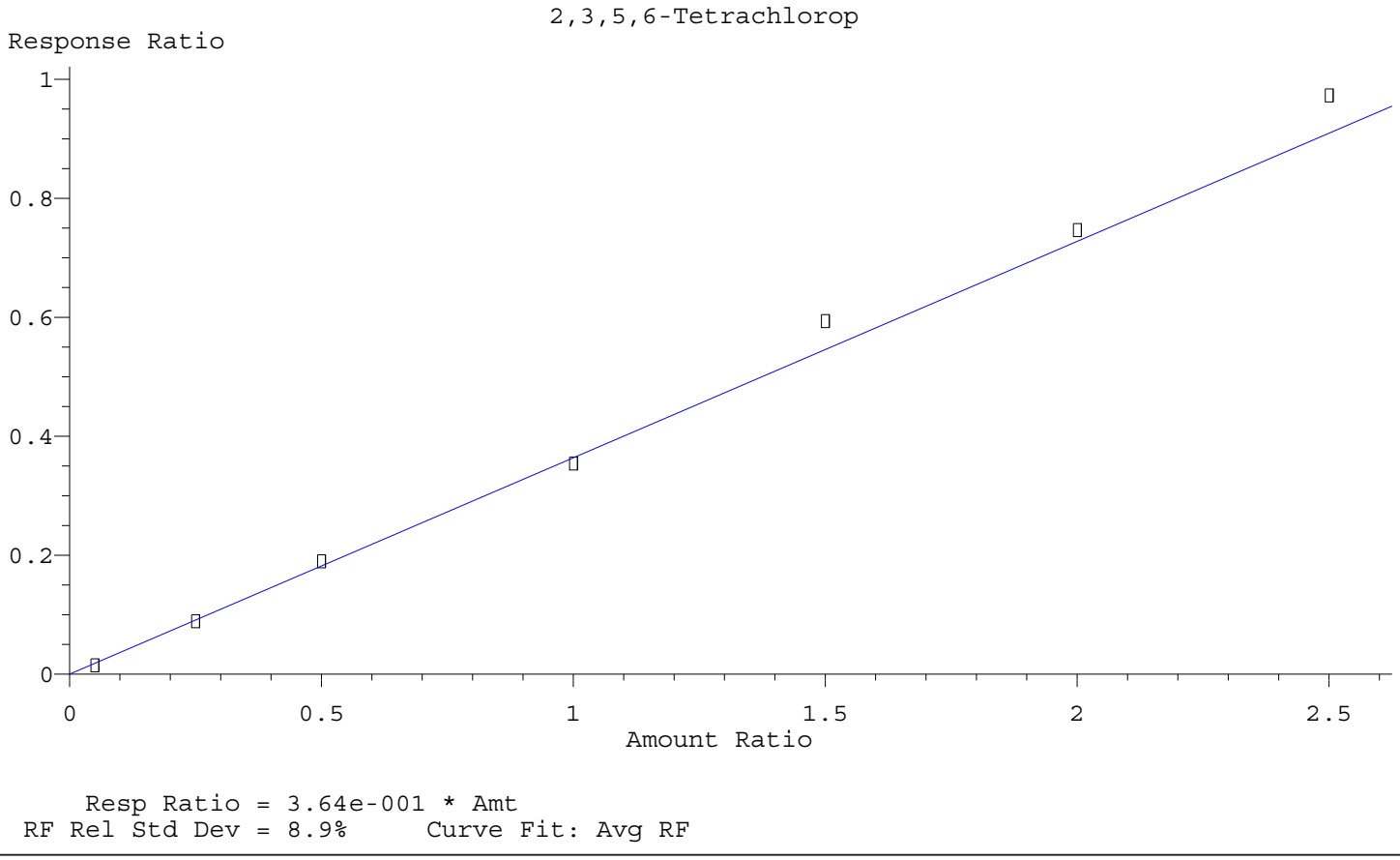
Resp Ratio = 1.82e+000 * Amt
RF Rel Std Dev = 3.6% Curve Fit: Avg RF



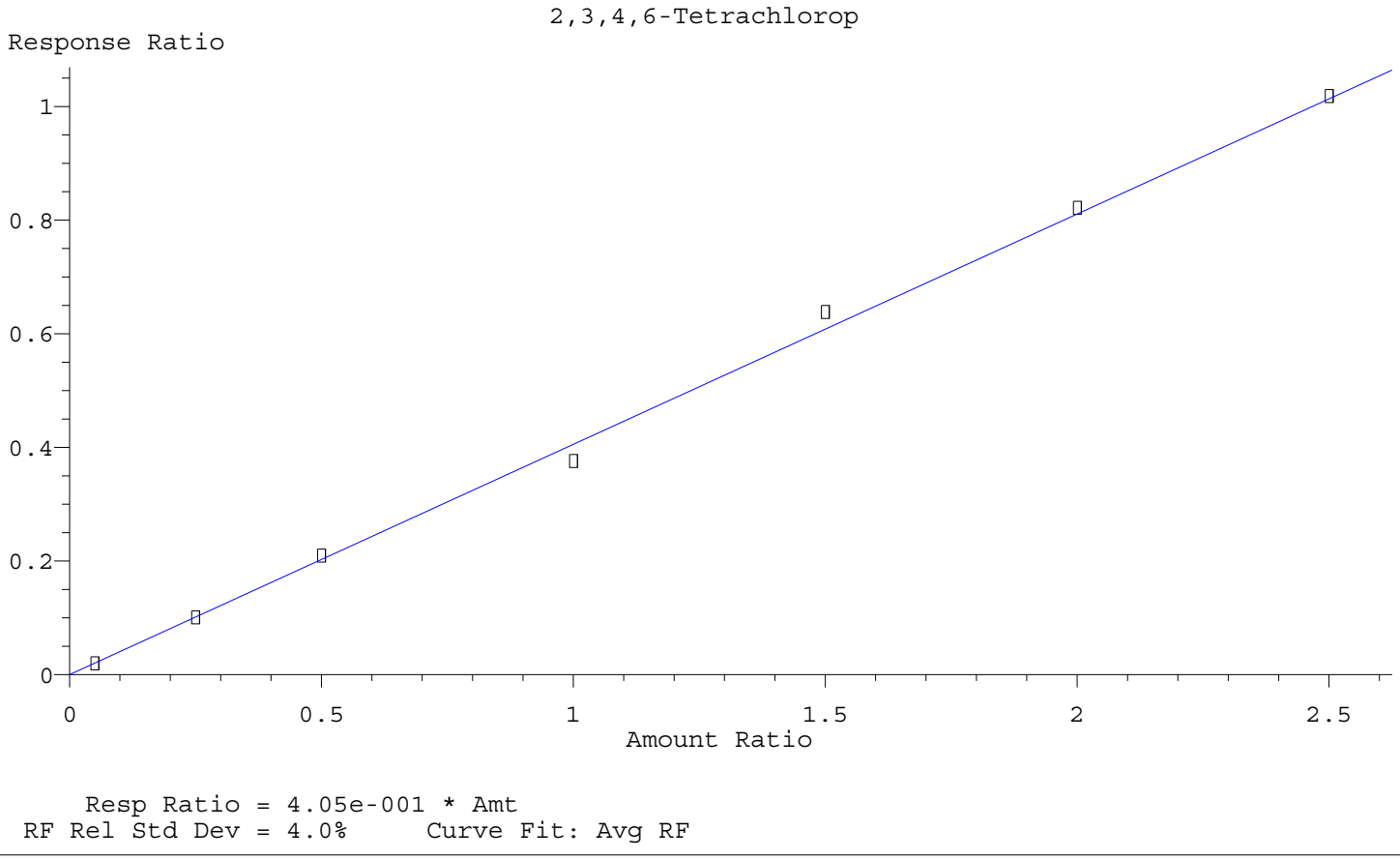
Resp Ratio = 4.21e-001 * Amt
RF Rel Std Dev = 7.6% Curve Fit: Avg RF



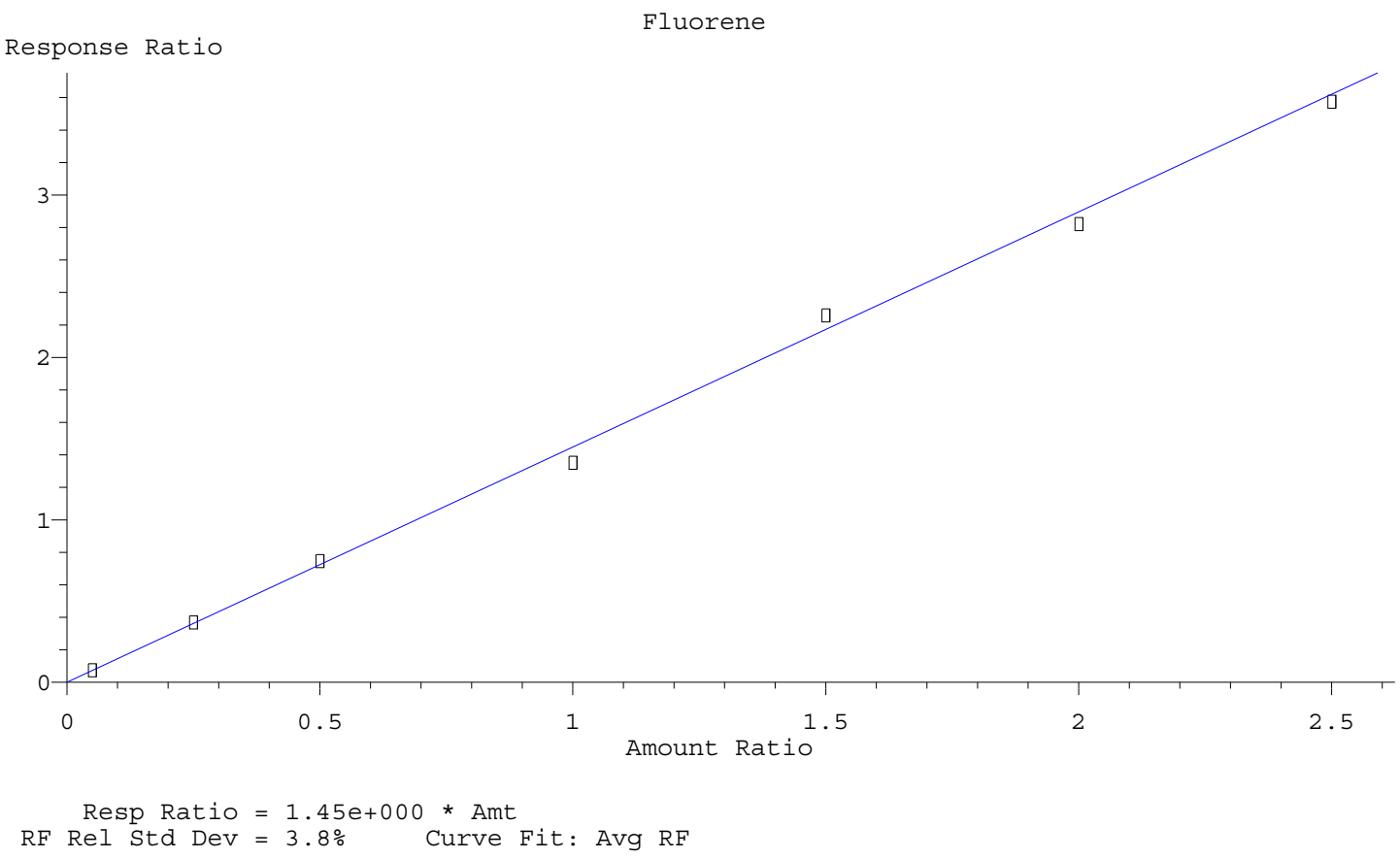
Resp Ratio = 2.74e-001 * Amt
RF Rel Std Dev = 7.4% Curve Fit: Avg RF



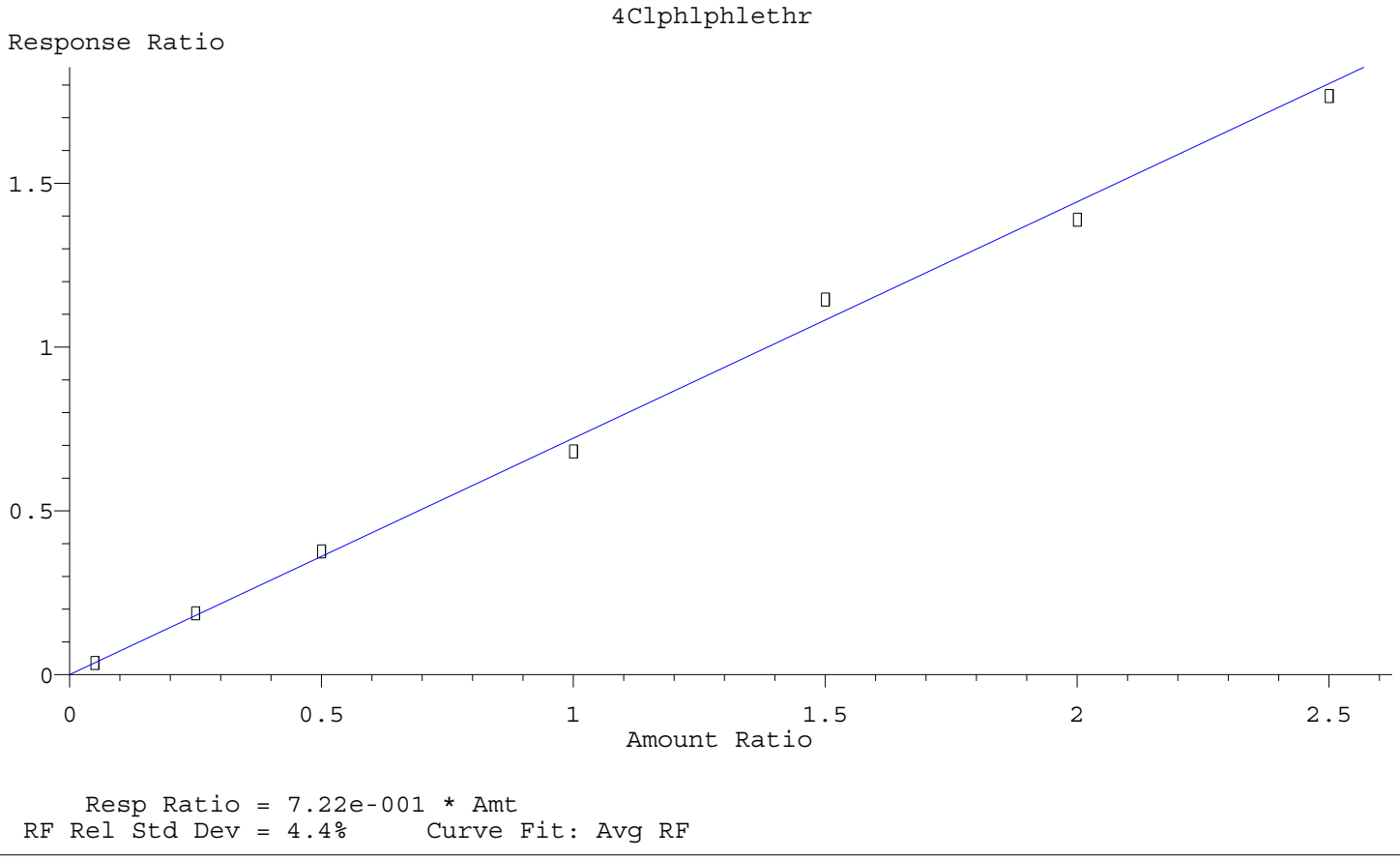
Resp Ratio = 3.64e-001 * Amt
RF Rel Std Dev = 8.9% Curve Fit: Avg RF



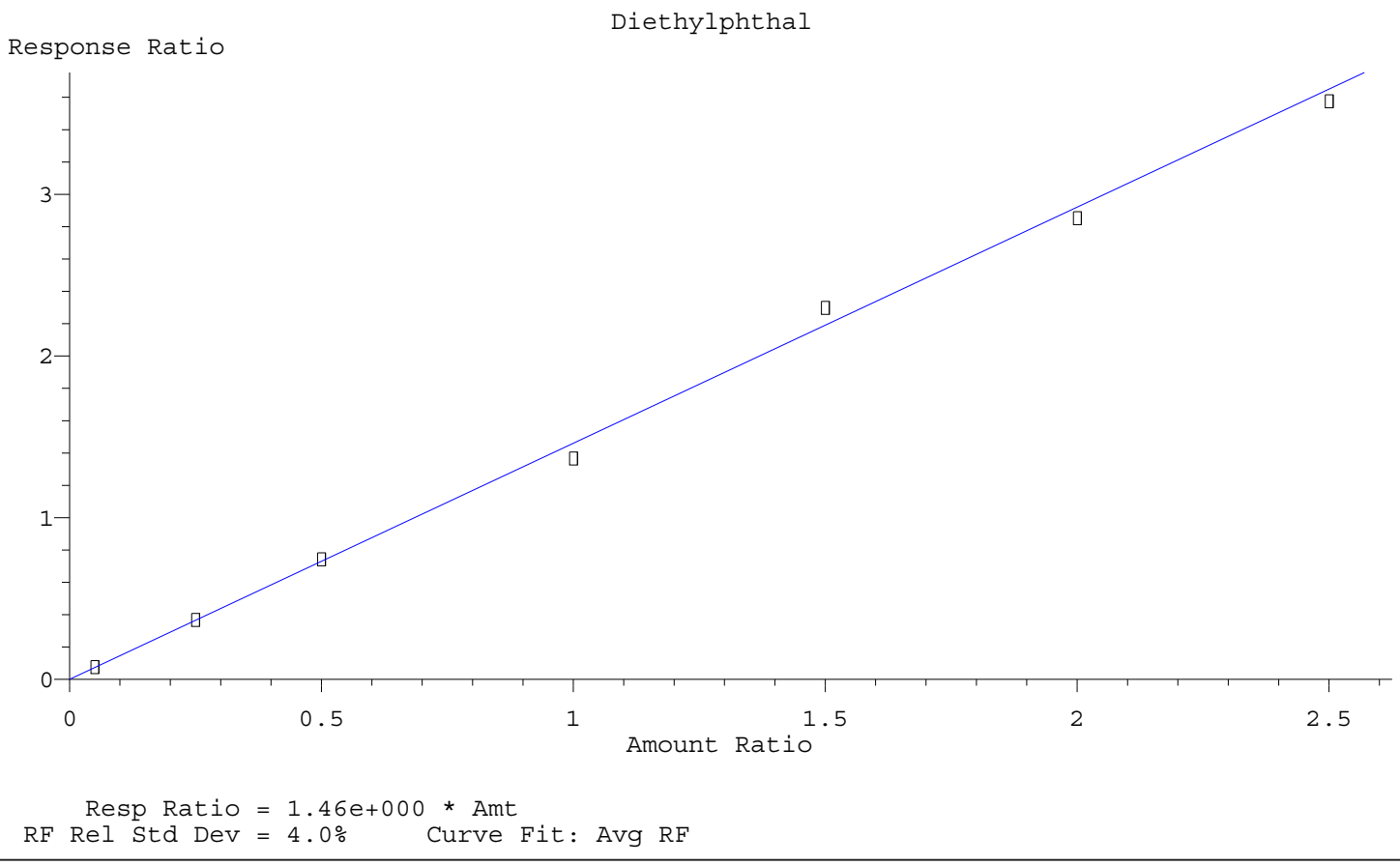
Resp Ratio = 4.05e-001 * Amt
RF Rel Std Dev = 4.0% Curve Fit: Avg RF



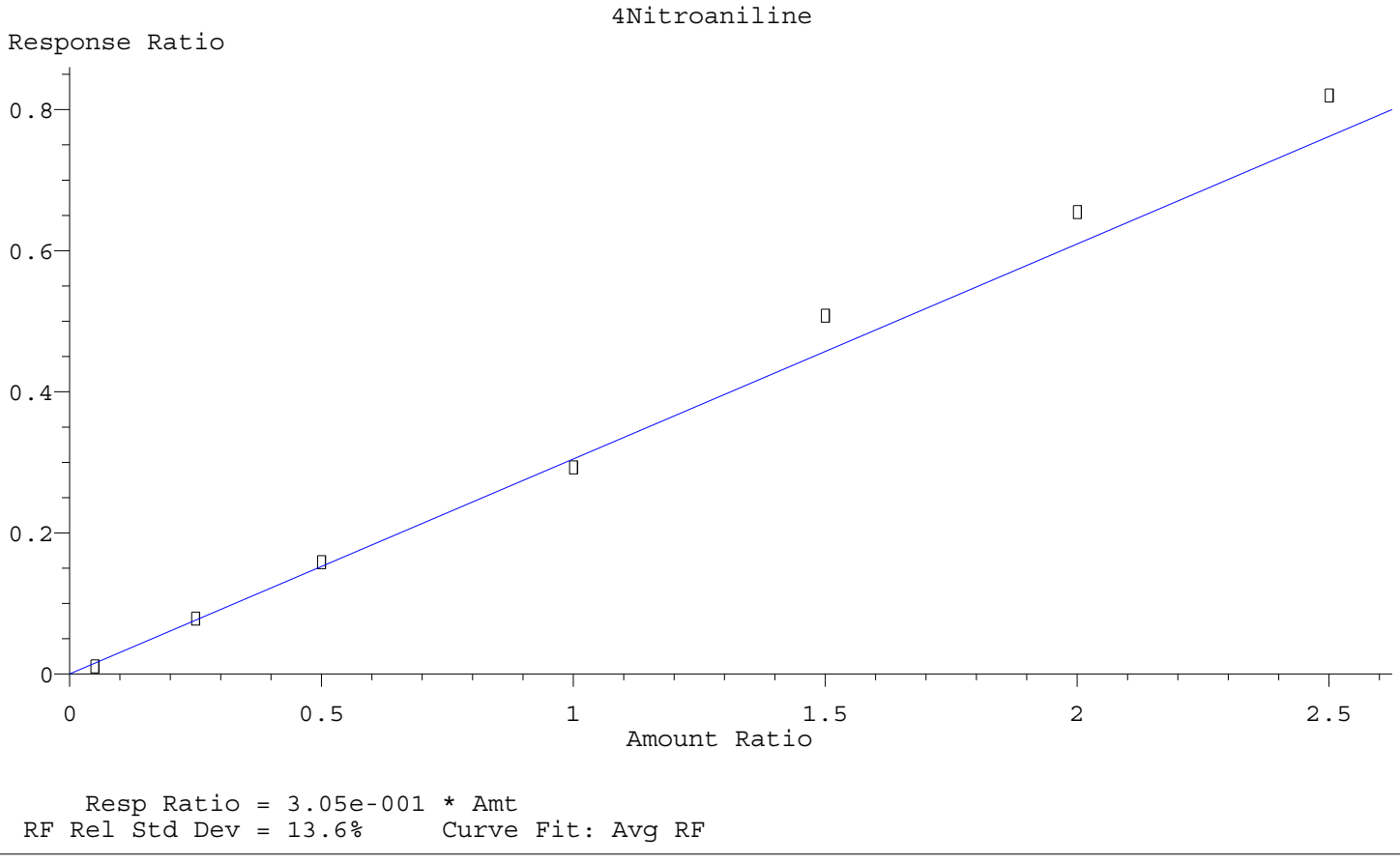
Resp Ratio = 1.45e+000 * Amt
RF Rel Std Dev = 3.8% Curve Fit: Avg RF



Resp Ratio = 7.22e-001 * Amt
RF Rel Std Dev = 4.4% Curve Fit: Avg RF

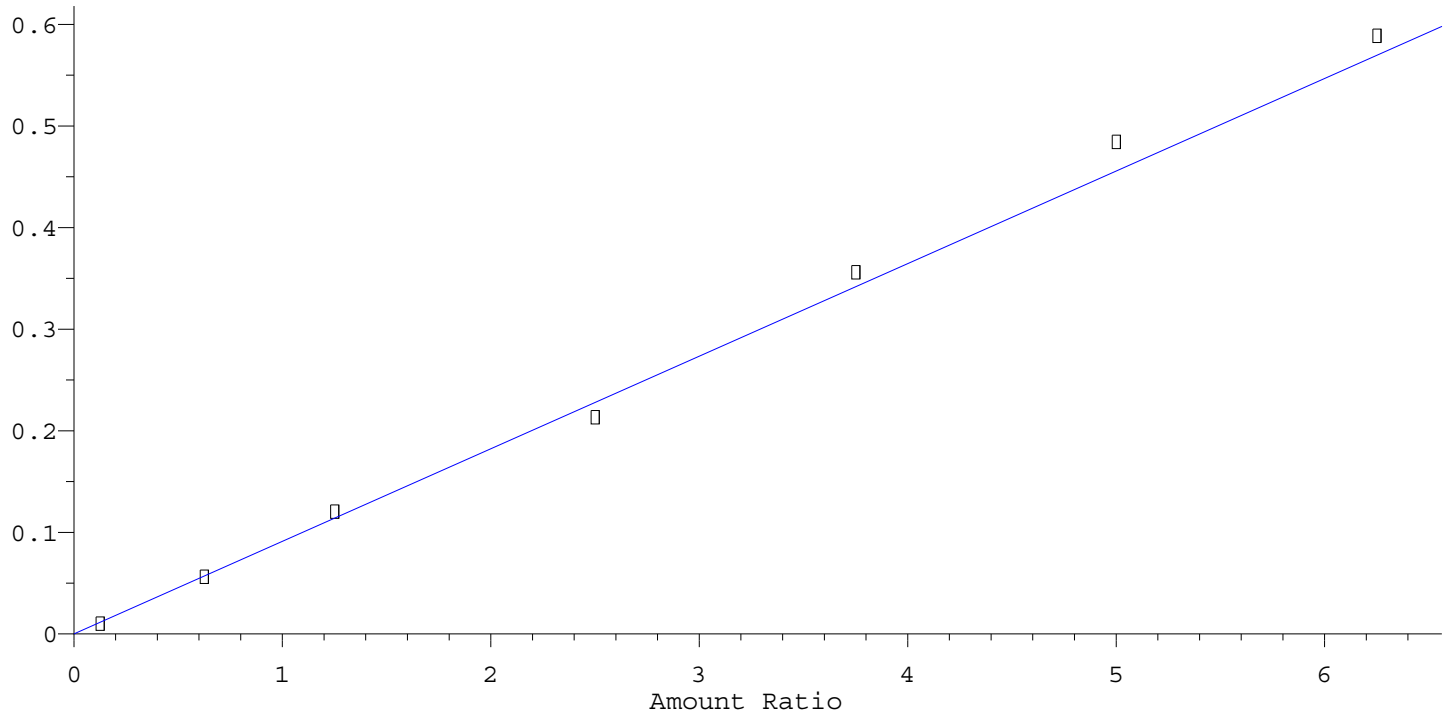


Resp Ratio = 1.46e+000 * Amt
RF Rel Std Dev = 4.0% Curve Fit: Avg RF



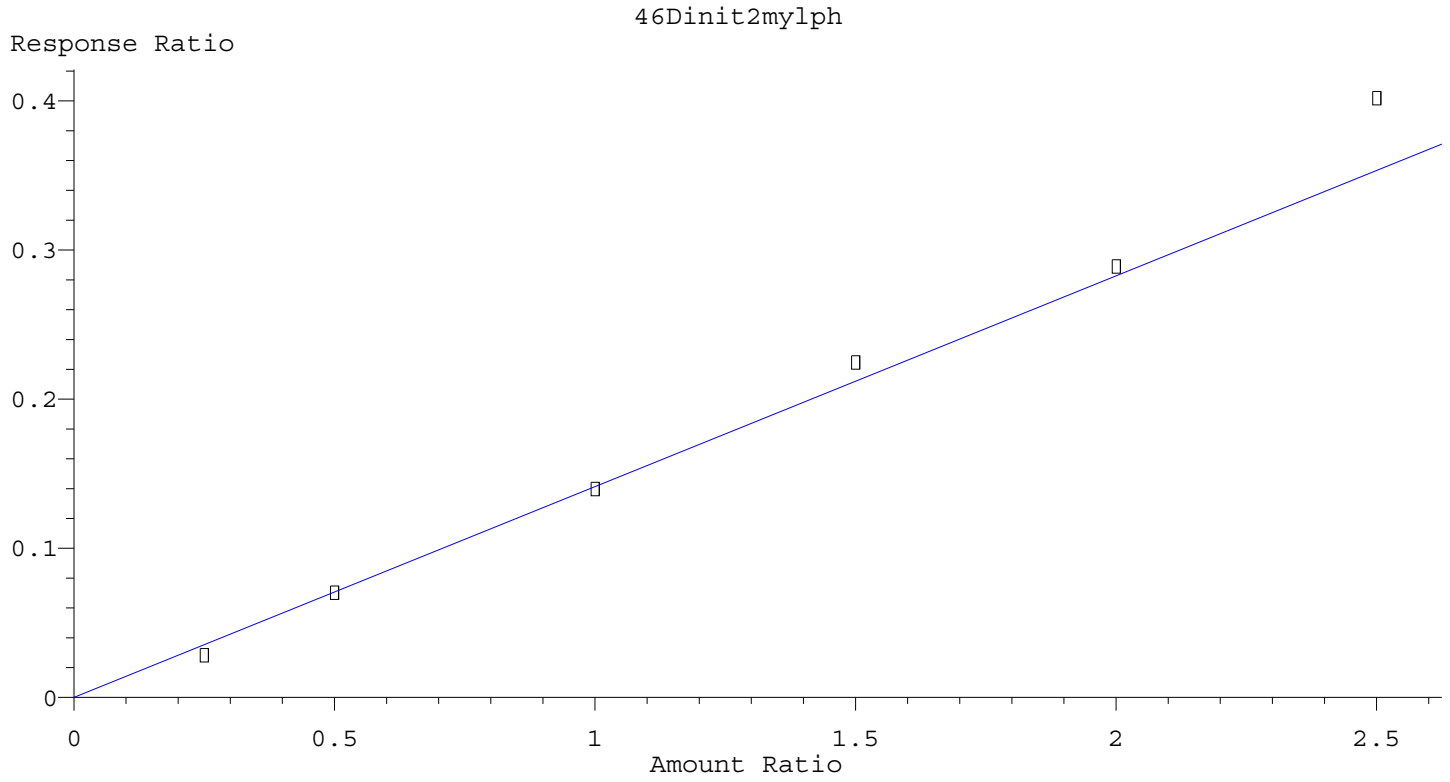
Resp Ratio = 3.05e-001 * Amt
RF Rel Std Dev = 13.6% Curve Fit: Avg RF

SURR246Tribrphenl

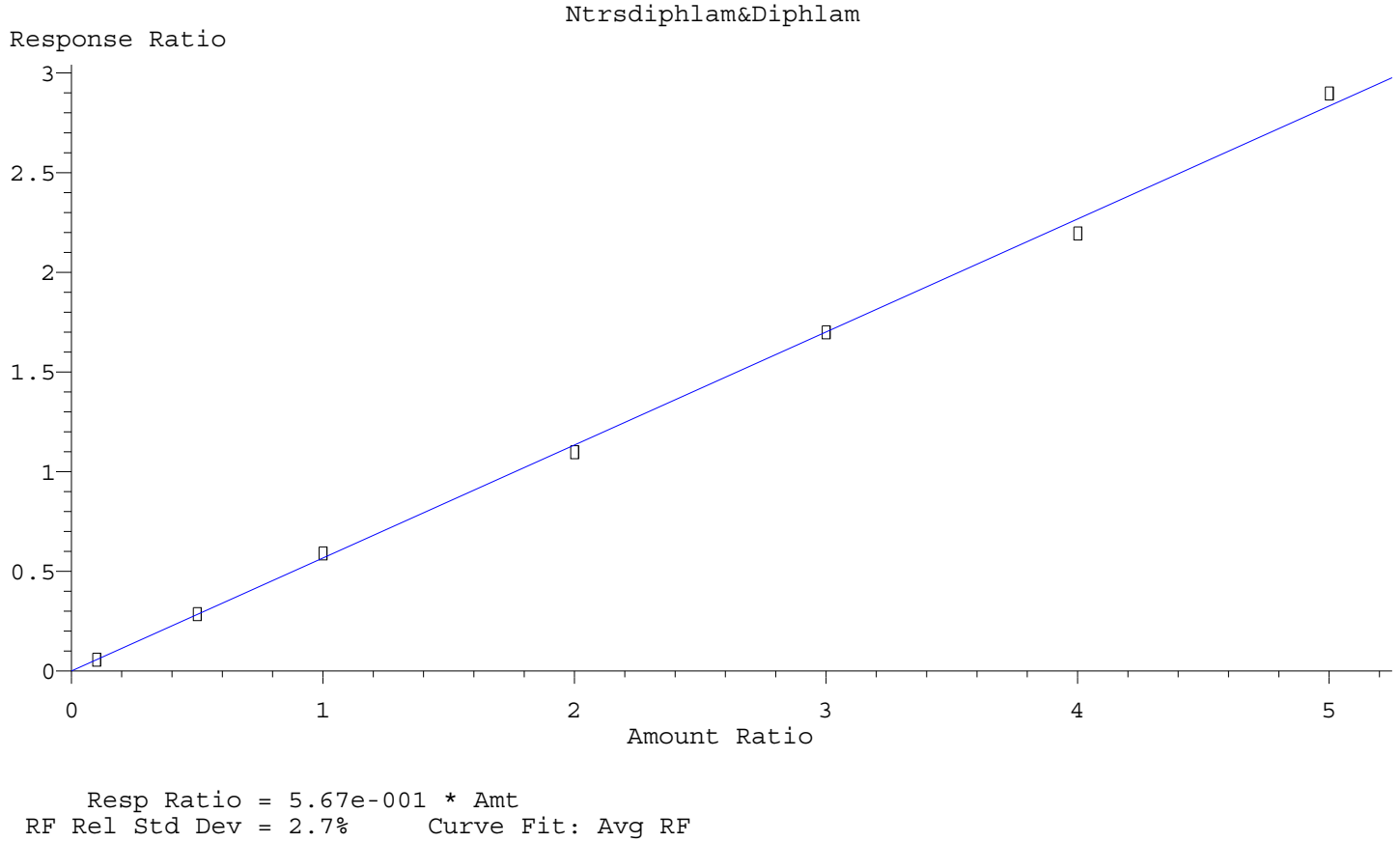


Resp Ratio = 9.12e-002 * Amt
RF Rel Std Dev = 6.7% Curve Fit: Avg RF

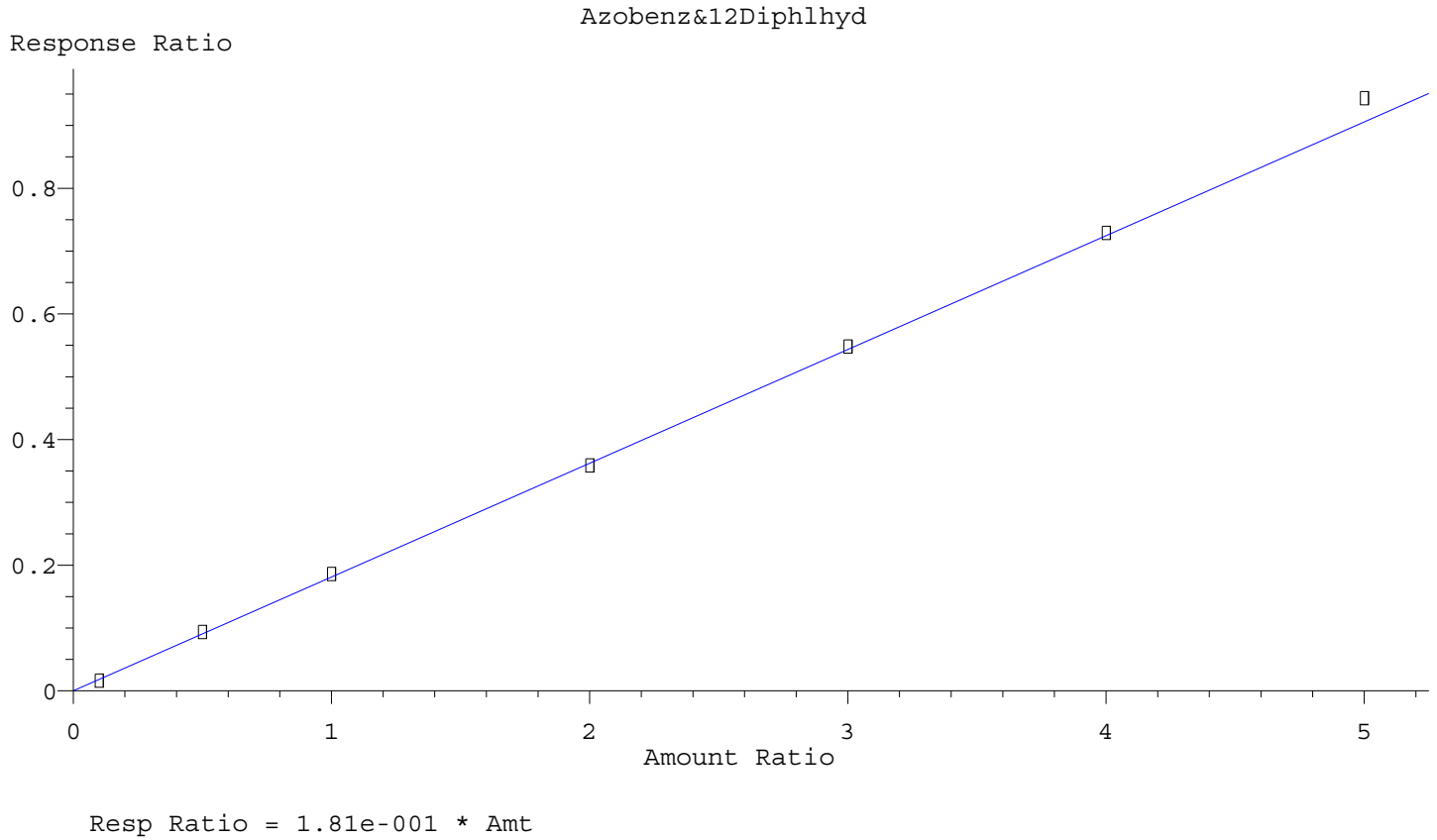
46Dinit2mylph



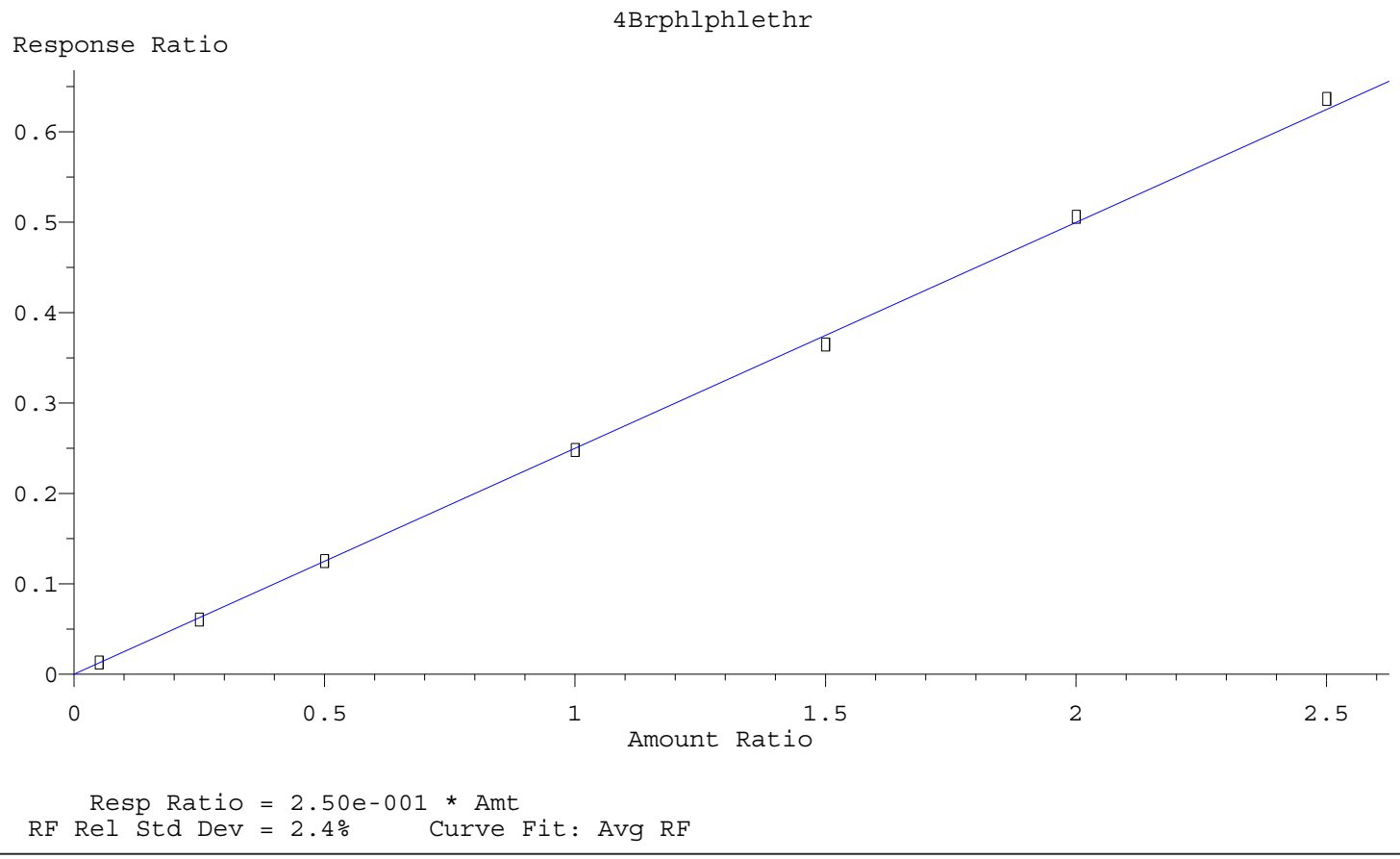
Resp Ratio = 1.41e-001 * Amt
RF Rel Std Dev = 11.2% Curve Fit: Avg RF



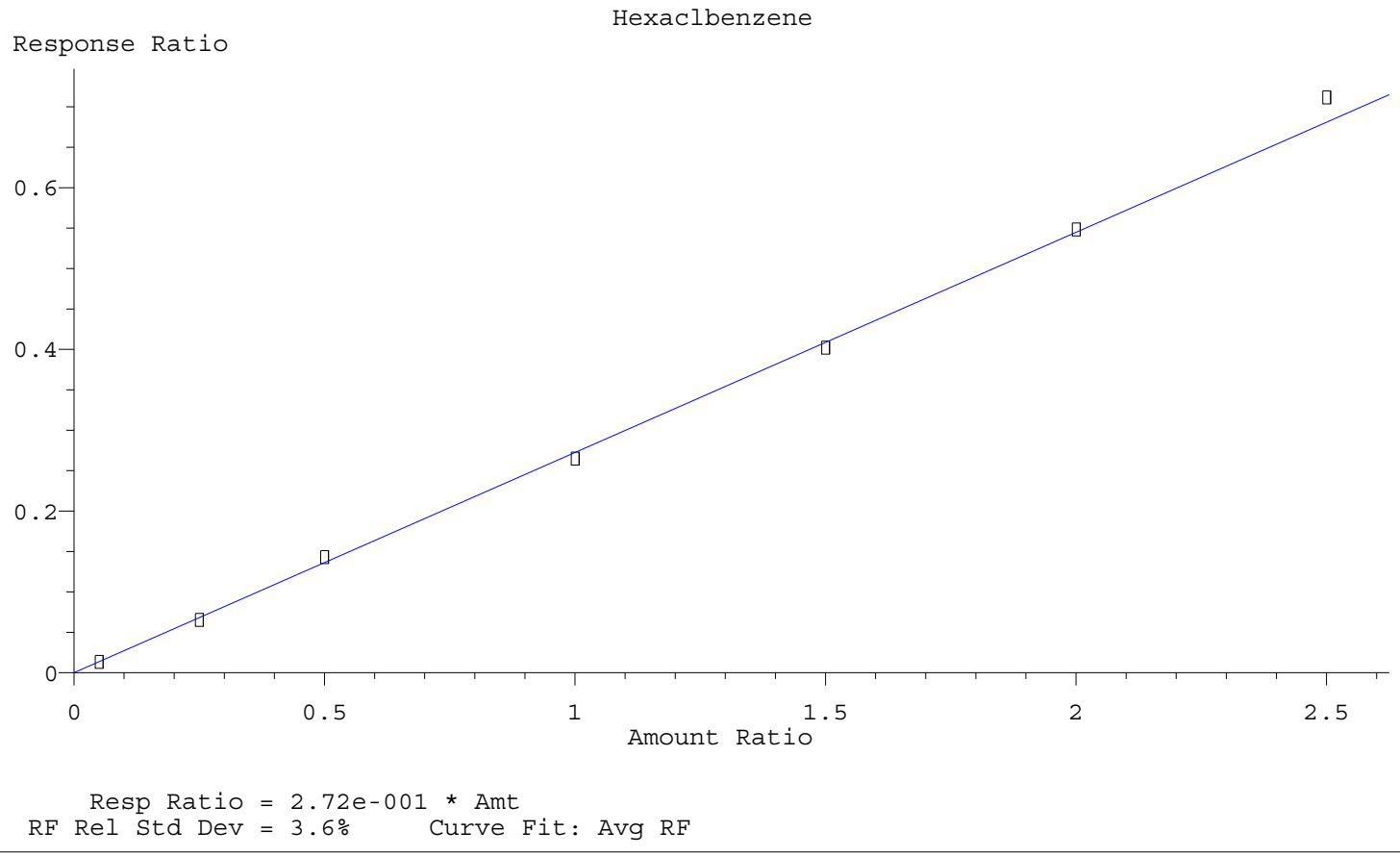
Resp Ratio = 5.67e-001 * Amt
RF Rel Std Dev = 2.7% Curve Fit: Avg RF



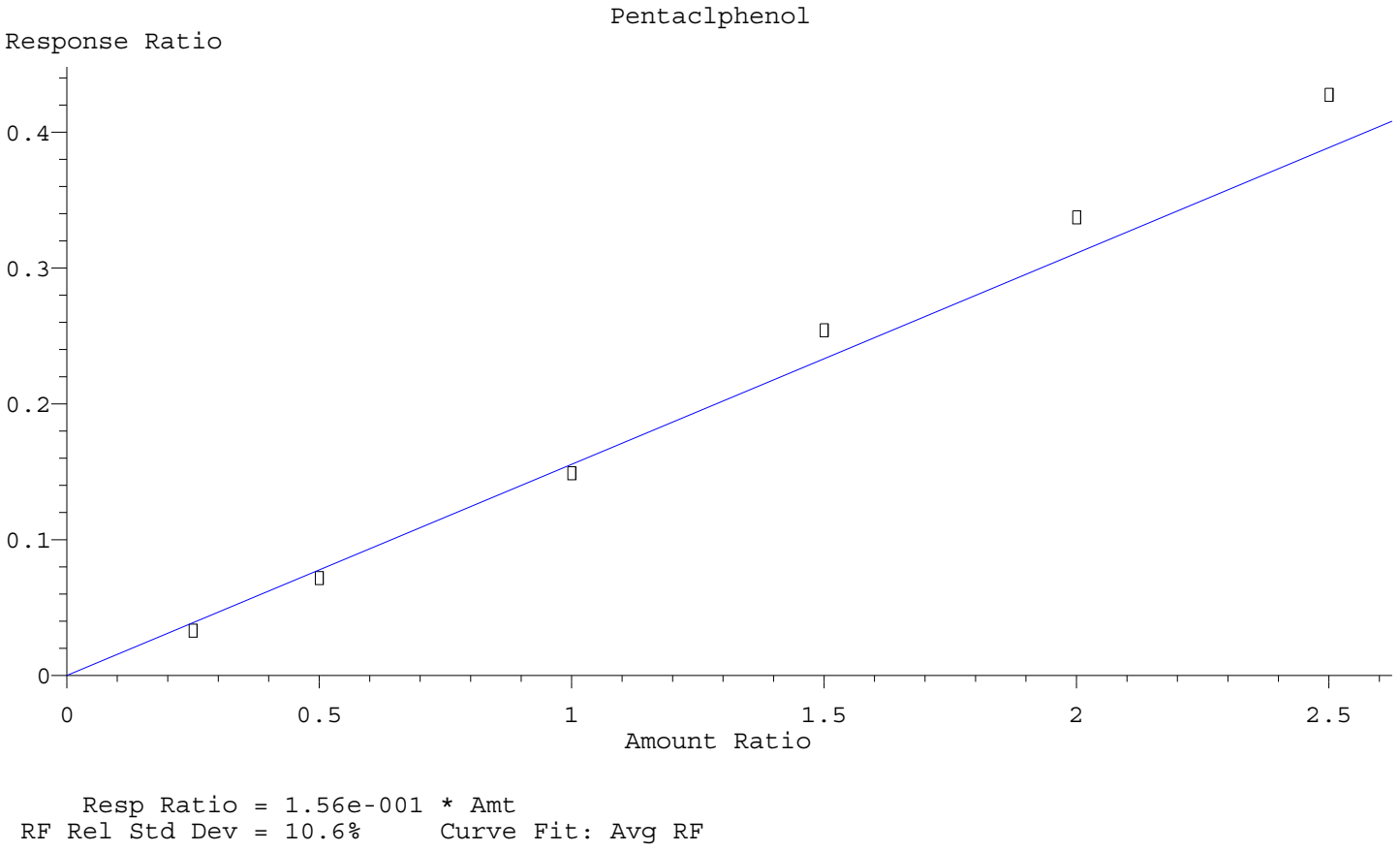
Resp Ratio = 1.81e-001 * Amt
RF Rel Std Dev = 5.1% Curve Fit: Avg RF



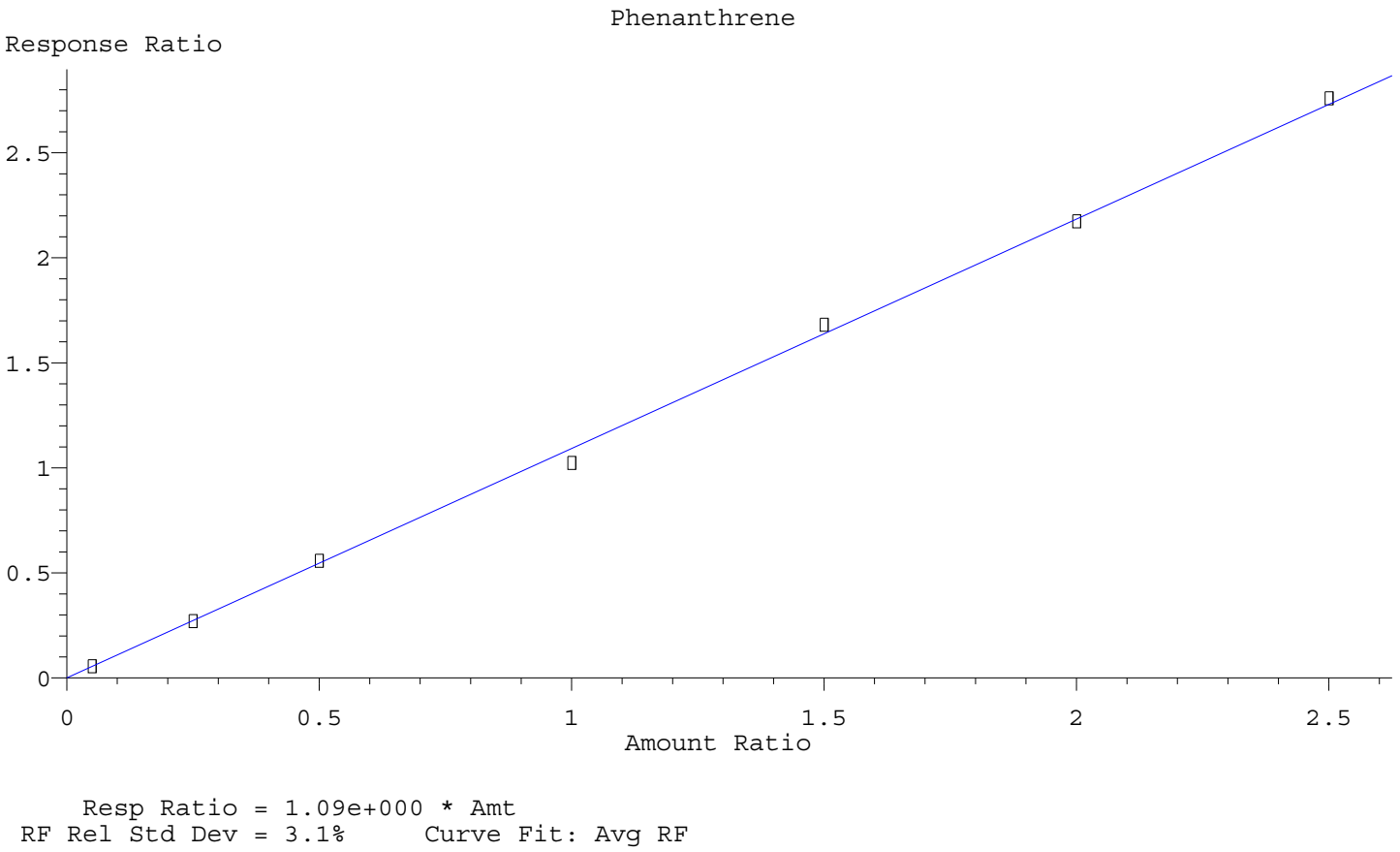
Resp Ratio = 2.50e-001 * Amt
RF Rel Std Dev = 2.4% Curve Fit: Avg RF



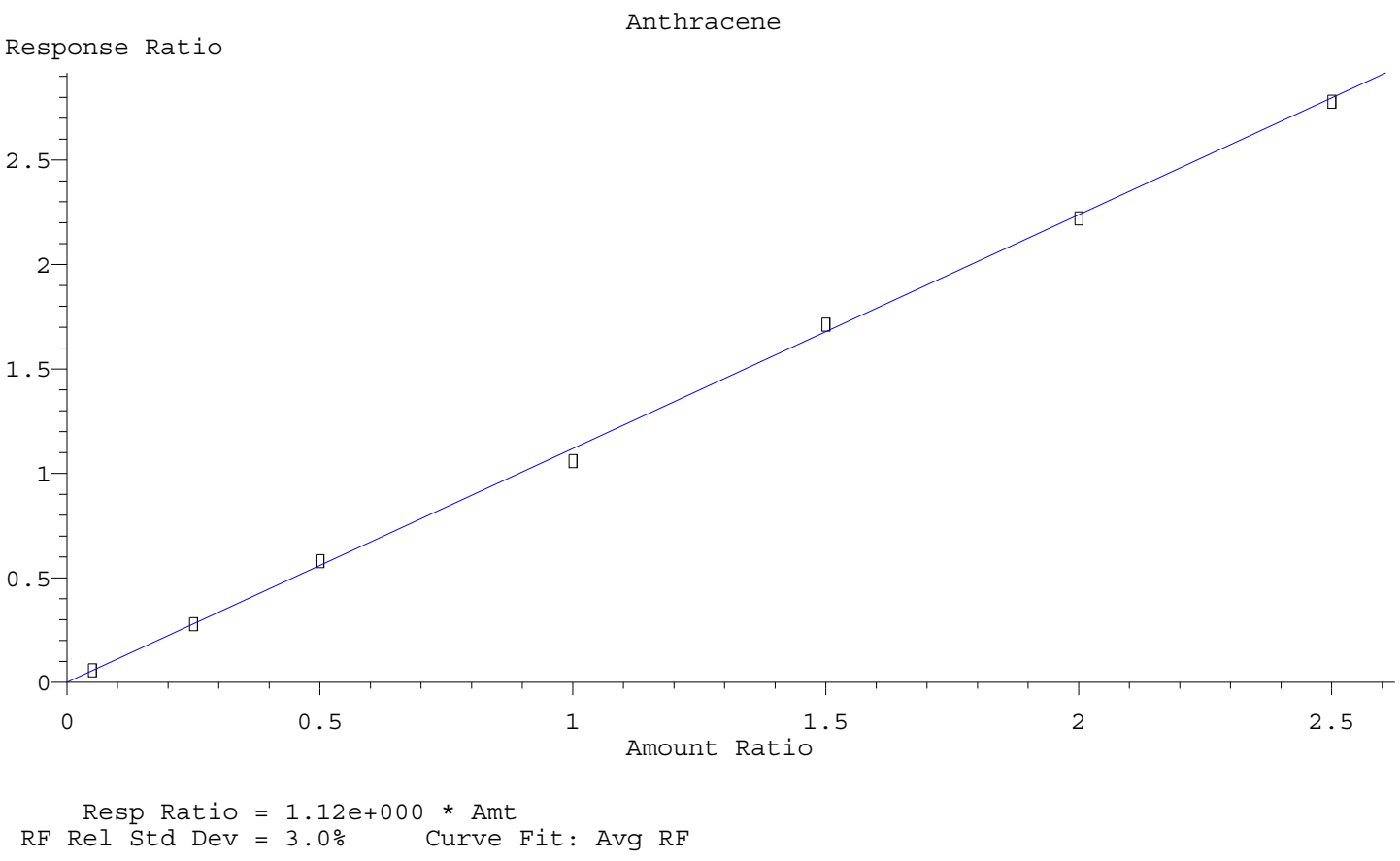
Resp Ratio = 2.72e-001 * Amt
RF Rel Std Dev = 3.6% Curve Fit: Avg RF



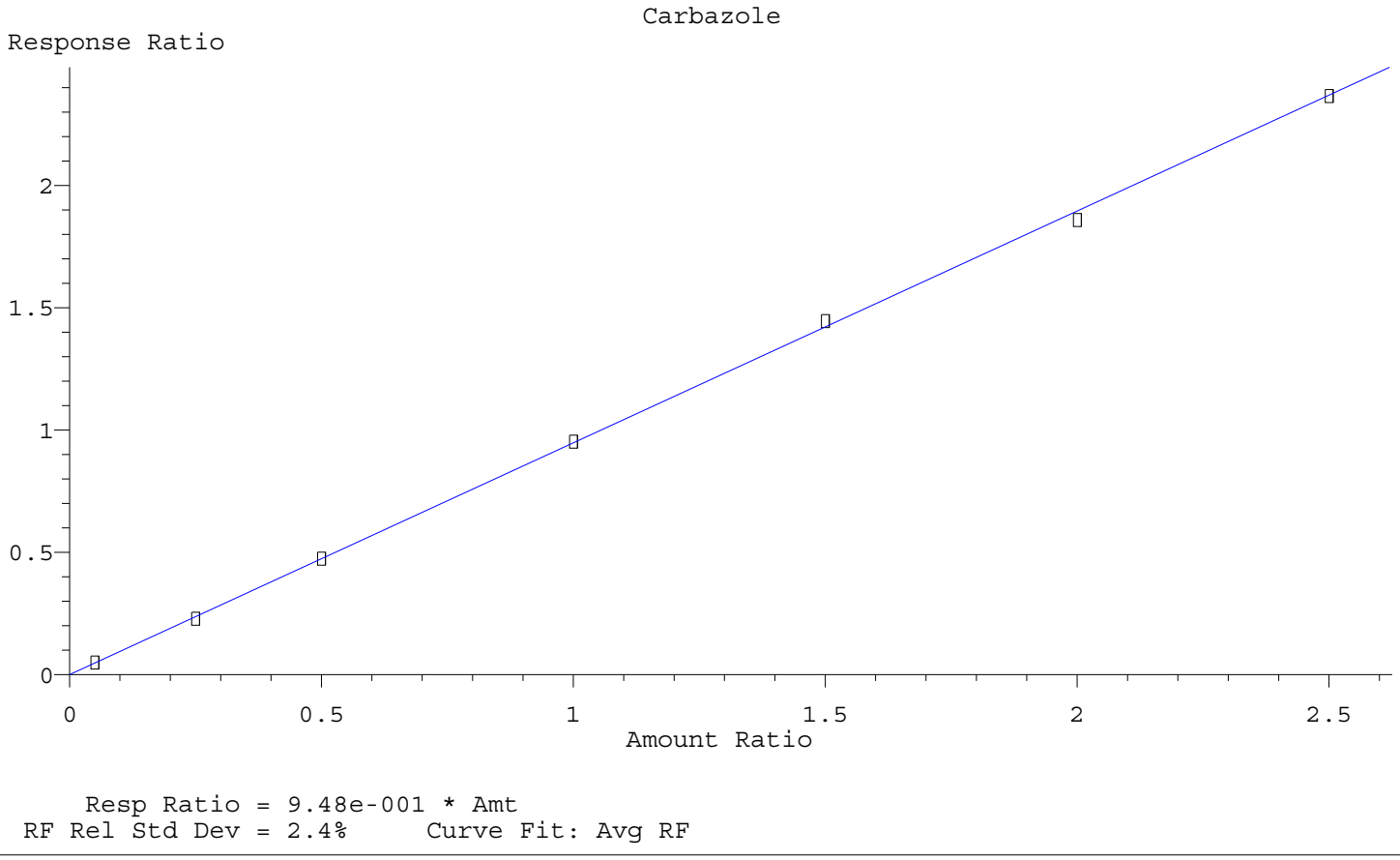
Resp Ratio = 1.56e-001 * Amt
RF Rel Std Dev = 10.6% Curve Fit: Avg RF



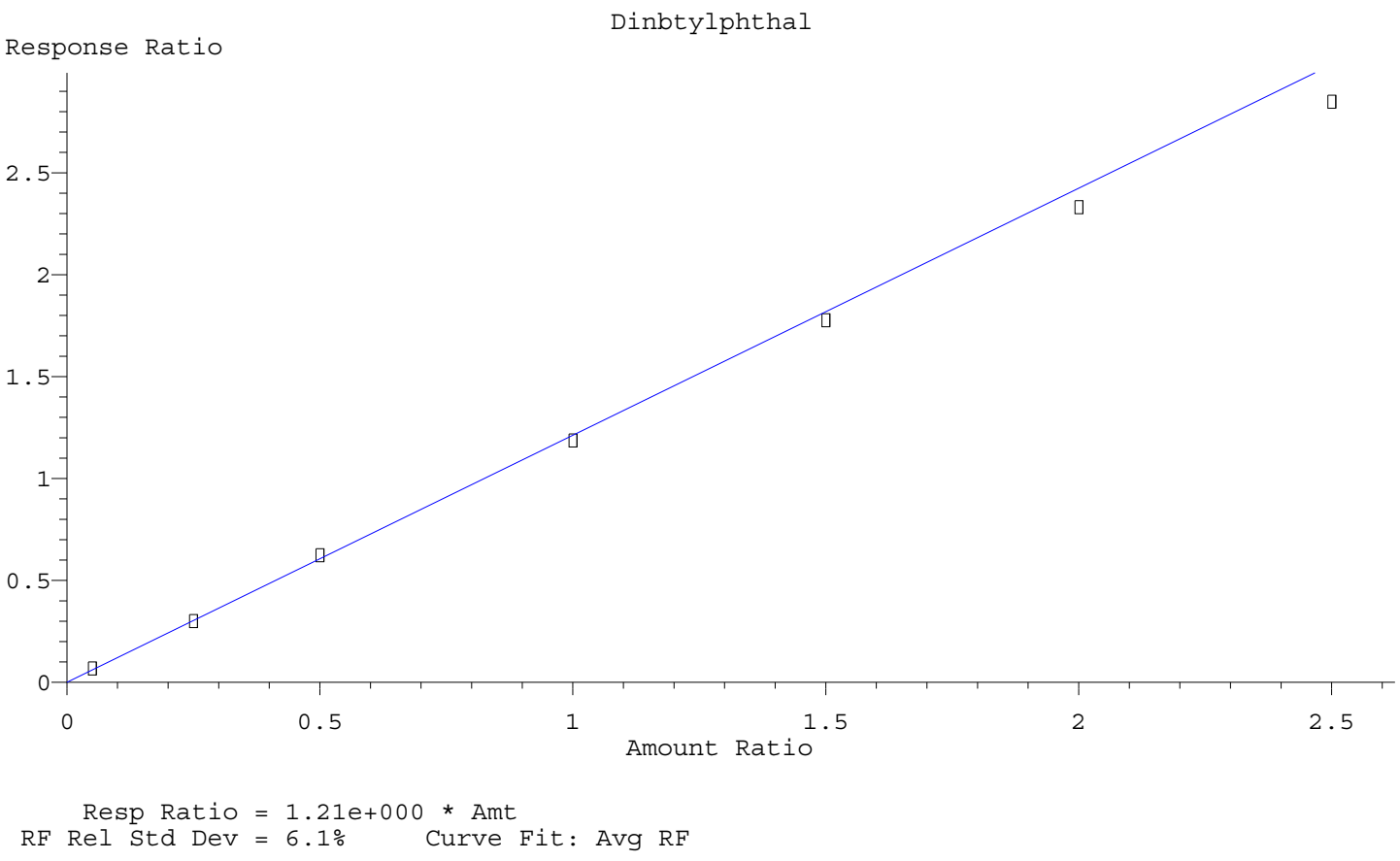
Resp Ratio = 1.09e+000 * Amt
RF Rel Std Dev = 3.1% Curve Fit: Avg RF



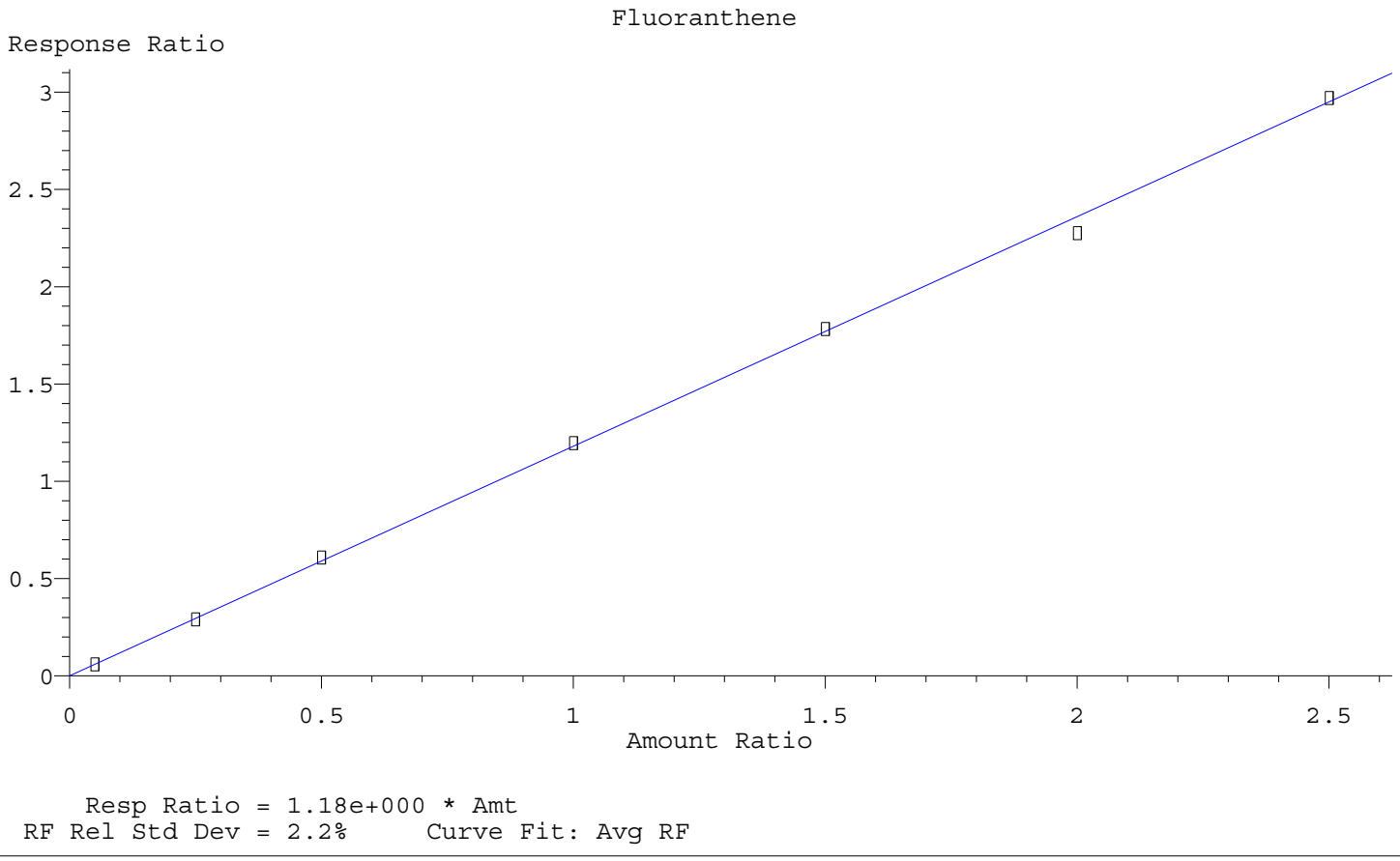
Resp Ratio = 1.12e+000 * Amt
RF Rel Std Dev = 3.0% Curve Fit: Avg RF



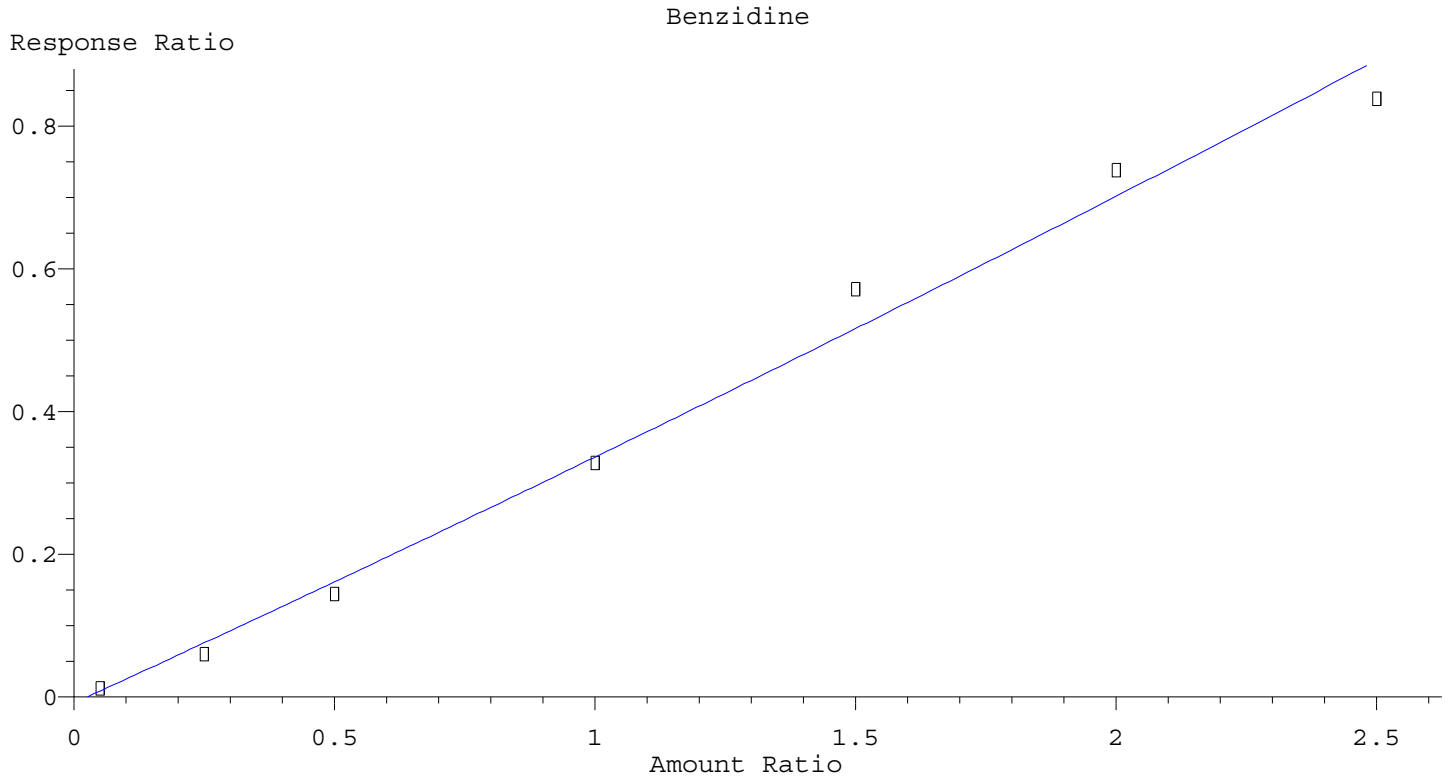
Resp Ratio = 9.48e-001 * Amt
RF Rel Std Dev = 2.4% Curve Fit: Avg RF



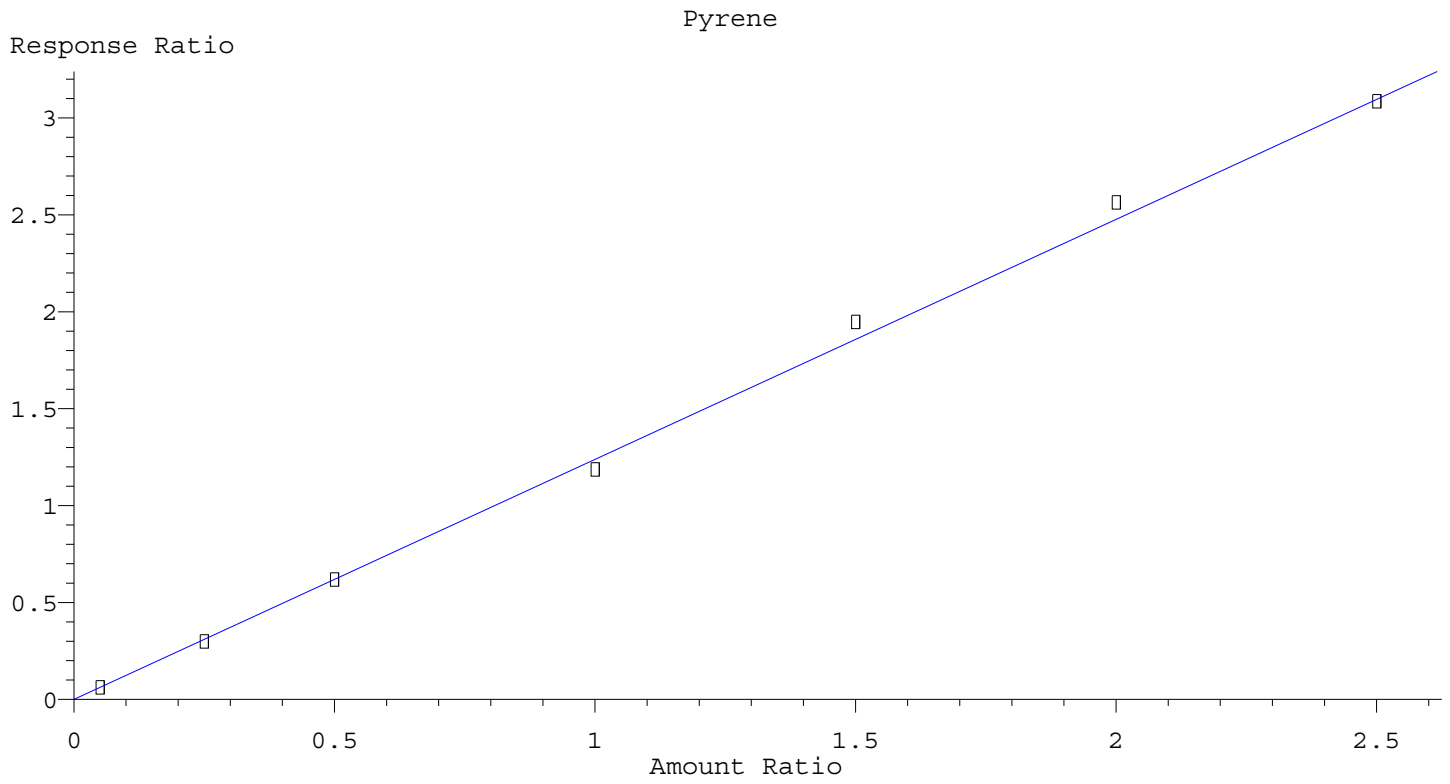
Resp Ratio = 1.21e+000 * Amt
RF Rel Std Dev = 6.1% Curve Fit: Avg RF



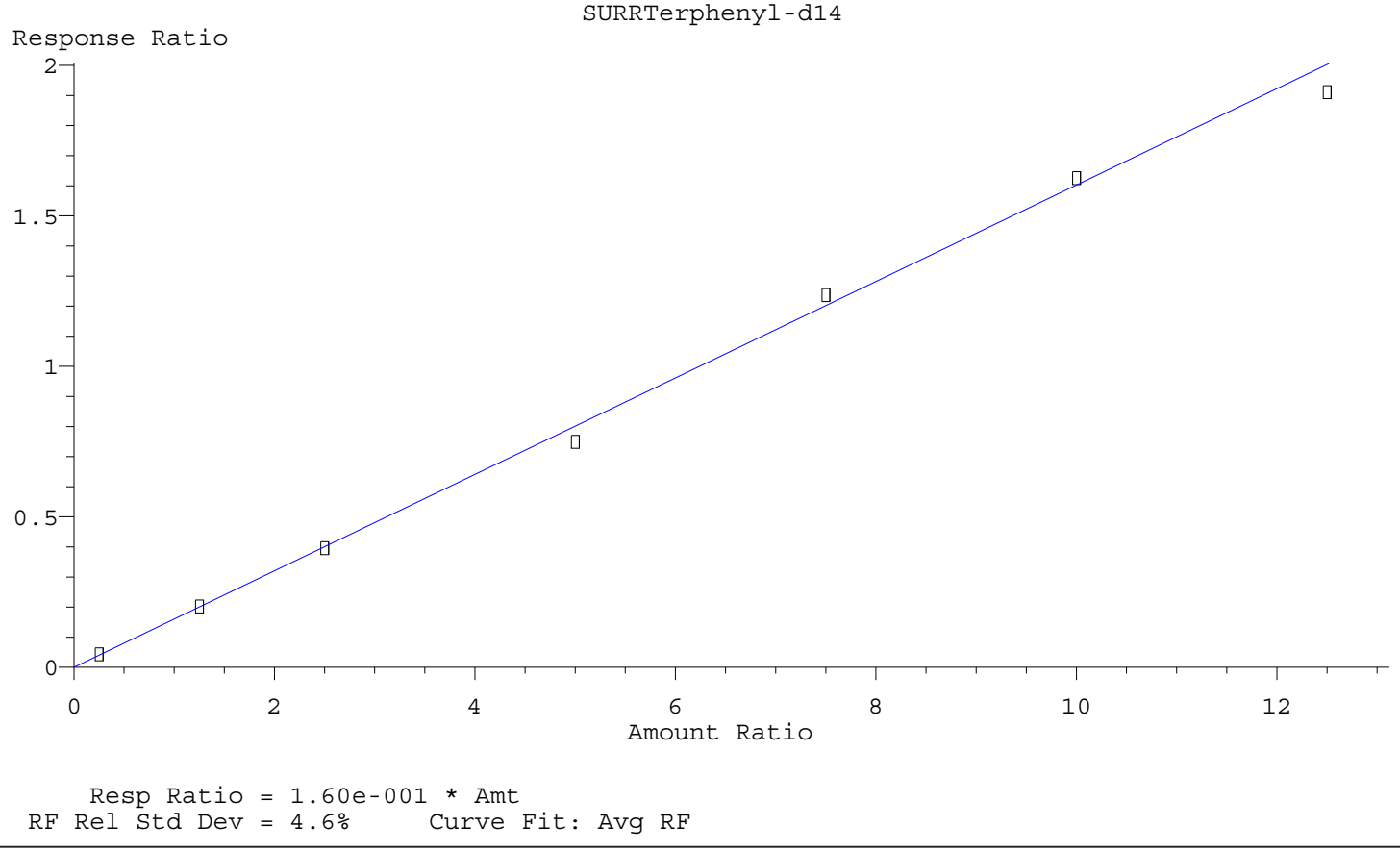
Resp Ratio = 1.18e+000 * Amt
RF Rel Std Dev = 2.2% Curve Fit: Avg RF



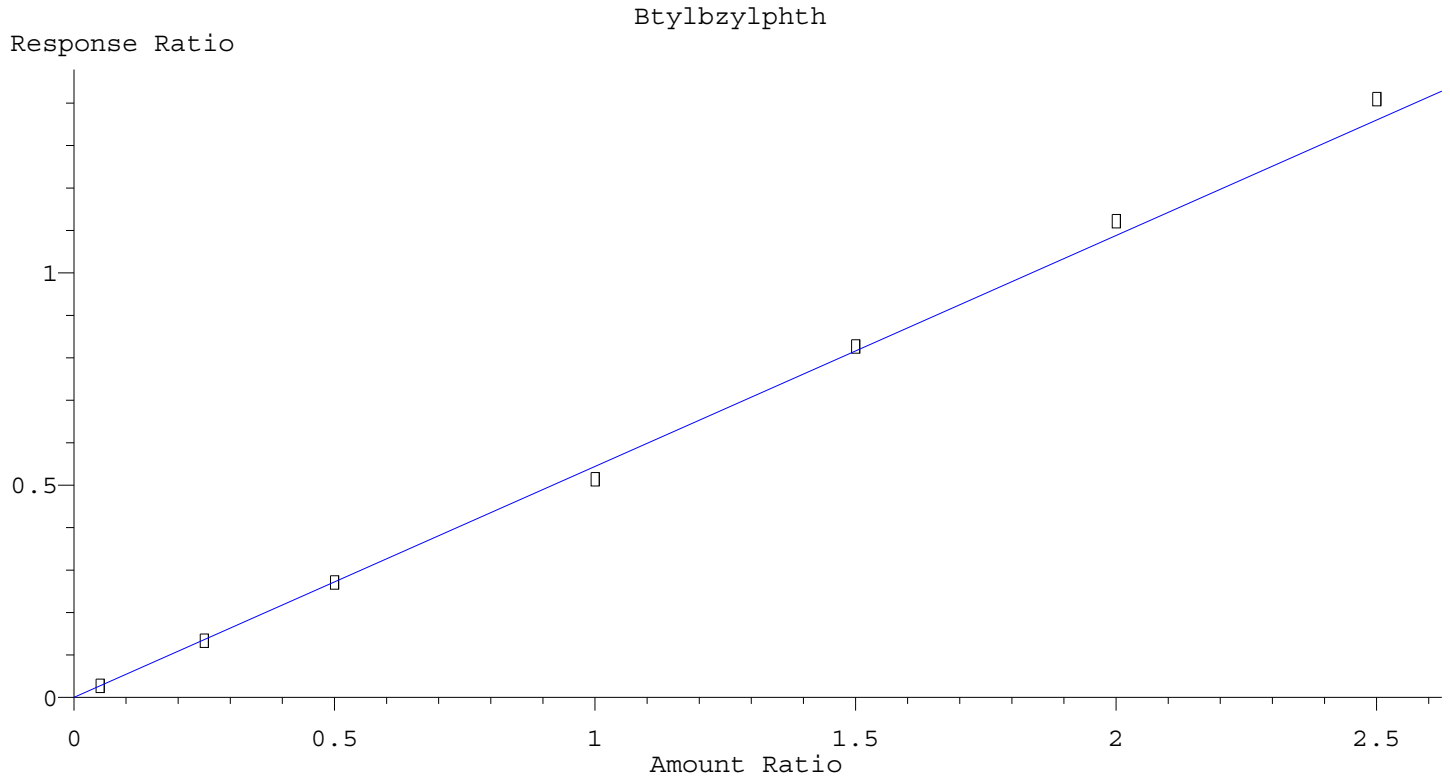
R = 1.05e-002 A*A + 3.34e-001 A - 8.38e-003
Coef of Det (r^2) = 0.992 Curve Fit: Quadratic w(1/a)



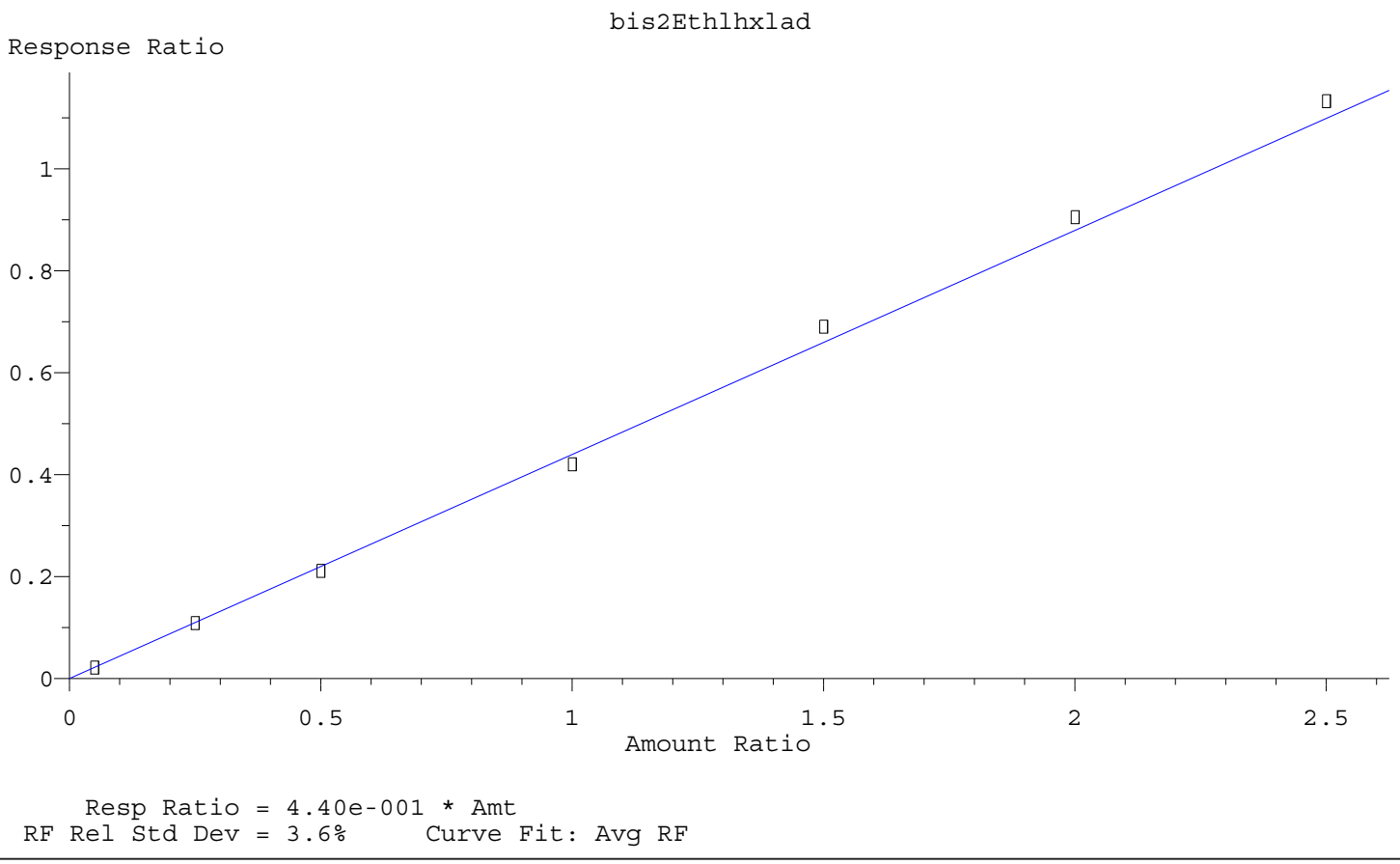
Resp Ratio = 1.24e+000 * Amt
RF Rel Std Dev = 3.3% Curve Fit: Avg RF



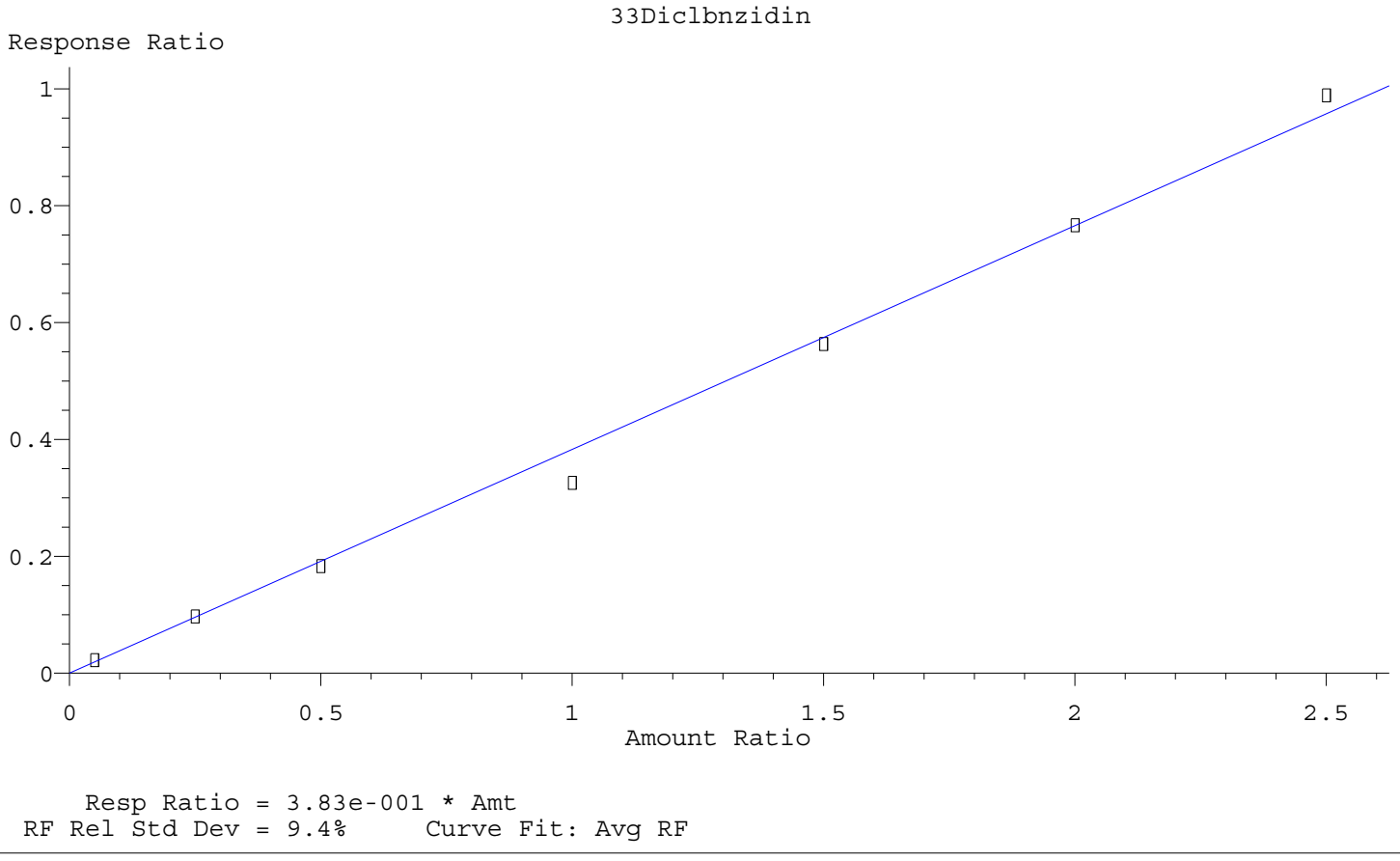
Resp Ratio = 1.60e-001 * Amt
RF Rel Std Dev = 4.6% Curve Fit: Avg RF



Resp Ratio = 5.44e-001 * Amt
RF Rel Std Dev = 3.1% Curve Fit: Avg RF

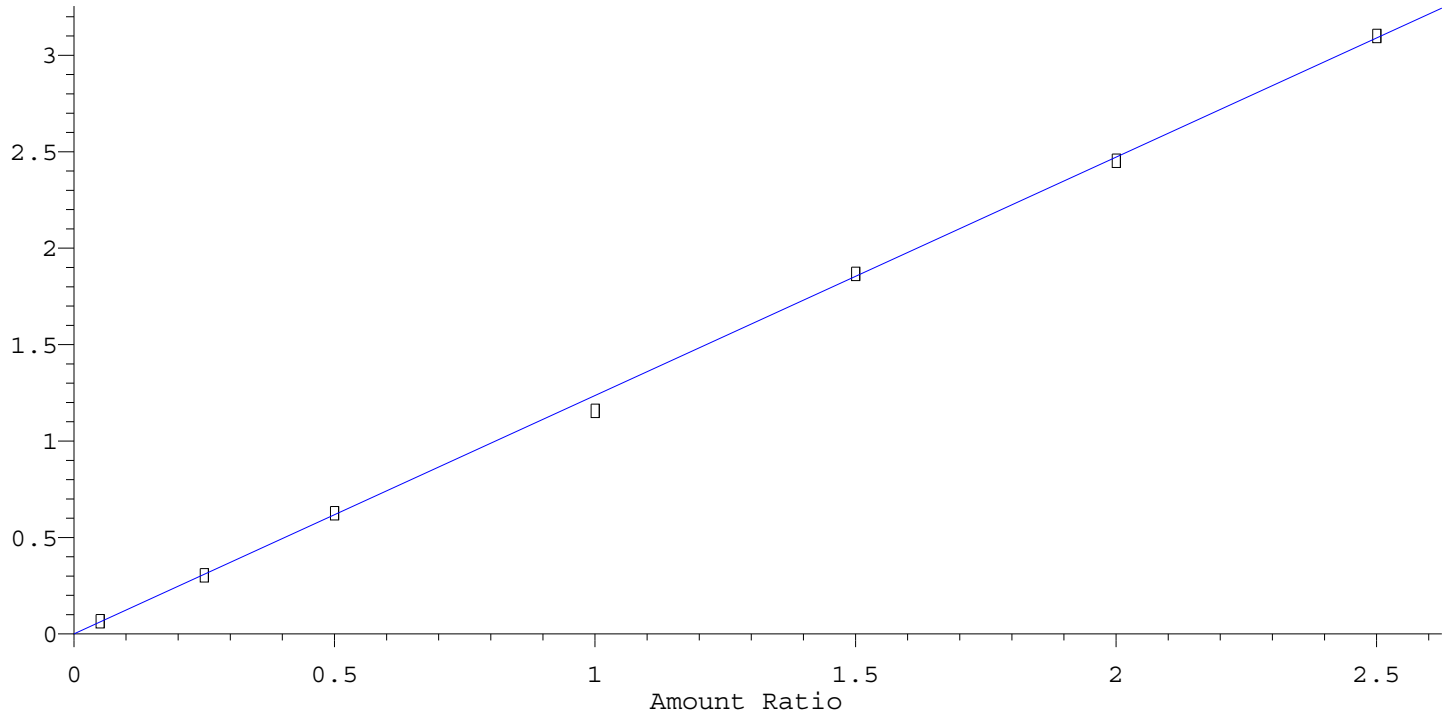


Resp Ratio = 4.40e-001 * Amt
RF Rel Std Dev = 3.6% Curve Fit: Avg RF



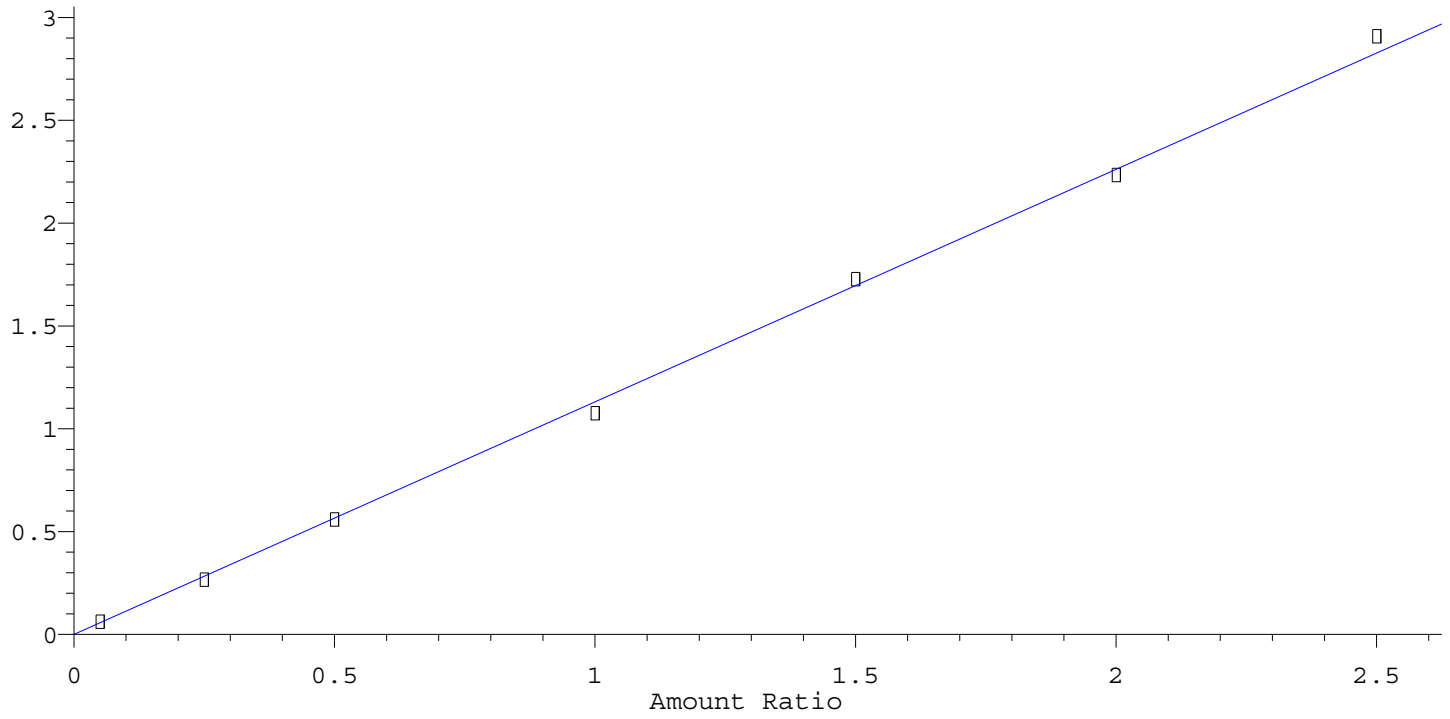
Resp Ratio = 3.83e-001 * Amt
RF Rel Std Dev = 9.4% Curve Fit: Avg RF

B[a]anthracen

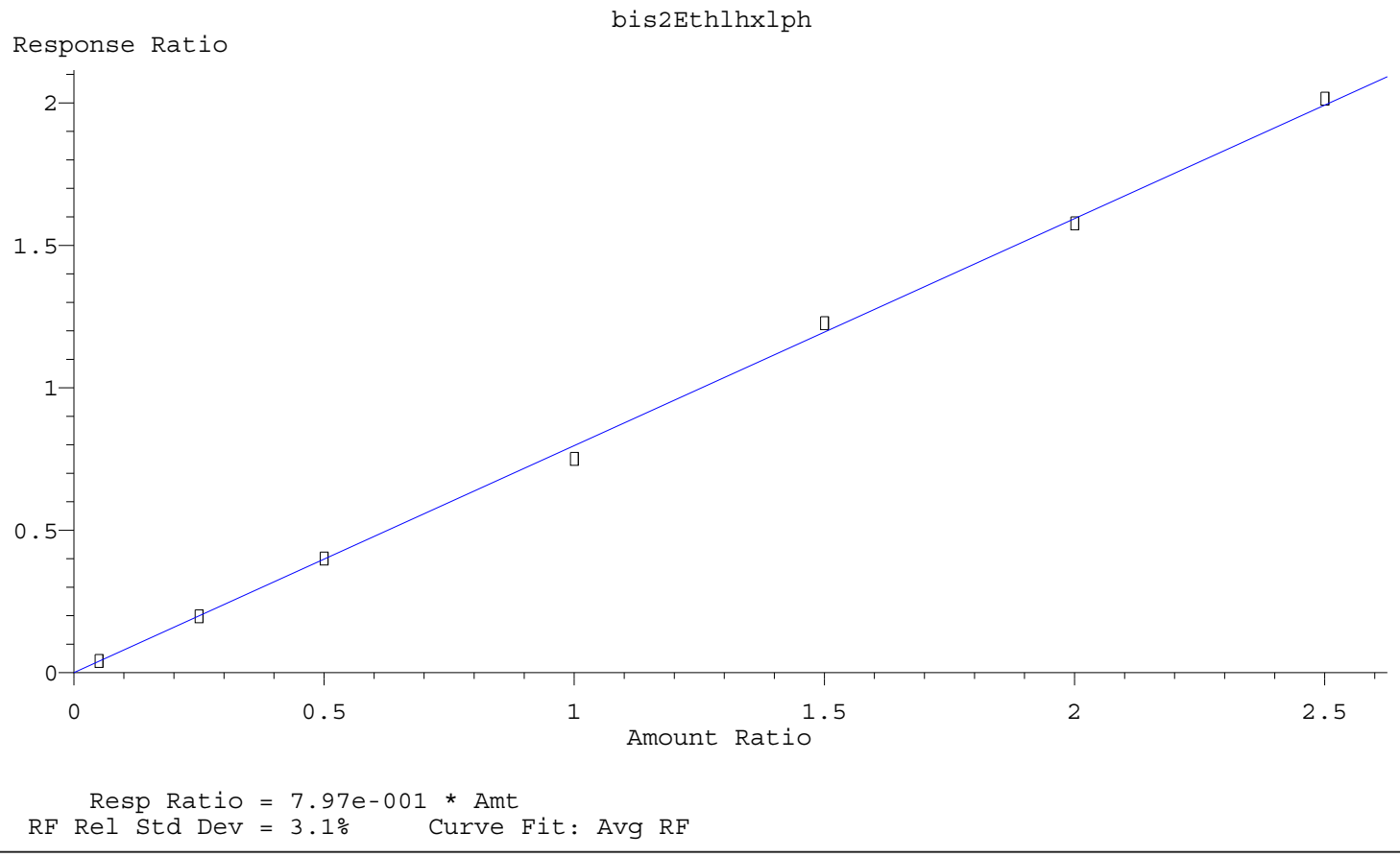


Resp Ratio = 1.24e+000 * Amt
RF Rel Std Dev = 3.9% Curve Fit: Avg RF

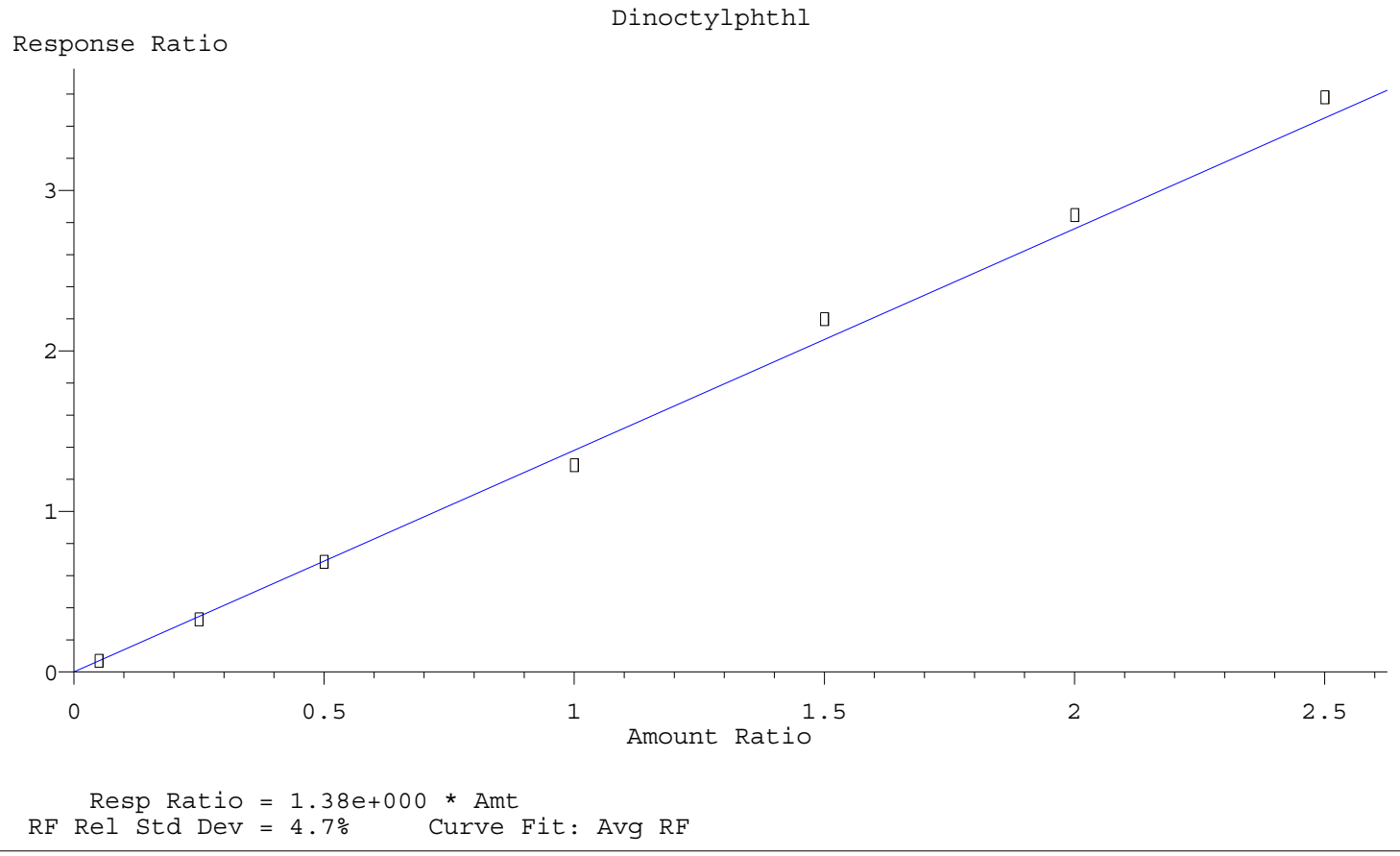
Chrysene



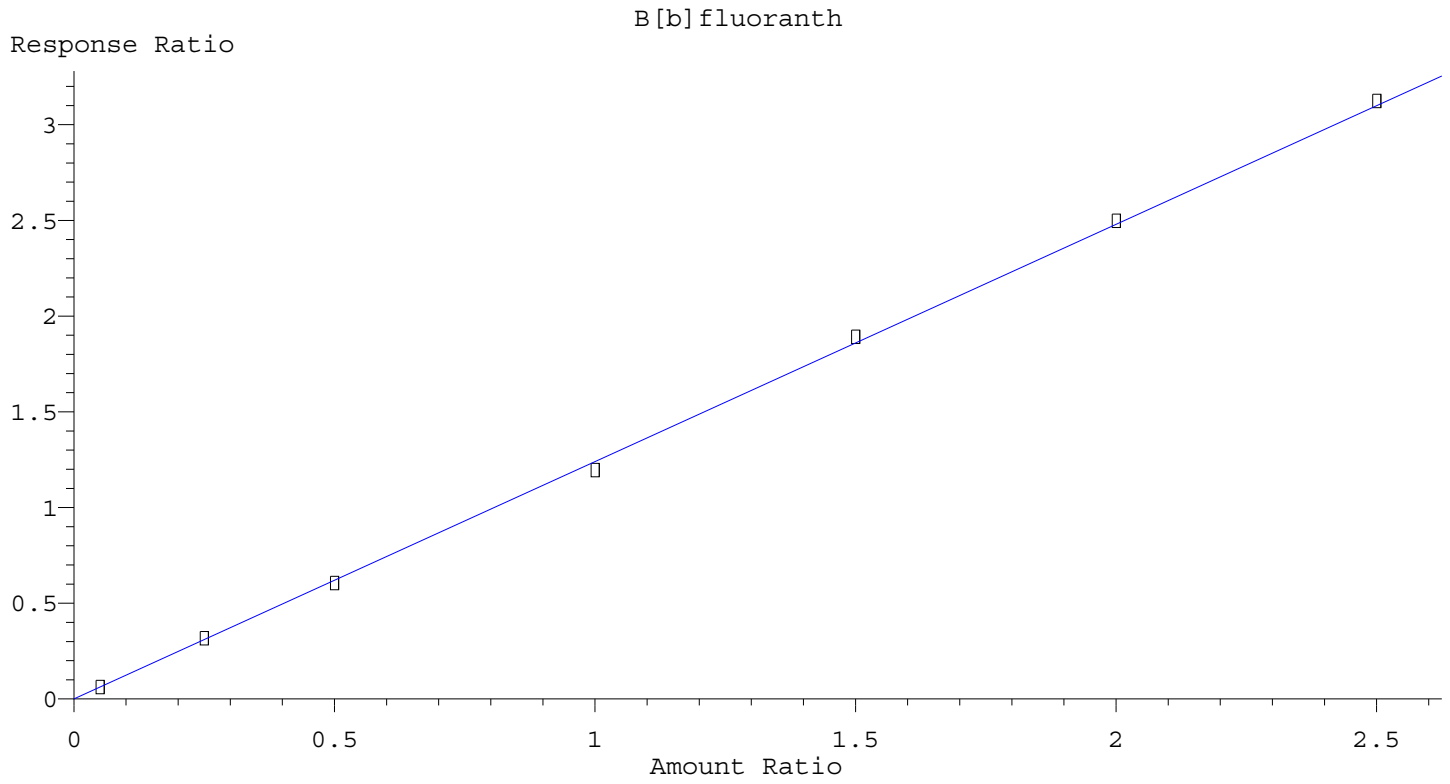
Resp Ratio = 1.13e+000 * Amt
RF Rel Std Dev = 4.9% Curve Fit: Avg RF



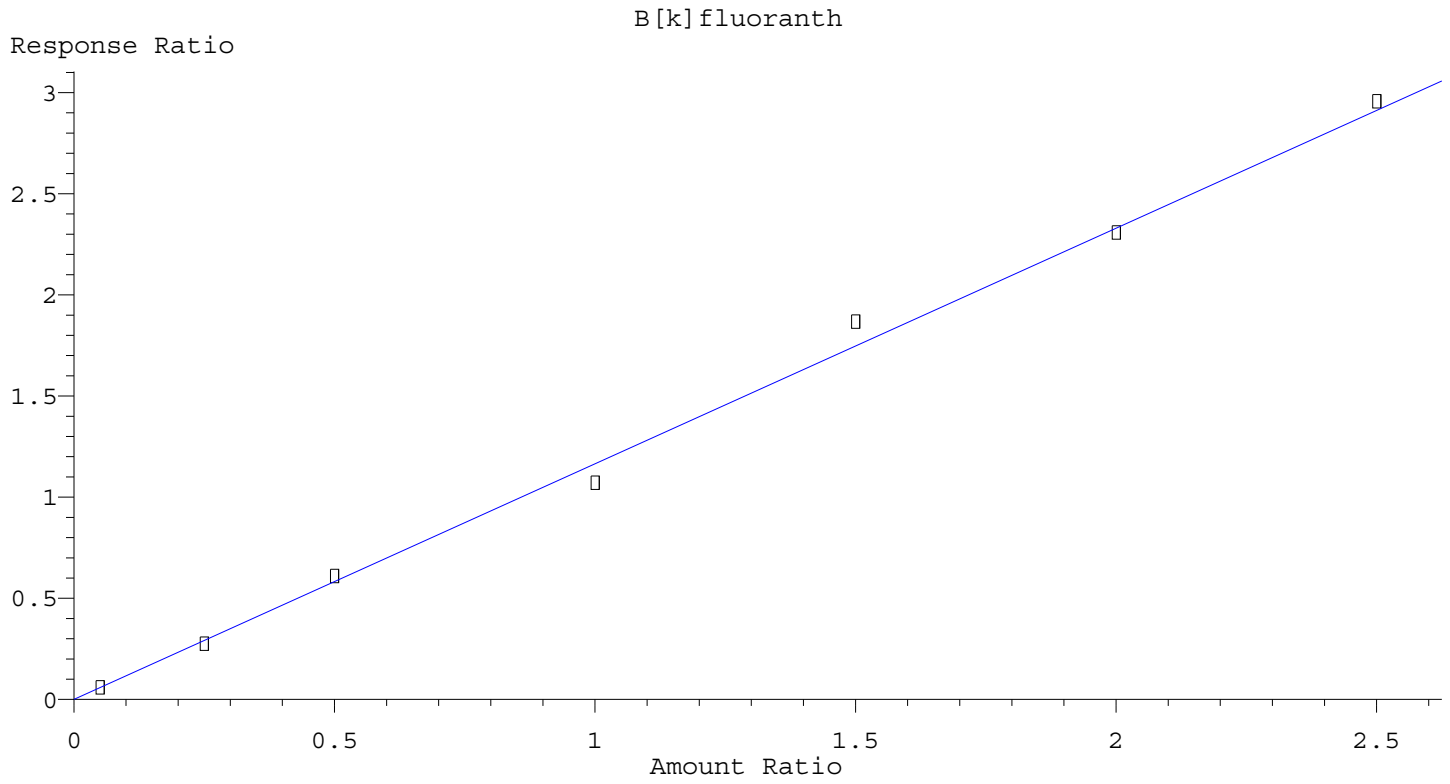
Resp Ratio = 7.97e-001 * Amt
RF Rel Std Dev = 3.1% Curve Fit: Avg RF



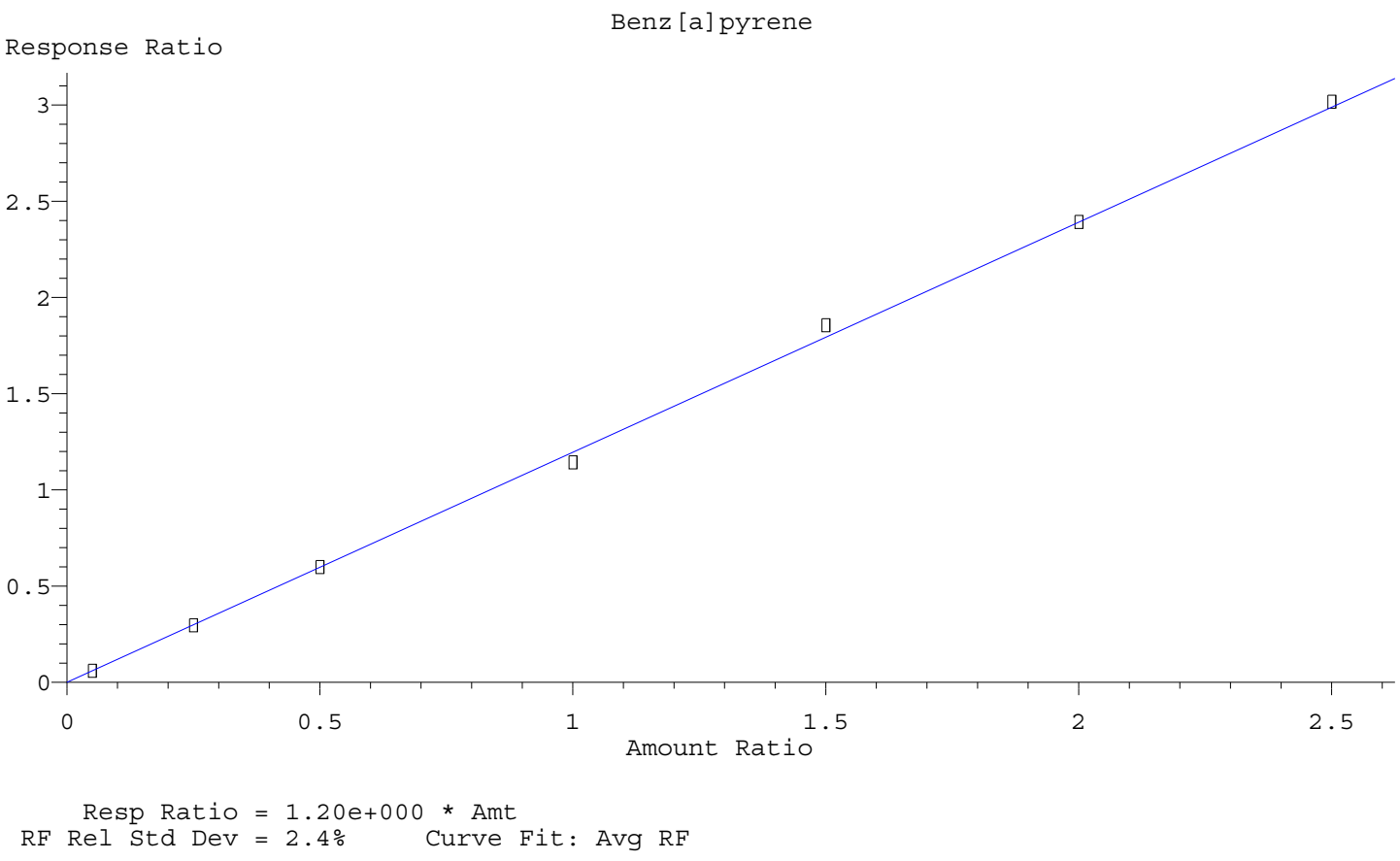
Resp Ratio = 1.38e+000 * Amt
RF Rel Std Dev = 4.7% Curve Fit: Avg RF



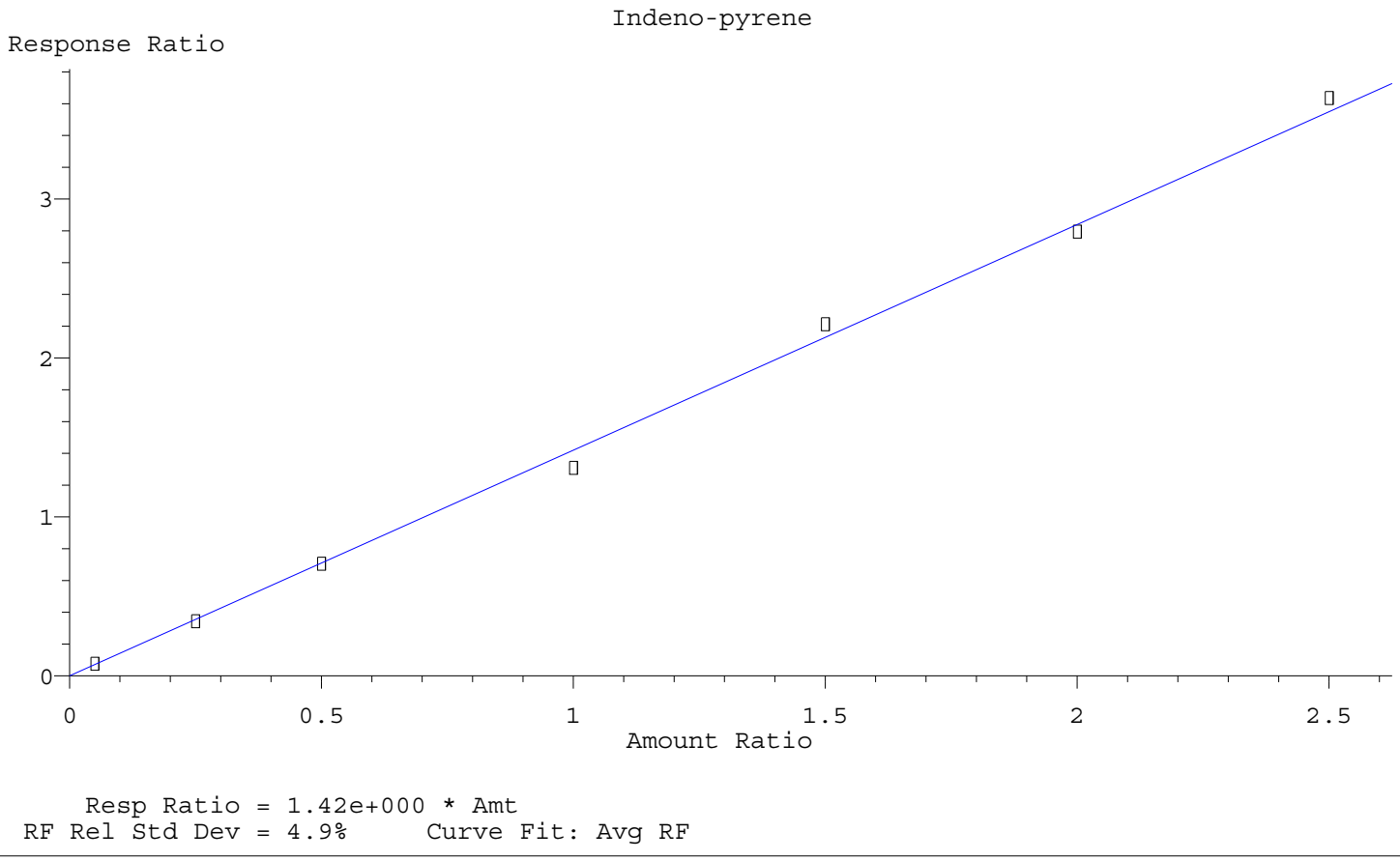
Resp Ratio = 1.24e+000 * Amt
RF Rel Std Dev = 2.2% Curve Fit: Avg RF



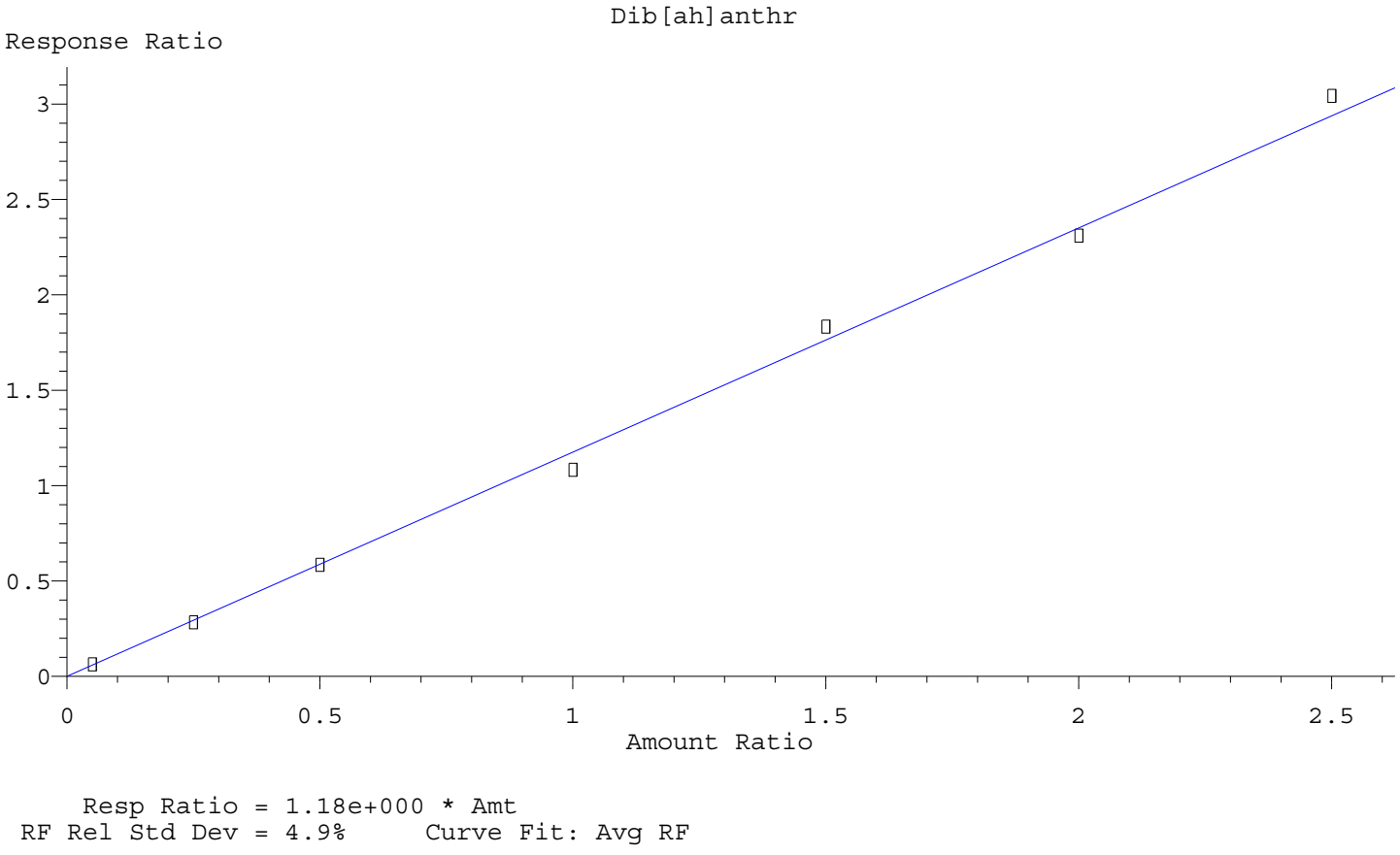
Resp Ratio = 1.16e+000 * Amt
RF Rel Std Dev = 5.3% Curve Fit: Avg RF



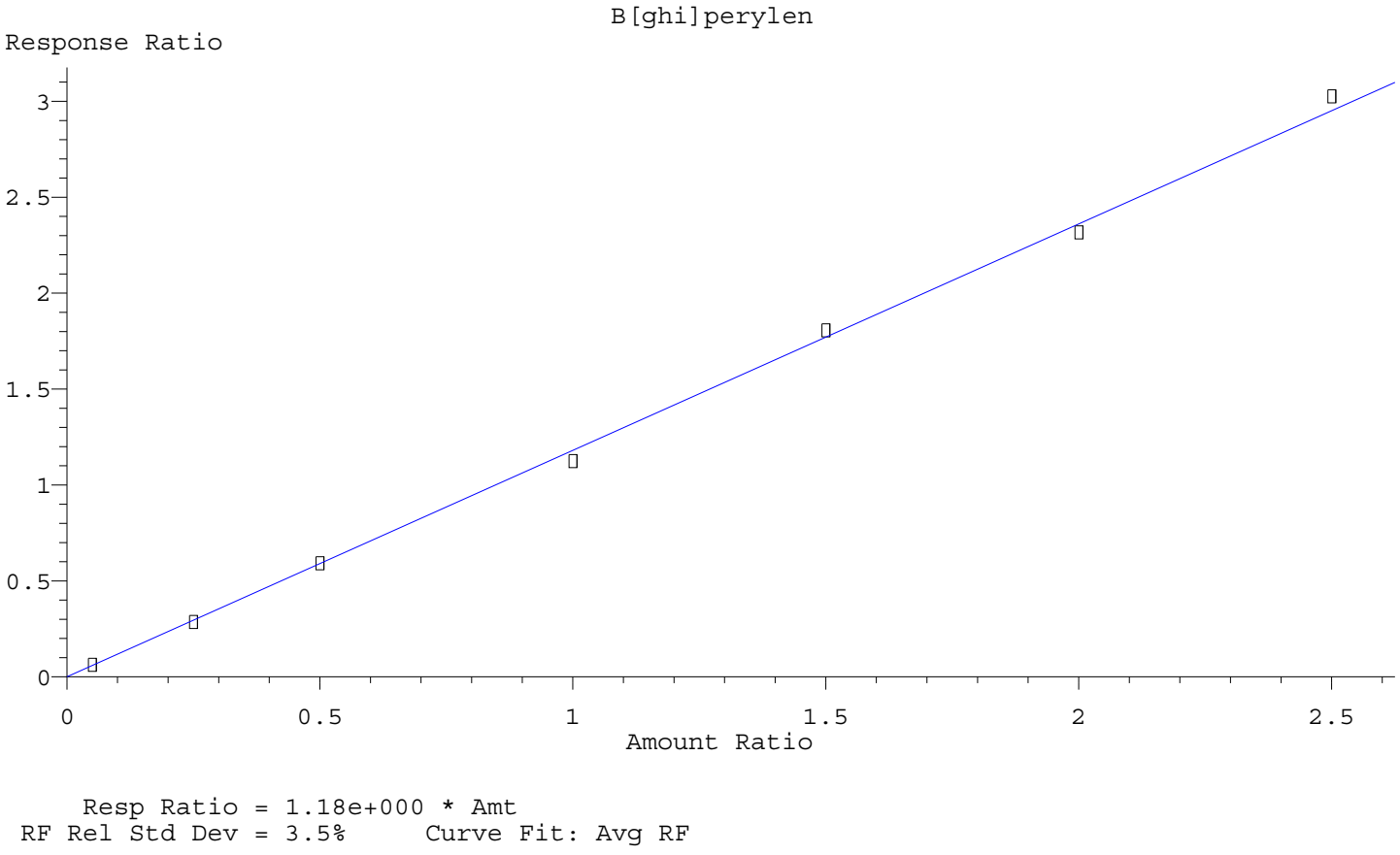
Resp Ratio = 1.20e+000 * Amt
RF Rel Std Dev = 2.4% Curve Fit: Avg RF



Resp Ratio = 1.42e+000 * Amt
RF Rel Std Dev = 4.9% Curve Fit: Avg RF



Resp Ratio = 1.18e+000 * Amt
RF Rel Std Dev = 4.9% Curve Fit: Avg RF



Resp Ratio = 1.18e+000 * Amt
RF Rel Std Dev = 3.5% Curve Fit: Avg RF

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1IB03.D Vial: 99
Acq On : 8 Sep 2016 14:45 Operator: RPN
Sample : InstrumentBlank Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 14 12:15:36 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:48:30 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

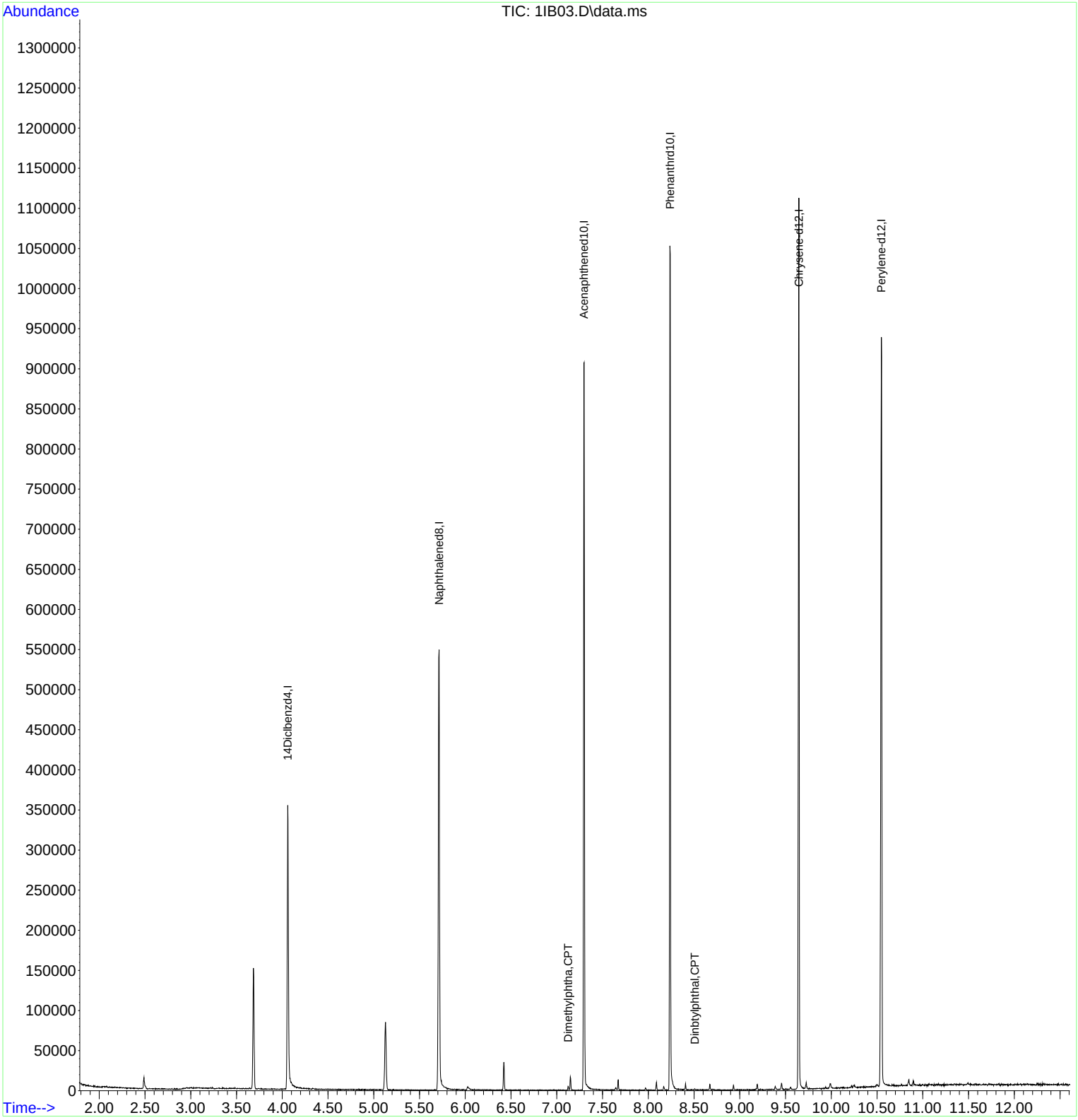
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	4.060	152	58466	20.00	ug/mL	0.00
21) Naphthalened8	5.714	136	258853	20.00	ug/mL	0.00
39) Acenaphthened10	7.296	164	133436	20.00	ug/mL	0.00
63) Phenanthrd10	8.240	188	268747	20.00	ug/mL	0.00
75) Chrysene-d12	9.646	240	255838	20.00	ug/mL	0.00
86) Perylene-d12	10.547	264	285803	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	0.000	112	0	0.00	%REC	
Spiked Amount 100.000	Range 20 - 110		Recovery =	0.00%#		
7) SURRPhenol-d5	0.000	99	0	0.00	%REC	
Spiked Amount 100.000	Range 10 - 115		Recovery =	0.00%#		
22) SURRNitrbenzened5	0.000	82	0	0.00	%REC	
Spiked Amount 100.000	Range 40 - 110		Recovery =	0.00%#		
44) SURR2Flbiphenyl	0.000	172	0	0.00	%REC	
Spiked Amount 100.000	Range 50 - 110		Recovery =	0.00%#		
62) SURR246Tribrphenl	0.000	330	0	0.00	%REC	
Spiked Amount 100.000	Range 40 - 125		Recovery =	0.00%#		
78) SURRTerphenyl-d14	0.000	244	0	0.00	%REC	
Spiked Amount 100.000	Range 50 - 135		Recovery =	0.00%#		
Target Compounds						Qvalue
48) Dimethylphtha	7.126	163	1475	0.1555	ug/mL	89
73) Dinbtylphthal	8.510	149	281	0.0173	ug/mL	90

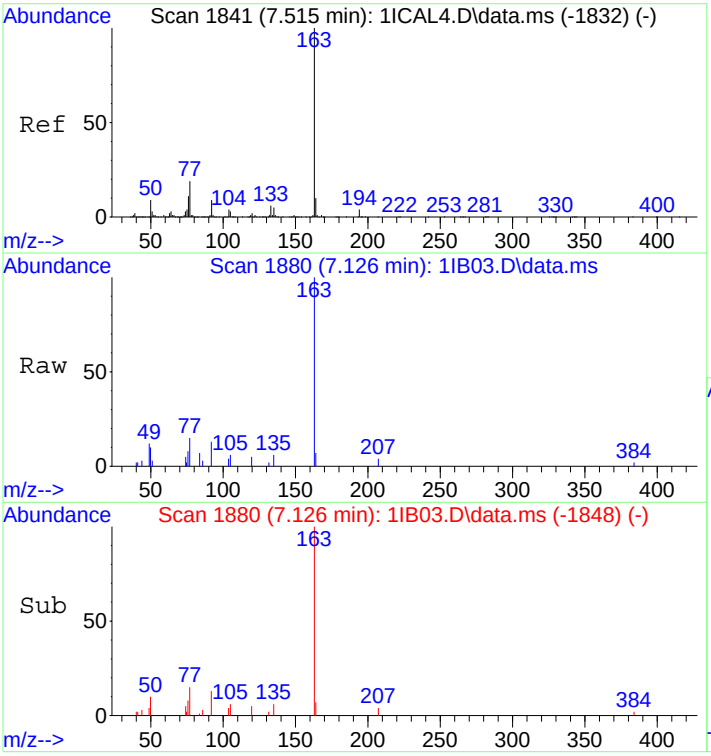
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1IB03.D Vial: 99
Acq On : 8 Sep 2016 14:45 Operator: RPN
Sample : InstrumentBlank Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 14 12:15:36 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:48:30 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

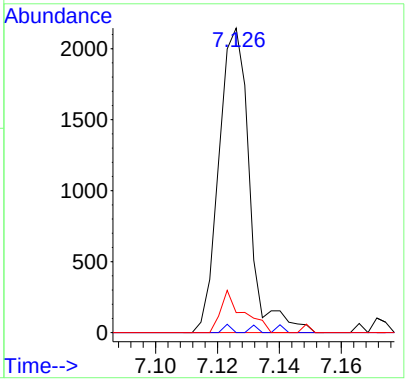


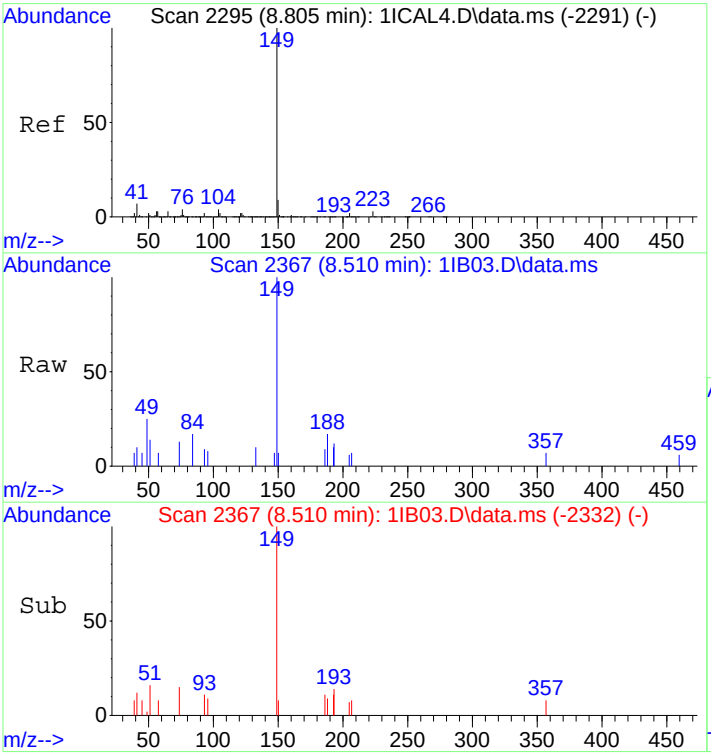


#48
Dimethylphtha
Concen: 0.16 ug/mL
RT: 7.126 min Scan# 1880
Delta R.T. -0.008 min
Lab File: 1IB03.D
Acq: 8 Sep 16 2:45 pm

Tgt Ion:163 Resp: 1475

Ion	Ratio	Lower	Upper
163	100		
194	0.0	0.0	33.9
164	6.6	0.0	40.5

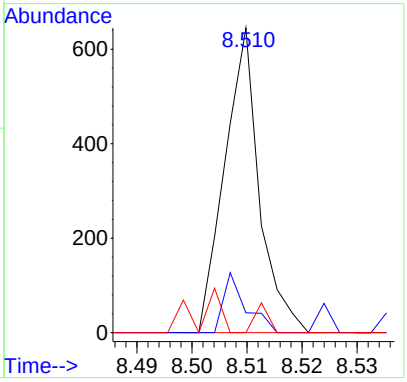




#73
Dinbtylphthal
Concen: 0.02 ug/mL
RT: 8.510 min Scan# 2367
Delta R.T. 0.000 min
Lab File: 1IB03.D
Acq: 8 Sep 16 2:45 pm

Tgt Ion:149 Resp: 281

Ion	Ratio	Lower	Upper
149	100		
150	6.5	0.0	39.8
104	0.0	0.0	34.5



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL7.D Vial: 11
Acq On : 8 Sep 2016 15:05 Operator: RPN
Sample : ICAL 50ug/ml SVMS7214 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:16:22 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:16:14 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	4.063	152	39558	20.00	ug/mL	0.00
21) Naphthalened8	5.717	136	171231	20.00	ug/mL	0.00
39) Acenaphthened10	7.302	164	96616	20.00	ug/mL	0.00
63) Phenanthrd10	8.240	188	163871	20.00	ug/mL	0.00
75) Chrysene-d12	9.652	240	158989	20.00	ug/mL	0.00
86) Perylene-d12	10.550	264	173849	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.886	112	123063	136.35	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 136.35%#			
7) SURRPhenol-d5	3.688	99	151578	136.48	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 136.48%#			
22) SURRNitrbenzened5	4.739	82	137639	249.58	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 249.58%#			
44) SURR2Flbiphenyl	6.813	172	321380	244.68	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 244.68%#			
62) SURR246Tribrphenl	7.825	330	56885	127.50	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 127.50%#			
78) SURRTerphenyl-d14	9.027	244	303784	240.23	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 240.23%#			
Target Compounds						Qvalue
2) Ntrsdimeth	2.128	74	77803	55.1230	ug/mL	94
3) Pyridine	2.145	79	139060	54.6570	ug/mL	98
5) Aniline	3.719	93	202468	54.6430	ug/mL	98
6) bis2Clethletr	3.787	93	117272	51.2991	ug/mL	98
8) Phenol	3.702	94	180280	54.7898	ug/mL	95
9) 2-Cl-phenol	3.841	128	144201	53.2163	ug/mL	98
10) 13Diclbenz	4.000	146	162975	53.1755	ug/mL	98
11) 14Diclbenz	4.083	146	162034	52.0941	ug/mL	96
12) 12Diclbenz	4.253	146	156820	53.8073	ug/mL	99
13) Benzyl alcoho	4.239	108	84747	54.7200	ug/mL	90
14) bis2clispreth	4.403	45	179680	53.1194	ug/mL	99
15) 2Methylphenol	4.381	107	105585	53.0724	ug/mL	96
16) Ntrspyrrol	4.543	100	64484	56.0149	ug/mL	96
17) Acetophenone	4.557	105	190225	55.7395	ug/mL	97
18) Hexaclethane	4.662	117	65022	53.9201	ug/mL	92
19) N-Ntrsdinprop	4.577	70	99729	56.7807	ug/mL	98
20) 3&4Methylphenol	4.586	107	145610	54.8250	ug/mL	97
23) Nitrobenzene	4.768	77	146837	50.2652	ug/mL	95
24) Isophorone	5.103	82	248793	48.9855	ug/mL	98
25) 2-Nitrophenol	5.199	139	78527	48.2709	ug/mL	97
26) 24Dimthpheno	5.319	122	114330	48.1705	ug/mL	95
27) bis2clethoxym	5.452	93	161060	48.8725	ug/mL	98
28) 24Diclphenol	5.563	162	127526	48.2990	ug/mL	95
29) 124Triclbenz	5.657	180	157157	51.8821	ug/mL	97
30) Benzoic acid	5.577	122	85398	50.0506	ug/mL	97
31) Naphthalene	5.745	128	459492	51.0382	ug/mL	99
32) 4-Cl-aniline	5.842	127	186715	51.6561	ug/mL	99
33) 26Diclphenol	5.844	162	120287	50.6174	ug/mL	93
34) Hexaclprop	5.859	213	114742	49.7017	ug/mL	97
35) Hexaclbutdien	5.915	225	98753	49.2920	ug/mL	96
36) 4Cl3methylphe	6.387	107	130271	48.7618	ug/mL	99
37) 2Methylnaphth	6.484	142	296302	47.9912	ug/mL	97
38) 1Methylnaphth	6.572	141	251235	48.0989	ug/mL	100
40) Hxclcycpentdi	6.631	237	97874	55.0730	ug/mL	99

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL7.D Vial: 11
Acq On : 8 Sep 2016 15:05 Operator: RPN
Sample : ICAL 50ug/ml SVMS7214 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:16:22 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:16:14 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

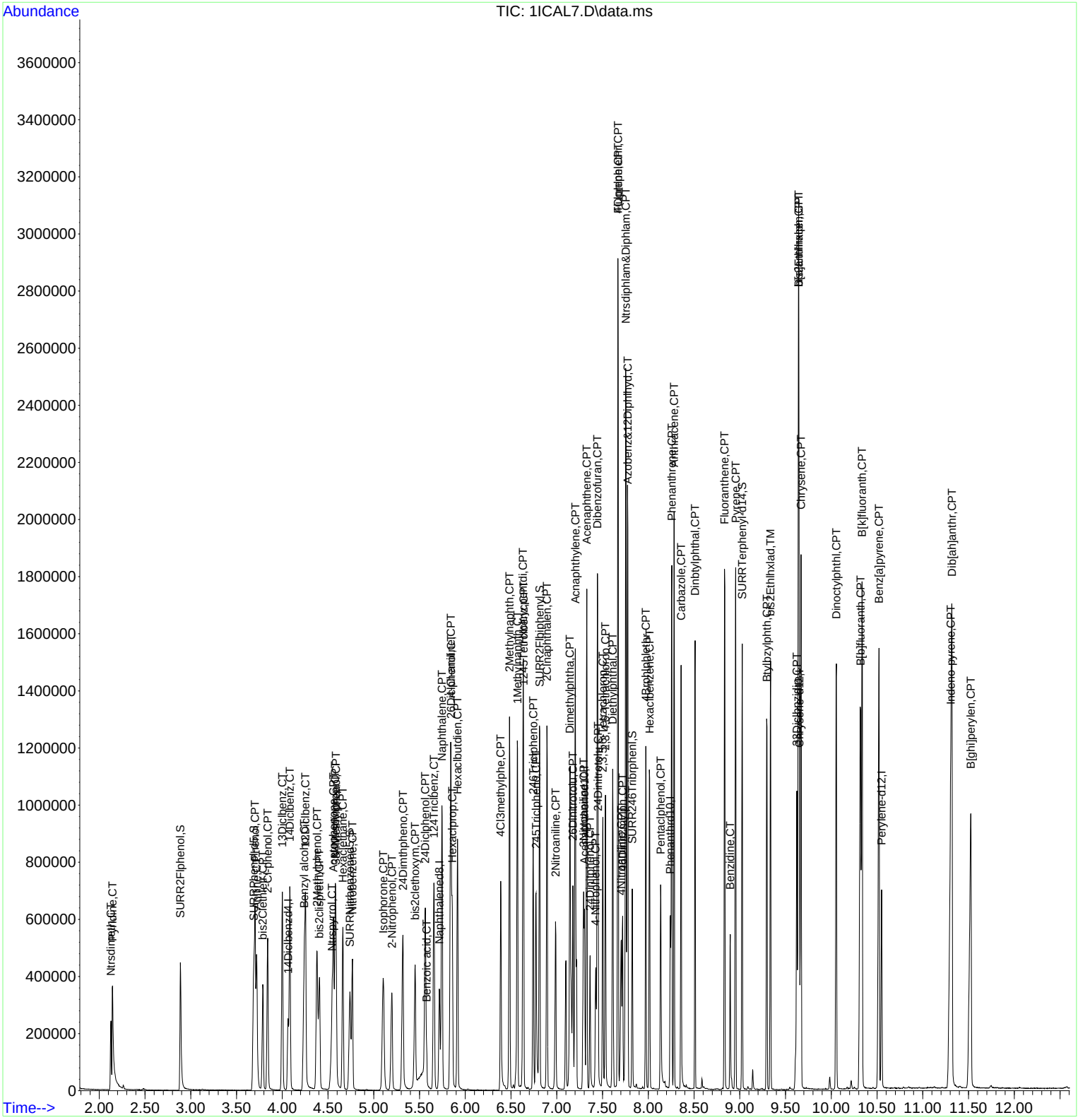
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
41) 1245Tetrclbenz	6.637	216	152292	47.9602 ug/mL	98
42) 246Triclpheno	6.742	196	96697	47.9944 ug/mL	99
43) 245Triclpheno	6.774	196	108407	48.8959 ug/mL	91
45) 2Clnaphthalen	6.893	162	289104	49.4793 ug/mL	99
46) 2Nitroaniline	6.987	65	82952	48.4366 ug/mL	97
47) Acnaphthylene	7.203	152	492366	49.5124 ug/mL	99
48) Dimethylphtha	7.143	163	339603	50.1193 ug/mL	99
49) 26Dinitrotolu	7.177	165	76899	50.6358 ug/mL	97
50) Acenaphthene	7.328	154	285793	50.4798 ug/mL	99
51) 3Nitroaniline	7.294	138	79008	50.8745 ug/mL	88
52) 24Dinitphenol	7.365	184	51657	52.1989 ug/mL	97
53) Dibenzofuran	7.444	168	430156	49.7285 ug/mL	100
54) 24Dinitrotolu	7.453	165	102294	49.4060 ug/mL	87
55) 4-Nitrophenol	7.424	65	68266	50.0225 ug/mL	99
56) 2,3,5,6-Tetrachlorop	7.504	232	94002	51.9802 ug/mL	97
57) 2,3,4,6-Tetrachlorop	7.532	232	98396	50.4041 ug/mL	94
58) Fluorene	7.669	166	345323	50.2575 ug/mL	96
59) 4Clphlphlethr	7.669	204	170621	49.5413 ug/mL	95
60) Diethylphthal	7.612	149	345382	49.6140 ug/mL	98
61) 4Nitroaniline	7.706	138	79225	51.3293 ug/mL	96
64) 46Dinit2mylph	7.720	198	65851	55.5700 ug/mL	97
65) Ntrsdiphlam&Diphlam	7.754	169	474687	104.4727 ug/mL	99
66) Azobenz&12Diphlhyd	7.777	182	154602	103.9905 ug/mL	96
67) 4Brphlphlethr	7.973	248	104276	51.3110 ug/mL	94
68) Hexaclbenzene	8.015	284	116615	52.9093 ug/mL	98
69) Pentaclphenol	8.137	266	70038	52.6577 ug/mL	96
70) Phenanthrene	8.257	178	452152	51.2375 ug/mL	98
71) Anthracene	8.282	178	455402	50.3807 ug/mL	98
72) Carbazole	8.359	167	387578	49.8766 ug/mL	97
73) Dinbtylphthal	8.513	149	466772	48.3301 ug/mL	98
74) Fluoranthene	8.834	202	486664	50.5985 ug/mL	98
76) Benzidine	8.896	184	133283	52.4428 ug/mL	98
77) Pyrene	8.956	202	490538	49.1477 ug/mL	99
79) Btylbzylphth	9.297	149	224055	52.0166 ug/mL	99
80) bis2Ethlhxlad	9.337	129	180071	50.9881 ug/mL	99
81) 33Diclbnzidin	9.624	252	157168	54.7141 ug/mL	98
82) B[a]anthracen	9.643	228	492901	51.2891 ug/mL	99
83) Chrysene	9.669	228	462390	52.1921 ug/mL	98
84) bis2Ethlhxlph	9.643	149	320311	51.2936 ug/mL	99
85) Dinoctylphthl	10.055	149	569172	51.4333 ug/mL	100
87) B[b]fluoranth	10.320	252	543097	50.5885 ug/mL	98
88) B[k]fluoranth	10.337	252	514033	51.1301 ug/mL	98
89) Benz[a]pyrene	10.521	252	524462	50.6122 ug/mL	100
90) Indeno-pyrene	11.306	276	632031	52.1767 ug/mL	99
91) Dib[ah]anthr	11.320	278	528966	52.7688 ug/mL	97
92) B[ghi]perylen	11.524	276	525986	52.0690 ug/mL	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL7.D Vial: 11
Acq On : 8 Sep 2016 15:05 Operator: RPN
Sample : ICAL 50ug/ml SVMS7214 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:16:22 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:16:14 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL6.D Vial: 12
Acq On : 8 Sep 2016 15:25 Operator: RPN
Sample : ICAL40ug/ml SVMS7213 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:15:25 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:15:14 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	4.063	152	44185	20.00	ug/mL	0.00
21) Naphthalened8	5.717	136	171973	20.00	ug/mL	0.00
39) Acenaphthened10	7.305	164	96816	20.00	ug/mL	0.00
63) Phenanthrd10	8.243	188	176124	20.00	ug/mL	0.00
75) Chrysene-d12	9.649	240	169274	20.00	ug/mL	0.00
86) Perylene-d12	10.547	264	185591	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.887	112	102000	101.77	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 101.77%			
7) SURRPhenol-d5	3.685	99	127798	104.60	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 104.60%			
22) SURRNitrbenzened5	4.736	82	112769	205.45	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 205.45%#			
44) SURR2Flbiphenyl	6.813	172	272938	211.27	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 211.27%#			
62) SURR246Tribrphenl	7.828	330	46891	107.50	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 107.50%			
78) SURRTerphenyl-d14	9.024	244	275131	206.60	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 206.60%#			
Target Compounds						Qvalue
2) Ntrsdimeth	2.125	74	63573	40.4887	ug/mL	95
3) Pyridine	2.142	79	116382	41.4471	ug/mL	93
5) Aniline	3.719	93	173497	42.9521	ug/mL	100
6) bis2Clethletr	3.787	93	103656	40.8988	ug/mL	95
8) Phenol	3.699	94	151441	41.8359	ug/mL	96
9) 2-Cl-phenol	3.838	128	122770	40.8502	ug/mL	97
10) 13Diclbenz	4.000	146	140026	41.3705	ug/mL	98
11) 14Diclbenz	4.083	146	140885	40.8330	ug/mL	92
12) 12Diclbenz	4.253	146	132810	41.2077	ug/mL	98
13) Benzyl alcoho	4.236	108	71436	41.9746	ug/mL	92
14) bis2clispreth	4.401	45	154783	41.4685	ug/mL	100
15) 2Methylphenol	4.375	107	93552	43.2344	ug/mL	92
16) Ntrspyrrol	4.537	100	53083	41.9552	ug/mL	94
17) Acetophenone	4.554	105	156875	41.7558	ug/mL	98
18) Hexaclethane	4.660	117	54445	40.6349	ug/mL	97
19) N-Ntrsdinprop	4.574	70	80629	41.6713	ug/mL	97
20) 3&4Methylphenol	4.583	107	120720	41.0495	ug/mL	98
23) Nitrobenzene	4.765	77	120848	41.8122	ug/mL	98
24) Isophorone	5.100	82	208467	41.3171	ug/mL	97
25) 2-Nitrophenol	5.194	139	67777	42.2666	ug/mL	96
26) 24Dimthpheno	5.313	122	96956	41.0197	ug/mL	94
27) bis2clethoxym	5.450	93	132699	40.1394	ug/mL	96
28) 24Diclphenol	5.560	162	108104	41.1608	ug/mL	93
29) 124Triclbenz	5.657	180	122429	40.3655	ug/mL	98
31) Naphthalene	5.745	128	360726	39.8425	ug/mL	99
32) 4-Cl-aniline	5.842	127	146781	40.6528	ug/mL	99
33) 26Diclphenol	5.844	162	96485	40.6427	ug/mL	95
34) Hexaclprop	5.859	213	92722	39.9854	ug/mL	94
35) Hexaclbutdien	5.916	225	81719	40.9275	ug/mL	96
36) 4Cl3methylphe	6.387	107	109520	41.2391	ug/mL	97
37) 2Methylnaphth	6.484	142	253522	41.3425	ug/mL	98
38) 1Methylnaphth	6.572	141	213862	41.1620	ug/mL	98
41) 1245Tetrclbenz	6.637	216	131591	42.0681	ug/mL	96
42) 246Triclpheno	6.742	196	82234	41.1074	ug/mL	99

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL6.D Vial: 12
Acq On : 8 Sep 2016 15:25 Operator: RPN
Sample : ICAL40ug/ml SVMS7213 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:15:25 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:15:14 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

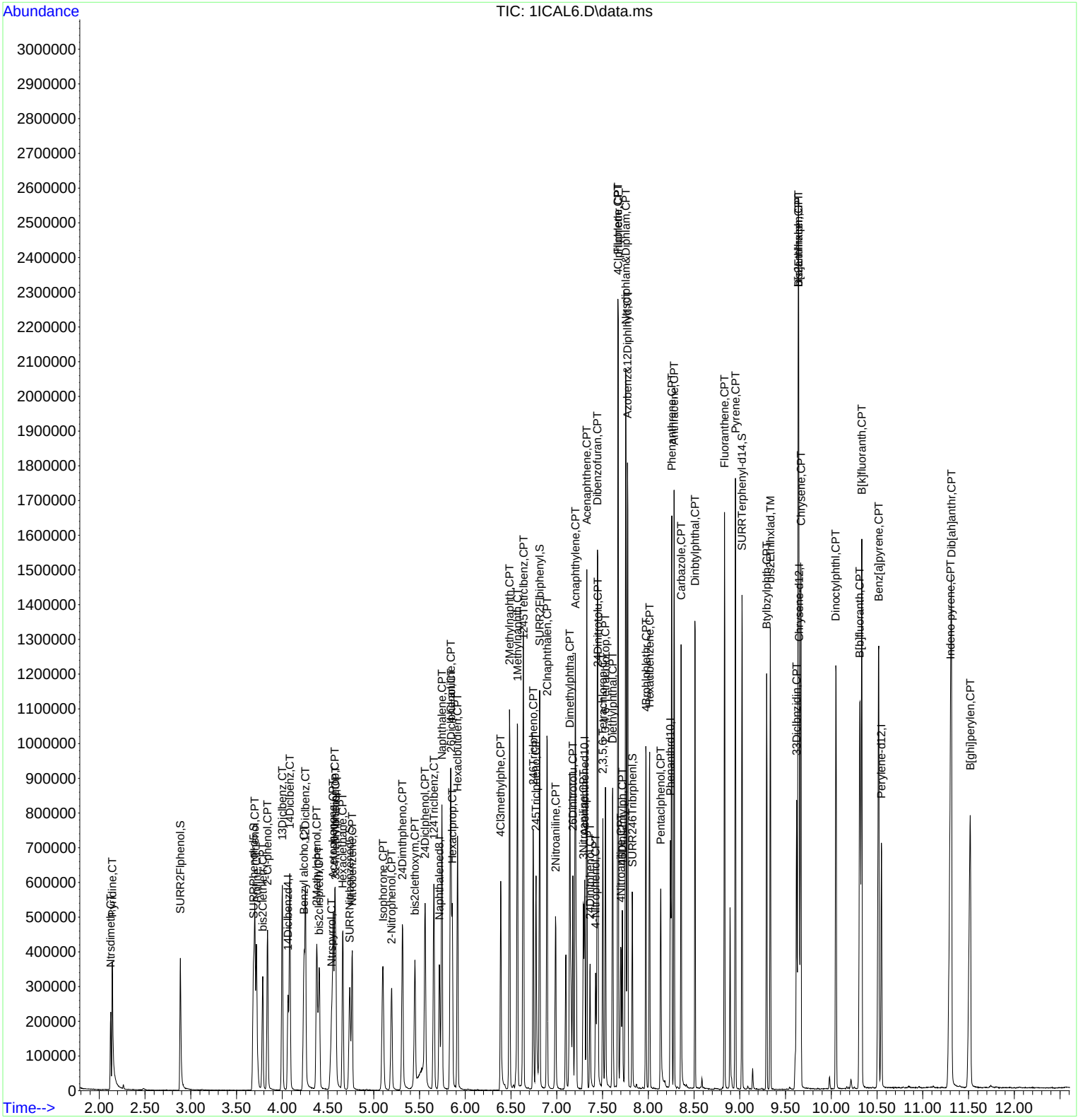
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
43) 245Triclpheno	6.774	196	91344	41.6957 ug/mL	91
45) 2Clnaphthalen	6.896	162	240276	41.5769 ug/mL	100
46) 2Nitroaniline	6.987	65	71381	42.4397 ug/mL	95
47) Acnaphthylene	7.203	152	398219	39.9434 ug/mL	99
48) Dimethylphtha	7.143	163	274933	40.7416 ug/mL	99
49) 26Dinitrotolu	7.177	165	61264	40.3871 ug/mL	87
50) Acenaphthene	7.328	154	227268	40.0894 ug/mL	99
51) 3Nitroaniline	7.291	138	63567	41.2844 ug/mL	93
52) 24Dinitphenol	7.365	184	41303	42.5272 ug/mL	99
53) Dibenzofuran	7.444	168	349959	40.5631 ug/mL	99
54) 24Dinitrotolu	7.450	165	83776	40.5705 ug/mL	93
55) 4-Nitrophenol	7.424	65	55671	41.0732 ug/mL	98
56) 2,3,5,6-Tetrachlorop	7.504	232	72266	39.8177 ug/mL	93
57) 2,3,4,6-Tetrachlorop	7.532	232	79552	41.0088 ug/mL	97
58) Fluorene	7.669	166	273066	39.4911 ug/mL	98
59) 4Clphlphlethr	7.672	204	134437	38.4517 ug/mL	98
60) Diethylphthal	7.612	149	276106	39.3742 ug/mL	99
61) 4Nitroaniline	7.700	138	63372	41.4781 ug/mL	92
64) 46Dinit2mylph	7.717	198	50894	39.9404 ug/mL	97
65) Ntrsdiphlam&Diphlam	7.754	169	386505	78.7272 ug/mL	100
66) Azobenz&12Diphlhyd	7.774	182	128392	80.5301 ug/mL#	87
67) 4Brphlphlethr	7.976	248	89118	41.2142 ug/mL	96
68) Hexaclbenzene	8.015	284	96569	41.1603 ug/mL	96
69) Pentaclphenol	8.138	266	59406	42.3815 ug/mL	97
70) Phenanthrene	8.257	178	382760	40.5371 ug/mL	99
71) Anthracene	8.282	178	391016	40.3736 ug/mL	99
72) Carbazole	8.359	167	327342	38.8036 ug/mL	98
73) Dinbtylphthal	8.513	149	410567	39.3334 ug/mL	98
74) Fluoranthene	8.834	202	400624	38.1613 ug/mL	99
77) Pyrene	8.953	202	434009	41.2763 ug/mL	99
79) Btylbzylphth	9.294	149	189876	42.1424 ug/mL	97
80) bis2Ethlhxlad	9.334	129	153185	41.1199 ug/mL	99
81) 33Diclbnzidin	9.621	252	129711	43.7305 ug/mL	96
82) B[a]anthracen	9.641	228	415174	40.8707 ug/mL	99
83) Chrysene	9.669	228	378104	40.1280 ug/mL	98
84) bis2Ethlhxlph	9.641	149	267002	40.2389 ug/mL	99
85) Dinoctylphthl	10.050	149	481816	41.3561 ug/mL	100
87) B[b]fluoranth	10.311	252	463579	40.6781 ug/mL	99
88) B[k]fluoranth	10.334	252	428339	39.8661 ug/mL	98
89) Benz[a]pyrene	10.519	252	443990	40.2038 ug/mL	99
90) Indeno-pyrene	11.303	276	518749	40.1733 ug/mL	99
91) Dib[ah]anthr	11.314	278	428703	40.0915 ug/mL	96
92) B[ghi]perylen	11.519	276	429914	39.7992 ug/mL	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL6.D Vial: 12
Acq On : 8 Sep 2016 15:25 Operator: RPN
Sample : ICAL40ug/ml SVMS7213 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:15:25 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:15:14 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL5.D Vial: 13
Acq On : 8 Sep 2016 15:45 Operator: RPN
Sample : ICAL30ug/ml SVMS7212 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:14:01 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:13:24 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	4.063	152	43284	20.00	ug/mL	0.00
21) Naphthalened8	5.716	136	172551	20.00	ug/mL	0.00
39) Acenaphthened10	7.305	164	99315	20.00	ug/mL	0.00
63) Phenanthrd10	8.242	188	184833	20.00	ug/mL	0.00
75) Chrysene-d12	9.649	240	167455	20.00	ug/mL	0.00
86) Perylene-d12	10.547	264	174508	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.886	112	77675	83.71	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 83.71%			
7) SURRPhenol-d5	3.682	99	95938	86.08	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 86.08%			
22) SURRNitrbenzened5	4.733	82	87047	167.03	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 167.03%#			
44) SURR2Flbiphenyl	6.813	172	206043	161.36	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 161.36%#			
62) SURR246Tribrphenl	7.825	330	35349	83.46	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 83.46%			
78) SURRTerphenyl-d14	9.024	244	207061	165.07	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 165.07%#			
Target Compounds						Qvalue
2) Ntrsdimeth	2.125	74	48983	33.9339	ug/mL	94
3) Pyridine	2.142	79	87466	33.8246	ug/mL	97
5) Aniline	3.716	93	129565	36.0398	ug/mL	99
6) bis2Clethletr	3.784	93	77906	32.8901	ug/mL	97
8) Phenol	3.696	94	115068	35.3345	ug/mL	100
9) 2-Cl-phenol	3.838	128	91531	32.2617	ug/mL	96
10) 13Diclbenz	4.000	146	104520	33.2091	ug/mL	99
11) 14Diclbenz	4.083	146	106931	33.4633	ug/mL	94
12) 12Diclbenz	4.253	146	99341	33.0798	ug/mL	99
13) Benzyl alcoho	4.233	108	53105	34.0629	ug/mL	94
14) bis2clispreth	4.401	45	117435	34.5564	ug/mL	98
15) 2Methylphenol	4.375	107	68083	34.5603	ug/mL	97
16) Ntrspyrrol	4.532	100	40220	35.3367	ug/mL	96
17) Acetophenone	4.551	105	118968	35.0411	ug/mL	99
18) Hexaclethane	4.659	117	41182	32.8840	ug/mL	96
19) N-Ntrsdinprop	4.568	70	61454	35.2700	ug/mL	96
20) 3&4Methylphenol	4.577	107	91853	34.0200	ug/mL	98
23) Nitrobenzene	4.762	77	91989	33.6507	ug/mL	98
24) Isophorone	5.097	82	161095	33.8779	ug/mL	97
25) 2-Nitrophenol	5.194	139	51536	34.3566	ug/mL	95
26) 24Dimthpheno	5.313	122	75403	33.8169	ug/mL	97
27) bis2clethoxym	5.449	93	105223	33.6530	ug/mL	98
28) 24Diclphenol	5.560	162	83071	33.2101	ug/mL	96
29) 124Triclbenz	5.657	180	93814	31.7017	ug/mL	96
31) Naphthalene	5.745	128	284055	32.6501	ug/mL	98
32) 4-Cl-aniline	5.839	127	118257	35.7968	ug/mL	99
33) 26Diclphenol	5.841	162	75112	33.2326	ug/mL	94
34) Hexaclprop	5.858	213	73690	33.5404	ug/mL	93
35) Hexaclbutdien	5.915	225	63291	33.3624	ug/mL	95
36) 4Cl3methylphe	6.387	107	84595	33.7101	ug/mL	99
37) 2Methylnaphth	6.484	142	196362	34.0888	ug/mL	98
38) 1Methylnaphth	6.569	141	168309	34.9488	ug/mL	97
41) 1245Tetrclbenz	6.634	216	101942	33.7611	ug/mL	97
42) 246Triclpheno	6.742	196	63914	32.3822	ug/mL	100

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL5.D Vial: 13
Acq On : 8 Sep 2016 15:45 Operator: RPN
Sample : ICAL30ug/ml SVMS7212 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:14:01 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:13:24 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

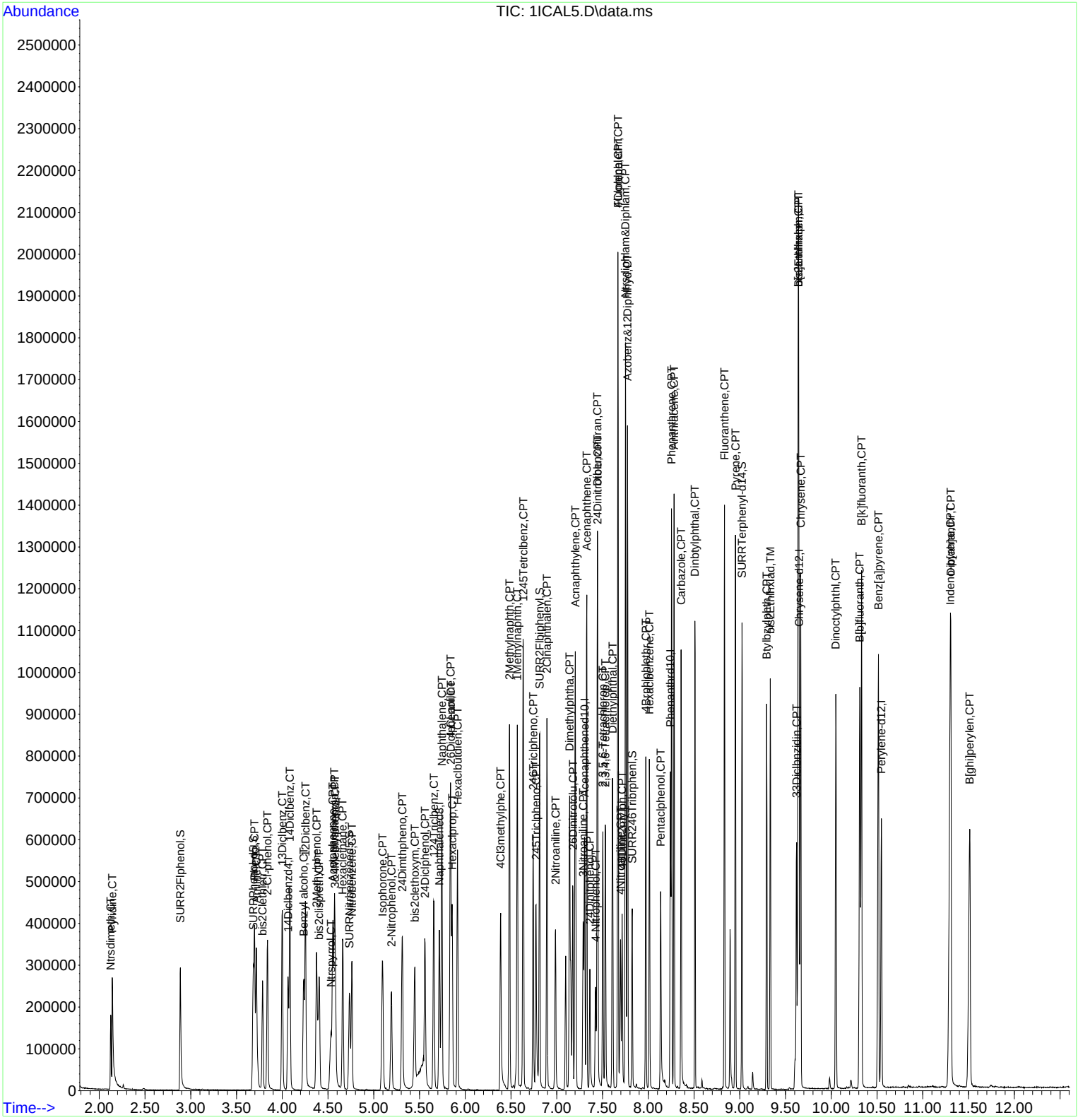
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
43) 245Triclpheno	6.773	196	69872	32.2662 ug/mL	92
45) 2Clnaphthalen	6.893	162	185568	32.7229 ug/mL	99
46) 2Nitroaniline	6.987	65	53180	31.6917 ug/mL	94
47) Acnaphthylene	7.202	152	320802	32.8676 ug/mL	98
48) Dimethylphtha	7.140	163	214419	32.0149 ug/mL	99
49) 26Dinitrotolu	7.177	165	48909	33.0054 ug/mL	93
50) Acenaphthene	7.327	154	185656	34.1143 ug/mL	100
51) 3Nitroaniline	7.288	138	49597	32.9391 ug/mL	94
52) 24Dinitphenol	7.362	184	32286	35.2327 ug/mL	93
53) Dibenzofuran	7.444	168	277285	32.7854 ug/mL	99
54) 24Dinitrotolu	7.447	165	66433	32.8541 ug/mL	95
55) 4-Nitrophenol	7.424	65	44641	34.5316 ug/mL	96
56) 2,3,5,6-Tetrachlorop	7.504	232	58951	33.5234 ug/mL	96
57) 2,3,4,6-Tetrachlorop	7.532	232	63390	33.9548 ug/mL	96
58) Fluorene	7.668	166	224298	33.4294 ug/mL	98
59) 4Clphlphlethr	7.668	204	113678	33.5955 ug/mL	98
60) Diethylphthal	7.609	149	228145	33.6403 ug/mL	98
61) 4Nitroaniline	7.697	138	50425	34.6868 ug/mL	98
64) 46Dinit2mylph	7.714	198	41506	32.1507 ug/mL	93
65) Ntrsdiphlam&Diphlam	7.751	169	314000	61.9204 ug/mL	98
66) Azobenz&12Diphlhyd	7.774	182	101300	61.0973 ug/mL#	86
67) 4Brphlphlethr	7.973	248	67398	29.4074 ug/mL	95
68) Hexaclbenzene	8.012	284	74327	30.3772 ug/mL	97
69) Pentaclphenol	8.134	266	46980	34.1420 ug/mL	98
70) Phenanthrene	8.254	178	310773	32.8543 ug/mL	99
71) Anthracene	8.282	178	316437	32.3562 ug/mL	100
72) Carbazole	8.359	167	267103	30.3437 ug/mL	98
73) Dinbtylphthal	8.510	149	328334	29.9463 ug/mL	99
74) Fluoranthene	8.833	202	329434	29.8038 ug/mL	99
77) Pyrene	8.953	202	326127	32.8341 ug/mL	100
79) Btylbzylphth	9.294	149	138406	32.1816 ug/mL	100
80) bis2Ethlhxlad	9.334	129	115571	32.8493 ug/mL	99
81) 33Diclbnzidin	9.621	252	94304	34.6060 ug/mL	95
82) B[a]anthracen	9.640	228	312516	32.2816 ug/mL	98
83) Chrysene	9.666	228	289280	32.1432 ug/mL	99
84) bis2Ethlhxlph	9.640	149	205451	32.7159 ug/mL	99
85) Dinoctylphthl	10.050	149	367997	34.1247 ug/mL	99
87) B[b]fluoranth	10.311	252	330152	31.6650 ug/mL	99
88) B[k]fluoranth	10.331	252	325903	34.8850 ug/mL	97
89) Benz[a]pyrene	10.516	252	323863	32.4754 ug/mL	100
90) Indeno-pyrene	11.300	276	385980	33.8065 ug/mL	98
91) Dib[ah]anthr	11.306	278	319870	33.8603 ug/mL	95
92) B[ghi]perylen	11.513	276	315149	32.1284 ug/mL	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL5.D Vial: 13
Acq On : 8 Sep 2016 15:45 Operator: RPN
Sample : ICAL30ug/ml SVMS7212 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:14:01 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:13:24 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL4.D Vial: 14
Acq On : 8 Sep 2016 16:19 Operator: RPN
Sample : ICAL20ug/ml SVMS7211 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:14:51 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:14:34 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	4.063	152	46433	20.00	ug/mL	0.00
21) Naphthalened8	5.714	136	188439	20.00	ug/mL	0.00
39) Acenaphthened10	7.302	164	102760	20.00	ug/mL	0.00
63) Phenanthrd10	8.240	188	179545	20.00	ug/mL	0.00
75) Chrysene-d12	9.649	240	182954	20.00	ug/mL	0.00
86) Perylene-d12	10.547	264	193135	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.884	112	49772	47.26	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 47.26%			
7) SURRPhenol-d5	3.679	99	59779	46.56	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 46.56%			
22) SURRNitrbenzened5	4.730	82	56912	94.63	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 94.63%			
44) SURR2Flbiphenyl	6.810	172	132119	96.35	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 96.35%			
62) SURR246Tribrphenl	7.822	330	21913	47.33	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 47.33%			
78) SURRTerphenyl-d14	9.024	244	137048	95.22	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 95.22%			
Target Compounds						Qvalue
2) Ntrsdimeth	2.122	74	30970	18.7694	ug/mL	100
3) Pyridine	2.142	79	55480	18.8015	ug/mL	100
5) Aniline	3.713	93	77132	18.1709	ug/mL	97
6) bis2Clethletr	3.779	93	50820	19.0809	ug/mL	100
8) Phenol	3.691	94	69869	18.3670	ug/mL	100
9) 2-Cl-phenol	3.835	128	60871	19.2735	ug/mL	100
10) 13Diclbenz	3.997	146	67526	18.9846	ug/mL	100
11) 14Diclbenz	4.080	146	68559	18.9086	ug/mL	100
12) 12Diclbenz	4.250	146	64431	19.0235	ug/mL	100
13) Benzyl alcoho	4.228	108	33560	18.7938	ug/mL	100
14) bis2clispreth	4.398	45	72912	18.5884	ug/mL	100
15) 2Methylphenol	4.372	107	42266	18.5873	ug/mL	100
16) Ntrspyrrol	4.520	100	24420	18.3664	ug/mL	100
17) Acetophenone	4.546	105	72842	18.4499	ug/mL	100
18) Hexaclethane	4.657	117	26869	19.0827	ug/mL	100
19) N-Ntrsdinprop	4.560	70	37383	18.3852	ug/mL	100
20) 3&4Methylphenol	4.571	107	57928	18.7441	ug/mL	100
23) Nitrobenzene	4.756	77	59707	18.8529	ug/mL	100
24) Isophorone	5.088	82	103860	18.7858	ug/mL	100
25) 2-Nitrophenol	5.188	139	32763	18.6461	ug/mL	100
26) 24Dimthpheno	5.307	122	48701	18.8038	ug/mL	100
27) bis2clethoxym	5.444	93	68292	18.8522	ug/mL	100
28) 24Diclphenol	5.554	162	54634	18.9843	ug/mL	100
29) 124Triclbenz	5.654	180	64635	19.4484	ug/mL	100
31) Naphthalene	5.739	128	190021	19.1540	ug/mL	100
32) 4-Cl-aniline	5.833	127	72155	18.2380	ug/mL	100
33) 26Diclphenol	5.836	162	49366	18.9775	ug/mL	100
34) Hexaclprop	5.853	213	47987	18.8856	ug/mL	100
35) Hexaclbutdien	5.912	225	41435	18.9387	ug/mL	100
36) 4Cl3methylphe	6.384	107	54811	18.8353	ug/mL	100
37) 2Methylnaphth	6.481	142	125814	18.7240	ug/mL	100
38) 1Methylnaphth	6.566	141	105186	18.4761	ug/mL	100
41) 1245Tetrclbenz	6.631	216	62485	18.8203	ug/mL	100
42) 246Triclpheno	6.739	196	40844	19.2362	ug/mL	100

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL4.D Vial: 14
Acq On : 8 Sep 2016 16:19 Operator: RPN
Sample : ICAL20ug/ml SVMS7211 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:14:51 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:14:34 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

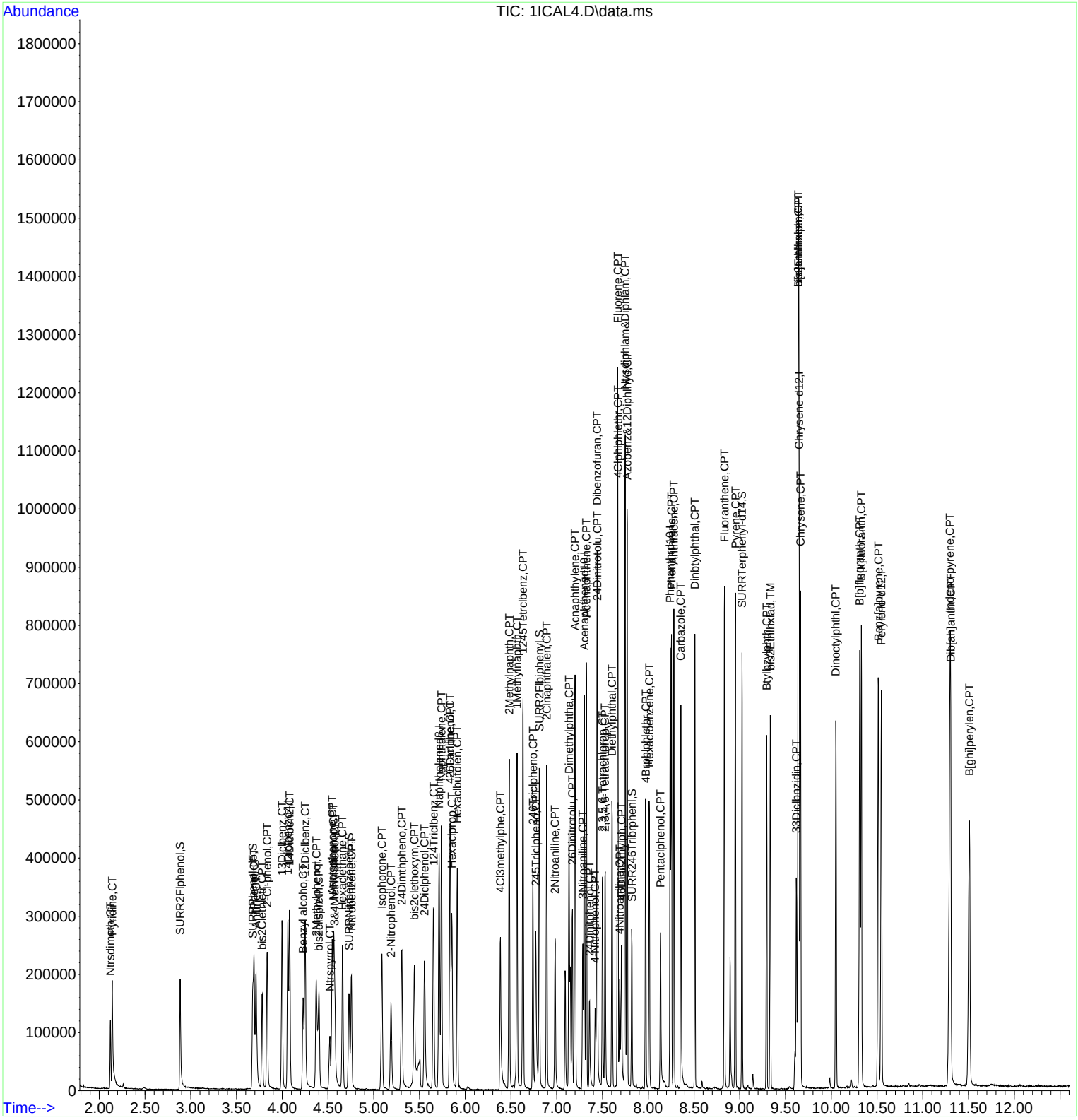
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
43) 245Triclpheno	6.771	196	44812	19.2721 ug/mL	100
45) 2Clnaphthalen	6.890	162	117352	19.1318 ug/mL	100
46) 2Nitroaniline	6.981	65	34725	19.4516 ug/mL	100
47) Acnaphthylene	7.200	152	201980	19.0877 ug/mL	100
48) Dimethylphtha	7.134	163	138596	19.3502 ug/mL	100
49) 26Dinitrotolu	7.171	165	30665	19.0460 ug/mL	100
50) Acenaphthene	7.322	154	112619	18.7166 ug/mL	100
51) 3Nitroaniline	7.285	138	31159	19.0661 ug/mL	100
52) 24Dinitphenol	7.359	184	18963	18.3957 ug/mL	100
53) Dibenzofuran	7.441	168	175019	19.1127 ug/mL	100
54) 24Dinitrotolu	7.444	165	41844	19.0918 ug/mL	100
55) 4-Nitrophenol	7.418	65	26752	18.5955 ug/mL	100
56) 2,3,5,6-Tetrachlorop	7.501	232	36390	18.8907 ug/mL	100
57) 2,3,4,6-Tetrachlorop	7.526	232	38633	18.7632 ug/mL	100
58) Fluorene	7.666	166	138847	18.9187 ug/mL	100
59) 4Clphlphlethr	7.668	204	70022	18.8693 ug/mL	100
60) Diethylphthal	7.603	149	140343	18.8560 ug/mL	100
61) 4Nitroaniline	7.688	138	30083	18.5509 ug/mL	99
64) 46Dinit2mylph	7.708	198	25081	19.3079 ug/mL	100
65) Ntrsdiphlam&Diphlam	7.748	169	197038	39.3700 ug/mL	100
66) Azobenz&12Diphlhyd	7.771	182	64423	39.6375 ug/mL	100
67) 4Brphlphlethr	7.973	248	44526	20.1995 ug/mL	100
68) Hexaclbenzene	8.012	284	47536	19.8751 ug/mL	100
69) Pentaclphenol	8.134	266	26733	18.7085 ug/mL	100
70) Phenanthrene	8.254	178	183770	19.0918 ug/mL	100
71) Anthracene	8.279	178	190000	19.2443 ug/mL	100
72) Carbazole	8.356	167	171015	19.8861 ug/mL	100
73) Dinbtylphthal	8.510	149	213008	20.0179 ug/mL	100
74) Fluoranthene	8.834	202	214744	20.0656 ug/mL	100
77) Pyrene	8.953	202	217038	19.0979 ug/mL	100
79) Btylbzylphth	9.294	149	93977	19.2983 ug/mL	100
80) bis2Ethlhxlad	9.334	129	76877	19.0933 ug/mL	100
81) 33Diclbnzidin	9.618	252	59546	18.5741 ug/mL	100
82) B[a]anthracen	9.640	228	211539	19.2673 ug/mL	100
83) Chrysene	9.663	228	196654	19.3102 ug/mL	100
84) bis2Ethlhxlph	9.640	149	137222	19.1339 ug/mL	100
85) Dinoctylphthl	10.050	149	235640	18.7135 ug/mL	100
87) B[b]fluoranth	10.311	252	230786	19.4600 ug/mL	100
88) B[k]fluoranth	10.328	252	206788	18.4943 ug/mL	100
89) Benz[a]pyrene	10.516	252	220741	19.2076 ug/mL	100
90) Indeno-pyrene	11.297	276	252720	18.8068 ug/mL	100
91) Dib[ah]anthr	11.306	278	209102	18.7910 ug/mL	100
92) B[ghi]perylen	11.510	276	217121	19.3148 ug/mL	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL4.D Vial: 14
Acq On : 8 Sep 2016 16:19 Operator: RPN
Sample : ICAL20ug/ml SVMS7211 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:14:51 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:14:34 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL3.D Vial: 15
Acq On : 8 Sep 2016 16:38 Operator: RPN
Sample : ICAL10ug/ml SVMS7210 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:17:05 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:16:54 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	4.060	152	44108	20.00	ug/mL	0.00
21) Naphthalened8	5.714	136	172665	20.00	ug/mL	0.00
39) Acenaphthened10	7.299	164	99969	20.00	ug/mL	0.00
63) Phenanthrd10	8.240	188	178610	20.00	ug/mL	0.00
75) Chrysene-d12	9.646	240	176428	20.00	ug/mL	0.00
86) Perylene-d12	10.547	264	178419	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.884	112	26181	25.44	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 25.44%			
7) SURRPhenol-d5	3.673	99	31920	25.20	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 25.20%			
22) SURRNitrbenzened5	4.725	82	28991	52.15	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 52.15%			
44) SURR2Flbiphenyl	6.808	172	69595	51.48	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 51.48%			
62) SURR246Tribrphenl	7.819	330	12027	25.92	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 25.92%#			
78) SURRTerphenyl-d14	9.024	244	69850	50.27	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 50.27%			
Target Compounds						Qvalue
2) Ntrsdimeth	2.122	74	16180	10.0241	ug/mL	90
3) Pyridine	2.145	79	30303	10.4388	ug/mL	95
5) Aniline	3.713	93	41683	9.8602	ug/mL#	73
6) bis2Clethletr	3.779	93	26315	10.2571	ug/mL	97
8) Phenol	3.688	94	38175	10.1618	ug/mL	97
9) 2-Cl-phenol	3.833	128	31171	10.1535	ug/mL	95
10) 13Diclbenz	3.997	146	35025	10.0889	ug/mL	97
11) 14Diclbenz	4.080	146	37053	10.5730	ug/mL	95
12) 12Diclbenz	4.250	146	34724	10.4857	ug/mL	97
13) Benzyl alcoho	4.225	108	16223	9.1778	ug/mL	87
14) bis2clispreth	4.397	45	39344	10.2713	ug/mL	97
15) 2Methylphenol	4.370	107	23448	10.4104	ug/mL	93
16) Ntrspyrrol	4.512	100	12699	9.6044	ug/mL	92
17) Acetophenone	4.543	105	39852	10.1806	ug/mL	97
18) Hexaclethane	4.657	117	13907	10.1440	ug/mL	98
19) N-Ntrsdinprop	4.557	70	20703	10.2247	ug/mL	97
20) 3&4Methylphenol	4.566	107	30933	10.1994	ug/mL	91
23) Nitrobenzene	4.750	77	30925	10.4844	ug/mL	99
24) Isophorone	5.083	82	53028	10.4069	ug/mL	98
25) 2-Nitrophenol	5.188	139	16978	10.4400	ug/mL	95
26) 24Dimthpheno	5.302	122	23374	9.8565	ug/mL	91
27) bis2clethoxym	5.441	93	33004	9.9880	ug/mL	99
28) 24Diclphenol	5.552	162	26565	10.0632	ug/mL	88
29) 124Triclbenz	5.651	180	31884	10.3411	ug/mL	98
30) Benzoic acid	5.452	122	14061	12.5510	ug/mL	78
31) Naphthalene	5.739	128	95003	10.4108	ug/mL	100
32) 4-Cl-aniline	5.830	127	36354	9.8922	ug/mL	96
33) 26Diclphenol	5.833	162	24613	10.2396	ug/mL	90
34) Hexaclprop	5.853	213	23443	10.0853	ug/mL	96
35) Hexaclbutdien	5.913	225	21069	10.4662	ug/mL	91
36) 4Cl3methylphe	6.384	107	26737	9.9867	ug/mL	94
37) 2Methylnaphth	6.478	142	64677	10.4940	ug/mL	96
38) 1Methylnaphth	6.566	141	54231	10.3951	ug/mL	95
40) Hxclcycpentdi	6.629	237	19131	13.7642	ug/mL	97

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL3.D Vial: 15
Acq On : 8 Sep 2016 16:38 Operator: RPN
Sample : ICAL10ug/ml SVMS7210 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:17:05 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:16:54 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

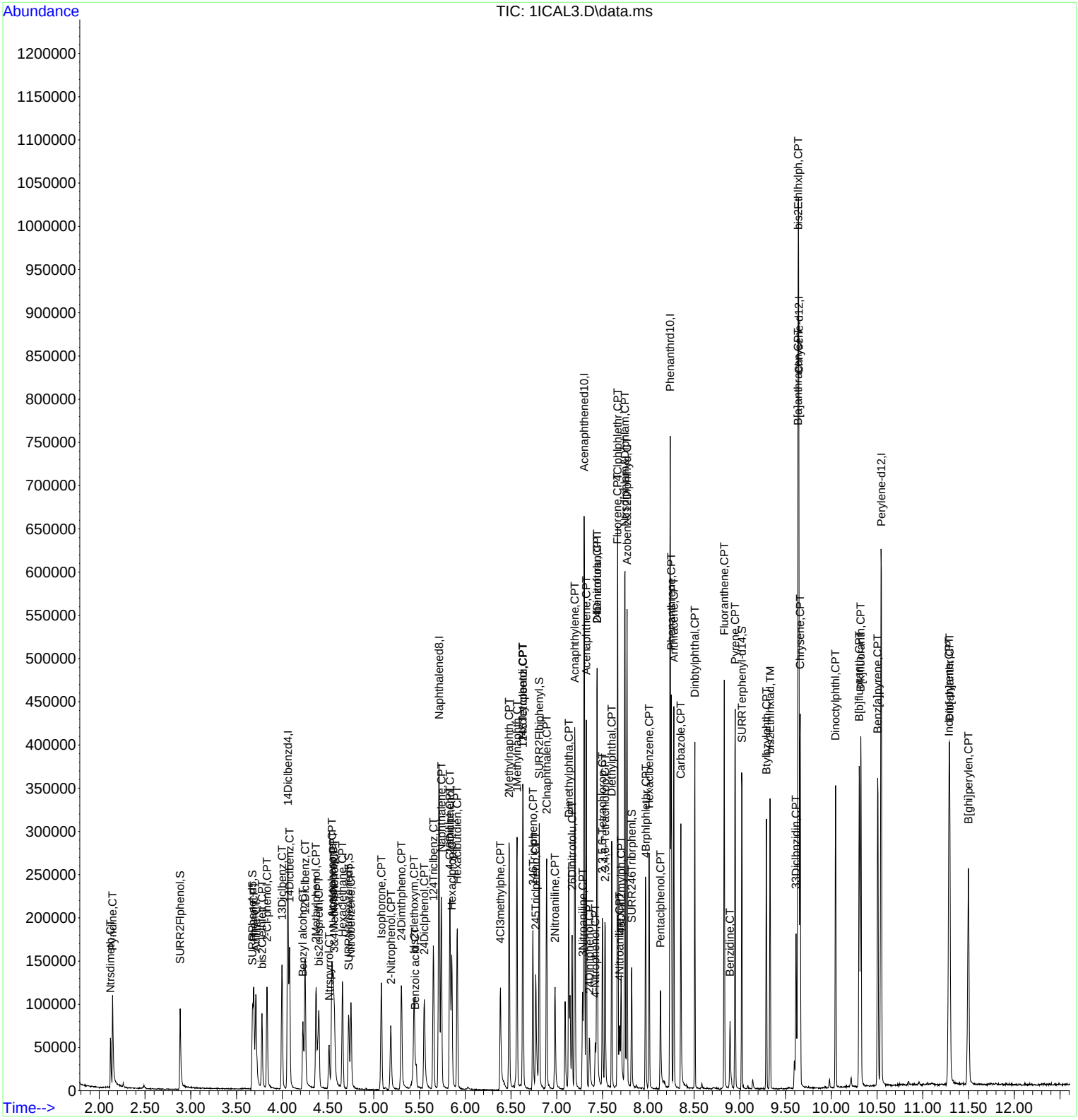
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
41) 1245Tetrclbenz	6.631	216	34994	10.7605 ug/mL	97
42) 246Triclpheno	6.739	196	19982	9.6823 ug/mL	91
43) 245Triclpheno	6.771	196	23045	10.1014 ug/mL	95
45) 2Clnaphthalen	6.890	162	60897	10.0991 ug/mL	99
46) 2Nitroaniline	6.981	65	17345	9.8654 ug/mL	94
47) Acnaphthylene	7.197	152	107297	10.4534 ug/mL	98
48) Dimethylphtha	7.132	163	74843	10.6687 ug/mL	99
49) 26Dinitrotolu	7.168	165	16352	10.3732 ug/mL	95
50) Acenaphthene	7.322	154	60135	10.2409 ug/mL	97
51) 3Nitroaniline	7.285	138	15862	9.8282 ug/mL	97
52) 24Dinitphenol	7.356	184	8583	8.2910 ug/mL	98
53) Dibenzofuran	7.441	168	91884	10.2800 ug/mL	99
54) 24Dinitrotolu	7.441	165	22176	10.3822 ug/mL	95
55) 4-Nitrophenol	7.421	65	13621	9.6451 ug/mL	92
56) 2,3,5,6-Tetrachlorop	7.498	232	18962	10.0344 ug/mL	97
57) 2,3,4,6-Tetrachlorop	7.529	232	20955	10.3534 ug/mL	93
58) Fluorene	7.663	166	74601	10.4796 ug/mL	98
59) 4Clphlphlethr	7.666	204	37581	10.5702 ug/mL	98
60) Diethylphthal	7.600	149	74173	10.3175 ug/mL	97
61) 4Nitroaniline	7.686	138	15832	9.8479 ug/mL	89
64) 46Dinit2mylph	7.703	198	12523	9.4331 ug/mL	94
65) Ntrsdiphlam&Diphlam	7.745	169	105343	21.0362 ug/mL	99
66) Azobenz&12Diphlhyd	7.768	182	33203	20.2881 ug/mL	88
67) 4Brphlphlethr	7.973	248	22346	10.0227 ug/mL	98
68) Hexaclbenzene	8.010	284	25519	10.4705 ug/mL	98
69) Pentaclphenol	8.135	266	12816	8.7246 ug/mL	99
70) Phenanthrene	8.251	178	99576	10.2891 ug/mL	98
71) Anthracene	8.279	178	103606	10.4960 ug/mL	99
72) Carbazole	8.356	167	84616	9.9967 ug/mL	98
73) Dinbtylphthal	8.510	149	111361	10.6680 ug/mL	99
74) Fluoranthene	8.831	202	108612	10.3296 ug/mL	98
76) Benzidine	8.893	184	25426	13.8713 ug/mL	96
77) Pyrene	8.950	202	109057	9.8887 ug/mL	99
79) Btylbzylphth	9.291	149	47760	9.8922 ug/mL	96
80) bis2Ethlhxlad	9.331	129	37277	9.4651 ug/mL	96
81) 33Diclbnzidin	9.615	252	32330	9.9088 ug/mL	97
82) B[a]anthracen	9.635	228	110286	10.2753 ug/mL	98
83) Chrysene	9.660	228	98604	9.9210 ug/mL	98
84) bis2Ethlhxlph	9.638	149	70664	10.1319 ug/mL	97
85) Dinoctylphthl	10.047	149	120990	9.7825 ug/mL	99
87) B[b]fluoranth	10.305	252	108008	9.7743 ug/mL	97
88) B[k]fluoranth	10.322	252	108754	10.4813 ug/mL	99
89) Benz[a]pyrene	10.507	252	106882	10.0196 ug/mL	96
90) Indeno-pyrene	11.286	276	125796	10.0100 ug/mL	96
91) Dib[ah]anthr	11.294	278	104201	9.9904 ug/mL	95
92) B[ghi]perylen	11.499	276	105543	10.0762 ug/mL	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL3.D Vial: 15
Acq On : 8 Sep 2016 16:38 Operator: RPN
Sample : ICAL10ug/ml SVMS7210 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:17:05 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:16:54 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL2.D Vial: 16
Acq On : 8 Sep 2016 16:58 Operator: RPN
Sample : ICAL5ug/ml SVMS7209 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:18:51 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:18:41 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	4.060	152	41993	20.00	ug/mL	0.00
21) Naphthalened8	5.714	136	183066	20.00	ug/mL	0.00
39) Acenaphthened10	7.299	164	100717	20.00	ug/mL	0.00
63) Phenanthrd10	8.240	188	186490	20.00	ug/mL	0.00
75) Chrysene-d12	9.643	240	179604	20.00	ug/mL	0.00
86) Perylene-d12	10.544	264	181827	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.884	112	11000	11.19	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 11.19%#			
7) SURRPhenol-d5	3.674	99	14688	12.16	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 12.16%			
22) SURRNitrbenzened5	4.725	82	13567	22.82	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 22.82%#			
44) SURR2Flbiphenyl	6.808	172	35609	25.99	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 25.99%#			
62) SURR246Tribrphenl	7.819	330	5655	12.01	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 12.01%#			
78) SURRTerphenyl-d14	9.021	244	36255	25.60	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 25.60%#			
Target Compounds						Qvalue
2) Ntrsdimeth	2.125	74	6909	4.4938	ug/mL	85
3) Pyridine	2.151	79	12180	4.3687	ug/mL	96
5) Aniline	3.711	93	17954	4.4735	ug/mL#	58
6) bis2Clethletr	3.776	93	11820	4.8145	ug/mL	92
8) Phenol	3.688	94	17196	4.7924	ug/mL	94
9) 2-Cl-phenol	3.836	128	13807	4.7095	ug/mL	90
10) 13Diclbenz	3.998	146	16551	4.9987	ug/mL	97
11) 14Diclbenz	4.080	146	16920	5.0138	ug/mL	96
12) 12Diclbenz	4.248	146	16262	5.1084	ug/mL	99
13) Benzyl alcoho	4.225	108	7006	4.2327	ug/mL	96
14) bis2clispreth	4.396	45	19800	5.4001	ug/mL	90
15) 2Methylphenol	4.367	107	11620	5.3748	ug/mL	96
16) Ntrspyrrol	4.503	100	6368	5.0991	ug/mL	84
17) Acetophenone	4.537	105	19968	5.3387	ug/mL	92
18) Hexaclethane	4.660	117	6822	5.2117	ug/mL	95
19) N-Ntrsdinprop	4.552	70	10403	5.3724	ug/mL	99
20) 3&4Methylphenol	4.566	107	14966	5.1626	ug/mL	96
23) Nitrobenzene	4.750	77	14409	4.5633	ug/mL	99
24) Isophorone	5.080	82	26265	4.8225	ug/mL	99
25) 2-Nitrophenol	5.188	139	8145	4.6827	ug/mL	86
26) 24Dimthpheno	5.299	122	10775	4.2979	ug/mL	96
27) bis2clethoxym	5.438	93	16726	4.7753	ug/mL	99
28) 24Diclphenol	5.552	162	12710	4.5354	ug/mL	92
29) 124Triclbenz	5.651	180	15828	4.8091	ug/mL	95
30) Benzoic acid	5.432	122	5793	5.9780	ug/mL	84
31) Naphthalene	5.736	128	48034	4.9242	ug/mL	98
32) 4-Cl-aniline	5.827	127	17487	4.4977	ug/mL	95
33) 26Diclphenol	5.833	162	12494	4.8791	ug/mL	99
34) Hexaclprop	5.853	213	11439	4.6336	ug/mL	95
35) Hexaclbutdien	5.913	225	10721	4.9768	ug/mL	97
36) 4Cl3methylphe	6.384	107	12598	4.4394	ug/mL	93
37) 2Methylnaphth	6.478	142	29677	4.4971	ug/mL	97
38) 1Methylnaphth	6.563	141	27028	4.8481	ug/mL	99
40) Hxclcycpentdi	6.629	237	9025	5.9245	ug/mL	99

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL2.D Vial: 16
Acq On : 8 Sep 2016 16:58 Operator: RPN
Sample : ICAL5ug/ml SVMS7209 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:18:51 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:18:41 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

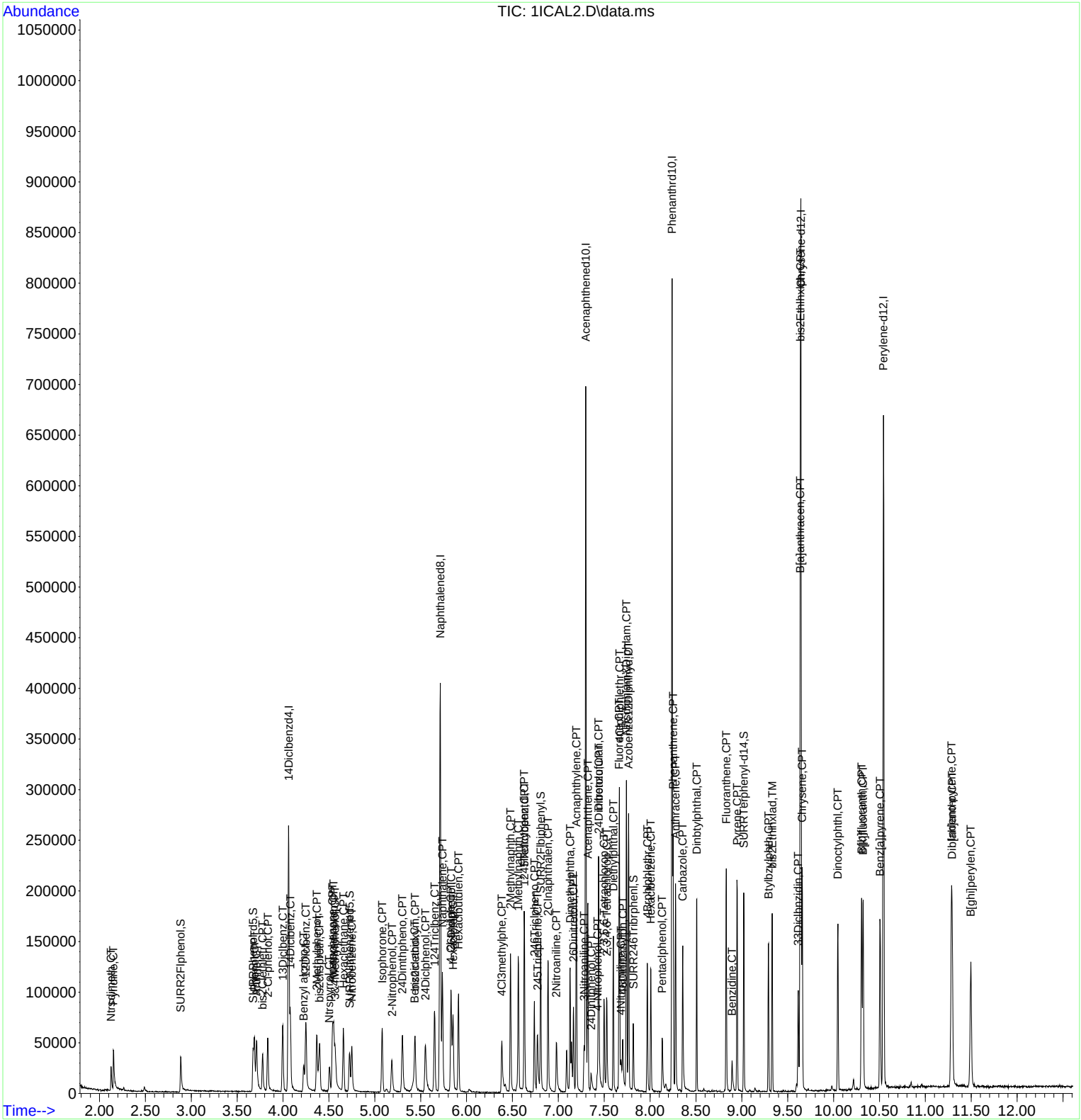
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
41)	1245Tetrclbenz	6.632	216	16990	5.1079	ug/mL	99
42)	246Triclpheno	6.739	196	9502	4.5992	ug/mL	94
43)	245Triclpheno	6.774	196	11460	4.9759	ug/mL	86
45)	2Clnaphthalen	6.887	162	31373	5.1540	ug/mL	100
46)	2Nitroaniline	6.978	65	8916	5.0471	ug/mL	94
47)	Acnaphthylene	7.197	152	51138	4.9007	ug/mL	97
48)	Dimethylphtha	7.129	163	35935	5.0173	ug/mL	99
49)	26Dinitrotolu	7.166	165	7731	4.8318	ug/mL	97
50)	Acenaphthene	7.322	154	28834	4.8505	ug/mL	98
51)	3Nitroaniline	7.282	138	7636	4.7124	ug/mL	85
52)	24Dinitphenol	7.359	184	2808	2.7876	ug/mL	98
53)	Dibenzofuran	7.438	168	47221	5.2147	ug/mL	98
54)	24Dinitrotolu	7.441	165	11029	5.0862	ug/mL	98
55)	4-Nitrophenol	7.430	65	6120	4.3322	ug/mL#	41
56)	2,3,5,6-Tetrachlorop	7.498	232	8961	4.7036	ug/mL	96
57)	2,3,4,6-Tetrachlorop	7.529	232	10143	4.9393	ug/mL	96
58)	Fluorene	7.663	166	37088	5.1221	ug/mL	99
59)	4Clphlphlethr	7.666	204	18853	5.2040	ug/mL	92
60)	Diethylphthal	7.600	149	36988	5.0746	ug/mL	95
61)	4Nitroaniline	7.683	138	7906	4.8961	ug/mL	84
64)	46Dinit2mylph	7.703	198	5270	3.8455	ug/mL	97
65)	Ntrsdiphlam&Diphlam	7.743	169	53249	10.0797	ug/mL	100
66)	Azobenz&12Diphlhyd	7.765	182	17458	10.1873	ug/mL	88
67)	4Brphlphlethr	7.970	248	11283	4.8446	ug/mL	85
68)	Hexaclbenzene	8.007	284	12190	4.7456	ug/mL	89
69)	Pentaclphenol	8.132	266	6146	4.1120	ug/mL	99
70)	Phenanthrene	8.251	178	50457	4.9647	ug/mL	98
71)	Anthracene	8.277	178	51787	4.9753	ug/mL	93
72)	Carbazole	8.356	167	42587	4.8190	ug/mL	99
73)	Dinbtylphthal	8.510	149	55928	5.0637	ug/mL	97
74)	Fluoranthene	8.831	202	54080	4.8937	ug/mL	96
76)	Benzidine	8.893	184	10762	6.7049	ug/mL	99
77)	Pyrene	8.950	202	53638	4.7882	ug/mL	98
79)	Btylbzylphth	9.291	149	23973	4.8881	ug/mL	98
80)	bis2Ethlhxlad	9.331	129	19541	4.9267	ug/mL	99
81)	33Diclbnzidin	9.615	252	17410	5.2512	ug/mL	93
82)	B[a]anthracen	9.635	228	54550	4.9652	ug/mL	99
83)	Chrysene	9.658	228	47791	4.7309	ug/mL	99
84)	bis2Ethlhxlph	9.638	149	35555	4.9946	ug/mL	98
85)	Dinoctylphthl	10.047	149	58813	4.6916	ug/mL	98
87)	B[b]fluoranth	10.306	252	57669	5.1442	ug/mL	99
88)	B[k]fluoranth	10.323	252	50011	4.6844	ug/mL	97
89)	Benz[a]pyrene	10.507	252	53912	4.9573	ug/mL	99
90)	Indeno-pyrene	11.286	276	62361	4.8683	ug/mL	94
91)	Dib[ah]anthr	11.291	278	51522	4.8481	ug/mL	94
92)	B[ghi]perylen	11.496	276	51886	4.8533	ug/mL	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL2.D Vial: 16
Acq On : 8 Sep 2016 16:58 Operator: RPN
Sample : ICAL5ug/ml SVMS7209 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:18:51 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:18:41 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL1.D Vial: 17
Acq On : 8 Sep 2016 17:18 Operator: RPN
Sample : ICAL1ug/ml SVMS7208 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:45:15 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:20:28 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	4.060	152	38781	20.00	ug/mL	0.00
21) Naphthalened8	5.711	136	164659	20.00	ug/mL	0.00
39) Acenaphthened10	7.296	164	94250	20.00	ug/mL	0.00
63) Phenanthrd10	8.237	188	171690	20.00	ug/mL	0.00
75) Chrysene-d12	9.643	240	157628	20.00	ug/mL	0.00
86) Perylene-d12	10.544	264	163140	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.892	112	1529	1.71	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 1.71%#			
7) SURRPhenol-d5	3.673	99	2345	2.11	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 2.11%#			
22) SURRNitrbenzened5	4.722	82	2409	4.57	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 4.57%#			
44) SURR2Flbiphenyl	6.808	172	6934	5.37	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 5.37%#			
62) SURR246Tribrphenl	7.813	330	952	2.17	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 2.17%#			
78) SURRTerphenyl-d14	9.024	244	6765	5.42	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 5.42%#			
Target Compounds						Qvalue
2) Ntrsdimeth	2.136	74	1125	0.8059	ug/mL	85
3) Pyridine	2.173	79	1725	0.6844	ug/mL	84
5) Aniline	3.713	93	3101	0.8516	ug/mL	89
6) bis2Clethletr	3.779	93	1907	0.8463	ug/mL	95
8) Phenol	3.691	94	2491	0.7570	ug/mL	90
9) 2-Cl-phenol	3.835	128	2471	0.9216	ug/mL	87
10) 13Diclbenz	3.995	146	2904	0.9497	ug/mL	92
11) 14Diclbenz	4.077	146	3145	1.0087	ug/mL	83
12) 12Diclbenz	4.247	146	3135	1.0625	ug/mL	86
13) Benzyl alcoho	4.236	108	584	0.3921	ug/mL#	48
14) bis2clispreth	4.395	45	3594	1.0474	ug/mL	94
15) 2Methylphenol	4.364	107	1900	0.9399	ug/mL#	80
16) Ntrspyrrol	4.509	100	797	0.6888	ug/mL#	49
17) Acetophenone	4.537	105	3162	0.9052	ug/mL	77
18) Hexaclethane	4.657	117	1069	0.8781	ug/mL	91
19) N-Ntrsdinprop	4.551	70	1666	0.9202	ug/mL	86
20) 3&4Methylphenol	4.571	107	2281	0.8474	ug/mL#	80
23) Nitrobenzene	4.748	77	2521	0.9008	ug/mL	79
24) Isophorone	5.077	82	4838	0.9935	ug/mL	90
25) 2-Nitrophenol	5.188	139	1055	0.6816	ug/mL	97
26) 24Dimthpheno	5.302	122	1921	0.8723	ug/mL#	71
27) bis2clethoxym	5.438	93	2972	0.9505	ug/mL	98
28) 24Diclphenol	5.563	162	2152	0.8672	ug/mL	80
29) 124Triclbenz	5.651	180	2975	1.0114	ug/mL	92
31) Naphthalene	5.733	128	8837	1.0098	ug/mL	96
32) 4-Cl-aniline	5.830	127	3004	0.8736	ug/mL	82
33) 26Diclphenol	5.836	162	2037	0.8880	ug/mL	73
34) Hexaclprop	5.853	213	2050	0.9346	ug/mL	82
35) Hexaclbutdien	5.910	225	1942	1.0030	ug/mL	94
36) 4Cl3methylphe	6.384	107	1997	0.7973	ug/mL	75
37) 2Methylnaphth	6.478	142	5700	0.9767	ug/mL	99
38) 1Methylnaphth	6.563	141	5148	1.0319	ug/mL	90
40) Hxclcycpentdi	6.629	237	1106	0.5890	ug/mL	85
41) 1245Tetrclbenz	6.629	216	2778	0.8893	ug/mL	95

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL1.D Vial: 17
Acq On : 8 Sep 2016 17:18 Operator: RPN
Sample : ICAL1ug/ml SVMS7208 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:45:15 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:20:28 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

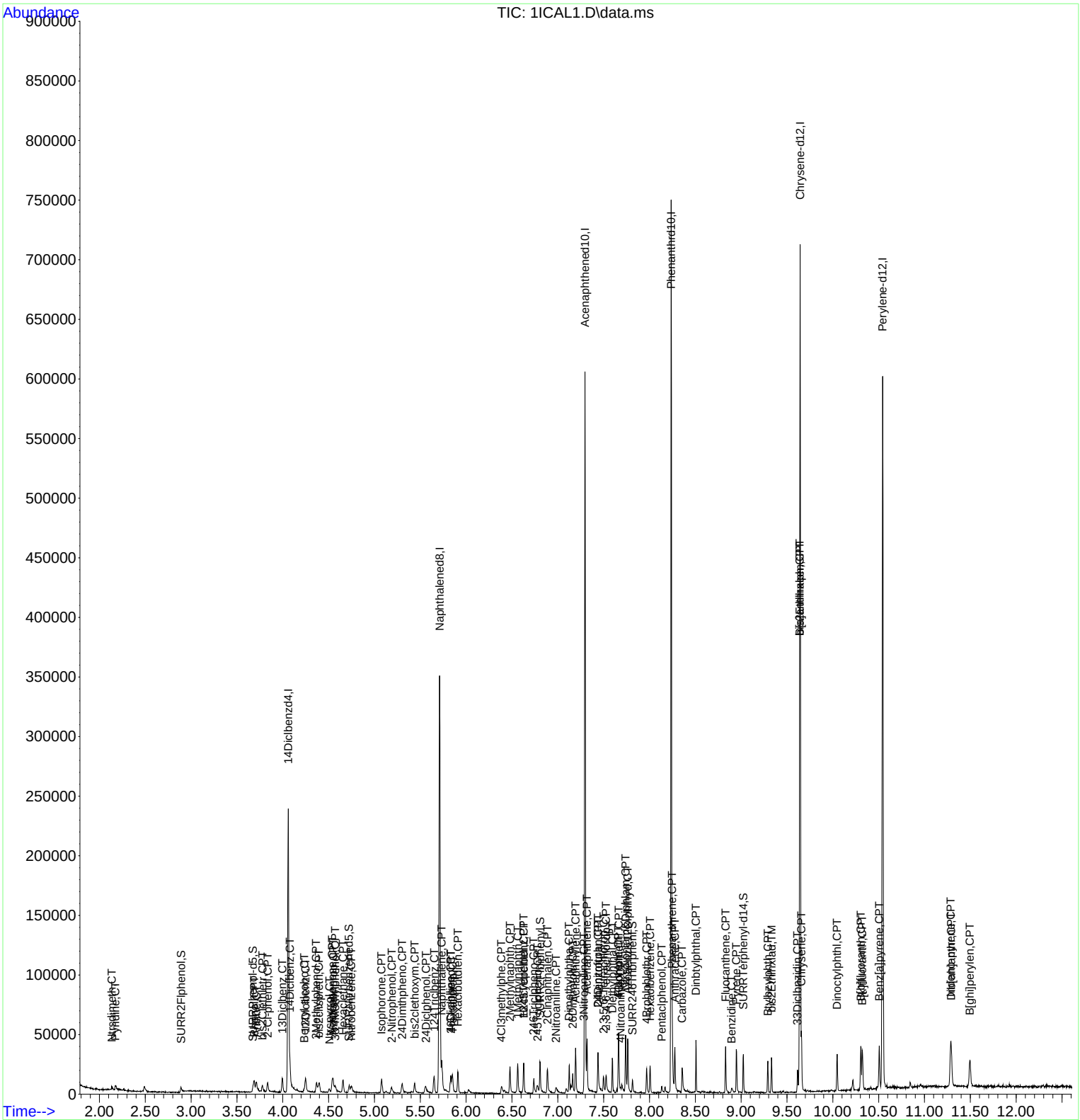
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
42) 246Triclpheno	6.737	196	1517	0.7953 ug/mL	84
43) 245Triclpheno	6.779	196	1804	0.8377 ug/mL	91
45) 2Clnaphthalen	6.887	162	5905	1.0314 ug/mL	97
46) 2Nitroaniline	6.981	65	1339	0.8087 ug/mL#	70
47) Acnaphthylene	7.194	152	10126	1.0404 ug/mL	96
48) Dimethylphtha	7.123	163	6659	0.9930 ug/mL	98
49) 26Dinitrotolu	7.163	165	1223	0.8214 ug/mL	90
50) Acenaphthene	7.319	154	5997	1.0835 ug/mL	99
51) 3Nitroaniline	7.285	138	1286	0.8563 ug/mL#	65
53) Dibenzofuran	7.438	168	8946	1.0482 ug/mL	89
54) 24Dinitrotolu	7.438	165	1673	0.8221 ug/mL	85
56) 2,3,5,6-Tetrachlorop	7.501	232	1409	0.7982 ug/mL	93
57) 2,3,4,6-Tetrachlorop	7.526	232	1867	0.9735 ug/mL	88
58) Fluorene	7.660	166	6953	1.0220 ug/mL	86
59) 4Clphlphlethr	7.666	204	3331	0.9759 ug/mL	98
60) Diethylphthal	7.595	149	7150	1.0457 ug/mL	97
61) 4Nitroaniline	7.686	138	1022	0.6787 ug/mL#	57
65) Ntrsdiphlam&Diphlam	7.740	169	9676	1.9869 ug/mL	98
66) Azobenz&12Diphlhyd	7.762	182	2772	1.7515 ug/mL	94
67) 4Brphlphlethr	7.970	248	2216	1.0389 ug/mL	89
68) Hexaclbenzene	8.007	284	2289	0.9762 ug/mL	92
69) Pentaclphenol	8.134	266	568	0.4254 ug/mL	87
70) Phenanthrene	8.248	178	9552	1.0221 ug/mL	97
71) Anthracene	8.277	178	9806	1.0241 ug/mL	95
72) Carbazole	8.356	167	8444	1.0442 ug/mL	93
73) Dinbtylphthal	8.507	149	11697	1.1479 ug/mL	98
74) Fluoranthene	8.831	202	10072	0.9935 ug/mL	94
76) Benzidine	8.896	184	1887	3.0216 ug/mL	95
77) Pyrene	8.947	202	9746	0.9984 ug/mL	99
79) Btylbzylphth	9.291	149	4277	0.9974 ug/mL	99
80) bis2Ethlhxlad	9.331	129	3413	0.9829 ug/mL#	83
81) 33Diclbnzidin	9.615	252	3512	1.1970 ug/mL	97
82) B[a]anthracen	9.638	228	10389	1.0787 ug/mL	94
83) Chrysene	9.658	228	9659	1.0993 ug/mL	98
84) bis2Ethlhxlph	9.638	149	6495	1.0398 ug/mL	98
85) Dinoctylphthl	10.047	149	10837	0.9952 ug/mL	99
87) B[b]fluoranth	10.305	252	10142	1.0035 ug/mL	96
88) B[k]fluoranth	10.320	252	9617	1.0147 ug/mL	94
89) Benz[a]pyrene	10.507	252	9801	1.0059 ug/mL	95
90) Indeno-pyrene	11.286	276	12403	1.0839 ug/mL	76
91) Dib[ah]anthr	11.291	278	10179	1.0730 ug/mL	99
92) B[ghi]perylen	11.496	276	10120	1.0602 ug/mL	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICAL1.D Vial: 17
Acq On : 8 Sep 2016 17:18 Operator: RPN
Sample : ICAL1ug/ml SVMS7208 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 17:45:15 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:20:28 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M



Evaluate Continuing Calibration Report

Data File : C:\INSTARCH\Data\1S090816\1ICV1.D Vial: 18
Acq On : 8 Sep 2016 17:38 Operator: RPN
Sample : ICV 20ug/ml SVMS7215 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 14 11:51:42 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:48:30 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	14Diclbenzd4	20.000	20.000	0.0	92	0.00
2	CT	Ntrsdimeth	20.000	20.669	-3.3	100	0.00
3	CT	Pyridine	20.000	21.172	-5.9	101	0.00
4	S	SURR2Flphenol	50.000	50.718	-1.4	96	0.00
5	CT	Aniline	20.000	21.479	-7.4	110	0.00
6	CPT	bis2Clethletr	20.000	21.040	-5.2	101	0.00
7	S	SURRPhenol-d5	50.000	53.568	-7.1	107	0.00
8	CPT	Phenol	20.000	21.021	-5.1	106	0.00
9	CPT	2-Cl-phenol	20.000	21.222	-6.1	102	0.00
10	CT	13Diclbenz	20.000	20.650	-3.2	102	0.00
11	CT	14Diclbenz	20.000	20.249	-1.2	102	0.00
12	CT	12Diclbenz	20.000	19.945	0.3	102	0.00
13	CT	Benzyl alcoho	20.000	19.790	1.1	96	0.00
14	CPT	bis2clispreth	20.000	19.578	2.1	102	0.00
15	CPT	2Methylphenol	20.000	19.935	0.3	104	0.00
16	CT	Ntrspyrrol	20.000	21.110	-5.5	106	0.00
17	CPT	Acetophenone	20.000	20.626	-3.1	108	0.00
18	CPT	Hexaclethane	20.000	19.761	1.2	97	0.00
19	CPT	N-Ntrsdinprop	20.000	19.419	2.9	103	0.00
20	CPT	3&4Methylphenol	20.000	19.262	3.7	97	0.00
21	I	Naphthalened8	20.000	20.000	0.0	86	0.00
22	S	SURRNitrbenzened5	100.000	109.145	-9.1	99	0.00
23	CPT	Nitrobenzene	20.000	21.164	-5.8	97	0.00
24	CPT	Isophorone	20.000	20.758	-3.8	96	0.00
25	CPT	2-Nitrophenol	20.000	21.607	-8.0	96	0.00
26	CPT	24Dimthpheno	20.000	23.489	-17.4	103	0.00
27	CPT	bis2clethoxym	20.000	22.470	-12.3	101	0.00
28	CPT	24Diclphenol	20.000	21.917	-9.6	96	0.00
29	CT	124Triclbenz	20.000	20.491	-2.5	92	0.00
30	CT	Benzoic acid	20.000	21.122	-5.6	95	0.00
31	CPT	Naphthalene	20.000	20.749	-3.7	95	0.00
32	CPT	4-Cl-aniline	20.000	21.744	-8.7	100	0.00
33	CT	26Diclphenol	20.000	21.230	-6.2	96	0.00
34	CT	Hexaclprop	20.000	21.722	-8.6	97	0.00
35	CPT	Hexaclbutdien	20.000	20.619	-3.1	95	0.00
36	CPT	4Cl3methylphe	20.000	22.427	-12.1	98	0.00
37	CPT	2Methylnaphth	20.000	20.843	-4.2	95	0.00
38	CT	1Methylnaphth	20.000	21.456	-7.3	101	0.00
39	I	Acenaphthened10	20.000	20.000	0.0	96	0.00
40	CPT	Hxclcycpentdi	20.000	19.217	3.9	97	0.00
41	CPT	1245Tetrclbenz	20.000	19.918	0.4	103	0.00
42	CPT	246Triclpheno	20.000	21.187	-5.9	100	0.00
43	CPT	245Triclpheno	20.000	20.678	-3.4	102	0.00
44	S	SURR2Flbiphenyl	100.000	105.354	-5.4	109	0.00
45	CPT	2Clnaphthalen	20.000	20.023	-0.1	103	0.00
46	CPT	2Nitroaniline	20.000	20.981	-4.9	102	0.00
47	CPT	Acnaphthylene	20.000	20.267	-1.3	103	0.00
48	CPT	Dimethylphtha	20.000	19.309	3.5	98	0.00
49	CPT	26Dinitrotolu	20.000	21.125	-5.6	105	0.00
50	CPT	Acenaphthene	20.000	19.843	0.8	103	0.00
51	CPT	3Nitroaniline	20.000	20.840	-4.2	103	0.00

Evaluate Continuing Calibration Report

Data File : C:\INSTARCH\Data\1S090816\1ICV1.D Vial: 18
Acq On : 8 Sep 2016 17:38 Operator: RPN
Sample : ICV 20ug/ml SVMS7215 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 14 11:51:42 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:48:30 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
52	CPT	24Dinitphenol	20.000	19.512	2.4	100	0.00
53	CPT	Dibenzofuran	20.000	20.342	-1.7	104	0.00
54	CPT	24Dinitrotolu	20.000	21.021	-5.1	104	0.00
55	CPT	4-Nitrophenol	20.000	20.148	-0.7	102	0.00
56	CT	2,3,5,6-Tetrachlorop	20.000	20.854	-4.3	103	0.00
57	CPT	2,3,4,6-Tetrachlorop	20.000	20.462	-2.3	106	0.00
58	CPT	Fluorene	20.000	20.588	-2.9	106	0.00
59	CPT	4Clphlphlethr	20.000	20.729	-3.6	105	0.00
60	CPT	Diethylphthal	20.000	20.407	-2.0	105	0.00
61	CPT	4Nitroaniline	20.000	21.731	-8.7	109	0.00
62	S	SURR246Tribrphenl	50.000	51.576	-3.2	106	0.00
63	I	Phenanthrd10	20.000	20.000	0.0	91	0.00
64	CPT	46Dinit2mylph	20.000	21.622	-8.1	100	0.00
65	CPT	Ntrsdiphlam&Diphlam	40.000	43.688	-9.2	103	0.00
66	CT	Azobenz&12Diphlhyd	40.000	44.042	-10.1	102	0.00
67	CPT	4Brphlphlethr	20.000	21.286	-6.4	98	0.00
68	CPT	Hexaclbenzene	20.000	21.664	-8.3	102	0.00
69	CPT	Pentaclphenol	20.000	22.195	-11.0	106	0.00
70	CPT	Phenanthrene	20.000	21.600	-8.0	105	0.00
71	CPT	Anthracene	20.000	21.066	-5.3	102	0.00
72	CPT	Carbazole	20.000	21.497	-7.5	98	0.00
73	CPT	Dinbtylphthal	20.000	20.998	-5.0	98	0.00
74	CPT	Fluoranthene	20.000	20.621	-3.1	93	0.00
75	I	Chrysene-d12	20.000	20.000	0.0	90	0.00
76	CT	Benzidine	20.000	19.994	0.0	93	0.00
77	CPT	Pyrene	20.000	20.398	-2.0	96	0.00
78	S	SURRTerphenyl-d14	100.000	100.931	-0.9	98	0.00
79	CPT	Btylbzylphth	20.000	20.437	-2.2	98	0.00
80	TM	bis2Ethlhxlad	20.000	20.629	-3.1	98	0.00
81	CPT	33Diclbnzidin	20.000	18.702	6.5	99	0.00
82	CPT	B[a]anthracen	20.000	20.350	-1.8	98	0.00
83	CPT	Chrysene	20.000	20.570	-2.9	98	0.00
84	CPT	bis2Ethlhxlph	20.000	20.784	-3.9	100	0.00
85	CPT	Dinoctylphthl	20.000	20.232	-1.2	98	0.00
86	I	Perylene-d12	20.000	20.000	0.0	86	0.00
87	CPT	B[b]fluoranth	20.000	21.595	-8.0	97	0.00
88	CPT	B[k]fluoranth	20.000	20.796	-4.0	97	0.00
89	CPT	Benz[a]pyrene	20.000	20.575	-2.9	93	0.00
90	CPT	Indeno-pyrene	20.000	21.788	-8.9	102	0.00
91	CPT	Dib[ah]anthr	20.000	21.900	-9.5	102	0.00
92	CPT	B[ghi]perylen	20.000	21.955	-9.8	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\INSTARCH\Data\1S090816\1ICV1.D Vial: 18
Acq On : 8 Sep 2016 17:38 Operator: RPN
Sample : ICV 20ug/ml SVMS7215 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 14 11:51:42 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:48:30 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	14Diclbenzd4	1.000	1.000	0.0	92	0.00
2	CT	Ntrsdimeth	0.700	0.723	-3.3	100	0.00
3	CT	Pyridine	1.241	1.314	-5.9	101	0.00
4	S	SURR2Flphenol	0.439	0.446	-1.6	96	0.00
5	CT	Aniline	1.838	1.974	-7.4	110	0.00
6	CPT	bis2Clethletr	1.137	1.196	-5.2	101	0.00
7	S	SURRPhenol-d5	0.560	0.600	-7.1	107	0.00
8	CPT	Phenol	1.638	1.722	-5.1	106	0.00
9	CPT	2-Cl-phenol	1.367	1.451	-6.1	102	0.00
10	CT	13Diclbenz	1.566	1.616	-3.2	102	0.00
11	CT	14Diclbenz	1.610	1.630	-1.2	102	0.00
12	CT	12Diclbenz	1.535	1.531	0.3	102	0.00
13	CT	Benzyl alcoho	0.701	0.750	-7.0	96	0.00
14	CPT	bis2clispreth	1.782	1.744	2.1	102	0.00
15	CPT	2Methylphenol	1.034	1.030	0.4	104	0.00
16	CT	Ntrspyrrol	0.570	0.602	-5.6	106	0.00
17	CPT	Acetophenone	1.777	1.833	-3.2	108	0.00
18	CPT	Hexaclethane	0.617	0.610	1.1	97	0.00
19	CPT	N-Ntrsdinprop	0.923	0.896	2.9	103	0.00
20	CPT	3&4Methylphenol	1.358	1.308	3.7	97	0.00
21	I	Naphthalened8	1.000	1.000	0.0	86	0.00
22	S	SURRNitrbenzened5	0.063	0.069	-9.5	99	0.00
23	CPT	Nitrobenzene	0.335	0.355	-6.0	97	0.00
24	CPT	Isophorone	0.591	0.613	-3.7	96	0.00
25	CPT	2-Nitrophenol	0.179	0.194	-8.4	96	0.00
26	CPT	24Dimthpheno	0.263	0.308	-17.1	103	0.00
27	CPT	bis2clethoxym	0.377	0.424	-12.5	101	0.00
28	CPT	24Diclphenol	0.296	0.324	-9.5	96	0.00
29	CT	124Triclbenz	0.358	0.367	-2.5	92	0.00
30	CT	Benzoic acid	0.181	0.206	-13.8	95	0.00
31	CPT	Naphthalene	1.064	1.104	-3.8	95	0.00
32	CPT	4-Cl-aniline	0.410	0.446	-8.8	100	0.00
33	CT	26Diclphenol	0.274	0.291	-6.2	96	0.00
34	CT	Hexaclprop	0.264	0.287	-8.7	97	0.00
35	CPT	Hexaclbutdien	0.235	0.243	-3.4	95	0.00
36	CPT	4Cl3methylphe	0.295	0.331	-12.2	98	0.00
37	CPT	2Methylnaphth	0.707	0.736	-4.1	95	0.00
38	CT	1Methylnaphth	0.609	0.653	-7.2	101	0.00
39	I	Acenaphthened10	1.000	1.000	0.0	96	0.00
40	CPT	Hxclcycpentdi	0.375	0.389	-3.7	97	0.00
41	CPT	1245Tetrclbenz	0.652	0.650	0.3	103	0.00
42	CPT	246Triclpheno	0.393	0.416	-5.9	100	0.00
43	CPT	245Triclpheno	0.446	0.462	-3.6	102	0.00
44	S	SURR2Flbiphenyl	0.277	0.292	-5.4	109	0.00
45	CPT	2Clnaphthalen	1.220	1.222	-0.2	103	0.00
46	CPT	2Nitroaniline	0.342	0.359	-5.0	102	0.00
47	CPT	Acnaphthylene	2.077	2.105	-1.3	103	0.00
48	CPT	Dimethylphtha	1.422	1.373	3.4	98	0.00
49	CPT	26Dinitrotolu	0.308	0.325	-5.5	105	0.00
50	CPT	Acenaphthene	1.189	1.179	0.8	103	0.00
51	CPT	3Nitroaniline	0.312	0.325	-4.2	103	0.00

Evaluate Continuing Calibration Report

Data File : C:\INSTARCH\Data\1S090816\1ICV1.D Vial: 18
Acq On : 8 Sep 2016 17:38 Operator: RPN
Sample : ICV 20ug/ml SVMS7215 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 14 11:51:42 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:48:30 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
52	CPT	24Dinitphenol	0.185	0.192	-3.8	100	0.00
53	CPT	Dibenzofuran	1.824	1.855	-1.7	104	0.00
54	CPT	24Dinitrotolu	0.421	0.442	-5.0	104	0.00
55	CPT	4-Nitrophenol	0.274	0.276	-0.7	102	0.00
56	CT	2,3,5,6-Tetrachlorop	0.364	0.379	-4.1	103	0.00
57	CPT	2,3,4,6-Tetrachlorop	0.405	0.415	-2.5	106	0.00
58	CPT	Fluorene	1.448	1.491	-3.0	106	0.00
59	CPT	4Clphlphlethr	0.722	0.748	-3.6	105	0.00
60	CPT	Diethylphthal	1.460	1.490	-2.1	105	0.00
61	CPT	4Nitroaniline	0.305	0.331	-8.5	109	0.00
62	S	SURR246Tribrphenl	0.091	0.094	-3.3	106	0.00
63	I	Phenanthrd10	1.000	1.000	0.0	91	0.00
64	CPT	46Dinit2mylph	0.141	0.153	-8.5	100	0.00
65	CPT	Ntrsdiphlam&Diphlam	0.567	0.619	-9.2	103	0.00
66	CT	Azobenz&12Diphlhyd	0.181	0.199	-9.9	102	0.00
67	CPT	4Brphlphlethr	0.250	0.266	-6.4	98	0.00
68	CPT	Hexaclbenzene	0.272	0.295	-8.5	102	0.00
69	CPT	Pentaclphenol	0.156	0.173	-10.9	106	0.00
70	CPT	Phenanthrene	1.092	1.179	-8.0	105	0.00
71	CPT	Anthracene	1.119	1.179	-5.4	102	0.00
72	CPT	Carbazole	0.948	1.019	-7.5	98	0.00
73	CPT	Dinbtylphthal	1.212	1.273	-5.0	98	0.00
74	CPT	Fluoranthene	1.180	1.217	-3.1	93	0.00
75	I	Chrysene-d12	1.000	1.000	0.0	90	0.00
76	CT	Benzidine	0.312	0.336	-7.7	93	0.00
77	CPT	Pyrene	1.238	1.263	-2.0	96	0.00
78	S	SURRTerphenyl-d14	0.160	0.162	-1.3	98	0.00
79	CPT	Btylbzylphth	0.544	0.556	-2.2	98	0.00
80	TM	bis2Ethlhxlad	0.440	0.453	-3.0	98	0.00
81	CPT	33Diclbnzidin	0.383	0.358	6.5	99	0.00
82	CPT	B[a]anthracen	1.236	1.257	-1.7	98	0.00
83	CPT	Chrysene	1.131	1.163	-2.8	98	0.00
84	CPT	bis2Ethlhxlph	0.797	0.828	-3.9	100	0.00
85	CPT	Dinoctylphthl	1.381	1.397	-1.2	98	0.00
86	I	Perylene-d12	1.000	1.000	0.0	86	0.00
87	CPT	B[b]fluoranth	1.240	1.339	-8.0	97	0.00
88	CPT	B[k]fluoranth	1.164	1.211	-4.0	97	0.00
89	CPT	Benz[a]pyrene	1.196	1.230	-2.8	93	0.00
90	CPT	Indeno-pyrene	1.420	1.547	-8.9	102	0.00
91	CPT	Dib[ah]anthr	1.175	1.287	-9.5	102	0.00
92	CPT	B[ghi]perylen	1.180	1.296	-9.8	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICV1.D Vial: 18
Acq On : 8 Sep 2016 17:38 Operator: RPN
Sample : ICV 20ug/ml SVMS7215 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 14 11:51:42 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:48:30 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	4.060	152	42816	20.00	ug/mL	0.00
21) Naphthalened8	5.714	136	162605	20.00	ug/mL	0.00
39) Acenaphthened10	7.299	164	98599	20.00	ug/mL	0.00
63) Phenanthrd10	8.240	188	163995	20.00	ug/mL	0.00
75) Chrysene-d12	9.649	240	165470	20.00	ug/mL	0.00
86) Perylene-d12	10.547	264	166510	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.884	112	47714	50.72	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 50.72%			
7) SURRPhenol-d5	3.676	99	64218	53.57	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 53.57%			
22) SURRNitrbenzened5	4.731	82	56097	109.15	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 109.15%			
44) SURR2Flbiphenyl	6.808	172	143750	105.35	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 105.35%			
62) SURR246Tribrphenl	7.819	330	23181	51.58	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 51.58%			
78) SURRTerphenyl-d14	9.024	244	133800	100.93	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 100.93%			
Target Compounds						Qvalue
2) Ntrsdimeth	2.125	74	30970	20.6687	ug/mL	93
3) Pyridine	2.145	79	56260	21.1716	ug/mL	96
5) Aniline	3.713	93	84519	21.4786	ug/mL	99
6) bis2Clethletr	3.781	93	51192	21.0398	ug/mL	97
8) Phenol	3.691	94	73720	21.0207	ug/mL	98
9) 2-Cl-phenol	3.835	128	62120	21.2224	ug/mL	97
10) 13Diclbenz	3.997	146	69208	20.6495	ug/mL	98
11) 14Diclbenz	4.080	146	69793	20.2494	ug/mL	95
12) 12Diclbenz	4.250	146	65553	19.9455	ug/mL	98
13) Benzyl alcoho	4.228	108	32091	19.7900	ug/mL	89
14) bis2clispreth	4.398	45	74669	19.5778	ug/mL	97
15) 2Methylphenol	4.370	107	44110	19.9349	ug/mL	96
16) Ntrspyrrol	4.520	100	25769	21.1095	ug/mL	95
17) Acetophenone	4.546	105	78470	20.6262	ug/mL	99
18) Hexaclethane	4.660	117	26097	19.7608	ug/mL	98
19) N-Ntrsdinprop	4.560	70	38372	19.4185	ug/mL	97
20) 3&4Methylphenol	4.571	107	55994	19.2619	ug/mL	97
23) Nitrobenzene	4.753	77	57664	21.1637	ug/mL	98
24) Isophorone	5.089	82	99731	20.7577	ug/mL	95
25) 2-Nitrophenol	5.188	139	31526	21.6067	ug/mL	94
26) 24Dimthpheno	5.305	122	50151	23.4892	ug/mL	92
27) bis2clethoxym	5.444	93	68893	22.4702	ug/mL	100
28) 24Diclphenol	5.555	162	52692	21.9174	ug/mL	90
29) 124Triclbenz	5.654	180	59618	20.4906	ug/mL	98
30) Benzoic acid	5.501	122	33436	21.1220	ug/mL	96
31) Naphthalene	5.739	128	179572	20.7489	ug/mL	100
32) 4-Cl-aniline	5.833	127	72501	21.7438	ug/mL	97
33) 26Diclphenol	5.836	162	47324	21.2302	ug/mL	96
34) Hexaclprop	5.853	213	46611	21.7222	ug/mL	95
35) Hexaclbutdien	5.913	225	39439	20.6186	ug/mL	94
36) 4Cl3methylphe	6.384	107	53867	22.4270	ug/mL	99
37) 2Methylnaphth	6.481	142	119724	20.8431	ug/mL	97
38) 1Methylnaphth	6.566	141	106188	21.4556	ug/mL	96
40) Hxclcycpentdi	6.629	237	38338	19.2175	ug/mL	98

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICV1.D Vial: 18
Acq On : 8 Sep 2016 17:38 Operator: RPN
Sample : ICV 20ug/ml SVMS7215 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 14 11:51:42 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:48:30 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

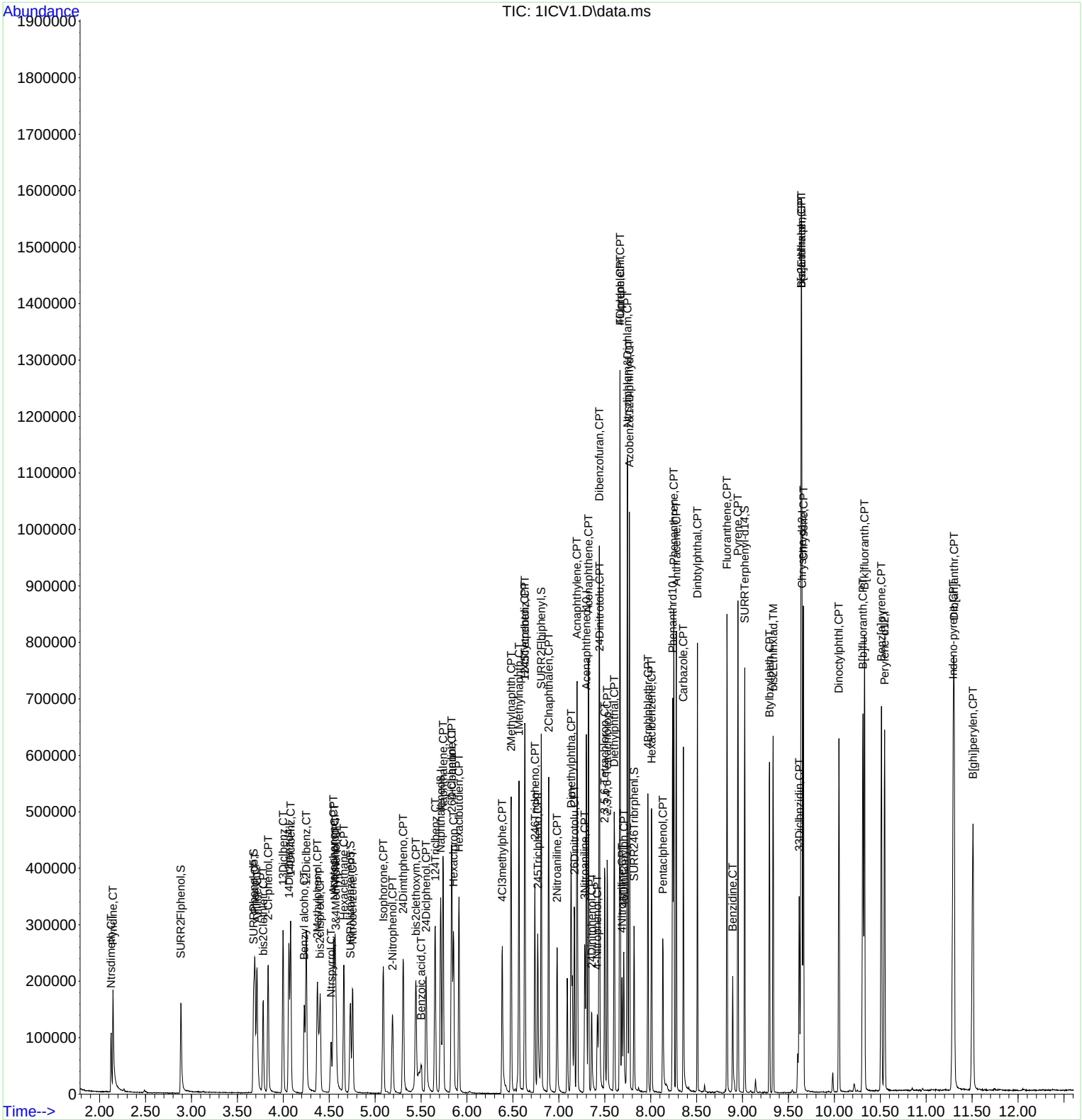
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
41) 1245Tetrclbenz	6.631	216	64061	19.9175 ug/mL	97
42) 246Triclpheno	6.739	196	41043	21.1871 ug/mL	97
43) 245Triclpheno	6.771	196	45504	20.6777 ug/mL	92
45) 2Clnaphthalen	6.890	162	120466	20.0225 ug/mL	99
46) 2Nitroaniline	6.981	65	35348	20.9807 ug/mL	97
47) Acnaphthylene	7.197	152	207545	20.2672 ug/mL	98
48) Dimethylphtha	7.134	163	135332	19.3094 ug/mL	98
49) 26Dinitrotolu	7.171	165	32064	21.1246 ug/mL	93
50) Acenaphthene	7.322	154	116272	19.8432 ug/mL	100
51) 3Nitroaniline	7.282	138	32070	20.8399 ug/mL	91
52) 24Dinitphenol	7.359	184	18902	19.5121 ug/mL	99
53) Dibenzofuran	7.441	168	182869	20.3416 ug/mL	97
54) 24Dinitrotolu	7.444	165	43615	21.0213 ug/mL	97
55) 4-Nitrophenol	7.419	65	27244	20.1479 ug/mL	90
56) 2,3,5,6-Tetrachlorop	7.498	232	37400	20.8539 ug/mL	98
57) 2,3,4,6-Tetrachlorop	7.527	232	40898	20.4624 ug/mL	92
58) Fluorene	7.666	166	146992	20.5880 ug/mL	98
59) 4Clphlphlethr	7.666	204	73764	20.7292 ug/mL	97
60) Diethylphthal	7.603	149	146929	20.4069 ug/mL	98
61) 4Nitroaniline	7.688	138	32662	21.7311 ug/mL	93
64) 46Dinit2mylph	7.708	198	25054	21.6218 ug/mL	99
65) Ntrsdiphlam&Diphlam	7.748	169	203035	43.6881 ug/mL	99
66) Azobenz&12Diphlhyd	7.768	182	65396	44.0417 ug/mL#	77
67) 4Brphlphlethr	7.970	248	43610	21.2861 ug/mL	89
68) Hexaclbenzene	8.010	284	48355	21.6635 ug/mL	94
69) Pentaclphenol	8.132	266	28309	22.1953 ug/mL	95
70) Phenanthrene	8.251	178	193423	21.5996 ug/mL	98
71) Anthracene	8.280	178	193324	21.0657 ug/mL	100
72) Carbazole	8.356	167	167101	21.4972 ug/mL	97
73) Dinbtylphthal	8.510	149	208694	20.9977 ug/mL	99
74) Fluoranthene	8.831	202	199500	20.6213 ug/mL	99
76) Benzidine	8.893	184	55598	19.9944 ug/mL	95
77) Pyrene	8.950	202	208986	20.3984 ug/mL	99
79) Btylbzylphth	9.294	149	91965	20.4373 ug/mL	99
80) bis2Ethlhxlad	9.334	129	75013	20.6285 ug/mL	99
81) 33Diclbnzidin	9.618	252	59224	18.7018 ug/mL	98
82) B[a]anthracen	9.641	228	208054	20.3499 ug/mL	98
83) Chrysene	9.663	228	192414	20.5696 ug/mL	99
84) bis2Ethlhxlph	9.641	149	137059	20.7836 ug/mL	97
85) Dinoctylphthl	10.050	149	231110	20.2322 ug/mL	99
87) B[b]fluoranth	10.311	252	222875	21.5952 ug/mL	99
88) B[k]fluoranth	10.328	252	201599	20.7961 ug/mL	98
89) Benz[a]pyrene	10.513	252	204790	20.5750 ug/mL	98
90) Indeno-pyrene	11.294	276	257508	21.7875 ug/mL	96
91) Dib[ah]anthr	11.303	278	214264	21.9000 ug/mL	96
92) B[ghi]perylen	11.510	276	215735	21.9551 ug/mL	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICV1.D Vial: 18
Acq On : 8 Sep 2016 17:38 Operator: RPN
Sample : ICV 20ug/ml SVMS7215 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 14 11:51:42 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:48:30 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M



Evaluate Continuing Calibration Report

Data File : C:\INSTARCH\Data\1S090816\1ICV2.D Vial: 19
Acq On : 8 Sep 2016 17:58 Operator: RPN
Sample : ICV 40ug/ml SVMS7216 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 14 11:53:53 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:48:30 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	14Diclbenzd4	20.000	20.000	0.0	97	0.00
2	CT	Ntrsdimeth	40.000	41.850	-4.6	99	0.00
3	CT	Pyridine	40.000	41.364	-3.4	95	0.00
4	S	SURR2Flphenol	100.000	102.664	-2.7	95	0.00
5	CT	Aniline	40.000	42.539	-6.3	97	0.00
6	CPT	bis2Clethletr	40.000	40.560	-1.4	96	0.00
7	S	SURRPhenol-d5	100.000	107.229	-7.2	101	0.00
8	CPT	Phenol	40.000	42.064	-5.2	98	0.00
9	CPT	2-Cl-phenol	40.000	40.905	-2.3	98	0.00
10	CT	13Diclbenz	40.000	39.961	0.1	96	0.00
11	CT	14Diclbenz	40.000	39.289	1.8	97	0.00
12	CT	12Diclbenz	40.000	39.109	2.2	97	0.00
13	CT	Benzyl alcoho	40.000	38.571	3.6	95	0.00
14	CPT	bis2clispreth	40.000	39.498	1.3	98	0.00
15	CPT	2Methylphenol	40.000	40.429	-1.1	96	0.00
16	CT	Ntrspyrrol	40.000	44.082	-10.2	102	0.02
17	CPT	Acetophenone	40.000	41.421	-3.6	101	0.01
18	CPT	Hexaclethane	40.000	39.186	2.0	96	0.00
19	CPT	N-Ntrsdinprop	40.000	38.876	2.8	96	0.01
20	CPT	3&4Methylphenol	40.000	39.923	0.2	97	0.01
21	I	Naphthalened8	20.000	20.000	0.0	96	0.00
22	S	SURRNitrbenzened5	200.000	218.622	-9.3	102	0.00
23	CPT	Nitrobenzene	40.000	42.673	-6.7	98	0.00
24	CPT	Isophorone	40.000	40.357	-0.9	95	0.01
25	CPT	2-Nitrophenol	40.000	44.831	-12.1	98	0.00
26	CPT	24Dimthpheno	40.000	45.835	-14.6	103	0.00
27	CPT	bis2clethoxym	40.000	41.968	-4.9	99	0.00
28	CPT	24Diclphenol	40.000	43.041	-7.6	98	0.00
29	CT	124Triclbenz	40.000	40.948	-2.4	99	0.00
30	CT	Benzoic acid	40.000	41.965	-4.9	99	0.05
31	CPT	Naphthalene	40.000	40.960	-2.4	100	0.00
32	CPT	4-Cl-aniline	40.000	41.024	-2.6	95	0.00
33	CT	26Diclphenol	40.000	40.775	-1.9	96	0.00
34	CT	Hexaclprop	40.000	42.017	-5.0	99	0.00
35	CPT	Hexaclbutdien	40.000	39.513	1.2	94	0.00
36	CPT	4Cl3methylphe	40.000	44.594	-11.5	100	0.00
37	CPT	2Methylnaphth	40.000	38.978	2.6	90	0.00
38	CT	1Methylnaphth	40.000	40.933	-2.3	97	0.00
39	I	Acenaphthened10	20.000	20.000	0.0	100	0.00
40	CPT	Hxclcycpentdi	40.000	39.101	2.2	95	0.00
41	CPT	1245Tetrclbenz	40.000	39.069	2.3	94	0.00
42	CPT	246Triclpheno	40.000	41.867	-4.7	97	0.00
43	CPT	245Triclpheno	40.000	39.378	1.6	93	0.00
44	S	SURR2Flbiphenyl	200.000	210.395	-5.2	104	0.00
45	CPT	2Clnaphthalen	40.000	40.282	-0.7	99	0.00
46	CPT	2Nitroaniline	40.000	42.389	-6.0	99	0.00
47	CPT	Acnaphthylene	40.000	39.486	1.3	100	0.00
48	CPT	Dimethylphtha	40.000	39.984	0.0	100	0.00
49	CPT	26Dinitrotolu	40.000	41.403	-3.5	101	0.00
50	CPT	Acenaphthene	40.000	38.557	3.6	98	0.00
51	CPT	3Nitroaniline	40.000	42.430	-6.1	101	0.00

Evaluate Continuing Calibration Report

Data File : C:\INSTARCH\Data\1S090816\1ICV2.D Vial: 19
Acq On : 8 Sep 2016 17:58 Operator: RPN
Sample : ICV 40ug/ml SVMS7216 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 14 11:53:53 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:48:30 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
52	CPT	24Dinitphenol	40.000	41.330	-3.3	103	0.00
53	CPT	Dibenzofuran	40.000	39.862	0.3	101	0.00
54	CPT	24Dinitrotolu	40.000	40.847	-2.1	100	0.00
55	CPT	4-Nitrophenol	40.000	41.178	-2.9	98	0.00
56	CT	2,3,5,6-Tetrachlorop	40.000	41.603	-4.0	102	0.00
57	CPT	2,3,4,6-Tetrachlorop	40.000	39.577	1.1	98	0.00
58	CPT	Fluorene	40.000	38.692	3.3	100	0.00
59	CPT	4Clphlphlethr	40.000	38.317	4.2	100	0.00
60	CPT	Diethylphthal	40.000	39.202	2.0	101	0.00
61	CPT	4Nitroaniline	40.000	42.375	-5.9	99	0.01
62	S	SURR246Tribrphenl	100.000	103.623	-3.6	98	0.00
63	I	Phenanthrd10	20.000	20.000	0.0	93	0.00
64	CPT	46Dinit2mylph	40.000	46.232	-15.6	105	0.00
65	CPT	Ntrsdiphlam&Diphlam	80.000	80.750	-0.9	97	0.00
66	CT	Azobenz&12Diphlhyd	80.000	83.684	-4.6	97	0.00
67	CPT	4Brphlphlethr	40.000	43.486	-8.7	100	0.00
68	CPT	Hexaclbenzene	40.000	42.104	-5.3	97	0.00
69	CPT	Pentaclphenol	40.000	45.496	-13.7	98	0.00
70	CPT	Phenanthrene	40.000	41.066	-2.7	96	0.00
71	CPT	Anthracene	40.000	40.485	-1.2	95	0.00
72	CPT	Carbazole	40.000	40.524	-1.3	96	0.00
73	CPT	Dinbtylphthal	40.000	40.599	-1.5	98	0.00
74	CPT	Fluoranthene	40.000	41.667	-4.2	100	0.00
75	I	Chrysene-d12	20.000	20.000	0.0	97	0.00
76	CT	Benzidine	40.000	45.242	-13.1	105	0.00
77	CPT	Pyrene	40.000	41.272	-3.2	96	0.00
78	S	SURRTerphenyl-d14	200.000	205.770	-2.9	98	0.00
79	CPT	Btylbzylphth	40.000	39.902	0.2	93	0.00
80	TM	bis2Ethlhxlad	40.000	39.213	2.0	92	0.00
81	CPT	33Diclbnzidin	40.000	41.425	-3.6	100	0.00
82	CPT	B[a]anthracen	40.000	40.780	-2.0	99	0.00
83	CPT	Chrysene	40.000	40.168	-0.4	98	0.00
84	CPT	bis2Ethlhxlph	40.000	40.922	-2.3	100	0.00
85	CPT	Dinoctylphthl	40.000	42.220	-5.5	99	0.00
86	I	Perylene-d12	20.000	20.000	0.0	96	0.00
87	CPT	B[b]fluoranth	40.000	40.576	-1.4	96	0.00
88	CPT	B[k]fluoranth	40.000	41.665	-4.2	101	0.00
89	CPT	Benz[a]pyrene	40.000	40.868	-2.2	98	0.00
90	CPT	Indeno-pyrene	40.000	40.598	-1.5	99	0.00
91	CPT	Dib[ah]anthr	40.000	40.829	-2.1	99	0.00
92	CPT	B[ghi]perylen	40.000	40.833	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICV2.D Vial: 19
Acq On : 8 Sep 2016 17:58 Operator: RPN
Sample : ICV 40ug/ml SVMS7216 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 14 11:53:53 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:48:30 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	4.063	152	43068	20.00	ug/mL	0.00
21) Naphthalened8	5.716	136	165782	20.00	ug/mL	0.00
39) Acenaphthened10	7.302	164	97091	20.00	ug/mL	0.00
63) Phenanthrd10	8.240	188	163740	20.00	ug/mL	0.00
75) Chrysene-d12	9.649	240	163372	20.00	ug/mL	0.00
86) Perylene-d12	10.550	264	177575	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.886	112	97152	102.66	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 102.66%			
7) SURRPhenol-d5	3.685	99	129305	107.23	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 107.23%			
22) SURRNitrbenzened5	4.736	82	114560	218.62	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 218.62%#			
44) SURR2Flbiphenyl	6.810	172	282683	210.39	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 210.39%#			
62) SURR246Tribrphenl	7.825	330	45861	103.62	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 103.62%			
78) SURRTerphenyl-d14	9.027	244	269322	205.77	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 205.77%#			
Target Compounds						Qvalue
2) Ntrsdimeth	2.125	74	63078	41.8505	ug/mL	99
3) Pyridine	2.139	79	110566	41.3644	ug/mL	97
5) Aniline	3.719	93	168379	42.5393	ug/mL	98
6) bis2Clethletr	3.787	93	99268	40.5602	ug/mL	99
8) Phenol	3.699	94	148387	42.0638	ug/mL	98
9) 2-Cl-phenol	3.838	128	120436	40.9046	ug/mL	98
10) 13Diclbenz	4.000	146	134721	39.9613	ug/mL	99
11) 14Diclbenz	4.083	146	136214	39.2893	ug/mL	94
12) 12Diclbenz	4.253	146	129293	39.1091	ug/mL	100
13) Benzyl alcoho	4.236	108	68000	38.5712	ug/mL	86
14) bis2clispreth	4.402	45	151529	39.4976	ug/mL	99
15) 2Methylphenol	4.375	107	89984	40.4292	ug/mL	97
16) Ntrspyrrol	4.537	100	54129	44.0821	ug/mL	96
17) Acetophenone	4.557	105	158509	41.4211	ug/mL	96
18) Hexaclethane	4.659	117	52055	39.1857	ug/mL	99
19) N-Ntrsdinprop	4.574	70	77274	38.8764	ug/mL	99
20) 3&4Methylphenol	4.583	107	116737	39.9225	ug/mL	99
23) Nitrobenzene	4.765	77	118540	42.6726	ug/mL	99
24) Isophorone	5.100	82	197685	40.3570	ug/mL	99
25) 2-Nitrophenol	5.197	139	66690	44.8307	ug/mL	99
26) 24Dimthpheno	5.313	122	99772	45.8347	ug/mL	94
27) bis2clethoxym	5.449	93	131186	41.9678	ug/mL	97
28) 24Diclphenol	5.560	162	105498	43.0413	ug/mL	96
29) 124Triclbenz	5.657	180	121468	40.9483	ug/mL	96
30) Benzoic acid	5.557	122	70537	41.9647	ug/mL	98
31) Naphthalene	5.745	128	361412	40.9596	ug/mL	99
32) 4-Cl-aniline	5.839	127	139460	41.0240	ug/mL	99
33) 26Diclphenol	5.841	162	92666	40.7746	ug/mL	94
34) Hexaclprop	5.856	213	91920	42.0168	ug/mL	95
35) Hexaclbutdien	5.915	225	77056	39.5126	ug/mL	95
36) 4Cl3methylphe	6.387	107	109202	44.5940	ug/mL	99
37) 2Methylnaphth	6.484	142	228266	38.9779	ug/mL	98
38) 1Methylnaphth	6.569	141	206542	40.9326	ug/mL	99
40) Hxclcycpentdi	6.631	237	78578	39.1005	ug/mL	98

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICV2.D Vial: 19
Acq On : 8 Sep 2016 17:58 Operator: RPN
Sample : ICV 40ug/ml SVMS7216 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 14 11:53:53 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:48:30 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

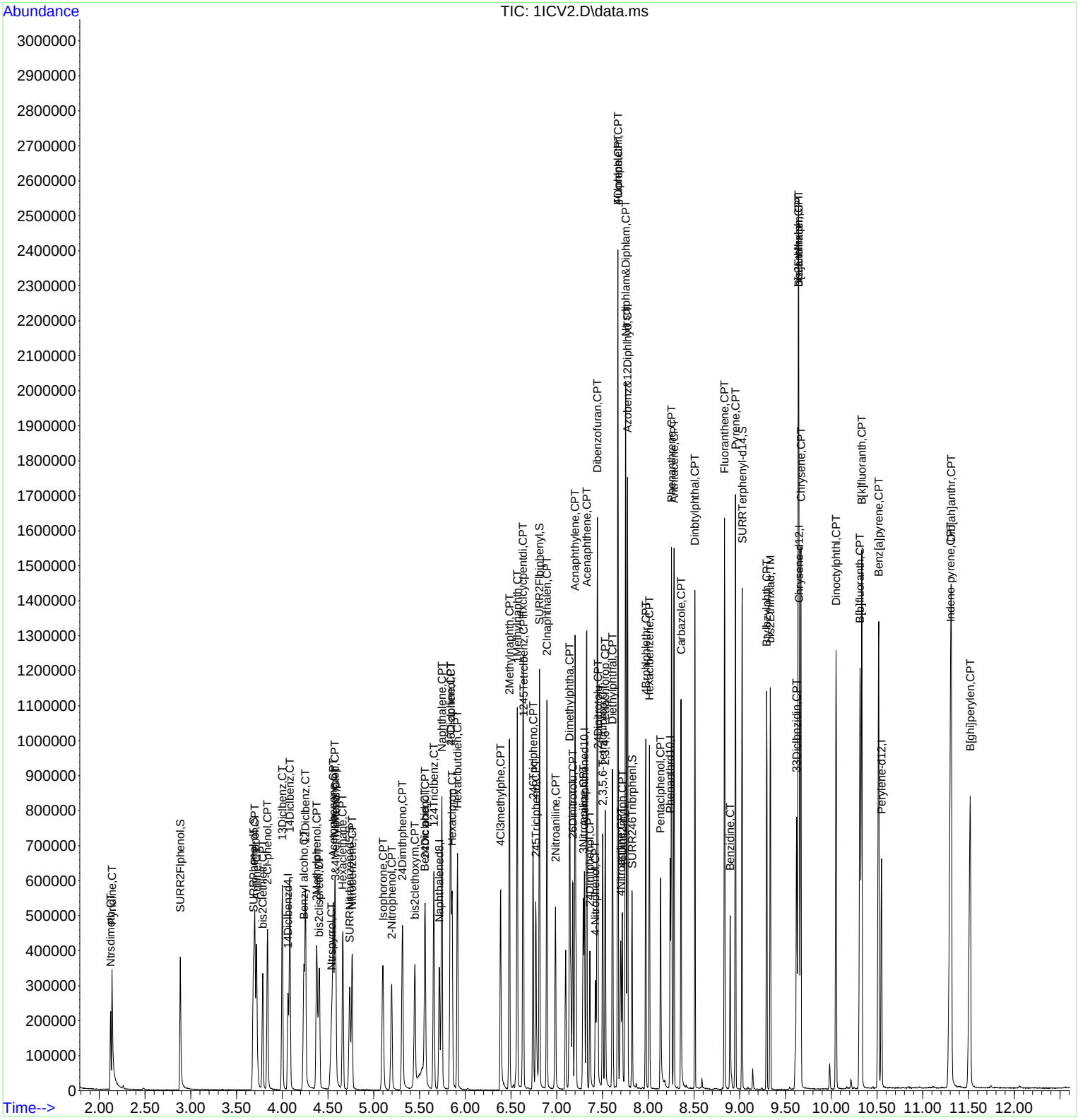
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
41) 1245Tetrclbenz	6.637	216	123736	39.0689 ug/mL	96
42) 246Triclpheno	6.742	196	79864	41.8674 ug/mL	99
43) 245Triclpheno	6.771	196	85331	39.3780 ug/mL	97
45) 2Clnaphthalen	6.893	162	238653	40.2824 ug/mL	100
46) 2Nitroaniline	6.987	65	70324	42.3888 ug/mL	99
47) Acnaphthylene	7.200	152	398170	39.4860 ug/mL	99
48) Dimethylphtha	7.140	163	275944	39.9837 ug/mL	99
49) 26Dinitrotolu	7.177	165	61883	41.4033 ug/mL	87
50) Acenaphthene	7.328	154	222472	38.5573 ug/mL	100
51) 3Nitroaniline	7.291	138	64295	42.4295 ug/mL	97
52) 24Dinitphenol	7.362	184	42748	41.3303 ug/mL	91
53) Dibenzofuran	7.444	168	352879	39.8624 ug/mL	98
54) 24Dinitrotolu	7.450	165	83454	40.8474 ug/mL	87
55) 4-Nitrophenol	7.421	65	54829	41.1779 ug/mL	96
56) 2,3,5,6-Tetrachlorop	7.504	232	73470	41.6026 ug/mL	96
57) 2,3,4,6-Tetrachlorop	7.529	232	77892	39.5769 ug/mL	95
58) Fluorene	7.669	166	272021	38.6916 ug/mL	96
59) 4Clphlphlethr	7.669	204	134264	38.3170 ug/mL	97
60) Diethylphthal	7.609	149	277940	39.2025 ug/mL	97
61) 4Nitroaniline	7.700	138	62716	42.3750 ug/mL	94
64) 46Dinit2mylph	7.717	198	53488	46.2324 ug/mL	99
65) Ntrsdiphlam&Diphlam	7.754	169	374692	80.7500 ug/mL	99
66) Azobenz&12Diphlhyd	7.774	182	124066	83.6839 ug/mL	90
67) 4Brphlphlethr	7.973	248	88954	43.4863 ug/mL	95
68) Hexaclbenzene	8.012	284	93833	42.1036 ug/mL	95
69) Pentaclphenol	8.135	266	57938	45.4963 ug/mL	96
70) Phenanthrene	8.254	178	367174	41.0662 ug/mL	99
71) Anthracene	8.282	178	370960	40.4848 ug/mL	99
72) Carbazole	8.359	167	314507	40.5237 ug/mL	98
73) Dinbtylphthal	8.510	149	402883	40.5991 ug/mL	98
74) Fluoranthene	8.834	202	402480	41.6671 ug/mL	99
76) Benzidine	8.896	184	130857	45.2419 ug/mL	98
77) Pyrene	8.953	202	417477	41.2717 ug/mL	100
79) Btylbzylphth	9.294	149	177276	39.9017 ug/mL	98
80) bis2Ethlhxlad	9.334	129	140785	39.2129 ug/mL	99
81) 33Diclbnzidin	9.621	252	129521	41.4255 ug/mL	98
82) B[a]anthracen	9.643	228	411640	40.7799 ug/mL	98
83) Chrysene	9.669	228	370980	40.1682 ug/mL	99
84) bis2Ethlhxlph	9.641	149	266441	40.9219 ug/mL	98
85) Dinoctylphthl	10.053	149	476155	42.2197 ug/mL	99
87) B[b]fluoranth	10.314	252	446591	40.5755 ug/mL	98
88) B[k]fluoranth	10.334	252	430744	41.6650 ug/mL	98
89) Benz[a]pyrene	10.519	252	433802	40.8677 ug/mL	99
90) Indeno-pyrene	11.303	276	511722	40.5985 ug/mL	99
91) Dib[ah]anthr	11.311	278	426005	40.8290 ug/mL	96
92) B[ghi]perylen	11.519	276	427891	40.8325 ug/mL	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S090816\1ICV2.D Vial: 19
Acq On : 8 Sep 2016 17:58 Operator: RPN
Sample : ICV 40ug/ml SVMS7216 Inst : SVMS1
Misc : 500uL+5ul IS S3516B Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 14 11:53:53 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Sep 08 17:48:30 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

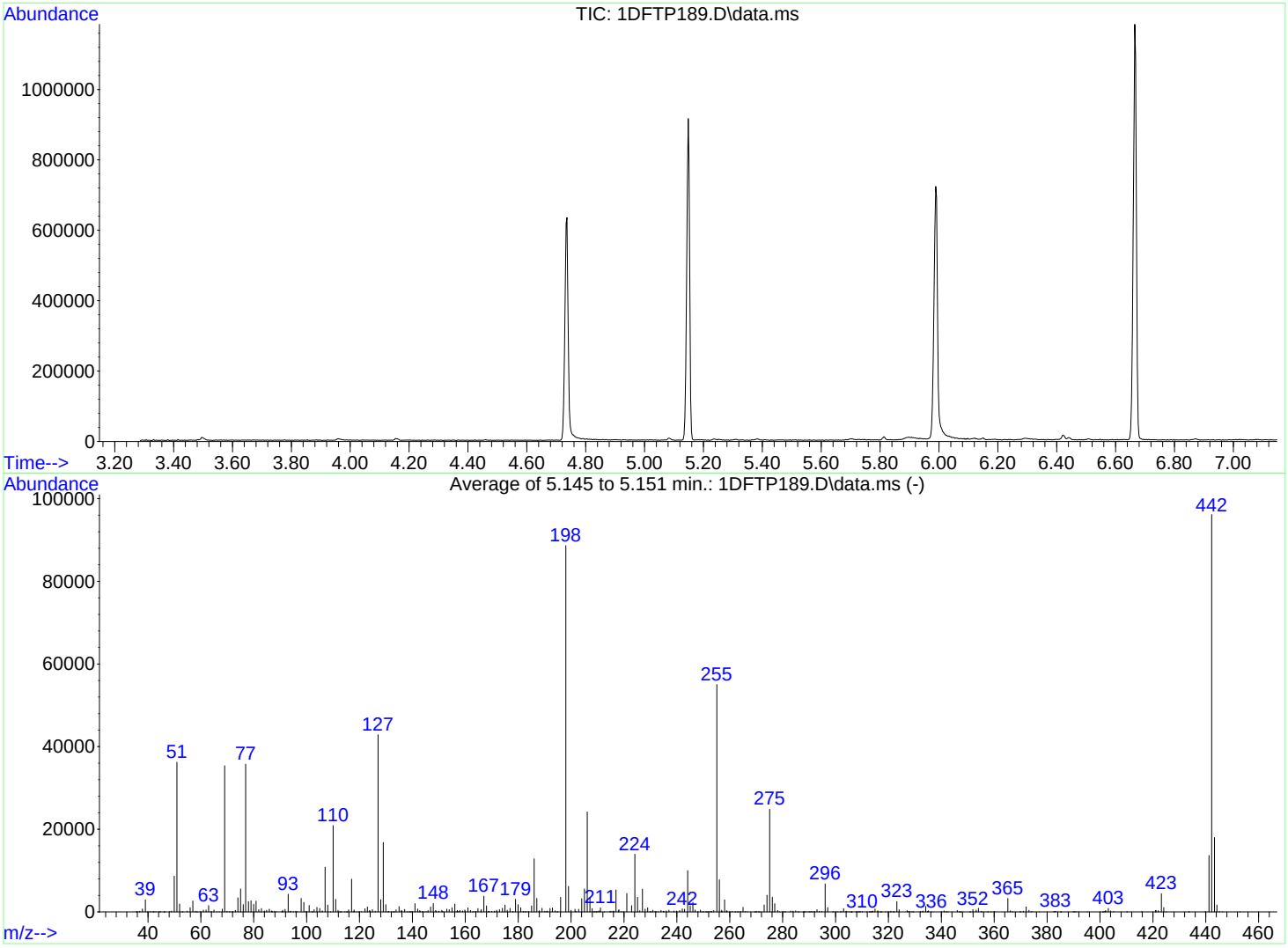


SEMI - VOLATILE ORGANIC ANALYSIS
CONTINUING CALIBRATION
DOCUMENTS

DFTPP

Data File : C:\INSTARCH\Data\1S101916\1DFTP189.D Vial: 1
Acq On : 19 Oct 2016 15:19 Operator: JJY
Sample : DFTPP TUNE SVMS7090 Inst : SVMS1
Misc : SVMS1,25 ug DFTPP Multiplr: 1.00
Integrator: RTE

Method : C:\INSTARCH\Methods\1DFTPP.M
Title : DFTPP TUNE Method
Last Update : Wed Oct 19 15:31:26 2016



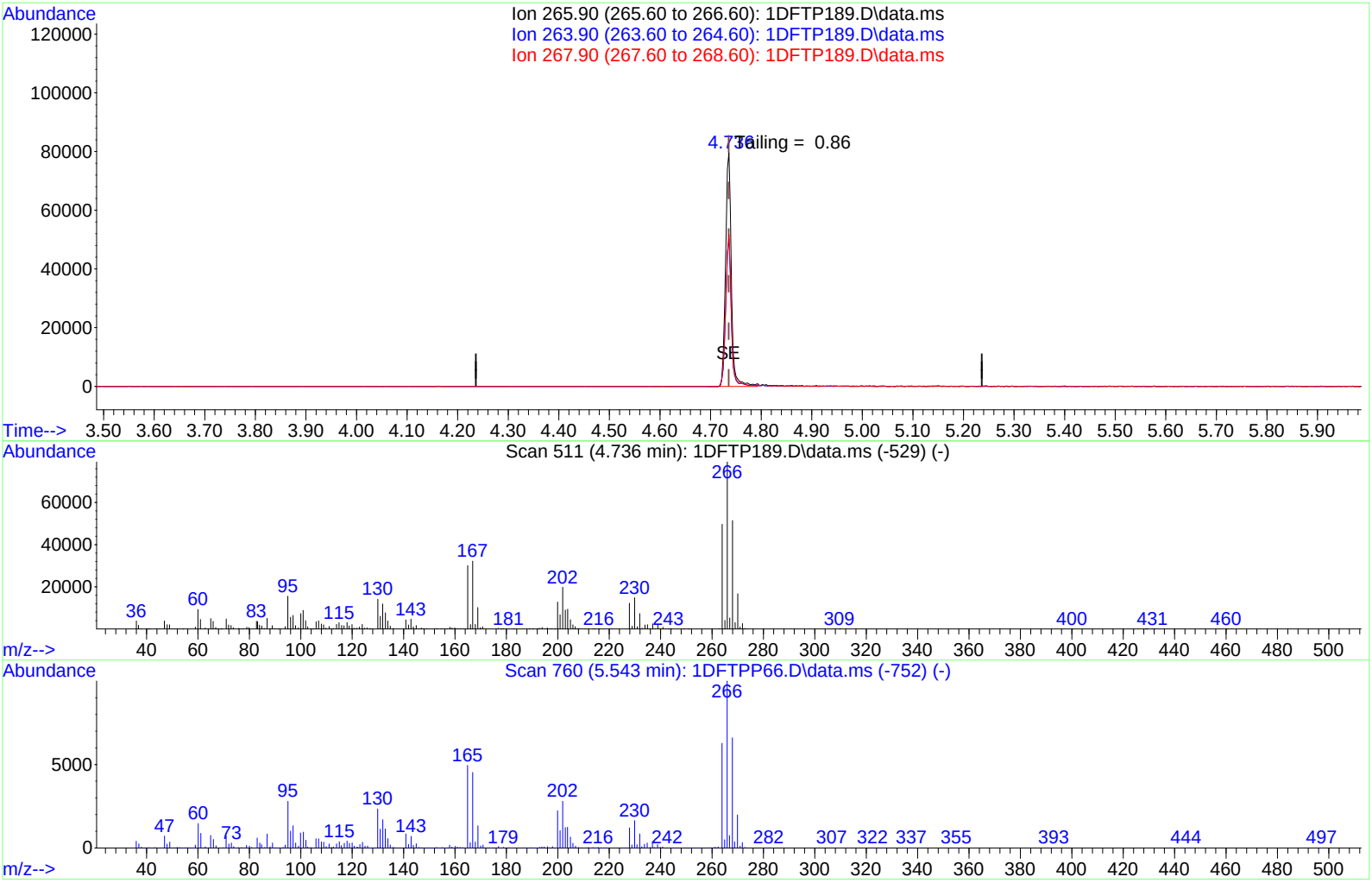
AutoFind: Scans 655, 656, 657; Background Corrected with Scan 646

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	442	10	80	37.7	36247	PASS
68	69	0.00	2	1.9	682	PASS
70	69	0.00	2	0.4	146	PASS
127	442	10	80	44.6	42880	PASS
197	198	0.00	2	0.0	0	PASS
198	442	50	100	92.2	88645	PASS
199	198	5	9	7.0	6181	PASS
275	442	10	60	25.9	24861	PASS
365	198	1	100	3.7	3259	PASS
441	442	0.01	24	14.2	13666	PASS
442	442	50	100	100.0	96146	PASS
443	442	15	24	18.7	18006	PASS

Quantitation Report (Qedit)

Data File : C:\INSTARCH\Data\1S101916\1DFTP189.D Vial: 1
Acq On : 19 Oct 2016 15:19 Operator: JJY
Sample : DFTPP TUNE SVMS7090 Inst : SVMS1
Misc : SVMS1,25 ug DFTPP Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 19 15:31:33 2016

Quant Method : C:\INSTARCH\Methods\1DFTPP.M
Quant Title : DFTPP TUNE Method
QLast Update : Wed Oct 19 15:31:26 2016
Response via : Initial Calibration
DataAcq Meth:1DFTPP.M



TIC: 1DFTP189.D\data.ms

(1) Pentachlorophenol

4.736min (0.000) 4.25 ng

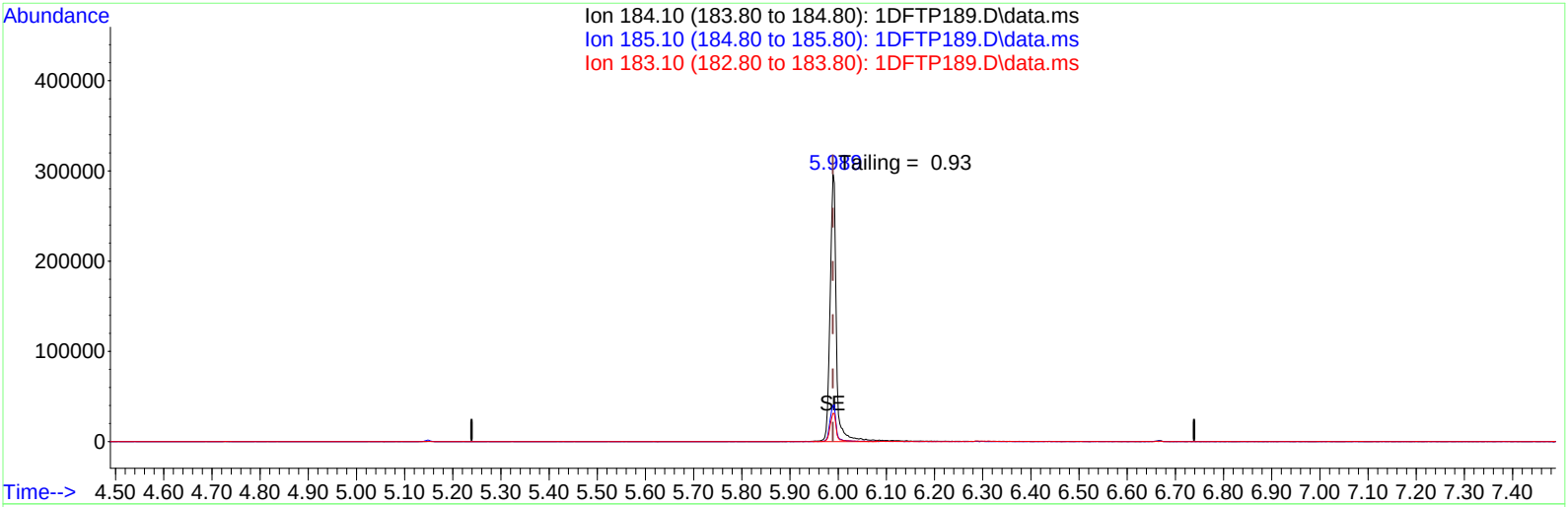
response 63179

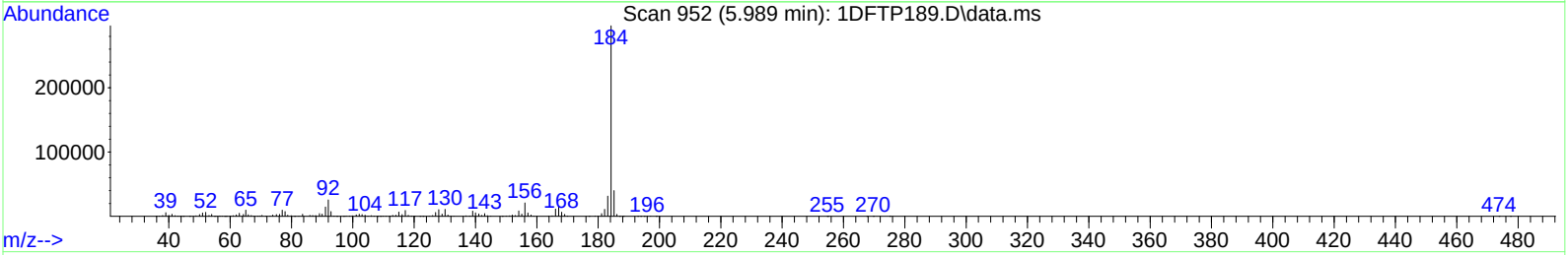
Ion	Exp%	Act%
265.90	100	100
263.90	66.20	63.10
267.90	60.90	64.85
0.00	0.00	0.00

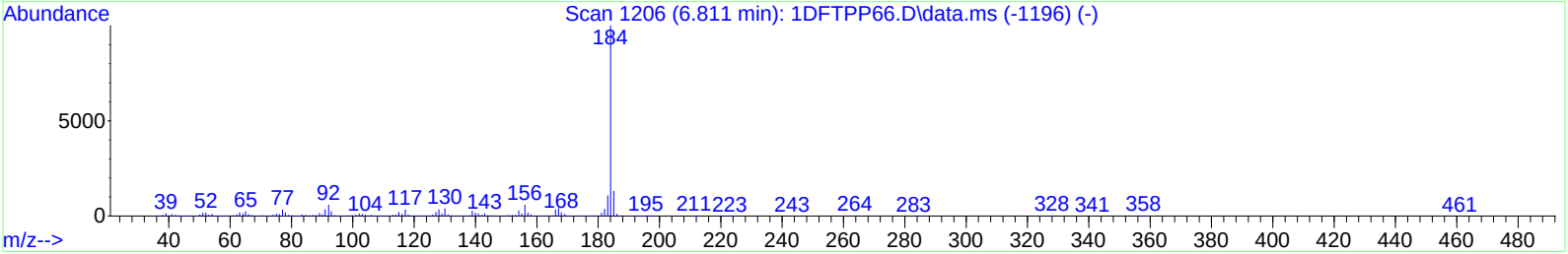
Quantitation Report (Qedit)

Data File : C:\INSTARCH\Data\1S101916\1DFTP189.D Vial: 1
Acq On : 19 Oct 2016 15:19 Operator: JJY
Sample : DFTPP TUNE SVMS7090 Inst : SVMS1
Misc : SVMS1,25 ug DFTPP Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 19 15:31:33 2016

Quant Method : C:\INSTARCH\Methods\1DFTPP.M
Quant Title : DFTPP TUNE Method
QLast Update : Wed Oct 19 15:31:26 2016
Response via : Initial Calibration
DataAcq Meth:1DFTPP.M







TIC: 1DFTP189.D\data.ms

(3) Benzidine

5.989min (0.000) 2.95 ng

response 258976

Ion	Exp%	Act%
184.10	100	100
185.10	13.80	14.46
183.10	12.20	10.99
0.00	0.00	0.00

Data File	: 1DFTP189.D	Vial Number	: 1
Data File Path	: C:\INSTARCH\Data\1S101916\	Operator	: JJY
Date Acquired	: 10/19/2016 15:19	Instrument Name:	SVMS1
Sample Name	: DFTPP TUNE SVMS7090	Sample Multiplier:	1
Misc Info	: SVMS1,25 ug DFTPP		

Quant Method	: C:\INSTARCH\Methods\1DFTPP.M
Calibration Title	: DFTPP TUNE Method
Last Update	: Wed Oct 19 15:31:26 2016

Compound	R.T.	QIon	Response
1) Pentachlorophenol	4.74	266	63179
2) DFTPP	5.15	198	68404
3) Benzidine	5.99	184	258976
4) DDE	6.15	246	327
5) DDD	6.43	235	2909
6) DDT	6.67	235	179051

DDT %Degradation

$$\frac{\text{DDD + DDE}}{\text{DDD + DDE + DDT}} \times 100\% = 1.78\ \%$$

Evaluate Continuing Calibration Report

Data File : C:\INSTARCH\Data\1S101916\1CCV214.D Vial: 2
Acq On : 19 Oct 2016 15:34 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 19 16:04:13 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Wed Oct 19 16:04:01 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	14Diclbenzd4	20.000	20.000	0.0	106	0.00
2	CT	Ntrsdimeth	20.000	21.326	-6.6	118	0.00
3	CT	Pyridine	20.000	22.431	-12.2	123	0.00
4	S	SURR2Flphenol	50.000	57.540	-15.1	125	0.00
5	CT	Aniline	20.000	20.640	-3.2	121	0.00
6	CPT	bis2Clethletr	20.000	21.793	-9.0	120	0.00
7	S	SURRPhenol-d5	50.000	53.325	-6.7	123	0.00
8	CPT	Phenol	20.000	20.954	-4.8	121	0.00
9	CPT	2-Cl-phenol	20.000	20.885	-4.4	115	0.00
10	CT	13Diclbenz	20.000	20.044	-0.2	114	0.00
11	CT	14Diclbenz	20.000	20.313	-1.6	117	0.00
12	CT	12Diclbenz	20.000	20.372	-1.9	119	0.00
13	CT	Benzyl alcoho	20.000	22.161	-10.8	124	0.00
14	CPT	bis2clispreth	20.000	21.829	-9.1	131	0.00
15	CPT	2Methylphenol	20.000	19.949	0.3	120	0.00
16	CT	Ntrspyrrol	20.000	21.250	-6.3	122	0.00
17	CPT	Acetophenone	20.000	21.148	-5.7	127	0.00
18	CPT	Hexaclethane	20.000	20.064	-0.3	113	0.00
19	CPT	N-Ntrsdinprop	20.000	20.590	-2.9	125	0.00
20	CPT	3&4Methylphenol	20.000	20.094	-0.5	116	0.00
21	I	Naphthalened8	20.000	20.000	0.0	109	0.00
22	S	SURRNitrbenzened5	100.000	100.003	-0.0	114	0.00
23	CPT	Nitrobenzene	20.000	19.106	4.5	110	0.00
24	CPT	Isophorone	20.000	19.629	1.9	114	0.00
25	CPT	2-Nitrophenol	20.000	19.415	2.9	109	0.00
26	CPT	24Dimthpheno	20.000	22.389	-11.9	124	0.00
27	CPT	bis2clethoxym	20.000	21.825	-9.1	123	0.00
28	CPT	24Diclphenol	20.000	20.571	-2.9	114	0.00
29	CT	124Triclbenz	20.000	20.321	-1.6	115	0.00
30	CT	Benzoic acid	20.000	20.623	-3.1	117	0.00
31	CPT	Naphthalene	20.000	20.208	-1.0	116	0.00
32	CPT	4-Cl-aniline	20.000	19.042	4.8	111	0.00
33	CT	26Diclphenol	20.000	20.813	-4.1	118	0.00
34	CT	Hexaclprop	20.000	20.735	-3.7	117	0.00
35	CPT	Hexaclbutdien	20.000	20.193	-1.0	117	0.00
36	CPT	4Cl3methylphe	20.000	19.975	0.1	110	0.00
37	CPT	2Methylnaphth	20.000	19.469	2.7	112	0.00
38	CT	1Methylnaphth	20.000	19.357	3.2	115	0.00
39	I	Acenaphthened10	20.000	20.000	0.0	109	0.00
40	CPT	Hxclcycpentdi	20.000	18.525	7.4	107	0.00
41	CPT	1245Tetrclbenz	20.000	20.152	-0.8	118	0.00
42	CPT	246Triclpheno	20.000	21.362	-6.8	115	0.00
43	CPT	245Triclpheno	20.000	19.720	1.4	110	0.00
44	S	SURR2Flbiphenyl	100.000	104.539	-4.5	123	0.00
45	CPT	2Clnaphthalen	20.000	19.848	0.8	116	0.00
46	CPT	2Nitroaniline	20.000	19.354	3.2	107	0.00
47	CPT	Acnaphthylene	20.000	19.055	4.7	110	0.00
48	CPT	Dimethylphtha	20.000	19.770	1.2	114	0.00
49	CPT	26Dinitrotolu	20.000	20.450	-2.2	115	0.00
50	CPT	Acenaphthene	20.000	19.259	3.7	114	0.00
51	CPT	3Nitroaniline	20.000	17.707	11.5	100	0.00

Evaluate Continuing Calibration Report

Data File : C:\INSTARCH\Data\1S101916\1CCV214.D Vial: 2
Acq On : 19 Oct 2016 15:34 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 19 16:04:13 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Wed Oct 19 16:04:01 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
52	CPT	24Dinitphenol	20.000	19.493	2.5	113	0.00
53	CPT	Dibenzofuran	20.000	19.452	2.7	114	0.00
54	CPT	24Dinitrotolu	20.000	20.185	-0.9	114	0.00
55	CPT	4-Nitrophenol	20.000	17.868	10.7	103	0.00
56	CT	2,3,5,6-Tetrachlorop	20.000	19.012	4.9	107	0.00
57	CPT	2,3,4,6-Tetrachlorop	20.000	18.725	6.4	110	0.00
58	CPT	Fluorene	20.000	19.689	1.6	115	0.00
59	CPT	4Clphlphlethr	20.000	19.241	3.8	111	0.00
60	CPT	Diethylphthal	20.000	19.985	0.1	117	0.00
61	CPT	4Nitroaniline	20.000	17.555	12.2	100	0.00
62	S	SURR246Tribrphenl	50.000	49.157	1.7	115	0.00
63	I	Phenanthrd10	20.000	20.000	0.0	113	0.00
64	CPT	46Dinit2mylph	20.000	20.156	-0.8	115	0.00
65	CPT	Ntrsdiphlam&Diphlam	40.000	40.272	-0.7	118	0.00
66	CT	Azobenz&12Diphlhyd	40.000	40.659	-1.6	116	0.00
67	CPT	4Brphlphlethr	20.000	19.569	2.2	111	0.00
68	CPT	Hexaclbenzene	20.000	20.342	-1.7	118	0.00
69	CPT	Pentaclphenol	20.000	20.608	-3.0	122	0.00
70	CPT	Phenanthrene	20.000	20.269	-1.3	122	0.00
71	CPT	Anthracene	20.000	20.307	-1.5	121	0.00
72	CPT	Carbazole	20.000	18.759	6.2	106	0.00
73	CPT	Dinbtylphthal	20.000	18.823	5.9	109	0.00
74	CPT	Fluoranthene	20.000	19.357	3.2	108	0.00
75	I	Chrysene-d12	20.000	20.000	0.0	94	0.00
76	CT	Benzidine	20.000	13.409	33.0#	63	0.00
77	CPT	Pyrene	20.000	21.340	-6.7	105	0.00
78	S	SURRTerphenyl-d14	100.000	109.965	-10.0	111	0.00
79	CPT	Btylbzylphth	20.000	22.036	-10.2	110	0.00
80	TM	bis2Ethlhxlad	20.000	22.636	-13.2	111	0.00
81	CPT	33Diclbnzidin	20.000	15.545	22.3#	86	0.00
82	CPT	B[a]anthracen	20.000	20.025	-0.1	101	0.00
83	CPT	Chrysene	20.000	19.962	0.2	99	0.00
84	CPT	bis2Ethlhxlph	20.000	21.448	-7.2	107	0.00
85	CPT	Dinoctylphthl	20.000	21.379	-6.9	108	0.00
86	I	Perylene-d12	20.000	20.000	0.0	88	0.00
87	CPT	B[b]fluoranth	20.000	22.435	-12.2	102	0.00
88	CPT	B[k]fluoranth	20.000	19.110	4.5	91	0.00
89	CPT	Benz[a]pyrene	20.000	20.690	-3.5	95	0.00
90	CPT	Indeno-pyrene	20.000	21.275	-6.4	101	0.00
91	CPT	Dib[ah]anthr	20.000	21.548	-7.7	103	0.00
92	CPT	B[ghi]perylen	20.000	20.800	-4.0	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 2

Evaluate Continuing Calibration Report

Data File : C:\INSTARCH\Data\1S101916\1CCV214.D Vial: 2
Acq On : 19 Oct 2016 15:34 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 19 16:04:13 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Wed Oct 19 16:04:01 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	14Diclbenzd4	1.000	1.000	0.0	106	0.00
2	CT	Ntrsdimeth	0.700	0.746	-6.6	118	0.00
3	CT	Pyridine	1.241	1.392	-12.2	123	0.00
4	S	SURR2Flphenol	0.439	0.506	-15.3	125	0.00
5	CT	Aniline	1.838	1.897	-3.2	121	0.00
6	CPT	bis2Clethletr	1.137	1.238	-8.9	120	0.00
7	S	SURRPhenol-d5	0.560	0.597	-6.6	123	0.00
8	CPT	Phenol	1.638	1.716	-4.8	121	0.00
9	CPT	2-Cl-phenol	1.367	1.428	-4.5	115	0.00
10	CT	13Diclbenz	1.566	1.569	-0.2	114	0.00
11	CT	14Diclbenz	1.610	1.635	-1.6	117	0.00
12	CT	12Diclbenz	1.535	1.564	-1.9	119	0.00
13	CT	Benzyl alcoho	0.701	0.849	-21.1#	124	0.00
14	CPT	bis2clispreth	1.782	1.945	-9.1	131	0.00
15	CPT	2Methylphenol	1.034	1.031	0.3	120	0.00
16	CT	Ntrspyrrol	0.570	0.606	-6.3	122	0.00
17	CPT	Acetophenone	1.777	1.879	-5.7	127	0.00
18	CPT	Hexaclethane	0.617	0.619	-0.3	113	0.00
19	CPT	N-Ntrsdinprop	0.923	0.950	-2.9	125	0.00
20	CPT	3&4Methylphenol	1.358	1.364	-0.4	116	0.00
21	I	Naphthalened8	1.000	1.000	0.0	109	0.00
22	S	SURRNitrbenzened5	0.063	0.063	0.0	114	0.00
23	CPT	Nitrobenzene	0.335	0.320	4.5	110	0.00
24	CPT	Isophorone	0.591	0.580	1.9	114	0.00
25	CPT	2-Nitrophenol	0.179	0.174	2.8	109	0.00
26	CPT	24Dimthpheno	0.263	0.294	-11.8	124	0.00
27	CPT	bis2clethoxym	0.377	0.412	-9.3	123	0.00
28	CPT	24Diclphenol	0.296	0.304	-2.7	114	0.00
29	CT	124Triclbenz	0.358	0.364	-1.7	115	0.00
30	CT	Benzoic acid	0.181	0.200	-10.5	117	0.00
31	CPT	Naphthalene	1.064	1.076	-1.1	116	0.00
32	CPT	4-Cl-aniline	0.410	0.390	4.9	111	0.00
33	CT	26Diclphenol	0.274	0.285	-4.0	118	0.00
34	CT	Hexaclprop	0.264	0.274	-3.8	117	0.00
35	CPT	Hexaclbutdien	0.235	0.238	-1.3	117	0.00
36	CPT	4Cl3methylphe	0.295	0.295	0.0	110	0.00
37	CPT	2Methylnaphth	0.707	0.688	2.7	112	0.00
38	CT	1Methylnaphth	0.609	0.589	3.3	115	0.00
39	I	Acenaphthened10	1.000	1.000	0.0	109	0.00
40	CPT	Hxclcycpentdi	0.375	0.374	0.3	107	0.00
41	CPT	1245Tetrclbenz	0.652	0.657	-0.8	118	0.00
42	CPT	246Triclpheno	0.393	0.420	-6.9	115	0.00
43	CPT	245Triclpheno	0.446	0.440	1.3	110	0.00
44	S	SURR2Flbiphenyl	0.277	0.289	-4.3	123	0.00
45	CPT	2Clnaphthalen	1.220	1.211	0.7	116	0.00
46	CPT	2Nitroaniline	0.342	0.331	3.2	107	0.00
47	CPT	Acnaphthylene	2.077	1.979	4.7	110	0.00
48	CPT	Dimethylphtha	1.422	1.405	1.2	114	0.00
49	CPT	26Dinitrotolu	0.308	0.315	-2.3	115	0.00
50	CPT	Acenaphthene	1.189	1.144	3.8	114	0.00
51	CPT	3Nitroaniline	0.312	0.276	11.5	100	0.00

Evaluate Continuing Calibration Report

Data File : C:\INSTARCH\Data\1S101916\1CCV214.D Vial: 2
Acq On : 19 Oct 2016 15:34 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 19 16:04:13 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Wed Oct 19 16:04:01 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
52	CPT	24Dinitphenol	0.185	0.191	-3.2	113	0.00
53	CPT	Dibenzofuran	1.824	1.774	2.7	114	0.00
54	CPT	24Dinitrotolu	0.421	0.425	-1.0	114	0.00
55	CPT	4-Nitrophenol	0.274	0.245	10.6	103	0.00
56	CT	2,3,5,6-Tetrachlorop	0.364	0.346	4.9	107	0.00
57	CPT	2,3,4,6-Tetrachlorop	0.405	0.380	6.2	110	0.00
58	CPT	Fluorene	1.448	1.426	1.5	115	0.00
59	CPT	4Clphlphlethr	0.722	0.694	3.9	111	0.00
60	CPT	Diethylphthal	1.460	1.459	0.1	117	0.00
61	CPT	4Nitroaniline	0.305	0.268	12.1	100	0.00
62	S	SURR246Tribrphenl	0.091	0.090	1.1	115	0.00
63	I	Phenanthrd10	1.000	1.000	0.0	113	0.00
64	CPT	46Dinit2mylph	0.141	0.142	-0.7	115	0.00
65	CPT	Ntrsdiphlam&Diphlam	0.567	0.571	-0.7	118	0.00
66	CT	Azobenz&12Diphlhyd	0.181	0.184	-1.7	116	0.00
67	CPT	4Brphlphlethr	0.250	0.244	2.4	111	0.00
68	CPT	Hexaclbenzene	0.272	0.277	-1.8	118	0.00
69	CPT	Pentaclphenol	0.156	0.160	-2.6	122	0.00
70	CPT	Phenanthrene	1.092	1.107	-1.4	122	0.00
71	CPT	Anthracene	1.119	1.136	-1.5	121	0.00
72	CPT	Carbazole	0.948	0.889	6.2	106	0.00
73	CPT	Dinbtylphthal	1.212	1.141	5.9	109	0.00
74	CPT	Fluoranthene	1.180	1.142	3.2	108	0.00
75	I	Chrysene-d12	1.000	1.000	0.0	94	0.00
76	CT	Benzidine	0.312	0.220	29.5#	63	0.00
77	CPT	Pyrene	1.238	1.321	-6.7	105	0.00
78	S	SURRTerphenyl-d14	0.160	0.176	-10.0	111	0.00
79	CPT	Btylbzylphth	0.544	0.599	-10.1	110	0.00
80	TM	bis2Ethlhxlad	0.440	0.497	-13.0	111	0.00
81	CPT	33Diclbnzidin	0.383	0.297	22.5#	86	0.00
82	CPT	B[a]anthracen	1.236	1.237	-0.1	101	0.00
83	CPT	Chrysene	1.131	1.128	0.3	99	0.00
84	CPT	bis2Ethlhxlph	0.797	0.855	-7.3	107	0.00
85	CPT	Dinoctylphthl	1.381	1.476	-6.9	108	0.00
86	I	Perylene-d12	1.000	1.000	0.0	88	0.00
87	CPT	B[b]fluoranth	1.240	1.391	-12.2	102	0.00
88	CPT	B[k]fluoranth	1.164	1.113	4.4	91	0.00
89	CPT	Benz[a]pyrene	1.196	1.237	-3.4	95	0.00
90	CPT	Indeno-pyrene	1.420	1.510	-6.3	101	0.00
91	CPT	Dib[ah]anthr	1.175	1.266	-7.7	103	0.00
92	CPT	B[ghi]perylen	1.180	1.227	-4.0	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 3

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\1CCV214.D Vial: 2
Acq On : 19 Oct 2016 15:34 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 19 16:04:13 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Wed Oct 19 16:04:01 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.972	152	49086	20.00	ug/mL	0.00
21) Naphthalened8	5.626	136	204675	20.00	ug/mL	0.00
39) Acenaphthened10	7.242	164	112283	20.00	ug/mL	0.00
63) Phenanthrd10	8.189	188	203042	20.00	ug/mL	0.00
75) Chrysene-d12	9.584	240	172160	20.00	ug/mL	0.00
86) Perylene-d12	10.473	264	169832	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.821	112	62059	57.54	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 57.54%			
7) SURRPhenol-d5	3.608	99	73289	53.33	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 53.33%			
22) SURRNitrbenzened5	4.634	82	64696	100.00	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 100.00%			
44) SURR2Flbiphenyl	6.748	172	162435	104.54	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 104.54%			
62) SURR246Tribrphenl	7.765	330	25160	49.16	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 49.16%			
78) SURRTerphenyl-d14	8.970	244	151670	109.97	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 109.97%			
Target Compounds						Qvalue
2) Ntrsdimeth	2.074	74	36634	21.3257	ug/mL	92
3) Pyridine	2.091	79	68335	22.4308	ug/mL	92
5) Aniline	3.628	93	93115	20.6405	ug/mL	98
6) bis2Clethletr	3.696	93	60790	21.7931	ug/mL	99
8) Phenol	3.622	94	84247	20.9538	ug/mL	79
9) 2-Cl-phenol	3.753	128	70083	20.8846	ug/mL	98
10) 13Diclbenz	3.907	146	77015	20.0437	ug/mL	97
11) 14Diclbenz	3.989	146	80264	20.3128	ug/mL	96
12) 12Diclbenz	4.157	146	76759	20.3718	ug/mL	99
13) Benzyl alcoho	4.142	108	41669	22.1606	ug/mL	98
14) bis2clispreth	4.307	45	95449	21.8295	ug/mL	95
15) 2Methylphenol	4.293	107	50606	19.9493	ug/mL	97
16) Ntrspyrrol	4.429	100	29739	21.2498	ug/mL	96
17) Acetophenone	4.452	105	92236	21.1478	ug/mL	96
18) Hexaclethane	4.560	117	30378	20.0642	ug/mL	90
19) N-Ntrsdinprop	4.469	70	46645	20.5899	ug/mL	95
20) 3&4Methylphenol	4.492	107	66968	20.0943	ug/mL	97
23) Nitrobenzene	4.660	77	65525	19.1057	ug/mL	96
24) Isophorone	4.992	82	118706	19.6287	ug/mL	100
25) 2-Nitrophenol	5.086	139	35658	19.4153	ug/mL	96
26) 24Dimthpheno	5.211	122	60169	22.3888	ug/mL	99
27) bis2clethoxym	5.344	93	84229	21.8254	ug/mL	97
28) 24Diclphenol	5.466	162	62251	20.5712	ug/mL	98
29) 124Triclbenz	5.560	180	74423	20.3214	ug/mL	96
30) Benzoic acid	5.435	122	40988	20.6228	ug/mL	87
31) Naphthalene	5.651	128	220140	20.2081	ug/mL	99
32) 4-Cl-aniline	5.753	127	79920	19.0422	ug/mL	97
33) 26Diclphenol	5.756	162	58398	20.8133	ug/mL	98
34) Hexaclprop	5.771	213	56005	20.7354	ug/mL	96
35) Hexaclbutdien	5.833	225	48618	20.1929	ug/mL	92
36) 4Cl3methylphe	6.327	107	60392	19.9755	ug/mL	99
37) 2Methylnaphth	6.416	142	140765	19.4690	ug/mL	94
38) 1Methylnaphth	6.501	141	120590	19.3573	ug/mL	100
40) Hxclcycpentdi	6.563	237	42031	18.5251	ug/mL	94

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\1CCV214.D Vial: 2
Acq On : 19 Oct 2016 15:34 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 19 16:04:13 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Wed Oct 19 16:04:01 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

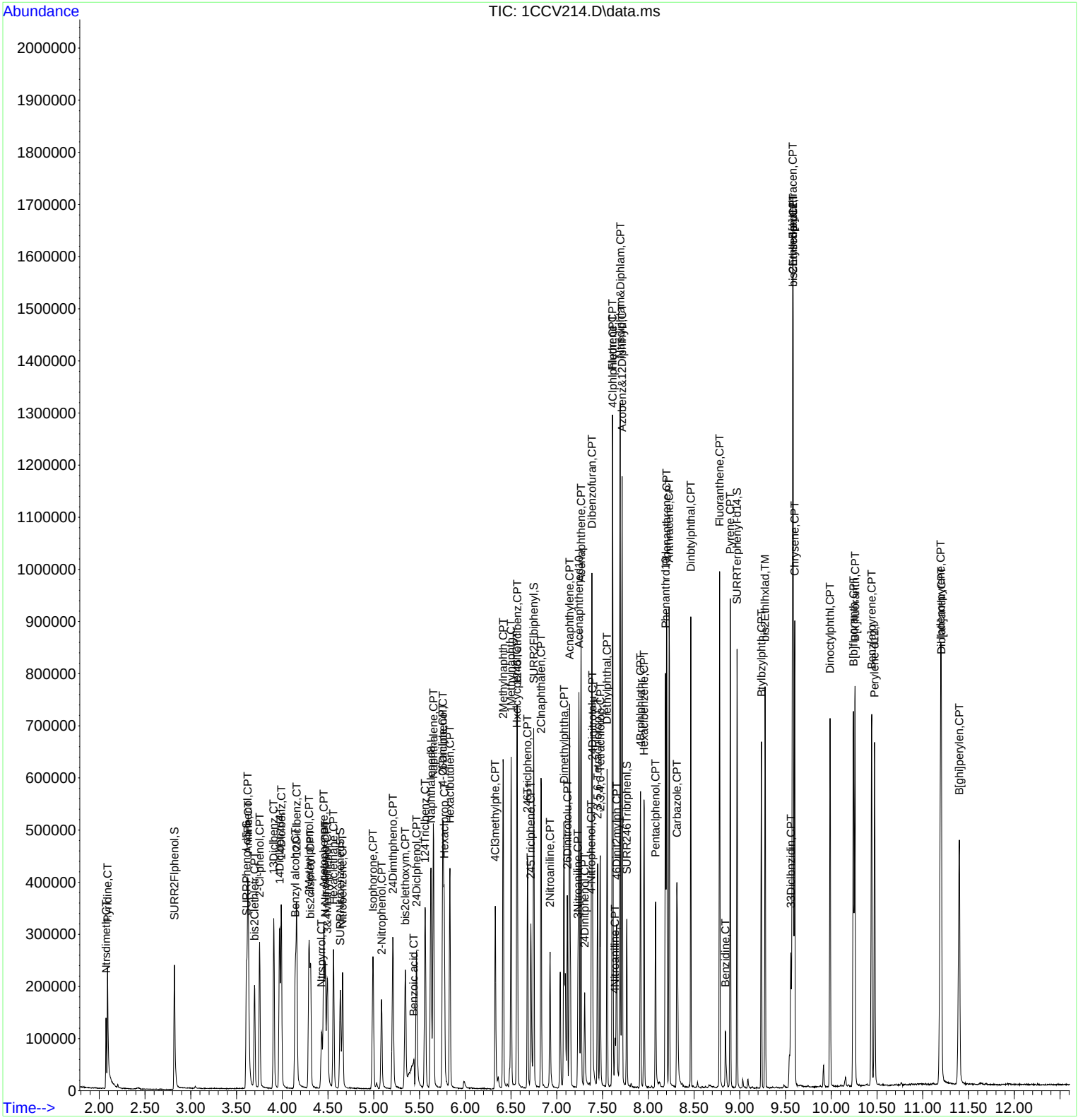
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
41) 1245Tetrclbenz	6.569	216	73809	20.1516 ug/mL	100
42) 246Triclpheno	6.680	196	47124	21.3615 ug/mL	98
43) 245Triclpheno	6.717	196	49419	19.7199 ug/mL	89
45) 2Clnaphthalen	6.828	162	135986	19.8476 ug/mL	99
46) 2Nitroaniline	6.927	65	37133	19.3541 ug/mL	97
47) Acnaphthylene	7.140	152	222218	19.0555 ug/mL	99
48) Dimethylphtha	7.080	163	157789	19.7699 ug/mL	99
49) 26Dinitrotolu	7.117	165	35348	20.4500 ug/mL	93
50) Acenaphthene	7.265	154	128507	19.2585 ug/mL	98
51) 3Nitroaniline	7.231	138	31031	17.7073 ug/mL	100
52) 24Dinitphenol	7.305	184	21501	19.4930 ug/mL	93
53) Dibenzofuran	7.384	168	199143	19.4521 ug/mL	98
54) 24Dinitrotolu	7.390	165	47692	20.1849 ug/mL	91
55) 4-Nitrophenol	7.376	65	27515	17.8685 ug/mL#	39
56) 2,3,5,6-Tetrachlorop	7.447	232	38829	19.0122 ug/mL	95
57) 2,3,4,6-Tetrachlorop	7.475	232	42619	18.7248 ug/mL	96
58) Fluorene	7.609	166	160084	19.6892 ug/mL	100
59) 4Clphlphlethr	7.612	204	77969	19.2406 ug/mL	96
60) Diethylphthal	7.549	149	163865	19.9854 ug/mL	99
61) 4Nitroaniline	7.637	138	30047	17.5549 ug/mL	93
64) 46Dinit2mylph	7.654	198	28917	20.1564 ug/mL	98
65) Ntrsdiphlam&Diphlam	7.694	169	231724	40.2724 ug/mL	99
66) Azobenz&12Diphlhyd	7.714	182	74748	40.6591 ug/mL#	83
67) 4Brphlphlethr	7.916	248	49638	19.5691 ug/mL	91
68) Hexaclbenzene	7.953	284	56217	20.3423 ug/mL	97
69) Pentaclphenol	8.081	266	32542	20.6075 ug/mL	95
70) Phenanthrene	8.200	178	224728	20.2693 ug/mL	98
71) Anthracene	8.228	178	230729	20.3065 ug/mL	98
72) Carbazole	8.314	167	180531	18.7586 ug/mL	97
73) Dinbtylphthal	8.464	149	231618	18.8225 ug/mL	98
74) Fluoranthene	8.780	202	231855	19.3568 ug/mL	99
76) Benzidine	8.845	184	37919	13.4094 ug/mL	93
77) Pyrene	8.896	202	227476	21.3403 ug/mL	100
79) Btylbzylphth	9.237	149	103169	22.0362 ug/mL	99
80) bis2Ethlhxlad	9.277	129	85642	22.6363 ug/mL	98
81) 33Diclbnzidin	9.558	252	51217	15.5449 ug/mL	98
82) B[a]anthracen	9.578	228	213009	20.0250 ug/mL	99
83) Chrysene	9.601	228	194275	19.9615 ug/mL	98
84) bis2Ethlhxlph	9.581	149	147157	21.4477 ug/mL	98
85) Dinoctylphthl	9.987	149	254079	21.3787 ug/mL	100
87) B[b]fluoranth	10.243	252	236164	22.4352 ug/mL	98
88) B[k]fluoranth	10.260	252	188948	19.1098 ug/mL	100
89) Benz[a]pyrene	10.442	252	210046	20.6902 ug/mL	100
90) Indeno-pyrene	11.195	276	256469	21.2751 ug/mL	99
91) Dib[ah]anthr	11.203	278	215024	21.5478 ug/mL	94
92) B[ghi]perylen	11.399	276	208467	20.8005 ug/mL	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\1CCV214.D Vial: 2
Acq On : 19 Oct 2016 15:34 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 19 16:04:13 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Wed Oct 19 16:04:01 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M



Ending CCV %Recovery Report

Data File Name	1CCV216.D
Data File Path	C:\INSTARCH\Data\1S101916\
Operator	JJY
Date Acquired	10/20/2016 1:44
Acq. Method File	1S090816.M
Sample Name	CCV20ug/ml SVMS7217
Misc Info	500uL+5ul IS S3516D
Vial Number	33
Instrument Name	SVMS1
Sample Multiplier	1

#	Name	Ret Time	Amount	Units	Response	50-150 %REC
1)	14Diclbenzd4	3.97	20.00	ug/mL	56426	ISTD
2)	Ntrsdimeth	2.07	15.25	ug/mL	30116	76
3)	Pyridine	2.09	17.60	ug/mL	61650	88
4)	SURR2Flphenol	2.83	45.42	%REC	56317	91
5)	Aniline	3.64	10.70	ug/mL	55502	54
6)	bis2Clethletr	3.70	17.67	ug/mL	56667	88
7)	SURRPhenol-d5	3.61	47.92	%REC	75712	96
8)	Phenol	3.63	19.21	ug/mL	88794	96
9)	2-Cl-phenol	3.76	18.85	ug/mL	72701	94
10)	13Diclbenz	3.91	18.15	ug/mL	80173	91
11)	14Diclbenz	3.99	18.26	ug/mL	82935	91
12)	12Diclbenz	4.16	18.49	ug/mL	80083	92
13)	Benzyl alcoho	4.15	18.02	ug/mL	38168	90
14)	bis2clispreth	4.31	19.65	ug/mL	98773	98
15)	2Methylphenol	4.30	18.31	ug/mL	53405	92
16)	Ntrspyrrol	4.43	20.34	ug/mL	32730	102
17)	Acetophenone	4.45	19.52	ug/mL	97856	98
18)	Hexaclethane	4.56	18.24	ug/mL	31743	91
19)	N-Ntrsdinprop	4.47	19.10	ug/mL	49727	95
20)	3&4Methylphenol	4.50	18.81	ug/mL	72060	94
21)	Naphthalened8	5.63	20.00	ug/mL	236481	ISTD
22)	SURRNitrbenzened5	4.64	97.07	%REC	72558	97
23)	Nitrobenzene	4.66	18.02	ug/mL	71399	90
24)	Isophorone	4.99	18.42	ug/mL	128673	92
25)	2-Nitrophenol	5.09	17.36	ug/mL	36841	87
26)	24Dimthpheno	5.21	19.62	ug/mL	60934	98
27)	bis2clethoxym	5.35	18.86	ug/mL	84082	94
28)	24Diclphenol	5.47	19.42	ug/mL	67889	97
29)	124Triclbenz	5.56	18.42	ug/mL	77944	92
30)	Benzoic acid	5.45	17.81	ug/mL	40180	89
31)	Naphthalene	5.65	18.32	ug/mL	230639	92
32)	4-Cl-aniline	5.77	16.17	ug/mL	78397	81
33)	26Diclphenol	5.76	18.83	ug/mL	61037	94
34)	Hexaclprop	5.77	13.60	ug/mL	42440	68
35)	Hexaclbutdien	5.83	18.40	ug/mL	51178	92
36)	4Cl3methylphe	6.33	18.93	ug/mL	66122	95
37)	2Methylnaphth	6.42	18.47	ug/mL	154291	92

38)	1Methylnaphth	6.50	18.49	ug/mL	133058	92
39)	Acenaphthened10	7.24	20.00	ug/mL	134735	ISTD
40)	Hxclcycpentdi	6.56	10.81	ug/mL	28755	54
41)	1245Tetrclbenz	6.57	18.42	ug/mL	80937	92
42)	246Triclpheno	6.68	19.48	ug/mL	51568	97
43)	245Triclpheno	6.72	18.30	ug/mL	55017	91
44)	SURR2Flbiphenyl	6.75	95.05	%REC	177216	95
45)	2Clnaphthalen	6.83	18.00	ug/mL	148005	90
46)	2Nitroaniline	6.93	18.07	ug/mL	41601	90
47)	Acnaphthylene	7.14	17.68	ug/mL	247387	88
48)	Dimethylphtha	7.08	18.53	ug/mL	177477	93
49)	26Dinitrotolu	7.11	18.29	ug/mL	37933	91
50)	Acenaphthene	7.27	18.15	ug/mL	145291	91
51)	3Nitroaniline	7.23	16.34	ug/mL	34356	82
52)	24Dinitphenol	7.31	11.66	ug/mL	13851	58
53)	Dibenzofuran	7.38	17.88	ug/mL	219686	89
54)	24Dinitrotolu	7.39	18.28	ug/mL	51817	91
55)	4-Nitrophenol	7.39	17.87	ug/mL	33019	89
56)	2,3,5,6-Tetrachlorop	7.45	17.81	ug/mL	43638	89
57)	2,3,4,6-Tetrachlorop	7.48	17.91	ug/mL	48911	90
58)	Fluorene	7.61	18.24	ug/mL	177998	91
59)	4Clphlphlethr	7.61	18.24	ug/mL	88683	91
60)	Diethylphthal	7.55	18.48	ug/mL	181779	92
61)	4Nitroaniline	7.64	16.53	ug/mL	33947	83
62)	SURR246Tribrphenl	7.77	47.86	%REC	29392	96
63)	Phenanthrd10	8.19	20.00	ug/mL	241827	ISTD
64)	46Dinit2mylph	7.65	11.96	ug/mL	20436	60
65)	Ntrsdiphlam&Diphlam	7.69	35.59	ug/mL	243886	89
66)	Azobenz&12Diphlhyd	7.71	37.30	ug/mL	81671	93
67)	4Brphlphlethr	7.92	18.06	ug/mL	54552	90
68)	Hexaclbenzene	7.96	18.66	ug/mL	61410	93
69)	Pentaclphenol	8.08	17.16	ug/mL	32265	86
70)	Phenanthrene	8.20	18.68	ug/mL	246652	93
71)	Anthracene	8.23	18.62	ug/mL	252044	93
72)	Carbazole	8.31	17.98	ug/mL	206050	90
73)	Dinbtylphthal	8.46	17.62	ug/mL	258291	88
74)	Fluoranthene	8.78	17.83	ug/mL	254403	89
75)	Chrysene-d12	9.59	20.00	ug/mL	215104	ISTD
76)	Benzidine	8.85	4.26	ug/mL	13584	21 #
77)	Pyrene	8.90	19.24	ug/mL	256215	96
78)	SURRTerphenyl-d14	8.97	99.49	%REC	171455	99
79)	Btylbzylphth	9.24	19.72	ug/mL	115364	99
80)	bis2Ethlhxlad	9.28	20.27	ug/mL	95833	101
81)	33Diclbnzidin	9.56	17.78	ug/mL	73194	89
82)	B[a]anthracen	9.58	18.57	ug/mL	246768	93
83)	Chrysene	9.60	18.39	ug/mL	223684	92
84)	bis2Ethlhxlph	9.58	19.05	ug/mL	163331	95
85)	Dinoctylphthl	9.99	19.38	ug/mL	287752	97
86)	Perylene-d12	10.48	20.00	ug/mL	196284	ISTD
87)	B[b]fluoranth	10.24	20.29	ug/mL	246799	101

88)	B[k]fluoranth	10.26	19.37	ug/mL	221315	97
89)	Benz[a]pyrene	10.44	18.94	ug/mL	222263	95
90)	Indeno-pyrene	11.19	13.21	ug/mL	184085	66
91)	Dib[ah]anthr	11.20	13.74	ug/mL	158439	69
92)	B[ghi]perylen	11.40	11.65	ug/mL	134931	58

(#) = recovery out of range Average Percent Recovery = 88

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\1CCV216.D Vial: 33
Acq On : 20 Oct 2016 1:44 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 20 16:07:20 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Oct 20 16:04:57 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.972	152	56426	20.00	ug/mL	0.00
21) Naphthalened8	5.626	136	236481	20.00	ug/mL	0.00
39) Acenaphthened10	7.242	164	134735	20.00	ug/mL	0.00
63) Phenanthrd10	8.188	188	241827	20.00	ug/mL	0.00
75) Chrysene-d12	9.586	240	215104	20.00	ug/mL	0.00
86) Perylene-d12	10.476	264	196284	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.827	112	56317	45.42	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 45.42%			
7) SURRPhenol-d5	3.614	99	75712	47.92	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 47.92%			
22) SURRNitrbenzened5	4.637	82	72558	97.07	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 97.07%			
44) SURR2Flbiphenyl	6.748	172	177216	95.05	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 95.05%			
62) SURR246Tribrphenl	7.765	330	29392	47.86	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 47.86%			
78) SURRTerphenyl-d14	8.970	244	171455	99.49	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 99.49%			
Target Compounds						Qvalue
2) Ntrsdimeth	2.071	74	30116	15.2509	ug/mL	92
3) Pyridine	2.094	79	61650	17.6041	ug/mL	89
5) Aniline	3.637	93	55502	10.7025	ug/mL#	61
6) bis2Clethletr	3.696	93	56667	17.6724	ug/mL	99
8) Phenol	3.628	94	88794	19.2119	ug/mL	89
9) 2-Cl-phenol	3.756	128	72701	18.8465	ug/mL	98
10) 13Diclbenz	3.906	146	80173	18.1513	ug/mL	99
11) 14Diclbenz	3.989	146	82935	18.2585	ug/mL	92
12) 12Diclbenz	4.157	146	80083	18.4892	ug/mL	97
13) Benzyl alcoho	4.148	108	38168	18.0231	ug/mL	97
14) bis2clispreth	4.307	45	98773	19.6512	ug/mL	82
15) 2Methylphenol	4.301	107	53405	18.3141	ug/mL	95
16) Ntrspyrrol	4.435	100	32730	20.3448	ug/mL	95
17) Acetophenone	4.452	105	97856	19.5178	ug/mL	97
18) Hexaclethane	4.560	117	31743	18.2385	ug/mL	90
19) N-Ntrsdinprop	4.472	70	49727	19.0950	ug/mL	95
20) 3&4Methylphenol	4.497	107	72060	18.8096	ug/mL	97
23) Nitrobenzene	4.659	77	71399	18.0184	ug/mL	96
24) Isophorone	4.992	82	128673	18.4151	ug/mL	98
25) 2-Nitrophenol	5.086	139	36841	17.3615	ug/mL	99
26) 24Dimthpheno	5.214	122	60934	19.6240	ug/mL	96
27) bis2clethoxym	5.347	93	84082	18.8570	ug/mL	98
28) 24Diclphenol	5.472	162	67889	19.4170	ug/mL	92
29) 124Triclbenz	5.563	180	77944	18.4204	ug/mL	98
30) Benzoic acid	5.447	122	40180	17.8089	ug/mL	93
31) Naphthalene	5.651	128	230639	18.3243	ug/mL	99
32) 4-Cl-aniline	5.773	127	78397	16.1670	ug/mL	97
33) 26Diclphenol	5.756	162	61037	18.8280	ug/mL	94
34) Hexaclprop	5.768	213	42440	13.5997	ug/mL	94
35) Hexaclbutdien	5.830	225	51178	18.3973	ug/mL	96
36) 4Cl3methylphe	6.333	107	66122	18.9292	ug/mL	99
37) 2Methylnaphth	6.415	142	154291	18.4697	ug/mL	95
38) 1Methylnaphth	6.501	141	133058	18.4860	ug/mL	99
40) Hxclcycpentdi	6.563	237	28755	10.8089	ug/mL	96

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\1CCV216.D Vial: 33
Acq On : 20 Oct 2016 1:44 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 20 16:07:20 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Oct 20 16:04:57 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

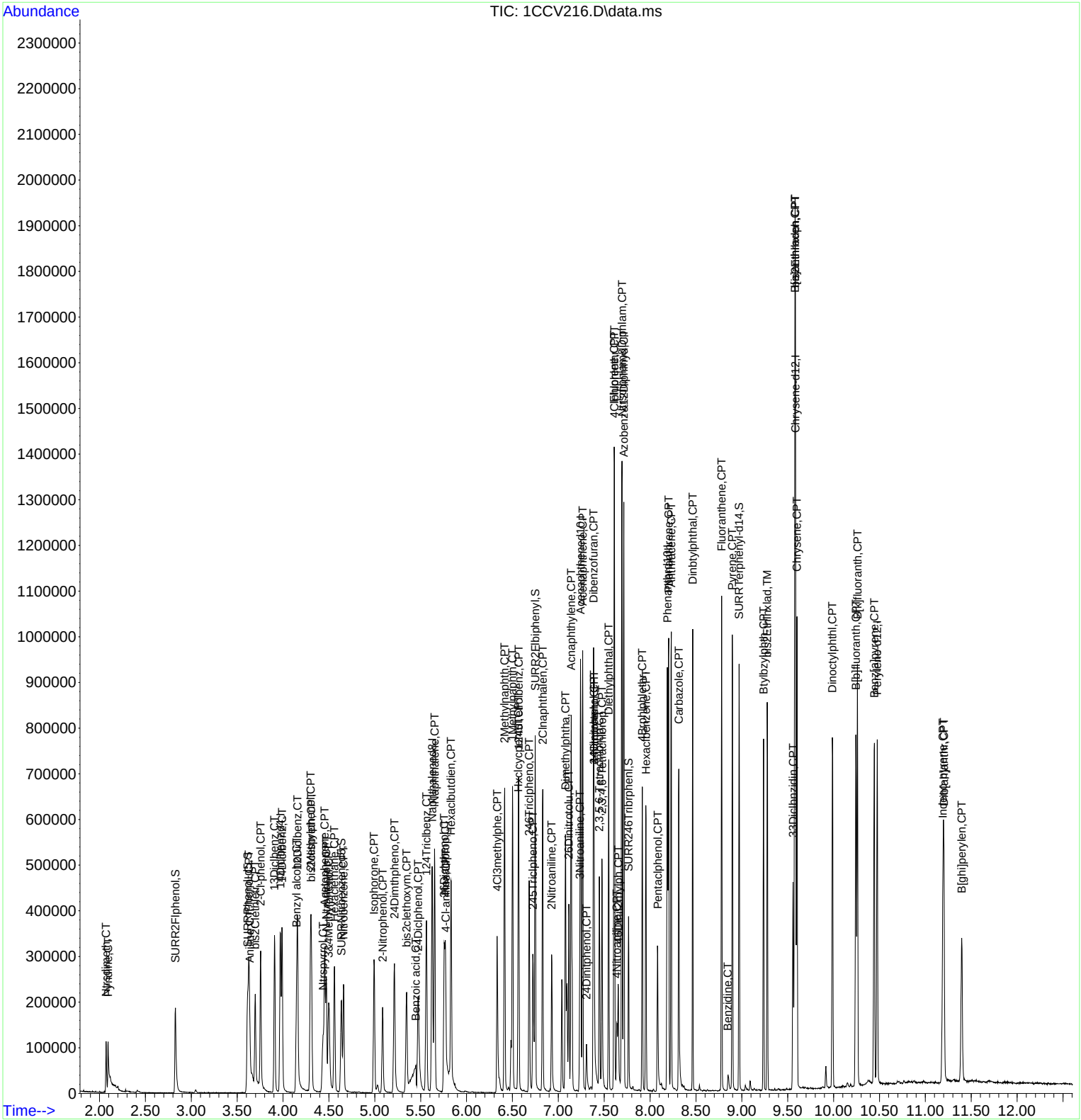
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
41) 1245Tetrclbenz	6.569	216	80937	18.4154 ug/mL	95
42) 246Triclpheno	6.683	196	51568	19.4807 ug/mL	94
43) 245Triclpheno	6.722	196	55017	18.2954 ug/mL	87
45) 2Clnaphthalen	6.830	162	148005	18.0021 ug/mL	98
46) 2Nitroaniline	6.927	65	41601	18.0697 ug/mL	98
47) Acnaphthylene	7.140	152	247387	17.6787 ug/mL	98
48) Dimethylphtha	7.077	163	177477	18.5312 ug/mL	98
49) 26Dinitrotolu	7.114	165	37933	18.2886 ug/mL	88
50) Acenaphthene	7.265	154	145291	18.1455 ug/mL	99
51) 3Nitroaniline	7.234	138	34356	16.3378 ug/mL	90
52) 24Dinitphenol	7.308	184	13851	11.6589 ug/mL	98
53) Dibenzofuran	7.384	168	219686	17.8829 ug/mL	99
54) 24Dinitrotolu	7.390	165	51817	18.2763 ug/mL	88
55) 4-Nitrophenol	7.390	65	33019	17.8696 ug/mL#	15
56) 2,3,5,6-Tetrachlorop	7.447	232	43638	17.8063 ug/mL	97
57) 2,3,4,6-Tetrachlorop	7.475	232	48911	17.9083 ug/mL	91
58) Fluorene	7.609	166	177998	18.2443 ug/mL	97
59) 4Clphlphlethr	7.612	204	88683	18.2378 ug/mL	97
60) Diethylphthal	7.549	149	181779	18.4759 ug/mL	98
61) 4Nitroaniline	7.637	138	33947	16.5284 ug/mL	95
64) 46Dinit2mylph	7.654	198	20436	11.9601 ug/mL	94
65) Ntrsdiphlam&Diphlam	7.694	169	243886	35.5881 ug/mL	99
66) Azobenz&12Diphlhyd	7.714	182	81671	37.2998 ug/mL#	85
67) 4Brphlphlethr	7.916	248	54552	18.0571 ug/mL	95
68) Hexaclbenzene	7.955	284	61410	18.6575 ug/mL	98
69) Pentaclphenol	8.083	266	32265	17.1552 ug/mL	98
70) Phenanthrene	8.203	178	246652	18.6787 ug/mL	99
71) Anthracene	8.231	178	252044	18.6248 ug/mL	99
72) Carbazole	8.314	167	206050	17.9764 ug/mL	99
73) Dinbtylphthal	8.464	149	258291	17.6237 ug/mL	99
74) Fluoranthene	8.780	202	254403	17.8329 ug/mL	97
76) Benzidine	8.848	184	13584	4.2554 ug/mL	93
77) Pyrene	8.896	202	256215	19.2377 ug/mL	99
79) Btylbzylphth	9.237	149	115364	19.7216 ug/mL	98
80) bis2Ethlhxlad	9.277	129	95833	20.2730 ug/mL	100
81) 33Diclbnzidin	9.558	252	73194	17.7800 ug/mL	98
82) B[a]anthracen	9.578	228	246768	18.5672 ug/mL	98
83) Chrysene	9.601	228	223684	18.3948 ug/mL	98
84) bis2Ethlhxlph	9.581	149	163331	19.0525 ug/mL	99
85) Dinoctylphthl	9.987	149	287752	19.3782 ug/mL	98
87) B[b]fluoranth	10.243	252	246799	20.2859 ug/mL	98
88) B[k]fluoranth	10.260	252	221315	19.3669 ug/mL	98
89) Benz[a]pyrene	10.445	252	222263	18.9432 ug/mL	100
90) Indeno-pyrene	11.192	276	184085	13.2127 ug/mL	96
91) Dib[ah]anthr	11.203	278	158439	13.7377 ug/mL	97
92) B[ghi]perylen	11.396	276	134931	11.6488 ug/mL	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

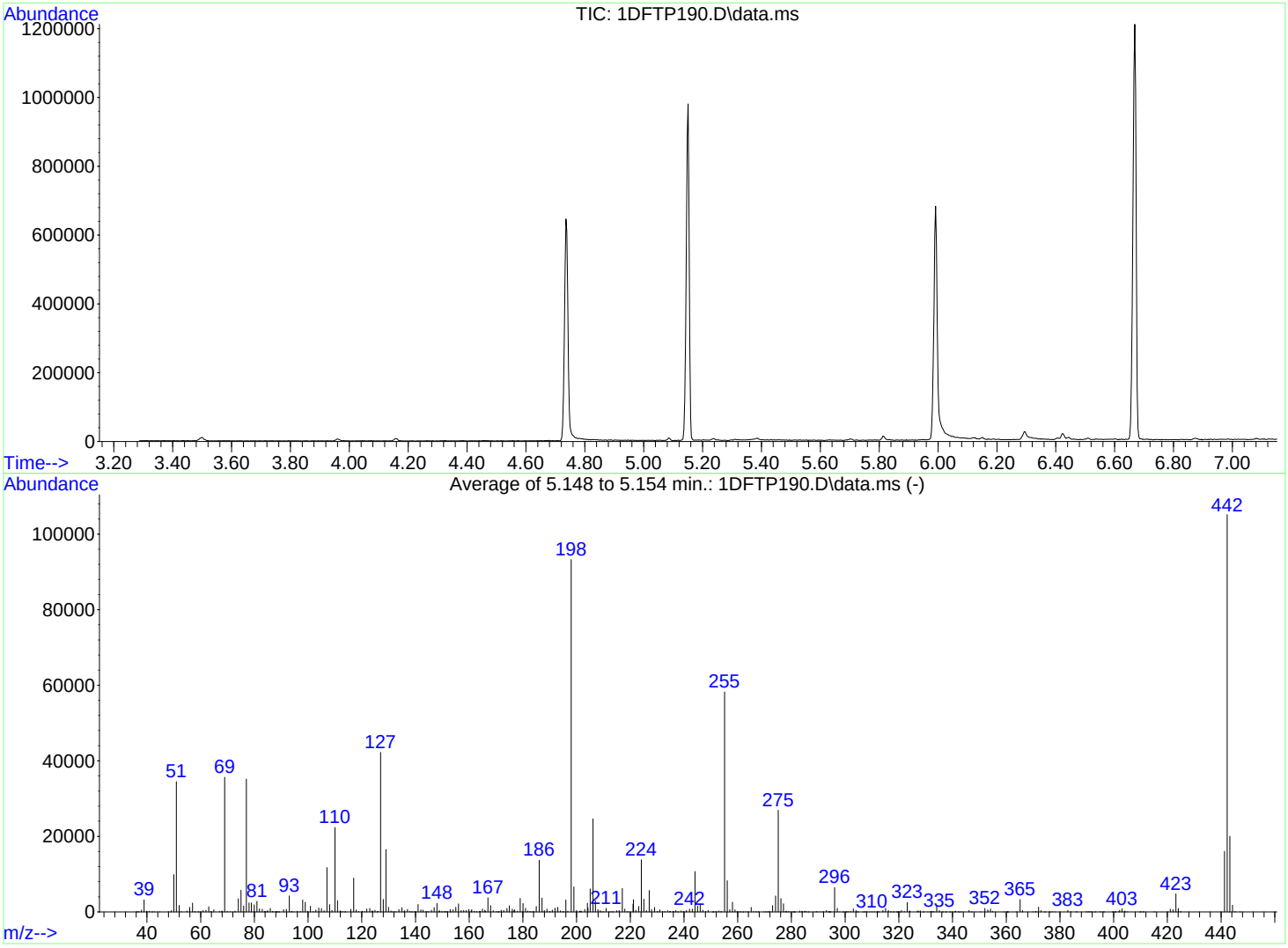
Data File : C:\INSTARCH\Data\1S101916\1CCV216.D Vial: 33
Acq On : 20 Oct 2016 1:44 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 20 16:07:20 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Thu Oct 20 16:04:57 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M



Data File : C:\INSTARCH\Data\1S102016\1DFTP190.D Vial: 1
Acq On : 20 Oct 2016 12:31 Operator: JJY
Sample : DFTPP TUNE SVMS7090 Inst : SVMS1
Misc : SVMS1,25 ug DFTPP Multiplr: 1.00
Integrator: RTE

Method : C:\INSTARCH\Methods\1DFTPP.M
Title : DFTPP TUNE Method
Last Update : Wed Oct 19 15:31:26 2016



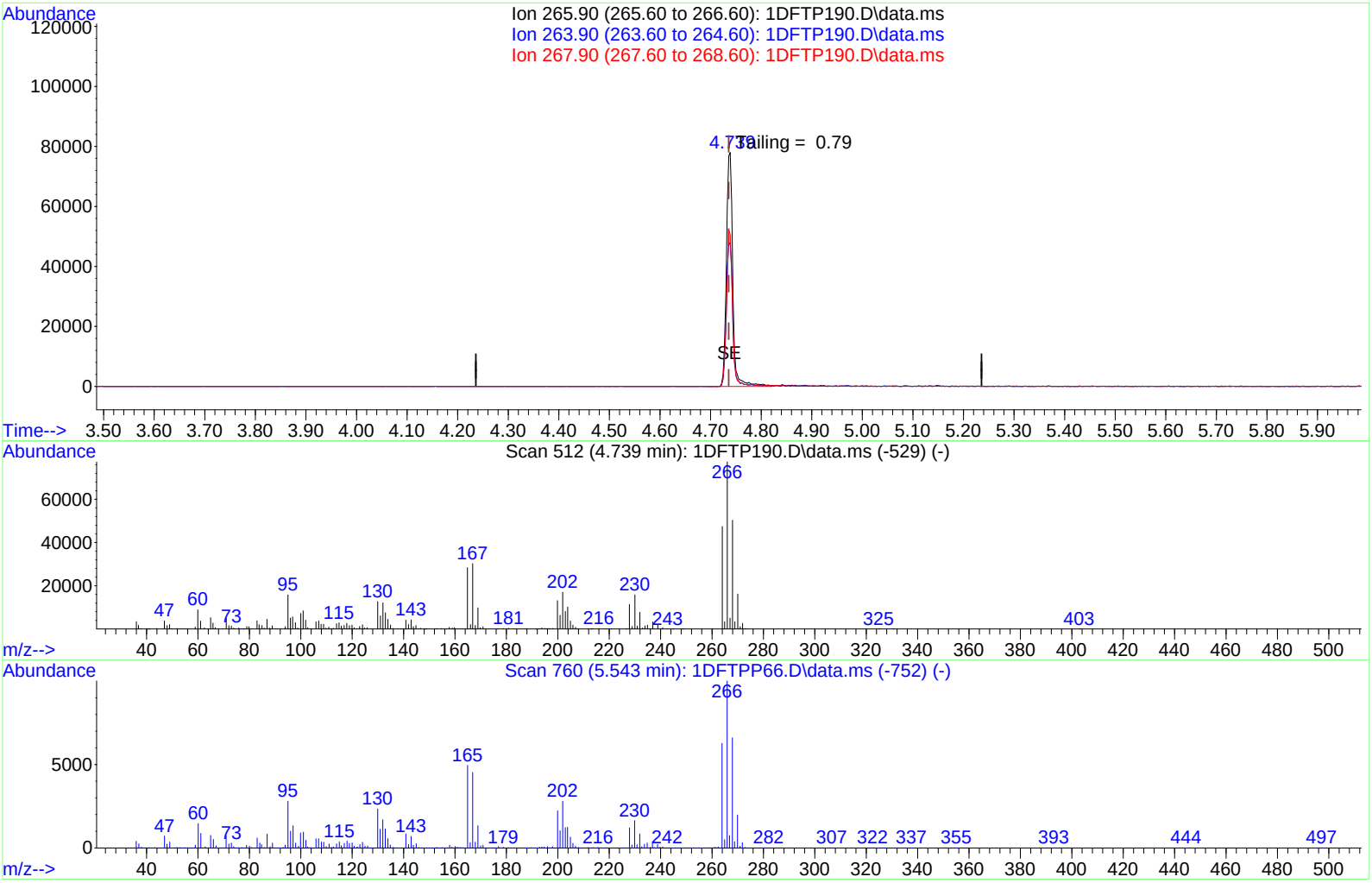
AutoFind: Scans 656, 657, 658; Background Corrected with Scan 647

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	442	10	80	32.8	34480	PASS
68	69	0.00	2	0.7	256	PASS
70	69	0.00	2	0.5	171	PASS
127	442	10	80	40.2	42242	PASS
197	198	0.00	2	0.2	200	PASS
198	442	50	100	88.7	93258	PASS
199	198	5	9	7.1	6632	PASS
275	442	10	60	25.6	26928	PASS
365	198	1	100	3.5	3269	PASS
441	442	0.01	24	15.2	16022	PASS
442	442	50	100	100.0	105165	PASS
443	442	15	24	19.0	20013	PASS

Quantitation Report (Qedit)

Data File : C:\INSTARCH\Data\1S102016\1DFTP190.D Vial: 1
Acq On : 20 Oct 2016 12:31 Operator: JJY
Sample : DFTPP TUNE SVMS7090 Inst : SVMS1
Misc : SVMS1,25 ug DFTPP Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 20 12:42:23 2016

Quant Method : C:\INSTARCH\Methods\1DFTPP.M
Quant Title : DFTPP TUNE Method
QLast Update : Wed Oct 19 15:31:26 2016
Response via : Initial Calibration
DataAcq Meth:1DFTPP.M



TIC: 1DFTP190.D\data.ms

(1) Pentachlorophenol

4.739min (+0.003) 4.49 ng

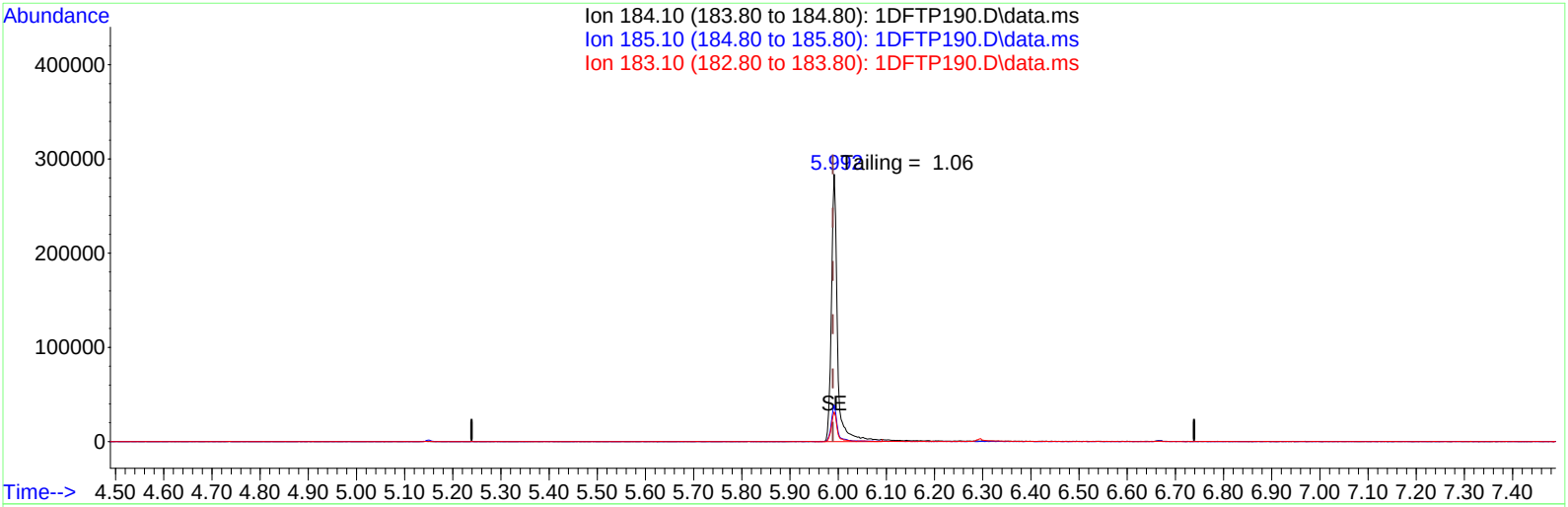
response 66756

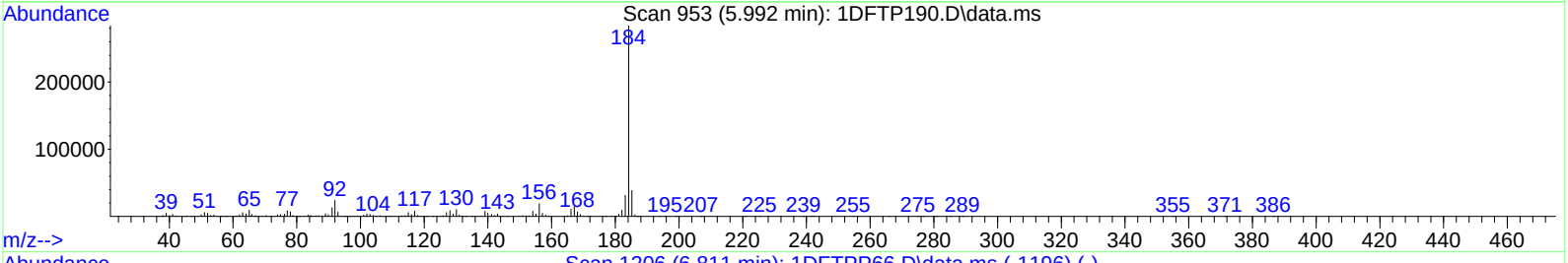
Ion	Exp%	Act%
265.90	100	100
263.90	66.20	61.33
267.90	60.90	64.90
0.00	0.00	0.00

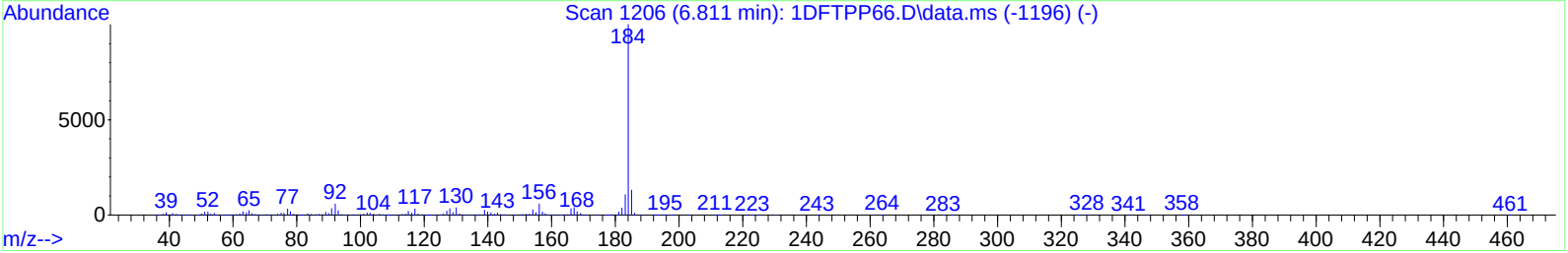
Quantitation Report (Qedit)

Data File : C:\INSTARCH\Data\1S102016\1DFTP190.D Vial: 1
Acq On : 20 Oct 2016 12:31 Operator: JJY
Sample : DFTPP TUNE SVMS7090 Inst : SVMS1
Misc : SVMS1,25 ug DFTPP Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 20 12:42:23 2016

Quant Method : C:\INSTARCH\Methods\1DFTPP.M
Quant Title : DFTPP TUNE Method
QLast Update : Wed Oct 19 15:31:26 2016
Response via : Initial Calibration
DataAcq Meth:1DFTPP.M







TIC: 1DFTP190.D\data.ms

(3) Benzidine

5.992min (+0.003) 2.77 ng

response 243048

Ion	Exp%	Act%
184.10	100	100
185.10	13.80	14.81
183.10	12.20	10.93
0.00	0.00	0.00

Data File	: 1DFTP190.D	Vial Number	: 1
Data File Path	: C:\INSTARCH\Data\1S102016\	Operator	: JJY
Date Acquired	: 10/20/2016 12:31	Instrument Name:	SVMS1
Sample Name	: DFTPP TUNE SVMS7090	Sample Multiplier:	1
Misc Info	: SVMS1,25 ug DFTPP		

Quant Method	: C:\INSTARCH\Methods\1DFTPP.M
Calibration Title	: DFTPP TUNE Method
Last Update	: Wed Oct 19 15:31:26 2016

Compound	R.T.	QIon	Response
1) Pentachlorophenol	4.74	266	66756
2) DFTPP	5.15	198	72575
3) Benzidine	5.99	184	243048
4) DDE	6.15	246	435
5) DDD	6.42	235	3783
6) DDT	6.67	235	188099

DDT %Degradation

$$\frac{DDD + DDE}{DDD + DDE + DDT} \times 100\% = 2.19\ \%$$

Evaluate Continuing Calibration Report

Data File : C:\INSTARCH\Data\1S102016\1CCV218.D Vial: 2
Acq On : 20 Oct 2016 12:46 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:24:37 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	14Diclbenzd4	20.000	20.000	0.0	107	0.00
2	CT	Ntrsdimeth	20.000	21.435	-7.2	121	0.00
3	CT	Pyridine	20.000	22.384	-11.9	125	0.00
4	S	SURR2Flphenol	50.000	57.371	-14.7	126	0.00
5	CT	Aniline	20.000	18.781	6.1	112	0.00
6	CPT	bis2Clethletr	20.000	23.235	-16.2	130	0.00
7	S	SURRPhenol-d5	50.000	54.076	-8.2	126	0.00
8	CPT	Phenol	20.000	20.940	-4.7	122	0.00
9	CPT	2-Cl-phenol	20.000	21.524	-7.6	121	0.00
10	CT	13Diclbenz	20.000	20.990	-4.9	121	0.00
11	CT	14Diclbenz	20.000	19.943	0.3	117	0.00
12	CT	12Diclbenz	20.000	22.286	-11.4	132	0.00
13	CT	Benzyl alcoho	20.000	22.375	-11.9	127	0.00
14	CPT	bis2clispreth	20.000	23.161	-15.8	141	0.00
15	CPT	2Methylphenol	20.000	21.030	-5.2	128	0.00
16	CT	Ntrspyrrol	20.000	23.191	-16.0	135	0.00
17	CPT	Acetophenone	20.000	22.861	-14.3	139	0.00
18	CPT	Hexaclethane	20.000	22.433	-12.2	128	0.00
19	CPT	N-Ntrsdinprop	20.000	22.451	-12.3	138	0.00
20	CPT	3&4Methylphenol	20.000	21.931	-9.7	128	0.00
21	I	Naphthalened8	20.000	20.000	0.0	117	0.00
22	S	SURRNitrbenzened5	100.000	107.677	-7.7	131	0.00
23	CPT	Nitrobenzene	20.000	20.513	-2.6	126	0.00
24	CPT	Isophorone	20.000	20.447	-2.2	128	0.00
25	CPT	2-Nitrophenol	20.000	19.498	2.5	117	0.00
26	CPT	24Dimthpheno	20.000	21.654	-8.3	128	0.00
27	CPT	bis2clethoxym	20.000	20.830	-4.1	126	0.00
28	CPT	24Diclphenol	20.000	21.447	-7.2	127	0.00
29	CT	124Triclbenz	20.000	20.488	-2.4	125	0.00
30	CT	Benzoic acid	20.000	20.144	-0.7	122	0.00
31	CPT	Naphthalene	20.000	20.246	-1.2	125	0.00
32	CPT	4-Cl-aniline	20.000	19.796	1.0	124	0.00
33	CT	26Diclphenol	20.000	21.579	-7.9	132	0.00
34	CT	Hexaclprop	20.000	20.423	-2.1	123	0.00
35	CPT	Hexaclbutdien	20.000	20.382	-1.9	127	0.00
36	CPT	4Cl3methylphe	20.000	21.076	-5.4	125	0.00
37	CPT	2Methylnaphth	20.000	20.890	-4.5	129	0.00
38	CT	1Methylnaphth	20.000	20.660	-3.3	131	0.00
39	I	Acenaphthened10	20.000	20.000	0.0	121	0.00
40	CPT	Hxclcycpentdi	20.000	19.014	4.9	122	0.00
41	CPT	1245Tetrclbenz	20.000	20.334	-1.7	132	0.00
42	CPT	246Triclpheno	20.000	21.374	-6.9	128	0.00
43	CPT	245Triclpheno	20.000	20.020	-0.1	124	0.00
44	S	SURR2Flbiphenyl	100.000	100.277	-0.3	131	0.00
45	CPT	2Clnaphthalen	20.000	19.486	2.6	126	0.00
46	CPT	2Nitroaniline	20.000	20.798	-4.0	128	0.00
47	CPT	Acnaphthylene	20.000	19.223	3.9	123	0.00
48	CPT	Dimethylphtha	20.000	20.149	-0.7	129	0.00
49	CPT	26Dinitrotolu	20.000	19.824	0.9	124	0.00
50	CPT	Acenaphthene	20.000	19.302	3.5	127	0.00
51	CPT	3Nitroaniline	20.000	19.741	1.3	123	0.00

Evaluate Continuing Calibration Report

Data File : C:\INSTARCH\Data\1S102016\1CCV218.D Vial: 2
Acq On : 20 Oct 2016 12:46 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:24:37 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
52	CPT	24Dinitphenol	20.000	20.379	-1.9	133	0.00
53	CPT	Dibenzofuran	20.000	19.454	2.7	126	0.00
54	CPT	24Dinitrotolu	20.000	19.604	2.0	123	0.00
55	CPT	4-Nitrophenol	20.000	17.828	10.9	114	0.00
56	CT	2,3,5,6-Tetrachlorop	20.000	19.517	2.4	122	0.00
57	CPT	2,3,4,6-Tetrachlorop	20.000	19.358	3.2	127	0.00
58	CPT	Fluorene	20.000	19.575	2.1	127	0.00
59	CPT	4Clphlphlethr	20.000	19.490	2.6	125	0.00
60	CPT	Diethylphthal	20.000	19.797	1.0	129	0.00
61	CPT	4Nitroaniline	20.000	19.335	3.3	122	0.00
62	S	SURR246Tribrphenl	50.000	50.898	-1.8	132	0.00
63	I	Phenanthrd10	20.000	20.000	0.0	123	0.00
64	CPT	46Dinit2mylph	20.000	21.225	-6.1	132	0.00
65	CPT	Ntrsdiphlam&Diphlam	40.000	39.816	0.5	127	0.00
66	CT	Azobenz&12Diphlhyd	40.000	40.559	-1.4	126	0.00
67	CPT	4Brphlphlethr	20.000	20.051	-0.3	124	0.00
68	CPT	Hexaclbenzene	20.000	20.261	-1.3	128	0.00
69	CPT	Pentaclphenol	20.000	19.941	0.3	128	0.00
70	CPT	Phenanthrene	20.000	20.157	-0.8	132	0.00
71	CPT	Anthracene	20.000	20.097	-0.5	131	0.00
72	CPT	Carbazole	20.000	20.054	-0.3	123	0.00
73	CPT	Dinbtylphthal	20.000	19.249	3.8	121	0.00
74	CPT	Fluoranthene	20.000	18.246	8.8	111	0.00
75	I	Chrysene-d12	20.000	20.000	0.0	109	0.00
76	CT	Benzidine	20.000	8.836	55.8#	47	0.00
77	CPT	Pyrene	20.000	19.347	3.3	110	0.00
78	S	SURRTerphenyl-d14	100.000	99.325	0.7	116	0.00
79	CPT	Btylbzylphth	20.000	21.947	-9.7	127	0.00
80	TM	bis2Ethlhxlad	20.000	21.575	-7.9	123	0.00
81	CPT	33Diclbnzidin	20.000	20.425	-2.1	131	0.00
82	CPT	B[a]anthracen	20.000	20.067	-0.3	117	0.00
83	CPT	Chrysene	20.000	19.608	2.0	112	0.00
84	CPT	bis2Ethlhxlph	20.000	21.040	-5.2	122	0.00
85	CPT	Dinoctylphthl	20.000	21.156	-5.8	124	0.00
86	I	Perylene-d12	20.000	20.000	0.0	104	0.00
87	CPT	B[b]fluoranth	20.000	21.358	-6.8	115	0.00
88	CPT	B[k]fluoranth	20.000	19.820	0.9	112	0.00
89	CPT	Benz[a]pyrene	20.000	20.633	-3.2	112	0.00
90	CPT	Indeno-pyrene	20.000	19.749	1.3	112	0.00
91	CPT	Dib[ah]anthr	20.000	19.766	1.2	112	0.00
92	CPT	B[ghi]perylen	20.000	19.831	0.8	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1

Evaluate Continuing Calibration Report

Data File : C:\INSTARCH\Data\1S102016\1CCV218.D Vial: 2
Acq On : 20 Oct 2016 12:46 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:24:37 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	14Diclbenzd4	1.000	1.000	0.0	107	0.00
2	CT	Ntrsdimeth	0.700	0.750	-7.1	121	0.00
3	CT	Pyridine	1.241	1.389	-11.9	125	0.00
4	S	SURR2Flphenol	0.439	0.504	-14.8	126	0.00
5	CT	Aniline	1.838	1.726	6.1	112	0.00
6	CPT	bis2Clethletr	1.137	1.320	-16.1	130	0.00
7	S	SURRPhenol-d5	0.560	0.606	-8.2	126	0.00
8	CPT	Phenol	1.638	1.715	-4.7	122	0.00
9	CPT	2-Cl-phenol	1.367	1.471	-7.6	121	0.00
10	CT	13Diclbenz	1.566	1.643	-4.9	121	0.00
11	CT	14Diclbenz	1.610	1.605	0.3	117	0.00
12	CT	12Diclbenz	1.535	1.711	-11.5	132	0.00
13	CT	Benzyl alcoho	0.701	0.858	-22.4#	127	0.00
14	CPT	bis2clispreth	1.782	2.063	-15.8	141	0.00
15	CPT	2Methylphenol	1.034	1.087	-5.1	128	0.00
16	CT	Ntrspyrrol	0.570	0.661	-16.0	135	0.00
17	CPT	Acetophenone	1.777	2.031	-14.3	139	0.00
18	CPT	Hexaclethane	0.617	0.692	-12.2	128	0.00
19	CPT	N-Ntrsdinprop	0.923	1.036	-12.2	138	0.00
20	CPT	3&4Methylphenol	1.358	1.489	-9.6	128	0.00
21	I	Naphthalened8	1.000	1.000	0.0	117	0.00
22	S	SURRNitrbenzened5	0.063	0.068	-7.9	131	0.00
23	CPT	Nitrobenzene	0.335	0.344	-2.7	126	0.00
24	CPT	Isophorone	0.591	0.604	-2.2	128	0.00
25	CPT	2-Nitrophenol	0.179	0.175	2.2	117	0.00
26	CPT	24Dimthpheno	0.263	0.284	-8.0	128	0.00
27	CPT	bis2clethoxym	0.377	0.393	-4.2	126	0.00
28	CPT	24Diclphenol	0.296	0.317	-7.1	127	0.00
29	CT	124Triclbenz	0.358	0.367	-2.5	125	0.00
30	CT	Benzoic acid	0.181	0.195	-7.7	122	0.00
31	CPT	Naphthalene	1.064	1.078	-1.3	125	0.00
32	CPT	4-Cl-aniline	0.410	0.406	1.0	124	0.00
33	CT	26Diclphenol	0.274	0.296	-8.0	132	0.00
34	CT	Hexaclprop	0.264	0.270	-2.3	123	0.00
35	CPT	Hexaclbutdien	0.235	0.240	-2.1	127	0.00
36	CPT	4Cl3methylphe	0.295	0.311	-5.4	125	0.00
37	CPT	2Methylnaphth	0.707	0.738	-4.4	129	0.00
38	CT	1Methylnaphth	0.609	0.629	-3.3	131	0.00
39	I	Acenaphthened10	1.000	1.000	0.0	121	0.00
40	CPT	Hxclcycpentdi	0.375	0.385	-2.7	122	0.00
41	CPT	1245Tetrclbenz	0.652	0.663	-1.7	132	0.00
42	CPT	246Triclpheno	0.393	0.420	-6.9	128	0.00
43	CPT	245Triclpheno	0.446	0.447	-0.2	124	0.00
44	S	SURR2Flbiphenyl	0.277	0.278	-0.4	131	0.00
45	CPT	2Clnaphthalen	1.220	1.189	2.5	126	0.00
46	CPT	2Nitroaniline	0.342	0.355	-3.8	128	0.00
47	CPT	Acnaphthylene	2.077	1.996	3.9	123	0.00
48	CPT	Dimethylphtha	1.422	1.432	-0.7	129	0.00
49	CPT	26Dinitrotolu	0.308	0.305	1.0	124	0.00
50	CPT	Acenaphthene	1.189	1.147	3.5	127	0.00
51	CPT	3Nitroaniline	0.312	0.308	1.3	123	0.00

Evaluate Continuing Calibration Report

Data File : C:\INSTARCH\Data\1S102016\1CCV218.D Vial: 2
Acq On : 20 Oct 2016 12:46 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:24:37 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
52	CPT	24Dinitphenol	0.185	0.202	-9.2	133	0.00
53	CPT	Dibenzofuran	1.824	1.774	2.7	126	0.00
54	CPT	24Dinitrotolu	0.421	0.413	1.9	123	0.00
55	CPT	4-Nitrophenol	0.274	0.244	10.9	114	0.00
56	CT	2,3,5,6-Tetrachlorop	0.364	0.355	2.5	122	0.00
57	CPT	2,3,4,6-Tetrachlorop	0.405	0.392	3.2	127	0.00
58	CPT	Fluorene	1.448	1.417	2.1	127	0.00
59	CPT	4Clphlphlethr	0.722	0.703	2.6	125	0.00
60	CPT	Diethylphthal	1.460	1.446	1.0	129	0.00
61	CPT	4Nitroaniline	0.305	0.295	3.3	122	0.00
62	S	SURR246Tribrphenl	0.091	0.093	-2.2	132	0.00
63	I	Phenanthrd10	1.000	1.000	0.0	123	0.00
64	CPT	46Dinit2mylph	0.141	0.150	-6.4	132	0.00
65	CPT	Ntrsdiphlam&Diphlam	0.567	0.564	0.5	127	0.00
66	CT	Azobenz&12Diphlhyd	0.181	0.184	-1.7	126	0.00
67	CPT	4Brphlphlethr	0.250	0.250	0.0	124	0.00
68	CPT	Hexaclbenzene	0.272	0.276	-1.5	128	0.00
69	CPT	Pentaclphenol	0.156	0.155	0.6	128	0.00
70	CPT	Phenanthrene	1.092	1.101	-0.8	132	0.00
71	CPT	Anthracene	1.119	1.125	-0.5	131	0.00
72	CPT	Carbazole	0.948	0.951	-0.3	123	0.00
73	CPT	Dinbtylphthal	1.212	1.167	3.7	121	0.00
74	CPT	Fluoranthene	1.180	1.076	8.8	111	0.00
75	I	Chrysene-d12	1.000	1.000	0.0	109	0.00
76	CT	Benzidine	0.312	0.141	54.8#	47#	0.00
77	CPT	Pyrene	1.238	1.198	3.2	110	0.00
78	S	SURRTerphenyl-d14	0.160	0.159	0.6	116	0.00
79	CPT	Btylbzylphth	0.544	0.597	-9.7	127	0.00
80	TM	bis2Ethlhxlad	0.440	0.474	-7.7	123	0.00
81	CPT	33Diclbnzidin	0.383	0.391	-2.1	131	0.00
82	CPT	B[a]anthracen	1.236	1.240	-0.3	117	0.00
83	CPT	Chrysene	1.131	1.108	2.0	112	0.00
84	CPT	bis2Ethlhxlph	0.797	0.839	-5.3	122	0.00
85	CPT	Dinoctylphthl	1.381	1.460	-5.7	124	0.00
86	I	Perylene-d12	1.000	1.000	0.0	104	0.00
87	CPT	B[b]fluoranth	1.240	1.324	-6.8	115	0.00
88	CPT	B[k]fluoranth	1.164	1.154	0.9	112	0.00
89	CPT	Benz[a]pyrene	1.196	1.233	-3.1	112	0.00
90	CPT	Indeno-pyrene	1.420	1.402	1.3	112	0.00
91	CPT	Dib[ah]anthr	1.175	1.161	1.2	112	0.00
92	CPT	B[ghi]perylen	1.180	1.170	0.8	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 2

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\1CCV218.D Vial: 2
Acq On : 20 Oct 2016 12:46 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:24:37 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.969	152	49852	20.00	ug/mL	0.00
21) Naphthalened8	5.623	136	219613	20.00	ug/mL	0.00
39) Acenaphthened10	7.239	164	124769	20.00	ug/mL	0.00
63) Phenanthrd10	8.186	188	221115	20.00	ug/mL	0.00
75) Chrysene-d12	9.584	240	199437	20.00	ug/mL	0.00
86) Perylene-d12	10.476	264	201122	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.821	112	62842	57.37	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 57.37%			
7) SURRPhenol-d5	3.608	99	75480	54.08	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 54.08%			
22) SURRNitrbenzened5	4.631	82	74745	107.68	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 107.68%			
44) SURR2Flbiphenyl	6.745	172	173139	100.28	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 100.28%			
62) SURR246Tribrphenl	7.765	330	28948	50.90	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 50.90%			
78) SURRTerphenyl-d14	8.970	244	158699	99.32	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 99.32%			
Target Compounds						Qvalue
2) Ntrsdimeth	2.071	74	37397	21.4354	ug/mL	94
3) Pyridine	2.091	79	69258	22.3845	ug/mL	97
5) Aniline	3.628	93	86047	18.7807	ug/mL	90
6) bis2Clethletr	3.693	93	65823	23.2349	ug/mL	98
8) Phenol	3.622	94	85507	20.9405	ug/mL	78
9) 2-Cl-phenol	3.753	128	73355	21.5237	ug/mL	97
10) 13Diclbenz	3.904	146	81911	20.9903	ug/mL	97
11) 14Diclbenz	3.986	146	80033	19.9432	ug/mL	92
12) 12Diclbenz	4.154	146	85280	22.2855	ug/mL	99
13) Benzyl alcoho	4.142	108	42770	22.3745	ug/mL	88
14) bis2clispreth	4.303	45	102851	23.1609	ug/mL	89
15) 2Methylphenol	4.293	107	54181	21.0304	ug/mL	96
16) Ntrspyrrol	4.429	100	32962	23.1909	ug/mL	97
17) Acetophenone	4.449	105	101262	22.8605	ug/mL	98
18) Hexaclethane	4.557	117	34495	22.4333	ug/mL	99
19) N-Ntrsdinprop	4.469	70	51654	22.4507	ug/mL	97
20) 3&4Methylphenol	4.492	107	74231	21.9314	ug/mL	94
23) Nitrobenzene	4.657	77	75487	20.5133	ug/mL	99
24) Isophorone	4.989	82	132680	20.4470	ug/mL	98
25) 2-Nitrophenol	5.083	139	38424	19.4983	ug/mL	99
26) 24Dimthpheno	5.208	122	62440	21.6535	ug/mL	96
27) bis2clethoxym	5.341	93	86256	20.8304	ug/mL	97
28) 24Diclphenol	5.466	162	69637	21.4467	ug/mL	94
29) 124Triclbenz	5.557	180	80508	20.4877	ug/mL	98
30) Benzoic acid	5.444	122	42847	20.1438	ug/mL	90
31) Naphthalene	5.648	128	236647	20.2458	ug/mL	98
32) 4-Cl-aniline	5.753	127	89147	19.7959	ug/mL	98
33) 26Diclphenol	5.753	162	64965	21.5789	ug/mL	94
34) Hexaclprop	5.768	213	59187	20.4229	ug/mL	95
35) Hexaclbutdien	5.830	225	52656	20.3824	ug/mL	96
36) 4Cl3methylphe	6.327	107	68369	21.0758	ug/mL	99
37) 2Methylnaphth	6.413	142	162065	20.8903	ug/mL	100
38) 1Methylnaphth	6.498	141	138102	20.6605	ug/mL	98
40) Hxclcycpentdi	6.560	237	47981	19.0136	ug/mL	99

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\1CCV218.D Vial: 2
Acq On : 20 Oct 2016 12:46 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:24:37 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

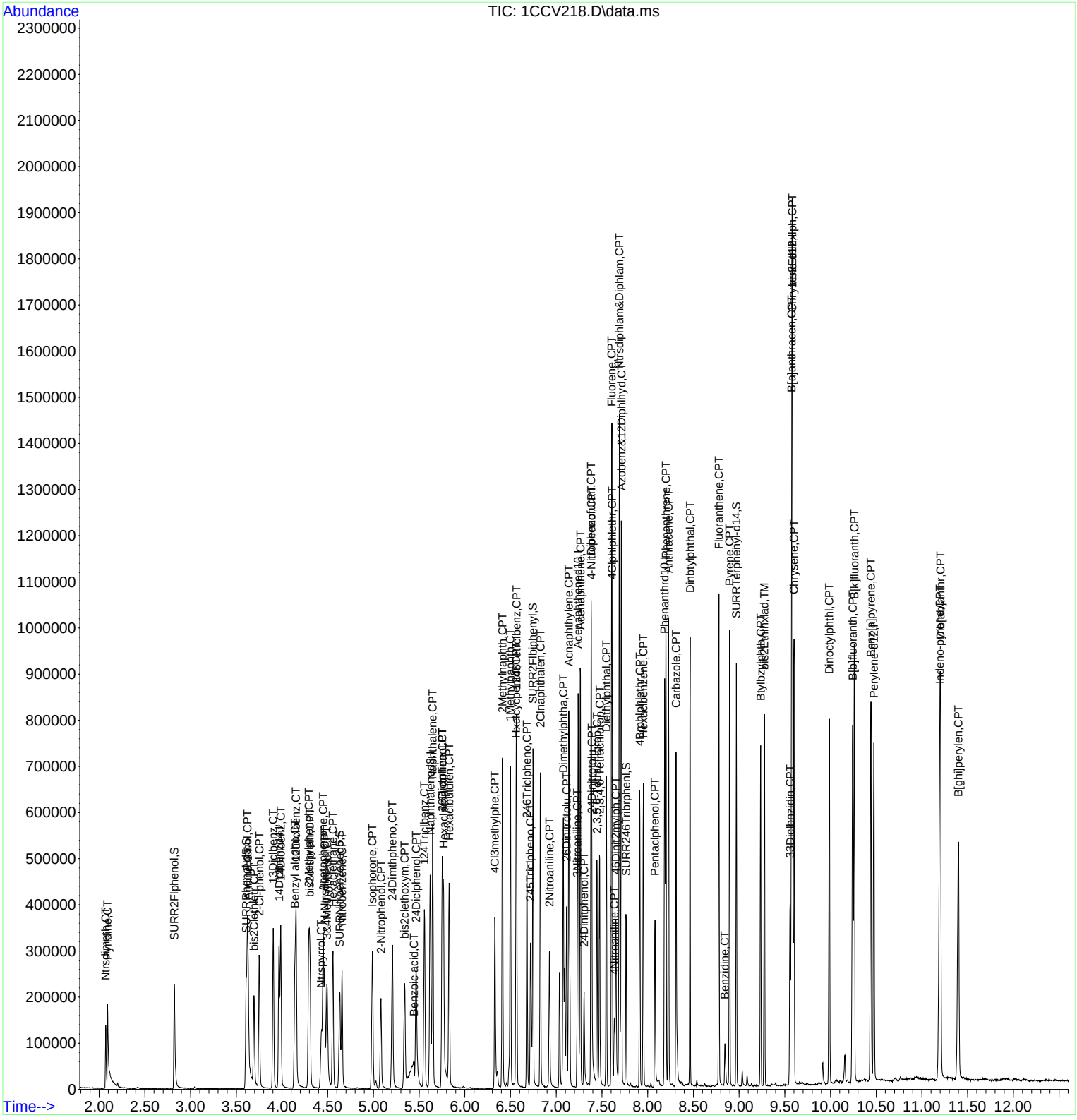
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
41) 1245Tetrclbenz	6.566	216	82758	20.3337 ug/mL	95
42) 246Triclpheno	6.680	196	52395	21.3741 ug/mL	97
43) 245Triclpheno	6.717	196	55750	20.0200 ug/mL	90
45) 2Clnaphthalen	6.827	162	148355	19.4860 ug/mL	97
46) 2Nitroaniline	6.927	65	44341	20.7982 ug/mL	96
47) Acnaphthylene	7.137	152	249095	19.2226 ug/mL	98
48) Dimethylphtha	7.078	163	178700	20.1493 ug/mL	100
49) 26Dinitrotolu	7.114	165	38077	19.8243 ug/mL	84
50) Acenaphthene	7.265	154	143120	19.3020 ug/mL	97
51) 3Nitroaniline	7.231	138	38441	19.7405 ug/mL	95
52) 24Dinitphenol	7.305	184	25146	20.3792 ug/mL	96
53) Dibenzofuran	7.382	168	221310	19.4541 ug/mL	95
54) 24Dinitrotolu	7.390	165	51471	19.6043 ug/mL	86
55) 4-Nitrophenol	7.384	65	30506	17.8283 ug/mL#	1
56) 2,3,5,6-Tetrachlorop	7.447	232	44293	19.5172 ug/mL	97
57) 2,3,4,6-Tetrachlorop	7.475	232	48961	19.3585 ug/mL	96
58) Fluorene	7.606	166	176856	19.5752 ug/mL	99
59) 4Clphlphlethr	7.612	204	87763	19.4902 ug/mL	99
60) Diethylphthal	7.549	149	180370	19.7970 ug/mL	98
61) 4Nitroaniline	7.637	138	36774	19.3350 ug/mL	97
64) 46Dinit2mylph	7.652	198	33160	21.2247 ug/mL	97
65) Ntrsdiphlam&Diphlam	7.691	169	249492	39.8163 ug/mL	99
66) Azobenz&12Diphlhyd	7.714	182	81202	40.5595 ug/mL	91
67) 4Brphlphlethr	7.913	248	55388	20.0511 ug/mL	95
68) Hexaclbenzene	7.953	284	60976	20.2609 ug/mL	95
69) Pentaclphenol	8.081	266	34292	19.9408 ug/mL	96
70) Phenanthrene	8.200	178	243378	20.1572 ug/mL	98
71) Anthracene	8.228	178	248669	20.0966 ug/mL	98
72) Carbazole	8.311	167	210179	20.0542 ug/mL	99
73) Dinbtylphthal	8.464	149	257948	19.2489 ug/mL	98
74) Fluoranthene	8.780	202	238005	18.2462 ug/mL	99
76) Benzidine	8.845	184	28162	8.8357 ug/mL	95
77) Pyrene	8.896	202	238899	19.3467 ug/mL	98
79) Btylbzylphth	9.237	149	119034	21.9475 ug/mL	99
80) bis2Ethlhxlad	9.277	129	94558	21.5746 ug/mL	98
81) 33Diclbnzidin	9.558	252	77957	20.4246 ug/mL	97
82) B[a]anthracen	9.575	228	247272	20.0667 ug/mL	99
83) Chrysene	9.601	228	221072	19.6082 ug/mL	99
84) bis2Ethlhxlph	9.581	149	167232	21.0400 ug/mL	99
85) Dinoctylphthl	9.987	149	291267	21.1558 ug/mL	99
87) B[b]fluoranth	10.243	252	266247	21.3580 ug/mL	98
88) B[k]fluoranth	10.260	252	232078	19.8202 ug/mL	99
89) Benz[a]pyrene	10.442	252	248057	20.6330 ug/mL	98
90) Indeno-pyrene	11.195	276	281939	19.7493 ug/mL	99
91) Dib[ah]anthr	11.203	278	233587	19.7663 ug/mL	97
92) B[ghi]perylen	11.399	276	235372	19.8313 ug/mL	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\1CCV218.D Vial: 2
Acq On : 20 Oct 2016 12:46 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:24:37 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M



Ending CCV %Recovery Report

Data File Name	1CCV219.D
Data File Path	C:\INSTARCH\Data\1S102016\
Operator	JJY
Date Acquired	10/20/2016 17:58
Acq. Method File	1S090816.M
Sample Name	CCV20ug/ml SVMS7217
Misc Info	500uL+5ul IS S3516D
Vial Number	18
Instrument Name	SVMS1
Sample Multiplier	1

#	Name	Ret Time	Amount	Units	Response	50-150 %REC
1)	14Diclbenzd4	3.97	20.00	ug/mL	61699	ISTD
2)	Ntrsdimeth	2.07	15.39	ug/mL	33227	77
3)	Pyridine	2.09	16.85	ug/mL	64509	84
4)	SURR2Flphenol	2.82	48.83	%REC	66193	98
5)	Aniline	3.63	17.10	ug/mL	96990	86
6)	bis2Clethletr	3.69	19.26	ug/mL	67544	96
7)	SURRPhenol-d5	3.61	48.04	%REC	82991	96
8)	Phenol	3.63	19.42	ug/mL	98138	97
9)	2-Cl-phenol	3.75	18.60	ug/mL	78458	93
10)	13Diclbenz	3.91	18.18	ug/mL	87783	91
11)	14Diclbenz	3.99	18.16	ug/mL	90210	91
12)	12Diclbenz	4.15	18.06	ug/mL	85545	90
13)	Benzyl alcoho	4.14	19.60	ug/mL	45765	98
14)	bis2clispreth	4.30	19.64	ug/mL	107919	98
15)	2Methylphenol	4.30	18.51	ug/mL	59016	93
16)	Ntrspyrrol	4.43	19.39	ug/mL	34111	97
17)	Acetophenone	4.45	19.42	ug/mL	106440	97
18)	Hexaclethane	4.56	17.51	ug/mL	33321	88
19)	N-Ntrsdinprop	4.47	18.37	ug/mL	52297	92
20)	3&4Methylphenol	4.49	18.52	ug/mL	77562	93
21)	Naphthalened8	5.62	20.00	ug/mL	249284	ISTD
22)	SURRNitrbenzened5	4.63	99.67	%REC	78538	100
23)	Nitrobenzene	4.66	18.25	ug/mL	76245	91
24)	Isophorone	4.99	18.92	ug/mL	139394	95
25)	2-Nitrophenol	5.09	18.34	ug/mL	41035	92
26)	24Dimthpheno	5.21	19.28	ug/mL	63116	96
27)	bis2clethoxym	5.34	19.44	ug/mL	91392	97
28)	24Diclphenol	5.47	19.34	ug/mL	71265	97
29)	124Triclbenz	5.56	18.66	ug/mL	83230	93
30)	Benzoic acid	5.45	19.35	ug/mL	46493	97
31)	Naphthalene	5.65	18.60	ug/mL	246816	93
32)	4-Cl-aniline	5.75	16.82	ug/mL	85980	84
33)	26Diclphenol	5.75	19.11	ug/mL	65295	96
34)	Hexaclprop	5.76	12.10	ug/mL	39813	61
35)	Hexaclbutdien	5.83	17.63	ug/mL	51710	88
36)	4Cl3methylphe	6.33	17.69	ug/mL	65127	88
37)	2Methylnaphth	6.41	16.73	ug/mL	147312	84

38)	1Methylnaphth	6.50	17.13	ug/mL	129995	86
39)	Acenaphthened10	7.24	20.00	ug/mL	146382	ISTD
40)	Hxclcycpentdi	6.56	7.30	ug/mL	20586	36 #
41)	1245Tetrclbenz	6.56	16.41	ug/mL	78336	82
42)	246Triclpheno	6.68	19.17	ug/mL	55142	96
43)	245Triclpheno	6.72	18.09	ug/mL	59113	90
44)	SURR2Flbiphenyl	6.74	92.87	%REC	188134	93
45)	2Clnaphthalen	6.82	17.65	ug/mL	157648	88
46)	2Nitroaniline	6.92	17.81	ug/mL	44539	89
47)	Acnaphthylene	7.13	17.51	ug/mL	266249	88
48)	Dimethylphtha	7.07	18.45	ug/mL	191936	92
49)	26Dinitrotolu	7.11	18.61	ug/mL	41946	93
50)	Acenaphthene	7.26	17.74	ug/mL	154299	89
51)	3Nitroaniline	7.23	16.17	ug/mL	36937	81
52)	24Dinitphenol	7.30	14.32	ug/mL	19458	72
53)	Dibenzofuran	7.38	17.92	ug/mL	239137	90
54)	24Dinitrotolu	7.38	18.22	ug/mL	56113	91
55)	4-Nitrophenol	7.38	18.60	ug/mL	37330	93
56)	2,3,5,6-Tetrachlorop	7.44	17.64	ug/mL	46980	88
57)	2,3,4,6-Tetrachlorop	7.47	17.82	ug/mL	52875	89
58)	Fluorene	7.60	18.28	ug/mL	193726	91
59)	4Clphlphlethr	7.60	17.68	ug/mL	93381	88
60)	Diethylphthal	7.54	18.26	ug/mL	195157	91
61)	4Nitroaniline	7.63	16.24	ug/mL	36238	81
62)	SURR246Tribrphenl	7.76	47.62	%REC	31778	95
63)	Phenanthrd10	8.18	20.00	ug/mL	258814	ISTD
64)	46Dinit2mylph	7.65	14.92	ug/mL	27293	75
65)	Ntrsdiphlam&Diphlam	7.69	35.81	ug/mL	262633	90
66)	Azobenz&12Diphlhyd	7.71	37.14	ug/mL	87039	93
67)	4Brphlphlethr	7.91	18.74	ug/mL	60596	94
68)	Hexaclbenzene	7.95	18.41	ug/mL	64854	92
69)	Pentaclphenol	8.07	18.39	ug/mL	37022	92
70)	Phenanthrene	8.19	18.94	ug/mL	267621	95
71)	Anthracene	8.22	19.28	ug/mL	279291	96
72)	Carbazole	8.31	18.62	ug/mL	228469	93
73)	Dinbtylphthal	8.46	18.20	ug/mL	285424	91
74)	Fluoranthene	8.78	18.47	ug/mL	281982	92
75)	Chrysene-d12	9.59	20.00	ug/mL	236092	ISTD
76)	Benzidine	8.84	12.38	ug/mL	47773	62
77)	Pyrene	8.90	19.73	ug/mL	288434	99
78)	SURRTerphenyl-d14	8.97	101.80	%REC	192544	102
79)	Btylbzylphth	9.24	20.03	ug/mL	128611	100
80)	bis2Ethlhxlad	9.28	20.59	ug/mL	106822	103
81)	33Diclbnzidin	9.56	20.21	ug/mL	91317	101
82)	B[a]anthracen	9.58	18.50	ug/mL	269906	93
83)	Chrysene	9.61	18.42	ug/mL	245894	92
84)	bis2Ethlhxlph	9.58	19.08	ug/mL	179523	95
85)	Dinoctylphthl	9.99	19.88	ug/mL	323936	99
86)	Perylene-d12	10.48	20.00	ug/mL	218846	ISTD
87)	B[b]fluoranth	10.25	19.93	ug/mL	270354	100

88)	B[k]fluoranth	10.27	19.72	ug/mL	251266	99
89)	Benz[a]pyrene	10.45	18.75	ug/mL	245330	94
90)	Indeno-pyrene	11.20	13.56	ug/mL	210616	68
91)	Dib[ah]anthr	11.21	13.89	ug/mL	178574	69
92)	B[ghi]perylen	11.41	12.11	ug/mL	156385	61

(#) = recovery out of range Average Percent Recovery = 90

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\1CCV219.D Vial: 18
Acq On : 20 Oct 2016 17:58 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:29:00 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.969	152	61699	20.00	ug/mL	0.00
21) Naphthalened8	5.620	136	249284	20.00	ug/mL	0.00
39) Acenaphthened10	7.237	164	146382	20.00	ug/mL	0.00
63) Phenanthrd10	8.180	188	258814	20.00	ug/mL	0.00
75) Chrysene-d12	9.589	240	236092	20.00	ug/mL	0.00
86) Perylene-d12	10.482	264	218846	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.824	112	66193	48.83	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 48.83%			
7) SURRPhenol-d5	3.611	99	82991	48.04	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 48.04%			
22) SURRNitrbenzened5	4.631	82	78538	99.67	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 99.67%			
44) SURR2Flbiphenyl	6.742	172	188134	92.87	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 92.87%			
62) SURR246Tribrphenl	7.760	330	31778	47.62	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 47.62%			
78) SURRTerphenyl-d14	8.973	244	192544	101.80	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 101.80%			
Target Compounds						Qvalue
2) Ntrsdimeth	2.074	74	33227	15.3883	ug/mL	95
3) Pyridine	2.091	79	64509	16.8462	ug/mL	93
5) Aniline	3.631	93	96990	17.1043	ug/mL	92
6) bis2Clethletr	3.693	93	67544	19.2643	ug/mL	98
8) Phenol	3.625	94	98138	19.4190	ug/mL	60
9) 2-Cl-phenol	3.753	128	78458	18.6007	ug/mL	96
10) 13Diclbenz	3.907	146	87783	18.1757	ug/mL	99
11) 14Diclbenz	3.986	146	90210	18.1628	ug/mL	94
12) 12Diclbenz	4.154	146	85545	18.0624	ug/mL	98
13) Benzyl alcoho	4.142	108	45765	19.6033	ug/mL	94
14) bis2clispreth	4.304	45	107919	19.6358	ug/mL	81
15) 2Methylphenol	4.296	107	59016	18.5087	ug/mL	95
16) Ntrspyrrol	4.432	100	34111	19.3911	ug/mL	97
17) Acetophenone	4.449	105	106440	19.4155	ug/mL	97
18) Hexaclethane	4.557	117	33321	17.5089	ug/mL	95
19) N-Ntrsdinprop	4.469	70	52297	18.3657	ug/mL	95
20) 3&4Methylphenol	4.495	107	77562	18.5155	ug/mL	93
23) Nitrobenzene	4.660	77	76245	18.2532	ug/mL	97
24) Isophorone	4.992	82	139394	18.9249	ug/mL	99
25) 2-Nitrophenol	5.086	139	41035	18.3448	ug/mL	95
26) 24Dimthpheno	5.211	122	63116	19.2827	ug/mL	95
27) bis2clethoxym	5.341	93	91392	19.4438	ug/mL	98
28) 24Diclphenol	5.466	162	71265	19.3357	ug/mL	96
29) 124Triclbenz	5.557	180	83230	18.6594	ug/mL	98
30) Benzoic acid	5.447	122	46493	19.3460	ug/mL	92
31) Naphthalene	5.648	128	246816	18.6024	ug/mL	99
32) 4-Cl-aniline	5.753	127	85980	16.8201	ug/mL	97
33) 26Diclphenol	5.751	162	65295	19.1070	ug/mL	99
34) Hexaclprop	5.765	213	39813	12.1027	ug/mL	92
35) Hexaclbutdien	5.827	225	51710	17.6338	ug/mL	92
36) 4Cl3methylphe	6.327	107	65127	17.6868	ug/mL	96
37) 2Methylnaphth	6.407	142	147312	16.7285	ug/mL	95
38) 1Methylnaphth	6.495	141	129995	17.1329	ug/mL	100
40) Hxclcycpentdi	6.558	237	20586	7.2993	ug/mL	96

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\1CCV219.D Vial: 18
Acq On : 20 Oct 2016 17:58 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:29:00 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

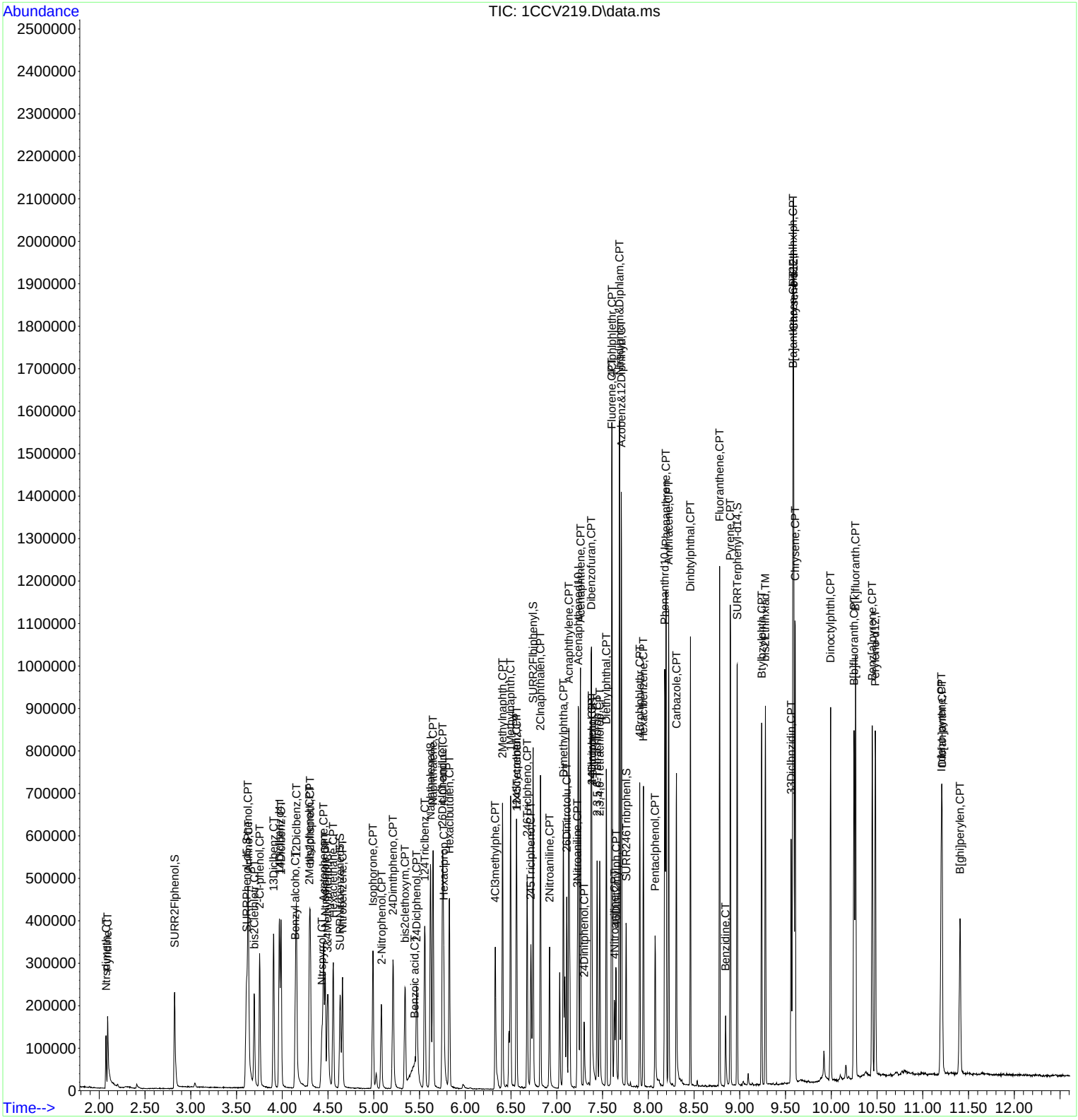
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
41) 1245Tetrclbenz	6.563	216	78336	16.4054 ug/mL	93
42) 246Triclpheno	6.677	196	55142	19.1734 ug/mL	98
43) 245Triclpheno	6.717	196	59113	18.0934 ug/mL	95
45) 2Clnaphthalen	6.822	162	157648	17.6493 ug/mL	99
46) 2Nitroaniline	6.921	65	44539	17.8065 ug/mL	95
47) Acnaphthylene	7.132	152	266249	17.5128 ug/mL	98
48) Dimethylphtha	7.072	163	191936	18.4463 ug/mL	99
49) 26Dinitrotolu	7.109	165	41946	18.6143 ug/mL	86
50) Acenaphthene	7.259	154	154299	17.7372 ug/mL	99
51) 3Nitroaniline	7.225	138	36937	16.1675 ug/mL	96
52) 24Dinitphenol	7.299	184	19458	14.3229 ug/mL	93
53) Dibenzofuran	7.376	168	239137	17.9174 ug/mL	98
54) 24Dinitrotolu	7.384	165	56113	18.2168 ug/mL	88
55) 4-Nitrophenol	7.384	65	37330	18.5953 ug/mL#	65
56) 2,3,5,6-Tetrachlorop	7.441	232	46980	17.6447 ug/mL	94
57) 2,3,4,6-Tetrachlorop	7.470	232	52875	17.8193 ug/mL	96
58) Fluorene	7.600	166	193726	18.2765 ug/mL	96
59) 4Clphlphlethr	7.603	204	93381	17.6759 ug/mL	96
60) Diethylphthal	7.541	149	195157	18.2574 ug/mL	99
61) 4Nitroaniline	7.632	138	36238	16.2400 ug/mL	95
64) 46Dinit2mylph	7.649	198	27293	14.9248 ug/mL	93
65) Ntrsdiphlam&Diphlam	7.686	169	262633	35.8084 ug/mL	98
66) Azobenz&12Diphlhyd	7.706	182	87039	37.1424 ug/mL#	78
67) 4Brphlphlethr	7.907	248	60596	18.7412 ug/mL	96
68) Hexaclbenzene	7.947	284	64854	18.4106 ug/mL	98
69) Pentaclphenol	8.075	266	37022	18.3925 ug/mL	95
70) Phenanthrene	8.194	178	267621	18.9365 ug/mL	99
71) Anthracene	8.223	178	279291	19.2836 ug/mL	98
72) Carbazole	8.308	167	228469	18.6240 ug/mL	100
73) Dinbtylphthal	8.461	149	285424	18.1968 ug/mL	98
74) Fluoranthene	8.780	202	281982	18.4687 ug/mL	98
76) Benzidine	8.845	184	47773	12.3790 ug/mL	98
77) Pyrene	8.896	202	288434	19.7316 ug/mL	99
79) Btylbzylphth	9.240	149	128611	20.0316 ug/mL	100
80) bis2Ethlhxlad	9.280	129	106822	20.5888 ug/mL	99
81) 33Diclbnzidin	9.561	252	91317	20.2104 ug/mL	97
82) B[a]anthracen	9.581	228	269906	18.5028 ug/mL	99
83) Chrysene	9.606	228	245894	18.4237 ug/mL	99
84) bis2Ethlhxlph	9.584	149	179523	19.0797 ug/mL	99
85) Dinoctylphthl	9.993	149	323936	19.8757 ug/mL	99
87) B[b]fluoranth	10.249	252	270354	19.9310 ug/mL	98
88) B[k]fluoranth	10.266	252	251266	19.7210 ug/mL	98
89) Benz[a]pyrene	10.448	252	245330	18.7535 ug/mL	97
90) Indeno-pyrene	11.203	276	210616	13.5584 ug/mL	98
91) Dib[ah]anthr	11.212	278	178574	13.8872 ug/mL	98
92) B[ghi]perylen	11.408	276	156385	12.1091 ug/mL	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\1CCV219.D Vial: 18
Acq On : 20 Oct 2016 17:58 Operator: JJY
Sample : CCV20ug/ml SVMS7217 Inst : SVMS1
Misc : 500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:29:00 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M



SEMI - VOLATILE ORGANIC ANALYSIS
QUALITY CONTROL
DOCUMENTS

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\1MBS01.D Vial: 22
Acq On : 19 Oct 2016 22:07 Operator: JJY
Sample : 131383,MBS, Inst : SVMS1
Misc : 785341,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 13:47:55 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

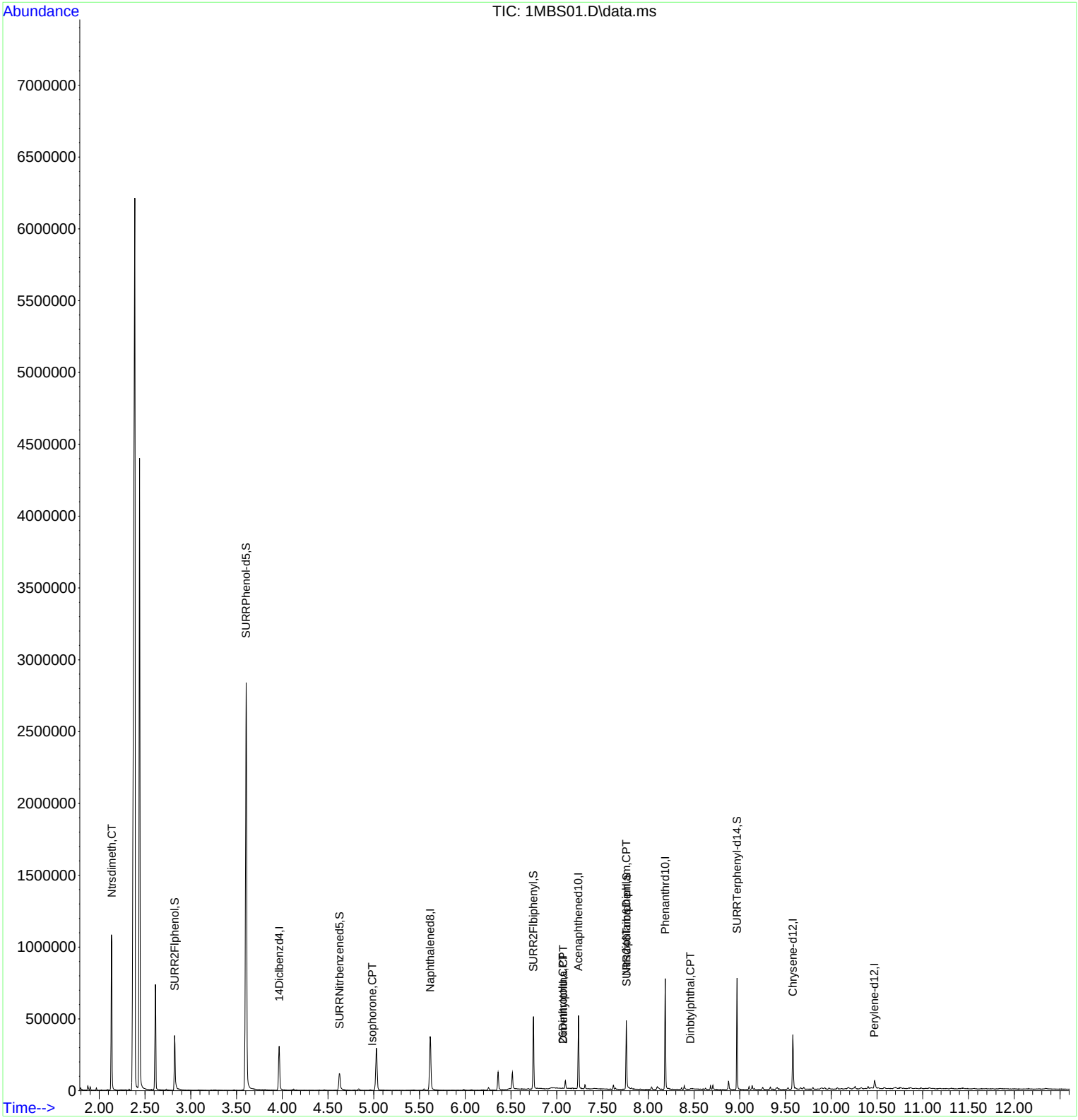
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.966	152	49006	20.00	ug/mL	0.00
21) Naphthalened8	5.617	136	199531	20.00	ug/mL	0.00
39) Acenaphthened10	7.237	164	73579	20.00	ug/mL	0.00
63) Phenanthrd10	8.186	188	167661	20.00	ug/mL	0.00
75) Chrysene-d12	9.578	240	62086	20.00	ug/mL	0.00
86) Perylene-d12	10.470	264	6527	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.824	112	85532	79.43	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 79.43%			
7) SURRPhenol-d5	3.605	99	80300	58.52	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 58.52%			
22) SURRNitrbenzened5	4.625	82	46913	74.38	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 74.38%			
44) SURR2Flbiphenyl	6.745	172	124970	122.73	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 122.73%#			
62) SURR246Tribrphenl	7.762	330	41395	123.42	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 123.42%			
78) SURRTerphenyl-d14	8.970	244	117418	236.06	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 236.06%#			
Target Compounds						Qvalue
2) Ntrsdimeth	2.136	74	412	0.2402	ug/mL#	1
24) Isophorone	4.983	82	603	0.1023	ug/mL	90
48) Dimethylphtha	7.069	163	875	0.1673	ug/mL	89
49) 26Dinitrotolu	7.066	165	305	0.2693	ug/mL#	47
65) Ntrsdiphlam&Diphlam	7.759	169	1178	0.2479	ug/mL#	22
73) Dinbtylphthal	8.461	149	721	0.0710	ug/mL	81

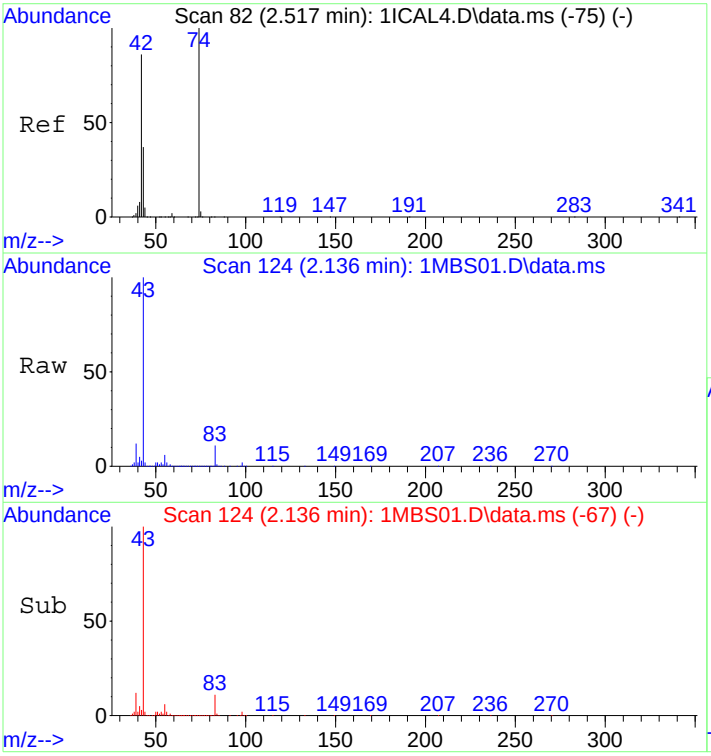
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\1MBS01.D Vial: 22
Acq On : 19 Oct 2016 22:07 Operator: JJY
Sample : 131383,MBS, Inst : SVMS1
Misc : 785341,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 13:47:55 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

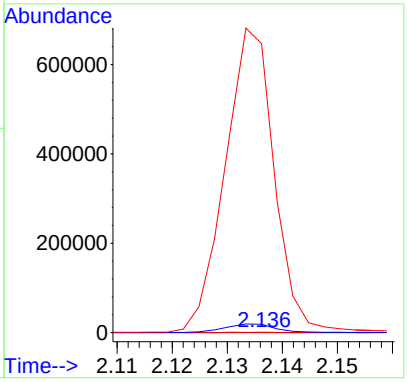


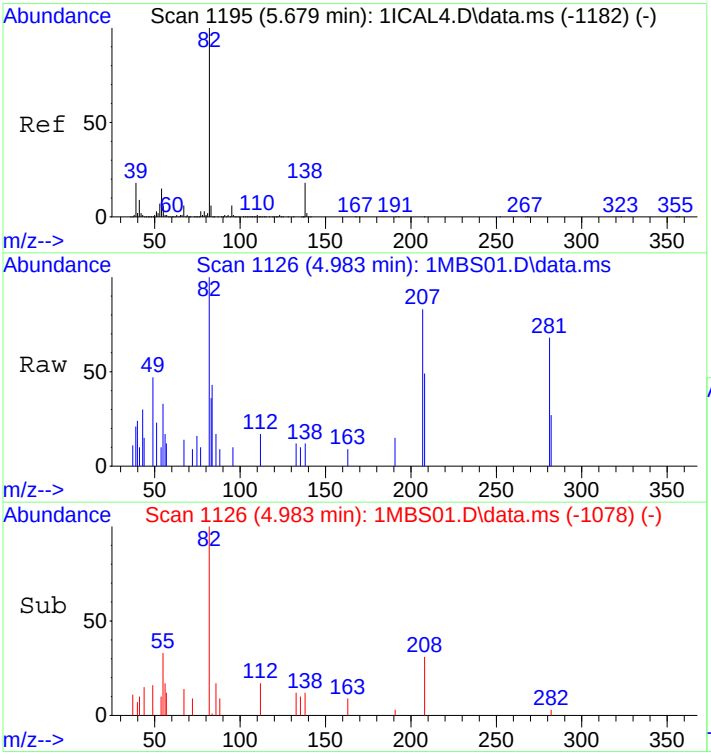


#2
Ntrsdimeth
Concen: 0.24 ug/mL
RT: 2.136 min Scan# 124
Delta R.T. 0.062 min
Lab File: 1MBS01.D
Acq: 19 Oct 16 10:07 pm

Tgt Ion: 74 Resp: 412

Ion	Ratio	Lower	Upper
74	100		
42	2798.9	61.8	121.8#
43	98778.2	5.5	65.5#

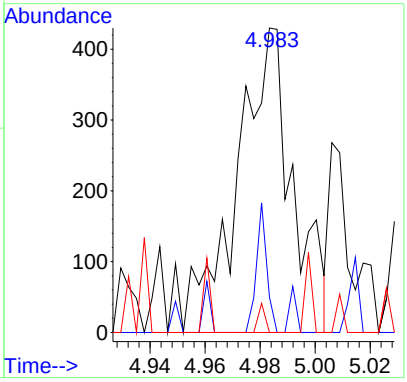


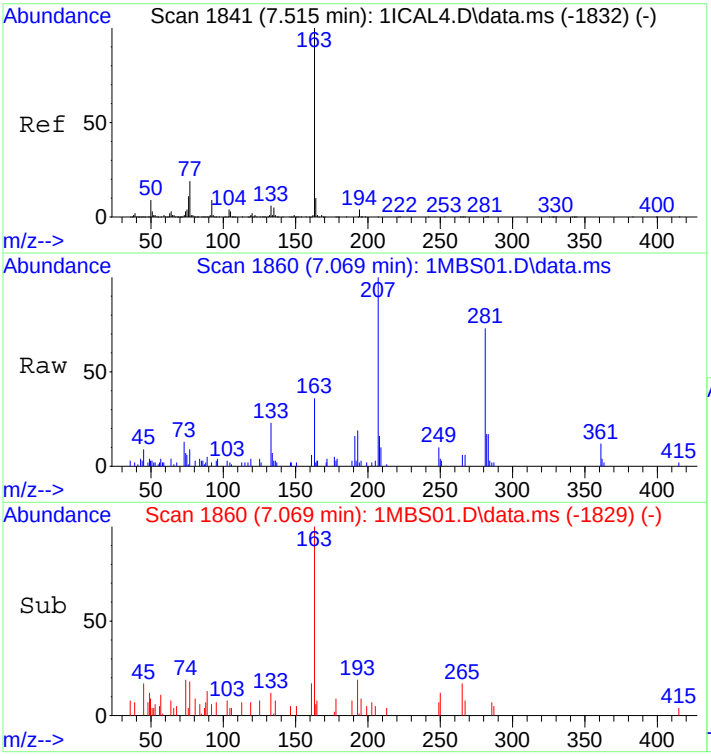


#24
Isophorone
Concen: 0.10 ug/mL
RT: 4.983 min Scan# 1126
Delta R.T. -0.009 min
Lab File: 1MBS01.D
Acq: 19 Oct 16 10:07 pm

Tgt Ion: 82 Resp: 603

Ion	Ratio	Lower	Upper
82	100		
138	14.3	0.0	46.9
95	0.0	0.0	26.8

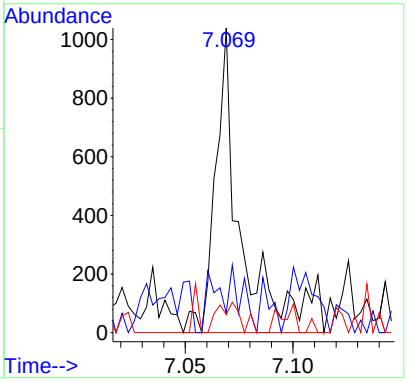


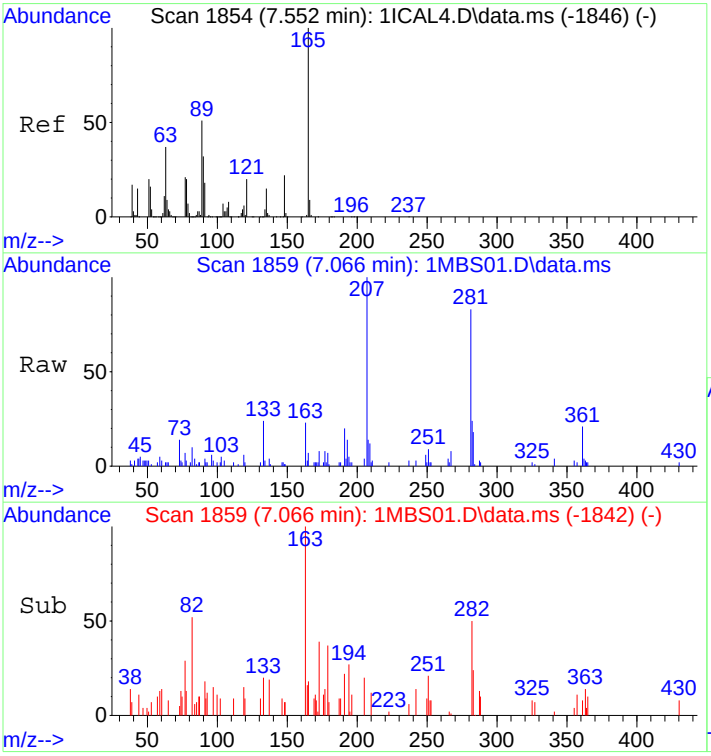


#48
Dimethylphtha
Concen: 0.17 ug/mL
RT: 7.069 min Scan# 1860
Delta R.T. -0.011 min
Lab File: 1MBS01.D
Acq: 19 Oct 16 10:07 pm

Tgt Ion:163 Resp: 875

Ion	Ratio	Lower	Upper
163	100		
194	0.0	0.0	33.9
164	14.3	0.0	40.5

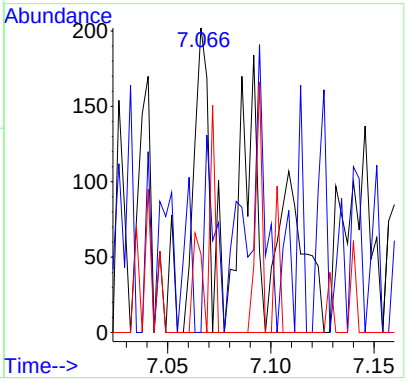


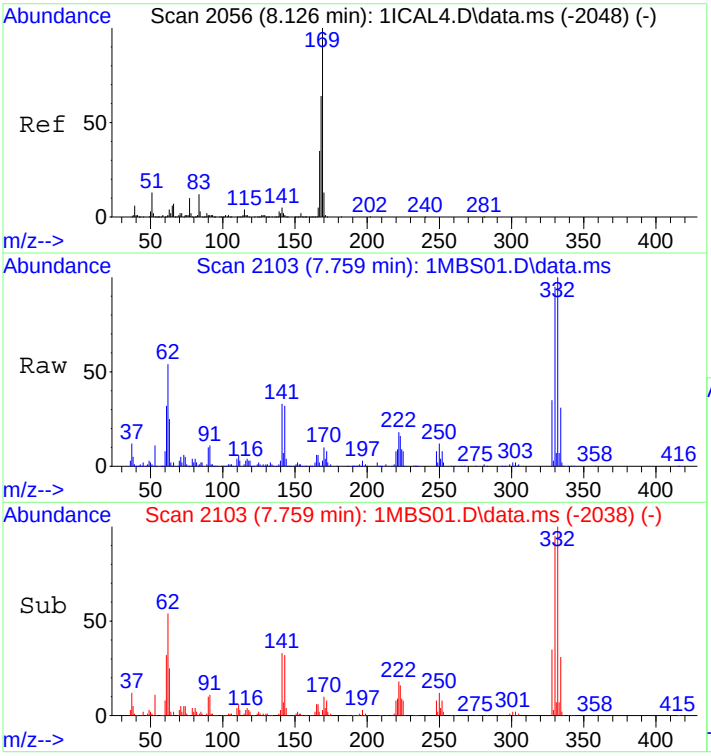


#49
26Dinitrotolu
Concen: 0.27 ug/mL
RT: 7.066 min Scan# 1859
Delta R.T. -0.051 min
Lab File: 1MBS01.D
Acq: 19 Oct 16 10:07 pm

Tgt Ion:165 Resp: 305

Ion	Ratio	Lower	Upper
165	100		
89	0.0	22.5	82.5#
63	25.7	23.3	63.3

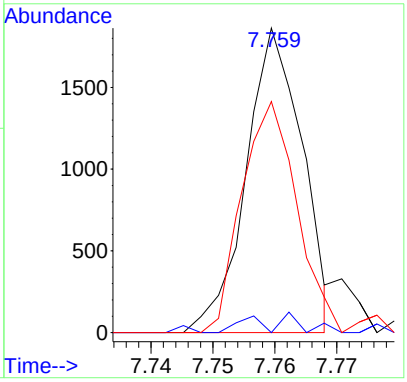


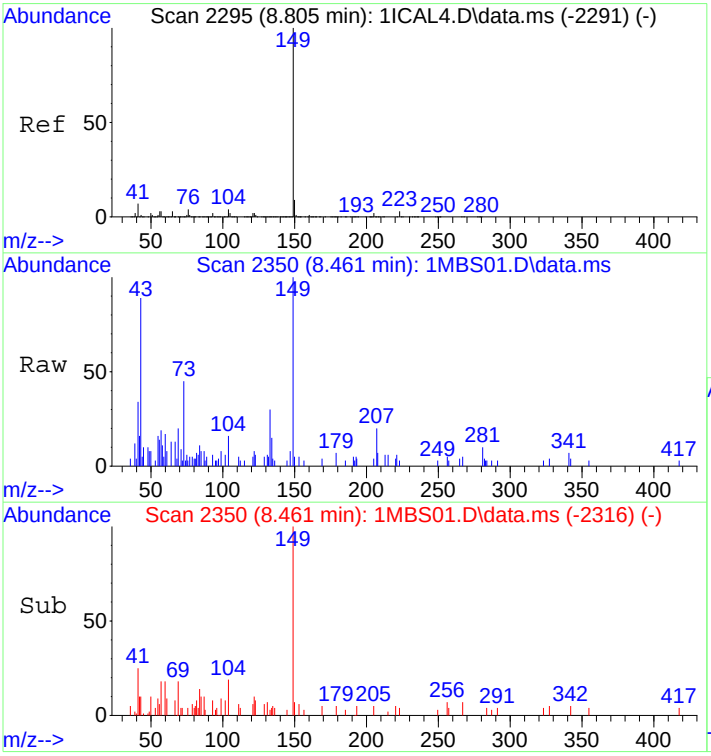


#65
Ntrsdiphlam&Diphlam
Concen: 0.25 ug/mL
RT: 7.759 min Scan# 2103
Delta R.T. 0.065 min
Lab File: 1MBS01.D
Acq: 19 Oct 16 10:07 pm

Tgt Ion:169 Resp: 1178

Ion	Ratio	Lower	Upper
169	100		
168	0.0	35.5	95.5#
167	75.9	5.2	65.2#

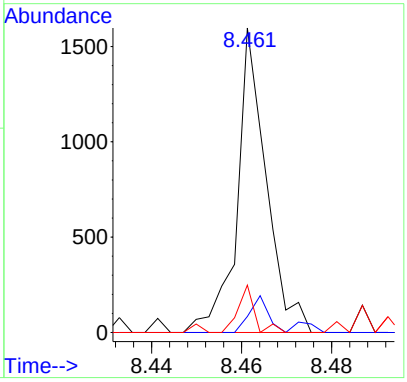




#73
Dinbtylphthal
Concen: 0.07 ug/mL
RT: 8.461 min Scan# 2350
Delta R.T. -0.003 min
Lab File: 1MBS01.D
Acq: 19 Oct 16 10:07 pm

Tgt Ion:149 Resp: 721

Ion	Ratio	Lower	Upper
149	100		
150	5.3	0.0	39.8
104	15.5	0.0	34.5



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\1MBS01D.D Vial: 23
Acq On : 19 Oct 2016 22:27 Operator: JJY
Sample : 131383,MBS,10 Inst : SVMS1
Misc : 785341,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 13:50:37 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

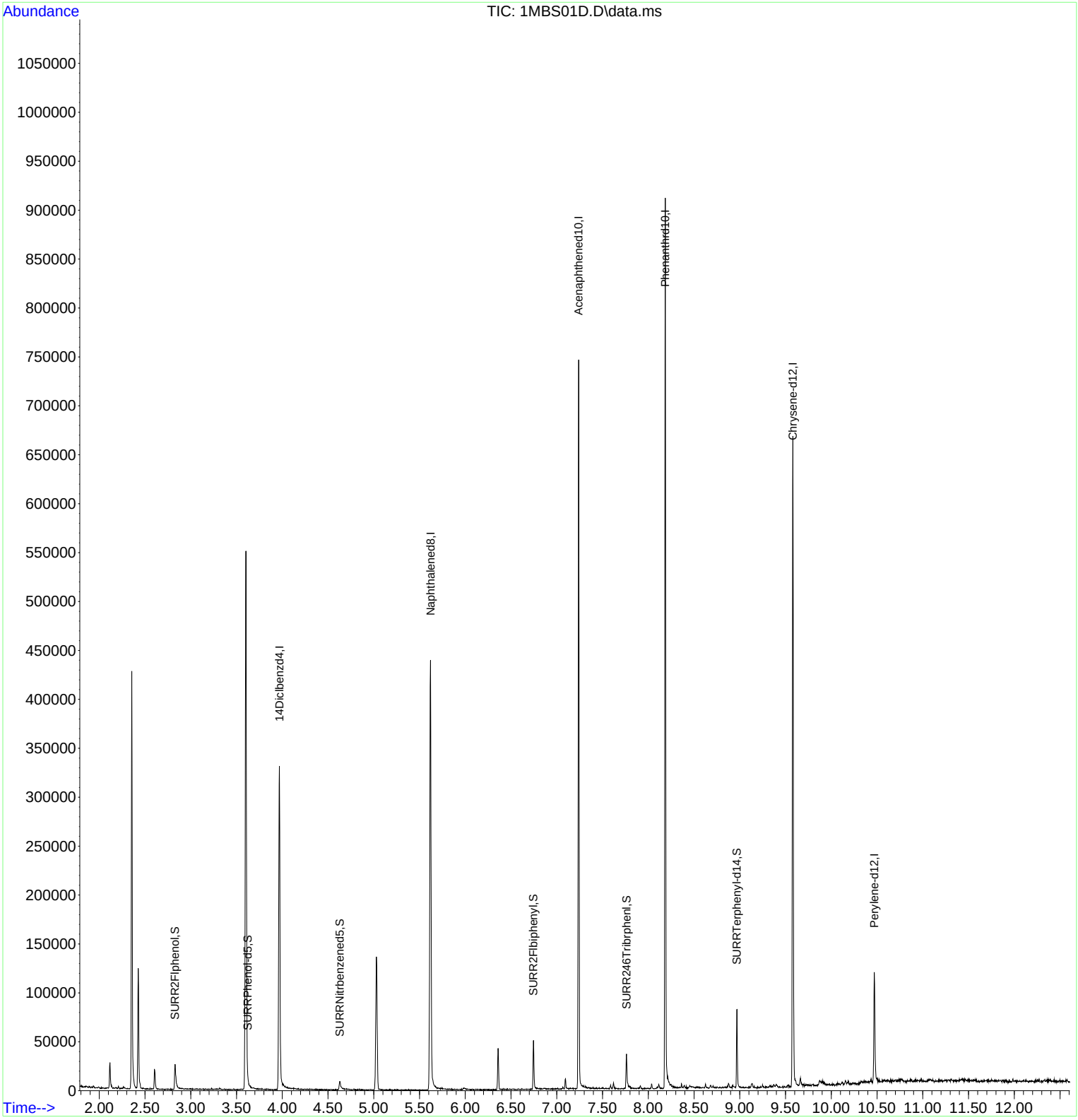
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.969	152	54304	20.00	ug/mL	0.00
21) Naphthalened8	5.620	136	216839	20.00	ug/mL	0.00
39) Acenaphthened10	7.239	164	99893	20.00	ug/mL	0.00
63) Phenanthrd10	8.186	188	219620	20.00	ug/mL	0.00
75) Chrysene-d12	9.578	240	117294	20.00	ug/mL	0.00
86) Perylene-d12	10.470	264	22929	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.827	112	8953	7.50	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 7.50%#			
7) SURRPhenol-d5	3.622	99	7835	5.15	%REC	0.01
Spiked Amount 100.000	Range 10 - 115		Recovery = 5.15%#			
22) SURRNitrbenzened5	4.628	82	4600	6.71	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 6.71%#			
44) SURR2Flbiphenyl	6.745	172	13203	9.55	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 9.55%#			
62) SURR246Tribrphenl	7.762	330	4317	9.48	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 9.48%#			
78) SURRTerphenyl-d14	8.967	244	15567	16.57	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 16.57%#			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\1MBS01D.D Vial: 23
Acq On : 19 Oct 2016 22:27 Operator: JJY
Sample : 131383,MBS,10 Inst : SVMS1
Misc : 785341,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 13:50:37 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\1LCSS01.D Vial: 24
Acq On : 19 Oct 2016 22:46 Operator: JJY
Sample : 131383,LCSS, Inst : SVMS1
Misc : 785342,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 13:51:37 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.966	152	46363	20.00	ug/mL	0.00
21) Naphthalened8	5.620	136	194172	20.00	ug/mL	0.00
39) Acenaphthened10	7.240	164	110625	20.00	ug/mL	0.00
63) Phenanthrd10	8.186	188	197940	20.00	ug/mL	0.00
75) Chrysene-d12	9.584	240	171099	20.00	ug/mL	0.00
86) Perylene-d12	10.473	264	161396	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.827	112	83217	81.69	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 81.69%			
7) SURRPhenol-d5	3.611	99	101309	78.04	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 78.04%			
22) SURRNitrbenzened5	4.625	82	44127	71.90	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 71.90%			
44) SURR2Flbiphenyl	6.745	172	120078	78.44	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 78.44%			
62) SURR246Tribrphenl	7.765	330	41165	81.63	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 81.63%			
78) SURRTerphenyl-d14	8.970	244	123808	90.32	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 90.32%			
Target Compounds						Qvalue
2) Ntrsdimeth	2.091	74	21515	13.2601	ug/mL	99
3) Pyridine	0.000		0	N.D.		
5) Aniline	3.622	93	952	0.2234	ug/mL#	1
6) bis2Clethletr	3.691	93	38961	14.7878	ug/mL	96
8) Phenol	3.622	94	56837	14.9667	ug/mL	97
9) 2-Cl-phenol	3.753	128	47643	15.0313	ug/mL	98
10) 13Diclbenz	3.904	146	51946	14.3133	ug/mL	98
11) 14Diclbenz	3.983	146	53033	14.2096	ug/mL	96
12) 12Diclbenz	4.154	146	50662	14.2354	ug/mL	95
13) Benzyl alcoho	4.148	108	10896	6.8772	ug/mL#	81
14) bis2clispreth	4.301	45	64423	15.5991	ug/mL	82
15) 2Methylphenol	4.293	107	36463	15.2183	ug/mL	94
16) Ntrspyrrol	4.421	100	18687	14.1369	ug/mL	92
17) Acetophenone	4.444	105	58838	14.2827	ug/mL	97
18) Hexaclethane	4.557	117	18923	13.2324	ug/mL	92
19) N-Ntrsdinprop	4.458	70	31048	14.5101	ug/mL	96
20) 3&4Methylphenol	4.492	107	47948	15.2322	ug/mL	89
23) Nitrobenzene	4.651	77	45545	13.9983	ug/mL	95
24) Isophorone	4.986	82	87782	15.3004	ug/mL	100
25) 2-Nitrophenol	5.080	139	25773	14.7921	ug/mL	96
26) 24Dimthpheno	5.211	122	37184	14.5845	ug/mL	99
27) bis2clethoxym	5.339	93	59242	16.1812	ug/mL	96
28) 24Diclphenol	5.478	162	48082	16.7485	ug/mL	97
29) 124Triclbenz	5.557	180	51410	14.7970	ug/mL	97
30) Benzoic acid	5.401	122	17617	10.5334	ug/mL	87
31) Naphthalene	5.645	128	156710	15.1636	ug/mL	99
32) 4-Cl-aniline	5.751	127	831	0.2087	ug/mL#	59
33) 26Diclphenol	5.753	162	43059	16.1765	ug/mL	98
34) Hexaclprop	5.765	213	36311	14.1710	ug/mL	94
35) Hexaclbutdien	5.827	225	33909	14.8455	ug/mL	96
36) 4Cl3methylphe	6.342	107	43539	15.1801	ug/mL	96
37) 2Methylnaphth	6.410	142	103433	15.0795	ug/mL	95
38) 1Methylnaphth	6.498	141	91966	15.5611	ug/mL	99
40) Hxclcycpentdi	6.560	237	28720	13.0301	ug/mL	96

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\1LCSS01.D Vial: 24
Acq On : 19 Oct 2016 22:46 Operator: JJY
Sample : 131383,LCSS, Inst : SVMS1
Misc : 785342,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 13:51:37 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

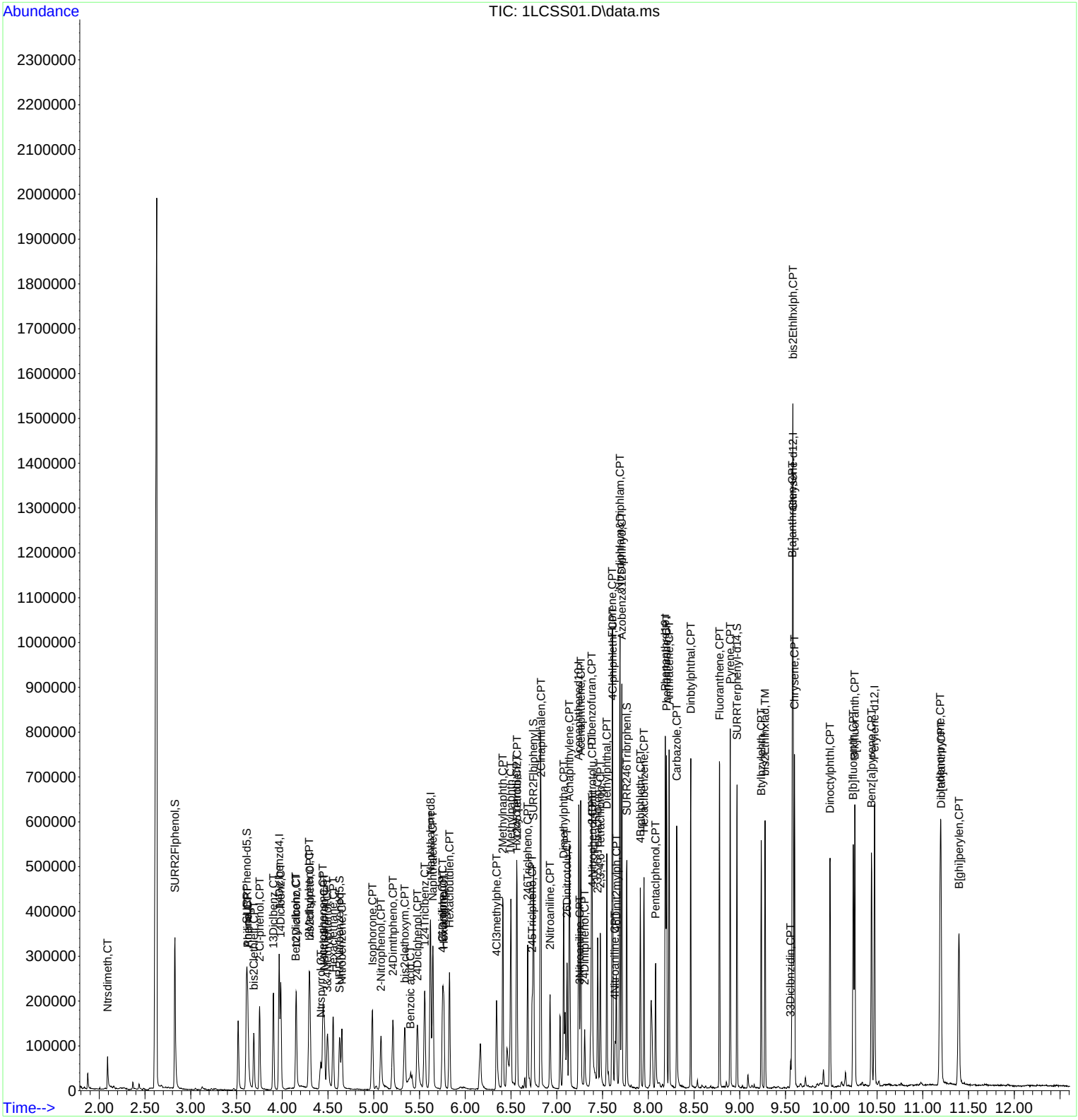
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
41) 1245Tetrclbenz	6.566	216	54137	15.0022 ug/mL	95
42) 246Triclpheno	6.683	196	36699	16.8852 ug/mL	98
43) 245Triclpheno	6.731	196	38452	15.5737 ug/mL	93
45) 2Clnaphthalen	6.828	162	101019	14.9650 ug/mL	97
46) 2Nitroaniline	6.927	65	31519	16.6742 ug/mL	99
47) Acnaphthylene	7.137	152	175918	15.3113 ug/mL	99
48) Dimethylphtha	7.075	163	130576	16.6055 ug/mL	98
49) 26Dinitrotolu	7.112	165	27920	16.3948 ug/mL	89
50) Acenaphthene	7.262	154	100642	15.3086 ug/mL	99
51) 3Nitroaniline	7.251	138	11627	6.7342 ug/mL	86
52) 24Dinitphenol	7.305	184	16890	16.0679 ug/mL	94
53) Dibenzofuran	7.382	168	159378	15.8013 ug/mL	95
54) 24Dinitrotolu	7.387	165	39067	16.7823 ug/mL	95
55) 4-Nitrophenol	7.390	65	16362	10.7849 ug/mL#	43
56) 2,3,5,6-Tetrachlorop	7.447	232	31001	15.4068 ug/mL	98
57) 2,3,4,6-Tetrachlorop	7.475	232	34981	15.5994 ug/mL	95
58) Fluorene	7.606	166	128523	16.0443 ug/mL	100
59) 4Clphlphlethr	7.612	204	64727	16.2123 ug/mL	94
60) Diethylphthal	7.546	149	134533	16.6539 ug/mL	99
61) 4Nitroaniline	7.634	138	17325	10.2738 ug/mL	90
64) 46Dinit2mylph	7.652	198	23029	16.4659 ug/mL	99
65) Ntrsdiphlam&Diphlam	7.691	169	172955	30.8335 ug/mL	98
66) Azobenz&12Diphlhyd	7.711	182	58225	32.4878 ug/mL#	87
67) 4Brphlphlethr	7.913	248	40279	16.2887 ug/mL	97
68) Hexaclbenzene	7.953	284	45481	16.8817 ug/mL	96
69) Pentaclphenol	8.081	266	25017	16.2506 ug/mL	98
70) Phenanthrene	8.200	178	180089	16.6618 ug/mL	98
71) Anthracene	8.228	178	181535	16.3888 ug/mL	98
72) Carbazole	8.311	167	152295	16.2325 ug/mL	99
73) Dinbtylphthal	8.464	149	193889	16.1626 ug/mL	98
74) Fluoranthene	8.780	202	183139	15.6838 ug/mL	98
76) Benzidine	0.000		0	N.D.	
77) Pyrene	8.896	202	190005	17.9356 ug/mL	97
79) Btylbzylphth	9.234	149	83402	17.9246 ug/mL	96
80) bis2Ethlhxlad	9.277	129	69843	18.5749 ug/mL	99
81) 33Diclbnzidin	9.555	252	12128	3.7038 ug/mL	94
82) B[a]anthracen	9.575	228	171690	16.2407 ug/mL	99
83) Chrysene	9.598	228	157429	16.2760 ug/mL	97
84) bis2Ethlhxlph	9.581	149	118886	17.4347 ug/mL	100
85) Dinoctylphthl	9.987	149	202588	17.1518 ug/mL	99
87) B[b]fluoranth	10.240	252	168281	16.8220 ug/mL	99
88) B[k]fluoranth	10.257	252	158217	16.8381 ug/mL	97
89) Benz[a]pyrene	10.439	252	151430	15.6960 ug/mL	97
90) Indeno-pyrene	11.192	276	189537	16.5447 ug/mL	99
91) Dib[ah]anthr	11.200	278	157774	16.6371 ug/mL	94
92) B[ghi]perylen	11.397	276	154138	16.1835 ug/mL	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\1LCSS01.D Vial: 24
Acq On : 19 Oct 2016 22:46 Operator: JJY
Sample : 131383,LCSS, Inst : SVMS1
Misc : 785342,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 13:51:37 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\784853MS.D Vial: 30
Acq On : 20 Oct 2016 00:45 Operator: JJY
Sample : 131383,MSS784853, Inst : SVMS1
Misc : 785344,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 14:57:05 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.966	152	55057	20.00	ug/mL	0.00
21) Naphthalened8	5.620	136	232718	20.00	ug/mL	0.00
39) Acenaphthened10	7.242	164	135000	20.00	ug/mL	0.00
63) Phenanthrd10	8.189	188	241484	20.00	ug/mL	0.00
75) Chrysene-d12	9.584	240	213212	20.00	ug/mL	0.00
86) Perylene-d12	10.476	264	176924	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.833	112	65562	54.20	%REC	0.01
Spiked Amount 100.000	Range 20 - 110		Recovery = 54.20%			
7) SURRPhenol-d5	3.617	99	72386	46.96	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 46.96%			
22) SURRNitrbenzened5	4.628	82	43153	58.67	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 58.67%			
44) SURR2Flbiphenyl	6.748	172	112482	60.21	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 60.21%			
62) SURR246Tribrphenl	7.765	330	36284	58.96	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 58.96%			
78) SURRTerphenyl-d14	8.970	244	110465	64.67	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 64.67%			
Target Compounds						Qvalue
2) Ntrsdimeth	2.088	74	18166	9.4281	ug/mL	95
3) Pyridine	0.000		0	N.D.		
5) Aniline	3.631	93	868	0.1715	ug/mL#	1
6) bis2Clethletr	3.691	93	36072	11.5293	ug/mL	97
8) Phenol	3.631	94	39697	8.8026	ug/mL	98
9) 2-Cl-phenol	3.756	128	43027	11.4314	ug/mL	97
10) 13Diclbenz	3.904	146	48976	11.3640	ug/mL	97
11) 14Diclbenz	3.986	146	50662	11.4308	ug/mL	95
12) 12Diclbenz	4.154	146	47502	11.2398	ug/mL	98
13) Benzyl alcoho	4.151	108	12408	6.6236	ug/mL	89
14) bis2clispreth	4.302	45	62530	12.7499	ug/mL#	72
15) 2Methylphenol	4.299	107	31891	11.2083	ug/mL	91
16) Ntrspyrrol	4.418	100	20483	13.0487	ug/mL	94
17) Acetophenone	4.446	105	57977	11.8513	ug/mL	98
18) Hexaclethane	4.554	117	18499	10.8932	ug/mL	95
19) N-Ntrsdinprop	4.464	70	31633	12.4490	ug/mL	99
20) 3&4Methylphenol	4.498	107	39572	10.5862	ug/mL	98
23) Nitrobenzene	4.654	77	44293	11.3586	ug/mL	93
24) Isophorone	4.986	82	84751	12.3253	ug/mL	99
25) 2-Nitrophenol	5.080	139	24097	11.5395	ug/mL	89
26) 24Dimthpheno	5.211	122	37760	12.3573	ug/mL	99
27) bis2clethoxym	5.342	93	54560	12.4340	ug/mL	96
28) 24Diclphenol	5.478	162	30453	8.8507	ug/mL	94
29) 124Triclbenz	5.557	180	48665	11.6869	ug/mL	97
30) Benzoic acid	5.359	122	3973	3.8479	ug/mL#	81
31) Naphthalene	5.648	128	145569	11.7525	ug/mL	98
32) 4-Cl-aniline	5.751	127	641	0.1343	ug/mL	62
33) 26Diclphenol	5.754	162	39688	12.4405	ug/mL	96
34) Hexaclprop	5.765	213	7128	2.3211	ug/mL	93
35) Hexaclbutdien	5.827	225	31979	11.6816	ug/mL	94
36) 4Cl3methylphe	6.342	107	23651	6.8802	ug/mL	91
37) 2Methylnaphth	6.410	142	100430	12.2165	ug/mL	97
38) 1Methylnaphth	6.498	141	88240	12.4576	ug/mL	99
40) Hxclcycpentdi	6.563	237	1051	0.8624	ug/mL	75

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\784853MS.D Vial: 30
Acq On : 20 Oct 2016 00:45 Operator: JJY
Sample : 131383,MSS784853, Inst : SVMS1
Misc : 785344,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 14:57:05 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

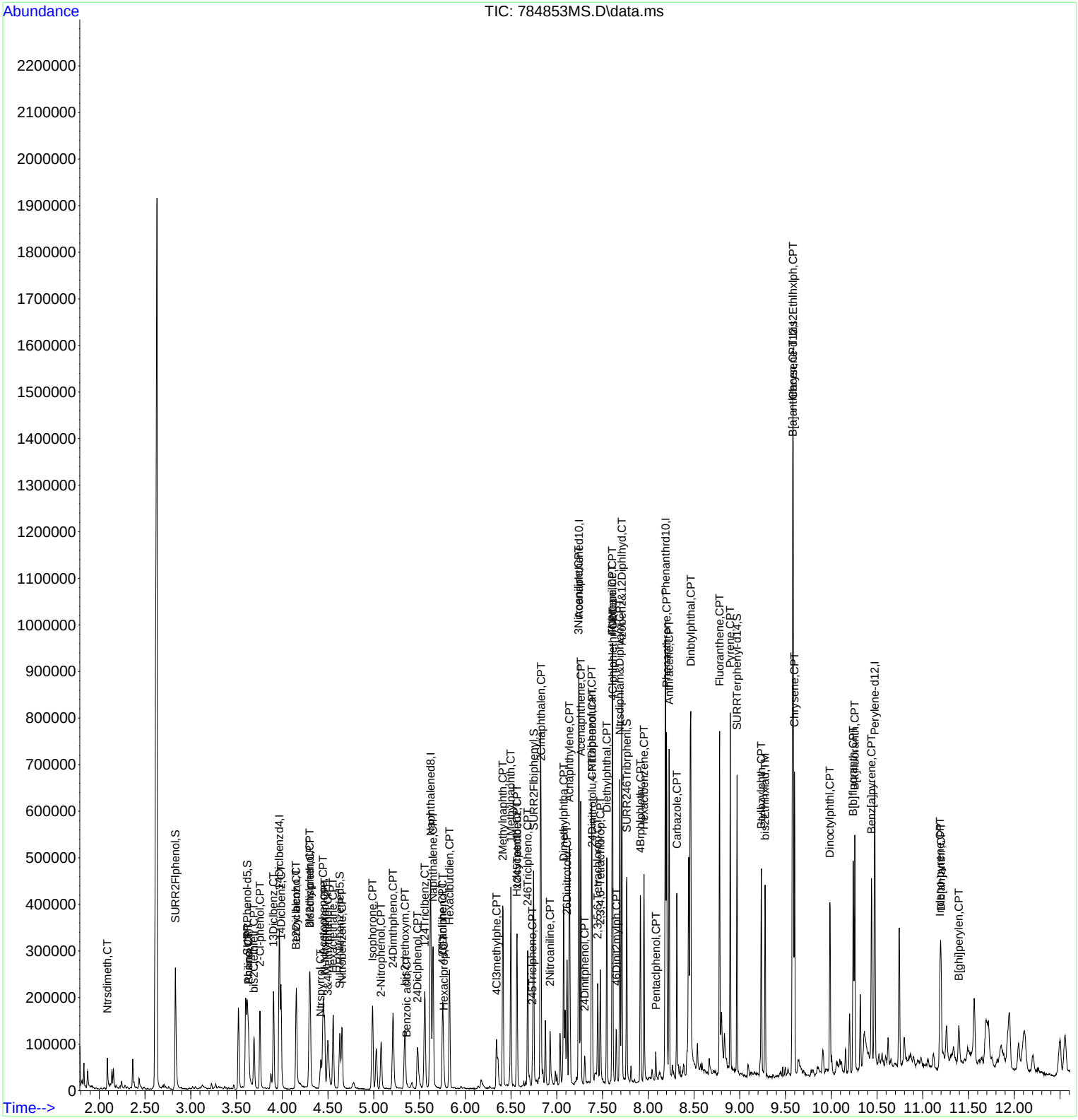
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
41) 1245Tetrclbenz	6.566	216	52937	12.0210 ug/mL	98
42) 246Triclpheno	6.683	196	31890	12.0233 ug/mL	97
43) 245Triclpheno	6.734	196	11052	3.6680 ug/mL	85
45) 2Clnaphthalen	6.828	162	95287	11.5672 ug/mL	98
46) 2Nitroaniline	6.927	65	22492	9.7504 ug/mL	97
47) Acnaphthylene	7.137	152	162517	11.5910 ug/mL	98
48) Dimethylphtha	7.075	163	116886	12.1806 ug/mL	99
49) 26Dinitrotolu	7.112	165	24833	11.9492 ug/mL	85
50) Acenaphthene	7.262	154	91726	11.4332 ug/mL	97
51) 3Nitroaniline	7.240	138	119	0.0565 ug/mL#	1
52) 24Dinitphenol	7.305	184	8249	7.9663 ug/mL	96
53) Dibenzofuran	7.382	168	144293	11.7227 ug/mL	97
54) 24Dinitrotolu	7.387	165	32907	11.5838 ug/mL	94
55) 4-Nitrophenol	7.385	65	2155	1.1640 ug/mL#	1
56) 2,3,5,6-Tetrachlorop	7.447	232	19233	7.8325 ug/mL	98
57) 2,3,4,6-Tetrachlorop	7.475	232	24094	8.8045 ug/mL	91
58) Fluorene	7.606	166	119618	12.2365 ug/mL	99
59) 4Clphlphlethr	7.612	204	59296	12.1703 ug/mL	96
60) Diethylphthal	7.547	149	120584	12.2320 ug/mL	98
61) 4Nitroaniline	7.606	138	1966	0.9553 ug/mL#	22
64) 46Dinit2mylph	7.652	198	12730	7.4608 ug/mL	93
65) Ntrsdiphlam&Diphlam	7.689	169	112105	16.3817 ug/mL	98
66) Azobenz&12Diphlhyd	7.711	182	51268	23.4478 ug/mL#	87
67) 4Brphlphlethr	7.916	248	36606	12.1340 ug/mL	96
68) Hexaclbenzene	7.953	284	39594	12.0465 ug/mL	95
69) Pentaclphenol	8.084	266	5760	3.0669 ug/mL	95
70) Phenanthrene	8.200	178	164606	12.4832 ug/mL	98
71) Anthracene	8.228	178	156528	11.5831 ug/mL	98
72) Carbazole	8.314	167	111854	9.7723 ug/mL	99
73) Dinbtylphthal	8.464	149	166443	11.3728 ug/mL	98
74) Fluoranthene	8.780	202	167404	11.7512 ug/mL	99
76) Benzidine	0.000		0	N.D.	
77) Pyrene	8.896	202	174271	13.2011 ug/mL	99
79) Btylbzylphth	9.234	149	72412	12.4887 ug/mL	99
80) bis2Ethlhxlad	9.277	129	49704	10.6079 ug/mL	99
81) 33Diclbnzidin	0.000		0	N.D.	
82) B[a]anthracen	9.578	228	157598	11.9631 ug/mL	99
83) Chrysene	9.598	228	141847	11.7684 ug/mL	100
84) bis2Ethlhxlph	9.581	149	90471	10.6471 ug/mL	97
85) Dinoctylphthl	9.984	149	139150	9.4540 ug/mL	99
87) B[b]fluoranth	10.240	252	138662	12.6446 ug/mL	98
88) B[k]fluoranth	10.257	252	127951	12.4220 ug/mL	99
89) Benz[a]pyrene	10.439	252	115098	10.8831 ug/mL	98
90) Indeno-pyrene	11.189	276	88251	7.0273 ug/mL	97
91) Dib[ah]anthr	11.201	278	76743	7.3822 ug/mL	95
92) B[ghi]perylen	11.394	276	36770	3.5218 ug/mL	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\784853MS.D Vial: 30
Acq On : 20 Oct 2016 00:45 Operator: JJY
Sample : 131383,MSS784853, Inst : SVMS1
Misc : 785344,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 14:57:05 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\784853SD.D Vial: 31
Acq On : 20 Oct 2016 1:05 Operator: JJY
Sample : 131383,MSDS784853, Inst : SVMS1
Misc : 785345,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 14:58:49 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.969	152	52010	20.00	ug/mL	0.00
21) Naphthalened8	5.620	136	216100	20.00	ug/mL	0.00
39) Acenaphthened10	7.237	164	135655	20.00	ug/mL	0.00
63) Phenanthrd10	8.183	188	237466	20.00	ug/mL	0.00
75) Chrysene-d12	9.589	240	206899	20.00	ug/mL	0.00
86) Perylene-d12	10.482	264	188813	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.833	112	72265	63.24	%REC	0.01
Spiked Amount 100.000	Range 20 - 110		Recovery = 63.24%			
7) SURRPhenol-d5	3.614	99	85195	58.50	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 58.50%			
22) SURRNitrbenzened5	4.628	82	47363	69.34	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 69.34%			
44) SURR2Flbiphenyl	6.742	172	135097	71.97	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 71.97%			
62) SURR246Tribrphenl	7.760	330	47506	76.83	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 76.83%			
78) SURRTerphenyl-d14	8.973	244	152529	92.02	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 92.02%			
Target Compounds						Qvalue
2) Ntrsdimeth	2.088	74	22866	12.5626	ug/mL	97
3) Pyridine	0.000		0	N.D.		
5) Aniline	3.628	93	932	0.1950	ug/mL#	1
6) bis2Clethletr	3.693	93	37231	12.5969	ug/mL	97
8) Phenol	3.628	94	47164	11.0711	ug/mL	96
9) 2-Cl-phenol	3.756	128	46183	12.9887	ug/mL	98
10) 13Diclbenz	3.904	146	49590	12.1805	ug/mL	98
11) 14Diclbenz	3.986	146	51237	12.2378	ug/mL	95
12) 12Diclbenz	4.154	146	51933	13.0081	ug/mL	94
13) Benzyl alcoho	4.151	108	16026	8.7841	ug/mL	83
14) bis2clispreth	4.303	45	68699	14.8284	ug/mL#	70
15) 2Methylphenol	4.299	107	38305	14.2512	ug/mL	91
16) Ntrspyrrol	4.424	100	23044	15.5402	ug/mL	97
17) Acetophenone	4.446	105	65425	14.1573	ug/mL	98
18) Hexaclethane	4.557	117	20146	12.5580	ug/mL	97
19) N-Ntrsdinprop	4.463	70	36018	15.0052	ug/mL	94
20) 3&4Methylphenol	4.500	107	47840	13.5478	ug/mL	95
23) Nitrobenzene	4.654	77	47412	13.0935	ug/mL	98
24) Isophorone	4.989	82	90992	14.2505	ug/mL	98
25) 2-Nitrophenol	5.083	139	24866	12.8234	ug/mL	98
26) 24Dimthpheno	5.211	122	38961	13.7309	ug/mL	99
27) bis2clethoxym	5.339	93	56519	13.8709	ug/mL	98
28) 24Diclphenol	5.475	162	35701	11.1739	ug/mL	95
29) 124Triclbenz	5.555	180	49956	12.9195	ug/mL	97
30) Benzoic acid	5.347	122	2630	3.4058	ug/mL#	59
31) Naphthalene	5.646	128	153257	13.3247	ug/mL	97
32) 4-Cl-aniline	5.751	127	805	0.1817	ug/mL#	38
33) 26Diclphenol	5.751	162	42294	14.2768	ug/mL	96
34) Hexaclprop	5.762	213	11828	4.1477	ug/mL	95
35) Hexaclbutdien	5.827	225	31829	12.5209	ug/mL	98
36) 4Cl3methylphe	6.333	107	34092	10.6802	ug/mL	96
37) 2Methylnaphth	6.407	142	106744	13.9831	ug/mL	98
38) 1Methylnaphth	6.495	141	94551	14.3751	ug/mL	96
40) Hxclcycpentdi	6.558	237	1919	1.1715	ug/mL	96

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\784853SD.D Vial: 31
Acq On : 20 Oct 2016 1:05 Operator: JJY
Sample : 131383,MSDS784853, Inst : SVMS1
Misc : 785345,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 14:58:49 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

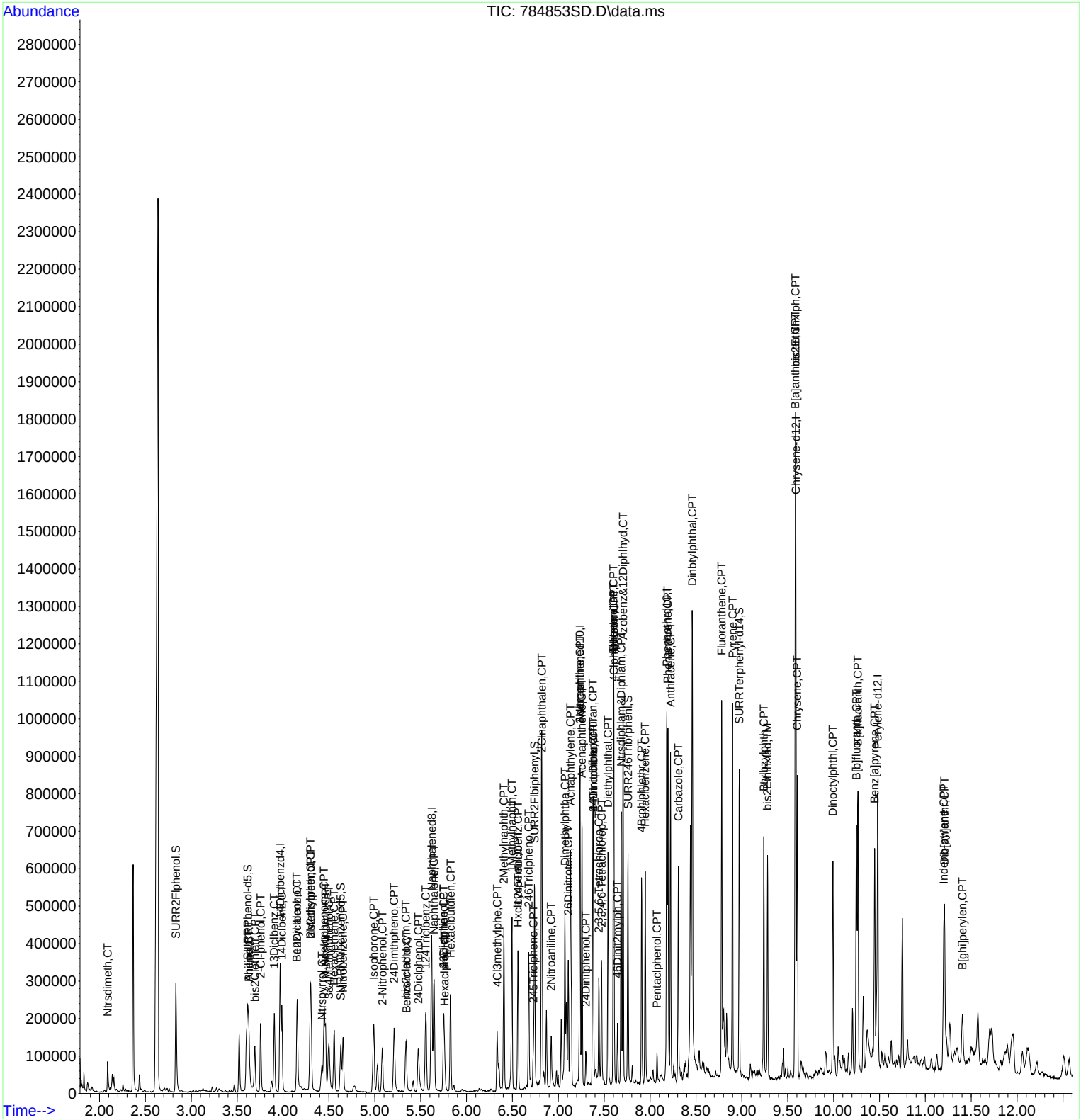
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
41) 1245Tetrclbenz	6.560	216	56282	12.7188 ug/mL	97
42) 246Triclpheno	6.677	196	39258	14.7298 ug/mL	98
43) 245Triclpheno	6.728	196	16112	5.3216 ug/mL	97
45) 2Clnaphthalen	6.822	162	112909	13.6402 ug/mL	96
46) 2Nitroaniline	6.921	65	24964	10.7697 ug/mL	96
47) Acnaphthylene	7.132	152	200188	14.2088 ug/mL	99
48) Dimethylphtha	7.072	163	150843	15.6434 ug/mL	98
49) 26Dinitrotolu	7.109	165	32555	15.5892 ug/mL	92
50) Acenaphthene	7.257	154	115723	14.3547 ug/mL	98
51) 3Nitroaniline	7.237	138	127	0.0600 ug/mL#	1
52) 24Dinitphenol	7.299	184	11497	10.0612 ug/mL	95
53) Dibenzofuran	7.376	168	184547	14.9206 ug/mL	97
54) 24Dinitrotolu	7.382	165	44379	15.5467 ug/mL	97
55) 4-Nitrophenol	7.382	65	2863	1.5389 ug/mL#	1
56) 2,3,5,6-Tetrachlorop	7.441	232	26646	10.7990 ug/mL	97
57) 2,3,4,6-Tetrachlorop	7.473	232	31726	11.5374 ug/mL	92
58) Fluorene	7.600	166	155171	15.7968 ug/mL	99
59) 4Clphlphlethr	7.606	204	76355	15.5960 ug/mL	98
60) Diethylphthal	7.541	149	157598	15.9095 ug/mL	99
61) 4Nitroaniline	7.600	138	2552	1.2341 ug/mL#	23
64) 46Dinit2mylph	7.646	198	17850	10.6385 ug/mL	97
65) Ntrsdiphlam&Diphlam	7.686	169	126262	18.7626 ug/mL	98
66) Azobenz&12Diphlhyd	7.706	182	62349	28.9983 ug/mL#	83
67) 4Brphlphlethr	7.907	248	48505	16.3503 ug/mL	94
68) Hexaclbenzene	7.947	284	52651	16.2901 ug/mL	95
69) Pentaclphenol	8.075	266	7033	3.8081 ug/mL	95
70) Phenanthrene	8.194	178	216753	16.7159 ug/mL	98
71) Anthracene	8.223	178	202297	15.2233 ug/mL	98
72) Carbazole	8.308	167	147217	13.0795 ug/mL	99
73) Dinbtylphthal	8.461	149	216729	15.0594 ug/mL	100
74) Fluoranthene	8.780	202	231861	16.5512 ug/mL	98
76) Benzidine	0.000		0	N.D.	
77) Pyrene	8.899	202	236902	18.4930 ug/mL	100
79) Btylbzylphth	9.240	149	96643	17.1764 ug/mL	97
80) bis2Ethlhxlad	9.280	129	68590	15.0853 ug/mL	100
81) 33Diclbnzidin	0.000		0	N.D.	
82) B[a]anthracen	9.584	228	207616	16.2408 ug/mL	99
83) Chrysene	9.604	228	182504	15.6036 ug/mL	99
84) bis2Ethlhxlph	9.587	149	135918	16.4836 ug/mL	100
85) Dinoctylphthl	9.993	149	217593	15.2346 ug/mL	100
87) B[b]fluoranth	10.249	252	221417	18.9197 ug/mL	99
88) B[k]fluoranth	10.266	252	186487	16.9649 ug/mL	97
89) Benz[a]pyrene	10.448	252	170859	15.1383 ug/mL	97
90) Indeno-pyrene	11.201	276	137076	10.2279 ug/mL	95
91) Dib[ah]anthr	11.209	278	118912	10.7184 ug/mL	97
92) B[ghi]perylen	11.405	276	61621	5.5303 ug/mL	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S101916\784853SD.D Vial: 31
Acq On : 20 Oct 2016 1:05 Operator: JJY
Sample : 131383,MSDS784853, Inst : SVMS1
Misc : 785345,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 14:58:49 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 12:40:39 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\1MBS02.D Vial: 8
Acq On : 20 Oct 2016 14:43 Operator: JJY
Sample : 131574,MBS, Inst : SVMS1
Misc : 787946,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:32:19 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

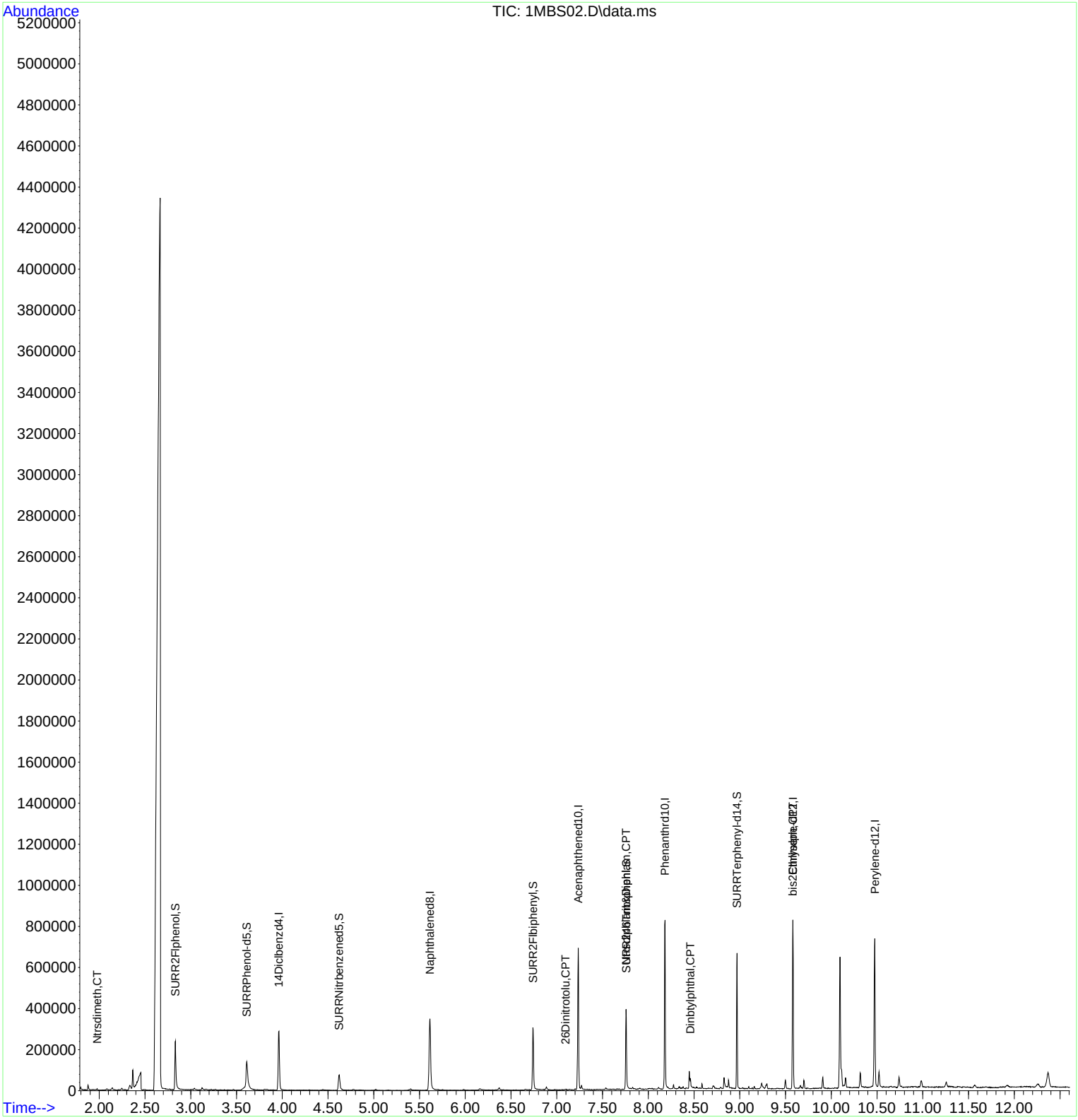
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.960	152	46993	20.00	ug/mL	0.00
21) Naphthalened8	5.614	136	209722	20.00	ug/mL	0.00
39) Acenaphthened10	7.234	164	123780	20.00	ug/mL	0.00
63) Phenanthrd10	8.183	188	221808	20.00	ug/mL	0.00
75) Chrysene-d12	9.581	240	196909	20.00	ug/mL	0.00
86) Perylene-d12	10.476	264	196279	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.832	112	58345	56.51	%REC	0.01
Spiked Amount 100.000	Range 20 - 110		Recovery = 56.51%			
7) SURRPhenol-d5	3.611	99	70730	53.76	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 53.76%			
22) SURRNitrbenzened5	4.620	82	33033	49.83	%REC	-0.01
Spiked Amount 100.000	Range 40 - 110		Recovery = 49.83%			
44) SURR2Flbiphenyl	6.739	172	89972	52.53	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 52.53%			
62) SURR246Tribrphenl	7.759	330	36371	64.46	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 64.46%			
78) SURRTerphenyl-d14	8.970	244	123497	78.29	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 78.29%			
Target Compounds						Qvalue
2) Ntrsdimeth	1.977	74	838	0.5096	ug/mL#	29
49) 26Dinitrotolu	7.097	165	209	0.1097	ug/mL#	29
65) Ntrsdiphlam&Diphlam	7.757	169	964	0.1534	ug/mL#	44
73) Dinbtylphthal	8.461	149	9808	0.7296	ug/mL	98
84) bis2Ethlhxlph	9.578	149	3119	0.3974	ug/mL	96

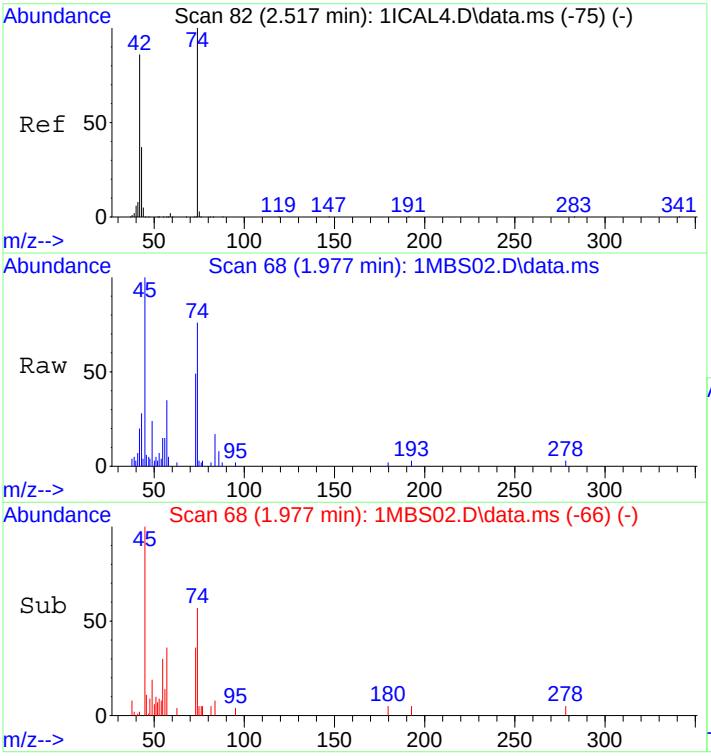
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\1MBS02.D Vial: 8
Acq On : 20 Oct 2016 14:43 Operator: JJY
Sample : 131574,MBS, Inst : SVMS1
Misc : 787946,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:32:19 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

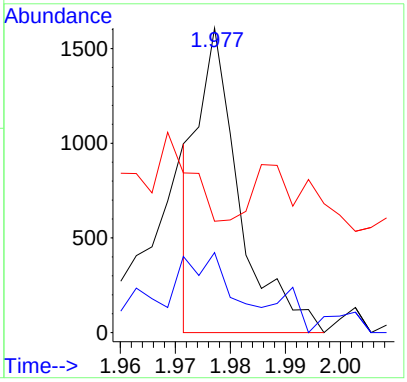


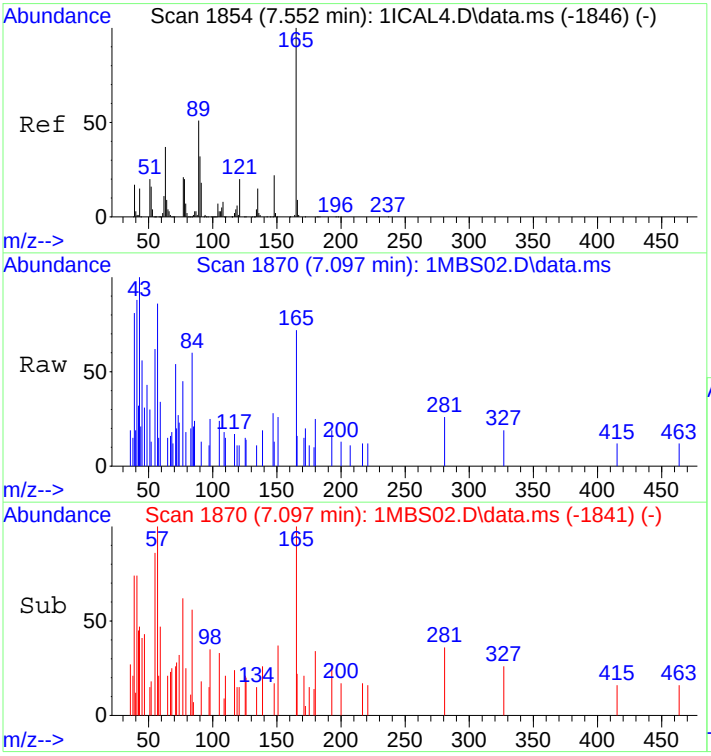


#2
Ntrsdimeth
Concen: 0.51 ug/mL
RT: 1.977 min Scan# 68
Delta R.T. -0.094 min
Lab File: 1MBS02.D
Acq: 20 Oct 16 2:43 pm

Tgt Ion: 74 Resp: 838

Ion	Ratio	Lower	Upper
74	100		
42	21.0	61.8	121.8#
43	0.0	5.5	65.5#

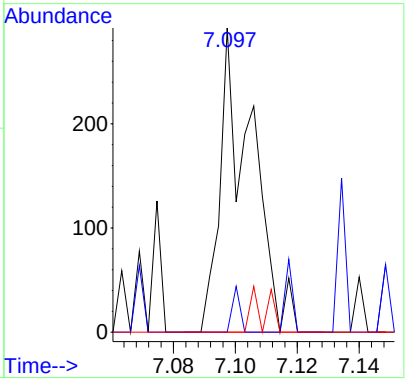


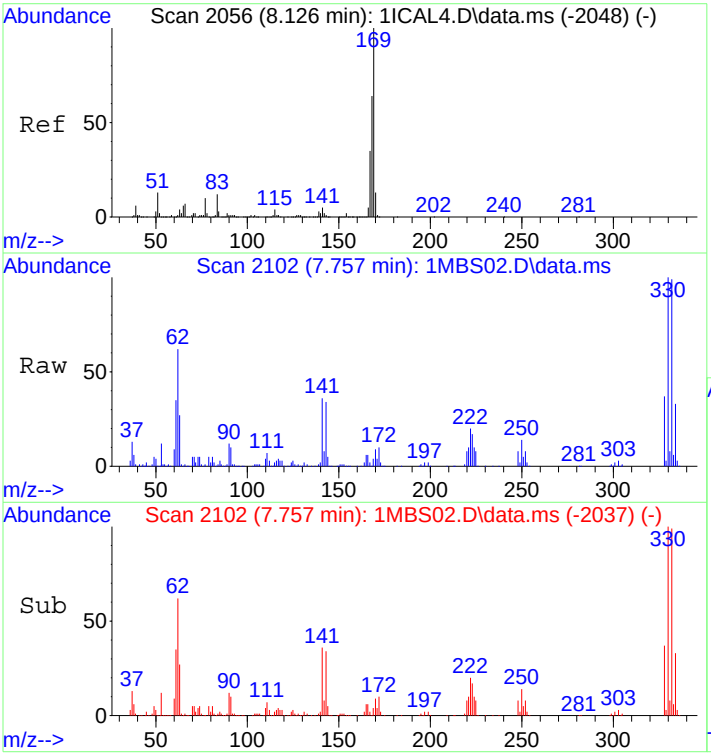


#49
26Dinitrotolu
Concen: 0.11 ug/mL
RT: 7.097 min Scan# 1870
Delta R.T. -0.017 min
Lab File: 1MBS02.D
Acq: 20 Oct 16 2:43 pm

Tgt Ion:165 Resp: 209

Ion	Ratio	Lower	Upper
165	100		
89	0.0	22.5	82.5#
63	0.0	23.3	63.3#

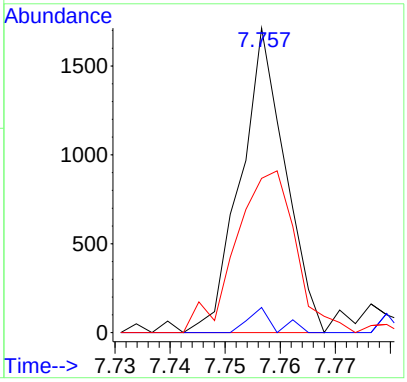


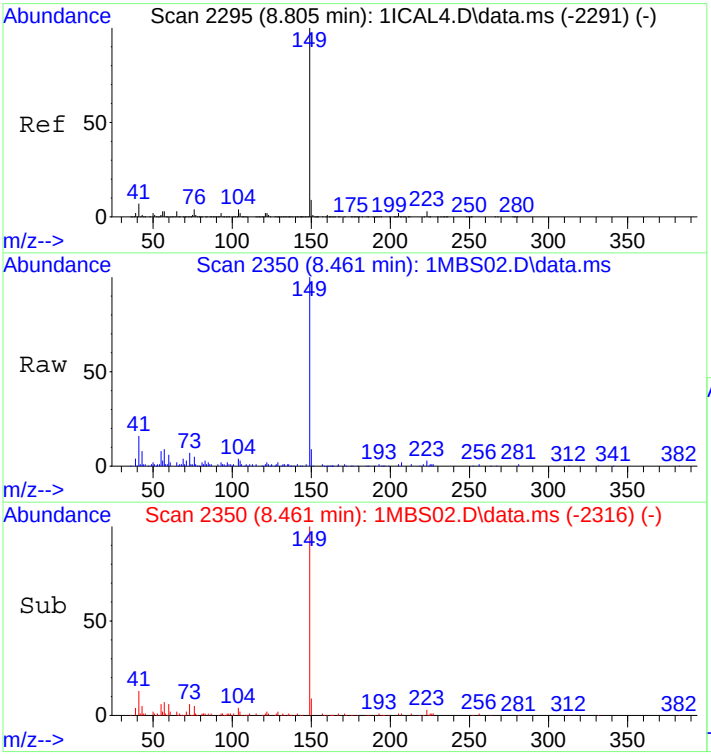


#65
Ntrsdiphlam&Diphlam
Concen: 0.15 ug/mL
RT: 7.757 min Scan# 2102
Delta R.T. 0.065 min
Lab File: 1MBS02.D
Acq: 20 Oct 16 2:43 pm

Tgt Ion:169 Resp: 964

Ion	Ratio	Lower	Upper
169	100		
168	8.3	35.5	95.5#
167	50.7	5.2	65.2

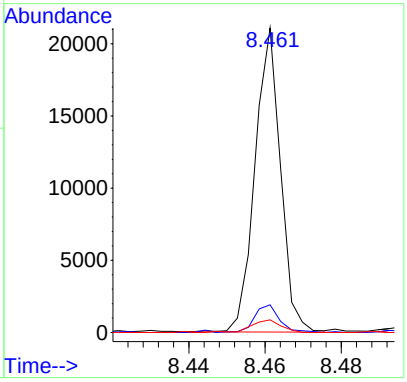


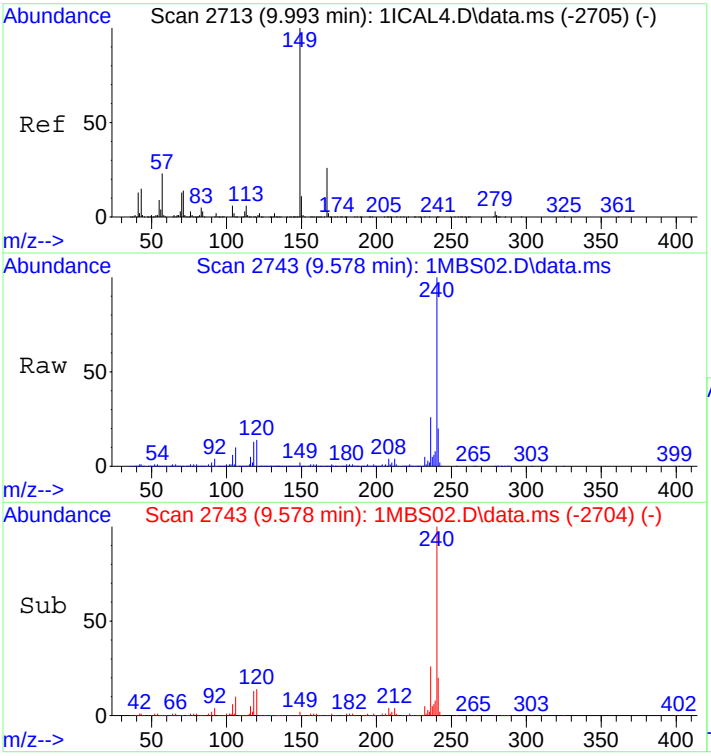


#73
Dinbtylphthal
Concen: 0.73 ug/mL
RT: 8.461 min Scan# 2350
Delta R.T. -0.003 min
Lab File: 1MBS02.D
Acq: 20 Oct 16 2:43 pm

Tgt Ion:149 Resp: 9808

Ion	Ratio	Lower	Upper
149	100		
150	9.1	0.0	39.8
104	4.2	0.0	34.5

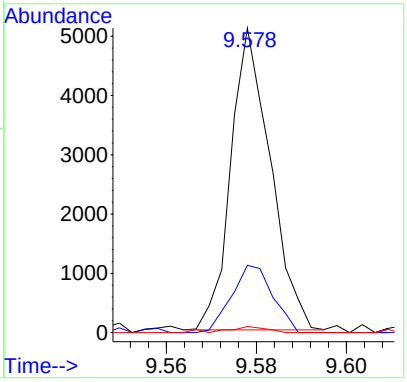




#84
bis2Ethlhxlph
Concen: 0.40 ug/mL
RT: 9.578 min Scan# 2743
Delta R.T. -0.003 min
Lab File: 1MBS02.D
Acq: 20 Oct 16 2:43 pm

Tgt Ion:149 Resp: 3119

Ion	Ratio	Lower	Upper
149	100		
167	22.3	0.0	54.6
279	2.0	0.0	33.1



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\1LCSS02.D Vial: 9
Acq On : 20 Oct 2016 15:02 Operator: JJY
Sample : 131574,LCSS, Inst : SVMS1
Misc : 787947,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:34:09 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.963	152	48808	20.00	ug/mL	0.00
21) Naphthalened8	5.617	136	207304	20.00	ug/mL	0.00
39) Acenaphthened10	7.240	164	116874	20.00	ug/mL	0.00
63) Phenanthrd10	8.186	188	211867	20.00	ug/mL	0.00
75) Chrysene-d12	9.584	240	196560	20.00	ug/mL	0.00
86) Perylene-d12	10.473	264	197989	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.824	112	104090	97.06	%REC	0.00
Spiked Amount 100.000	Range 20 - 110		Recovery = 97.06%			
7) SURRPhenol-d5	3.608	99	134978	98.77	%REC	0.00
Spiked Amount 100.000	Range 10 - 115		Recovery = 98.77%			
22) SURRNitrbenzened5	4.625	82	63714	97.24	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 97.24%			
44) SURR2Flbiphenyl	6.745	172	153900	95.16	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 95.16%			
62) SURR246Tribrphenl	7.762	330	48179	90.43	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 90.43%			
78) SURRTerphenyl-d14	8.970	244	155993	99.06	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 99.06%			
Target Compounds						Qvalue
2) Ntrsdimeth	2.088	74	29796	17.4439	ug/mL	96
3) Pyridine	2.142	79	30761	10.1548	ug/mL	94
5) Aniline	3.620	93	1462	0.3259	ug/mL#	1
6) bis2Clethletr	3.688	93	52921	19.0802	ug/mL	96
8) Phenol	3.622	94	73556	18.3990	ug/mL	96
9) 2-Cl-phenol	3.750	128	60034	17.9919	ug/mL	96
10) 13Diclbenz	3.901	146	66384	17.3753	ug/mL	98
11) 14Diclbenz	3.980	146	67590	17.2028	ug/mL	96
12) 12Diclbenz	4.148	146	66448	17.7357	ug/mL	98
13) Benzyl alcoho	4.140	108	36520	19.7595	ug/mL	93
14) bis2clispreth	4.298	45	82084	18.8798	ug/mL	80
15) 2Methylphenol	4.293	107	42745	16.9464	ug/mL	92
16) Ntrspyrrol	4.424	100	27502	19.7633	ug/mL	95
17) Acetophenone	4.444	105	83629	19.2836	ug/mL	99
18) Hexaclethane	4.552	117	26086	17.3275	ug/mL	94
19) N-Ntrsdinprop	4.461	70	42578	18.9017	ug/mL	97
20) 3&4Methylphenol	4.492	107	57874	17.4645	ug/mL	97
23) Nitrobenzene	4.651	77	60493	17.4148	ug/mL	99
24) Isophorone	4.983	82	103594	16.9126	ug/mL	99
25) 2-Nitrophenol	5.077	139	31275	16.8129	ug/mL	99
26) 24Dimthpheno	5.205	122	36591	13.4428	ug/mL	93
27) bis2clethoxym	5.339	93	73087	18.6982	ug/mL	97
28) 24Diclphenol	5.469	162	55412	18.0790	ug/mL	95
29) 124Triclbenz	5.555	180	63541	17.1300	ug/mL	96
30) Benzoic acid	5.407	122	20964	11.4835	ug/mL	85
31) Naphthalene	5.646	128	195952	17.7596	ug/mL	99
32) 4-Cl-aniline	5.771	127	21527	5.0641	ug/mL	89
33) 26Diclphenol	5.748	162	51202	18.0172	ug/mL	96
34) Hexaclprop	5.762	213	20728	7.5770	ug/mL	98
35) Hexaclbutdien	5.825	225	40371	16.5550	ug/mL	96
36) 4Cl3methylphe	6.339	107	55288	18.0554	ug/mL	95
37) 2Methylnaphth	6.410	142	133553	18.2373	ug/mL	98
38) 1Methylnaphth	6.495	141	115570	18.3162	ug/mL	97
40) Hxclcycpentdi	6.560	237	710	0.7792	ug/mL	82

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\1LCSS02.D Vial: 9
Acq On : 20 Oct 2016 15:02 Operator: JJY
Sample : 131574,LCSS, Inst : SVMS1
Misc : 787947,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:34:09 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

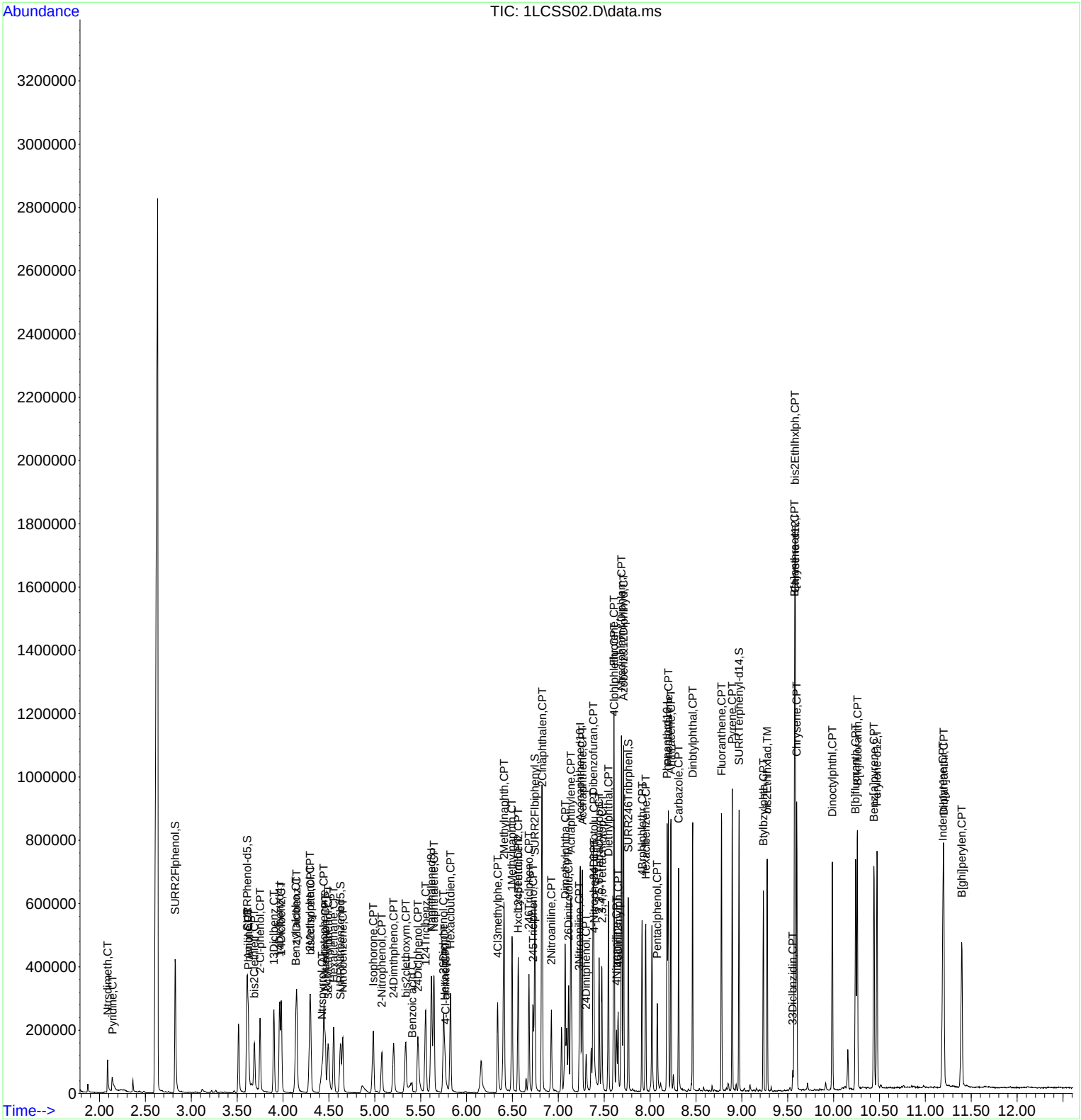
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
41) 1245Tetrclbenz	6.563	216	69548	18.2424 ug/mL	93
42) 246Triclpheno	6.680	196	43028	18.7386 ug/mL	97
43) 245Triclpheno	6.725	196	47417	18.1778 ug/mL	92
45) 2Clnaphthalen	6.825	162	124786	17.4975 ug/mL	99
46) 2Nitroaniline	6.924	65	38183	19.1196 ug/mL	96
47) Acnaphthylene	7.137	152	205978	16.9690 ug/mL	99
48) Dimethylphtha	7.075	163	156539	18.8428 ug/mL	99
49) 26Dinitrotolu	7.112	165	33894	18.8386 ug/mL	86
50) Acenaphthene	7.262	154	116625	16.7913 ug/mL	98
51) 3Nitroaniline	7.228	138	20483	11.2291 ug/mL	93
52) 24Dinitphenol	7.302	184	15657	14.4147 ug/mL	93
53) Dibenzofuran	7.382	168	190631	17.8892 ug/mL	98
54) 24Dinitrotolu	7.387	165	46092	18.7415 ug/mL	97
55) 4-Nitrophenol	7.390	65	25132	15.6798 ug/mL	87
56) 2,3,5,6-Tetrachlorop	7.444	232	38583	18.1496 ug/mL	94
57) 2,3,4,6-Tetrachlorop	7.475	232	41693	17.5984 ug/mL	96
58) Fluorene	7.606	166	150668	17.8031 ug/mL	100
59) 4Clphlphlethr	7.609	204	76245	18.0761 ug/mL	98
60) Diethylphthal	7.546	149	159730	18.7159 ug/mL	98
61) 4Nitroaniline	7.635	138	29489	16.5521 ug/mL	94
64) 46Dinit2mylph	7.652	198	24938	16.6588 ug/mL	98
65) Ntrsdiphlam&Diphlam	7.689	169	202774	33.7732 ug/mL	98
66) Azobenz&12Diphlhyd	7.711	182	70556	36.7802 ug/mL#	85
67) 4Brphlphlethr	7.913	248	48129	18.1838 ug/mL	96
68) Hexaclbenzene	7.953	284	52661	18.2618 ug/mL	97
69) Pentaclphenol	8.078	266	26030	15.7971 ug/mL	98
70) Phenanthrene	8.200	178	217304	18.7833 ug/mL	98
71) Anthracene	8.228	178	221034	18.6430 ug/mL	99
72) Carbazole	8.311	167	174107	17.3375 ug/mL	99
73) Dinbtylphthal	8.464	149	235598	18.3485 ug/mL	97
74) Fluoranthene	8.780	202	222726	17.8201 ug/mL	99
76) Benzidine	0.000		0	N.D.	
77) Pyrene	8.896	202	226939	18.6471 ug/mL	99
79) Btylbzylphth	9.234	149	102695	19.2121 ug/mL	98
80) bis2Ethlhxlad	9.277	129	85636	19.8249 ug/mL	100
81) 33Diclbnzidin	9.555	252	10513	2.7947 ug/mL	88
82) B[a]anthracen	9.575	228	222424	18.3144 ug/mL	98
83) Chrysene	9.598	228	206808	18.6115 ug/mL	99
84) bis2Ethlhxlph	9.578	149	154558	19.7301 ug/mL	100
85) Dinoctylphthl	9.987	149	268972	19.8224 ug/mL	100
87) B[b]fluoranth	10.240	252	228040	18.5826 ug/mL	98
88) B[k]fluoranth	10.260	252	221884	19.2495 ug/mL	99
89) Benz[a]pyrene	10.439	252	215886	18.2412 ug/mL	96
90) Indeno-pyrene	11.192	276	233380	16.6066 ug/mL	98
91) Dib[ah]anthr	11.201	278	199291	17.1310 ug/mL	94
92) B[ghi]perylen	11.397	276	194354	16.6344 ug/mL	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\1LCSS02.D Vial: 9
Acq On : 20 Oct 2016 15:02 Operator: JJY
Sample : 131574,LCSS, Inst : SVMS1
Misc : 787947,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:34:09 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\784496MS.D Vial: 16
Acq On : 20 Oct 2016 17:19 Operator: JJY
Sample : 131574,MSS784496, Inst : SVMS1
Misc : 787949,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:55:53 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.969	152	54756	20.00	ug/mL	0.00
21) Naphthalened8	5.620	136	201676	20.00	ug/mL	0.00
39) Acenaphthened10	7.234	164	132487	20.00	ug/mL	0.00
63) Phenanthrd10	8.180	188	240659	20.00	ug/mL	0.00
75) Chrysene-d12	9.589	240	225215	20.00	ug/mL	0.00
86) Perylene-d12	10.484	264	194658	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.869	112	85901	71.40	%REC	0.05
Spiked Amount 100.000	Range 20 - 110		Recovery = 71.40%			
7) SURRPhenol-d5	3.619	99	104737	68.32	%REC	0.01
Spiked Amount 100.000	Range 10 - 115		Recovery = 68.32%			
22) SURRNitrbenzened5	4.625	82	47164	73.99	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 73.99%			
44) SURR2Flbiphenyl	6.739	172	118048	64.39	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 64.39%			
62) SURR246Tribrphenl	7.759	330	42822	70.91	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 70.91%			
78) SURRTerphenyl-d14	8.970	244	130236	72.18	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 72.18%			
Target Compounds						Qvalue
2) Ntrsdimeth	2.099	74	18772	9.7962	ug/mL	93
3) Pyridine	0.000		0	N.D.		
5) Aniline	3.631	93	982	0.1951	ug/mL#	1
6) bis2Clethletr	3.696	93	36102	11.6023	ug/mL	93
8) Phenol	3.634	94	58156	12.9667	ug/mL	97
9) 2-Cl-phenol	3.761	128	47941	12.8069	ug/mL	95
10) 13Diclbenz	3.906	146	50486	11.7787	ug/mL	98
11) 14Diclbenz	3.989	146	51222	11.6207	ug/mL	97
12) 12Diclbenz	4.156	146	48343	11.5016	ug/mL	97
13) Benzyl alcoho	4.151	108	24336	12.2721	ug/mL	89
14) bis2clispreth	4.302	45	62038	12.7191	ug/mL#	60
15) 2Methylphenol	4.301	107	36285	12.8227	ug/mL	88
16) Ntrspyrrol	4.424	100	20606	13.1992	ug/mL	90
17) Acetophenone	4.446	105	64059	13.1665	ug/mL	94
18) Hexaclethane	4.554	117	18020	10.6695	ug/mL	96
19) N-Ntrsdinprop	4.460	70	31853	12.6045	ug/mL	95
20) 3&4Methylphenol	4.500	107	48939	13.1640	ug/mL	90
23) Nitrobenzene	4.651	77	46010	13.6151	ug/mL	98
24) Isophorone	4.986	82	81505	13.6777	ug/mL	99
25) 2-Nitrophenol	5.080	139	23304	12.8774	ug/mL	96
26) 24Dimthpheno	5.211	122	39637	14.9682	ug/mL	96
27) bis2clethoxym	5.338	93	54796	14.4099	ug/mL	97
28) 24Diclphenol	5.475	162	41681	13.9786	ug/mL	95
29) 124Triclbenz	5.554	180	45471	12.6006	ug/mL	99
30) Benzoic acid	5.375	122	4913	4.5060	ug/mL	89
31) Naphthalene	5.643	128	136672	12.7326	ug/mL	99
32) 4-Cl-aniline	5.753	127	810	0.1959	ug/mL#	38
33) 26Diclphenol	5.751	162	42357	15.3207	ug/mL	91
34) Hexaclprop	5.756	213	18231	6.8503	ug/mL	91
35) Hexaclbutdien	5.824	225	32424	13.6672	ug/mL	93
36) 4Cl3methylphe	6.336	107	45840	15.3877	ug/mL	98
37) 2Methylnaphth	6.404	142	102132	14.3358	ug/mL	96
38) 1Methylnaphth	6.492	141	89391	14.5626	ug/mL	100
40) Hxclcycpentdi	6.555	237	9013	3.7865	ug/mL	97

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\784496MS.D Vial: 16
Acq On : 20 Oct 2016 17:19 Operator: JJY
Sample : 131574,MSS784496, Inst : SVMS1
Misc : 787949,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:55:53 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

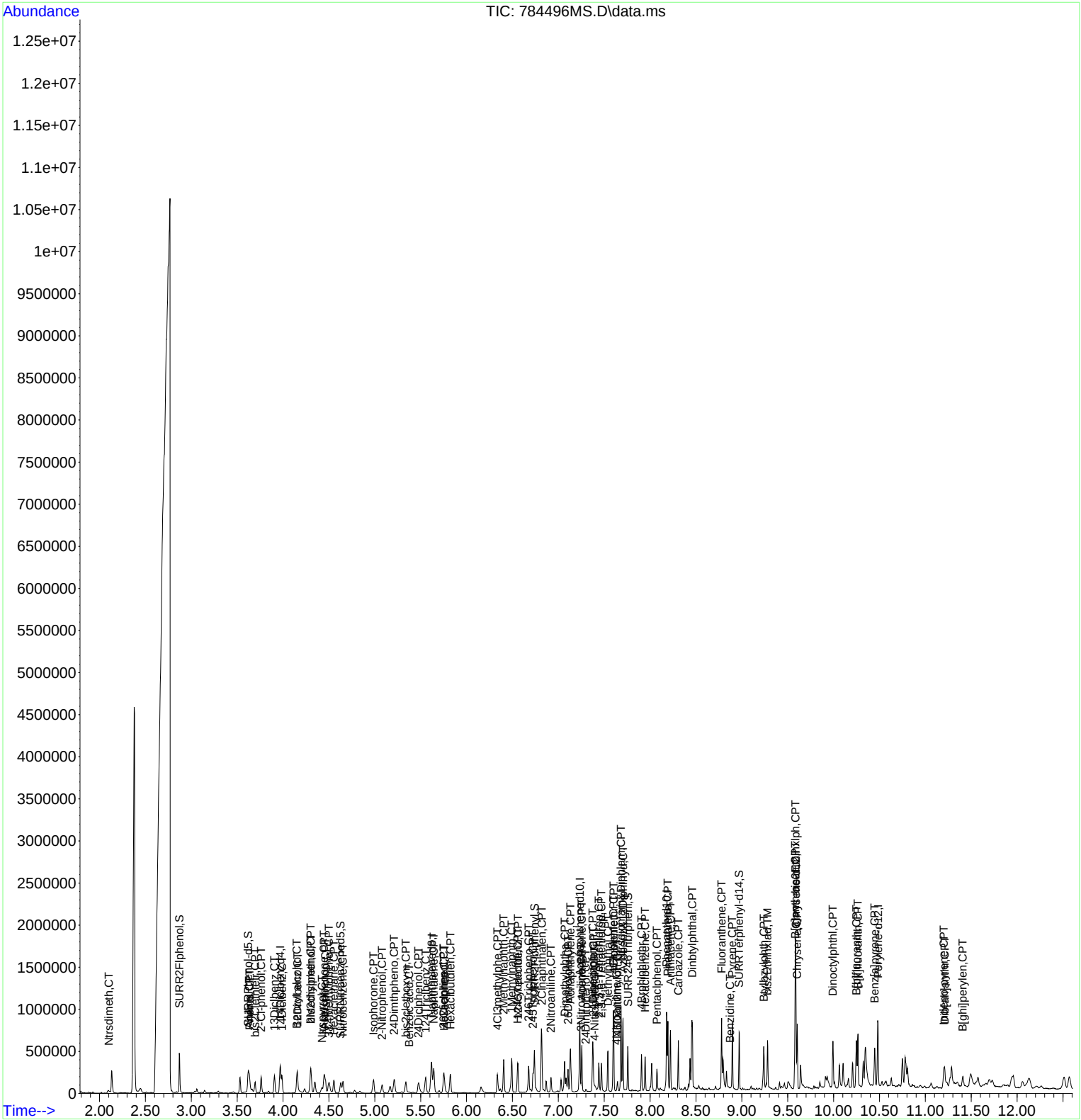
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
41) 1245Tetrclbenz	6.560	216	53216	12.3135 ug/mL	94
42) 246Triclpheno	6.677	196	37461	14.3916 ug/mL	96
43) 245Triclpheno	6.722	196	37583	12.7099 ug/mL	95
45) 2Clnaphthalen	6.822	162	96924	11.9891 ug/mL	99
46) 2Nitroaniline	6.918	65	27661	12.2186 ug/mL	91
47) Acnaphthylene	7.131	152	165369	12.0181 ug/mL	98
48) Dimethylphtha	7.069	163	122827	13.0425 ug/mL	98
49) 26Dinitrotolu	7.106	165	26794	13.1373 ug/mL	84
50) Acenaphthene	7.256	154	93009	11.8130 ug/mL	97
51) 3Nitroaniline	7.248	138	1336	0.6461 ug/mL#	44
52) 24Dinitphenol	7.299	184	4329	5.4454 ug/mL	91
53) Dibenzofuran	7.373	168	151919	12.5764 ug/mL	95
54) 24Dinitrotolu	7.382	165	37048	13.2888 ug/mL	86
55) 4-Nitrophenol	7.396	65	23674	13.0296 ug/mL	95
56) 2,3,5,6-Tetrachlorop	7.441	232	31593	13.1101 ug/mL	98
57) 2,3,4,6-Tetrachlorop	7.470	232	34736	12.9340 ug/mL	96
58) Fluorene	7.600	166	122480	12.7669 ug/mL	99
59) 4Clphlphlethr	7.603	204	61704	12.9048 ug/mL	98
60) Diethylphthal	7.541	149	129197	13.3543 ug/mL	99
61) 4Nitroaniline	7.634	138	5721	2.8328 ug/mL	86
64) 46Dinit2mylph	7.646	198	12295	7.2306 ug/mL	94
65) Ntrsdiphlam&Diphlam	7.683	169	173308	25.4120 ug/mL	98
66) Azobenz&12Diphlhyd	7.705	182	57100	26.2046 ug/mL	95
67) 4Brphlphlethr	7.907	248	37497	12.4720 ug/mL	96
68) Hexaclbenzene	7.947	284	40330	12.3125 ug/mL	98
69) Pentaclphenol	8.075	266	23267	12.4310 ug/mL	96
70) Phenanthrene	8.194	178	182576	13.8934 ug/mL	99
71) Anthracene	8.223	178	173662	12.8950 ug/mL	98
72) Carbazole	8.308	167	140367	12.3054 ug/mL	98
73) Dinbtylphthal	8.461	149	187160	12.8322 ug/mL	99
74) Fluoranthene	8.779	202	187452	13.2036 ug/mL	99
76) Benzidine	8.873	184	576	0.6541 ug/mL	61
77) Pyrene	8.896	202	190491	13.6608 ug/mL	100
79) Btylbzylphth	9.240	149	77601	12.6704 ug/mL	91
80) bis2Ethlhxlad	9.280	129	65418	13.2175 ug/mL	99
81) 33Diclbnzidin	0.000		0	N.D.	
82) B[a]anthracen	9.581	228	175003	12.5763 ug/mL	98
83) Chrysene	9.604	228	162743	12.7825 ug/mL	99
84) bis2Ethlhxlph	9.586	149	129969	14.4802 ug/mL	96
85) Dinoctylphthl	9.993	149	213163	13.7107 ug/mL	98
87) B[b]fluoranth	10.249	252	175771	14.5684 ug/mL	98
88) B[k]fluoranth	10.266	252	151488	13.3672 ug/mL	98
89) Benz[a]pyrene	10.447	252	138888	11.9361 ug/mL	98
90) Indeno-pyrene	11.200	276	80437	5.8216 ug/mL	95
91) Dib[ah]anthr	11.212	278	68292	5.9708 ug/mL	99
92) B[ghi]perylen	11.408	276	59328	5.1647 ug/mL	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\784496MS.D Vial: 16
Acq On : 20 Oct 2016 17:19 Operator: JJY
Sample : 131574,MSS784496, Inst : SVMS1
Misc : 787949,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:55:53 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M



Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\784496SD.D Vial: 17
Acq On : 20 Oct 2016 17:38 Operator: JJY
Sample : 131574,MSDS784496, Inst : SVMS1
Misc : 787950,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:57:24 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 14Diclbenzd4	3.969	152	55271	20.00	ug/mL	0.00
21) Naphthalened8	5.617	136	212437	20.00	ug/mL	0.00
39) Acenaphthened10	7.234	164	134551	20.00	ug/mL	0.00
63) Phenanthrd10	8.180	188	247980	20.00	ug/mL	0.00
75) Chrysene-d12	9.587	240	227197	20.00	ug/mL	0.00
86) Perylene-d12	10.485	264	194033	20.00	ug/mL	0.00
System Monitoring Compounds						
4) SURR2Flphenol	2.870	112	70182	57.79	%REC	0.05
Spiked Amount 100.000	Range 20 - 110		Recovery = 57.79%			
7) SURRPhenol-d5	3.620	99	92232	59.60	%REC	0.01
Spiked Amount 100.000	Range 10 - 115		Recovery = 59.60%			
22) SURRNitrbenzened5	4.628	82	42800	63.74	%REC	0.00
Spiked Amount 100.000	Range 40 - 110		Recovery = 63.74%			
44) SURR2Flbiphenyl	6.740	172	109749	58.94	%REC	0.00
Spiked Amount 100.000	Range 50 - 110		Recovery = 58.94%			
62) SURR246Tribrphenl	7.757	330	37317	60.84	%REC	0.00
Spiked Amount 100.000	Range 40 - 125		Recovery = 60.84%			
78) SURRTerphenyl-d14	8.970	244	110578	60.75	%REC	0.00
Spiked Amount 100.000	Range 50 - 135		Recovery = 60.75%			
Target Compounds						Qvalue
2) Ntrsdimeth	2.102	74	16728	8.6482	ug/mL	92
3) Pyridine	0.000		0	N.D.		
5) Aniline	3.625	93	1066	0.2099	ug/mL#	1
6) bis2Clethletr	3.696	93	32786	10.4385	ug/mL	96
8) Phenol	3.631	94	49987	11.0415	ug/mL	98
9) 2-Cl-phenol	3.762	128	42571	11.2664	ug/mL	99
10) 13Diclbenz	3.907	146	45311	10.4729	ug/mL	96
11) 14Diclbenz	3.986	146	45739	10.2801	ug/mL	92
12) 12Diclbenz	4.154	146	44684	10.5320	ug/mL	95
13) Benzyl alcoho	4.151	108	22284	11.2251	ug/mL	91
14) bis2clispreth	4.302	45	57034	11.5842	ug/mL#	69
15) 2Methylphenol	4.299	107	33013	11.5577	ug/mL	94
16) Ntrspyrrol	4.421	100	18422	11.6903	ug/mL	92
17) Acetophenone	4.447	105	59048	12.0235	ug/mL	97
18) Hexaclethane	4.555	117	16490	9.6726	ug/mL	97
19) N-Ntrsdinprop	4.461	70	28622	11.2205	ug/mL	95
20) 3&4Methylphenol	4.501	107	43733	11.6540	ug/mL	94
23) Nitrobenzene	4.651	77	42833	12.0329	ug/mL	94
24) Isophorone	4.984	82	73378	11.6901	ug/mL	98
25) 2-Nitrophenol	5.077	139	22022	11.5526	ug/mL	97
26) 24Dimthpheno	5.211	122	34918	12.5182	ug/mL	95
27) bis2clethoxym	5.336	93	48416	12.0872	ug/mL	98
28) 24Diclphenol	5.475	162	37656	11.9890	ug/mL	94
29) 124Triclbenz	5.552	180	41779	10.9911	ug/mL	97
30) Benzoic acid	5.364	122	3903	3.9653	ug/mL	95
31) Naphthalene	5.643	128	125923	11.1369	ug/mL	99
32) 4-Cl-aniline	5.745	127	659	0.1513	ug/mL	80
33) 26Diclphenol	5.751	162	34608	11.8837	ug/mL	93
34) Hexaclprop	5.759	213	15238	5.4356	ug/mL	97
35) Hexaclbutdien	5.822	225	25808	10.3274	ug/mL	94
36) 4Cl3methylphe	6.336	107	36643	11.6773	ug/mL	98
37) 2Methylnaphth	6.404	142	84319	11.2359	ug/mL	98
38) 1Methylnaphth	6.492	141	73081	11.3025	ug/mL	96
40) Hxclcycpentdi	6.552	237	7316	3.1244	ug/mL	91

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\784496SD.D Vial: 17
Acq On : 20 Oct 2016 17:38 Operator: JJY
Sample : 131574,MSDS784496, Inst : SVMS1
Misc : 787950,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:57:24 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M

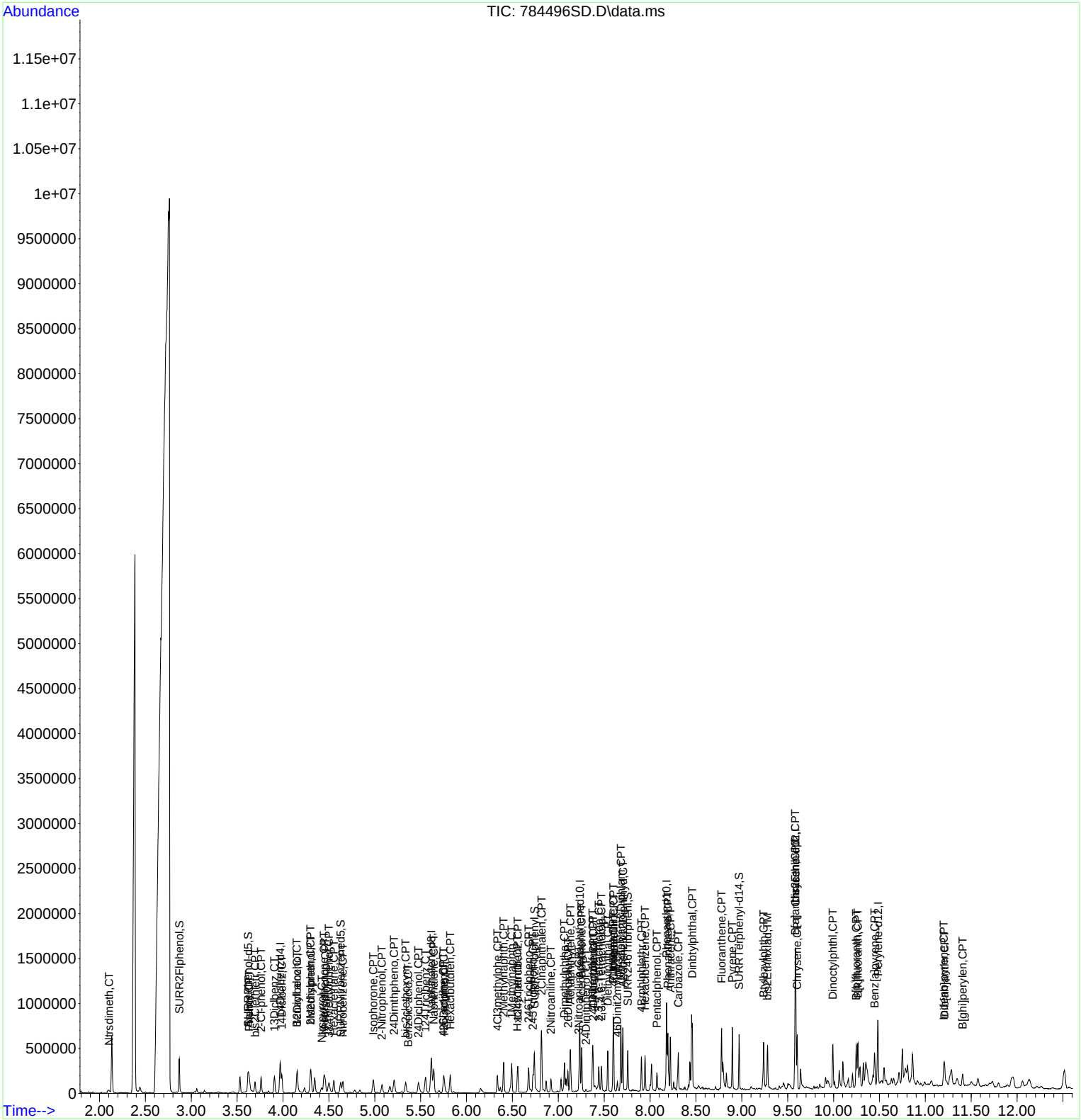
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
41) 1245Tetrclbenz	6.558	216	44302	10.0937 ug/mL	96
42) 246Triclpheno	6.677	196	30655	11.5963 ug/mL	97
43) 245Triclpheno	6.723	196	32516	10.8277 ug/mL	93
45) 2Clnaphthalen	6.819	162	87168	10.6169 ug/mL	99
46) 2Nitroaniline	6.919	65	22386	9.7368 ug/mL	90
47) Acnaphthylene	7.132	152	149046	10.6657 ug/mL	99
48) Dimethylphtha	7.066	163	110051	11.5066 ug/mL	99
49) 26Dinitrotolu	7.106	165	23737	11.4599 ug/mL	90
50) Acenaphthene	7.254	154	85752	10.7243 ug/mL	99
51) 3Nitroaniline	7.223	138	243	0.1157 ug/mL#	1
52) 24Dinitphenol	7.302	184	3784	5.0416 ug/mL	84
53) Dibenzofuran	7.373	168	135751	11.0655 ug/mL	95
54) 24Dinitrotolu	7.382	165	32211	11.3766 ug/mL	86
55) 4-Nitrophenol	7.379	65	1692	0.9170 ug/mL#	1
56) 2,3,5,6-Tetrachlorop	7.441	232	27056	11.0552 ug/mL	97
57) 2,3,4,6-Tetrachlorop	7.470	232	29740	10.9039 ug/mL	95
58) Fluorene	7.598	166	108502	11.1364 ug/mL	99
59) 4Clphlphlethr	7.603	204	55496	11.4284 ug/mL	98
60) Diethylphthal	7.538	149	112526	11.4527 ug/mL	98
61) 4Nitroaniline	7.601	138	4996	2.4358 ug/mL#	1
64) 46Dinit2mylph	7.643	198	11784	6.7254 ug/mL	88
65) Ntrsdiphlam&Diphlam	7.683	169	132870	18.9075 ug/mL	99
66) Azobenz&12Diphlhyd	7.706	182	48199	21.4667 ug/mL	99
67) 4Brphlphlethr	7.907	248	34339	11.0844 ug/mL	97
68) Hexaclbenzene	7.944	284	38780	11.4897 ug/mL	96
69) Pentaclphenol	8.075	266	19034	9.8692 ug/mL	92
70) Phenanthrene	8.194	178	156760	11.5767 ug/mL	99
71) Anthracene	8.223	178	150576	10.8507 ug/mL	99
72) Carbazole	8.308	167	111272	9.4668 ug/mL	97
73) Dinbtylphthal	8.461	149	173936	11.5735 ug/mL	99
74) Fluoranthene	8.780	202	160842	10.9948 ug/mL	99
76) Benzidine	0.000		0	N.D.	
77) Pyrene	8.896	202	163659	11.6342 ug/mL	100
79) Btylbzylphth	9.237	149	73150	11.8394 ug/mL	98
80) bis2Ethlhxlad	9.280	129	57939	11.6043 ug/mL	99
81) 33Diclbnzidin	0.000		0	N.D.	
82) B[a]anthracen	9.581	228	149239	10.6313 ug/mL	99
83) Chrysene	9.604	228	136642	10.6388 ug/mL	98
84) bis2Ethlhxlph	9.584	149	105559	11.6580 ug/mL	97
85) Dinoctylphthl	9.993	149	180516	11.5095 ug/mL	100
87) B[b]fluoranth	10.246	252	136645	11.3620 ug/mL	98
88) B[k]fluoranth	10.266	252	134402	11.8977 ug/mL	97
89) Benz[a]pyrene	10.448	252	114935	9.9094 ug/mL	97
90) Indeno-pyrene	11.201	276	81782	5.9380 ug/mL	96
91) Dib[ah]anthr	11.209	278	68905	6.0438 ug/mL	95
92) B[ghi]perylen	11.408	276	58796	5.1348 ug/mL	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\INSTARCH\Data\1S102016\784496SD.D Vial: 17
Acq On : 20 Oct 2016 17:38 Operator: JJY
Sample : 131574,MSDS784496, Inst : SVMS1
Misc : 787950,500uL+5ul IS S3516D Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 21 15:57:24 2016

Quant Method : C:\INSTARCH\METHODS\1S090816.M
Quant Title : Method for 8270 analysis
QLast Update : Fri Oct 21 15:22:59 2016
Response via : Initial Calibration
DataAcq Meth:1S090816.M



SEMI - VOLATILE ORGANIC ANALYSIS
LOGBOOK
DOCUMENTS

S SVOC 8270 SOIL Analytical Run
131383 on 10/14/2016

Date Analyzed: 10/19/2016

QPN
11/04/16

Date Reviewed: _____

Date Entered: _____

Date Validated: _____

COC	ORDER	SAMPLE DECRIPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
122724	784783		10/06/2016 1505		BERING SEA ENVIRONMENTAL	RADFORD AAP	SVOC 8270 QSM 5		S	**4**	
		RFAAP-FGMR-SSD-001						59434			
122724	784852		10/06/2016 1515		BERING SEA ENVIRONMENTAL	RADFORD AAP	SVOC 8270 QSM 5		S	**4**	
		RFAAP-FGMR-DUP1						59434			
122724	784853		10/06/2016 1530		BERING SEA ENVIRONMENTAL	RADFORD AAP	SVOC 8270 QSM 5		S	**4**	
		RFAAP-FGMR-SSD-002		Designated MS/MSD				59434			
122724	784854		10/06/2016 1550		BERING SEA ENVIRONMENTAL	RADFORD AAP	SVOC 8270 QSM 5		S	**4**	
		RFAAP-FGMR-SSD-003						59434			
122724	784855		10/06/2016 1610		BERING SEA ENVIRONMENTAL	RADFORD AAP	SVOC 8270 QSM 5		S	**4**	
		RFAAP-FGMR-SSD-004						59434			
	785341						SVOC 8270 QSM 5				
				MBS				59434			
	785342						SVOC 8270 QSM 5				
				LCSS				59434			
	785344		10/06/2016 1530				SVOC 8270 QSM 5				
		RFAAP-FGMR-SSD-002		MSS 784853				59434			
	785345		10/06/2016 1530				SVOC 8270 QSM 5				
		RFAAP-FGMR-SSD-002		MSDS 785344				59434			

9 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

PREP WORKSHEET
on 10/14/2016

Prep Batch **59,434** Date Prepped: 10/10/2016 Prepped By BMM

Folder #	Order	QC Type	Link	Test	Matrix	Volume	Weight	Initial Volume	SDG Level	Notes
	785341	MBS		SVOC 8270 QSM 5	SOLID	1.0	10.00			
	785342	LCSS		SVOC 8270 QSM 5	SOLID	1.0	10.00			
122724	784783			SVOC 8270 QSM 5	SOIL	1.0	10.00		4	
	784852			SVOC 8270 QSM 5	SOIL	1.0	10.04		4	
	784853	*		SVOC 8270 QSM 5	SOIL	1.0	9.95		4	
	784854			SVOC 8270 QSM 5	SOIL	1.0	10.07		4	
	784855			SVOC 8270 QSM 5	SOIL	1.0	9.99		4	
	785344	MSS	784853	SVOC 8270 QSM 5	SOIL	1.0	10.06			
	785345	MSDS	785344	SVOC 8270 QSM 5	SOIL	1.0	9.95			

Notes:_____

FSV6-02 & FSV7-02

Method 8270-SV GC/MS Extraction Bench Sheet

(SOP Reference #'s 8270C, 8270D, 8270 SIM)

3510=WATER
3545=PFE or 3546=Microwave >>
(PFE=Pressurized Fluid Extraction)

Prep Batch #:	59434
Prep Method:	3546
Analyst:	BMM/JLH
Date:	10/10/2016
Start Time:	10:00
End Date:	10/14/2016
End Time:	14:00

Matrix: SOIL
Balance Used: SVB02
Ave MW temp(°C): 110.0

Reagent Lots>>>

Sodium Sulfate	S3513
Diatomaceous Earth	S3530
Dionex Solution	MISC0359D
Methylene Chloride	56217
Acetone	55338
Sulfuric Acid	NA
Sodium Hydroxide	NA

Initial Concentration By: BMM/JLH
Date: 10/13/2016
GPC Cleanup? (yes/no): YES
Date: 10/13/2016
Final Concentration By: BMM/JLH
Date: 10/14/2016

Microwave Cell #	Sample ID	Comments		(Solids) Sample Weight (g)	(Liquids) Sample Volume (L)	Final Volume (ml)	ph Adj. <2 (Yes/No)	pH Adj. >12 Yes/No)
10A	785341	(MB)		10.00		1.0		
11A	785342	(LCS)		10.00		1.0		
12A	784783			10.00		1.0		
16A	784852			10.04		1.0		
17A	784853			9.95		1.0		
18A	784854			10.07		1.0		
19A	784855			9.99		1.0		
						1.0		
						1.0		
						1.0		
						1.0		
						1.0		
						1.0		
						1.0		
						1.0		
						1.0		
						1.0		
						1.0		
						1.0		
						1.0		
						1.0		
						1.0		
						1.0		
8A	785344	(MS)	Parent Sample	10.06		1.0		
9A	785345	(MSD)	784853	9.95		1.0		

MB=Method Blank, LCS=Laboratory Control Sample, MS=Matrix Spike & MSD=Matrix Spike Duplicate

MS/MSD/ LCS Spike Amount (ml): 1
Spike Concentration (ug/mL): 20
Spike Reference #: SVMS7233

Surrogate Spike Amount (ml): 1
Surrogate Spike Conc. (ug/mL): 20/40
Surrogate Spike Reference #: SVMS7199

Relinquished to: JJY
Date: 10/14/2016

Reviewed By: JJY
Date: 10/14/2016

FSV6-01

8270 SVOC Analysis Data Review Checklist

Analytical Run #: 131383	**Independent Reviewer: RED**
Sequence Date: 10/19/2016	**Date of Review: 10/21/2016**
Analyst/Data Interpreter: JJY	**Approval: 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.

Requirements:	Acceptance Criteria	Analyst Review		Independent Review		Comments (indicate reference to an attachment if necessary)
		Yes	No	Yes	No	
1. INITIAL CALIBRATION (ICAL)						
a. Was the initial calibration performed using a minimum of five standard concentration levels?	Lowest standard at or near MRL	**Yes**		x		See below for reported analytes.
b. SPCC responses.	Avg. RRF ≥ 0.05	**Yes**		x		
c. Is the variation between calibration response factors for all concentration levels <15% RSD, is r >.995, or r^2 > 0.990 for the regression line. RSD≤ 15%, ≤ 30% for CCCs.	RSD≤ 15%, ≤ 30% for CCCs	**Yes**		x		
d. Were the standards used for the ICAL uniquely identified?		**Yes**		x		
e. Was there a DFTPP standard analyzed prior to the ICAL?		**Yes**		x		
f. Was an instrument blank (IB) analyzed prior to the ICAL?		**Yes**		x		
2. INITIAL CALIBRATION VERIFICATION (ICV)						
a. Were there a second source ICVs for all target analytes analyzed after the initial calibration and prior to analysis of any samples?	Second source	**Yes**		x		
b. Were the SPCC within QC limits	RRF ≥ 0.05	**Yes**		x		
c. Were the CCCs within QC limits	%D ≤ 20%	**Yes**		x		
d. Were the ICVs uniquely identified (i.e. Standard Number)?		**Yes**		x		
3. CONTINUING CALIBRATION VERIFICATION (CCV)						
a. Were CCVs for target analytes analyzed at the beginning of the sequence and after every 12 hours.		**Yes**		x		
b. Were SPCC compounds acceptable?	RRF ≥ 0.050	**Yes**		x		
c. Were the CCCs compounds acceptable?	%D ≤ 20%	**Yes**		x		
d. Were the recoveries for the CCVs acceptable?	%D≤20%	**Yes**		x		
e. Was each CCV uniquely identified (i.e. Standard Number)?		**Yes**		x		

Additional Comments:

These samples were analyzed for the following compounds only: di-n-butylphthalate, 2-choronaphthalene, n-nitrosodiphenylamine&diphenylamine.

Analytical Run #: 131383

FSV6-01

8270 SVOC Analysis Data Review Checklist

Requirements:	Acceptance Criteria	Analyst		Independent		Comments (indicate reference to an attachment if necessary)
		Yes	No	Yes	No	
4. DFTPP						
a. Was a DFTPP tune check ran at the beginning of every twelve hour shift?		**Yes**		**x**		
b. Were the relative abundance criteria met?		**Yes**		**x**		
c. Was the peak tailing <2 on Pentachlorophenol and <2 on Benzidine?	Tailing <2%	**Yes**		**x**		
d. Was the breakdown of DDT to DDE and DDD less than 20%	Breakdown ≤20%	**Yes**		**x**		
5. BLANKS						
a. Was method blank (MB) analyzed prior to the analysis of samples?		**Yes**		**x**		
b. Were the MB results less than the reporting limit (RL)?	< MRL	**Yes**		**x**		
c. Was a MB prepped and analyzed at a frequency of one per Prep Batch?	Batch <20 samples	**Yes**		**x**		
6. LABORATORY CONTROL SAMPLE (LCS)						
a. Was a LCS analyzed prior to the analysis of samples?		**Yes**		**x**		
b. Were the LCS recoveries in each LCS within the acceptance criteria?	In-house limits or client specified limits	**Yes**		**x**		
7. MATRIX SPIKES						
a. Was a matrix spiked (MS) sample analyzed at a frequency one per Prep Batch?	Batch <20 samples	**Yes**		**x**		
b. Were MS recoveries in each MS within the acceptance criteria?	In-house limits or client specified limits	**Yes**		**x**		
8. LABORATORY CONTROL SPIKE / MATRIX SPIKE DUPLICATE						
a. Was a duplicate matrix spike or laboratory control spike sample analyzed at a frequency one per Prep Batch?	Batch <20 samples	**Yes**		**x**		
b. Were MSD or LCSD recoveries within the acceptance criteria?	In-house limits or client specified limits	**Yes**		**x**		
c. Is the relative percent difference (RPD) between a matrix spike (MS) and its' duplicate (MSD) or laboratory control spike (LCS) and its' duplicate (LCSD) within the acceptance criteria?	In-house limits or client specified limits		**No**		**x**	di-n-butylphthalate had high RPD. "Y" in parent.

Additional Comments:

Method blank 785341 had low responses of internal standard 5 and 6. These internal standards were not used in the quantitation of the reported analytes.

Analytical Run #: 131383

FSV6-01

8270 SVOC Analysis Data Review Checklist

Requirements:	Acceptance Criteria	Analyst		Independent		Comments (indicate reference to an attachment if necessary)
		Yes	No	Yes	No	
9. SAMPLES (INCLUDING BLANKS, STANDARDS, AND QC SAMPLES)						
a. Are chromatogram characteristics, including peak shapes and areas, consistent with those of the CCV?		**Yes**		**x**		
b. Are surrogate recoveries for all samples, blanks, standards, and QC samples within acceptance criteria?			**No**		**x**	See below.
c. Were all samples having analytes detected in amounts exceeding the calibration range diluted and reanalyzed?		**Yes**		**x**		
d. Were all samples extracted within holding times and analyzed within 40 days of extracting?	Analysis within 40 days of extraction	**Yes**		**x**		
e. Did the samples require additional cleanup steps? (i.e. acid treatment, acid-base fractioning, and GPC)	GPC, Acid/Base, Treatments	**Yes**		**x**		GPC.
10. RECORDS AND REPORTING						
a. Are Run, Prep Batch and Extraction sheets, Summary sheets, Sequence file, initial and rerun raw and process data present in the data file?		**Yes**		**x**		
b. Are all chromatograms dated and initialed?		**Yes**		**x**		
c. Are reported results whose amounts exceeded the acceptance criteria flagged with an appropriate qualifier and, if needed, a NCR completed?		**Yes**		**x**		
d. Do all values, dilution factors and qualifiers listed on the raw reports match the LIMS data?		**Yes**		**x**		
e. Is the ICAL method referenced on the Raw Data?		**Yes**		**x**		

Additional Comments:

Sample 784854 had a low recovery of surrogate terphenyl-d14. confirmed in analysis on 10/14/2016.

Sequence Name: C:\INSTARCH\Sequence\1S090816.S
Comment: 8270
Operator: RPN
Data Path: C:\INSTARCH\DATA\1S090816\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line			Sample Name/Misc Info	
1)	Sample	99	1IB01	1S090816 InstrumentBlank
2)	DFTPP	1	1DFTP156	1DFTPP DFTPP TUNE SVMS7090
3)	Sample	99	1IB02	1S090816 InstrumentBlank
4)	Sample	2	1ICAL7A	1S090816 ICAL 50ug/ml SVMS7191
5)	Sample	3	1ICAL6A	1S090816 ICAL40ug/ml SVMS7190
6)	Sample	4	1ICAL5A	1S090816 ICAL30ug/ml SVMS7189
7)	Sample	5	1ICAL4A	1S090816 ICAL20ug/ml SVMS7188
8)	Sample	6	1ICAL3A	1S090816 ICAL10ug/ml SVMS7197
9)	Sample	7	1ICAL2A	1S090816 ICAL5ug/ml SVMS7186
10)	Sample	8	1ICAL1A	1S090816 ICAL1ug/ml SVMS7185
11)	Sample	9	1ICV1A	1S090816 ICV 20ug/ml SVMS7192
12)	Sample	99	1IB03	1S090816 InstrumentBlank
13)	Sample	11	1ICAL7	1S090816 ICAL50ug/ml SVMS7214
14)	Sample	12	1ICAL6	1S090816 ICAL40ug/ml SVMS7213
15)	Sample	13	1ICAL5	1S090816 ICAL30ug/ml SVMS7212
16)	Sample	14	1ICAL4	1S090816 ICAL20ug/ml SVMS7211
17)	Sample	15	1ICAL3	1S090816 ICAL10ug/ml SVMS7210
18)	Sample	16	1ICAL2	1S090816 ICAL5ug/ml SVMS7209
19)	Sample	17	1ICAL1	1S090816 ICAL1ug/ml SVMS7208
20)	Sample	18	1ICV1	1S090816 ICV 20ug/ml SVMS7215
21)	Sample	19	1ICV2	1S090816 ICV 40ug/ml SVMS7216

Sequence Name: C:\INSTARCH\Sequence\1S101916.S
Comment: 8270
Operator: JJY
Data Path: C:\INSTARCH\DATA\1S101916\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line			Sample Name/Misc Info	
1)	Sample	99	1IB01	1S090816 InstrumentBlank
2)	DFTPP	1	1DFTP189	1DFTPP DFTPP TUNE SVMS7090
3)	Sample	2	1CCV214	1S090816 CCV20ug/ml SVMS7217
4)	Sample	3	1CCV215	1S090816 CCV20ug/ml SVMS7194
5)	Sample	4	1MRL01	1S090816 MRL 1/5ug/ml SVMS7241
6)	Sample	5	1MRL01A	1S090816 MRL 1ug/ml SVMS7195
7)	Sample	6	1MDL01	1S090816 MDL 0.5/2.5ug/ml SVMS7242
8)	Sample	7	1MBW01	1S090816 131496,MBW,
9)	Sample	8	1LCSW01	1S090816 131496,LCSW,
10)	Sample	9	788094	1S090816 131496,788094,
11)	Sample	10	1MRL02	1S090816 MRL 1/5ug/ml SVMS7241
12)	Sample	11	1MRL02A	1S090816 MRL 1ug/ml SVMS7195
13)	Sample	12	1MDL02	1S090816 MDL 0.5/2.5ug/ml SVMS7242
14)	Sample	13	783337R	1S090816 131413,783337,
15)	Sample	14	784884	1S090816 131496,784884,
16)	Sample	15	785421	1S090816 131496,785421,
17)	Sample	16	787198	1S090816 131496,787198,
18)	Sample	17	787199	1S090816 131496,787199,
19)	Sample	18	787200	1S090816 131496,787200,
20)	Sample	19	784879	1S090816 131496,784879,
21)	Sample	20	784879MS	1S090816 131496,MSW784879,
22)	Sample	21	784879SD	1S090816 131496,MSDW784879,
23)	Sample	22	1MBS01	1S090816 131383,MBS,
24)	Sample	23	1MBS01D	1S090816 131383,MBS,10
25)	Sample	24	1LCSS01	1S090816 131383,LCSS,
26)	Sample	25	784783	1S090816 131383,784783,
27)	Sample	26	784852	1S090816 131383,784852,
28)	Sample	27	784854	1S090816 131383,784854,
29)	Sample	28	784855	1S090816 131383,784855,
30)	Sample	29	784853	1S090816 131383,784853,
31)	Sample	30	784853MS	1S090816 131383,MSS784853,
32)	Sample	31	784853SD	1S090816 131383,MSDS784853,
33)	Sample	32	783337D	1S090816 131413,783337,10
34)	Sample	33	1CCV216	1S090816 CCV20ug/ml SVMS7217
35)	Sample	34	1CCV217	1S090816 CCV20ug/ml SVMS7194

Sequence Name: C:\INSTARCH\Sequence\1S102016.S
Comment: 8270
Operator: JJY
Data Path: C:\INSTARCH\DATA\1S102016\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line			Sample Name/Misc Info	
1)	Sample	99	1IB01	1S090816 InstrumentBlank
2)	DFTPP	1	1DFTP190	1DFTPP DFTPP TUNE SVMS7090
3)	Sample	2	1CCV218	1S090816 CCV20ug/ml SVMS7217
4)	Sample	3	1MBW02	1S090816 131519,MBW,
5)	Sample	4	1LCSW02	1S090816 131519,LCSW,
6)	Sample	5	785049	1S090816 131519,785049,5
7)	Sample	6	785099	1S090816 131519,785099,5
8)	Sample	7	1IB02	1S090816 InstrumentBlank
9)	Sample	8	1MBS02	1S090816 131574,MBS,
10)	Sample	9	1LCSS02	1S090816 131574,LCSS,
11)	Sample	10	784515	1S090816 131574,784515,
12)	Sample	11	784516	1S090816 131574,784516,
13)	Sample	12	785308	1S090816 131574,785308,
14)	Sample	13	785309	1S090816 131574,785309,
15)	Sample	14	785310	1S090816 131574,785310,
16)	Sample	15	784496	1S090816 131574,784496,
17)	Sample	16	784496MS	1S090816 131574,MSS784496,
18)	Sample	17	784496SD	1S090816 131574,MSDS784496,
19)	Sample	18	1CCV219	1S090816 CCV20ug/ml SVMS7217

SVOC Logbook 01
01/19/2015

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Page Title: 051716

Standard Number	Standard Description	Solvent Manufacturer Lot	Analyst	Prep Date	Expiration Date
SVMS7090	8270 Tuning Mix	Methylene Chloride EMD 56008	RPN	05/17/16	11/17/16

STD Parent ID	Parent Concentration	Units	Standard Volume (ml)	Final Volume (ml)	Final Concentration (ug/ml)
S3387	1000	ug/ml	0.5	10	50

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SVOC Logbook 01
01/19/2015

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Project: Unassigned
Page Title: 091316

Standard Number	Standard Description	Solvent Manufacturer Lot	Analyst	Prep Date	Expiration Date
SVMS7199	8270 Surrogates	Acetone EMD 55187	RPN	09/13/16	03/13/17

STD Parent ID	Parent Concentration	Units	Standard Volume (ul)	Final Volume (ml)	Final Concentration (ug/ml)
S3501A	5000	ug/ml	1000	250	20
S3502A	10000	ug/ml	1000	250	40

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Project: Unassigned
Page Title: 100416B

	Initial Calibration	Solvent Manufacturer Lot	Analyst	Prep Date	Expiration Date
	8270 ICAL Working Stds	Methylene Chloride EMD 56190	RPN	10/04/16	04/04/17

Standard Number	Standard Description	Parent ID	Parent Concentration	Units	Standard Volume (ml)	Final Volume (ml)	Final Concentration (ug/ml)
SVMS7208	ICAL 1	SVMS7206	100	ug/ml	0.005	0.5	1
SVMS7209	ICAL 2	SVMS7206	100	ug/ml	0.025	0.5	5
SVMS7210	ICAL 3	SVMS7206	100	ug/ml	0.050	0.5	10
SVMS7211	ICAL 4	SVMS7206	100	ug/ml	0.100	0.5	20
SVMS7212	ICAL 5	SVMS7206	100	ug/ml	0.150	0.5	30
SVMS7213	ICAL 6	SVMS7206	100	ug/ml	0.200	0.5	40
SVMS7214	ICAL 7	SVMS7206	100	ug/ml	0.250	0.5	50
SVMS7215	ICV1	SVMS7207	100	ug/ml	0.100	0.5	20
SVMS7216	ICV2	SVMS7207	100	ug/ml	0.200	0.5	40
SVMS7217	CCV	SVMS7206	100	ug/ml	0.100	0.5	20
SVMS		SVMS					
SVMS		SVMS					
SVMS		SVMS					

SVOC Logbook 01
01/19/2015

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Author: rduranceau on: 26.10.2016 14:05:17
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Project: Unassigned
Page Title: 101016

8270 Spike 20ug/ml

Standard Number: SVMS7233 **Standard Description:** 8270 Spike

Analyst: JJY **Solvent/Lot:** Acetone EMD Millipore lot 55338

Prep Date: 10/10/2016 **Expiration Date:** 11/10/2016

Parent Standard	CTL ID	Concentration (ug/ml)	Volume Added	Final Volume	Final Concentraion (ug/ml)
8270 Mega Mix	S3497B	1000	0.200 mL	10	20
Benzadines	S3499A	2000	0.100 mL	10	20
Custom Mix	S3551A	2000	0.100 mL	10	20
Biphenyl	S3487B	1000	0.200 mL	10	20
Additions Std	S3486B	1000	0.200 mL	10	20

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CT Laboratories LLC

SVOC Logbook 01
01/19/2015

NOTEBOOK VIEW: LTN_SVOC_Logbook01_Default, NOTEBOOK: SVOC_Logbook01, PAGE: 96
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Author: rduranceau on: 26.10.2016 14:05:52
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8270 Spike 20ug/ml

Standard Number: SVMS7234 **Standard Description:** 8270 Spike

Analyst: JJY **Solvent/Lot:** Acetone EMD Millipore lot 55338

Prep Date: 10/14/2016 **Expiration Date:** 4/14/2017

Parent Standard	CTL ID	Concentration (ug/ml)	Volume Added	Final Volume	Final Concentraion (ug/ml)
8270 Mega Mix	S3562	1000	1.00	50.00	20
Benzadines	S3556	2000	0.500	50.00	20
Custom Mix	S3551B	2000	0.500	50.00	20
Biphenyl	S3575A	1000	1.00	50.00	20
Additions Std	S3559A	1000	1.00	50.00	20

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EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-DUP1

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	10.09 (g/L)	CTL Sample ID:	784852
% Solids:	79.0	Date Received:	10/07/2016
Conc. Extract Vol:	20.0 (mL)	Date/Time Prepared:	10/14/2016 / 16:30
Analytical Method:	EPA 8330B	Analytical Prep Batch #	59529
Analytical Run #:	131500	Dilution Factor:	1.00
Date & Time Analyzed:	10/19/2016 / 15:37	GPC Cleanup Date/Time:	/
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	070616EXPic-PRI	Concentration Units:	mg/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
99-35-4	1,3,5-Trinitrobenzene	0.30	U	0.13	0.30	0.50	0.50
99-65-0	1,3-Dinitrobenzene	0.20	U	0.079	0.20	0.30	0.30
118-96-7	2,4,6-Trinitrotoluene	0.20	U	0.089	0.20	0.50	0.50
121-14-2	2,4-Dinitrotoluene	0.20	U	0.079	0.20	0.30	0.30
606-20-2	2,6-Dinitrotoluene	0.20	U	0.069	0.20	0.30	0.30
35572-78-2	2-Amino-4,6-dinitrotoluene	0.20	U	0.089	0.20	0.30	0.30
88-72-2	2-Nitrotoluene	0.20	U	0.089	0.20	0.30	0.30
618-87-1	3,5-Dinitroaniline	0.20	U	0.089	0.20	0.59	0.59
99-08-1	3-Nitrotoluene	0.30	U	0.11	0.30	0.50	0.50
19406-51-0	4-Amino-2,6-dinitrotoluene	0.20	U	0.079	0.20	0.30	0.30
99-99-0	4-Nitrotoluene	0.20	U	0.099	0.20	0.50	0.50
2691-41-0	HMX	0.30	U	0.12	0.30	0.50	0.50
98-95-3	Nitrobenzene	0.20	U	0.099	0.20	0.50	0.50
55-63-0	Nitroglycerin	1.2	U	0.50	1.2	2.0	2.0
78-11-5	PETN	1.2	U	0.59	1.2	2.0	2.0
121-82-4	RDX	0.30	U	0.14	0.30	0.50	0.50
479-45-8	Tetryl	0.20	U	0.089	0.20	0.50	0.50

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EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSD-001

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	10.10 (g/L)	CTL Sample ID:	784783
% Solids:	75.4	Date Received:	10/07/2016
Conc. Extract Vol:	20.0 (mL)	Date/Time Prepared:	10/14/2016 / 16:30
Analytical Method:	EPA 8330B	Analytical Prep Batch #	59529
Analytical Run #:	131500	Dilution Factor:	1.00
Date & Time Analyzed:	10/19/2016 / 15:18	GPC Cleanup Date/Time:	/
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	070616EXPic-PRI	Concentration Units:	mg/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
99-35-4	1,3,5-Trinitrobenzene	0.30	U	0.13	0.30	0.50	0.50
99-65-0	1,3-Dinitrobenzene	0.20	U	0.079	0.20	0.30	0.30
118-96-7	2,4,6-Trinitrotoluene	0.20	U	0.089	0.20	0.50	0.50
121-14-2	2,4-Dinitrotoluene	0.20	U	0.079	0.20	0.30	0.30
606-20-2	2,6-Dinitrotoluene	0.20	U	0.069	0.20	0.30	0.30
35572-78-2	2-Amino-4,6-dinitrotoluene	0.20	U	0.089	0.20	0.30	0.30
88-72-2	2-Nitrotoluene	0.20	U	0.089	0.20	0.30	0.30
618-87-1	3,5-Dinitroaniline	0.20	U	0.089	0.20	0.59	0.59
99-08-1	3-Nitrotoluene	0.30	U	0.11	0.30	0.50	0.50
19406-51-0	4-Amino-2,6-dinitrotoluene	0.20	U	0.079	0.20	0.30	0.30
99-99-0	4-Nitrotoluene	0.20	U	0.099	0.20	0.50	0.50
2691-41-0	HMX	0.30	U	0.12	0.30	0.50	0.50
98-95-3	Nitrobenzene	0.20	U	0.099	0.20	0.50	0.50
55-63-0	Nitroglycerin	1.2	U	0.50	1.2	2.0	2.0
78-11-5	PETN	1.2	U	0.59	1.2	2.0	2.0
121-82-4	RDX	0.30	U	0.14	0.30	0.50	0.50
479-45-8	Tetryl	0.20	U	0.089	0.20	0.50	0.50

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EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSD-002

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	10.01 (g/L)	CTL Sample ID:	784853
% Solids:	80.3	Date Received:	10/07/2016
Conc. Extract Vol:	20.0 (mL)	Date/Time Prepared:	10/14/2016 / 16:30
Analytical Method:	EPA 8330B	Analytical Prep Batch #	59529
Analytical Run #:	131500	Dilution Factor:	1.00
Date & Time Analyzed:	10/19/2016 / 15:55	GPC Cleanup Date/Time:	/
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	070616EXPic-PRI	Concentration Units:	mg/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
99-35-4	1,3,5-Trinitrobenzene	0.30	U	0.13	0.30	0.50	0.50
99-65-0	1,3-Dinitrobenzene	0.20	U	0.080	0.20	0.30	0.30
118-96-7	2,4,6-Trinitrotoluene	0.20	U	0.090	0.20	0.50	0.50
121-14-2	2,4-Dinitrotoluene	0.20	U	0.080	0.20	0.30	0.30
606-20-2	2,6-Dinitrotoluene	0.20	U	0.070	0.20	0.30	0.30
35572-78-2	2-Amino-4,6-dinitrotoluene	0.20	U	0.090	0.20	0.30	0.30
88-72-2	2-Nitrotoluene	0.20	U	0.090	0.20	0.30	0.30
618-87-1	3,5-Dinitroaniline	0.20	U M	0.090	0.20	0.60	0.60
99-08-1	3-Nitrotoluene	0.30	U	0.11	0.30	0.50	0.50
19406-51-0	4-Amino-2,6-dinitrotoluene	0.20	U	0.080	0.20	0.30	0.30
99-99-0	4-Nitrotoluene	0.20	U	0.10	0.20	0.50	0.50
2691-41-0	HMX	0.30	U	0.12	0.30	0.50	0.50
98-95-3	Nitrobenzene	0.20	U	0.10	0.20	0.50	0.50
55-63-0	Nitroglycerin	1.2	U	0.50	1.2	2.0	2.0
78-11-5	PETN	1.2	U	0.60	1.2	2.0	2.0
121-82-4	RDX	0.30	U	0.14	0.30	0.50	0.50
479-45-8	Tetryl	0.20	U	0.090	0.20	0.50	0.50

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EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSD-003

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	9.97 (g/L)	CTL Sample ID:	784854
% Solids:	73.4	Date Received:	10/07/2016
Conc. Extract Vol:	20.0 (mL)	Date/Time Prepared:	10/14/2016 / 16:30
Analytical Method:	EPA 8330B	Analytical Prep Batch #	59529
Analytical Run #:	131500	Dilution Factor:	1.00
Date & Time Analyzed:	10/19/2016 / 17:45	GPC Cleanup Date/Time:	/
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	070616EXPic-PRI	Concentration Units:	mg/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
99-35-4	1,3,5-Trinitrobenzene	0.30	U	0.13	0.30	0.50	0.50
99-65-0	1,3-Dinitrobenzene	0.20	U	0.080	0.20	0.30	0.30
118-96-7	2,4,6-Trinitrotoluene	0.20	U	0.090	0.20	0.50	0.50
121-14-2	2,4-Dinitrotoluene	0.20	U	0.080	0.20	0.30	0.30
606-20-2	2,6-Dinitrotoluene	0.20	U	0.070	0.20	0.30	0.30
35572-78-2	2-Amino-4,6-dinitrotoluene	0.20	U	0.090	0.20	0.30	0.30
88-72-2	2-Nitrotoluene	0.20	U	0.090	0.20	0.30	0.30
618-87-1	3,5-Dinitroaniline	0.20	U	0.090	0.20	0.60	0.60
99-08-1	3-Nitrotoluene	0.30	U	0.11	0.30	0.50	0.50
19406-51-0	4-Amino-2,6-dinitrotoluene	0.20	U	0.080	0.20	0.30	0.30
99-99-0	4-Nitrotoluene	0.20	U	0.10	0.20	0.50	0.50
2691-41-0	HMX	0.30	U	0.12	0.30	0.50	0.50
98-95-3	Nitrobenzene	0.20	U	0.10	0.20	0.50	0.50
55-63-0	Nitroglycerin	1.2	U	0.50	1.2	2.0	2.0
78-11-5	PETN	1.2	U	0.60	1.2	2.0	2.0
121-82-4	RDX	0.30	U	0.14	0.30	0.50	0.50
479-45-8	Tetryl	0.20	U	0.090	0.20	0.50	0.50

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EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSD-004

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	10.06 (g/L)	CTL Sample ID:	784855
% Solids:	79.9	Date Received:	10/07/2016
Conc. Extract Vol:	20.0 (mL)	Date/Time Prepared:	10/14/2016 / 16:30
Analytical Method:	EPA 8330B	Analytical Prep Batch #	59529
Analytical Run #:	131500	Dilution Factor:	1.00
Date & Time Analyzed:	10/20/2016 / 09:48	GPC Cleanup Date/Time:	/
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	070616EXPic-PRI	Concentration Units:	mg/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
99-35-4	1,3,5-Trinitrobenzene	0.30	U	0.13	0.30	0.50	0.50
99-65-0	1,3-Dinitrobenzene	0.20	U	0.080	0.20	0.30	0.30
118-96-7	2,4,6-Trinitrotoluene	0.20	U	0.089	0.20	0.50	0.50
121-14-2	2,4-Dinitrotoluene	0.20	U	0.080	0.20	0.30	0.30
606-20-2	2,6-Dinitrotoluene	0.20	U	0.070	0.20	0.30	0.30
35572-78-2	2-Amino-4,6-dinitrotoluene	0.20	U	0.089	0.20	0.30	0.30
88-72-2	2-Nitrotoluene	0.20	U	0.089	0.20	0.30	0.30
618-87-1	3,5-Dinitroaniline	0.20	U	0.089	0.20	0.60	0.60
99-08-1	3-Nitrotoluene	0.30	U	0.11	0.30	0.50	0.50
19406-51-0	4-Amino-2,6-dinitrotoluene	0.20	U	0.080	0.20	0.30	0.30
99-99-0	4-Nitrotoluene	0.20	U	0.099	0.20	0.50	0.50
2691-41-0	HMX	0.30	U	0.12	0.30	0.50	0.50
98-95-3	Nitrobenzene	0.20	U	0.099	0.20	0.50	0.50
55-63-0	Nitroglycerin	1.2	U	0.50	1.2	2.0	2.0
78-11-5	PETN	1.2	U	0.60	1.2	2.0	2.0
121-82-4	RDX	0.30	U	0.14	0.30	0.50	0.50
479-45-8	Tetryl	0.20	U	0.089	0.20	0.50	0.50

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EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSI-001A

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	10.10 (g/L)	CTL Sample ID:	784496
% Solids:	98.6	Date Received:	10/06/2016
Conc. Extract Vol:	20.0 (mL)	Date/Time Prepared:	10/14/2016 / 15:30
Analytical Method:	EPA 8330B	Analytical Prep Batch #	59528
Analytical Run #:	131499	Dilution Factor:	1.00
Date & Time Analyzed:	10/19/2016 / 11:10	GPC Cleanup Date/Time:	/
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	070616EXPic-PRI	Concentration Units:	mg/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
99-35-4	1,3,5-Trinitrobenzene	0.30	U M	0.13	0.30	0.50	0.50
99-65-0	1,3-Dinitrobenzene	0.20	U	0.079	0.20	0.30	0.30
118-96-7	2,4,6-Trinitrotoluene	0.20	U	0.089	0.20	0.50	0.50
121-14-2	2,4-Dinitrotoluene	0.20	U M	0.079	0.20	0.30	0.30
606-20-2	2,6-Dinitrotoluene	0.20	U	0.069	0.20	0.30	0.30
35572-78-2	2-Amino-4,6-dinitrotoluene	0.20	U	0.089	0.20	0.30	0.30
88-72-2	2-Nitrotoluene	0.20	U	0.089	0.20	0.30	0.30
618-87-1	3,5-Dinitroaniline	0.20	U Q,M	0.089	0.20	0.59	0.59
99-08-1	3-Nitrotoluene	0.30	U	0.11	0.30	0.50	0.50
19406-51-0	4-Amino-2,6-dinitrotoluene	0.20	U	0.079	0.20	0.30	0.30
99-99-0	4-Nitrotoluene	0.20	U	0.099	0.20	0.50	0.50
2691-41-0	HMX	0.30	U	0.12	0.30	0.50	0.50
98-95-3	Nitrobenzene	0.20	U	0.099	0.20	0.50	0.50
55-63-0	Nitroglycerin	1.2	U	0.50	1.2	2.0	2.0
78-11-5	PETN	1.2	U	0.59	1.2	2.0	2.0
121-82-4	RDX	0.30	U	0.14	0.30	0.50	0.50
479-45-8	Tetryl	0.20	U	0.089	0.20	0.50	0.50

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EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSI-001B

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	9.99 (g/L)	CTL Sample ID:	784515
% Solids:	98.4	Date Received:	10/06/2016
Conc. Extract Vol:	20.0 (mL)	Date/Time Prepared:	10/14/2016 / 15:30
Analytical Method:	EPA 8330B	Analytical Prep Batch #	59528
Analytical Run #:	131499	Dilution Factor:	1.00
Date & Time Analyzed:	10/19/2016 / 12:52	GPC Cleanup Date/Time:	/
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	070616EXPic-PRI	Concentration Units:	mg/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
99-35-4	1,3,5-Trinitrobenzene	0.30	U	0.13	0.30	0.50	0.50
99-65-0	1,3-Dinitrobenzene	0.20	U	0.080	0.20	0.30	0.30
118-96-7	2,4,6-Trinitrotoluene	0.20	U	0.090	0.20	0.50	0.50
121-14-2	2,4-Dinitrotoluene	0.20	U	0.080	0.20	0.30	0.30
606-20-2	2,6-Dinitrotoluene	0.20	U	0.070	0.20	0.30	0.30
35572-78-2	2-Amino-4,6-dinitrotoluene	0.20	U	0.090	0.20	0.30	0.30
88-72-2	2-Nitrotoluene	0.20	U	0.090	0.20	0.30	0.30
618-87-1	3,5-Dinitroaniline	0.20	U Q	0.090	0.20	0.60	0.60
99-08-1	3-Nitrotoluene	0.30	U	0.11	0.30	0.50	0.50
19406-51-0	4-Amino-2,6-dinitrotoluene	0.20	U	0.080	0.20	0.30	0.30
99-99-0	4-Nitrotoluene	0.20	U	0.10	0.20	0.50	0.50
2691-41-0	HMX	0.30	U	0.12	0.30	0.50	0.50
98-95-3	Nitrobenzene	0.20	U	0.10	0.20	0.50	0.50
55-63-0	Nitroglycerin	1.2	U	0.50	1.2	2.0	2.0
78-11-5	PETN	1.2	U	0.60	1.2	2.0	2.0
121-82-4	RDX	0.30	U	0.14	0.30	0.50	0.50
479-45-8	Tetryl	0.20	U	0.090	0.20	0.50	0.50

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EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSI-001C

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	10.06 (g/L)	CTL Sample ID:	784516
% Solids:	98.5	Date Received:	10/06/2016
Conc. Extract Vol:	20.0 (mL)	Date/Time Prepared:	10/14/2016 / 15:30
Analytical Method:	EPA 8330B	Analytical Prep Batch #	59528
Analytical Run #:	131499	Dilution Factor:	1.00
Date & Time Analyzed:	10/19/2016 / 13:10	GPC Cleanup Date/Time:	/
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	070616EXPic-PRI	Concentration Units:	mg/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
99-35-4	1,3,5-Trinitrobenzene	0.30	U	0.13	0.30	0.50	0.50
99-65-0	1,3-Dinitrobenzene	0.20	U	0.080	0.20	0.30	0.30
118-96-7	2,4,6-Trinitrotoluene	0.20	U	0.089	0.20	0.50	0.50
121-14-2	2,4-Dinitrotoluene	0.20	U	0.080	0.20	0.30	0.30
606-20-2	2,6-Dinitrotoluene	0.20	U	0.070	0.20	0.30	0.30
35572-78-2	2-Amino-4,6-dinitrotoluene	0.20	U	0.089	0.20	0.30	0.30
88-72-2	2-Nitrotoluene	0.20	U	0.089	0.20	0.30	0.30
618-87-1	3,5-Dinitroaniline	0.20	U Q	0.089	0.20	0.60	0.60
99-08-1	3-Nitrotoluene	0.30	U	0.11	0.30	0.50	0.50
19406-51-0	4-Amino-2,6-dinitrotoluene	0.20	U	0.080	0.20	0.30	0.30
99-99-0	4-Nitrotoluene	0.20	U	0.099	0.20	0.50	0.50
2691-41-0	HMX	0.30	U	0.12	0.30	0.50	0.50
98-95-3	Nitrobenzene	0.20	U	0.099	0.20	0.50	0.50
55-63-0	Nitroglycerin	1.2	U	0.50	1.2	2.0	2.0
78-11-5	PETN	1.2	U	0.60	1.2	2.0	2.0
121-82-4	RDX	0.30	U	0.14	0.30	0.50	0.50
479-45-8	Tetryl	0.20	U	0.089	0.20	0.50	0.50

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EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSI-002A

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	10.08 (g/L)	CTL Sample ID:	785308
% Solids:	97.7	Date Received:	10/08/2016
Conc. Extract Vol:	20.0 (mL)	Date/Time Prepared:	10/14/2016 / 15:30
Analytical Method:	EPA 8330B	Analytical Prep Batch #	59528
Analytical Run #:	131499	Dilution Factor:	1.00
Date & Time Analyzed:	10/19/2016 / 13:29	GPC Cleanup Date/Time:	/
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	070616EXPic-PRI	Concentration Units:	mg/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
99-35-4	1,3,5-Trinitrobenzene	0.30	U	0.13	0.30	0.50	0.50
99-65-0	1,3-Dinitrobenzene	0.20	U	0.079	0.20	0.30	0.30
118-96-7	2,4,6-Trinitrotoluene	0.20	U	0.089	0.20	0.50	0.50
121-14-2	2,4-Dinitrotoluene	0.20	U	0.079	0.20	0.30	0.30
606-20-2	2,6-Dinitrotoluene	0.20	U	0.069	0.20	0.30	0.30
35572-78-2	2-Amino-4,6-dinitrotoluene	0.20	U	0.089	0.20	0.30	0.30
88-72-2	2-Nitrotoluene	0.20	U	0.089	0.20	0.30	0.30
618-87-1	3,5-Dinitroaniline	0.20	U Q	0.089	0.20	0.60	0.60
99-08-1	3-Nitrotoluene	0.30	U	0.11	0.30	0.50	0.50
19406-51-0	4-Amino-2,6-dinitrotoluene	0.20	U	0.079	0.20	0.30	0.30
99-99-0	4-Nitrotoluene	0.20	U	0.099	0.20	0.50	0.50
2691-41-0	HMX	0.30	U	0.12	0.30	0.50	0.50
98-95-3	Nitrobenzene	0.20	U	0.099	0.20	0.50	0.50
55-63-0	Nitroglycerin	1.2	U	0.50	1.2	2.0	2.0
78-11-5	PETN	1.2	U	0.60	1.2	2.0	2.0
121-82-4	RDX	0.30	U	0.14	0.30	0.50	0.50
479-45-8	Tetryl	0.20	U	0.089	0.20	0.50	0.50

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1B

EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSI-002B

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	9.99 (g/L)	CTL Sample ID:	785309
% Solids:	97.3	Date Received:	10/08/2016
Conc. Extract Vol:	20.0 (mL)	Date/Time Prepared:	10/14/2016 / 15:30
Analytical Method:	EPA 8330B	Analytical Prep Batch #	59528
Analytical Run #:	131499	Dilution Factor:	1.00
Date & Time Analyzed:	10/19/2016 / 14:05	GPC Cleanup Date/Time:	/
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	070616EXPic-PRI	Concentration Units:	mg/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
99-35-4	1,3,5-Trinitrobenzene	0.30	U	0.13	0.30	0.50	0.50
99-65-0	1,3-Dinitrobenzene	0.20	U	0.080	0.20	0.30	0.30
118-96-7	2,4,6-Trinitrotoluene	0.20	U	0.090	0.20	0.50	0.50
121-14-2	2,4-Dinitrotoluene	0.20	U	0.080	0.20	0.30	0.30
606-20-2	2,6-Dinitrotoluene	0.20	U	0.070	0.20	0.30	0.30
35572-78-2	2-Amino-4,6-dinitrotoluene	0.20	U	0.090	0.20	0.30	0.30
88-72-2	2-Nitrotoluene	0.20	U	0.090	0.20	0.30	0.30
618-87-1	3,5-Dinitroaniline	0.20	U Q	0.090	0.20	0.60	0.60
99-08-1	3-Nitrotoluene	0.30	U	0.11	0.30	0.50	0.50
19406-51-0	4-Amino-2,6-dinitrotoluene	0.20	U	0.080	0.20	0.30	0.30
99-99-0	4-Nitrotoluene	0.20	U	0.10	0.20	0.50	0.50
2691-41-0	HMX	0.30	U	0.12	0.30	0.50	0.50
98-95-3	Nitrobenzene	0.20	U	0.10	0.20	0.50	0.50
55-63-0	Nitroglycerin	1.2	U	0.50	1.2	2.0	2.0
78-11-5	PETN	1.2	U	0.60	1.2	2.0	2.0
121-82-4	RDX	0.30	U	0.14	0.30	0.50	0.50
479-45-8	Tetryl	0.20	U	0.090	0.20	0.50	0.50

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1B

EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSI-002C

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Sample wt/vol:	10.10 (g/L)	CTL Sample ID:	785310
% Solids:	97.7	Date Received:	10/08/2016
Conc. Extract Vol:	20.0 (mL)	Date/Time Prepared:	10/14/2016 / 15:30
Analytical Method:	EPA 8330B	Analytical Prep Batch #	59528
Analytical Run #:	131499	Dilution Factor:	1.00
Date & Time Analyzed:	10/19/2016 / 14:23	GPC Cleanup Date/Time:	/
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	070616EXPic-PRI	Concentration Units:	mg/kg

CAS NO.	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
99-35-4	1,3,5-Trinitrobenzene	0.30	U	0.13	0.30	0.50	0.50
99-65-0	1,3-Dinitrobenzene	0.20	U	0.079	0.20	0.30	0.30
118-96-7	2,4,6-Trinitrotoluene	0.20	U	0.089	0.20	0.50	0.50
121-14-2	2,4-Dinitrotoluene	0.20	U	0.079	0.20	0.30	0.30
606-20-2	2,6-Dinitrotoluene	0.20	U	0.069	0.20	0.30	0.30
35572-78-2	2-Amino-4,6-dinitrotoluene	0.20	U	0.089	0.20	0.30	0.30
88-72-2	2-Nitrotoluene	0.20	U	0.089	0.20	0.30	0.30
618-87-1	3,5-Dinitroaniline	0.20	U Q	0.089	0.20	0.59	0.59
99-08-1	3-Nitrotoluene	0.30	U	0.11	0.30	0.50	0.50
19406-51-0	4-Amino-2,6-dinitrotoluene	0.20	U	0.079	0.20	0.30	0.30
99-99-0	4-Nitrotoluene	0.20	U	0.099	0.20	0.50	0.50
2691-41-0	HMX	0.30	U	0.12	0.30	0.50	0.50
98-95-3	Nitrobenzene	0.20	U	0.099	0.20	0.50	0.50
55-63-0	Nitroglycerin	1.2	U	0.50	1.2	2.0	2.0
78-11-5	PETN	1.2	U	0.59	1.2	2.0	2.0
121-82-4	RDX	0.30	U	0.14	0.30	0.50	0.50
479-45-8	Tetryl	0.20	U	0.089	0.20	0.50	0.50

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Sample Description

METHOD BLANK

1B-2

EXPLOSIVES ANALYSIS (MB or CCB)

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:		SDG No.:	122704
Sample wt/vol:	10.06 (g/L)	CTL Sample ID:	788002
% Solids:		Date Received:	10/08/2016
Conc. Extract Vol:	20.0 (mL)	Date/Time Prepared:	10/14/2016 / 15:30
Analytical Method:	EPA 8330B	Analytical Prep Batch #	59528
Analytical Run #:	131499	Dilution Factor:	1.00
Cleanup Date/Time/Type:	. . ,		
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	070616EXPic-PRI	Concentration Units:	mg/kg

CAS NO.	Analyte	Analysis Date/Time		Concentration	Qualifiers	DL/LOD	RL	*Control Limit*
99-35-4	1,3,5-Trinitrobenzene	10/19/2016	10:06	0.13	U	0.13	0.50	***0.25***
99-65-0	1,3-Dinitrobenzene	10/19/2016	10:06	0.08	U	0.08	0.30	***0.15***
118-96-7	2,4,6-Trinitrotoluene	10/19/2016	10:06	0.09	U	0.09	0.50	***0.25***
121-14-2	2,4-Dinitrotoluene	10/19/2016	10:06	0.08	U	0.08	0.30	***0.15***
606-20-2	2,6-Dinitrotoluene	10/19/2016	10:06	0.07	U	0.07	0.30	***0.15***
35572-78-2	2-Amino-4,6-dinitrotoluene	10/19/2016	10:06	0.09	U	0.09	0.30	***0.15***
88-72-2	2-Nitrotoluene	10/19/2016	10:06	0.09	U	0.09	0.30	***0.15***
618-87-1	3,5-Dinitroaniline	10/19/2016	10:06	0.09	U	0.09	0.60	***0.30***
99-08-1	3-Nitrotoluene	10/19/2016	10:06	0.11	U	0.11	0.50	***0.25***
19406-51-0	4-Amino-2,6-dinitrotoluene	10/19/2016	10:06	0.08	U	0.08	0.30	***0.15***
99-99-0	4-Nitrotoluene	10/19/2016	10:06	0.10	U	0.10	0.50	***0.25***
2691-41-0	HMX	10/19/2016	10:06	0.12	U	0.12	0.50	***0.25***
98-95-3	Nitrobenzene	10/19/2016	10:06	0.10	U	0.10	0.50	***0.25***
55-63-0	Nitroglycerin	10/19/2016	10:06	0.5	U	0.5	2.0	***1.0***
78-11-5	PETN	10/19/2016	10:06	0.6	U	0.6	2.0	***1.0***
121-82-4	RDX	10/19/2016	10:06	0.14	U	0.14	0.50	***0.25***
479-45-8	Tetryl	10/19/2016	10:06	0.09	U	0.09	0.50	***0.25***

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Sample Description

METHOD BLANK

1B-2

EXPLOSIVES ANALYSIS (MB or CCB)

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:		SDG No.:	122704
Sample wt/vol:	10.00 (g/L)	CTL Sample ID:	788012
% Solids:		Date Received:	10/07/2016
Conc. Extract Vol:	20.0 (mL)	Date/Time Prepared:	10/14/2016 / 16:30
Analytical Method:	EPA 8330B	Analytical Prep Batch #	59529
Analytical Run #:	131500	Dilution Factor:	1.00
Cleanup Date/Time/Type:	. . ,		
TCLP / SPLP / MLP or ASTM Procedure Extraction Date (*if applicable*):			/
ICAL Calibration #:	070616EXPic-PRI	Concentration Units:	mg/kg

CAS NO.	Analyte	Analysis Date/Time		Concentration	Qualifiers	DL/LOD	RL	*Control Limit*
99-35-4	1,3,5-Trinitrobenzene	10/19/2016	14:42	0.13	U	0.13	0.50	***0.25***
99-65-0	1,3-Dinitrobenzene	10/19/2016	14:42	0.08	U	0.08	0.30	***0.15***
118-96-7	2,4,6-Trinitrotoluene	10/19/2016	14:42	0.09	U	0.09	0.50	***0.25***
121-14-2	2,4-Dinitrotoluene	10/19/2016	14:42	0.08	U	0.08	0.30	***0.15***
606-20-2	2,6-Dinitrotoluene	10/19/2016	14:42	0.07	U	0.07	0.30	***0.15***
35572-78-2	2-Amino-4,6-dinitrotoluene	10/19/2016	14:42	0.09	U	0.09	0.30	***0.15***
88-72-2	2-Nitrotoluene	10/19/2016	14:42	0.09	U	0.09	0.30	***0.15***
618-87-1	3,5-Dinitroaniline	10/19/2016	14:42	0.09	U	0.09	0.60	***0.30***
99-08-1	3-Nitrotoluene	10/19/2016	14:42	0.11	U	0.11	0.50	***0.25***
19406-51-0	4-Amino-2,6-dinitrotoluene	10/19/2016	14:42	0.08	U	0.08	0.30	***0.15***
99-99-0	4-Nitrotoluene	10/19/2016	14:42	0.10	U	0.10	0.50	***0.25***
2691-41-0	HMX	10/19/2016	14:42	0.12	U	0.12	0.50	***0.25***
98-95-3	Nitrobenzene	10/19/2016	14:42	0.10	U	0.10	0.50	***0.25***
55-63-0	Nitroglycerin	10/19/2016	14:42	0.5	U	0.5	2.0	***1.0***
78-11-5	PETN	10/19/2016	14:42	0.6	U	0.6	2.0	***1.0***
121-82-4	RDX	10/19/2016	14:42	0.14	U	0.14	0.50	***0.25***
479-45-8	Tetryl	10/19/2016	14:42	0.09	U	0.09	0.50	***0.25***

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2H-2

SOIL EXPLOSIVES SYSTEM MONITORING COMPOUND RECOVERY

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Analytical Method:	EPA 8330B	SDG:	122704
Analytical Run #:	131499	ICAL Calibration #:	070616EXPic-PRI

CTLab #	784496				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
1,2-Dinitrobenzene	100	96	78	119	

CTLab #	784515				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
1,2-Dinitrobenzene	100	95	78	119	

CTLab #	784516				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
1,2-Dinitrobenzene	100	93	78	119	

CTLab #	785308				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
1,2-Dinitrobenzene	100	86	78	119	

CTLab #	785309				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
1,2-Dinitrobenzene	100	87	78	119	

CTLab #	785310				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
1,2-Dinitrobenzene	100	90	78	119	

CTLab #	788002	Sample Type:	Method Blank		
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
1,2-Dinitrobenzene		74.5	78	119	*FAIL*

CTLab #	788003	Sample Type:	Lab Control Spike		
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
1,2-Dinitrobenzene	100	93.7	78	119	

CTLab #	788004	Sample Type:	Matrix Spike		
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
1,2-Dinitrobenzene	100	99.9	78	119	

CTLab #	788005	Sample Type:	Matrix Spike Duplicate		
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
1,2-Dinitrobenzene	100	91.6	78	119	

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2H-2

SOIL EXPLOSIVES SYSTEM MONITORING COMPOUND RECOVERY

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Analytical Method:	EPA 8330B	SDG:	122704
Analytical Run #:	131500	ICAL Calibration #:	070616EXPic-PRI

CTLab #	784783				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
1,2-Dinitrobenzene	100	103	78	119	

CTLab #	784852				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
1,2-Dinitrobenzene	100	98	78	119	

CTLab #	784853				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
1,2-Dinitrobenzene	100	98	78	119	

CTLab #	784854				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
1,2-Dinitrobenzene	100	103	78	119	

CTLab #	784855				
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
1,2-Dinitrobenzene	100	93	78	119	

CTLab #	788012	Sample Type:	Method Blank		
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
1,2-Dinitrobenzene		96.5	78	119	

CTLab #	788013	Sample Type:	Lab Control Spike		
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
1,2-Dinitrobenzene	100	99.5	78	119	

CTLab #	788014	Sample Type:	Matrix Spike		
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
1,2-Dinitrobenzene	100	97.9	78	119	

CTLab #	788015	Sample Type:	Matrix Spike Duplicate		
Surrogate	**Spike Amount**	**% Recovery**	**Lower Limit**	**Upper Limit**	**Qualifier**
1,2-Dinitrobenzene	100	89.4	78	119	

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3H

Sample Description

SOIL EXPLOSIVES MATRIX SPIKE RECOVERY

RFAAP-FGMR-SSI-001A

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Matrix: SOIL SDG No.: 122704

Analytical Method: EPA 8330B Concentration Units: mg/kg

Analytical Run #: 131499 Sample No.: 788004 Parent Sample No.: 784496

Analytical Prep Batch #: 59528 Analytical Preparation Date/Time: 10/14/2016 15:30

ICAL Calibration #: 070616EXPic-PRI

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	Parent Result	Spike Amount	%R	
1,3,5-Trinitrobenzene	10/19/2016	12:05	80-116	1.60	BDL	1.98	81	
1,3-Dinitrobenzene	10/19/2016	12:05	73-119	1.76	BDL	1.98	89	
2,4,6-Trinitrotoluene	10/19/2016	12:05	71-120	1.65	BDL	1.98	83	
2,4-Dinitrotoluene	10/19/2016	12:05	75-121	1.53	BDL	1.98	77	
2,6-Dinitrotoluene	10/19/2016	12:05	79-117	1.83	BDL	1.98	92	
2-Amino-4,6-dinitrotoluene	10/19/2016	12:05	71-123	1.64	BDL	1.98	83	
2-Nitrotoluene	10/19/2016	12:05	70-124	1.74	BDL	1.98	88	
3,5-Dinitroaniline	10/19/2016	12:05	86-118	1.53	BDL	1.98	77	*FAIL*
3-Nitrotoluene	10/19/2016	12:05	67-129	1.73	BDL	1.98	87	
4-Amino-2,6-dinitrotoluene	10/19/2016	12:05	64-127	1.81	BDL	1.98	91	
4-Nitrotoluene	10/19/2016	12:05	71-124	1.70	BDL	1.98	86	
HMX	10/19/2016	12:05	74-124	1.49	BDL	1.98	75	
Nitrobenzene	10/19/2016	12:05	67-129	1.80	BDL	1.98	91	
Nitroglycerin	10/19/2016	12:05	73-124	3.31	BDL	3.96	84	
PETN	10/19/2016	12:05	72-128	3.62	BDL	3.96	91	
RDX	10/19/2016	12:05	67-129	1.67	BDL	1.98	84	
Tetryl	10/19/2016	12:05	68-135	1.59	BDL	1.98	80	

Spike Recovery: 1 out of 17 outside QC limits

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SOIL EXPLOSIVES MATRIX SPIKE RECOVERY

Sample Description

RFAAP-FGMR-SSD-002

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Matrix: SOIL SDG No.: 122704

Analytical Method: EPA 8330B Concentration Units: mg/kg

Analytical Run #: 131500 Sample No.: 788014 Parent Sample No.: 784853

Analytical Prep Batch #: 59529 Analytical Preparation Date/Time: 10/14/2016 16:30

ICAL Calibration #: 070616EXPic-PRI

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	Parent Result	Spike Amount	%R	
1,3,5-Trinitrobenzene	10/19/2016	16:50	80-116	1.88	BDL	2.01	94	
1,3-Dinitrobenzene	10/19/2016	16:50	73-119	2.03	BDL	2.01	101	
2,4,6-Trinitrotoluene	10/19/2016	16:50	71-120	1.94	BDL	2.01	97	
2,4-Dinitrotoluene	10/19/2016	16:50	75-121	1.91	BDL	2.01	95	
2,6-Dinitrotoluene	10/19/2016	16:50	79-117	2.02	BDL	2.01	100	
2-Amino-4,6-dinitrotoluene	10/19/2016	16:50	71-123	1.95	BDL	2.01	97	
2-Nitrotoluene	10/19/2016	16:50	70-124	1.98	BDL	2.01	99	
3,5-Dinitroaniline	10/19/2016	16:50	86-118	1.61	BDL	2.01	80	*FAIL*
3-Nitrotoluene	10/19/2016	16:50	67-129	2.05	BDL	2.01	102	
4-Amino-2,6-dinitrotoluene	10/19/2016	16:50	64-127	2.05	BDL	2.01	102	
4-Nitrotoluene	10/19/2016	16:50	71-124	1.99	BDL	2.01	99	
HMX	10/19/2016	16:50	74-124	1.77	BDL	2.01	88	
Nitrobenzene	10/19/2016	16:50	67-129	2.15	BDL	2.01	107	
Nitroglycerin	10/19/2016	16:50	73-124	3.97	BDL	4.02	99	
PETN	10/19/2016	16:50	72-128	4.05	BDL	4.02	101	
RDX	10/19/2016	16:50	67-129	1.92	BDL	2.01	96	
Tetryl	10/19/2016	16:50	68-135	1.79	BDL	2.01	89	

Spike Recovery: 1 out of 17 outside QC limits

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Sample Description

SOIL EXPLOSIVES MATRIX SPIKE DUPLICATE RECOVERY

RFAAP-FGMR-SSI-001A

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Matrix: SOIL SDG No.: 122704

Analytical Method: EPA 8330B Concentration Units: mg/kg

Analytical Run #: 131499 Sample No.: 788005 Parent Sample No.: 788004

Analytical Prep Batch #: 59528 Analytical Preparation Date/Time: 10/14/2016 15:30

ICAL Calibration #: 070616EXPic-PRI

Analyte	Analysis Date/Time		Spike Result	Spike Amount	%R	%RPD	Control Limits (%R)	Control Limits (%RPD)	
1,3,5-Trinitrobenzene	10/19/2016	12:24	1.57	2.00	78	3	80-116	20	*FAIL*
1,3-Dinitrobenzene	10/19/2016	12:24	1.67	2.00	84	6	73-119	20	
2,4,6-Trinitrotoluene	10/19/2016	12:24	1.58	2.00	79	6	71-120	20	
2,4-Dinitrotoluene	10/19/2016	12:24	1.46	2.00	73	5	75-121	20	*FAIL*
2,6-Dinitrotoluene	10/19/2016	12:24	1.85	2.00	92	0	79-117	20	
2-Amino-4,6-dinitrotoluene	10/19/2016	12:24	1.56	2.00	78	6	71-123	20	
2-Nitrotoluene	10/19/2016	12:24	1.67	2.00	84	5	70-124	20	
3,5-Dinitroaniline	10/19/2016	12:24	1.46	2.00	73	5	86-118	20	*FAIL*
3-Nitrotoluene	10/19/2016	12:24	1.65	2.00	82	6	67-129	20	
4-Amino-2,6-dinitrotoluene	10/19/2016	12:24	1.69	2.00	84	7	64-127	20	
4-Nitrotoluene	10/19/2016	12:24	1.63	2.00	82	6	71-124	20	
HMX	10/19/2016	12:24	1.84	2.00	92	20	74-124	20	
Nitrobenzene	10/19/2016	12:24	1.68	2.00	84	8	67-129	20	
Nitroglycerin	10/19/2016	12:24	3.33	3.99	83	0	73-124	20	
PETN	10/19/2016	12:24	3.41	3.99	85	7	72-128	20	
RDX	10/19/2016	12:24	1.56	2.00	78	7	67-129	20	
Tetryl	10/19/2016	12:24	1.55	2.00	78	3	68-135	20	

RPD or Spike Recovery: 3 out of 17 outside QC limits

CT LABORATORIES
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3H

Sample Description

RFAAP-FGMR-SSD-002

SOIL EXPLOSIVES MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Matrix: SOIL SDG No.: 122704

Analytical Method: EPA 8330B Concentration Units: mg/kg

Analytical Run #: 131500 Sample No.: 788015 Parent Sample No.: 788014

Analytical Prep Batch #: 59529 Analytical Preparation Date/Time: 10/14/2016 16:30

ICAL Calibration #: 070616EXPic-PRI

Analyte	Analysis Date/Time		Spike Result	Spike Amount	%R	%RPD	Control Limits (%R)	Control Limits (%RPD)	
1,3,5-Trinitrobenzene	10/19/2016	17:26	1.67	1.98	84	11	80-116	20	
1,3-Dinitrobenzene	10/19/2016	17:26	1.81	1.98	91	10	73-119	20	
2,4,6-Trinitrotoluene	10/19/2016	17:26	1.71	1.98	86	11	71-120	20	
2,4-Dinitrotoluene	10/19/2016	17:26	1.75	1.98	88	8	75-121	20	
2,6-Dinitrotoluene	10/19/2016	17:26	1.82	1.98	92	9	79-117	20	
2-Amino-4,6-dinitrotoluene	10/19/2016	17:26	1.72	1.98	87	11	71-123	20	
2-Nitrotoluene	10/19/2016	17:26	1.77	1.98	89	10	70-124	20	
3,5-Dinitroaniline	10/19/2016	17:26	1.53	1.98	77	4	86-118	20	*FAIL*
3-Nitrotoluene	10/19/2016	17:26	1.74	1.98	88	15	67-129	20	
4-Amino-2,6-dinitrotoluene	10/19/2016	17:26	1.85	1.98	93	9	64-127	20	
4-Nitrotoluene	10/19/2016	17:26	1.73	1.98	87	13	71-124	20	
HMX	10/19/2016	17:26	1.58	1.98	80	10	74-124	20	
Nitrobenzene	10/19/2016	17:26	1.84	1.98	93	14	67-129	20	
Nitroglycerin	10/19/2016	17:26	3.56	3.96	90	10	73-124	20	
PETN	10/19/2016	17:26	3.56	3.96	90	11	72-128	20	
RDX	10/19/2016	17:26	1.69	1.98	85	11	67-129	20	
Tetryl	10/19/2016	17:26	1.56	1.98	79	13	68-135	20	

RPD or Spike Recovery: 1 out of 17 outside QC limits

CT LABORATORIES
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3H

Sample Description

LCS

SOIL EXPLOSIVES LAB CONTROL SAMPLE

Lab Name: CT Laboratories

Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Sample No.: 788003

SDG No.: 122704

Analytical Method: EPA 8330B

Concentration Units: mg/kg

Analytical Run #: 131499 Sample No.: 788003 Parent Sample No.: 0

Analytical Prep Batch #: 59528 Analytical Preparation Date/Time: 10/14/2016 15:30

ICAL Calibration #: 070616EXPic-PRI

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	Parent Result	Spike Amount	%R	
1,3,5-Trinitrobenzene	10/19/2016	10:24	80-116	1.67		2.00	84	
1,3-Dinitrobenzene	10/19/2016	10:24	74-120	1.77		2.00	88	
2,4,6-Trinitrotoluene	10/19/2016	10:24	71-120	1.72		2.00	86	
2,4-Dinitrotoluene	10/19/2016	10:24	75-121	1.68		2.00	84	
2,6-Dinitrotoluene	10/19/2016	10:24	79-117	1.82		2.00	91	
2-Amino-4,6-dinitrotoluene	10/19/2016	10:24	71-123	1.71		2.00	86	
2-Nitrotoluene	10/19/2016	10:24	70-124	1.75		2.00	88	
3,5-Dinitroaniline	10/19/2016	10:24	86-118	1.67		2.00	84	*FAIL*
3-Nitrotoluene	10/19/2016	10:24	67-129	1.73		2.00	86	
4-Amino-2,6-dinitrotoluene	10/19/2016	10:24	64-127	1.86		2.00	93	
4-Nitrotoluene	10/19/2016	10:24	71-124	1.73		2.00	86	
HMX	10/19/2016	10:24	74-124	1.57		2.00	78	
Nitrobenzene	10/19/2016	10:24	67-129	1.80		2.00	90	
Nitroglycerin	10/19/2016	10:24	73-124	3.52		4.00	88	
PETN	10/19/2016	10:24	72-128	3.65		4.00	91	
RDX	10/19/2016	10:24	67-129	1.74		2.00	87	
Tetryl	10/19/2016	10:24	68-135	1.71		2.00	86	

Spike Recovery: 1 out of 17 outside limits

CT LABORATORIES
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3H

Sample Description

SOIL EXPLOSIVES LAB CONTROL SAMPLE

LCS

Lab Name: CT Laboratories

Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Sample No.: 788013

SDG No.: 122704

Analytical Method: EPA 8330B

Concentration Units: mg/kg

Analytical Run #: 131500 Sample No.: 788013 Parent Sample No.: 0

Analytical Prep Batch #: 59529 Analytical Preparation Date/Time: 10/14/2016 16:30

ICAL Calibration #: 070616EXPic-PRI

Analyte	Analysis Date/Time		Control Limit (%R)	Spike Result	Parent Result	Spike Amount	%R
1,3,5-Trinitrobenzene	10/19/2016	15:00	80-116	1.89		2.00	94
1,3-Dinitrobenzene	10/19/2016	15:00	74-120	2.01		2.00	100
2,4,6-Trinitrotoluene	10/19/2016	15:00	71-120	1.97		2.00	98
2,4-Dinitrotoluene	10/19/2016	15:00	75-121	1.93		2.00	96
2,6-Dinitrotoluene	10/19/2016	15:00	79-117	2.01		2.00	100
2-Amino-4,6-dinitrotoluene	10/19/2016	15:00	71-123	1.96		2.00	98
2-Nitrotoluene	10/19/2016	15:00	70-124	1.96		2.00	98
3,5-Dinitroaniline	10/19/2016	15:00	86-118	1.75		2.00	88
3-Nitrotoluene	10/19/2016	15:00	67-129	1.96		2.00	98
4-Amino-2,6-dinitrotoluene	10/19/2016	15:00	64-127	2.09		2.00	104
4-Nitrotoluene	10/19/2016	15:00	71-124	1.96		2.00	98
HMX	10/19/2016	15:00	74-124	1.80		2.00	90
Nitrobenzene	10/19/2016	15:00	67-129	2.05		2.00	102
Nitroglycerin	10/19/2016	15:00	73-124	3.91		4.00	98
PETN	10/19/2016	15:00	72-128	3.97		4.00	99
RDX	10/19/2016	15:00	67-129	1.98		2.00	99
Tetryl	10/19/2016	15:00	68-135	1.97		2.00	98

Spike Recovery: 0 out of 17 outside limits

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4B-1

EXPLOSIVES METHOD BLANK SUMMARY

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Sample ID:	788002	SDG No.:	122704
Matrix:	SOLID	Date Extracted:	10/14/2016
Date Analyzed:	10/19/2016	Time Analyzed:	10:06
Analytical Method:	EPA 8330B	Extraction Method:	METHOD
Analytical Run #:	131499	Extraction Batch #:	59528
		ICAL Calibration #:	070616EXPic-PRI

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES AND QC:

SEQUENCE	SAMPLE DESCRIPTION	SAMPLE ID	DATE/TIME ANALYZED	CALIBRATION # ID
1	MBS	788002	10/19/2016 10:06	070616EXPic-P
2	LCSS	788003	10/19/2016 10:24	070616EXPic-P
3	RFAAP-FGMR-SSI-001A	784496	10/19/2016 11:10	070616EXPic-P
4	RFAAP-FGMR-SSI-001AMSS	788004	10/19/2016 12:05	070616EXPic-P
5	RFAAP-FGMR-SSI-001AMSDS	788005	10/19/2016 12:24	070616EXPic-P
6	RFAAP-FGMR-SSI-001B	784515	10/19/2016 12:52	070616EXPic-P
7	RFAAP-FGMR-SSI-001C	784516	10/19/2016 13:10	070616EXPic-P
8	RFAAP-FGMR-SSI-002A	785308	10/19/2016 13:29	070616EXPic-P
9	RFAAP-FGMR-SSI-002B	785309	10/19/2016 14:05	070616EXPic-P
10	RFAAP-FGMR-SSI-002C	785310	10/19/2016 14:23	070616EXPic-P

CT LABORATORIES
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4B-1

EXPLOSIVES METHOD BLANK SUMMARY

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Sample ID:	788012	SDG No.:	122704
Matrix:	SOLID	Date Extracted:	10/14/2016
Date Analyzed:	10/19/2016	Time Analyzed:	14:42
Analytical Method:	EPA 8330B	Extraction Method:	METHOD
Analytical Run #:	131500	Extraction Batch #:	59529
		ICAL Calibration #:	070616EXPic-PRI

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES AND QC:

SEQUENCE	SAMPLE DESCRIPTION	SAMPLE ID	DATE/TIME ANALYZED	CALIBRATION # ID
1	MBS	788012	10/19/2016 14:42	070616EXPic-P
2	LCSS	788013	10/19/2016 15:00	070616EXPic-P
3	RFAAP-FGMR-SSD-001	784783	10/19/2016 15:18	070616EXPic-P
4	RFAAP-FGMR-DUP1	784852	10/19/2016 15:37	070616EXPic-P
5	RFAAP-FGMR-SSD-002	784853	10/19/2016 15:55	070616EXPic-P
6	RFAAP-FGMR-SSD-002MSS	788014	10/19/2016 16:50	070616EXPic-P
7	RFAAP-FGMR-SSD-002MSDS	788015	10/19/2016 17:26	070616EXPic-P
8	RFAAP-FGMR-SSD-003	784854	10/19/2016 17:45	070616EXPic-P
9	RFAAP-FGMR-SSD-004	784855	10/20/2016 09:48	070616EXPic-P

CT LABORATORIES
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CHANNEL A/B (FRONT/BACK) DETECTOR/COLUMN RPD

EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-DUP1

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Analytical Method:	EPA 8330B	CTL Sample ID:	784852
Analytical Run #:	131500	Date/Time Prepared:	10/14/2016 / 16:30
Date & Time Analyzed:	10/19/2016 / 15:37	Analytical Prep Batch #:	59529
Date & Time Analyzed #2:	10/21/2016 / 08:41	Concentration Units:	ug/mL
ICAL Calibration #:	070616EXPic-PRI		

Analyte	Column/Detector #1	Column/Detector #2	%RPD	Qualifiers
1,3,5-Trinitrobenzene	NA	NA	NA	
1,3-Dinitrobenzene	NA	NA	NA	
2,4,6-Trinitrotoluene	NA	NA	NA	
2,4-Dinitrotoluene	NA	NA	NA	
2,6-Dinitrotoluene	NA	NA	NA	
2-Amino-4,6-dinitrotoluene	NA	NA	NA	
2-Nitrotoluene	NA	NA	NA	
3,5-Dinitroaniline	NA	NA	NA	
3-Nitrotoluene	NA	NA	NA	
4-Amino-2,6-dinitrotoluene	NA	NA	NA	
4-Nitrotoluene	NA	NA	NA	
HMX	NA	NA	NA	
Nitrobenzene	NA	NA	NA	
Nitroglycerin	NA	NA	NA	
PETN	NA	NA	NA	
RDX	NA	NA	NA	
Tetryl	NA	NA	NA	

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CHANNEL A/B (FRONT/BACK) DETECTOR/COLUMN RPD

EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSD-001

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Analytical Method:	EPA 8330B	CTL Sample ID:	784783
Analytical Run #:	131500	Date/Time Prepared:	10/14/2016 / 16:30
Date & Time Analyzed:	10/19/2016 / 15:18	Analytical Prep Batch #:	59529
Date & Time Analyzed #2:	10/21/2016 / 08:04	Concentration Units:	ug/mL
ICAL Calibration #:	070616EXPic-PRI		

Analyte	Column/Detector #1	Column/Detector #2	%RPD	Qualifiers
1,3,5-Trinitrobenzene	NA	NA	NA	
1,3-Dinitrobenzene	NA	NA	NA	
2,4,6-Trinitrotoluene	NA	NA	NA	
2,4-Dinitrotoluene	NA	NA	NA	
2,6-Dinitrotoluene	NA	NA	NA	
2-Amino-4,6-dinitrotoluene	NA	NA	NA	
2-Nitrotoluene	NA	NA	NA	
3,5-Dinitroaniline	NA	NA	NA	
3-Nitrotoluene	NA	NA	NA	
4-Amino-2,6-dinitrotoluene	NA	NA	NA	
4-Nitrotoluene	NA	NA	NA	
HMX	NA	NA	NA	
Nitrobenzene	NA	NA	NA	
Nitroglycerin	NA	NA	NA	
PETN	NA	NA	NA	
RDX	NA	NA	NA	
Tetryl	NA	NA	NA	

CT LABORATORIES
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CHANNEL A/B (FRONT/BACK) DETECTOR/COLUMN RPD

EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSD-002

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Analytical Method:	EPA 8330B	CTL Sample ID:	784853
Analytical Run #:	131500	Date/Time Prepared:	10/14/2016 / 16:30
Date & Time Analyzed:	10/19/2016 / 15:55	Analytical Prep Batch #:	59529
Date & Time Analyzed #2:	10/21/2016 / 09:18	Concentration Units:	ug/mL
ICAL Calibration #:	070616EXPic-PRI		

Analyte	Column/Detector #1	Column/Detector #2	%RPD	Qualifiers
1,3,5-Trinitrobenzene	NA	NA	NA	
1,3-Dinitrobenzene	NA	NA	NA	
2,4,6-Trinitrotoluene	NA	NA	NA	
2,4-Dinitrotoluene	NA	NA	NA	
2,6-Dinitrotoluene	NA	NA	NA	
2-Amino-4,6-dinitrotoluene	NA	NA	NA	
2-Nitrotoluene	NA	NA	NA	
3,5-Dinitroaniline	NA	NA	NA	
3-Nitrotoluene	NA	NA	NA	
4-Amino-2,6-dinitrotoluene	NA	NA	NA	
4-Nitrotoluene	NA	NA	NA	
HMX	NA	NA	NA	
Nitrobenzene	NA	NA	NA	
Nitroglycerin	NA	NA	NA	
PETN	NA	NA	NA	
RDX	NA	NA	NA	
Tetryl	NA	NA	NA	

CT LABORATORIES
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CHANNEL A/B (FRONT/BACK) DETECTOR/COLUMN RPD

EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSD-003

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Analytical Method:	EPA 8330B	CTL Sample ID:	784854
Analytical Run #:	131500	Date/Time Prepared:	10/14/2016 / 16:30
Date & Time Analyzed:	10/19/2016 / 17:45	Analytical Prep Batch #:	59529
Date & Time Analyzed #2:	/	Concentration Units:	ug/mL
ICAL Calibration #:	070616EXPic-PRI		

Analyte	Column/Detector #1	Column/Detector #2	%RPD	Qualifiers
1,3,5-Trinitrobenzene	NA			
1,3-Dinitrobenzene	NA			
2,4,6-Trinitrotoluene	NA			
2,4-Dinitrotoluene	NA			
2,6-Dinitrotoluene	NA			
2-Amino-4,6-dinitrotoluene	NA			
2-Nitrotoluene	NA			
3,5-Dinitroaniline	NA			
3-Nitrotoluene	NA			
4-Amino-2,6-dinitrotoluene	NA			
4-Nitrotoluene	NA			
HMX	NA			
Nitrobenzene	NA			
Nitroglycerin	NA			
PETN	NA			
RDX	NA			
Tetryl	NA			

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CHANNEL A/B (FRONT/BACK) DETECTOR/COLUMN RPD

EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSD-004

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Analytical Method:	EPA 8330B	CTL Sample ID:	784855
Analytical Run #:	131500	Date/Time Prepared:	10/14/2016 / 16:30
Date & Time Analyzed:	10/20/2016 / 09:48	Analytical Prep Batch #:	59529
Date & Time Analyzed #2:	/	Concentration Units:	ug/mL
ICAL Calibration #:	070616EXPic-PRI		

Analyte	Column/Detector #1	Column/Detector #2	%RPD	Qualifiers
1,3,5-Trinitrobenzene	NA			
1,3-Dinitrobenzene	NA			
2,4,6-Trinitrotoluene	NA			
2,4-Dinitrotoluene	NA			
2,6-Dinitrotoluene	NA			
2-Amino-4,6-dinitrotoluene	NA			
2-Nitrotoluene	NA			
3,5-Dinitroaniline	NA			
3-Nitrotoluene	NA			
4-Amino-2,6-dinitrotoluene	NA			
4-Nitrotoluene	NA			
HMX	NA			
Nitrobenzene	NA			
Nitroglycerin	NA			
PETN	NA			
RDX	NA			
Tetryl	NA			

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CHANNEL A/B (FRONT/BACK) DETECTOR/COLUMN RPD

EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSI-001A

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Analytical Method:	EPA 8330B	CTL Sample ID:	784496
Analytical Run #:	131499	Date/Time Prepared:	10/14/2016 / 15:30
Date & Time Analyzed:	10/19/2016 / 11:10	Analytical Prep Batch #:	59528
Date & Time Analyzed #2:	/	Concentration Units:	ug/mL
ICAL Calibration #:	070616EXPic-PRI		

Analyte	Column/Detector #1	Column/Detector #2	%RPD	Qualifiers
1,3,5-Trinitrobenzene	NA			
1,3-Dinitrobenzene	NA			
2,4,6-Trinitrotoluene	NA			
2,4-Dinitrotoluene	NA			
2,6-Dinitrotoluene	NA			
2-Amino-4,6-dinitrotoluene	NA			
2-Nitrotoluene	NA			
3,5-Dinitroaniline	NA			
3-Nitrotoluene	NA			
4-Amino-2,6-dinitrotoluene	NA			
4-Nitrotoluene	NA			
HMX	NA			
Nitrobenzene	NA			
Nitroglycerin	NA			
PETN	NA			
RDX	NA			
Tetryl	NA			

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CHANNEL A/B (FRONT/BACK) DETECTOR/COLUMN RPD

EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSI-001B

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Analytical Method:	EPA 8330B	CTL Sample ID:	784515
Analytical Run #:	131499	Date/Time Prepared:	10/14/2016 / 15:30
Date & Time Analyzed:	10/19/2016 / 12:52	Analytical Prep Batch #:	59528
Date & Time Analyzed #2:	/	Concentration Units:	ug/mL
ICAL Calibration #:	070616EXPic-PRI		

Analyte	Column/Detector #1	Column/Detector #2	%RPD	Qualifiers
1,3,5-Trinitrobenzene	NA			
1,3-Dinitrobenzene	NA			
2,4,6-Trinitrotoluene	NA			
2,4-Dinitrotoluene	NA			
2,6-Dinitrotoluene	NA			
2-Amino-4,6-dinitrotoluene	NA			
2-Nitrotoluene	NA			
3,5-Dinitroaniline	NA			
3-Nitrotoluene	NA			
4-Amino-2,6-dinitrotoluene	NA			
4-Nitrotoluene	NA			
HMX	NA			
Nitrobenzene	NA			
Nitroglycerin	NA			
PETN	NA			
RDX	NA			
Tetryl	NA			

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CHANNEL A/B (FRONT/BACK) DETECTOR/COLUMN RPD

EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSI-001C

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Analytical Method:	EPA 8330B	CTL Sample ID:	784516
Analytical Run #:	131499	Date/Time Prepared:	10/14/2016 / 15:30
Date & Time Analyzed:	10/19/2016 / 13:10	Analytical Prep Batch #:	59528
Date & Time Analyzed #2:	/	Concentration Units:	ug/mL
ICAL Calibration #:	070616EXPic-PRI		

Analyte	Column/Detector #1	Column/Detector #2	%RPD	Qualifiers
1,3,5-Trinitrobenzene	NA			
1,3-Dinitrobenzene	NA			
2,4,6-Trinitrotoluene	NA			
2,4-Dinitrotoluene	NA			
2,6-Dinitrotoluene	NA			
2-Amino-4,6-dinitrotoluene	NA			
2-Nitrotoluene	NA			
3,5-Dinitroaniline	NA			
3-Nitrotoluene	NA			
4-Amino-2,6-dinitrotoluene	NA			
4-Nitrotoluene	NA			
HMX	NA			
Nitrobenzene	NA			
Nitroglycerin	NA			
PETN	NA			
RDX	NA			
Tetryl	NA			

CT LABORATORIES
delivering more than data from your environmental analyses

CHANNEL A/B (FRONT/BACK) DETECTOR/COLUMN RPD

EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSI-002A

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Analytical Method:	EPA 8330B	CTL Sample ID:	785308
Analytical Run #:	131499	Date/Time Prepared:	10/14/2016 / 15:30
Date & Time Analyzed:	10/19/2016 / 13:29	Analytical Prep Batch #:	59528
Date & Time Analyzed #2:	10/21/2016 / 04:20	Concentration Units:	ug/mL
ICAL Calibration #:	070616EXPic-PRI		

Analyte	Column/Detector #1	Column/Detector #2	%RPD	Qualifiers
1,3,5-Trinitrobenzene	NA	NA	NA	
1,3-Dinitrobenzene	NA	NA	NA	
2,4,6-Trinitrotoluene	NA	NA	NA	
2,4-Dinitrotoluene	NA	NA	NA	
2,6-Dinitrotoluene	NA	NA	NA	
2-Amino-4,6-dinitrotoluene	NA	NA	NA	
2-Nitrotoluene	NA	NA	NA	
3,5-Dinitroaniline	NA	NA	NA	
3-Nitrotoluene	NA	NA	NA	
4-Amino-2,6-dinitrotoluene	NA	NA	NA	
4-Nitrotoluene	NA	NA	NA	
HMX	NA	NA	NA	
Nitrobenzene	NA	NA	NA	
Nitroglycerin	NA	NA	NA	
PETN	NA	NA	NA	
RDX	NA	NA	NA	
Tetryl	NA	NA	NA	

CT LABORATORIES
delivering more than data from your environmental analyses

CHANNEL A/B (FRONT/BACK) DETECTOR/COLUMN RPD

EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSI-002B

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Analytical Method:	EPA 8330B	CTL Sample ID:	785309
Analytical Run #:	131499	Date/Time Prepared:	10/14/2016 / 15:30
Date & Time Analyzed:	10/19/2016 / 14:05	Analytical Prep Batch #:	59528
Date & Time Analyzed #2:	10/21/2016 / 04:57	Concentration Units:	ug/mL
ICAL Calibration #:	070616EXPic-PRI		

Analyte	Column/Detector #1	Column/Detector #2	%RPD	Qualifiers
1,3,5-Trinitrobenzene	NA	NA	NA	
1,3-Dinitrobenzene	NA	NA	NA	
2,4,6-Trinitrotoluene	NA	NA	NA	
2,4-Dinitrotoluene	NA	NA	NA	
2,6-Dinitrotoluene	NA	NA	NA	
2-Amino-4,6-dinitrotoluene	NA	NA	NA	
2-Nitrotoluene	NA	NA	NA	
3,5-Dinitroaniline	NA	NA	NA	
3-Nitrotoluene	NA	NA	NA	
4-Amino-2,6-dinitrotoluene	NA	NA	NA	
4-Nitrotoluene	NA	NA	NA	
HMX	NA	NA	NA	
Nitrobenzene	NA	NA	NA	
Nitroglycerin	NA	NA	NA	
PETN	NA	NA	NA	
RDX	NA	NA	NA	
Tetryl	NA	NA	NA	

CT LABORATORIES
delivering more than data from your environmental analyses

CHANNEL A/B (FRONT/BACK) DETECTOR/COLUMN RPD

EXPLOSIVES ANALYSIS

Sample Description

RFAAP-FGMR-SSI-002C

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOIL	SDG No.:	122704
Analytical Method:	EPA 8330B	CTL Sample ID:	785310
Analytical Run #:	131499	Date/Time Prepared:	10/14/2016 / 15:30
Date & Time Analyzed:	10/19/2016 / 14:23	Analytical Prep Batch #:	59528
Date & Time Analyzed #2:	/	Concentration Units:	ug/mL
ICAL Calibration #:	070616EXPic-PRI		

Analyte	Column/Detector #1	Column/Detector #2	%RPD	Qualifiers
1,3,5-Trinitrobenzene	NA			
1,3-Dinitrobenzene	NA			
2,4,6-Trinitrotoluene	NA			
2,4-Dinitrotoluene	NA			
2,6-Dinitrotoluene	NA			
2-Amino-4,6-dinitrotoluene	NA			
2-Nitrotoluene	NA			
3,5-Dinitroaniline	NA			
3-Nitrotoluene	NA			
4-Amino-2,6-dinitrotoluene	NA			
4-Nitrotoluene	NA			
HMX	NA			
Nitrobenzene	NA			
Nitroglycerin	NA			
PETN	NA			
RDX	NA			
Tetryl	NA			

Triplicate Sample Analysis Relative Standard Deviation Calculations

Analyst: RED
Sample ID: **784496**
Analysis Date: 10 19 2016
Data path: C:\Instarch\hplc 2\data\ 101816exp-primary

	Analyte Concentration (ug/mL)						
Analyte	**Parent Sample**	**Duplicate Sample**	**Triplicate Sample**	**Mean Conc. (ug/mL)**	**Standard Deviation**	**%RSD**	**Flag (>20% RSD)**
HMX	0	0	0	0	0	#DIV/0!	#DIV/0!
RDX	0	0	0	0	0	#DIV/0!	#DIV/0!
1.3.5-Trinitrobenzne	0	0	0	0	0	#DIV/0!	#DIV/0!
1.2-Dinitrobenzene (SSTD)	95.8557	94.911	94.6677	95.1448	0.627561	0.659585	
1.3-Dinitrobenzene	0	0	0	0	0	#DIV/0!	#DIV/0!
tetryl	0	0	0	0	0	#DIV/0!	#DIV/0!
3,5-dinitroaniline	0	0	0	0	0	#DIV/0!	#DIV/0!
Nitrobenzene	0	0	0	0	0	#DIV/0!	#DIV/0!
2,4,6-Trinitrotoluene	0	0	0	0	0	#DIV/0!	#DIV/0!
2-amino-4,6-Dinitrotoluene	0	0	0	0	0	#DIV/0!	#DIV/0!
4-amino-2,6-Dinitrotoluene	0	0	0	0	0	#DIV/0!	#DIV/0!
2,6-Dinitrotoluene	0	0	0	0	0	#DIV/0!	#DIV/0!
2,4-Dinitrotoluene	0	0	0	0	0	#DIV/0!	#DIV/0!
2-Nitrotoluene	0	0	0	0	0	#DIV/0!	#DIV/0!
4-Nitrotoluene	0	0	0	0	0	#DIV/0!	#DIV/0!
3-Nitrotoluene	0	0	0	0	0	#DIV/0!	#DIV/0!
Nitroglycerin	0	0	0	0	0	#DIV/0!	#DIV/0!
PETN	0	0	0	0	0	#DIV/0!	#DIV/0!

Triplicate Sample Analysis Relative Standard Deviation Calculations

Analyst: RED
Sample ID: **784853**
Analysis Date: 10 19 2016
Data path: C:\Instarch\hplc 2\data\ 101816exp-primary

	Analyte Concentration (ug/mL)						
Analyte	**Parent Sample**	**Duplicate Sample**	**Triplicate Sample**	**Mean Conc. (ug/mL)**	**Standard Deviation**	**%RSD**	**Flag (>20% RSD)**
HMX	0	0	0	0	0	#DIV/0!	#DIV/0!
RDX	0	0	0	0	0	#DIV/0!	#DIV/0!
1.3.5-Trinitrobenzne	0	0	0	0	0	#DIV/0!	#DIV/0!
1.2-Dinitrobenzene (SSTD)	97.5528	93.3893	96.4195	95.7872	2.1525649	2.247236	
1.3-Dinitrobenzene	0	0	0	0	0	#DIV/0!	#DIV/0!
tetryl	0	0	0	0	0	#DIV/0!	#DIV/0!
3,5-dinitroaniline	0	0	0	0	0	#DIV/0!	#DIV/0!
Nitrobenzene	0	0	0	0	0	#DIV/0!	#DIV/0!
2,4,6-Trinitrotoluene	0	0	0	0	0	#DIV/0!	#DIV/0!
2-amino-4,6-Dinitrotoluene	0	0	0	0	0	#DIV/0!	#DIV/0!
4-amino-2,6-Dinitrotoluene	0	0	0	0	0	#DIV/0!	#DIV/0!
2,6-Dinitrotoluene	0	0	0	0	0	#DIV/0!	#DIV/0!
2,4-Dinitrotoluene	0	0	0	0	0	#DIV/0!	#DIV/0!
2-Nitrotoluene	0	0	0	0	0	#DIV/0!	#DIV/0!
4-Nitrotoluene	0	0	0	0	0	#DIV/0!	#DIV/0!
3-Nitrotoluene	0	0	0	0	0	#DIV/0!	#DIV/0!
Nitroglycerin	0	0	0	0	0	#DIV/0!	#DIV/0!
PETN	0	0	0	0	0	#DIV/0!	#DIV/0!

NITROAROMATICS ANALYSIS
SAMPLE DATA
DOCUMENTS

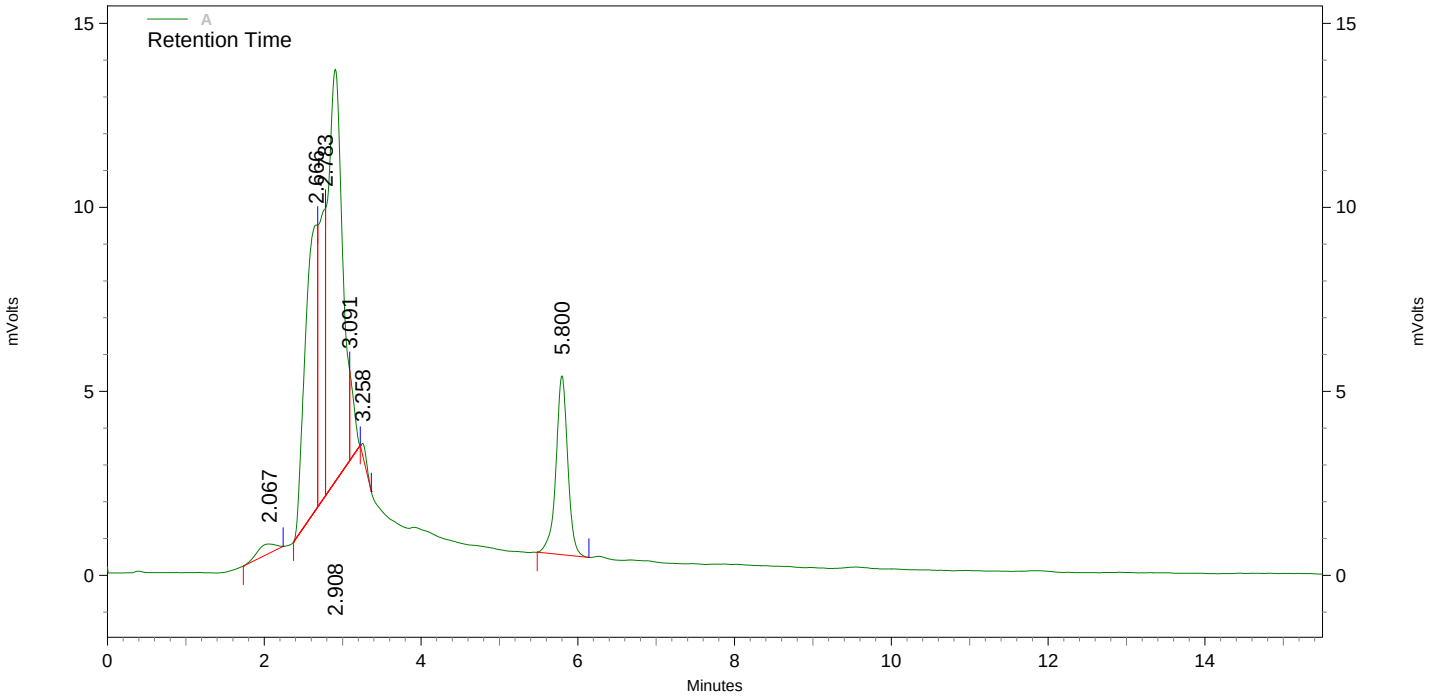
After Manual Integration

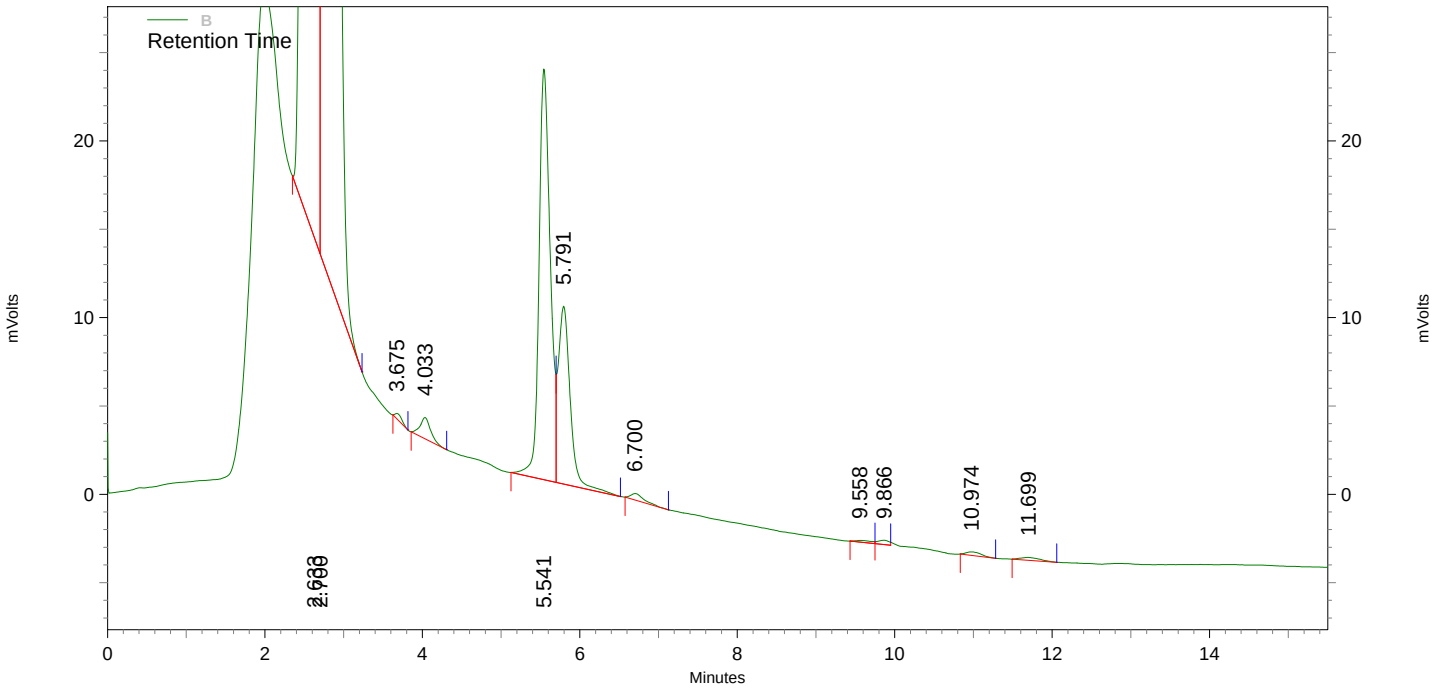
RED
11/10/2016

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\005.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,784496,
Acquired: 10/19/2016 11:10:56
Data Summary: Reason #4 applies to data. RED 10/20/2016

JJY
11/4/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\005.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,784496,
Acquired: 10/19/2016 11:10:56
Data Summary: Reason #4 applies to data. RED 10/20/2016

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.800	50763	**95.8557**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB			**0.0000 BDL**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

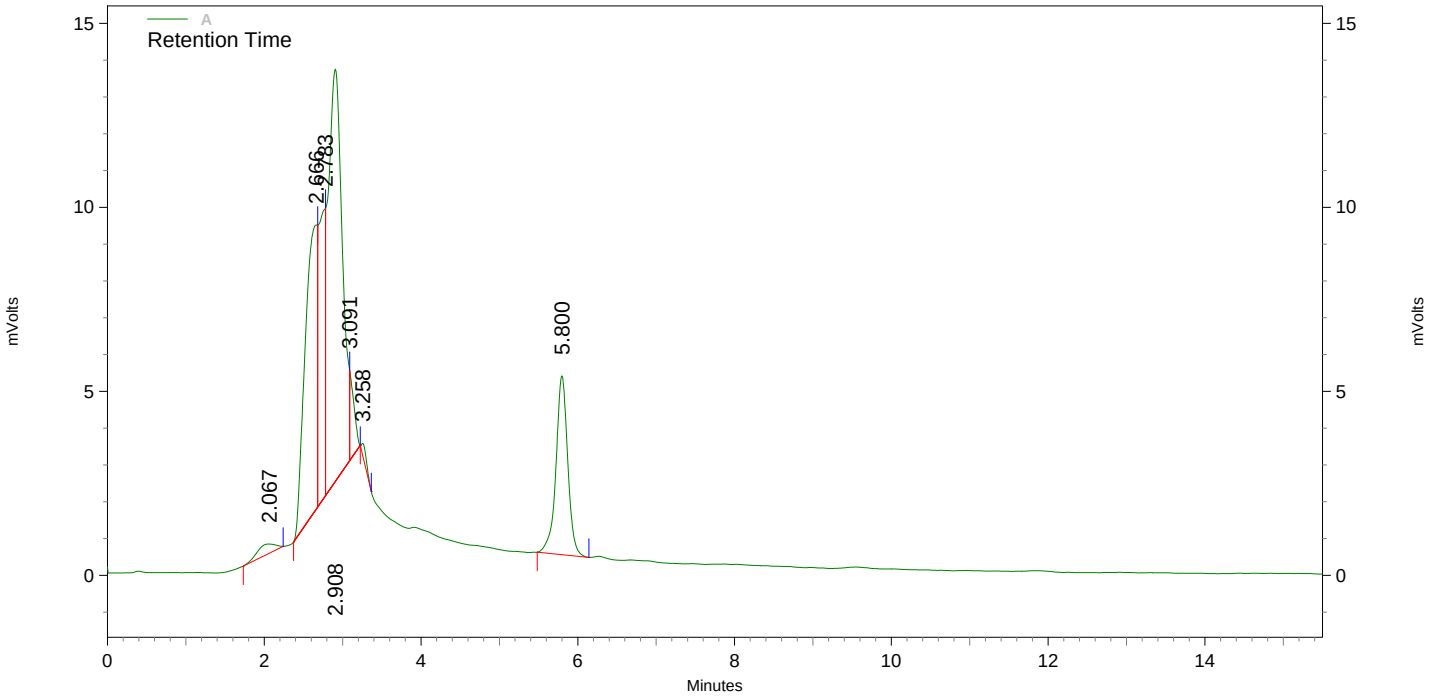
B Results

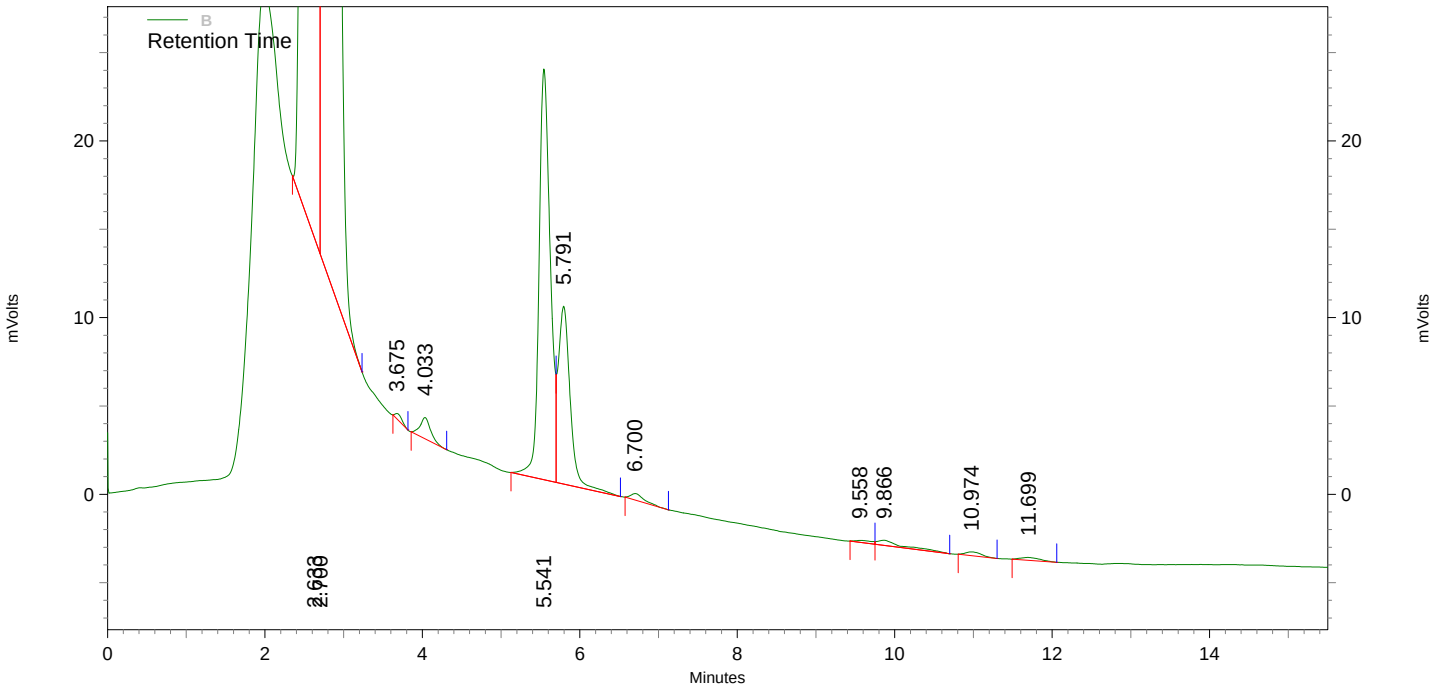
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG			**0.0000 BDL**
26-DNT	9.866	2333	**0.0144**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

Before Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\005.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,784496,
Acquired: 10/19/2016 11:10:56
Data Summary: Reason #4 applies to data. RED 10/20/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\005.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,784496,
Acquired: 10/19/2016 11:10:56
Data Summary: Reason #4 applies to data. RED 10/20/2016

A Results

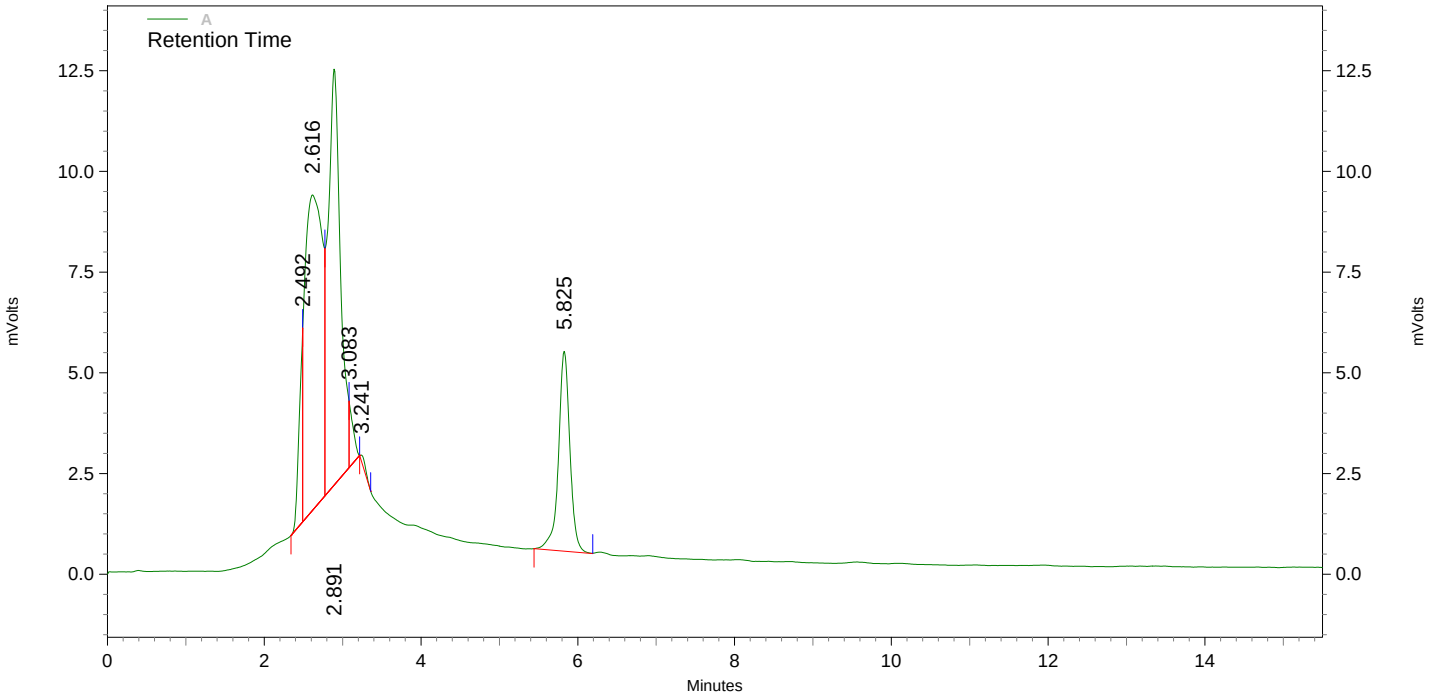
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.800	50763	**95.8557**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB			**0.0000 BDL**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

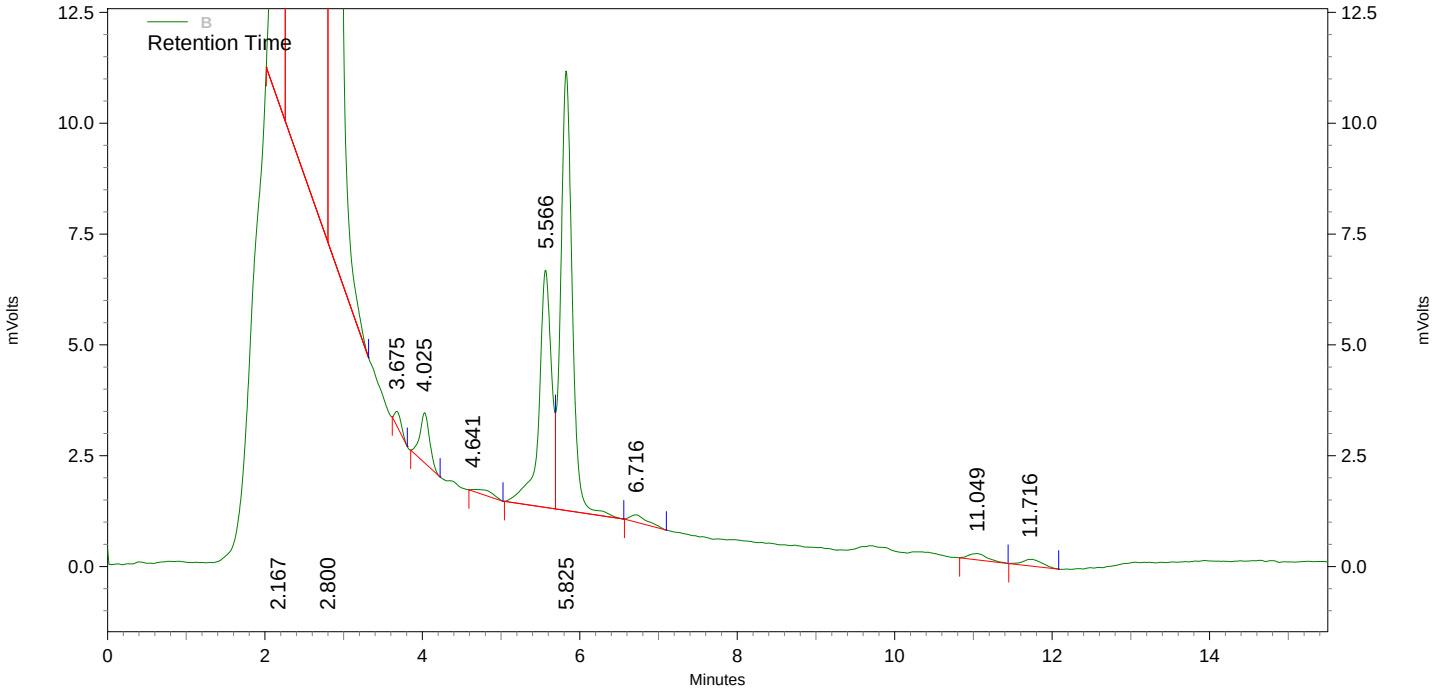
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG			**0.0000 BDL**
26-DNT	9.866	6808	**0.0380**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\010.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,784515,
Acquired: 10/19/2016 12:52:26
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\010.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,784515,
Acquired: 10/19/2016 12:52:26
Data Summary: {Data Description}

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.825	50233	**94.8563**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB			**0.0000 BDL**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

B Results

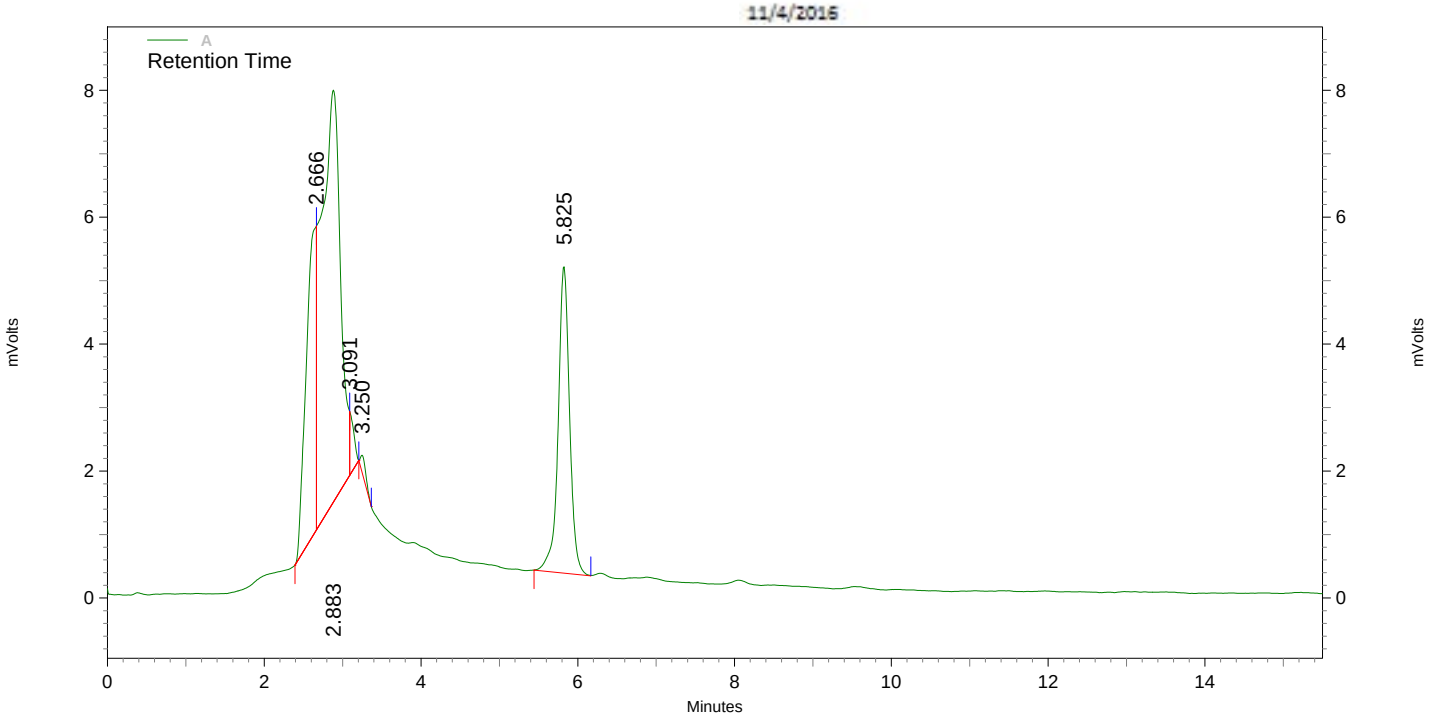
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG			**0.0000 BDL**
26-DNT			**0.0000 BDL**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

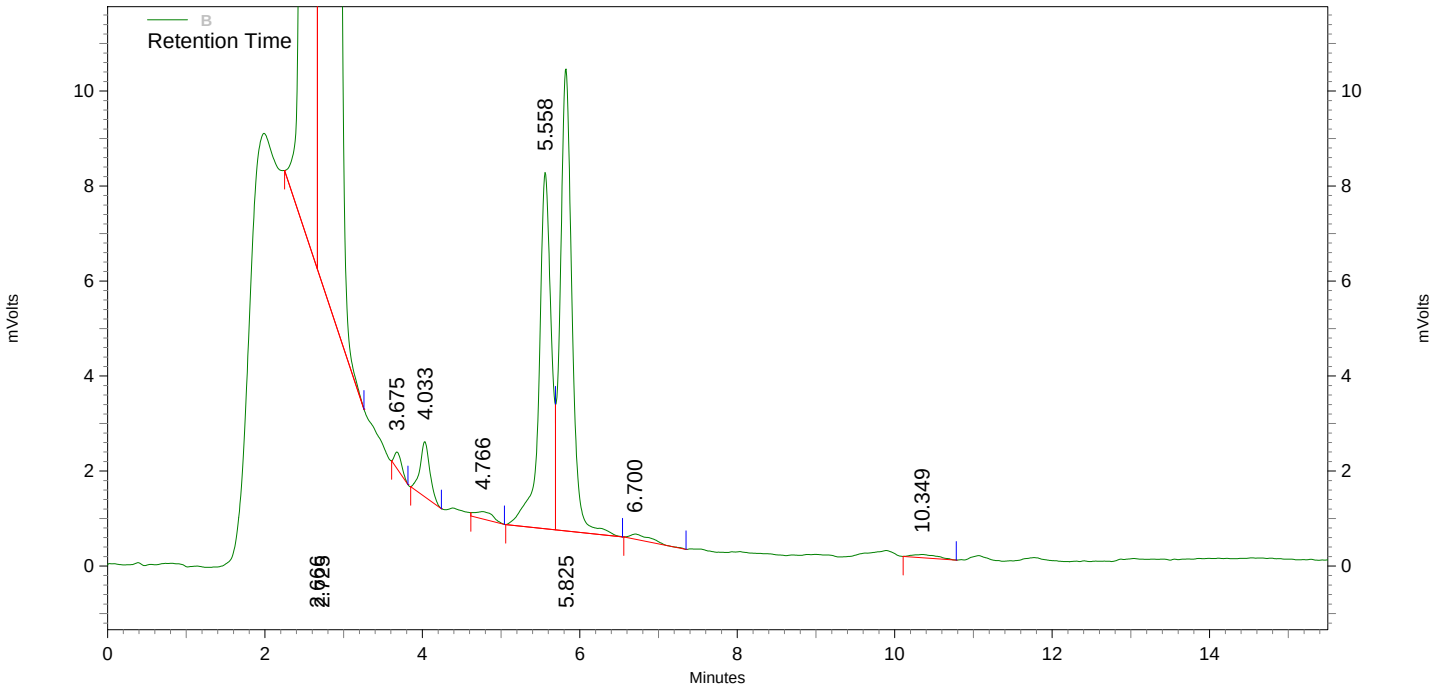
After Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\011.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,784516,
Acquired: 10/19/2016 13:10:45 JJY
Data Summary: Reason #3 applies to data. RED 10/20/2016

11/4/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\011.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,784516,
Acquired: 10/19/2016 13:10:45
Data Summary: Reason #3 applies to data. RED 10/20/2016

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.825	49021	**92.5709**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB			**0.0000 BDL**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

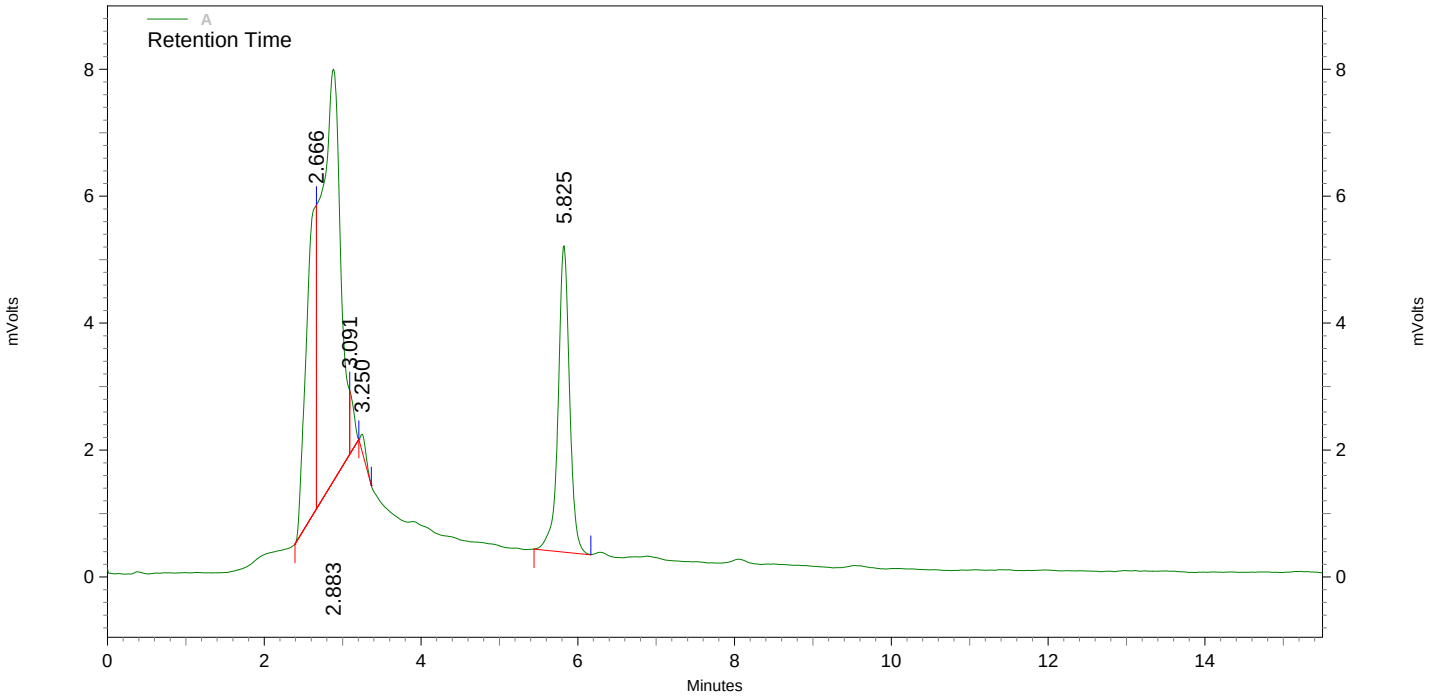
B Results

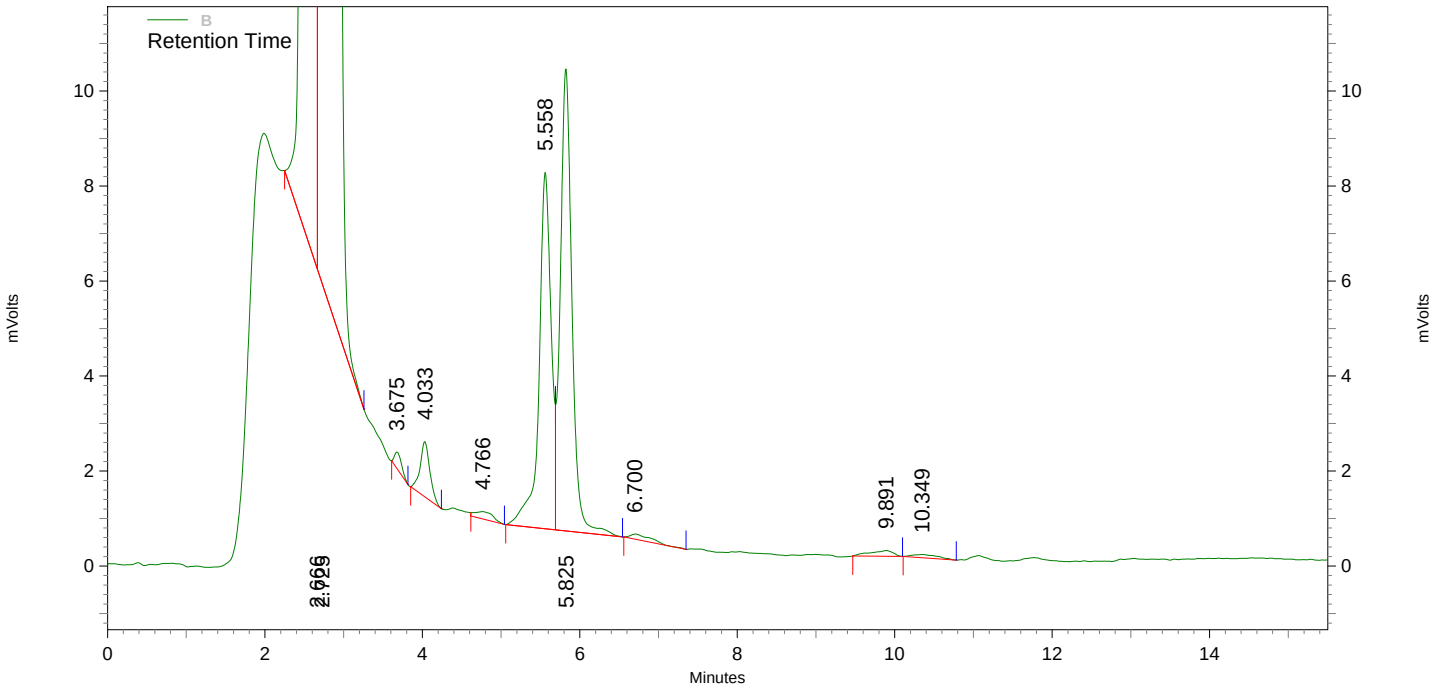
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG			**0.0000 BDL**
26-DNT			**0.0000 BDL**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

Before Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\011.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,784516,
Acquired: 10/19/2016 13:10:45
Data Summary: Reason #3 applies to data. RED 10/20/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\011.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,784516,
Acquired: 10/19/2016 13:10:45
Data Summary: Reason #3 applies to data. RED 10/20/2016

A Results

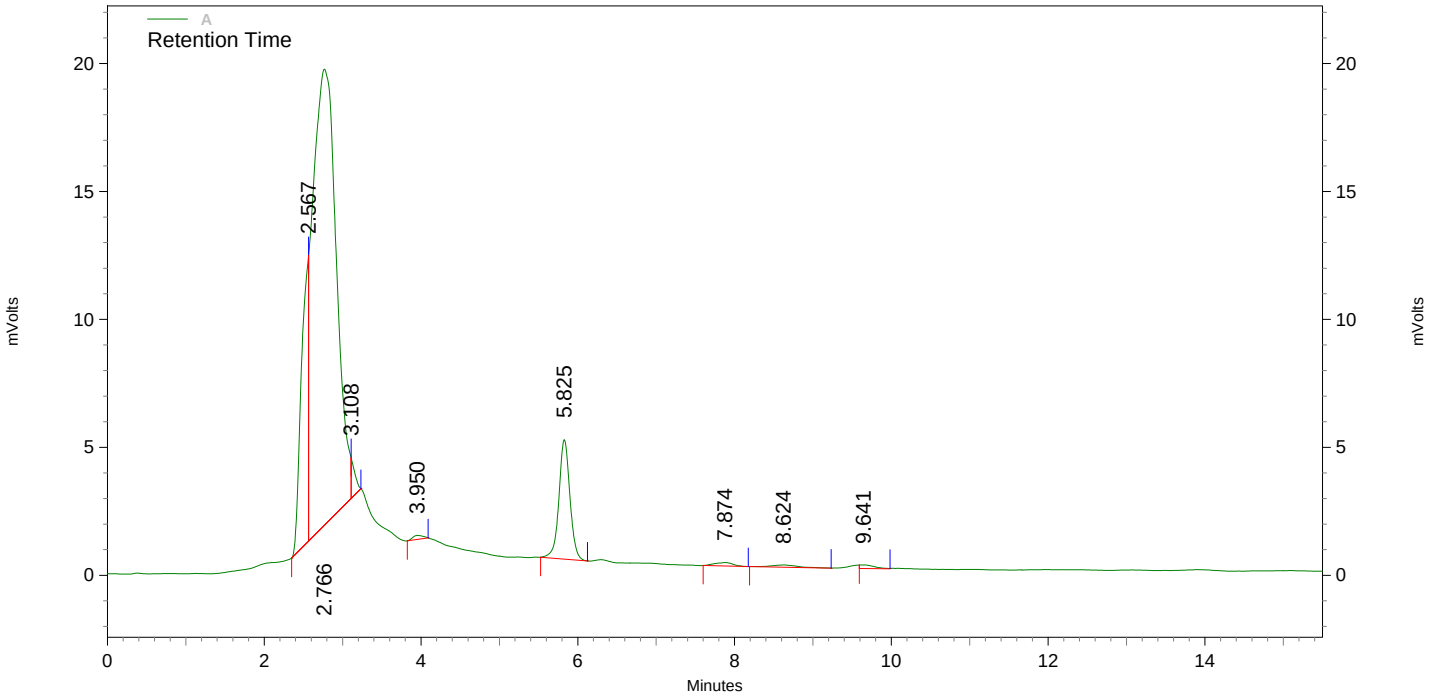
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.825	49021	**92.5709**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB			**0.0000 BDL**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

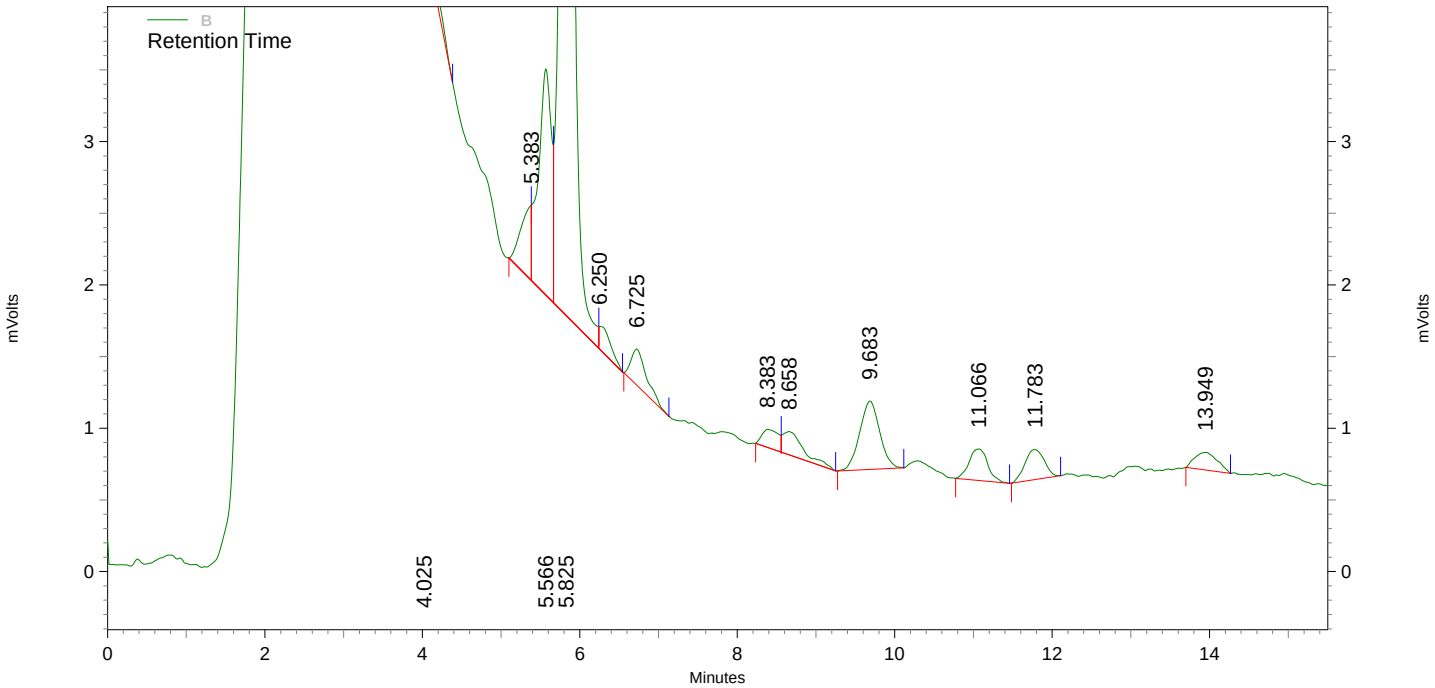
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG			**0.0000 BDL**
26-DNT	9.891	2410	**0.0148**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\012.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,785308,
Acquired: 10/19/2016 13:29:02
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\012.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,785308,
Acquired: 10/19/2016 13:29:02
Data Summary: {Data Description}

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.825	45470	**85.8751**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB	7.874	2198	**0.0104**
246-TNT	8.624	1957	**0.0094**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

B Results

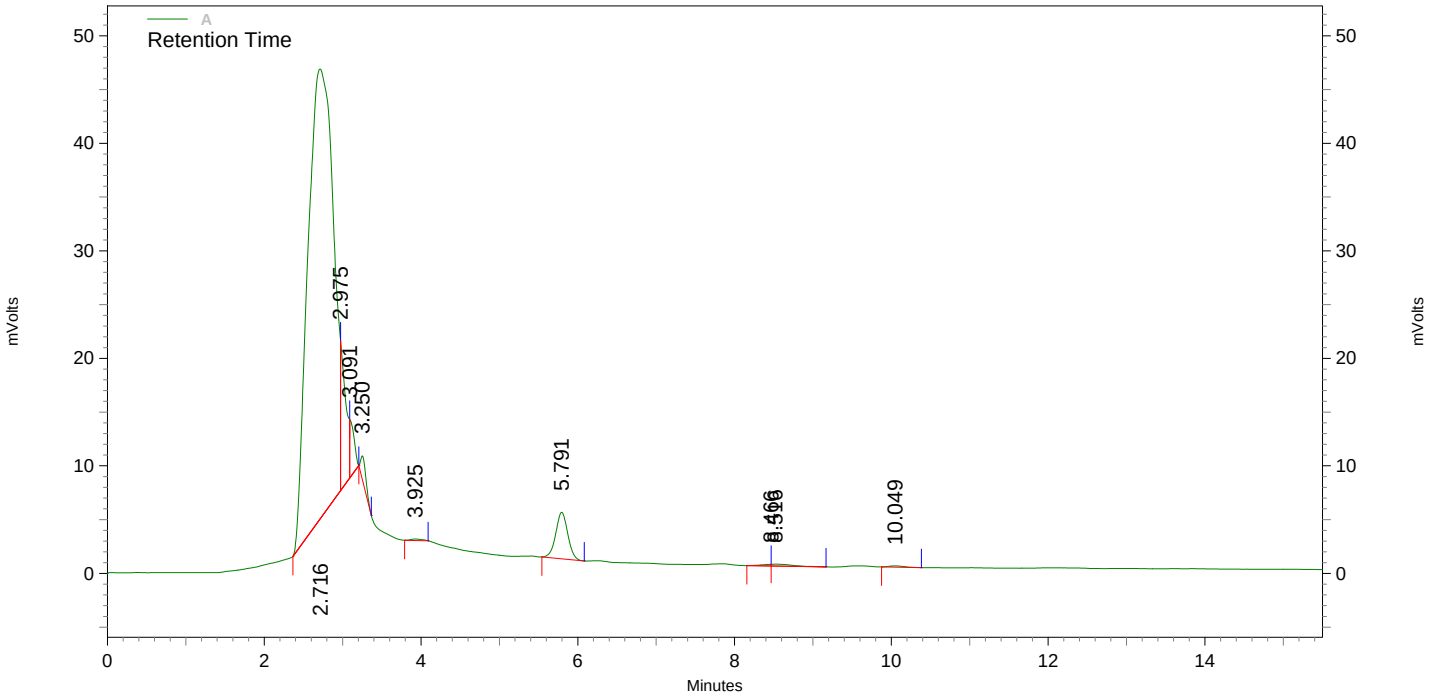
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.383	1904	**0.0309**
26-DNT	9.683	8470	**0.0468**
24-DNT			**0.0000 BDL**
PETN	13.949	2451	**0.0206**

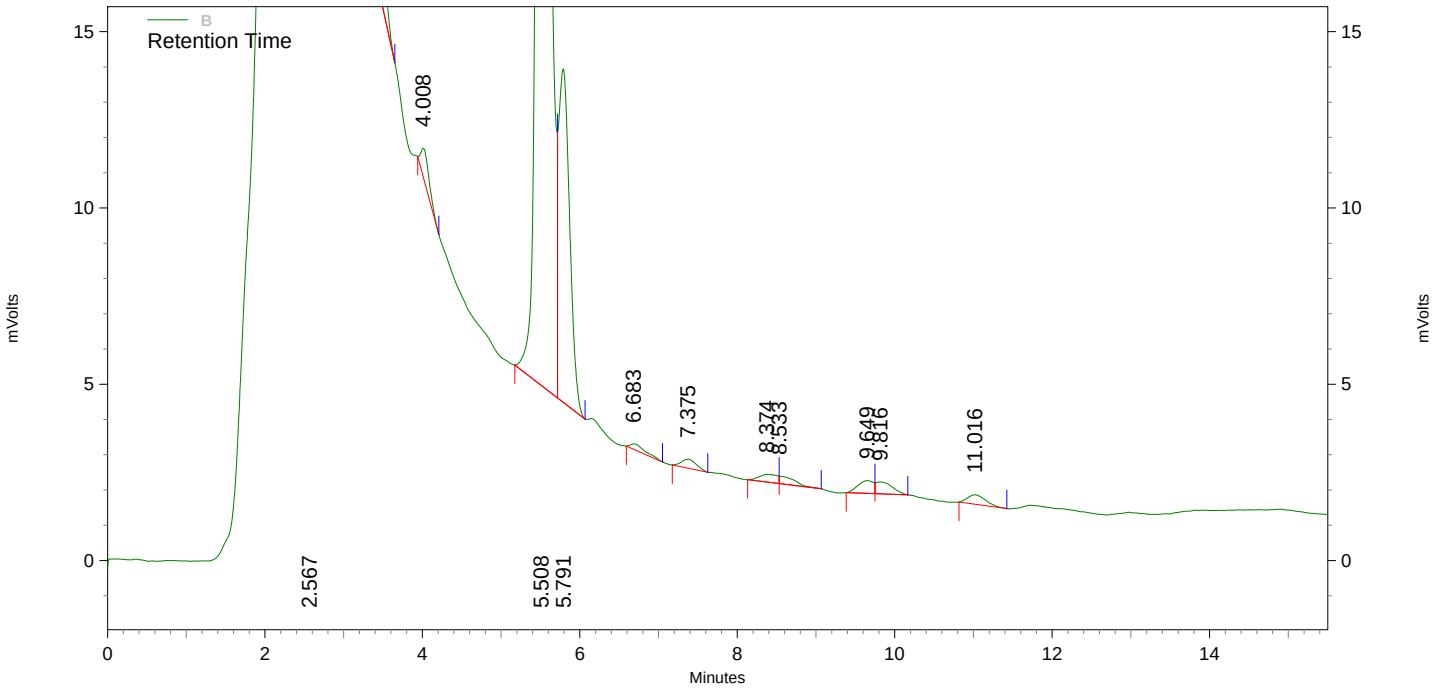
After Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\014.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,785309,
Acquired: 10/19/2016 14:05:37
Data Summary: Reason #3,#4 applies to data. RED 10/20/2016

JJY
11/4/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\014.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,785309,
Acquired: 10/19/2016 14:05:37
Data Summary: Reason #3,#4 applies to data. RED 10/20/2016

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.791	46258	**87.3609**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB			**0.0000 BDL**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

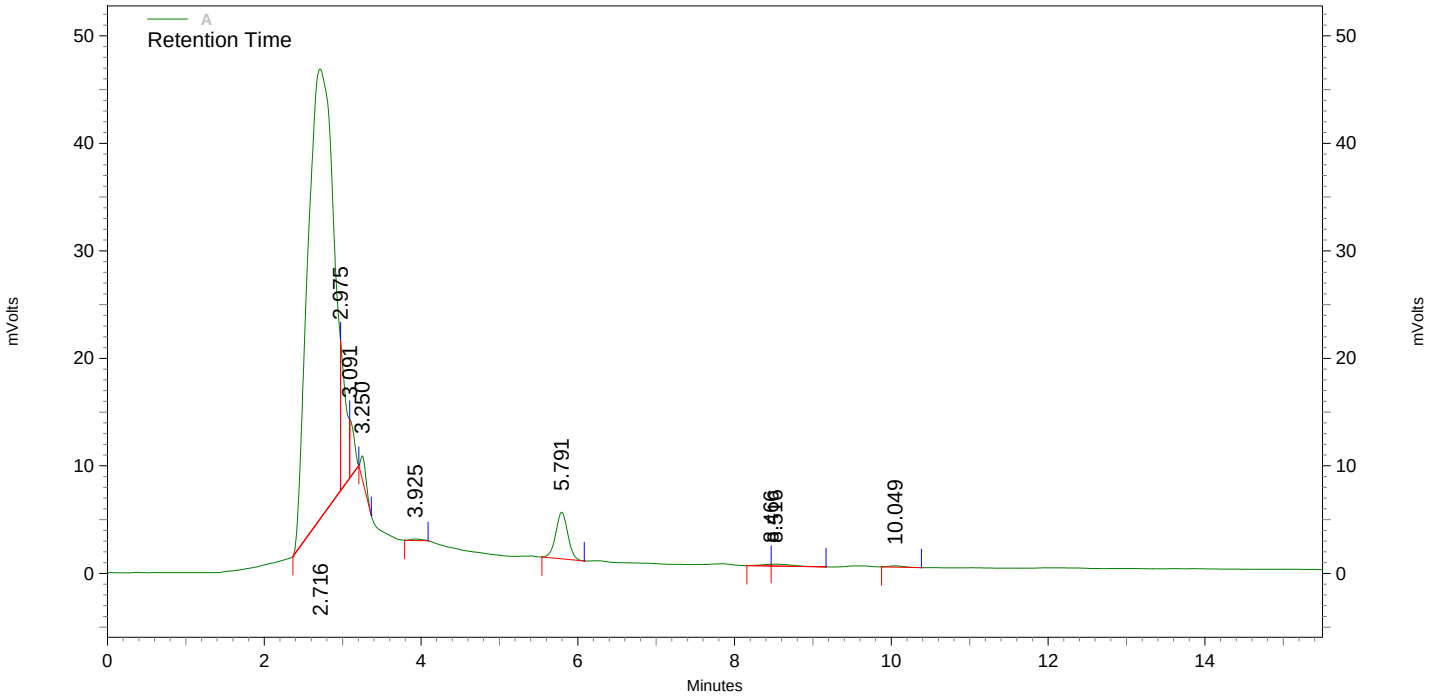
B Results

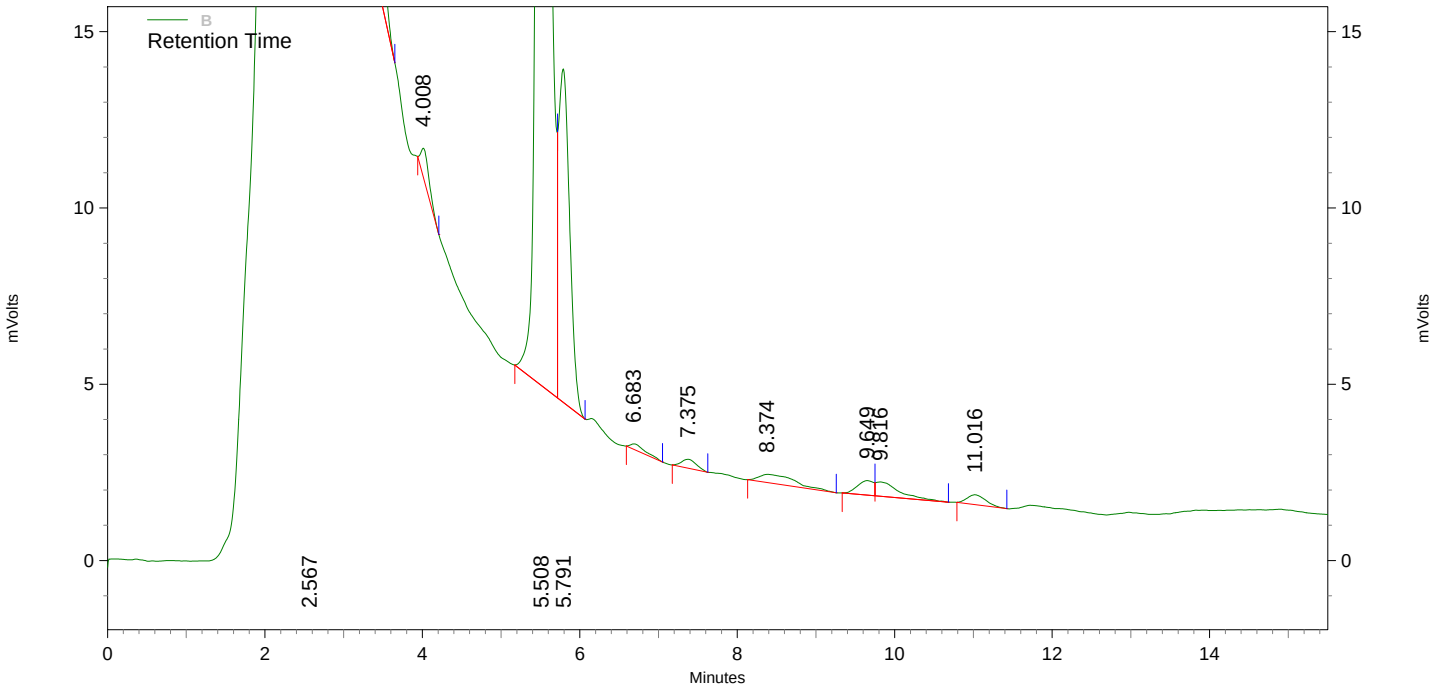
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.374	3518	**0.0516**
26-DNT	9.816	4931	**0.0281**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

Before Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\014.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,785309,
Acquired: 10/19/2016 14:05:37
Data Summary: Reason #3,#4 applies to data. RED 10/20/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\014.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,785309,
Acquired: 10/19/2016 14:05:37
Data Summary: Reason #3,#4 applies to data. RED 10/20/2016

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.791	46258	**87.3609**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB			**0.0000 BDL**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

B Results

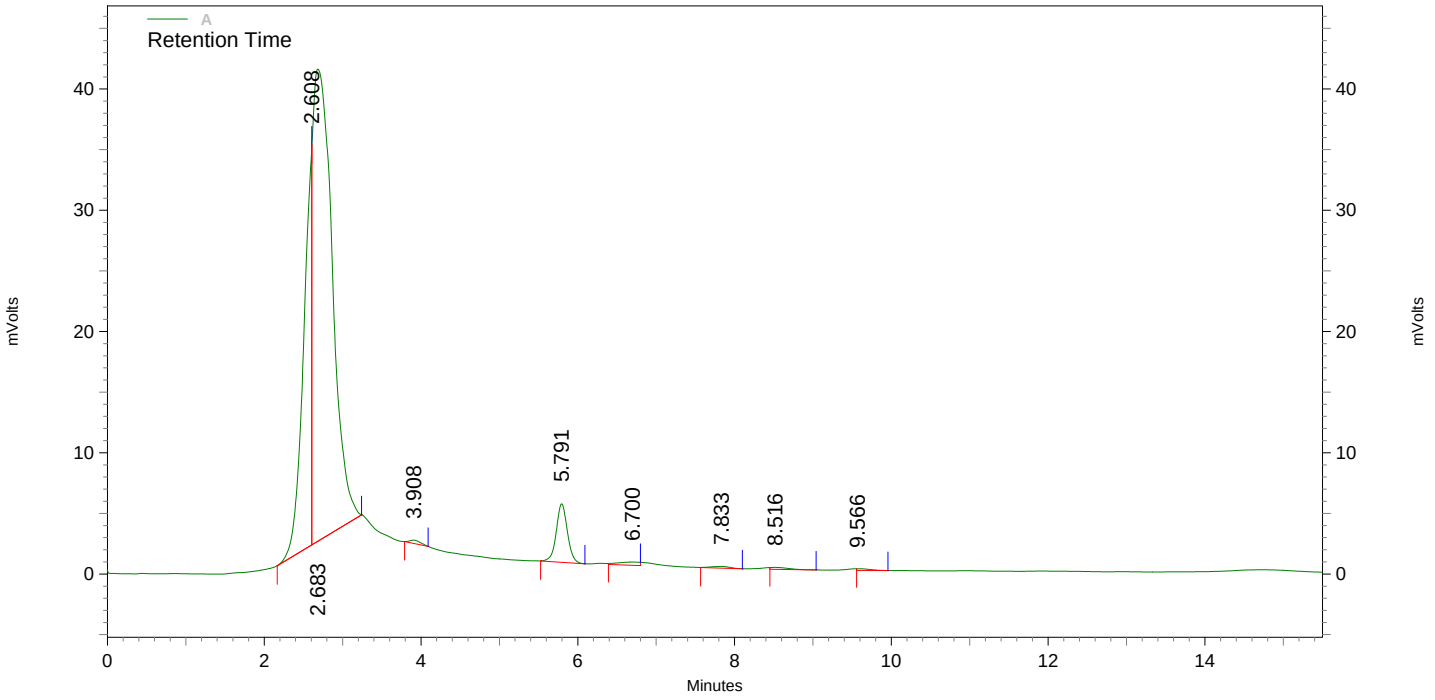
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.374	8121	**0.1109**
26-DNT	9.816	8531	**0.0472**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

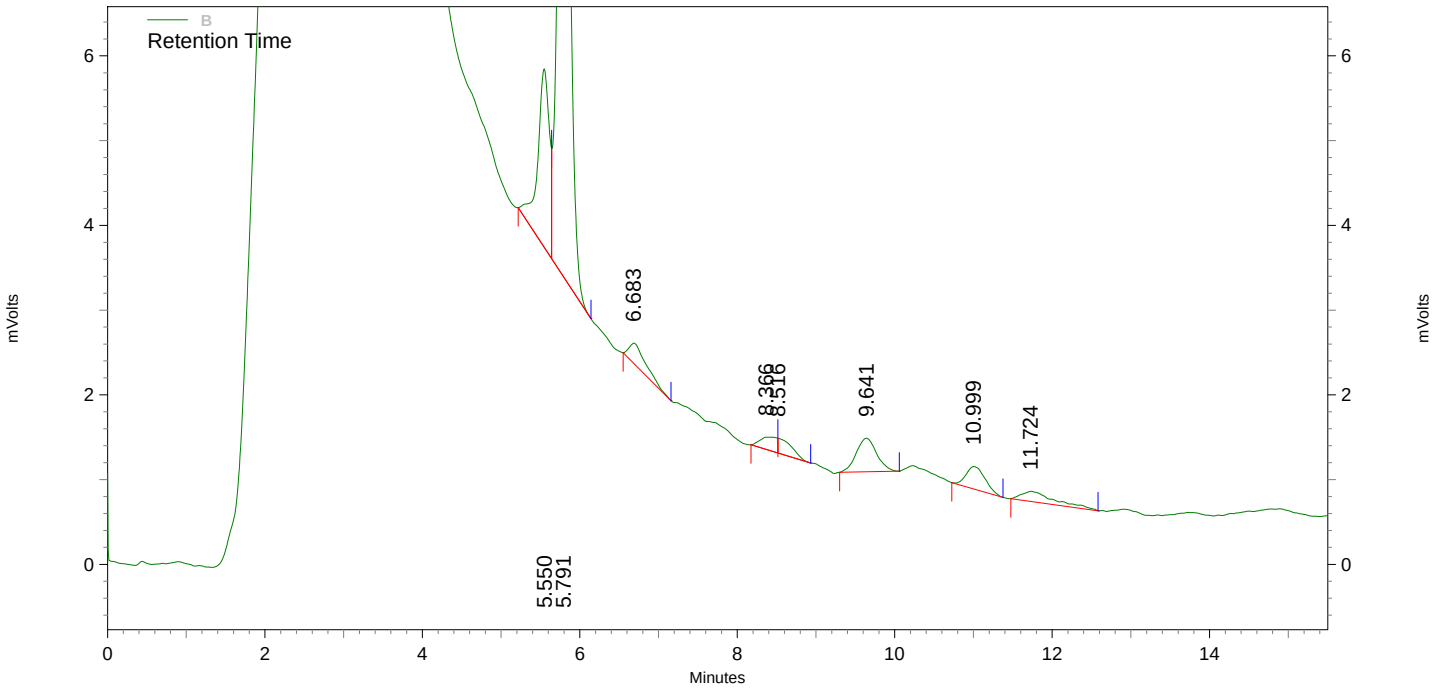
After Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\015.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,785310,
Acquired: 10/19/2016 14:23:55
Data Summary: Reason #3,#4 applies to data. RED 10/20/2016

JJY
11/4/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\015.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,785310,
Acquired: 10/19/2016 14:23:55
Data Summary: Reason #3,#4 applies to data. RED 10/20/2016

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.791	47426	**89.5634**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB	7.833	2263	**0.0107**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

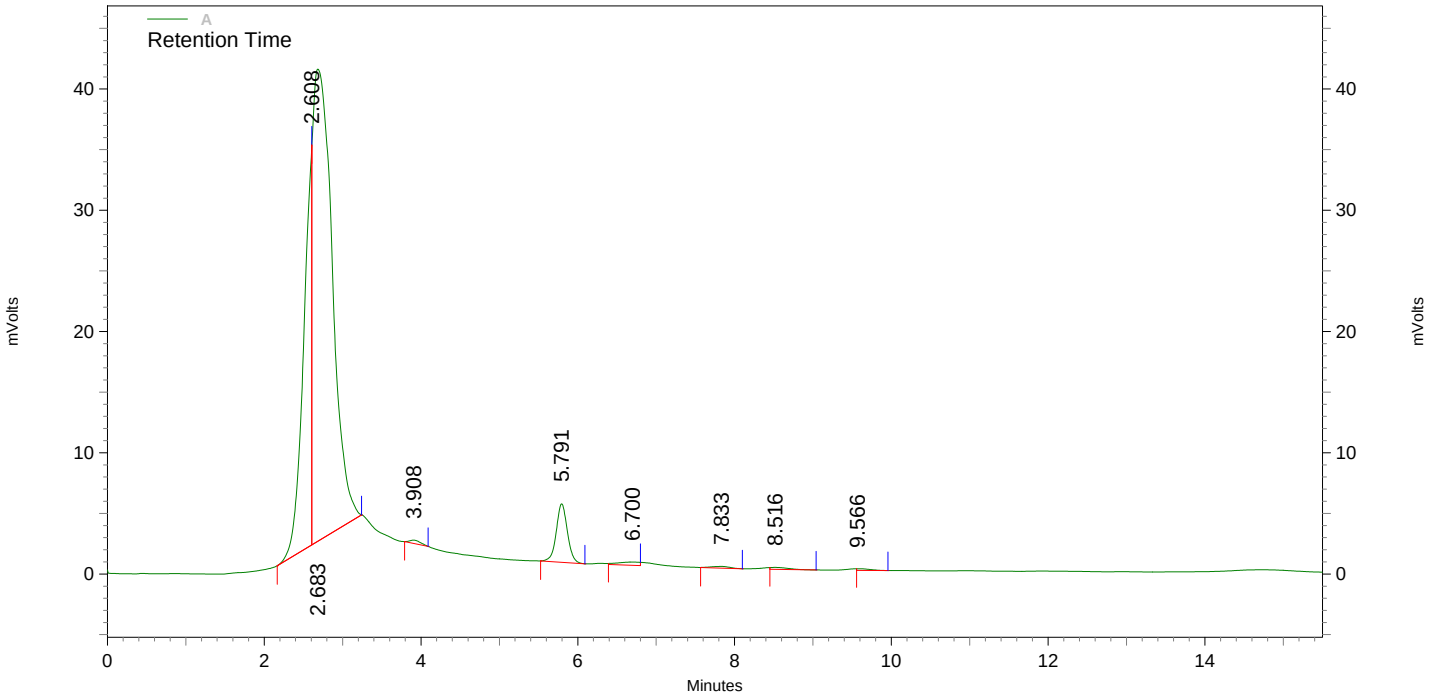
B Results

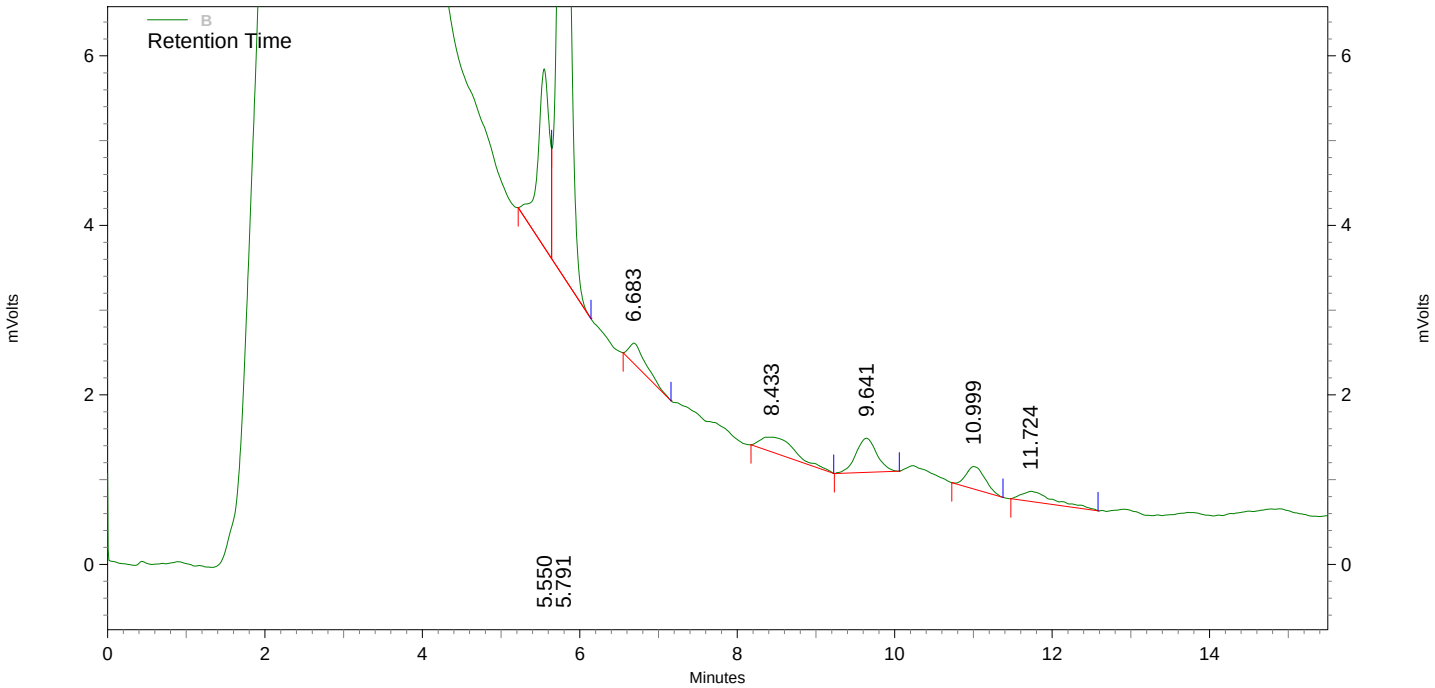
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.366	2270	**0.0356**
26-DNT			**0.0000 BDL**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

Before Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\015.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,785310,
Acquired: 10/19/2016 14:23:55
Data Summary: Reason #3,#4 applies to data. RED 10/20/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\015.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,785310,
Acquired: 10/19/2016 14:23:55
Data Summary: Reason #3,#4 applies to data. RED 10/20/2016

A Results

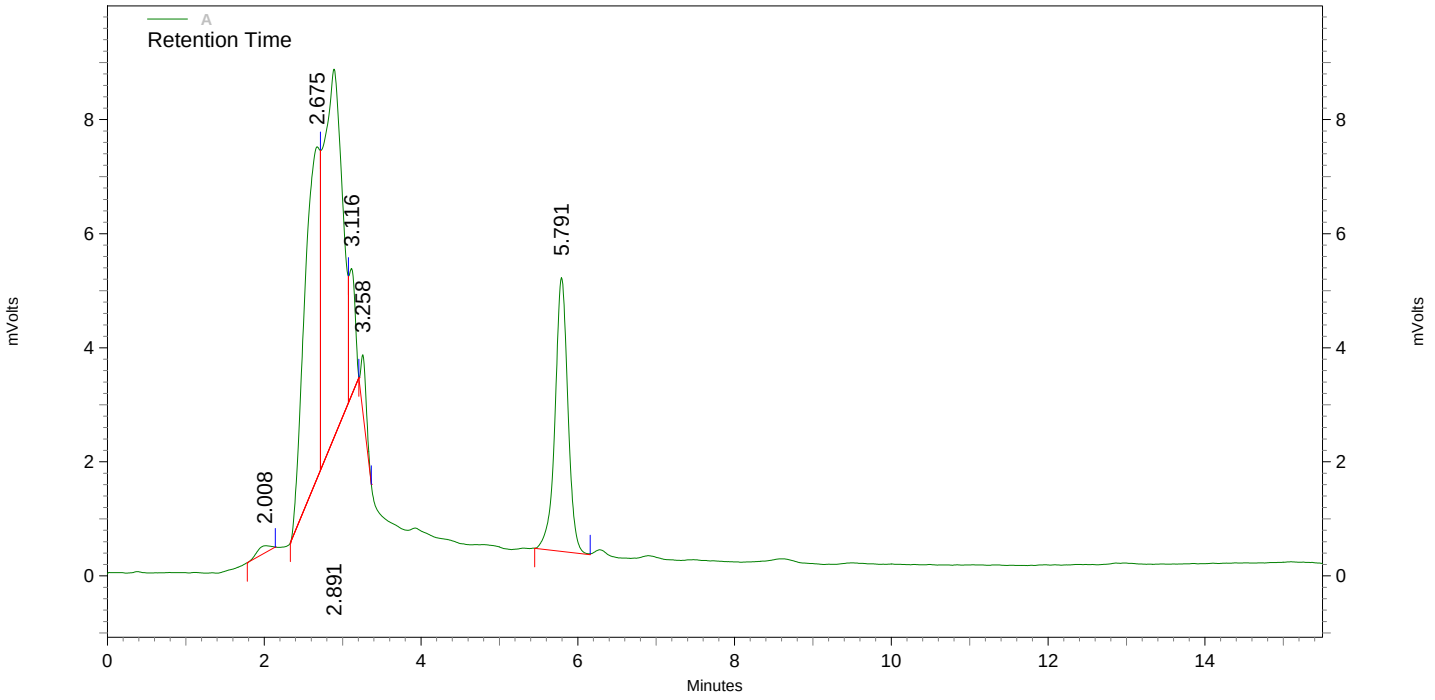
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.791	47426	**89.5634**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB	7.833	2263	**0.0107**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

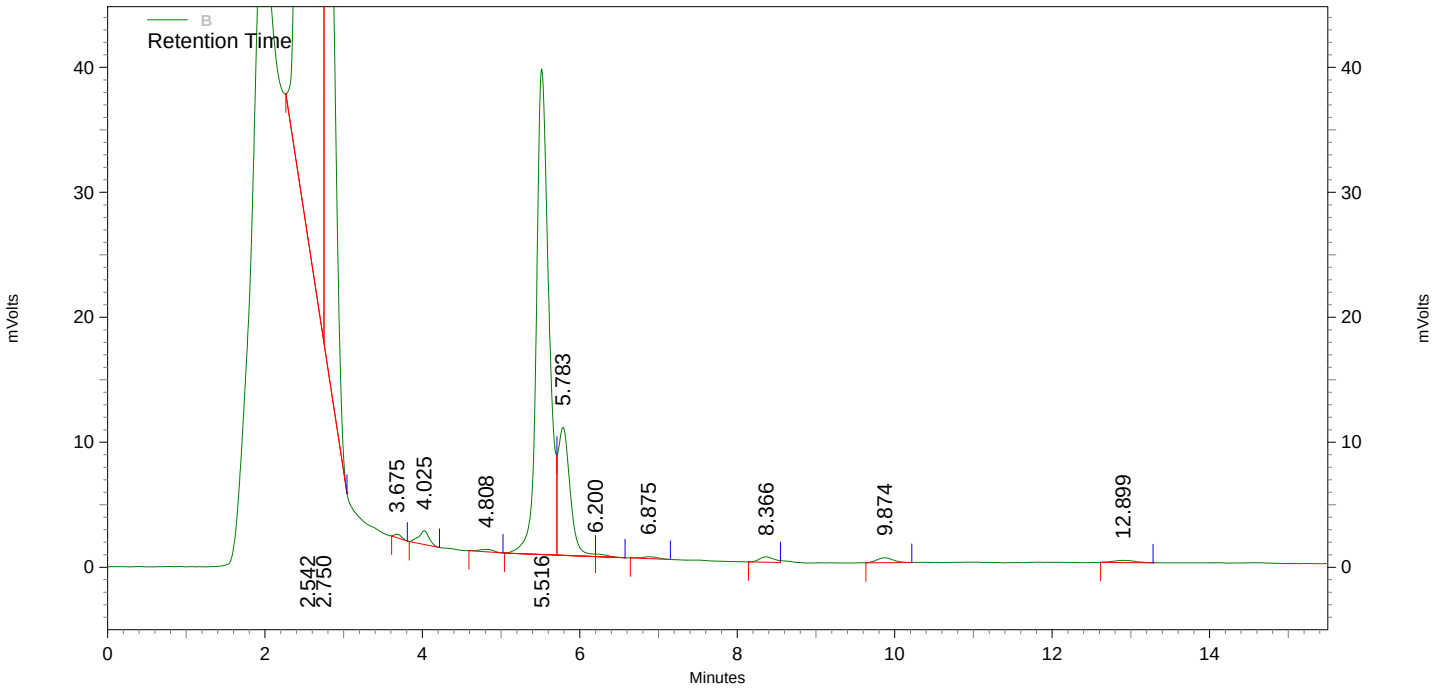
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.433	5583	**0.0782**
26-DNT	9.641	7444	**0.0414**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\018.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131500,784783,
Acquired: 10/19/2016 15:18:47
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\018.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131500,784783,
Acquired: 10/19/2016 15:18:47
Data Summary: {Data Description}

A Results

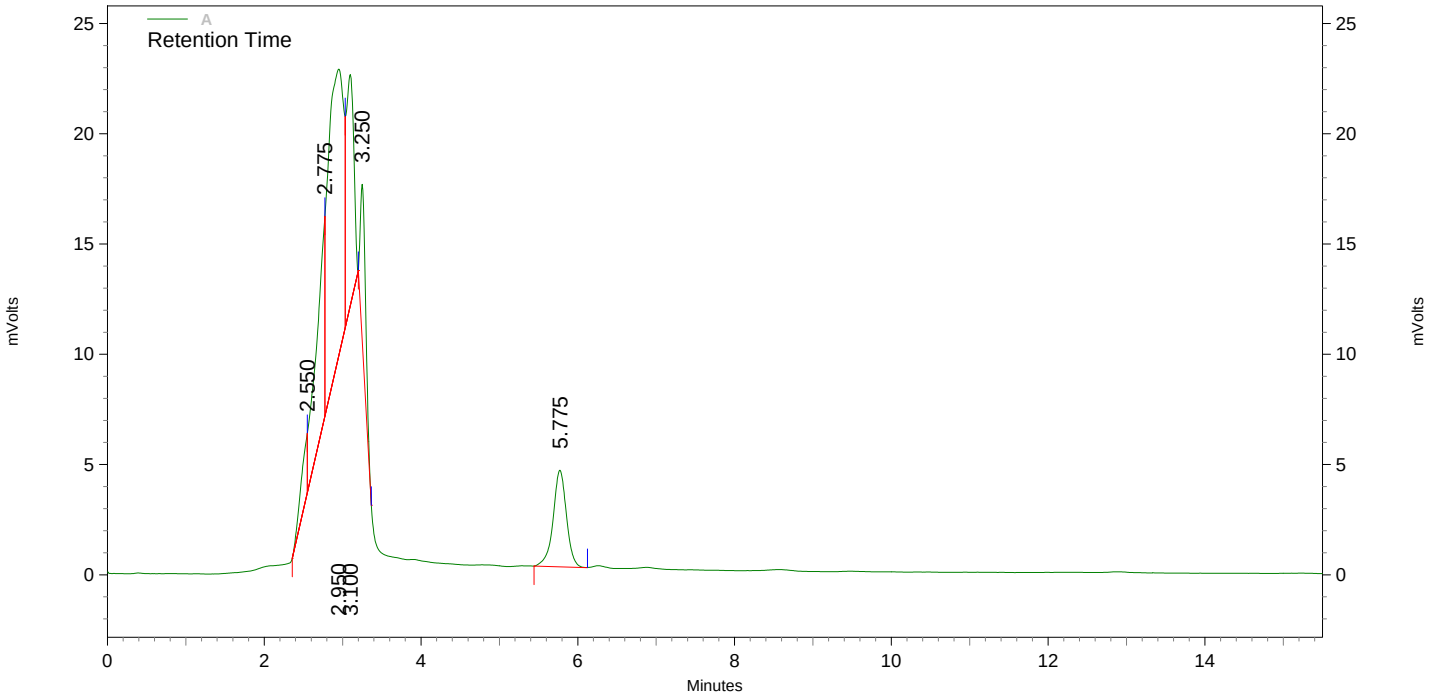
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.791	54752	**103.3775**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB			**0.0000 BDL**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

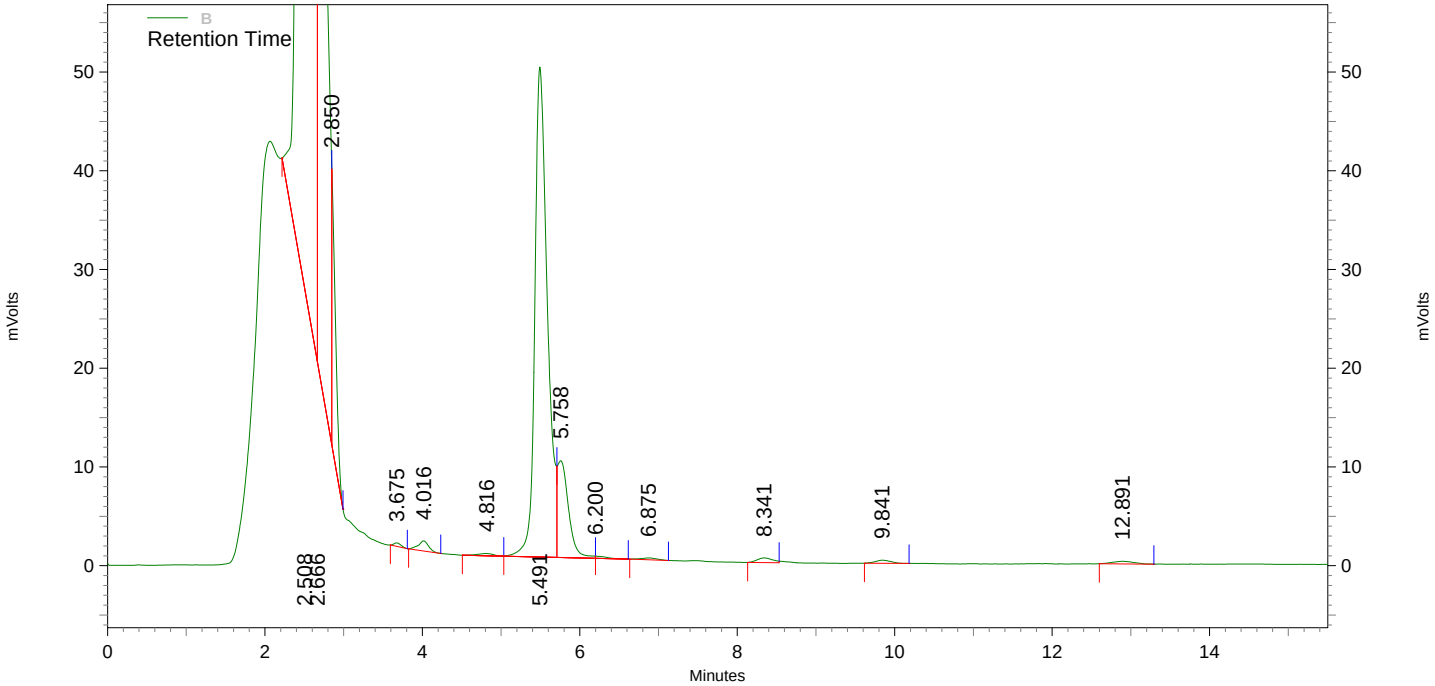
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.366	5588	**0.0783**
26-DNT	9.874	5677	**0.0321**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\019.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131500,784852,
Acquired: 10/19/2016 15:37:08
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\019.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131500,784852,
Acquired: 10/19/2016 15:37:08
Data Summary: {Data Description}

A Results

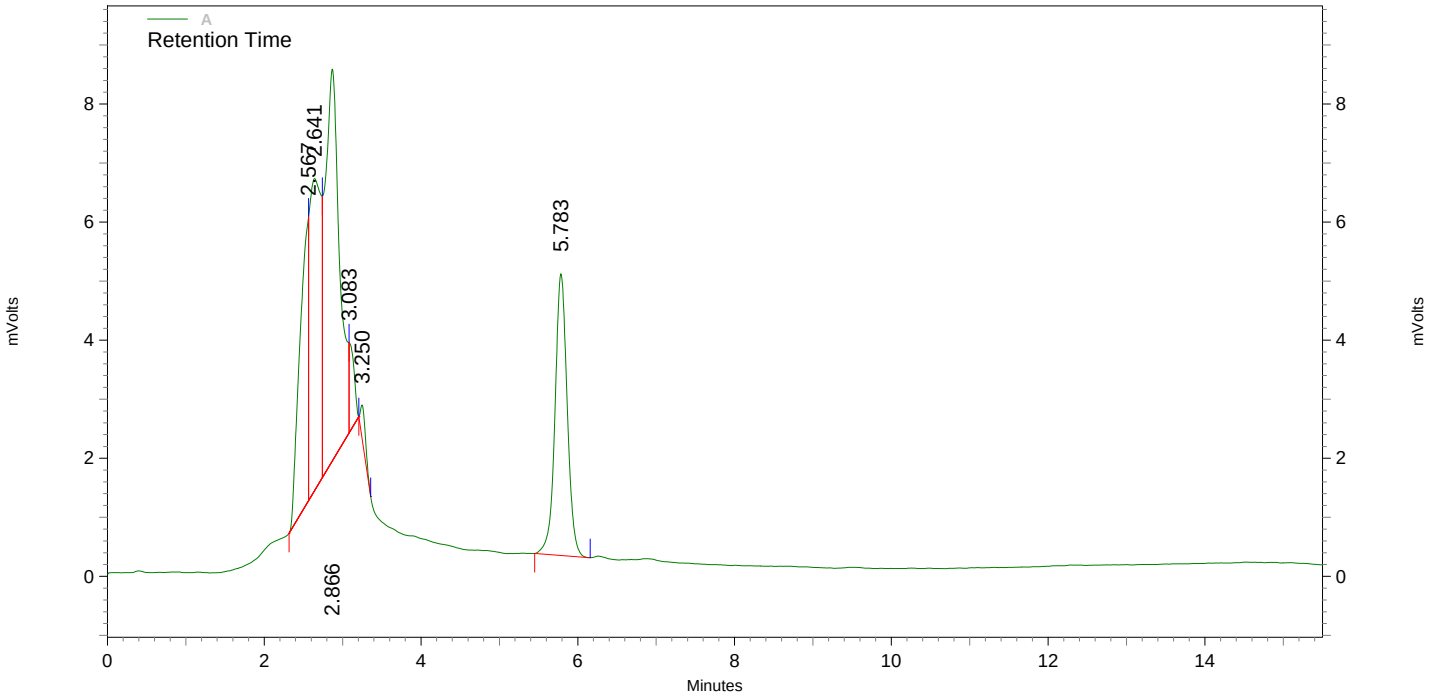
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.775	51738	**97.6942**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB			**0.0000 BDL**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

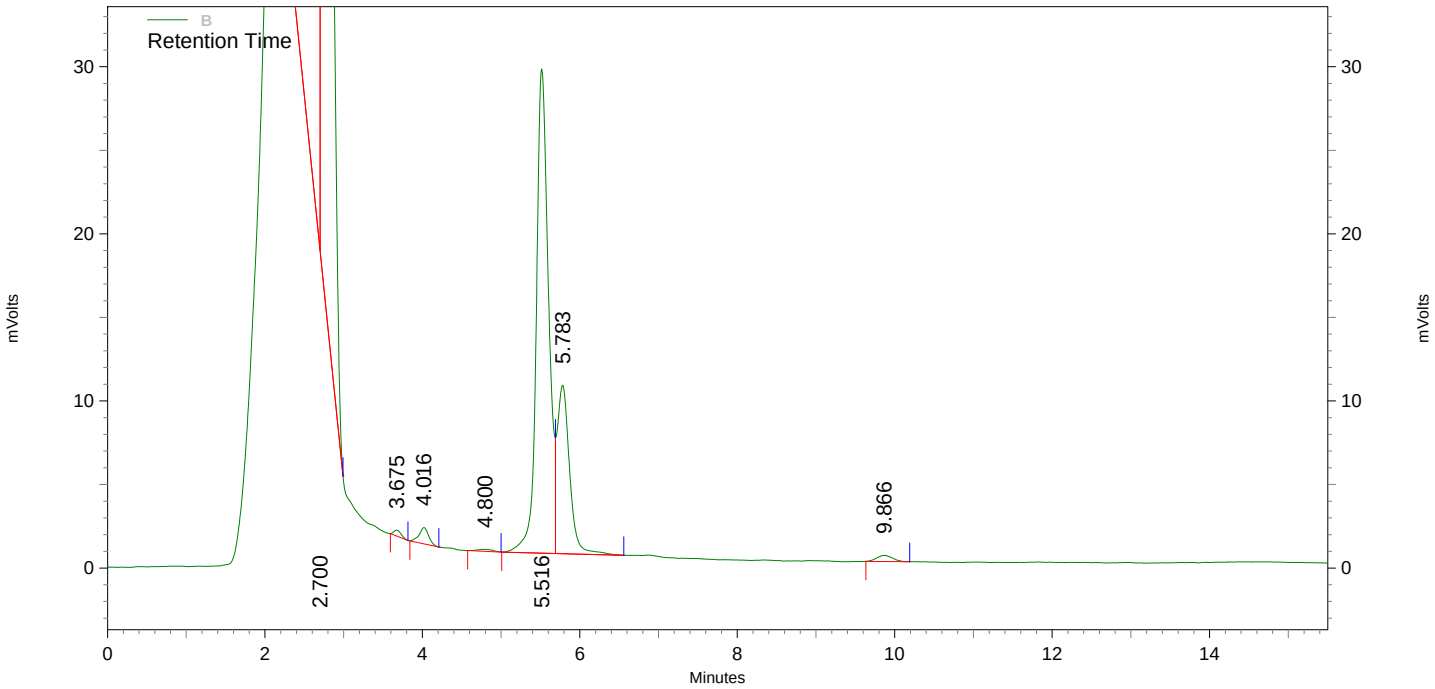
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.341	6580	**0.0911**
26-DNT	9.841	4243	**0.0245**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\020.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131500,784853,
Acquired: 10/19/2016 15:55:26
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\020.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131500,784853,
Acquired: 10/19/2016 15:55:26
Data Summary: {Data Description}

A Results

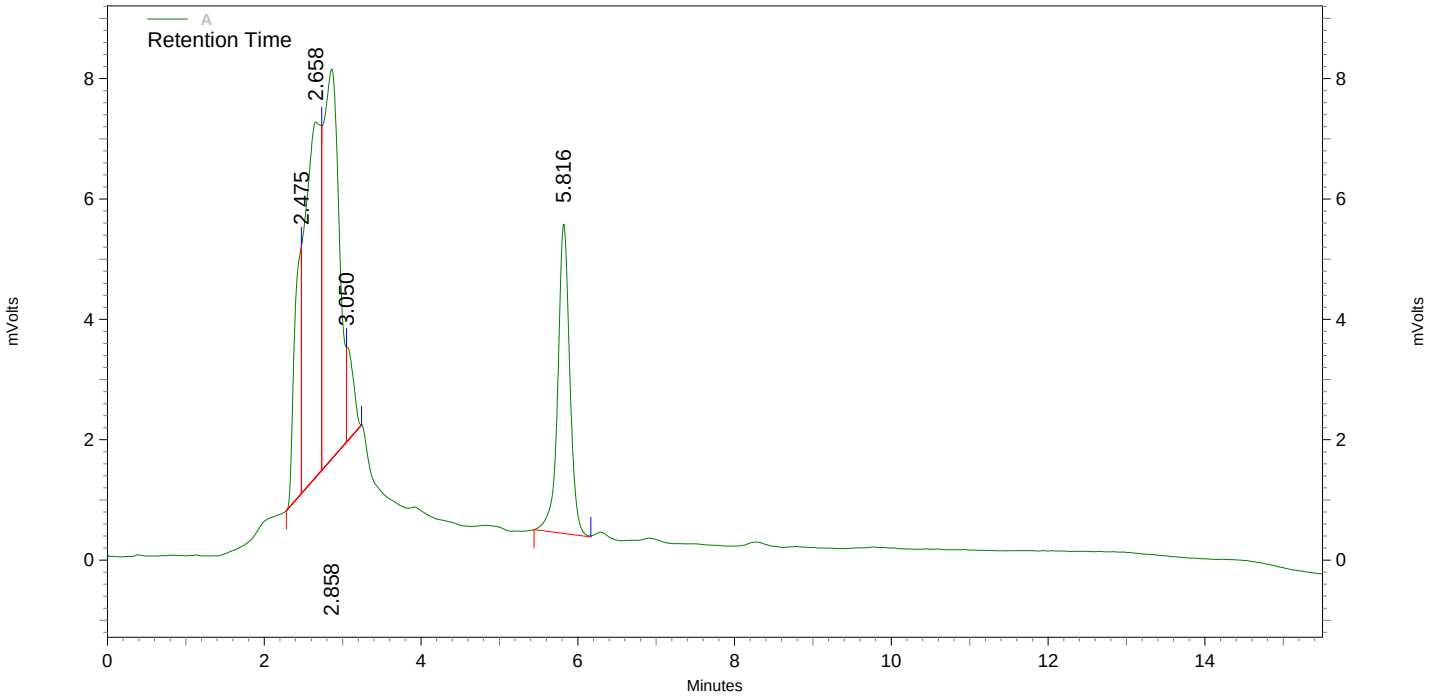
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.783	51663	**97.5528**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB			**0.0000 BDL**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

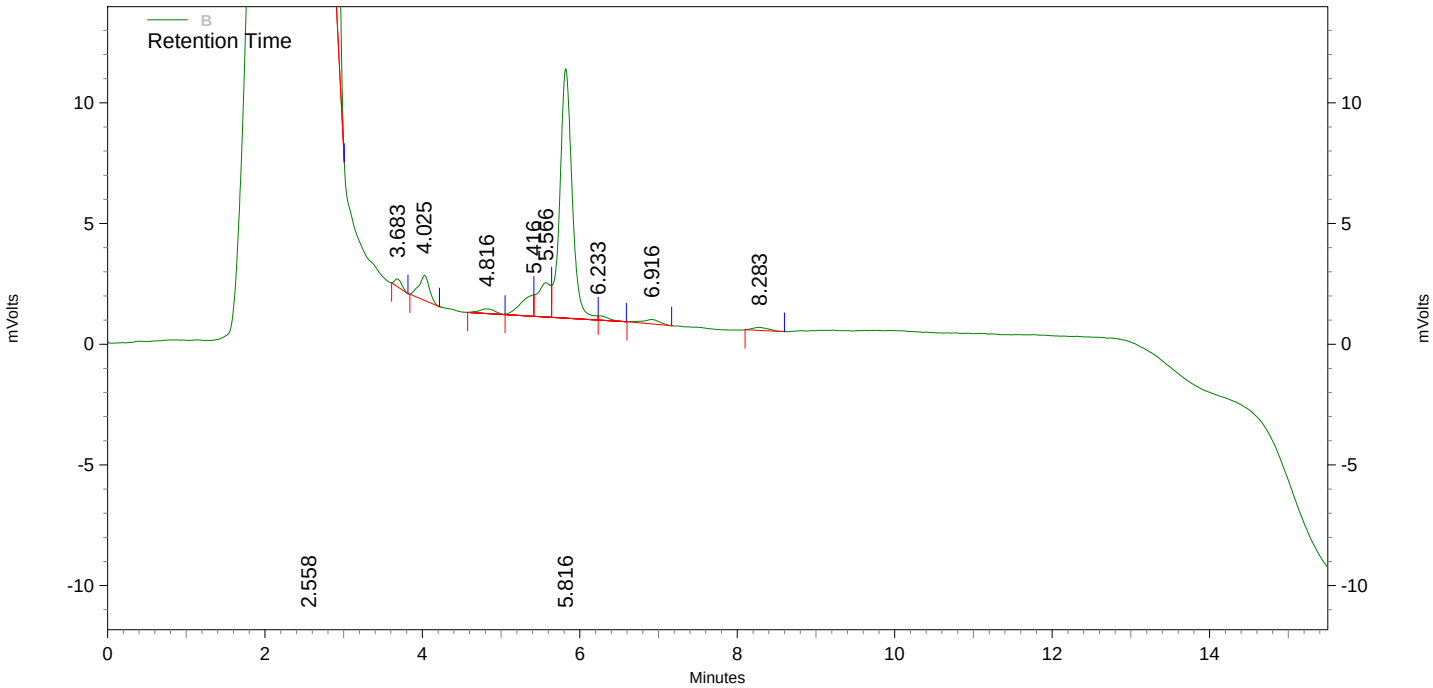
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG			**0.0000 BDL**
26-DNT	9.866	5040	**0.0287**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\026.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131500,784854,
Acquired: 10/19/2016 17:45:12
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\026.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131500,784854,
Acquired: 10/19/2016 17:45:12
Data Summary: {Data Description}

A Results

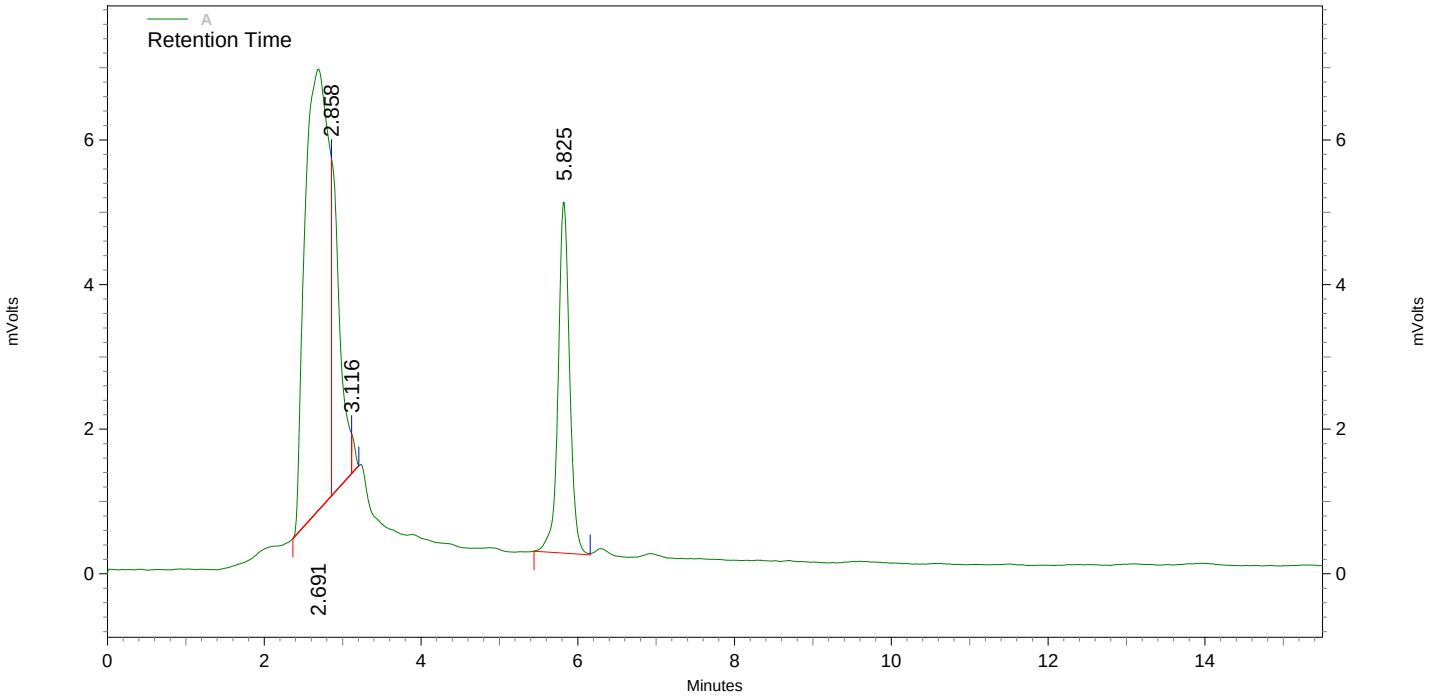
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.816	54498	**102.8985**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB			**0.0000 BDL**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

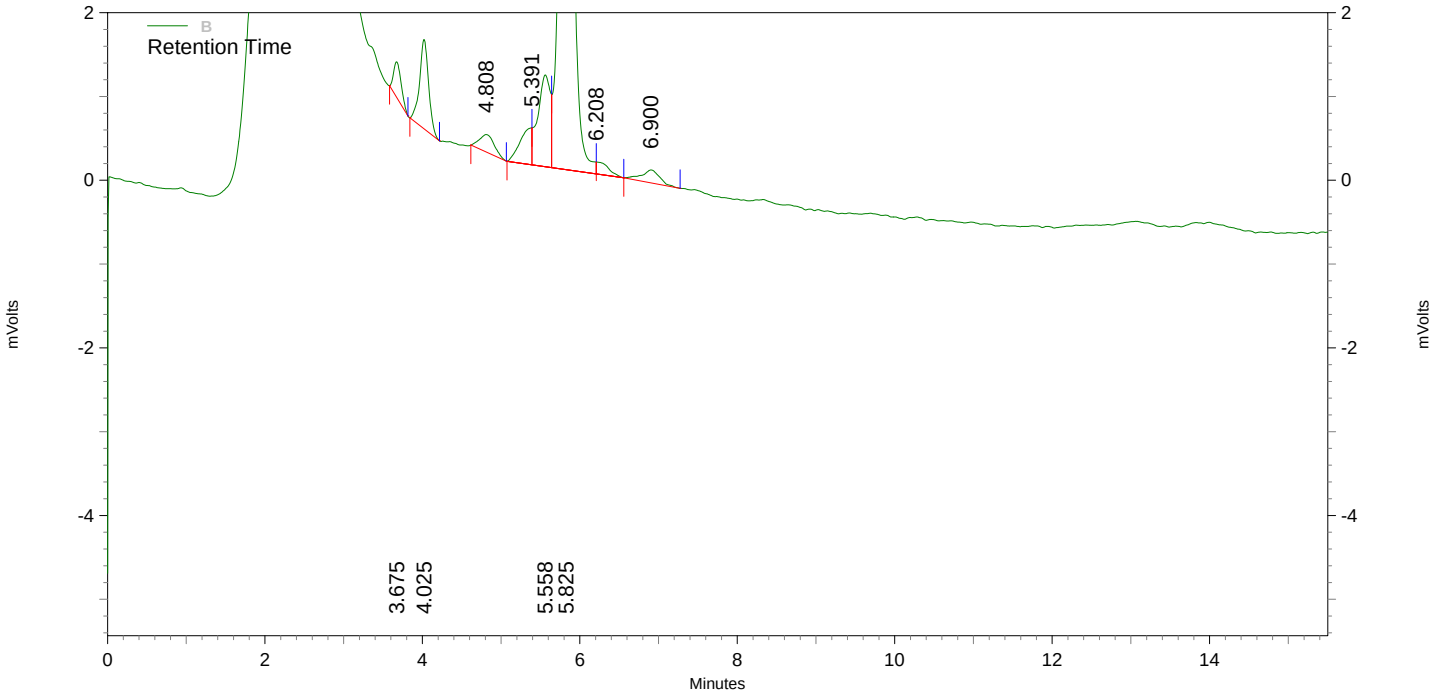
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.283	1754	**0.0289**
26-DNT			**0.0000 BDL**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\031.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131500,784855,
Acquired: 10/20/2016 09:48:47
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\031.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131500,784855,
Acquired: 10/20/2016 09:48:47
Data Summary: {Data Description}

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.825	49426	**93.3346**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB			**0.0000 BDL**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

B Results

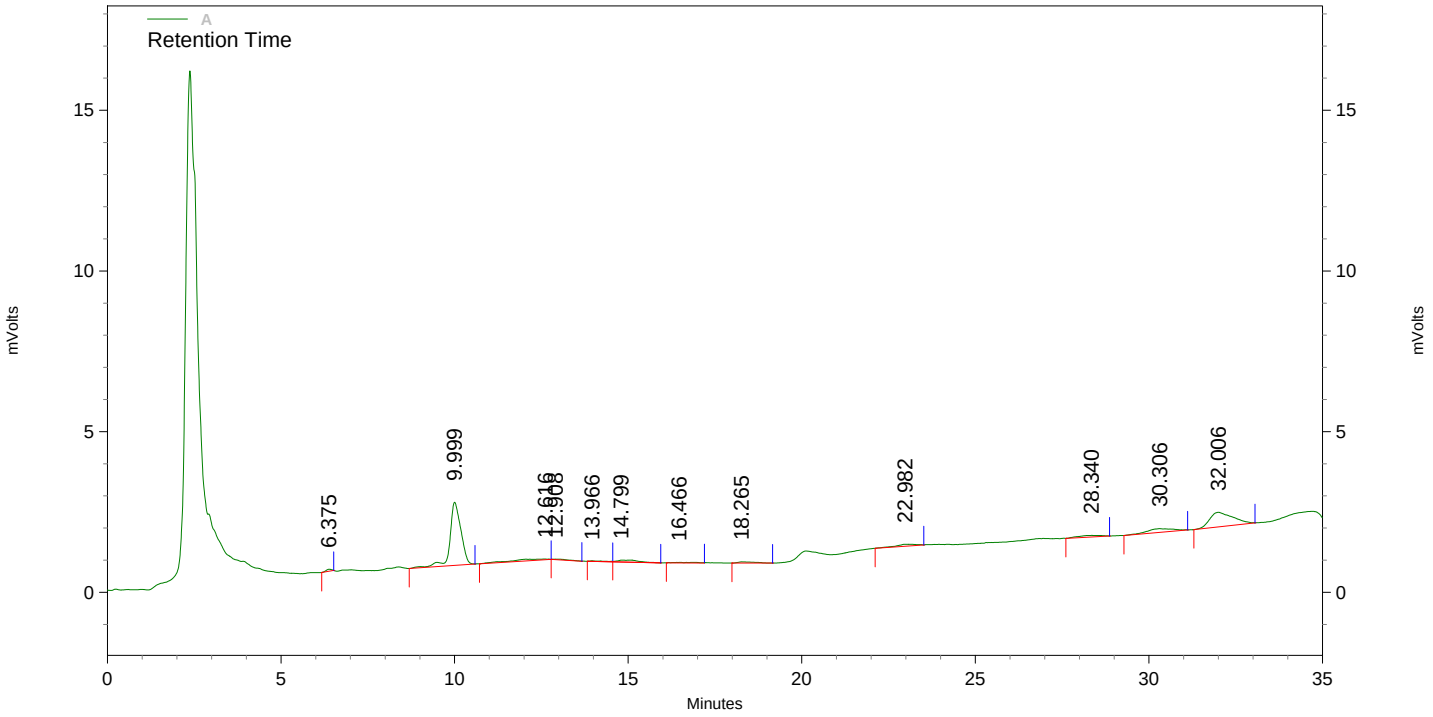
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG			**0.0000 BDL**
26-DNT			**0.0000 BDL**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

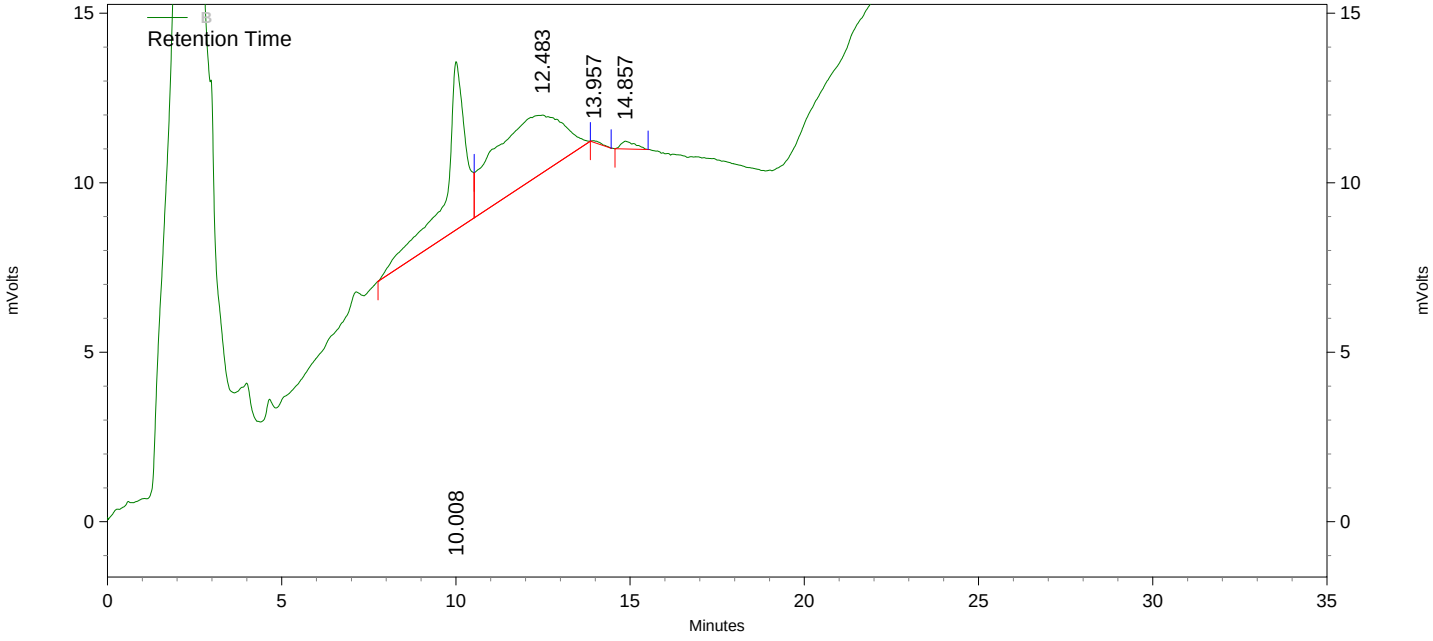
NITROAROMATICS ANALYSIS
CONFIRMATION
SAMPLE DATA
DOCUMENTS

Explosives - 8330

RED
11/10/2016

File: C:\Instarch\HPLC 2\Data\102016EXP-CONFIRM\025.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\102016EXP-CONFIRM.met
Sample ID: 131499,785308,
Acquired: 10/21/2016 04:20:29
Data Summary: {Data Description}





131499,785308,

A Results

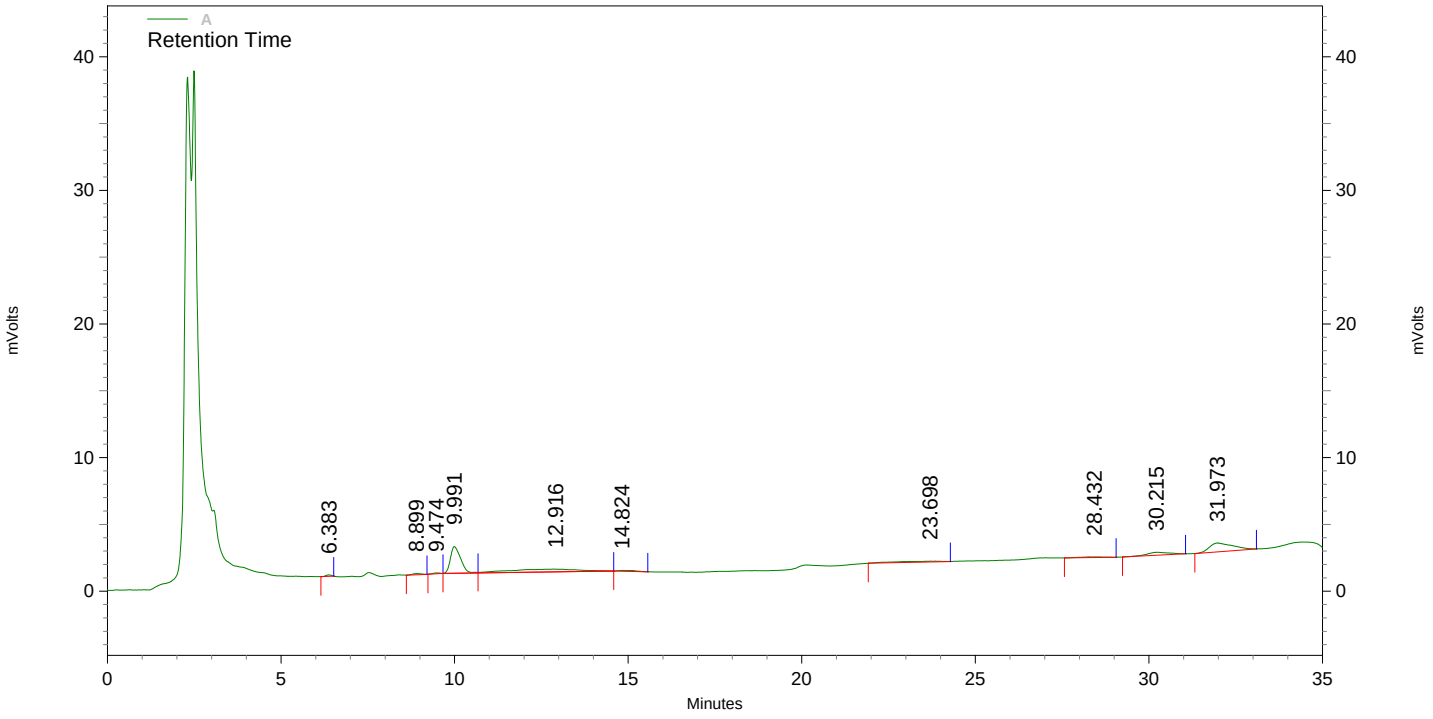
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm			**0.0000 BDL**
RDX-confirm			**0.0000 BDL**
NB-confirm			**0.0000 BDL**
12-DNB (SSTD)-confirm	9.999	43015	**161.4533**
4-AM-26-DNT-conf.			**0.0000 BDL**
3,5-DNA-confirm			**0.0000 BDL**
2-NT-confirm			**0.0000 BDL**
2-AM-46-DNT-conf.	12.908	567	**0.0000**
3-NT-confirm			**0.0000 BDL**
4-NT-confirm	14.799	2569	**0.0187**
26-DNT-confirm	16.466	824	**0.0007**
13-DNB-confirm			**0.0000 BDL**
TETRYL-confirm	22.982	2196	**0.0043**
24-DNT-confirm			**0.0000 BDL**
135-TNB-confirm	30.306	5692	**0.0628**
246-TNT-confirm			**0.0000 BDL**

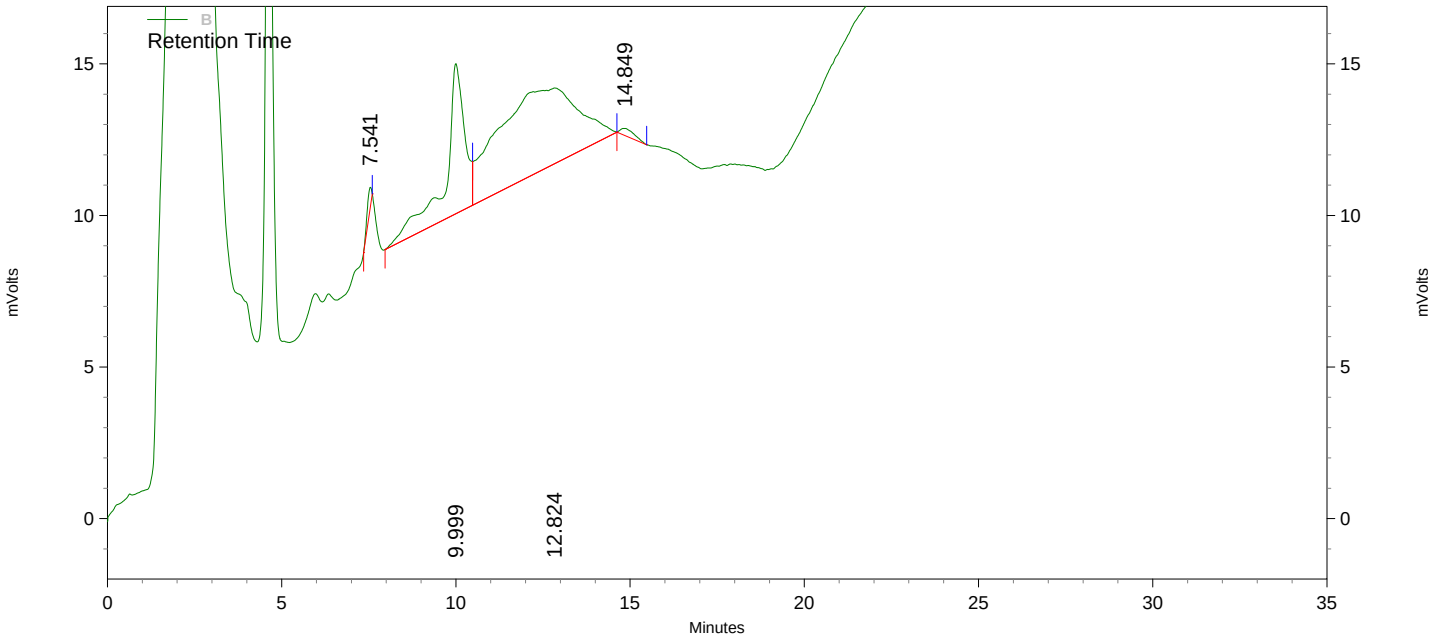
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm			**0.0000 BDL**
PETN-confirm	13.957	1125	**0.0293**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\102016EXP-CONFIRM\026.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\102016EXP-CONFIRM.met
Sample ID: 131499,785309,
Acquired: 10/21/2016 04:57:47
Data Summary: {Data Description}





131499,785309,

A Results

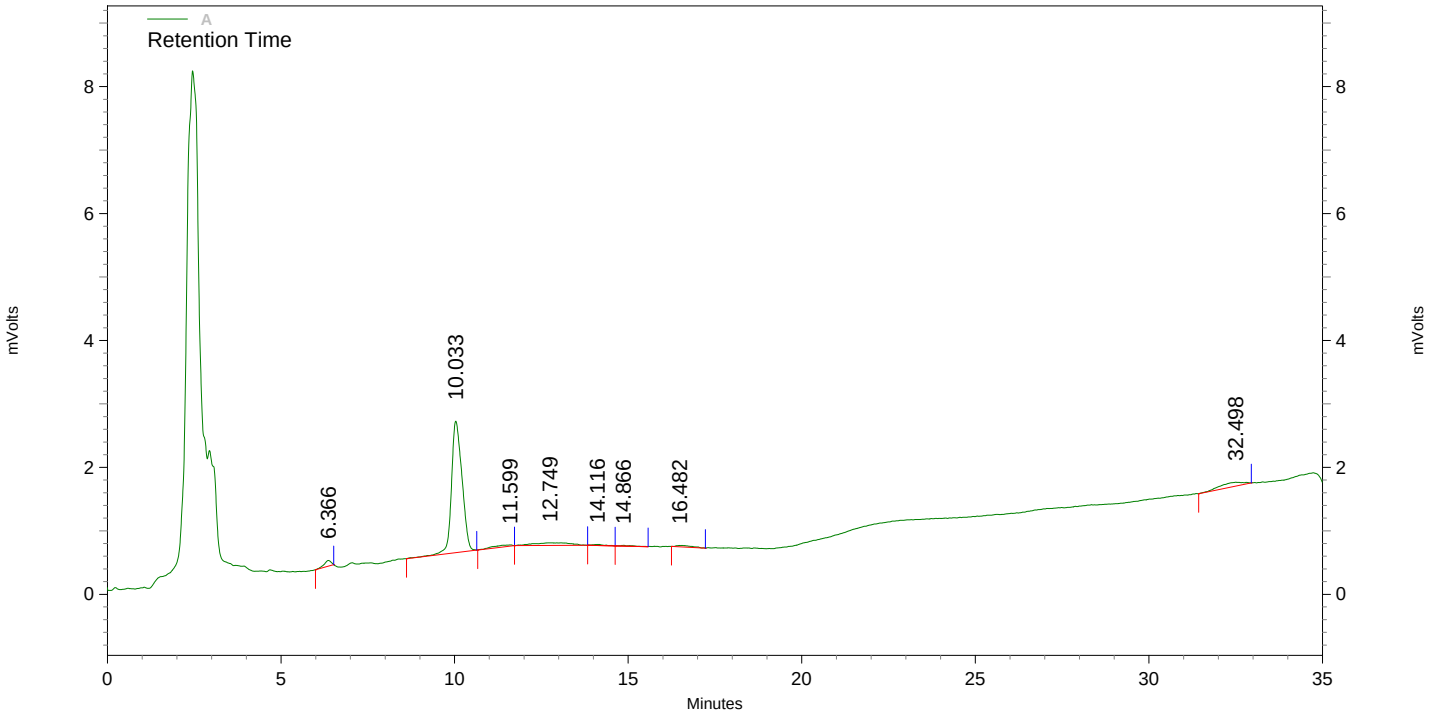
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm			**0.0000 BDL**
RDX-confirm			**0.0000 BDL**
NB-confirm			**0.0000 BDL**
12-DNB (SSTD)-confirm	9.991	40730	**152.8767**
4-AM-26-DNT-conf.			**0.0000 BDL**
3,5-DNA-confirm			**0.0000 BDL**
2-NT-confirm			**0.0000 BDL**
2-AM-46-DNT-conf.	12.916	28971	**0.1909**
3-NT-confirm			**0.0000 BDL**
4-NT-confirm	14.824	2257	**0.0149**
26-DNT-confirm			**0.0000 BDL**
13-DNB-confirm			**0.0000 BDL**
TETRYL-confirm			**0.0000 BDL**
24-DNT-confirm			**0.0000 BDL**
135-TNB-confirm	30.215	9990	**0.1169**
246-TNT-confirm			**0.0000 BDL**

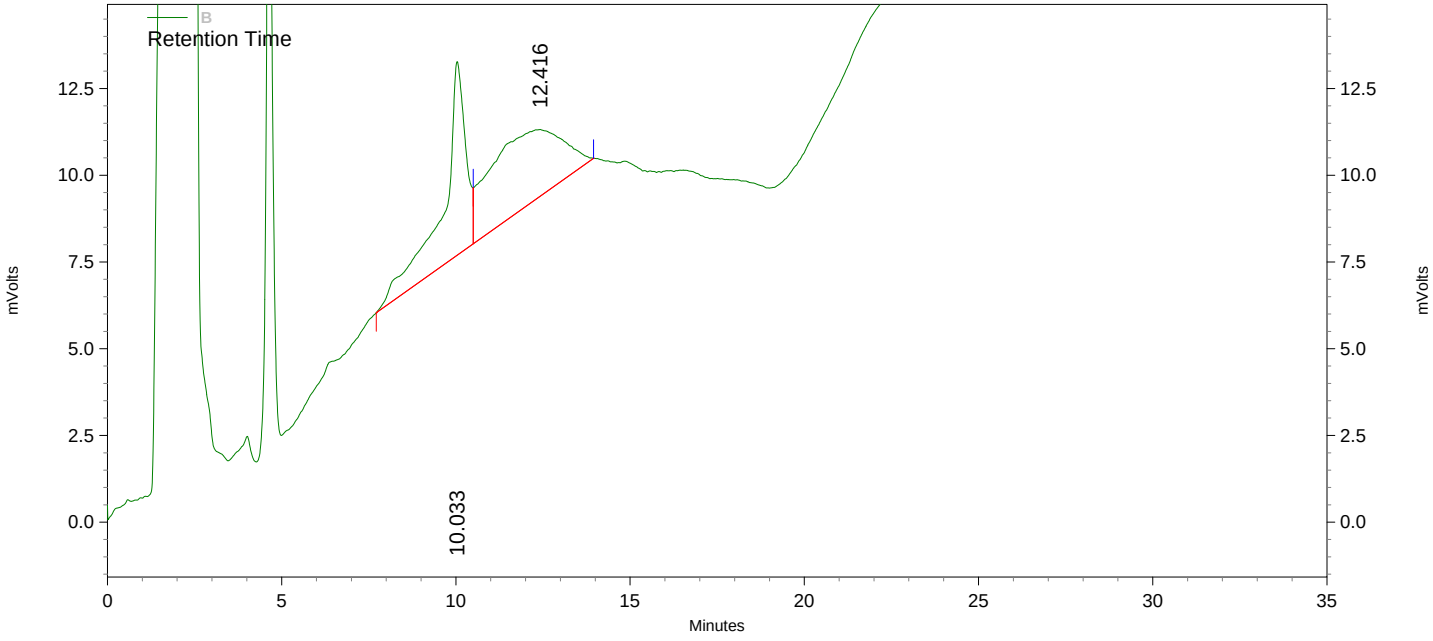
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm			**0.0000 BDL**
PETN-confirm			**0.0000 BDL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\102016EXP-CONFIRM\031.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\102016EXP-CONFIRM.met
Sample ID: 131500,784783,
Acquired: 10/21/2016 08:04:20
Data Summary: {Data Description}





131500,784783,

A Results

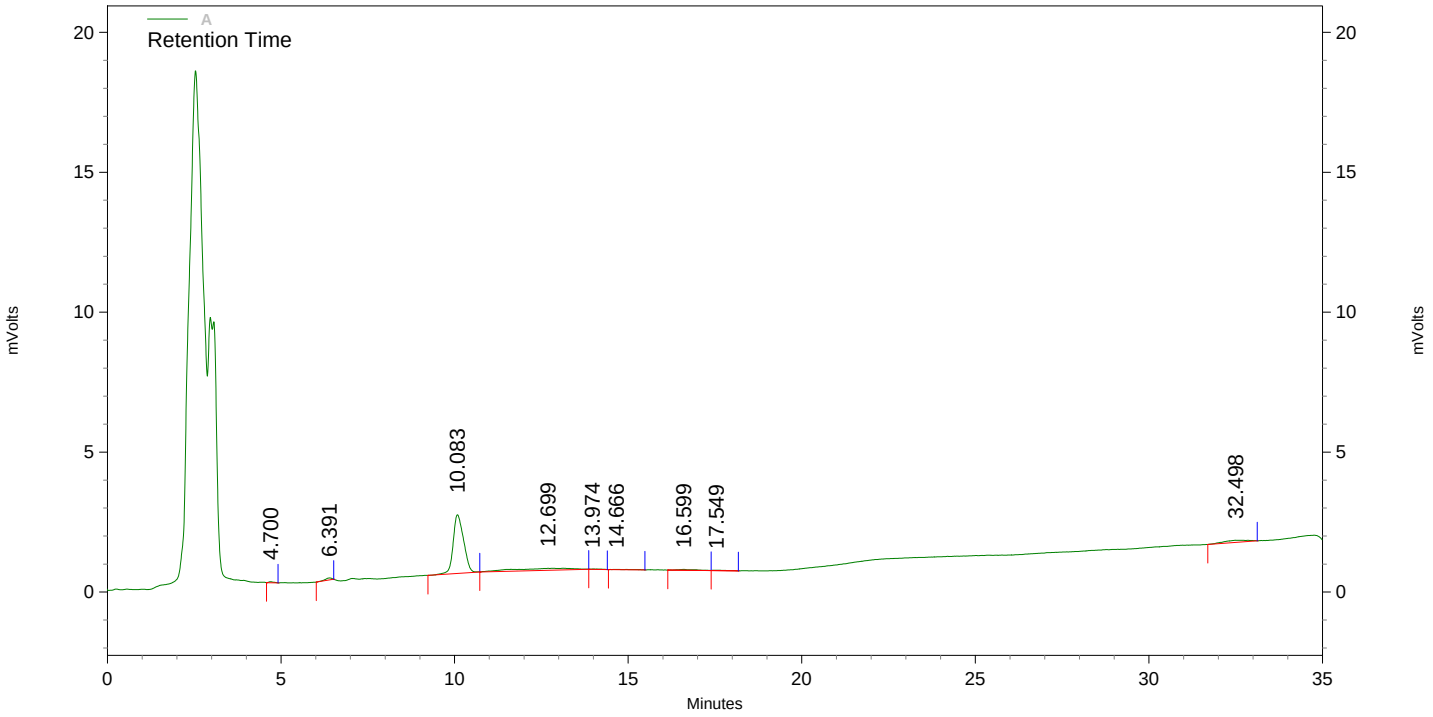
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm			**0.0000 BDL**
RDX-confirm			**0.0000 BDL**
NB-confirm			**0.0000 BDL**
12-DNB (SSTD)-confirm	10.033	43698	**164.0169**
4-AM-26-DNT-conf.			**0.0000 BDL**
3,5-DNA-confirm			**0.0000 BDL**
2-NT-confirm			**0.0000 BDL**
2-AM-46-DNT-conf.	12.749	3176	**0.0096**
3-NT-confirm			**0.0000 BDL**
4-NT-confirm	14.866	329	**0.0000**
26-DNT-confirm	16.482	791	**0.0000**
13-DNB-confirm			**0.0000 BDL**
TETRYL-confirm			**0.0000 BDL**
24-DNT-confirm			**0.0000 BDL**
135-TNB-confirm			**0.0000 BDL**
246-TNT-confirm			**0.0000 BDL**

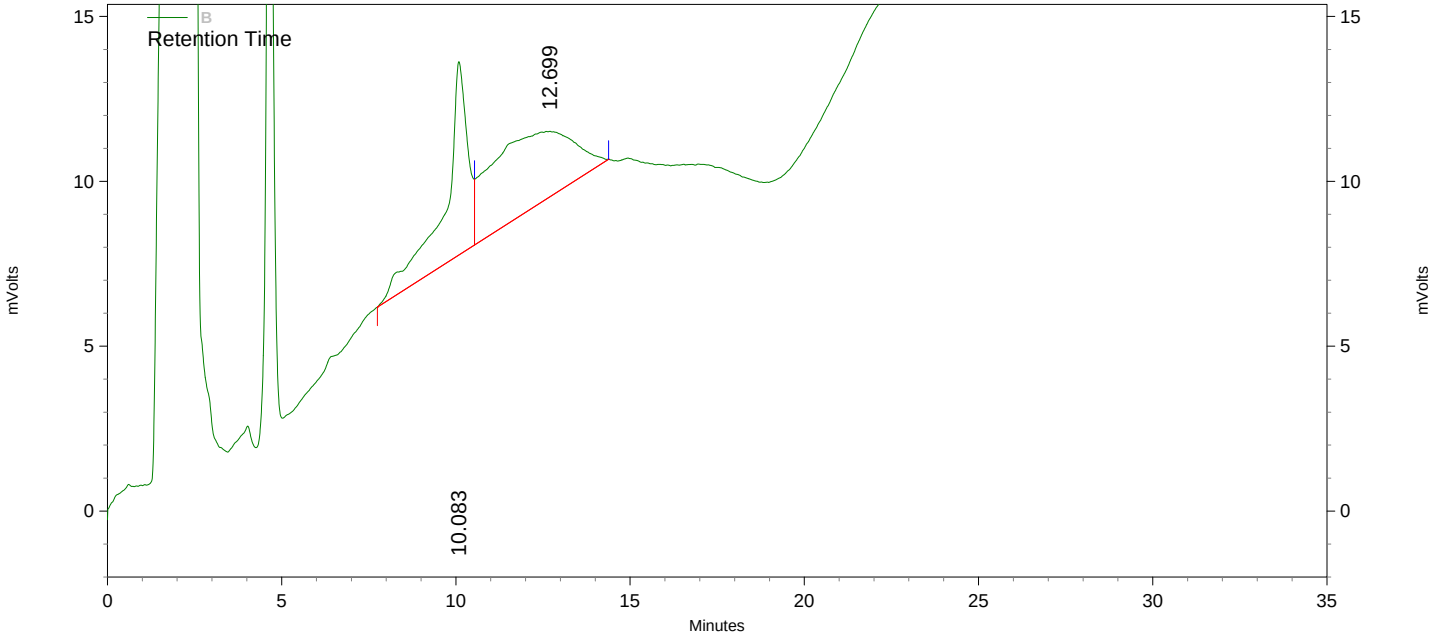
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm			**0.0000 BDL**
PETN-confirm			**0.0000 BDL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\102016EXP-CONFIRM\032.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\102016EXP-CONFIRM.met
Sample ID: 131500,784852,
Acquired: 10/21/2016 08:41:37
Data Summary: {Data Description}





131500,784852,

A Results

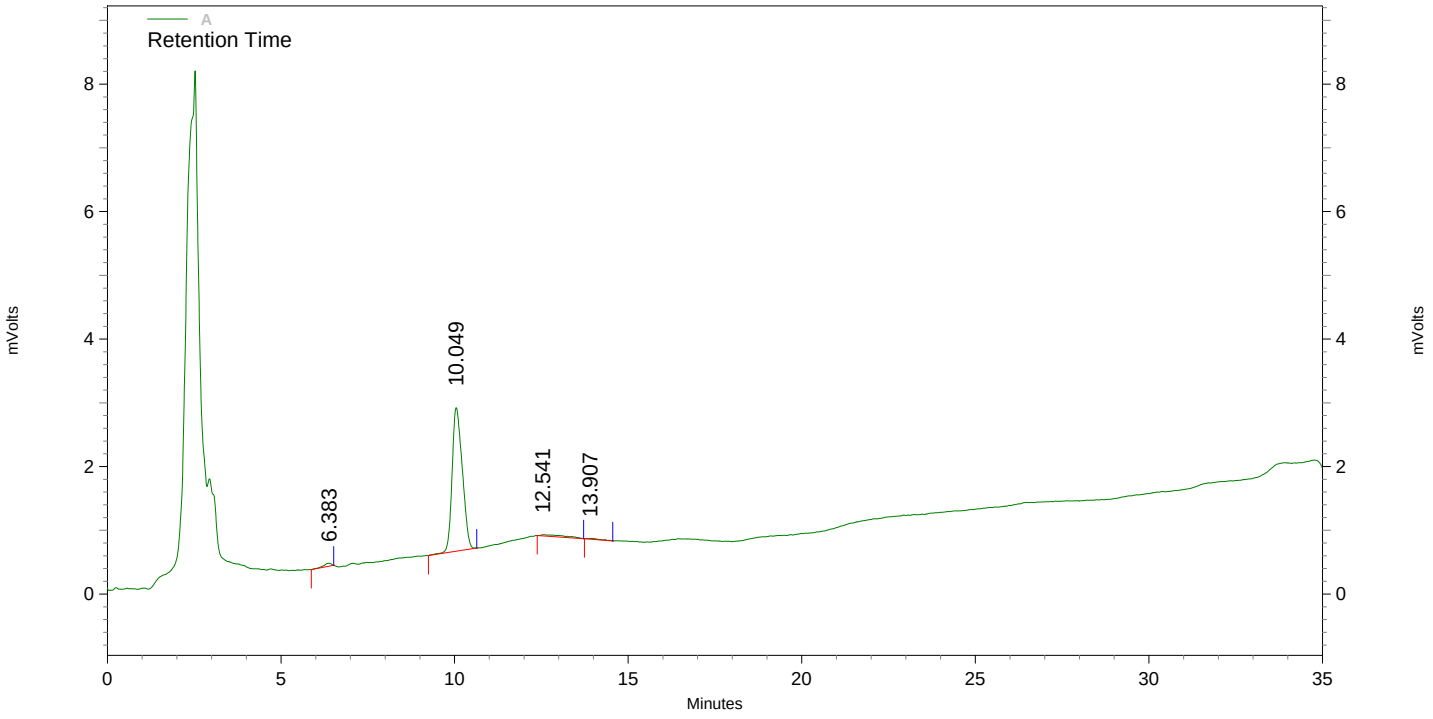
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm			**0.0000 BDL**
RDX-confirm			**0.0000 BDL**
NB-confirm			**0.0000 BDL**
12-DNB (SSTD)-confirm	10.083	43791	**164.3659**
4-AM-26-DNT-conf.			**0.0000 BDL**
3,5-DNA-confirm			**0.0000 BDL**
2-NT-confirm			**0.0000 BDL**
2-AM-46-DNT-conf.	12.699	8422	**0.0465**
3-NT-confirm			**0.0000 BDL**
4-NT-confirm	14.666	454	**0.0000**
26-DNT-confirm			**0.0000 BDL**
13-DNB-confirm	16.599	1153	**0.0000**
TETRYL-confirm			**0.0000 BDL**
24-DNT-confirm			**0.0000 BDL**
135-TNB-confirm			**0.0000 BDL**
246-TNT-confirm			**0.0000 BDL**

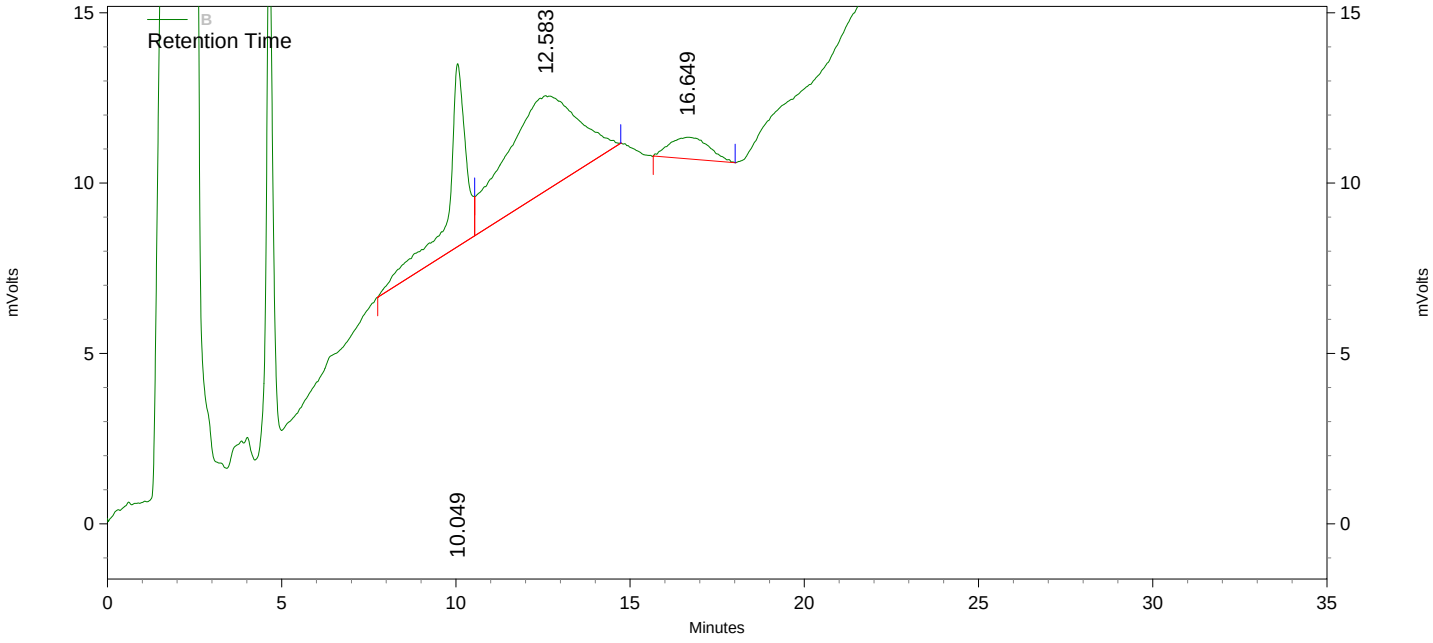
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm			**0.0000 BDL**
PETN-confirm			**0.0000 BDL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\102016EXP-CONFIRM\033.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\102016EXP-CONFIRM.met
Sample ID: 131500,784853,
Acquired: 10/21/2016 09:18:54
Data Summary: {Data Description}





131500,784853,

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm			**0.0000 BDL**
RDX-confirm			**0.0000 BDL**
NB-confirm			**0.0000 BDL**
12-DNB (SSTD)-confirm	10.049	46046	**172.8299**
4-AM-26-DNT-conf.			**0.0000 BDL**
3,5-DNA-confirm			**0.0000 BDL**
2-NT-confirm			**0.0000 BDL**
2-AM-46-DNT-conf.			**0.0000 BDL**
3-NT-confirm			**0.0000 BDL**
4-NT-confirm			**0.0000 BDL**
26-DNT-confirm			**0.0000 BDL**
13-DNB-confirm			**0.0000 BDL**
TETRYL-confirm			**0.0000 BDL**
24-DNT-confirm			**0.0000 BDL**
135-TNB-confirm			**0.0000 BDL**
246-TNT-confirm			**0.0000 BDL**

B Results

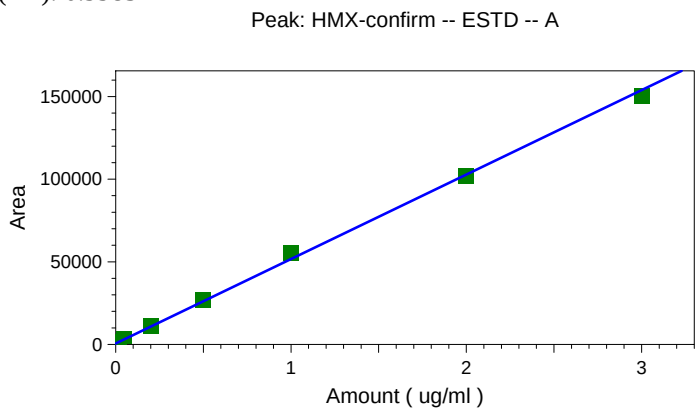
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm			**0.0000 BDL**
PETN-confirm			**0.0000 BDL**

NITROAROMATICS ANALYSIS
INITIAL CALIBRATION
DOCUMENTS

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:57:59
User: red
Instrument: HPLC 2 (Offline)

HMX-confirm (A)
Average RF: 56702.0 RF StDev: 7277.80 RF %RSD: 12.8352
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 51136.2x + 508.384
Goodness of fit (r^2): 0.998517



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	1430	2988	11095	26760	55620
RF	71500	59760	55475	53520	55620
Last Area Residual	0.00197721	0.00150953	-0.00702799	-0.013367	-0.0777426
Rep StDev					
Rep %RSD					
Rep 1 Area	1430	2988	11095	26760	55620
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\002.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\004.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\005.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5817	8330 Pt 2 EXP 5818	8330 Pt 3 EXP 5819	8330 Pt 4 EXP 5820	8330 Pt 5 EXP 5821
Rep 1 Calib. Time	07/01/2016 09:46:08	07/01/2016 09:26:44	06/30/2016 15:26:20	07/01/2016 09:14:53	07/01/2016 09:15:48

	Level 6	Level 7
Amount	2	3

Calibration Report

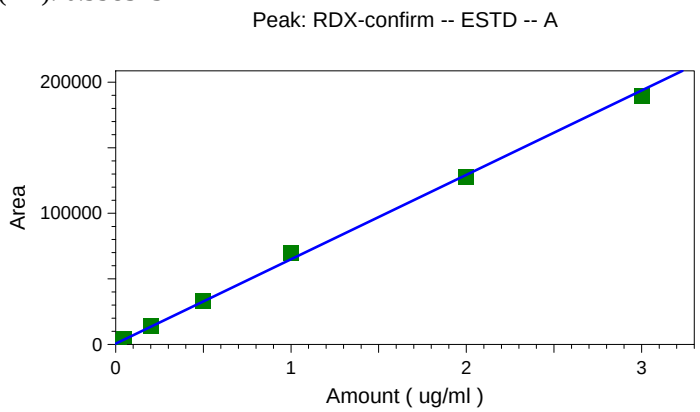
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:57:59
User: red
Instrument: HPLC 2 (Offline)

Area	101703	150563
RF	50851.5	50187.6666666667
Last Area Residual	0.0210751	0.0655869
Rep StDev		
Rep %RSD		
Rep 1 Area	101703	150563
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\007.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5822	8330 Pt 7 EXP 5823
Rep 1 Calib. Time	07/01/2016 09:11:53	07/01/2016 09:13:03

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:58:05
User: red
Instrument: HPLC 2 (Offline)

RDX-confirm (A)
Average RF: 70102.4 RF StDev: 6560.39 RF %RSD: 9.35830
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 64409.1x + 518.599
Goodness of fit (r^2): 0.998573



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	1630	3778	14019	33218	69947
RF	81500	75560	70095	66436	69947
Last Area Residual	0.00274466	-0.000604645	-0.00960383	-0.00768266	-0.0779278
Rep StDev					
Rep %RSD					
Rep 1 Area	1630	3778	14019	33218	69947
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\002.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\004.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\005.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5817	8330 Pt 2 EXP 5818	8330 Pt 3 EXP 5819	8330 Pt 4 EXP 5820	8330 Pt 5 EXP 5821
Rep 1 Calib. Time	07/01/2016 09:46:08	07/01/2016 09:26:44	06/30/2016 15:26:20	07/01/2016 09:14:53	07/01/2016 09:15:48

	Level 6	Level 7
Amount	2	3

Calibration Report

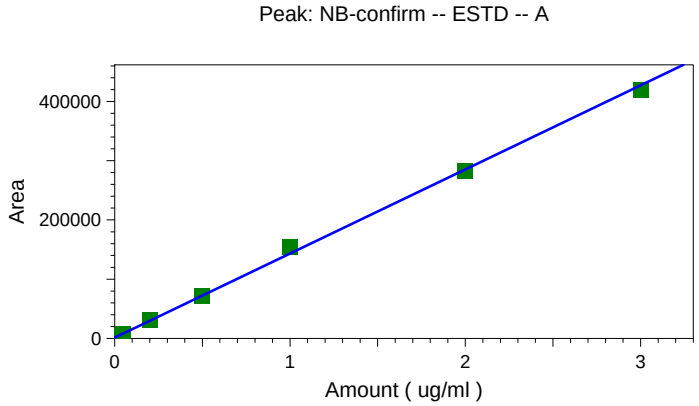
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:58:05
User: red
Instrument: HPLC 2 (Offline)

Area	127864	189740
RF	63932	63246.6666666667
Last Area Residual	0.0228674	0.0621963
Rep StDev		
Rep %RSD		
Rep 1 Area	127864	189740
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\007.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5822	8330 Pt 7 EXP 5823
Rep 1 Calib. Time	07/01/2016 09:11:53	07/01/2016 09:13:03

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:58:11
User: red
Instrument: HPLC 2 (Offline)

NB-confirm (A)
Average RF: 156134. RF StDev: 19725.1 RF %RSD: 12.6334
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 142046.x + 1273.67
Goodness of fit (r^2): 0.998767



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	3936	8147	30678	72165	154308
RF	196800	162940	153390	144330	154308
Last Area Residual	0.00125726	0.00161187	-0.00700608	0.000925963	-0.0773597
Rep StDev					
Rep %RSD					
Rep 1 Area	3936	8147	30678	72165	154308
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\002.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\004.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\005.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5817	8330 Pt 2 EXP 5818	8330 Pt 3 EXP 5819	8330 Pt 4 EXP 5820	8330 Pt 5 EXP 5821
Rep 1 Calib. Time	07/01/2016 09:46:08	07/01/2016 09:26:44	06/30/2016 15:26:20	07/01/2016 09:14:53	07/01/2016 09:15:48

	Level 6	Level 7
Amount	2	3

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:58:11
User: red
Instrument: HPLC 2 (Offline)

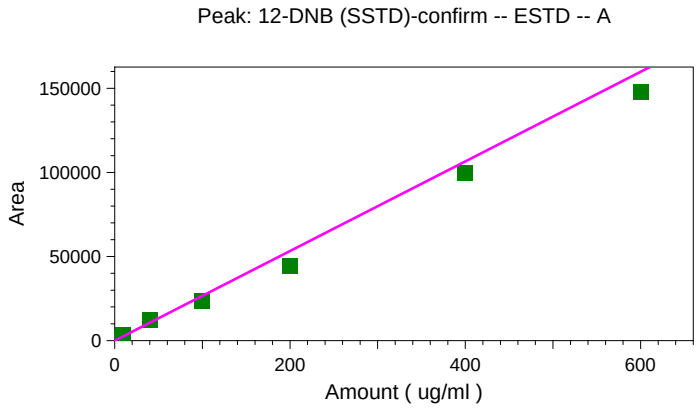
Area	282377	419948
RF	141188.5	139982.666666667
Last Area Residual	0.0210361	0.052538
Rep StDev		
Rep %RSD		
Rep 1 Area	282377	419948
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\007.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5822	8330 Pt 7 EXP 5823
Rep 1 Calib. Time	07/01/2016 09:11:53	07/01/2016 09:13:03

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:58:28
User: red
Instrument: HPLC 2 (Offline)

12-DNB (SSTD)-confirm (A)
Average RF: 266.424 RF StDev: 36.7511 RF %RSD: 13.7942
Scaling: None LSQ Weighting: None Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Average RF

Average Slope: 266.424



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	4	10	40	100	200
Area	1237	3030	12047	23321	44490
RF	309.25	303	301.175	233.21	222.45
Last Area					
Residual	-0.642978	-1.37286	-5.21743	12.4665	33.0104
Rep StDev					
Rep %RSD					
Rep 1 Area	1237	3030	12047	23321	44490
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\002.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\004.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\005.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5817	8330 Pt 2 EXP 5818	8330 Pt 3 EXP 5819	8330 Pt 4 EXP 5820	8330 Pt 5 EXP 5821
Rep 1 Calib. Time	07/01/2016 09:46:08	07/01/2016 09:26:44	06/30/2016 15:26:20	07/01/2016 09:14:53	07/01/2016 09:15:48

Level 6	Level 7

Calibration Report

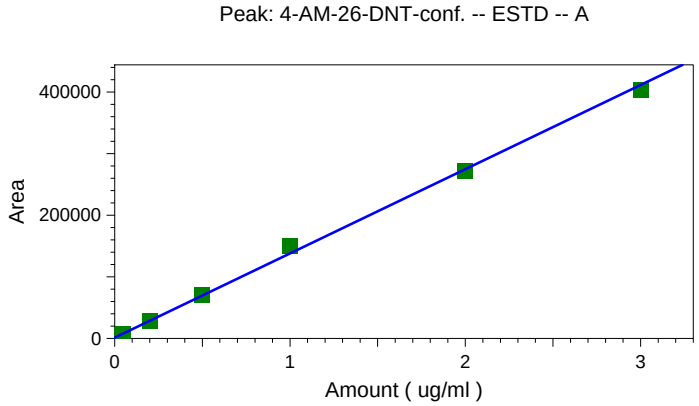
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:58:28
User: red
Instrument: HPLC 2 (Offline)

Amount	400	600
Area	99756	147895
RF	249.39	246.491666666667
Last Area		
Residual	25.574	44.8882
Rep StDev		
Rep %RSD		
Rep 1 Area	99756	147895
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\007.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5822	8330 Pt 7 EXP 5823
Rep 1 Calib. Time	07/01/2016 09:11:53	07/01/2016 09:13:03

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:58:39
User: red
Instrument: HPLC 2 (Offline)

4-AM-26-DNT-conf. (A)
Average RF: 150268. RF StDev: 21203.4 RF %RSD: 14.1103
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 136780.x + 1196.83
Goodness of fit (r^2): 0.998575



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	3923	7579	28749	70268	149390
RF	196150	151580	143745	140536	149390
Last Area Residual	6.90313e-005	0.00334007	-0.00143347	-0.00497825	-0.083438
Rep StDev					
Rep %RSD					
Rep 1 Area	3923	7579	28749	70268	149390
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\002.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\004.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\005.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5817	8330 Pt 2 EXP 5818	8330 Pt 3 EXP 5819	8330 Pt 4 EXP 5820	8330 Pt 5 EXP 5821
Rep 1 Calib. Time	07/01/2016 09:46:08	07/01/2016 09:26:44	06/30/2016 15:26:20	07/01/2016 09:14:53	07/01/2016 09:15:48

	Level 6	Level 7
Amount	2	3

Calibration Report

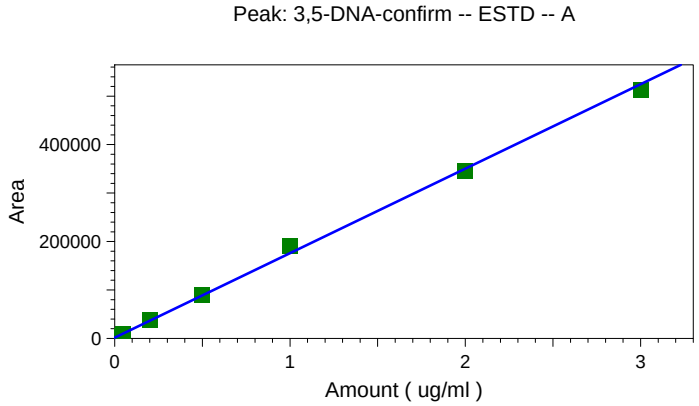
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:58:39
User: red
Instrument: HPLC 2 (Offline)

Area	271737	403824
RF	135868.5	134608
Last Area		
Residual	0.022085	0.0563989
Rep StDev		
Rep %RSD		
Rep 1 Area	271737	403824
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\007.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5822	8330 Pt 7 EXP 5823
Rep 1 Calib. Time	07/01/2016 09:11:53	07/01/2016 09:13:03

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:58:57
User: red
Instrument: HPLC 2 (Offline)

3,5-DNA-confirm (A)
Average RF: 191075. RF StDev: 21314.6 RF %RSD: 11.1551
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 174385.x + 1519.01
Goodness of fit (r^2): 0.998425



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	4679	9947	37812	90590	190226
RF	233950	198940	189060	181180	190226
Last Area Residual	0.00187926	0.0016703	-0.00811949	-0.010771	-0.0821263
Rep StDev					
Rep %RSD					
Rep 1 Area	4679	9947	37812	90590	190226
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\002.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\004.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\005.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5817	8330 Pt 2 EXP 5818	8330 Pt 3 EXP 5819	8330 Pt 4 EXP 5820	8330 Pt 5 EXP 5821
Rep 1 Calib. Time	07/01/2016 09:46:08	07/01/2016 09:26:44	06/30/2016 15:26:20	07/01/2016 09:14:53	07/01/2016 09:15:48

	Level 6	Level 7
Amount	2	3

Calibration Report

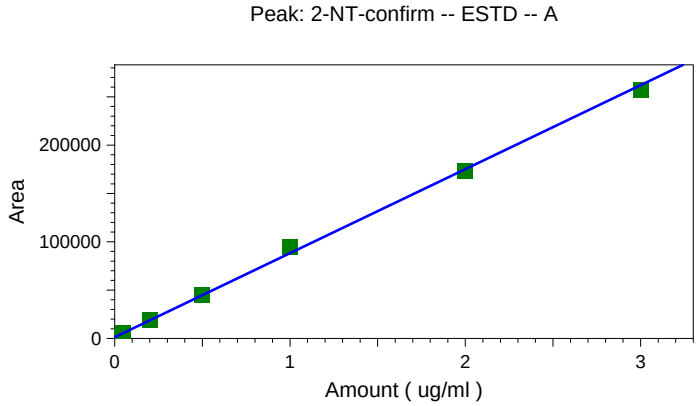
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:58:57
User: red
Instrument: HPLC 2 (Offline)

Area	346082	513387
RF	173041	171129
Last Area		
Residual	0.0241289	0.0647307
Rep StDev		
Rep %RSD		
Rep 1 Area	346082	513387
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\007.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5822	8330 Pt 7 EXP 5823
Rep 1 Calib. Time	07/01/2016 09:11:53	07/01/2016 09:13:03

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:02
User: red
Instrument: HPLC 2 (Offline)

2-NT-confirm (A)
Average RF: 100965. RF StDev: 21534.3 RF %RSD: 21.3284
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 86942.1x + 1262.87
Goodness of fit (r^2): 0.998696



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	2942	5328	19167	44852	95126
RF	147100	106560	95835	89704	95126
Last Area Residual	0.000686828	0.00324327	-0.00593164	-0.00135815	-0.0796051
Rep StDev					
Rep %RSD					
Rep 1 Area	2942	5328	19167	44852	95126
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\002.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\004.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\005.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5817	8330 Pt 2 EXP 5818	8330 Pt 3 EXP 5819	8330 Pt 4 EXP 5820	8330 Pt 5 EXP 5821
Rep 1 Calib. Time	07/01/2016 09:46:08	07/01/2016 09:26:44	06/30/2016 15:26:20	07/01/2016 09:14:53	07/01/2016 09:15:48

	Level 6	Level 7
Amount	2	3

Calibration Report

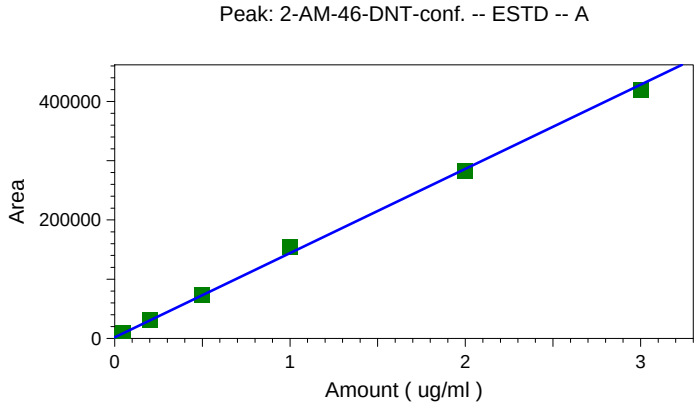
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:02
User: red
Instrument: HPLC 2 (Offline)

Area	173272	257391
RF	86636	85797
Last Area		
Residual	0.0215668	0.0540377
Rep StDev		
Rep %RSD		
Rep 1 Area	173272	257391
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\007.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5822	8330 Pt 7 EXP 5823
Rep 1 Calib. Time	07/01/2016 09:11:53	07/01/2016 09:13:03

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:08
User: red
Instrument: HPLC 2 (Offline)

2-AM-46-DNT-conf. (A)
Average RF: 162138. RF StDev: 28414.4 RF %RSD: 17.5249
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 142223.x + 1814.15
Goodness of fit (r^2): 0.998652



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	4432	8627	31282	73841	155039
RF	221600	172540	156410	147682	155039
Last Area Residual	0.00159337	0.00209749	-0.00719431	-0.00643507	-0.0773543
Rep StDev					
Rep %RSD					
Rep 1 Area	4432	8627	31282	73841	155039
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\002.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\004.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\005.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5817	8330 Pt 2 EXP 5818	8330 Pt 3 EXP 5819	8330 Pt 4 EXP 5820	8330 Pt 5 EXP 5821
Rep 1 Calib. Time	07/01/2016 09:46:08	07/01/2016 09:26:44	06/30/2016 15:26:20	07/01/2016 09:14:53	07/01/2016 09:15:48

	Level 6	Level 7
Amount	2	3

Calibration Report

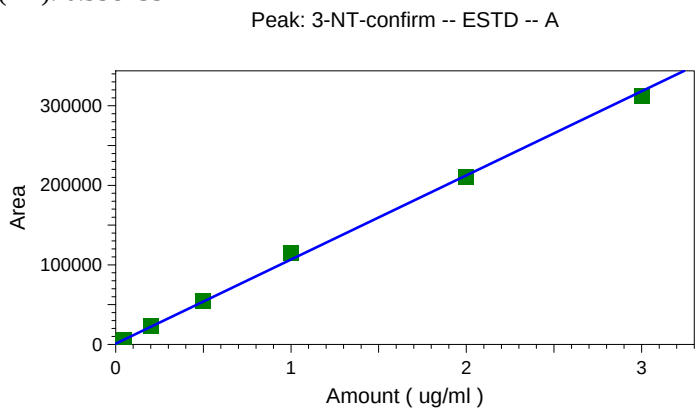
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:08
User: red
Instrument: HPLC 2 (Offline)

Area	283395	419983
RF	141697.5	139994.333333333
Last Area		
Residual	0.0201492	0.0597719
Rep StDev		
Rep %RSD		
Rep 1 Area	283395	419983
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\007.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5822	8330 Pt 7 EXP 5823
Rep 1 Calib. Time	07/01/2016 09:11:53	07/01/2016 09:13:03

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:13
User: red
Instrument: HPLC 2 (Offline)

3-NT-confirm (A)
Average RF: 116939. RF StDev: 16349.5 RF %RSD: 13.9812
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 105777.x + 1004.15
Goodness of fit (r^2): 0.998733



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	3034	5996	22852	54195	115012
RF	151700	119920	114260	108390	115012
Last Area Residual	0.000810118	0.00280784	-0.00654613	-0.00285791	-0.0778122
Rep StDev					
Rep %RSD					
Rep 1 Area	3034	5996	22852	54195	115012
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\002.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\004.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\005.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5817	8330 Pt 2 EXP 5818	8330 Pt 3 EXP 5819	8330 Pt 4 EXP 5820	8330 Pt 5 EXP 5821
Rep 1 Calib. Time	07/01/2016 09:46:08	07/01/2016 09:26:44	06/30/2016 15:26:20	07/01/2016 09:14:53	07/01/2016 09:15:48

	Level 6	Level 7
Amount	2	3

Calibration Report

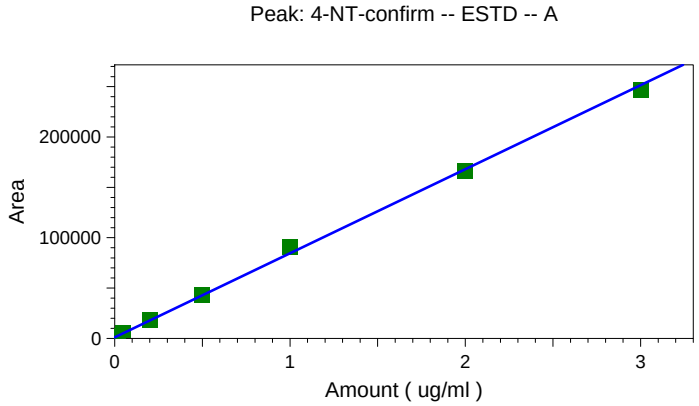
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:13
User: red
Instrument: HPLC 2 (Offline)

Area	210116	312694
RF	105058	104231.333333333
Last Area Residual	0.0230896	0.0533333
Rep StDev		
Rep %RSD		
Rep 1 Area	210116	312694
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\007.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5822	8330 Pt 7 EXP 5823
Rep 1 Calib. Time	07/01/2016 09:11:53	07/01/2016 09:13:03

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:17
User: red
Instrument: HPLC 2 (Offline)

4-NT-confirm (A)
Average RF: 94632.1 RF StDev: 16184.5 RF %RSD: 17.1026
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 83507.0x + 1008.81
Goodness of fit (r^2): 0.998761



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	2576	4983	18279	43161	90851
RF	128800	99660	91395	86322	90851
Last Area Residual	0.00123285	0.00240894	-0.00681117	-0.00477406	-0.0758636
Rep StDev					
Rep %RSD					
Rep 1 Area	2576	4983	18279	43161	90851
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\002.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\004.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\005.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5817	8330 Pt 2 EXP 5818	8330 Pt 3 EXP 5819	8330 Pt 4 EXP 5820	8330 Pt 5 EXP 5821
Rep 1 Calib. Time	07/01/2016 09:46:08	07/01/2016 09:26:44	06/30/2016 15:26:20	07/01/2016 09:14:53	07/01/2016 09:15:48

	Level 6	Level 7
Amount	2	3

Calibration Report

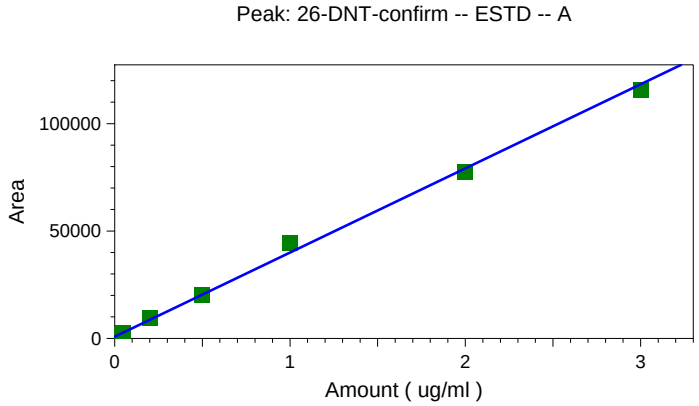
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:17
User: red
Instrument: HPLC 2 (Offline)

Area	166114	247020
RF	83057	82340
Last Area		
Residual	0.0228591	0.0540067
Rep StDev		
Rep %RSD		
Rep 1 Area	166114	247020
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\007.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5822	8330 Pt 7 EXP 5823
Rep 1 Calib. Time	07/01/2016 09:11:53	07/01/2016 09:13:03

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:22
User: red
Instrument: HPLC 2 (Offline)

26-DNT-confirm (A)
Average RF: 47951.6 RF StDev: 12980.3 RF %RSD: 27.0697
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 39176.6x + 795.852
Goodness of fit (r^2): 0.997390



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	1511	2508	9595	20103	44402
RF	75550	50160	47975	40206	44402
Last Area Residual	0.00174552	0.00629664	-0.0246023	0.00717618	-0.113067
Rep StDev					
Rep %RSD					
Rep 1 Area	1511	2508	9595	20103	44402
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\002.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\004.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\005.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5817	8330 Pt 2 EXP 5818	8330 Pt 3 EXP 5819	8330 Pt 4 EXP 5820	8330 Pt 5 EXP 5821
Rep 1 Calib. Time	07/01/2016 09:46:08	07/01/2016 09:26:44	06/30/2016 15:26:20	07/01/2016 09:14:53	07/01/2016 09:15:48

	Level 6	Level 7
Amount	2	3

Calibration Report

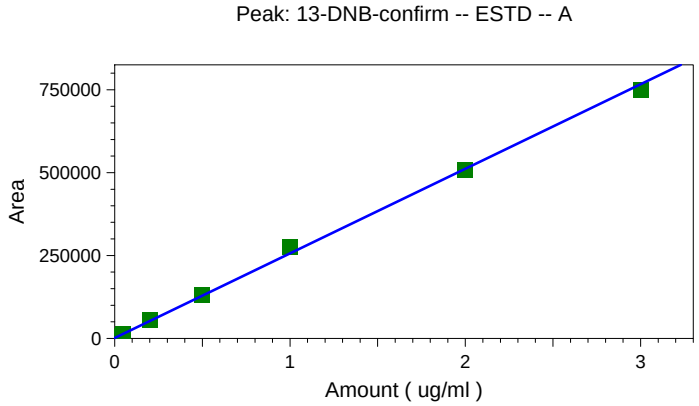
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:22
User: red
Instrument: HPLC 2 (Offline)

Area	77536	115800
RF	38768	38600
Last Area		
Residual	0.0411725	0.0644663
Rep StDev		
Rep %RSD		
Rep 1 Area	77536	115800
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\007.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5822	8330 Pt 7 EXP 5823
Rep 1 Calib. Time	07/01/2016 09:11:53	07/01/2016 09:13:03

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:24
User: red
Instrument: HPLC 2 (Offline)

13-DNB-confirm (A)
Average RF: 271195. RF StDev: 16552.0 RF %RSD: 6.10334
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 255121.x + 1443.99
Goodness of fit (r^2): 0.998634



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	5853	14476	54796	131715	275315
RF	292650	289520	273980	263430	275315
Last Area Residual	0.00271795	-0.00108171	-0.00912441	-0.0106246	-0.0734949
Rep StDev					
Rep %RSD					
Rep 1 Area	5853	14476	54796	131715	275315
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\002.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\004.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\005.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5817	8330 Pt 2 EXP 5818	8330 Pt 3 EXP 5819	8330 Pt 4 EXP 5820	8330 Pt 5 EXP 5821
Rep 1 Calib. Time	07/01/2016 09:46:08	07/01/2016 09:26:44	06/30/2016 15:26:20	07/01/2016 09:14:53	07/01/2016 09:15:48

	Level 6	Level 7
Amount	2	3

Calibration Report

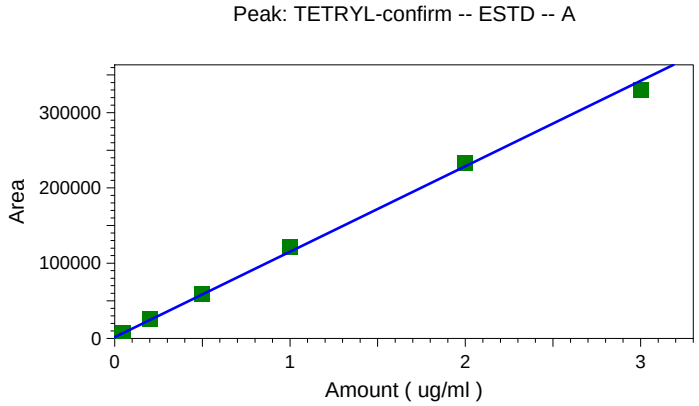
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:24
User: red
Instrument: HPLC 2 (Offline)

Area	506719	750332
RF	253359.5	250110.666666667
Last Area Residual	0.0194685	0.0645762
Rep StDev		
Rep %RSD		
Rep 1 Area	506719	750332
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\007.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5822	8330 Pt 7 EXP 5823
Rep 1 Calib. Time	07/01/2016 09:11:53	07/01/2016 09:13:03

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:29
User: red
Instrument: HPLC 2 (Offline)

TETRYL-confirm (A)
Average RF: 131939. RF StDev: 24160.4 RF %RSD: 18.3118
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 113528.x + 1704.60
Goodness of fit (r^2): 0.997852



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	3586	7409	25728	59421	122016
RF	179300	148180	128640	118842	122016
Last Area Residual	0.00342797	-0.000246428	-0.0116069	-0.00838733	-0.0597472
Rep StDev					
Rep %RSD					
Rep 1 Area	3586	7409	25728	59421	122016
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\002.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\004.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\005.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5817	8330 Pt 2 EXP 5818	8330 Pt 3 EXP 5819	8330 Pt 4 EXP 5820	8330 Pt 5 EXP 5821
Rep 1 Calib. Time	07/01/2016 09:46:08	07/01/2016 09:26:44	06/30/2016 15:26:20	07/01/2016 09:14:53	07/01/2016 09:15:48

	Level 6	Level 7
Amount	2	3

Calibration Report

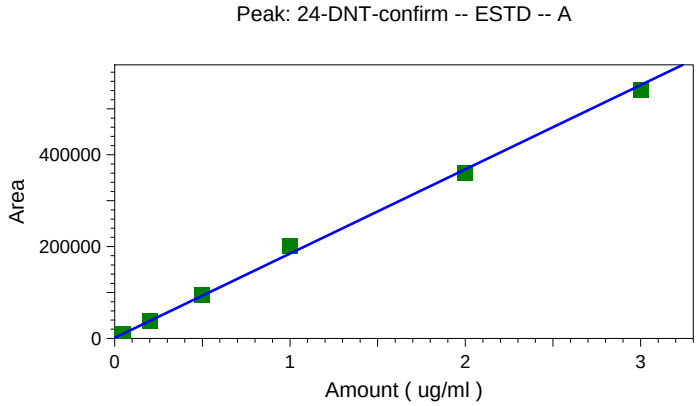
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:29
User: red
Instrument: HPLC 2 (Offline)

Area	232863	330492
RF	116431.5	110164
Last Area		
Residual	-0.0361285	0.103919
Rep StDev		
Rep %RSD		
Rep 1 Area	232863	330492
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\007.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5822	8330 Pt 7 EXP 5823
Rep 1 Calib. Time	07/01/2016 09:11:53	07/01/2016 09:13:03

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:35
User: red
Instrument: HPLC 2 (Offline)

24-DNT-confirm (A)
Average RF: 196590. RF StDev: 15745.5 RF %RSD: 8.00929
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 183573.x + 1173.90
Goodness of fit (r^2): 0.998267



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	4520	10141	38990	94947	201341
RF	226000	202820	194950	189894	201341
Last Area Residual	0.00177237	0.00115242	-0.00600024	-0.0108216	-0.0903946
Rep StDev					
Rep %RSD					
Rep 1 Area	4520	10141	38990	94947	201341
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\002.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\004.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\005.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5817	8330 Pt 2 EXP 5818	8330 Pt 3 EXP 5819	8330 Pt 4 EXP 5820	8330 Pt 5 EXP 5821
Rep 1 Calib. Time	07/01/2016 09:46:08	07/01/2016 09:26:44	06/30/2016 15:26:20	07/01/2016 09:14:53	07/01/2016 09:15:48

	Level 6	Level 7
Amount	2	3

Calibration Report

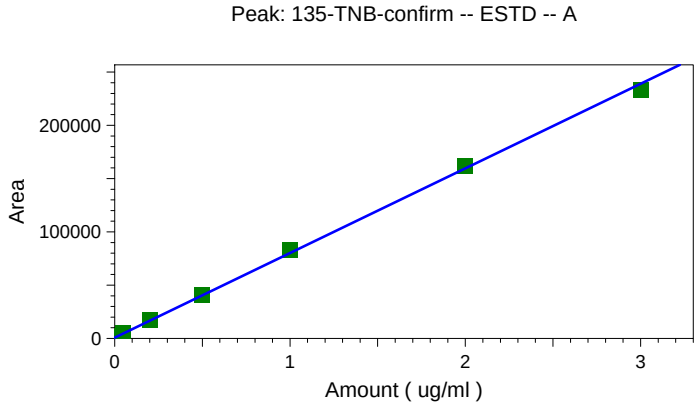
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:35
User: red
Instrument: HPLC 2 (Offline)

Area	361029	541841
RF	180514.5	180613.666666667
Last Area Residual	0.0397176	0.0547584
Rep StDev		
Rep %RSD		
Rep 1 Area	361029	541841
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\007.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5822	8330 Pt 7 EXP 5823
Rep 1 Calib. Time	07/01/2016 09:11:53	07/01/2016 09:13:03

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:39
User: red
Instrument: HPLC 2 (Offline)

135-TNB-confirm (A)
Average RF: 87165.1 RF StDev: 9226.93 RF %RSD: 10.5856
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 79459.0x + 700.977
Goodness of fit (r^2): 0.999049



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	2034	4902	17520	40543	83084
RF	101700	98040	87600	81086	83084
Last Area Residual	0.00322376	-0.00287035	-0.0116693	-0.00141642	-0.0367998
Rep StDev					
Rep %RSD					
Rep 1 Area	2034	4902	17520	40543	83084
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\002.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\004.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\005.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5817	8330 Pt 2 EXP 5818	8330 Pt 3 EXP 5819	8330 Pt 4 EXP 5820	8330 Pt 5 EXP 5821
Rep 1 Calib. Time	07/01/2016 09:46:08	07/01/2016 09:26:44	06/30/2016 15:26:20	07/01/2016 09:14:53	07/01/2016 09:15:48

	Level 6	Level 7
Amount	2	3

Calibration Report

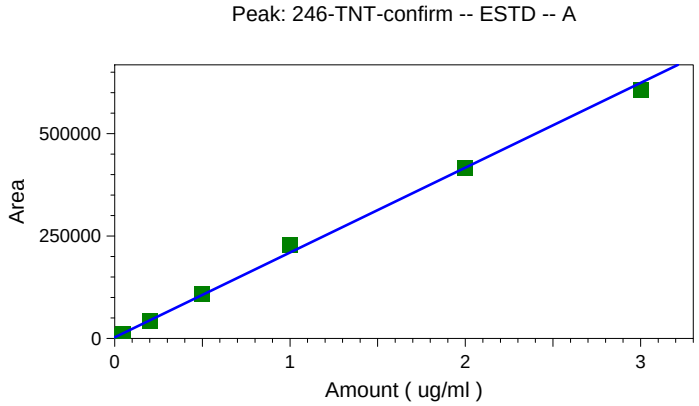
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:39
User: red
Instrument: HPLC 2 (Offline)

Area	161643	233473
RF	80821.5	77824.3333333333
Last Area		
Residual	-0.0254738	0.0705374
Rep StDev		
Rep %RSD		
Rep 1 Area	161643	233473
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\007.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5822	8330 Pt 7 EXP 5823
Rep 1 Calib. Time	07/01/2016 09:11:53	07/01/2016 09:13:03

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:44
User: red
Instrument: HPLC 2 (Offline)

246-TNT-confirm (A)
Average RF: 234329. RF StDev: 47287.1 RF %RSD: 20.1798
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 207249.x + 2334.63
Goodness of fit (r^2): 0.998058



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	6787	11433	43645	107640	228034
RF	339350	228660	218225	215280	228034
Last Area Residual	-0.00148325	0.00609922	0.000672305	-0.00811154	-0.0890276
Rep StDev					
Rep %RSD					
Rep 1 Area	6787	11433	43645	107640	228034
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\002.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\004.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\005.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5817	8330 Pt 2 EXP 5818	8330 Pt 3 EXP 5819	8330 Pt 4 EXP 5820	8330 Pt 5 EXP 5821
Rep 1 Calib. Time	07/01/2016 09:46:08	07/01/2016 09:26:44	06/30/2016 15:26:20	07/01/2016 09:14:53	07/01/2016 09:15:48

	Level 6	Level 7
Amount	2	3

Calibration Report

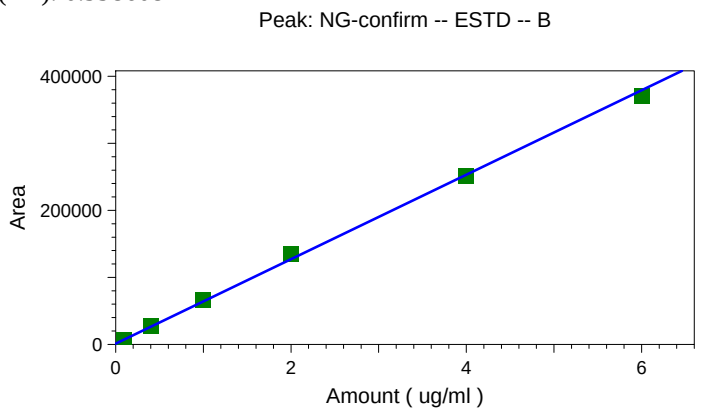
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:44
User: red
Instrument: HPLC 2 (Offline)

Area	416521	607482
RF	208260.5	202494
Last Area		
Residual	0.00149915	0.0800885
Rep StDev		
Rep %RSD		
Rep 1 Area	416521	607482
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\007.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5822	8330 Pt 7 EXP 5823
Rep 1 Calib. Time	07/01/2016 09:11:53	07/01/2016 09:13:03

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:53
User: red
Instrument: HPLC 2 (Offline)

NG-confirm (B)
Average RF: 65871.6 RF StDev: 2882.86 RF %RSD: 4.37648
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 63019.3x + 1170.58
Goodness of fit (r^2): 0.998608



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.04	0.1	0.4	1	2
Area		6724	27680	66454	135243
RF		67240	69200	66454	67621.5
Last Area Residual	N/A	0.0118775	-0.0206558	-0.0359279	-0.127483
Rep StDev					
Rep %RSD					
Rep 1 Area		6724	27680	66454	135243
Rep 1 User		red	red	red	red
Rep 1 Data File		C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\004.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\005.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\006.dat
Rep 1 Sample ID		8330 Pt 2 EXP 5818	8330 Pt 3 EXP 5819	8330 Pt 4 EXP 5820	8330 Pt 5 EXP 5821
Rep 1 Calib. Time		07/01/2016 09:26:44	06/30/2016 15:26:20	07/01/2016 09:14:53	07/01/2016 09:15:48

	Level 6	Level 7
Amount	4	6

Calibration Report

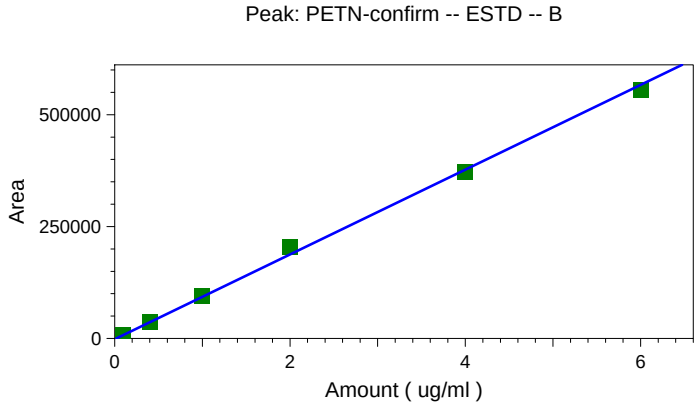
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:53
User: red
Instrument: HPLC 2 (Offline)

Area	251420	371153
RF	62855	61858.8333333333
Last Area Residual	0.0290013	0.129058
Rep StDev		
Rep %RSD		
Rep 1 Area	251420	371153
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\007.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5822	8330 Pt 7 EXP 5823
Rep 1 Calib. Time	07/01/2016 09:11:53	07/01/2016 09:13:03

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:59
User: red
Instrument: HPLC 2 (Offline)

PETN-confirm (B)
Average RF: 91143.9 RF StDev: 9841.48 RF %RSD: 10.7977
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 94729.0x - 1653.56
Goodness of fit (r^2): 0.998177



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.04	0.1	0.4	1	2
Area		7266	36446	95591	203980
RF		72660	91115	95591	101990
Last Area Residual	N/A	0.00584127	-0.00219546	-0.0265557	-0.170757
Rep StDev					
Rep %RSD					
Rep 1 Area		7266	36446	95591	203980
Rep 1 User		red	red	red	red
Rep 1 Data File		C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\004.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\005.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\006.dat
Rep 1 Sample ID		8330 Pt 2 EXP 5818	8330 Pt 3 EXP 5819	8330 Pt 4 EXP 5820	8330 Pt 5 EXP 5821
Rep 1 Calib. Time		07/01/2016 09:26:44	06/30/2016 15:26:20	07/01/2016 09:14:53	07/01/2016 09:15:48

	Level 6	Level 7
Amount	4	6

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Print Time: 07/01/2016 09:59:59
User: red
Instrument: HPLC 2 (Offline)

Area	371426	555905
RF	92856.5	92650.8333333333
Last Area Residual	0.0616104	0.11417
Rep StDev		
Rep %RSD		
Rep 1 Area	371426	555905
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\007.dat	C:\Instarch\HPLC 2\Data\063016EXPic-confirm\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5822	8330 Pt 7 EXP 5823
Rep 1 Calib. Time	07/01/2016 09:11:53	07/01/2016 09:13:03

QC Check Standard Report

Sequence : C:\Instarch\HPLC 2\Sequences\8330A_B\063016EXPIC-CONFIRM.seq
User : red
Printed : 07/01/2016 09:53:10

File	Sample ID	Acquired
C:\Instarch\HPLC 2\Data\063016EXPic-confirm\002.dat	8330 Pt 1 EXP 5817	07/01/2016 09:53:10

A

Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
HMX-confirm	0.020	0.018	9.886	20.000	Passed
RDX-confirm	0.020	0.017	13.723	20.000	Passed
NB-confirm	0.020	0.019	6.286	20.000	Passed
12-DNB (SSTD)-confirm	4.000	4.643	16.074	20.000	Passed
4-AM-26-DNT-conf.	0.020	0.020	0.345	20.000	Passed
3,5-DNA-confirm	0.020	0.018	9.396	20.000	Passed
2-NT-confirm	0.020	0.019	3.434	20.000	Passed
2-AM-46-DNT-conf.	0.020	0.018	7.967	20.000	Passed
3-NT-confirm	0.020	0.019	4.051	20.000	Passed
4-NT-confirm	0.020	0.019	6.164	20.000	Passed
26-DNT-confirm	0.020	0.018	8.728	20.000	Passed
13-DNB-confirm	0.020	0.017	13.590	20.000	Passed
TETRYL-confirm	0.020	0.017	17.140	20.000	Passed
24-DNT-confirm	0.020	0.018	8.862	20.000	Passed
135-TNB-confirm	0.020	0.017	16.119	20.000	Passed
246-TNT-confirm	0.020	0.021	7.416	20.000	Passed

B

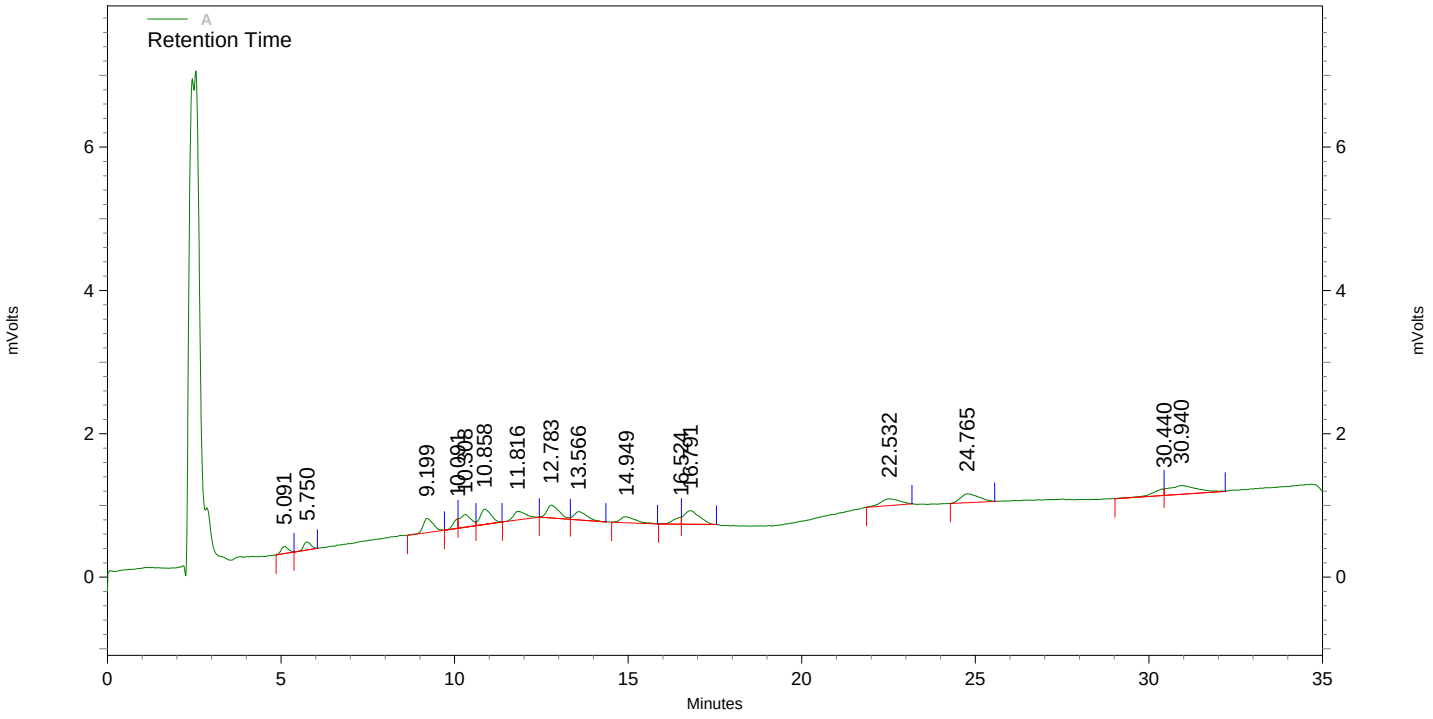
Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
NG-confirm	0.000	0.000	0.000	0.000	Passed
PETN-confirm	0.000	0.000	0.000	0.000	Passed

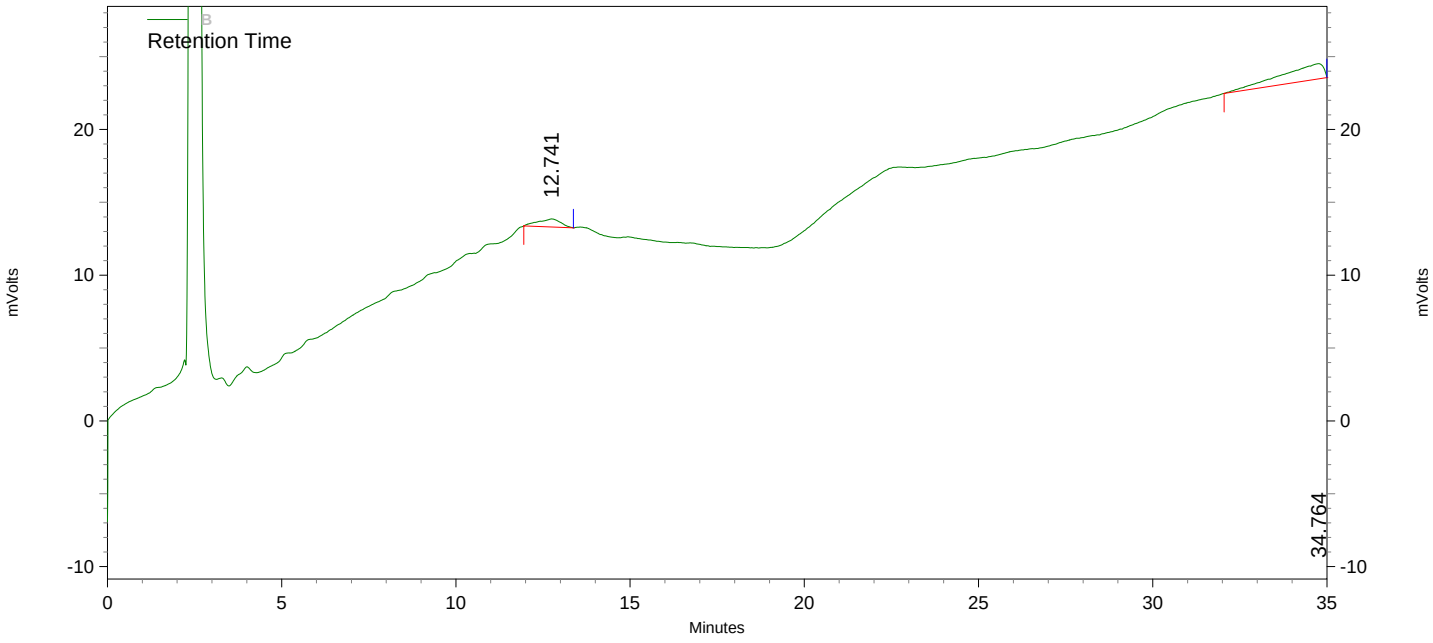
After Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\063016EXPic-confirm\002.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Sample ID: 8330 Pt 1 EXP 5817
Acquired: 06/30/2016 12:45:11
Data Summary: Reason #2 applies to data. RED 7/1/2016

JJY
7/1/2016





8330 Pt 1 EXP 5817

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm	5.091	1430	**0.0180**
RDX-confirm	5.750	1630	**0.0173**
NB-confirm	9.199	3936	**0.0187**
12-DNB (SSTD)-confirm	10.091	1237	**4.6430**
4-AM-26-DNT-conf.	10.308	3923	**0.0199**
3,5-DNA-confirm	10.858	4679	**0.0181**
2-NT-confirm	11.816	2942	**0.0193**
2-AM-46-DNT-conf.	12.783	4432	**0.0184**
3-NT-confirm	13.566	3034	**0.0192**
4-NT-confirm	14.949	2576	**0.0188**
26-DNT-confirm	16.524	1511	**0.0183**
13-DNB-confirm	16.791	5853	**0.0173**
TETRYL-confirm	22.532	3586	**0.0166**
24-DNT-confirm	24.765	4520	**0.0182**
135-TNB-confirm	30.440	2034	**0.0168**
246-TNT-confirm	30.940	6787	**0.0215**

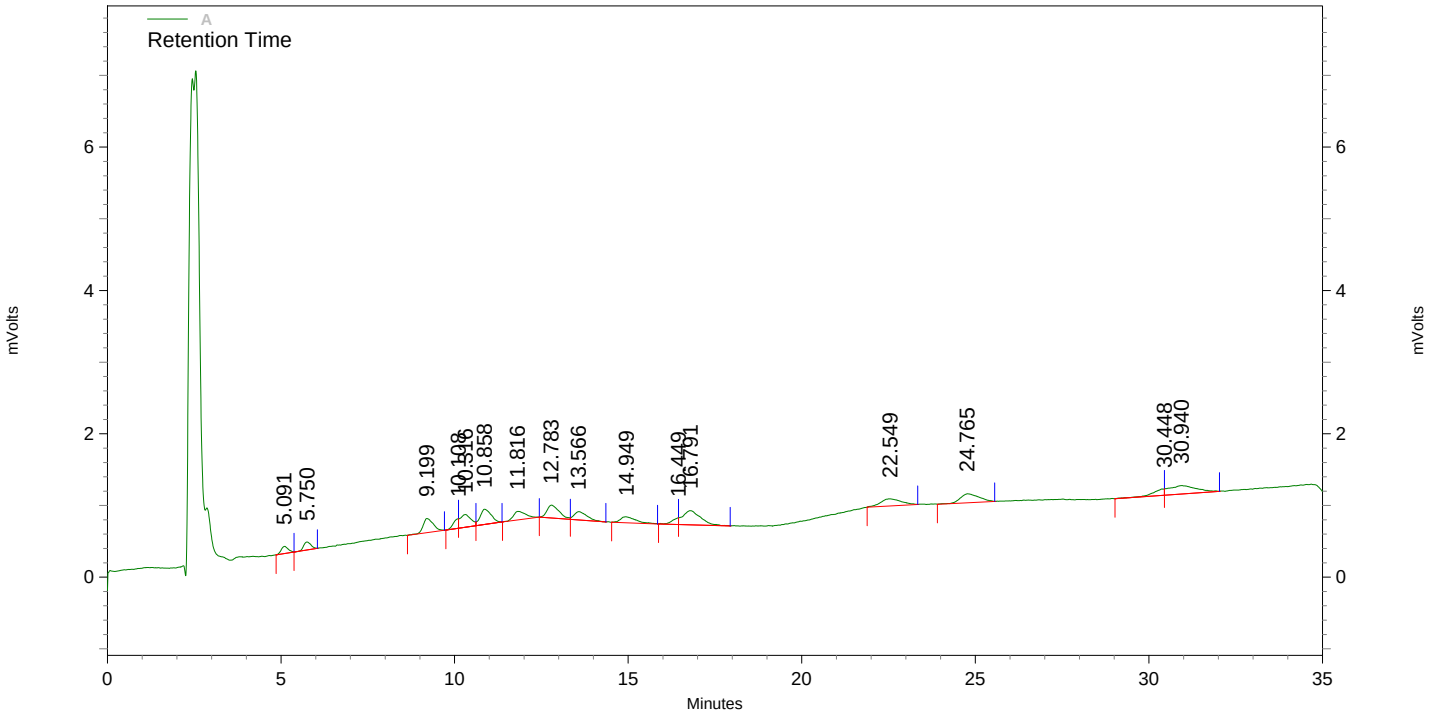
B Results

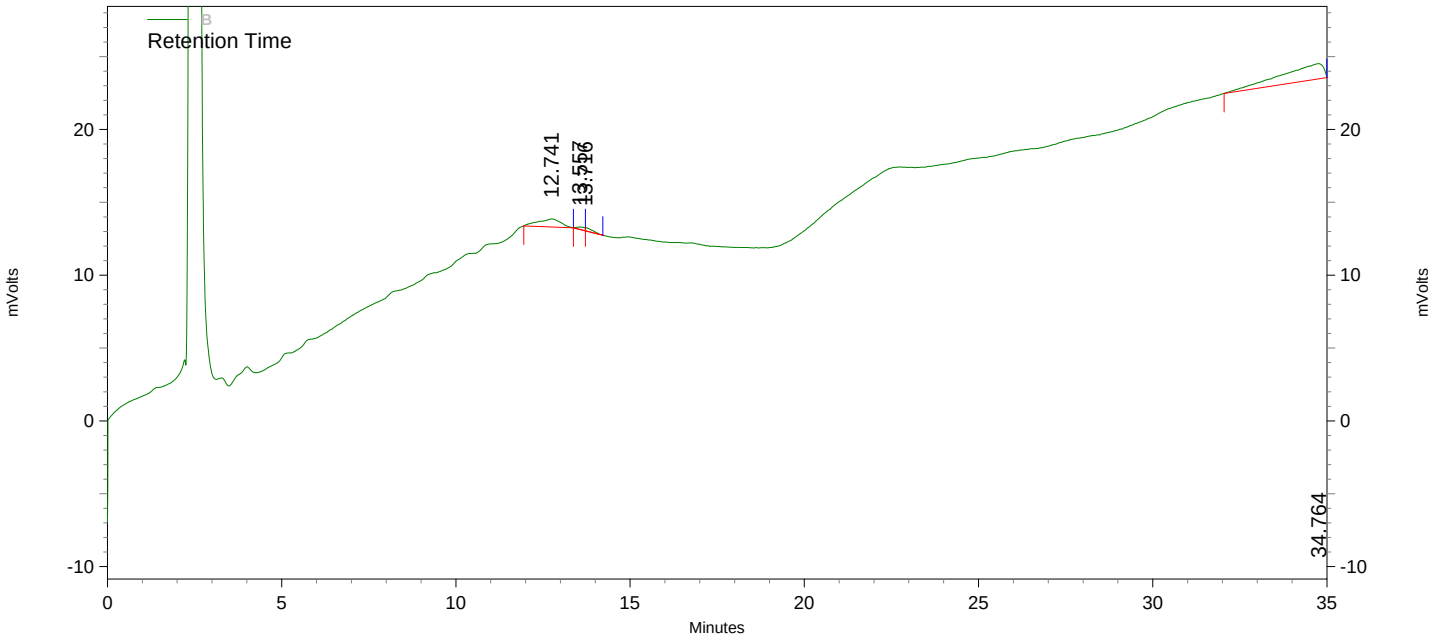
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm			**0.0000 BDL**
PETN-confirm			**0.0000 BDL**

Before Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\063016EXPic-confirm\002.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Sample ID: 8330 Pt 1 EXP 5817
Acquired: 06/30/2016 12:45:11
Data Summary: Reason #2 applies to data. RED 7/1/2016





8330 Pt 1 EXP 5817

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm	5.091	1430	**0.0180**
RDX-confirm	5.750	1630	**0.0173**
NB-confirm	9.199	3936	**0.0187**
12-DNB (SSTD)-confirm	10.108	1406	**3.6281**
4-AM-26-DNT-conf.	10.316	3827	**0.0197**
3,5-DNA-confirm	10.858	4699	**0.0182**
2-NT-confirm	11.816	2942	**0.0193**
2-AM-46-DNT-conf.	12.783	4432	**0.0184**
3-NT-confirm	13.566	3034	**0.0192**
4-NT-confirm	14.949	2576	**0.0188**
26-DNT-confirm	16.449	1129	**0.0085**
13-DNB-confirm	16.791	7030	**0.0219**
TETRYL-confirm	22.549	4036	**0.0205**
24-DNT-confirm	24.765	4660	**0.0190**
135-TNB-confirm	30.448	1970	**0.0160**
246-TNT-confirm	30.940	6311	**0.0192**

B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm			**0.0000 BDL**
PETN-confirm	13.716	3364	**0.0530**

QC Check Standard Report

Sequence : C:\Instarch\HPLC 2\Sequences\8330A_B\063016EXPIC-CONFIRM.seq
User : red
Printed : 07/01/2016 09:53:18

File	Sample ID	Acquired
C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat	8330 Pt 2 EXP 5818	07/01/2016 09:53:17

A

Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
HMX-confirm	0.050	0.048	3.019	30.000	Passed
RDX-confirm	0.050	0.051	1.209	30.000	Passed
NB-confirm	0.050	0.048	3.224	30.000	Passed
12-DNB (SSTD)-confirm	10.000	11.373	13.729	30.000	Passed
4-AM-26-DNT-conf.	0.050	0.047	6.680	30.000	Passed
3,5-DNA-confirm	0.050	0.048	3.341	30.000	Passed
2-NT-confirm	0.050	0.047	6.487	30.000	Passed
2-AM-46-DNT-conf.	0.050	0.048	4.195	30.000	Passed
3-NT-confirm	0.050	0.047	5.616	30.000	Passed
4-NT-confirm	0.050	0.048	4.818	30.000	Passed
26-DNT-confirm	0.050	0.044	12.593	30.000	Passed
13-DNB-confirm	0.050	0.051	2.163	30.000	Passed
TETRYL-confirm	0.050	0.050	0.493	30.000	Passed
24-DNT-confirm	0.050	0.049	2.305	30.000	Passed
135-TNB-confirm	0.050	0.053	5.741	30.000	Passed
246-TNT-confirm	0.050	0.044	12.198	30.000	Passed

B

Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
NG-confirm	0.000	0.088	0.000	0.000	Passed
PETN-confirm	0.000	0.094	0.000	0.000	Passed

After Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Sample ID: 8330 Pt 2 EXP 5818
Acquired: 06/30/2016 13:22:28
Data Summary: Reason #3 applies to data. RED 7/1/2016

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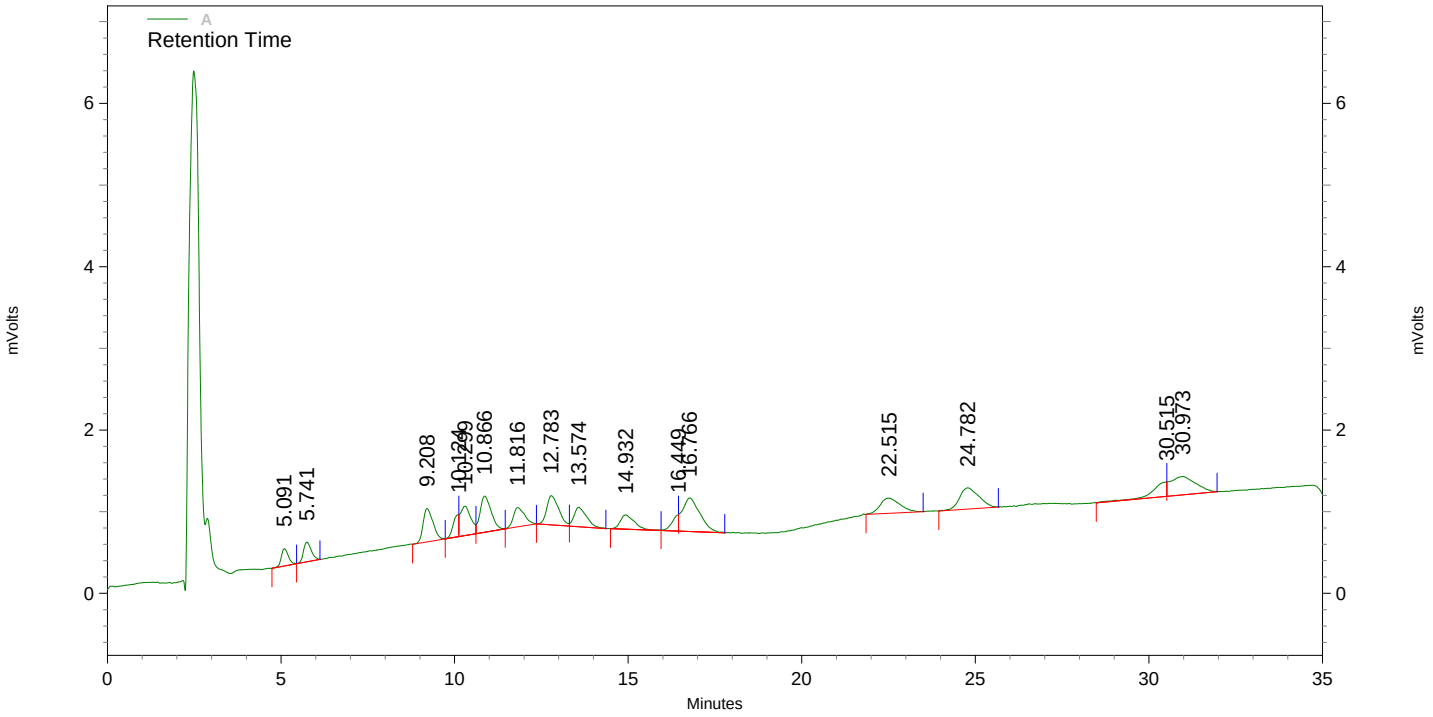
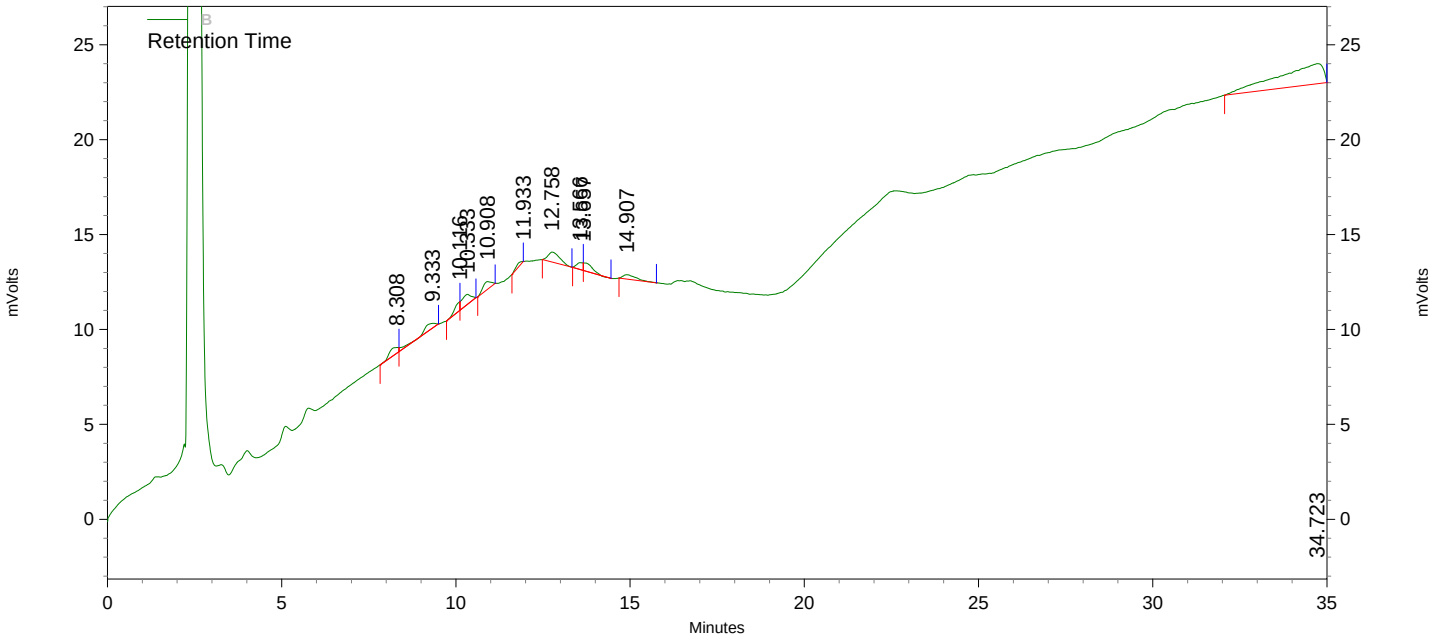
7/1/2016





8330 Pt 2 EXP 5818

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm	5.091	2988	**0.0485**
RDX-confirm	5.741	3778	**0.0506**
NB-confirm	9.208	8147	**0.0484**
12-DNB (SSTD)-confirm	10.124	3030	**11.3729**
4-AM-26-DNT-conf.	10.299	7579	**0.0467**
3,5-DNA-confirm	10.866	9947	**0.0483**
2-NT-confirm	11.816	5328	**0.0468**
2-AM-46-DNT-conf.	12.783	8627	**0.0479**
3-NT-confirm	13.574	5996	**0.0472**
4-NT-confirm	14.932	4983	**0.0476**
26-DNT-confirm	16.449	2508	**0.0437**
13-DNB-confirm	16.766	14476	**0.0511**
TETRYL-confirm	22.515	7409	**0.0502**
24-DNT-confirm	24.782	10141	**0.0488**
135-TNB-confirm	30.515	4902	**0.0529**
246-TNT-confirm	30.973	11433	**0.0439**

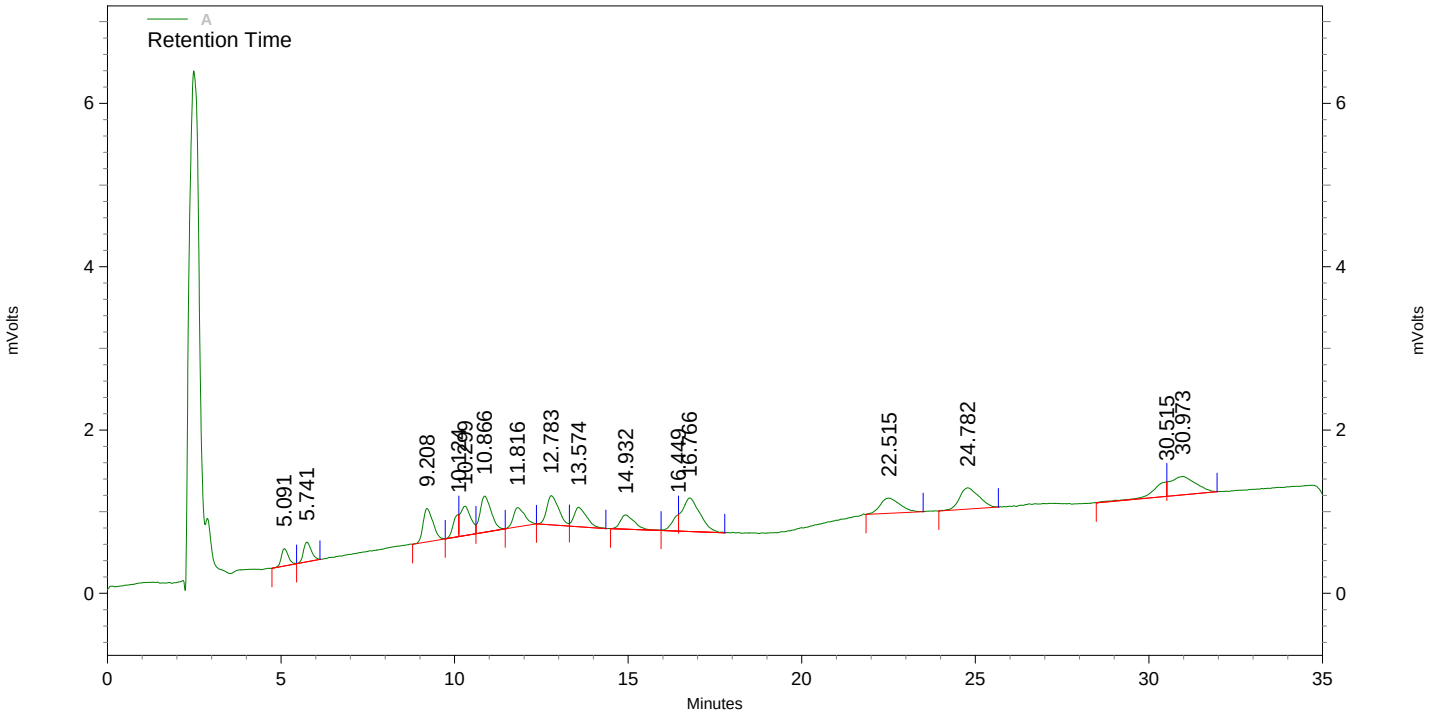
B Results

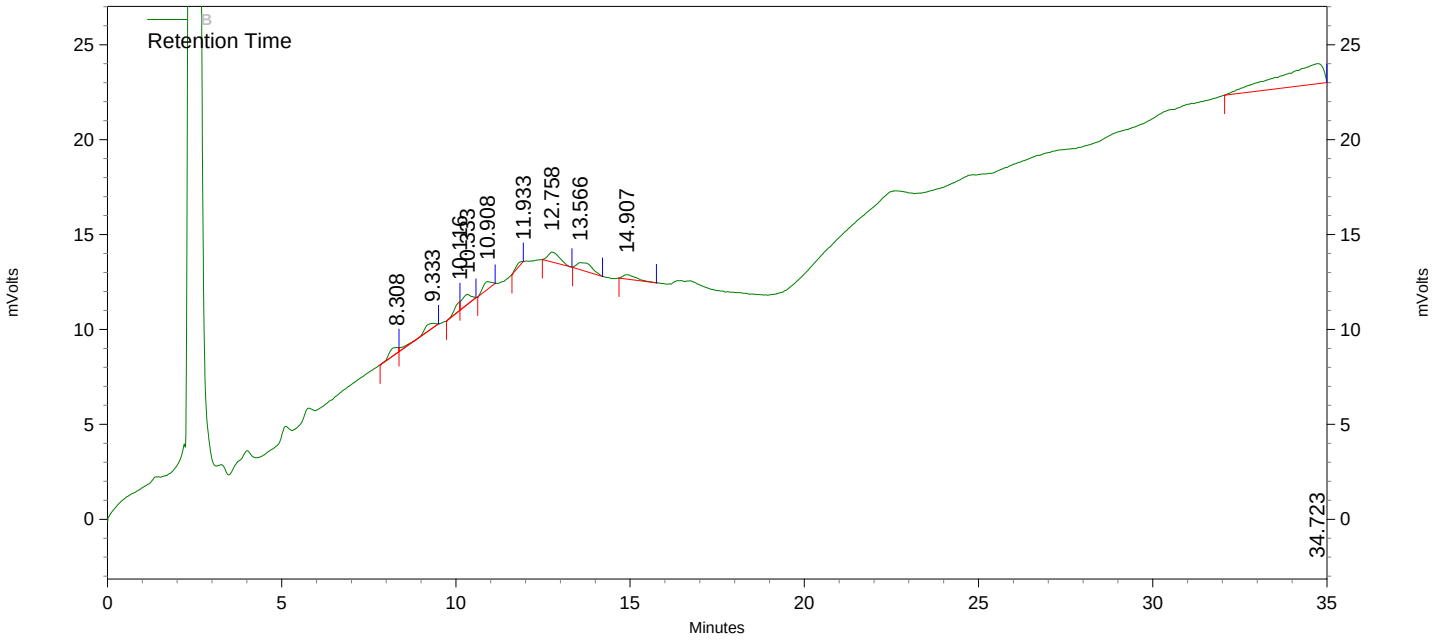
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm	8.308	6724	**0.0881**
PETN-confirm	13.657	7266	**0.0942**

Before Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\063016EXPic-confirm\003.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Sample ID: 8330 Pt 2 EXP 5818
Acquired: 06/30/2016 13:22:28
Data Summary: Reason #3 applies to data. RED 7/1/2016





8330 Pt 2 EXP 5818

A Results

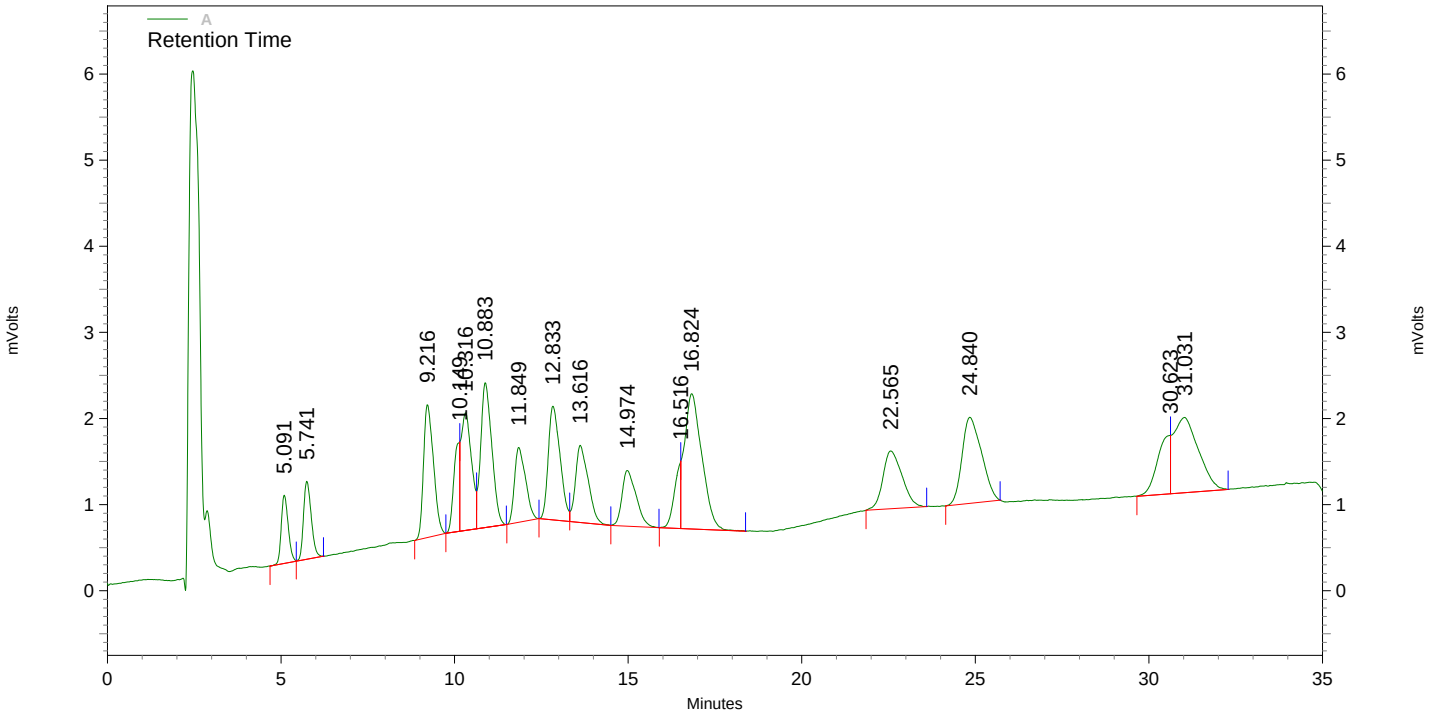
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm	5.091	2988	**0.0485**
RDX-confirm	5.741	3778	**0.0506**
NB-confirm	9.208	8147	**0.0484**
12-DNB (SSTD)-confirm	10.124	3030	**10.3457**
4-AM-26-DNT-conf.	10.299	7579	**0.0471**
3,5-DNA-confirm	10.866	9947	**0.0483**
2-NT-confirm	11.816	5328	**0.0468**
2-AM-46-DNT-conf.	12.783	8627	**0.0479**
3-NT-confirm	13.574	5996	**0.0472**
4-NT-confirm	14.932	4983	**0.0476**
26-DNT-confirm	16.449	2508	**0.0437**
13-DNB-confirm	16.766	14476	**0.0511**
TETRYL-confirm	22.515	7409	**0.0502**
24-DNT-confirm	24.782	10141	**0.0488**
135-TNB-confirm	30.515	4902	**0.0529**
246-TNT-confirm	30.973	11433	**0.0439**

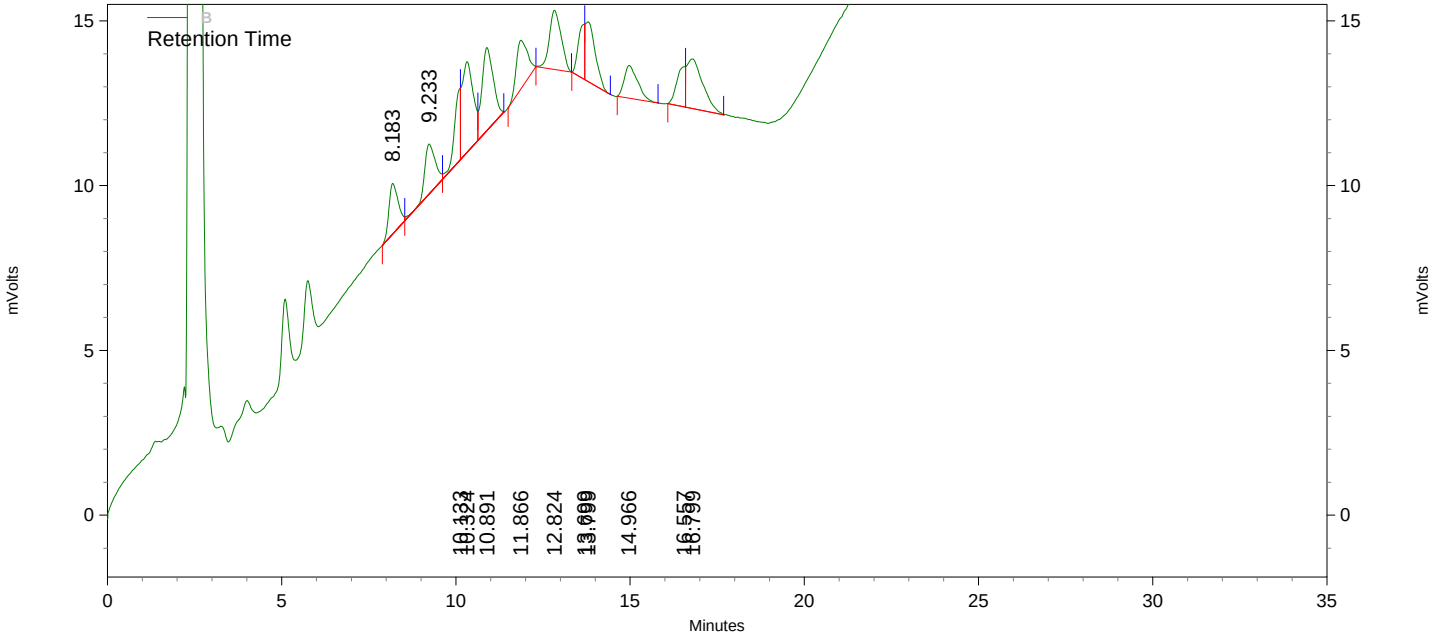
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm	8.308	6724	**0.0881**
PETN-confirm	13.566	12693	**0.1514**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\063016EXPic-confirm\004.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Sample ID: 8330 Pt 3 EXP 5819
Acquired: 06/30/2016 13:59:47
Data Summary: {Data Description}





8330 Pt 3 EXP 5819

A Results

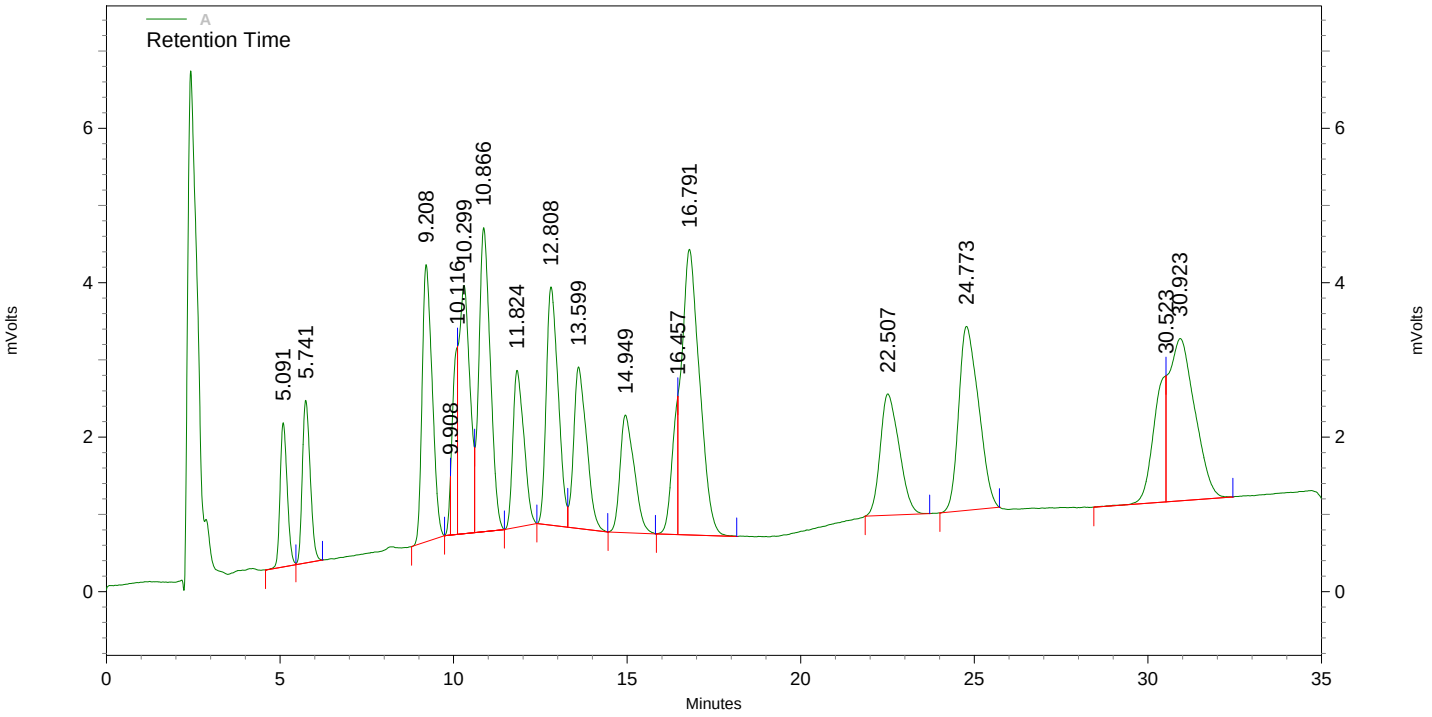
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm	5.091	11095	**0.2000 CAL**
RDX-confirm	5.741	14019	**0.2000 CAL**
NB-confirm	9.216	30678	**0.2000 CAL**
12-DNB (SSTD)-confirm	10.149	12047	**40.0000 CAL**
4-AM-26-DNT-conf.	10.316	28749	**0.2000 CAL**
3,5-DNA-confirm	10.883	37812	**0.2000 CAL**
2-NT-confirm	11.849	19167	**0.2000 CAL**
2-AM-46-DNT-conf.	12.833	31282	**0.2000 CAL**
3-NT-confirm	13.616	22852	**0.2000 CAL**
4-NT-confirm	14.974	18279	**0.2000 CAL**
26-DNT-confirm	16.516	9595	**0.2000 CAL**
13-DNB-confirm	16.824	54796	**0.2000 CAL**
TETRYL-confirm	22.565	25728	**0.2000 CAL**
24-DNT-confirm	24.840	38990	**0.2000 CAL**
135-TNB-confirm	30.623	17520	**0.2000 CAL**
246-TNT-confirm	31.031	43645	**0.2000 CAL**

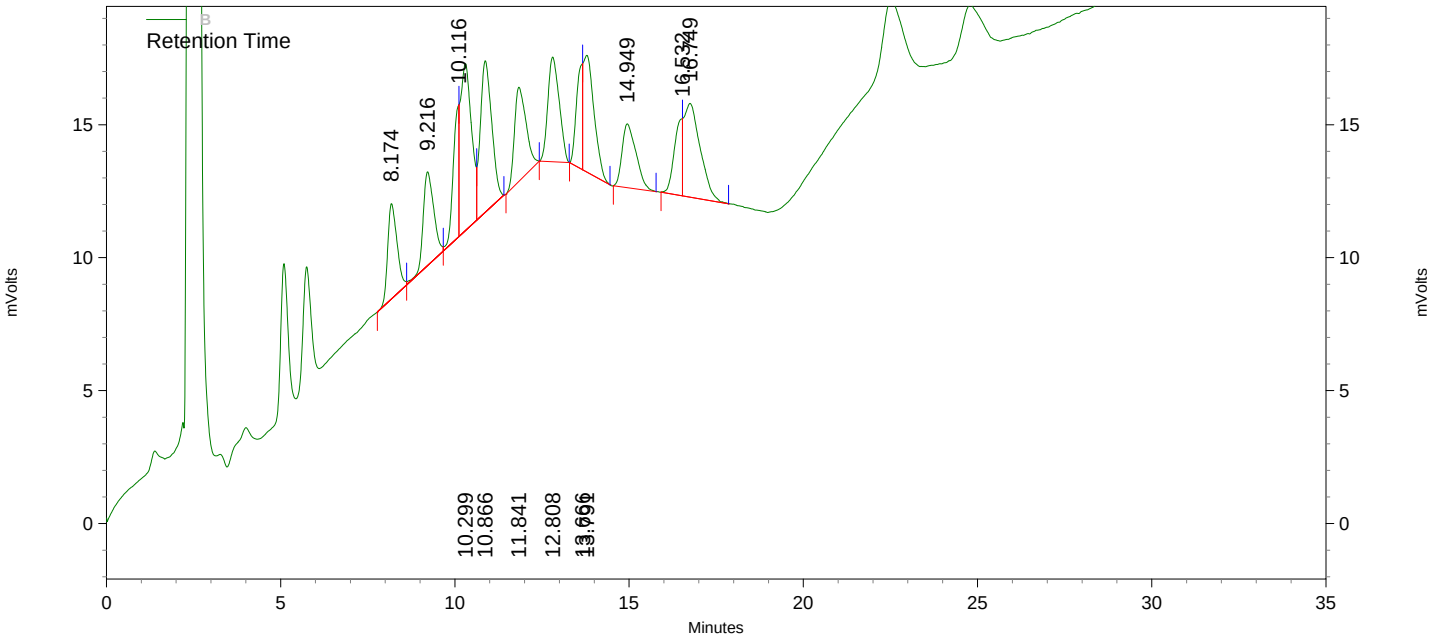
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm	8.183	27680	**0.4000 CAL**
PETN-confirm	13.799	36446	**0.4000 CAL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\063016EXPic-confirm\005.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Sample ID: 8330 Pt 4 EXP 5820
Acquired: 06/30/2016 14:37:05
Data Summary: {Data Description}





8330 Pt 4 EXP 5820

A Results

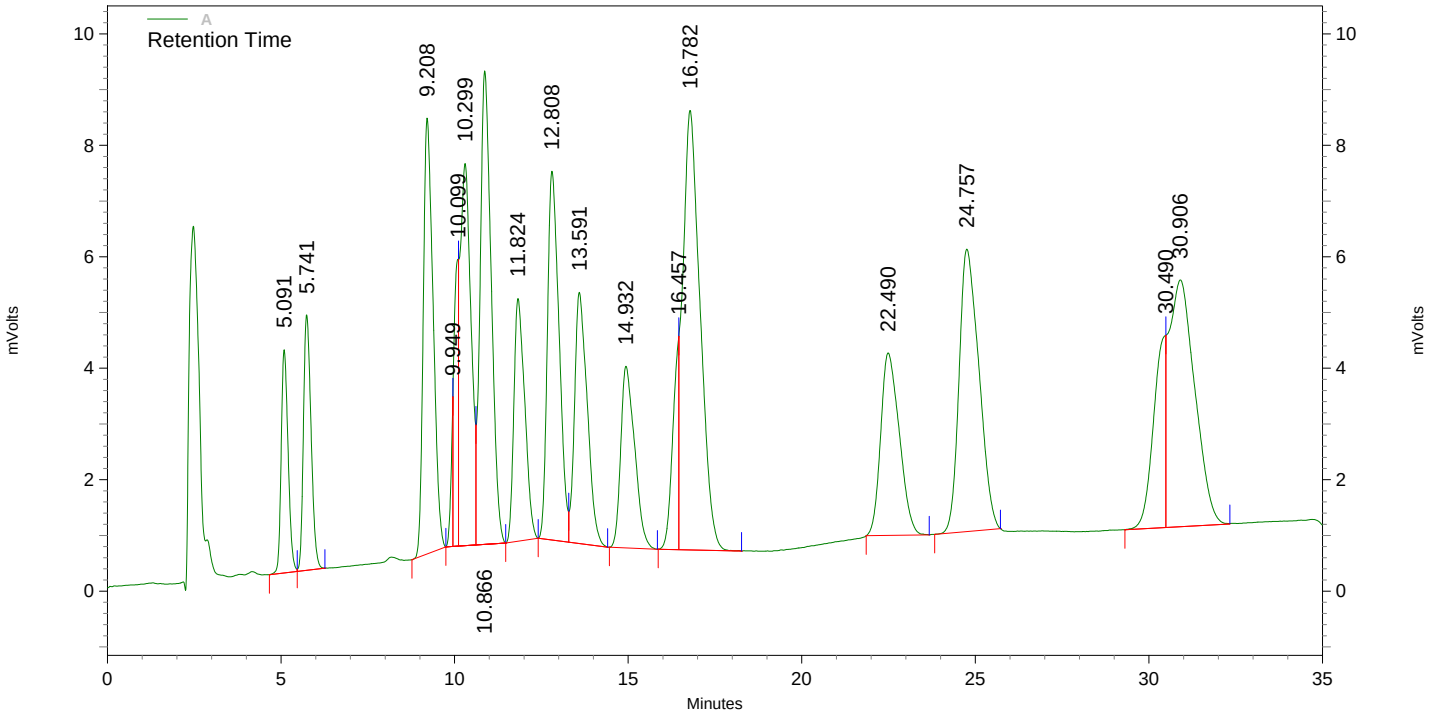
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm	5.091	26760	**0.5000 CAL**
RDX-confirm	5.741	33218	**0.5000 CAL**
NB-confirm	9.208	72165	**0.5000 CAL**
12-DNB (SSTD)-confirm	10.116	23321	**100.0000 CAL**
4-AM-26-DNT-conf.	10.299	70268	**0.5000 CAL**
3,5-DNA-confirm	10.866	90590	**0.5000 CAL**
2-NT-confirm	11.824	44852	**0.5000 CAL**
2-AM-46-DNT-conf.	12.808	73841	**0.5000 CAL**
3-NT-confirm	13.599	54195	**0.5000 CAL**
4-NT-confirm	14.949	43161	**0.5000 CAL**
26-DNT-confirm	16.457	20103	**0.5000 CAL**
13-DNB-confirm	16.791	131715	**0.5000 CAL**
TETRYL-confirm	22.507	59421	**0.5000 CAL**
24-DNT-confirm	24.773	94947	**0.5000 CAL**
135-TNB-confirm	30.523	40543	**0.5000 CAL**
246-TNT-confirm	30.923	107640	**0.5000 CAL**

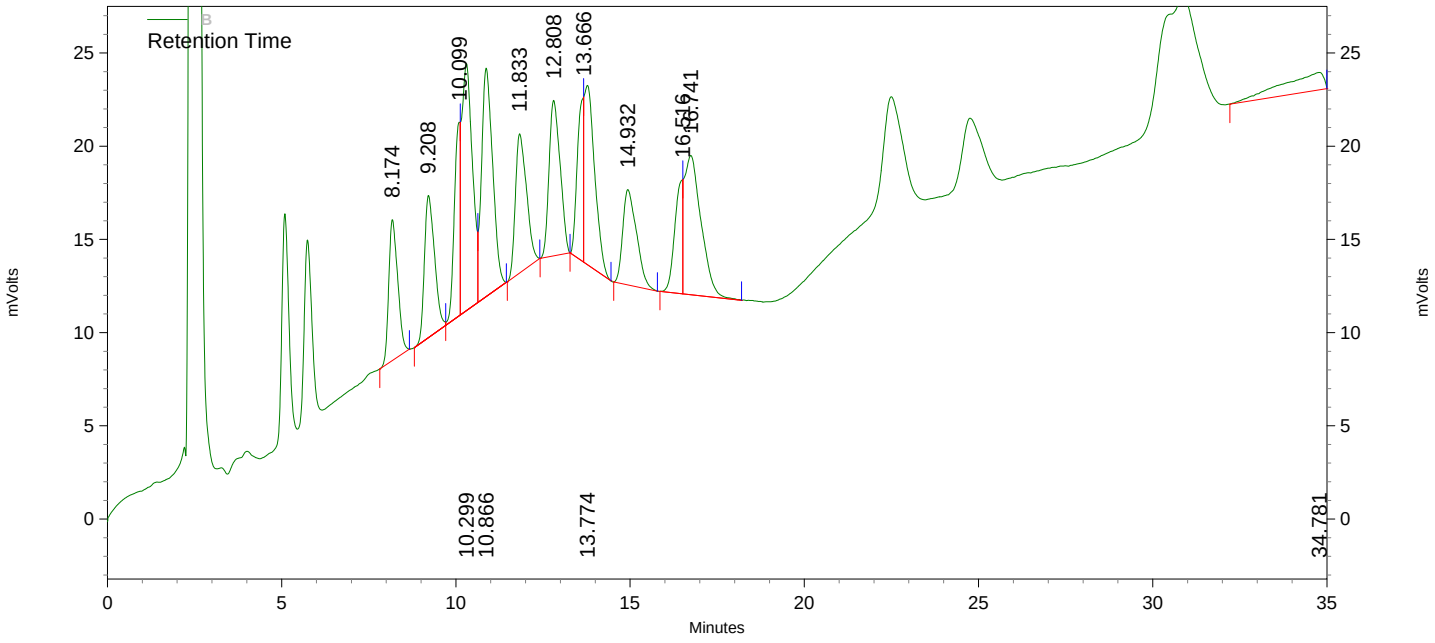
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm	8.174	66454	**1.0000 CAL**
PETN-confirm	13.791	95591	**1.0000 CAL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\063016EXPic-confirm\006.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Sample ID: 8330 Pt 5 EXP 5821
Acquired: 06/30/2016 15:14:23
Data Summary: {Data Description}





8330 Pt 5 EXP 5821

A Results

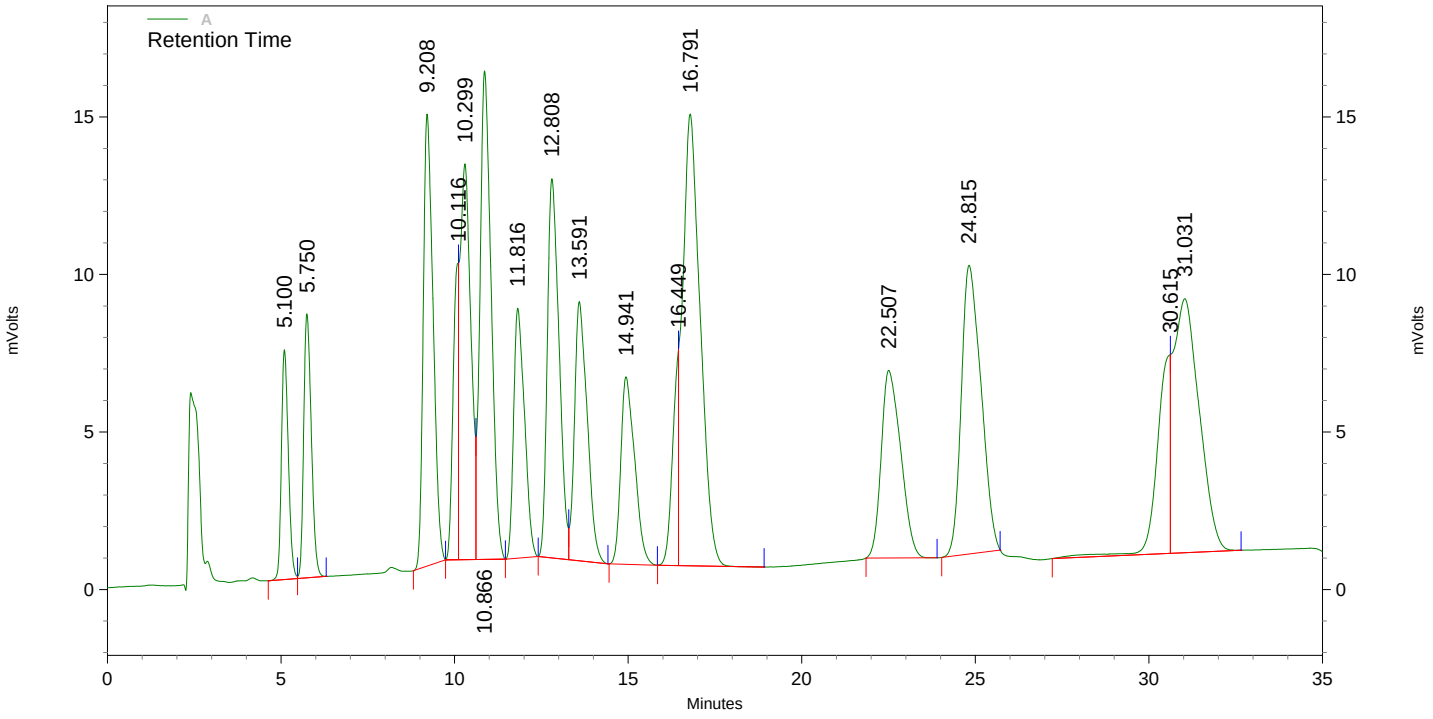
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm	5.091	55620	**1.0000 CAL**
RDX-confirm	5.741	69947	**1.0000 CAL**
NB-confirm	9.208	154308	**1.0000 CAL**
12-DNB (SSTD)-confirm	10.099	44490	**200.0000 CAL**
4-AM-26-DNT-conf.	10.299	149390	**1.0000 CAL**
3,5-DNA-confirm	10.866	190226	**1.0000 CAL**
2-NT-confirm	11.824	95126	**1.0000 CAL**
2-AM-46-DNT-conf.	12.808	155039	**1.0000 CAL**
3-NT-confirm	13.591	115012	**1.0000 CAL**
4-NT-confirm	14.932	90851	**1.0000 CAL**
26-DNT-confirm	16.457	44402	**1.0000 CAL**
13-DNB-confirm	16.782	275315	**1.0000 CAL**
TETRYL-confirm	22.490	122016	**1.0000 CAL**
24-DNT-confirm	24.757	201341	**1.0000 CAL**
135-TNB-confirm	30.490	83084	**1.0000 CAL**
246-TNT-confirm	30.906	228034	**1.0000 CAL**

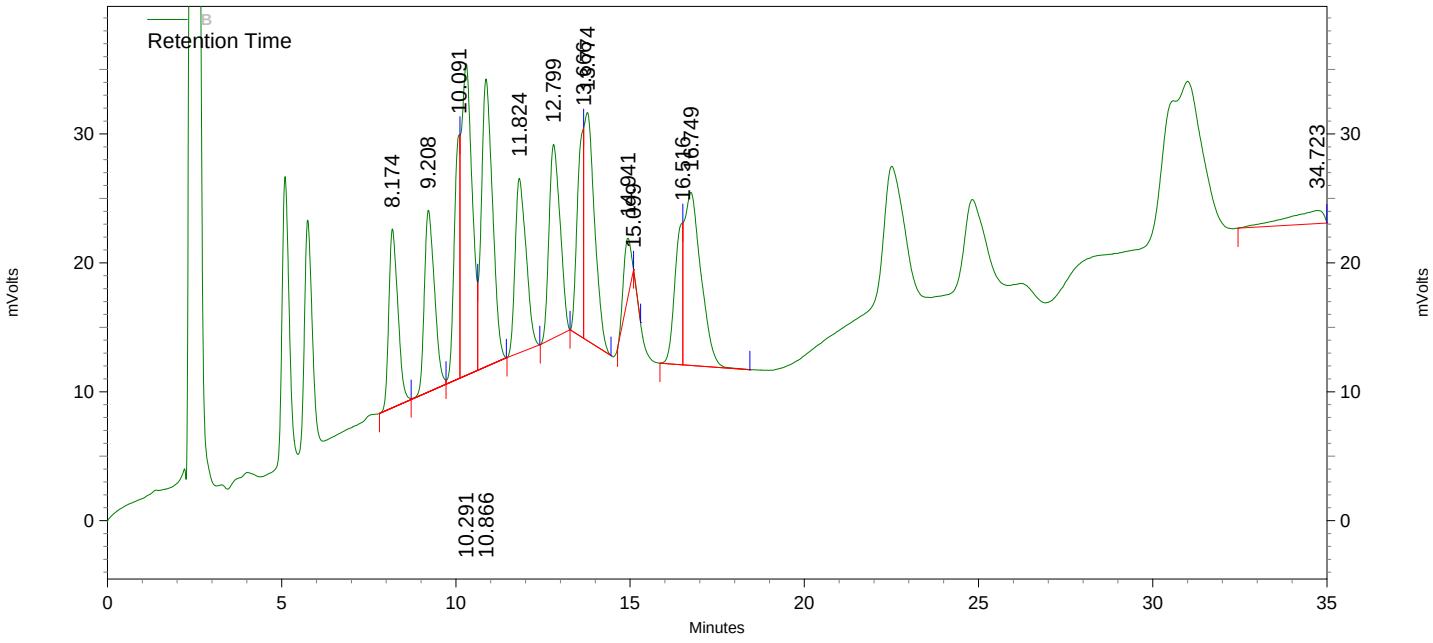
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm	8.174	135243	**2.0000 CAL**
PETN-confirm	13.774	203980	**2.0000 CAL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\063016EXPic-confirm\007.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Sample ID: 8330 Pt 6 EXP 5822
Acquired: 06/30/2016 15:51:41
Data Summary: {Data Description}





8330 Pt 6 EXP 5822

A Results

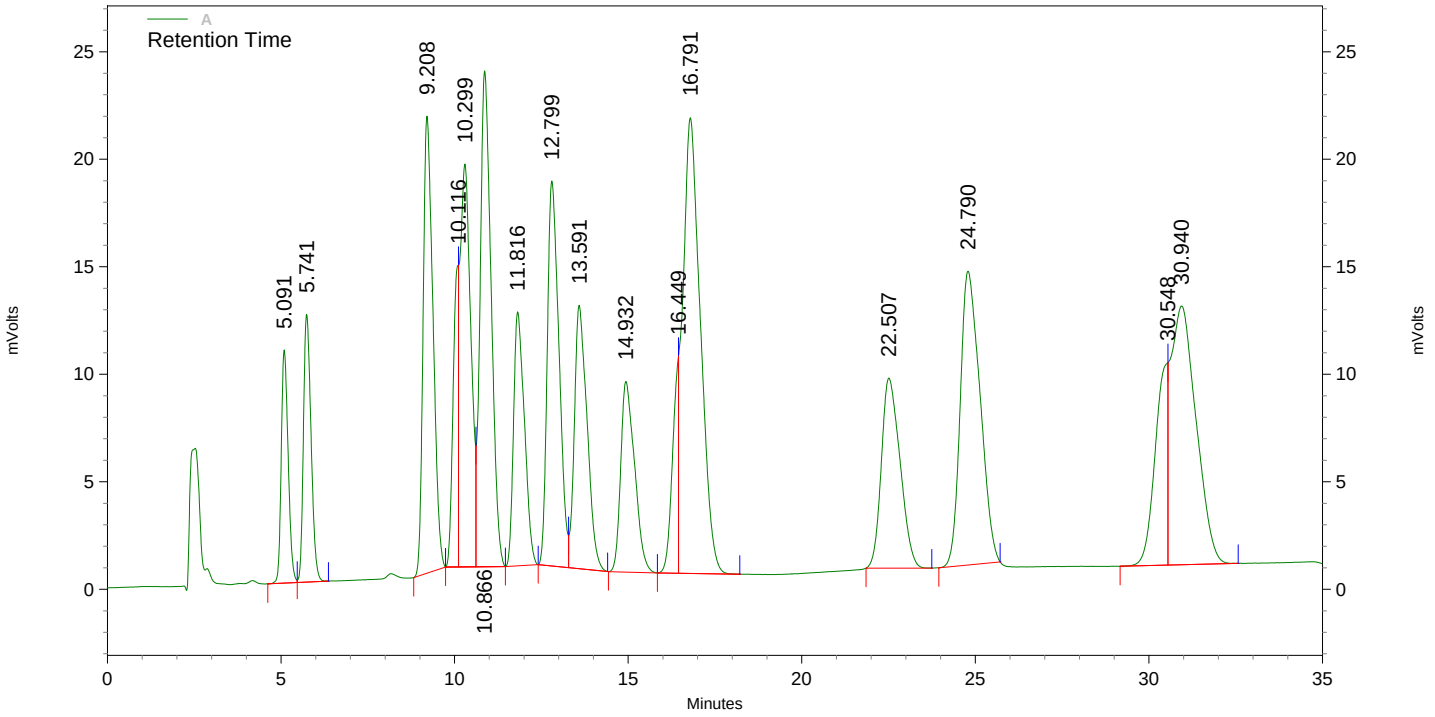
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm	5.100	101703	**2.0000 CAL**
RDX-confirm	5.750	127864	**2.0000 CAL**
NB-confirm	9.208	282377	**2.0000 CAL**
12-DNB (SSTD)-confirm	10.116	99756	**400.0000 CAL**
4-AM-26-DNT-conf.	10.299	271737	**2.0000 CAL**
3,5-DNA-confirm	10.866	346082	**2.0000 CAL**
2-NT-confirm	11.816	173272	**2.0000 CAL**
2-AM-46-DNT-conf.	12.808	283395	**2.0000 CAL**
3-NT-confirm	13.591	210116	**2.0000 CAL**
4-NT-confirm	14.941	166114	**2.0000 CAL**
26-DNT-confirm	16.449	77536	**2.0000 CAL**
13-DNB-confirm	16.791	506719	**2.0000 CAL**
TETRYL-confirm	22.507	232863	**2.0000 CAL**
24-DNT-confirm	24.815	361029	**2.0000 CAL**
135-TNB-confirm	30.615	161643	**2.0000 CAL**
246-TNT-confirm	31.031	416521	**2.0000 CAL**

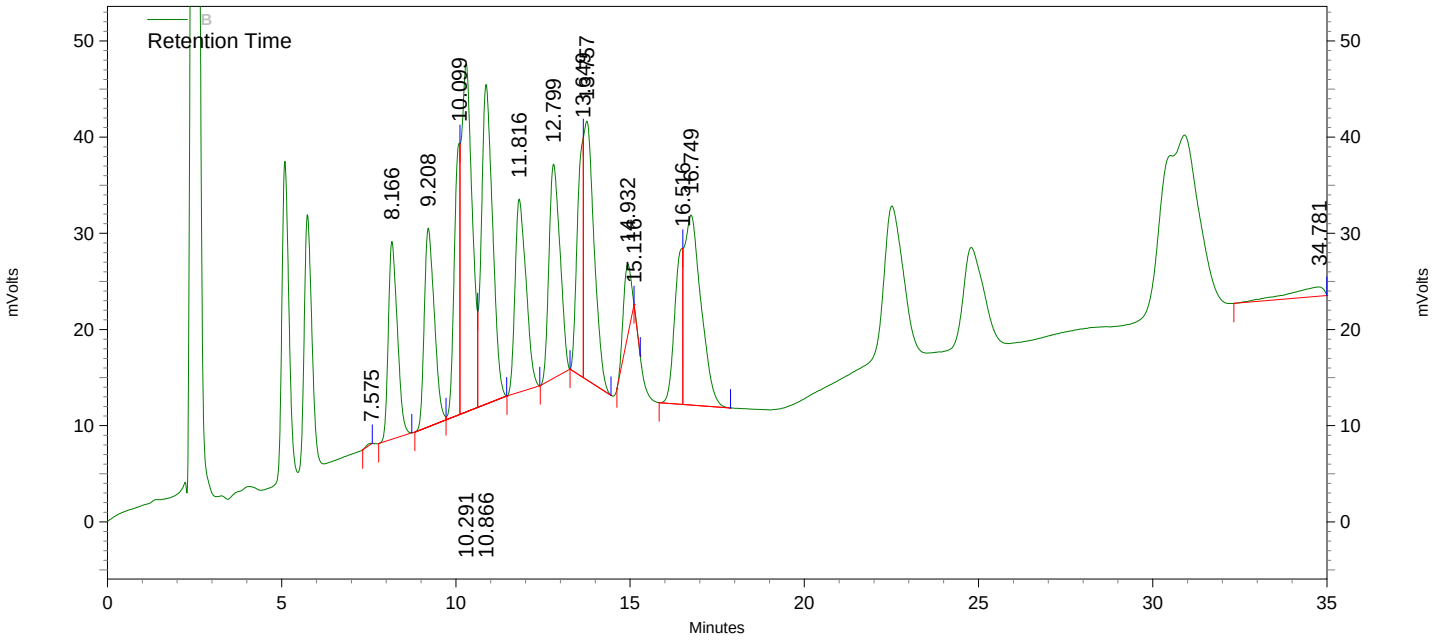
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm	8.174	251420	**4.0000 CAL**
PETN-confirm	13.774	371426	**4.0000 CAL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\063016EXPic-confirm\008.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Sample ID: 8330 Pt 7 EXP 5823
Acquired: 06/30/2016 16:28:59
Data Summary: {Data Description}





8330 Pt 7 EXP 5823

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm	5.091	150563	**3.0000 CAL**
RDX-confirm	5.741	189740	**3.0000 CAL**
NB-confirm	9.208	419948	**3.0000 CAL**
12-DNB (SSTD)-confirm	10.116	147895	**600.0000 CAL**
4-AM-26-DNT-conf.	10.299	403824	**3.0000 CAL**
3,5-DNA-confirm	10.866	513387	**3.0000 CAL**
2-NT-confirm	11.816	257391	**3.0000 CAL**
2-AM-46-DNT-conf.	12.799	419983	**3.0000 CAL**
3-NT-confirm	13.591	312694	**3.0000 CAL**
4-NT-confirm	14.932	247020	**3.0000 CAL**
26-DNT-confirm	16.449	115800	**3.0000 CAL**
13-DNB-confirm	16.791	750332	**3.0000 CAL**
TETRYL-confirm	22.507	330492	**3.0000 CAL**
24-DNT-confirm	24.790	541841	**3.0000 CAL**
135-TNB-confirm	30.548	233473	**3.0000 CAL**
246-TNT-confirm	30.940	607482	**3.0000 CAL**

B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm	8.166	371153	**6.0000 CAL**
PETN-confirm	13.757	555905	**6.0000 CAL**

QC Check Standard Report

Sequence : C:\Instarch\HPLC 2\Sequences\8330A_B\063016EXPIC-CONFIRM.seq
User : red
Printed : 07/01/2016 09:55:47

File	Sample ID	Acquired
C:\Instarch\HPLC 2\Data\063016EXPic-confirm\009.dat	8330 ICV EXP 5824	07/01/2016 09:55:38

A

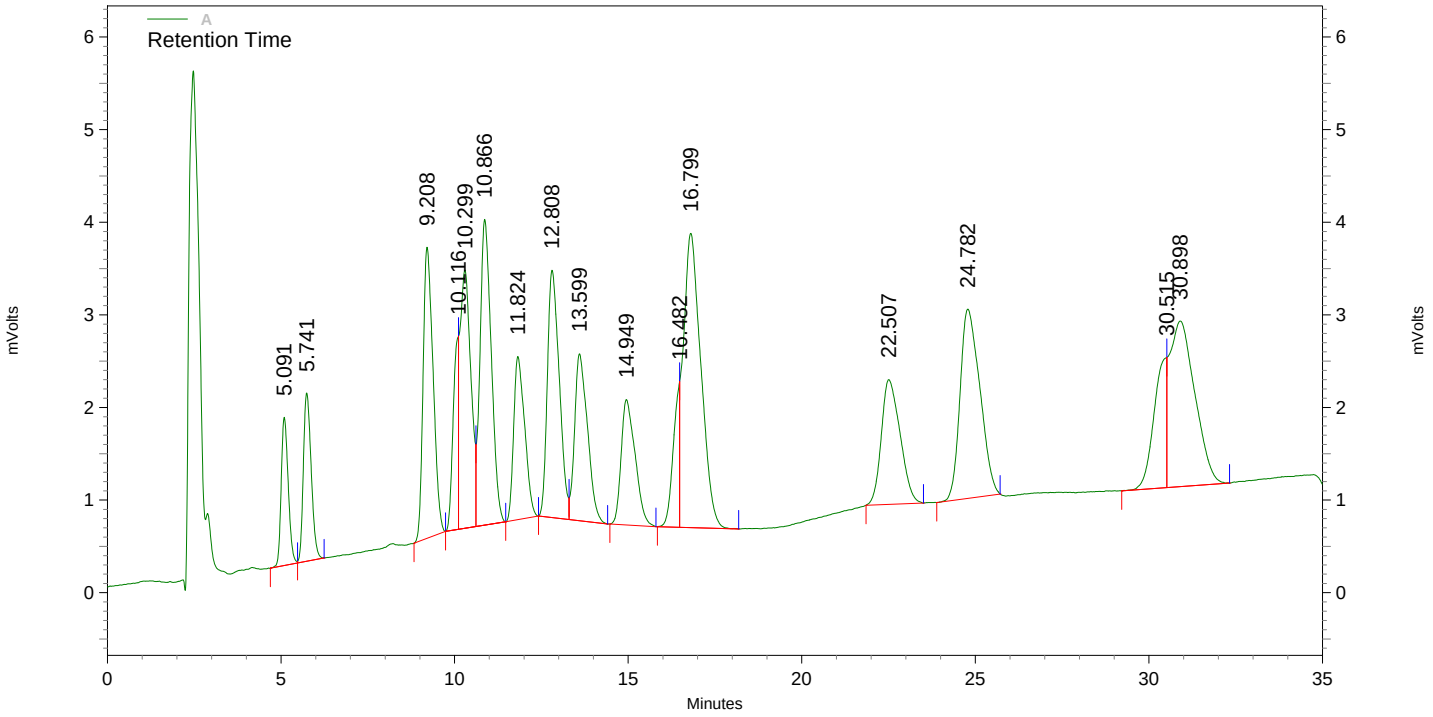
Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
HMX-confirm	0.500	0.432	13.616	20.000	Passed
RDX-confirm	0.500	0.434	13.169	20.000	Passed
NB-confirm	0.500	0.435	13.085	20.000	Passed
12-DNB (SSTD)-confirm	100.000	82.556	17.444	20.000	Passed
4-AM-26-DNT-conf.	0.500	0.435	12.986	20.000	Passed
3,5-DNA-confirm	0.500	0.422	15.675	20.000	Passed
2-NT-confirm	0.500	0.433	13.439	20.000	Passed
2-AM-46-DNT-conf.	0.500	0.436	12.760	20.000	Passed
3-NT-confirm	0.500	0.431	13.770	20.000	Passed
4-NT-confirm	0.500	0.443	11.449	20.000	Passed
26-DNT-confirm	0.500	0.472	5.540	20.000	Passed
13-DNB-confirm	0.500	0.431	13.866	20.000	Passed
TETRYL-confirm	0.500	0.430	14.016	20.000	Passed
24-DNT-confirm	0.500	0.436	12.838	20.000	Passed
135-TNB-confirm	0.500	0.433	13.364	20.000	Passed
246-TNT-confirm	0.500	0.424	15.254	20.000	Passed

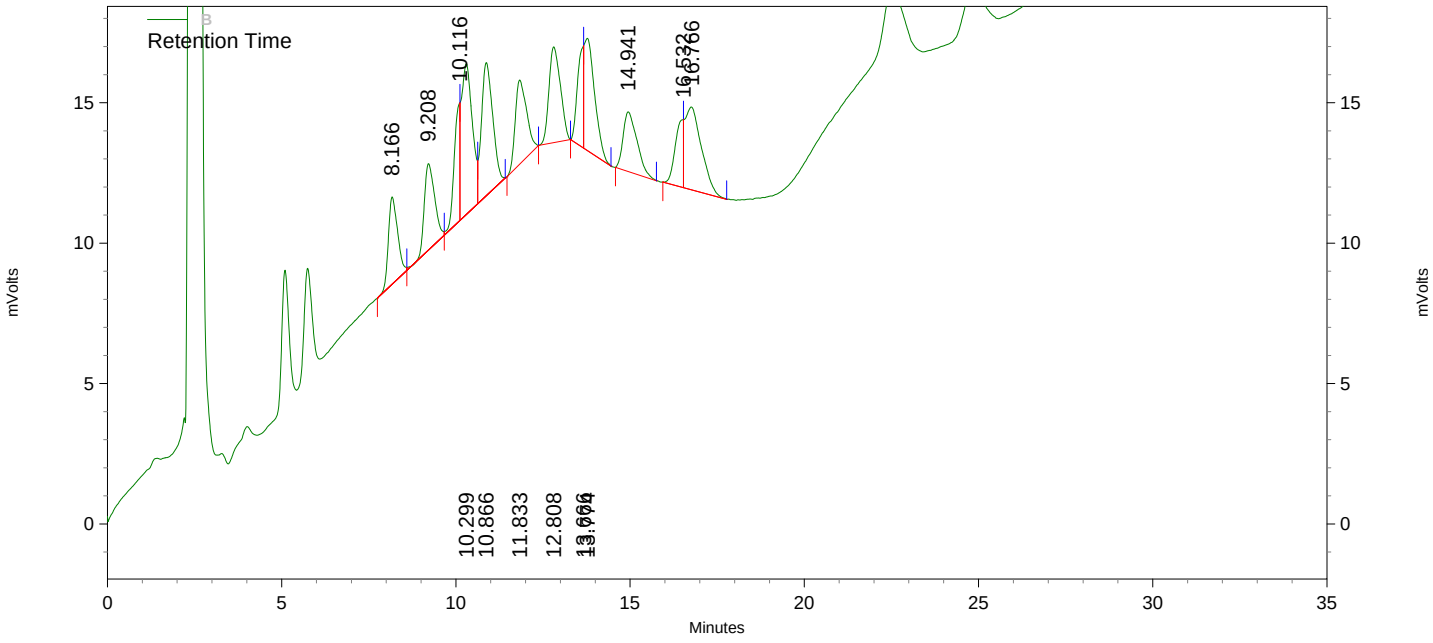
B

Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
NG-confirm	1.000	0.887	11.293	20.000	Passed
PETN-confirm	1.000	0.909	9.104	20.000	Passed

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\063016EXPic-confirm\009.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\063016expic-confirm.met
Sample ID: 8330 ICV EXP 5824
Acquired: 06/30/2016 17:06:21
Data Summary: {Data Description}





8330 ICV EXP 5824

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm	5.091	22595	**0.4319**
RDX-confirm	5.741	28482	**0.4342**
NB-confirm	9.208	63003	**0.4346**
12-DNB (SSTD)-confirm	10.116	21995	**82.5564**
4-AM-26-DNT-conf.	10.299	60706	**0.4351**
3,5-DNA-confirm	10.866	75044	**0.4216**
2-NT-confirm	11.824	38892	**0.4328**
2-AM-46-DNT-conf.	12.808	63852	**0.4362**
3-NT-confirm	13.599	46610	**0.4312**
4-NT-confirm	14.949	37982	**0.4428**
26-DNT-confirm	16.482	19299	**0.4723**
13-DNB-confirm	16.799	111317	**0.4307**
TETRYL-confirm	22.507	50513	**0.4299**
24-DNT-confirm	24.782	81177	**0.4358**
135-TNB-confirm	30.515	35121	**0.4332**
246-TNT-confirm	30.898	90152	**0.4237**

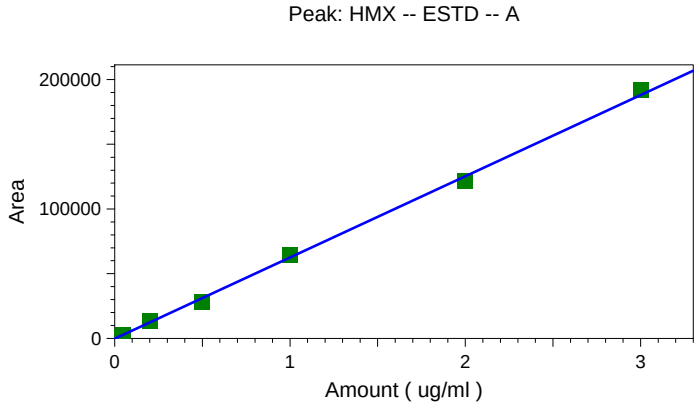
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm	8.166	57073	**0.8871**
PETN-confirm	13.774	84451	**0.9090**

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:03
User: red
Instrument: HPLC 2 (Offline)

HMX (A)
Average RF: 61343.1 RF StDev: 4488.63 RF %RSD: 7.31725
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 62726.6x - 140.255
Goodness of fit (r^2): 0.998461



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	1152	2854	13673	28447	64754
RF	57600	57080	68365	56894	64754
Last Area					
Residual	-0.000601381	0.00226501	-0.0202135	0.0442566	-0.0345565
Rep StDev					
Rep %RSD					
Rep 1 Area	1152	2854	13673	28447	64754
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5829	8330 Pt 2 EXP 5830	8330 Pt 3 EXP 5831	8330 Pt 4 EXP 5832	8330 Pt 5 EXP 5833
Rep 1 Calib. Time	Jul 06, 2016 10:30:13	Jul 06, 2016 10:28:59	Jul 06, 2016 10:55:48	Jul 06, 2016 11:01:17	Jul 06, 2016 12:24:13

Level 6	Level 7

Calibration Report

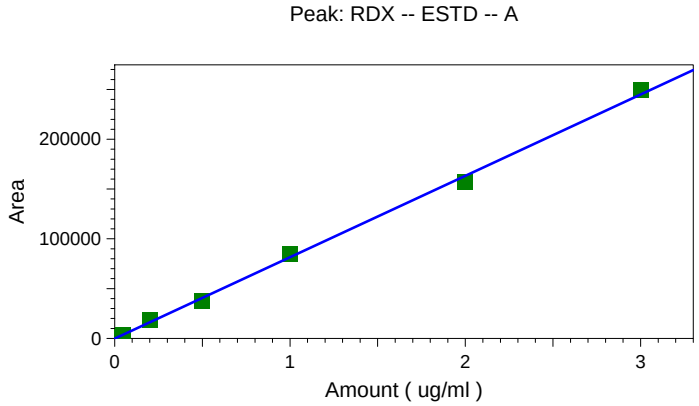
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:03
User: red
Instrument: HPLC 2 (Offline)

Amount	2	3
Area	121268	192225
RF	60634	64075
Last Area		
Residual	0.0644867	-0.0667232
Rep StDev		
Rep %RSD		
Rep 1 Area	121268	192225
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5834	8330 Pt 7 EXP 5835
Rep 1 Calib. Time	Jul 06, 2016 12:24:23	Jul 06, 2016 12:24:33

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:06
User: red
Instrument: HPLC 2 (Offline)

RDX (A)
Average RF: 80644.0 RF StDev: 5940.02 RF %RSD: 7.36573
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 81697.5x - 119.502
Goodness of fit (r^2): 0.998498



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	1511	3776	18230	37905	84527
RF	75550	75520	91150	75810	84527
Last Area					
Residual	4.22132e-005	0.002318	-0.0246029	0.0345698	-0.0360962
Rep StDev					
Rep %RSD					
Rep 1 Area	1511	3776	18230	37905	84527
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5829	8330 Pt 2 EXP 5830	8330 Pt 3 EXP 5831	8330 Pt 4 EXP 5832	8330 Pt 5 EXP 5833
Rep 1 Calib. Time	Jul 06, 2016 10:30:13	Jul 06, 2016 10:28:59	Jul 06, 2016 10:55:48	Jul 06, 2016 11:01:17	Jul 06, 2016 12:24:13

Level 6	Level 7

Calibration Report

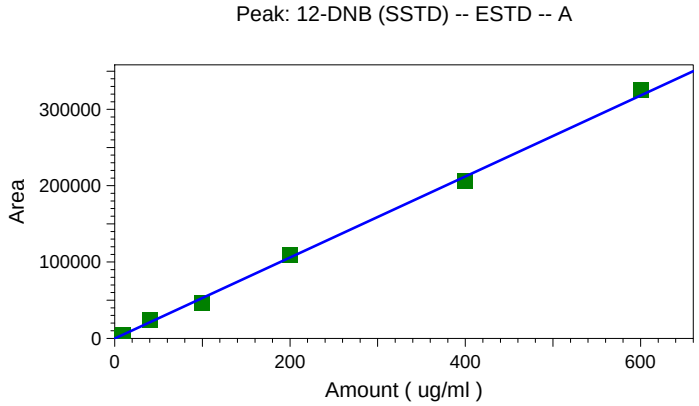
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:06
User: red
Instrument: HPLC 2 (Offline)

Amount	2	3
Area	157378	249787
RF	78689	83262.3333333333
Last Area Residual	0.0721878	-0.0589235
Rep StDev		
Rep %RSD		
Rep 1 Area	157378	249787
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5834	8330 Pt 7 EXP 5835
Rep 1 Calib. Time	Jul 06, 2016 12:24:23	Jul 06, 2016 12:24:33

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:11
User: red
Instrument: HPLC 2 (Offline)

12-DNB (SSTD) (A)
Average RF: 529.099 RF StDev: 41.2802 RF %RSD: 7.80197
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 530.328x - 71.9350
Goodness of fit (r^2): 0.998268



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	4	10	40	100	200
Area	2185	4899	23674	46869	109864
RF	546.25	489.9	591.85	468.69	549.32
Last Area Residual	-0.255736	0.626674	-4.77596	11.4869	-7.29809
Rep StDev					
Rep %RSD					
Rep 1 Area	2185	4899	23674	46869	109864
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5829	8330 Pt 2 EXP 5830	8330 Pt 3 EXP 5831	8330 Pt 4 EXP 5832	8330 Pt 5 EXP 5833
Rep 1 Calib. Time	Jul 06, 2016 10:30:13	Jul 06, 2016 10:28:59	Jul 06, 2016 10:55:48	Jul 06, 2016 11:01:17	Jul 06, 2016 12:24:13

Level 6	Level 7

Calibration Report

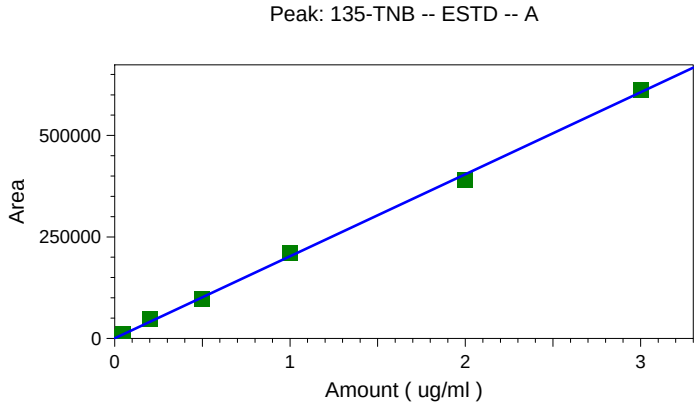
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:11
User: red
Instrument: HPLC 2 (Offline)

Amount	400	600
Area	205897	325766
RF	514.7425	542.943333333333
Last Area		
Residual	11.6196	-14.4086
Rep StDev		
Rep %RSD		
Rep 1 Area	205897	325766
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5834	8330 Pt 7 EXP 5835
Rep 1 Calib. Time	Jul 06, 2016 12:24:23	Jul 06, 2016 12:24:33

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:15
User: red
Instrument: HPLC 2 (Offline)

135-TNB (A)
Average RF: 207131. RF StDev: 13247.3 RF %RSD: 6.39560
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 201982.x + 397.225
Goodness of fit (r^2): 0.998795



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	4104	10264	46839	97651	210861
RF	205200	205280	234195	195302	210861
Last Area Residual	0.00164799	0.00115022	-0.0299303	0.0185027	-0.041993
Rep StDev					
Rep %RSD					
Rep 1 Area	4104	10264	46839	97651	210861
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5829	8330 Pt 2 EXP 5830	8330 Pt 3 EXP 5831	8330 Pt 4 EXP 5832	8330 Pt 5 EXP 5833
Rep 1 Calib. Time	Jul 06, 2016 10:30:13	Jul 06, 2016 10:28:59	Jul 06, 2016 10:55:48	Jul 06, 2016 11:01:17	Jul 06, 2016 12:24:13

Level 6	Level 7

Calibration Report

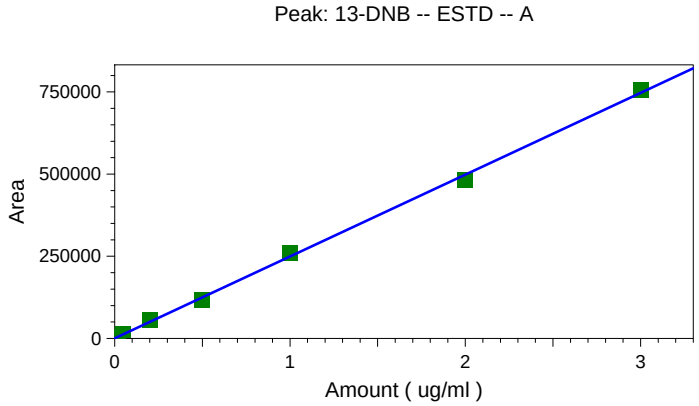
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:15
User: red
Instrument: HPLC 2 (Offline)

Amount	2	3
Area	389675	612721
RF	194837.5	204240.333333333
Last Area		
Residual	0.0727101	-0.0315767
Rep StDev		
Rep %RSD		
Rep 1 Area	389675	612721
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5834	8330 Pt 7 EXP 5835
Rep 1 Calib. Time	Jul 06, 2016 12:24:23	Jul 06, 2016 12:24:33

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:18
User: red
Instrument: HPLC 2 (Offline)

13-DNB (A)
Average RF: 252600. RF StDev: 15621.0 RF %RSD: 6.18408
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 248951.x + 254.057
Goodness of fit (r^2): 0.998814



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	5093	12379	56107	115479	260620
RF	254650	247580	280535	230958	260620
Last Area Residual	0.000562664	0.00129586	-0.0243532	0.0371581	-0.0458524
Rep StDev					
Rep %RSD					
Rep 1 Area	5093	12379	56107	115479	260620
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5829	8330 Pt 2 EXP 5830	8330 Pt 3 EXP 5831	8330 Pt 4 EXP 5832	8330 Pt 5 EXP 5833
Rep 1 Calib. Time	Jul 06, 2016 10:30:13	Jul 06, 2016 10:28:59	Jul 06, 2016 10:55:48	Jul 06, 2016 11:01:17	Jul 06, 2016 12:24:13

Level 6	Level 7

Calibration Report

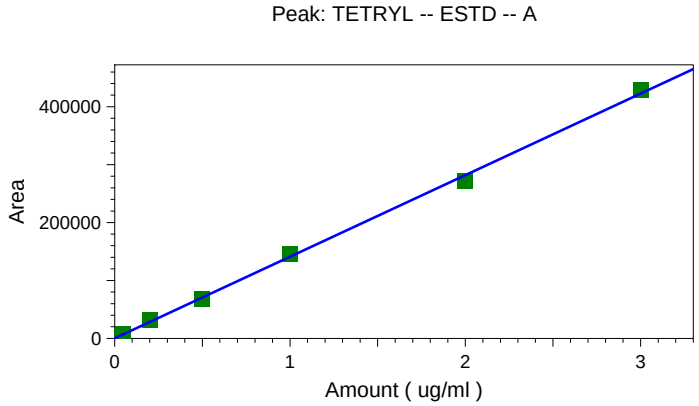
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:18
User: red
Instrument: HPLC 2 (Offline)

Amount	2	3
Area	483152	756846
RF	241576	252282
Last Area		
Residual	0.0602688	-0.0391205
Rep StDev		
Rep %RSD		
Rep 1 Area	483152	756846
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5834	8330 Pt 7 EXP 5835
Rep 1 Calib. Time	Jul 06, 2016 12:24:23	Jul 06, 2016 12:24:33

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:23
User: red
Instrument: HPLC 2 (Offline)

TETRYL (A)
Average RF: 144444. RF StDev: 8803.70 RF %RSD: 6.09488
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 140796.x + 290.398
Goodness of fit (r^2): 0.998728



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	2960	7143	32201	67252	145714
RF	148000	142860	161005	134504	145714
Last Area Residual	0.00103925	0.00132963	-0.0266439	0.0244076	-0.0328661
Rep StDev					
Rep %RSD					
Rep 1 Area	2960	7143	32201	67252	145714
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5829	8330 Pt 2 EXP 5830	8330 Pt 3 EXP 5831	8330 Pt 4 EXP 5832	8330 Pt 5 EXP 5833
Rep 1 Calib. Time	Jul 06, 2016 10:30:13	Jul 06, 2016 10:28:59	Jul 06, 2016 10:55:48	Jul 06, 2016 11:01:17	Jul 06, 2016 12:24:13

Level 6	Level 7

Calibration Report

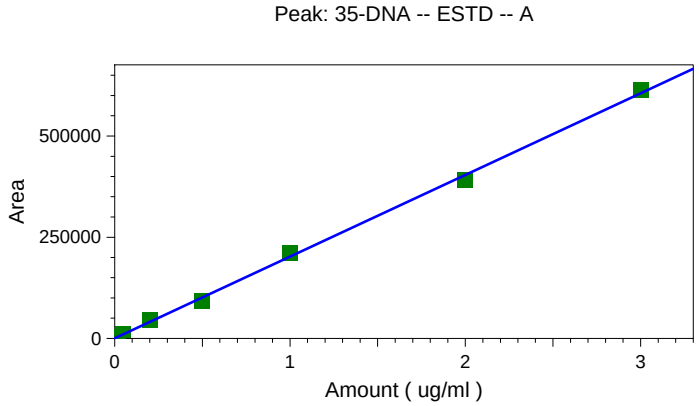
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:23
User: red
Instrument: HPLC 2 (Offline)

Amount	2	3
Area	271737	429474
RF	135868.5	143158
Last Area		
Residual	0.07206	-0.0482616
Rep StDev		
Rep %RSD		
Rep 1 Area	271737	429474
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5834	8330 Pt 7 EXP 5835
Rep 1 Calib. Time	Jul 06, 2016 12:24:23	Jul 06, 2016 12:24:33

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:26
User: red
Instrument: HPLC 2 (Offline)

35-DNA (A)
Average RF: 205004. RF StDev: 12779.2 RF %RSD: 6.23363
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 201739.x + 234.343
Goodness of fit (r^2): 0.998791



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	4233	9973	45232	93257	210586
RF	211650	199460	226160	186514	210586
Last Area Residual	0.000179085	0.00172652	-0.0230486	0.0388966	-0.0426908
Rep StDev					
Rep %RSD					
Rep 1 Area	4233	9973	45232	93257	210586
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5829	8330 Pt 2 EXP 5830	8330 Pt 3 EXP 5831	8330 Pt 4 EXP 5832	8330 Pt 5 EXP 5833
Rep 1 Calib. Time	Jul 06, 2016 10:30:13	Jul 06, 2016 10:28:59	Jul 06, 2016 10:55:48	Jul 06, 2016 11:01:17	Jul 06, 2016 12:24:13

Level 6	Level 7

Calibration Report

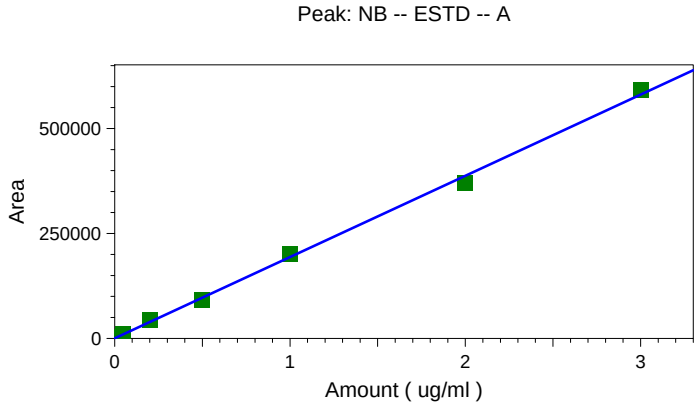
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:26
User: red
Instrument: HPLC 2 (Offline)

Amount	2	3
Area	391646	614496
RF	195823	204832
Last Area		
Residual	0.0598141	-0.0448296
Rep StDev		
Rep %RSD		
Rep 1 Area	391646	614496
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5834	8330 Pt 7 EXP 5835
Rep 1 Calib. Time	Jul 06, 2016 12:24:23	Jul 06, 2016 12:24:33

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:31
User: red
Instrument: HPLC 2 (Offline)

NB (A)
Average RF: 196230. RF StDev: 11553.4 RF %RSD: 5.88770
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 193555.x + 187.046
Goodness of fit (r^2): 0.998279



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	3867	9746	43620	91504	201046
RF	193350	194920	218100	183008	201046
Last Area Residual	0.000987571	0.000613806	-0.0243957	0.0282123	-0.0377348
Rep StDev					
Rep %RSD					
Rep 1 Area	3867	9746	43620	91504	201046
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5829	8330 Pt 2 EXP 5830	8330 Pt 3 EXP 5831	8330 Pt 4 EXP 5832	8330 Pt 5 EXP 5833
Rep 1 Calib. Time	Jul 06, 2016 10:30:13	Jul 06, 2016 10:28:59	Jul 06, 2016 10:55:48	Jul 06, 2016 11:01:17	Jul 06, 2016 12:24:13

Level 6	Level 7

Calibration Report

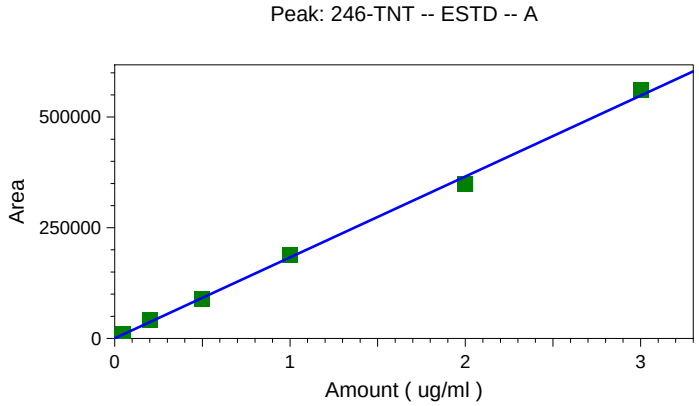
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:31
User: red
Instrument: HPLC 2 (Offline)

Amount	2	3
Area	371222	592720
RF	185611	197573.333333333
Last Area		
Residual	0.0830535	-0.0613126
Rep StDev		
Rep %RSD		
Rep 1 Area	371222	592720
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5834	8330 Pt 7 EXP 5835
Rep 1 Calib. Time	Jul 06, 2016 12:24:23	Jul 06, 2016 12:24:33

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:36
User: red
Instrument: HPLC 2 (Offline)

246-TNT (A)
Average RF: 186027. RF StDev: 11934.0 RF %RSD: 6.41519
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 182735.x + 234.156
Goodness of fit (r^2): 0.997894



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	3575	9400	41954	88376	187582
RF	178750	188000	209770	176752	187582
Last Area Residual	0.00171755	-0.000159209	-0.0283079	0.0176522	-0.0252432
Rep StDev					
Rep %RSD					
Rep 1 Area	3575	9400	41954	88376	187582
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5829	8330 Pt 2 EXP 5830	8330 Pt 3 EXP 5831	8330 Pt 4 EXP 5832	8330 Pt 5 EXP 5833
Rep 1 Calib. Time	Jul 06, 2016 10:30:13	Jul 06, 2016 10:28:59	Jul 06, 2016 10:55:48	Jul 06, 2016 11:01:17	Jul 06, 2016 12:24:13

	Level 6	Level 7

Calibration Report

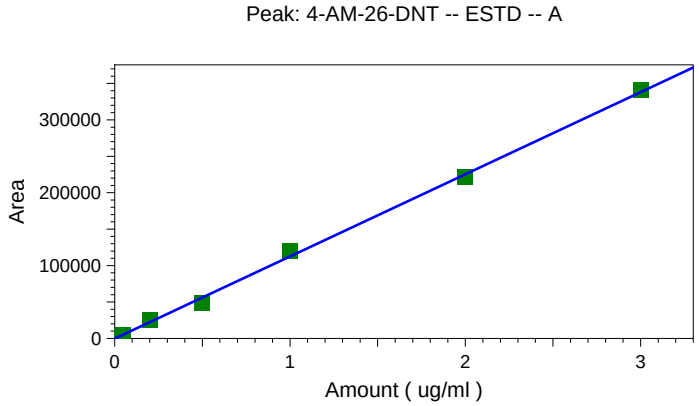
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:36
User: red
Instrument: HPLC 2 (Offline)

Amount	2	3
Area	348065	561917
RF	174032.5	187305.666666667
Last Area Residual		
Rep StDev	0.0965289	-0.0737558
Rep %RSD		
Rep 1 Area	348065	561917
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5834	8330 Pt 7 EXP 5835
Rep 1 Calib. Time	Jul 06, 2016 12:24:23	Jul 06, 2016 12:24:33

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:40
User: red
Instrument: HPLC 2 (Offline)

4-AM-26-DNT (A)
Average RF: 110872. RF StDev: 10131.6 RF %RSD: 9.13812
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 112782.x - 236.177
Goodness of fit (r^2): 0.998605



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	2202	4973	25016	48425	119695
RF	110100	99460	125080	96850	119695
Last Area Residual	-0.00161845	0.00381207	-0.0239021	0.0685385	-0.0633873
Rep StDev					
Rep %RSD					
Rep 1 Area	2202	4973	25016	48425	119695
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5829	8330 Pt 2 EXP 5830	8330 Pt 3 EXP 5831	8330 Pt 4 EXP 5832	8330 Pt 5 EXP 5833
Rep 1 Calib. Time	Jul 06, 2016 10:30:13	Jul 06, 2016 10:28:59	Jul 06, 2016 10:55:48	Jul 06, 2016 11:01:17	Jul 06, 2016 12:24:13

Level 6	Level 7

Calibration Report

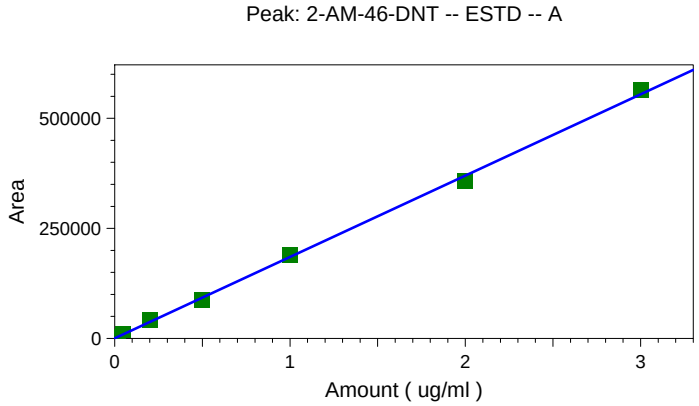
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:40
User: red
Instrument: HPLC 2 (Offline)

Amount	2	3
Area	222195	341457
RF	111097.5	113819
Last Area		
Residual	0.0277814	-0.0296726
Rep StDev		
Rep %RSD		
Rep 1 Area	222195	341457
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5834	8330 Pt 7 EXP 5835
Rep 1 Calib. Time	Jul 06, 2016 12:24:23	Jul 06, 2016 12:24:33

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:45
User: red
Instrument: HPLC 2 (Offline)

2-AM-46-DNT (A)
Average RF: 186833. RF StDev: 11381.3 RF %RSD: 6.09168
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 184868.x + 123.026
Goodness of fit (r^2): 0.998605



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	3645	9263	41808	86903	190776
RF	182250	185260	209040	173806	190776
Last Area					
Residual	0.000948712	0.000559465	-0.025485	0.0305842	-0.0312923
Rep StDev					
Rep %RSD					
Rep 1 Area	3645	9263	41808	86903	190776
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5829	8330 Pt 2 EXP 5830	8330 Pt 3 EXP 5831	8330 Pt 4 EXP 5832	8330 Pt 5 EXP 5833
Rep 1 Calib. Time	Jul 06, 2016 10:30:13	Jul 06, 2016 10:28:59	Jul 06, 2016 10:55:48	Jul 06, 2016 11:01:17	Jul 06, 2016 12:24:13

	Level 6	Level 7

Calibration Report

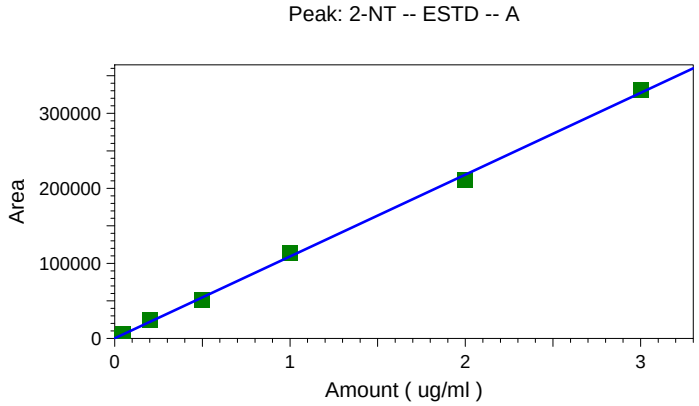
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:45
User: red
Instrument: HPLC 2 (Offline)

Amount	2	3
Area	356594	565200
RF	178297	188400
Last Area		
Residual	0.0717543	-0.0566507
Rep StDev		
Rep %RSD		
Rep 1 Area	356594	565200
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5834	8330 Pt 7 EXP 5835
Rep 1 Calib. Time	Jul 06, 2016 12:24:23	Jul 06, 2016 12:24:33

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:48
User: red
Instrument: HPLC 2 (Offline)

2-NT (A)
Average RF: 111220. RF StDev: 6399.31 RF %RSD: 5.75376
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 109020.x + 170.105
Goodness of fit (r^2): 0.998789



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	2255	5564	24416	51019	114263
RF	112750	111280	122080	102038	114263
Last Area Residual	0.000875973	0.000523657	-0.0223992	0.0335806	-0.0465348
Rep StDev					
Rep %RSD					
Rep 1 Area	2255	5564	24416	51019	114263
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5829	8330 Pt 2 EXP 5830	8330 Pt 3 EXP 5831	8330 Pt 4 EXP 5832	8330 Pt 5 EXP 5833
Rep 1 Calib. Time	Jul 06, 2016 10:30:13	Jul 06, 2016 10:28:59	Jul 06, 2016 10:55:48	Jul 06, 2016 11:01:17	Jul 06, 2016 12:24:13

Level 6	Level 7

Calibration Report

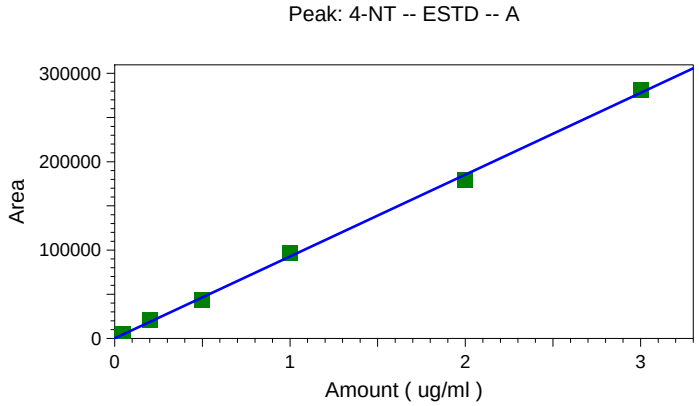
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:48
User: red
Instrument: HPLC 2 (Offline)

Amount	2	3
Area	211243	331516
RF	105621.5	110505.333333333
Last Area		
Residual	0.0639011	-0.0393216
Rep StDev		
Rep %RSD		
Rep 1 Area	211243	331516
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5834	8330 Pt 7 EXP 5835
Rep 1 Calib. Time	Jul 06, 2016 12:24:23	Jul 06, 2016 12:24:33

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:53
User: red
Instrument: HPLC 2 (Offline)

4-NT (A)
Average RF: 94296.6 RF StDev: 5408.61 RF %RSD: 5.73574
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 92600.3x + 128.231
Goodness of fit (r^2): 0.998788



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	1881	4745	20758	43408	97010
RF	94050	94900	103790	86816	97010
Last Area Residual	0.00107167	0.000143034	-0.022783	0.0326173	-0.0462362
Rep StDev					
Rep %RSD					
Rep 1 Area	1881	4745	20758	43408	97010
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5829	8330 Pt 2 EXP 5830	8330 Pt 3 EXP 5831	8330 Pt 4 EXP 5832	8330 Pt 5 EXP 5833
Rep 1 Calib. Time	Jul 06, 2016 10:30:13	Jul 06, 2016 10:28:59	Jul 06, 2016 10:55:48	Jul 06, 2016 11:01:17	Jul 06, 2016 12:24:13

Level 6	Level 7

Calibration Report

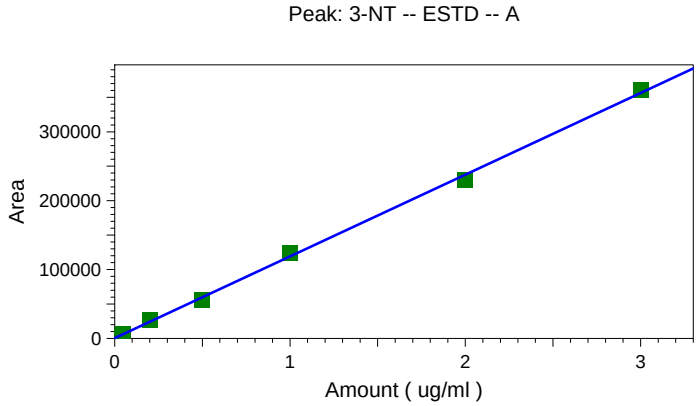
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:53
User: red
Instrument: HPLC 2 (Offline)

Amount	2	3
Area	179332	281533
RF	89666	93844.3333333333
Last Area Residual	0.06476	-0.0389191
Rep StDev		
Rep %RSD		
Rep 1 Area	179332	281533
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5834	8330 Pt 7 EXP 5835
Rep 1 Calib. Time	Jul 06, 2016 12:24:23	Jul 06, 2016 12:24:33

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:55
User: red
Instrument: HPLC 2 (Offline)

3-NT (A)
Average RF: 122492. RF StDev: 7726.81 RF %RSD: 6.30803
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 118673.x + 316.304
Goodness of fit (r^2): 0.998783



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	2616	6144	26492	55646	124583
RF	130800	122880	132460	111292	124583
Last Area Residual	0.000621588	0.000892862	-0.0205698	0.0337638	-0.0471345
Rep StDev					
Rep %RSD					
Rep 1 Area	2616	6144	26492	55646	124583
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5829	8330 Pt 2 EXP 5830	8330 Pt 3 EXP 5831	8330 Pt 4 EXP 5832	8330 Pt 5 EXP 5833
Rep 1 Calib. Time	Jul 06, 2016 10:30:13	Jul 06, 2016 10:28:59	Jul 06, 2016 10:55:48	Jul 06, 2016 11:01:17	Jul 06, 2016 12:24:13

Level 6	Level 7

Calibration Report

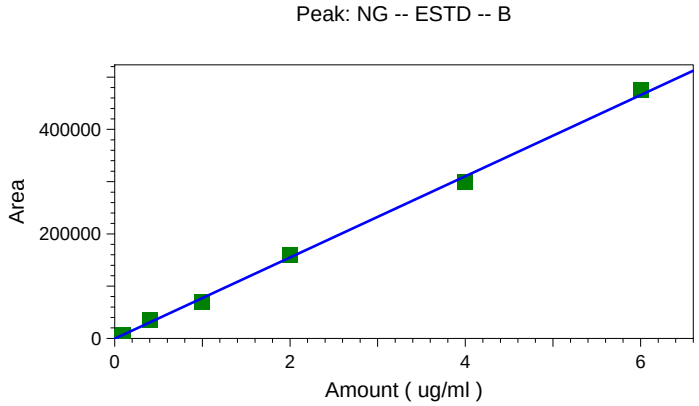
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:46:55
User: red
Instrument: HPLC 2 (Offline)

Amount	2	3
Area	230097	361134
RF	115048.5	120378
Last Area		
Residual	0.0637507	-0.0404338
Rep StDev		
Rep %RSD		
Rep 1 Area	230097	361134
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5834	8330 Pt 7 EXP 5835
Rep 1 Calib. Time	Jul 06, 2016 12:24:23	Jul 06, 2016 12:24:33

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:45:41
User: red
Instrument: HPLC 2 (Offline)

NG (B)
Average RF: 75222.1 RF StDev: 7317.95 RF %RSD: 9.72845
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 77679.8x - 493.530
Goodness of fit (r^2): 0.998431



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.04	0.1	0.4	1	2
Area	2579	7101	34609	70467	159570
RF	64475	71010	86522.5	70467	79785
Last Area Residual	0.000446198	0.00223283	-0.0518877	0.0864991	-0.0605565
Rep StDev					
Rep %RSD					
Rep 1 Area	2579	7101	34609	70467	159570
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5829	8330 Pt 2 EXP 5830	8330 Pt 3 EXP 5831	8330 Pt 4 EXP 5832	8330 Pt 5 EXP 5833
Rep 1 Calib. Time	Jul 06, 2016 10:30:13	Jul 06, 2016 10:28:59	Jul 06, 2016 10:55:48	Jul 06, 2016 11:01:17	Jul 06, 2016 12:24:13

Level 6	Level 7

Calibration Report

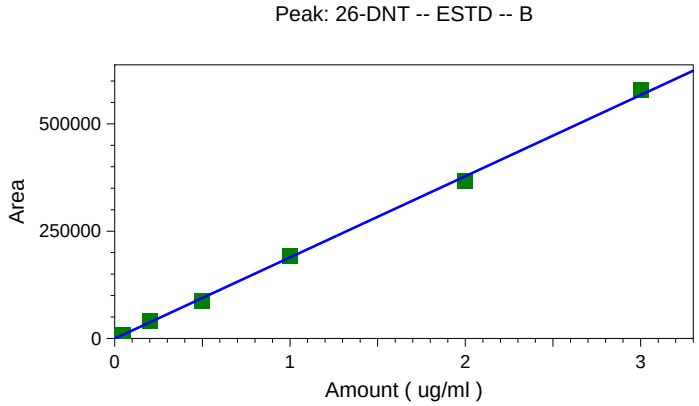
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:45:41
User: red
Instrument: HPLC 2 (Offline)

Amount	4	6
Area	299861	475981
RF	74965.25	79330.1666666667
Last Area		
Residual	0.133426	-0.133831
Rep StDev		
Rep %RSD		
Rep 1 Area	299861	475981
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5834	8330 Pt 7 EXP 5835
Rep 1 Calib. Time	Jul 06, 2016 12:24:23	Jul 06, 2016 12:24:33

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:45:44
User: red
Instrument: HPLC 2 (Offline)

26-DNT (B)
Average RF: 185559. RF StDev: 13546.9 RF %RSD: 7.30057
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 189153.x - 388.434
Goodness of fit (r^2): 0.998752



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	3732	8237	41036	86270	192628
RF	186600	164740	205180	172540	192628
Last Area Residual	-0.00178362	0.00439967	-0.0189997	0.0418604	-0.0204255
Rep StDev					
Rep %RSD					
Rep 1 Area	3732	8237	41036	86270	192628
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5829	8330 Pt 2 EXP 5830	8330 Pt 3 EXP 5831	8330 Pt 4 EXP 5832	8330 Pt 5 EXP 5833
Rep 1 Calib. Time	Jul 06, 2016 10:30:13	Jul 06, 2016 10:28:59	Jul 06, 2016 10:55:48	Jul 06, 2016 11:01:17	Jul 06, 2016 12:24:13

Level 6	Level 7

Calibration Report

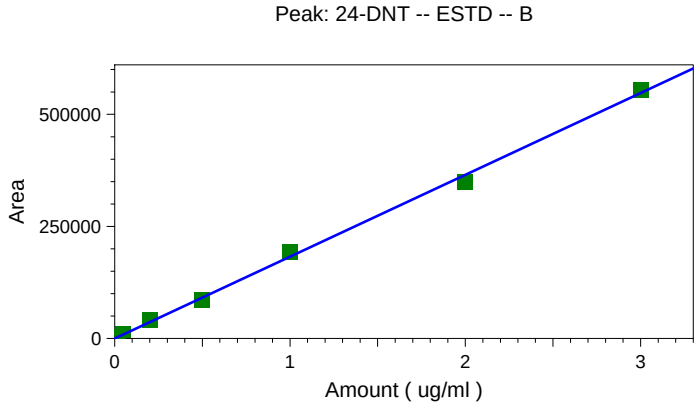
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:45:44
User: red
Instrument: HPLC 2 (Offline)

Amount	2	3
Area	367901	579829
RF	183950.5	193276.333333333
Last Area		
Residual	0.0529537	-0.0674522
Rep StDev		
Rep %RSD		
Rep 1 Area	367901	579829
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5834	8330 Pt 7 EXP 5835
Rep 1 Calib. Time	Jul 06, 2016 12:24:23	Jul 06, 2016 12:24:33

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:45:48
User: red
Instrument: HPLC 2 (Offline)

24-DNT (B)
Average RF: 181589. RF StDev: 14380.1 RF %RSD: 7.91900
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 182605.x - 163.168
Goodness of fit (r^2): 0.998385



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.02	0.05	0.2	0.5	1
Area	3237	8889	41231	86636	192020
RF	161850	177780	206155	173272	192020
Last Area Residual	0.00137965	0.000427587	-0.026687	0.0246615	-0.0524533
Rep StDev					
Rep %RSD					
Rep 1 Area	3237	8889	41231	86636	192020
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5829	8330 Pt 2 EXP 5830	8330 Pt 3 EXP 5831	8330 Pt 4 EXP 5832	8330 Pt 5 EXP 5833
Rep 1 Calib. Time	Jul 06, 2016 10:30:13	Jul 06, 2016 10:28:59	Jul 06, 2016 10:55:48	Jul 06, 2016 11:01:17	Jul 06, 2016 12:24:13

Level 6	Level 7

Calibration Report

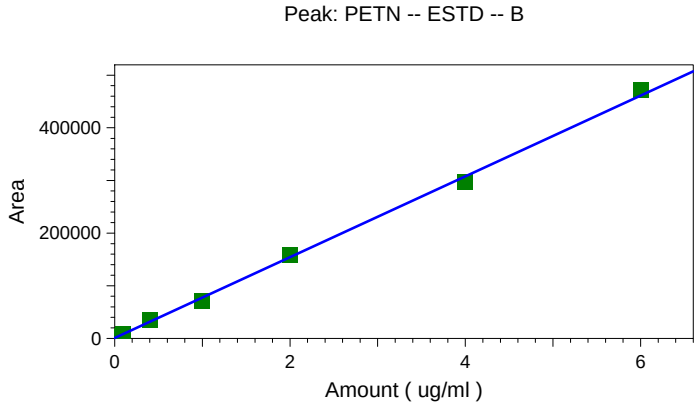
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:45:48
User: red
Instrument: HPLC 2 (Offline)

Amount	2	3
Area	350027	555106
RF	175013.5	185035.333333333
Last Area		
Residual	0.0822525	-0.0408222
Rep StDev		
Rep %RSD		
Rep 1 Area	350027	555106
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5834	8330 Pt 7 EXP 5835
Rep 1 Calib. Time	Jul 06, 2016 12:24:23	Jul 06, 2016 12:24:33

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:45:52
User: red
Instrument: HPLC 2 (Offline)

PETN (B)
Average RF: 82068.1 RF StDev: 11074.1 RF %RSD: 13.4938
Scaling: None LSQ Weighting: 1/Response Force Through Zero: Off
Replicate Mode: Replace
Fit Type: Linear
y = 76733.4x + 869.883
Goodness of fit (r^2): 0.998276



	Level 1	Level 2	Level 3	Level 4	Level 5
Amount	0.04	0.1	0.4	1	2
Area	4193	7870	34661	71800	159275
RF	104825	78700	86652.5	71800	79637.5
Last Area Residual	-0.00330729	0.00877358	-0.0403702	0.0756296	-0.0643559
Rep StDev					
Rep %RSD					
Rep 1 Area	4193	7870	34661	71800	159275
Rep 1 User	red	red	red	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
Rep 1 Sample ID	8330 Pt 1 EXP 5829	8330 Pt 2 EXP 5830	8330 Pt 3 EXP 5831	8330 Pt 4 EXP 5832	8330 Pt 5 EXP 5833
Rep 1 Calib. Time	Jul 06, 2016 10:30:13	Jul 06, 2016 10:28:59	Jul 06, 2016 10:55:48	Jul 06, 2016 11:01:17	Jul 06, 2016 12:24:13

Level 6	Level 7

Calibration Report

Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Print Time: Jul 11, 2016 13:45:52
User: red
Instrument: HPLC 2 (Offline)

Amount	4	6
Area	296479	472451
RF	74119.75	78741.8333333333
Last Area		
Residual	0.147584	-0.145706
Rep StDev		
Rep %RSD		
Rep 1 Area	296479	472451
Rep 1 User	red	red
Rep 1 Data File	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat	C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
Rep 1 Sample ID	8330 Pt 6 EXP 5834	8330 Pt 7 EXP 5835
Rep 1 Calib. Time	Jul 06, 2016 12:24:23	Jul 06, 2016 12:24:33

QC Check Standard Report

Sequence : C:\Instarch\HPLC 2\Sequences\8330A_B\070616EXPic-PRIMARY.seq
User : red
Printed : Jul 11, 2016 13:44:55

File	Sample ID	Acquired
C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat	8330 Pt 1 EXP 5829	Jul 11, 2016 13:44:54

A

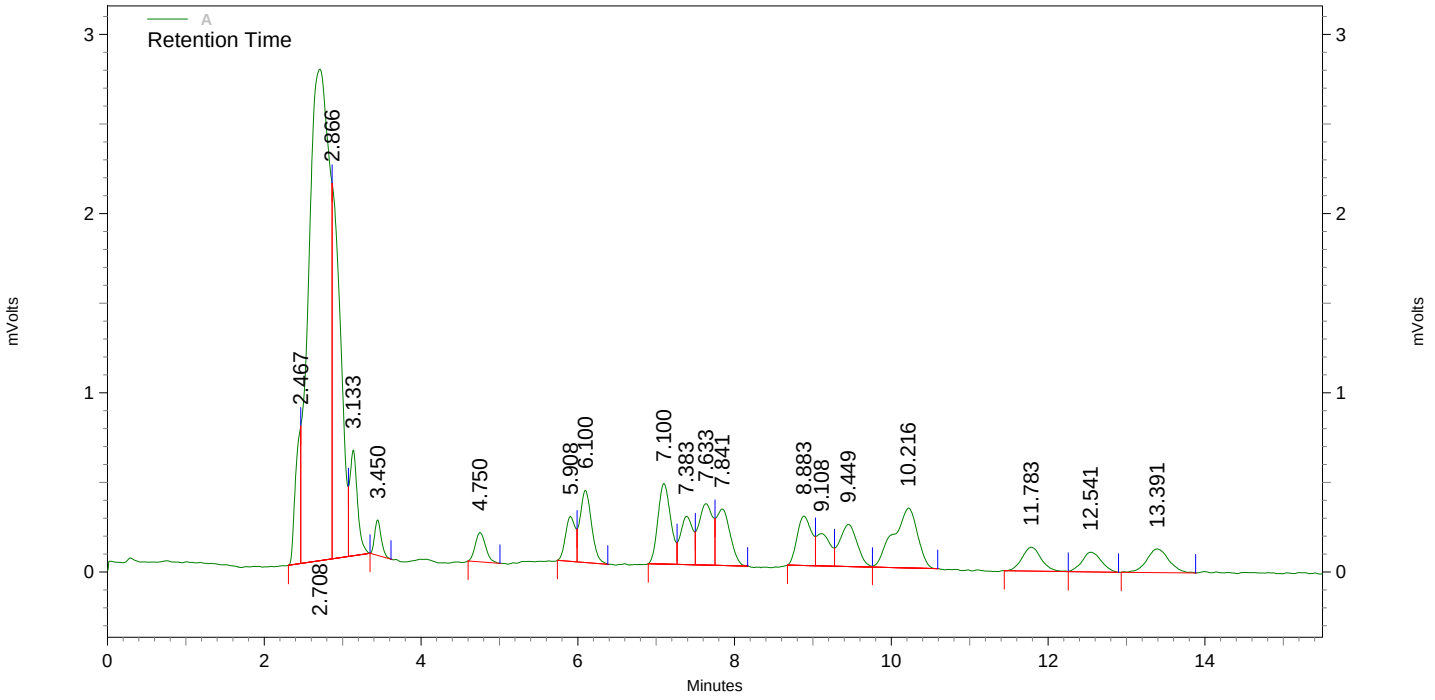
Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
HMX	0.020	0.021	3.007	20.000	Passed
RDX	0.020	0.020	0.211	20.000	Passed
12-DNB (SSTD)	4.000	4.256	6.393	20.000	Passed
135-TNB	0.020	0.018	8.240	20.000	Passed
13-DNB	0.020	0.019	2.813	20.000	Passed
TETRYL	0.020	0.019	5.196	20.000	Passed
35-DNA	0.020	0.020	0.895	20.000	Passed
NB	0.020	0.019	4.938	20.000	Passed
246-TNT	0.020	0.018	8.588	20.000	Passed
4-AM-26-DNT	0.020	0.022	8.092	20.000	Passed
2-AM-46-DNT	0.020	0.019	4.744	20.000	Passed
2-NT	0.020	0.019	4.380	20.000	Passed
4-NT	0.020	0.019	5.358	20.000	Passed
3-NT	0.020	0.019	3.108	20.000	Passed

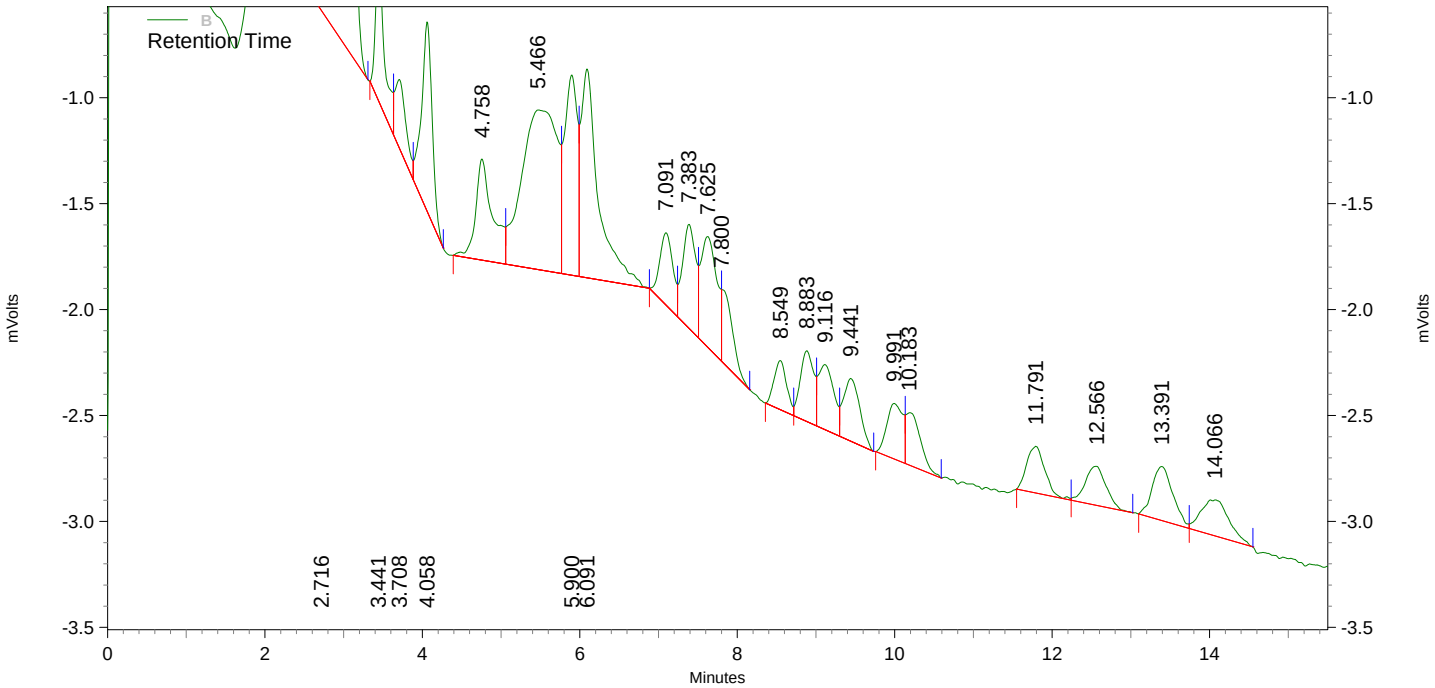
B

Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
NG	0.040	0.040	1.115	20.000	Passed
26-DNT	0.020	0.022	8.918	20.000	Passed
24-DNT	0.020	0.019	6.898	20.000	Passed
PETN	0.040	0.043	8.268	20.000	Passed

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Sample ID: 8330 Pt 1 EXP 5829
Acquired: Jul 06, 2016 09:46:17
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\002.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Sample ID: 8330 Pt 1 EXP 5829
Acquired: Jul 06, 2016 09:46:17
Data Summary: {Data Description}

A Results

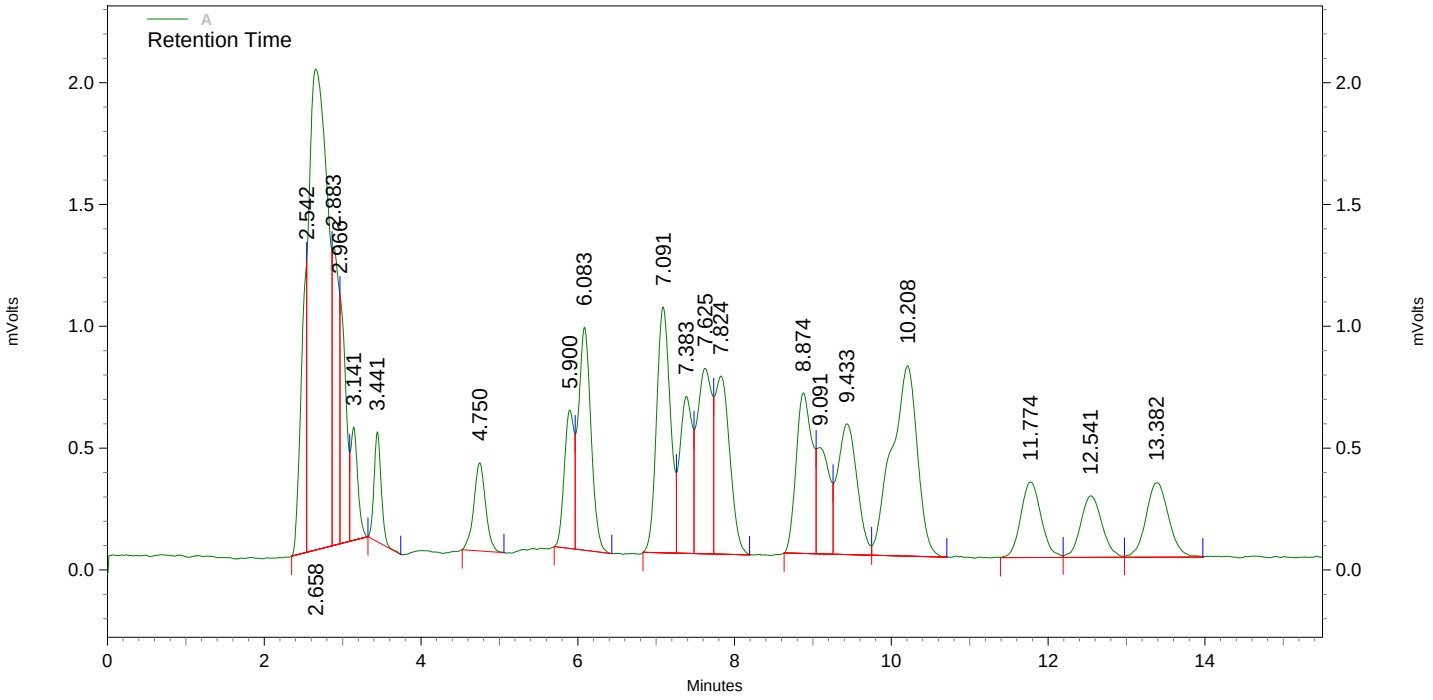
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.450	1152	**0.0206**
RDX	4.750	1511	**0.0200**
12-DNB (SSTD)	5.908	2185	**4.2557**
135-TNB	6.100	4104	**0.0184**
13-DNB	7.100	5093	**0.0194**
TETRYL	7.383	2960	**0.0190**
35-DNA	7.633	4233	**0.0198**
NB	7.841	3867	**0.0190**
246-TNT	8.883	3575	**0.0183**
4-AM-26-DNT	9.108	2202	**0.0216**
2-AM-46-DNT	9.449	3645	**0.0191**
2-NT	11.783	2255	**0.0191**
4-NT	12.541	1881	**0.0189**
3-NT	13.391	2616	**0.0194**

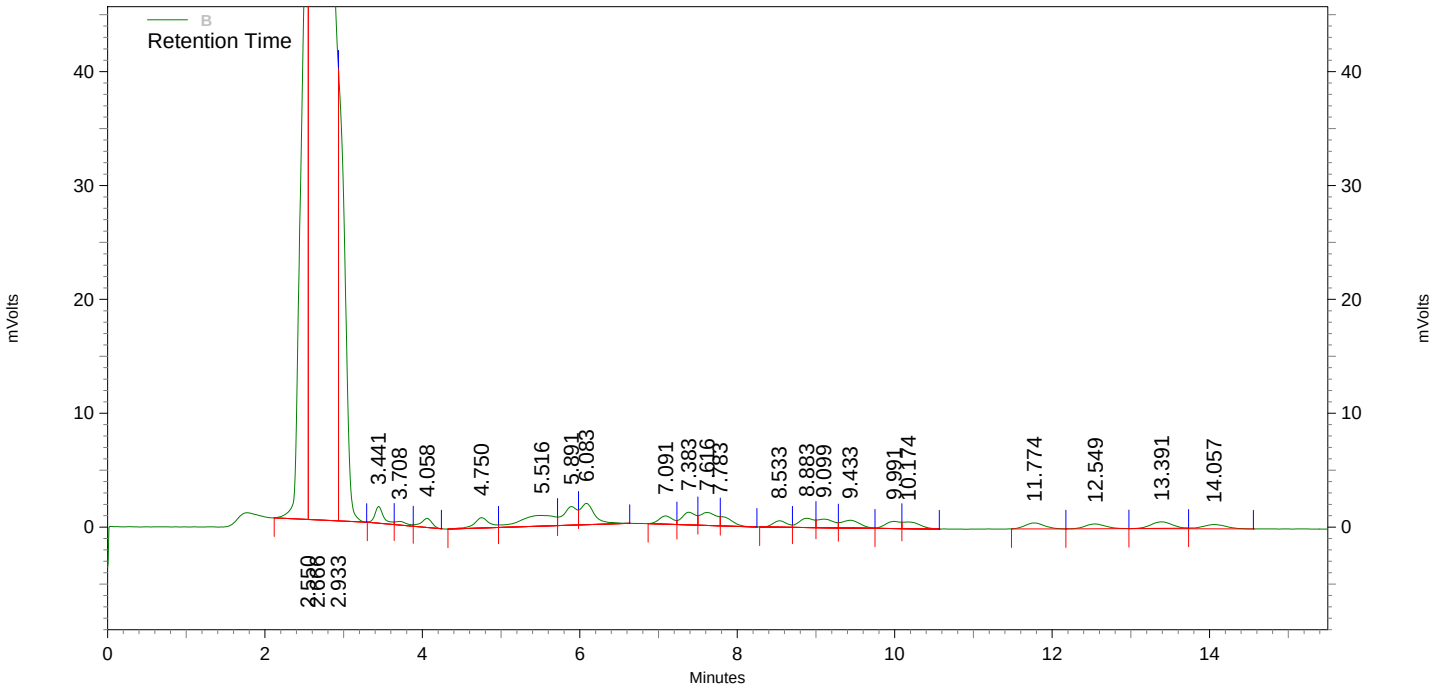
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.549	2579	**0.0396**
26-DNT	9.991	3732	**0.0218**
24-DNT	10.183	3237	**0.0186**
PETN	14.066	4193	**0.0433**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Sample ID: 8330 Pt 2 EXP 5830
Acquired: Jul 06, 2016 10:04:35
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\003.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Sample ID: 8330 Pt 2 EXP 5830
Acquired: Jul 06, 2016 10:04:35
Data Summary: {Data Description}

A Results

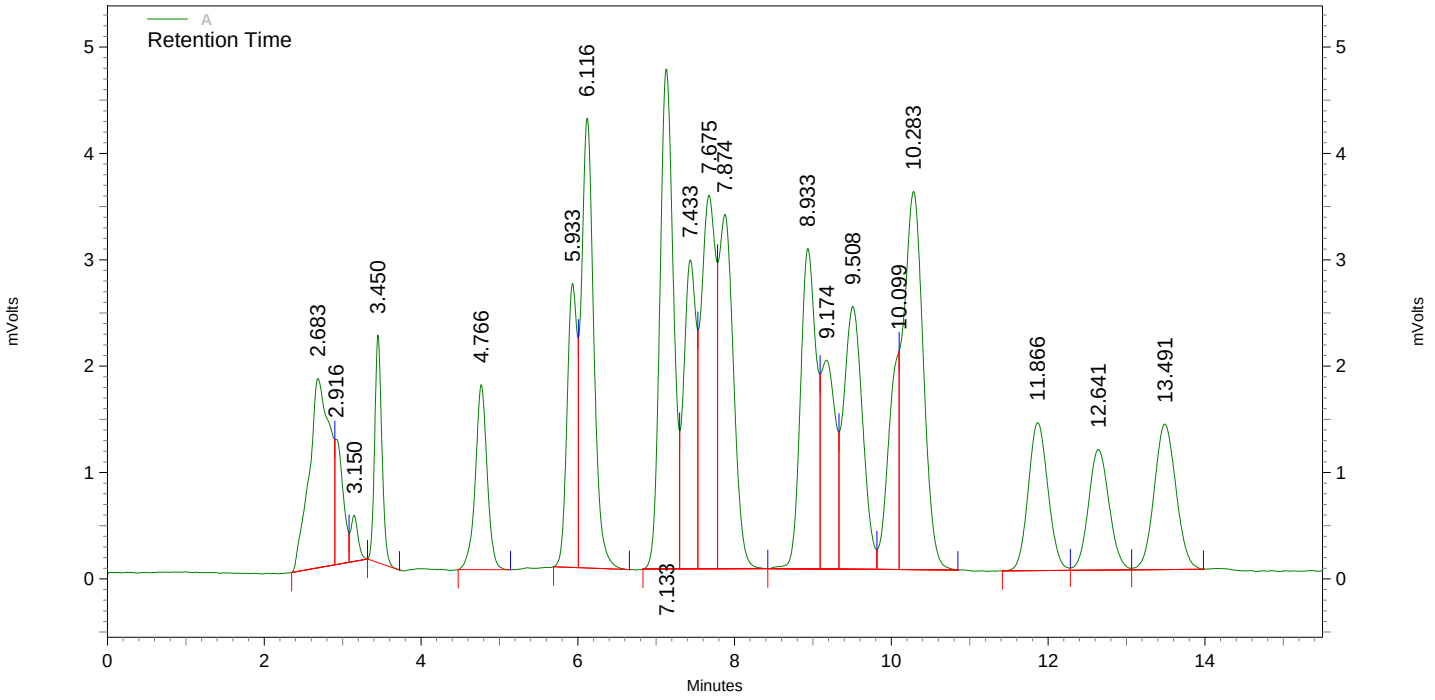
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.441	2854	**0.0500 CAL**
RDX	4.750	3776	**0.0500 CAL**
12-DNB (SSTD)	5.900	4899	**10.0000 CAL**
135-TNB	6.083	10264	**0.0500 CAL**
13-DNB	7.091	12379	**0.0500 CAL**
TETRYL	7.383	7143	**0.0500 CAL**
35-DNA	7.625	9973	**0.0500 CAL**
NB	7.824	9746	**0.0500 CAL**
246-TNT	8.874	9400	**0.0500 CAL**
4-AM-26-DNT	9.091	4973	**0.0500 CAL**
2-AM-46-DNT	9.433	9263	**0.0500 CAL**
2-NT	11.774	5564	**0.0500 CAL**
4-NT	12.541	4745	**0.0500 CAL**
3-NT	13.382	6144	**0.0500 CAL**

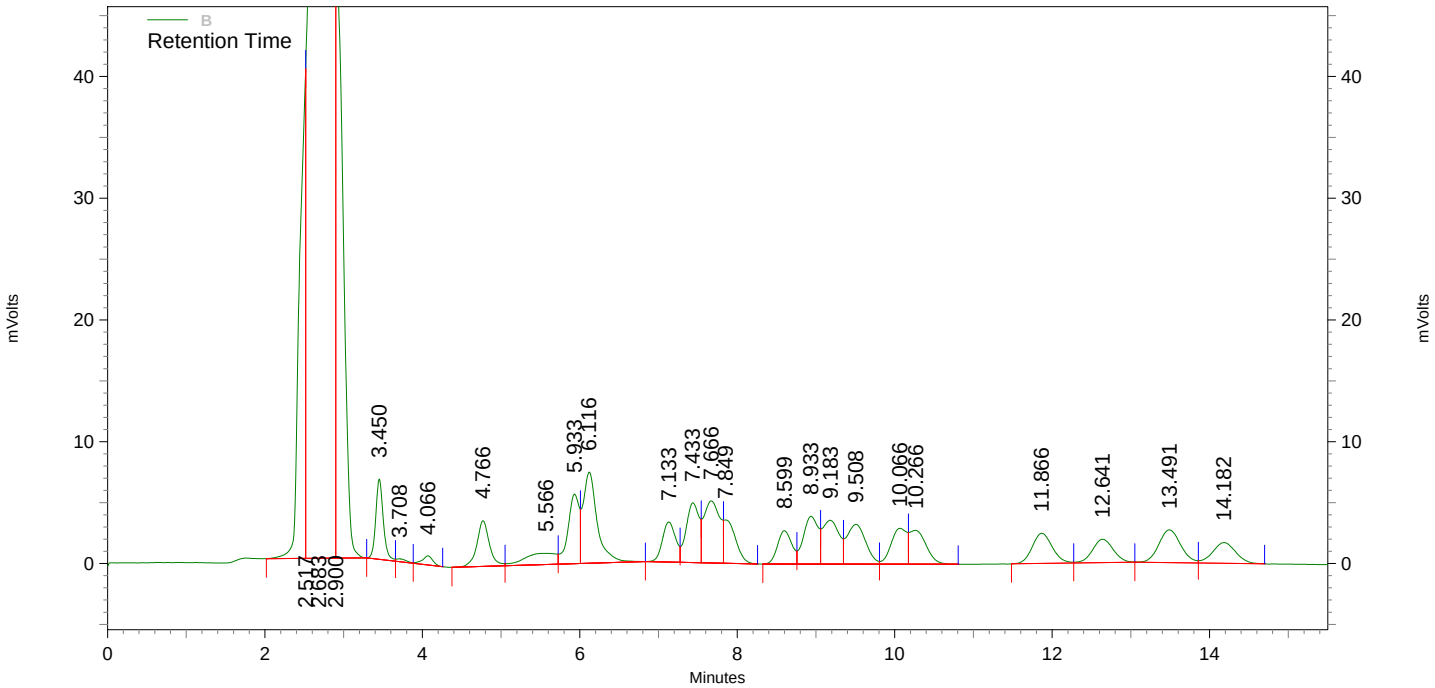
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.533	7101	**0.1000 CAL**
26-DNT	9.991	8237	**0.0500 CAL**
24-DNT	10.174	8889	**0.0500 CAL**
PETN	14.057	7870	**0.1000 CAL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Sample ID: 8330 Pt 3 EXP 5831
Acquired: Jul 06, 2016 10:22:53
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\004.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Sample ID: 8330 Pt 3 EXP 5831
Acquired: Jul 06, 2016 10:22:53
Data Summary: {Data Description}

A Results

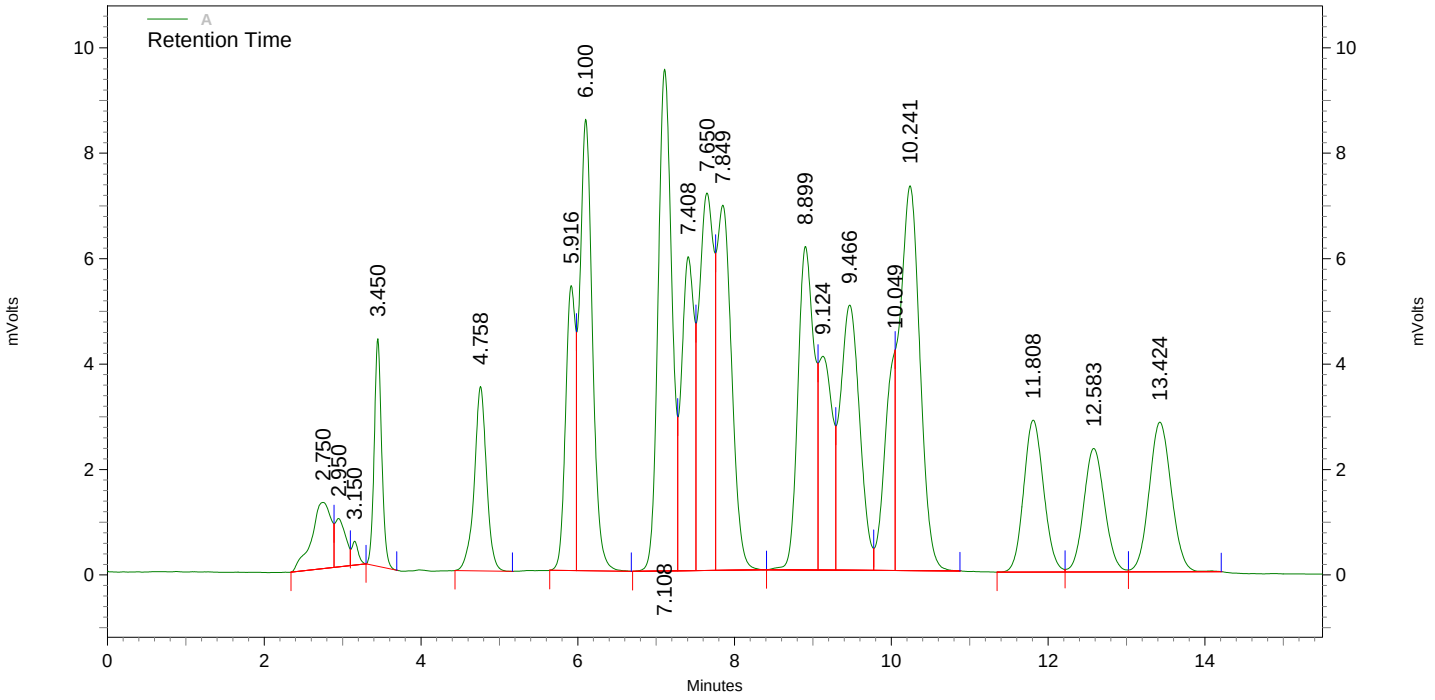
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.450	13673	**0.2000 CAL**
RDX	4.766	18230	**0.2000 CAL**
12-DNB (SSTD)	5.933	23674	**40.0000 CAL**
135-TNB	6.116	46839	**0.2000 CAL**
13-DNB	7.133	56107	**0.2000 CAL**
TETRYL	7.433	32201	**0.2000 CAL**
35-DNA	7.675	45232	**0.2000 CAL**
NB	7.874	43620	**0.2000 CAL**
246-TNT	8.933	41954	**0.2000 CAL**
4-AM-26-DNT	9.174	25016	**0.2000 CAL**
2-AM-46-DNT	9.508	41808	**0.2000 CAL**
2-NT	11.866	24416	**0.2000 CAL**
4-NT	12.641	20758	**0.2000 CAL**
3-NT	13.491	26492	**0.2000 CAL**

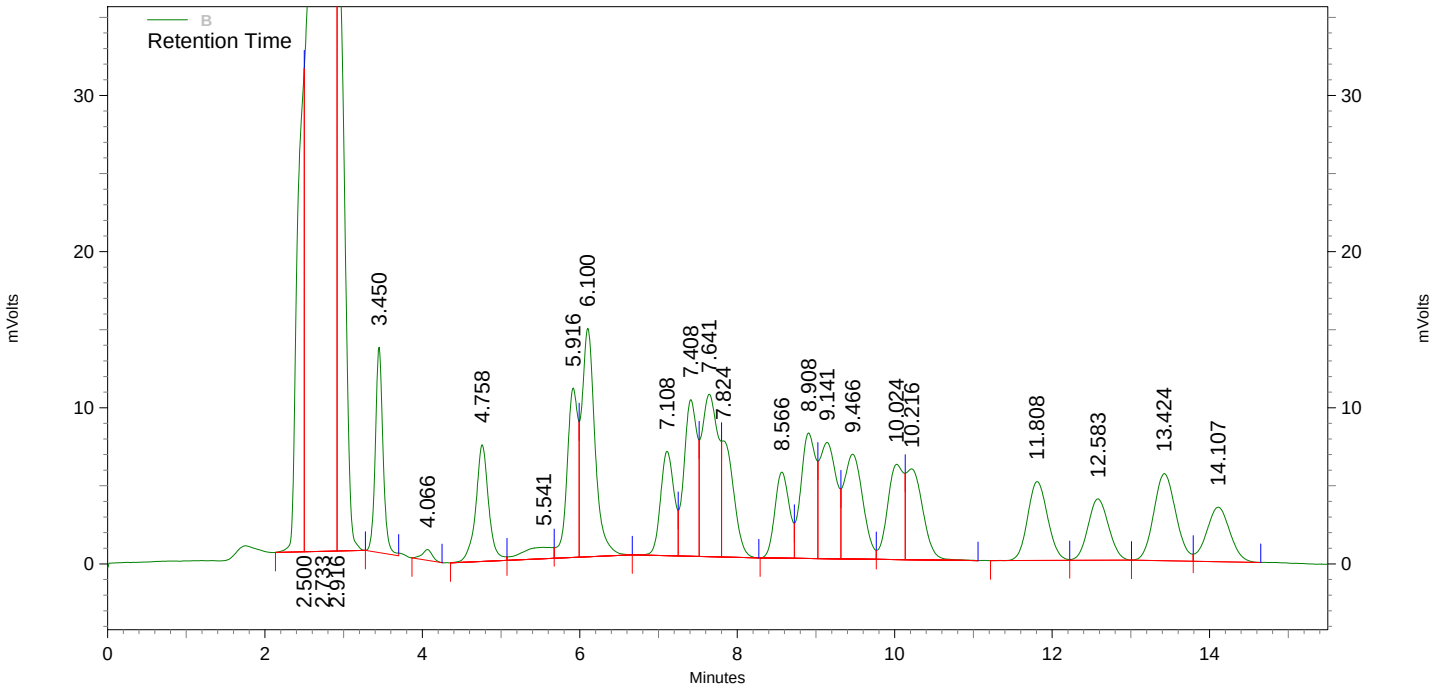
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.599	34609	**0.4000 CAL**
26-DNT	10.066	41036	**0.2000 CAL**
24-DNT	10.266	41231	**0.2000 CAL**
PETN	14.182	34661	**0.4000 CAL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Sample ID: 8330 Pt 4 EXP 5832
Acquired: Jul 06, 2016 10:41:10
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\005.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Sample ID: 8330 Pt 4 EXP 5832
Acquired: Jul 06, 2016 10:41:10
Data Summary: {Data Description}

A Results

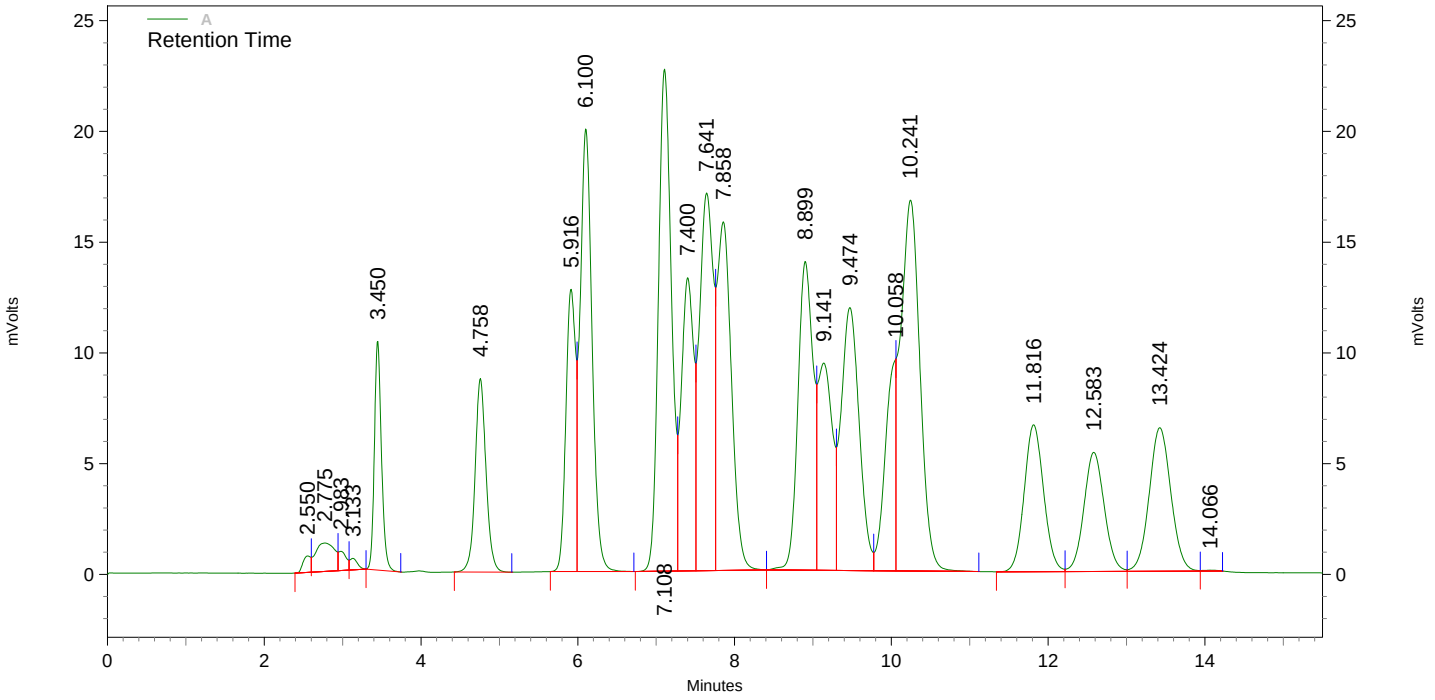
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.450	28447	**0.5000 CAL**
RDX	4.758	37905	**0.5000 CAL**
12-DNB (SSTD)	5.916	46869	**100.0000 CAL**
135-TNB	6.100	97651	**0.5000 CAL**
13-DNB	7.108	115479	**0.5000 CAL**
TETRYL	7.408	67252	**0.5000 CAL**
35-DNA	7.650	93257	**0.5000 CAL**
NB	7.849	91504	**0.5000 CAL**
246-TNT	8.899	88376	**0.5000 CAL**
4-AM-26-DNT	9.124	48425	**0.5000 CAL**
2-AM-46-DNT	9.466	86903	**0.5000 CAL**
2-NT	11.808	51019	**0.5000 CAL**
4-NT	12.583	43408	**0.5000 CAL**
3-NT	13.424	55646	**0.5000 CAL**

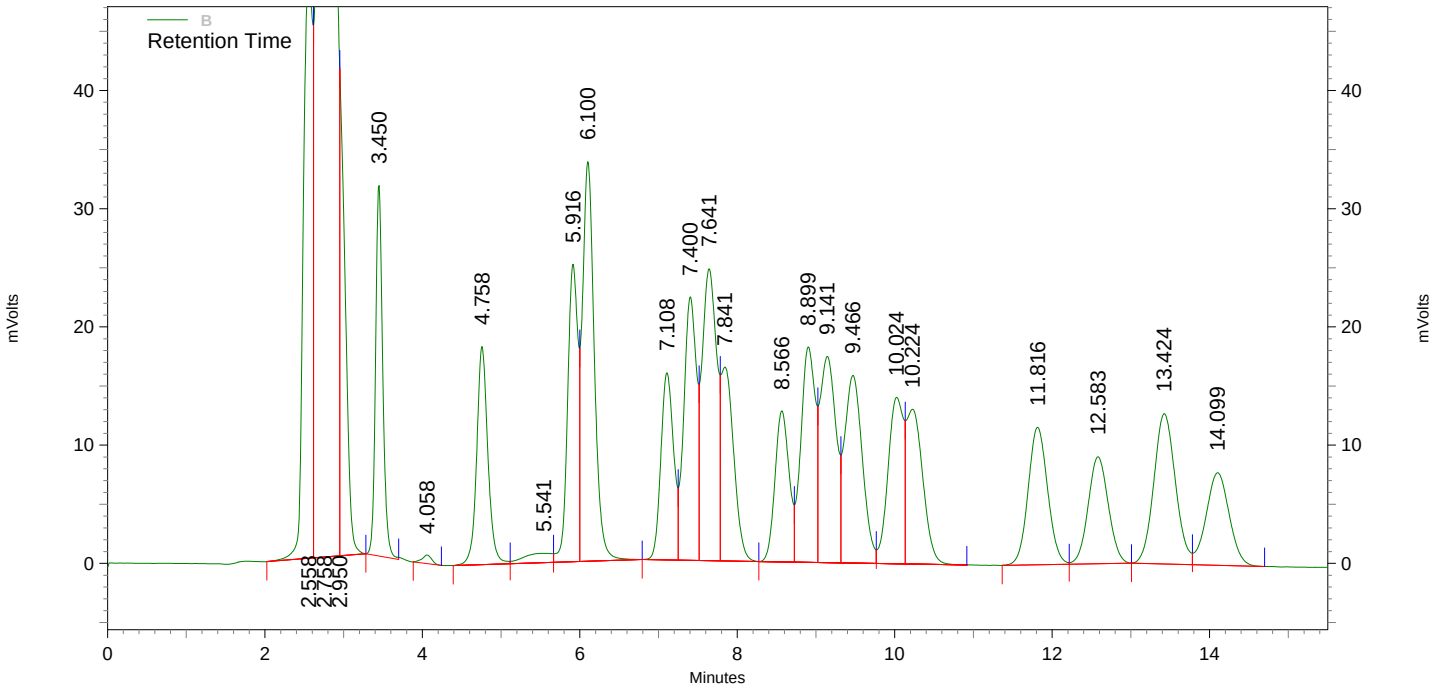
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.566	70467	**1.0000 CAL**
26-DNT	10.024	86270	**0.5000 CAL**
24-DNT	10.216	86636	**0.5000 CAL**
PETN	14.107	71800	**1.0000 CAL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Sample ID: 8330 Pt 5 EXP 5833
Acquired: Jul 06, 2016 10:59:29
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\006.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Sample ID: 8330 Pt 5 EXP 5833
Acquired: Jul 06, 2016 10:59:29
Data Summary: {Data Description}

A Results

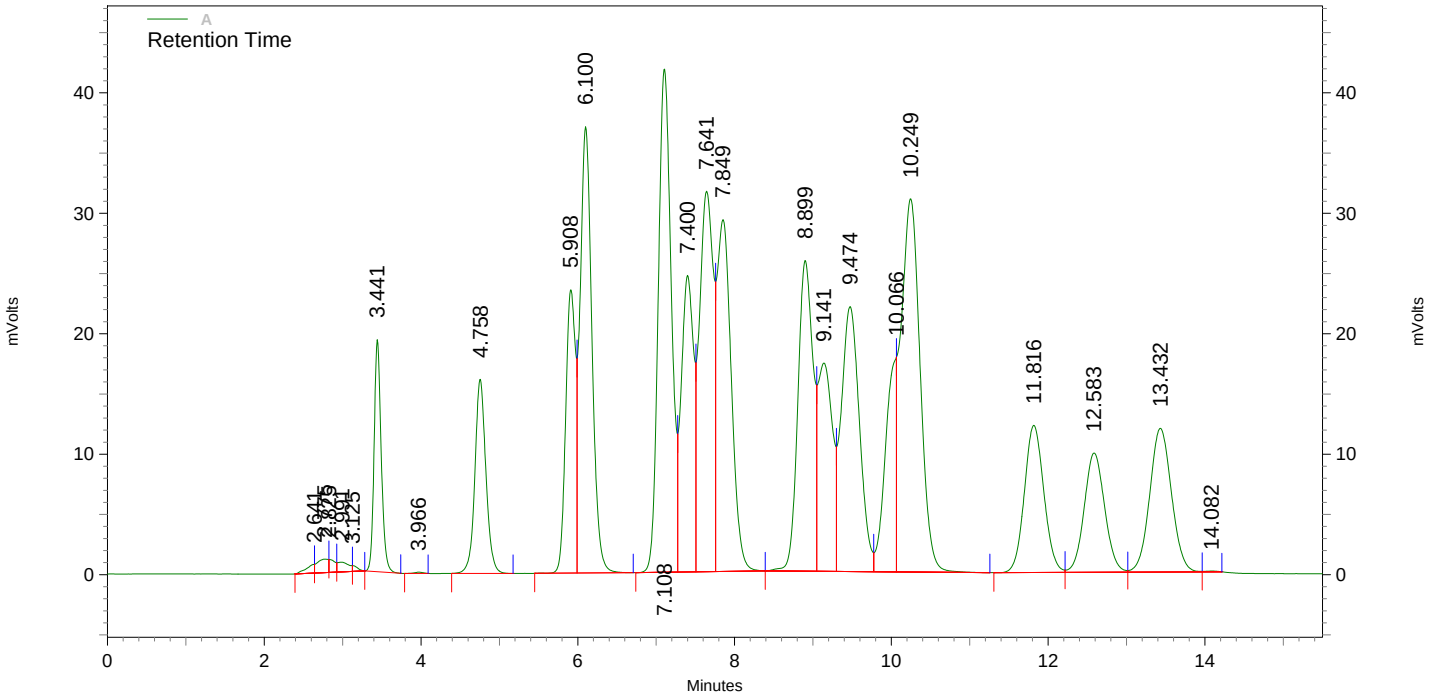
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.450	64754	**1.0000 CAL**
RDX	4.758	84527	**1.0000 CAL**
12-DNB (SSTD)	5.916	109864	**200.0000 CAL**
135-TNB	6.100	210861	**1.0000 CAL**
13-DNB	7.108	260620	**1.0000 CAL**
TETRYL	7.400	145714	**1.0000 CAL**
35-DNA	7.641	210586	**1.0000 CAL**
NB	7.858	201046	**1.0000 CAL**
246-TNT	8.899	187582	**1.0000 CAL**
4-AM-26-DNT	9.141	119695	**1.0000 CAL**
2-AM-46-DNT	9.474	190776	**1.0000 CAL**
2-NT	11.816	114263	**1.0000 CAL**
4-NT	12.583	97010	**1.0000 CAL**
3-NT	13.424	124583	**1.0000 CAL**

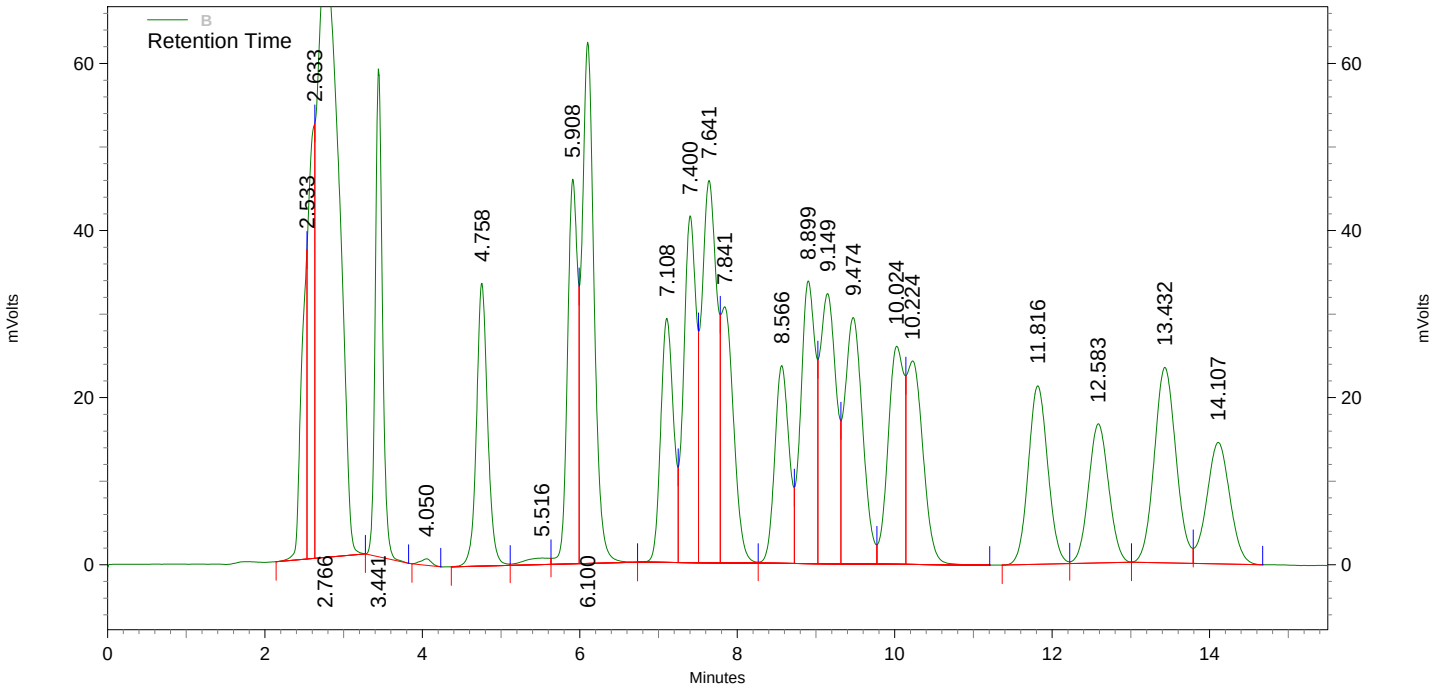
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.566	159570	**2.0000 CAL**
26-DNT	10.024	192628	**1.0000 CAL**
24-DNT	10.224	192020	**1.0000 CAL**
PETN	14.099	159275	**2.0000 CAL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Sample ID: 8330 Pt 6 EXP 5834
Acquired: Jul 06, 2016 11:17:46
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\007.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Sample ID: 8330 Pt 6 EXP 5834
Acquired: Jul 06, 2016 11:17:46
Data Summary: {Data Description}

A Results

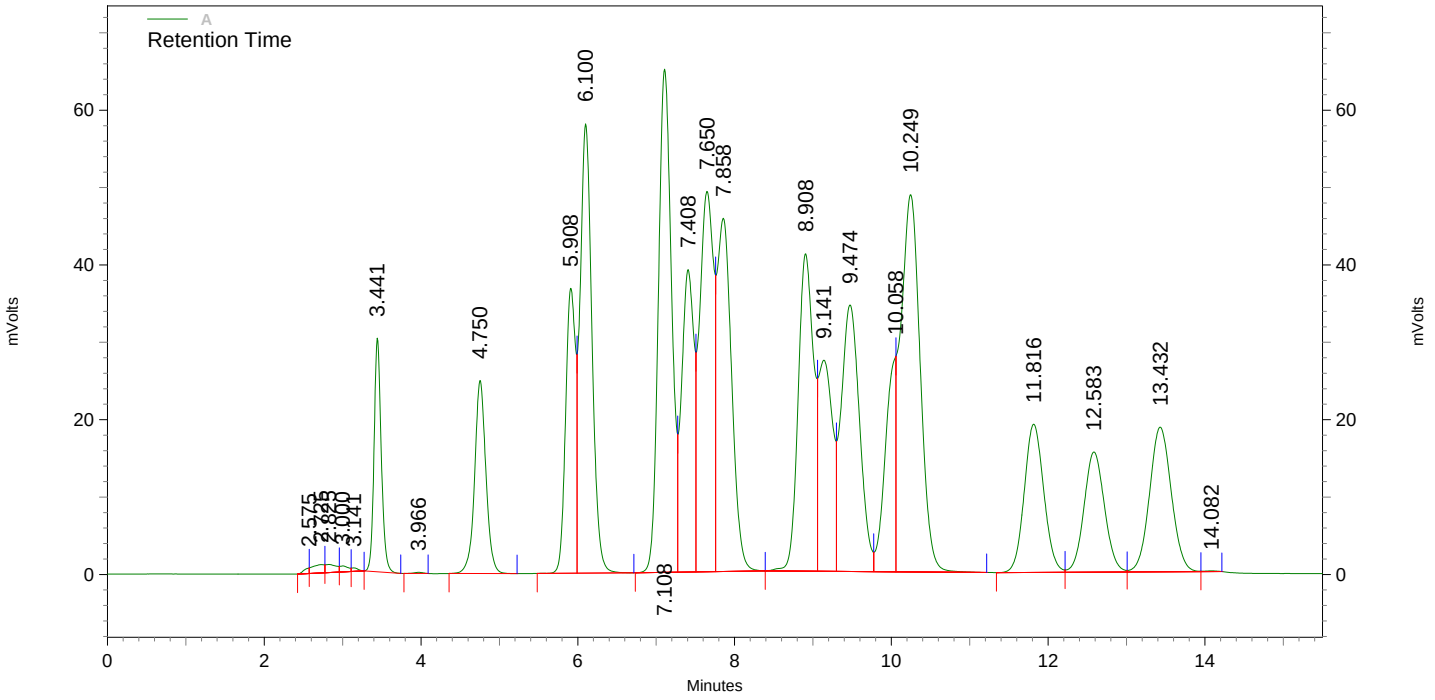
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.441	121268	**2.0000 CAL**
RDX	4.758	157378	**2.0000 CAL**
12-DNB (SSTD)	5.908	205897	**400.0000 CAL**
135-TNB	6.100	389675	**2.0000 CAL**
13-DNB	7.108	483152	**2.0000 CAL**
TETRYL	7.400	271737	**2.0000 CAL**
35-DNA	7.641	391646	**2.0000 CAL**
NB	7.849	371222	**2.0000 CAL**
246-TNT	8.899	348065	**2.0000 CAL**
4-AM-26-DNT	9.141	222195	**2.0000 CAL**
2-AM-46-DNT	9.474	356594	**2.0000 CAL**
2-NT	11.816	211243	**2.0000 CAL**
4-NT	12.583	179332	**2.0000 CAL**
3-NT	13.432	230097	**2.0000 CAL**

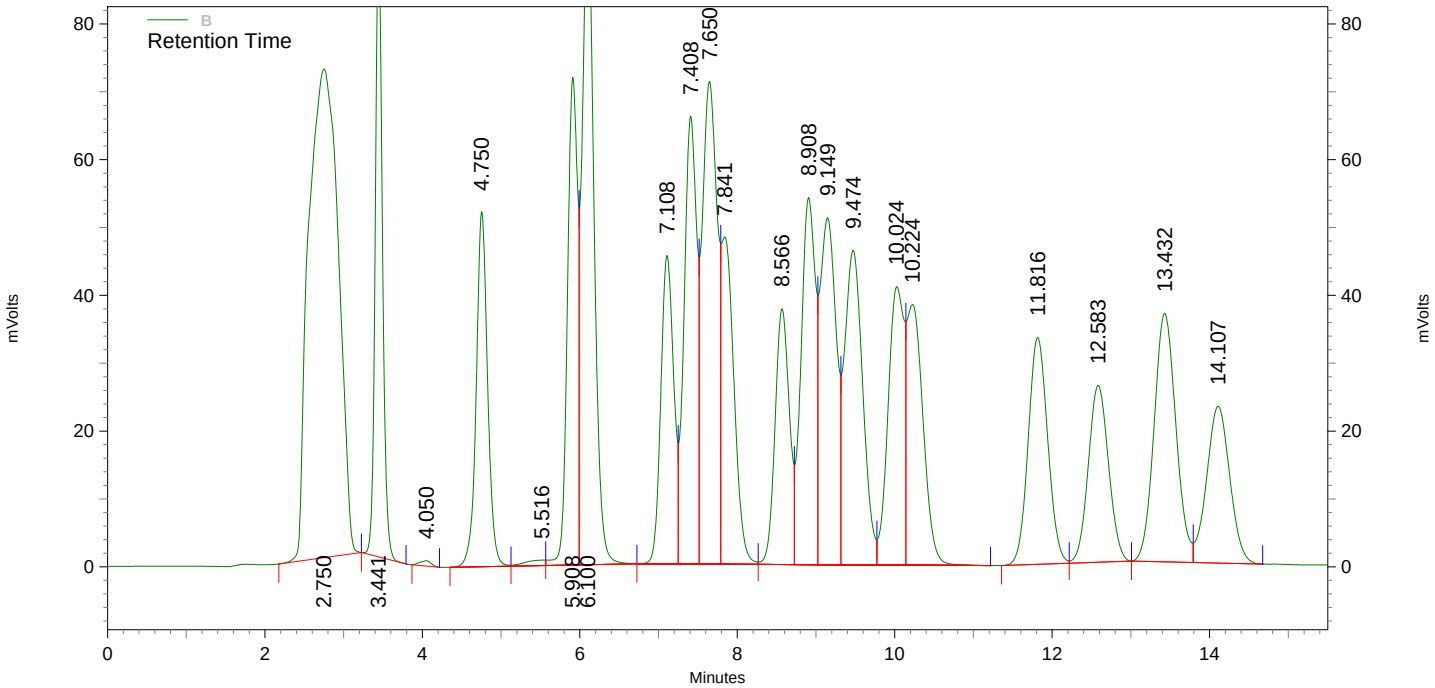
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.566	299861	**4.0000 CAL**
26-DNT	10.024	367901	**2.0000 CAL**
24-DNT	10.224	350027	**2.0000 CAL**
PETN	14.107	296479	**4.0000 CAL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Sample ID: 8330 Pt 7 EXP 5835
Acquired: Jul 06, 2016 11:36:05
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\008.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Sample ID: 8330 Pt 7 EXP 5835
Acquired: Jul 06, 2016 11:36:05
Data Summary: {Data Description}

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.441	192225	**3.0000 CAL**
RDX	4.750	249787	**3.0000 CAL**
12-DNB (SSTD)	5.908	325766	**600.0000 CAL**
135-TNB	6.100	612721	**3.0000 CAL**
13-DNB	7.108	756846	**3.0000 CAL**
TETRYL	7.408	429474	**3.0000 CAL**
35-DNA	7.650	614496	**3.0000 CAL**
NB	7.858	592720	**3.0000 CAL**
246-TNT	8.908	561917	**3.0000 CAL**
4-AM-26-DNT	9.141	341457	**3.0000 CAL**
2-AM-46-DNT	9.474	565200	**3.0000 CAL**
2-NT	11.816	331516	**3.0000 CAL**
4-NT	12.583	281533	**3.0000 CAL**
3-NT	13.432	361134	**3.0000 CAL**

B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.566	475981	**6.0000 CAL**
26-DNT	10.024	579829	**3.0000 CAL**
24-DNT	10.224	555106	**3.0000 CAL**
PETN	14.107	472451	**6.0000 CAL**

QC Check Standard Report

Sequence : C:\Instarch\HPLC 2\Sequences\8330A_B\070616EXPic-PRIMARY.seq
User : red
Printed : Jul 11, 2016 13:45:29

File	Sample ID	Acquired
C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\009.dat	8330 ICV EXP 5836	Jul 11, 2016 13:45:29

A

Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
HMX	0.500	0.446	10.806	20.000	Passed
RDX	0.500	0.459	8.175	20.000	Passed
12-DNB (SSTD)	100.000	89.597	10.403	20.000	Passed
135-TNB	0.500	0.505	1.031	20.000	Passed
13-DNB	0.500	0.465	6.941	20.000	Passed
TETRYL	0.500	0.489	2.237	20.000	Passed
35-DNA	0.500	0.430	14.082	20.000	Passed
NB	0.500	0.466	6.819	20.000	Passed
246-TNT	0.500	0.491	1.831	20.000	Passed
4-AM-26-DNT	0.500	0.417	16.632	20.000	Passed
2-AM-46-DNT	0.500	0.474	5.286	20.000	Passed
2-NT	0.500	0.459	8.222	20.000	Passed
4-NT	0.500	0.470	6.012	20.000	Passed
3-NT	0.500	0.453	9.458	20.000	Passed

B

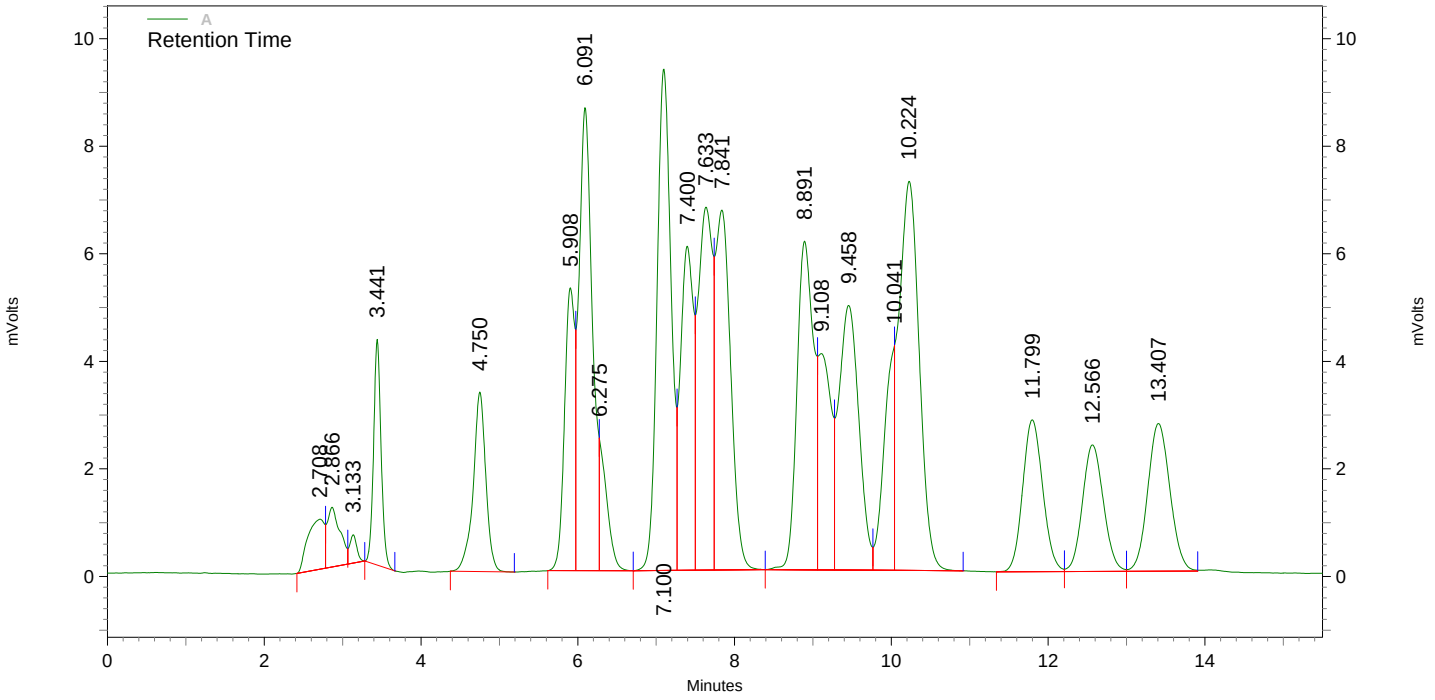
Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
NG	1.000	0.914	8.574	20.000	Passed
26-DNT	0.500	0.442	11.530	20.000	Passed
24-DNT	0.500	0.477	4.547	20.000	Passed
PETN	1.000	0.957	4.330	20.000	Passed

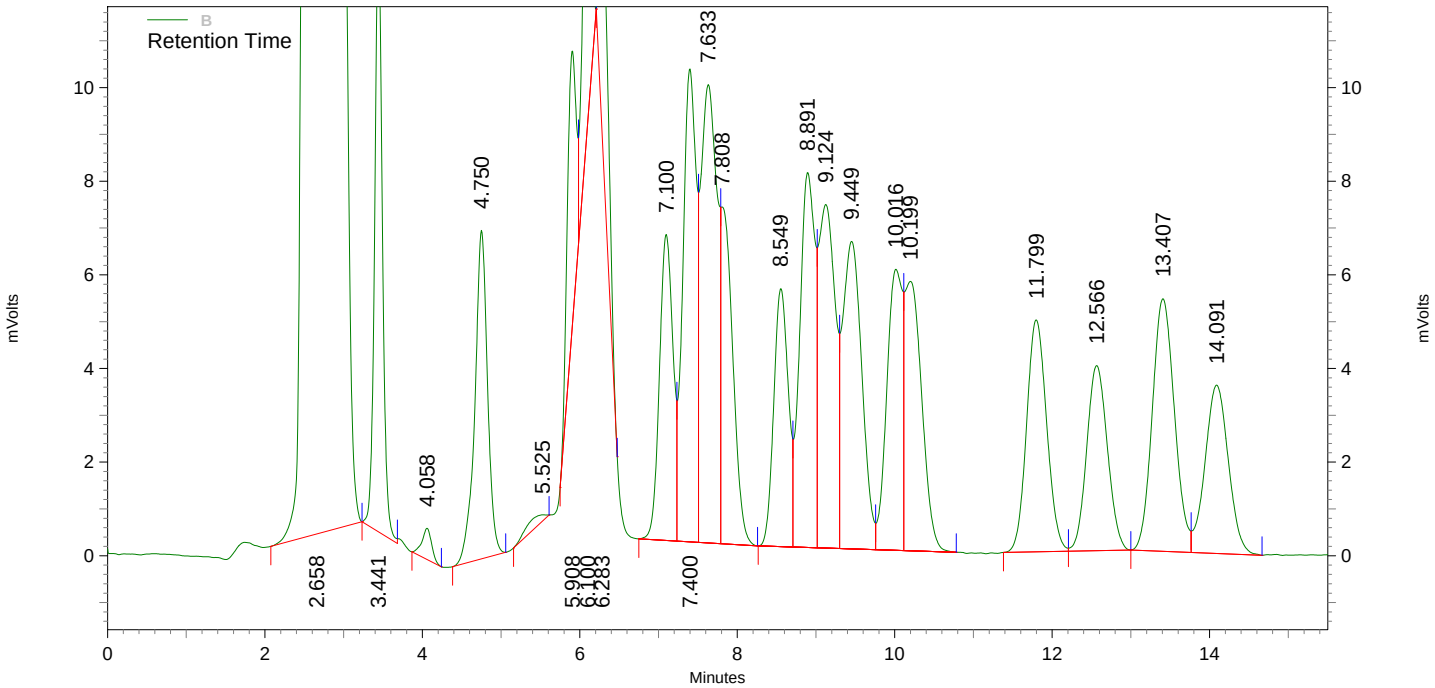
After Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\009.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Sample ID: 8330 ICV EXP 5836
Acquired: Jul 06, 2016 11:54:26
Data Summary: REASON #3 APPLIES TO DATA. RED 7/6/2016

JJY
7/8/2016





File: C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\009.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Sample ID: 8330 ICV EXP 5836
Acquired: Jul 06, 2016 11:54:26
Data Summary: REASON #3 APPLIES TO DATA. RED 7/6/2016

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.441	27834	**0.4460**
RDX	4.750	37390	**0.4591**
12-DNB (SSTD)	5.908	47444	**89.5973**
135-TNB	6.091	102429	**0.5052**
13-DNB	7.100	116090	**0.4653**
TETRYL	7.400	69114	**0.4888**
35-DNA	7.633	86900	**0.4296**
NB	7.841	90365	**0.4659**
246-TNT	8.891	89929	**0.4908**
4-AM-26-DNT	9.108	46776	**0.4168**
2-AM-46-DNT	9.458	87671	**0.4736**
2-NT	11.799	50198	**0.4589**
4-NT	12.566	43645	**0.4699**
3-NT	13.407	54041	**0.4527**

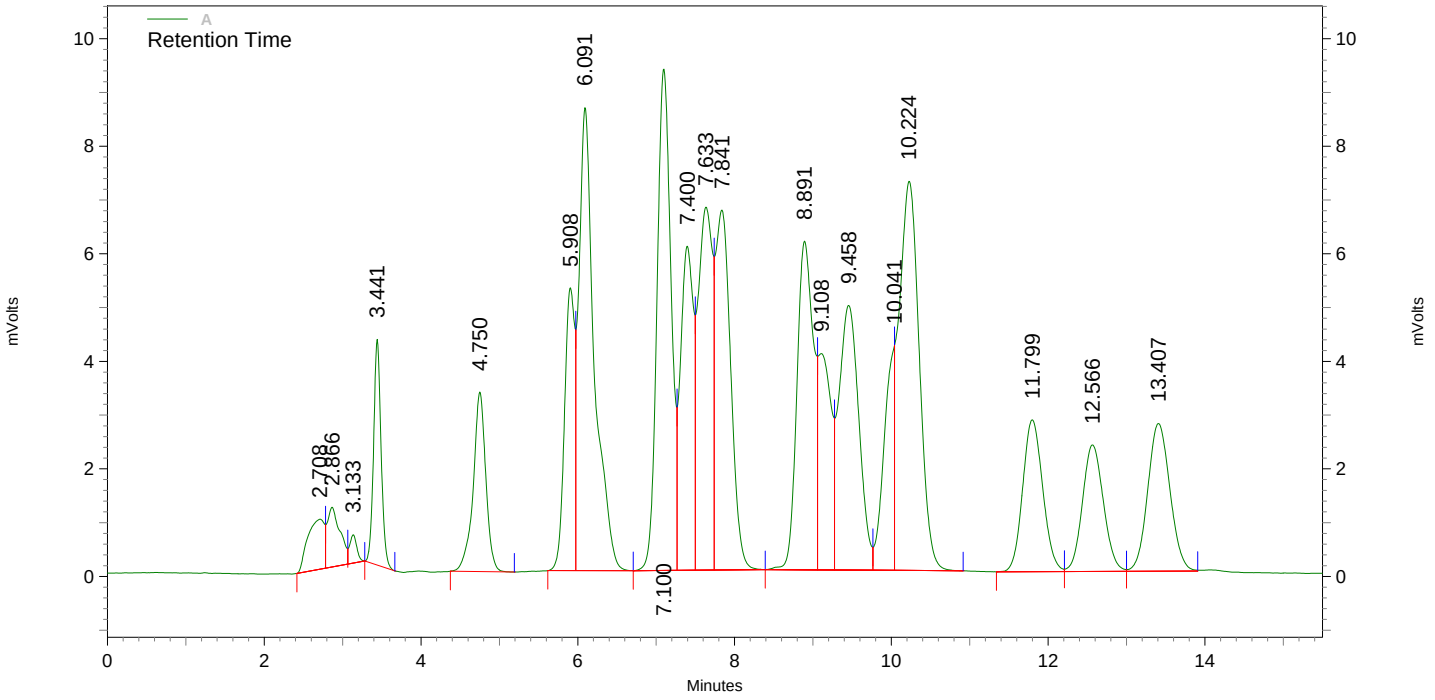
B Results

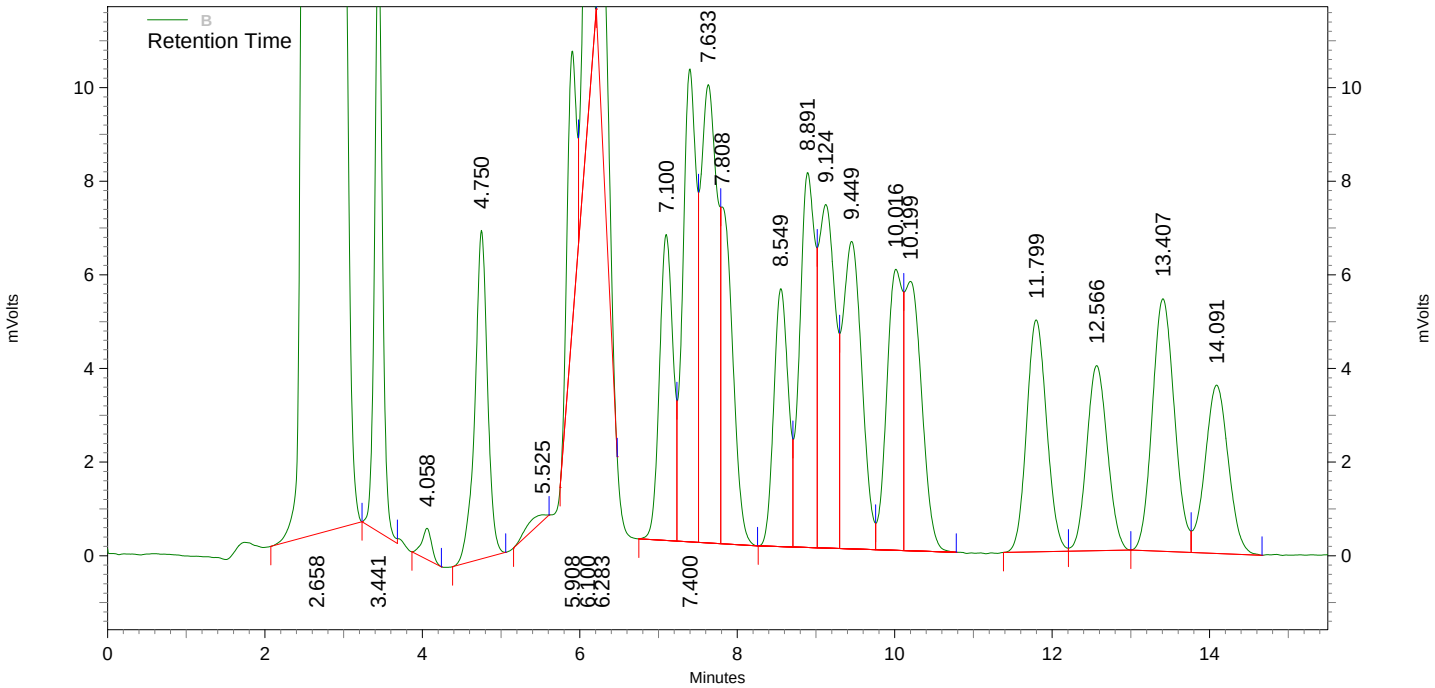
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.549	70526	**0.9143**
26-DNT	10.016	83283	**0.4423**
24-DNT	10.199	86988	**0.4773**
PETN	14.091	74281	**0.9567**

Before Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\009.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Sample ID: 8330 ICV EXP 5836
Acquired: Jul 06, 2016 11:54:26
Data Summary: REASON #3 APPLIES TO DATA. RED 7/6/2016





File: C:\Instarch\HPLC 2\Data\070616EXPic-PRIMARY\009.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\070616EXPic-PRIMARY.met
Sample ID: 8330 ICV EXP 5836
Acquired: Jul 06, 2016 11:54:26
Data Summary: REASON #3 APPLIES TO DATA. RED 7/6/2016

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.441	27834	**0.4460**
RDX	4.750	37390	**0.4591**
12-DNB (SSTD)	5.908	47444	**89.5973**
135-TNB	6.091	118909	**0.5867**
13-DNB	7.100	116090	**0.4653**
TETRYL	7.400	69114	**0.4888**
35-DNA	7.633	86900	**0.4296**
NB	7.841	90365	**0.4659**
246-TNT	8.891	89929	**0.4908**
4-AM-26-DNT	9.108	46776	**0.4168**
2-AM-46-DNT	9.458	87671	**0.4736**
2-NT	11.799	50198	**0.4589**
4-NT	12.566	43645	**0.4699**
3-NT	13.407	54041	**0.4527**

B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.549	70526	**0.9143**
26-DNT	10.016	83283	**0.4423**
24-DNT	10.199	86988	**0.4773**
PETN	14.091	74281	**0.9567**

NITROAROMATICS ANALYSIS
CONTINUING CALIBRATION
DOCUMENTS

QC Check Standard Report

RED
11/10/2016

Sequence : C:\Instarch\HPLC 2\Sequences\8330A_B\101816exp-primary.seq
User : red
Printed : 10/25/2016 10:49:24

File	Sample ID	Acquired
C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\002.dat	8330 CCV EXP 5865	10/25/2016 10:49:04

A

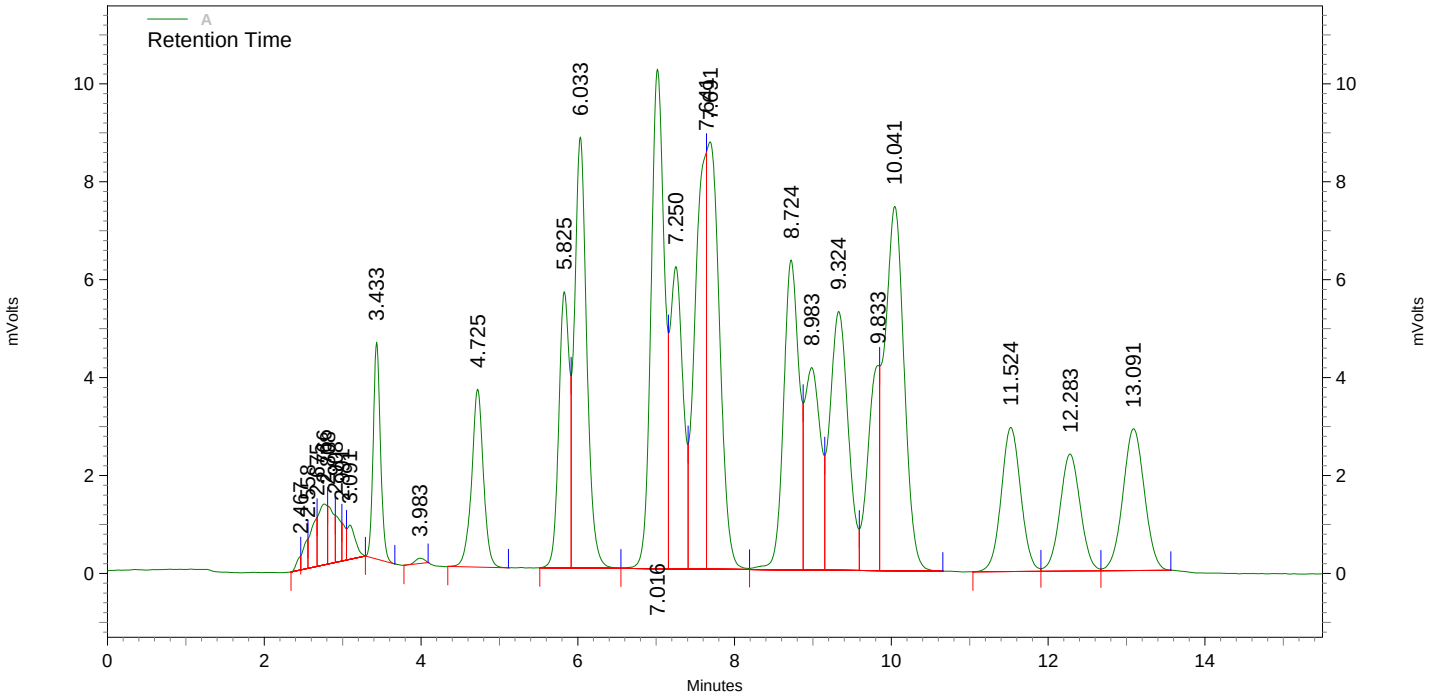
Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
HMX	0.500	0.456	8.896	20.000	Passed
RDX	0.500	0.466	6.889	20.000	Passed
12-DNB (SSTD)	100.000	99.340	0.660	20.000	Passed
135-TNB	0.500	0.472	5.690	20.000	Passed
13-DNB	0.500	0.484	3.201	20.000	Passed
TETRYL	0.500	0.502	0.337	20.000	Passed
35-DNA	0.500	0.418	16.380	20.000	Passed
NB	0.500	0.511	2.230	20.000	Passed
246-TNT	0.500	0.472	5.552	20.000	Passed
4-AM-26-DNT	0.500	0.508	1.513	20.000	Passed
2-AM-46-DNT	0.500	0.466	6.846	20.000	Passed
2-NT	0.500	0.466	6.773	20.000	Passed
4-NT	0.500	0.464	7.273	20.000	Passed
3-NT	0.500	0.464	7.240	20.000	Passed

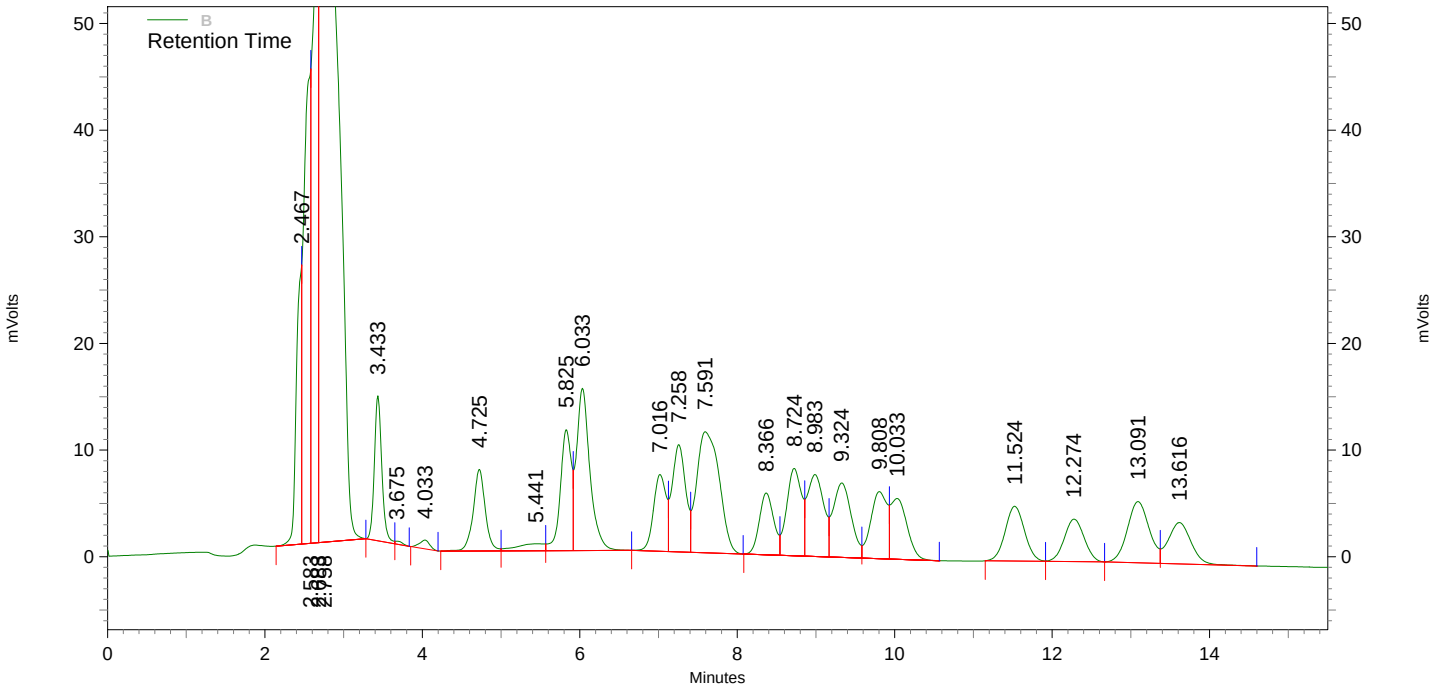
B

Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
NG	1.000	0.957	4.277	20.000	Passed
26-DNT	0.500	0.485	2.912	20.000	Passed
24-DNT	0.500	0.454	9.230	20.000	Passed
PETN	1.000	1.011	1.124	20.000	Passed

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\002.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 8330 CCV EXP 5865
Acquired: 10/19/2016 09:48:06
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\002.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 8330 CCV EXP 5865
Acquired: 10/19/2016 09:48:06
Data Summary: {Data Description}

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.433	28433	**0.4555**
RDX	4.725	37915	**0.4656**
12-DNB (SSTD)	5.825	52611	**99.3403**
135-TNB	6.033	95642	**0.4716**
13-DNB	7.016	120745	**0.4840**
TETRYL	7.250	70926	**0.5017**
35-DNA	7.641	84582	**0.4181**
NB	7.691	99123	**0.5112**
246-TNT	8.724	86529	**0.4722**
4-AM-26-DNT	8.983	57008	**0.5076**
2-AM-46-DNT	9.324	86229	**0.4658**
2-NT	11.524	50988	**0.4661**
4-NT	12.283	43061	**0.4636**
3-NT	13.091	55357	**0.4638**

B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.366	73864	**0.9572**
26-DNT	9.808	91434	**0.4854**
24-DNT	10.033	82712	**0.4538**
PETN	13.616	78466	**1.0112**

QC Check Standard Report

Sequence : C:\Instarch\HPLC 2\Sequences\8330A_B\101816exp-primary.seq
User : red
Printed : 10/25/2016 10:53:40

File	Sample ID	Acquired
C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\013.dat	8330 CCV EXP 5865	10/25/2016 10:53:38

A

Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
HMX	0.500	0.425	14.916	20.000	Passed
RDX	0.500	0.442	11.529	20.000	Passed
12-DNB (SSTD)	100.000	95.447	4.553	20.000	Passed
135-TNB	0.500	0.460	8.041	20.000	Passed
13-DNB	0.500	0.483	3.415	20.000	Passed
TETRYL	0.500	0.470	6.014	20.000	Passed
35-DNA	0.500	0.411	17.893	20.000	Passed
NB	0.500	0.469	6.189	20.000	Passed
246-TNT	0.500	0.450	9.979	20.000	Passed
4-AM-26-DNT	0.500	0.466	6.813	20.000	Passed
2-AM-46-DNT	0.500	0.443	11.362	20.000	Passed
2-NT	0.500	0.453	9.389	20.000	Passed
4-NT	0.500	0.458	8.398	20.000	Passed
3-NT	0.500	0.468	6.461	20.000	Passed

B

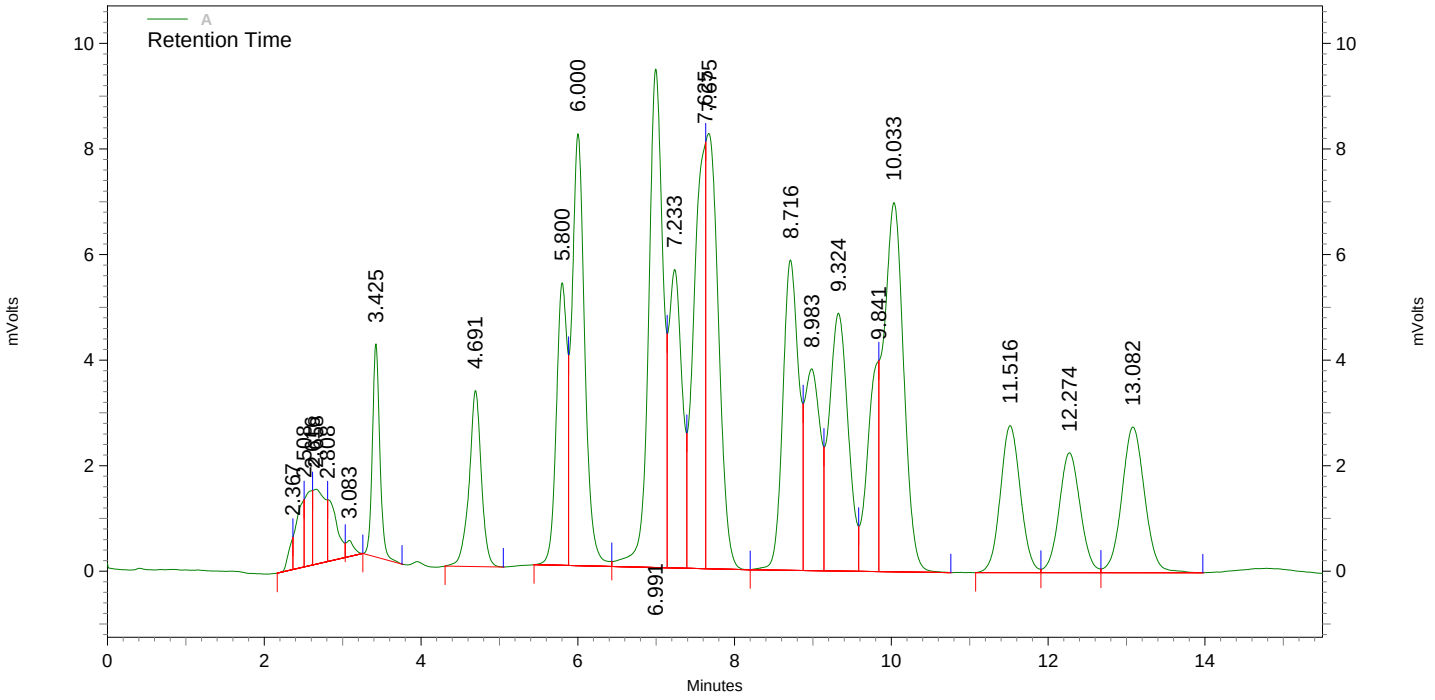
Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
NG	1.000	0.902	9.833	20.000	Passed
26-DNT	0.500	0.455	9.033	20.000	Passed
24-DNT	0.500	0.439	12.226	20.000	Passed
PETN	1.000	0.932	6.789	20.000	Passed

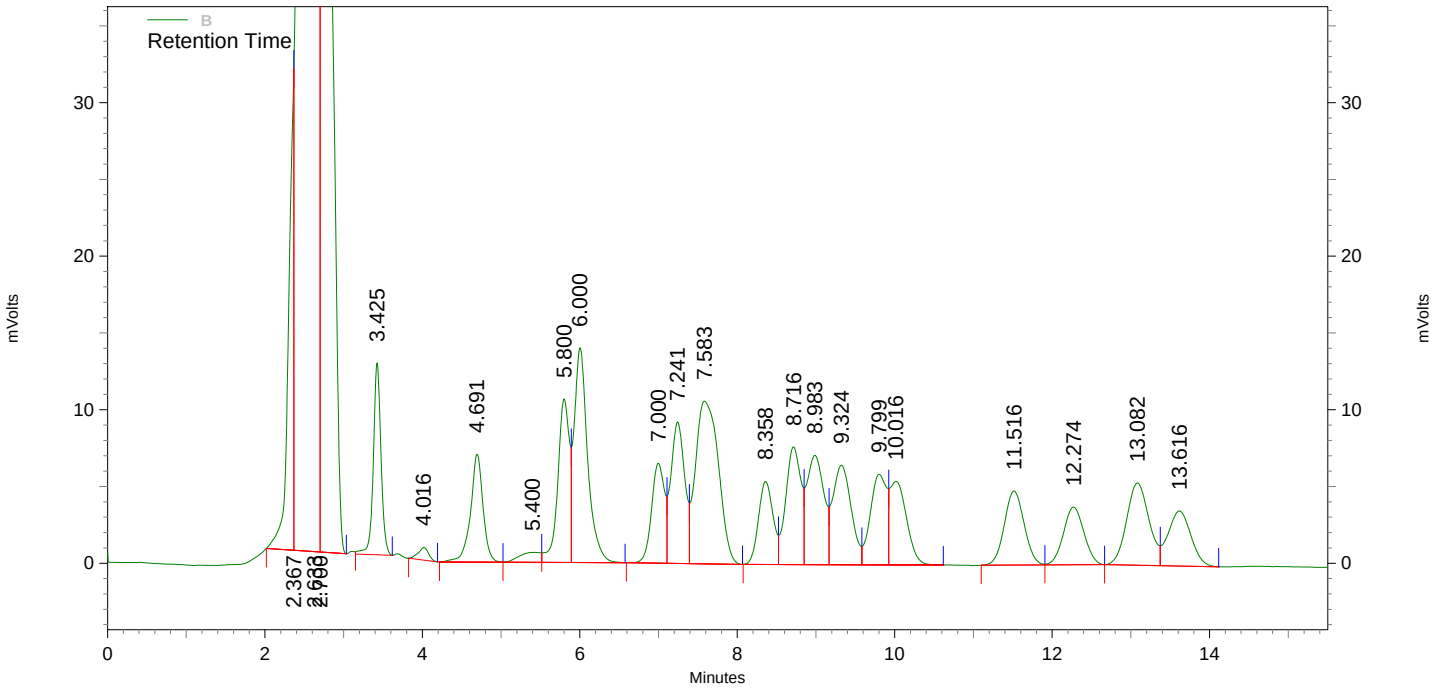
After Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\013.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 8330 CCV EXP 5865
Acquired: 10/19/2016 13:47:20
Data Summary: Reason #3 applies to data. RED 10/20/2016

JJY
11/4/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\013.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 8330 CCV EXP 5865
Acquired: 10/19/2016 13:47:20
Data Summary: Reason #3 applies to data. RED 10/20/2016

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.425	26545	**0.4254**
RDX	4.691	36020	**0.4424**
12-DNB (SSTD)	5.800	50546	**95.4465**
135-TNB	6.000	93268	**0.4598**
13-DNB	6.991	120479	**0.4829**
TETRYL	7.233	66455	**0.4699**
35-DNA	7.625	83055	**0.4105**
NB	7.675	90975	**0.4691**
246-TNT	8.716	82484	**0.4501**
4-AM-26-DNT	8.983	52313	**0.4659**
2-AM-46-DNT	9.324	82055	**0.4432**
2-NT	11.516	49562	**0.4531**
4-NT	12.274	42540	**0.4580**
3-NT	13.082	55819	**0.4677**

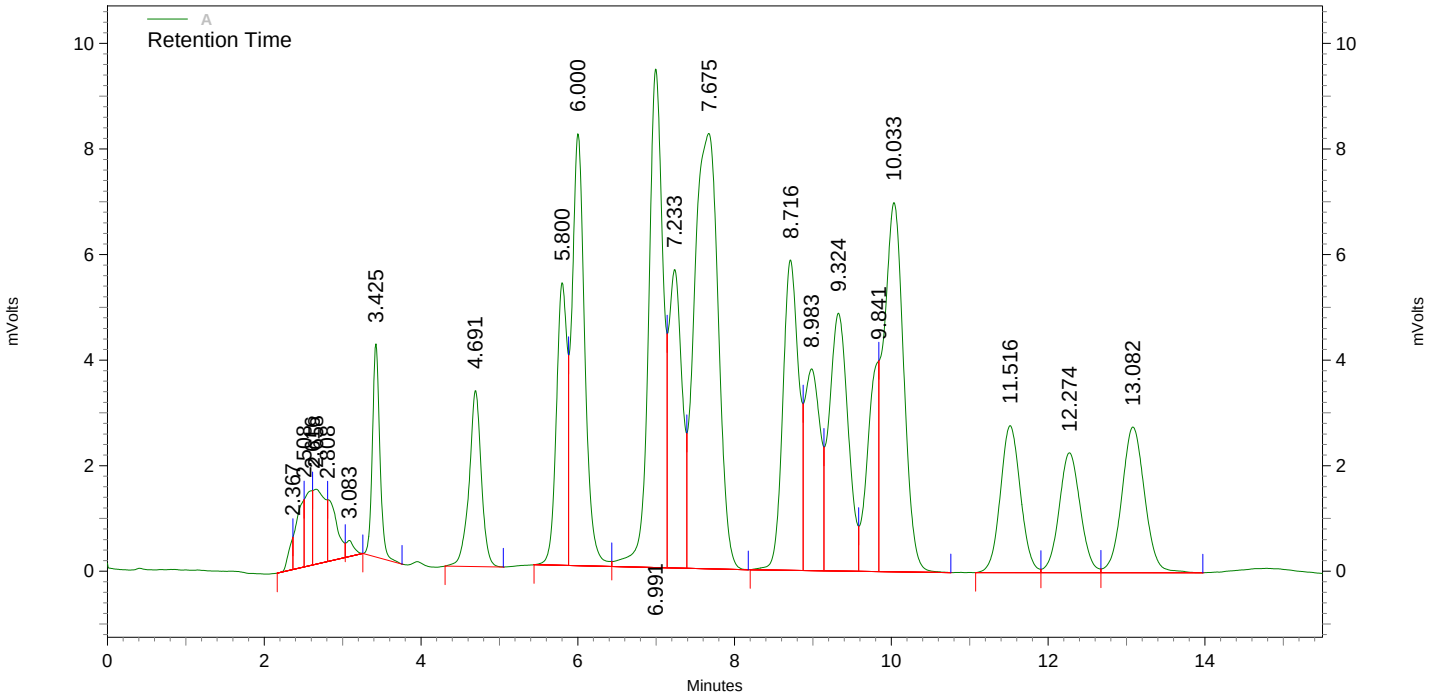
B Results

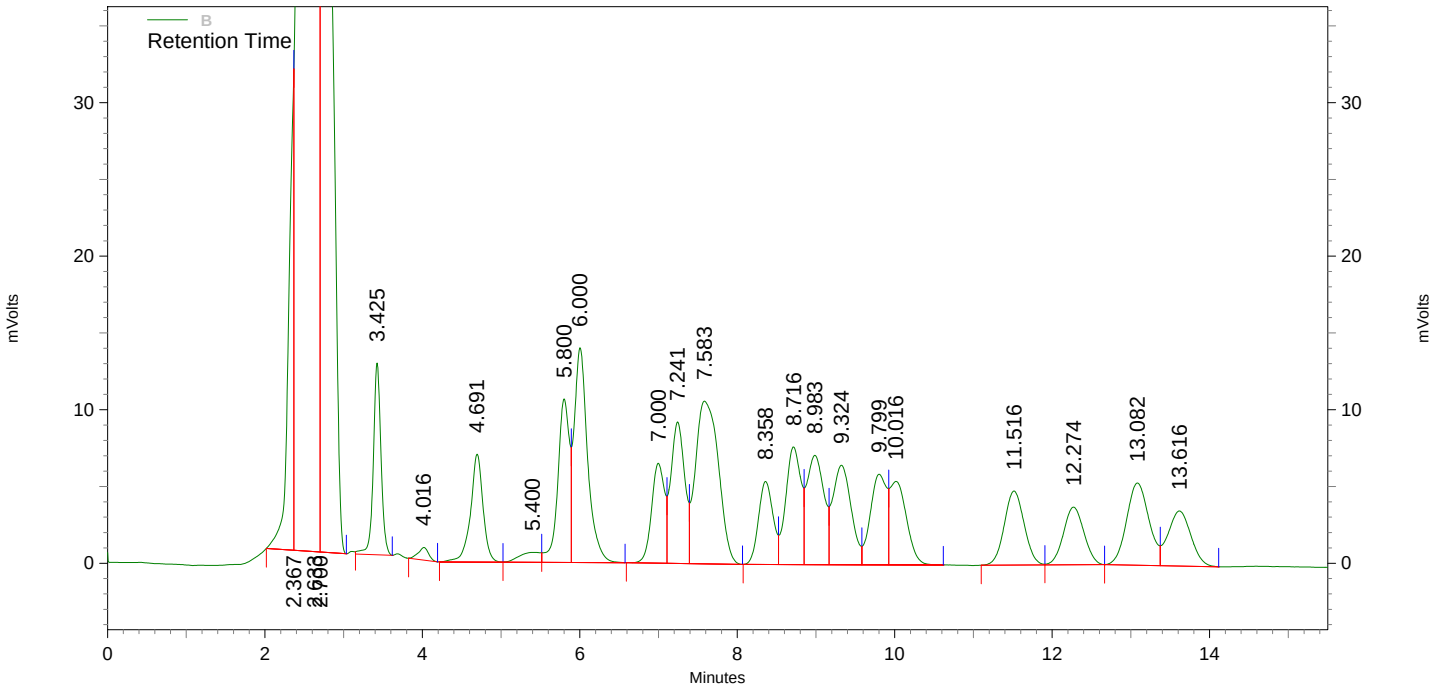
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.358	69548	**0.9017**
26-DNT	9.799	85645	**0.4548**
24-DNT	10.016	79977	**0.4389**
PETN	13.616	72394	**0.9321**

Before Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\013.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 8330 CCV EXP 5865
Acquired: 10/19/2016 13:47:20
Data Summary: Reason #3 applies to data. RED 10/20/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\013.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 8330 CCV EXP 5865
Acquired: 10/19/2016 13:47:20
Data Summary: Reason #3 applies to data. RED 10/20/2016

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.425	26545	**0.4254**
RDX	4.691	36020	**0.4424**
12-DNB (SSTD)	5.800	50548	**95.4503**
135-TNB	6.000	93275	**0.4598**
13-DNB	6.991	120497	**0.4830**
TETRYL	7.233	66463	**0.4700**
35-DNA	7.675	174065	**0.8617**
NB			**0.0000 BDL**
246-TNT	8.716	82484	**0.4501**
4-AM-26-DNT	8.983	52313	**0.4659**
2-AM-46-DNT	9.324	82055	**0.4432**
2-NT	11.516	49562	**0.4531**
4-NT	12.274	42540	**0.4580**
3-NT	13.082	55819	**0.4677**

B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.358	69548	**0.9017**
26-DNT	9.799	85645	**0.4548**
24-DNT	10.016	79977	**0.4389**
PETN	13.616	72394	**0.9321**

QC Check Standard Report

Sequence : C:\Instarch\HPLC 2\Sequences\8330A_B\101816exp-primary.seq
User : red
Printed : 10/25/2016 10:57:41

File	Sample ID	Acquired
C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\024.dat	8330 CCV EXP 5865	10/25/2016 10:57:36

A

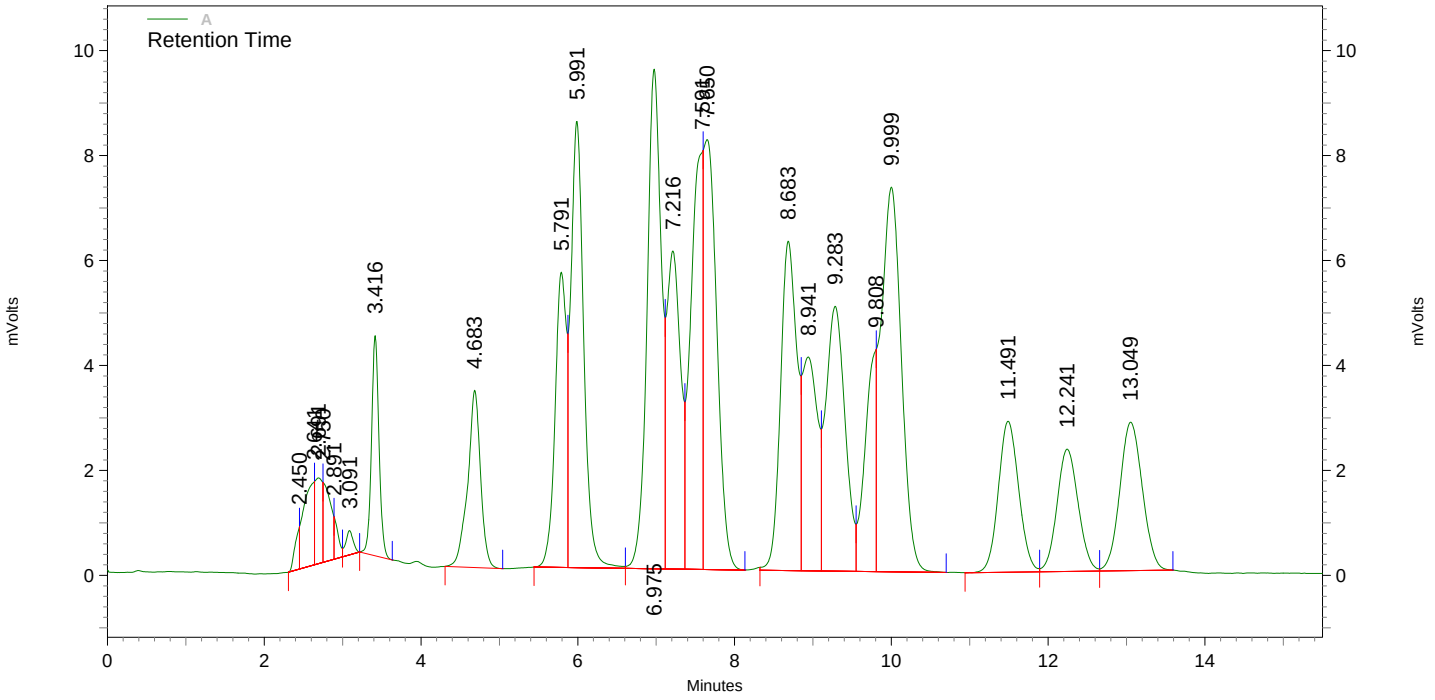
Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
HMX	0.500	0.444	11.118	20.000	Passed
RDX	0.500	0.473	5.457	20.000	Passed
12-DNB (SSTD)	100.000	106.962	6.962	20.000	Passed
135-TNB	0.500	0.480	4.068	20.000	Passed
13-DNB	0.500	0.479	4.131	20.000	Passed
TETRYL	0.500	0.521	4.251	20.000	Passed
35-DNA	0.500	0.420	16.038	20.000	Passed
NB	0.500	0.497	0.646	20.000	Passed
246-TNT	0.500	0.498	0.437	20.000	Passed
4-AM-26-DNT	0.500	0.493	1.419	20.000	Passed
2-AM-46-DNT	0.500	0.466	6.767	20.000	Passed
2-NT	0.500	0.476	4.766	20.000	Passed
4-NT	0.500	0.473	5.482	20.000	Passed
3-NT	0.500	0.474	5.206	20.000	Passed

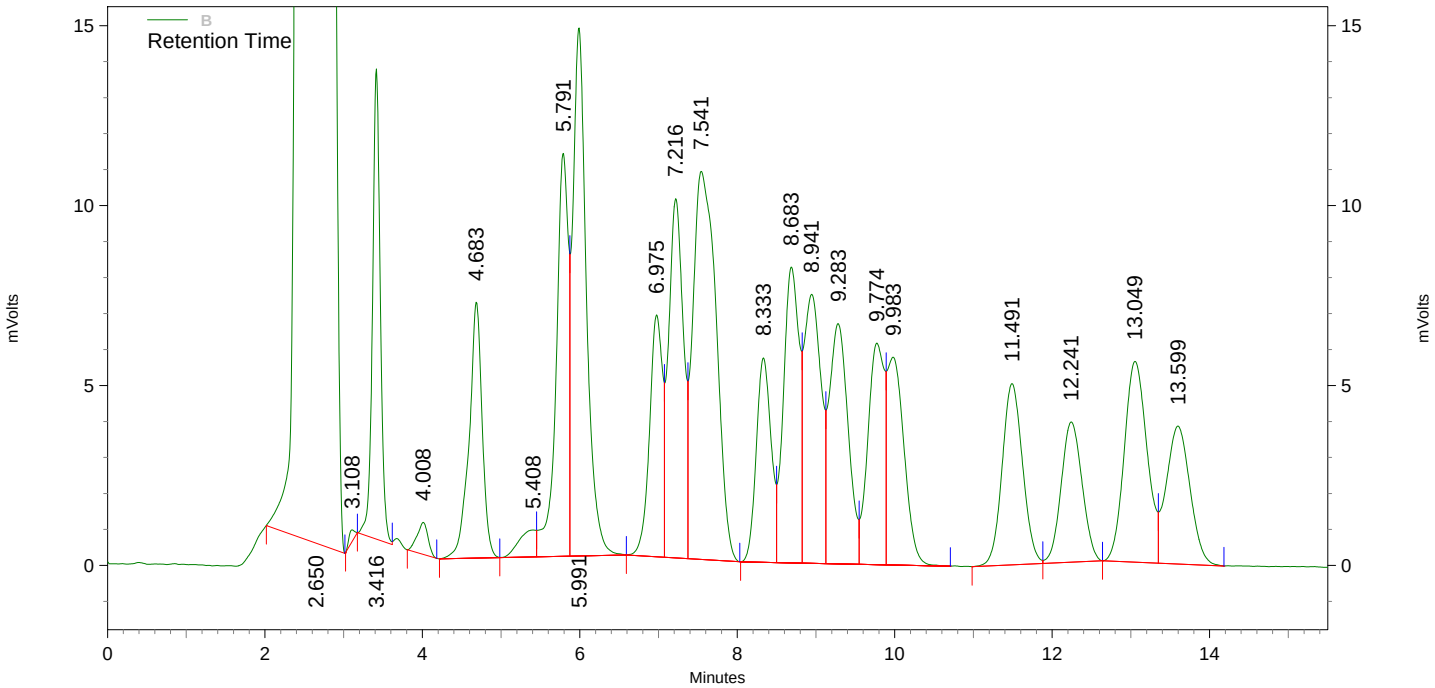
B

Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
NG	1.000	0.964	3.553	20.000	Passed
26-DNT	0.500	0.477	4.608	20.000	Passed
24-DNT	0.500	0.476	4.708	20.000	Passed
PETN	1.000	1.037	3.732	20.000	Passed

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\024.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 8330 CCV EXP 5865
Acquired: 10/19/2016 17:08:37
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\024.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 8330 CCV EXP 5865
Acquired: 10/19/2016 17:08:37
Data Summary: {Data Description}

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.416	27736	**0.4444**
RDX	4.683	38500	**0.4727**
12-DNB (SSTD)	5.791	56653	**106.9620**
135-TNB	5.991	97280	**0.4797**
13-DNB	6.975	119588	**0.4793**
TETRYL	7.216	73681	**0.5213**
35-DNA	7.591	84926	**0.4198**
NB	7.650	96339	**0.4968**
246-TNT	8.683	91202	**0.4978**
4-AM-26-DNT	8.941	55355	**0.4929**
2-AM-46-DNT	9.283	86302	**0.4662**
2-NT	11.491	52082	**0.4762**
4-NT	12.241	43890	**0.4726**
3-NT	13.049	56564	**0.4740**

B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.333	74426	**0.9645**
26-DNT	9.774	89830	**0.4770**
24-DNT	9.983	86841	**0.4765**
PETN	13.599	80467	**1.0373**

QC Check Standard Report

Sequence : C:\Instarch\HPLC 2\Sequences\8330A_B\101816exp-primary.seq
User : red
Printed : 10/25/2016 10:59:09

File	Sample ID	Acquired
C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\028.dat	8330 CCV EXP 5865	10/25/2016 10:58:54

A

Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
HMX	0.500	0.429	14.176	20.000	Passed
RDX	0.500	0.438	12.358	20.000	Passed
12-DNB (SSTD)	100.000	96.295	3.705	20.000	Passed
135-TNB	0.500	0.428	14.319	20.000	Passed
13-DNB	0.500	0.453	9.499	20.000	Passed
TETRYL	0.500	0.464	7.116	20.000	Passed
35-DNA	0.500	0.435	12.911	20.000	Passed
NB	0.500	0.436	12.752	20.000	Passed
246-TNT	0.500	0.434	13.116	20.000	Passed
4-AM-26-DNT	0.500	0.464	7.255	20.000	Passed
2-AM-46-DNT	0.500	0.437	12.506	20.000	Passed
2-NT	0.500	0.430	13.977	20.000	Passed
4-NT	0.500	0.428	14.469	20.000	Passed
3-NT	0.500	0.451	9.830	20.000	Passed

B

Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
NG	1.000	0.910	8.994	20.000	Passed
26-DNT	0.500	0.439	12.186	20.000	Passed
24-DNT	0.500	0.447	10.544	20.000	Passed
PETN	1.000	0.944	5.612	20.000	Passed

After Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\028.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 8330 CCV EXP 5865
Acquired: 10/19/2016 18:21:46
Data Summary: REASON #3 APPLIES TO DATA. RED 10/24/2016

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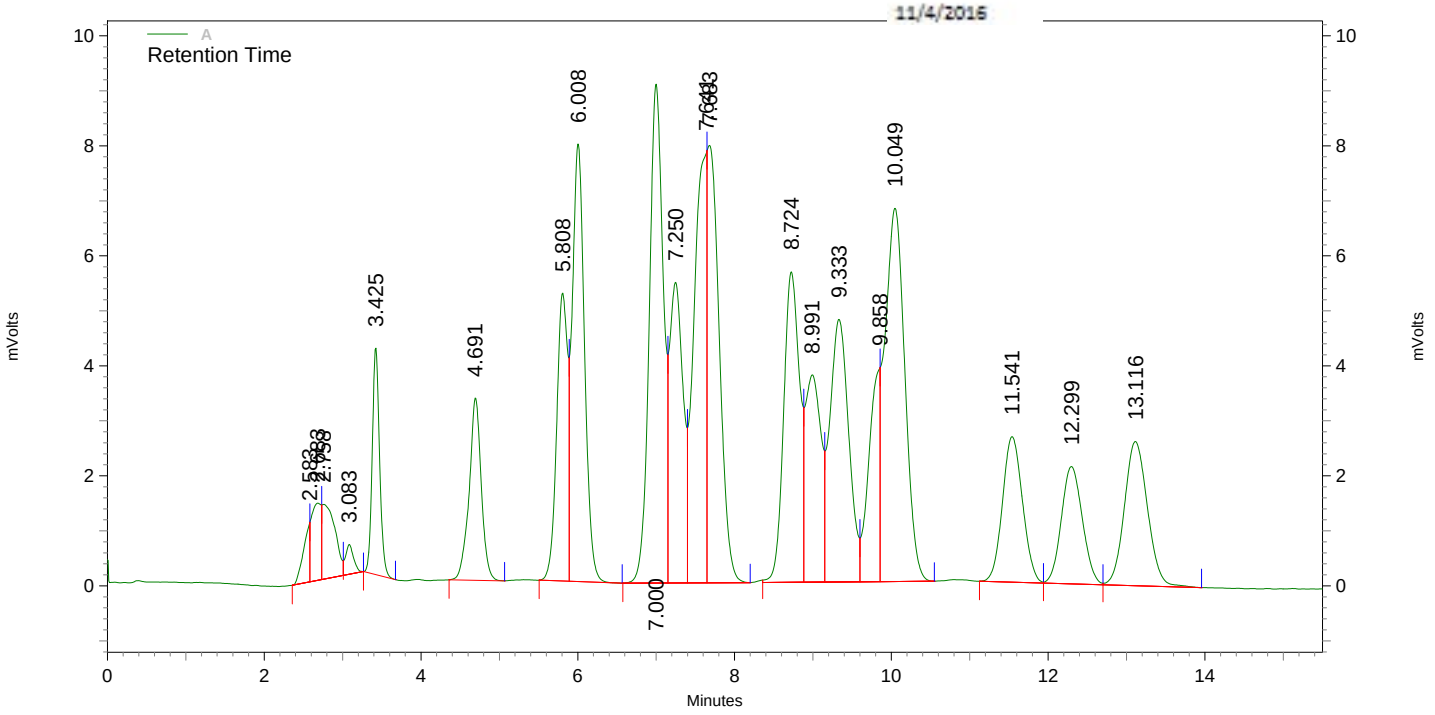
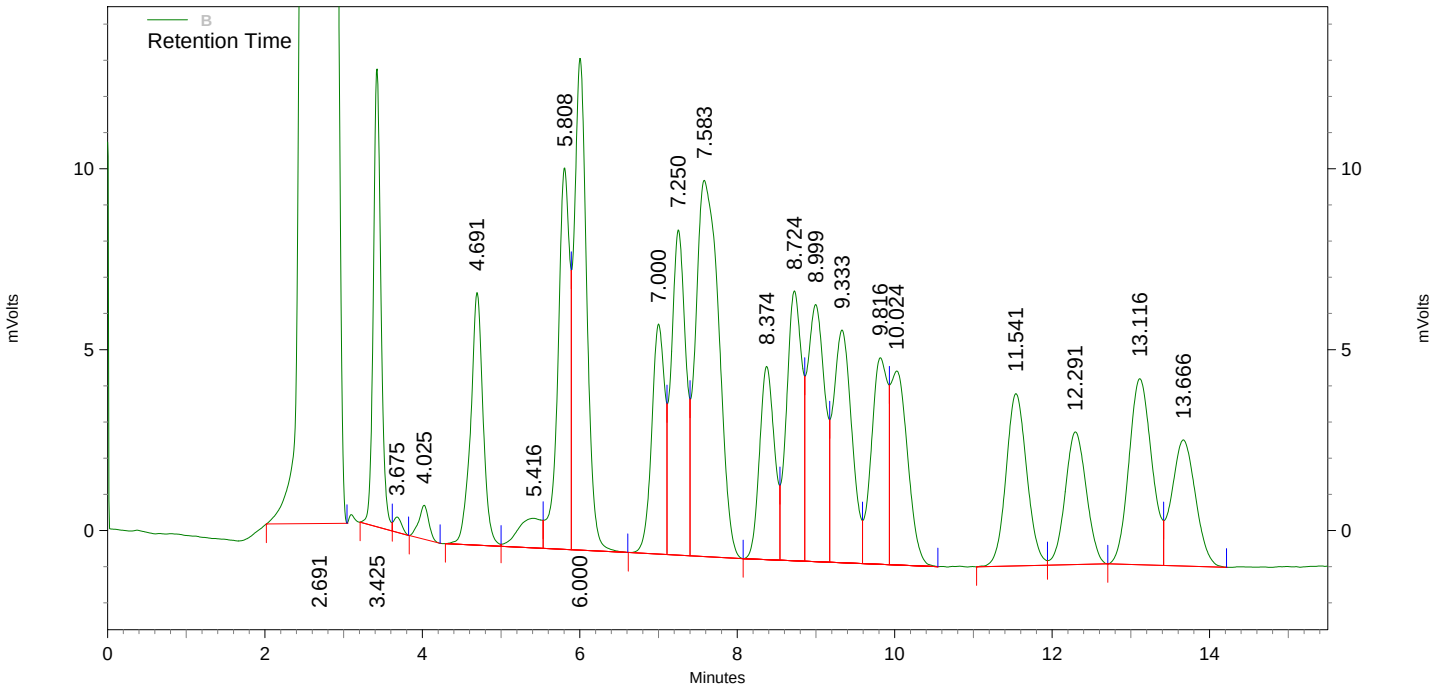




File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\028.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 8330 CCV EXP 5865
Acquired: 10/19/2016 18:21:46
Data Summary: REASON #3 APPLIES TO DATA. RED 10/24/2016

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.425	26777	**0.4291**
RDX	4.691	35681	**0.4382**
12-DNB (SSTD)	5.808	50996	**96.2950**
135-TNB	6.008	86927	**0.4284**
13-DNB	7.000	112906	**0.4525**
TETRYL	7.250	65679	**0.4644**
35-DNA	7.641	88081	**0.4354**
NB	7.683	84624	**0.4362**
246-TNT	8.724	79618	**0.4344**
4-AM-26-DNT	8.991	52064	**0.4637**
2-AM-46-DNT	9.333	80997	**0.4375**
2-NT	11.541	47061	**0.4301**
4-NT	12.299	39729	**0.4277**
3-NT	13.116	53820	**0.4508**

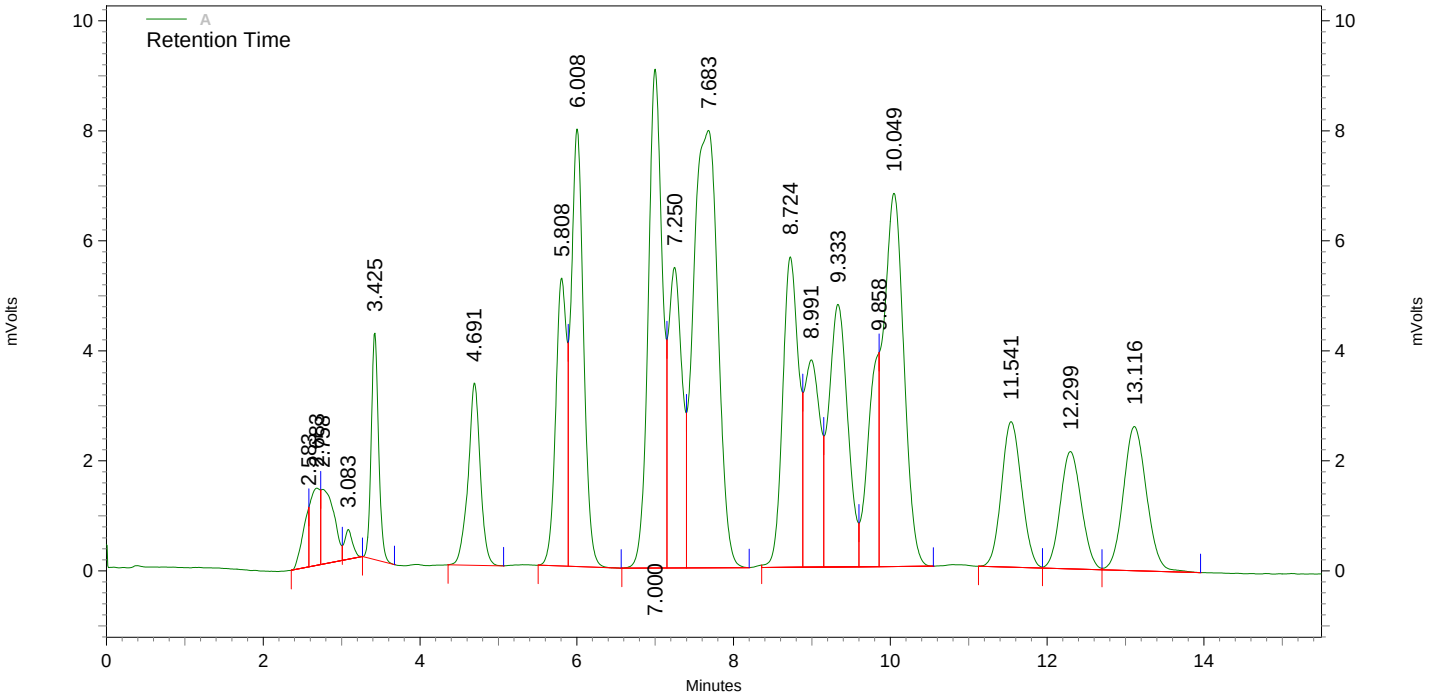
B Results

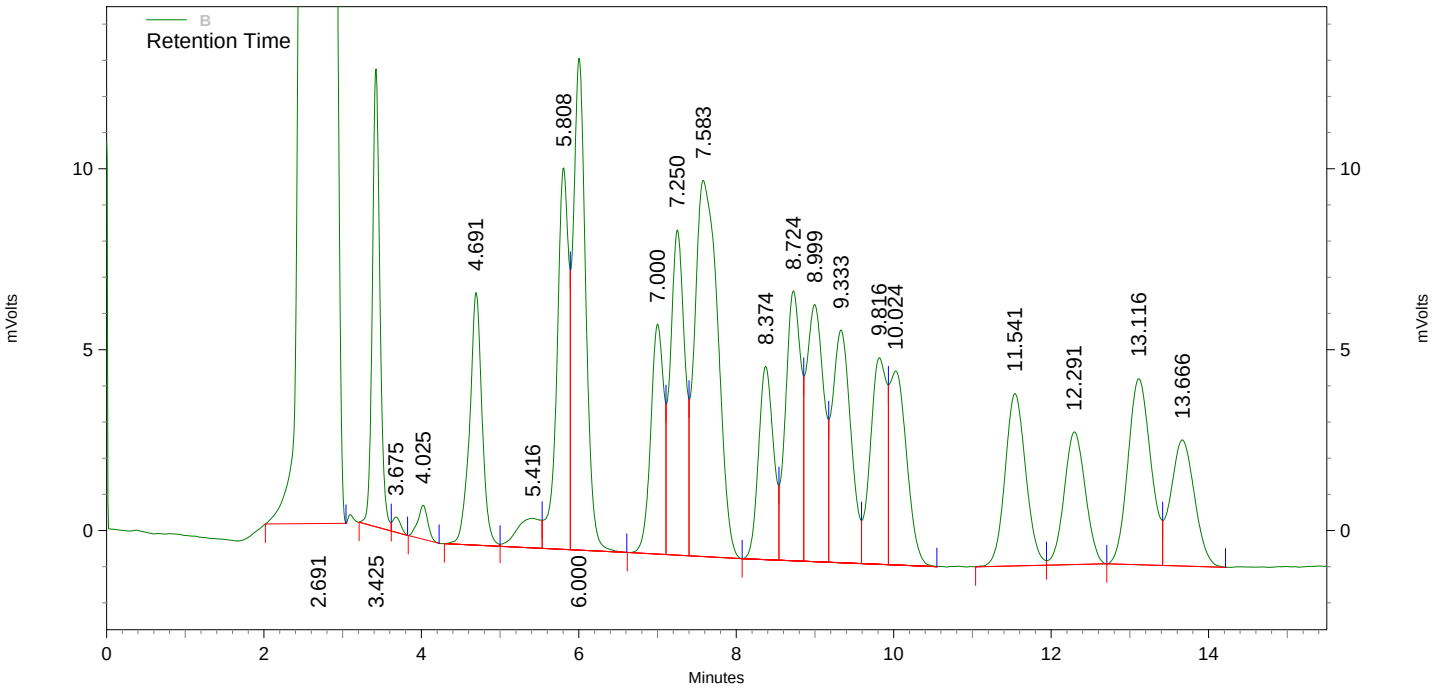
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.374	70200	**0.9101**
26-DNT	9.816	82663	**0.4391**
24-DNT	10.024	81512	**0.4473**
PETN	13.666	73297	**0.9439**

Before Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\028.dat
User ID: RED
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 8330 CCV EXP 5865
Acquired: 10/19/2016 18:21:46
Data Summary: REASON #3 APPLIES TO DATA. RED 10/24/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\028.dat
User ID: RED
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 8330 CCV EXP 5865
Acquired: 10/19/2016 18:21:46
Data Summary: REASON #3 APPLIES TO DATA. RED 10/24/2016

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.425	26777	**0.4291**
RDX	4.691	35681	**0.4382**
12-DNB (SSTD)	5.808	50996	**96.2950**
135-TNB	6.008	86927	**0.4284**
13-DNB	7.000	112906	**0.4525**
TETRYL	7.250	65679	**0.4644**
35-DNA			**0.0000 BDL**
NB	7.683	172705	**0.8913**
246-TNT	8.724	79618	**0.4344**
4-AM-26-DNT	8.991	52064	**0.4637**
2-AM-46-DNT	9.333	80997	**0.4375**
2-NT	11.541	47061	**0.4301**
4-NT	12.299	39729	**0.4277**
3-NT	13.116	53820	**0.4508**

B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.374	70200	**0.9101**
26-DNT	9.816	82663	**0.4391**
24-DNT	10.024	81512	**0.4473**
PETN	13.666	73297	**0.9439**

QC Check Standard Report

Sequence : C:\Instarch\HPLC 2\Sequences\8330A_B\101816exp-primary.seq
User : red
Printed : 10/25/2016 11:01:00

File	Sample ID	Acquired
C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\030.dat	8330 CCV EXP 5866	10/25/2016 11:00:52

A

Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
HMX	0.500	0.466	6.709	20.000	Passed
RDX	0.500	0.476	4.772	20.000	Passed
12-DNB (SSTD)	100.000	102.303	2.303	20.000	Passed
135-TNB	0.500	0.463	7.334	20.000	Passed
13-DNB	0.500	0.479	4.195	20.000	Passed
TETRYL	0.500	0.524	4.793	20.000	Passed
35-DNA	0.500	0.450	9.994	20.000	Passed
NB	0.500	0.477	4.554	20.000	Passed
246-TNT	0.500	0.486	2.786	20.000	Passed
4-AM-26-DNT	0.500	0.503	0.603	20.000	Passed
2-AM-46-DNT	0.500	0.474	5.281	20.000	Passed
2-NT	0.500	0.474	5.271	20.000	Passed
4-NT	0.500	0.476	4.852	20.000	Passed
3-NT	0.500	0.475	4.911	20.000	Passed

B

Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
NG	1.000	0.996	0.370	20.000	Passed
26-DNT	0.500	0.490	1.912	20.000	Passed
24-DNT	0.500	0.487	2.537	20.000	Passed
PETN	1.000	1.005	0.513	20.000	Passed

After Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\030.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 8330 CCV EXP 5866
Acquired: 10/20/2016 09:30:29
Data Summary: REASON #3 APPLIES TO DATA. RED 10/20/2016

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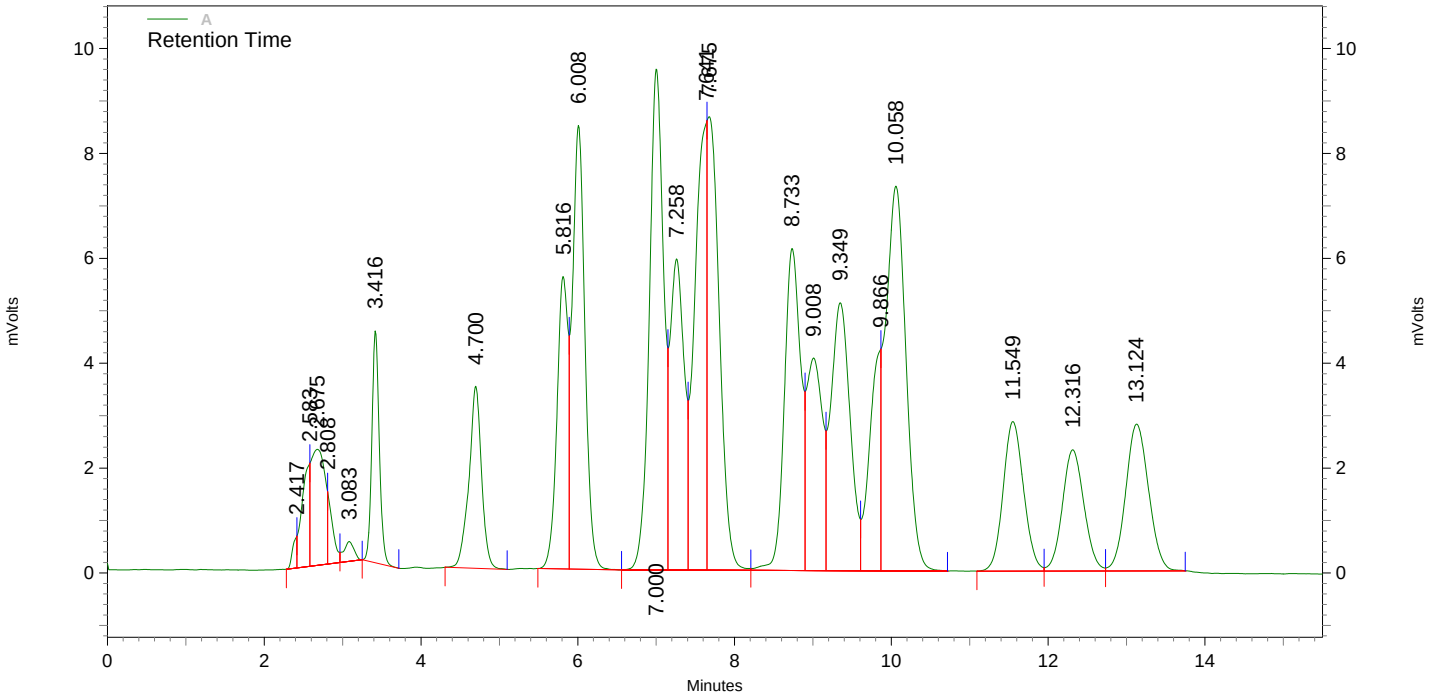
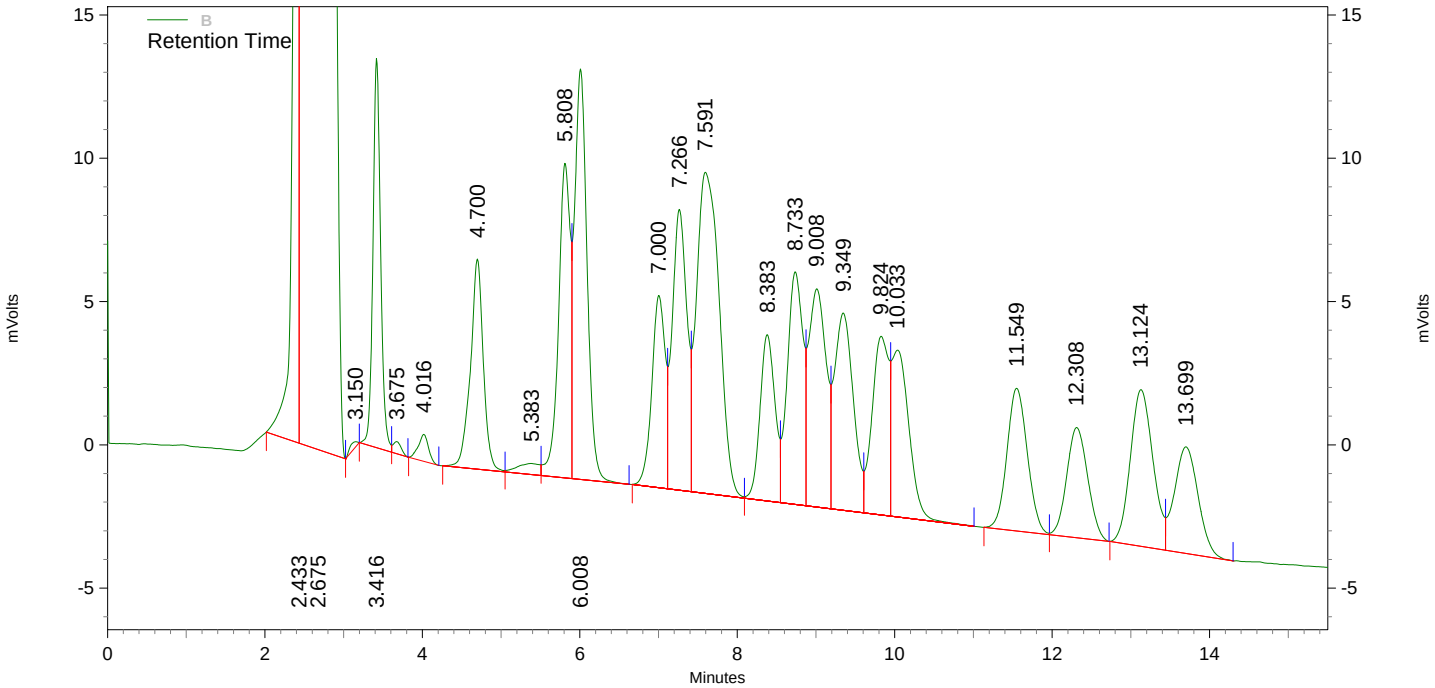
11/4/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\030.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 8330 CCV EXP 5866
Acquired: 10/20/2016 09:30:29
Data Summary: REASON #3 APPLIES TO DATA. RED 10/20/2016

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.416	29119	**0.4665**
RDX	4.700	38780	**0.4761**
12-DNB (SSTD)	5.816	54182	**102.3027**
135-TNB	6.008	93982	**0.4633**
13-DNB	7.000	119508	**0.4790**
TETRYL	7.258	74063	**0.5240**
35-DNA	7.641	91023	**0.4500**
NB	7.675	92557	**0.4772**
246-TNT	8.733	89056	**0.4861**
4-AM-26-DNT	9.008	56495	**0.5030**
2-AM-46-DNT	9.349	87676	**0.4736**
2-NT	11.549	51807	**0.4736**
4-NT	12.316	44182	**0.4757**
3-NT	13.124	56739	**0.4754**

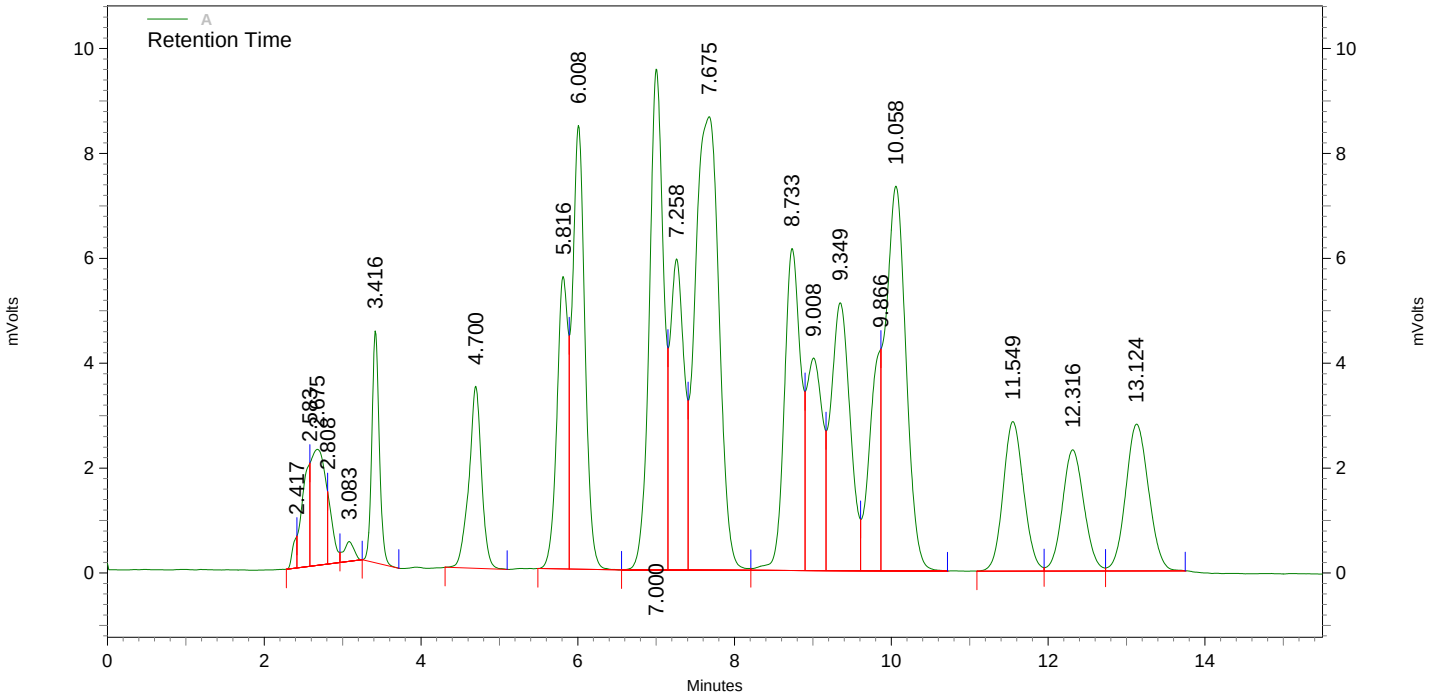
B Results

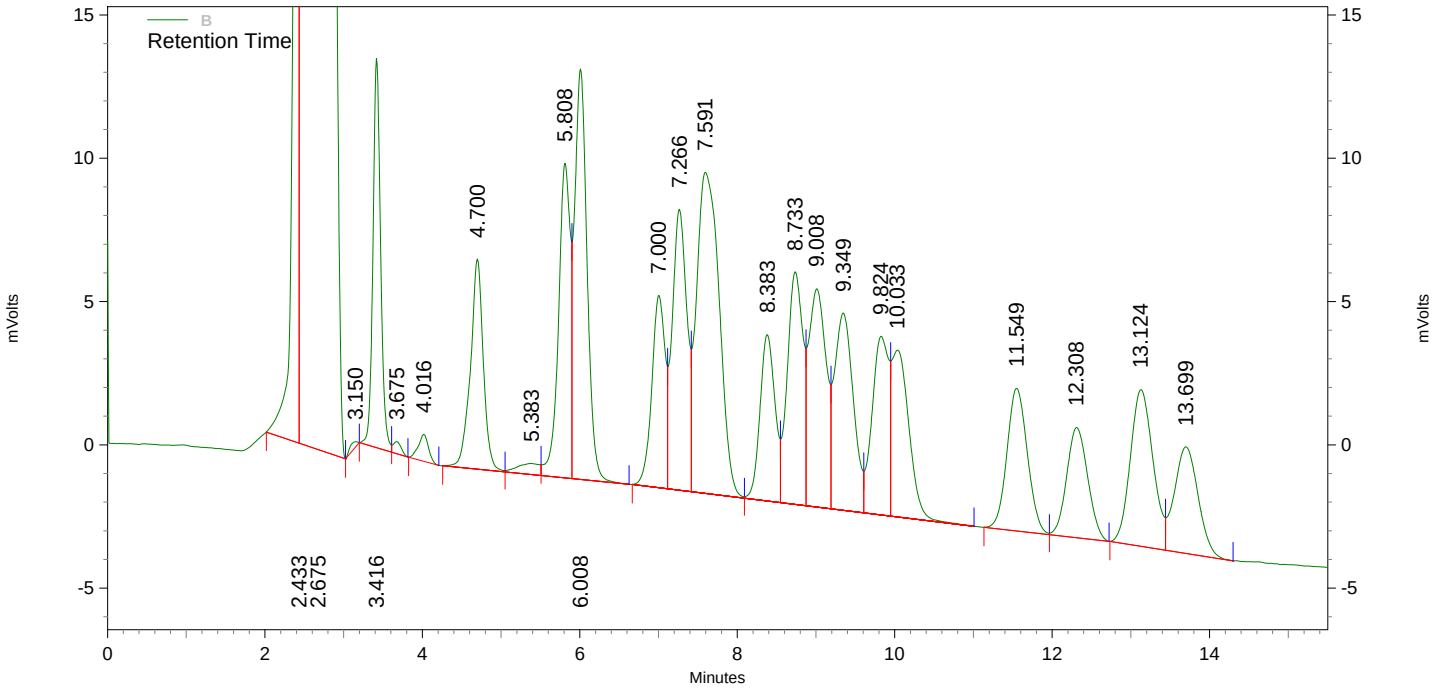
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.383	76899	**0.9963**
26-DNT	9.824	92380	**0.4904**
24-DNT	10.033	88823	**0.4873**
PETN	13.699	77997	**1.0051**

Before Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\030.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: {Sample ID}
Acquired: Oct 20, 2016 09:30:29
Data Summary: REASON #3 APPLIES TO DATA. RED 10/20/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\030.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: {Sample ID}
Acquired: Oct 20, 2016 09:30:29
Data Summary: REASON #3 APPLIES TO DATA. RED 10/20/2016

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.416	29119	**0.4665**
RDX	4.700	38780	**0.4761**
12-DNB (SSTD)	5.816	54182	**102.3027**
135-TNB	6.008	93982	**0.4633**
13-DNB	7.000	119508	**0.4790**
TETRYL	7.258	74063	**0.5240**
35-DNA	7.675	183580	**0.9088**
NB			**0.0000 BDL**
246-TNT	8.733	89056	**0.4861**
4-AM-26-DNT	9.008	56495	**0.5030**
2-AM-46-DNT	9.349	87676	**0.4736**
2-NT	11.549	51807	**0.4736**
4-NT	12.316	44182	**0.4757**
3-NT	13.124	56739	**0.4754**

B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.383	76899	**0.9963**
26-DNT	9.824	92380	**0.4904**
24-DNT	10.033	88823	**0.4873**
PETN	13.699	77997	**1.0051**

QC Check Standard Report

Sequence : C:\Instarch\HPLC 2\Sequences\8330A_B\101816exp-primary.seq
User : red
Printed : 10/25/2016 11:01:38

File	Sample ID	Acquired
C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\032.dat	8330 CCV EXP 5866	10/25/2016 11:01:34

A

Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
HMX	0.500	0.463	7.397	20.000	Passed
RDX	0.500	0.473	5.467	20.000	Passed
12-DNB (SSTD)	100.000	103.449	3.449	20.000	Passed
135-TNB	0.500	0.456	8.811	20.000	Passed
13-DNB	0.500	0.488	2.321	20.000	Passed
TETRYL	0.500	0.526	5.110	20.000	Passed
35-DNA	0.500	0.447	10.621	20.000	Passed
NB	0.500	0.477	4.664	20.000	Passed
246-TNT	0.500	0.483	3.314	20.000	Passed
4-AM-26-DNT	0.500	0.507	1.328	20.000	Passed
2-AM-46-DNT	0.500	0.463	7.331	20.000	Passed
2-NT	0.500	0.476	4.816	20.000	Passed
4-NT	0.500	0.472	5.688	20.000	Passed
3-NT	0.500	0.470	6.001	20.000	Passed

B

Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
NG	1.000	0.960	4.012	20.000	Passed
26-DNT	0.500	0.474	5.192	20.000	Passed
24-DNT	0.500	0.486	2.811	20.000	Passed
PETN	1.000	1.007	0.675	20.000	Passed

Explosives - 8330

After Manual Integration

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\032.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 8330 CCV EXP 5866
Acquired: 10/20/2016 10:07:03

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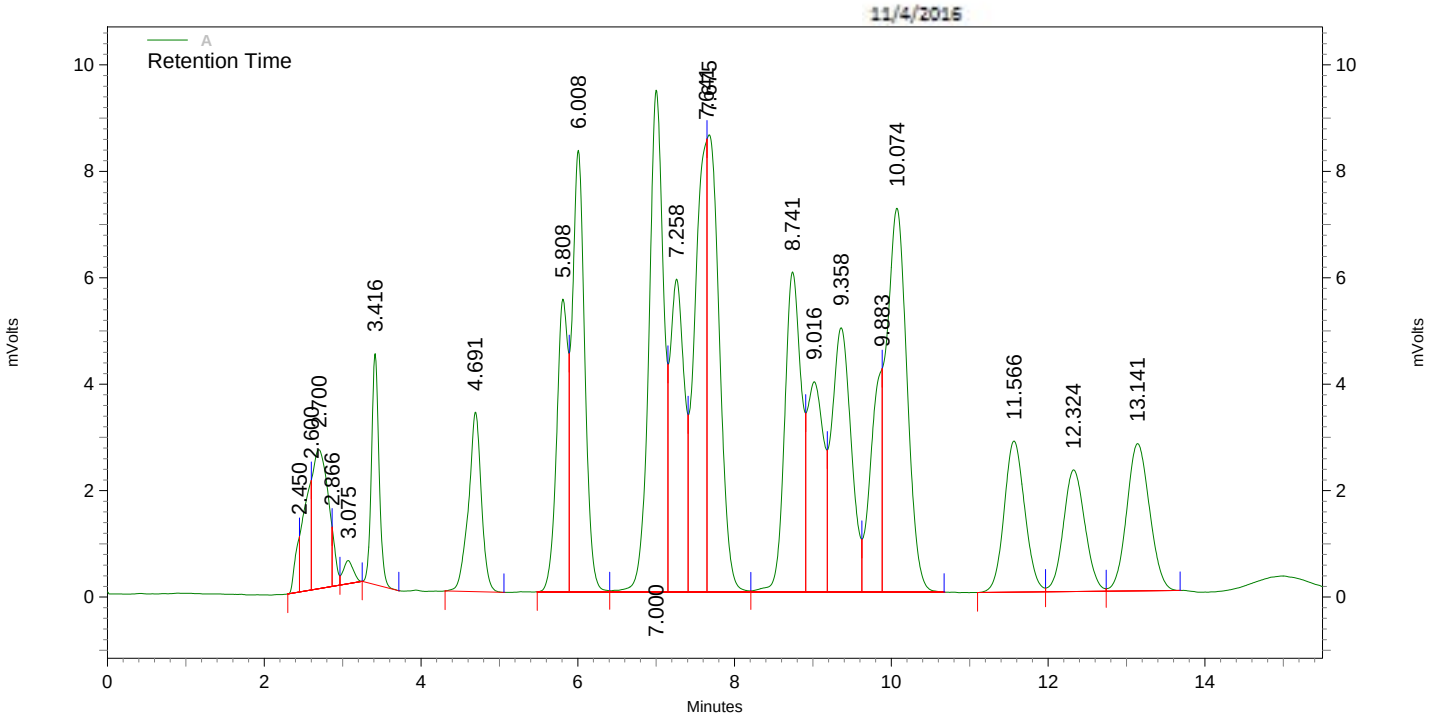
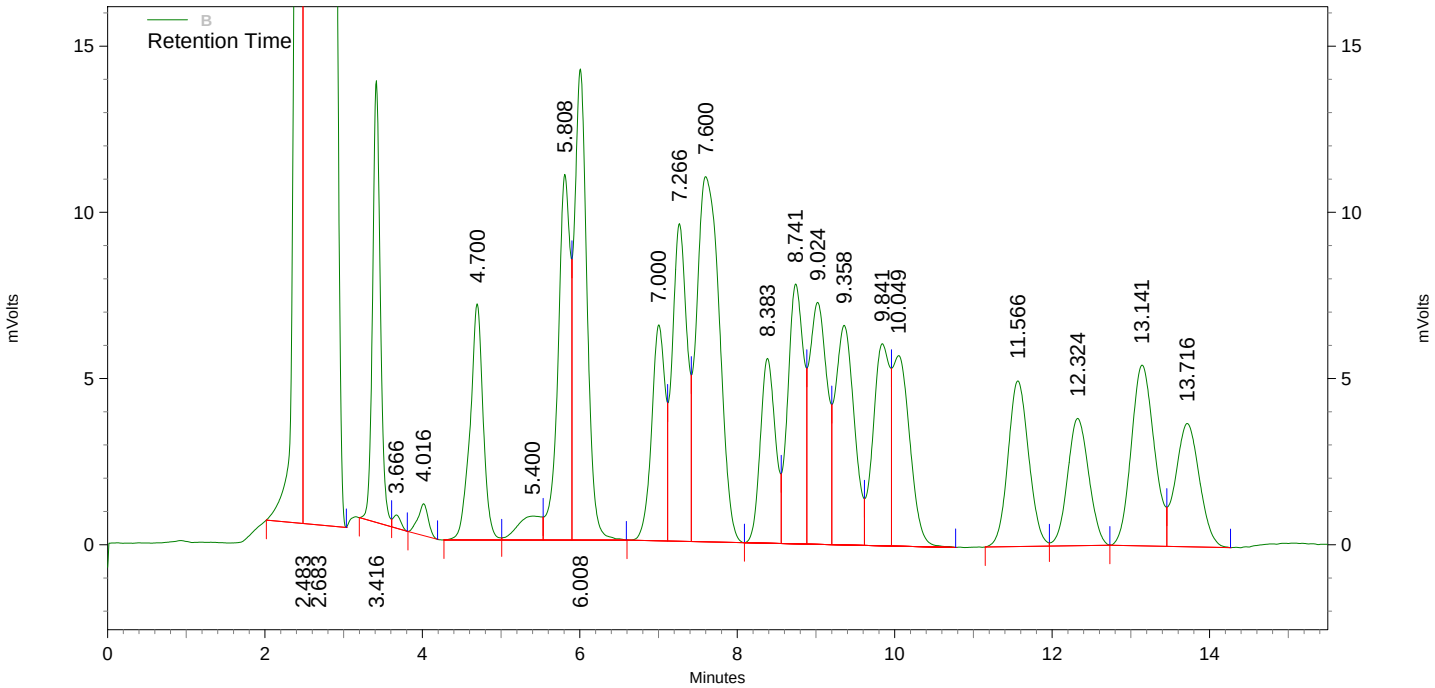
11/4/2016

Data Summary: REASON #3 APPLIES TO DATA. RED 10/24/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\032.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 8330 CCV EXP 5866
Acquired: 10/20/2016 10:07:03
Data Summary: REASON #3 APPLIES TO DATA. RED 10/24/2016

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.416	28903	**0.4630**
RDX	4.691	38496	**0.4727**
12-DNB (SSTD)	5.808	54790	**103.4491**
135-TNB	6.008	92490	**0.4559**
13-DNB	7.000	121841	**0.4884**
TETRYL	7.258	74286	**0.5256**
35-DNA	7.641	90391	**0.4469**
NB	7.675	92451	**0.4767**
246-TNT	8.741	88574	**0.4834**
4-AM-26-DNT	9.016	56904	**0.5066**
2-AM-46-DNT	9.358	85781	**0.4633**
2-NT	11.566	52055	**0.4759**
4-NT	12.324	43795	**0.4716**
3-NT	13.141	56092	**0.4700**

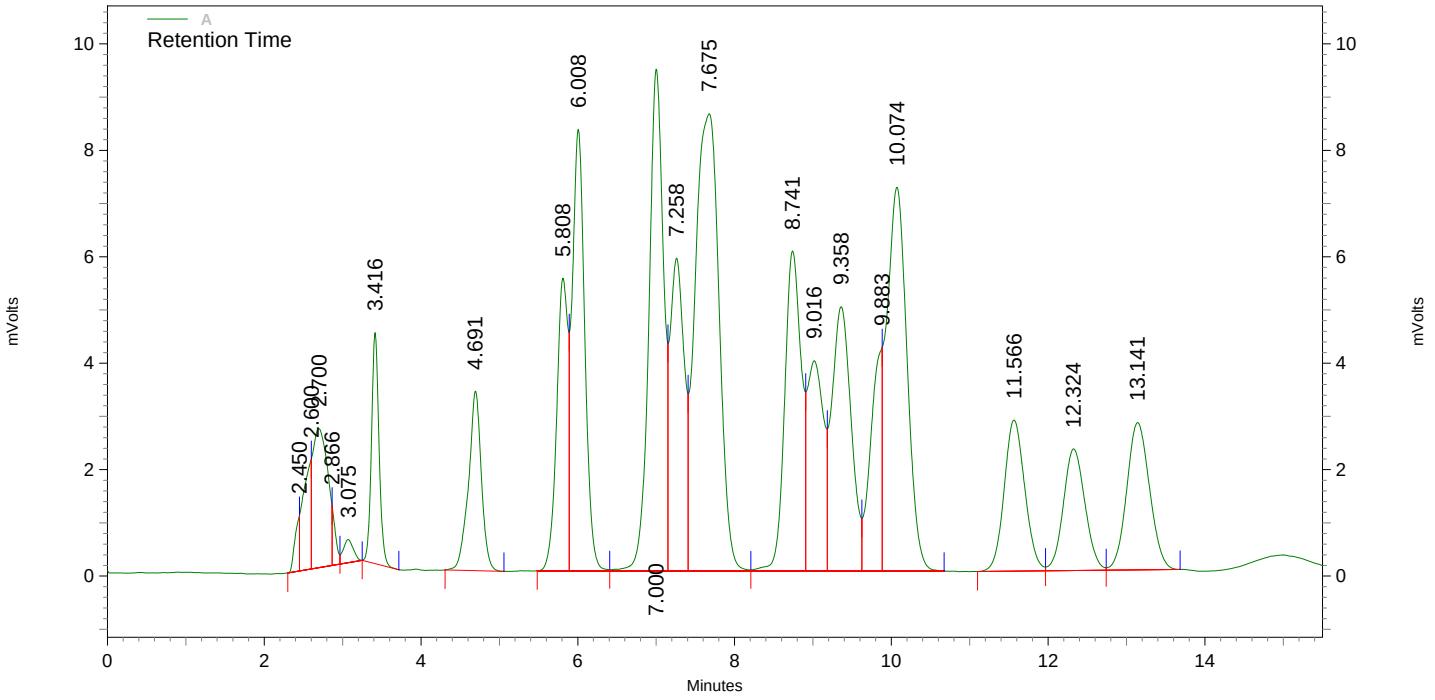
B Results

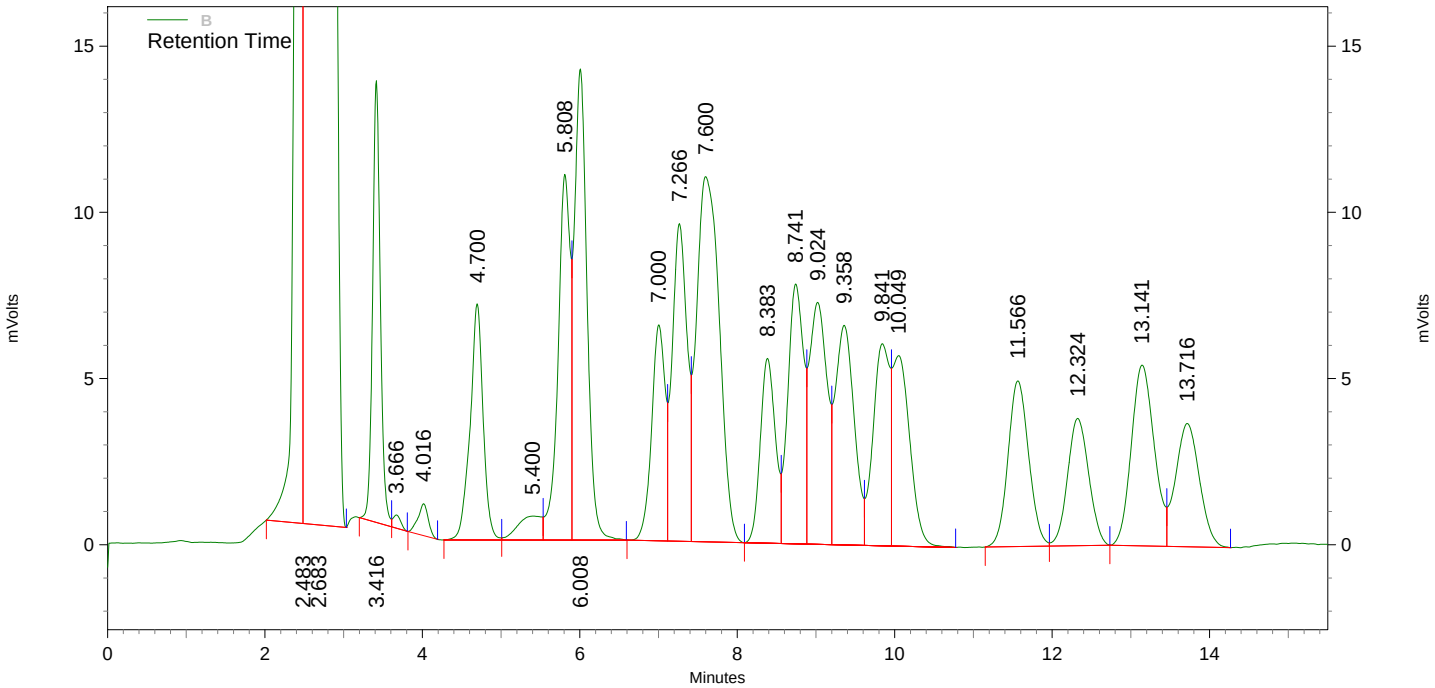
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.383	74070	**0.9599**
26-DNT	9.841	89278	**0.4740**
24-DNT	10.049	88573	**0.4859**
PETN	13.716	78121	**1.0067**

Before Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\032.dat
User ID: RED
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 8330 CCV EXP 5866
Acquired: 10/20/2016 10:07:03
Data Summary: REASON #3 APPLIES TO DATA. RED 10/24/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\032.dat
User ID: RED
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 8330 CCV EXP 5866
Acquired: 10/20/2016 10:07:03
Data Summary: REASON #3 APPLIES TO DATA. RED 10/24/2016

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.416	28903	**0.4630**
RDX	4.691	38496	**0.4727**
12-DNB (SSTD)	5.808	54790	**103.4491**
135-TNB	6.008	92490	**0.4559**
13-DNB	7.000	121841	**0.4884**
TETRYL	7.258	74286	**0.5256**
35-DNA	7.675	182842	**0.9052**
NB			**0.0000 BDL**
246-TNT	8.741	88574	**0.4834**
4-AM-26-DNT	9.016	56904	**0.5066**
2-AM-46-DNT	9.358	85781	**0.4633**
2-NT	11.566	52055	**0.4759**
4-NT	12.324	43795	**0.4716**
3-NT	13.141	56092	**0.4700**

B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.383	74070	**0.9599**
26-DNT	9.841	89278	**0.4740**
24-DNT	10.049	88573	**0.4859**
PETN	13.716	78121	**1.0067**

QC Check Standard Report

Sequence : C:\Instarch\HPLC 2\Sequences\8330A_B\102016EXP-CONFIRM.seq
User : red
Printed : 10/25/2016 11:08:38

File	Sample ID	Acquired
C:\Instarch\HPLC 2\Data\102016EXP-CONFIRM\017.dat	8330 CCV EXP 5866	10/25/2016 11:08:34

A

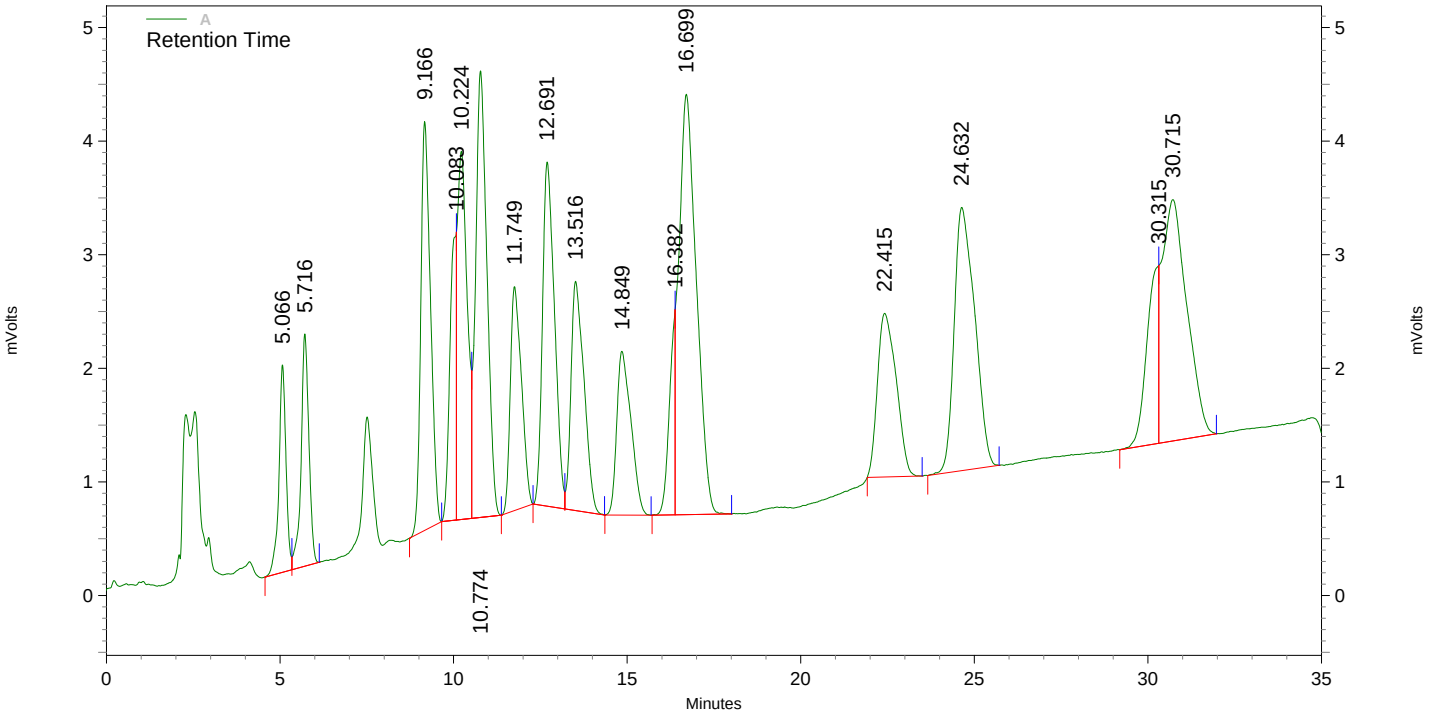
Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
HMX-confirm	0.500	0.500	0.065	20.000	Passed
RDX-confirm	0.500	0.490	1.935	20.000	Passed
NB-confirm	0.500	0.482	3.659	20.000	Passed
12-DNB (SSTD)-confirm	100.000	119.922	19.922	20.000	Passed
4-AM-26-DNT-conf.	0.500	0.459	8.126	20.000	Passed
3,5-DNA-confirm	0.500	0.503	0.516	20.000	Passed
2-NT-confirm	0.500	0.490	1.939	20.000	Passed
2-AM-46-DNT-conf.	0.500	0.500	0.027	20.000	Passed
3-NT-confirm	0.500	0.488	2.370	20.000	Passed
4-NT-confirm	0.500	0.480	3.907	20.000	Passed
26-DNT-confirm	0.500	0.493	1.410	20.000	Passed
13-DNB-confirm	0.500	0.501	0.175	20.000	Passed
TETRYL-confirm	0.500	0.461	7.730	20.000	Passed
24-DNT-confirm	0.500	0.512	2.496	20.000	Passed
135-TNB-confirm	0.500	0.453	9.380	20.000	Passed
246-TNT-confirm	0.500	0.496	0.739	20.000	Passed

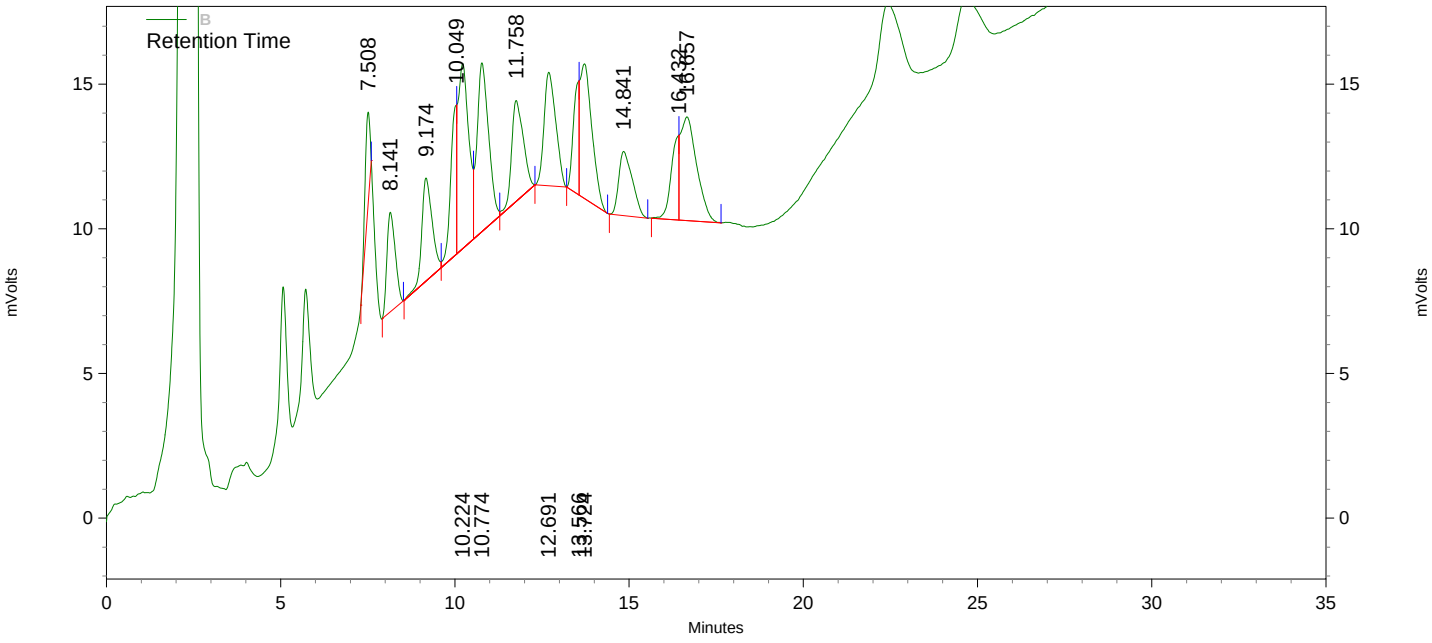
B

Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
NG-confirm	1.000	0.883	11.683	20.000	Passed
PETN-confirm	1.000	1.185	18.532	20.000	Passed

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\102016EXP-CONFIRM\017.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\102016EXP-CONFIRM.met
Sample ID: 8330 CCV EXP 5866
Acquired: 10/20/2016 23:22:05
Data Summary: {Data Description}





8330 CCV EXP 5866

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm	5.066	26093	**0.5003**
RDX-confirm	5.716	32100	**0.4903**
NB-confirm	9.166	69698	**0.4817**
12-DNB (SSTD)-confirm	10.083	31950	**119.9217**
4-AM-26-DNT-conf.	10.224	64030	**0.4594**
3,5-DNA-confirm	10.774	89162	**0.5026**
2-NT-confirm	11.749	43891	**0.4903**
2-AM-46-DNT-conf.	12.691	72945	**0.5001**
3-NT-confirm	13.516	52639	**0.4881**
4-NT-confirm	14.849	41131	**0.4805**
26-DNT-confirm	16.382	20108	**0.4930**
13-DNB-confirm	16.699	129228	**0.5009**
TETRYL-confirm	22.415	54081	**0.4614**
24-DNT-confirm	24.632	95251	**0.5125**
135-TNB-confirm	30.315	36704	**0.4531**
246-TNT-confirm	30.715	105193	**0.4963**

B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm	8.141	56827	**0.8832**
PETN-confirm	13.724	110631	**1.1853**

QC Check Standard Report

Sequence : C:\Instarch\HPLC 2\Sequences\8330A_B\102016EXP-CONFIRM.seq
User : red
Printed : 10/25/2016 11:10:30

File	Sample ID	Acquired
C:\Instarch\HPLC 2\Data\102016EXP-CONFIRM\030.dat	8330 CCV EXP 5866	10/25/2016 11:10:30

A

Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
HMX-confirm	0.500	0.492	1.512	20.000	Passed
RDX-confirm	0.500	0.485	3.022	20.000	Passed
NB-confirm	0.500	0.478	4.305	20.000	Passed
12-DNB (SSTD)-confirm	100.000	116.957	16.957	20.000	Passed
4-AM-26-DNT-conf.	0.500	0.457	8.655	20.000	Passed
3,5-DNA-confirm	0.500	0.490	2.090	20.000	Passed
2-NT-confirm	0.500	0.490	1.921	20.000	Passed
2-AM-46-DNT-conf.	0.500	0.483	3.307	20.000	Passed
3-NT-confirm	0.500	0.475	4.983	20.000	Passed
4-NT-confirm	0.500	0.492	1.574	20.000	Passed
26-DNT-confirm	0.500	0.519	3.706	20.000	Passed
13-DNB-confirm	0.500	0.481	3.878	20.000	Passed
TETRYL-confirm	0.500	0.473	5.419	20.000	Passed
24-DNT-confirm	0.500	0.495	1.080	20.000	Passed
135-TNB-confirm	0.500	0.453	9.402	20.000	Passed
246-TNT-confirm	0.500	0.493	1.476	20.000	Passed

B

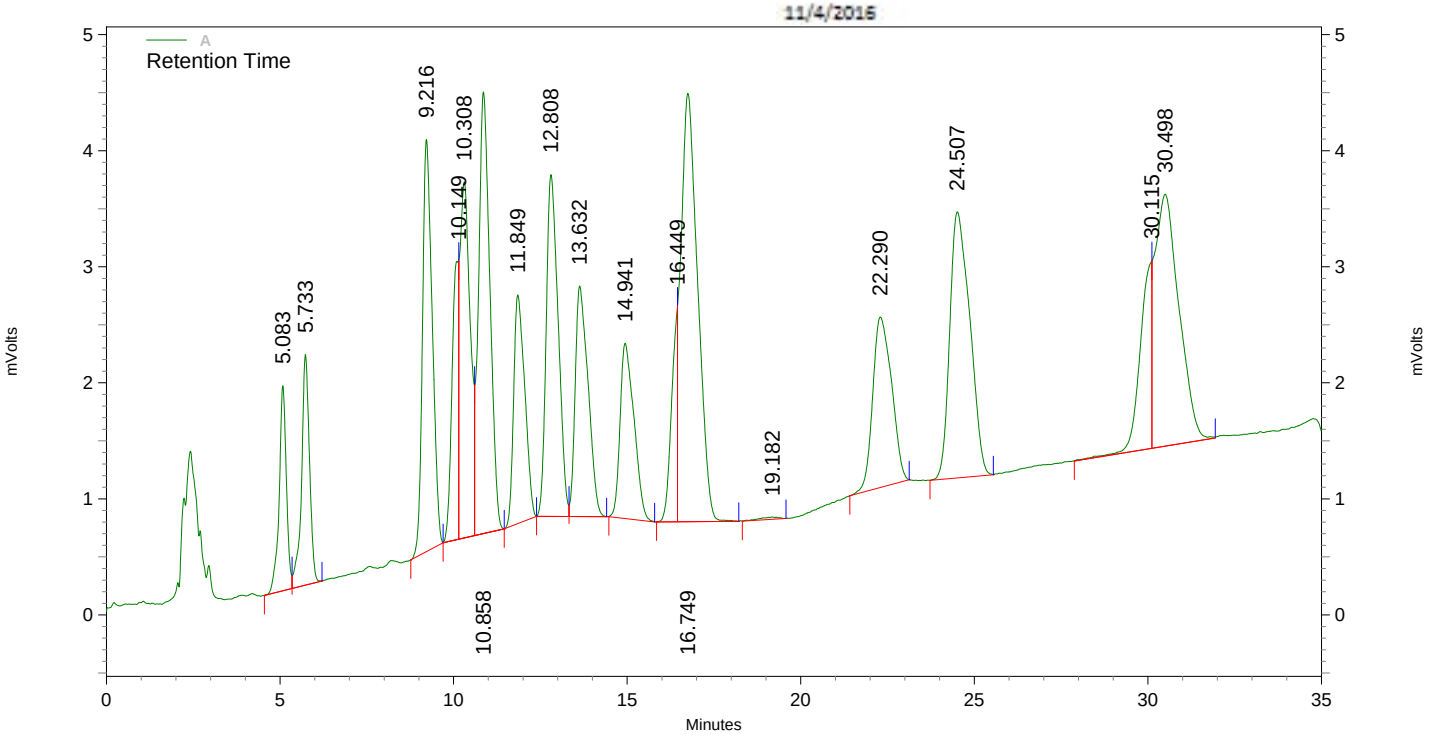
Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
NG-confirm	1.000	0.984	1.634	20.000	Passed
PETN-confirm	1.000	1.145	14.520	20.000	Passed

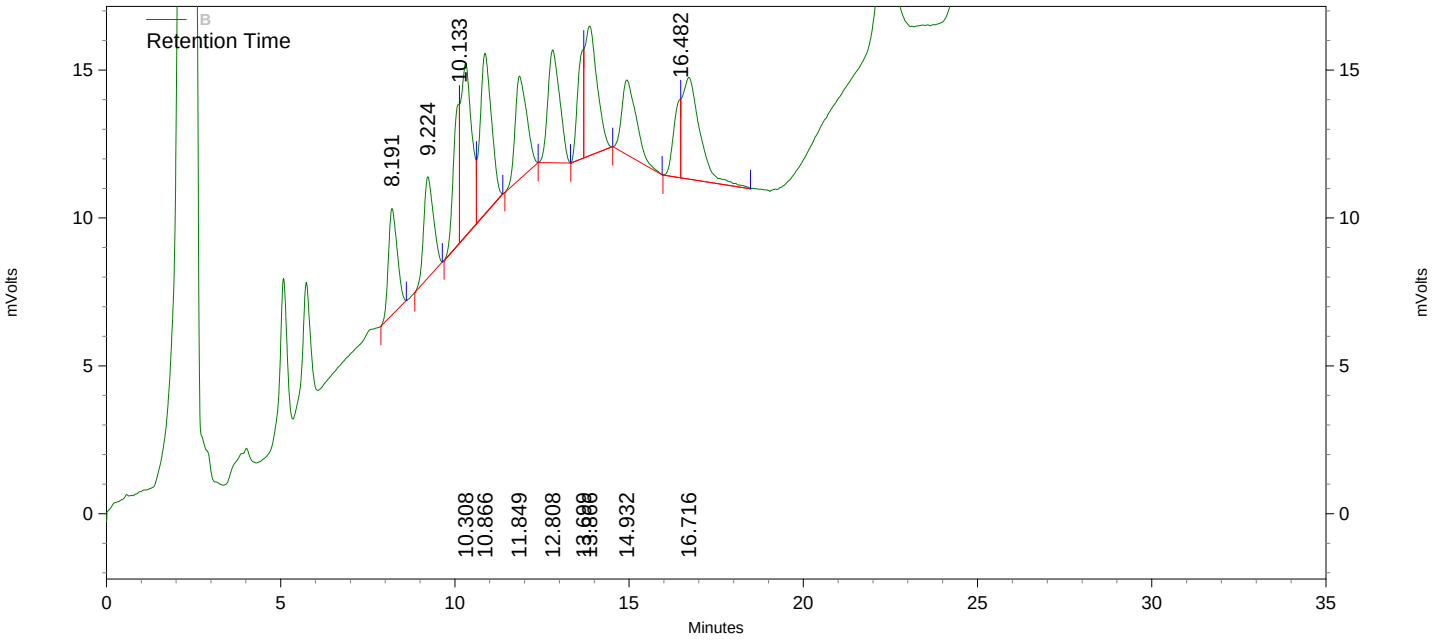
After Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\102016EXP-CONFIRM\030.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\102016EXP-CONFIRM.met
Sample ID: 8330 CCV EXP 5866
Acquired: 10/21/2016 07:27:01 JJY
Data Summary: Reason #1, #4 applies to data. RED 10/22/2016

11/4/2016





8330 CCV EXP 5866

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm	5.083	25690	**0.4924**
RDX-confirm	5.733	31750	**0.4849**
NB-confirm	9.216	69239	**0.4785**
12-DNB (SSTD)-confirm	10.149	31160	**116.9565**
4-AM-26-DNT-conf.	10.308	63668	**0.4567**
3,5-DNA-confirm	10.858	86889	**0.4895**
2-NT-confirm	11.849	43899	**0.4904**
2-AM-46-DNT-conf.	12.808	70574	**0.4835**
3-NT-confirm	13.632	51257	**0.4751**
4-NT-confirm	14.941	42105	**0.4921**
26-DNT-confirm	16.449	21110	**0.5185**
13-DNB-confirm	16.749	124058	**0.4806**
TETRYL-confirm	22.290	55393	**0.4729**
24-DNT-confirm	24.507	91969	**0.4946**
135-TNB-confirm	30.115	36695	**0.4530**
246-TNT-confirm	30.498	104429	**0.4926**

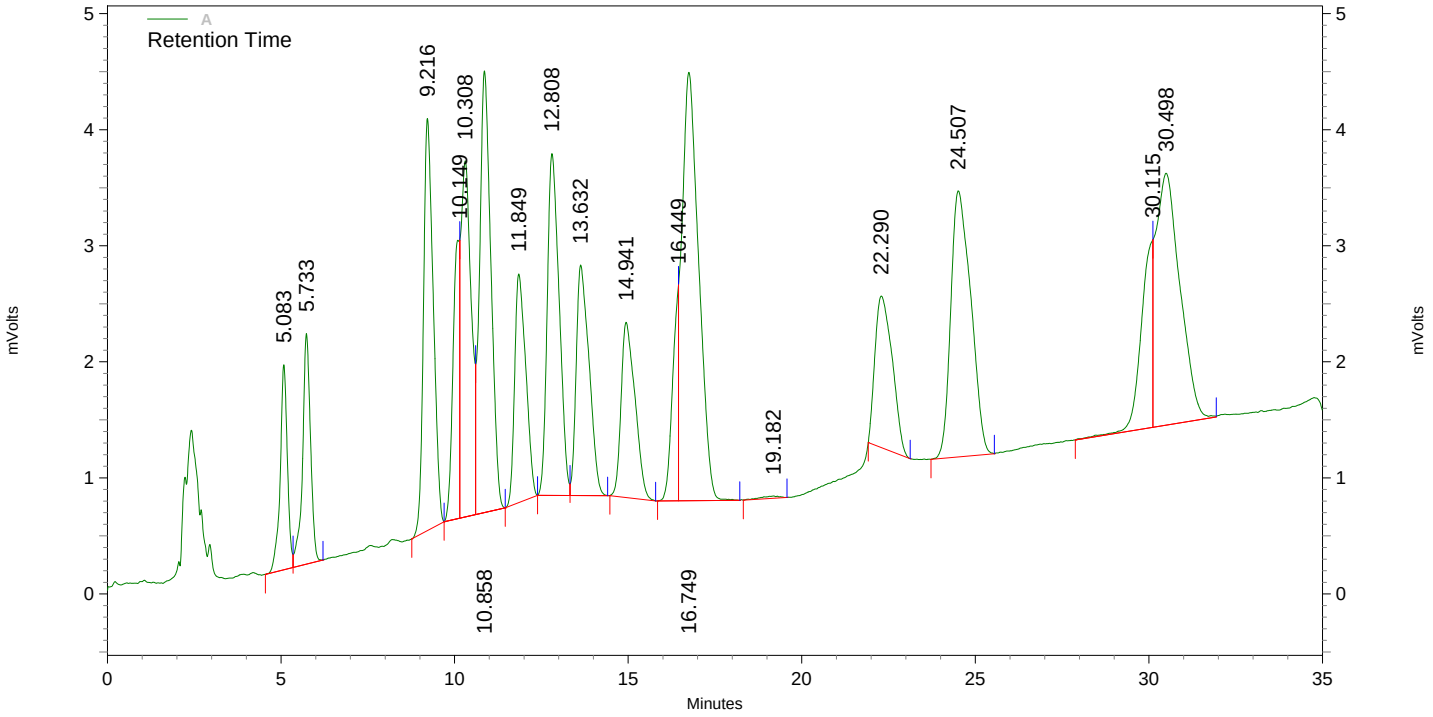
B Results

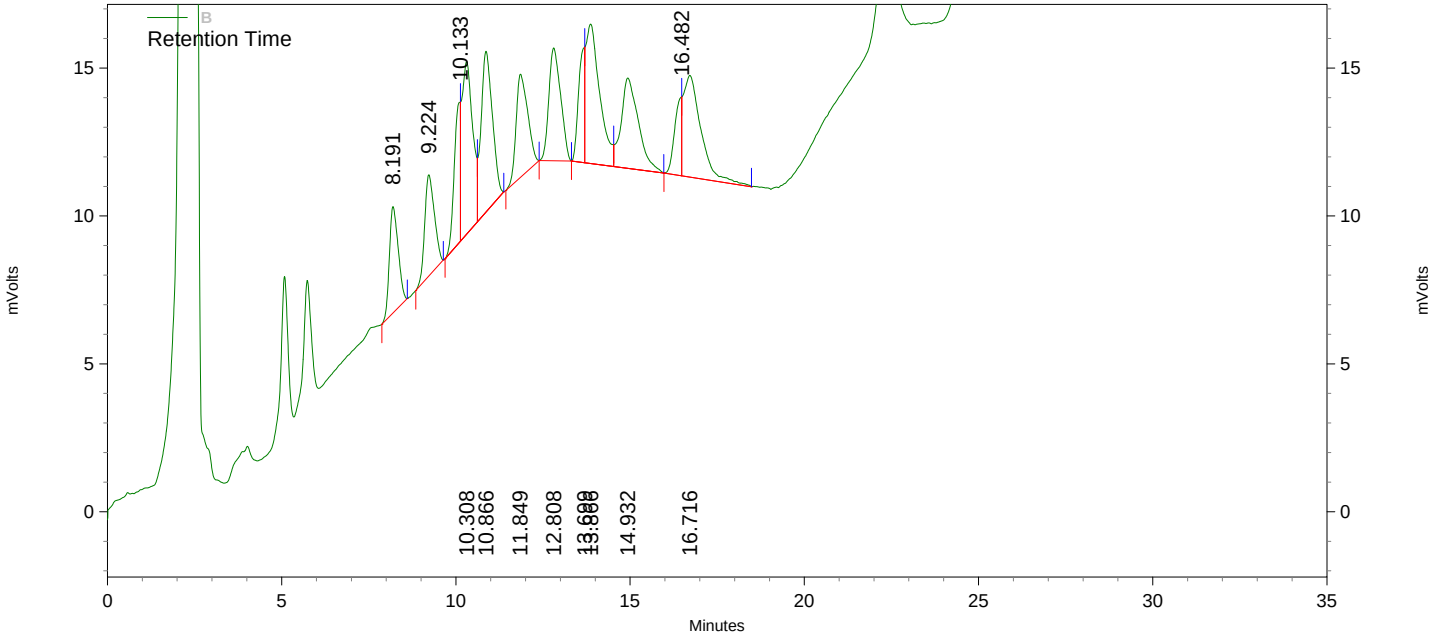
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm	8.191	63160	**0.9837**
PETN-confirm	13.866	106830	**1.1452**

Before Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\102016EXP-CONFIRM\030.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\102016EXP-CONFIRM_short list.met
Sample ID: 8330 CCV EXP 5866
Acquired: 10/21/2016 07:27:01
Data Summary: Reason #1, #4 applies to data. RED 10/22/2016





8330 CCV EXP 5866

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm	5.083	25690	**0.4924**
RDX-confirm	5.733	31750	**0.4849**
NB-confirm	9.216	69239	**0.4785**
12-DNB (SSTD)-confirm	10.149	31160	**116.9565**
4-AM-26-DNT-conf.	10.308	63668	**0.4567**
2-NT-confirm	11.849	43899	**0.4904**
2-AM-46-DNT-conf.	12.808	70574	**0.4835**
3-NT-confirm	13.632	51257	**0.4751**
4-NT-confirm	14.941	42105	**0.4921**
26-DNT-confirm	16.449	21110	**0.5185**
13-DNB-confirm	16.749	124058	**0.4806**
TETRYL-confirm	22.290	45332	**0.3843**
24-DNT-confirm	24.507	91969	**0.4946**
135-TNB-confirm	30.498	104429	**1.3054**
246-TNT-confirm			**0.0000 BDL**

B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*

QC Check Standard Report

Sequence : C:\Instarch\HPLC 2\Sequences\8330A_B\102016EXP-CONFIRM.seq
User : red
Printed : 10/25/2016 11:11:33

File	Sample ID	Acquired
C:\Instarch\HPLC 2\Data\102016EXP-CONFIRM\036.dat	8330 CCV EXP 5866	10/25/2016 11:11:28

A

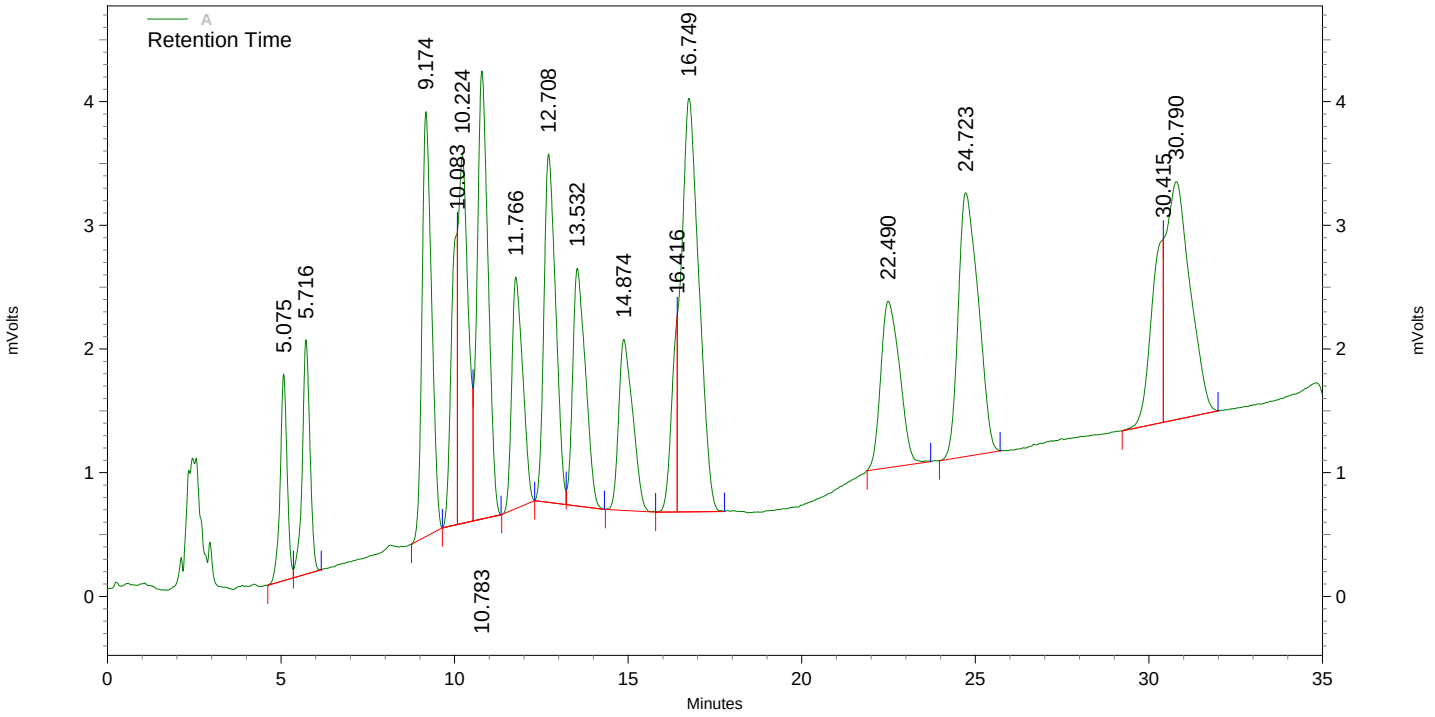
Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
HMX-confirm	0.500	0.448	10.398	20.000	Passed
RDX-confirm	0.500	0.447	10.574	20.000	Passed
NB-confirm	0.500	0.454	9.226	20.000	Passed
12-DNB (SSTD)-confirm	100.000	109.660	9.660	20.000	Passed
4-AM-26-DNT-conf.	0.500	0.421	15.719	20.000	Passed
3,5-DNA-confirm	0.500	0.451	9.764	20.000	Passed
2-NT-confirm	0.500	0.461	7.892	20.000	Passed
2-AM-46-DNT-conf.	0.500	0.456	8.745	20.000	Passed
3-NT-confirm	0.500	0.458	8.359	20.000	Passed
4-NT-confirm	0.500	0.455	9.092	20.000	Passed
26-DNT-confirm	0.500	0.430	14.045	20.000	Passed
13-DNB-confirm	0.500	0.454	9.280	20.000	Passed
TETRYL-confirm	0.500	0.434	13.297	20.000	Passed
24-DNT-confirm	0.500	0.458	8.395	20.000	Passed
135-TNB-confirm	0.500	0.439	12.214	20.000	Passed
246-TNT-confirm	0.500	0.434	13.250	20.000	Passed

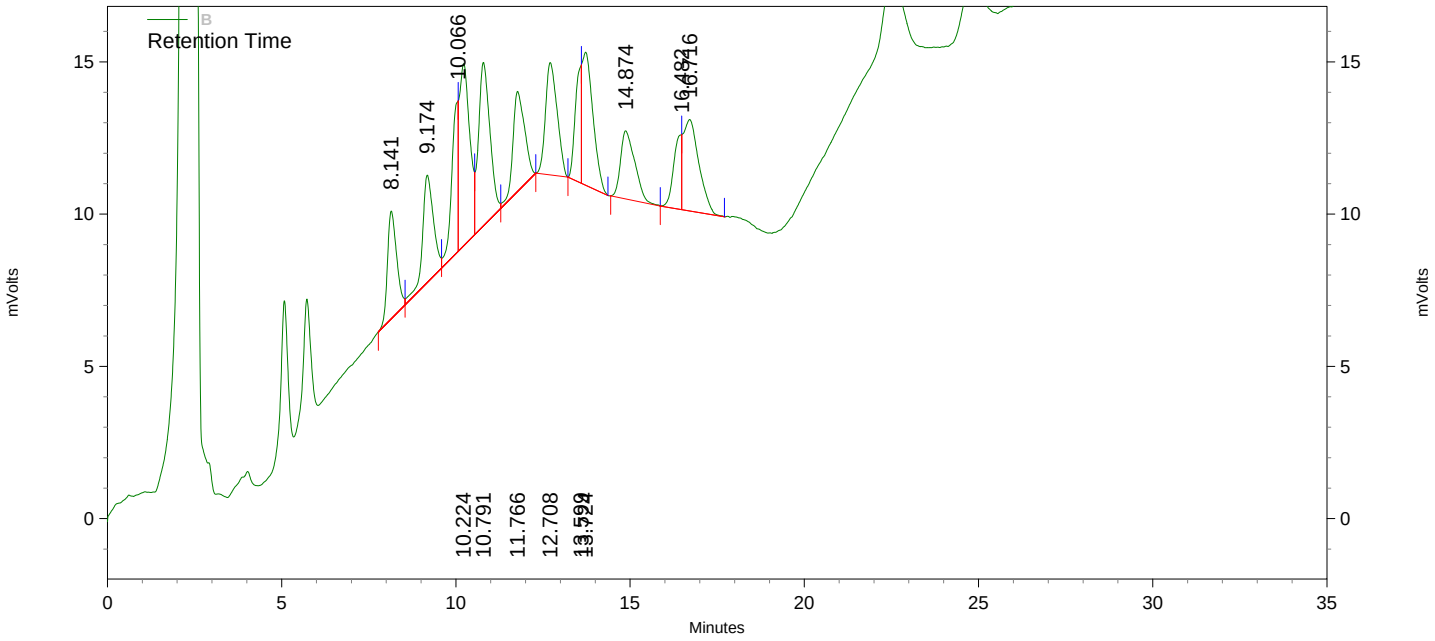
B

Compound	Expected Conc.	Actual Conc.	%RD Actual	%RD Limit	Status
NG-confirm	1.000	1.004	0.416	20.000	Passed
PETN-confirm	1.000	1.037	3.735	20.000	Passed

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\102016EXP-CONFIRM\036.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\102016EXP-CONFIRM.met
Sample ID: 8330 CCV EXP 5866
Acquired: 10/21/2016 11:10:45
Data Summary: {Data Description}





8330 CCV EXP 5866

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm	5.075	23418	**0.4480**
RDX-confirm	5.716	29318	**0.4471**
NB-confirm	9.174	65744	**0.4539**
12-DNB (SSTD)-confirm	10.083	29216	**109.6599**
4-AM-26-DNT-conf.	10.224	58837	**0.4214**
3,5-DNA-confirm	10.783	80198	**0.4512**
2-NT-confirm	11.766	41303	**0.4605**
2-AM-46-DNT-conf.	12.708	66707	**0.4563**
3-NT-confirm	13.532	49472	**0.4582**
4-NT-confirm	14.874	38966	**0.4545**
26-DNT-confirm	16.416	17633	**0.4298**
13-DNB-confirm	16.749	117167	**0.4536**
TETRYL-confirm	22.490	50921	**0.4335**
24-DNT-confirm	24.723	85255	**0.4580**
135-TNB-confirm	30.415	35578	**0.4389**
246-TNT-confirm	30.790	92229	**0.4338**

B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm	8.141	64452	**1.0042**
PETN-confirm	13.724	96614	**1.0374**

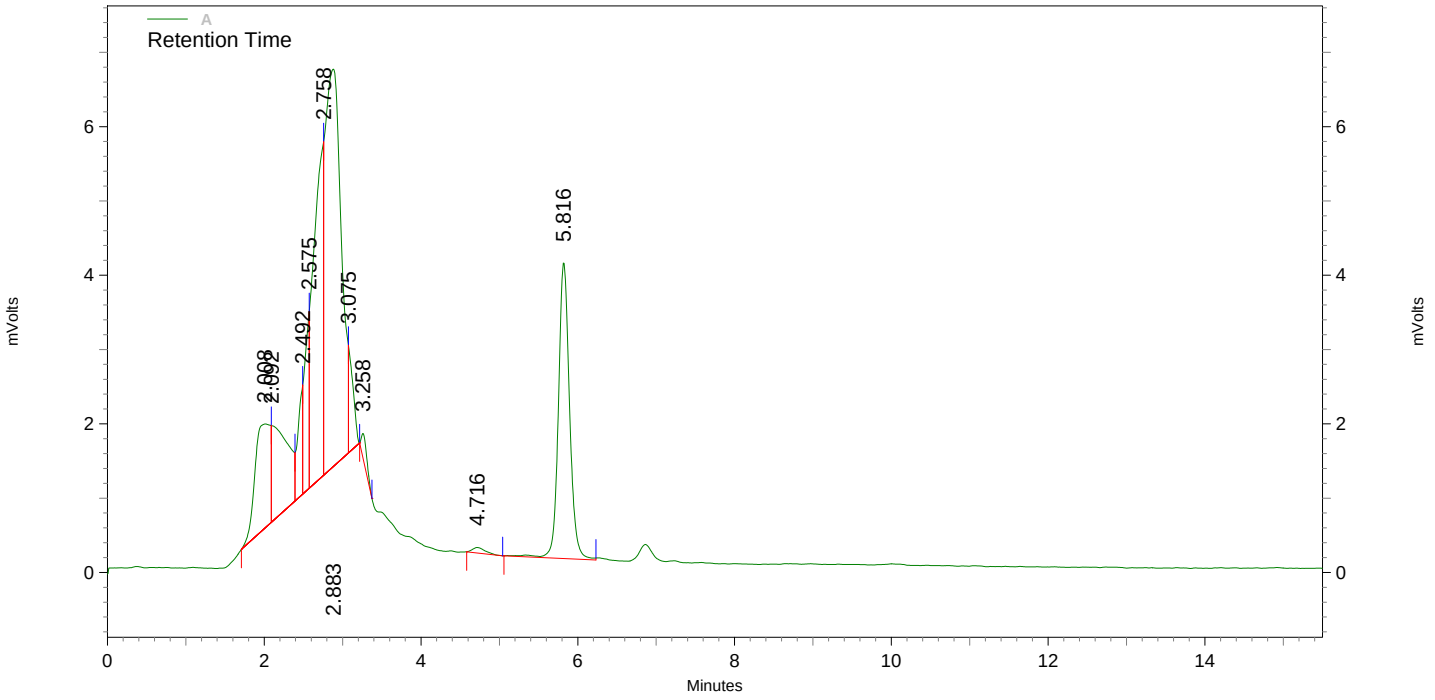
NITROAROMATICS ANALYSIS
QUALITY CONTROL
DOCUMENTS

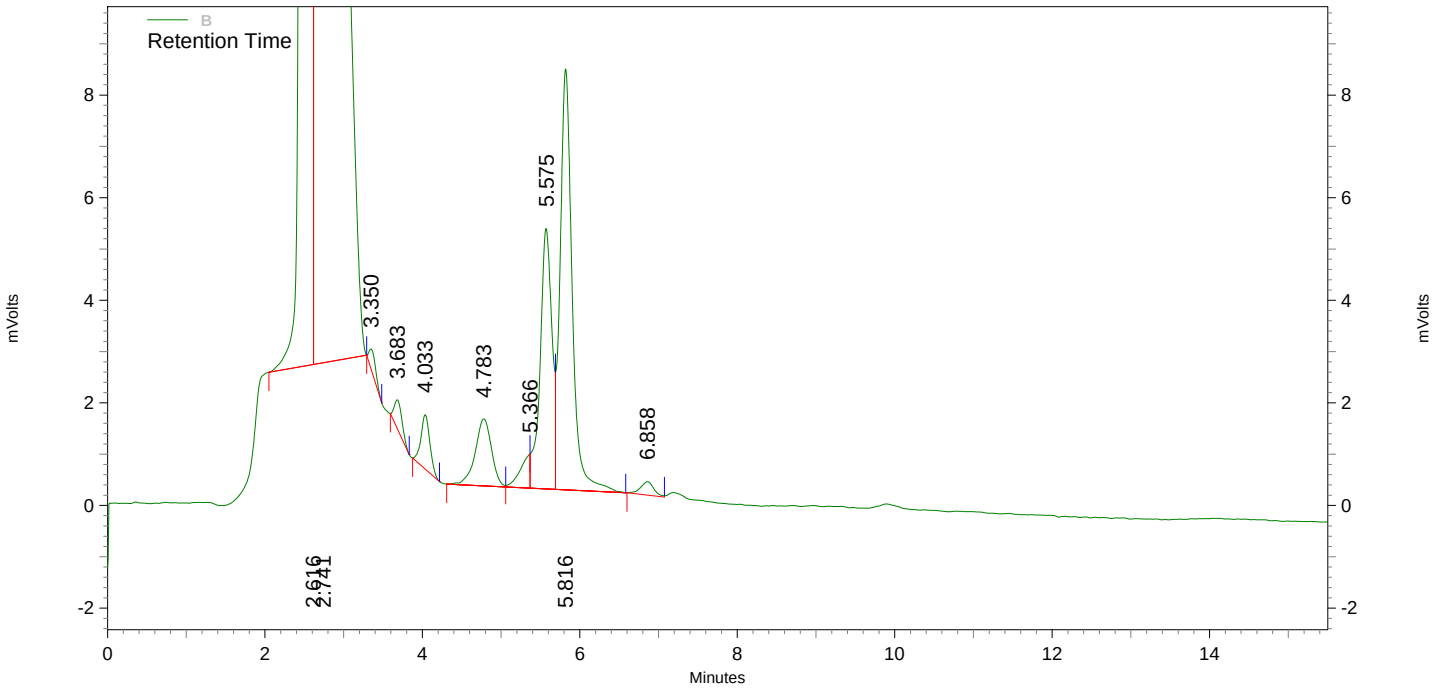
RED

11/10/2016

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\003.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,MBS,
Acquired: 10/19/2016 10:06:23
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\003.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,MBS,
Acquired: 10/19/2016 10:06:23
Data Summary: {Data Description}

A Results

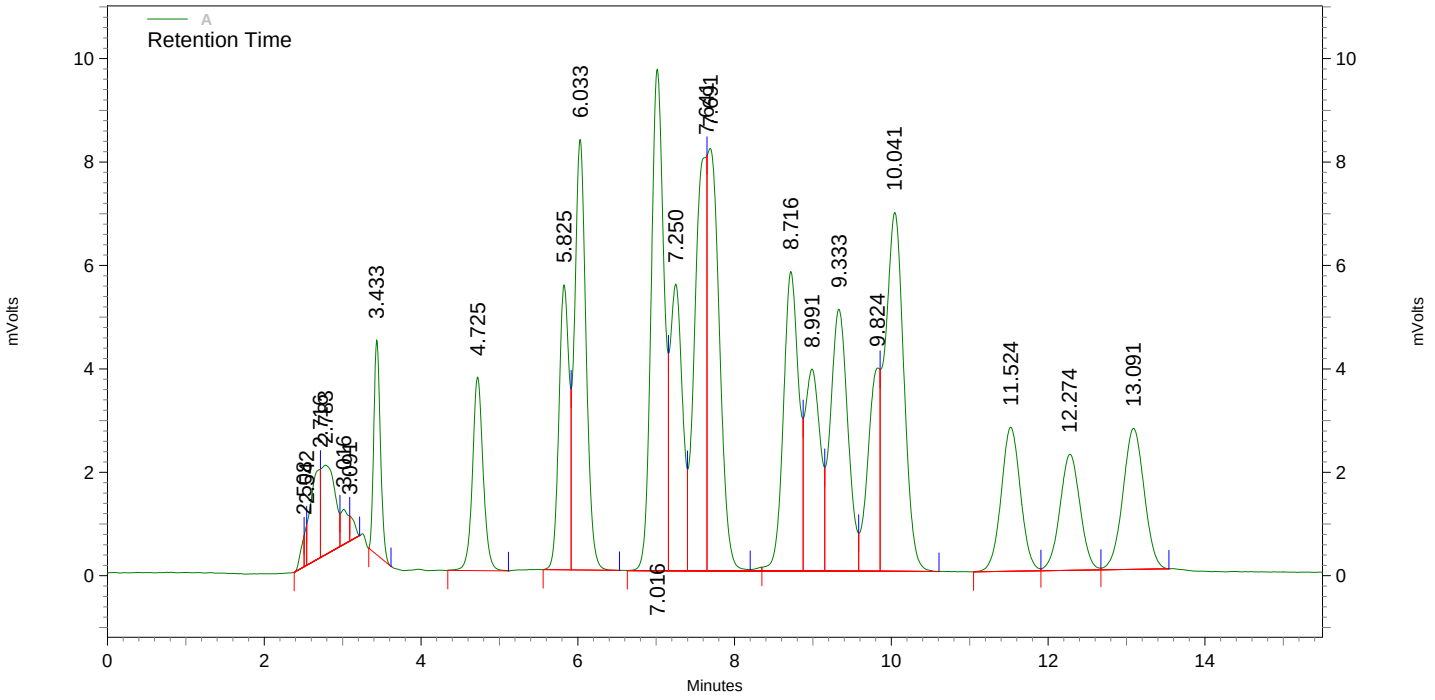
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX	4.716	835	**0.0117**
12-DNB (SSTD)	5.816	39414	**74.4557**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB			**0.0000 BDL**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

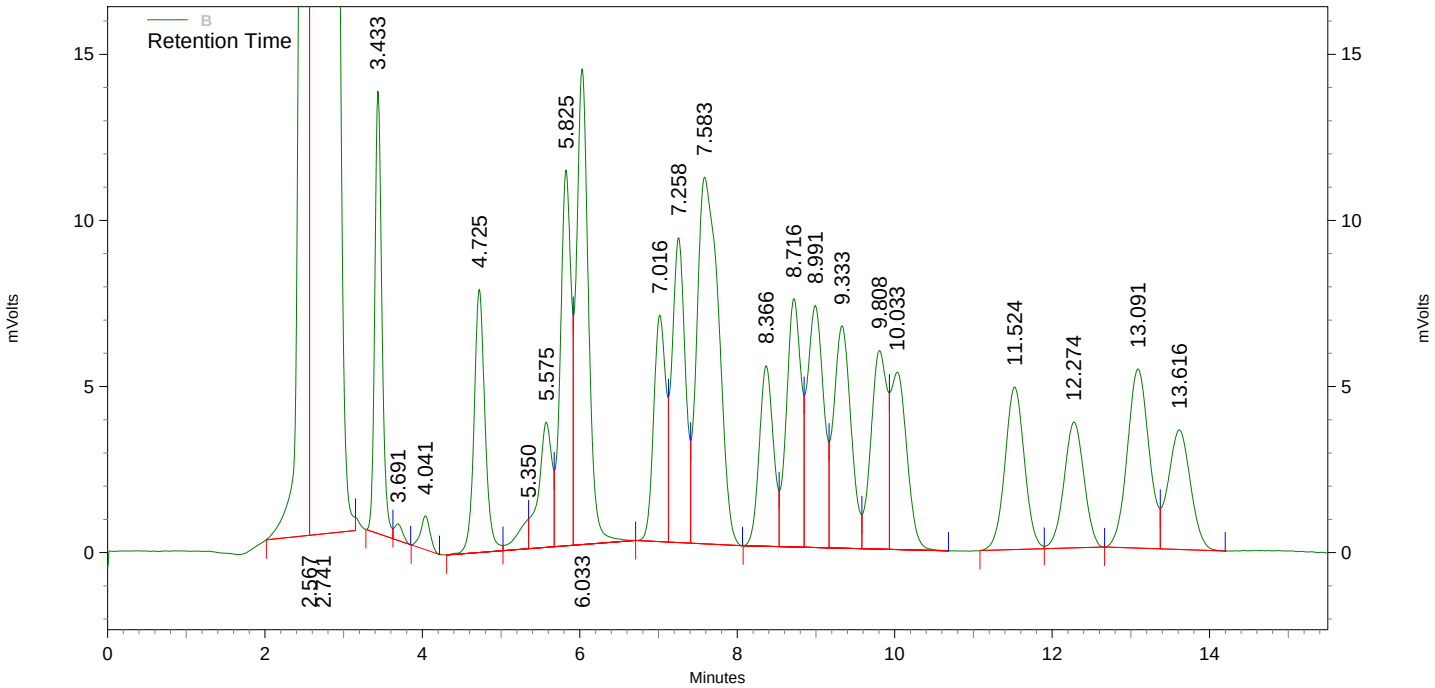
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG			**0.0000 BDL**
26-DNT			**0.0000 BDL**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\004.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,LCSS,
Acquired: 10/19/2016 10:24:41
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\004.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,LCSS,
Acquired: 10/19/2016 10:24:41
Data Summary: {Data Description}

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.433	24447	**0.3920**
RDX	4.725	35361	**0.4343**
12-DNB (SSTD)	5.825	49645	**93.7476**
135-TNB	6.033	84872	**0.4182**
13-DNB	7.016	110668	**0.4435**
TETRYL	7.250	60558	**0.4280**
35-DNA	7.641	84553	**0.4180**
NB	7.691	87409	**0.4506**
246-TNT	8.716	78404	**0.4278**
4-AM-26-DNT	8.991	52269	**0.4655**
2-AM-46-DNT	9.333	79114	**0.4273**
2-NT	11.524	47794	**0.4368**
4-NT	12.274	40154	**0.4322**
3-NT	13.091	51514	**0.4314**

B Results

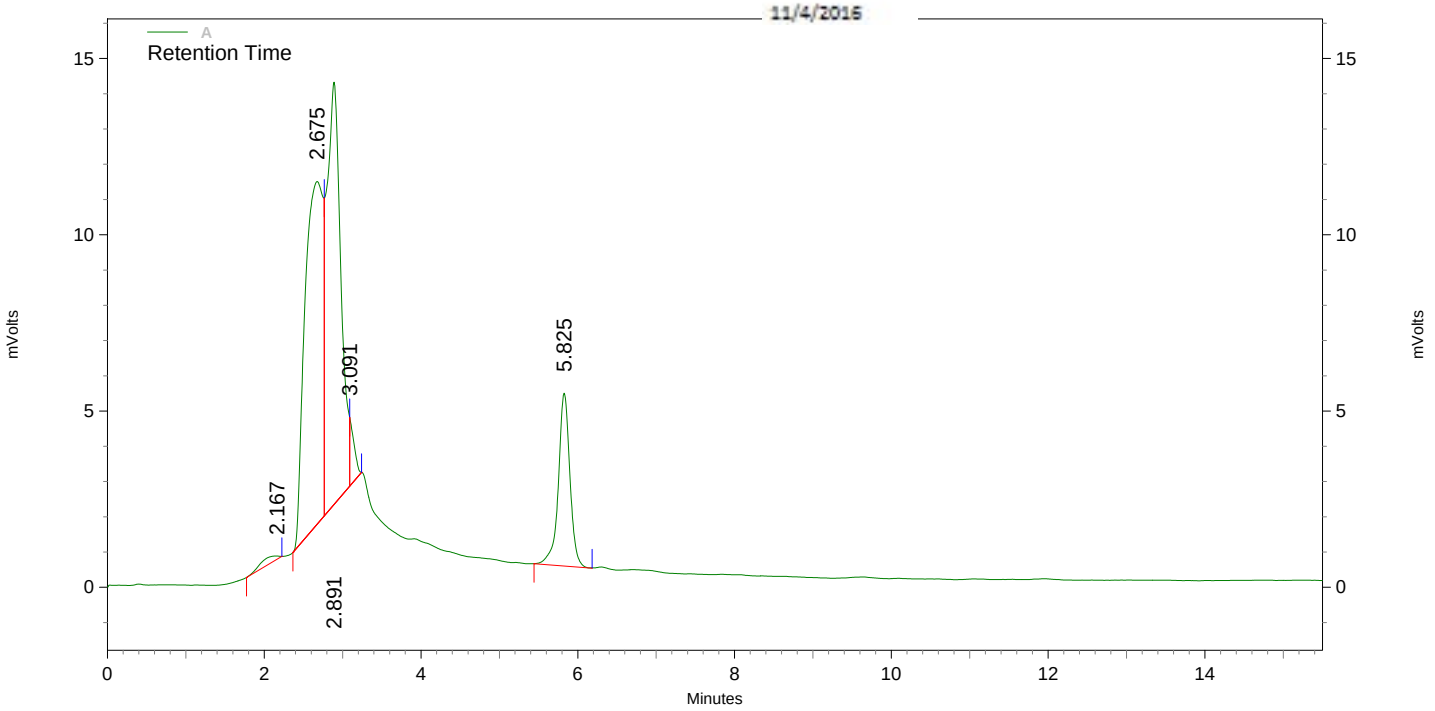
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.366	67775	**0.8788**
26-DNT	9.808	85748	**0.4554**
24-DNT	10.033	76551	**0.4201**
PETN	13.616	70818	**0.9116**

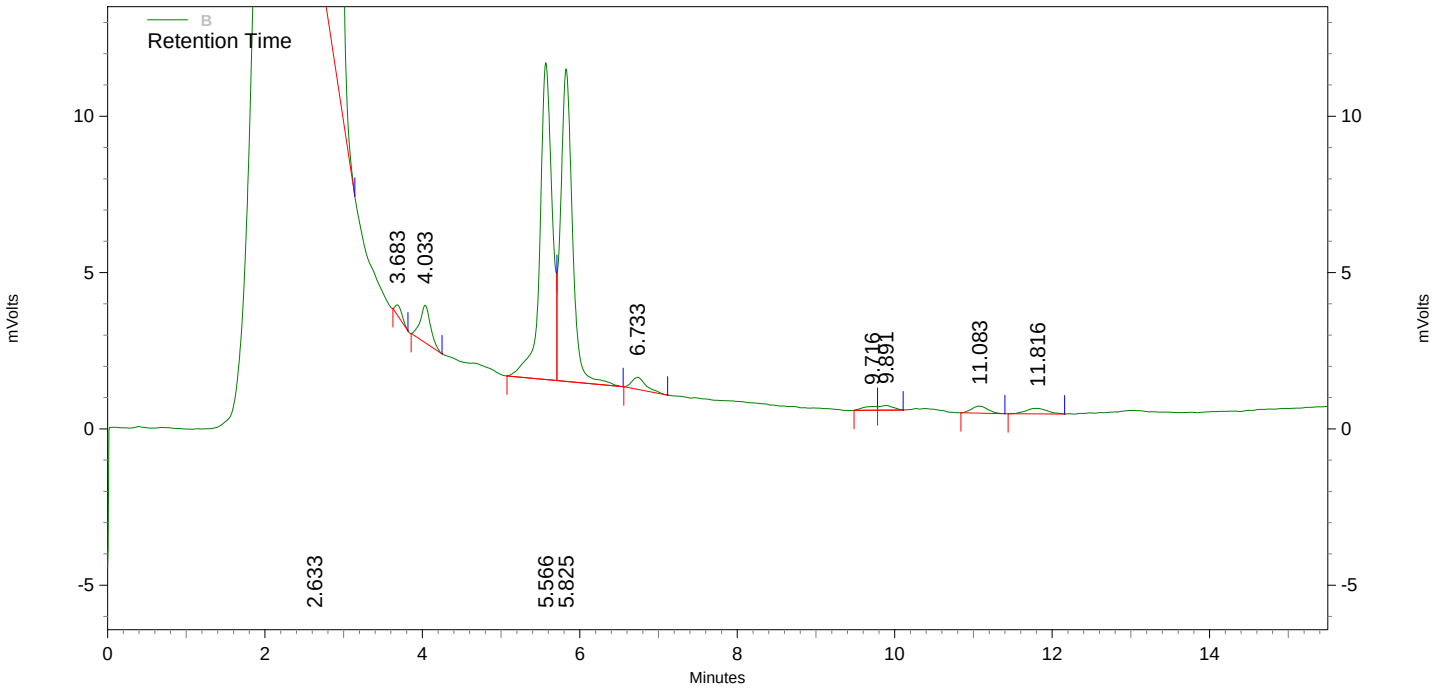
After Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\006.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: DUP 784496
Acquired: 10/19/2016 11:29:14
Data Summary: Reason #3 applies to data. RED 10/20/2016

JJY
11/4/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\006.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: DUP 784496
Acquired: 10/19/2016 11:29:14
Data Summary: Reason #3 applies to data. RED 10/20/2016

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.825	50262	**94.9110**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB			**0.0000 BDL**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

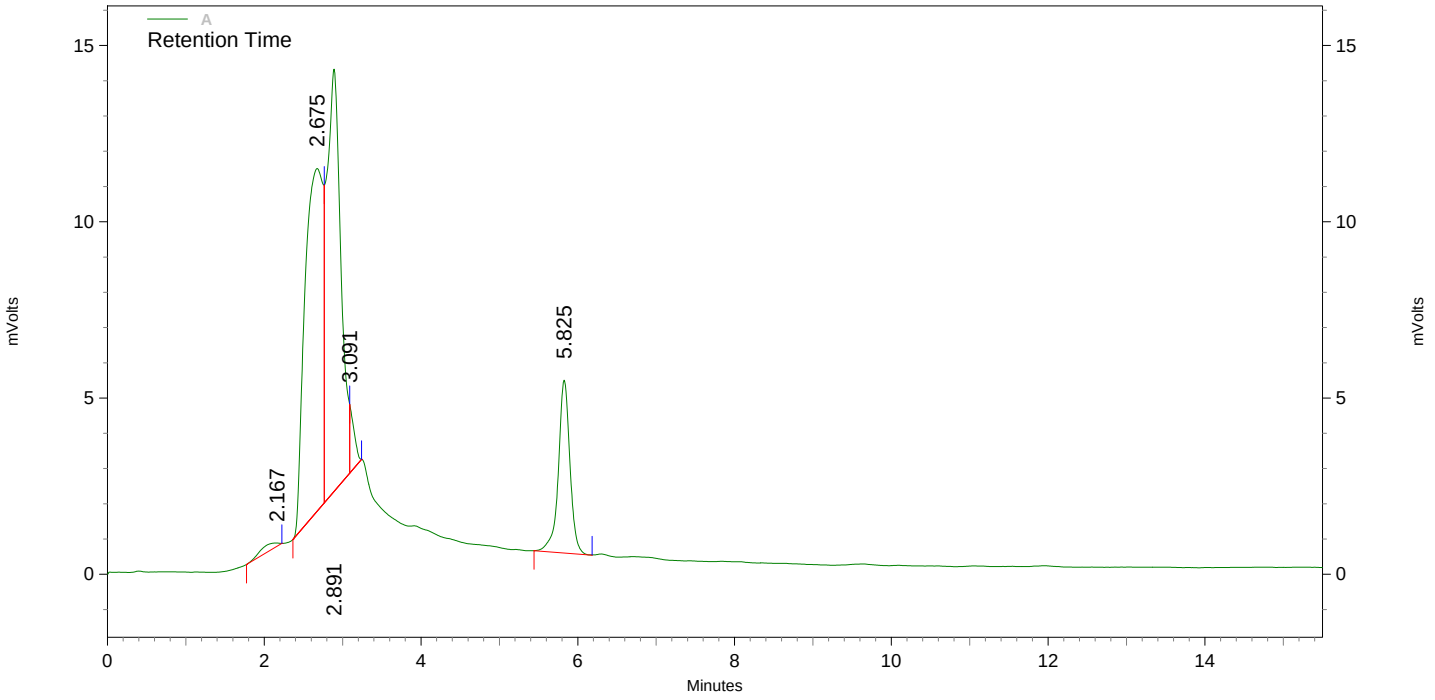
B Results

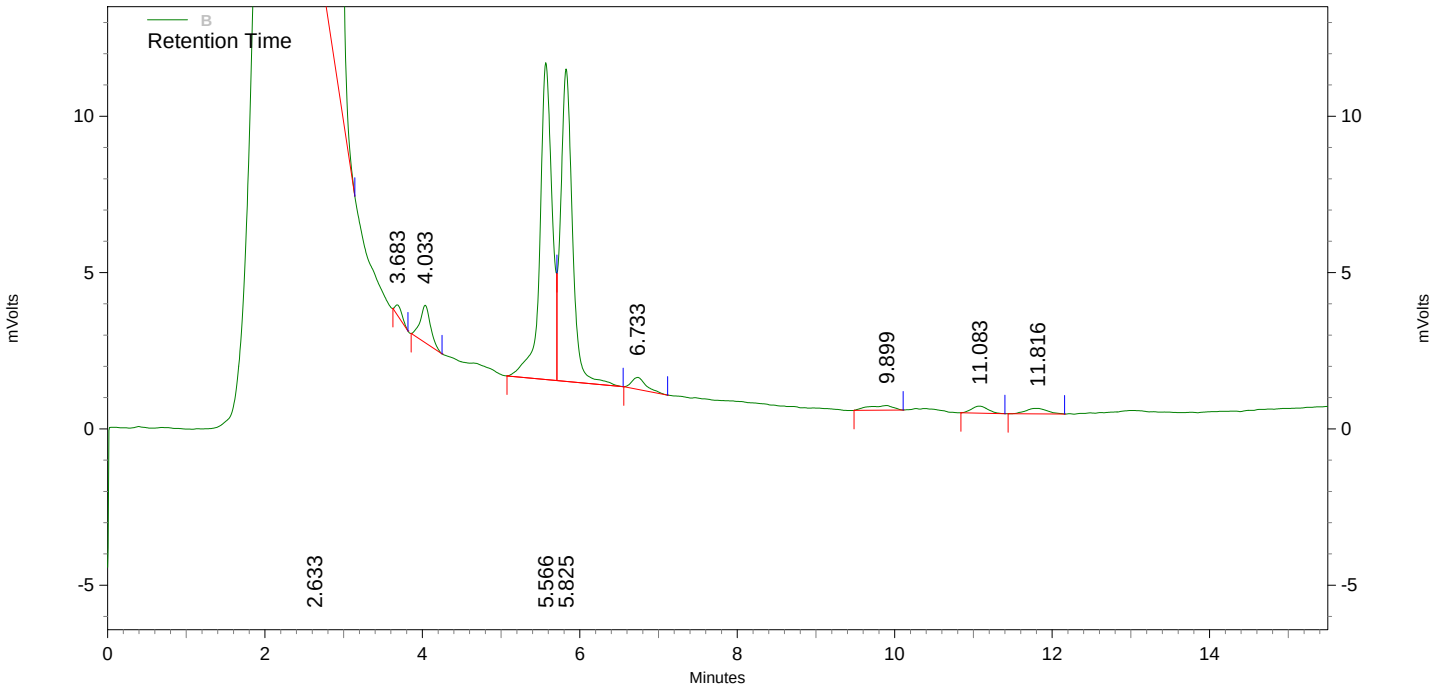
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG			**0.0000 BDL**
26-DNT	9.891	1764	**0.0114**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

Before Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\006.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: DUP 784496
Acquired: 10/19/2016 11:29:14
Data Summary: Reason #3 applies to data. RED 10/20/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\006.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: DUP 784496
Acquired: 10/19/2016 11:29:14
Data Summary: Reason #3 applies to data. RED 10/20/2016

A Results

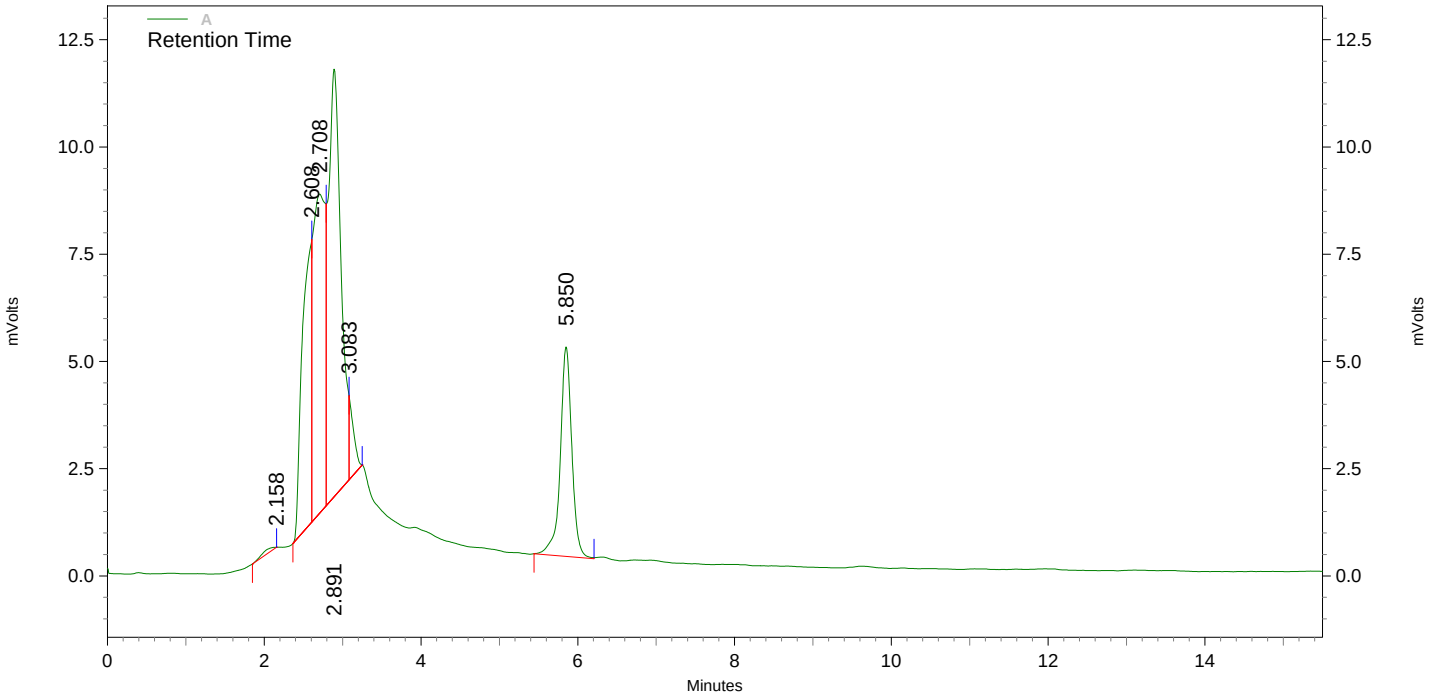
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.825	50262	**94.9110**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB			**0.0000 BDL**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

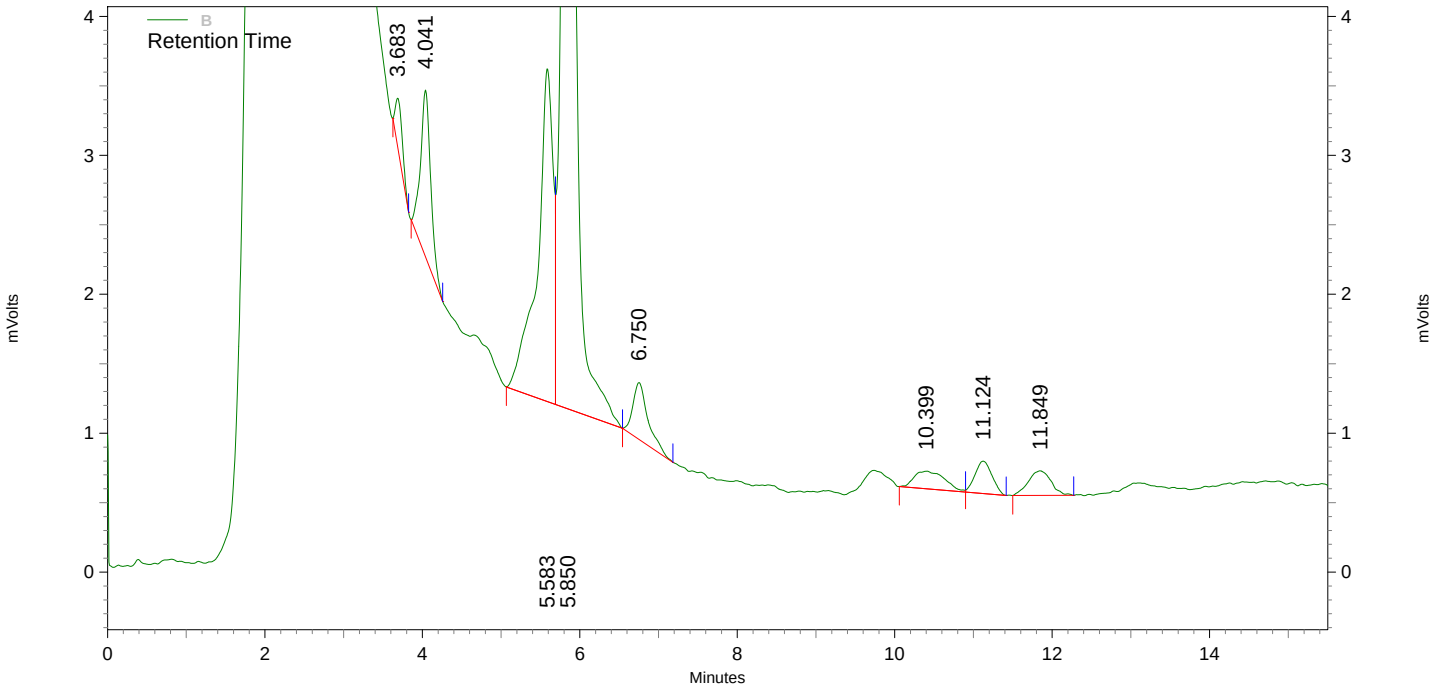
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG			**0.0000 BDL**
26-DNT	9.899	3272	**0.0194**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\007.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: TRIP 784496
Acquired: 10/19/2016 11:47:32
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\007.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: TRIP 784496
Acquired: 10/19/2016 11:47:32
Data Summary: {Data Description}

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.850	50133	**94.6677**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB			**0.0000 BDL**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

B Results

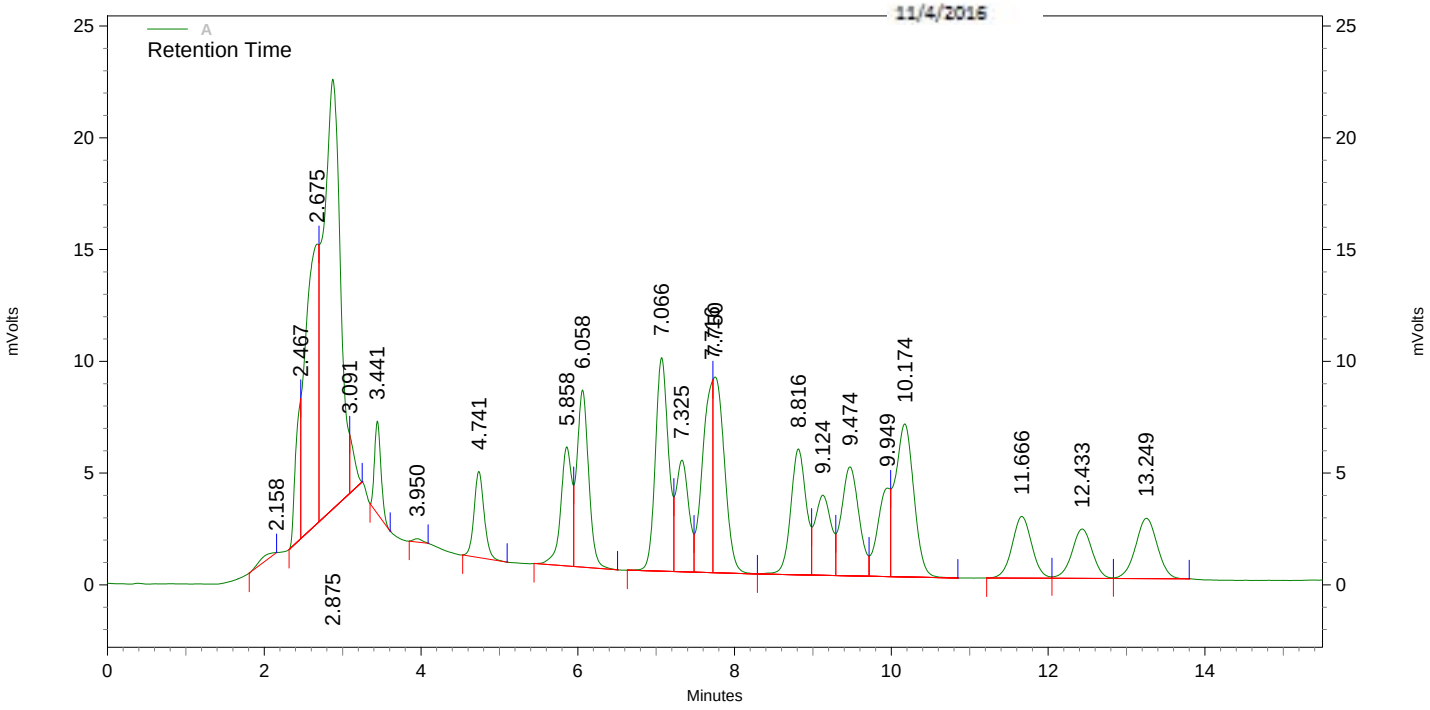
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG			**0.0000 BDL**
26-DNT			**0.0000 BDL**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

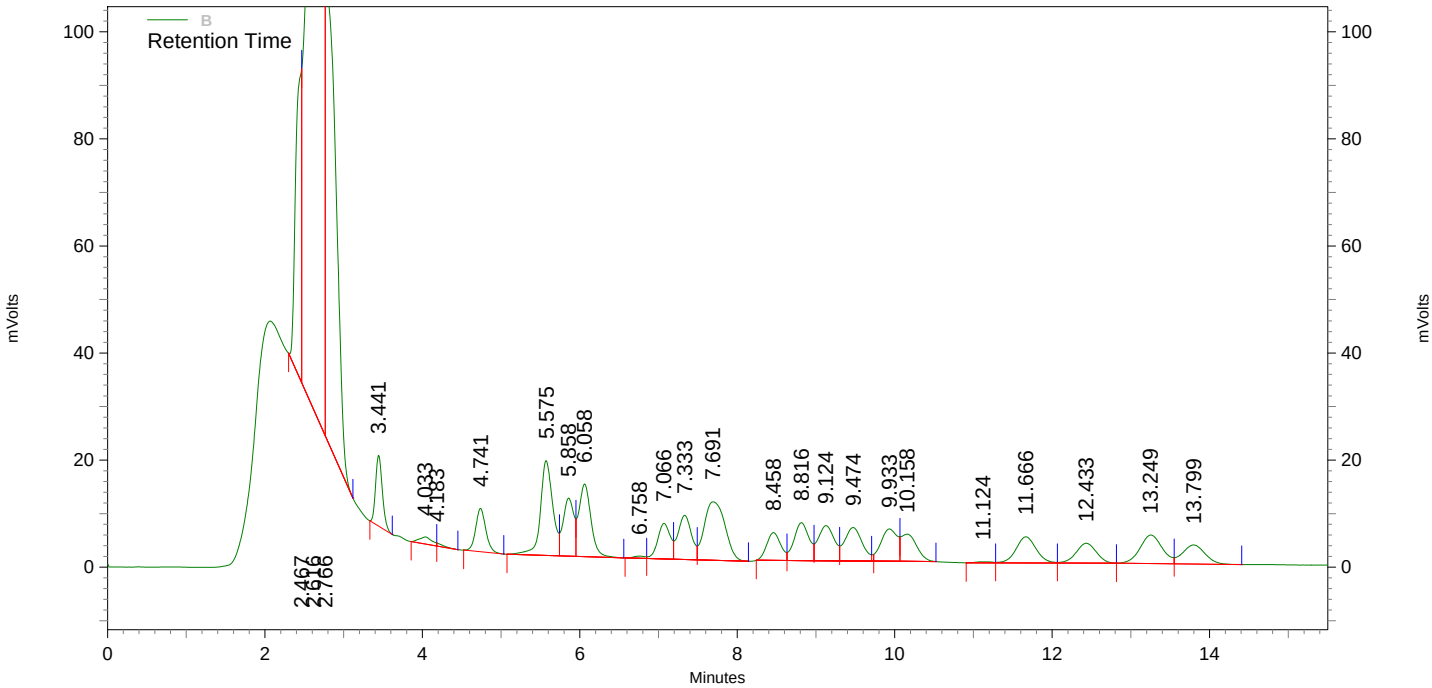
After Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\008.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,MSS784496,
Acquired: 10/19/2016 12:05:50
Data Summary: Reason #1, #3, #4 applies to data. RED 10/20/2016

JJY
11/4/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\008.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,MSS784496,
Acquired: 10/19/2016 12:05:50
Data Summary: Reason #1, #3, #4 applies to data. RED 10/20/2016

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.441	23494	**0.3768**
RDX	4.741	34299	**0.4213**
12-DNB (SSTD)	5.858	52921	**99.9249**
135-TNB	6.058	82236	**0.4052**
13-DNB	7.066	110687	**0.4436**
TETRYL	7.325	56782	**0.4012**
35-DNA	7.716	77950	**0.3852**
NB	7.750	88111	**0.4543**
246-TNT	8.816	76566	**0.4177**
4-AM-26-DNT	9.124	51308	**0.4570**
2-AM-46-DNT	9.474	76513	**0.4132**
2-NT	11.666	47986	**0.4386**
4-NT	12.433	39976	**0.4303**
3-NT	13.249	52151	**0.4368**

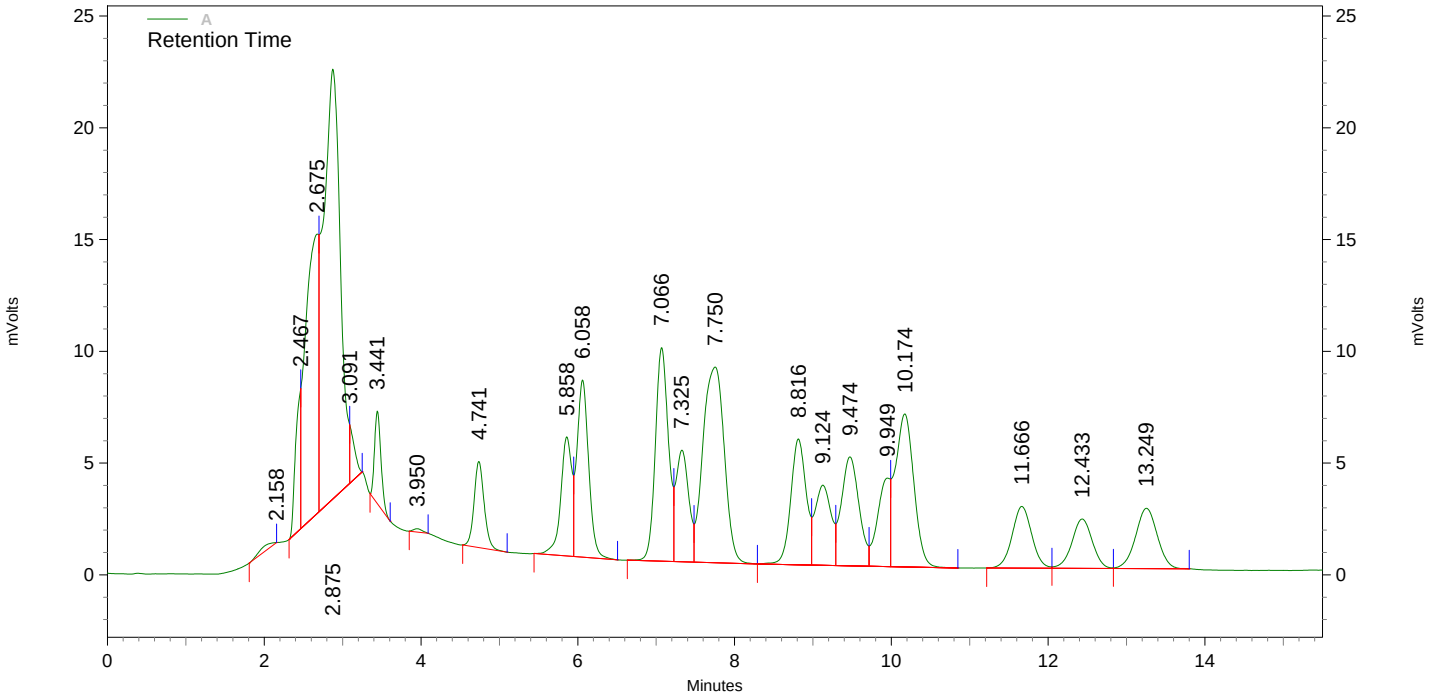
B Results

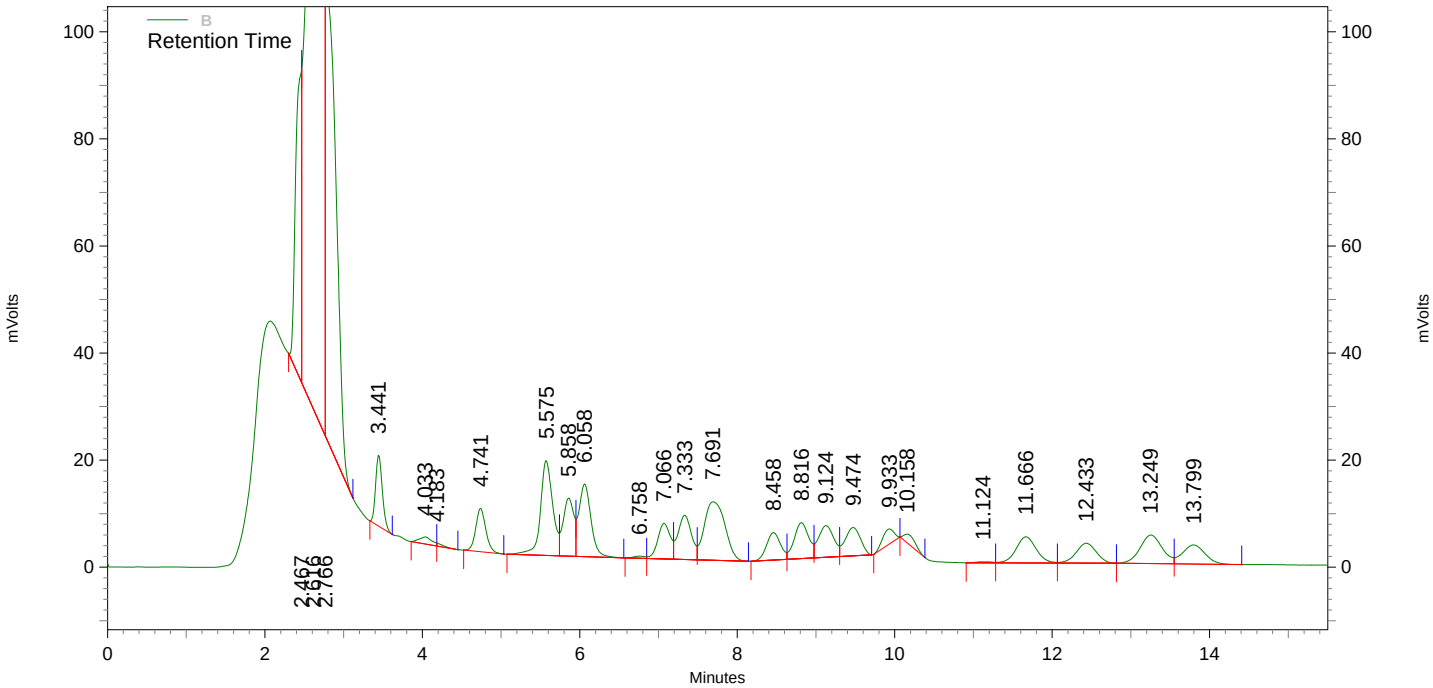
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.458	64402	**0.8354**
26-DNT	9.933	87187	**0.4630**
24-DNT	10.158	70497	**0.3870**
PETN	13.799	71046	**0.9145**

Before Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\008.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,MSS784496,
Acquired: 10/19/2016 12:05:50
Data Summary: Reason #1, #3, #4 applies to data. RED 10/20/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\008.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,MSS784496,
Acquired: 10/19/2016 12:05:50
Data Summary: Reason #1, #3, #4 applies to data. RED 10/20/2016

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.441	23494	**0.3768**
RDX	4.741	34299	**0.4213**
12-DNB (SSTD)	5.858	52921	**99.9249**
135-TNB	6.058	82236	**0.4052**
13-DNB	7.066	110687	**0.4436**
TETRYL	7.325	56782	**0.4012**
35-DNA			**0.0000 BDL**
NB	7.750	166060	**0.8570**
246-TNT	8.816	76566	**0.4177**
4-AM-26-DNT	9.124	51308	**0.4570**
2-AM-46-DNT	9.474	76513	**0.4132**
2-NT	11.666	47986	**0.4386**
4-NT	12.433	39976	**0.4303**
3-NT	13.249	52151	**0.4368**

B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.458	63408	**0.8226**
26-DNT			**0.0000 BDL**
24-DNT	9.933	28885	**0.1591**
PETN	13.799	71046	**0.9145**

After Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\009.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,MSDS784496,
Acquired: 10/19/2016 12:24:12
Data Summary: Reason #1, #3, #4 applies to data. RED 10/20/2016

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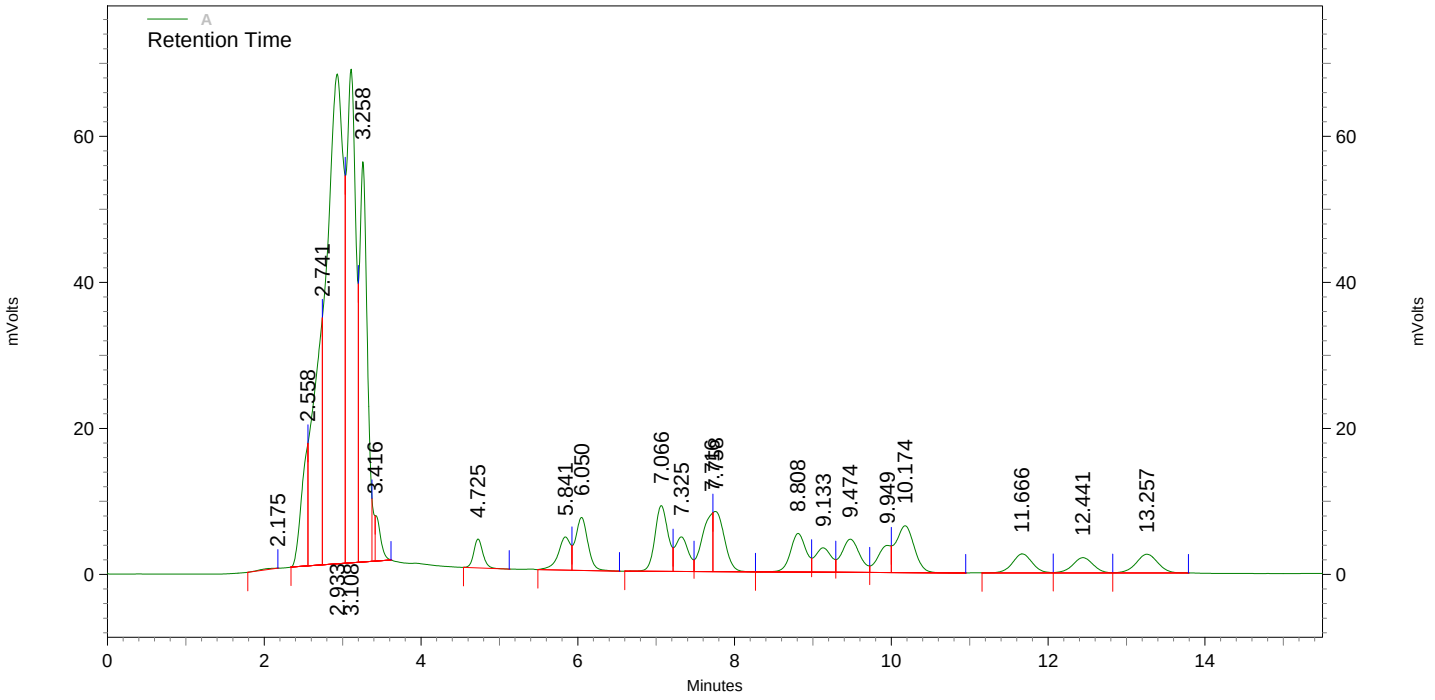
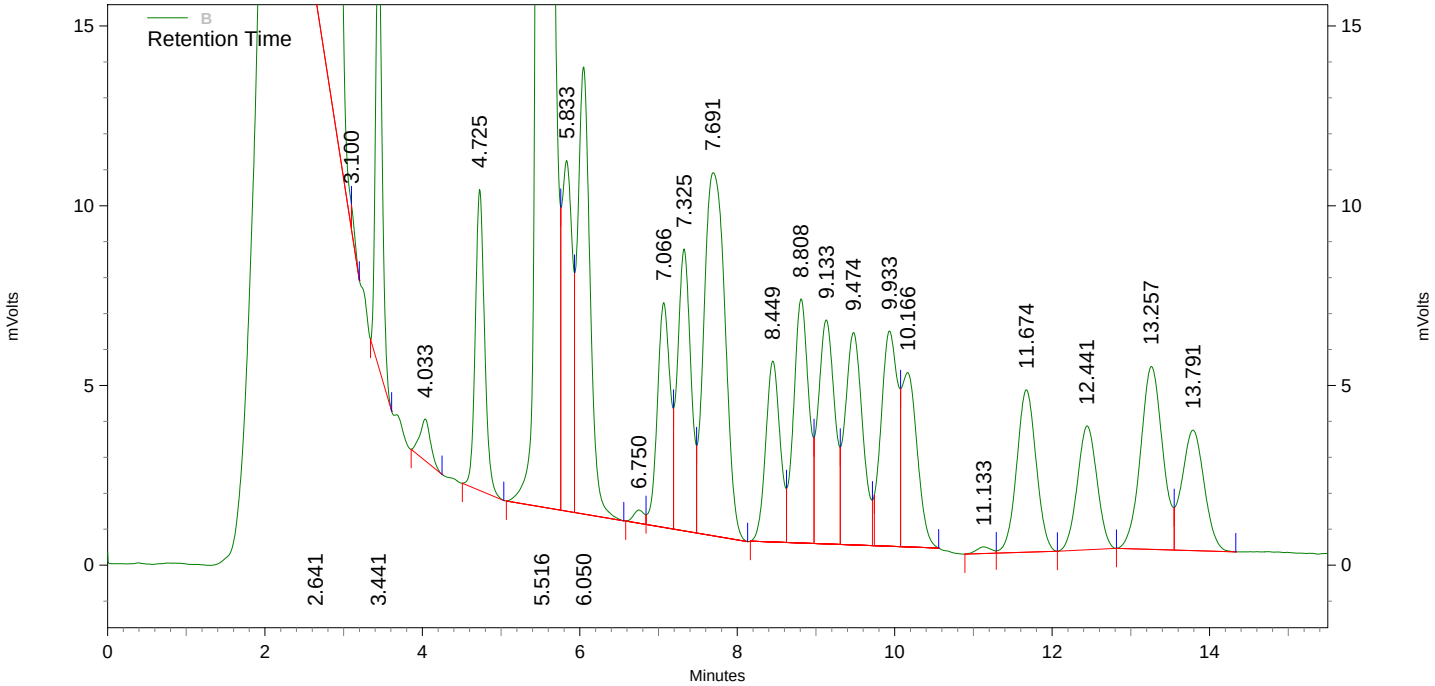
11/4/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\009.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,MSDS784496,
Acquired: 10/19/2016 12:24:12
Data Summary: Reason #1, #3, #4 applies to data. RED 10/20/2016

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.416	28759	**0.4607**
RDX	4.725	31852	**0.3913**
12-DNB (SSTD)	5.841	48516	**91.6187**
135-TNB	6.050	79786	**0.3930**
13-DNB	7.066	104323	**0.4180**
TETRYL	7.325	55099	**0.3893**
35-DNA	7.716	73835	**0.3648**
NB	7.758	81731	**0.4213**
246-TNT	8.808	72411	**0.3950**
4-AM-26-DNT	9.133	47627	**0.4244**
2-AM-46-DNT	9.474	72299	**0.3904**
2-NT	11.666	45747	**0.4181**
4-NT	12.441	37835	**0.4072**
3-NT	13.257	49347	**0.4132**

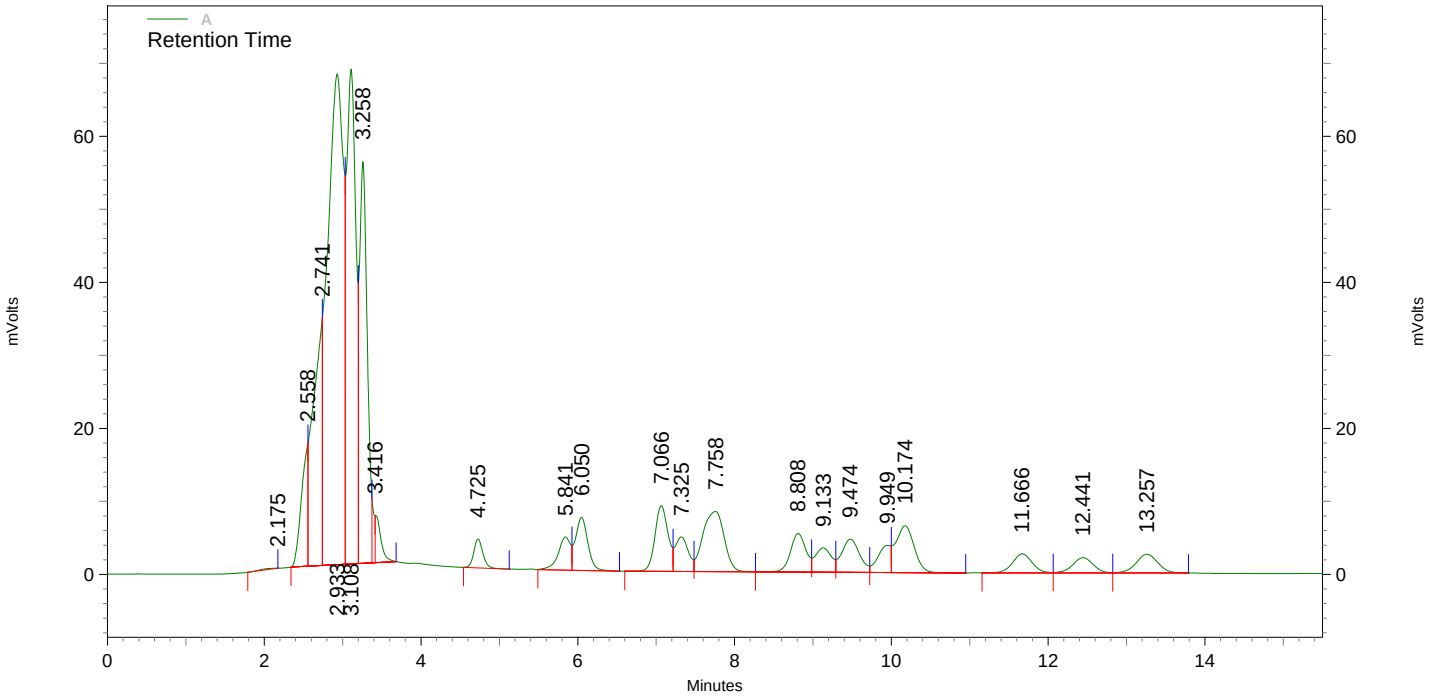
B Results

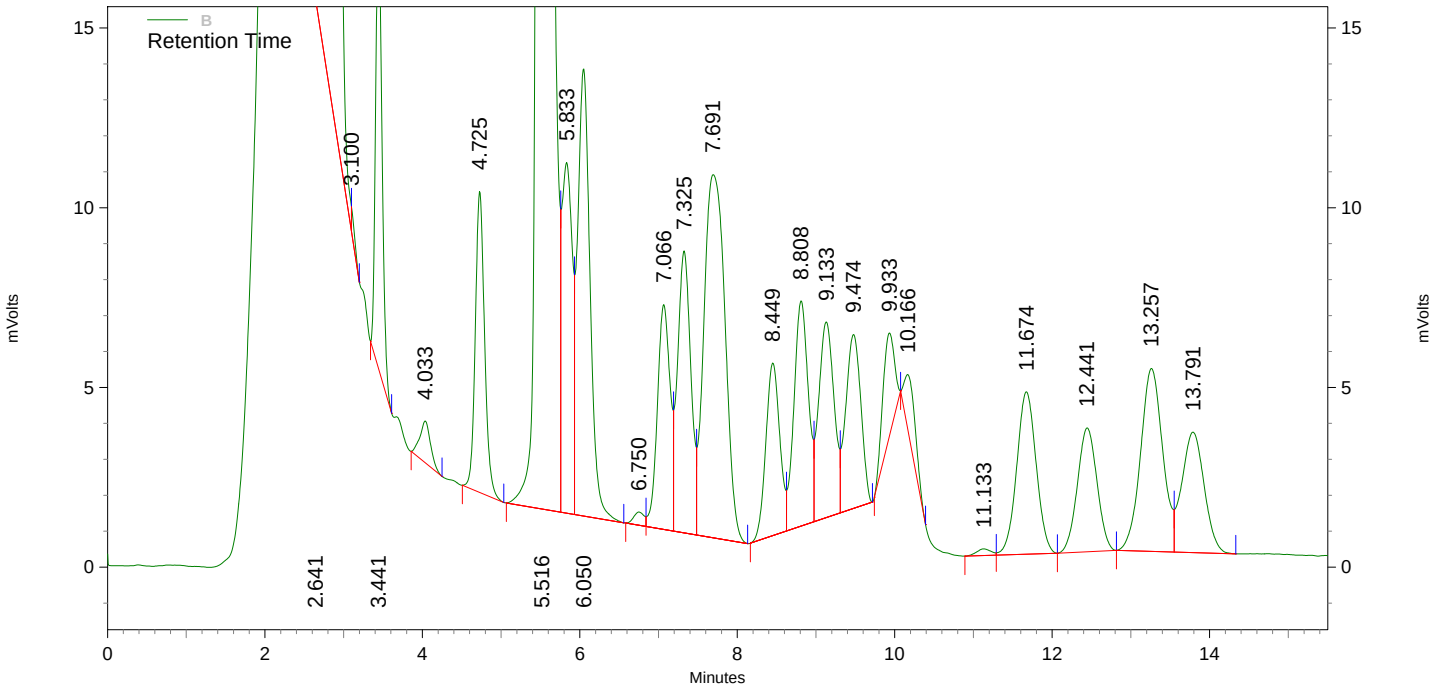
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.449	64235	**0.8333**
26-DNT	9.933	87495	**0.4646**
24-DNT	10.166	66811	**0.3668**
PETN	13.791	66332	**0.8531**

Before Manual Integration

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\009.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,MSDS784496,
Acquired: 10/19/2016 12:24:12
Data Summary: Reason #1, #3, #4 applies to data. RED 10/20/2016





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\009.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131499,MSDS784496,
Acquired: 10/19/2016 12:24:12
Data Summary: Reason #1, #3, #4 applies to data. RED 10/20/2016

A Results

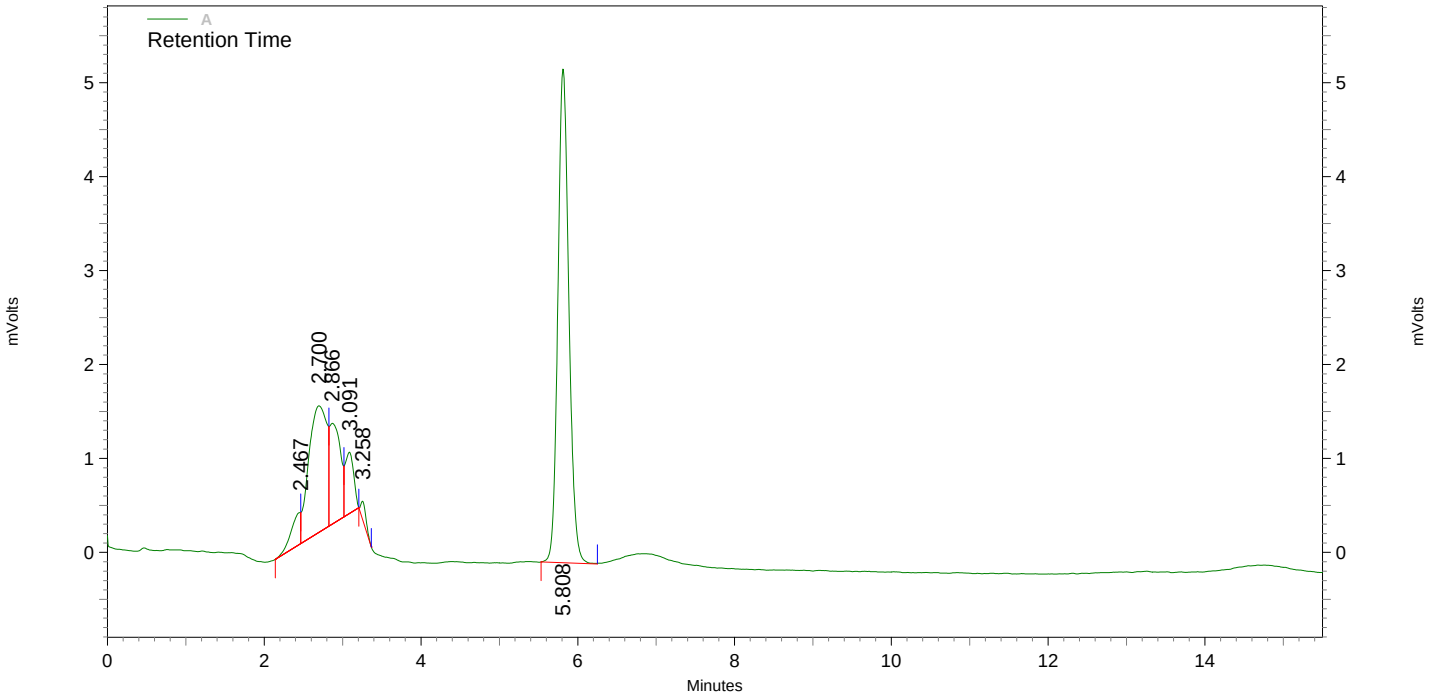
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.416	31904	**0.5109**
RDX	4.725	31852	**0.3913**
12-DNB (SSTD)	5.841	48516	**91.6187**
135-TNB	6.050	79786	**0.3930**
13-DNB	7.066	104323	**0.4180**
TETRYL	7.325	55099	**0.3893**
35-DNA			**0.0000 BDL**
NB	7.758	155566	**0.8028**
246-TNT	8.808	72411	**0.3950**
4-AM-26-DNT	9.133	47627	**0.4244**
2-AM-46-DNT	9.474	72299	**0.3904**
2-NT	11.666	45747	**0.4181**
4-NT	12.441	37835	**0.4072**
3-NT	13.257	49347	**0.4132**

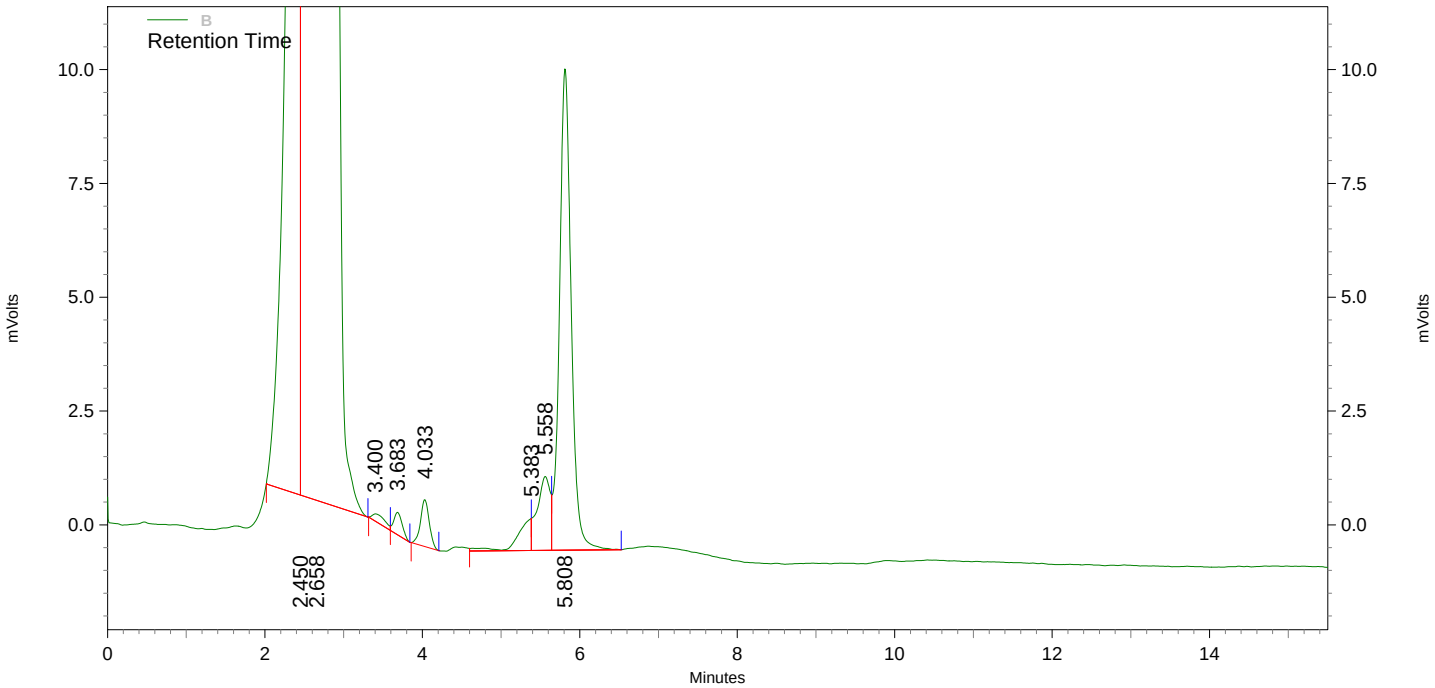
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.449	59084	**0.7670**
26-DNT			**0.0000 BDL**
24-DNT	9.933	29537	**0.1626**
PETN	13.791	66332	**0.8531**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\016.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131500,MBS,
Acquired: 10/19/2016 14:42:12
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\016.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131500,MBS,
Acquired: 10/19/2016 14:42:12
Data Summary: {Data Description}

A Results

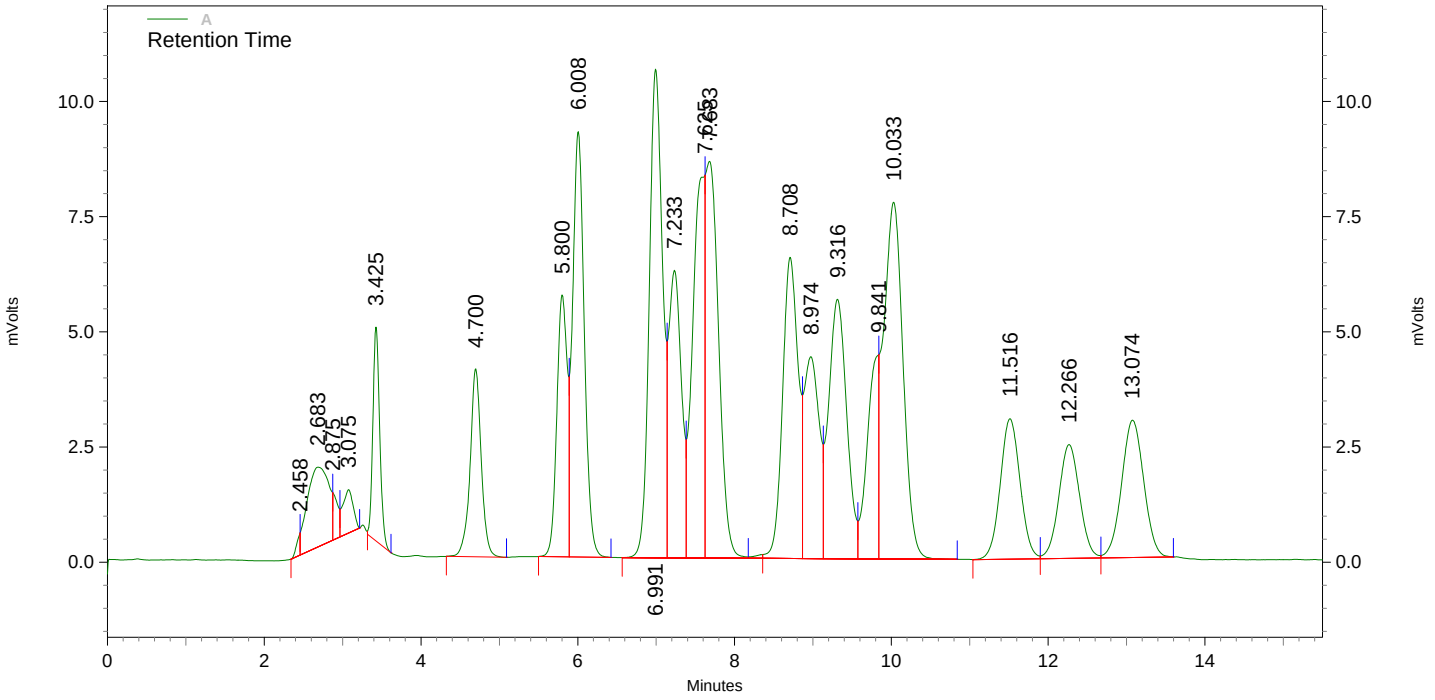
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.808	51081	**96.4553**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB			**0.0000 BDL**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

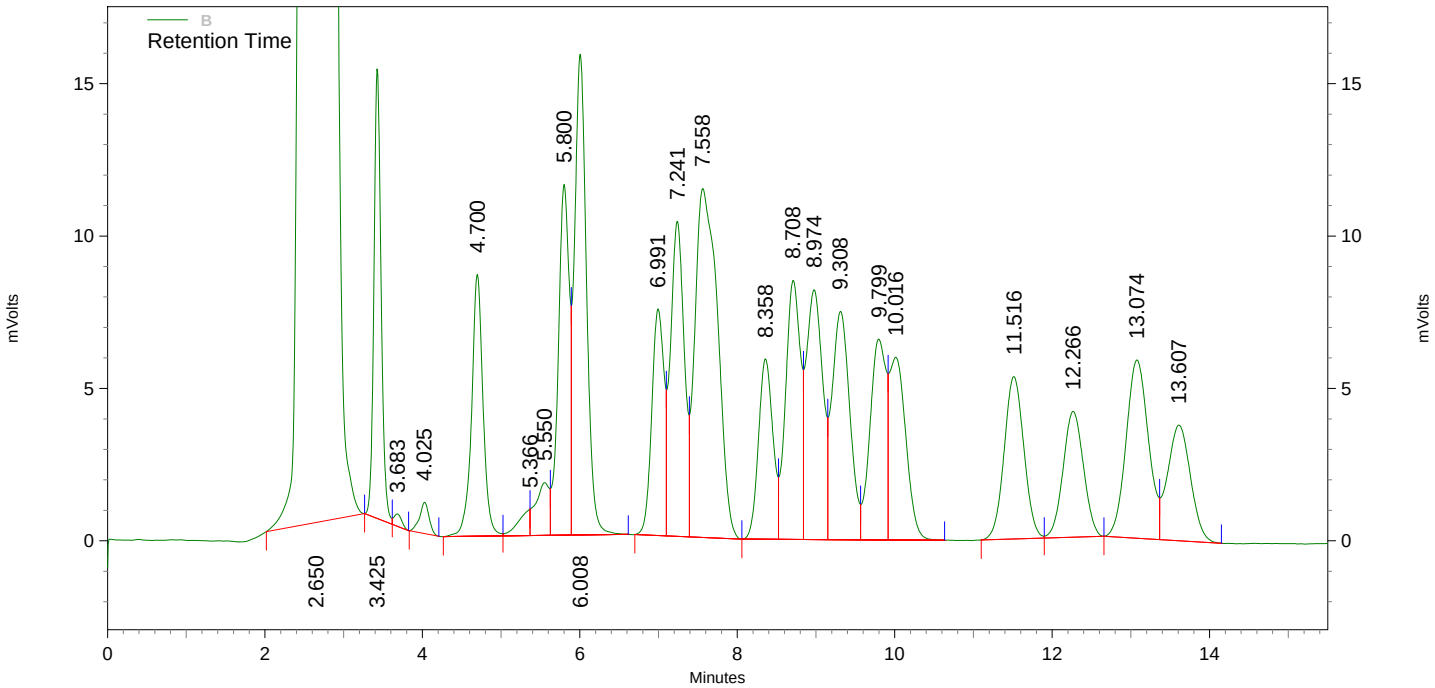
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG			**0.0000 BDL**
26-DNT			**0.0000 BDL**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\017.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131500,LCSS,
Acquired: 10/19/2016 15:00:29
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\017.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131500,LCSS,
Acquired: 10/19/2016 15:00:29
Data Summary: {Data Description}

A Results

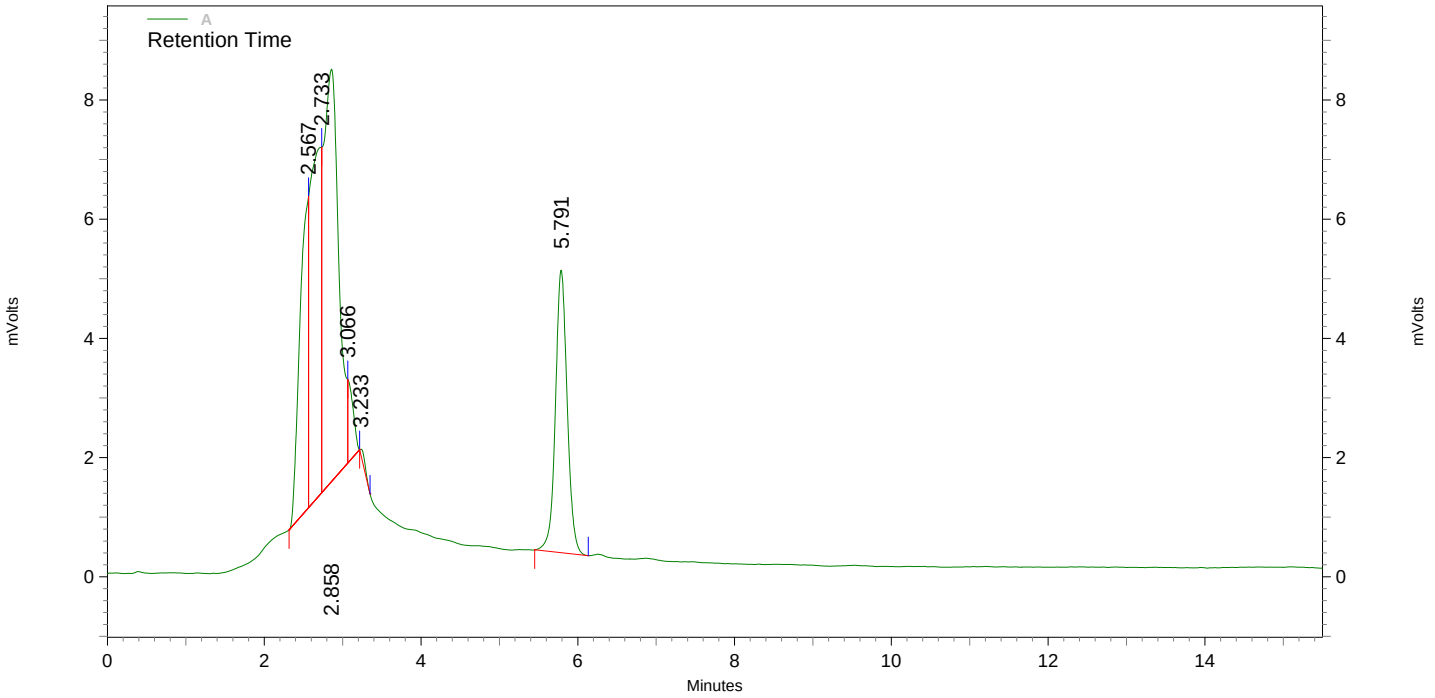
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.425	28053	**0.4495**
RDX	4.700	40327	**0.4951**
12-DNB (SSTD)	5.800	52671	**99.4535**
135-TNB	6.008	95692	**0.4718**
13-DNB	6.991	125214	**0.5019**
TETRYL	7.233	69795	**0.4937**
35-DNA	7.625	88411	**0.4371**
NB	7.683	99541	**0.5133**
246-TNT	8.708	90398	**0.4934**
4-AM-26-DNT	8.974	58642	**0.5221**
2-AM-46-DNT	9.316	90795	**0.4905**
2-NT	11.516	53650	**0.4906**
4-NT	12.266	45539	**0.4904**
3-NT	13.074	58530	**0.4905**

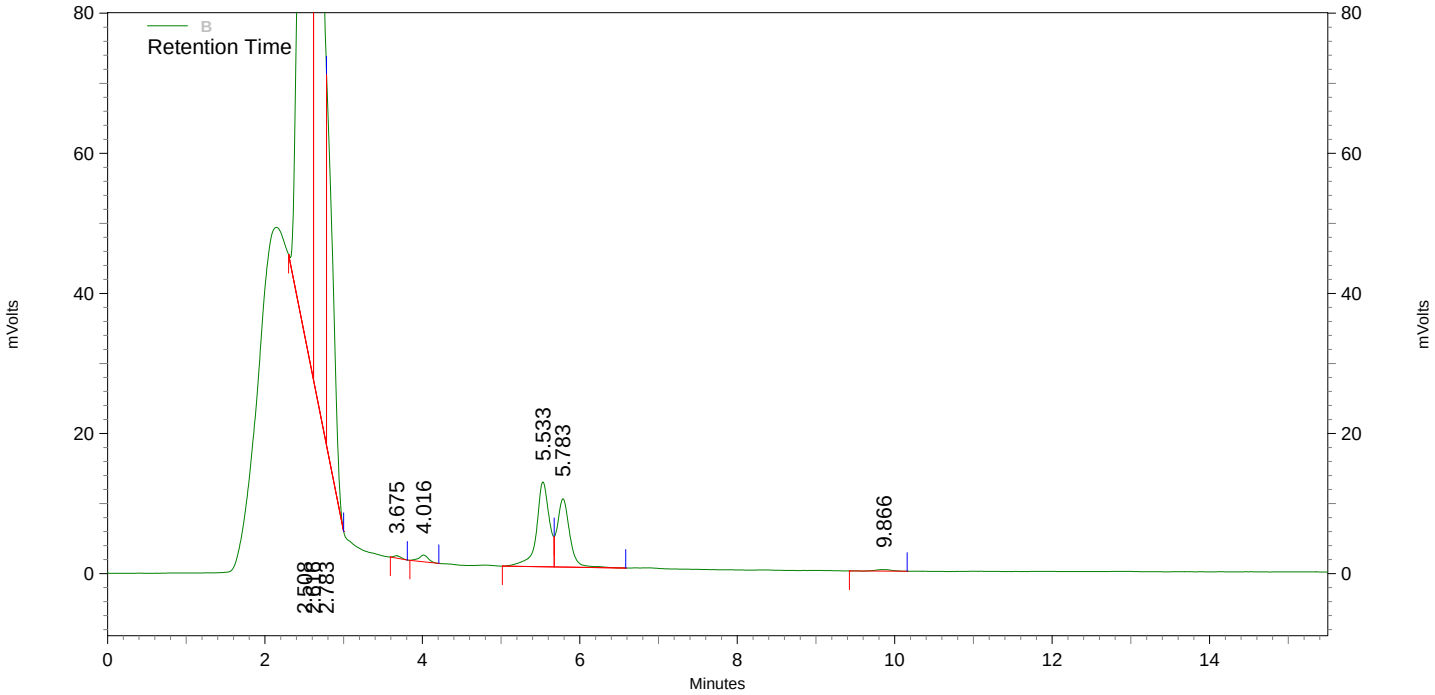
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.358	75509	**0.9784**
26-DNT	9.799	94473	**0.5015**
24-DNT	10.016	88129	**0.4835**
PETN	13.607	77070	**0.9930**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\021.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: DUP 784853
Acquired: 10/19/2016 16:13:45
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\021.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: DUP 784853
Acquired: 10/19/2016 16:13:45
Data Summary: {Data Description}

A Results

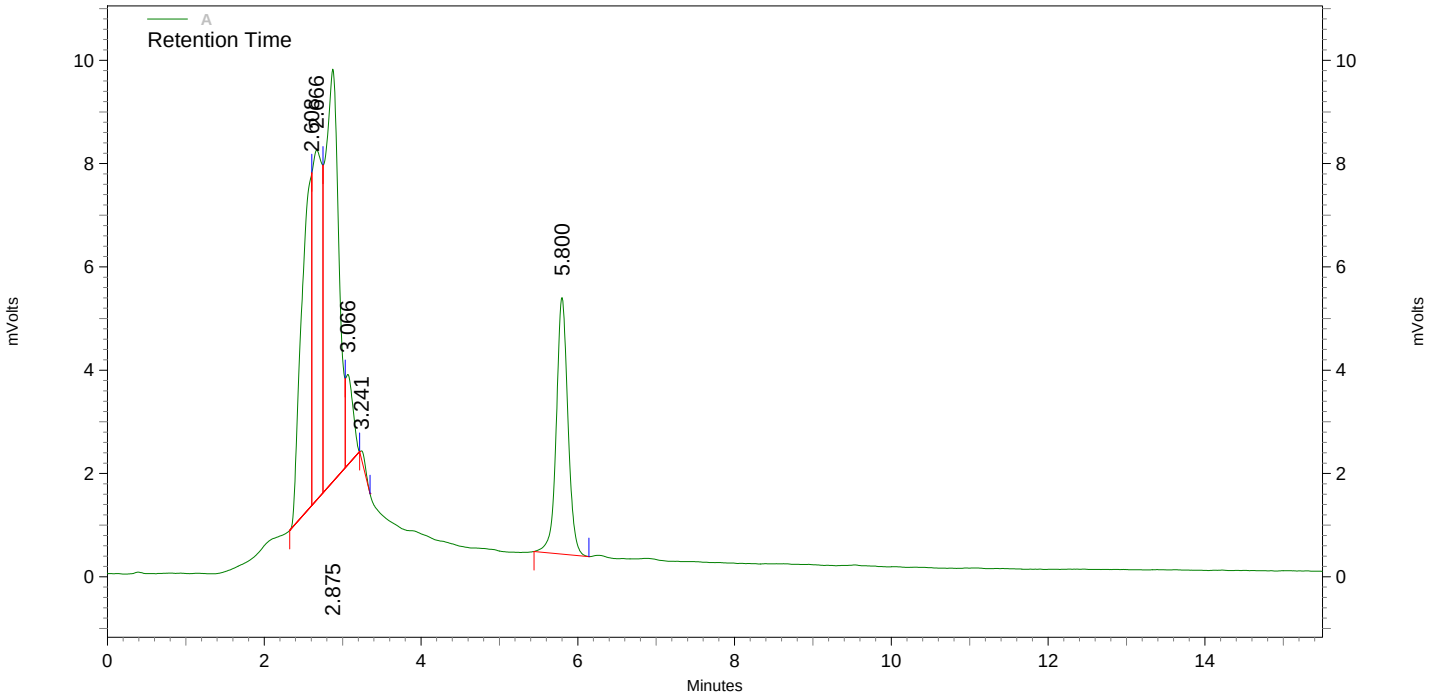
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.791	49455	**93.3893**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB			**0.0000 BDL**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

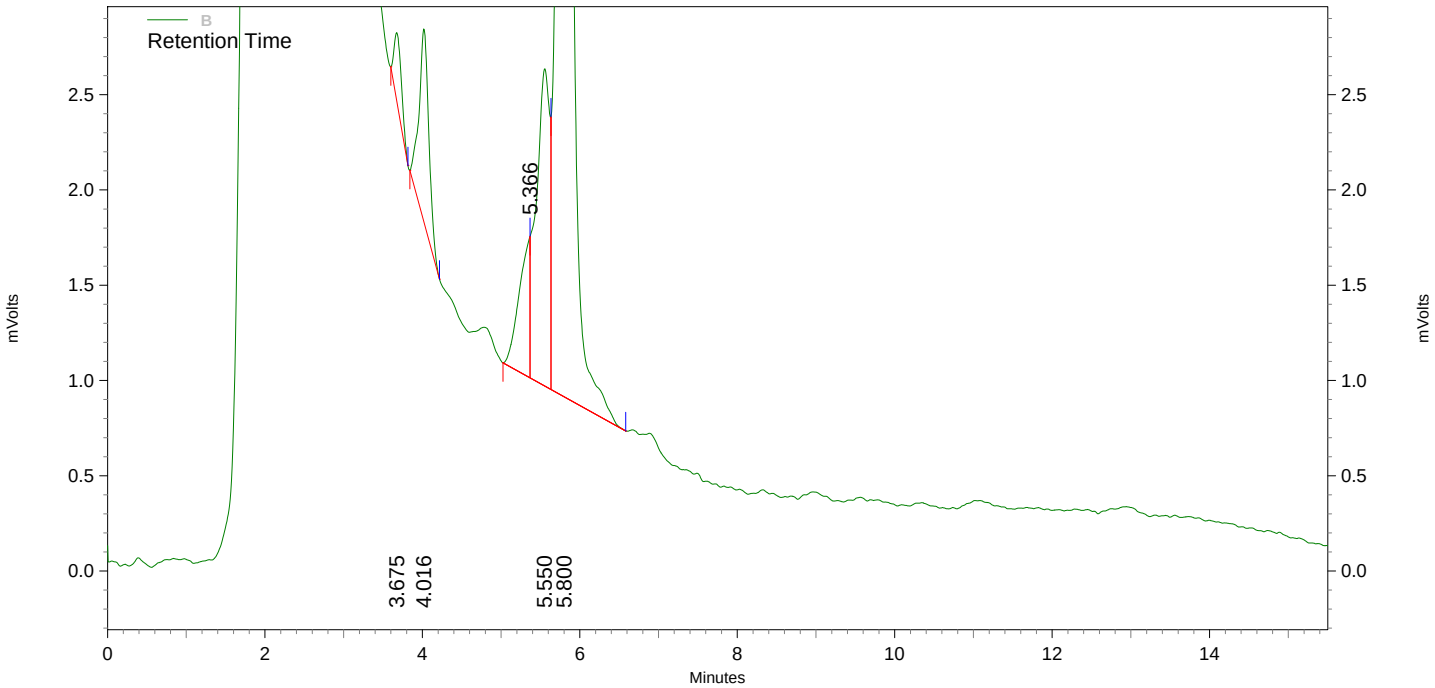
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG			**0.0000 BDL**
26-DNT	9.866	3216	**0.0191**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\022.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: TRIP 784853
Acquired: 10/19/2016 16:32:03
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\022.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: TRIP 784853
Acquired: 10/19/2016 16:32:03
Data Summary: {Data Description}

A Results

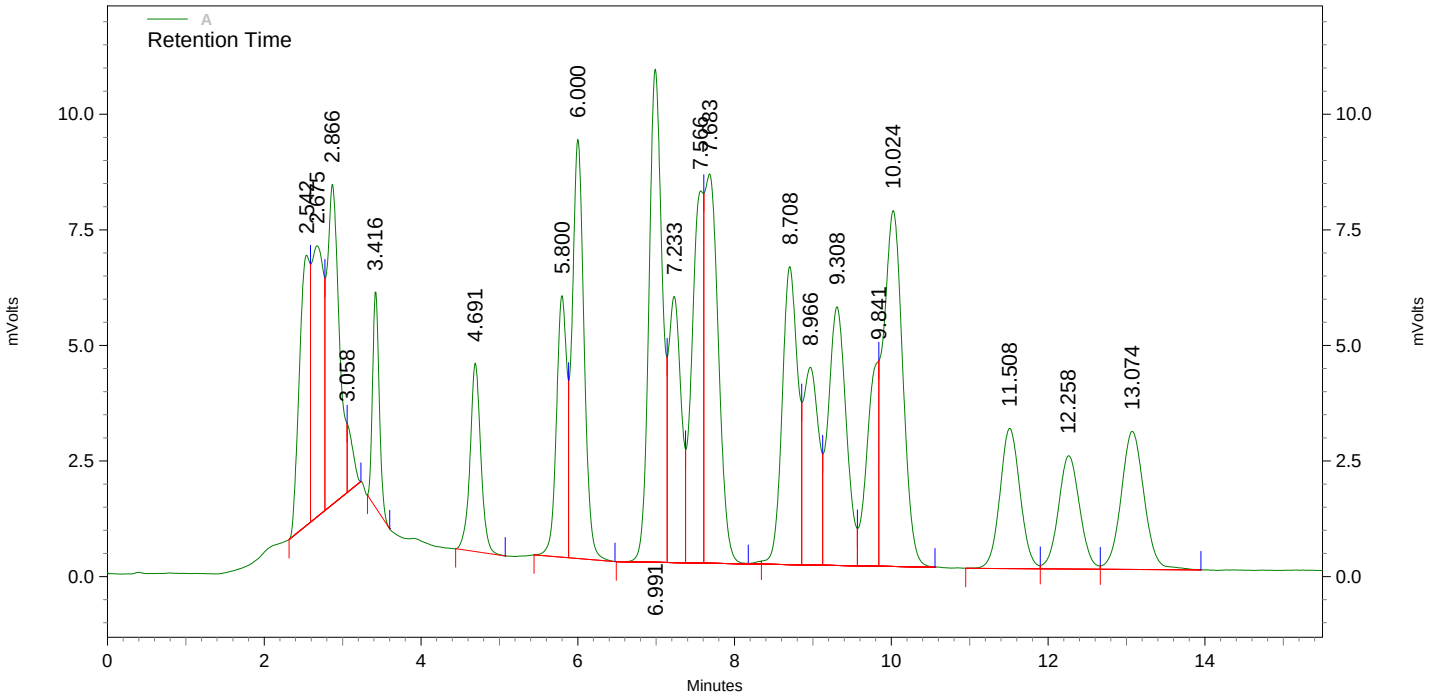
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX			**0.0000 BDL**
RDX			**0.0000 BDL**
12-DNB (SSTD)	5.800	51062	**96.4195**
135-TNB			**0.0000 BDL**
13-DNB			**0.0000 BDL**
TETRYL			**0.0000 BDL**
35-DNA			**0.0000 BDL**
NB			**0.0000 BDL**
246-TNT			**0.0000 BDL**
4-AM-26-DNT			**0.0000 BDL**
2-AM-46-DNT			**0.0000 BDL**
2-NT			**0.0000 BDL**
4-NT			**0.0000 BDL**
3-NT			**0.0000 BDL**

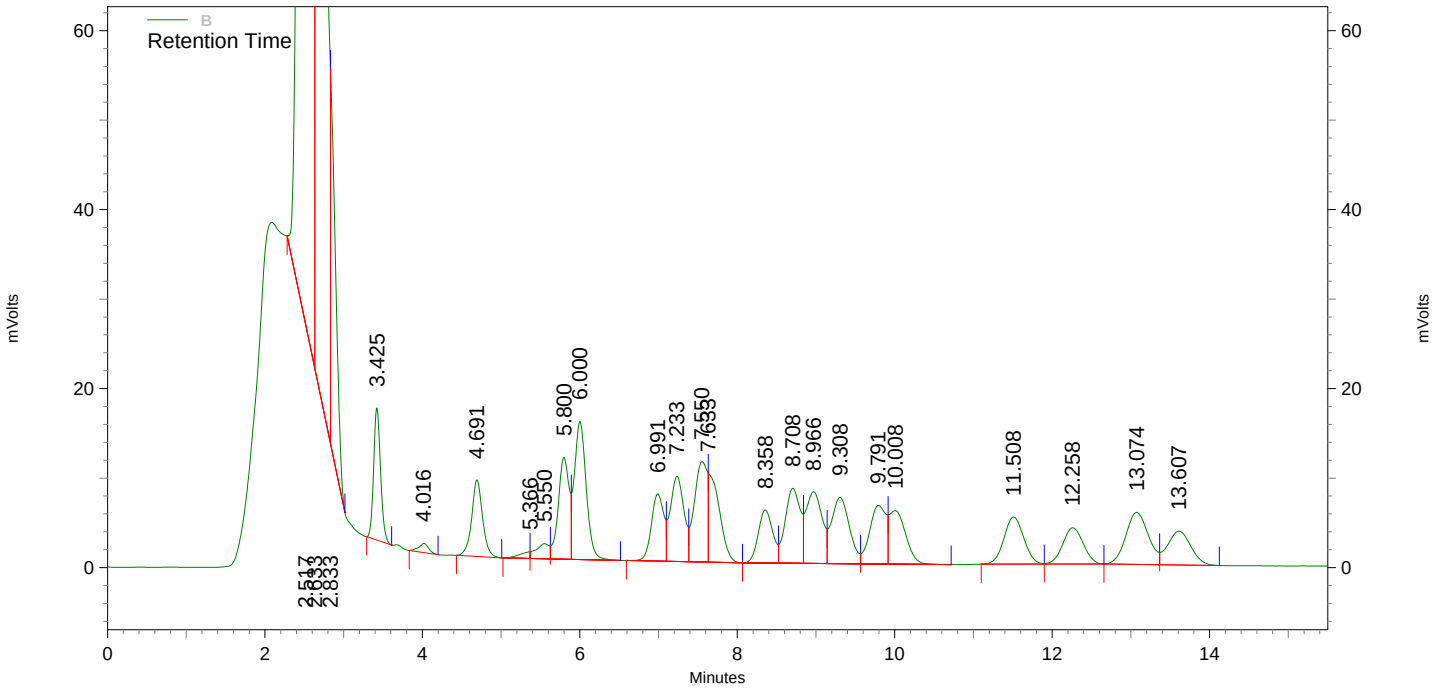
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG			**0.0000 BDL**
26-DNT			**0.0000 BDL**
24-DNT			**0.0000 BDL**
PETN			**0.0000 BDL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\023.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131500,MSS784853,
Acquired: 10/19/2016 16:50:20
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\023.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131500,MSS784853,
Acquired: 10/19/2016 16:50:20
Data Summary: {Data Description}

A Results

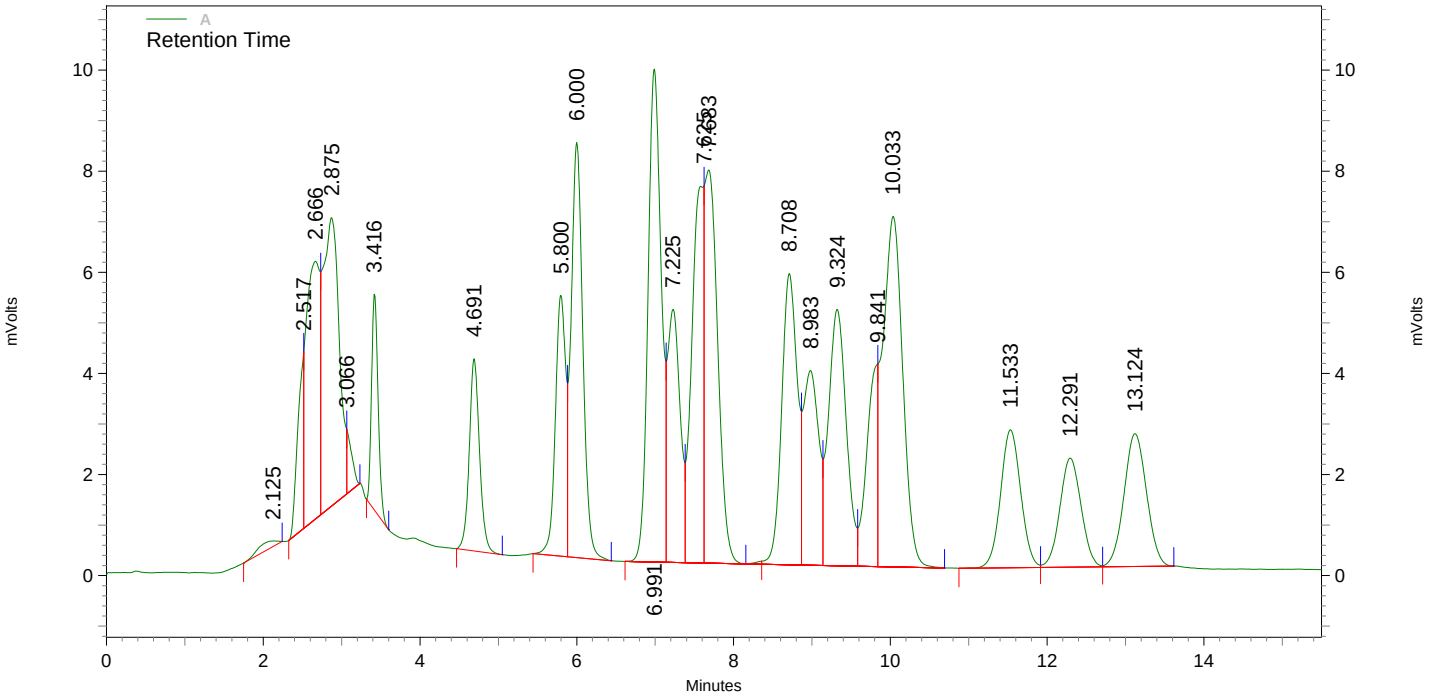
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.416	27542	**0.4413**
RDX	4.691	38843	**0.4769**
12-DNB (SSTD)	5.800	51829	**97.8658**
135-TNB	6.000	95117	**0.4690**
13-DNB	6.991	125820	**0.5044**
TETRYL	7.233	63118	**0.4462**
35-DNA	7.566	81296	**0.4018**
NB	7.683	103585	**0.5342**
246-TNT	8.708	88670	**0.4840**
4-AM-26-DNT	8.966	57379	**0.5109**
2-AM-46-DNT	9.308	89805	**0.4851**
2-NT	11.508	53952	**0.4933**
4-NT	12.258	46045	**0.4959**
3-NT	13.074	60881	**0.5103**

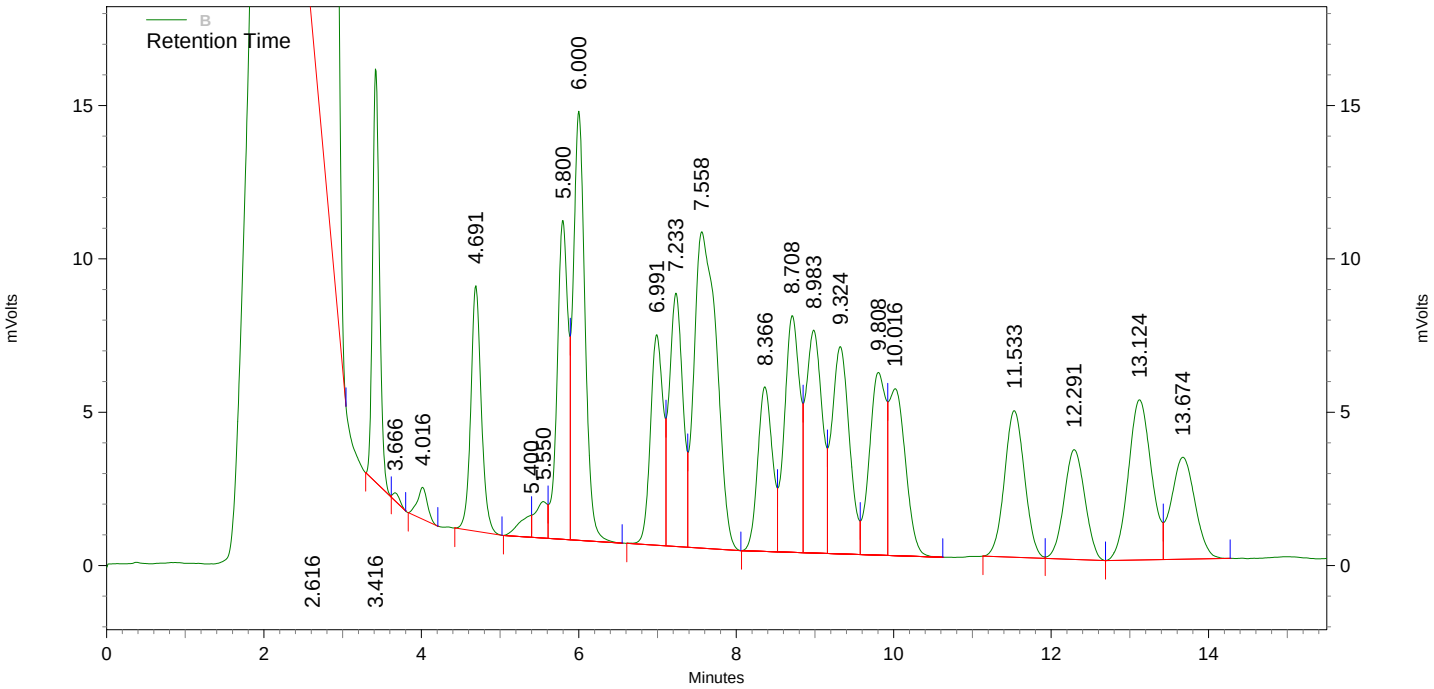
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.358	76217	**0.9875**
26-DNT	9.791	94961	**0.5041**
24-DNT	10.008	86910	**0.4768**
PETN	13.607	78238	**1.0083**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\025.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131500,MSDS784853,
Acquired: 10/19/2016 17:26:54
Data Summary: {Data Description}





File: C:\Instarch\HPLC 2\Data\101816EXP-PRIMARY\025.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\primary\070616EXPic-PRIMARY\101816exp-primary.met
Sample ID: 131500,MSDS784853,
Acquired: 10/19/2016 17:26:54
Data Summary: {Data Description}

A Results

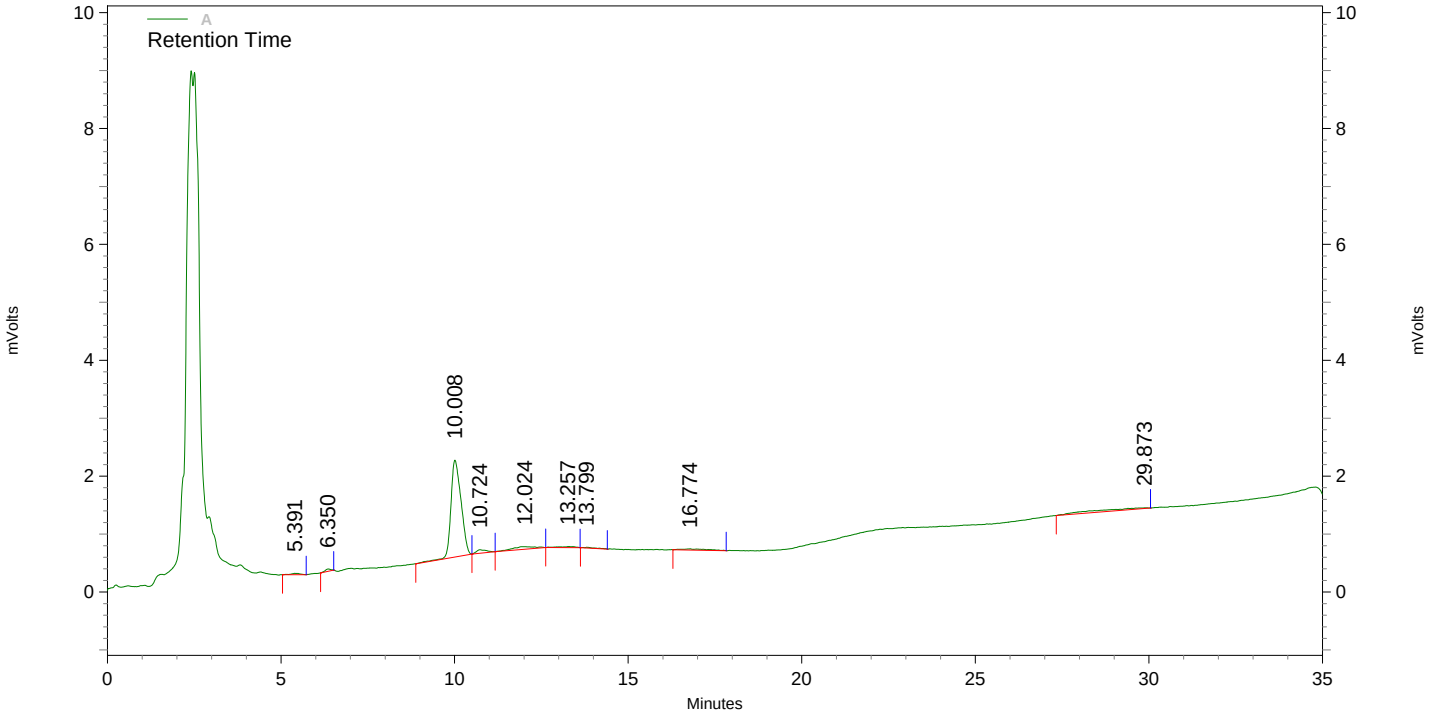
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX	3.416	24835	**0.3982**
RDX	4.691	34610	**0.4251**
12-DNB (SSTD)	5.800	47329	**89.3804**
135-TNB	6.000	85222	**0.4200**
13-DNB	6.991	113980	**0.4568**
TETRYL	7.225	55614	**0.3929**
35-DNA	7.625	77882	**0.3849**
NB	7.683	90032	**0.4642**
246-TNT	8.708	79275	**0.4325**
4-AM-26-DNT	8.983	52487	**0.4675**
2-AM-46-DNT	9.324	80554	**0.4351**
2-NT	11.533	48819	**0.4462**
4-NT	12.291	40621	**0.4373**
3-NT	13.124	52483	**0.4396**

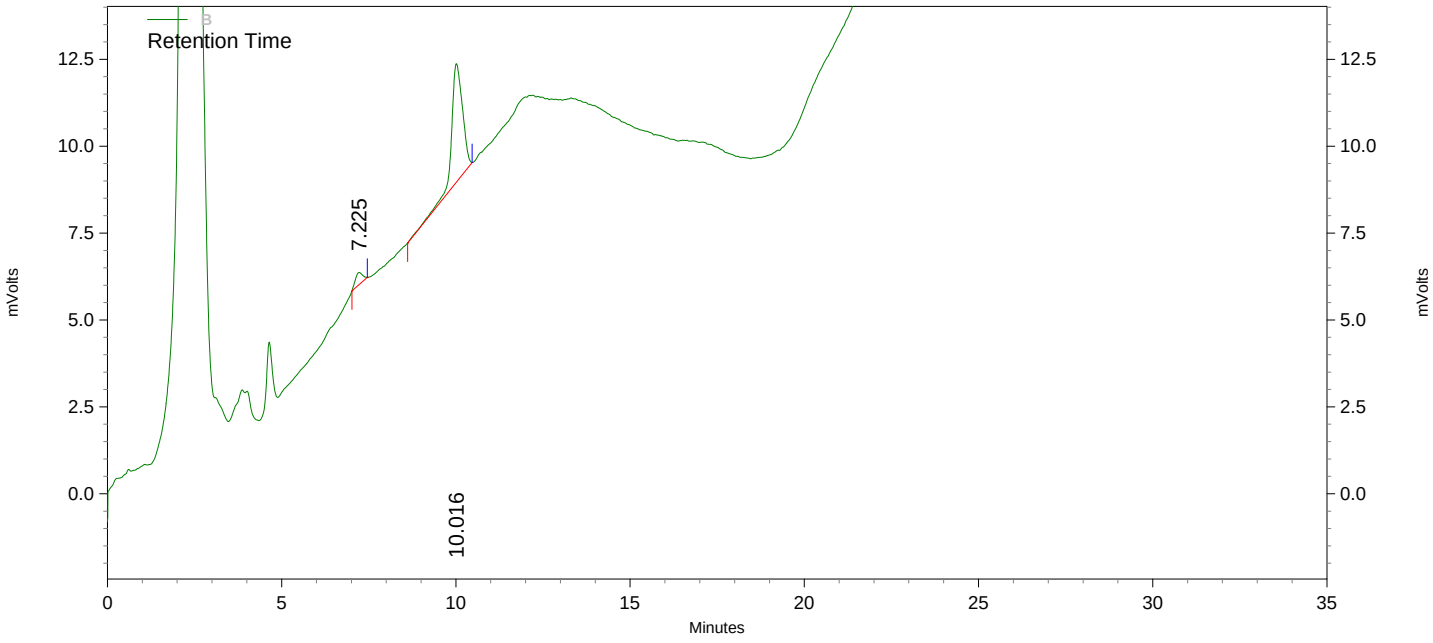
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG	8.366	69238	**0.8977**
26-DNT	9.808	86451	**0.4591**
24-DNT	10.016	80308	**0.4407**
PETN	13.674	69843	**0.8989**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\102016EXP-CONFIRM\024.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\102016EXP-CONFIRM.met
Sample ID: 131499,MBS,
Acquired: 10/21/2016 03:43:12
Data Summary: {Data Description}





131499,MBS,

A Results

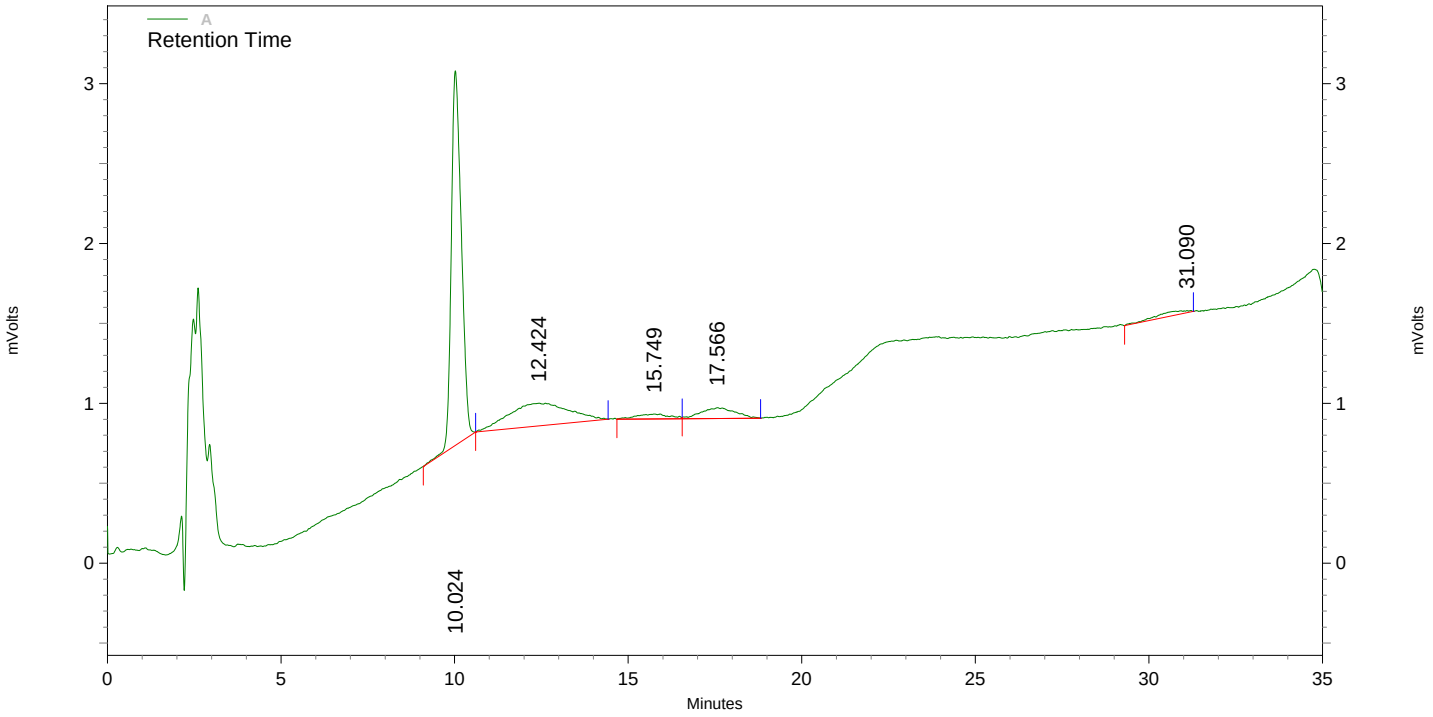
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm			**0.0000 BDL**
RDX-confirm			**0.0000 BDL**
NB-confirm			**0.0000 BDL**
12-DNB (SSTD)-confirm	10.008	33746	**126.6629**
4-AM-26-DNT-conf.			**0.0000 BDL**
3,5-DNA-confirm	10.724	1159	**0.0000**
2-NT-confirm			**0.0000 BDL**
2-AM-46-DNT-conf.			**0.0000 BDL**
3-NT-confirm			**0.0000 BDL**
4-NT-confirm			**0.0000 BDL**
26-DNT-confirm			**0.0000 BDL**
13-DNB-confirm	16.774	1141	**0.0000**
TETRYL-confirm			**0.0000 BDL**
24-DNT-confirm			**0.0000 BDL**
135-TNB-confirm			**0.0000 BDL**
246-TNT-confirm			**0.0000 BDL**

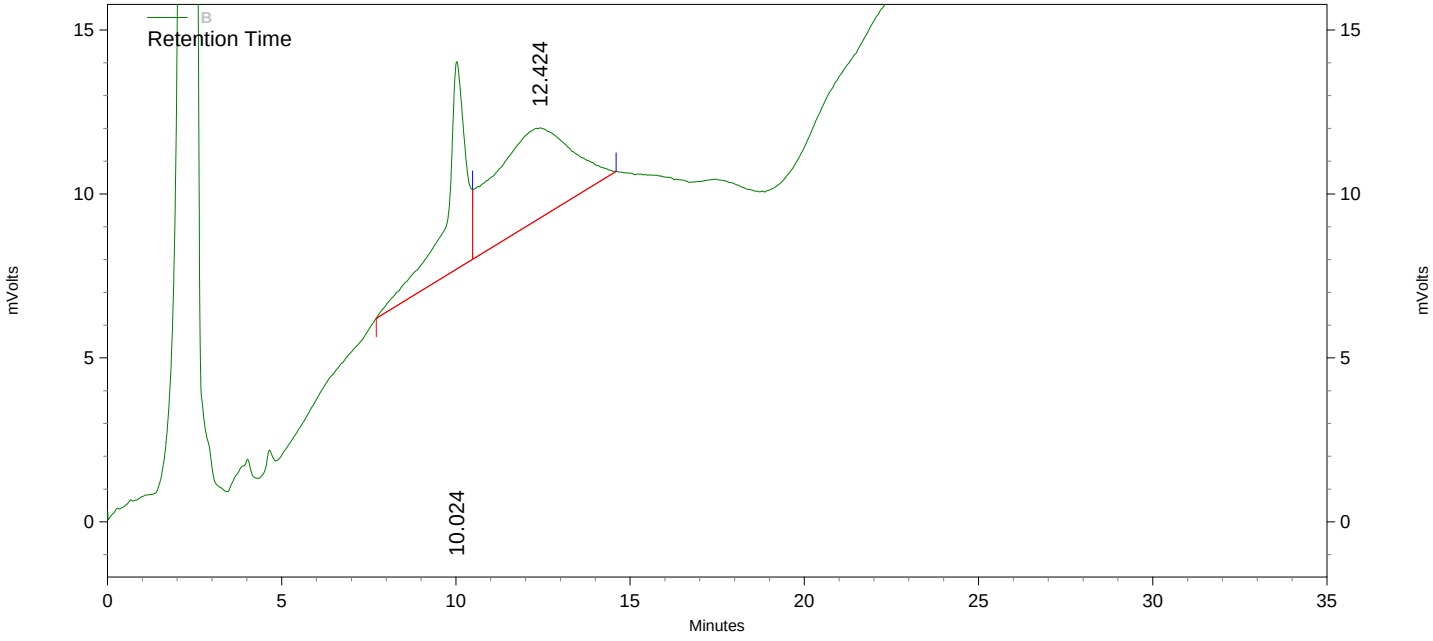
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm			**0.0000 BDL**
PETN-confirm			**0.0000 BDL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\102016EXP-CONFIRM\027.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\102016EXP-CONFIRM.met
Sample ID: 131500,MBS,
Acquired: 10/21/2016 05:35:04
Data Summary: {Data Description}





131500,MBS,

A Results

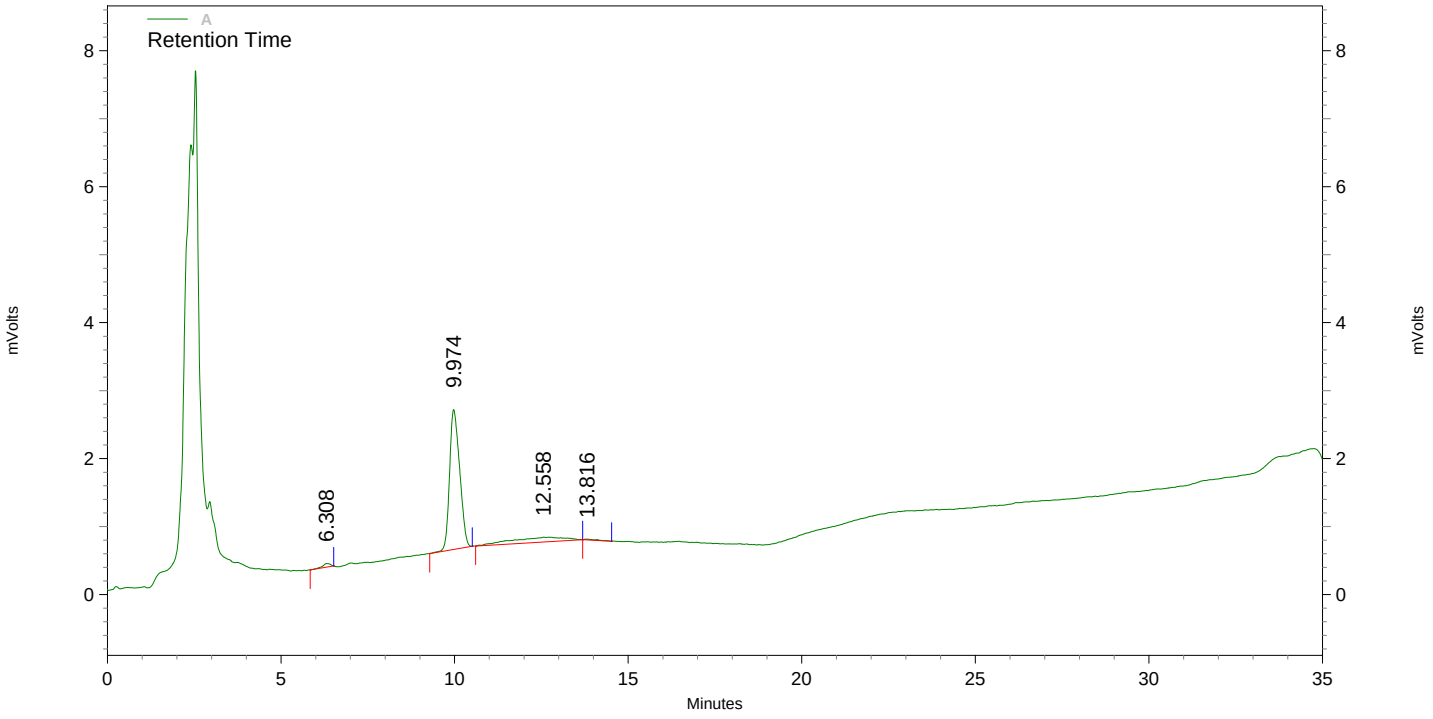
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm			**0.0000 BDL**
RDX-confirm			**0.0000 BDL**
NB-confirm			**0.0000 BDL**
12-DNB (SSTD)-confirm	10.024	46960	**176.2605**
4-AM-26-DNT-conf.			**0.0000 BDL**
3,5-DNA-confirm			**0.0000 BDL**
2-NT-confirm			**0.0000 BDL**
2-AM-46-DNT-conf.			**0.0000 BDL**
3-NT-confirm			**0.0000 BDL**
4-NT-confirm			**0.0000 BDL**
26-DNT-confirm			**0.0000 BDL**
13-DNB-confirm			**0.0000 BDL**
TETRYL-confirm			**0.0000 BDL**
24-DNT-confirm			**0.0000 BDL**
135-TNB-confirm			**0.0000 BDL**
246-TNT-confirm	31.090	1635	**0.0000**

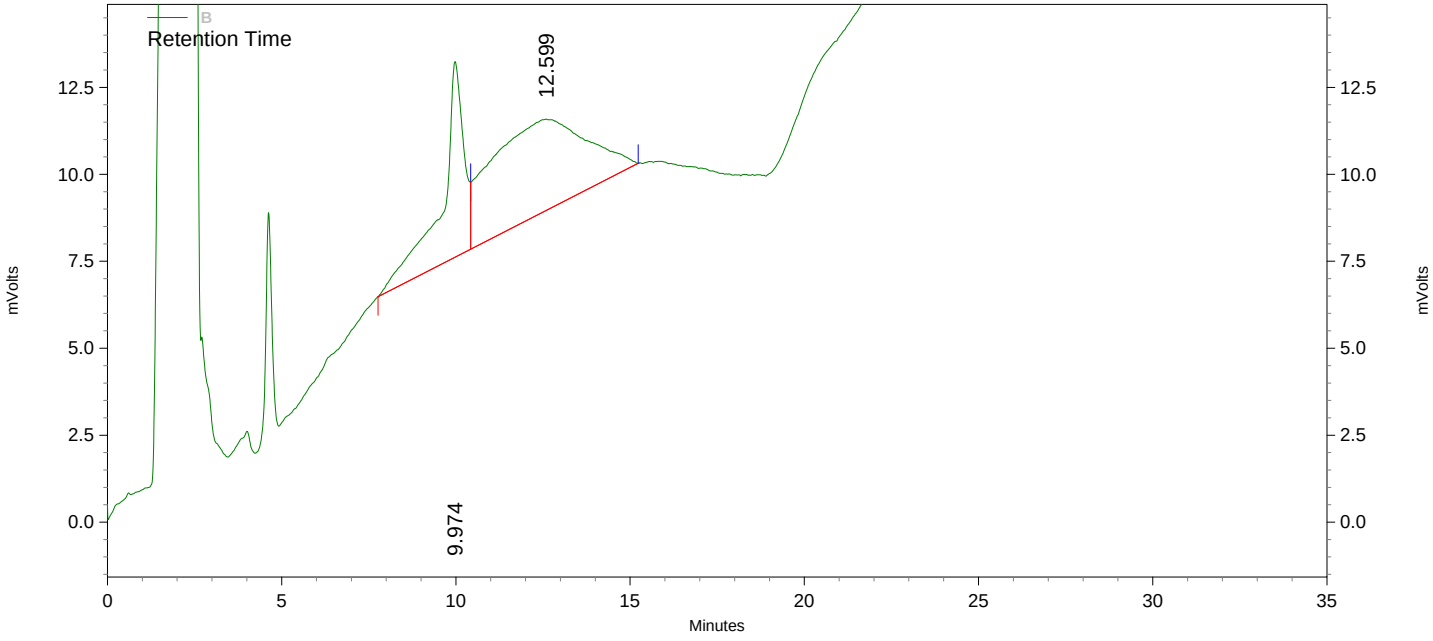
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm			**0.0000 BDL**
PETN-confirm			**0.0000 BDL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\102016EXP-CONFIRM\034.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\102016EXP-CONFIRM.met
Sample ID: DUP 784853
Acquired: 10/21/2016 09:56:12
Data Summary: {Data Description}





DUP 784853

A Results

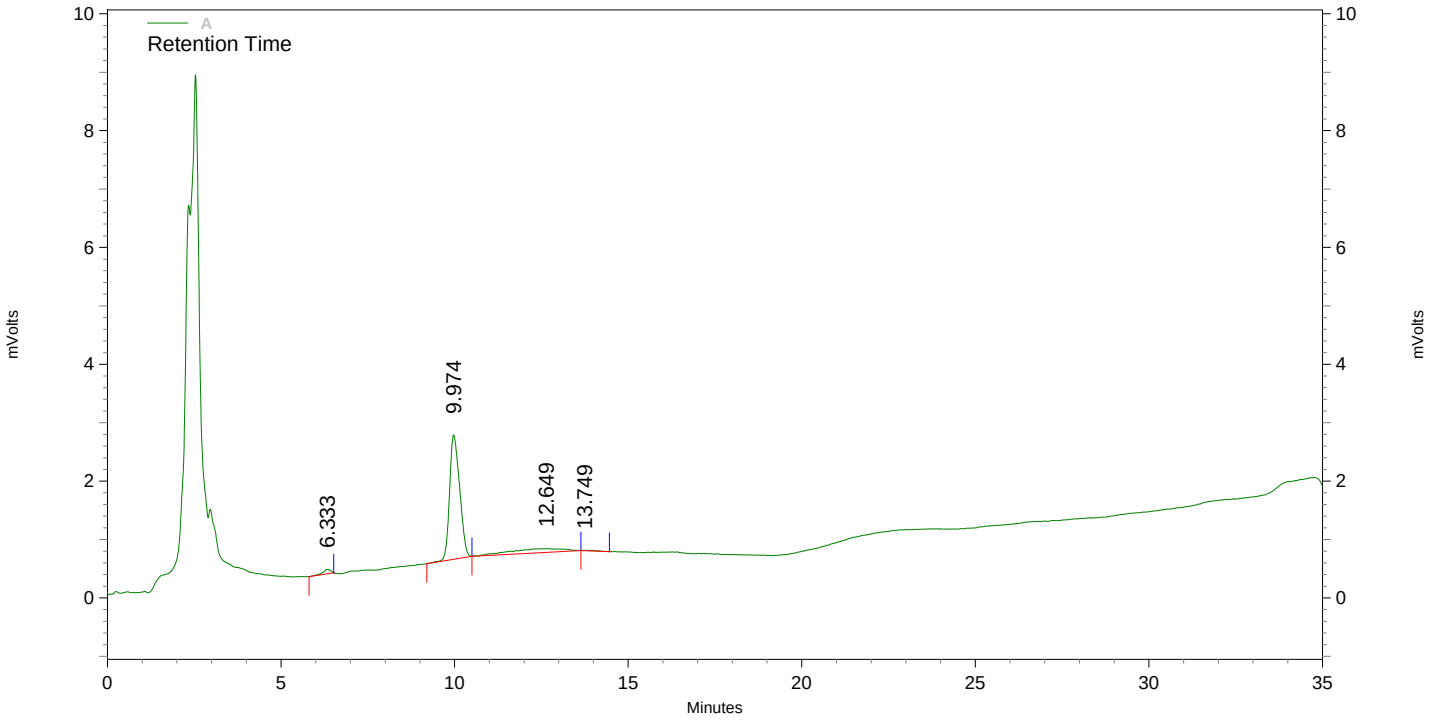
Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm			**0.0000 BDL**
RDX-confirm			**0.0000 BDL**
NB-confirm			**0.0000 BDL**
12-DNB (SSTD)-confirm	9.974	41564	**156.0071**
4-AM-26-DNT-conf.			**0.0000 BDL**
3,5-DNA-confirm			**0.0000 BDL**
2-NT-confirm			**0.0000 BDL**
2-AM-46-DNT-conf.			**0.0000 BDL**
3-NT-confirm			**0.0000 BDL**
4-NT-confirm			**0.0000 BDL**
26-DNT-confirm			**0.0000 BDL**
13-DNB-confirm			**0.0000 BDL**
TETRYL-confirm			**0.0000 BDL**
24-DNT-confirm			**0.0000 BDL**
135-TNB-confirm			**0.0000 BDL**
246-TNT-confirm			**0.0000 BDL**

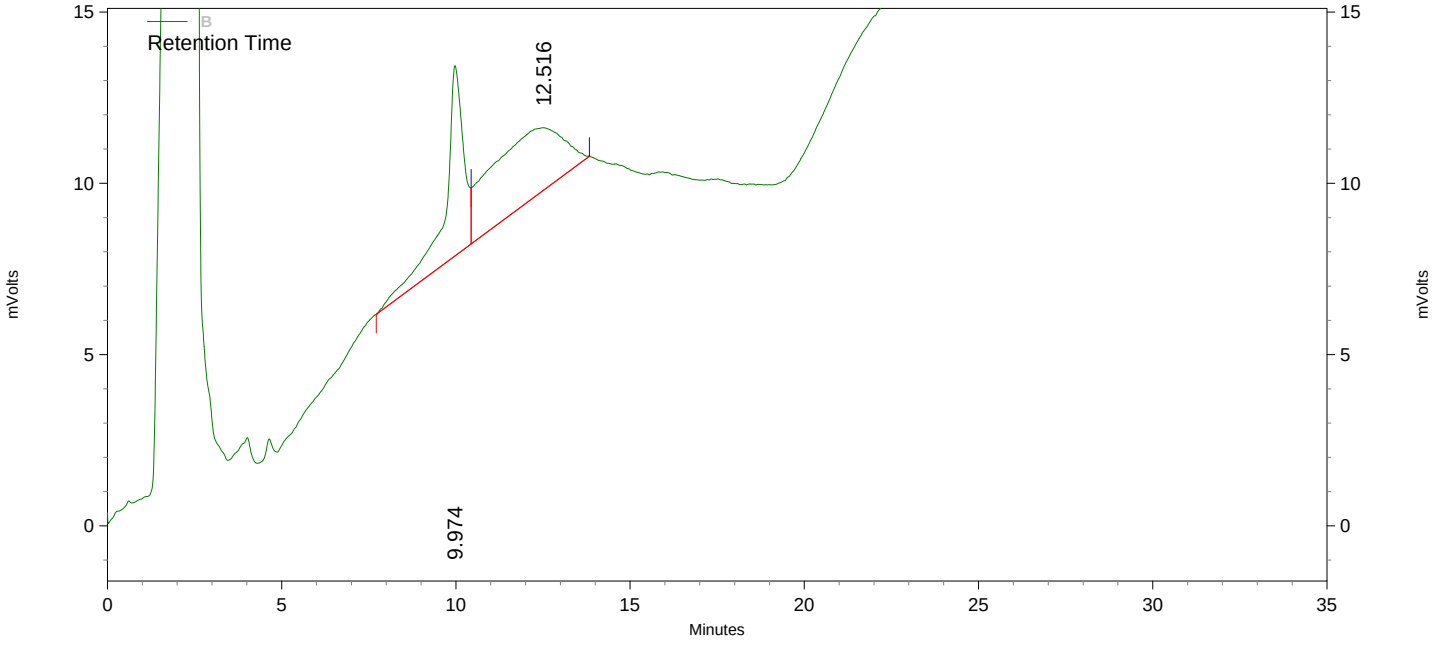
B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm			**0.0000 BDL**
PETN-confirm			**0.0000 BDL**

Explosives - 8330

File: C:\Instarch\HPLC 2\Data\102016EXP-CONFIRM\035.dat
User ID: red
Method: C:\Instarch\HPLC 2\Methods\8330A_B\confirmation\063016expic-confirm\102016EXP-CONFIRM.met
Sample ID: TRIP 784853
Acquired: 10/21/2016 10:33:29
Data Summary: {Data Description}





TRIP 784853

A Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
HMX-confirm			**0.0000 BDL**
RDX-confirm			**0.0000 BDL**
NB-confirm			**0.0000 BDL**
12-DNB (SSTD)-confirm	9.974	43024	**161.4871**
4-AM-26-DNT-conf.			**0.0000 BDL**
3,5-DNA-confirm			**0.0000 BDL**
2-NT-confirm			**0.0000 BDL**
2-AM-46-DNT-conf.	12.649	7685	**0.0413**
3-NT-confirm	13.749	223	**0.0000**
4-NT-confirm			**0.0000 BDL**
26-DNT-confirm			**0.0000 BDL**
13-DNB-confirm			**0.0000 BDL**
TETRYL-confirm			**0.0000 BDL**
24-DNT-confirm			**0.0000 BDL**
135-TNB-confirm			**0.0000 BDL**
246-TNT-confirm			**0.0000 BDL**

B Results

Name	*Retention Time*	*Area*	*concentration (ug/ml)*
NG-confirm			**0.0000 BDL**
PETN-confirm			**0.0000 BDL**

NITROAROMATICS ANALYSIS
LOGBOOK
DOCUMENTS

S 8330B EXPLOSIVES QSM Analytical Run
131499 on 10/18/2016

RED
11/10/2016

Date Analyzed: _____ Date Reviewed: _____

Date Entered: _____ Date Validated: _____

COC	ORDER	SAMPLE DECRIPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
122704	784496		10/04/2016 1000		BERING SEA ENVIRONMENTAL	RADFORD AAP	8330B EXPLOSIVES QSM 5		S	**4**	
		RFAAP-FGMR-SSI-001A						59528			
122704	784515		10/04/2016 1000		BERING SEA ENVIRONMENTAL	RADFORD AAP	8330B EXPLOSIVES QSM 5		S	**4**	
		RFAAP-FGMR-SSI-001B						59528			
122704	784516		10/04/2016 1000		BERING SEA ENVIRONMENTAL	RADFORD AAP	8330B EXPLOSIVES QSM 5		S	**4**	
		RFAAP-FGMR-SSI-001C						59528			
122746	785308		10/07/2016 0850		BERING SEA ENVIRONMENTAL	RADFORD AAP	8330B EXPLOSIVES QSM 5		S	**4**	
		RFAAP-FGMR-SSI-002A						59528			
122746	785309		10/07/2016 0850		BERING SEA ENVIRONMENTAL	RADFORD AAP	8330B EXPLOSIVES QSM 5		S	**4**	
		RFAAP-FGMR-SSI-002B						59528			
122746	785310		10/07/2016 0850		BERING SEA ENVIRONMENTAL	RADFORD AAP	8330B EXPLOSIVES QSM 5		S	**4**	
		RFAAP-FGMR-SSI-002C						59528			
	788002						8330B EXPLOSIVES QSM 5				
				MBS				59528			
	788003						8330B EXPLOSIVES QSM 5				
				LCSS				59528			
	788004		10/04/2016 1000				8330B EXPLOSIVES QSM 5				
		RFAAP-FGMR-SSI-001A		MSS 784496				59528			
	788005		10/04/2016 1000				8330B EXPLOSIVES QSM 5				
		RFAAP-FGMR-SSI-001A		MSDS 788004				59528			

10 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

PREP WORKSHEET
on 10/18/2016

Prep Batch **59,528** Date Prepped: 10/14/2016 Prepped By BMM

Folder #	Order	QC Type	Link	Test	Matrix	Volume	Weight	Initial Volume	SDG Level	Notes
	788002	MBS		8330B EXPLOSIVES	SOLID	20.0	10.06			
	788003	LCSS		8330B EXPLOSIVES	SOLID	20.0	10.00			
122704	784496			8330B EXPLOSIVES	SOIL	20.0	10.10		4	
	784515			8330B EXPLOSIVES	SOIL	20.0	9.99		4	
	784516			8330B EXPLOSIVES	SOIL	20.0	10.06		4	
122746	785308			8330B EXPLOSIVES	SOIL	20.0	10.08		4	
	785309			8330B EXPLOSIVES	SOIL	20.0	9.99		4	
	785310			8330B EXPLOSIVES	SOIL	20.0	10.10		4	
	788004	MSS	784496	8330B EXPLOSIVES	SOIL	20.0	10.10			
	788005	MSDS	788004	8330B EXPLOSIVES	SOIL	20.0	10.02			

Notes:_____

Explosives or Nitroguanidine Prep Bench Sheet

(SOP Reference #'s SV009 & SV010)

Prep Batch #:	59528
Prep Method:	8330B
Analyst:	BMM/RED
Date:	10/14/2016
Start Time:	15:30
End Date:	10/18/2016
End Time:	13:00

3535,8330A,8330B, or 8330M >

Matrix: SOIL
Balance Used: SVB02

SPE Aparatus (check one):
NA Dionex AutoTrace 280
NA Manual SPE

Reagent:	Lot #
Methylene Chloride	na
Acetonitrile	55311
Methanol	na
0.1% Formic Acid	EXP 5766
SPE Cartridges	NA

Concentrated By: NA
Concentration Date: NA

Diluted By: RED
Dilution Date: 10/18/2016

8330A = Explosives (liquids/solids)
8330B = Explosives (liquids/solids)
8330M = Nitroguanidine (liquids/solids)
3535 = SPE (liquids)

Sample ID #	Comments		(Solids) Sample Weight (g)	(Liquids) Sample Volume (L)	Extract Volume (ml)	Diluted (Yes/No)	Dilution Volume (ml)
788002	(MB)		10.06		20.0	yes	40.0
788003	(LCS) EXP 5765		10.00		20.0	yes	40.0
784496			10.10		20.0	yes	40.0
784515			9.99		20.0	yes	40.0
784516			10.06		20.0	yes	40.0
785308			10.08		20.0	yes	40.0
785309			9.99		20.0	yes	40.0
785310			10.10		20.0	yes	40.0
DUP 784496	(Dup)		9.99		20.0	yes	40.0
TRIP 784496	(Trip)		10.05		20.0	yes	40.0
788004	(MS)	Parent Sample	10.10		20.0	yes	40.0
788005	(MSD)	784496	10.02		20.0	yes	40.0

MB=Method Blank, LCS=Laboratory Control Sample, Dup=Duplicate, Trip=Triplicate, MS=Matrix Spike & MSD=Matrix Spike Duplicate

MS/MSD/ LCS Spike Amount (ml): 2
Spike Concentration (ug/mL): 10/20
Spike Reference #: EXP 5855

Surrogate Spike Amount (ml): 2
Surrogate Spike Conc. (ug/mL): 10
Surrogate Spike Reference #: EXP 5856

Relinquished to: RED
Date: 10/18/2016

Reviewed By: RED
Date: 10/18/2016

Table 5

8330B Analysis Data Review Checklist

Analytical Run #: 131499	**Independent Reviewer: JJY**
Sequence Date: 10/18/2016; 10/20/2016	**Date of Review: 10/24/2016**
Analyst/Data Interpreter: RED	**Approval: 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.

Requirements:	Acceptance Criteria	Analyst Review		Independent Review		Comments (indicate reference to an attachment if necessary)
		Yes	No	Yes	No	
1. INITIAL CALIBRATION (ICAL)						
a. Was the Explosive initial calibration performed using a minimum of five varying standard concentration levels?	Lowest standard at or near MRL	X		X		
b. Is the variation between calibration response factors for all concentration levels <15% RSD, is r^2 >.990, or r > 0.995 for the regression line?		X		X		
c. Was each ICAL uniquely identified (i.e. Standard Number)?	RSD<15%, r^2>0.990, or r>0.995	X		X		
d. Was an initial calibration blank (ICB) analyzed?		X		X		
2. INITIAL CALIBRATION VERIFICATION (ICV)						
a. Was there a second source ICV for all target analytes analyzed after the initial calibration and prior to analysis of any samples?	Second source	X		X		
b. Were the recoveries for the ICV between 85-115% (80-120% for QSM).	% Recovery	X		X		
c. Was the ICV uniquely identified (i.e. Standard Number)?		X		X		
3. CONTINUING CALIBRATION VERIFICATION (CCV)						
a. Were CCVs analyzed at the beginning of the sequence, after every 12 hours or every 20 samples (which ever comes first)(every 10 samples for QSM) and at the end of the analytical run?		X		X		
b. Were the recoveries for the CCVs within program limits?	%Recovery	X		X		
c. Was each CCV uniquely identified (i.e. Standard Number)?		X		X		

Additional Comments:

Table 5

8330B Analysis Data Review Checklist

Requirements:	Acceptance Criteria	Analyst		Independent		Comments (indicate reference to an attachment if necessary)
		Yes	No	Yes	No	
4. BLANKS						
a. Was a method blank (MB) analyzed prior to the analysis of samples?		X		X		
b. Was the MB result less than ½ the reporting limit (RL) or 5% of the sample amount (QSM: less than 1/2 the RL and <10% of the sample amount)?		X		X		
c. Was a MB prepped and analyzed at a frequency of one per Prep Batch?	Batch ≤20 samples	X		X		
5. LABORATORY CONTROL SAMPLE (LCS)						
a. Was a LCS analyzed at a frequency of one per Prep Batch?	Batch ≤20 samples	X		X		
b. Were the LCS recoveries in each LCS within the acceptance criteria?	Per Program		X		X	see below
6. MATRIX SPIKES						
a. Was a matrix spiked (MS) sample analyzed at a frequency one per Prep Batch?	Batch ≤20 samples	X		X		
b. Were MS recoveries in each MS within the acceptance criteria?	Per Program		X		X	see below
7. MATRIX SPIKE DUPLICATE						
a. Was a duplicate matrix spike sample analyzed at a frequency one per Prep Batch?	Batch <20 samples	X		X		
b. Were MSD within the acceptance criteria?	Per Program		X		X	see below
c. Is the relative percent difference (RPD) between a matrix spike (MS) and its duplicate (MSD) within the acceptance criteria?	Per Program QSM: 30% RPD	X		X		

Additional Comments:

3,5-dinitroaniline (35-DNA) was low in the laboratory control sample (LCS), with a recovery of 84% and the acceptable range set at 86-118%. The CCV limits for this analyte are wider at 80-120% and it is passing in all CCV's. The analyte was qualified with a "Q" in the samples.

The matrix spike (MS) had low recovery of 35-DNA. The matrix spike duplicate (MSD) had low recovery of 35-DNA, 1,3,5-trinitrobenzene (135-TNB), and 2,4-dinitrotoluene (24-DNT). These analytes were qualified with an "M" in the parent sample (#784496).

Table 5

8330B Analysis Data Review Checklist

Requirements:	Acceptance Criteria	Analyst		Independent		Comments (indicate reference to an attachment if necessary)
		Yes	No	Yes	No	
8. SAMPLES (INCLUDING BLANKS, STANDARDS, AND QC SAMPLES)						
a. Are chromatogram characteristics, including peak shapes and areas, consistent with those of the CCV?		X		X		
b. Are surrogate recoveries for all samples, blanks, standards, and QC samples within acceptance criteria?			X		X	see below
c. Were all samples having analytes detected in amounts exceeding the calibration range diluted and reanalyzed?		X		X		
d. Were all samples extracted within holding times and analyzed within 40 days of extracting?	Analysis within 40 days of extraction	X		X		
e. Was there a acetonitrile:H2O injection preformed prior to sample analysis?		X		X		
f. If any analytes were detected in the soil grinding blanks, were the associated samples B-flagged?	< 1/2 RL	X		X		
g. Was the batch soil triplicate RSD within acceptance criteria?	<20%	X		X		
9. RECORDS AND REPORTING						
a. Are Run, Prep Batch and Extraction sheets, Summary sheets, Sequence file, initial and rerun raw and process data present in the PDF file?		X		X		
b. Are all chromatograms dated and initialed?		X		X		
c. Are reported results whose amounts exceeded the acceptance criteria flagged with an appropriate qualifier and, if needed, a NCR completed?		X		X		
d. Do all values, dilution factors and qualifiers listed on the raw reports match the LIMS data?		X		X		
e. Is the ICAL method referenced on the Raw Data?		X		X		

Additional Comments:

The grinding blank was prepared as the method blank (MBS). The surrogate recovery in the MBS was marginally low in the primary analysis, but high in the confirmation analysis. The surrogate was reported from the primary analysis and qualified with an "S".

S 8330B EXPLOSIVES QSM Analytical Run
131500 on 10/18/2016

Date Analyzed: _____ Date Reviewed: _____

Date Entered: _____ Date Validated: _____

COC	ORDER	SAMPLE DECRIPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
122724	784783		10/06/2016 1505		BERING SEA ENVIRONMENTAL	RADFORD AAP	8330B EXPLOSIVES QSM 5		S	**4**	
		RFAAP-FGMR-SSD-001						59529			
122724	784852		10/06/2016 1515		BERING SEA ENVIRONMENTAL	RADFORD AAP	8330B EXPLOSIVES QSM 5		S	**4**	
		RFAAP-FGMR-DUP1						59529			
122724	784853		10/06/2016 1530		BERING SEA ENVIRONMENTAL	RADFORD AAP	8330B EXPLOSIVES QSM 5		S	**4**	
		RFAAP-FGMR-SSD-002		Designated MS/MSD				59529			
122724	784854		10/06/2016 1550		BERING SEA ENVIRONMENTAL	RADFORD AAP	8330B EXPLOSIVES QSM 5		S	**4**	
		RFAAP-FGMR-SSD-003						59529			
122724	784855		10/06/2016 1610		BERING SEA ENVIRONMENTAL	RADFORD AAP	8330B EXPLOSIVES QSM 5		S	**4**	
		RFAAP-FGMR-SSD-004						59529			
	788012						8330B EXPLOSIVES QSM 5				
				MBS				59529			
	788013						8330B EXPLOSIVES QSM 5				
				LCSS				59529			
	788014		10/06/2016 1530				8330B EXPLOSIVES QSM 5				
		RFAAP-FGMR-SSD-002		MSS 784853				59529			
	788015		10/06/2016 1530				8330B EXPLOSIVES QSM 5				
		RFAAP-FGMR-SSD-002		MSDS 788014				59529			

9 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

PREP WORKSHEET
on 10/18/2016

Prep Batch **59,529** Date Prepped: 10/14/2016 Prepped By BMM

Folder #	Order	QC Type	Link	Test	Matrix	Volume	Weight	Initial Volume	SDG Level	Notes
	788012	MBS		8330B EXPLOSIVES	SOLID	20.0	10.00			
	788013	LCSS		8330B EXPLOSIVES	SOLID	20.0	10.00			
122724	784783			8330B EXPLOSIVES	SOIL	20.0	10.10		4	
	784852			8330B EXPLOSIVES	SOIL	20.0	10.09		4	
	784853	*		8330B EXPLOSIVES	SOIL	20.0	10.01		4	
	784854			8330B EXPLOSIVES	SOIL	20.0	9.97		4	
	784855			8330B EXPLOSIVES	SOIL	20.0	10.06		4	
	788014	MSS	784853	8330B EXPLOSIVES	SOIL	20.0	9.96			
	788015	MSDS	788014	8330B EXPLOSIVES	SOIL	20.0	10.09			

Notes:_____

Explosives or Nitroguanidine Prep Bench Sheet

(SOP Reference #'s SV009 & SV010)

Prep Batch #:	59529
Prep Method:	8330B
Analyst:	BMM/RED
Date:	10/14/2016
Start Time:	16:30
End Date:	10/18/2016
End Time:	13:00

3535,8330A,8330B, or 8330M >

Matrix: SOIL

Balance Used: SVB02

SPE Aparatus (check one):

NA Dionex AutoTrace 280

NA Manual SPE

Reagent:	Lot #
Methylene Chloride	na
Acetonitrile	55311
Methanol	na
0.1% Formic Acid	EXP 5766
SPE Cartridges	NA

Concentrated By: NA

Concentration Date: NA

Diluted By: RED

Dilution Date: 10/18/2016

8330A = Explosives (liquids/solids)
8330B = Explosives (liquids/solids)
8330M = Nitroguanidine (liquids/solids)
3535 = SPE (liquids)

Sample ID #	Comments		(Solids) Sample Weight (g)	(Liquids) Sample Volume (L)	Extract Volume (ml)	Diluted (Yes/No)	Dilution Volume (ml)
788012	(MB)		10.00		20.0	yes	40.0
788013	(LCS)		10.00		20.0	yes	40.0
784783			10.10		20.0	yes	40.0
784852			10.09		20.0	yes	40.0
784853			10.01		20.0	yes	40.0
784854			9.97		20.0	yes	40.0
784855			10.06		20.0	yes	40.0
DUP 784853	(Dup)		10.10		20.0	yes	40.0
TRIP 784853	(Trip)		10.09		20.0	yes	40.0
788014	(MS)	Parent Sample	9.96		20.0	yes	40.0
788015	(MSD)	784853	10.09		20.0	yes	40.0

MB=Method Blank, LCS=Laboratory Control Sample, Dup=Duplicate, Trip=Triplicate, MS=Matrix Spike & MSD=Matrix Spike Duplicate

MS/MSD/ LCS Spike Amount (ml): 2

Spike Concentration (ug/mL): 10/20

Spike Reference #: EXP 5847

Surrogate Spike Amount (ml): 2

Surrogate Spike Conc. (ug/mL): 10

Surrogate Spike Reference #: EXP 5856

Relinquished to: RED

Date: 10/18/2016

Reviewed By: RED

Date: 10/18/2016

Table 5

8330B Analysis Data Review Checklist

Analytical Run #: 131500	**Independent Reviewer: JJY**
Sequence Date: 10/18/2016; 10/20/2016	**Date of Review: 10/24/2016**
Analyst/Data Interpreter: RED	**Approval: 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.

Requirements:	Acceptance Criteria	Analyst Review		Independent Review		Comments (indicate reference to an attachment if necessary)
		Yes	No	Yes	No	
1. INITIAL CALIBRATION (ICAL)						
a. Was the Explosive initial calibration performed using a minimum of five varying standard concentration levels?	Lowest standard at or near MRL	X		X		
b. Is the variation between calibration response factors for all concentration levels <15% RSD, is r^2 >.990, or r > 0.995 for the regression line?		X		X		
c. Was each ICAL uniquely identified (i.e. Standard Number)?	RSD<15%, r^2>0.990, or r>0.995	X		X		
d. Was an initial calibration blank (ICB) analyzed?		X		X		
2. INITIAL CALIBRATION VERIFICATION (ICV)						
a. Was there a second source ICV for all target analytes analyzed after the initial calibration and prior to analysis of any samples?	Second source	X		X		
b. Were the recoveries for the ICV between 85-115% (80-120% for QSM).	% Recovery	X		X		
c. Was the ICV uniquely identified (i.e. Standard Number)?		X		X		
3. CONTINUING CALIBRATION VERIFICATION (CCV)						
a. Were CCVs analyzed at the beginning of the sequence, after every 12 hours or every 20 samples (which ever comes first)(every 10 samples for QSM) and at the end of the analytical run?		X		X		
b. Were the recoveries for the CCVs within program limits?	%Recovery	X		X		
c. Was each CCV uniquely identified (i.e. Standard Number)?		X		X		

Additional Comments:

Table 5

8330B Analysis Data Review Checklist

Requirements:	Acceptance Criteria	Analyst		Independent		Comments (indicate reference to an attachment if necessary)
		Yes	No	Yes	No	
4. BLANKS						
a. Was a method blank (MB) analyzed prior to the analysis of samples?		X		X		
b. Was the MB result less than ½ the reporting limit (RL) or 5% of the sample amount (QSM: less than 1/2 the RL and <10% of the sample amount)?		X		X		
c. Was a MB prepped and analyzed at a frequency of one per Prep Batch?	Batch ≤20 samples	X		X		
5. LABORATORY CONTROL SAMPLE (LCS)						
a. Was a LCS analyzed at a frequency of one per Prep Batch?	Batch ≤20 samples	X		X		
b. Were the LCS recoveries in each LCS within the acceptance criteria?	Per Program	X		X		
6. MATRIX SPIKES						
a. Was a matrix spiked (MS) sample analyzed at a frequency one per Prep Batch?	Batch ≤20 samples	X		X		
b. Were MS recoveries in each MS within the acceptance criteria?	Per Program		X		X	see below
7. MATRIX SPIKE DUPLICATE						
a. Was a duplicate matrix spike sample analyzed at a frequency one per Prep Batch?	Batch <20 samples	X		X		
b. Were MSD within the acceptance criteria?	Per Program		X		X	see below
c. Is the relative percent difference (RPD) between a matrix spike (MS) and its duplicate (MSD) within the acceptance criteria?	Per Program QSM: 30% RPD	X		X		

Additional Comments:

The matrix spike (MS) and matrix spike duplicate (MSD) both had low recovery of 3,5-dinitroaniline (35-DNA).
This analyte was qualified with an "M" in the parent sample (#784853).

Table 5

8330B Analysis Data Review Checklist

Requirements:	Acceptance Criteria	Analyst		Independent		Comments (indicate reference to an attachment if necessary)
		Yes	No	Yes	No	
8. SAMPLES (INCLUDING BLANKS, STANDARDS, AND QC SAMPLES)						
a. Are chromatogram characteristics, including peak shapes and areas, consistent with those of the CCV?		X		X		
b. Are surrogate recoveries for all samples, blanks, standards, and QC samples within acceptance criteria?		X		X		see below
c. Were all samples having analytes detected in amounts exceeding the calibration range diluted and reanalyzed?		X		X		
d. Were all samples extracted within holding times and analyzed within 40 days of extracting?	Analysis within 40 days of extraction	X		X		
e. Was there a acetonitrile:H2O injection preformed prior to sample analysis?		X		X		
f. If any analytes were detected in the soil grinding blanks, were the associated samples B-flagged?	< 1/2 RL	X		X		
g. Was the batch soil triplicate RSD within acceptance criteria?	<20%	X		X		
9. RECORDS AND REPORTING						
a. Are Run, Prep Batch and Extraction sheets, Summary sheets, Sequence file, initial and rerun raw and process data present in the PDF file?		X		X		
b. Are all chromatograms dated and initialed?		X		X		
c. Are reported results whose amounts exceeded the acceptance criteria flagged with an appropriate qualifier and, if needed, a NCR completed?		X		X		
d. Do all values, dilution factors and qualifiers listed on the raw reports match the LIMS data?		X		X		
e. Is the ICAL method referenced on the Raw Data?		X		X		

Additional Comments:

Surrogate values on the primary analysis of all samples were within the acceptable QC range. Surrogate values in the confirmation analysis were high. All surrogates were reported from the primary analysis.

Summary Report

Instrument I... **HPLC 2 (Offline)**
Data Path: **C:\Instarch\HPLC 2\Sequences\8330A_B\063016EXPIC-CONFIRM.seq**
User ID: **red**
Printed Date: **06/30/2016 13:17:56**

Run Number	Sample ID	Data Filename	Method Filename	Analysis Date	Data Description
1	1:1 ACN:EXP 5677	001.dat	063016expic-confirm...	06/30/2016 12:07:52	
2	8330 Pt 1 EXP 5817	002.dat	063016expic-confirm...	06/30/2016 12:45:11	Reason #2 applies to dat...
3	8330 Pt 2 EXP 5818	003.dat	063016expic-confirm...	06/30/2016 13:22:28	Reason #3 applies to dat...
4	8330 Pt 3 EXP 5819	004.dat	063016expic-confirm...	06/30/2016 13:59:47	
5	8330 Pt 4 EXP 5820	005.dat	063016expic-confirm...	06/30/2016 14:37:05	
6	8330 Pt 5 EXP 5821	006.dat	063016expic-confirm...	06/30/2016 15:14:23	
7	8330 Pt 6 EXP 5822	007.dat	063016expic-confirm...	06/30/2016 15:51:41	
8	8330 Pt 7 EXP 5823	008.dat	063016expic-confirm...	06/30/2016 16:28:59	
9	8330 ICV EXP 5824	009.dat	063016expic-confirm...	06/30/2016 17:06:21	
10	8330 CCV EXP 5820	010.dat	063016expic-confirm...	06/30/2016 17:43:39	Reason #2 applies to dat...
11	127264,MBS,	011.dat	063016expic-confirm...	06/30/2016 18:20:57	Reason #3, #4 applies to ...
12	127264,735794,	012.dat	063016expic-confirm...	06/30/2016 18:58:15	Reason #32 applies to da...
13	DUP 735794	013.dat	063016expic-confirm...	06/30/2016 19:35:33	Reason #3, #4 applies to ...
14	TRIP 735794	014.dat	063016expic-confirm...	06/30/2016 20:12:50	Reason #3, #4 applies to ...
15	127263,MBS,	015.dat	063016expic-confirm...	06/30/2016 20:50:08	
16	127263,707140,,200 UL LOD	016.dat	063016expic-confirm...	06/30/2016 21:27:26	
17	127263,736593,,300 UL L...	017.dat	063016expic-confirm...	06/30/2016 22:04:43	
18	500 UL LOD/LOQ	018.dat	063016expic-confirm...	06/30/2016 22:42:00	
19	600 UL LOD/LOQ	019.dat	063016expic-confirm...	06/30/2016 23:19:21	
20	1000 UL LOD/LOQ	020.dat	063016expic-confirm...	06/30/2016 23:56:40	
21	8330 CCV EXP 5820	021.dat	063016expic-confirm...	07/01/2016 00:33:59	

Summary Report

Instrument I... **HPLC 2 (Offline)**
Data Path: **C:\Instarch\HPLC 2\Sequences\8330A_B\070616EXPic-PRIMARY.seq**
User ID: **red**
Printed Date: **Jul 06, 2016 09:43:29**

Run Number	Sample ID	Data Filename	Method Filename	Analysis Date	Data Description
1	1:1 ACN:EXP 5766	001.dat	070616EXPic-PRIM...	Jul 06, 2016 09:27:59	
2	8330 Pt 1 EXP 5829	002.dat	070616EXPic-PRIM...	Jul 06, 2016 09:46:17	
3	8330 Pt 2 EXP 5830	003.dat	070616EXPic-PRIM...	Jul 06, 2016 10:04:35	
4	8330 Pt 3 EXP 5831	004.dat	070616EXPic-PRIM...	Jul 06, 2016 10:22:53	
5	8330 Pt 4 EXP 5832	005.dat	070616EXPic-PRIM...	Jul 06, 2016 10:41:10	
6	8330 Pt 5 EXP 5833	006.dat	070616EXPic-PRIM...	Jul 06, 2016 10:59:29	
7	8330 Pt 6 EXP 5834	007.dat	070616EXPic-PRIM...	Jul 06, 2016 11:17:46	
8	8330 Pt 7 EXP 5835	008.dat	070616EXPic-PRIM...	Jul 06, 2016 11:36:05	
9	8330 ICV EXP 5836	009.dat	070616EXPic-PRIM...	Jul 06, 2016 11:54:26	REASON #3 APPLIES ...

Summary Report

Instrument I... **HPLC 2 (Offline)**
Data Path: **C:\Instarch\HPLC 2\Sequences\8330A_B\101816exp-primary.seq**
User ID: **red**
Printed Date: **10/19/2016 10:23:56**

Run Number	Sample ID	Data Filename	Method Filename	Analysis Date	Data Description
1	1:1 ACN:EXP 5766	001.dat	101816exp-primary....	10/19/2016 09:29:47	
2	8330 CCV EXP 5865	002.dat	101816exp-primary....	10/19/2016 09:48:06	
3	131499,MBS,	003.dat	101816exp-primary....	10/19/2016 10:06:23	
4	131499,LCSS,	004.dat	101816exp-primary....	10/19/2016 10:24:41	
5	131499,784496,	005.dat	101816exp-primary....	10/19/2016 11:10:56	Reason #4 applies to dat...
6	DUP 784496	006.dat	101816exp-primary....	10/19/2016 11:29:14	Reason #3 applies to dat...
7	TRIP 784496	007.dat	101816exp-primary....	10/19/2016 11:47:32	
8	131499,MSS784496,	008.dat	101816exp-primary....	10/19/2016 12:05:50	Reason #1, #3, #4 applie...
9	131499,MSDS784496,	009.dat	101816exp-primary....	10/19/2016 12:24:12	Reason #1, #3, #4 applie...
10	131499,784515,	010.dat	101816exp-primary....	10/19/2016 12:52:26	
11	131499,784516,	011.dat	101816exp-primary....	10/19/2016 13:10:45	Reason #3 applies to dat...
12	131499,785308,	012.dat	101816exp-primary....	10/19/2016 13:29:02	
13	8330 CCV EXP 5865	013.dat	101816exp-primary....	10/19/2016 13:47:20	Reason #3 applies to dat...
14	131499,785309,	014.dat	101816exp-primary....	10/19/2016 14:05:37	Reason #3,#4 applies to ...
15	131499,785310,	015.dat	101816exp-primary....	10/19/2016 14:23:55	Reason #3,#4 applies to ...
16	131500,MBS,	016.dat	101816exp-primary....	10/19/2016 14:42:12	
17	131500,LCSS,	017.dat	101816exp-primary....	10/19/2016 15:00:29	
18	131500,784783,	018.dat	101816exp-primary....	10/19/2016 15:18:47	
19	131500,784852,	019.dat	101816exp-primary....	10/19/2016 15:37:08	
20	131500,784853,	020.dat	101816exp-primary....	10/19/2016 15:55:26	
21	DUP 784853	021.dat	101816exp-primary....	10/19/2016 16:13:45	
22	TRIP 784853	022.dat	101816exp-primary....	10/19/2016 16:32:03	
23	131500,MSS784853,	023.dat	101816exp-primary....	10/19/2016 16:50:20	
24	8330 CCV EXP 5865	024.dat	101816exp-primary....	10/19/2016 17:08:37	
25	131500,MSDS784853,	025.dat	101816exp-primary....	10/19/2016 17:26:54	
26	131500,784854,	026.dat	101816exp-primary....	10/19/2016 17:45:12	
27	131500,784855,	027.dat	101816exp-primary....	10/19/2016 18:03:29	
28	8330 CCV EXP 5865	028.dat	101816exp-primary....	10/19/2016 18:21:46	REASON #3 APPLIES ...
29	1:1 ACN:EXP 5766	029.dat	101816exp-primary....	10/20/2016 09:12:11	
30	8330 CCV EXP 5866	030.dat	101816exp-primary....	10/20/2016 09:30:29	REASON #3 APPLIES ...
31	131500,784855,	031.dat	101816exp-primary....	10/20/2016 09:48:47	
32	8330 CCV EXP 5866	032.dat	101816exp-primary....	10/20/2016 10:07:03	REASON #3 APPLIES ...

Summary Report

Instrument I... **HPLC 2 (Offline)**
Data Path: **C:\Instarch\HPLC 2\Sequences\8330A_B\102016EXP-CONFIRM.seq**
User ID: **red**
Printed Date: **10/20/2016 14:00:16**

Run Number	Sample ID	Data Filename	Method Filename	Analysis Date	Data Description
1	1:1 ACN:EXP 5766	001.dat	102016EXP-CONFI...	10/20/2016 13:25:15	
2	8330 CCV EXP 5866	002.dat	102016EXP-CONFI...	10/20/2016 14:02:32	
3	8330 MRL check EXP 5867	003.dat	102016EXP-CONFI...	10/20/2016 14:39:50	
4	8330 MDL check EXP 5868	004.dat	102016EXP-CONFI...	10/20/2016 15:17:08	Reason #3 applies to dat...
5	131188,MBS,	005.dat	102016EXP-CONFI...	10/20/2016 15:54:27	
6	131188,782951,	006.dat	102016EXP-CONFI...	10/20/2016 16:31:44	
7	DUP 782951	007.dat	102016EXP-CONFI...	10/20/2016 17:09:03	
8	TRIP 782951	008.dat	102016EXP-CONFI...	10/20/2016 17:46:20	
9	131188,782952,	009.dat	102016EXP-CONFI...	10/20/2016 18:23:42	
10	131188,782953,	010.dat	102016EXP-CONFI...	10/20/2016 19:01:01	
11	131184,MBS,	011.dat	102016EXP-CONFI...	10/20/2016 19:38:18	
12	131184,782193,	012.dat	102016EXP-CONFI...	10/20/2016 20:15:36	Reason #4 applies to dat...
13	131184,782195,	013.dat	102016EXP-CONFI...	10/20/2016 20:52:54	
14	131184,782196,	014.dat	102016EXP-CONFI...	10/20/2016 21:30:11	
15	8330 MRL check EXP 5867	015.dat	102016EXP-CONFI...	10/20/2016 22:07:29	Reason #4 applies to dat...
16	8330 MDL check EXP 5868	016.dat	102016EXP-CONFI...	10/20/2016 22:44:46	Reason #3 applies to dat...
17	8330 CCV EXP 5866	017.dat	102016EXP-CONFI...	10/20/2016 23:22:05	
18	131184,782198,	018.dat	102016EXP-CONFI...	10/20/2016 23:59:22	Reason #4 applies to dat...
19	131184,782200,	019.dat	102016EXP-CONFI...	10/21/2016 00:36:43	
20	131184,782206,	020.dat	102016EXP-CONFI...	10/21/2016 01:14:01	
21	782206 1:10	021.dat	102016EXP-CONFI...	10/21/2016 01:51:19	
22	131184,782207,	022.dat	102016EXP-CONFI...	10/21/2016 02:28:37	
23	131184,782209,	023.dat	102016EXP-CONFI...	10/21/2016 03:05:55	
24	131499,MBS,	024.dat	102016EXP-CONFI...	10/21/2016 03:43:12	
25	131499,785308,	025.dat	102016EXP-CONFI...	10/21/2016 04:20:29	
26	131499,785309,	026.dat	102016EXP-CONFI...	10/21/2016 04:57:47	
27	131500,MBS,	027.dat	102016EXP-CONFI...	10/21/2016 05:35:04	
28	8330 MRL check EXP 5867	028.dat	102016EXP-CONFI...	10/21/2016 06:12:22	
29	8330 MDL check EXP 5868	029.dat	102016EXP-CONFI...	10/21/2016 06:49:43	
30	8330 CCV EXP 5866	030.dat	102016EXP-CONFI...	10/21/2016 07:27:01	Reason #1, #4 applies to ...
31	131500,784783,	031.dat	102016EXP-CONFI...	10/21/2016 08:04:20	
32	131500,784852,	032.dat	102016EXP-CONFI...	10/21/2016 08:41:37	
33	131500,784853,	033.dat	102016EXP-CONFI...	10/21/2016 09:18:54	
34	DUP 784853	034.dat	102016EXP-CONFI...	10/21/2016 09:56:12	
35	TRIP 784853	035.dat	102016EXP-CONFI...	10/21/2016 10:33:29	
36	8330 CCV EXP 5866	036.dat	102016EXP-CONFI...	10/21/2016 11:10:45	

EXP Logbook 01

01/19/2015

NOTEBOOK VIEW: LTN_EXP_Logbook01_Default, NOTEBOOK: EXP_Logbook01, PAGE: 88
Page is Locked
Author: rduranceau on: 09.05.2016 12:04:29
Page is not Witnessed
Project: Unassigned
Page Title: 050916

Standard ID:	EXP 5766	Standard Description:	0.1% formic acid in H2O; 4 mL formic acid added to 4 L Millipore H2O
Analyst:	RED	Solvent: Manufacturer Lot	99% formic acid; Sigma lot 04817JE
Prep Date:	05/09/2016	Expiration Date:	11/09/2016

EXP Logbook 01

01/19/2015

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Project: Unassigned
Page Title: 051716

Standard Number	Standard Description	Solvent Manufacturer Lot	Analyst	Prep Date	Expiration Date
EXP 5783	8330 2nd Source Spike	ACN EMD Lot 55265	RED	05/17/2016	11/13/2016

STD Parent ID	Parent Concentration	Units	Standard Volume (ml)	Final Volume (ml)	Final Concentration (ug/ml)
8330 Std S3335	1000	ug/mL	0.100	10	10
35-DNA S3336	1000	ug/mL	0.100	10	10
Nitroglycerin S3419	1000	ug/mL	0.200	10	20
PETN S3420	1000	ug/mL	0.200	10	20
Surrogate S3334C	1000	ug/mL	0.100	10	10

EXP Logbook 01

01/19/2015

NOTEBOOK VIEW: LTN_EXP_Logbook01_Default, NOTEBOOK: EXP_Logbook01, PAGE: 99
Page is Unlocked
Page is not Witnessed
Project: Unassigned
Page Title: 062216

Standard ID #	Standard Description	Solvent / Lot #	Prep Date	Expiration Date	Analyst
EXP 5814	8330 Spike Std.	ACN / Lot # EMD 55265	06/23/2016	08/19/2016	RED

Stock Standards Used	Prep	Final Concentration
(1) 8330 Calibration Mix (1000 ug/mL) S3418 (2) 3,5-Dinitroaniline Standard (1,000 ug/mL) S3302 (3) 1,2-Dintrobenzene Standard (1,000 ug/mL) S3334C (4) Trinitroglycerin Standard (1,000 ug/mL) S3333B (5) PETN Standard (1,000 ug/mL) S3331B/3493	0.250 mL (1), (2), and (3) plus 0.500 mL (4) and (5) were added to ACN in a 25 mL volumetric flask and brought to volume with ACN.	10.0 ug/mL (20.0 ug/mL NG/PETN)

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LPSVEXP-02
Semi-Volatiles Explosives Standards Prep Logbook
Logbook Created:6/28/16

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Page Title: 063016

	Initial Calibration	Solvent Manufacturer Lot	Analyst	Prep Date	Expiration Date
	8330 ICAL	1:1 ACN:0.1% formic acid in H2O; EMD lot 55265: EXP 5766	RED	06/30/2016	07/01/2016

Standard Number	Standard Description	Parent ID	Parent Concentration	Units	Standard Volume (ml)	Final Volume (ml)	Final Concentration (ug/ml)
EXP 5817	ICAL 1	EXP 5814	10/20	ug/mL	0.002	1.00	0.02/0.04
EXP 5818	ICAL 2	EXP 5814	10/20	ug/mL	0.005	1.00	0.05/0.10
EXP 5819	ICAL 3	EXP 5814	10/20	ug/mL	0.020	1.00	0.20/0.40
EXP 5820	ICAL 4 (CCV)	EXP 5814	10/20	ug/mL	0.500	10.00	0.50/1.00
EXP 5821	ICAL 5	EXP 5814	10/20	ug/mL	0.100	1.00	1.00/2.00
EXP 5822	ICAL 6	EXP 5814	10/20	ug/mL	0.200	1.00	2.00/4.00
EXP 5823	ICAL 7	EXP 5814	10/20	ug/mL	0.300	1.00	3.00/6.00
EXP 5824	ICV	EXP 5783	10/20	ug/mL	0.050	1.00	0.50/1.00

LPSVEXP-02
Semi-Volatiles Explosives Standards Prep Logbook
Logbook Created:6/28/16

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	Initial Calibration	Solvent Manufacturer Lot	Analyst	Prep Date	Expiration Date
	8330 ICAL	1:1 ACN:0.1% Formic acid in H20; EMD lot 55265: EXP 5766	RED	07/06/2016	07/07/2016

Standard Number	Standard Description	Parent ID	Parent Concentration	Units	Standard Volume (ml)	Final Volume (ml)	Final Concentration (ug/ml)
EXP 5829	ICAL 1 (MDL CHECK)	EXP 5814	10/20	ug/mL	0.020	10.00	0.02/0.04
EXP 5830	ICAL 2 (MRL CHECK)	EXP 5814	10/20	ug/mL	0.050	10.00	0.05/0.10
EXP 5831	ICAL 3	EXP 5814	10/20	ug/mL	0.020	1.00	0.20/0.40
EXP 5832	ICAL 4 (CCV)	EXP 5814	10/20	ug/mL	0.500	10.00	0.50/1.00
EXP 5833	ICAL 5	EXP 5814	10/20	ug/mL	0.100	1.00	1.00/2.00
EXP 5834	ICAL 6	EXP 5814	10/20	ug/mL	0.200	1.00	2.00/4.00
EXP 5835	ICAL 7	EXP 5814	10/20	ug/mL	0.300	1.00	3.00/6.00
EXP 5836	ICV	EXP 5783	10/20	ug/mL	0.050	1.00	0.50/1.00

LPSVEXP-02
Semi-Volatiles Explosives Standards Prep Logbook
Logbook Created:6/28/16

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Standard ID #	Standard Description	Solvent / Lot #	Prep Date	Expiration Date	Analyst
EXP 5847	8330 Spike Std.	ACN / Lot # EMD 55261	08/29/2016	02/18/2017	RED

Stock Standards Used	Prep	Final Concentration
(1) 8330 Calibration Mix (1000 ug/mL) S3418 (2) 3,5-Dinitroaniline Standard (1,000 ug/mL) S3458 (3) 1,2-Dintrobenzene Standard (1,000 ug/mL) S3491A (4) Trinitroglycerin Standard (1,000 ug/mL) S3333B (5) PETN Standard (1,000 ug/mL) S3493A	0.250 mL each of (1), (2), and (3) and 0.500 mL each of (4) and (5) were added to ACN in a 25 mL volumetric flask and brought to volume with ACN.	10.0 ug/mL (20.0 ug/mL NG/PETN)

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LPSVEXP-02
Semi-Volatiles Explosives Standards Prep Logbook
Logbook Created:6/28/16

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Standard ID #	Standard Description	Solvent / Lot #	Prep Date	Expiration Date	Analyst
EXP 5855	8330 Spike Std.	ACN / Lot # EMD 55261	10/10/2016	02/18/2017	RED

Stock Standards Used	Prep	Final Concentration
(1) 8330 Calibration Mix (1000 ug/mL) S3418 (2) 3,5-Dinitroaniline Standard (1,000 ug/mL) S3458 (3) 1,2-Dintrobenzene Standard (1,000 ug/mL) S3491A (4) Trinitroglycerin Standard (1,000 ug/mL) S3492 (5) PETN Standard (1,000 ug/mL) S3493B	0.500 mL each of (1), (2), and 3 plus 1.00 mL each of (4) and (5) were added to ACN in a 50 mL volumetric flask and brought to volume with ACN.	10.0 ug/mL (20.0 ug/mL NG/PETN)

Standard Number	Standard Description	Solvent Manufacturer Lot	Analyst	Prep Date	Expiration Date
EXP 5856	8330 surrogat	ACN; EMD lot 55261	RED	10/10/2016	4/10/2017

STD Parent ID	Parent Concentration	Units	Standard Volume (ml)	Final Volume (ml)	Final Concentration (ug/ml)	
S3491B	1000	ug/mL	1.00	100	10.00	Calc

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LPSVEXP-02
Semi-Volatiles Explosives Standards Prep Logbook
Logbook Created:6/28/16

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Standard ID #	Standard Description	Solvent / Lot #	Prep Date	Expiration Date	Analyst
EXP 5865	8330 CCV Std.	1:1 ACN: 0.1% formic acid in H_2O EXP 5766 / Lot # EMD 55261	10/18/2016	10/19/2016	RED

Standards Used	Prep	Final Concentration
(1) 10 ug/mL (20 ug/mL NG/PETN) 8330 Spike Std. EXP 5855	0.500 mL of (1) into 10 mL of 1:1 ACN: 0.1% formic acid in H_2O.	0.50 ug/mL (1.00 ug/mL NG/PETN)

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CT Laboratories, LLC

LPSVEXP-02
Semi-Volatiles Explosives Standards Prep Logbook
Logbook Created:6/28/16

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Page Title: 102016

Standard ID #	Standard Description	Solvent / Lot #	Prep Date	Expiration Date	Analyst
EXP 5866	8330 CCV Std.	1:1 ACN: 0.1% formic acid in H_2O EXP 5766 / Lot # EMD 55311	10/20/2016	10/21/2016	RED

Standards Used	Prep	Final Concentration
(1) 10 ug/mL (20 ug/mL NG/PETN) 8330 Spike Std. EXP 5855	0.500 mL of (1) into 10 mL of 1:1 ACN: 0.1% formic acid in H_2O.	0.50 ug/mL (1.00 ug/mL NG/PETN)

Standard Number	Standard Description	Solvent Manufacturer Lot	Analyst	Prep Date	Expiration Date
EXP 5867	MRL check	1:1 ACN:EXP 5766	RED	10/20/2016	10/21/2016

STD Parent ID	Parent Concentration	Units	Standard Volume (ml)	Final Volume (ml)	Final Concentration (ug/ml)	
EXP 5855	10/20	ug/mL	0.050	10.0	0.05/1.00	Calc

Standard Number	Standard Description	Solvent Manufacturer Lot	Analyst	Prep Date	Expiration Date
EXP 5868	MDL check	1:1 ACN:EXP 5766	RED	10/20/2016	10/21/2016

STD Parent ID	Parent Concentration	Units	Standard Volume (ml)	Final Volume (ml)	Final Concentration (ug/ml)	
EXP 5855	10/20	ug/mL	0.020	10.0	0.02/0.04	Calc

METALS
CLP FORMS
DOCUMENTS

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-DUP1

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	79.0	Lab Sample ID:	784852
Analytical Method:	EPA 6010C	Date Received:	10/07/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131140	Analysis Date/Time	10/11/2016 04:32
Analytical Prep Batch #:	59424	Prep. Date/Time:	10/10/2016 06:00
ICAL Calibration #:		Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7440-36-0	Antimony	0.33	J	0.15	0.48	0.95	0.95
7440-41-7	Beryllium	0.095		0.0048	0.014	0.048	0.048
7440-43-9	Cadmium	0.024	U	0.0071	0.024	0.048	0.048
7440-47-3	Chromium	16.0		0.027	0.083	0.17	0.17
7440-48-4	Cobalt	4.2		0.048	0.14	0.29	0.29
7440-50-8	Copper	8.5		0.083	0.24	0.48	0.48
7439-92-1	Lead	475		0.048	0.15	0.30	0.30
7439-96-5	Manganese	228		0.030	0.089	0.18	0.18
7440-02-0	Nickel	4.4		0.025	0.071	0.14	0.14
7782-49-2	Selenium	1.6		0.071	0.24	0.48	0.48
7440-22-4	Silver	0.059	U	0.020	0.059	0.12	0.12
7440-28-0	Thallium	0.75		0.095	0.29	0.57	0.57
7440-62-2	Vanadium	28.0		0.014	0.048	0.095	0.095
7440-66-6	Zinc	37.7		0.059	0.18	0.36	0.36
7439-93-2	Lithium	6.8		0.071	0.21	0.43	0.43
7439-98-7	Molybdenum	0.37	B	0.048	0.14	0.29	0.29
7440-24-6	Strontium	7.5		0.015	0.048	0.095	0.095
7440-31-5	Tin	1.2	B	0.11	0.30	0.59	0.59

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-DUP1

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	79.0	Lab Sample ID:	784852
Analytical Method:	EPA 7471B	Date Received:	10/07/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131258	Analysis Date/Time	10/14/2016 09:57
Analytical Prep Batch #:	59473	Prep. Date/Time:	10/12/2016 10:00
ICAL Calibration #:	10142016	Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-97-6	Mercury	0.077		0.0028	0.0056	0.011	0.011

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSD-001

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	75.4	Lab Sample ID:	784783
Analytical Method:	EPA 6010C	Date Received:	10/07/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131140	Analysis Date/Time	10/11/2016 04:26
Analytical Prep Batch #:	59424	Prep. Date/Time:	10/10/2016 06:00
ICAL Calibration #:		Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7440-36-0	Antimony	0.34	J	0.17	0.52	1.0	1.0
7440-41-7	Beryllium	0.090		0.0052	0.016	0.052	0.052
7440-43-9	Cadmium	0.026	U	0.0078	0.026	0.052	0.052
7440-47-3	Chromium	15.7		0.030	0.091	0.18	0.18
7440-48-4	Cobalt	4.4		0.052	0.16	0.31	0.31
7440-50-8	Copper	9.3		0.091	0.26	0.52	0.52
7439-92-1	Lead	451		0.052	0.16	0.33	0.33
7439-96-5	Manganese	237		0.033	0.098	0.20	0.20
7440-02-0	Nickel	4.6		0.027	0.078	0.16	0.16
7782-49-2	Selenium	1.3		0.078	0.26	0.52	0.52
7440-22-4	Silver	0.065	U	0.022	0.065	0.13	0.13
7440-28-0	Thallium	0.68		0.10	0.31	0.63	0.63
7440-62-2	Vanadium	32.7		0.016	0.052	0.10	0.10
7440-66-6	Zinc	41.5		0.065	0.20	0.39	0.39
7439-93-2	Lithium	7.2		0.078	0.24	0.47	0.47
7439-98-7	Molybdenum	0.42	B	0.052	0.16	0.31	0.31
7440-24-6	Strontium	8.3		0.017	0.052	0.10	0.10
7440-31-5	Tin	1.3	B	0.12	0.33	0.65	0.65

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSD-001

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	75.4	Lab Sample ID:	784783
Analytical Method:	EPA 7471B	Date Received:	10/07/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131258	Analysis Date/Time	10/14/2016 09:50
Analytical Prep Batch #:	59473	Prep. Date/Time:	10/12/2016 10:00
ICAL Calibration #:	10142016	Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-97-6	Mercury	0.070		0.0029	0.0059	0.012	0.012

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSD-002

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	80.3	Lab Sample ID:	784853
Analytical Method:	EPA 6010C	Date Received:	10/07/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131140	Analysis Date/Time	10/11/2016 04:39
Analytical Prep Batch #:	59424	Prep. Date/Time:	10/10/2016 06:00
ICAL Calibration #:		Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7440-36-0	Antimony	0.39	J	0.15	0.47	0.94	0.94
7440-41-7	Beryllium	0.023	J	0.0047	0.014	0.047	0.047
7440-43-9	Cadmium	0.023 UJ	U M	0.0070	0.023	0.047	0.047
7440-47-3	Chromium	10.9		0.027	0.082	0.16	0.16
7440-48-4	Cobalt	2.9	Y	0.047	0.14	0.28	0.28
7440-50-8	Copper	3.0		0.082	0.23	0.47	0.47
7439-92-1	Lead	8.6	Y	0.047	0.15	0.29	0.29
7439-96-5	Manganese	193	Y,M	0.029	0.088	0.18	0.18
7440-02-0	Nickel	2.0		0.025	0.070	0.14	0.14
7782-49-2	Selenium	0.99		0.070	0.23	0.47	0.47
7440-22-4	Silver	0.059	U	0.020	0.059	0.12	0.12
7440-28-0	Thallium	0.26	J	0.094	0.28	0.56	0.56
7440-62-2	Vanadium	18.7		0.014	0.047	0.094	0.094
7440-66-6	Zinc	13.0		0.059	0.18	0.35	0.35
7439-93-2	Lithium	2.3		0.070	0.21	0.42	0.42
7439-98-7	Molybdenum	0.29	B	0.047	0.14	0.28	0.28
7440-24-6	Strontium	2.3		0.015	0.047	0.094	0.094
7440-31-5	Tin	0.99	~~B~~	0.11	0.29	0.59	0.59

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSD-002

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	80.3	Lab Sample ID:	784853
Analytical Method:	EPA 7471B	Date Received:	10/07/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131258	Analysis Date/Time	10/14/2016 09:59
Analytical Prep Batch #:	59473	Prep. Date/Time:	10/12/2016 10:00
ICAL Calibration #:	10142016	Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-97-6	Mercury	0.044	M	0.0028	0.0055	0.011	0.011

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSD-003

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	73.4	Lab Sample ID:	784854
Analytical Method:	EPA 6010C	Date Received:	10/07/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131140	Analysis Date/Time	10/11/2016 05:38
Analytical Prep Batch #:	59424	Prep. Date/Time:	10/10/2016 06:00
ICAL Calibration #:		Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7440-36-0	Antimony	0.63	J	0.17	0.51	1.0	1.0
7440-41-7	Beryllium	0.22		0.0051	0.015	0.051	0.051
7440-43-9	Cadmium	0.026	U	0.0077	0.026	0.051	0.051
7440-47-3	Chromium	14.6		0.030	0.090	0.18	0.18
7440-48-4	Cobalt	5.8		0.051	0.15	0.31	0.31
7440-50-8	Copper	8.9		0.090	0.26	0.51	0.51
7439-92-1	Lead	8.9		0.051	0.16	0.32	0.32
7439-96-5	Manganese	398		0.032	0.096	0.19	0.19
7440-02-0	Nickel	6.5		0.027	0.077	0.15	0.15
7782-49-2	Selenium	1.5		0.077	0.26	0.51	0.51
7440-22-4	Silver	0.064	U	0.022	0.064	0.13	0.13
7440-28-0	Thallium	0.69		0.10	0.31	0.62	0.62
7440-62-2	Vanadium	26.0		0.015	0.051	0.10	0.10
7440-66-6	Zinc	23.5		0.064	0.19	0.39	0.39
7439-93-2	Lithium	10.7		0.077	0.23	0.46	0.46
7439-98-7	Molybdenum	0.24	J B	0.051	0.15	0.31	0.31
7440-24-6	Strontium	6.9		0.017	0.051	0.10	0.10
7440-31-5	Tin	1.3	B	0.12	0.32	0.64	0.64

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSD-003

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	73.4	Lab Sample ID:	784854
Analytical Method:	EPA 7471B	Date Received:	10/07/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131258	Analysis Date/Time	10/14/2016 10:08
Analytical Prep Batch #:	59473	Prep. Date/Time:	10/12/2016 10:00
ICAL Calibration #:	10142016	Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-97-6	Mercury	0.042		0.0031	0.0062	0.012	0.012

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSD-004

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	79.9	Lab Sample ID:	784855
Analytical Method:	EPA 6010C	Date Received:	10/07/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131140	Analysis Date/Time	10/11/2016 05:45
Analytical Prep Batch #:	59424	Prep. Date/Time:	10/10/2016 06:00
ICAL Calibration #:		Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7440-36-0	Antimony	0.33	J	0.17	0.52	1.0	1.0
7440-41-7	Beryllium	0.18		0.0052	0.016	0.052	0.052
7440-43-9	Cadmium	0.026	U	0.0078	0.026	0.052	0.052
7440-47-3	Chromium	11.6		0.030	0.091	0.18	0.18
7440-48-4	Cobalt	3.1		0.052	0.16	0.31	0.31
7440-50-8	Copper	5.1		0.091	0.26	0.52	0.52
7439-92-1	Lead	18.0		0.052	0.16	0.33	0.33
7439-96-5	Manganese	183		0.033	0.098	0.20	0.20
7440-02-0	Nickel	2.6		0.027	0.078	0.16	0.16
7782-49-2	Selenium	0.97		0.078	0.26	0.52	0.52
7440-22-4	Silver	0.065	U	0.022	0.065	0.13	0.13
7440-28-0	Thallium	0.35	J	0.10	0.31	0.63	0.63
7440-62-2	Vanadium	20.5		0.016	0.052	0.10	0.10
7440-66-6	Zinc	21.8		0.065	0.20	0.39	0.39
7439-93-2	Lithium	3.3		0.078	0.23	0.47	0.47
7439-98-7	Molybdenum	0.41	B	0.052	0.16	0.31	0.31
7440-24-6	Strontium	4.2		0.017	0.052	0.10	0.10
7440-31-5	Tin	1.1	B	0.12	0.33	0.65	0.65

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSD-004

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	79.9	Lab Sample ID:	784855
Analytical Method:	EPA 7471B	Date Received:	10/07/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131258	Analysis Date/Time	10/14/2016 10:10
Analytical Prep Batch #:	59473	Prep. Date/Time:	10/12/2016 10:00
ICAL Calibration #:	10142016	Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-97-6	Mercury	0.044		0.0028	0.0055	0.011	0.011

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSI-001A

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	98.6	Lab Sample ID:	784496
Analytical Method:	EPA 7471B	Date Received:	10/06/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131437	Analysis Date/Time	10/18/2016 08:24
Analytical Prep Batch #:	59544	Prep. Date/Time:	10/17/2016 10:00
ICAL Calibration #:	10182016	Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-97-6	Mercury	0.043		0.0022	0.0045	0.0089	0.0089

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Sample Description

RFAAP-FGMR-SSI-001A

INORGANIC ANALYSIS DATA SHEET

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	98.6	Lab Sample ID:	784496
Analytical Method:	EPA 6010C	Date Received:	10/06/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131318	Analysis Date/Time	10/14/2016 21:44
Analytical Prep Batch #:	59503	Prep. Date/Time:	10/13/2016 10:00
ICAL Calibration #:		Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7440-36-0	Antimony	5.3		0.14	0.42	0.85	0.85
7440-41-7	Beryllium	0.45		0.0042	0.013	0.042	0.042
7440-43-9	Cadmium	0.021	U	0.0064	0.021	0.042	0.042
7440-47-3	Chromium	16.6	M	0.024	0.074	0.15	0.15
7440-48-4	Cobalt	3.7		0.042	0.13	0.25	0.25
7440-50-8	Copper	7.2		0.074	0.21	0.42	0.42
7439-92-1	Lead	454	M	0.042	0.13	0.27	0.27
7439-96-5	Manganese	526	M	0.027	0.080	0.16	0.16
7440-02-0	Nickel	8.0	M,Y	0.022	0.064	0.13	0.13
7782-49-2	Selenium	0.71	B	0.064	0.21	0.42	0.42
7440-22-4	Silver	0.053	U M	0.018	0.053	0.11	0.11
7440-28-0	Thallium	0.25	U M	0.085	0.25	0.51	0.51
7440-62-2	Vanadium	22.2		0.013	0.042	0.085	0.085
7440-66-6	Zinc	23.6		0.053	0.16	0.32	0.32
7439-93-2	Lithium	4.7		0.064	0.19	0.38	0.38
7439-98-7	Molybdenum	0.62		0.042	0.13	0.25	0.25
7440-24-6	Strontium	8.3		0.014	0.042	0.085	0.085
7440-31-5	Tin	1.2		0.096	0.27	0.53	0.53

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSI-001B

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	98.4	Lab Sample ID:	784515
Analytical Method:	EPA 7471B	Date Received:	10/06/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131437	Analysis Date/Time	10/18/2016 08:32
Analytical Prep Batch #:	59544	Prep. Date/Time:	10/17/2016 10:00
ICAL Calibration #:	10182016	Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-97-6	Mercury	0.035		0.0022	0.0044	0.0087	0.0087

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Sample Description

RFAAP-FGMR-SSI-001B

INORGANIC ANALYSIS DATA SHEET

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	98.4	Lab Sample ID:	784515
Analytical Method:	EPA 6010C	Date Received:	10/06/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131318	Analysis Date/Time	10/14/2016 22:46
Analytical Prep Batch #:	59503	Prep. Date/Time:	10/13/2016 10:00
ICAL Calibration #:		Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7440-36-0	Antimony	0.70	J	0.13	0.41	0.83	0.83
7440-41-7	Beryllium	0.44		0.0041	0.012	0.041	0.041
7440-43-9	Cadmium	0.013	J	0.0062	0.021	0.041	0.041
7440-47-3	Chromium	17.8		0.024	0.073	0.15	0.15
7440-48-4	Cobalt	3.8		0.041	0.12	0.25	0.25
7440-50-8	Copper	6.4		0.073	0.21	0.41	0.41
7439-92-1	Lead	173		0.041	0.13	0.26	0.26
7439-96-5	Manganese	524		0.026	0.078	0.16	0.16
7440-02-0	Nickel	4.5		0.022	0.062	0.12	0.12
7782-49-2	Selenium	0.39	J B	0.062	0.21	0.41	0.41
7440-22-4	Silver	0.052	U	0.018	0.052	0.10	0.10
7440-28-0	Thallium	0.25	U	0.083	0.25	0.50	0.50
7440-62-2	Vanadium	22.3		0.012	0.041	0.083	0.083
7440-66-6	Zinc	24.4		0.052	0.16	0.31	0.31
7439-93-2	Lithium	4.0		0.062	0.19	0.37	0.37
7439-98-7	Molybdenum	0.54		0.041	0.12	0.25	0.25
7440-24-6	Strontium	7.6		0.013	0.041	0.083	0.083
7440-31-5	Tin	0.89		0.093	0.26	0.52	0.52

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSI-001C

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	98.5	Lab Sample ID:	784516
Analytical Method:	EPA 7471B	Date Received:	10/06/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131437	Analysis Date/Time	10/18/2016 08:34
Analytical Prep Batch #:	59544	Prep. Date/Time:	10/17/2016 10:00
ICAL Calibration #:	10182016	Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-97-6	Mercury	0.034		0.0023	0.0047	0.0092	0.0092

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSI-001C

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	98.5	Lab Sample ID:	784516
Analytical Method:	EPA 6010C	Date Received:	10/06/2016
Dilution Factor:	10.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131318	Analysis Date/Time	10/18/2016 18:02
Analytical Prep Batch #:	59503	Prep. Date/Time:	10/13/2016 10:00
ICAL Calibration #:		Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-92-1	Lead	5100		0.41	1.3	2.6	2.6

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSI-001C

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	98.5	Lab Sample ID:	784516
Analytical Method:	EPA 6010C	Date Received:	10/06/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131318	Analysis Date/Time	10/14/2016 22:54
Analytical Prep Batch #:	59503	Prep. Date/Time:	10/13/2016 10:00
ICAL Calibration #:		Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers		DL	LOD	LOQ	RL
7440-36-0	Antimony	9.4			0.13	0.41	0.82	0.82
7440-41-7	Beryllium	0.42			0.0041	0.012	0.041	0.041
7440-43-9	Cadmium	0.014	J		0.0061	0.020	0.041	0.041
7440-47-3	Chromium	16.0			0.023	0.071	0.14	0.14
7440-48-4	Cobalt	4.0			0.041	0.12	0.24	0.24
7440-50-8	Copper	20.8			0.071	0.20	0.41	0.41
7439-96-5	Manganese	490			0.026	0.077	0.15	0.15
7440-02-0	Nickel	5.0			0.021	0.061	0.12	0.12
7782-49-2	Selenium	0.64		B	0.061	0.20	0.41	0.41
7440-22-4	Silver	0.052	J	B	0.017	0.051	0.10	0.10
7440-28-0	Thallium	0.24	U		0.082	0.24	0.49	0.49
7440-62-2	Vanadium	22.8			0.012	0.041	0.082	0.082
7440-66-6	Zinc	23.7			0.051	0.15	0.31	0.31
7439-93-2	Lithium	4.1			0.061	0.18	0.37	0.37
7439-98-7	Molybdenum	0.57			0.041	0.12	0.24	0.24
7440-24-6	Strontium	7.1			0.013	0.041	0.082	0.082
7440-31-5	Tin	1.2			0.092	0.26	0.51	0.51

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSI-002A

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	97.7	Lab Sample ID:	785308
Analytical Method:	EPA 7471B	Date Received:	10/08/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131437	Analysis Date/Time	10/18/2016 08:37
Analytical Prep Batch #:	59544	Prep. Date/Time:	10/17/2016 10:00
ICAL Calibration #:	10182016	Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-97-6	Mercury	0.034		0.0023	0.0046	0.0091	0.0091

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSI-002A

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	97.7	Lab Sample ID:	785308
Analytical Method:	EPA 6010C	Date Received:	10/08/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131318	Analysis Date/Time	10/14/2016 23:01
Analytical Prep Batch #:	59503	Prep. Date/Time:	10/13/2016 10:00
ICAL Calibration #:		Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7440-36-0	Antimony	0.31	J	0.14	0.42	0.83	0.83
7440-41-7	Beryllium	0.31		0.0042	0.012	0.042	0.042
7440-43-9	Cadmium	0.68		0.0062	0.021	0.042	0.042
7440-47-3	Chromium	29.9		0.024	0.073	0.15	0.15
7440-48-4	Cobalt	3.6		0.042	0.12	0.25	0.25
7440-50-8	Copper	10.6		0.073	0.21	0.42	0.42
7439-92-1	Lead	12.0		0.042	0.13	0.26	0.26
7439-96-5	Manganese	239		0.026	0.078	0.16	0.16
7440-02-0	Nickel	15.8		0.022	0.062	0.12	0.12
7782-49-2	Selenium	0.21	U	0.062	0.21	0.42	0.42
7440-22-4	Silver	0.052	U	0.018	0.052	0.10	0.10
7440-28-0	Thallium	0.099	J	0.083	0.25	0.50	0.50
7440-62-2	Vanadium	30.9		0.012	0.042	0.083	0.083
7440-66-6	Zinc	26.0		0.052	0.16	0.31	0.31
7439-93-2	Lithium	9.9		0.062	0.19	0.37	0.37
7439-98-7	Molybdenum	0.99		0.042	0.12	0.25	0.25
7440-24-6	Strontium	23.7		0.014	0.042	0.083	0.083
7440-31-5	Tin	1.2		0.094	0.26	0.52	0.52

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSI-002B

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	97.3	Lab Sample ID:	785309
Analytical Method:	EPA 7471B	Date Received:	10/08/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131437	Analysis Date/Time	10/18/2016 08:43
Analytical Prep Batch #:	59544	Prep. Date/Time:	10/17/2016 10:00
ICAL Calibration #:	10182016	Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-97-6	Mercury	0.036		0.0023	0.0045	0.0090	0.0090

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSI-002B

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	97.3	Lab Sample ID:	785309
Analytical Method:	EPA 6010C	Date Received:	10/08/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131318	Analysis Date/Time	10/14/2016 23:08
Analytical Prep Batch #:	59503	Prep. Date/Time:	10/13/2016 10:00
ICAL Calibration #:		Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7440-36-0	Antimony	0.30	J	0.13	0.39	0.78	0.78
7440-41-7	Beryllium	0.29		0.0039	0.012	0.039	0.039
7440-43-9	Cadmium	0.48		0.0059	0.020	0.039	0.039
7440-47-3	Chromium	20.5		0.023	0.069	0.14	0.14
7440-48-4	Cobalt	3.4		0.039	0.12	0.23	0.23
7440-50-8	Copper	9.0		0.069	0.20	0.39	0.39
7439-92-1	Lead	11.7		0.039	0.12	0.24	0.24
7439-96-5	Manganese	245		0.024	0.073	0.15	0.15
7440-02-0	Nickel	9.8		0.021	0.059	0.12	0.12
7782-49-2	Selenium	0.20	U	0.059	0.20	0.39	0.39
7440-22-4	Silver	0.049	U	0.017	0.049	0.098	0.098
7440-28-0	Thallium	0.089	J	0.078	0.23	0.47	0.47
7440-62-2	Vanadium	29.1		0.012	0.039	0.078	0.078
7440-66-6	Zinc	33.8		0.049	0.15	0.29	0.29
7439-93-2	Lithium	11.1		0.059	0.18	0.35	0.35
7439-98-7	Molybdenum	0.81		0.039	0.12	0.23	0.23
7440-24-6	Strontium	20.8		0.013	0.039	0.078	0.078
7440-31-5	Tin	1.0		0.088	0.24	0.49	0.49

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSI-002C

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	97.7	Lab Sample ID:	785310
Analytical Method:	EPA 7471B	Date Received:	10/08/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131437	Analysis Date/Time	10/18/2016 08:45
Analytical Prep Batch #:	59544	Prep. Date/Time:	10/17/2016 10:00
ICAL Calibration #:	10182016	Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-97-6	Mercury	0.040		0.0023	0.0045	0.0089	0.0089

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Sample Description

RFAAP-FGMR-SSI-002C

INORGANIC ANALYSIS DATA SHEET

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	97.7	Lab Sample ID:	785310
Analytical Method:	EPA 6010C	Date Received:	10/08/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131318	Analysis Date/Time	10/14/2016 23:15
Analytical Prep Batch #:	59503	Prep. Date/Time:	10/13/2016 10:00
ICAL Calibration #:		Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7440-36-0	Antimony	0.34	J	0.13	0.40	0.79	0.79
7440-41-7	Beryllium	0.28		0.0040	0.012	0.040	0.040
7440-43-9	Cadmium	0.37		0.0060	0.020	0.040	0.040
7440-47-3	Chromium	18.2		0.023	0.070	0.14	0.14
7440-48-4	Cobalt	3.2		0.040	0.12	0.24	0.24
7440-50-8	Copper	7.7		0.070	0.20	0.40	0.40
7439-92-1	Lead	10.6		0.040	0.12	0.25	0.25
7439-96-5	Manganese	224		0.025	0.075	0.15	0.15
7440-02-0	Nickel	10.8		0.021	0.060	0.12	0.12
7782-49-2	Selenium	0.20	U	0.060	0.20	0.40	0.40
7440-22-4	Silver	0.050	U	0.017	0.050	0.099	0.099
7440-28-0	Thallium	0.091	J	0.079	0.24	0.48	0.48
7440-62-2	Vanadium	24.5		0.012	0.040	0.079	0.079
7440-66-6	Zinc	22.5		0.050	0.15	0.30	0.30
7439-93-2	Lithium	9.7		0.060	0.18	0.36	0.36
7439-98-7	Molybdenum	0.75		0.040	0.12	0.24	0.24
7440-24-6	Strontium	22.3		0.013	0.040	0.079	0.079
7440-31-5	Tin	0.94		0.089	0.25	0.50	0.50

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Sample No.

ICV

2A-1

INITIAL CALIBRATION VERIFICATION

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131258 Lab Sample ID: 788152

ICAL Calibration #: 10142016 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Mercury	10/14/16 08:49	3.00	3.28	109	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

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Sample No.

ICV

2A-1

INITIAL CALIBRATION VERIFICATION

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131437 Lab Sample ID: 790261

ICAL Calibration #: 10182016 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Mercury	10/18/16 08:13	3.00	2.97	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: 70-130

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Sample No.

ICV

2A-1

INITIAL CALIBRATION VERIFICATION

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131437 Lab Sample ID: 790280

ICAL Calibration #: 10182016 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Mercury	10/18/16 12:52	3.00	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

ICV

2A-1

INITIAL CALIBRATION VERIFICATION

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131140 Lab Sample ID: 787528

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)
Antimony	10/10/16	15:23	500.0	507.0	101	90	110
Beryllium	10/10/16	15:23	50.00	47.80	96	90	110
Cadmium	10/10/16	15:23	50.00	48.80	98	90	110
Chromium	10/10/16	15:23	200.0	198.0	99	90	110
Cobalt	10/10/16	15:23	500.0	495.0	99	90	110
Copper	10/10/16	15:23	250.0	244.0	98	90	110
Lead	10/10/16	15:23	500.0	498.0	100	90	110
Manganese	10/10/16	15:23	500.0	482.0	96	90	110
Molybdenum	10/10/16	15:23	500.0	519.0	104	90	110
Nickel	10/10/16	15:23	500.0	489.0	98	90	110
Selenium	10/10/16	15:23	2000	2000	100	90	110
Silver	10/10/16	15:23	50.00	50.00	100	90	110
Strontium	10/10/16	15:23	500.0	511.0	102	90	110
Thallium	10/10/16	15:23	2000	1980	99	90	110
Tin	10/10/16	15:23	500.0	527.0	105	90	110
Vanadium	10/10/16	15:23	500.0	501.0	100	90	110
Zinc	10/10/16	15:23	500.0	507.0	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

LLQC

2A-1

LOWER LIMIT OF QUANTITATION CHECK (LLQC)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131140 Lab Sample ID: 787529

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)
Antimony	10/10/16	15:30	60.00	66.40	111	80	120
Beryllium	10/10/16	15:30	12.00	13.40	112	80	120
Cadmium	10/10/16	15:30	15.00	16.60	111	80	120
Chromium	10/10/16	15:30	30.00	32.50	108	80	120
Cobalt	10/10/16	15:30	30.00	32.00	107	80	120
Copper	10/10/16	15:30	30.00	31.60	105	80	120
Lead	10/10/16	15:30	30.00	31.00	103	80	120
Manganese	10/10/16	15:30	30.00	33.30	111	80	120
Molybdenum	10/10/16	15:30	30.00	31.60	105	80	120
Nickel	10/10/16	15:30	30.00	28.60	95	80	120
Selenium	10/10/16	15:30	60.00	67.60	113	80	120
Silver	10/10/16	15:30	60.00	49.20	82	80	120
Strontium	10/10/16	15:30	30.00	32.30	108	80	120
Thallium	10/10/16	15:30	60.00	61.40	102	80	120
Tin	10/10/16	15:30	150.0	157.0	105	80	120
Vanadium	10/10/16	15:30	30.00	33.00	110	80	120
Zinc	10/10/16	15:30	30.00	33.00	110	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

LLQC

2A-1

LOWER LIMIT OF QUANTITATION CHECK (LLQC)

Lab Name: CT Laboratories

Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131140

Lab Sample ID: 787533

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	10/10/16	16:10	10.00	11.30	113	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

ICV

2A-1

INITIAL CALIBRATION VERIFICATION

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 790077

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)
Antimony	10/14/16	09:55	500.0	501.0	100	90	110
Beryllium	10/14/16	09:55	50.00	49.90	100	90	110
Cadmium	10/14/16	09:55	50.00	47.50	95	90	110
Chromium	10/14/16	09:55	200.0	202.0	101	90	110
Cobalt	10/14/16	09:55	500.0	501.0	100	90	110
Copper	10/14/16	09:55	250.0	244.0	98	90	110
Lead	10/14/16	09:55	500.0	510.0	102	90	110
Lithium	10/14/16	09:55	500.0	520.0	104	90	110
Manganese	10/14/16	09:55	500.0	502.0	100	90	110
Molybdenum	10/14/16	09:55	500.0	537.0	107	90	110
Nickel	10/14/16	09:55	500.0	519.0	104	90	110
Selenium	10/14/16	09:55	2000	1950	98	90	110
Silver	10/14/16	09:55	50.00	49.20	98	90	110
Strontium	10/14/16	09:55	500.0	518.0	104	90	110
Thallium	10/14/16	09:55	2000	1960	98	90	110
Tin	10/14/16	09:55	500.0	539.0	108	90	110
Vanadium	10/14/16	09:55	500.0	512.0	102	90	110
Zinc	10/14/16	09:55	500.0	525.0	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

LLQC

2A-1

LOWER LIMIT OF QUANTITATION CHECK (LLQC)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 790078

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)
Antimony	10/14/16	10:02	60.00	66.70	111	80	120
Beryllium	10/14/16	10:02	12.00	13.50	112	80	120
Cadmium	10/14/16	10:02	15.00	16.20	108	80	120
Chromium	10/14/16	10:02	30.00	32.00	107	80	120
Cobalt	10/14/16	10:02	30.00	32.10	107	80	120
Copper	10/14/16	10:02	30.00	30.70	102	80	120
Lead	10/14/16	10:02	30.00	32.00	107	80	120
Lithium	10/14/16	10:02	60.00	63.60	106	80	120
Manganese	10/14/16	10:02	30.00	33.00	110	80	120
Molybdenum	10/14/16	10:02	30.00	30.90	103	80	120
Nickel	10/14/16	10:02	30.00	33.00	110	80	120
Selenium	10/14/16	10:02	60.00	70.80	118	80	120
Strontium	10/14/16	10:02	30.00	32.40	108	80	120
Thallium	10/14/16	10:02	60.00	58.60	98	80	120
Tin	10/14/16	10:02	150.0	155.0	103	80	120
Vanadium	10/14/16	10:02	30.00	33.60	112	80	120
Zinc	10/14/16	10:02	30.00	33.40	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

LLQC

2A-1

LOWER LIMIT OF QUANTITATION CHECK (LLQC)

Lab Name: CT Laboratories

Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318

Lab Sample ID: 790082

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	10/14/16 10:46	10.00	11.10	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

ICV

2A-1

INITIAL CALIBRATION VERIFICATION

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 791709

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)
Antimony	10/18/16	09:16	500.0	524.0	105	90	110
Beryllium	10/18/16	09:16	50.00	50.80	102	90	110
Cadmium	10/18/16	09:16	50.00	48.90	98	90	110
Chromium	10/18/16	09:16	200.0	209.0	104	90	110
Cobalt	10/18/16	09:16	500.0	521.0	104	90	110
Copper	10/18/16	09:16	250.0	246.0	98	90	110
Lead	10/18/16	09:16	500.0	521.0	104	90	110
Lithium	10/18/16	09:16	500.0	531.0	106	90	110
Manganese	10/18/16	09:16	500.0	515.0	103	90	110
Molybdenum	10/18/16	09:16	500.0	547.0	109	90	110
Nickel	10/18/16	09:16	500.0	522.0	104	90	110
Selenium	10/18/16	09:16	2000	1930	96	90	110
Silver	10/18/16	09:16	50.00	49.00	98	90	110
Strontium	10/18/16	09:16	500.0	535.0	107	90	110
Thallium	10/18/16	09:16	2000	1990	100	90	110
Tin	10/18/16	09:16	500.0	536.0	107	90	110
Vanadium	10/18/16	09:16	500.0	518.0	104	90	110
Zinc	10/18/16	09:16	500.0	518.0	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

LLQC

2A-1

LOWER LIMIT OF QUANTITATION CHECK (LLQC)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 791710

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)
Antimony	10/18/16	09:23	60.00	64.20	107	80	120
Beryllium	10/18/16	09:23	12.00	13.20	110	80	120
Cadmium	10/18/16	09:23	15.00	16.20	108	80	120
Chromium	10/18/16	09:23	30.00	31.60	105	80	120
Cobalt	10/18/16	09:23	30.00	31.60	105	80	120
Copper	10/18/16	09:23	30.00	30.80	103	80	120
Lead	10/18/16	09:23	30.00	32.50	108	80	120
Lithium	10/18/16	09:23	60.00	61.30	102	80	120
Manganese	10/18/16	09:23	30.00	31.90	106	80	120
Molybdenum	10/18/16	09:23	30.00	30.80	103	80	120
Nickel	10/18/16	09:23	30.00	31.90	106	80	120
Selenium	10/18/16	09:23	60.00	62.70	104	80	120
Strontium	10/18/16	09:23	30.00	32.50	108	80	120
Thallium	10/18/16	09:23	60.00	56.10	94	80	120
Tin	10/18/16	09:23	150.0	152.0	101	80	120
Vanadium	10/18/16	09:23	30.00	31.70	106	80	120
Zinc	10/18/16	09:23	30.00	32.60	109	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

LLQC

2A-1

LOWER LIMIT OF QUANTITATION CHECK (LLQC)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 791714

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	10/18/16 10:07	10.00	10.10	101	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV High Level

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 1 - HIGH RANGE)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131140 Lab Sample ID: 787534

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)
Antimony	10/11/16	03:27	5000	4730	95	90	110
Beryllium	10/11/16	03:27	500.0	463.0	93	90	110
Cadmium	10/11/16	03:27	500.0	462.0	92	90	110
Chromium	10/11/16	03:27	5000	4650	93	90	110
Cobalt	10/11/16	03:27	5000	4690	94	90	110
Copper	10/11/16	03:27	5000	4600	92	90	110
Lead	10/11/16	03:27	5000	4670	93	90	110
Manganese	10/11/16	03:27	5000	4590	92	90	110
Molybdenum	10/11/16	03:27	5000	4550	91	90	110
Nickel	10/11/16	03:27	5000	4690	94	90	110
Selenium	10/11/16	03:27	5000	4730	95	90	110
Silver	10/11/16	03:27	500.0	468.0	94	90	110
Strontium	10/11/16	03:27	5000	4560	91	90	110
Thallium	10/11/16	03:27	5000	4650	93	90	110
Tin	10/11/16	03:27	5000	4490	90	90	110
Vanadium	10/11/16	03:27	5000	4510	90	90	110
Zinc	10/11/16	03:27	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV Low Level

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 2 - LOW RANGE)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131140 Lab Sample ID: 787535

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)
Antimony	10/11/16	03:33	500.0	476.0	95	90	110
Beryllium	10/11/16	03:33	50.00	48.50	97	90	110
Cadmium	10/11/16	03:33	50.00	48.60	97	90	110
Chromium	10/11/16	03:33	500.0	476.0	95	90	110
Cobalt	10/11/16	03:33	500.0	475.0	95	90	110
Copper	10/11/16	03:33	500.0	470.0	94	90	110
Lead	10/11/16	03:33	500.0	477.0	95	90	110
Manganese	10/11/16	03:33	500.0	465.0	93	90	110
Molybdenum	10/11/16	03:33	500.0	462.0	92	90	110
Nickel	10/11/16	03:33	500.0	483.0	97	90	110
Selenium	10/11/16	03:33	500.0	525.0	105	90	110
Silver	10/11/16	03:33	50.00	50.40	101	90	110
Strontium	10/11/16	03:33	500.0	472.0	94	90	110
Thallium	10/11/16	03:33	500.0	479.0	96	90	110
Tin	10/11/16	03:33	500.0	465.0	93	90	110
Vanadium	10/11/16	03:33	500.0	458.0	92	90	110
Zinc	10/11/16	03:33	500.0	477.0	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV High Level

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 1 - HIGH RANGE)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131140 Lab Sample ID: 787538

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)
Antimony	10/11/16	04:53	5000	4740	95	90	110
Beryllium	10/11/16	04:53	500.0	464.0	93	90	110
Cadmium	10/11/16	04:53	500.0	465.0	93	90	110
Chromium	10/11/16	04:53	5000	4700	94	90	110
Cobalt	10/11/16	04:53	5000	4690	94	90	110
Copper	10/11/16	04:53	5000	4620	92	90	110
Lead	10/11/16	04:53	5000	4670	93	90	110
Manganese	10/11/16	04:53	5000	4540	91	90	110
Molybdenum	10/11/16	04:53	5000	4570	91	90	110
Nickel	10/11/16	04:53	5000	4710	94	90	110
Selenium	10/11/16	04:53	5000	4770	95	90	110
Silver	10/11/16	04:53	500.0	470.0	94	90	110
Strontium	10/11/16	04:53	5000	4630	93	90	110
Thallium	10/11/16	04:53	5000	4690	94	90	110
Tin	10/11/16	04:53	5000	4560	91	90	110
Vanadium	10/11/16	04:53	5000	4510	90	90	110
Zinc	10/11/16	04:53	5000	4600	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV Low Level

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 2 - LOW RANGE)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131140 Lab Sample ID: 787539

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)
Antimony	10/11/16	04:58	500.0	480.0	96	90	110
Beryllium	10/11/16	04:58	50.00	48.10	96	90	110
Cadmium	10/11/16	04:58	50.00	48.80	98	90	110
Chromium	10/11/16	04:58	500.0	472.0	94	90	110
Cobalt	10/11/16	04:58	500.0	471.0	94	90	110
Copper	10/11/16	04:58	500.0	475.0	95	90	110
Lead	10/11/16	04:58	500.0	484.0	97	90	110
Manganese	10/11/16	04:58	500.0	466.0	93	90	110
Molybdenum	10/11/16	04:58	500.0	460.0	92	90	110
Nickel	10/11/16	04:58	500.0	480.0	96	90	110
Selenium	10/11/16	04:58	500.0	540.0	108	90	110
Silver	10/11/16	04:58	50.00	50.10	100	90	110
Strontium	10/11/16	04:58	500.0	477.0	95	90	110
Thallium	10/11/16	04:58	500.0	481.0	96	90	110
Tin	10/11/16	04:58	500.0	472.0	94	90	110
Vanadium	10/11/16	04:58	500.0	454.0	91	90	110
Zinc	10/11/16	04:58	500.0	475.0	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV High Level

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 1 - HIGH RANGE)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131140 Lab Sample ID: 787542

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)
Antimony	10/11/16	06:18	5000	4780	96	90	110
Beryllium	10/11/16	06:18	500.0	462.0	92	90	110
Cadmium	10/11/16	06:18	500.0	463.0	93	90	110
Chromium	10/11/16	06:18	5000	4660	93	90	110
Cobalt	10/11/16	06:18	5000	4700	94	90	110
Copper	10/11/16	06:18	5000	4620	92	90	110
Lead	10/11/16	06:18	5000	4740	95	90	110
Manganese	10/11/16	06:18	5000	4550	91	90	110
Molybdenum	10/11/16	06:18	5000	4530	91	90	110
Nickel	10/11/16	06:18	5000	4690	94	90	110
Selenium	10/11/16	06:18	5000	4800	96	90	110
Silver	10/11/16	06:18	500.0	472.0	94	90	110
Strontium	10/11/16	06:18	5000	4570	91	90	110
Thallium	10/11/16	06:18	5000	4710	94	90	110
Tin	10/11/16	06:18	5000	4490	90	90	110
Vanadium	10/11/16	06:18	5000	4490	90	90	110
Zinc	10/11/16	06:18	5000	4600	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV Low Level

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 2 - LOW RANGE)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131140 Lab Sample ID: 787543

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)
Antimony	10/11/16	06:24	500.0	483.0	97	90	110
Beryllium	10/11/16	06:24	50.00	48.40	97	90	110
Cadmium	10/11/16	06:24	50.00	48.90	98	90	110
Chromium	10/11/16	06:24	500.0	475.0	95	90	110
Cobalt	10/11/16	06:24	500.0	476.0	95	90	110
Copper	10/11/16	06:24	500.0	475.0	95	90	110
Lead	10/11/16	06:24	500.0	482.0	96	90	110
Manganese	10/11/16	06:24	500.0	458.0	92	90	110
Molybdenum	10/11/16	06:24	500.0	463.0	93	90	110
Nickel	10/11/16	06:24	500.0	482.0	96	90	110
Selenium	10/11/16	06:24	500.0	527.0	105	90	110
Silver	10/11/16	06:24	50.00	50.60	101	90	110
Strontium	10/11/16	06:24	500.0	470.0	94	90	110
Thallium	10/11/16	06:24	500.0	489.0	98	90	110
Tin	10/11/16	06:24	500.0	466.0	93	90	110
Vanadium	10/11/16	06:24	500.0	457.0	91	90	110
Zinc	10/11/16	06:24	500.0	479.0	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV

2A-2

CONTINUING CALIBRATION VERIFICATION

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131258 Lab Sample ID: 788155

ICAL Calibration #: 10142016 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Mercury	10/14/16 09:27	3.00	3.15	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV

2A-2

CONTINUING CALIBRATION VERIFICATION

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131258 Lab Sample ID: 788157

ICAL Calibration #: 10142016 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Mercury	10/14/16 09:53	3.00	3.10	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV

2A-2

CONTINUING CALIBRATION VERIFICATION

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131258 Lab Sample ID: 788161

ICAL Calibration #: 10142016 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Mercury	10/14/16 10:18	3.00	3.04	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV High Level

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 1 - HIGH RANGE)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 790083

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)
Antimony	10/14/16	20:57	5000	4940	99	90	110
Beryllium	10/14/16	20:57	500.0	506.0	101	90	110
Cadmium	10/14/16	20:57	500.0	461.0	92	90	110
Chromium	10/14/16	20:57	5000	5070	101	90	110
Cobalt	10/14/16	20:57	5000	4800	96	90	110
Copper	10/14/16	20:57	5000	4940	99	90	110
Lead	10/14/16	20:57	5000	4820	96	90	110
Lithium	10/14/16	20:57	5000	5280	106	90	110
Manganese	10/14/16	20:57	5000	5060	101	90	110
Molybdenum	10/14/16	20:57	5000	5200	104	90	110
Nickel	10/14/16	20:57	5000	5080	102	90	110
Selenium	10/14/16	20:57	5000	4960	99	90	110
Silver	10/14/16	20:57	500.0	471.0	94	90	110
Strontium	10/14/16	20:57	5000	4850	97	90	110
Thallium	10/14/16	20:57	5000	4940	99	90	110
Tin	10/14/16	20:57	5000	5240	105	90	110
Vanadium	10/14/16	20:57	5000	5200	104	90	110
Zinc	10/14/16	20:57	5000	4810	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV Low Level

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 2 - LOW RANGE)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 790084

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)
Antimony	10/14/16	21:04	500.0	478.0	96	90	110
Beryllium	10/14/16	21:04	50.00	53.60	107	90	110
Cadmium	10/14/16	21:04	50.00	50.00	100	90	110
Chromium	10/14/16	21:04	500.0	512.0	102	90	110
Cobalt	10/14/16	21:04	500.0	502.0	100	90	110
Copper	10/14/16	21:04	500.0	504.0	101	90	110
Lead	10/14/16	21:04	500.0	516.0	103	90	110
Lithium	10/14/16	21:04	500.0	538.0	108	90	110
Manganese	10/14/16	21:04	500.0	518.0	104	90	110
Molybdenum	10/14/16	21:04	500.0	526.0	105	90	110
Nickel	10/14/16	21:04	500.0	534.0	107	90	110
Selenium	10/14/16	21:04	500.0	498.0	100	90	110
Silver	10/14/16	21:04	50.00	51.60	103	90	110
Strontium	10/14/16	21:04	500.0	501.0	100	90	110
Thallium	10/14/16	21:04	500.0	510.0	102	90	110
Tin	10/14/16	21:04	500.0	542.0	108	90	110
Vanadium	10/14/16	21:04	500.0	534.0	107	90	110
Zinc	10/14/16	21:04	500.0	525.0	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV High Level

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 1 - HIGH RANGE)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 790088

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)
Antimony	10/14/16	22:27	5000	4960	99	90	110
Beryllium	10/14/16	22:27	500.0	514.0	103	90	110
Cadmium	10/14/16	22:27	500.0	464.0	93	90	110
Chromium	10/14/16	22:27	5000	5110	102	90	110
Cobalt	10/14/16	22:27	5000	4890	98	90	110
Copper	10/14/16	22:27	5000	4940	99	90	110
Lead	10/14/16	22:27	5000	4850	97	90	110
Lithium	10/14/16	22:27	5000	5240	105	90	110
Manganese	10/14/16	22:27	5000	5060	101	90	110
Molybdenum	10/14/16	22:27	5000	5200	104	90	110
Nickel	10/14/16	22:27	5000	5080	102	90	110
Selenium	10/14/16	22:27	5000	4960	99	90	110
Silver	10/14/16	22:27	500.0	484.0	97	90	110
Strontium	10/14/16	22:27	5000	4940	99	90	110
Thallium	10/14/16	22:27	5000	4950	99	90	110
Tin	10/14/16	22:27	5000	5230	105	90	110
Vanadium	10/14/16	22:27	5000	5200	104	90	110
Zinc	10/14/16	22:27	5000	4880	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV Low Level

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 2 - LOW RANGE)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 790089

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)
Antimony	10/14/16	22:33	500.0	470.0	94	90	110
Beryllium	10/14/16	22:33	50.00	53.70	107	90	110
Cadmium	10/14/16	22:33	50.00	49.40	99	90	110
Chromium	10/14/16	22:33	500.0	514.0	103	90	110
Cobalt	10/14/16	22:33	500.0	502.0	100	90	110
Copper	10/14/16	22:33	500.0	499.0	100	90	110
Lead	10/14/16	22:33	500.0	509.0	102	90	110
Lithium	10/14/16	22:33	500.0	549.0	110	90	110
Manganese	10/14/16	22:33	500.0	519.0	104	90	110
Molybdenum	10/14/16	22:33	500.0	530.0	106	90	110
Nickel	10/14/16	22:33	500.0	535.0	107	90	110
Selenium	10/14/16	22:33	500.0	496.0	99	90	110
Silver	10/14/16	22:33	50.00	51.50	103	90	110
Strontium	10/14/16	22:33	500.0	503.0	101	90	110
Thallium	10/14/16	22:33	500.0	504.0	101	90	110
Tin	10/14/16	22:33	500.0	536.0	107	90	110
Vanadium	10/14/16	22:33	500.0	539.0	108	90	110
Zinc	10/14/16	22:33	500.0	526.0	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV High Level

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 1 - HIGH RANGE)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 790091

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)
Antimony	10/14/16	23:58	5000	4970	99	90	110
Beryllium	10/14/16	23:58	500.0	513.0	103	90	110
Cadmium	10/14/16	23:58	500.0	465.0	93	90	110
Chromium	10/14/16	23:58	5000	5130	103	90	110
Cobalt	10/14/16	23:58	5000	4880	98	90	110
Copper	10/14/16	23:58	5000	4960	99	90	110
Lead	10/14/16	23:58	5000	4880	98	90	110
Lithium	10/14/16	23:58	5000	5320	106	90	110
Manganese	10/14/16	23:58	5000	5050	101	90	110
Molybdenum	10/14/16	23:58	5000	5220	104	90	110
Nickel	10/14/16	23:58	5000	5090	102	90	110
Selenium	10/14/16	23:58	5000	4970	99	90	110
Silver	10/14/16	23:58	500.0	482.0	96	90	110
Strontium	10/14/16	23:58	5000	4900	98	90	110
Thallium	10/14/16	23:58	5000	4940	99	90	110
Tin	10/14/16	23:58	5000	5210	104	90	110
Vanadium	10/14/16	23:58	5000	5190	104	90	110
Zinc	10/14/16	23:58	5000	4900	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV Low Level

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 2 - LOW RANGE)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 790092

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)
Antimony	10/15/16	00:04	500.0	480.0	96	90	110
Beryllium	10/15/16	00:04	50.00	53.80	108	90	110
Cadmium	10/15/16	00:04	50.00	49.80	100	90	110
Chromium	10/15/16	00:04	500.0	514.0	103	90	110
Cobalt	10/15/16	00:04	500.0	505.0	101	90	110
Copper	10/15/16	00:04	500.0	503.0	101	90	110
Lead	10/15/16	00:04	500.0	515.0	103	90	110
Lithium	10/15/16	00:04	500.0	538.0	108	90	110
Manganese	10/15/16	00:04	500.0	523.0	105	90	110
Molybdenum	10/15/16	00:04	500.0	527.0	105	90	110
Nickel	10/15/16	00:04	500.0	538.0	108	90	110
Selenium	10/15/16	00:04	500.0	495.0	99	90	110
Silver	10/15/16	00:04	50.00	52.70	105	90	110
Strontium	10/15/16	00:04	500.0	506.0	101	90	110
Thallium	10/15/16	00:04	500.0	504.0	101	90	110
Tin	10/15/16	00:04	500.0	539.0	108	90	110
Vanadium	10/15/16	00:04	500.0	540.0	108	90	110
Zinc	10/15/16	00:04	500.0	525.0	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV

2A-2

CONTINUING CALIBRATION VERIFICATION

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131437 Lab Sample ID: 790264

ICAL Calibration #: 10182016 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Mercury	10/18/16 08:39	3.00	3.26	109	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV

2A-2

CONTINUING CALIBRATION VERIFICATION

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131437 Lab Sample ID: 790266

ICAL Calibration #: 10182016 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time		Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Mercury	10/18/16	09:05	3.00	3.15	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV

2A-2

CONTINUING CALIBRATION VERIFICATION

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131437 Lab Sample ID: 790282

ICAL Calibration #: 10182016 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Spiked Conc.	Measured Conc.	%R**	Lower Limit (1)	Upper Limit (1)
Mercury	10/18/16 12:58	3.00	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV High Level

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 1 - HIGH RANGE)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 791715

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)
Antimony	10/18/16	17:15	5000	4830	97	90	110
Beryllium	10/18/16	17:15	500.0	486.0	97	90	110
Cadmium	10/18/16	17:15	500.0	463.0	93	90	110
Chromium	10/18/16	17:15	5000	5150	103	90	110
Cobalt	10/18/16	17:15	5000	5040	101	90	110
Copper	10/18/16	17:15	5000	4840	97	90	110
Lead	10/18/16	17:15	5000	4690	94	90	110
Lithium	10/18/16	17:15	5000	4920	98	90	110
Manganese	10/18/16	17:15	5000	4990	100	90	110
Molybdenum	10/18/16	17:15	5000	5050	101	90	110
Nickel	10/18/16	17:15	5000	5250	105	90	110
Silver	10/18/16	17:15	500.0	480.0	96	90	110
Strontium	10/18/16	17:15	5000	5140	103	90	110
Thallium	10/18/16	17:15	5000	4890	98	90	110
Tin	10/18/16	17:15	5000	4800	96	90	110
Vanadium	10/18/16	17:15	5000	5140	103	90	110
Zinc	10/18/16	17:15	5000	4980	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV Low Level

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 2 - LOW RANGE)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 791716

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)
Antimony	10/18/16	17:21	500.0	507.0	101	90	110
Beryllium	10/18/16	17:21	50.00	51.40	103	90	110
Cadmium	10/18/16	17:21	50.00	50.10	100	90	110
Chromium	10/18/16	17:21	500.0	541.0	108	90	110
Cobalt	10/18/16	17:21	500.0	486.0	97	90	110
Copper	10/18/16	17:21	500.0	494.0	99	90	110
Lead	10/18/16	17:21	500.0	504.0	101	90	110
Lithium	10/18/16	17:21	500.0	528.0	106	90	110
Manganese	10/18/16	17:21	500.0	523.0	105	90	110
Molybdenum	10/18/16	17:21	500.0	479.0	96	90	110
Nickel	10/18/16	17:21	500.0	542.0	108	90	110
Selenium	10/18/16	17:21	500.0	491.0	98	90	110
Silver	10/18/16	17:21	50.00	53.30	107	90	110
Strontium	10/18/16	17:21	500.0	543.0	109	90	110
Thallium	10/18/16	17:21	500.0	506.0	101	90	110
Tin	10/18/16	17:21	500.0	506.0	101	90	110
Vanadium	10/18/16	17:21	500.0	472.0	94	90	110
Zinc	10/18/16	17:21	500.0	521.0	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

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No.

CCV High Level

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 1 - HIGH RANGE)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 791718

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)
Antimony	10/18/16	18:44	5000	4980	100	90	110
Beryllium	10/18/16	18:44	500.0	496.0	99	90	110
Cadmium	10/18/16	18:44	500.0	483.0	97	90	110
Chromium	10/18/16	18:44	5000	5380	108	90	110
Cobalt	10/18/16	18:44	5000	5080	102	90	110
Copper	10/18/16	18:44	5000	4960	99	90	110
Lead	10/18/16	18:44	5000	4860	97	90	110
Lithium	10/18/16	18:44	5000	5010	100	90	110
Manganese	10/18/16	18:44	5000	5020	100	90	110
Molybdenum	10/18/16	18:44	5000	5170	103	90	110
Nickel	10/18/16	18:44	5000	5340	107	90	110
Selenium	10/18/16	18:44	5000	4610	92	90	110
Silver	10/18/16	18:44	500.0	487.0	97	90	110
Strontium	10/18/16	18:44	5000	5240	105	90	110
Thallium	10/18/16	18:44	5000	5020	100	90	110
Tin	10/18/16	18:44	5000	4990	100	90	110
Vanadium	10/18/16	18:44	5000	5110	102	90	110
Zinc	10/18/16	18:44	5000	5190	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

CT LABORATORIES
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Sample No.

CCV Low Level

2A-2

CONTINUING CALIBRATION VERIFICATION (LEVEL 2 - LOW RANGE)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 791719

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)
Antimony	10/18/16	18:51	500.0	516.0	103	90	110
Beryllium	10/18/16	18:51	50.00	52.00	104	90	110
Cadmium	10/18/16	18:51	50.00	51.50	103	90	110
Chromium	10/18/16	18:51	500.0	541.0	108	90	110
Cobalt	10/18/16	18:51	500.0	499.0	100	90	110
Copper	10/18/16	18:51	500.0	503.0	101	90	110
Lead	10/18/16	18:51	500.0	520.0	104	90	110
Lithium	10/18/16	18:51	500.0	525.0	105	90	110
Manganese	10/18/16	18:51	500.0	522.0	104	90	110
Molybdenum	10/18/16	18:51	500.0	490.0	98	90	110
Nickel	10/18/16	18:51	500.0	545.0	109	90	110
Selenium	10/18/16	18:51	500.0	483.0	97	90	110
Silver	10/18/16	18:51	50.00	53.40	107	90	110
Strontium	10/18/16	18:51	500.0	542.0	108	90	110
Thallium	10/18/16	18:51	500.0	513.0	103	90	110
Tin	10/18/16	18:51	500.0	522.0	104	90	110
Vanadium	10/18/16	18:51	500.0	479.0	96	90	110
Zinc	10/18/16	18:51	500.0	524.0	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

CT LABORATORIES
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Sample No

ICB

3-1

INITIAL CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131258 Lab Sample ID: 788153

Analytical Prep Batch # 0 Preparation Date/Time:

ICAL Calibration #: 10142016 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Mercury	10/14/2016 08:52	0.0210	U	0.03	0.10

** 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.

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No

ICB

3-1

INITIAL CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131437 Lab Sample ID: 790262

Analytical Prep Batch # 0 Preparation Date/Time:

ICAL Calibration #: 10182016 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Mercury	10/18/2016 08:15	0	U	0.03	0.10

** 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.

CT LABORATORIES
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Sample No

ICB

3-1

INITIAL CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131437 Lab Sample ID: 790281

Analytical Prep Batch # 0 Preparation Date/Time:

ICAL Calibration #: 10182016 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Mercury	10/18/2016 12:54	0	U	0.03	0.10

** 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.

CT LABORATORIES
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Sample No

ICB

3-1

INITIAL CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131140 Lab Sample ID: 787530

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
Antimony	10/10/2016 15:43	0.220	U	2.0	16
Beryllium	10/10/2016 15:43	0.0340	U	0.10	0.48
Cadmium	10/10/2016 15:43	-0.0670	U	0.3	0.8
Chromium	10/10/2016 15:43	-0.0300	U	0.6	2.8
Cobalt	10/10/2016 15:43	0.266	U	0.7	4.8
Copper	10/10/2016 15:43	-0.00200	U	1.2	8.0
Lead	10/10/2016 15:43	0.639	U	1.4	5.0
Manganese	10/10/2016 15:43	0.202	U	0.7	3.0
Molybdenum	10/10/2016 15:43	0	U	1.2	4.8
Nickel	10/10/2016 15:43	-3.41	U	1.0	2.4
Selenium	10/10/2016 15:43	4.39		2.2	8.0
Silver	10/10/2016 15:43	1.24		0.7	2.0
Strontium	10/10/2016 15:43	0.0430	U	0.3	1.6
Thallium	10/10/2016 15:43	-1.61	U	2.5	9.6
Tin	10/10/2016 15:43	-3.69	U	1.8	10
Vanadium	10/10/2016 15:43	0.368	U	0.8	1.6
Zinc	10/10/2016 15:43	-0.643	U	1.6	6.0

** 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.

CT LABORATORIES
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Sample No

ICB

3-1

INITIAL CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 790079

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
Antimony	10/14/2016 10:15	0.751	U	2.0	16
Beryllium	10/14/2016 10:15	0.0390	U	0.10	0.48
Cadmium	10/14/2016 10:15	0.0880	U	0.3	0.8
Chromium	10/14/2016 10:15	-0.375	U	0.6	2.8
Cobalt	10/14/2016 10:15	0.0680	U	0.7	4.8
Copper	10/14/2016 10:15	-0.349	U	1.2	8.0
Lead	10/14/2016 10:15	-0.904	U	1.4	5.0
Lithium	10/14/2016 10:15	0.144	U	14.4	14.4
Manganese	10/14/2016 10:15	-0.326	U	0.7	3.0
Molybdenum	10/14/2016 10:15	-0.100	U	1.2	4.8
Nickel	10/14/2016 10:15	0.222	U	1.0	2.4
Selenium	10/14/2016 10:15	1.27	U	2.2	8.0
Silver	10/14/2016 10:15	0.625	U	0.7	2.0
Strontium	10/14/2016 10:15	-0.0690	U	0.3	1.6
Thallium	10/14/2016 10:15	0.913	U	2.5	9.6
Tin	10/14/2016 10:15	-6.34	U	1.8	10
Vanadium	10/14/2016 10:15	0.242	U	0.8	1.6
Zinc	10/14/2016 10:15	-0.643	U	1.6	6.0

** 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.

CT LABORATORIES
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Sample No

ICB

3-1

INITIAL CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 791711

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
Antimony	10/18/2016 09:37	-1.74	U	2.0	16
Beryllium	10/18/2016 09:37	-0.0410	U	0.10	0.48
Cadmium	10/18/2016 09:37	0.125	U	0.3	0.8
Chromium	10/18/2016 09:37	-0.334	U	0.6	2.8
Cobalt	10/18/2016 09:37	-0.102	U	0.7	4.8
Copper	10/18/2016 09:37	0.295	U	1.2	8.0
Lead	10/18/2016 09:37	-1.45	U	1.4	5.0
Lithium	10/18/2016 09:37	0.248	U	14.4	14.4
Manganese	10/18/2016 09:37	-0.0320	U	0.7	3.0
Molybdenum	10/18/2016 09:37	0.0170	U	1.2	4.8
Nickel	10/18/2016 09:37	-0.177	U	1.0	2.4
Selenium	10/18/2016 09:37	-2.90	U	2.2	8.0
Silver	10/18/2016 09:37	-0.212	U	0.7	2.0
Strontium	10/18/2016 09:37	-0.0400	U	0.3	1.6
Thallium	10/18/2016 09:37	-2.18	U	2.5	9.6
Tin	10/18/2016 09:37	-3.95	U	1.8	10
Vanadium	10/18/2016 09:37	-0.360	U	0.8	1.6
Zinc	10/18/2016 09:37	-0.0480	U	1.6	6.0

** 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.

CT LABORATORIES
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Sample No

CCB

3-2

CONTINUING CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131258 Lab Sample ID: 788156

Analytical Prep Batch # 0 Preparation Date/Time:

ICAL Calibration #: 10142016 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Mercury	10/14/2016 09:29	0	U	0.03	0.10

** 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.

CT LABORATORIES
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Sample No

CCB

3-2

CONTINUING CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131258 Lab Sample ID: 788158

Analytical Prep Batch # 0 Preparation Date/Time:

ICAL Calibration #: 10142016 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Mercury	10/14/2016 09:55	0	U	0.03	0.10

** 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.

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No

CCB

3-2

CONTINUING CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131258 Lab Sample ID: 788162

Analytical Prep Batch # 0 Preparation Date/Time:

ICAL Calibration #: 10142016 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Mercury	10/14/2016 10:21	0	U	0.03	0.10

** 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.

CT LABORATORIES
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Sample No

CCB

3-2

CONTINUING CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131437 Lab Sample ID: 790265

Analytical Prep Batch # 0 Preparation Date/Time:

ICAL Calibration #: 10182016 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Mercury	10/18/2016 08:41	0	U	0.03	0.10

** 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.

CT LABORATORIES
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Sample No

CCB

3-2

CONTINUING CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131437 Lab Sample ID: 790267

Analytical Prep Batch # 0 Preparation Date/Time:

ICAL Calibration #: 10182016 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Mercury	10/18/2016 09:07	0	U	0.03	0.10

** 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.

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No

CCB

3-2

CONTINUING CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131437 Lab Sample ID: 790283

Analytical Prep Batch # 0 Preparation Date/Time:

ICAL Calibration #: 10182016 Concentration Units: ug/L

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Mercury	10/18/2016 13:01	0	U	0.03	0.10

** 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.

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No

3-2

CCB

CONTINUING CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131140 Lab Sample ID: 787536

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
Antimony	10/11/2016 03:39	-1.34	U	2.0	16
Beryllium	10/11/2016 03:39	0.0370	U	0.10	0.48
Cadmium	10/11/2016 03:39	-0.0970	U	0.3	0.8
Chromium	10/11/2016 03:39	0.612		0.6	2.8
Cobalt	10/11/2016 03:39	0.194	U	0.7	4.8
Copper	10/11/2016 03:39	0.450	U	1.2	8.0
Lead	10/11/2016 03:39	-0.403	U	1.4	5.0
Manganese	10/11/2016 03:39	0.390	U	0.7	3.0
Molybdenum	10/11/2016 03:39	1.53		1.2	4.8
Nickel	10/11/2016 03:39	-1.45	U	1.0	2.4
Selenium	10/11/2016 03:39	-4.25	U	2.2	8.0
Silver	10/11/2016 03:39	1.32		0.7	2.0
Strontium	10/11/2016 03:39	0.532		0.3	1.6
Thallium	10/11/2016 03:39	-0.699	U	2.5	9.6
Tin	10/11/2016 03:39	-2.46	U	1.8	10
Vanadium	10/11/2016 03:39	-1.28	U	0.8	1.6
Zinc	10/11/2016 03:39	-0.323	U	1.6	6.0

** 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.

CT LABORATORIES
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Sample No

CCB

3-2

CONTINUING CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131140 Lab Sample ID: 787540

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
Antimony	10/11/2016 05:05	-0.940	U	2.0	16
Beryllium	10/11/2016 05:05	0.0670	U	0.10	0.48
Cadmium	10/11/2016 05:05	-0.263	U	0.3	0.8
Chromium	10/11/2016 05:05	0.999		0.6	2.8
Cobalt	10/11/2016 05:05	0.251	U	0.7	4.8
Copper	10/11/2016 05:05	0.561	U	1.2	8.0
Lead	10/11/2016 05:05	1.49		1.4	5.0
Manganese	10/11/2016 05:05	0.571	U	0.7	3.0
Molybdenum	10/11/2016 05:05	1.96		1.2	4.8
Nickel	10/11/2016 05:05	-1.74	U	1.0	2.4
Selenium	10/11/2016 05:05	-3.87	U	2.2	8.0
Silver	10/11/2016 05:05	1.64		0.7	2.0
Strontium	10/11/2016 05:05	0.588		0.3	1.6
Thallium	10/11/2016 05:05	-0.771	U	2.5	9.6
Tin	10/11/2016 05:05	-2.09	U	1.8	10
Vanadium	10/11/2016 05:05	-1.25	U	0.8	1.6
Zinc	10/11/2016 05:05	-0.148	U	1.6	6.0

** 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.

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No

CCB

3-2

CONTINUING CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131140 Lab Sample ID: 787544

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
Antimony	10/11/2016 06:30	-0.762	U	2.0	16
Beryllium	10/11/2016 06:30	0.0620	U	0.10	0.48
Cadmium	10/11/2016 06:30	-0.108	U	0.3	0.8
Chromium	10/11/2016 06:30	1.02		0.6	2.8
Cobalt	10/11/2016 06:30	0.416	U	0.7	4.8
Copper	10/11/2016 06:30	1.28		1.2	8.0
Lead	10/11/2016 06:30	0.511	U	1.4	5.0
Manganese	10/11/2016 06:30	0.755		0.7	3.0
Molybdenum	10/11/2016 06:30	2.37		1.2	4.8
Nickel	10/11/2016 06:30	-1.68	U	1.0	2.4
Selenium	10/11/2016 06:30	-6.36	U	2.2	8.0
Silver	10/11/2016 06:30	1.32		0.7	2.0
Strontium	10/11/2016 06:30	0.789		0.3	1.6
Thallium	10/11/2016 06:30	-0.194	U	2.5	9.6
Tin	10/11/2016 06:30	-0.717	U	1.8	10
Vanadium	10/11/2016 06:30	-1.10	U	0.8	1.6
Zinc	10/11/2016 06:30	-0.169	U	1.6	6.0

** 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.

CT LABORATORIES
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Sample No

CCB

3-2

CONTINUING CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 790085

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
Antimony	10/14/2016 21:10	0.0250	U	2.0	16
Beryllium	10/14/2016 21:10	0.00800	U	0.10	0.48
Cadmium	10/14/2016 21:10	-0.0550	U	0.3	0.8
Chromium	10/14/2016 21:10	-0.643	U	0.6	2.8
Cobalt	10/14/2016 21:10	0.0620	U	0.7	4.8
Copper	10/14/2016 21:10	-0.739	U	1.2	8.0
Lead	10/14/2016 21:10	-2.19	U	1.4	5.0
Lithium	10/14/2016 21:10	2.12	U	14.4	14.4
Manganese	10/14/2016 21:10	-0.489	U	0.7	3.0
Molybdenum	10/14/2016 21:10	0.490	U	1.2	4.8
Nickel	10/14/2016 21:10	-0.111	U	1.0	2.4
Selenium	10/14/2016 21:10	5.15		2.2	8.0
Silver	10/14/2016 21:10	0.513	U	0.7	2.0
Strontium	10/14/2016 21:10	-0.0570	U	0.3	1.6
Thallium	10/14/2016 21:10	-2.04	U	2.5	9.6
Tin	10/14/2016 21:10	-7.57	U	1.8	10
Vanadium	10/14/2016 21:10	1.50		0.8	1.6
Zinc	10/14/2016 21:10	-0.736	U	1.6	6.0

** 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.

CT LABORATORIES
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Sample No

CCB

3-2

CONTINUING CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 790090

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
Antimony	10/14/2016 22:39	1.43	U	2.0	16
Beryllium	10/14/2016 22:39	0.0140	U	0.10	0.48
Cadmium	10/14/2016 22:39	-0.0850	U	0.3	0.8
Chromium	10/14/2016 22:39	-0.184	U	0.6	2.8
Cobalt	10/14/2016 22:39	0.133	U	0.7	4.8
Copper	10/14/2016 22:39	-0.421	U	1.2	8.0
Lead	10/14/2016 22:39	-0.454	U	1.4	5.0
Lithium	10/14/2016 22:39	1.84	U	14.4	14.4
Manganese	10/14/2016 22:39	-0.365	U	0.7	3.0
Molybdenum	10/14/2016 22:39	0.274	U	1.2	4.8
Nickel	10/14/2016 22:39	-0.0690	U	1.0	2.4
Selenium	10/14/2016 22:39	5.20		2.2	8.0
Silver	10/14/2016 22:39	0.979		0.7	2.0
Strontium	10/14/2016 22:39	-0.00400	U	0.3	1.6
Thallium	10/14/2016 22:39	-0.630	U	2.5	9.6
Tin	10/14/2016 22:39	-7.84	U	1.8	10
Vanadium	10/14/2016 22:39	1.49		0.8	1.6
Zinc	10/14/2016 22:39	-0.666	U	1.6	6.0

** 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.

CT LABORATORIES
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Sample No

CCB

3-2

CONTINUING CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 790093

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
Antimony	10/15/2016 00:11	0.397	U	2.0	16
Beryllium	10/15/2016 00:11	-0.0400	U	0.10	0.48
Cadmium	10/15/2016 00:11	-0.119	U	0.3	0.8
Chromium	10/15/2016 00:11	-0.211	U	0.6	2.8
Cobalt	10/15/2016 00:11	0.00100	U	0.7	4.8
Copper	10/15/2016 00:11	-0.391	U	1.2	8.0
Lead	10/15/2016 00:11	-1.08	U	1.4	5.0
Lithium	10/15/2016 00:11	0.464	U	14.4	14.4
Manganese	10/15/2016 00:11	-0.323	U	0.7	3.0
Molybdenum	10/15/2016 00:11	0.390	U	1.2	4.8
Nickel	10/15/2016 00:11	-0.418	U	1.0	2.4
Selenium	10/15/2016 00:11	1.17	U	2.2	8.0
Silver	10/15/2016 00:11	1.06		0.7	2.0
Strontium	10/15/2016 00:11	0.0490	U	0.3	1.6
Thallium	10/15/2016 00:11	-0.0270	U	2.5	9.6
Tin	10/15/2016 00:11	-6.46	U	1.8	10
Vanadium	10/15/2016 00:11	1.49		0.8	1.6
Zinc	10/15/2016 00:11	-0.706	U	1.6	6.0

** 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.

CT LABORATORIES
delivering more than data from your environmental analyses

Sample No

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CCB

CONTINUING CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 791717

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
Antimony	10/18/2016 17:28	0.247	U	2.0	16
Beryllium	10/18/2016 17:28	0.0170	U	0.10	0.48
Cadmium	10/18/2016 17:28	0.173	U	0.3	0.8
Chromium	10/18/2016 17:28	-0.412	U	0.6	2.8
Cobalt	10/18/2016 17:28	-0.00100	U	0.7	4.8
Copper	10/18/2016 17:28	0.349	U	1.2	8.0
Lead	10/18/2016 17:28	-0.0290	U	1.4	5.0
Lithium	10/18/2016 17:28	0.480	U	14.4	14.4
Manganese	10/18/2016 17:28	0.200	U	0.7	3.0
Molybdenum	10/18/2016 17:28	0.457	U	1.2	4.8
Nickel	10/18/2016 17:28	0.118	U	1.0	2.4
Selenium	10/18/2016 17:28	-3.22	U	2.2	8.0
Silver	10/18/2016 17:28	0.909		0.7	2.0
Strontium	10/18/2016 17:28	0.211	U	0.3	1.6
Thallium	10/18/2016 17:28	-1.36	U	2.5	9.6
Tin	10/18/2016 17:28	-3.36	U	1.8	10
Vanadium	10/18/2016 17:28	0.338	U	0.8	1.6
Zinc	10/18/2016 17:28	-0.130	U	1.6	6.0

** 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.

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Sample No

CCB

3-2

CONTINUING CALIBRATION BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 791720

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
Antimony	10/18/2016 18:57	0.483	U	2.0	16
Beryllium	10/18/2016 18:57	0.0390	U	0.10	0.48
Cadmium	10/18/2016 18:57	0.154	U	0.3	0.8
Chromium	10/18/2016 18:57	-0.278	U	0.6	2.8
Cobalt	10/18/2016 18:57	0.245	U	0.7	4.8
Copper	10/18/2016 18:57	0.201	U	1.2	8.0
Lead	10/18/2016 18:57	0.306	U	1.4	5.0
Lithium	10/18/2016 18:57	0.128	U	14.4	14.4
Manganese	10/18/2016 18:57	-0.00100	U	0.7	3.0
Molybdenum	10/18/2016 18:57	0.454	U	1.2	4.8
Nickel	10/18/2016 18:57	-0.0910	U	1.0	2.4
Selenium	10/18/2016 18:57	-2.39	U	2.2	8.0
Silver	10/18/2016 18:57	0.677	U	0.7	2.0
Strontium	10/18/2016 18:57	0.208	U	0.3	1.6
Thallium	10/18/2016 18:57	-0.732	U	2.5	9.6
Tin	10/18/2016 18:57	-4.06	U	1.8	10
Vanadium	10/18/2016 18:57	0.332	U	0.8	1.6
Zinc	10/18/2016 18:57	-0.225	U	1.6	6.0

** 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.

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Sample No

MB

3-3

METHOD BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131258 Lab Sample ID: 786369

Analytical Prep Batch # 59473 Preparation Date/Time: 10/12/2016 10:00

ICAL Calibration #: 10142016 Concentration Units: mg/kg

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Mercury	10/14/2016 09:48	0	U	0.0021	0.00415

** 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.

CT LABORATORIES
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Sample No

MB

3-3

METHOD BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131437 Lab Sample ID: 788745

Analytical Prep Batch # 59544 Preparation Date/Time: 10/17/2016 10:00

ICAL Calibration #: 10182016 Concentration Units: mg/kg

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit
Mercury	10/18/2016 08:21	0	U	0.0021	0.00415

** 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.

CT LABORATORIES
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Sample No

MB

3-3

METHOD BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131140 Lab Sample ID: 785240

Analytical Prep Batch # 59424 Preparation Date/Time: 10/10/2016 06:00

ICAL Calibration #: Concentration Units: mg/kg

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit	
Antimony	10/11/2016 04:19	-0.045	U	0.13	0.40	
Beryllium	10/11/2016 04:19	0.00048	U	0.004	0.020	
Cadmium	10/11/2016 04:19	-0.0069	U	0.006	0.020	
Chromium	10/11/2016 04:19	0.017	U	0.023	0.125	
Cobalt	10/11/2016 04:19	-0.0086	U	0.04	0.12	
Copper	10/11/2016 04:19	0.015	U	0.07	0.20	
Lead	10/11/2016 04:19	0.0087	U	0.04	0.125	
Lithium	10/11/2016 04:19	0.0037	U	0.06	0.18	
Manganese	10/11/2016 04:19	0.028		0.025	0.075	FAIL
Molybdenum	10/11/2016 04:19	0.050		0.04	0.12	FAIL
Nickel	10/11/2016 04:19	-0.049	U	0.021	0.060	
Selenium	10/11/2016 04:19	-0.20	U	0.06	0.20	
Silver	10/11/2016 04:19	0.040		0.017	0.050	FAIL
Strontium	10/11/2016 04:19	0.024	U	0.13	0.040	
Thallium	10/11/2016 04:19	-0.010	U	0.08	0.24	
Tin	10/11/2016 04:19	0.12		0.09	0.25	FAIL
Vanadium	10/11/2016 04:19	-0.026	U	0.012	0.040	
Zinc	10/11/2016 04:19	0.0086	U	0.05	0.15	

** 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.

CT LABORATORIES
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Sample No

MB

3-3

METHOD BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131140 Lab Sample ID: 785240

Analytical Prep Batch # 59424 Preparation Date/Time: 10/10/2016 06:00

ICAL Calibration #: Concentration Units: mg/kg

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit	
Antimony	10/11/2016 04:19	-0.045	U	0.13	0.40	
Beryllium	10/11/2016 04:19	0.00048	U	0.004	0.020	
Cadmium	10/11/2016 04:19	-0.0069	U	0.006	0.020	
Chromium	10/11/2016 04:19	0.017	U	0.023	0.125	
Cobalt	10/11/2016 04:19	-0.0086	U	0.04	0.12	
Copper	10/11/2016 04:19	0.015	U	0.07	0.20	
Lead	10/11/2016 04:19	0.0087	U	0.04	0.125	
Lithium	10/11/2016 04:19	0.0037	U	0.06	0.18	
Manganese	10/11/2016 04:19	0.028		0.025	0.075	FAIL
Molybdenum	10/11/2016 04:19	0.050		0.04	0.12	FAIL
Nickel	10/11/2016 04:19	-0.049	U	0.021	0.060	
Selenium	10/11/2016 04:19	-0.20	U	0.06	0.20	
Silver	10/11/2016 04:19	0.040		0.017	0.050	FAIL
Strontium	10/11/2016 04:19	0.024	U	0.13	0.040	
Thallium	10/11/2016 04:19	-0.010	U	0.08	0.24	
Tin	10/11/2016 04:19	0.12		0.09	0.25	FAIL
Vanadium	10/11/2016 04:19	-0.026	U	0.012	0.040	
Zinc	10/11/2016 04:19	0.0086	U	0.05	0.15	

** 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.

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Sample No

MB

3-3

METHOD BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 787349

Analytical Prep Batch # 59503 Preparation Date/Time: 10/13/2016 10:00

ICAL Calibration #: Concentration Units: mg/kg

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit	
Antimony	10/14/2016 21:37	-0.026	U	0.13	0.40	
Beryllium	10/14/2016 21:37	0.00065	U	0.004	0.020	
Cadmium	10/14/2016 21:37	0.00058	U	0.006	0.020	
Chromium	10/14/2016 21:37	-0.016	U	0.023	0.125	
Cobalt	10/14/2016 21:37	-0.00088	U	0.04	0.12	
Copper	10/14/2016 21:37	-0.0087	U	0.07	0.20	
Lead	10/14/2016 21:37	0.022	U	0.04	0.125	
Lithium	10/14/2016 21:37	0.047	U	0.06	0.18	
Manganese	10/14/2016 21:37	-0.0023	U	0.025	0.075	
Molybdenum	10/14/2016 21:37	0.010	U	0.04	0.12	
Nickel	10/14/2016 21:37	-0.0012	U	0.021	0.060	
Selenium	10/14/2016 21:37	0.19		0.06	0.20	FAIL
Silver	10/14/2016 21:37	0.038		0.017	0.050	FAIL
Strontium	10/14/2016 21:37	-0.0015	U	0.13	0.040	
Thallium	10/14/2016 21:37	-0.017	U	0.08	0.24	
Tin	10/14/2016 21:37	-0.11	U	0.09	0.25	
Vanadium	10/14/2016 21:37	0.044		0.012	0.040	FAIL
Zinc	10/14/2016 21:37	0.0030	U	0.05	0.15	

** 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.

CT LABORATORIES
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Sample No

MB

3-3

METHOD BLANKS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Analytical Run #: 131318 Lab Sample ID: 787349

Analytical Prep Batch # 59503 Preparation Date/Time: 10/13/2016 10:00

ICAL Calibration #: Concentration Units: mg/kg

Analysis Type: Initial Analysis

Analyte	Analysis Date/Time	Measured Concentration	C***	Detection Limit**	Control Limit	
Antimony	10/14/2016 21:37	-0.026	U	0.13	0.40	
Beryllium	10/14/2016 21:37	0.00065	U	0.004	0.020	
Cadmium	10/14/2016 21:37	0.00058	U	0.006	0.020	
Chromium	10/14/2016 21:37	-0.016	U	0.023	0.125	
Cobalt	10/14/2016 21:37	-0.00088	U	0.04	0.12	
Copper	10/14/2016 21:37	-0.0087	U	0.07	0.20	
Lead	10/14/2016 21:37	0.022	U	0.04	0.125	
Lithium	10/14/2016 21:37	0.047	U	0.06	0.18	
Manganese	10/14/2016 21:37	-0.0023	U	0.025	0.075	
Molybdenum	10/14/2016 21:37	0.010	U	0.04	0.12	
Nickel	10/14/2016 21:37	-0.0012	U	0.021	0.060	
Selenium	10/14/2016 21:37	0.19		0.06	0.20	FAIL
Silver	10/14/2016 21:37	0.038		0.017	0.050	FAIL
Strontium	10/14/2016 21:37	-0.0015	U	0.13	0.040	
Thallium	10/14/2016 21:37	-0.017	U	0.08	0.24	
Tin	10/14/2016 21:37	-0.11	U	0.09	0.25	
Vanadium	10/14/2016 21:37	0.044		0.012	0.040	FAIL
Zinc	10/14/2016 21:37	0.0030	U	0.05	0.15	

** 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.

CT LABORATORIES
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Sample No:

4-1

ICP INTERFERENCE CHECK SAMPLE (SOL. A)

ICSA

Lab Name: CT Laboratories
Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP
ICP ID Number: TJA 6000
SDG No.: 122704
ICS Source: SPEX

Analytical Run #: 131140
Lab Sample ID: 787531
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	10/10/2016 15:57	500000	492000	98	80	120
Antimony	10/10/2016 15:57	0	0.134		-16	16
Beryllium	10/10/2016 15:57	0	0.126		-0.48	0.48
Cadmium	10/10/2016 15:57	0	-0.00100		-0.8	0.8
Calcium	10/10/2016 15:57	500000	479000	96	80	120
Chromium	10/10/2016 15:57	0	0		-2.8	2.8
Cobalt	10/10/2016 15:57	0	0.00500		-4.8	4.8
Copper	10/10/2016 15:57	0	-0.122		-8	8
Iron	10/10/2016 15:57	500000	460000	92	80	120
Lead	10/10/2016 15:57	0	0.0160		-5	5
Magnesium	10/10/2016 15:57	500000	513000	103	80	120
Manganese	10/10/2016 15:57	0	0.0720		-3	3
Molybdenum	10/10/2016 15:57	0	0		-4.8	4.80
Nickel	10/10/2016 15:57	0	-0.00400		-2.4	2.4
Selenium	10/10/2016 15:57	0	-0.00500		-8	8
Silver	10/10/2016 15:57	0	0		-2	2
Strontium	10/10/2016 15:57	0	0		-1.6	1.6
Thallium	10/10/2016 15:57	0	-0.335		-9.6	9
Tin	10/10/2016 15:57	0	0.388		-10	10
Vanadium	10/10/2016 15:57	0	-0.00500		-1.6	1.6
Zinc	10/10/2016 15:57	0	0.00200		-6	6

CT LABORATORIES
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Sample No:

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ICP INTERFERENCE CHECK SAMPLE (SOL. A)

ICSA

Lab Name: CT Laboratories
Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP
ICP ID Number: TJA 6000
SDG No.: 122704
ICS Source: SPEX

Analytical Run #: 131318
Lab Sample ID: 790080
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	10/14/2016 10:29	500000	523000	105	80	120
Antimony	10/14/2016 10:29	0	0.00600		-16	16
Beryllium	10/14/2016 10:29	0	-0.102		-0.48	0.48
Cadmium	10/14/2016 10:29	0	0.00600		-0.8	0.8
Calcium	10/14/2016 10:29	500000	496000	99	80	120
Chromium	10/14/2016 10:29	0	0.120		-2.8	2.8
Cobalt	10/14/2016 10:29	0	-0.740		-4.8	4.8
Copper	10/14/2016 10:29	0	-0.148		-8	8
Iron	10/14/2016 10:29	500000	432000	86	80	120
Lead	10/14/2016 10:29	0	-0.106		-5	5
Lithium	10/14/2016 10:29	0	-0.438		-14.4	14.4
Magnesium	10/14/2016 10:29	500000	535000	107	80	120
Manganese	10/14/2016 10:29	0	0		-3	3
Molybdenum	10/14/2016 10:29	0	-0.396		-4.8	4.80
Nickel	10/14/2016 10:29	0	-0.364		-2.4	2.4
Selenium	10/14/2016 10:29	0	0.0250		-8	8
Silver	10/14/2016 10:29	0	0.913		-2	2
Strontium	10/14/2016 10:29	0	0		-1.6	1.6
Thallium	10/14/2016 10:29	0	0.240		-9.6	9
Tin	10/14/2016 10:29	0	0		-10	10
Vanadium	10/14/2016 10:29	0	0		-1.6	1.6
Zinc	10/14/2016 10:29	0	0.00100		-6	6

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Sample No:

4-1

ICP INTERFERENCE CHECK SAMPLE (SOL. A)

ICSA

Lab Name: CT Laboratories
Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP
ICP ID Number: TJA 6000
SDG No.: 122704
ICS Source: SPEX

Analytical Run #: 131318
Lab Sample ID: 791712
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	10/18/2016 09:51	500000	513000	103	80	120
Antimony	10/18/2016 09:51	0	0.00100		-16	16
Beryllium	10/18/2016 09:51	0	-0.163		-0.48	0.48
Cadmium	10/18/2016 09:51	0	0.00200		-0.8	0.8
Calcium	10/18/2016 09:51	500000	476000	95	80	120
Chromium	10/18/2016 09:51	0	0		-2.8	2.8
Cobalt	10/18/2016 09:51	0	0.0110		-4.8	4.8
Copper	10/18/2016 09:51	0	-0.151		-8	8
Iron	10/18/2016 09:51	500000	398000	80	80	120
Lead	10/18/2016 09:51	0	-0.164		-5	5
Lithium	10/18/2016 09:51	0	3.52		-14.4	14.4
Magnesium	10/18/2016 09:51	500000	516000	103	80	120
Manganese	10/18/2016 09:51	0	0.249		-3	3
Molybdenum	10/18/2016 09:51	0	0		-4.8	4.80
Nickel	10/18/2016 09:51	0	-0.680		-2.4	2.4
Selenium	10/18/2016 09:51	0	0.00300		-8	8
Silver	10/18/2016 09:51	0	0		-2	2
Strontium	10/18/2016 09:51	0	0		-1.6	1.6
Thallium	10/18/2016 09:51	0	-0.379		-9.6	9
Tin	10/18/2016 09:51	0	-0.277		-10	10
Vanadium	10/18/2016 09:51	0	0		-1.6	1.6
Zinc	10/18/2016 09:51	0	0.00100		-6	6

CT LABORATORIES
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Sample No:

4-2

ICP INTERFERENCE CHECK SAMPLE (SOL. AB)

ICSAB

Lab Name: CT Laboratories
Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP
ICP ID Number: TJA 6000
SDG No.: 122704
ICS Source: SPEX, Ultra

Analytical Run #: 131140
Lab Sample ID: 787532
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	10/10/2016 16:03	500000	468000	94	80	120
Antimony	10/10/2016 16:03	500.0	512.0	102	80	120
Beryllium	10/10/2016 16:03	500.0	472.0	94	80	120
Cadmium	10/10/2016 16:03	500.0	443.0	89	80	120
Calcium	10/10/2016 16:03	500000	488000	98	80	120
Chromium	10/10/2016 16:03	500.0	439.0	88	80	120
Cobalt	10/10/2016 16:03	500.0	412.0	82	80	120
Copper	10/10/2016 16:03	500.0	407.0	81	80	120
Iron	10/10/2016 16:03	500000	478000	96	80	120
Lead	10/10/2016 16:03	500.0	427.0	85	80	120
Magnesium	10/10/2016 16:03	500000	448000	90	80	120
Manganese	10/10/2016 16:03	500.0	449.0	90	80	120
Molybdenum	10/10/2016 16:03	500.0	439.0	88	80	120
Nickel	10/10/2016 16:03	500.0	422.0	84	80	120
Selenium	10/10/2016 16:03	500.0	476.0	95	80	120
Silver	10/10/2016 16:03	500.0	528.0	106	80	120
Strontium	10/10/2016 16:03	500.0	475.0	95	80	120
Thallium	10/10/2016 16:03	500.0	412.0	82	80	120
Tin	10/10/2016 16:03	500.0	421.0	84	80	120
Vanadium	10/10/2016 16:03	500.0	487.0	97	80	120
Zinc	10/10/2016 16:03	500.0	421.0	84	80	120

CT LABORATORIES
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Sample No:

4-2

ICP INTERFERENCE CHECK SAMPLE (SOL. AB)

ICSAB

Lab Name: CT Laboratories
Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP
ICP ID Number: TJA 6000
SDG No.: 122704
ICS Source: SPEX, Ultra

Analytical Run #: 131318
Lab Sample ID: 790081
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	10/14/2016 10:37	500000	529000	106	80	120
Antimony	10/14/2016 10:37	500.0	468.0	94	80	120
Beryllium	10/14/2016 10:37	500.0	509.0	102	80	120
Cadmium	10/14/2016 10:37	500.0	449.0	90	80	120
Calcium	10/14/2016 10:37	500000	506000	101	80	120
Chromium	10/14/2016 10:37	500.0	460.0	92	80	120
Cobalt	10/14/2016 10:37	500.0	405.0	81	80	120
Copper	10/14/2016 10:37	500.0	430.0	86	80	120
Iron	10/14/2016 10:37	500000	441000	88	80	120
Lead	10/14/2016 10:37	500.0	421.0	84	80	120
Lithium	10/14/2016 10:37	500.0	580.0	116	80	120
Magnesium	10/14/2016 10:37	500000	547000	109	80	120
Manganese	10/14/2016 10:37	500.0	457.0	91	80	120
Molybdenum	10/14/2016 10:37	500.0	481.0	96	80	120
Nickel	10/14/2016 10:37	500.0	434.0	87	80	120
Selenium	10/14/2016 10:37	500.0	446.0	89	80	120
Silver	10/14/2016 10:37	500.0	484.0	97	80	120
Strontium	10/14/2016 10:37	500.0	467.0	93	80	120
Thallium	10/14/2016 10:37	500.0	507.0	101	80	120
Tin	10/14/2016 10:37	500.0	476.0	95	80	120
Vanadium	10/14/2016 10:37	500.0	427.0	85	80	120
Zinc	10/14/2016 10:37	500.0	488.0	98	80	120

CT LABORATORIES
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Sample No:

4-2

ICP INTERFERENCE CHECK SAMPLE (SOL. AB)

ICSAB

Lab Name: CT Laboratories
Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP
ICP ID Number: TJA 6000
SDG No.: 122704
ICS Source: SPEX, Ultra

Analytical Run #: 131318
Lab Sample ID: 791713
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	10/18/2016 09:59	500000	530000	106	80	120
Antimony	10/18/2016 09:59	500.0	516.0	103	80	120
Beryllium	10/18/2016 09:59	500.0	513.0	103	80	120
Cadmium	10/18/2016 09:59	500.0	463.0	93	80	120
Calcium	10/18/2016 09:59	500000	498000	100	80	120
Chromium	10/18/2016 09:59	500.0	477.0	95	80	120
Cobalt	10/18/2016 09:59	500.0	438.0	88	80	120
Copper	10/18/2016 09:59	500.0	423.0	85	80	120
Iron	10/18/2016 09:59	500000	427000	85	80	120
Lead	10/18/2016 09:59	500.0	434.0	87	80	120
Lithium	10/18/2016 09:59	500.0	545.0	109	80	120
Magnesium	10/18/2016 09:59	500000	540000	108	80	120
Manganese	10/18/2016 09:59	500.0	536.0	107	80	120
Molybdenum	10/18/2016 09:59	500.0	495.0	99	80	120
Nickel	10/18/2016 09:59	500.0	439.0	88	80	120
Selenium	10/18/2016 09:59	500.0	496.0	99	80	120
Silver	10/18/2016 09:59	500.0	496.0	99	80	120
Strontium	10/18/2016 09:59	500.0	511.0	102	80	120
Thallium	10/18/2016 09:59	500.0	510.0	102	80	120
Tin	10/18/2016 09:59	500.0	453.0	91	80	120
Vanadium	10/18/2016 09:59	500.0	479.0	96	80	120
Zinc	10/18/2016 09:59	500.0	492.0	98	80	120

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5A

SPIKE SAMPLE RECOVERY

Sample Description

RFAAP-FGMR-SSD-002

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOLID	SDG No.:	122704
% Solids for Sample:	80.3	Concentration Units:	mg/kg
Sample No	786372	Parent Sample No.:	784853
Analytical Prep Batch #	59473	Analytical Preparation Date/Time:	10/12/2016 10:00
Analytical Run #:	131258	ICAL Calibration #:	10142016

Analysis Type *Initial Analysis* Analysis Date: ----- 10/14/2016 Analysis Time: -------- 10:03

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M	
Mercury	82-119	0.19		0.044		0.11	133		CV	*FAIL*

BDL = analyte concentration was below detection limit

CT LABORATORIES
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5A

SPIKE SAMPLE RECOVERY

Sample Description

RFAAP-FGMR-SSI-001A

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOLID	SDG No.:	122704
% Solids for Sample:	98.6	Concentration Units:	mg/kg
Sample No	788748	Parent Sample No.:	784496
Analytical Prep Batch #	59544	Analytical Preparation Date/Time:	10/17/2016 10:00
Analytical Run #:	131437	ICAL Calibration #:	10182016

Analysis Type *Initial Analysis* Analysis Date: ----- 10/18/2016 Analysis Time: -------- 08:28

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Mercury	82-119	0.13		0.043		0.087	100		CV

BDL = analyte concentration was below detection limit

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5A

SPIKE SAMPLE RECOVERY

Sample Description

RFAAP-FGMR-SSD-002

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOLID	SDG No.:	122704
% Solids for Sample:	80.3	Concentration Units:	mg/kg
Sample No	785243	Parent Sample No.:	784853
Analytical Prep Batch #	59424	Analytical Preparation Date/Time:	10/10/2016 06:00
Analytical Run #:	131140	ICAL Calibration #:	

Analysis Type *Initial Analysis* Analysis Date: ----- 10/11/2016 Analysis Time: -------- 05:19

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M	
Antimony	79-114	8.9		0.39	J	30.5	28		P	*FAIL*
Beryllium	83-113	2.8		0.023	J	3.1	90		P	
Cadmium	82-113	2.1		BDL	U	3.1	68		P	*FAIL*
Chromium	85-113	24.1		10.9		12.2	108		P	
Cobalt	85-112	29.9		2.9		30.5	89		P	
Copper	81-117	17.0		3.0		15.3	92		P	
Lead	81-112	37.2		8.6		30.5	94		P	
Lithium	85-112	68.1		2.3		61.0	108		P	
Manganese	84-114	189		193		30.5	0		P	*FAIL*
Molybdenum	82-116	53.1		0.29	J	61.0	87		P	
Nickel	83-113	30.3		2.0		30.5	93		P	
Selenium	78-111	99.2		0.99		122	80		P	
Silver	82-112	2.7		BDL	U	3.1	87		P	
Strontium	83-114	59.8		2.3		61.0	94		P	
Thallium	83-111	102		0.26	J	122	83		P	
Tin	80-120	49.4		0.99		61.0	79		P	*FAIL*
Vanadium	82-114	44.6		18.7		30.5	85		P	
Zinc	82-113	42.4		13.0		30.5	96		P	

BDL = analyte concentration was below detection limit

CT LABORATORIES
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5A

SPIKE SAMPLE RECOVERY

Sample Description

RFAAP-FGMR-SSI-001A

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOLID	SDG No.:	122704
% Solids for Sample:	98.6	Concentration Units:	mg/kg
Sample No	787352	Parent Sample No.:	784496
Analytical Prep Batch #	59503	Analytical Preparation Date/Time:	10/13/2016 10:00
Analytical Run #:	131318	ICAL Calibration #:	

Analysis Type *Initial Analysis* Analysis Date: ----- 10/14/2016 Analysis Time: -------- 22:05

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M	
Antimony	79-114	13.7		5.3		25.6	33		P	*FAIL*
Beryllium	83-113	3.0		0.45		2.6	98		P	
Cadmium	82-113	2.1		BDL	U	2.6	81		P	*FAIL*
Chromium	85-113	27.4		16.6		10.2	106		P	
Cobalt	85-112	25.5		3.7		25.6	85		P	
Copper	81-117	18.7		7.2		12.8	90		P	
Lead	81-112	476		454		25.6	86		P	
Lithium	85-112	66.3		4.7		51.2	120		P	*FAIL*
Manganese	84-114	525		526		25.6	0		P	*FAIL*
Molybdenum	82-116	48.9		0.62		51.2	94		P	
Nickel	83-113	29.2		8.0		25.6	83		P	
Selenium	78-111	84.5		0.71		102	82		P	
Silver	82-112	2.0		BDL	U	2.6	77		P	*FAIL*
Strontium	83-114	57.4		8.3		51.2	96		P	
Thallium	83-111	77.9		BDL	U	102	76		P	*FAIL*
Tin	80-120	45.1		1.2		51.2	86		P	
Vanadium	82-114	50.7		22.2		25.6	111		P	
Zinc	82-113	45.6		23.6		25.6	86		P	

BDL = analyte concentration was below detection limit

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5B

POST DIGESTION SPIKE SAMPLE RECOVERY

Sample Description

RFAAP-FGMR-SSD-002

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOLID	SDG No.:	122704
% Solids for Sample:	80.3	Concentration Units:	ug/L
Sample No	787541	Parent Sample No.:	784853
Analytical Prep Batch #	0	Analytical Preparation Date/Time:	
Analytical Run #:	131140	ICAL Calibration #:	

Analysis Type	*Initial Analysis*	Analysis Date: -----	10/11/2016	Analysis Time: --------	05:32

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M	
Antimony	80-120	974.		13.3		1000	96		P	
Beryllium	80-120	93.2		.783		100	92		P	
Cadmium	80-120	74.3		BDL	U	100	74		P	*FAIL*
Chromium	80-120	679.		370.		400	77		P	*FAIL*
Cobalt	80-120	947.		98.8		1000	85		P	
Copper	80-120	518.		102.		500	83		P	
Lead	80-120	1220.		293.		1000	93		P	
Manganese	80-120	4760.		6560.		1000	0		P	*FAIL*
Molybdenum	80-120	1850.		9.90		2000	92		P	
Nickel	80-120	922.		66.7		1000	86		P	
Selenium	80-120	3680.		33.7		4000	91		P	
Silver	80-120	93.7		BDL	U	100	94		P	
Strontium	80-120	1910.		78.1		2000	92		P	
Thallium	80-120	3310.		8.86		4000	83		P	
Tin	80-120	1740.		33.8		2000	85		P	
Vanadium	80-120	1390.		638.		1000	75		P	*FAIL*
Zinc	80-120	1240.		441.		1000	80		P	

BDL = analyte concentration was below detection limit

CT LABORATORIES
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5B

POST DIGESTION SPIKE SAMPLE RECOVERY

Sample Description: **RFAAP-FGMR-SSI-001A**

Lab Name: CT Laboratories
Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix: SOLID
SDG No.: 122704
% Solids for Sample: 98.6
Concentration Units: ug/L
Sample No: 790087
Parent Sample No.: 784496
Analytical Prep Batch #: 0
Analytical Preparation Date/Time:
Analytical Run #: 131318
ICAL Calibration #:

Analysis Type: *Initial Analysis* Analysis Date: ----- 10/14/2016 Analysis Time: -------- 22:19

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M	
Antimony	80-120	1180.		199.		1000	98		P	
Beryllium	80-120	110.		17.1		100	93		P	
Cadmium	80-120	84.7		BDL	U	100	85		P	
Chromium	80-120	915.		624.		400	73		P	*FAIL*
Cobalt	80-120	941.		139.		1000	80		P	
Copper	80-120	701.		271.		500	86		P	
Lead	80-120	16800.		17100.		1000	0		P	*FAIL*
Manganese	80-120	18800.		19800.		1000	0		P	*FAIL*
Nickel	80-120	1060.		301.		1000	76		P	*FAIL*
Selenium	80-120	3600.		26.8		4000	89		P	
Silver	80-120	79.1		BDL	U	100	79		P	*FAIL*
Thallium	80-120	3080.		BDL	U	4000	77		P	*FAIL*
Vanadium	80-120	1830.		835.		1000	100		P	
Zinc	80-120	1590.		889.		1000	70		P	*FAIL*

BDL = analyte concentration was below detection limit

CT LABORATORIES
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5B

POST DIGESTION SPIKE SAMPLE RECOVERY

Sample Description

RFAAP-FGMR-SSI-001A

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOLID	SDG No.:	122704
% Solids for Sample:	98.6	Concentration Units:	ug/L
Sample No	790087	Parent Sample No.:	784496
Analytical Prep Batch #	0	Analytical Preparation Date/Time:	
Analytical Run #:	131318	ICAL Calibration #:	

Analysis Type *Initial Analysis* Analysis Date: ----- 10/18/2016 Analysis Time: -------- 17:55

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Lithium	80-120	2450		177		2000	114		P
Strontium	80-120	2570		313.		2000	113		P
Tin	80-120	1980		45.7		2000	97		P

BDL = analyte concentration was below detection limit

CT LABORATORIES
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5B

POST DIGESTION SPIKE SAMPLE RECOVERY

Sample Description

RFAAP-FGMR-SSI-001A

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOLID	SDG No.:	122704
% Solids for Sample:	98.6	Concentration Units:	ug/L
Sample No	790087	Parent Sample No.:	784496
Analytical Prep Batch #	0	Analytical Preparation Date/Time:	
Analytical Run #:	131318	ICAL Calibration #:	

ReRun *Re-Analysis #1* Analysis Date: ----- 10/18/2016 Analysis Time: -------- 17:55

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Molybdenum	80-120	2160		23.5		2000	107		P

BDL = analyte concentration was below detection limit

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5C

SPIKE DUPLICATE SAMPLE RECOVERY

Sample Description

RFAAP-FGMR-SSD-002

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOLID	SDG No.:	122704
% Solids for Sample:	80.3	Concentration Units:	mg/kg
Sample No	786373	Parent Sample No.:	786372
Analytical Prep Batch #	59473	Analytical Preparation Date/Time:	10/12/2016 10:00
Analytical Run #:	131258	ICAL Calibration #:	10142016

Analysis Type *Initial Analysis* Analysis Date: ----- 10/14/2016 Analysis Time: -------- 10:06

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M	
Mercury	82-119	0.17		0.044		0.10	126		CV	*FAIL*

BDL = analyte concentration was below detection limit

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5C

SPIKE DUPLICATE SAMPLE RECOVERY

Sample Description

RFAAP-FGMR-SSI-001A

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOLID	SDG No.:	122704
% Solids for Sample:	98.6	Concentration Units:	mg/kg
Sample No	788749	Parent Sample No.:	788748
Analytical Prep Batch #	59544	Analytical Preparation Date/Time:	10/17/2016 10:00
Analytical Run #:	131437	ICAL Calibration #:	10182016

Analysis Type *Initial Analysis* Analysis Date: ----- 10/18/2016 Analysis Time: -------- 08:30

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M
Mercury	82-119	0.13		0.043		0.089	98		CV

BDL = analyte concentration was below detection limit

CT LABORATORIES
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5C

SPIKE DUPLICATE SAMPLE RECOVERY

Sample Description

RFAAP-FGMR-SSD-002

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOLID	SDG No.:	122704
% Solids for Sample:	80.3	Concentration Units:	mg/kg
Sample No	785244	Parent Sample No.:	785243
Analytical Prep Batch #	59424	Analytical Preparation Date/Time:	10/10/2016 06:00
Analytical Run #:	131140	ICAL Calibration #:	

Analysis Type *Initial Analysis* Analysis Date: ----- 10/11/2016 Analysis Time: -------- 05:25

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M	
Antimony	79-114	10.2		0.39	J	32.3	30		P	*FAIL*
Beryllium	83-113	3.0		0.023	J	3.2	93		P	
Cadmium	82-113	2.3		BDL	U	3.2	72		P	*FAIL*
Chromium	85-113	23.7		10.9		12.9	99		P	
Cobalt	85-112	31.6		2.9		32.3	89		P	
Copper	81-117	17.3		3.0		16.1	89		P	
Lead	81-112	38.4		8.6		32.3	92		P	
Lithium	85-112	71.0		2.3		64.5	107		P	
Manganese	84-114	182		193		32.3	0		P	*FAIL*
Molybdenum	82-116	56.8		0.29	J	64.5	88		P	
Nickel	83-113	31.8		2.0		32.3	92		P	
Selenium	78-111	107		0.99		129	82		P	
Silver	82-112	2.9		BDL	U	3.2	91		P	
Strontium	83-114	62.9		2.3		64.5	94		P	
Thallium	83-111	108		0.26	J	129	84		P	
Tin	80-120	52.6		0.99		64.5	80		P	
Vanadium	82-114	45.2		18.7		32.3	82		P	
Zinc	82-113	43.2		13.0		32.3	93		P	

BDL = analyte concentration was below detection limit

CT LABORATORIES
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5C

SPIKE DUPLICATE SAMPLE RECOVERY

Sample Description

RFAAP-FGMR-SSI-001A

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix:	SOLID	SDG No.:	122704
% Solids for Sample:	98.6	Concentration Units:	mg/kg
Sample No	787353	Parent Sample No.:	787352
Analytical Prep Batch #	59503	Analytical Preparation Date/Time:	10/13/2016 10:00
Analytical Run #:	131318	ICAL Calibration #:	

Analysis Type *Initial Analysis* Analysis Date: ----- 10/14/2016 Analysis Time: -------- 22:12

Analyte	Control Limit (%R)	Spike Result	C (Spike)	Parent Result	C (Parent)	Spike Amount	%R	Q	M	
Antimony	79-114	18.3		5.3		25.9	50		P	*FAIL*
Beryllium	83-113	2.9		0.45		2.6	94		P	
Cadmium	82-113	2.2		BDL	U	2.6	85		P	
Chromium	85-113	28.7		16.6		10.3	117		P	*FAIL*
Cobalt	85-112	25.0		3.7		25.9	82		P	*FAIL*
Copper	81-117	20.9		7.2		12.9	106		P	
Lead	81-112	950		454		25.9	1915		P	*FAIL*
Lithium	85-112	66.5		4.7		51.7	120		P	*FAIL*
Manganese	84-114	528		526		25.9	8		P	*FAIL*
Molybdenum	82-116	47.9		0.62		51.7	91		P	
Nickel	83-113	28.7		8.0		25.9	80		P	*FAIL*
Selenium	78-111	86.7		0.71		103	83		P	
Silver	82-112	2.1		BDL	U	2.6	81		P	*FAIL*
Strontium	83-114	58.5		8.3		51.7	97		P	
Thallium	83-111	78.9		BDL	U	103	77		P	*FAIL*
Tin	80-120	46.1		1.2		51.7	87		P	
Vanadium	82-114	49.9		22.2		25.9	107		P	
Zinc	82-113	46.3		23.6		25.9	88		P	

BDL = analyte concentration was below detection limit

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6

DUPLICATES

Sample Description

RFAAP-FGMR-SSD-002

Lab Name: CT Laboratories

Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Matrix: SOLID

SDG No.: 122704

% Solid for Sample: 80.3

Concentration Units: mg/kg

Analytical Prep Batch # 1

Analytical Preparation Date/Time 59473

Analytical Run #: 131258

ICAL Calibration #: 10142016

Sample #: 786371

Parent Sample #: 784853

Analysis Type *Initial Analysis*

Analyte	Analysis Date/Tim	RPD Limit	Original Parent Conc. (S)	C	Duplicate Conc. (D)	C	RPD	Q	M
Mercury	10/14/2016 10:01	20	0.044		0.040		10		CV

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6

DUPLICATES

Sample Description

RFAAP-FGMR-SSI-001A

Lab Name: CT Laboratories
Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix: SOLID
SDG No.: 122704
% Solid for Sample: 98.6
Concentration Units: mg/kg
Analytical Prep Batch # 1
Analytical Preparation Date/Time 59544
Analytical Run #: 131437
ICAL Calibration #: 10182016
Sample #: 788747
Parent Sample #: 784496

Analysis Type *Initial Analysis*

Analyte	Analysis Date/Tim		RPD Limit	Original Parent Conc. (S)	C	Duplicate Conc. (D)	C	RPD	Q	M
Mercury	10/18/2016	08:26	20	0.043		0.040		7		CV

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6

DUPLICATES

Sample Description

RFAAP-FGMR-SSD-002

Lab Name: CT Laboratories
Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix: SOLID
SDG No.: 122704
% Solid for Sample: 80.3
Concentration Units: mg/kg
Analytical Prep Batch #: 1
Analytical Preparation Date/Time: 59424
Analytical Run #: 131140
ICAL Calibration #:
Sample #: 785242
Parent Sample #: 784853

Analysis Type *Initial Analysis*

Analyte	Analysis Date/Tim		RPD Limit	Original Parent Conc. (S)	C	Duplicate Conc. (D)	C	RPD	Q	M	
Antimony	10/11/2016	05:12	20	0.39	J	0.35	J	11		P	
Beryllium	10/11/2016	05:12	20	0.023	J	0.0047	U	200		P	*FAIL*
Cadmium	10/11/2016	05:12	20	0.0070	U	0.0070	U	0		P	
Chromium	10/11/2016	05:12	20	10.9		10.9		0		P	
Cobalt	10/11/2016	05:12	20	2.9		2.3		23		P	*FAIL*
Copper	10/11/2016	05:12	20	3.0		2.7		11		P	
Lead	10/11/2016	05:12	20	8.6		6.8		23		P	*FAIL*
Lithium	10/11/2016	05:12	20	2.3		2.1		9		P	
Manganese	10/11/2016	05:12	20	193		148		26		P	*FAIL*
Molybdenum	10/11/2016	05:12	20	0.29		0.27	J	7		P	
Nickel	10/11/2016	05:12	20	2.0		1.8		11		P	
Selenium	10/11/2016	05:12	20	0.99		0.80		21		P	*FAIL*
Silver	10/11/2016	05:12	20	0.020	U	0.020	U	0		P	
Strontium	10/11/2016	05:12	20	2.3		2.3		0		P	
Thallium	10/11/2016	05:12	20	0.26	J	0.36	J	32		P	*FAIL*
Tin	10/11/2016	05:12	20	0.99		0.99		0		P	
Vanadium	10/11/2016	05:12	20	18.7		17.5		7		P	
Zinc	10/11/2016	05:12	20	13.0		13.5		4		P	

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6

DUPLICATES

Sample Description

RFAAP-FGMR-SSI-001A

Lab Name: CT Laboratories
Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix: SOLID
SDG No.: 122704
% Solid for Sample: 98.6
Concentration Units: mg/kg
Analytical Prep Batch # 1
Analytical Preparation Date/Time 59503
Analytical Run #: 131318
ICAL Calibration #:
Sample #: 787351
Parent Sample #: 784496

Analysis Type *Initial Analysis*

Analyte	Analysis Date/Tim		RPD Limit	Original Parent Conc. (S)	C	Duplicate Conc. (D)	C	RPD	Q	M	
Antimony	10/14/2016	21:58	20	5.3		4.4		19		P	
Beryllium	10/14/2016	21:58	20	0.45		0.46		2		P	
Cadmium	10/14/2016	21:58	20	0.0064	U	0.039	J	200		P	*FAIL*
Chromium	10/14/2016	21:58	20	16.6		16.6		0		P	
Cobalt	10/14/2016	21:58	20	3.7		3.8		3		P	
Copper	10/14/2016	21:58	20	7.2		7.6		5		P	
Lead	10/14/2016	21:58	20	454		431		5		P	
Lithium	10/14/2016	21:58	20	4.7		4.7		0		P	
Manganese	10/14/2016	21:58	20	526		510		3		P	
Molybdenum	10/14/2016	21:58	20	0.62		0.57		8		P	
Nickel	10/14/2016	21:58	20	8.0		5.6		35		P	*FAIL*
Selenium	10/14/2016	21:58	20	0.71		0.65		9		P	
Silver	10/14/2016	21:58	20	0.018	U	0.018	U	0		P	
Strontium	10/14/2016	21:58	20	8.3		8.3		0		P	
Thallium	10/14/2016	21:58	20	0.085	U	0.085	U	0		P	
Tin	10/14/2016	21:58	20	1.2		1.2		0		P	
Vanadium	10/14/2016	21:58	20	22.2		23.3		5		P	
Zinc	10/14/2016	21:58	20	23.6		23.0		3		P	

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6A

MATRIX SPIKE DUPLICATES

Sample Description

RFAAP-FGMR-SSD-002

Lab Name: CT Laboratories

Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Matrix: SOLID

SDG No.: 122704

% Solid for Sample: 80.3

Concentration Units: mg/kg

Analytical Prep Batch #: 59473

Analytical Preparation Date/Time: 10/12/2016 10:00

Analytical Run #: 131258

ICAL Calibration #: 10142016

Sample #: 786373

Parent Sample #: 786372

Analysis Type *Initial Analysis*

Analyte	Analysis Date/Tim		RPD Limit	Matrix Spik Parent Conc. (S)	C	Matrix Spike Duplicate Conc. (D)	C	RPD	Q	M
Mercury	10/14/2016	10:06	20	0.19		0.17		3		CV

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6A

MATRIX SPIKE DUPLICATES

Sample Description

RFAAP-FGMR-SSI-001A

Lab Name: CT Laboratories | Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Matrix: SOLID | SDG No.: 122704

% Solid for Sample: 98.6 | Concentration Units: mg/kg

Analytical Prep Batch #: 59544 | Analytical Preparation Date/Time: 10/17/2016 10:00

Analytical Run #: 131437 | ICAL Calibration #: 10182016

Sample #: 788749 | Parent Sample #: 788748

Analysis Type *Initial Analysis*

Analyte	Analysis Date/Tim		RPD Limit	Matrix Spik Parent Conc. (S)	C	Matrix Spike Duplicate Conc. (D)	C	RPD	Q	M
Mercury	10/18/2016	08:30	20	0.13		0.13		3		CV

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6A

MATRIX SPIKE DUPLICATES

Sample Description: **RFAAP-FGMR-SSD-002**

Lab Name: CT Laboratories | Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Matrix: SOLID | SDG No.: 122704

% Solid for Sample: 80.3 | Concentration Units: mg/kg

Analytical Prep Batch #: 59424 | Analytical Preparation Date/Time: 10/10/2016 06:00

Analytical Run #: 131140 | ICAL Calibration #:

Sample #: 785244 | Parent Sample #: 785243

Analysis Type: *Initial Analysis*

Analyte	Analysis Date/Tim		RPD Limit	Matrix Spik Parent Conc. (S)	C	Matrix Spike Duplicate Conc. (D)	C	RPD	Q	M
Antimony	10/11/2016	05:25	20	8.9		10.2		8		P
Beryllium	10/11/2016	05:25	20	2.8		3.0		0		P
Cadmium	10/11/2016	05:25	20	2.1		2.3		2		P
Chromium	10/11/2016	05:25	20	24.1		23.7		7		P
Cobalt	10/11/2016	05:25	20	29.9		31.6		0		P
Copper	10/11/2016	05:25	20	17.0		17.3		4		P
Lead	10/11/2016	05:25	20	37.2		38.4		2		P
Lithium	10/11/2016	05:25	20	68.1		71.0		1		P
Manganese	10/11/2016	05:25	20	189		182		9		P
Molybdenum	10/11/2016	05:25	20	53.1		56.8		1		P
Nickel	10/11/2016	05:25	20	30.3		31.8		1		P
Selenium	10/11/2016	05:25	20	99.2		107		2		P
Silver	10/11/2016	05:25	20	2.7		2.9		1		P
Strontium	10/11/2016	05:25	20	59.8		62.9		1		P
Thallium	10/11/2016	05:25	20	102		108		1		P
Tin	10/11/2016	05:25	20	49.4		52.6		1		P
Vanadium	10/11/2016	05:25	20	44.6		45.2		4		P
Zinc	10/11/2016	05:25	20	42.4		43.2		4		P

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6A

MATRIX SPIKE DUPLICATES

Sample Description: **RFAAP-FGMR-SSI-001A**

Lab Name: CT Laboratories | Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Matrix: SOLID | SDG No.: 122704

% Solid for Sample: 98.6 | Concentration Units: mg/kg

Analytical Prep Batch #: 59503 | Analytical Preparation Date/Time: 10/13/2016 10:00

Analytical Run #: 131318 | ICAL Calibration #:

Sample #: 787353 | Parent Sample #: 787352

Analysis Type: *Initial Analysis*

Analyte	Analysis Date/Tim		RPD Limit	Matrix Spik Parent Conc. (S)	C	Matrix Spike Duplicate Conc. (D)	C	RPD	Q	M	
Antimony	10/14/2016	22:12	20	13.7		18.3		28		P	*FAIL*
Beryllium	10/14/2016	22:12	20	3.0		2.9		4		P	
Cadmium	10/14/2016	22:12	20	2.1		2.2		2		P	
Chromium	10/14/2016	22:12	20	27.4		28.7		4		P	
Cobalt	10/14/2016	22:12	20	25.5		25.0		3		P	
Copper	10/14/2016	22:12	20	18.7		20.9		10		P	
Lead	10/14/2016	22:12	20	476		950		65		P	*FAIL*
Lithium	10/14/2016	22:12	20	66.3		66.5		1		P	
Manganese	10/14/2016	22:12	20	525		528		0		P	
Molybdenum	10/14/2016	22:12	20	48.9		47.9		3		P	
Nickel	10/14/2016	22:12	20	29.2		28.7		3		P	
Selenium	10/14/2016	22:12	20	84.5		86.7		2		P	
Silver	10/14/2016	22:12	20	2.0		2.1		0		P	
Strontium	10/14/2016	22:12	20	57.4		58.5		1		P	
Thallium	10/14/2016	22:12	20	77.9		78.9		0		P	
Tin	10/14/2016	22:12	20	45.1		46.1		1		P	
Vanadium	10/14/2016	22:12	20	50.7		49.9		3		P	
Zinc	10/14/2016	22:12	20	45.6		46.3		1		P	

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7-2

Sample No:

LABORATORY CONTROL SAMPLE - SOLID

LCS

Lab Name: CT Laboratories Contract BERING SEA ENVIRONMENTAL-RADFORD AAP

LCS Source: SPEX and Ultra SDG No.: 122704

Concentration Units: mg/kg

Analytical Run #: 131258 Sample No.:#: 786370

Analytical Prep Batch #: 59473 Preparation Date/Time: 10/12/2016 10:00

ICAL Calibration #: 10142016

Analysis Type ---------- Initial Analysis

Analyte	Analysis Date/Time	Control Limit (%R)	Spike Result	C	Spike Amount	%R	Q	M
Mercury	10/14/2016 10:16	82-119	0.091		0.083	110		CV

CT LABORATORIES
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7-2

Sample No:

LABORATORY CONTROL SAMPLE - SOLID

LCS

Lab Name: CT Laboratories Contract BERING SEA ENVIRONMENTAL-RADFORD AAP

LCS Source: SPEX and Ultra SDG No.: 122704

Concentration Units: mg/kg

Analytical Run #: 131437 Sample No.:#: 788746

Analytical Prep Batch #: 59544 Preparation Date/Time: 10/17/2016 10:00

ICAL Calibration #: 10182016

Analysis Type ---------- Initial Analysis

Analyte	Analysis Date/Time	Control Limit (%R)	Spike Result	C	Spike Amount	%R	Q	M
Mercury	10/18/2016 12:56	82-119	0.080		0.083	96		CV

CT LABORATORIES
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7-2

Sample No:

LABORATORY CONTROL SAMPLE - SOLID

LCS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

LCS Source: SPEX and Ultra SDG No.: 122704

Concentration Units: mg/kg

Analytical Run #: 131140 Sample No.:#: 785241

Analytical Prep Batch #: 59424 Preparation Date/Time: 10/10/2016 06:00

ICAL Calibration #:

Analysis Type ---------- Initial Analysis

Analyte	Analysis Date/Time	Control Limit (%R)	Spike Result	C	Spike Amount	%R	Q	M
Antimony	10/11/2016 04:13	79-114	22.6		25.0	90		P
Beryllium	10/11/2016 04:13	83-113	2.3		2.5	92		P
Cadmium	10/11/2016 04:13	82-113	2.2		2.5	88		P
Chromium	10/11/2016 04:13	85-113	9.3		10.0	93		P
Cobalt	10/11/2016 04:13	85-112	23.2		25.0	93		P
Copper	10/11/2016 04:13	81-117	11.2		12.5	90		P
Lead	10/11/2016 04:13	81-112	22.6		25.0	90		P
Lithium	10/11/2016 04:13	85-112	50.5		50.0	101		P
Manganese	10/11/2016 04:13	84-114	21.9		25.0	88		P
Molybdenum	10/11/2016 04:13	82-116	46.8		50.0	94		P
Nickel	10/11/2016 04:13	83-113	23.3		25.0	93		P
Selenium	10/11/2016 04:13	78-111	87.0		100	87		P
Silver	10/11/2016 04:13	82-112	2.2		2.5	88		P
Strontium	10/11/2016 04:13	83-114	47.3		50.0	95		P
Thallium	10/11/2016 04:13	83-111	90.0		100	90		P
Tin	10/11/2016 04:13	80-120	45.8		50.0	92		P
Vanadium	10/11/2016 04:13	82-114	22.8		25.0	91		P
Zinc	10/11/2016 04:13	82-113	22.2		25.0	89		P

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7-2

Sample No:

LABORATORY CONTROL SAMPLE - SOLID

LCS

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

LCS Source: SPEX and Ultra SDG No.: 122704

Concentration Units: mg/kg

Analytical Run #: 131318 Sample No.:#: 787350

Analytical Prep Batch #: 59503 Preparation Date/Time: 10/13/2016 10:00

ICAL Calibration #:

Analysis Type ---------- Initial Analysis

Analyte	Analysis Date/Time	Control Limit (%R)	Spike Result	C	Spike Amount	%R	Q	M
Antimony	10/14/2016 21:31	79-114	24.3		25.0	97		P
Beryllium	10/14/2016 21:31	83-113	2.5		2.5	100		P
Cadmium	10/14/2016 21:31	82-113	2.1		2.5	84		P
Chromium	10/14/2016 21:31	85-113	9.7		10.0	97		P
Cobalt	10/14/2016 21:31	85-112	23.2		25.0	93		P
Copper	10/14/2016 21:31	81-117	11.4		12.5	91		P
Lead	10/14/2016 21:31	81-112	22.4		25.0	90		P
Lithium	10/14/2016 21:31	85-112	52.8		50.0	106		P
Manganese	10/14/2016 21:31	84-114	21.7		25.0	87		P
Molybdenum	10/14/2016 21:31	82-116	53.0		50.0	106		P
Nickel	10/14/2016 21:31	83-113	23.9		25.0	96		P
Selenium	10/14/2016 21:31	78-111	94.3		100	94		P
Silver	10/14/2016 21:31	82-112	2.1		2.5	84		P
Strontium	10/14/2016 21:31	83-114	47.8		50.0	96		P
Thallium	10/14/2016 21:31	83-111	87.3		100	87		P
Tin	10/14/2016 21:31	80-120	50.8		50.0	102		P
Vanadium	10/14/2016 21:31	82-114	24.4		25.0	98		P
Zinc	10/14/2016 21:31	82-113	24.5		25.0	98		P

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9

ICP SERIAL DILUTION

Sample Description

RFAAP-FGMR-SSD-002

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Matrix: SOLID SDG No.: 122704

Concentration Units: ug/L

Sample No.: 787537 Parent Sample No.: 784853

LIMS Run #: 131140 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	
Antimony	10/11/2016 04:46	13.3		9.1		32		P	*INVALID*
Beryllium	10/11/2016 04:46	.783		0.92		17		P	*INVALID*
Cadmium	10/11/2016 04:46	BDL	U	0.03	U	0		P	*INVALID*
Chromium	10/11/2016 04:46	370.		386.5		4		P	
Cobalt	10/11/2016 04:46	98.8		105		6		P	*INVALID*
Copper	10/11/2016 04:46	102.		104.5		2		P	*INVALID*
Lead	10/11/2016 04:46	293.		313		7		P	*INVALID*
Manganese	10/11/2016 04:46	6560.		7050		7		P	
Molybdenum	10/11/2016 04:46	9.90		13.7		38		P	*INVALID*
Nickel	10/11/2016 04:46	66.7		60.5		9		P	*INVALID*
Selenium	10/11/2016 04:46	33.7		26.7		21		P	*INVALID*
Silver	10/11/2016 04:46	BDL	U	4.56		0		P	*INVALID*
Strontium	10/11/2016 04:46	78.1		78		0		P	*INVALID*
Thallium	10/11/2016 04:46	8.86		13.95		57		P	*INVALID*
Tin	10/11/2016 04:46	33.8		25.3		25		P	*INVALID*
Vanadium	10/11/2016 04:46	638.		655		3		P	
Zinc	10/11/2016 04:46	441.		505		15		P	*INVALID*

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9

ICP SERIAL DILUTION

Sample Description

RFAAP-FGMR-SSI-001A

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Matrix: SOLID SDG No.: 122704

Concentration Units: ug/L

Sample No.: 790086 Parent Sample No.: 784496

LIMS Run #: 131318 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	
Antimony	10/14/2016 21:51	199.		301.5		52		P	*INVALID*
Beryllium	10/14/2016 21:51	17.1		25.2		47		P	*INVALID*
Cadmium	10/14/2016 21:51	BDL	U	0.03	U	0		P	*INVALID*
Chromium	10/14/2016 21:51	624.		925		48		P	*FAIL*
Cobalt	10/14/2016 21:51	139.		156.5		13		P	*INVALID*
Copper	10/14/2016 21:51	271.		176		35		P	*INVALID*
Lead	10/14/2016 21:51	17100.		18900		11		P	*FAIL*
Lithium	10/14/2016 21:51	177		343		94		P	*FAIL*
Manganese	10/14/2016 21:51	19800.		40300		104		P	*FAIL*
Molybdenum	10/14/2016 21:51	23.5		56		138		P	*INVALID*
Nickel	10/14/2016 21:51	301.		336.5		12		P	*FAIL*
Selenium	10/14/2016 21:51	26.8		243.5		809		P	*INVALID*
Silver	10/14/2016 21:51	BDL	U	0.085	U	0		P	*INVALID*
Strontium	10/14/2016 21:51	313.		680		117		P	*FAIL*
Thallium	10/14/2016 21:51	BDL	U	0.4	U	0		P	*INVALID*
Tin	10/14/2016 21:51	45.7		34.45		25		P	*INVALID*
Vanadium	10/14/2016 21:51	835.		1400		68		P	*FAIL*
Zinc	10/14/2016 21:51	889.		890		0		P	

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METHOD DETECTION LIMITS (ANNUALLY)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

SDG No.: 122704

Matrix: SOLID

Analyte	Wavelength (nm)	Background	CRDL (ug/L)	MDL (mg/k)	M
Mercury	253.7			0.0021	CV

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METHOD DETECTION LIMITS (ANNUALLY)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

ICP ID Number: TJA SDG No.: 122704

Matrix: SOLID

Analyte	Wavelength (nm)	Background	CRDL (ug/L)	MDL (mg/k)	M
Antimony	217.5			0.13	P
Beryllium	313.041			0.004	P
Cadmium	226.502			0.006	P
Chromium	267.716			0.023	P
Cobalt	228.616			0.04	P
Copper	324.753			0.07	P
Lead	220.35			0.04	P
Manganese	257.61			0.025	P
Nickel	231.604			0.021	P
Selenium	196.02			0.06	P
Silver	328.068			0.017	P
Thallium	190.864			0.08	P
Vanadium	292.402			0.012	P
Zinc	213.856			0.05	P
Lithium	670.7			0.06	P
Molybdenum	202.030			0.04	P
Strontium	407.77			0.013	P
Tin	189.9			0.09	P

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ICP INTERELEMENT CORRECTION FACTORS (ANNUAL)
ICP ID NUMBER: TA ICAP6000 / ICAP6500

Element, Wavelength and Order	Use?	# IECs	IEC	k1
Ag 328.068 {103}	☒	1	Fe	0.000006
Al 308.215 {109}	☒	None		
Al 309.271 {109}	☒	None		
Al 396.152 { 85}	☒	None		
Al 167.079 {502}	☒	1	Fe	0.000627
As 193.759 {474}	☒	3	Fe	-0.000324
			Mo	0.000000
			Co	0.000000
As 189.042 {479}	☒	1	Fe	0.000027
Ba 455.403 { 74}	☒	1	Fe	-0.000000
Ba 493.409 { 68}	☒	1	Fe	0.000106
Be 313.042 {108}	☒	1	Fe	0.000000
Be 234.861 {144}	☒	1	Fe	0.000101
Ca 315.887 {107}	☒	None		
Ca 317.933 {106}	☒	None		
Ca 393.366 { 86}	☒	None		
Ca 396.847 { 85}	☒	None		
Cd 226.502 {449}	☒	2	Fe	0.000381
			Ag	-0.049000
Cd 228.802 {447}	☒	1	Fe	0.000100
Co 228.616 {447}	☒	6	Ti	-0.002110
			Mo	-0.001300
			Cr	-0.000235
			Ba	0.000315
			Ni	0.000000
			Fe	0.000017
Co 238.892 {141}	☒	1	Fe	0.000242
Cr 267.716 {126}	☒	1	Fe	0.000010
Cr 283.563 {119}	☒	1	Fe	0.000949
Cu 224.700 {450}	☒	2	Fe	0.000062
			Ag	-0.050000
Cu 324.754 {104}	☒	1	Fe	0.000200
Cu 327.396 {103}	☒	1	Fe	-0.000016
Fe 234.349 {144}	☒	None		
Fe 239.562 {141}	☒	None		
Fe 259.940 {130}	☒	None		
Mg 202.582 {466}	☒	None		
Mg 279.079 {121}	☒	None		
Mg 280.270 {120}	☒	None		
Mn 257.610 {131}	☒	1	Al	-0.000055
Mn 259.373 {130}	☒	1	Mg	0.001246
Mo 203.844 {465}	☒	1	Fe	-0.000027
Mo 202.030 {467}	☒	1	Fe	-0.000020
Mo 204.598 {465}	☒	1	Fe	-0.000100

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ICP INTERELEMENT CORRECTION FACTORS (ANNUAL)

ICP ID NUMBER: TA ICAP6000 / ICAP6500

Element, Wavelength and Order	Use?	# IECs	IEC	k1
Ni 221.647 {452}	☒	1	Ca	0.000022
Ni 231.604 {445}	☒	4	Fe	0.000117
			Co	-0.050000
			Ag	-0.050000
			Mo	-0.000200
Pb 216.999 {455}	☒	2	Al	0.000478
			Na	0.000000
Pb 220.353 {153}	☒	1	Fe	0.000024
Pb 220.353 {453}	☒	9	Fe	0.000071
			Si	0.000940
			Tl	0.000640
			Cu	0.000370
			Ni	0.000109
			Al	0.000000
			Co	-0.000149
			Mn	0.000074
			Ti	0.000004
Sb 206.833 {463}	☒	1	Fe	0.000032
Sb 217.581 {455}	☒	1	Fe	-0.000048
Se 196.090 {172}	☒	1	Fe	-0.000205
Se 196.090 {472}	☒	1	Fe	0.000022
Se 206.279 {463}	☒	1	Fe	0.001119
Tl 276.787 {122}	☒	1	Mg	0.006492
Tl 190.856 {477}	☒	10	Ti	0.000050
			Al	-0.000002
			V	0.000586
			Mn	0.000398
			Mo	-0.000120
			Be	-0.000013
			Fe	-0.000033
			Sr	-0.000027
			Co	0.000016
			Cr	0.000251
V 290.882 {116}	☒	1	Fe	0.000170
V 292.402 {115}	☒	1	Fe	0.000041
Zn 206.200 {463}	☒	1	Fe	0.000173
Zn 213.856 {458}	☒	1	Fe	0.000380
Y 360.073 { 94}*	☒	None		
Na 330.298 {102}	☒	1	Fe	0.000991
Si 251.611 {134}	☒	1	Fe	-0.000042
Ti 334.941 {101}	☒	1	Fe	0.000050
Ti 337.280 {100}	☒	1	Fe	0.000006
Sr 407.771 { 83}	☒	1	Fe	0.000039
Sr 421.552 { 80}	☒	1	Fe	0.000039

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ICP INTERELEMENT CORRECTION FACTORS (ANNUAL)
ICP ID NUMBER: TA ICAP6000 / ICAP6500

Element, Wavelength and Order	Use?	# IECs	IEC	k1
Sn 189.989 {477}	☒	1	Fe	0.000011
Sn 283.999 {119}	☒	1	Fe	-0.003092
B 249.678 {135}	☒	1	Fe	-0.000918
B 249.773 {135}	☒	1	Fe	0.000199
Li 670.784 { 50}	☒	1	Fe	0.000029
K 766.490 { 44}	☒	1	Fe	0.006630

Element, Wavelength and Order	Use?	# IECs	IEC	k1
K 766.490 { 44}	☒	1	Fe	0.000178
Na 330.237 {102}	☒	1	Fe	-0.004289
Na 589.592 { 57}	☒	1	Fe	0.000173
Y 350.073 { 94}	☒	None		
Y 320.332 {105}*	☒	None		
Al 308.215 {109}	☒	1	Fe	0.000000
Al 396.152 { 85}	☒	None		
Mg 285.213 {118}	☒	None		
Ca 317.933 {106}	☒	None		
Fe 234.349 {144}	☒	None		

ICP LINEAR RANGES (QUARTERLY)

Lab Name: CT Laboratories Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

ICP ID Number: TA SDG No.: 122704

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

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PREPARATION LOG

Lab Name: CT Laboratories

Project: BERING SEA ENVIRONMENTAL-RADFORD AAP

Method: EPA 3050B

SDG No.: 122704

Preparation Batch #: 59424

Preparation Date/Time: 10/10/2016 / 06:00

Lab Sample #	QC Type	Sample Description	Matrix	**Weight (g for solid/soil) or Volume (mL for liquid/aqueous)**
784783	Normal Sample	RFAAP-FGMR-SSD-001	SOIL	2.03
784852	Normal Sample	RFAAP-FGMR-DUP1	SOIL	2.13
784853	Normal Sample	RFAAP-FGMR-SSD-002	SOIL	2.12
784854	Normal Sample	RFAAP-FGMR-SSD-003	SOIL	2.12
784855	Normal Sample	RFAAP-FGMR-SSD-004	SOIL	1.92
785240	Method Blank		SOLID	2.00
785241	Lab Control Spike		SOLID	2.00
785242	Lab Duplicate	RFAAP-FGMR-SSD-002	SOIL	1.98
785243	Matrix Spike	RFAAP-FGMR-SSD-002	SOIL	2.04
785244	Matrix Spike Duplicate	RFAAP-FGMR-SSD-002	SOIL	1.93

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PREPARATION LOG

Lab Name: CT Laboratories

Project: BERING SEA ENVIRONMENTAL-RADFORD AAP

Method: EPA 7471A

SDG No.: 122704

Preparation Batch #: 59473

Preparation Date/Time: 10/12/2016 / 10:00

Lab Sample #	QC Type	Sample Description	Matrix	**Weight (g for solid/soil) or Volume (mL for liquid/aqueous)**
784783	Normal Sample	RFAAP-FGMR-SSD-001	SOIL	0.57
784852	Normal Sample	RFAAP-FGMR-DUP1	SOIL	0.57
784853	Normal Sample	RFAAP-FGMR-SSD-002	SOIL	0.57
784854	Normal Sample	RFAAP-FGMR-SSD-003	SOIL	0.55
784855	Normal Sample	RFAAP-FGMR-SSD-004	SOIL	0.57
786369	Method Blank		SOLID	0.60
786370	Lab Control Spike		SOLID	0.60
786371	Lab Duplicate	RFAAP-FGMR-SSD-002	SOIL	0.55
786372	Matrix Spike	RFAAP-FGMR-SSD-002	SOIL	0.55
786373	Matrix Spike Duplicate	RFAAP-FGMR-SSD-002	SOIL	0.60

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PREPARATION LOG

Lab Name: CT Laboratories

Project: BERING SEA ENVIRONMENTAL-RADFORD AAP

Method: EPA 3050B

SDG No.: 122704

Preparation Batch #: 59503

Preparation Date/Time: 10/13/2016 / 10:00

Lab Sample #	QC Type	Sample Description	Matrix	**Weight (g for solid/soil) or Volume (mL for liquid/aqueous)**
784496	Normal Sample	RFAAP-FGMR-SSI-001A	SOIL	1.91
784515	Normal Sample	RFAAP-FGMR-SSI-001B	SOIL	1.96
784516	Normal Sample	RFAAP-FGMR-SSI-001C	SOIL	1.99
785308	Normal Sample	RFAAP-FGMR-SSI-002A	SOIL	1.97
785309	Normal Sample	RFAAP-FGMR-SSI-002B	SOIL	2.10
785310	Normal Sample	RFAAP-FGMR-SSI-002C	SOIL	2.06
787349	Method Blank		SOLID	2.00
787350	Lab Control Spike		SOLID	2.00
787351	Lab Duplicate	RFAAP-FGMR-SSI-001A	SOIL	1.93
787352	Matrix Spike	RFAAP-FGMR-SSI-001A	SOIL	1.98
787353	Matrix Spike Duplicate	RFAAP-FGMR-SSI-001A	SOIL	1.96

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PREPARATION LOG

Lab Name: CT Laboratories

Project: BERING SEA ENVIRONMENTAL-RADFORD AAP

Method: EPA 7471A

SDG No.: 122704

Preparation Batch #: 59544

Preparation Date/Time: 10/17/2016 / 10:00

Lab Sample #	QC Type	Sample Description	Matrix	**Weight (g for solid/soil) or Volume (mL for liquid/aqueous)**
784496	Normal Sample	RFAAP-FGMR-SSI-001A	SOIL	0.57
784515	Normal Sample	RFAAP-FGMR-SSI-001B	SOIL	0.58
784516	Normal Sample	RFAAP-FGMR-SSI-001C	SOIL	0.55
785308	Normal Sample	RFAAP-FGMR-SSI-002A	SOIL	0.56
785309	Normal Sample	RFAAP-FGMR-SSI-002B	SOIL	0.57
785310	Normal Sample	RFAAP-FGMR-SSI-002C	SOIL	0.57
788745	Method Blank		SOLID	0.60
788746	Lab Control Spike		SOLID	0.60
788747	Lab Duplicate	RFAAP-FGMR-SSI-001A	SOIL	0.57
788748	Matrix Spike	RFAAP-FGMR-SSI-001A	SOIL	0.58
788749	Matrix Spike Duplicate	RFAAP-FGMR-SSI-001A	SOIL	0.57

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ANALYSIS RUN LOG

Lab Name: CT Laboratories

Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Lab Code: CTL

SDG No.: 122704

Instrument ID Number: CETAC

Method Number: CV

Start & End Date: 10/14/2016 to 10/14/2016

Analytical Run #: 131258

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
788152	ICV	1.00	10/14 08:49																X													
788153	ICB	1.00	10/14 08:52																X													
788155	CCV	1.00	10/14 09:27																X													
788156	CCB	1.00	10/14 09:29																X													
786369	MBS	1.00	10/14 09:48																X													
784783	Initial	1.00	10/14 09:50																X													
788157	CCV	1.00	10/14 09:53																X													
788158	CCB	1.00	10/14 09:55																X													
784852	Initial	1.00	10/14 09:57																X													
784853	Initial	1.00	10/14 09:59																X													
786371	DUP	1.00	10/14 10:01																X													
786372	MSS	1.00	10/14 10:03																X													
786373	MSDS	1.00	10/14 10:06																X													
784854	Initial	1.00	10/14 10:08																X													
784855	Initial	1.00	10/14 10:10																X													
786370	LCSS	1.00	10/14 10:16																X													
788161	CCV	1.00	10/14 10:18																X													
788162	CCB	1.00	10/14 10:21																X													

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ANALYSIS RUN LOG

Lab Name: CT Laboratories
Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Lab Code: CTL
SDG No.: 122704

Instrument ID Number: CETAC
Method Number: CV

Start & End Date: 10/18/2016 to 10/18/2016
Analytical Run #: 131437

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
790261	ICV	1.00	10/18 08:13																X													
790262	ICB	1.00	10/18 08:15																X													
788745	MBS	1.00	10/18 08:21																X													
784496	Initial	1.00	10/18 08:24																X													
788747	DUP	1.00	10/18 08:26																X													
788748	MSS	1.00	10/18 08:28																X													
788749	MSDS	1.00	10/18 08:30																X													
784515	Initial	1.00	10/18 08:32																X													
784516	Initial	1.00	10/18 08:34																X													
785308	Initial	1.00	10/18 08:37																X													
790264	CCV	1.00	10/18 08:39																X													
790265	CCB	1.00	10/18 08:41																X													
785309	Initial	1.00	10/18 08:43																X													
785310	Initial	1.00	10/18 08:45																X													
790266	CCV	1.00	10/18 09:05																X													
790267	CCB	1.00	10/18 09:07																X													
790280	ICV	1.00	10/18 12:52																X													
790281	ICB	1.00	10/18 12:54																X													
788746	LCSS	1.00	10/18 12:56																X													
790282	CCV	1.00	10/18 12:58																X													
790283	CCB	1.00	10/18 13:01																X													

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ANALYSIS RUN LOG

Lab Name: CT Laboratories

Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Lab Code: CTL

SDG No.: 122704

Instrument ID Number: TJA

Method Number: P

Start & End Date: 10/10/2016 to 10/11/2016

Analytical Run #: 131140

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
787528	ICV	1.00	10/10 15:23		X			X		X		X	X	X		X		X		X		X		X		X		X	X	X		X	X
787529	ICVLL	1.00	10/10 15:30		X			X		X		X	X	X		X		X		X		X		X		X		X	X	X		X	X
787530	ICB	1.00	10/10 15:43		X			X		X		X	X	X		X		X		X		X		X		X		X	X	X		X	X
787531	ICSA	1.00	10/10 15:57	X	X			X		X	X	X	X	X	X	X	X	X		X		X		X		X		X	X	X		X	X
787532	ICSAB	1.00	10/10 16:03	X	X			X		X	X	X	X	X	X	X	X	X		X		X		X		X		X	X	X		X	X
787533	ICVLL	1.00	10/10 16:10																							X							
787534	CCV1	1.00	10/11 03:27		X			X		X		X	X	X		X		X		X		X		X		X		X	X	X		X	X
787535	CCV2	1.00	10/11 03:33		X			X		X		X	X	X		X		X		X		X		X		X		X	X	X		X	X
787536	CCB	1.00	10/11 03:39		X			X		X		X	X	X		X		X		X		X		X		X		X	X	X		X	X
785241	LCSS	1.00	10/11 04:13		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
785240	MBS	1.00	10/11 04:19		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
784783	Initial	1.00	10/11 04:26		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
784852	Initial	1.00	10/11 04:32		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
784853	Initial	1.00	10/11 04:39		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
787537	L	5	10/11 04:46		X			X		X		X	X	X		X		X		X		X		X		X		X	X	X		X	X
787538	CCV1	1.00	10/11 04:53		X			X		X		X	X	X		X		X		X		X		X		X		X	X	X		X	X
787539	CCV2	1.00	10/11 04:58		X			X		X		X	X	X		X		X		X		X		X		X		X	X	X		X	X
787540	CCB	1.00	10/11 05:05		X			X		X		X	X	X		X		X		X		X		X		X		X	X	X		X	X
785242	DUP	1.00	10/11 05:12		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
785243	MSS	1.00	10/11 05:19		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
785244	MSDS	1.00	10/11 05:25		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
787541	PDSS	1.00	10/11 05:32		X			X		X		X	X	X		X		X		X		X		X		X		X	X	X		X	X
784854	Initial	1.00	10/11 05:38		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
784855	Initial	1.00	10/11 05:45		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
787542	CCV1	1.00	10/11 06:18		X			X		X		X	X	X		X		X		X		X		X		X		X	X	X		X	X
787543	CCV2	1.00	10/11 06:24		X			X		X		X	X	X		X		X		X		X		X		X		X	X	X		X	X
787544	CCB	1.00	10/11 06:30		X			X		X		X	X	X		X		X		X		X		X		X		X	X	X		X	X

CT LABORATORIES
delivering more than data from your environmental analyses

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ANALYSIS RUN LOG

Lab Name: CT Laboratories

Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Lab Code: CTL

SDG No.: 122704

Instrument ID Number: TJA

Method Number: P

Start & End Date: 10/10/2016 to 10/11/2016

Analytical Run #: 131140

CT LABORATORIES
delivering more than data from your environmental analyses

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ANALYSIS RUN LOG

Lab Name: CT Laboratories

Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Lab Code: CTL

SDG No.: 122704

Instrument ID Number: TJA

Method Number: P

Start & End Date: 10/14/2016 to 10/18/2016

Analytical Run #: 131318

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
790077	ICV	1.00	10/14 09:55		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
790078	ICVLL	1.00	10/14 10:02		X			X		X		X	X	X		X		X		X	X	X		X				X	X	X		X	X
790079	ICB	1.00	10/14 10:15		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
790080	ICSA	1.00	10/14 10:29	X	X			X		X	X	X	X	X	X	X	X	X		X	X	X		X		X		X	X	X		X	X
790081	ICSAB	1.00	10/14 10:37	X	X			X		X	X	X	X	X	X	X	X	X		X	X	X		X		X		X	X	X		X	X
790082	ICVLL	1.00	10/14 10:46																							X							
790083	CCV1	1.00	10/14 20:57		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
790084	CCV2	1.00	10/14 21:04		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
790085	CCB	1.00	10/14 21:10		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
787350	LCSS	1.00	10/14 21:31		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
787349	MBS	1.00	10/14 21:37		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
784496	Initial	1.00	10/14 21:44		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
790086	L	5	10/14 21:51		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
787351	DUP	1.00	10/14 21:58		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
787352	MSS	1.00	10/14 22:05		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
787353	MSDS	1.00	10/14 22:12		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
790087	PDSS	1.00	10/14 22:19		X			X		X		X	X	X		X		X				X		X		X			X			X	X
790088	CCV1	1.00	10/14 22:27		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
790089	CCV2	1.00	10/14 22:33		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
790090	CCB	1.00	10/14 22:39		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
784515	Initial	1.00	10/14 22:46		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
784516	Initial	1.00	10/14 22:54		X			X		X		X	X	X				X		X	X	X		X		X		X	X	X		X	X
785308	Initial	1.00	10/14 23:01		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
785309	Initial	1.00	10/14 23:08		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
785310	Initial	1.00	10/14 23:15		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
790091	CCV1	1.00	10/14 23:58		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
790092	CCV2	1.00	10/15 00:04		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
790093	CCB	1.00	10/15 00:11		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X

CT LABORATORIES
delivering more than data from your environmental analyses

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ANALYSIS RUN LOG

Lab Name: CT Laboratories | Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP

Lab Code: CTL | SDG No.: 122704

Instrument ID Number: TJA | Method Number: P

Start & End Date: 10/14/2016 to 10/18/2016 | Analytical Run #: 131318

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
791709	ICV	1.00	10/18 09:16		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
791710	ICVLL	1.00	10/18 09:23		X			X		X		X	X	X		X		X		X	X	X		X				X	X	X		X	X
791711	ICB	1.00	10/18 09:37		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
791712	ICSA	1.00	10/18 09:51	X	X			X		X	X	X	X	X	X	X	X	X		X	X	X		X		X		X	X	X		X	X
791713	ICSAB	1.00	10/18 09:59	X	X			X		X	X	X	X	X	X	X	X	X		X	X	X		X		X		X	X	X		X	X
791714	ICVLL	1.00	10/18 10:07																							X							
791715	CCV1	1.00	10/18 17:15		X			X		X		X	X	X		X		X		X	X	X				X		X	X	X		X	X
791716	CCV2	1.00	10/18 17:21		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
791717	CCB	1.00	10/18 17:28		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
790087	PDSS	1.00	10/18 17:55																		X							X		X			
790087	PDSS	1.00	10/18 17:55																	X													
784516	Re-Analysis	10.00	10/18 18:02													X																	
791718	CCV1	1.00	10/18 18:44		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
791719	CCV2	1.00	10/18 18:51		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X
791720	CCB	1.00	10/18 18:57		X			X		X		X	X	X		X		X		X	X	X		X		X		X	X	X		X	X

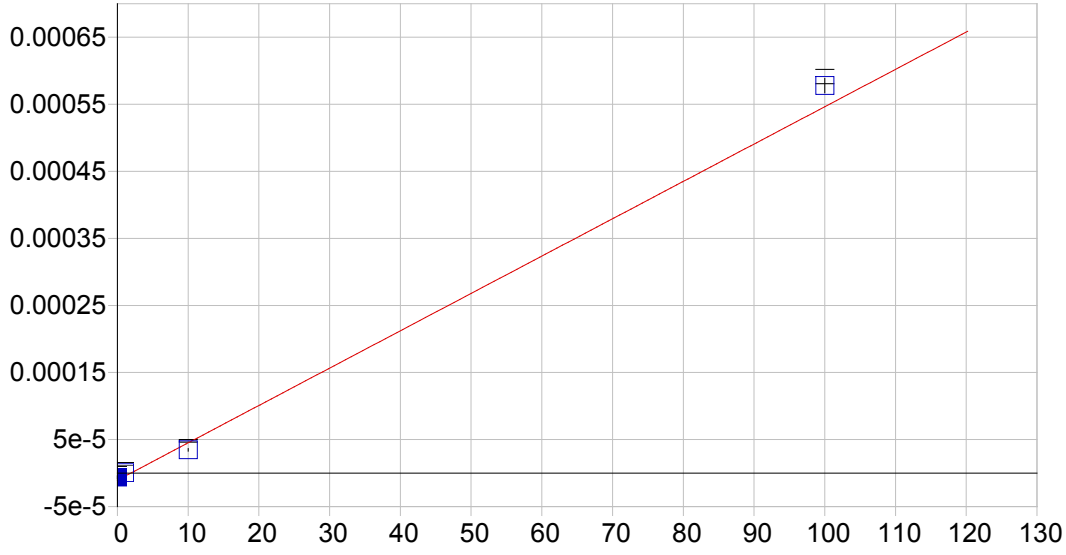
METALS
RAW DATA
DOCUMENTS

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	Status	Resl Slope
Ag 328.068 {103}	10/13/2016 11:55:53	10/10/2016 14:37:36	Linear	1/Var	-0.000011	0.000006	0.000000	1.000000	0.991329	0.000011	0.673899	2.246329	OK.	1.000000
Al 309.271 {109}	10/13/2016 11:55:53	10/10/2016 15:03:01	Curvilin	None	0.000129	0.000000	0.000000	1.000000	1.000000	0.000016	37.864925	126.216416	OK.	1.000000
Al 396.152 { 85}	10/13/2016 11:55:53	10/10/2016 15:17:03	Full Fit	1/Conc	-0.000016	0.000001	0.000000	1.020000	0.999994	0.000012	20.627339	68.757796	OK.	1.000000
Al 167.079 {502}	10/13/2016 11:55:53	10/10/2016 14:43:31	Linear	1/Var	0.000030	0.000006	0.000000	1.000000	0.997392	0.000012	3.100564	10.335215	OK.	1.000000
As 193.759 {474}	10/13/2016 11:55:53	10/10/2016 14:49:24	Linear	1/Var	-0.000069	0.000008	0.000000	1.000000	0.999911	0.000052	5.051716	16.839053	OK.	1.000000
As 189.042 {479}	10/13/2016 11:55:53	10/10/2016 14:49:24	Linear	1/Conc	0.000022	0.000003	0.000000	1.000000	0.999975	0.000000	9.132367	30.441225	OK.	1.000000
Ba 233.527 {445}	10/13/2016 11:55:53	10/10/2016 14:43:32	Linear	1/Conc	0.000064	0.000120	0.000000	1.000000	0.999694	0.000004	0.249653	0.832176	OK.	1.000000
Ba 455.403 { 74}	10/13/2016 11:55:53	10/10/2016 14:49:24	Linear	None	0.000017	0.000004	0.000000	1.000000	0.999998	0.000024	0.458803	1.529344	OK.	1.000000
Ba 493.409 { 68}	10/13/2016 11:55:53	10/10/2016 14:49:24	Linear	None	0.005556	0.000056	0.000000	1.000000	1.000000	0.000213	1.022634	3.408781	OK.	1.000000
Be 313.042 {108}	10/13/2016 11:55:53	10/10/2016 14:43:32	Linear	1/Conc	-0.000065	0.000106	0.000000	1.000000	0.999944	0.000001	0.028837	0.096123	OK.	1.000000
Be 234.861 {144}	10/13/2016 11:55:53	10/10/2016 14:43:32	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000	0.999998	0.000000	1.437763	4.792542	OK.	1.000000
Ca 315.887 {107}	10/13/2016 11:55:53	10/10/2016 15:17:03	Linear	None	0.001456	0.000000	0.000000	1.000000	0.999790	0.002971	23.566804	78.556012	OK.	1.000000
Ca 317.933 {106}	10/13/2016 11:55:53	10/10/2016 15:17:03	Curvilin	1/Conc	0.002816	0.000001	0.000000	1.000000	0.999991	0.000009	7.007265	23.357550	OK.	1.000000
Ca 393.366 { 86}	10/13/2016 11:55:53	10/10/2016 14:43:32	Linear	1/Conc	0.000038	0.000013	0.000000	1.000000	0.997072	0.000018	0.096592	0.321973	OK.	1.000000
Ca 396.847 { 85}	10/13/2016 11:55:53	10/10/2016 14:49:24	Linear	1/Conc	0.000279	0.000091	0.000000	1.000000	0.999575	0.000124	0.194149	0.647164	OK.	1.000000
Cd 226.502 {449}	10/13/2016 11:55:53	10/10/2016 14:43:32	Linear	1/Conc	0.000047	0.000478	0.000000	1.000000	0.999844	0.000007	0.137671	0.458902	OK.	1.000000
Cd 228.802 {447}	10/13/2016 11:55:53	10/10/2016 14:43:32	Linear	1/Conc	0.000035	0.000514	0.000000	1.000000	0.999834	0.000009	0.133174	0.443915	OK.	1.000000
Co 228.616 {447}	10/13/2016 11:55:53	10/10/2016 14:49:24	Linear	1/Conc	-0.000085	0.000208	0.000000	1.000000	0.999966	0.000007	0.268248	0.894162	OK.	1.000000
Co 238.892 {141}	10/13/2016 11:55:53	10/10/2016 14:49:24	Linear	None	0.000011	0.000003	0.000000	1.000000	1.000000	0.000013	0.777604	2.592013	OK.	1.000000
Cr 205.560 {464}	10/13/2016 11:55:53	10/10/2016 14:56:09	Linear	1/Var	0.000117	0.000191	0.000000	1.000000	0.999969	0.000819	0.194833	0.649442	OK.	1.000000
Cr 267.716 {126}	10/13/2016 11:55:53	10/10/2016 14:49:24	Linear	1/Var	-0.000003	0.000006	0.000000	1.000000	0.999993	0.000004	0.507215	1.690715	OK.	1.000000
Cu 224.700 {450}	10/13/2016 11:55:53	10/10/2016 14:49:24	Curvilin	1/Conc	-0.000141	0.000106	-0.000000	1.000000	0.999940	0.000005	0.518556	1.728520	OK.	1.000000
Cu 324.754 {104}	10/13/2016 11:55:53	10/10/2016 14:56:09	Linear	None	0.000077	0.000002	0.000000	1.000000	0.999994	0.000393	5.352749	17.842498	OK.	1.000000
Cu 327.396 {103}	10/13/2016 11:55:53	10/10/2016 14:56:09	Curvilin	1/Conc	-0.000045	0.000002	0.000000	1.000000	0.999990	0.000001	9.091140	30.303799	OK.	1.000000
Fe 234.349 {144}	10/13/2016 11:55:53	10/10/2016 15:17:03	Curvilin	None	0.000333	0.000001	0.000000	1.000000	0.999998	0.000482	1.878906	6.263019	OK.	1.000000
Fe 239.562 {140}	10/13/2016 11:55:53	10/10/2016 15:17:03	Curvilin	1/Conc	0.000001	0.000000	0.000000	1.000000	0.999947	0.000001	13.810217	46.034055	OK.	1.000000
Fe 259.940 {129}	10/13/2016 11:55:53	10/10/2016 15:17:04	Linear	1/Conc	0.000014	0.000001	0.000000	1.000000	0.998536	0.000049	13.829363	46.097875	OK.	1.000000
Mg 202.582 {466}	10/13/2016 11:55:53	10/10/2016 15:17:04	Curvilin	1/Conc	-0.000106	0.000015	-0.000000	1.000000	0.999878	0.000375	2.726264	9.087546	OK.	1.000000
Mg 279.079 {121}	10/13/2016 11:55:53	10/10/2016 15:17:04	Full Fit	1/Conc	-0.000002	0.000000	0.000000	1.040000	0.999982	0.000001	130.644377	435.481256	OK.	1.000000
Mg 280.270 {120}	10/13/2016 11:55:53	10/10/2016 14:49:24	Linear	1/Conc	0.000240	0.000065	0.000000	1.000000	0.999606	0.000086	0.033650	0.112166	OK.	1.000000
Mn 257.610 {131}	10/13/2016 11:55:53	10/10/2016 14:49:24	Linear	1/Conc	-0.000002	0.000012	0.000000	1.000000	0.999836	0.000002	0.138395	0.461318	OK.	1.000000
Mn 259.373 {130}	10/13/2016 11:55:53	10/10/2016 14:56:09	Linear	1/Var	0.603403	0.455644	0.000000	1.000000	0.999966	2.246055	1.297588	4.325294	OK.	1.000000
Mo 202.030 {466}	10/13/2016 11:55:53	10/10/2016 14:43:33	Linear	None	0.000114	0.000093	0.000000	1.000000	0.999993	0.000135	0.427994	1.426647	OK.	1.000000
Mo 204.598 {464}	10/13/2016 11:55:53	10/10/2016 14:49:24	Curvilin	1/Conc	0.000001	0.000001	0.000000	1.000000	0.999974	0.000000	0.637157	2.123857	OK.	1.000000
Mo 204.598 {465}	10/13/2016 11:55:53	10/10/2016 14:49:24	Linear	1/Conc	-0.000000	0.000001	0.000000	1.000000	0.999993	0.000000	0.802362	2.674540	OK.	1.000000
Ni 221.647 {452}	10/13/2016 11:55:53	10/10/2016 14:49:24	Linear	None	0.000028	0.000003	0.000000	1.000000	0.999996	0.000046	0.390563	1.301878	OK.	1.000000
Ni 231.604 {445}	10/13/2016 11:55:53	10/10/2016 14:49:25	Linear	None	0.000007	0.000003	0.000000	1.000000	0.999998	0.000023	0.400521	1.335071	OK.	1.000000
Pb 216.999 {455}	10/13/2016 11:55:53	10/10/2016 14:56:09	Linear	1/Var	-0.000017	0.000014	0.000000	1.000000	0.999840	0.000000	3.961213	13.204043	OK.	1.000000
Pb 220.353 {453}	10/13/2016 11:55:53	10/10/2016 14:49:25	Linear	1/Var	0.000105	0.000037	0.000000	1.000000	0.999986	0.000049	1.962660	6.542199	OK.	1.000000
Pb 220.353 {153}	10/13/2016 11:55:53	10/10/2016 14:56:09	Linear	1/Conc	0.000212	0.000014	0.000000	1.000000	0.999997	0.000005	6.647042	22.156807	OK.	1.000000
Sb 206.833 {463}	10/13/2016 11:55:53	10/10/2016 14:49:25	Linear	1/Conc	-0.000109	0.000023	0.000000	1.000000	0.999975	0.000002	1.929313	6.431044	OK.	1.000000
Sb 217.581 {455}	10/13/2016 11:55:53	10/10/2016 14:49:25	Linear	1/Conc	0.000007	0.000025	0.000000	1.000000	0.999951	0.000002	2.025804	6.752680	OK.	1.000000
Se 196.090 {472}	10/13/2016 11:55:53	10/10/2016 14:49:25	Linear	1/Conc	0.000025	0.000007	0.000000	1.000000	0.999976	0.000001	4.408248	14.694160	OK.	1.000000
Se 206.279 {463}	10/13/2016 11:55:53	10/10/2016 14:49:25	Curvilin	1/Conc	-0.000007	0.000003	-0.000000	1.000000	0.999909	0.000002	18.448295	61.494315	OK.	1.000000
Se 196.090 {471}	10/13/2016 11:55:53	10/10/2016 14:49:25	Linear	1/Conc	0.000012	0.000007	0.000000	1.000000	0.999928	0.000001	4.684708	15.615694	OK.	1.000000
Tl 190.856 {476}	10/13/2016 11:55:53	10/10/2016 14:49:25	Curvilin	1/Conc	0.000079	0.000016	-0.000000	1.000000	0.999995	0.000001	2.580553	8.601844	OK.	1.000000

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	Status	Resl Slope
Tl 190.856 {477}	10/13/2016 11:55:53	10/10/2016 14:49:25	Curvilin	1/Var	-0.000041	0.000011	-0.000000	1.000000	0.999972	0.000040	2.962882	9.876273	OK.	1.000000
V 290.882 {116}	10/13/2016 11:55:53	10/10/2016 14:49:25	Curvilin	1/Conc	0.000001	0.000000	0.000000	1.000000	0.999995	0.000000	7.021363	23.404542	OK.	1.000000
V 292.402 {115}	10/13/2016 11:55:53	10/10/2016 14:49:25	Linear	1/Conc	0.000005	0.000008	0.000000	1.000000	0.999723	0.000001	0.516113	1.720378	OK.	1.000000
Zn 206.200 {463}	10/13/2016 11:55:53	10/10/2016 14:56:09	Linear	1/Var	0.000373	0.000145	0.000000	1.000000	0.999004	0.004495	0.299193	0.997310	OK.	1.000000
Zn 213.856 {458}	10/13/2016 11:55:53	10/10/2016 14:49:25	Linear	1/Var	0.000004	0.000003	0.000000	1.000000	0.999440	0.000007	0.180359	0.601198	OK.	1.000000
Y 324.228 {104}*	10/13/2016 11:55:53	10/10/2016 13:43:54	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000
Y 371.030 { 91}*	10/13/2016 11:55:53	10/10/2016 13:43:54	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000
Y 224.306 {451}*	10/13/2016 11:55:53	10/10/2016 13:43:54	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000
Na 588.995 { 57}	10/13/2016 11:55:53	10/10/2016 15:03:01	Linear	1/Conc	0.000283	0.000001	0.000000	1.000000	1.000000	0.000000	9.125876	30.419588	OK.	1.000000
Si 251.611 {134}	10/13/2016 11:55:53	10/10/2016 15:03:01	Linear	1/Conc	0.000007	0.000000	0.000000	1.000000	1.000000	0.000000	18.341776	61.139254	OK.	1.000000
Ti 334.941 {101}	10/13/2016 11:55:53	10/10/2016 14:49:25	Linear	1/Conc	0.000004	0.000005	0.000000	1.000000	0.999964	0.000000	2.321143	7.737144	OK.	1.000000
Sr 407.771 { 83}	10/13/2016 11:55:53	10/10/2016 14:49:25	Linear	1/Conc	-0.000033	0.000102	0.000000	1.000000	0.999985	0.000002	0.173615	0.578718	OK.	1.000000
Sn 189.989 {478}	10/13/2016 11:55:53	10/10/2016 14:49:25	Linear	1/Var	0.000019	0.000009	0.000000	1.000000	0.999991	0.000022	2.664043	8.880145	OK.	1.000000
B 249.678 {135}	10/13/2016 11:55:53	10/10/2016 14:49:25	Linear	1/Conc	0.000006	0.000002	0.000000	1.000000	0.999822	0.000001	1.324317	4.414389	OK.	1.000000
B 249.773 {135}	10/13/2016 11:55:53	10/10/2016 14:49:25	Linear	1/Conc	0.000022	0.000007	0.000000	1.000000	0.999948	0.000001	0.543142	1.810474	OK.	1.000000
Li 670.784 { 50}	10/13/2016 11:55:53	10/10/2016 14:49:25	Linear	1/Var	0.000048	0.000020	0.000000	1.000000	0.999999	0.000048	2.744917	9.149723	OK.	1.000000
K 766.490 { 44}	10/13/2016 11:55:53	10/10/2016 15:03:01	Linear	1/Conc	0.000287	0.000001	0.000000	1.000000	1.000000	0.000000	59.178569	197.261896	OK.	1.000000
P 213.618 {457}	10/13/2016 11:55:53	10/10/2016 15:03:01	Linear	1/Conc	-0.000001	0.000000	0.000000	1.000000	0.999995	0.000000	56.470362	188.234539	OK.	1.000000
S 182.034 {485}	10/13/2016 11:55:53	10/10/2016 15:03:01	Linear	1/Var	-0.000038	0.000007	0.000000	1.000000	0.999945	0.000623	4.643831	15.479436	OK.	1.000000
W 239.709 {140}	10/13/2016 11:55:53	10/10/2016 15:03:01	Linear	1/Conc	0.000001	0.000000	0.000000	1.000000	1.000000	0.000000	110.415863	368.052876	OK.	1.000000
Hg 184.950 {482}	10/13/2016 11:55:53	10/10/2016 14:43:34	Linear	1/Conc	0.000134	0.000039	0.000000	1.000000	0.999911	0.000010	0.885080	2.950265	OK.	1.000000
Hg 194.227 {473}	10/13/2016 11:55:53	10/10/2016 14:43:34	Linear	1/Conc	-0.000000	0.000036	0.000000	1.000000	0.999948	0.000007	0.914171	3.047236	OK.	1.000000

Element, Wavelength and Order	ope	QC Norm	
	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.000000	1	0
Al 309.271 {109}	0.000000	1	0
Al 396.152 { 85}	0.000000	1	0
Al 167.079 {502}	0.000000	1	0
As 193.759 {474}	0.000000	1	0
As 189.042 {479}	0.000000	1	0
Ba 233.527 {445}	0.000000	1	0
Ba 455.403 { 74}	0.000000	1	0
Ba 493.409 { 68}	0.000000	1	0
Be 313.042 {108}	0.000000	1	0
Be 234.861 {144}	0.000000	1	0
Ca 315.887 {107}	0.000000	1	0
Ca 317.933 {106}	0.000000	1	0
Ca 393.366 { 86}	0.000000	1	0
Ca 396.847 { 85}	0.000000	1	0
Cd 226.502 {449}	0.000000	1	0
Cd 228.802 {447}	0.000000	1	0
Co 228.616 {447}	0.000000	1	0
Co 238.892 {141}	0.000000	1	0
Cr 205.560 {464}	0.000000	1	0
Cr 267.716 {126}	0.000000	1	0
Cu 224.700 {450}	0.000000	1	0
Cu 324.754 {104}	0.000000	1	0
Cu 327.396 {103}	0.000000	1	0
Fe 234.349 {144}	0.000000	1	0
Fe 239.562 {140}	0.000000	1	0
Fe 259.940 {129}	0.000000	1	0
Mg 202.582 {466}	0.000000	1	0
Mg 279.079 {121}	0.000000	1	0
Mg 280.270 {120}	0.000000	1	0
Mn 257.610 {131}	0.000000	1	0
Mn 259.373 {130}	0.000000	1	0
Mo 202.030 {466}	0.000000	1	0
Mo 204.598 {464}	0.000000	1	0
Mo 204.598 {465}	0.000000	1	0
Ni 221.647 {452}	0.000000	1	0
Ni 231.604 {445}	0.000000	1	0
Pb 216.999 {455}	0.000000	1	0
Pb 220.353 {453}	0.000000	1	0
Pb 220.353 {153}	0.000000	1	0
Sb 206.833 {463}	0.000000	1	0
Sb 217.581 {455}	0.000000	1	0
Se 196.090 {472}	0.000000	1	0
Se 206.279 {463}	0.000000	1	0
Se 196.090 {471}	0.000000	1	0
Tl 190.856 {476}	0.000000	1	0

Element, Wavelength and Order	ope	QC Norm	
	Y-int	Slope factor	Offset
Tl 190.856 {477}	0.000000	1	0
V 290.882 {116}	0.000000	1	0
V 292.402 {115}	0.000000	1	0
Zn 206.200 {463}	0.000000	1	0
Zn 213.856 {458}	0.000000	1	0
Y 324.228 {104}*	0.000000	1	0
Y 371.030 { 91}*	0.000000	1	0
Y 224.306 {451}*	0.000000	1	0
Na 588.995 { 57}	0.000000	1	0
Si 251.611 {134}	0.000000	1	0
Ti 334.941 {101}	0.000000	1	0
Sr 407.771 { 83}	0.000000	1	0
Sn 189.989 {478}	0.000000	1	0
B 249.678 {135}	0.000000	1	0
B 249.773 {135}	0.000000	1	0
Li 670.784 { 50}	0.000000	1	0
K 766.490 { 44}	0.000000	1	0
P 213.618 {457}	0.000000	1	0
S 182.034 {485}	0.000000	1	0
W 239.709 {140}	0.000000	1	0
Hg 184.950 {482}	0.000000	1	0
Hg 194.227 {473}	0.000000	1	0

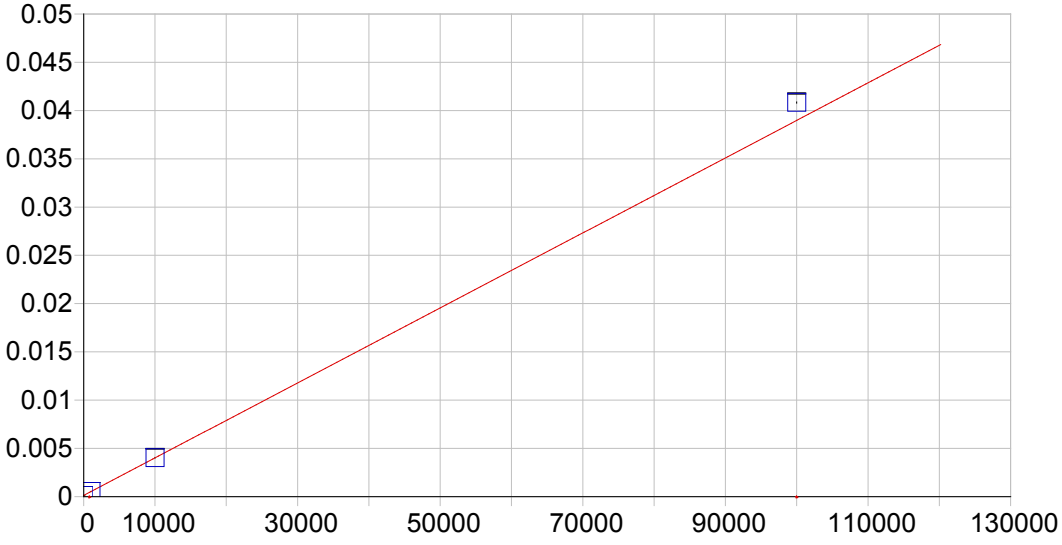


Ag 328.068 {103}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	-0.000011	Re-Slope:	1.000000
A1 (Gain):	0.000006	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.991329	Status:	OK.
Std Error of Est:	0.000011		
Predicted MDL:	0.673899		
Predicted MQL:	2.246329		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.80713	.807	.000	-.00001	.000	1
CalStd5=10	10.000	8.1059	-1.89	-18.9	.00003	.000	1
CalStd8=100	100.00	105.66	5.66	5.66	.00058	.000	1
CalStd3=1	1.0000	1.9781	.978	97.8	.00000	.000	1

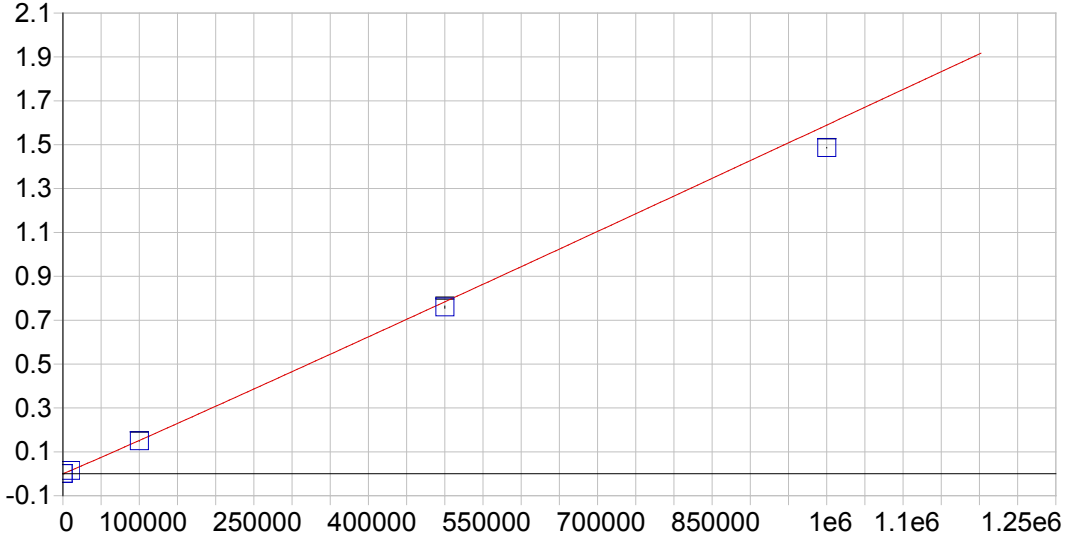


Al 309.271 {109}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Curvilinear	Weighting:	None

A0 (Offset):	0.000129	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000016		
Predicted MDL:	37.864925		
Predicted MQL:	126.216416		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-27.715	-27.7	.000	.00012	.000	1
CalStd10=10	10000.	10044.	44.2	.442	.00403	.000	1
CalStd9=100	1000.0	1031.6	31.6	3.16	.00053	.000	1
CalStd12-100	100000.	104770.	4770.	4.77	.04083	.000	1

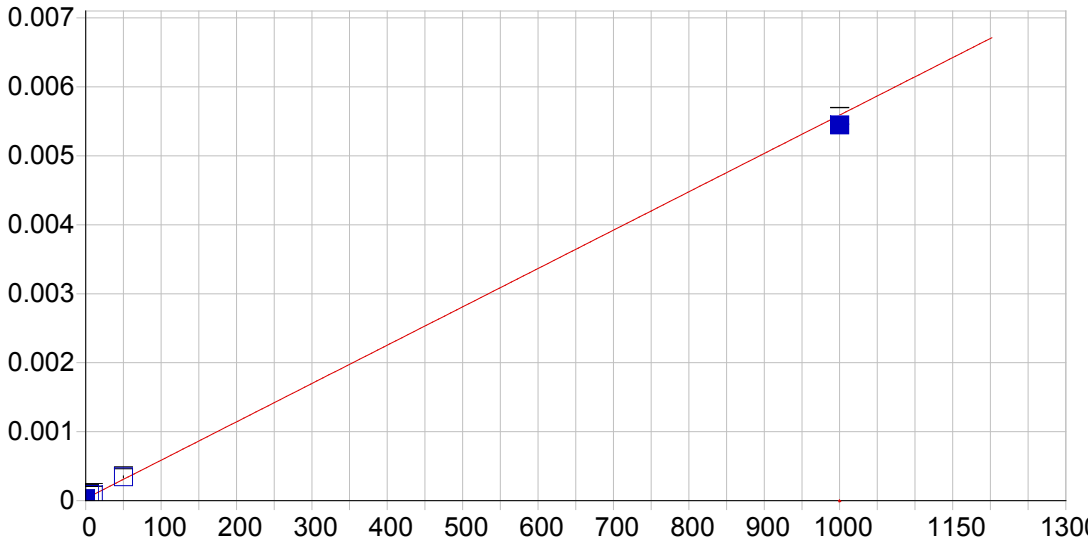


Al 396.152 { 85}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Full Fit	Weighting:	1/Conc

A0 (Offset):	-0.000016	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.020000		
Correlation:	0.999994	Status:	OK.
Std Error of Est:	0.000012		
Predicted MDL:	20.627339		
Predicted MQL:	68.757796		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	-.00002	.000	1
CalStd14-100	1000000.	936470.	-63500.	-6.35	1.4864	.001	1
CalStd13=50	500000.	484980.	-15000.	-3.00	.75971	.005	1
CalStd10=10	10000.	10294.	294.	2.94	.01491	.000	1
CalStd12-100	100000.	98676.	-1320.	-1.32	.14972	.000	1
CalStd9=100	1000.0	1076.4	76.4	7.64	.00148	.000	1

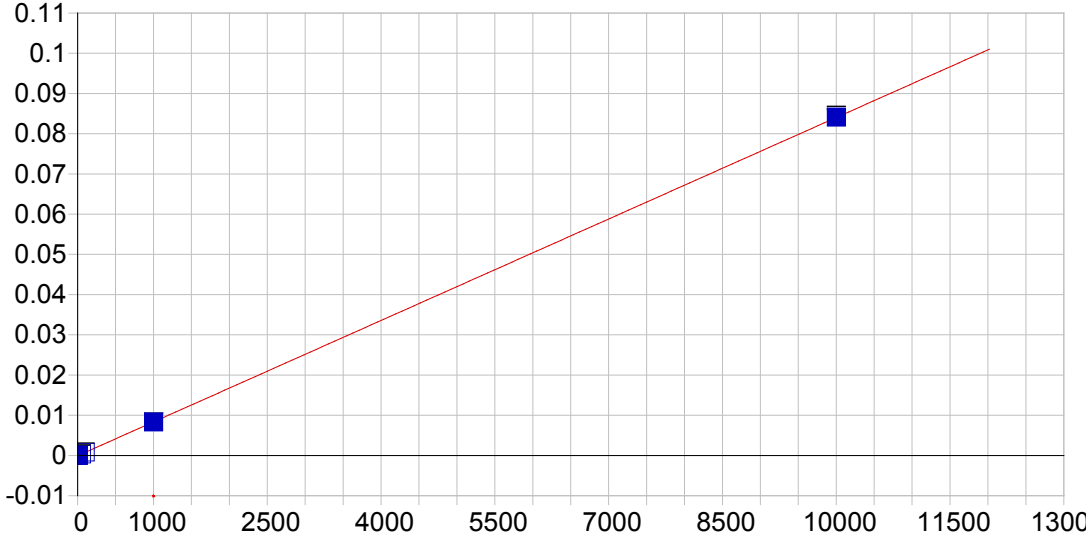


Al 167.079 {502}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000030	Re-Slope:	1.000000
A1 (Gain):	0.000006	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.997392	Status:	OK.
Std Error of Est:	0.000012		
Predicted MDL:	3.100564		
Predicted MQL:	10.335215		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.40406	-.404	.000	.00003	.000	1
CalStd9=100	1000.0	974.07	-25.9	-2.59	.00545	.000	1
CalStd5=10	10.000	11.801	1.80	18.0	.00010	.000	1
CalStd4=5	5.0000	10.476	5.48	110.	.00009	.000	1
CalStd7=50	50.000	56.392	6.39	12.8	.00034	.000	1

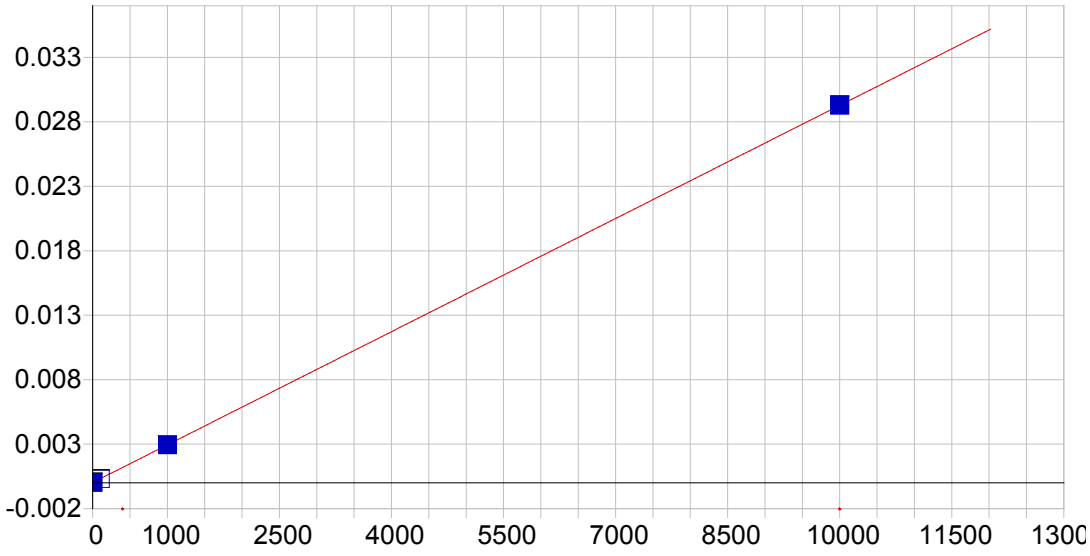


As 193.759 {474}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	-0.000069	Re-Slope:	1.000000
A1 (Gain):	0.000008	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999911	Status:	OK.
Std Error of Est:	0.000052		
Predicted MDL:	5.051716		
Predicted MQL:	16.839053		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-4.9867	-4.99	.000	-.00011	.000	1
CalStd9=100	1000.0	996.22	-3.78	-.378	.00832	.000	1
CalStd7=50	50.000	49.160	-.840	-1.68	.00034	.000	1
CalStd5=10	10.000	6.4866	-3.51	-35.1	-.00001	.000	1
CalStd8=100	100.00	106.25	6.25	6.25	.00082	.000	1
CalStd10=10	10000.	10009.	8.83	.088	.08419	.000	1

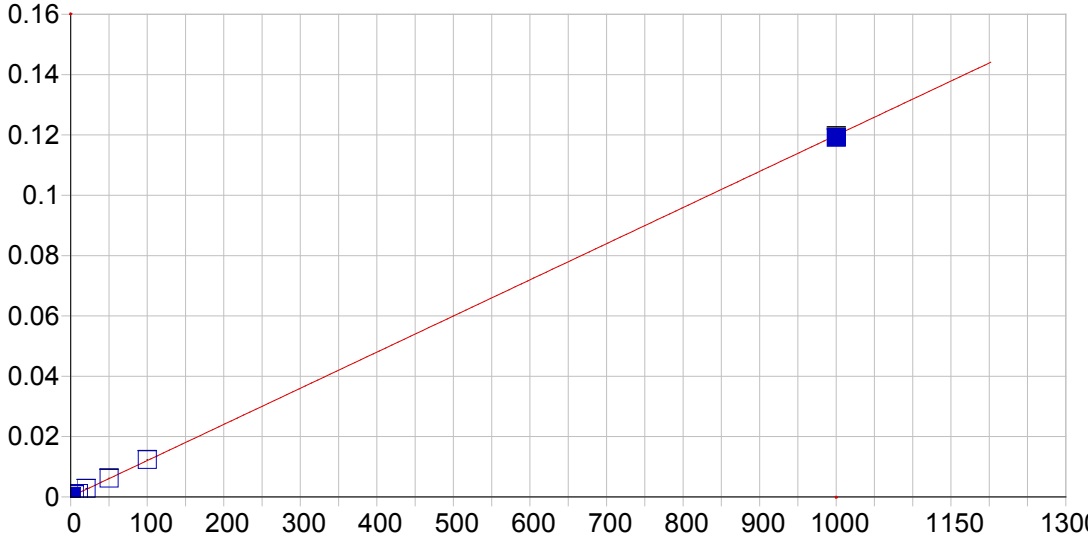


As 189.042 {479}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000022	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999975	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	9.132367		
Predicted MQL:	30.441225		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00167	-.002	.000	.00002	.000	1
CalStd9=100	1000.0	996.97	-3.03	-.303	.00294	.000	1
CalStd10=10	10000.	10001.	.924	.009	.02928	.000	1
CalStd8=100	100.00	100.44	.439	.439	.00032	.000	1
CalStd4=5	5.0000	6.6629	1.66	33.3	.00004	.000	1

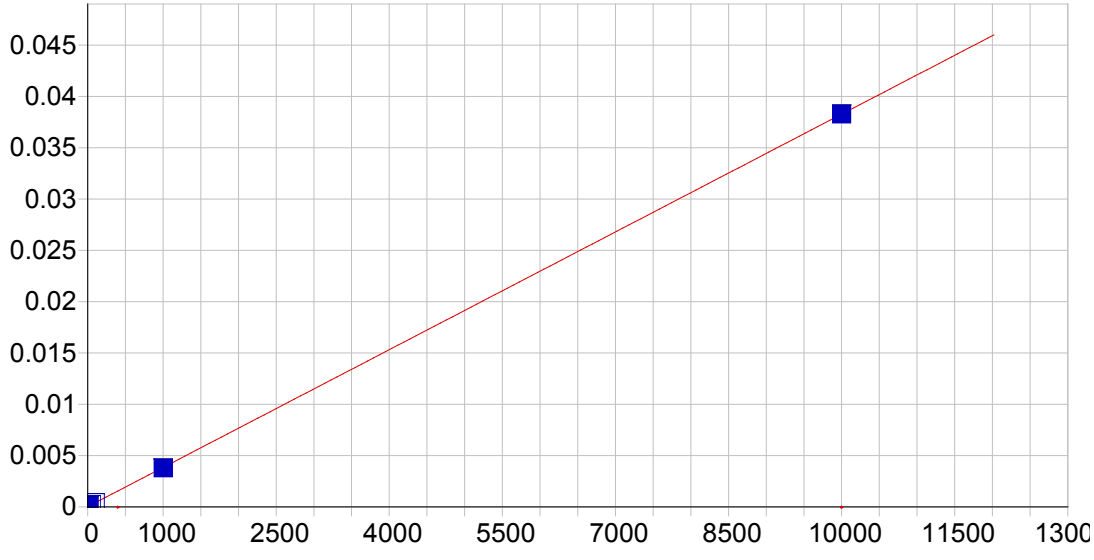


Ba 233.527 {445}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000064	Re-Slope:	1.000000
A1 (Gain):	0.000120	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999694	Status:	OK.
Std Error of Est:	0.000004		
Predicted MDL:	0.249653		
Predicted MQL:	0.832176		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00036	.000	.000	.00006	.000	1
CalStd7=50	50.000	51.114	1.11	2.23	.00619	.000	1
CalStd5=10	10.000	8.8932	-1.11	-11.1	.00113	.000	1
CalStd6=20	20.000	22.815	2.81	14.1	.00280	.000	1
CalStd8=100	100.00	102.66	2.66	2.66	.01237	.000	1
CalStd4=5	5.0000	5.0720	.072	1.44	.00067	.000	1
CalStd9=100	1000.0	994.17	-5.83	-.583	.11919	.000	1
CalStd3=1	1.0000	1.2753	.275	27.5	.00022	.000	1

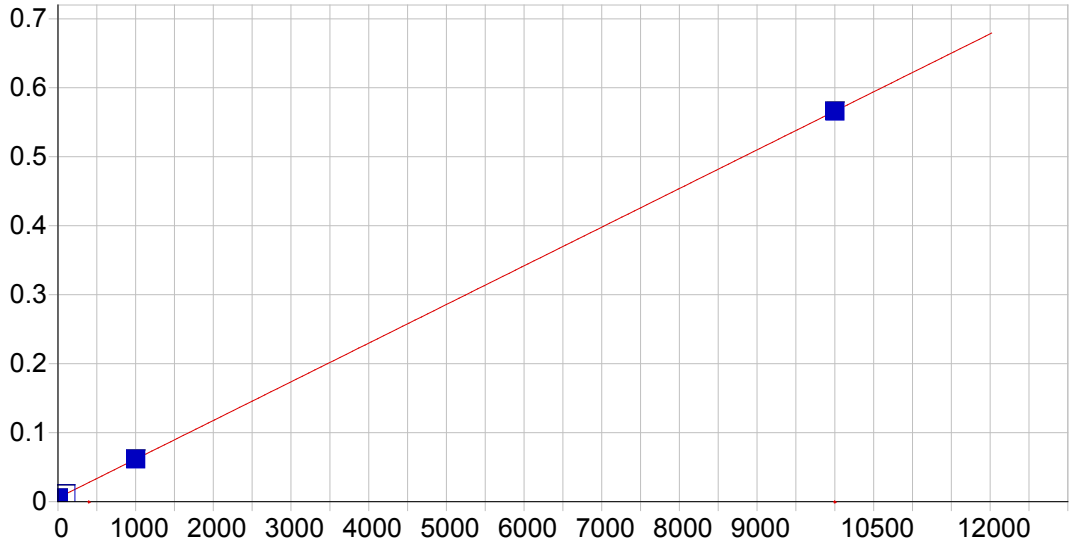


Ba 455.403 { 74}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	None

A0 (Offset):	0.000017	Re-Slope:	1.000000
A1 (Gain):	0.000004	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999998	Status:	OK.
Std Error of Est:	0.000024		
Predicted MDL:	0.458803		
Predicted MQL:	1.529344		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	1.8719	1.87	.000	.00002	.000	1
CalStd7=50	50.000	51.895	1.89	3.79	.00022	.000	1
CalStd5=10	10.000	10.367	.367	3.67	.00006	.000	1
CalStd6=20	20.000	24.483	4.48	22.4	.00011	.000	1
CalStd8=100	100.00	101.31	1.31	1.31	.00040	.000	1
CalStd4=5	5.0000	6.8079	1.81	36.2	.00004	.000	1
CalStd9=100	1000.0	984.35	-15.7	-1.57	.00378	.000	1
CalStd3=1	1.0000	3.3886	2.39	239.	.00003	.000	1
CalStd10=10	10000.	10002.	1.53	.015	.03827	.000	1

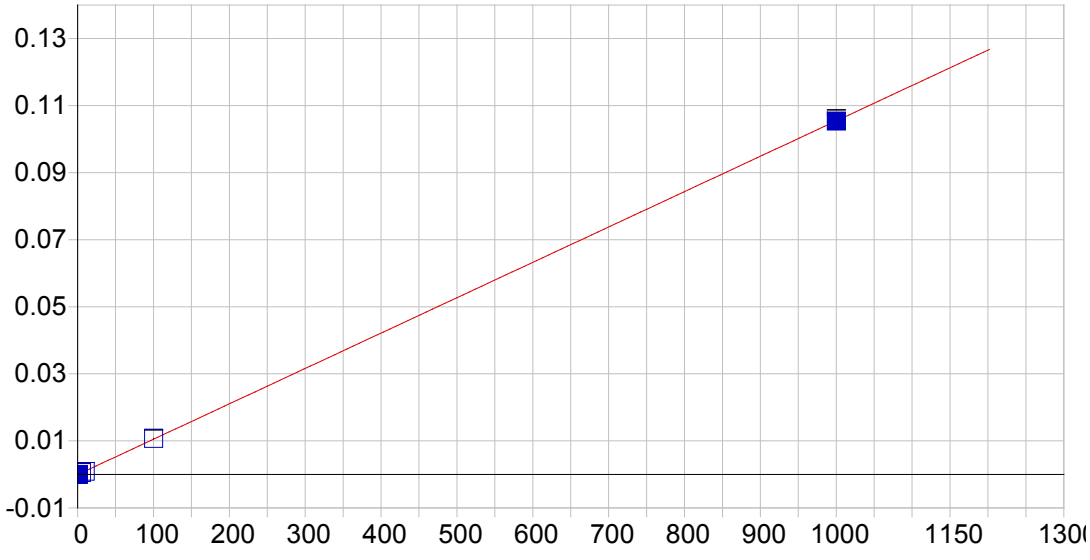


Ba 493.409 { 68}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	None

A0 (Offset):	0.005556	Re-Slope:	1.000000
A1 (Gain):	0.000056	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000213		
Predicted MDL:	1.022634		
Predicted MQL:	3.408781		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-4.1977	-4.20	.000	.00532	.000	1
CalStd9=100	1000.0	1003.0	2.97	.297	.06178	.001	1
CalStd8=100	100.00	101.54	1.54	1.54	.01125	.000	1
CalStd10=10	10000.	9999.7	-.312	-.003	.56614	.000	1

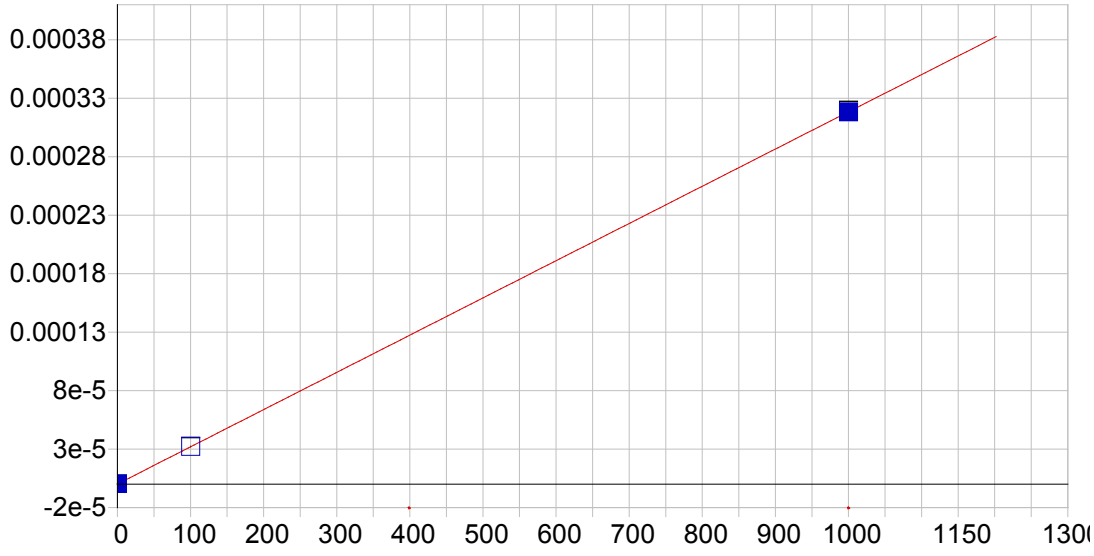


Be 313.042 {108}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000065	Re-Slope:	1.000000
A1 (Gain):	0.000106	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999944	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	0.028837		
Predicted MQL:	0.096123		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00005	.000	.000	-.00007	.000	1
CalStd5=10	10.000	9.0974	-.903	-9.03	.00089	.000	1
CalStd8=100	100.00	101.63	1.63	1.63	.01066	.000	1
CalStd2=0.5	.50000	.51847	.018	3.69	-.00001	.000	1
CalStd4=5	5.0000	5.1842	.184	3.68	.00048	.000	1
CalStd1=0.25	.25000	.28602	.036	14.4	-.00004	.000	1
CalStd9=100	1000.0	998.97	-1.03	-.103	.10534	.001	1
CalStd3=1	1.0000	1.0637	.064	6.37	.00005	.000	1

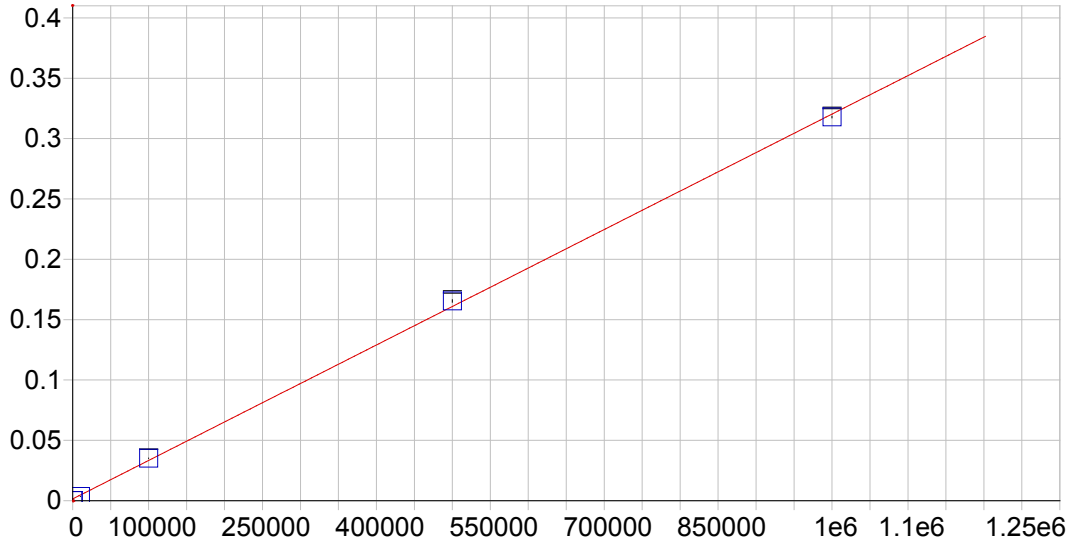


Be 234.861 {144}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999998	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	1.437763		
Predicted MQL:	4.792542		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00052	-.001	.000	.00000	.000	1
CalStd9=100	1000.0	999.42	-.576	-.058	.00032	.000	1
CalStd8=100	100.00	100.58	.576	.576	.00003	.000	1

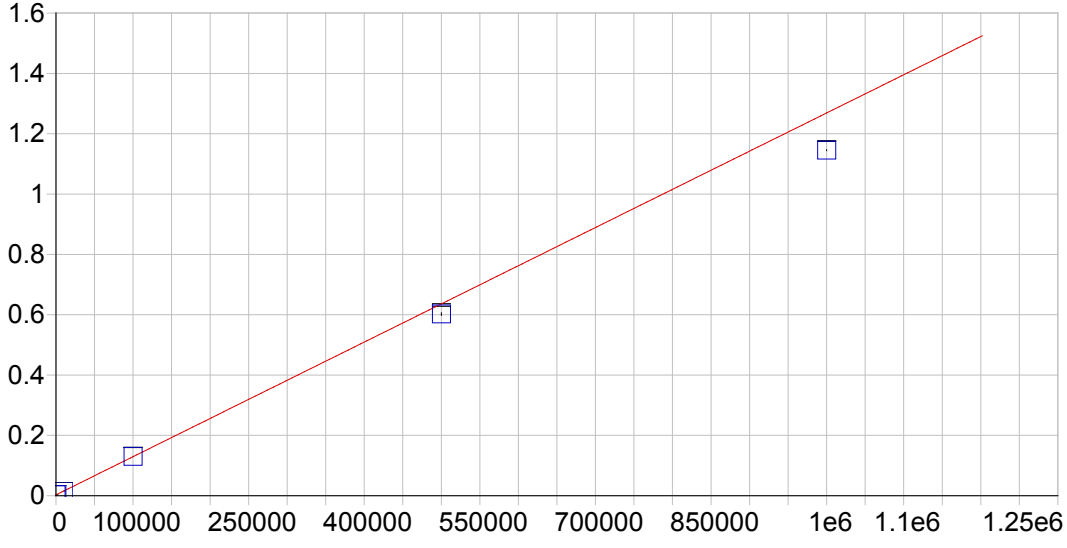


Ca 315.887 {107}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	None

A0 (Offset):	0.001456	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999790	Status:	OK.
Std Error of Est:	0.002971		
Predicted MDL:	23.566804		
Predicted MQL:	78.556012		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-4410.9	-4410.	.000	.00005	.000	1
CalStd10=10	10000.	6380.3	-3620.	-36.2	.00349	.000	1
CalStd13=50	500000.	514310.	14300.	2.86	.16544	.001	1
CalStd14-100	1000000.	992320.	-7680.	-.768	.31785	.001	1
CalStd9=100	1000.0	-3286.7	-4290.	-429.	.00041	.000	1
CalStd12-100	100000.	105690.	5690.	5.69	.03515	.000	1

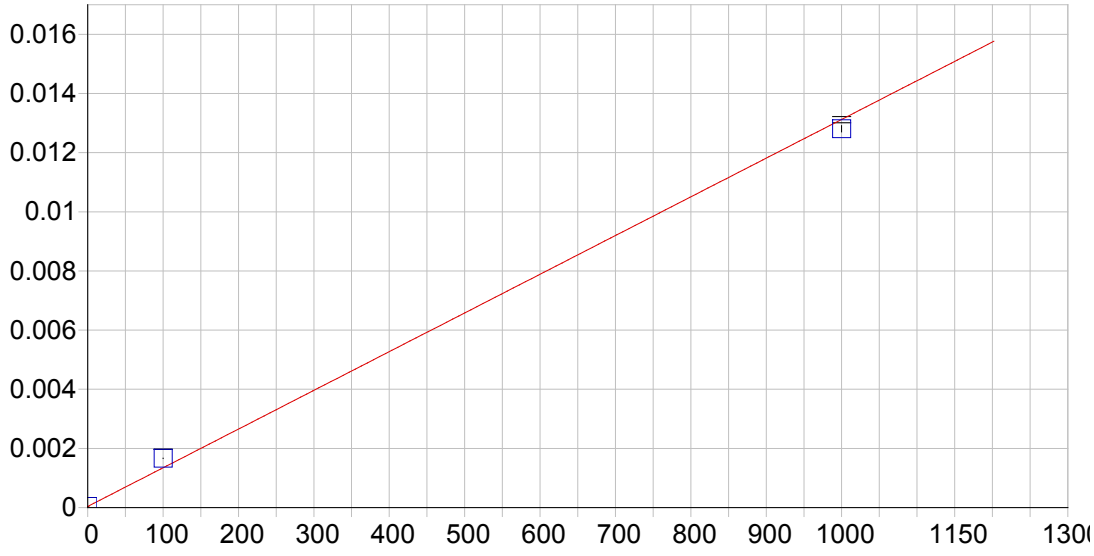


Ca 317.933 {106}

Date of Fit: 10/13/2016 11:55:53 Type of Fit: Curvilinear Weighting: 1/Conc

A0 (Offset):	0.002816	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999991	Status:	OK.
Std Error of Est:	0.000009		
Predicted MDL:	7.007265		
Predicted MQL:	23.357550		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.03540	.035	.000	.00282	.000	1
CalStd10=10	10000.	9917.6	-82.4	-.824	.01537	.000	1
CalStd13=50	500000.	473430.	-26600.	-5.31	.60221	.004	1
CalStd14-100	1000000.	902530.	-97500.	-9.75	1.1455	.001	1
CalStd9=100	1000.0	962.62	-37.4	-3.74	.00403	.000	1
CalStd12-100	100000.	100240.	241.	.241	.12973	.000	1

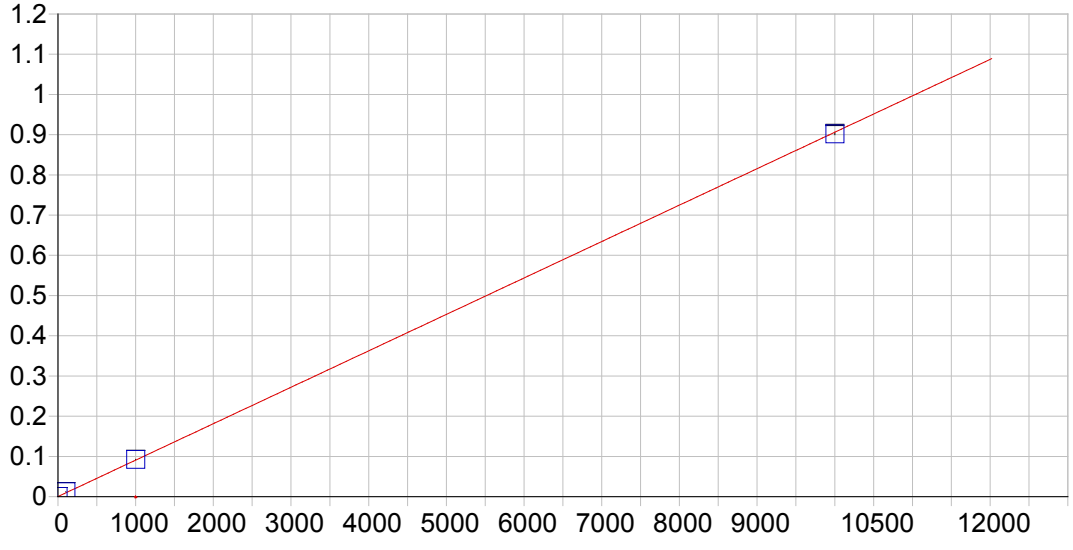


Ca 393.366 { 86}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000038	Re-Slope:	1.000000
A1 (Gain):	0.000013	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.997072	Status:	OK.
Std Error of Est:	0.000018		
Predicted MDL:	0.096592		
Predicted MQL:	0.321973		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.02181	-.022	.000	.00004	.000	1
CalStd9=100	1000.0	975.76	-24.2	-2.42	.01281	.000	1
CalStd8=100	100.00	124.24	24.2	24.2	.00166	.000	1

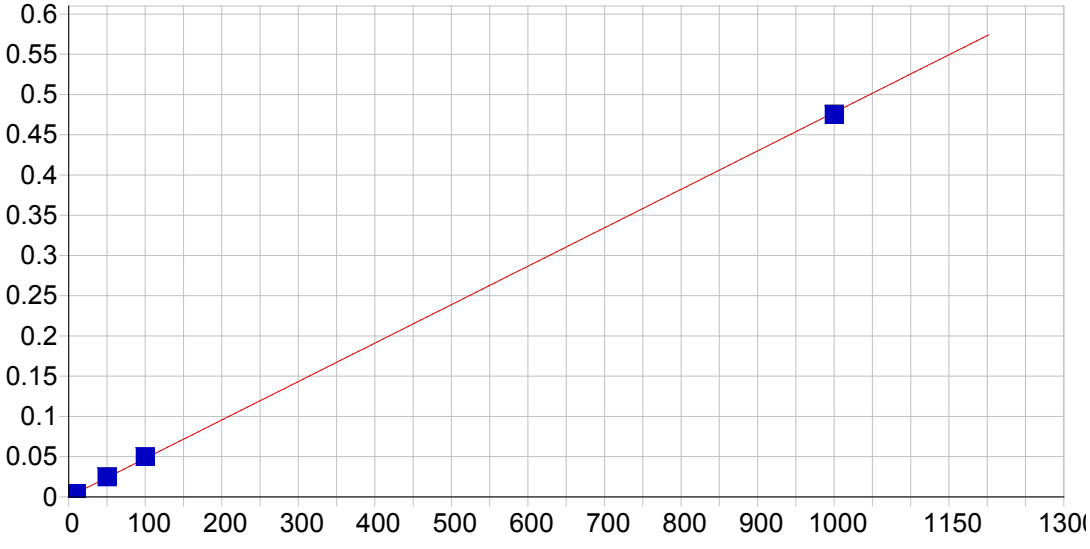


Ca 396.847 { 85}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000279	Re-Slope:	1.000000
A1 (Gain):	0.000091	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999575	Status:	OK.
Std Error of Est:	0.000124		
Predicted MDL:	0.194149		
Predicted MQL:	0.647164		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.03111	-.031	.000	.00028	.000	1
CalStd10=10	10000.	9952.2	-47.8	-.478	.90172	.002	1
CalStd8=100	100.00	129.80	29.8	29.8	.01204	.000	1
CalStd9=100	1000.0	1018.0	18.0	1.80	.09248	.000	1

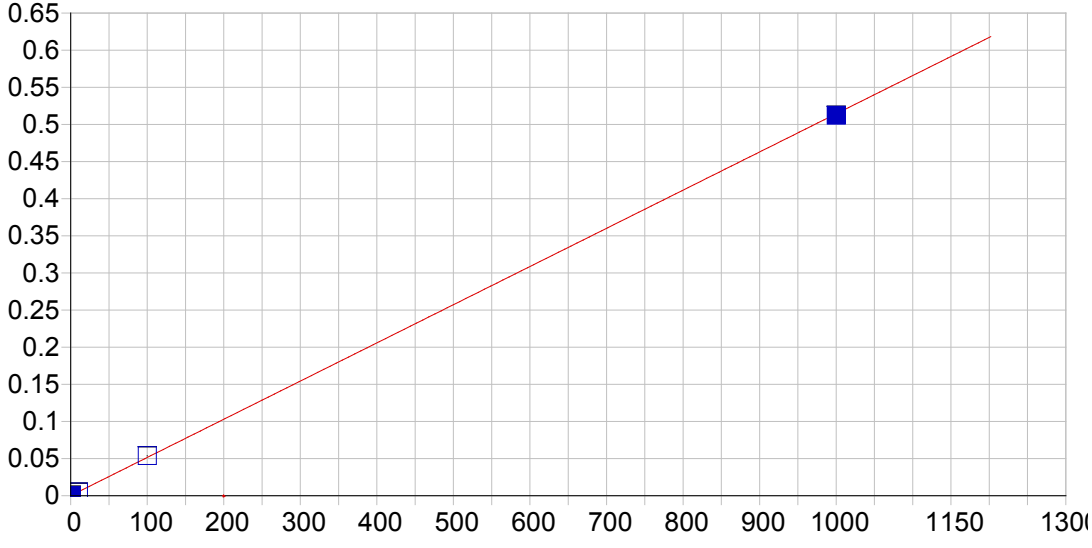


Cd 226.502 {449}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000047	Re-Slope:	1.000000
A1 (Gain):	0.000478	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999844	Status:	OK.
Std Error of Est:	0.000007		
Predicted MDL:	0.137671		
Predicted MQL:	0.458902		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00003	.000	.000	.00005	.000	1
CalStd7=50	50.000	51.805	1.80	3.61	.02479	.000	1
CalStd3=1	1.0000	1.0711	.071	7.11	.00056	.000	1
CalStd2=0.5	.50000	.47778	-.022	-4.44	.00028	.000	1
CalStd4=5	5.0000	5.1595	.159	3.19	.00251	.000	1
CalStd8=100	100.00	104.42	4.42	4.42	.04993	.000	1
CalStd5=10	10.000	9.2255	-.775	-7.75	.00445	.000	1
CalStd9=100	1000.0	994.34	-5.66	-.566	.47509	.000	1

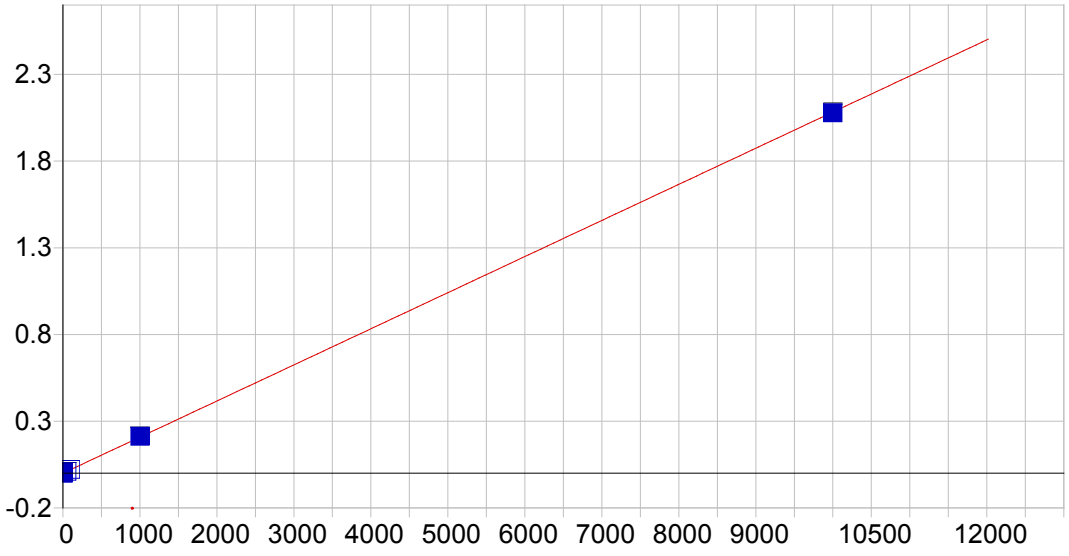


Cd 228.802 {447}

Date of Fit: 10/13/2016 11:55:53 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset):	0.000035	Re-Slope:	1.000000
A1 (Gain):	0.000514	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999834	Status:	OK.
Std Error of Est:	0.000009		
Predicted MDL:	0.133174		
Predicted MQL:	0.443915		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00028	.000	.000	.00004	.000	1
CalStd9=100	1000.0	995.71	-4.29	-.429	.51214	.000	1
CalStd8=100	100.00	104.47	4.47	4.47	.05377	.000	1
CalStd2=0.5	.50000	.65797	.158	31.6	.00037	.000	1
CalStd3=1	1.0000	1.2551	.255	25.5	.00068	.000	1
CalStd5=10	10.000	9.4058	-.594	-5.94	.00487	.000	1

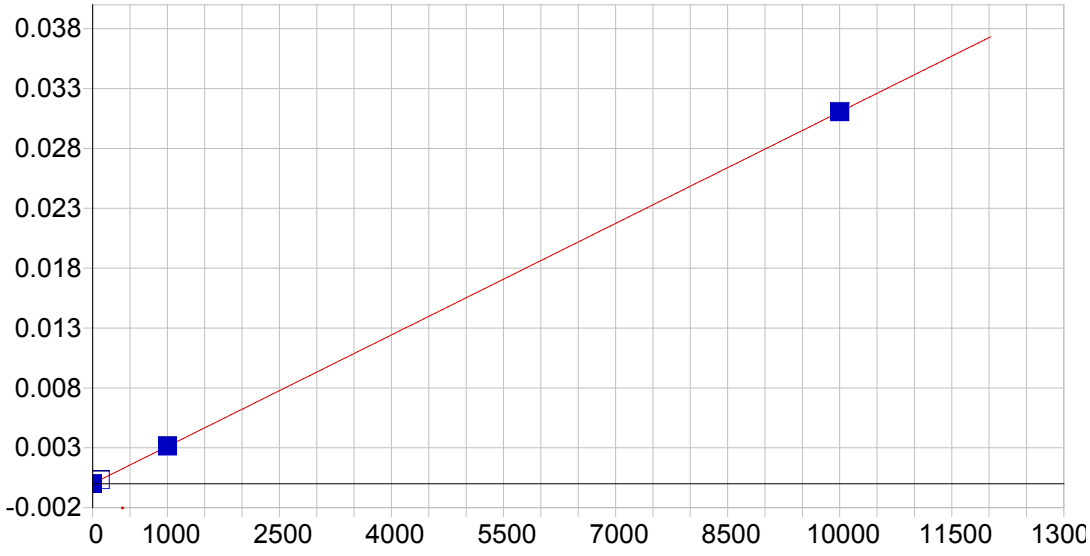


Co 228.616 {447}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000085	Re-Slope:	1.000000
A1 (Gain):	0.000208	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999966	Status:	OK.
Std Error of Est:	0.000007		
Predicted MDL:	0.268248		
Predicted MQL:	0.894162		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00033	.000	.000	-.00008	.000	1
CalStd7=50	50.000	51.885	1.88	3.77	.01072	.000	1
CalStd5=10	10.000	9.2913	-.709	-7.09	.00185	.000	1
CalStd4=5	5.0000	5.4324	.432	8.65	.00105	.000	1
CalStd8=100	100.00	103.52	3.52	3.52	.02147	.000	1
CalStd9=100	1000.0	1019.0	19.0	1.90	.21215	.000	1
CalStd3=1	1.0000	1.2248	.225	22.5	.00017	.000	1
CalStd10=10	10000.	9975.6	-24.4	-.244	2.0775	.004	1

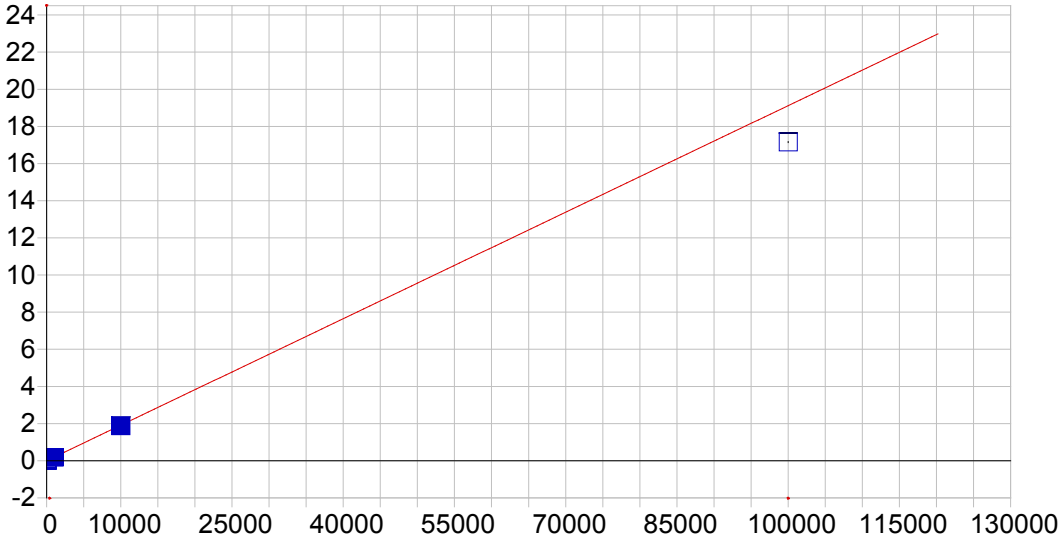


Co 238.892 {141}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	None

A0 (Offset):	0.000011	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000013		
Predicted MDL:	0.777604		
Predicted MQL:	2.592013		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-3.0999	-3.10	.000	.00000	.000	1
CalStd9=100	1000.0	1005.0	5.04	.504	.00313	.000	1
CalStd10=10	10000.	9999.5	-.489	-.005	.03106	.000	1
CalStd8=100	100.00	98.551	-1.45	-1.45	.00032	.000	1

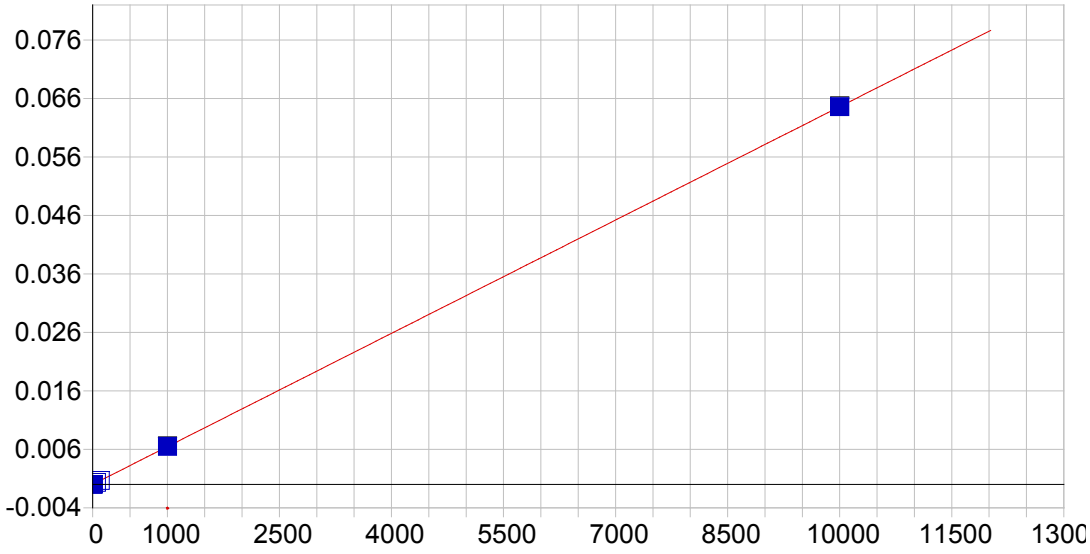


Cr 205.560 {464}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000117	Re-Slope:	1.000000
A1 (Gain):	0.000191	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999969	Status:	OK.
Std Error of Est:	0.000819		
Predicted MDL:	0.194833		
Predicted MQL:	0.649442		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-1.0115	-1.01	.000	-.00008	.000	1
CalStd5=10	10.000	8.5651	-1.43	-14.3	.00175	.000	1
CalStd7=50	50.000	50.503	.503	1.01	.00977	.000	1
CalStd9=100	1000.0	1000.2	.225	.023	.19135	.000	1
CalStd8=100	100.00	101.44	1.44	1.44	.01951	.000	1
CalStd4=5	5.0000	4.6130	-.387	-7.74	.00100	.000	1
CalStd3=1	1.0000	1.1431	.143	14.3	.00034	.000	1
CalStd11-100	100000.	89735.	-10300.	-10.3	17.157	.026	1
CalStd10=10	10000.	9807.9	-192.	-1.92	1.8753	.004	1

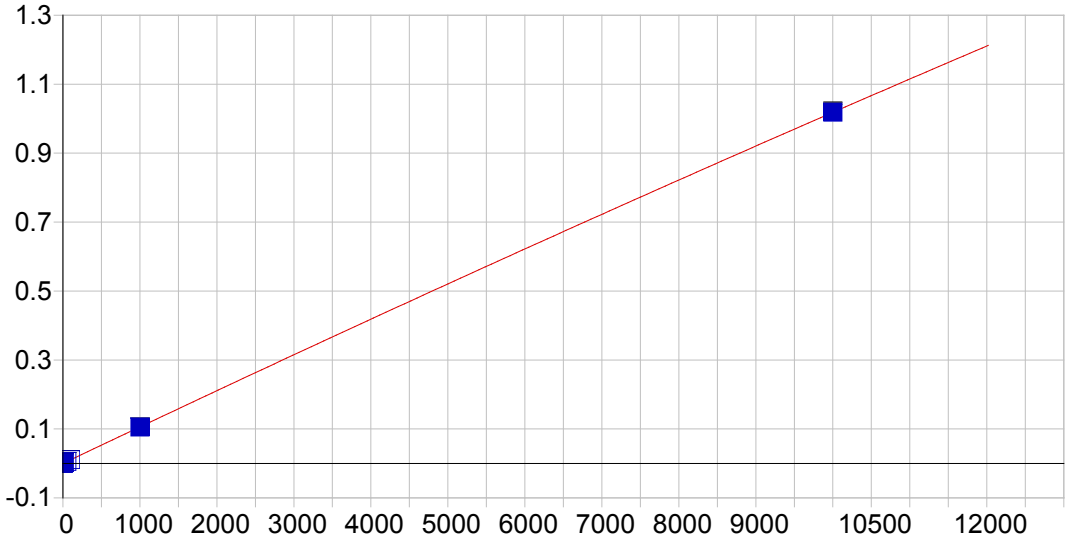


Cr 267.716 {126}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	-0.000003	Re-Slope:	1.000000
A1 (Gain):	0.000006	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999993	Status:	OK.
Std Error of Est:	0.000004		
Predicted MDL:	0.507215		
Predicted MQL:	1.690715		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.55980	.560	.000	.00000	.000	1
CalStd5=10	10.000	9.4379	-.562	-5.62	.00006	.000	1
CalStd7=50	50.000	50.874	.874	1.75	.00033	.000	1
CalStd9=100	1000.0	1004.9	4.93	.493	.00649	.000	1
CalStd8=100	100.00	101.48	1.48	1.48	.00065	.000	1
CalStd4=5	5.0000	5.1722	.172	3.44	.00003	.000	1
CalStd10=10	10000.	9998.1	-1.89	-.019	.06459	.000	1

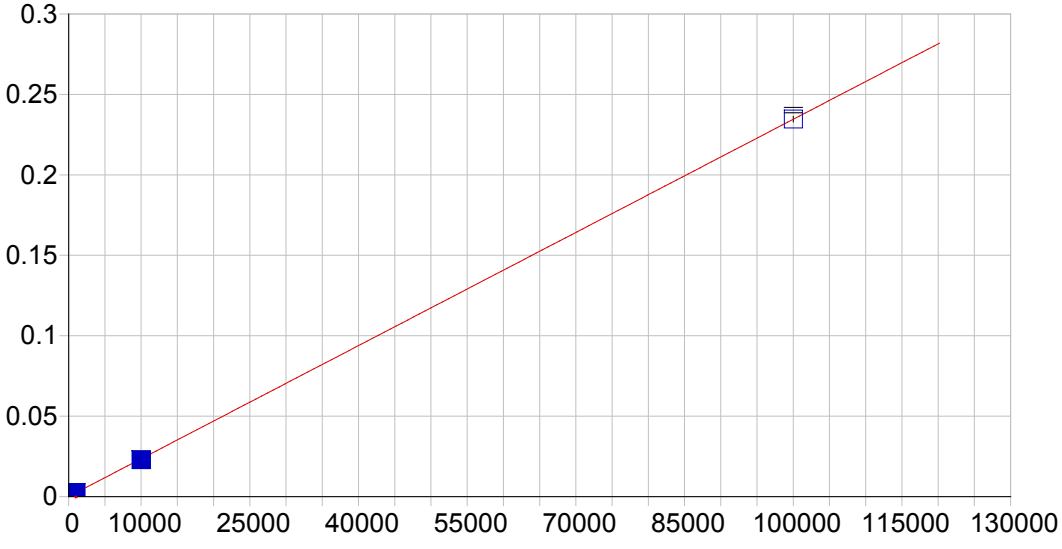


Cu 224.700 {450}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Curvilinear	Weighting:	1/Conc

A0 (Offset):	-0.000141	Re-Slope:	1.000000
A1 (Gain):	0.000106	Y-int:	0.000000
A2 (Curvature):	-0.000000		
n (Exponent):	1.000000		
Correlation:	0.999940	Status:	OK.
Std Error of Est:	0.000005		
Predicted MDL:	0.518556		
Predicted MQL:	1.728520		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00097	-.001	.000	-.00014	.000	1
CalStd9=100	1000.0	993.52	-6.48	-.648	.10522	.000	1
CalStd7=50	50.000	50.815	.815	1.63	.00527	.000	1
CalStd8=100	100.00	101.02	1.02	1.02	.01061	.000	1
CalStd5=10	10.000	9.4475	-.552	-5.52	.00086	.000	1
CalStd10=10	10000.	10001.	.681	.007	1.0187	.003	1
CalStd4=5	5.0000	5.4966	.497	9.93	.00044	.000	1
CalStd6=20	20.000	23.286	3.29	16.4	.00234	.000	1
CalStd3=1	1.0000	1.7410	.741	74.1	.00004	.000	1

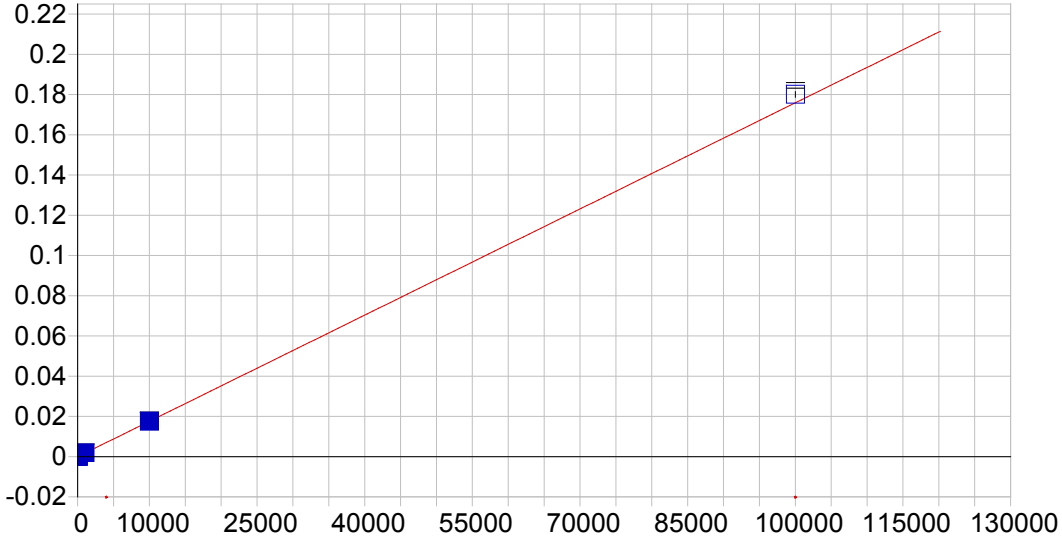


Cu 324.754 {104}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	None

A0 (Offset):	0.000077	Re-Slope:	1.000000
A1 (Gain):	0.000002	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999994	Status:	OK.
Std Error of Est:	0.000393		
Predicted MDL:	5.352749		
Predicted MQL:	17.842498		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	89.699	89.7	.000	.00029	.000	1
CalStd9=100	1000.0	1062.3	62.3	6.23	.00257	.000	1
CalStd8=100	100.00	179.31	79.3	79.3	.00050	.000	1
CalStd10=10	10000.	9743.8	-256.	-2.56	.02293	.000	1
CalStd11-100	100000.	100020.	24.9	.025	.23463	.002	1

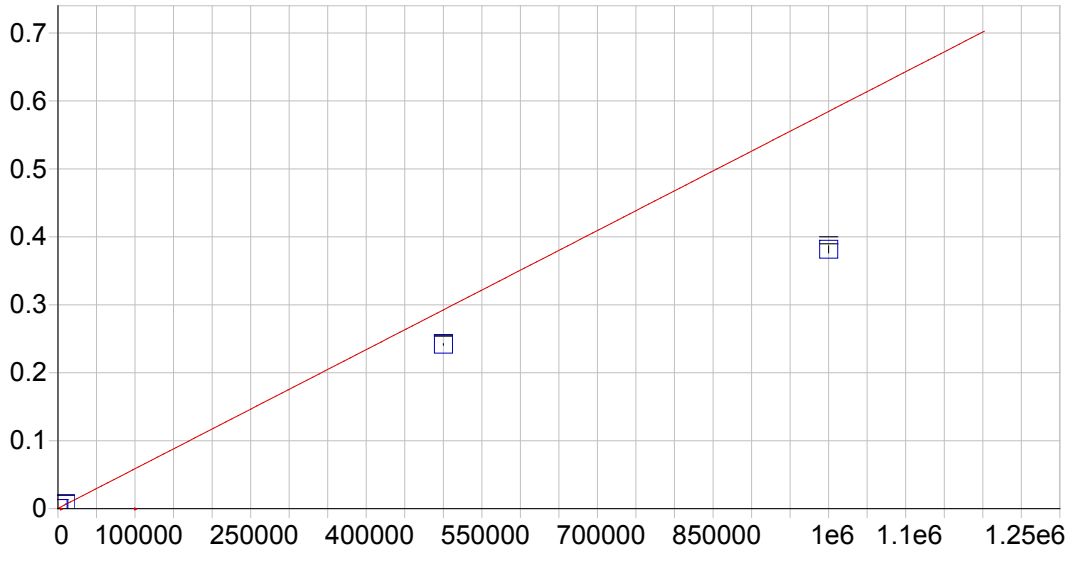


Cu 327.396 {103}

Date of Fit: 10/13/2016 11:55:53 Type of Fit: Curvilinear Weighting: 1/Conc

A0 (Offset):	-0.000045	Re-Slope:	1.000000
A1 (Gain):	0.000002	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999990	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	9.091140		
Predicted MQL:	30.303799		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00744	-.007	.000	-.00005	.000	1
CalStd6=20	20.000	25.430	5.43	27.2	.00000	.000	1
CalStd7=50	50.000	51.284	1.28	2.57	.00005	.000	1
CalStd8=100	100.00	105.79	5.79	5.79	.00014	.000	1
CalStd9=100	1000.0	1020.8	20.8	2.08	.00175	.000	1
CalStd10=10	10000.	9987.1	-12.9	-.129	.01753	.000	1
CalStd11-100	100000.	102370.	2370.	2.37	.18006	.001	1

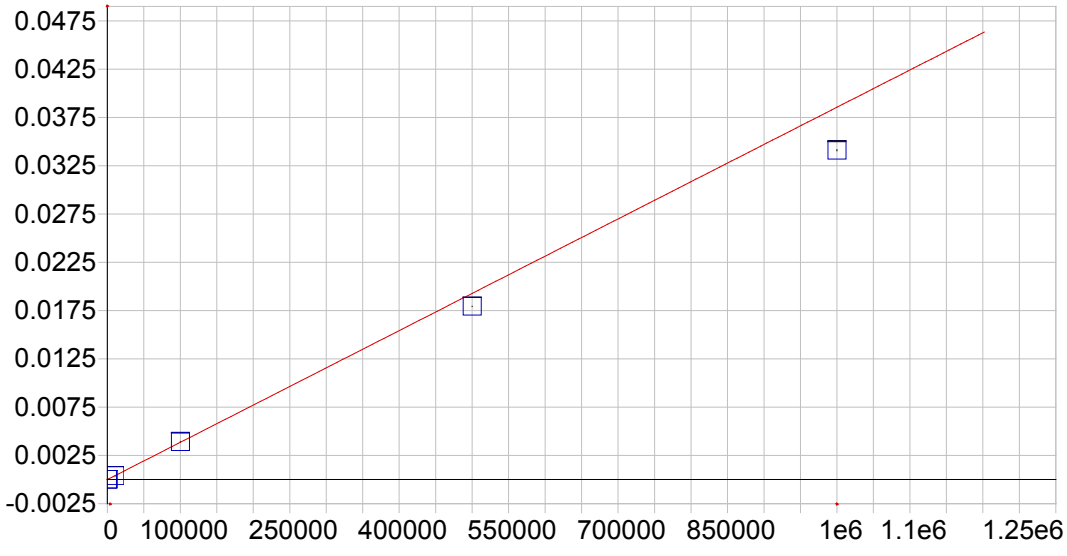


Fe 234.349 {144}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Curvilinear	Weighting:	None

A0 (Offset):	0.000333	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999998	Status:	OK.
Std Error of Est:	0.000482		
Predicted MDL:	1.878906		
Predicted MQL:	6.263019		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-545.28	-545.	.000	.00001	.000	1
CalStd10=10	10000.	10922.	922.	9.22	.00671	.000	1
CalStd13=50	500000.	413060.	-86900.	-17.4	.24163	.001	1
CalStd14-100	1000000.	652410.	-348000.	-34.8	.38145	.005	1
CalStd9=100	1000.0	615.35	-385.	-38.5	.00069	.000	1

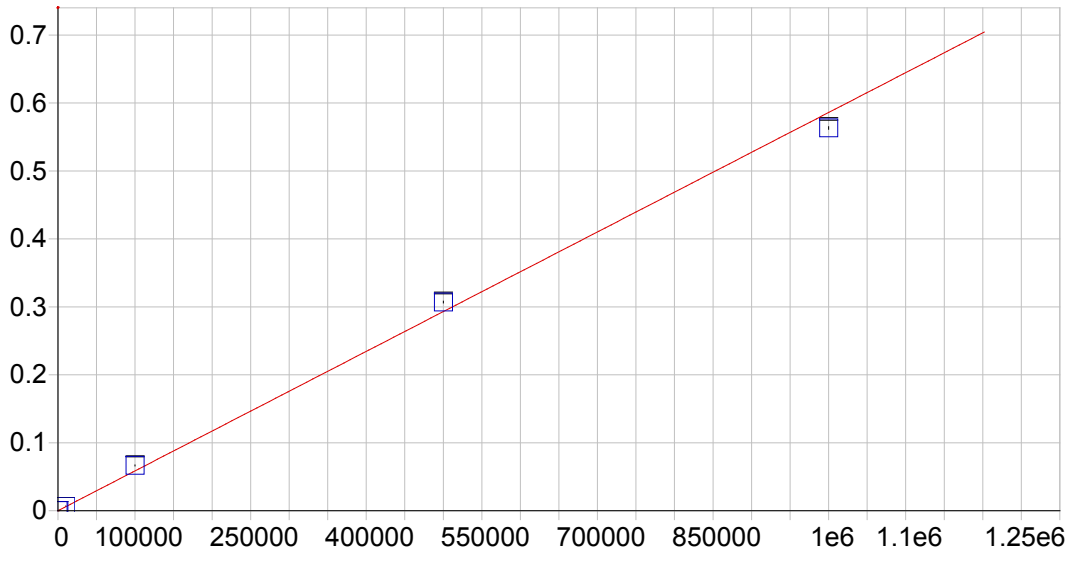


Fe 239.562 {140}

Date of Fit: 10/13/2016 11:55:53 Type of Fit: Curvilinear Weighting: 1/Conc

A0 (Offset):	0.000001	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999947	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	13.810217		
Predicted MQL:	46.034055		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.01455	-.015	.000	.00000	.000	1
CalStd10=10	10000.	10080.	80.0	.800	.00039	.000	1
CalStd13=50	500000.	465310.	-34700.	-6.94	.01794	.000	1
CalStd14-100	1000000.	884430.	-116000.	-11.6	.03410	.000	1
CalStd9=100	1000.0	985.24	-14.8	-1.48	.00004	.000	1
CalStd12-100	100000.	101630.	1630.	1.63	.00392	.000	1

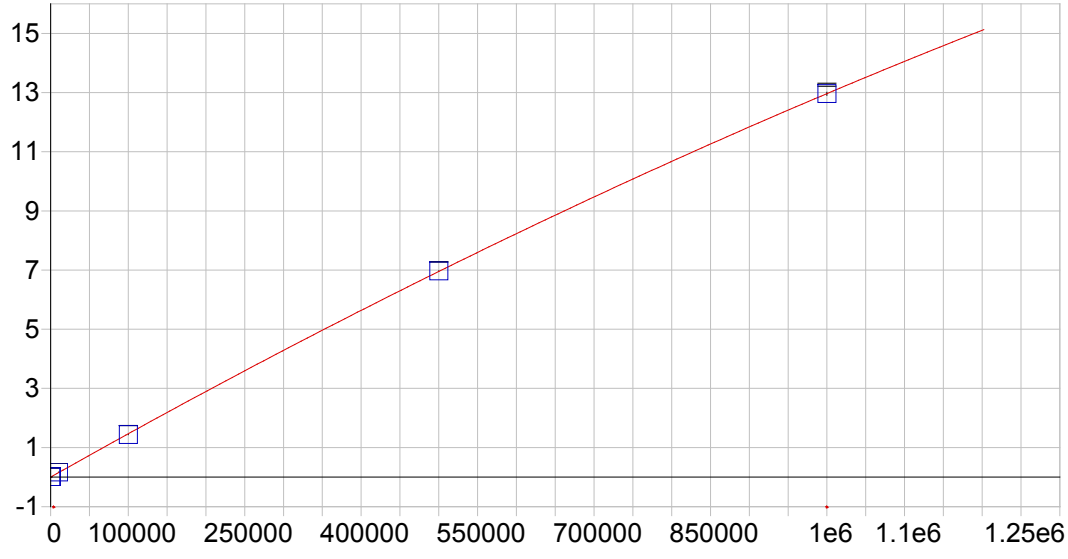


Fe 259.940 {129}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000014	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998536	Status:	OK.
Std Error of Est:	0.000049		
Predicted MDL:	13.829363		
Predicted MQL:	46.097875		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.43899	-.439	.000	.00001	.000	1
CalStd10=10	10000.	11288.	1290.	12.9	.00663	.000	1
CalStd13=50	500000.	523900.	23900.	4.78	.30700	.001	1
CalStd14-100	1000000.	960970.	-39000.	-3.90	.56311	.002	1
CalStd9=100	1000.0	1164.7	165.	16.5	.00070	.000	1
CalStd12-100	100000.	113670.	13700.	13.7	.06662	.001	1

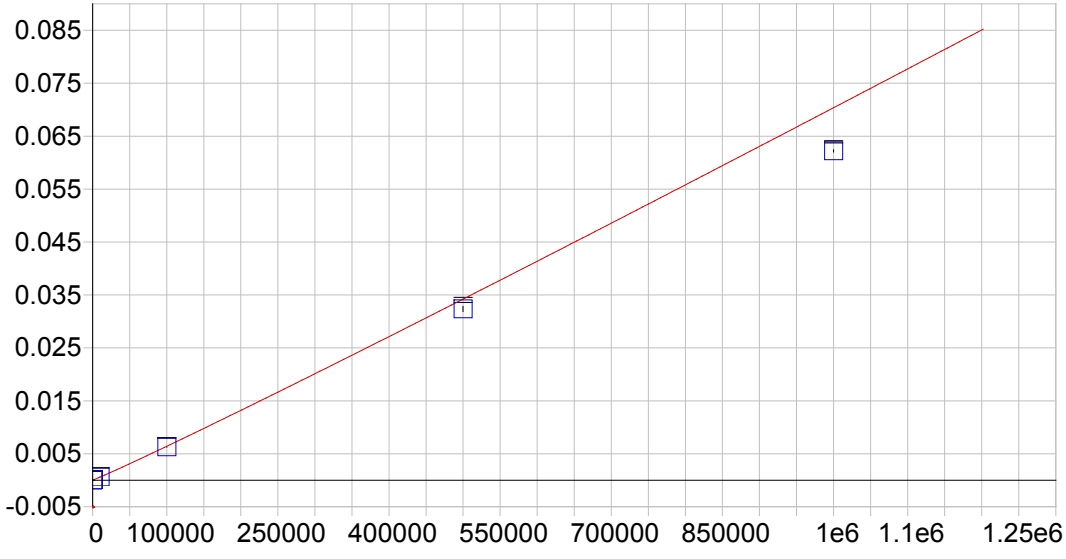


Mg 202.582 {466}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Curvilinear	Weighting:	1/Conc

A0 (Offset):	-0.000106	Re-Slope:	1.000000
A1 (Gain):	0.000015	Y-int:	0.000000
A2 (Curvature):	-0.000000		
n (Exponent):	1.000000		
Correlation:	0.999878	Status:	OK.
Std Error of Est:	0.000375		
Predicted MDL:	2.726264		
Predicted MQL:	9.087546		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.07260	.073	.000	-.00010	.000	1
CalStd13=50	500000.	501230.	1230.	.246	6.9688	.004	1
CalStd10=10	10000.	11528.	1530.	15.3	.17080	.001	1
CalStd14-100	1000000.	999540.	-464.	-.046	12.960	.049	1
CalStd12-100	100000.	97905.	-2090.	-2.09	1.4354	.003	1
CalStd9=100	1000.0	793.62	-206.	-20.6	.01168	.000	1

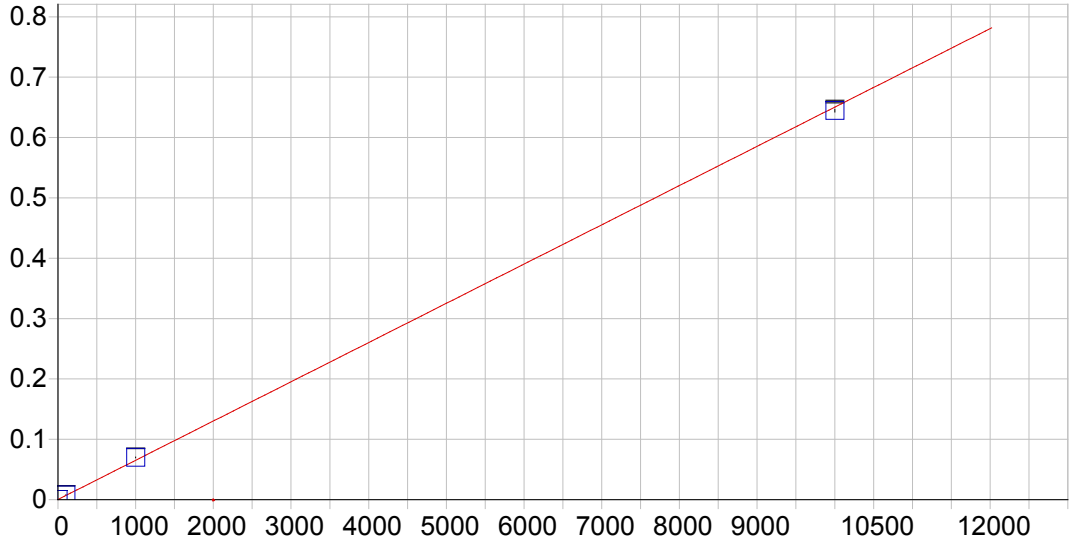


Mg 279.079 {121}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Full Fit	Weighting:	1/Conc

A0 (Offset):	-0.000002	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.040000		
Correlation:	0.999982	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	130.644377		
Predicted MQL:	435.481256		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	.00000	.000	1
CalStd13=50	500000.	473770.	-26200.	-5.25	.03236	.000	1
CalStd10=10	10000.	10448.	448.	4.48	.00061	.000	1
CalStd14-100	1000000.	888250.	-112000.	-11.2	.06221	.000	1
CalStd12-100	100000.	97902.	-2100.	-2.10	.00628	.000	1
CalStd9=100	1000.0	1168.0	168.	16.8	.00006	.000	1

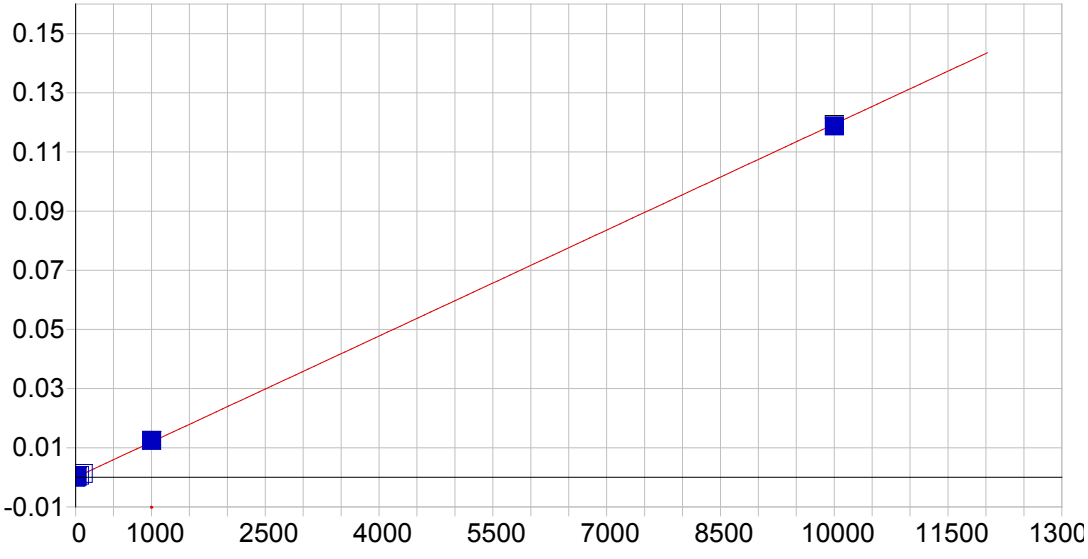


Mg 280.270 {120}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000240	Re-Slope:	1.000000
A1 (Gain):	0.000065	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999606	Status:	OK.
Std Error of Est:	0.000086		
Predicted MDL:	0.033650		
Predicted MQL:	0.112166		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.02214	-.022	.000	.00024	.000	1
CalStd9=100	1000.0	1074.1	74.1	7.41	.07007	.001	1
CalStd10=10	10000.	9910.3	-89.7	-.897	.64454	.002	1
CalStd8=100	100.00	115.63	15.6	15.6	.00776	.000	1

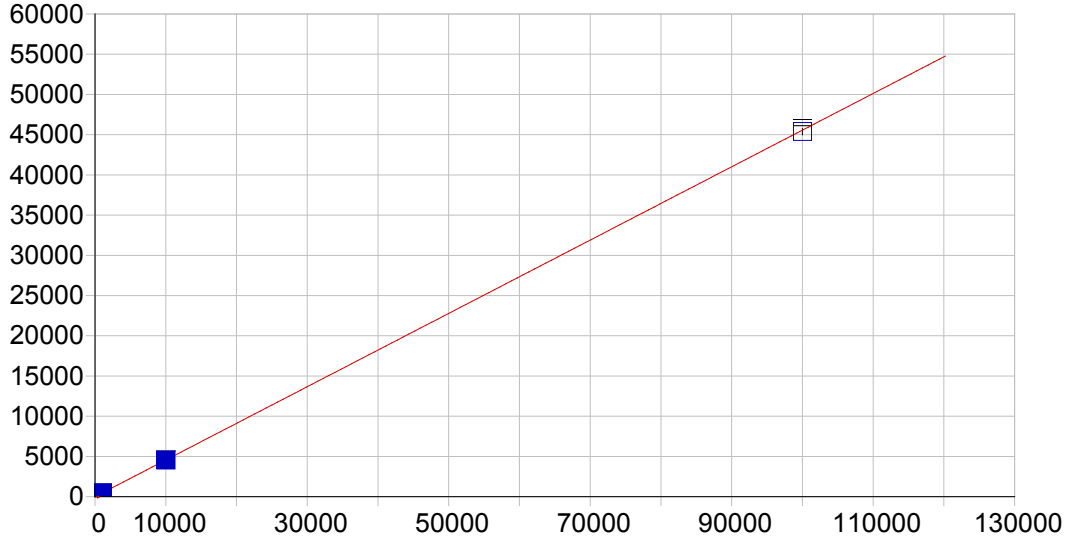


Mn 257.610 {131}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000002	Re-Slope:	1.000000
A1 (Gain):	0.000012	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999836	Status:	OK.
Std Error of Est:	0.000002		
Predicted MDL:	0.138395		
Predicted MQL:	0.461318		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00264	-.003	.000	.00000	.000	1
CalStd5=10	10.000	9.7582	-.242	-2.42	.00011	.000	1
CalStd7=50	50.000	53.815	3.82	7.63	.00064	.000	1
CalStd6=20	20.000	24.767	4.77	23.8	.00029	.000	1
CalStd8=100	100.00	106.31	6.31	6.31	.00127	.000	1
CalStd4=5	5.0000	5.7063	.706	14.1	.00007	.000	1
CalStd9=100	1000.0	1038.1	38.1	3.81	.01239	.000	1
CalStd10=10	10000.	9946.6	-53.4	-.534	.11877	.000	1

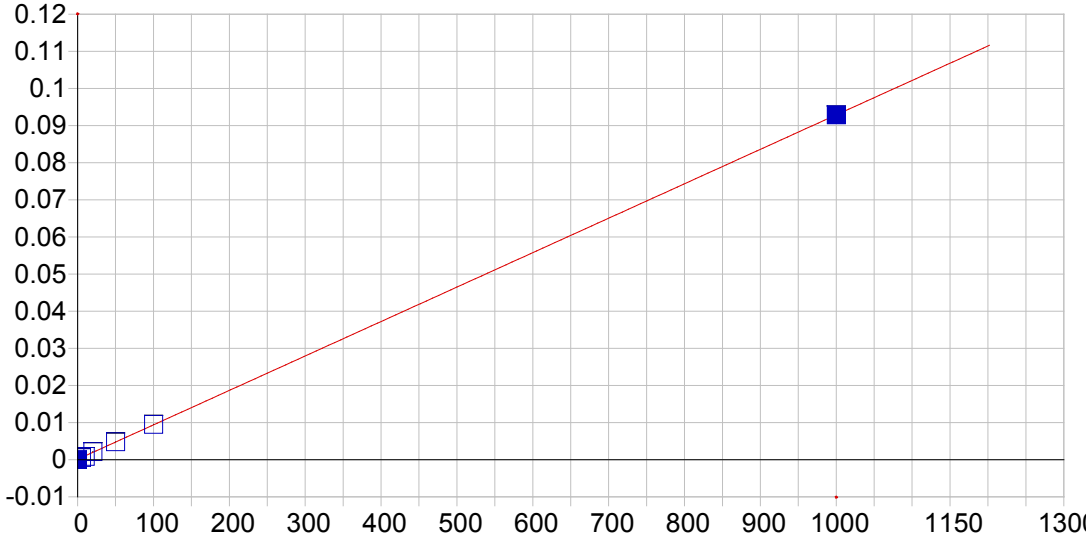


Mn 259.373 {130}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.603403	Re-Slope:	1.000000
A1 (Gain):	0.455644	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999966	Status:	OK.
Std Error of Est:	2.246055		
Predicted MDL:	1.297588		
Predicted MQL:	4.325294		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.42016	-.420	.000	.41196	.088	1
CalStd10=10	10000.	9971.0	-29.0	-.290	4550.6	2.20	1
CalStd11-100	100000.	99589.	-411.	-.411	45378.	387.	1
CalStd9=100	1000.0	1023.3	23.3	2.33	467.54	.624	1

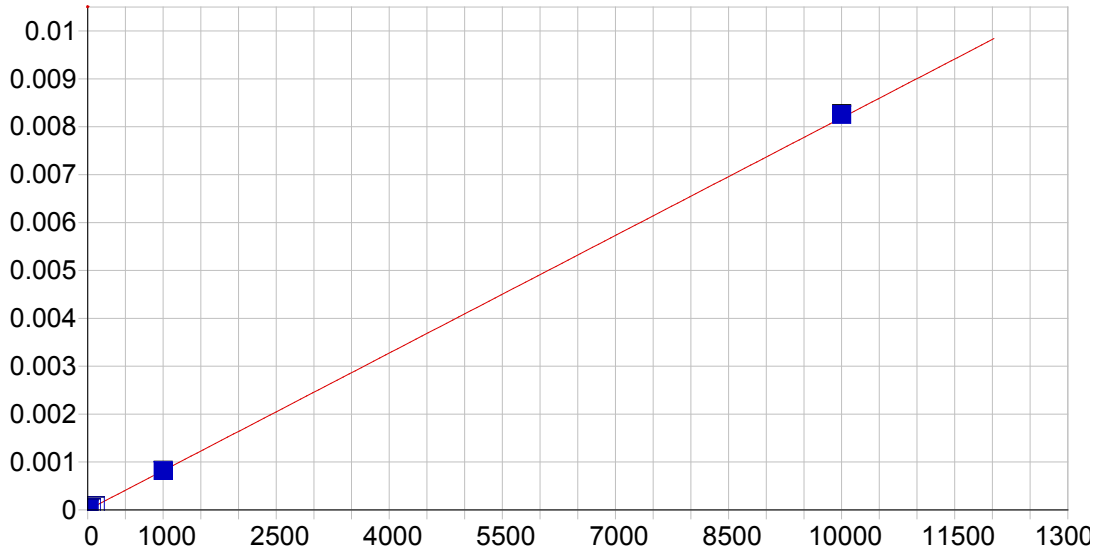


Mo 202.030 {466}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	None

A0 (Offset):	0.000114	Re-Slope:	1.000000
A1 (Gain):	0.000093	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999993	Status:	OK.
Std Error of Est:	0.000135		
Predicted MDL:	0.427994		
Predicted MQL:	1.426647		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-1.0571	-1.06	.000	.00002	.000	1
CalStd7=50	50.000	50.433	.433	.866	.00479	.000	1
CalStd6=20	20.000	22.026	2.03	10.1	.00216	.000	1
CalStd5=10	10.000	8.2186	-1.78	-17.8	.00088	.000	1
CalStd8=100	100.00	101.23	1.23	1.23	.00950	.000	1
CalStd4=5	5.0000	4.3120	-.688	-13.8	.00051	.000	1
CalStd9=100	1000.0	999.84	-.164	-.016	.09283	.000	1

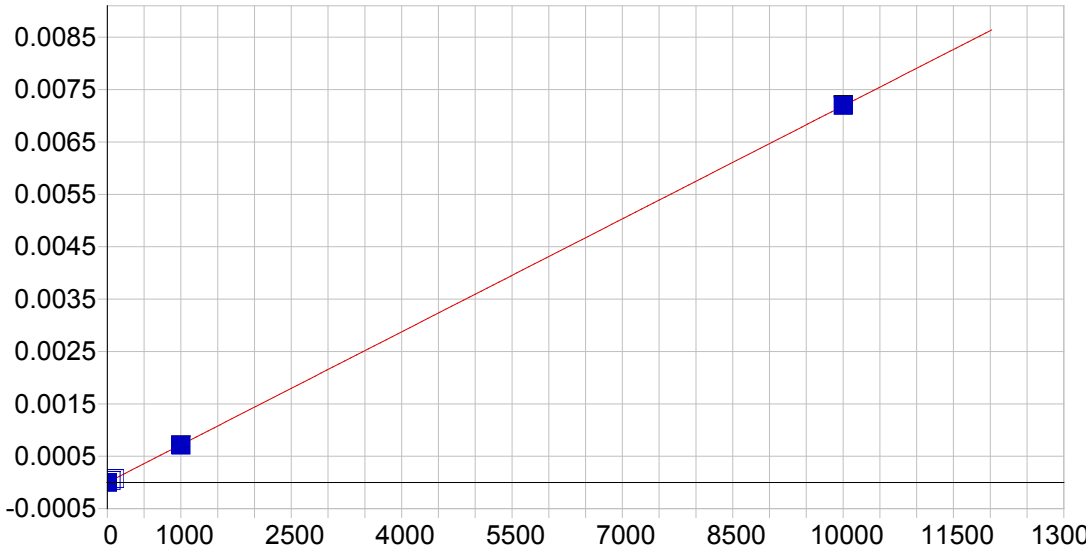


Mo 204.598 {464}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Curvilinear	Weighting:	1/Conc

A0 (Offset):	0.000001	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999974	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	0.637157		
Predicted MQL:	2.123857		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00074	.001	.000	.00000	.000	1
CalStd7=50	50.000	50.246	.246	.491	.00004	.000	1
CalStd6=20	20.000	22.409	2.41	12.0	.00002	.000	1
CalStd5=10	10.000	8.4996	-1.50	-15.0	.00001	.000	1
CalStd8=100	100.00	100.16	.155	.155	.00008	.000	1
CalStd4=5	5.0000	4.3765	-.624	-12.5	.00000	.000	1
CalStd9=100	1000.0	1000.1	.077	.008	.00082	.000	1
CalStd10=10	10000.	10082.	82.1	.821	.00825	.000	1

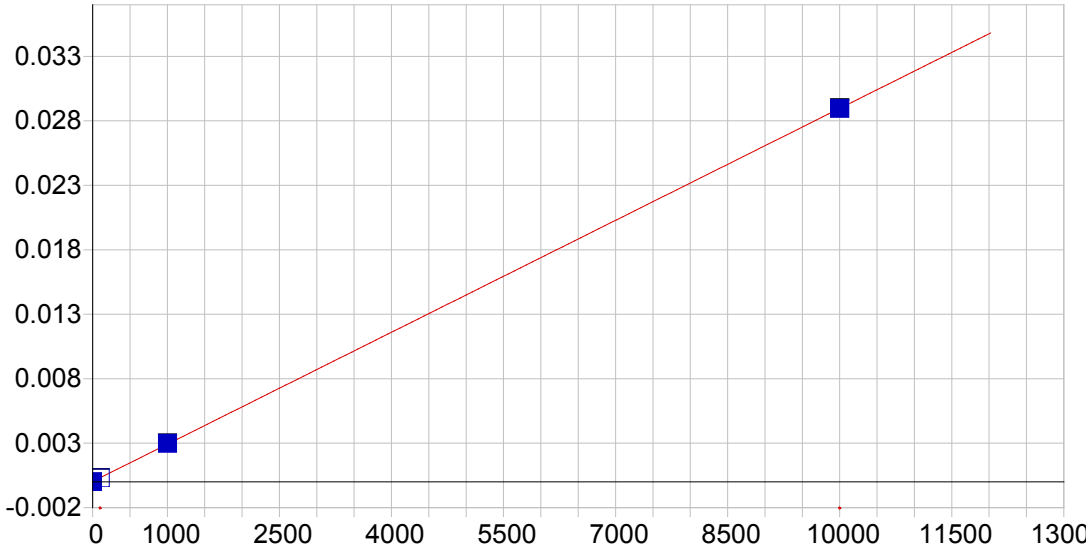


Mo 204.598 {465}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999993	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	0.802362		
Predicted MQL:	2.674540		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00027	.000	.000	.00000	.000	1
CalStd9=100	1000.0	988.58	-11.4	-1.14	.00071	.000	1
CalStd10=10	10000.	10011.	10.8	.108	.00720	.000	1
CalStd7=50	50.000	49.886	-.114	-.229	.00004	.000	1
CalStd8=100	100.00	100.73	.728	.728	.00007	.000	1

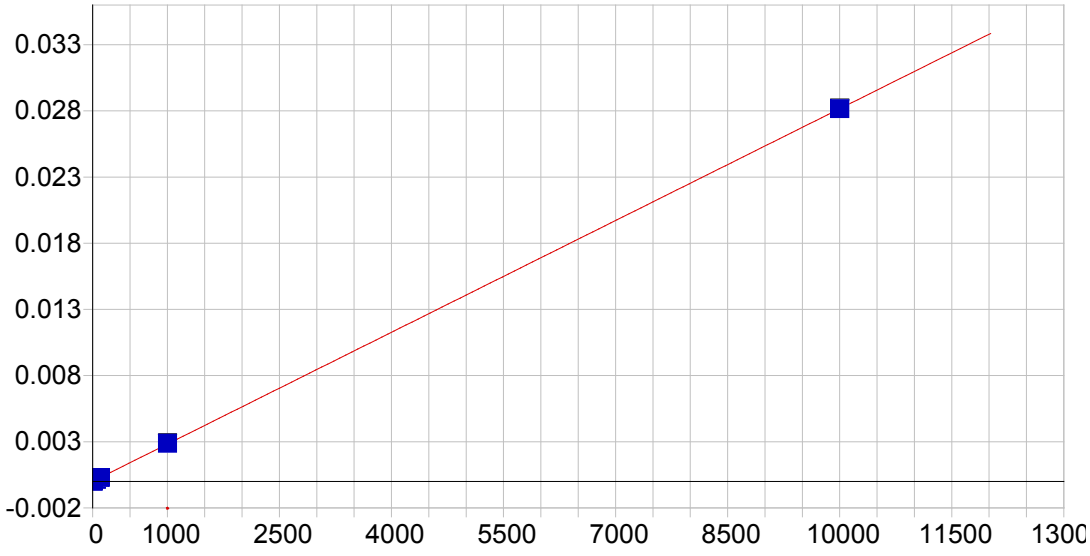


Ni 221.647 {452}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	None

A0 (Offset):	0.000028	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999996	Status:	OK.
Std Error of Est:	0.000046		
Predicted MDL:	0.390563		
Predicted MQL:	1.301878		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-10.096	-10.1	.000	.00000	.000	1
CalStd10=10	10000.	9998.2	-1.83	-.018	.02896	.000	1
CalStd8=100	100.00	92.930	-7.07	-7.07	.00030	.000	1
CalStd9=100	1000.0	1019.0	19.0	1.90	.00298	.000	1

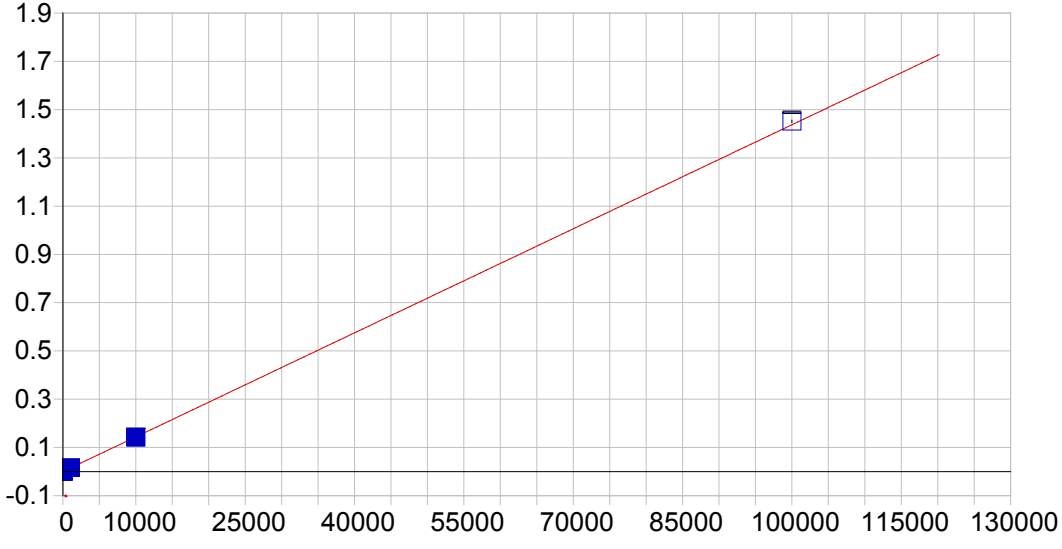


Ni 231.604 {445}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	None

A0 (Offset):	0.000007	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999998	Status:	OK.
Std Error of Est:	0.000023		
Predicted MDL:	0.400521		
Predicted MQL:	1.335071		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-3.5607	-3.56	.000	.00000	.000	1
CalStd7=50	50.000	48.353	-1.65	-3.29	.00014	.000	1
CalStd5=10	10.000	5.6627	-4.34	-43.4	.00002	.000	1
CalStd8=100	100.00	99.472	-.528	-.528	.00029	.000	1
CalStd4=5	5.0000	1.6466	-3.35	-67.1	.00001	.000	1
CalStd9=100	1000.0	1018.4	18.4	1.84	.00287	.000	1
CalStd3=1	1.0000	-2.1394	-3.14	-314.	.00000	.000	1
CalStd10=10	10000.	9998.2	-1.82	-.018	.02816	.000	1

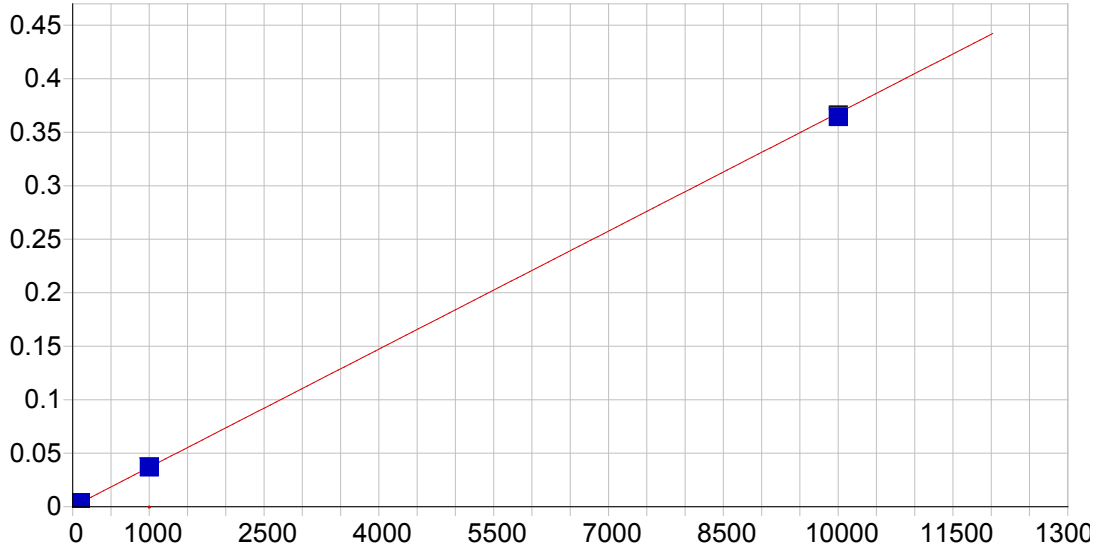


Pb 216.999 {455}

Date of Fit: 10/13/2016 11:55:53 Type of Fit: Linear Weighting: 1/Var

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:	0.999840	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	3.961213		
Predicted MQL:	13.204043		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	-.00002	.000	1
CalStd9=100	1000.0	1036.4	36.4	3.64	.01489	.000	1
CalStd10=10	10000.	9837.8	-162.	-1.62	.14154	.000	1
CalStd11-100	100000.	101000.	999.	.999	1.4515	.005	1
CalStd8=100	100.00	101.16	1.16	1.16	.00144	.000	1
CalStd5=10	10.000	9.4898	-.510	-5.10	.00012	.000	1

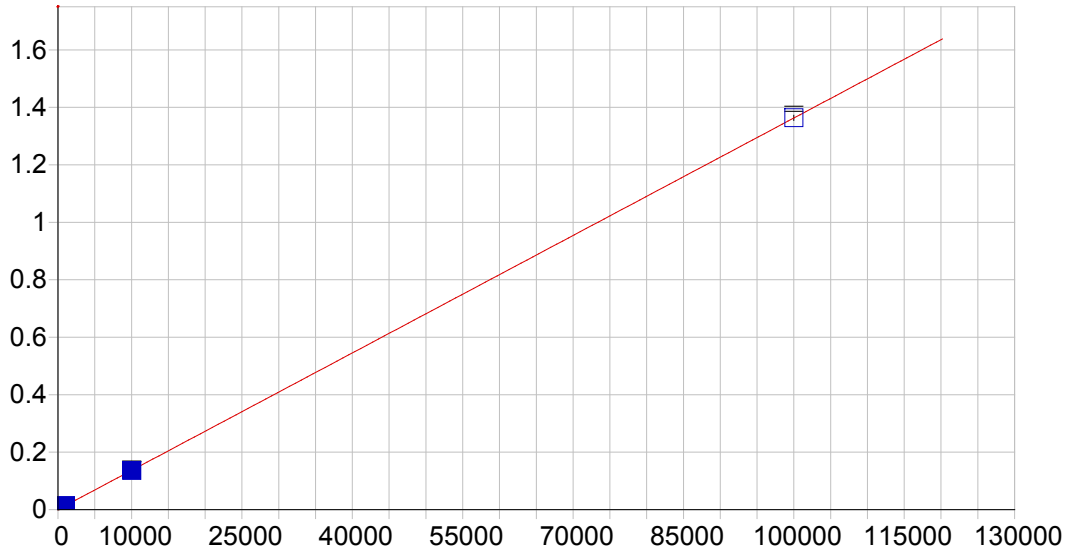


Pb 220.353 {453}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000105	Re-Slope:	1.000000
A1 (Gain):	0.000037	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999986	Status:	OK.
Std Error of Est:	0.000049		
Predicted MDL:	1.962660		
Predicted MQL:	6.542199		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.27564	.276	.000	.00012	.000	1
CalStd5=10	10.000	9.7974	-.203	-2.03	.00047	.000	1
CalStd8=100	100.00	103.79	3.79	3.79	.00392	.000	1
CalStd4=5	5.0000	5.5157	.516	10.3	.00031	.000	1
CalStd9=100	1000.0	1001.8	1.76	.176	.03696	.000	1
CalStd10=10	10000.	9901.8	-98.2	-.982	.36437	.001	1

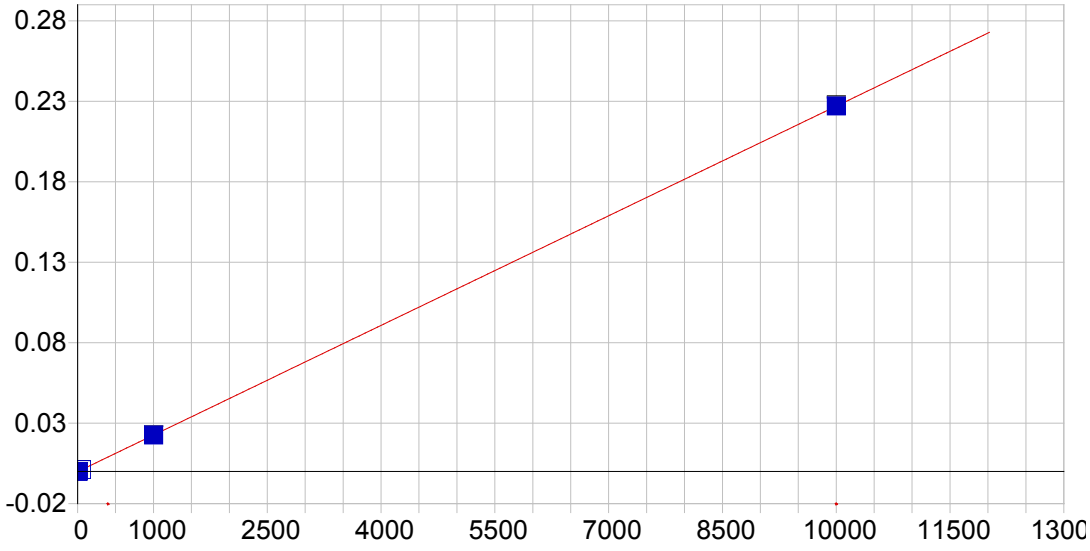


Pb 220.353 {153}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000212	Re-Slope:	1.000000
A1 (Gain):	0.000014	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999997	Status:	OK.
Std Error of Est:	0.000005		
Predicted MDL:	6.647042		
Predicted MQL:	22.156807		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00547	-.005	.000	.00021	.000	1
CalStd9=100	1000.0	997.92	-2.08	-.208	.01381	.000	1
CalStd10=10	10000.	9947.7	-52.3	-.523	.13574	.001	1
CalStd8=100	100.00	106.15	6.15	6.15	.00166	.000	1
CalStd11-100	100000.	100050.	48.2	.048	1.3636	.009	1

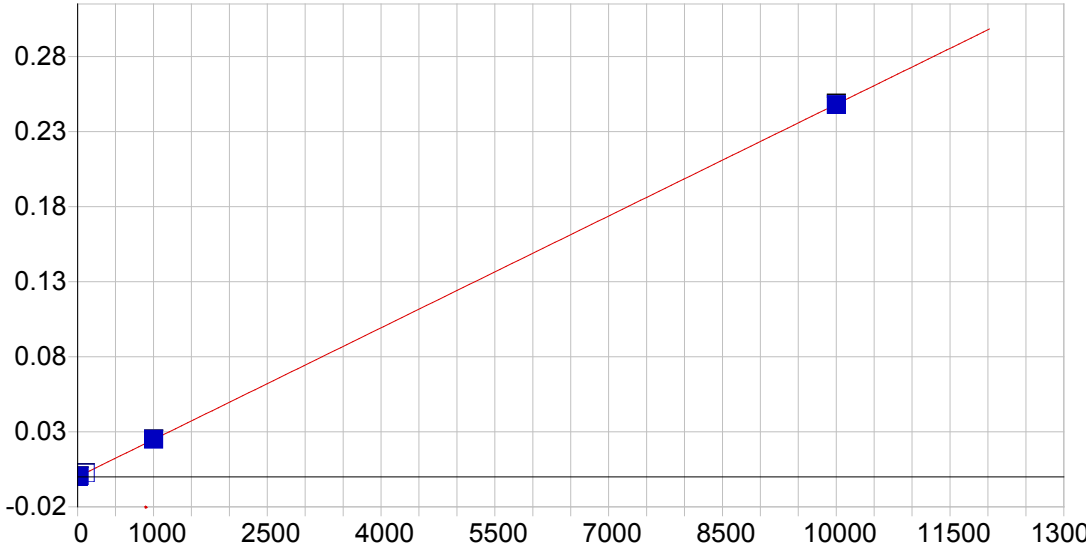


Sb 206.833 {463}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000109	Re-Slope:	1.000000
A1 (Gain):	0.000023	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999975	Status:	OK.
Std Error of Est:	0.000002		
Predicted MDL:	1.929313		
Predicted MQL:	6.431044		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00172	.002	.000	-.00011	.000	1
CalStd9=100	1000.0	999.06	-.940	-.094	.02258	.000	1
CalStd5=10	10.000	7.8679	-2.13	-21.3	.00007	.000	1
CalStd7=50	50.000	52.110	2.11	4.22	.00107	.000	1
CalStd10=10	10000.	10001.	.962	.010	.22703	.001	1

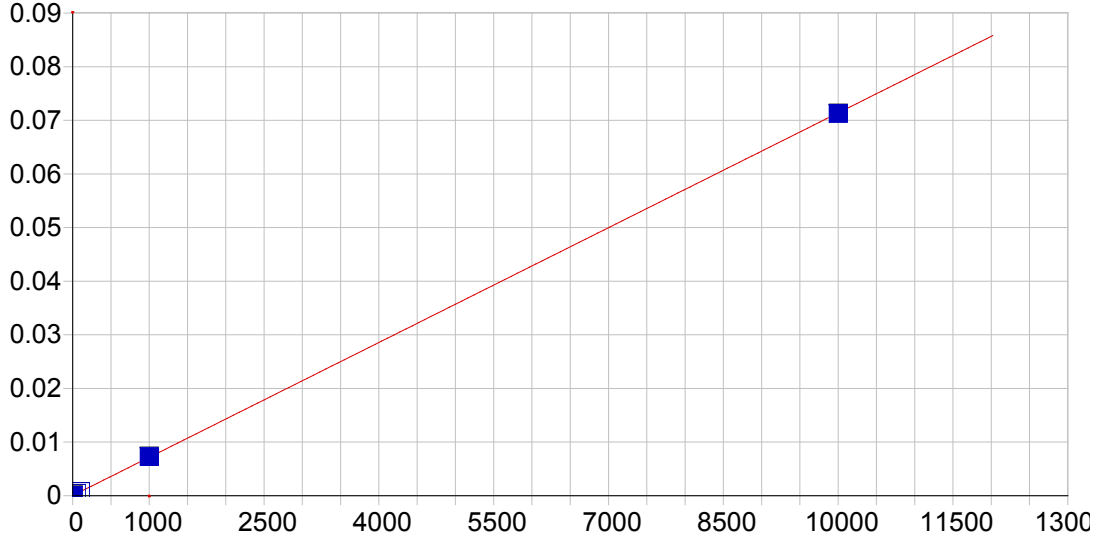


Sb 217.581 {455}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000007	Re-Slope:	1.000000
A1 (Gain):	0.000025	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999951	Status:	OK.
Std Error of Est:	0.000002		
Predicted MDL:	2.025804		
Predicted MQL:	6.752680		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00072	.001	.000	.00001	.000	1
CalStd9=100	1000.0	1008.4	8.44	.844	.02503	.000	1
CalStd6=20	20.000	22.893	2.89	14.5	.00058	.000	1
CalStd5=10	10.000	7.7290	-2.27	-22.7	.00020	.000	1
CalStd8=100	100.00	101.98	1.98	1.98	.00254	.000	1
CalStd4=5	5.0000	4.5610	-.439	-8.78	.00012	.000	1
CalStd10=10	10000.	9989.4	-10.6	-.106	.24789	.001	1

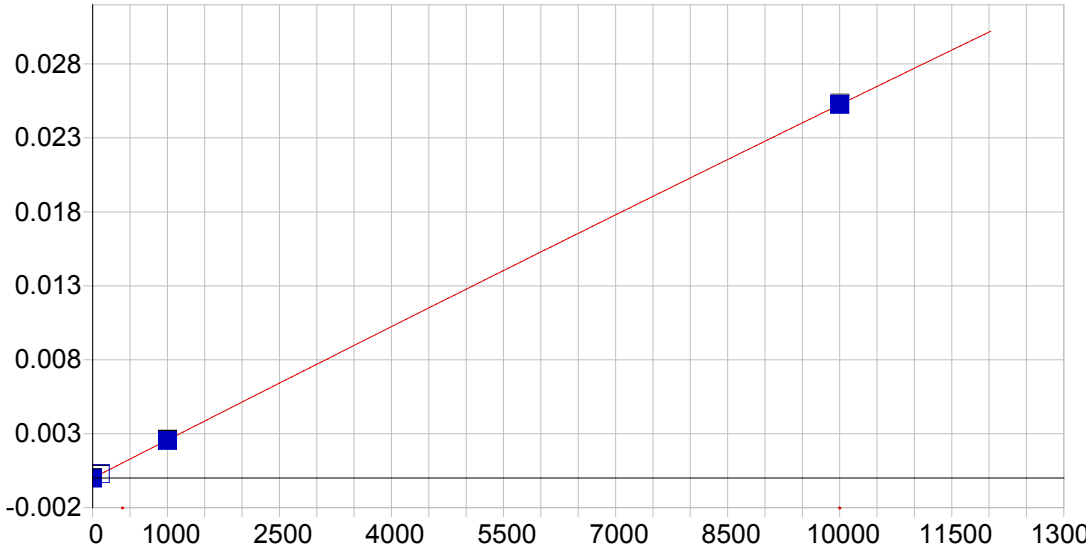


Se 196.090 {472}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000025	Re-Slope:	1.000000
A1 (Gain):	0.000007	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999976	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	4.408248		
Predicted MQL:	14.694160		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00146	-.001	.000	.00002	.000	1
CalStd7=50	50.000	53.186	3.19	6.37	.00040	.000	1
CalStd9=100	1000.0	1015.7	15.7	1.57	.00727	.000	1
CalStd5=10	10.000	10.584	.584	5.84	.00010	.000	1
CalStd8=100	100.00	101.00	.996	.996	.00075	.000	1
CalStd10=10	10000.	9979.5	-20.5	-.205	.07121	.000	1

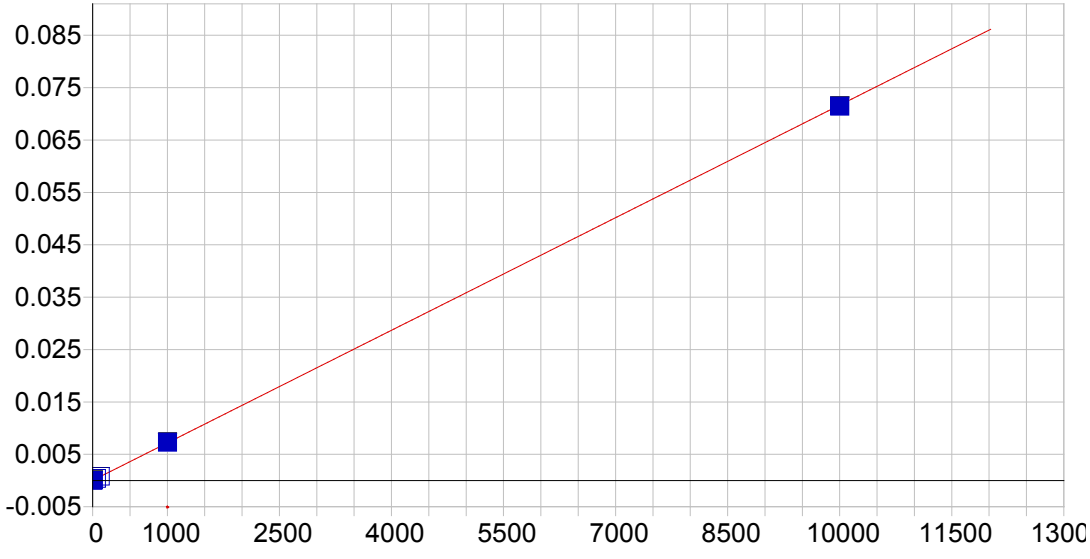


Se 206.279 {463}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Curvilinear	Weighting:	1/Conc

A0 (Offset):	-0.000007	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	-0.000000		
n (Exponent):	1.000000		
Correlation:	0.999909	Status:	OK.
Std Error of Est:	0.000002		
Predicted MDL:	18.448295		
Predicted MQL:	61.494315		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.01171	-.012	.000	-.00001	.000	1
CalStd9=100	1000.0	985.50	-14.5	-1.45	.00254	.000	1
CalStd10=10	10000.	10001.	1.38	.014	.02529	.000	1
CalStd8=100	100.00	113.15	13.2	13.2	.00028	.000	1

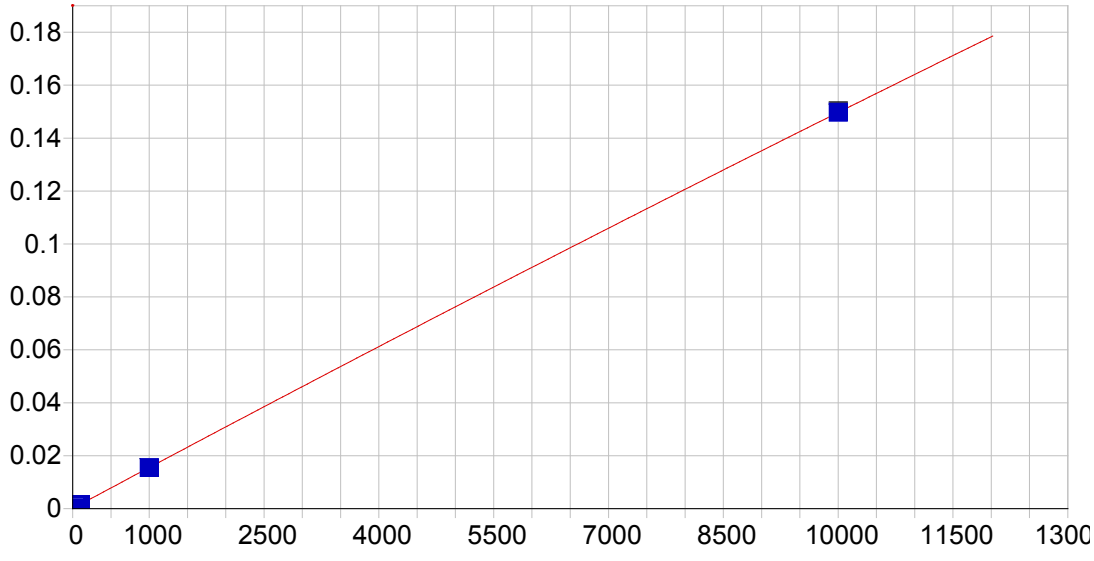


Se 196.090 {471}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000012	Re-Slope:	1.000000
A1 (Gain):	0.000007	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999928	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	4.684708		
Predicted MQL:	15.615694		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00185	-.002	.000	.00001	.000	1
CalStd7=50	50.000	52.396	2.40	4.79	.00039	.000	1
CalStd9=100	1000.0	1017.2	17.2	1.72	.00730	.000	1
CalStd5=10	10.000	10.182	.182	1.82	.00009	.000	1
CalStd8=100	100.00	110.51	10.5	10.5	.00080	.000	1
CalStd10=10	10000.	9969.7	-30.3	-.303	.07143	.000	1

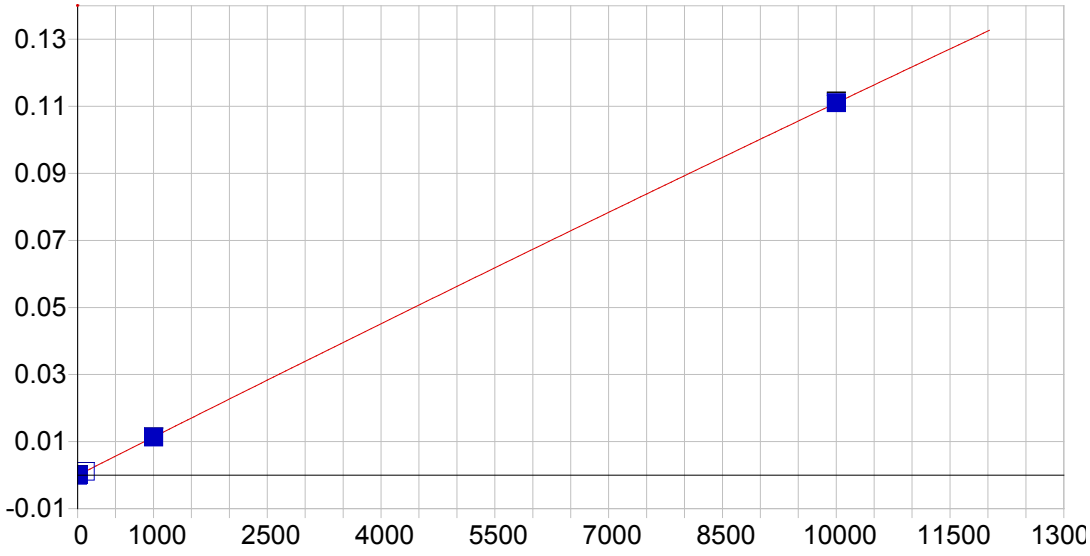


Tl 190.856 {476}

Date of Fit: 10/13/2016 11:55:53 Type of Fit: Curvilinear Weighting: 1/Conc

A0 (Offset):	0.000079	Re-Slope:	1.000000
A1 (Gain):	0.000016	Y-int:	0.000000
A2 (Curvature):	-0.000000		
n (Exponent):	1.000000		
Correlation:	0.999995	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	2.580553		
Predicted MQL:	8.601844		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00002	.000	.000	.00008	.000	1
CalStd9=100	1000.0	997.03	-2.97	-.297	.01549	.000	1
CalStd8=100	100.00	102.93	2.93	2.93	.00167	.000	1
CalStd5=10	10.000	9.7576	-.242	-2.42	.00023	.000	1
CalStd10=10	10000.	10000.	.286	.003	.14975	.000	1

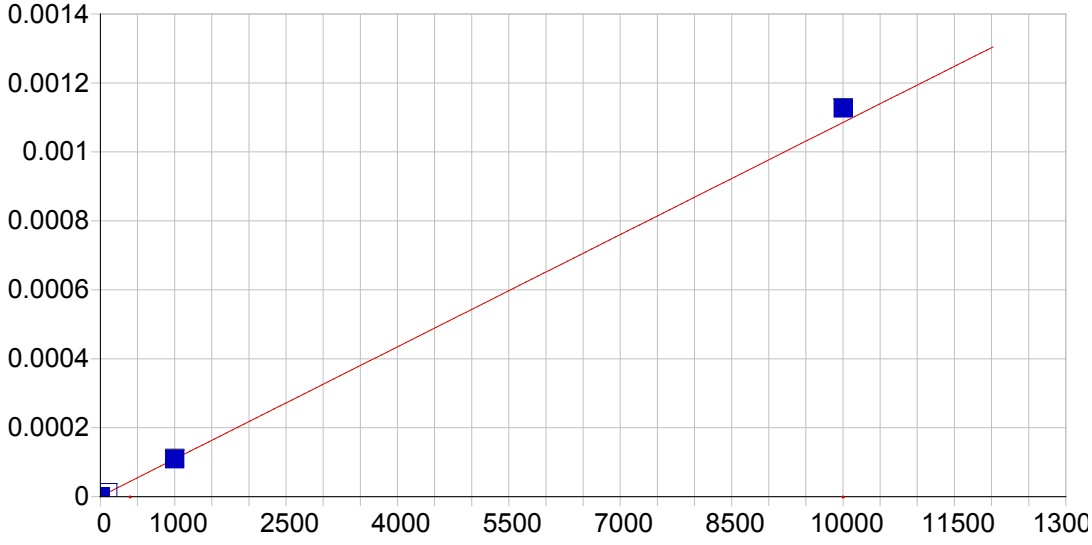


Tl 190.856 {477}

Date of Fit: 10/13/2016 11:55:53 Type of Fit: Curvilinear Weighting: 1/Var

A0 (Offset):	-0.000041	Re-Slope:	1.000000
A1 (Gain):	0.000011	Y-int:	0.000000
A2 (Curvature):	-0.000000		
n (Exponent):	1.000000		
Correlation:	0.999972	Status:	OK.
Std Error of Est:	0.000040		
Predicted MDL:	2.962882		
Predicted MQL:	9.876273		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.76656	-.767	.000	-.00005	.000	1
CalStd9=100	1000.0	998.49	-1.51	-.151	.01134	.000	1
CalStd8=100	100.00	103.23	3.23	3.23	.00114	.000	1
CalStd5=10	10.000	8.3601	-1.64	-16.4	.00005	.000	1
CalStd10=10	10000.	10003.	3.35	.033	.11105	.000	1

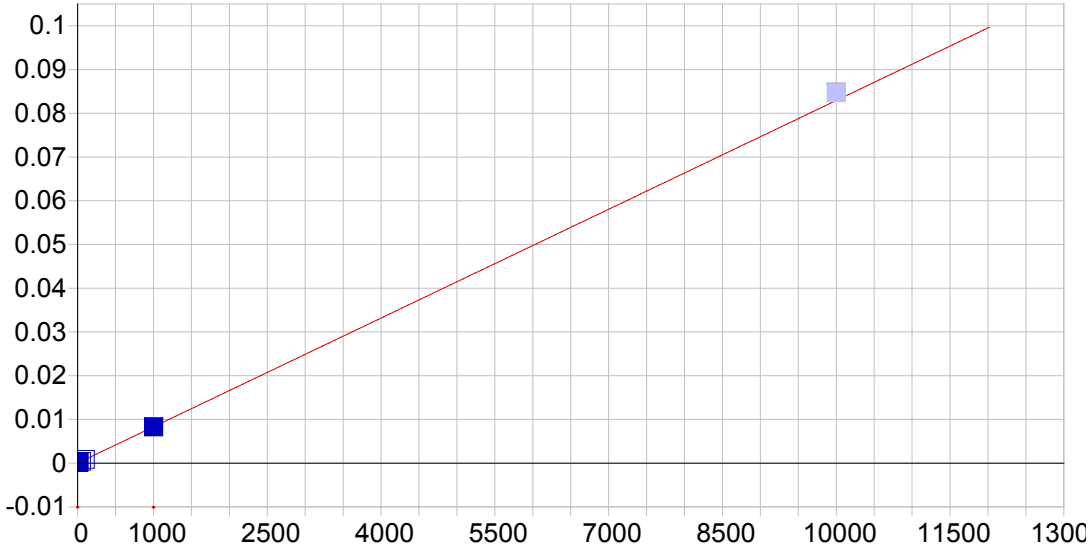


V 290.882 {116}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Curvilinear	Weighting:	1/Conc

A0 (Offset):	0.000001	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999995	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	7.021363		
Predicted MQL:	23.404542		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00277	-.003	.000	.00000	.000	1
CalStd9=100	1000.0	1000.4	.375	.038	.00011	.000	1
CalStd10=10	10000.	10380.	380.	3.80	.00113	.000	1
CalStd8=100	100.00	103.15	3.15	3.15	.00001	.000	1

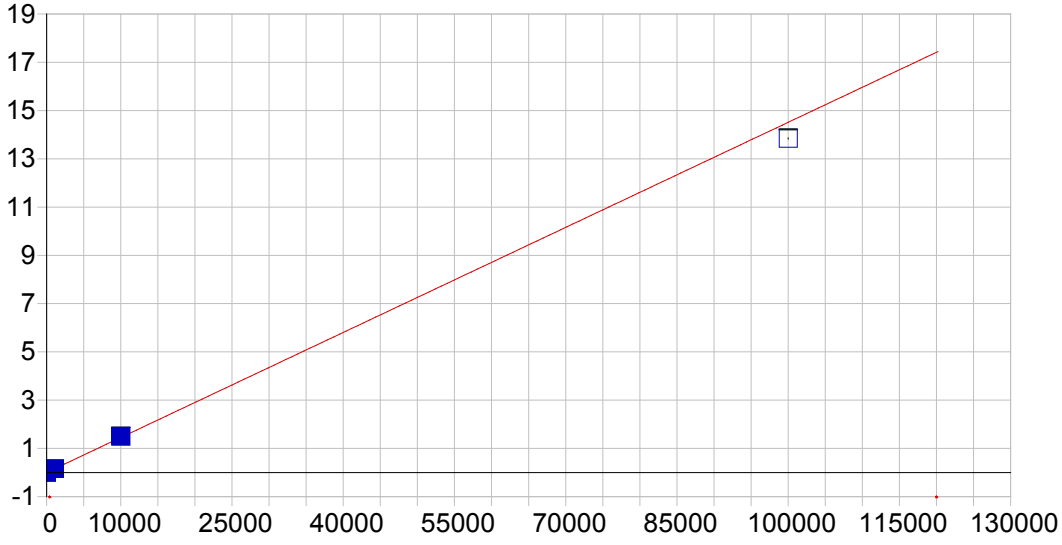


V 292.402 {115}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000005	Re-Slope:	1.000000
A1 (Gain):	0.000008	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999723	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	0.516113		
Predicted MQL:	1.720378		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00145	-.001	.000	.00001	.000	1
CalStd7=50	50.000	51.149	1.15	2.30	.00043	.000	1
CalStd9=100	1000.0	995.94	-4.06	-.406	.00826	.000	1
CalStd6=20	20.000	23.434	3.43	17.2	.00020	.000	1
CalStd5=10	10.000	9.5528	-.447	-4.47	.00008	.000	1
CalStd8=100	100.00	99.927	-.073	-.073	.00083	.000	1
CalStd10=10	10000.	10214.	214.	2.14	.08468	.000	0

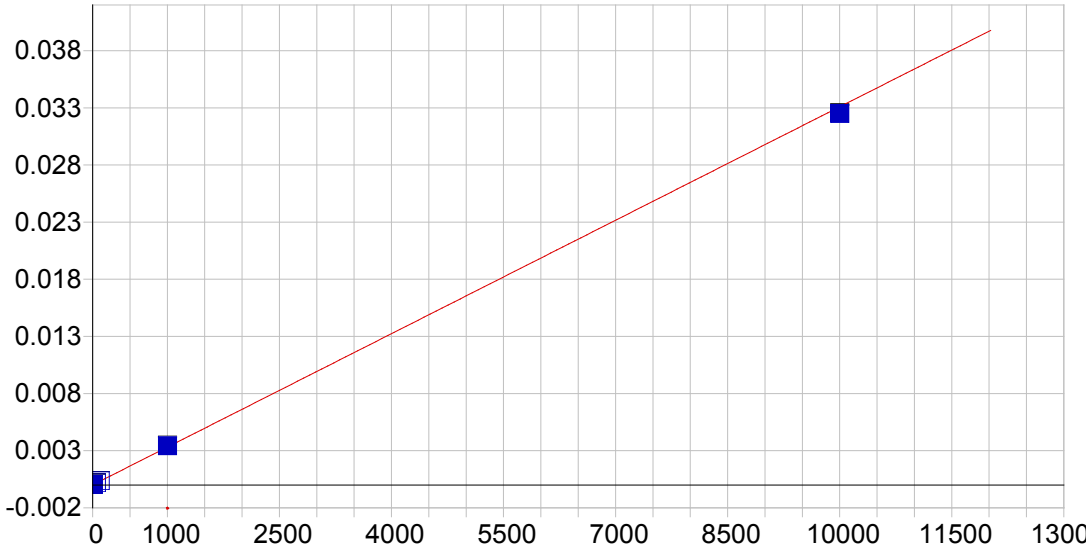


Zn 206.200 {463}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000373	Re-Slope:	1.000000
A1 (Gain):	0.000145	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999004	Status:	OK.
Std Error of Est:	0.004495		
Predicted MDL:	0.299193		
Predicted MQL:	0.997310		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CalStd10=10	10000.	10309.	309.	3.09	1.4965	.002	1
Blank	.00000	-2.2525	-2.25	.000	.00005	.000	1
CalStd9=100	1000.0	1071.7	71.7	7.17	.15590	.000	1
CalStd11-100	100000.	95375.	-4630.	-4.63	13.841	.019	1

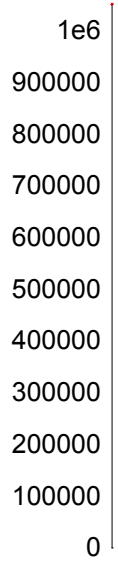


Zn 213.856 {458}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000004	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999440	Status:	OK.
Std Error of Est:	0.000007		
Predicted MDL:	0.180359		
Predicted MQL:	0.601198		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-1.1249	-1.12	.000	.00000	.000	1
CalStd8=100	100.00	105.10	5.10	5.10	.00035	.000	1
CalStd7=50	50.000	52.180	2.18	4.36	.00018	.000	1
CalStd5=10	10.000	8.9058	-1.09	-10.9	.00003	.000	1
CalStd9=100	1000.0	1033.7	33.7	3.37	.00342	.000	1
CalStd4=5	5.0000	5.0107	.011	.215	.00002	.000	1
CalStd10=10	10000.	9818.2	-182.	-1.82	.03249	.000	1

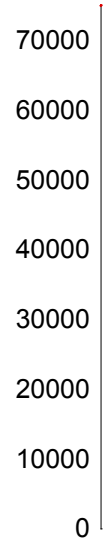


Y 324.228 {104}*

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	954950.	3920.	1



Y 371.030 { 91}*

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

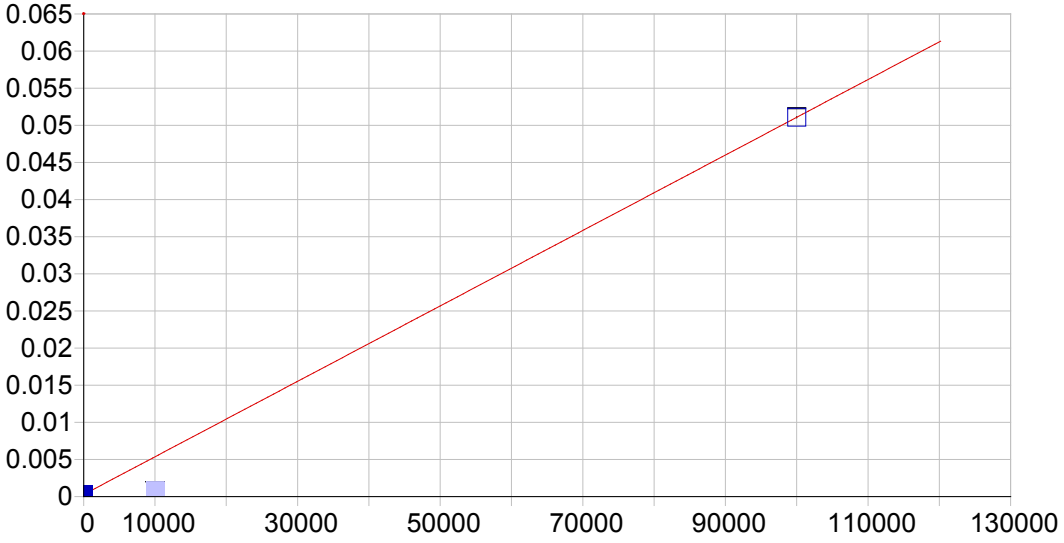
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	68197.	571.	1

Y 224.306 {451}*

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	15153.	28.9	1

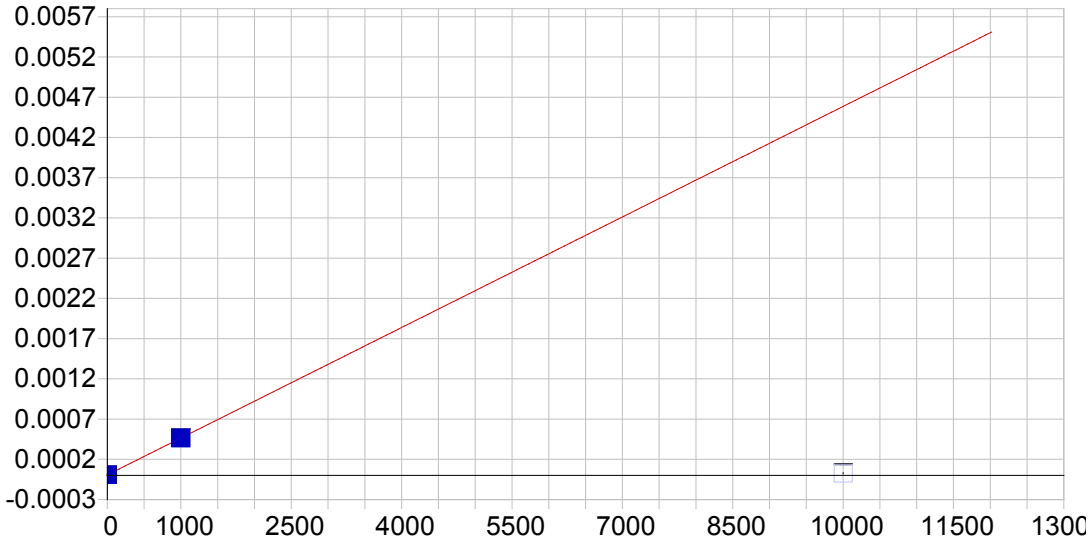


Na 588.995 { 57}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000283	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	9.125876		
Predicted MQL:	30.419588		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	.00028	.000	1
CalStd9=100	10000.	980.49	-9020.	-90.2	.00078	.000	0
CalStd12-100	100000.	100000.	.000	.000	.05108	.000	1

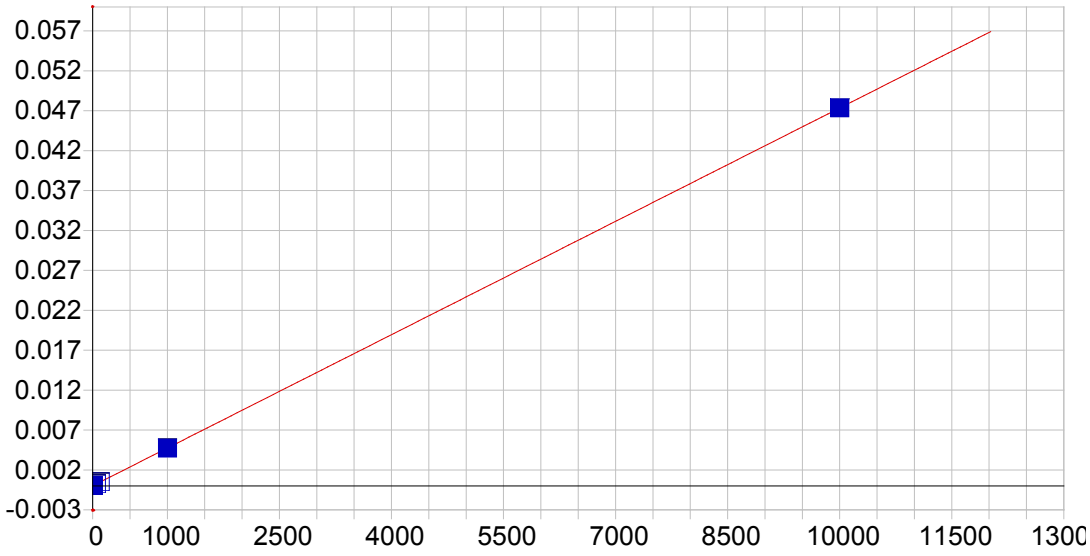


Si 251.611 {134}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000007	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	18.341776		
Predicted MQL:	61.139254		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	.00001	.000	1
CalStd9=100	1000.0	1000.0	.000	.000	.00046	.000	1
CalStd12-100	10000.	45.471	-9950.	-99.5	.00003	.000	0

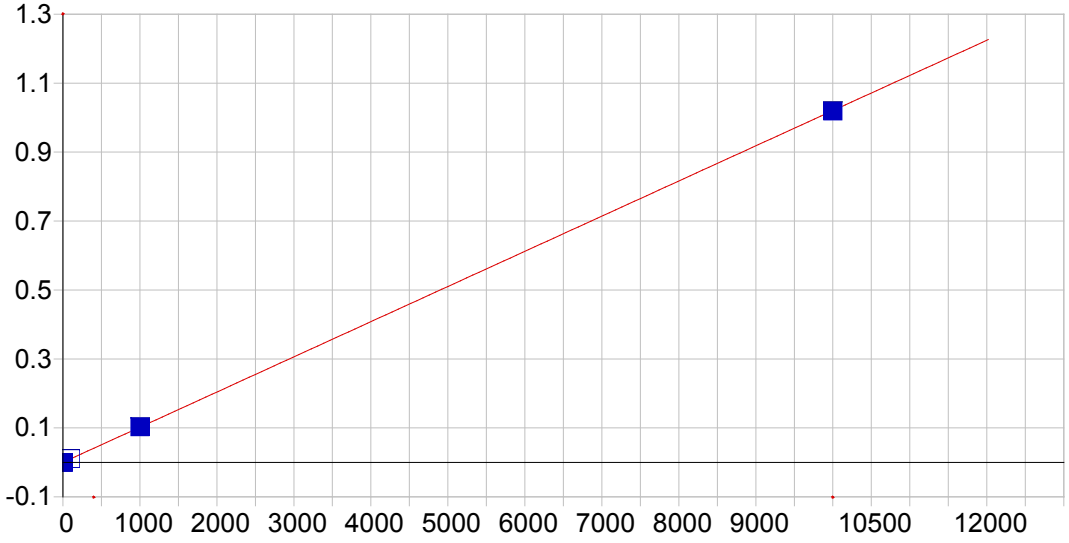


Ti 334.941 {101}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000004	Re-Slope:	1.000000
A1 (Gain):	0.000005	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999964	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	2.321143		
Predicted MQL:	7.737144		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00202	.002	.000	.00000	.000	1
CalStd5=10	10.000	7.7496	-2.25	-22.5	.00004	.000	1
CalStd8=100	100.00	103.12	3.12	3.12	.00049	.000	1
CalStd9=100	1000.0	998.73	-1.27	-.127	.00473	.000	1
CalStd10=10	10000.	10002.	1.91	.019	.04736	.000	1
CalStd7=50	50.000	49.486	-.514	-1.03	.00024	.000	1
CalStd4=5	5.0000	4.0028	-.997	-19.9	.00002	.000	1

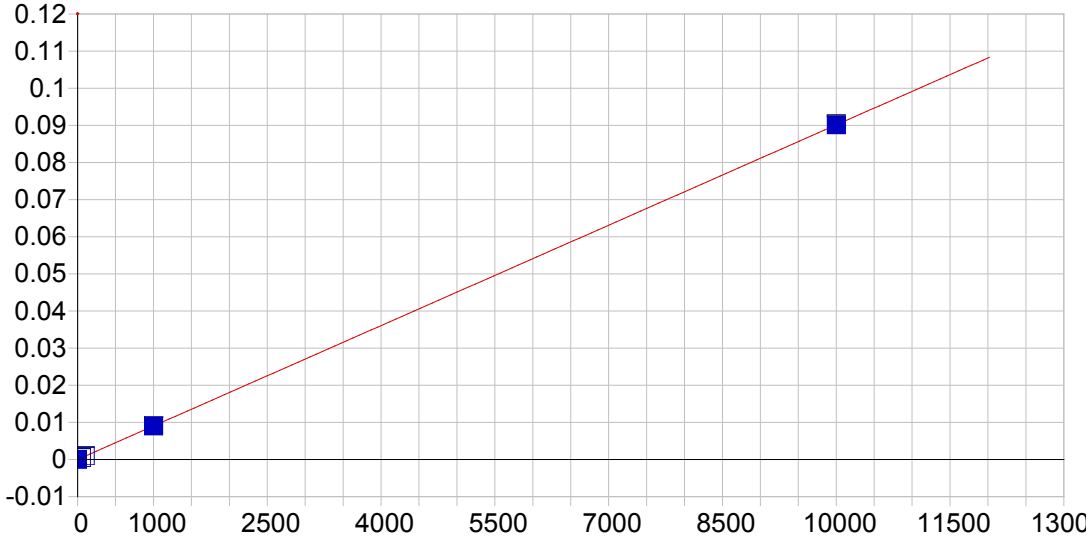


Sr 407.771 { 83}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000033	Re-Slope:	1.000000
A1 (Gain):	0.000102	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999985	Status:	OK.
Std Error of Est:	0.000002		
Predicted MDL:	0.173615		
Predicted MQL:	0.578718		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00021	.000	.000	-.00003	.000	1
CalStd3=1	1.0000	1.1917	.192	19.2	.00009	.000	1
CalStd4=5	5.0000	5.3473	.347	6.95	.00051	.000	1
CalStd5=10	10.000	9.1092	-.891	-8.91	.00090	.000	1
CalStd8=100	100.00	102.69	2.69	2.69	.01045	.000	1
CalStd9=100	1000.0	1009.8	9.79	.979	.10300	.001	1
CalStd10=10	10000.	9987.9	-12.1	-.121	1.0191	.000	1

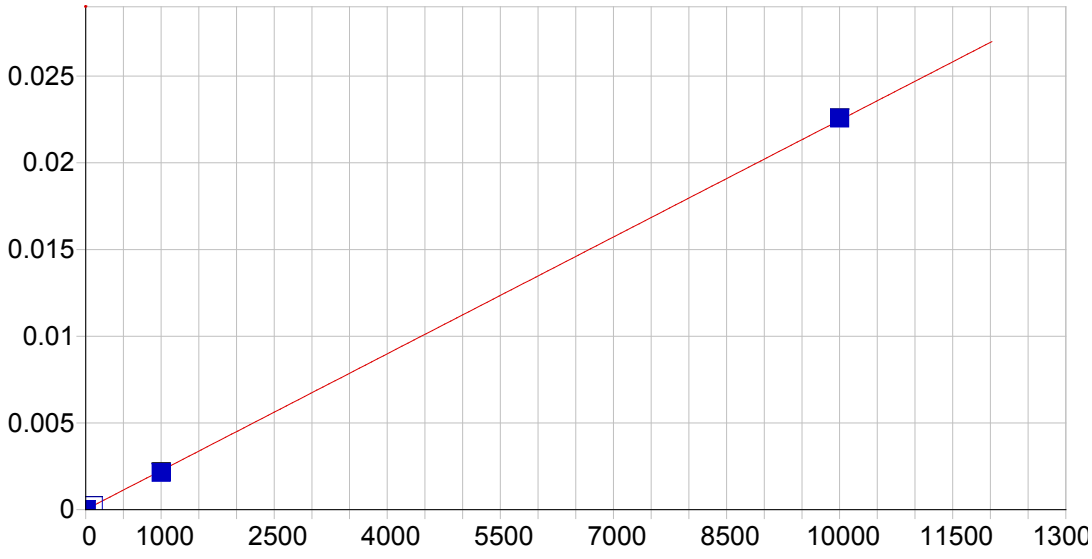


Sn 189.989 {478}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000019	Re-Slope:	1.000000
A1 (Gain):	0.000009	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999991	Status:	OK.
Std Error of Est:	0.000022		
Predicted MDL:	2.664043		
Predicted MQL:	8.880145		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-2.9993	-3.00	.000	-.00001	.000	1
CalStd10=10	10000.	9998.2	-1.77	-.018	.09013	.000	1
CalStd9=100	1000.0	997.16	-2.84	-.284	.00901	.000	1
CalStd8=100	100.00	101.60	1.60	1.60	.00093	.000	1
CalStd7=50	50.000	50.633	.633	1.27	.00048	.000	1

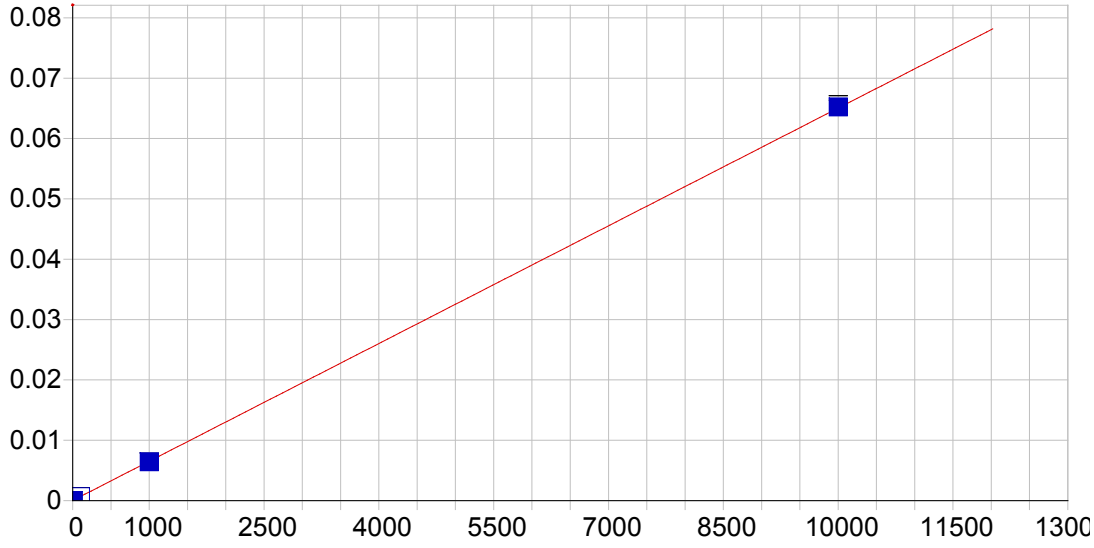


B 249.678 {135}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000006	Re-Slope:	1.000000
A1 (Gain):	0.000002	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999822	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	1.324317		
Predicted MQL:	4.414389		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00428	.004	.000	.00001	.000	1
CalStd8=100	100.00	96.176	-3.82	-3.82	.00022	.000	1
CalStd5=10	10.000	6.5253	-3.47	-34.7	.00002	.000	1
CalStd9=100	1000.0	952.18	-47.8	-4.78	.00214	.000	1
CalStd10=10	10000.	10055.	55.1	.551	.02258	.000	1

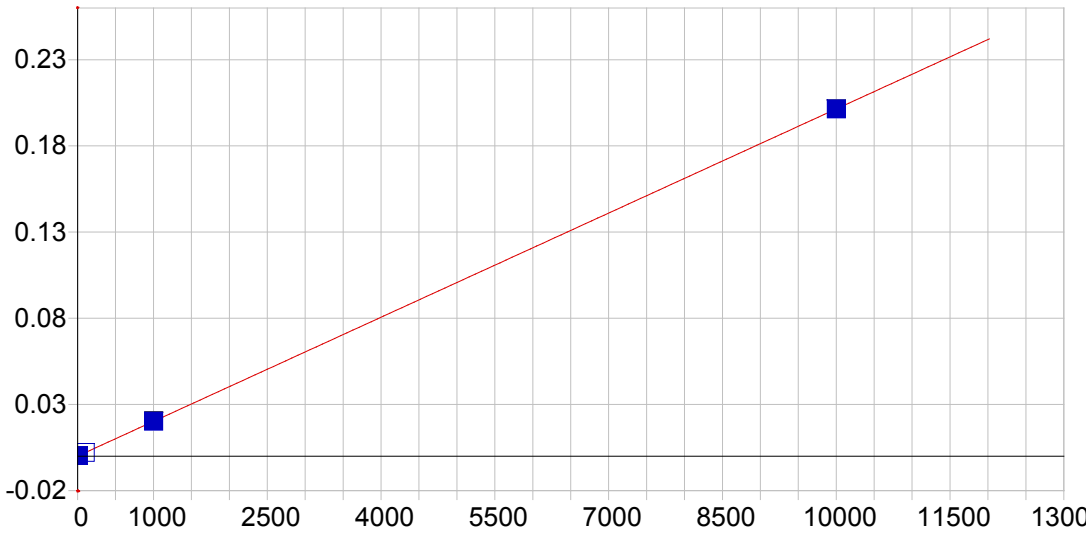


B 249.773 {135}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000022	Re-Slope:	1.000000
A1 (Gain):	0.000007	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999948	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	0.543142		
Predicted MQL:	1.810474		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00304	.003	.000	.00002	.000	1
CalStd8=100	100.00	95.978	-4.02	-4.02	.00065	.000	1
CalStd5=10	10.000	7.5187	-2.48	-24.8	.00007	.000	1
CalStd9=100	1000.0	981.88	-18.1	-1.81	.00641	.000	1
CalStd10=10	10000.	10025.	24.6	.246	.06523	.000	1

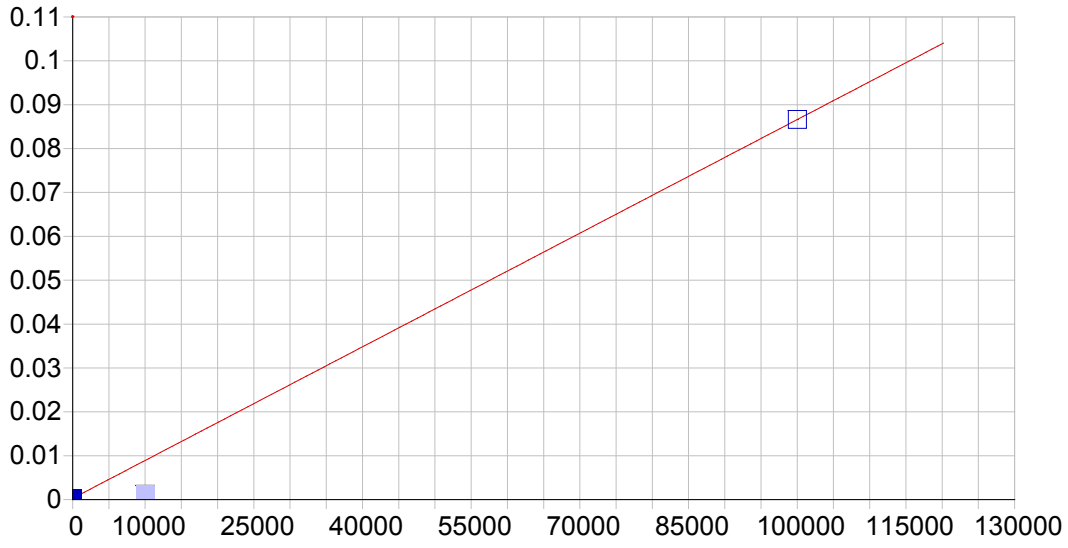


Li 670.784 { 50}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000048	Re-Slope:	1.000000
A1 (Gain):	0.000020	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999999	Status:	OK.
Std Error of Est:	0.000048		
Predicted MDL:	2.744917		
Predicted MQL:	9.149723		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-1.2856	-1.29	.000	.00002	.000	1
CalStd5=10	10.000	9.3881	-.612	-6.12	.00024	.000	1
CalStd8=100	100.00	103.25	3.25	3.25	.00213	.000	1
CalStd9=100	1000.0	1001.5	1.51	.151	.02022	.000	1
CalStd10=10	10000.	9999.5	-.460	-.005	.20143	.000	1

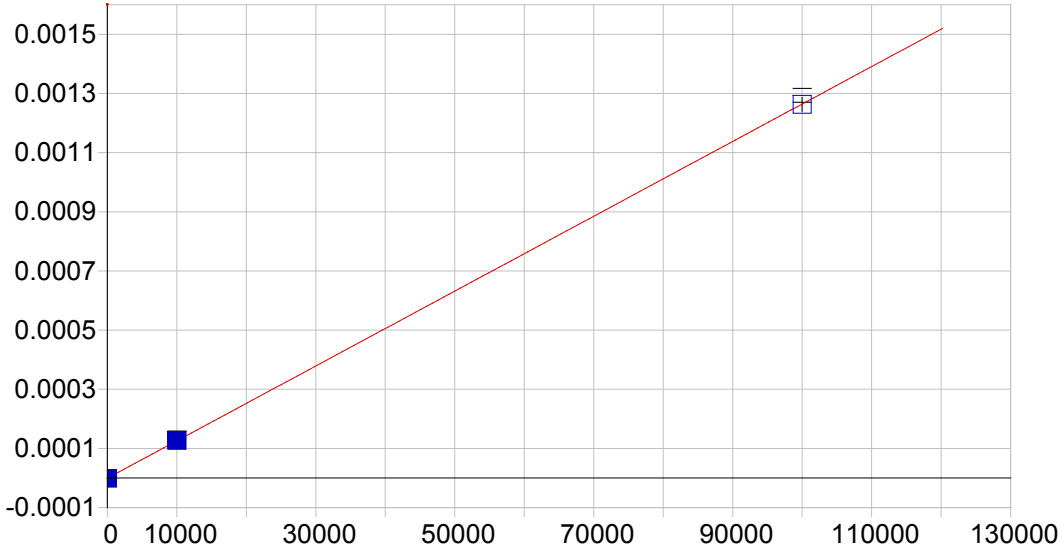


K 766.490 { 44}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000287	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	59.178569		
Predicted MQL:	197.261896		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	.00029	.000	1
CalStd9=100	10000.	986.74	-9010.	-90.1	.00114	.000	0
CalStd12-100	100000.	100000.	.000	.000	.08662	.000	1

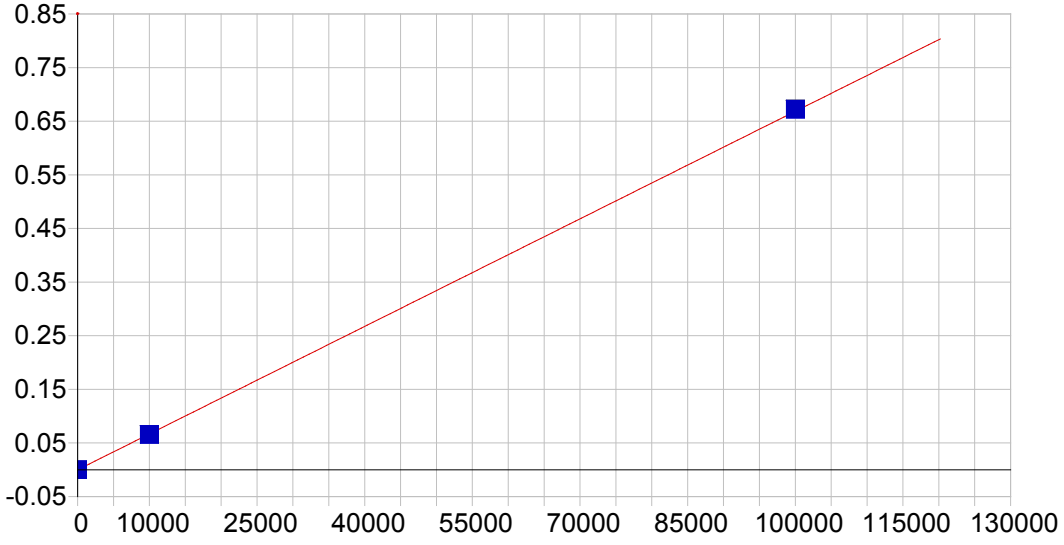


P 213.618 {457}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000001	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999995	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	56.470362		
Predicted MQL:	188.234539		

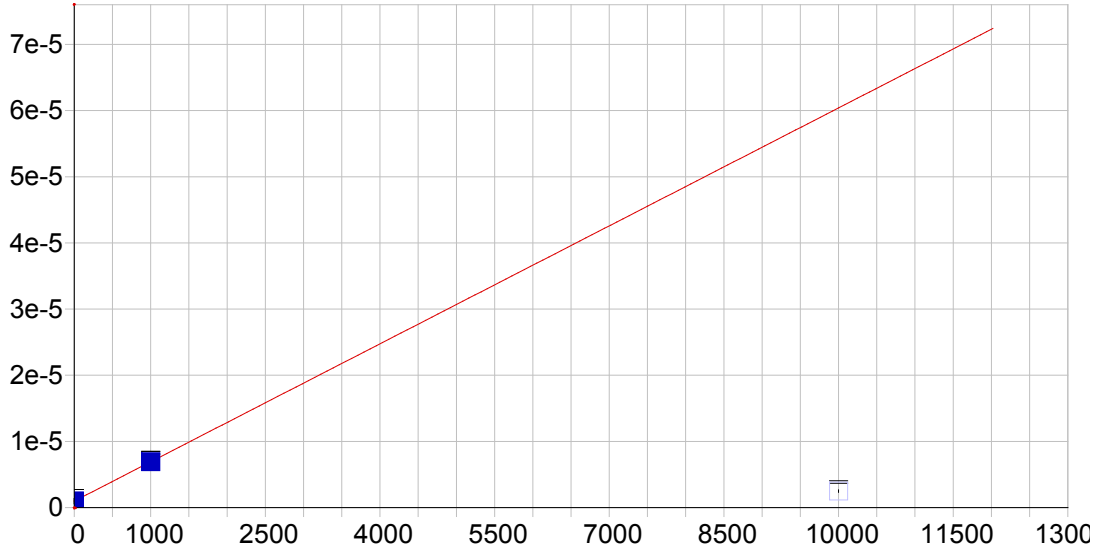
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.09066	-.091	.000	.00000	.000	1
CalStd9=100	10000.	10101.	101.	1.01	.00013	.000	1
CalStd12-100	100000.	99899.	-101.	-.101	.00126	.000	1



S 182.034 {485}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	
A0 (Offset):	-0.000038			Re-Slope:	1.000000
A1 (Gain):	0.000007			Y-int:	0.000000
A2 (Curvature):	0.000000				
n (Exponent):	1.000000				
Correlation:	0.999945		Status:	OK.	
Std Error of Est:	0.000623				
Predicted MDL:	4.643831				
Predicted MQL:	15.479436				

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	10.554	10.6	.000	.00003	.000	1
CalStd12-100	100000.	100520.	519.	.519	.67192	.000	1
CalStd9=100	10000.	9799.9	-200.	-2.00	.06547	.000	1

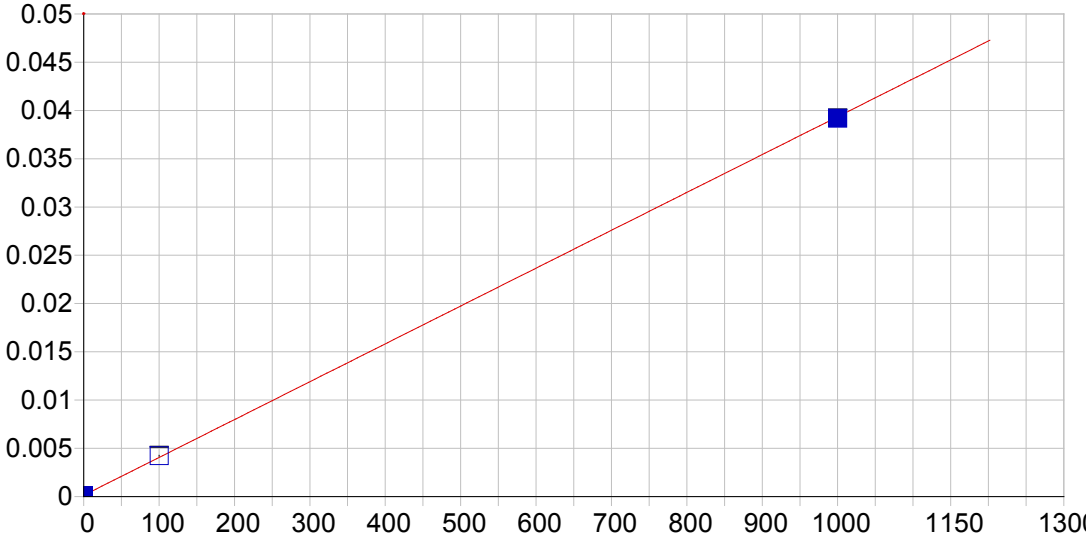


W 239.709 {140}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000001	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	110.415863		
Predicted MQL:	368.052876		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	.00000	.000	1
CalStd9=100	1000.0	1000.0	.000	.000	.00001	.000	1
CalStd12-100	10000.	253.26	-9750.	-97.5	.00000	.000	0

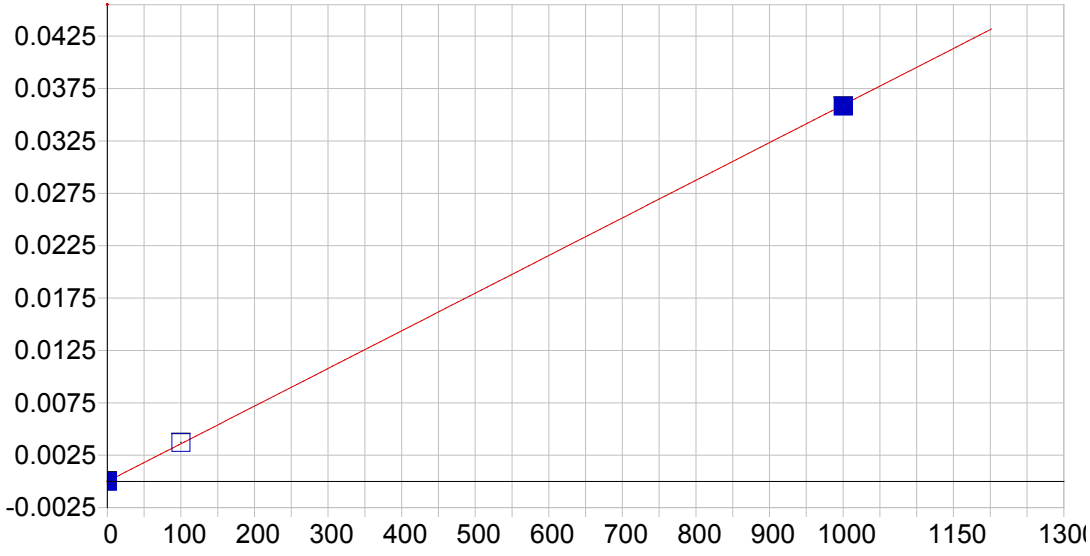


Hg 184.950 {482}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000134	Re-Slope:	1.000000
A1 (Gain):	0.000039	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999911	Status:	OK.
Std Error of Est:	0.000010		
Predicted MDL:	0.885080		
Predicted MQL:	2.950265		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00380	-.004	.000	.00013	.000	1
CalStd8=100	100.00	104.22	4.22	4.22	.00422	.000	1
CalStd9=100	1000.0	995.78	-4.22	-.422	.03919	.000	1



Hg 194.227 {473}

Date of Fit:	10/13/2016 11:55:53	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000036	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999948	Status:	OK.
Std Error of Est:	0.000007		
Predicted MDL:	0.914171		
Predicted MQL:	3.047236		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00290	-.003	.000	.00000	.000	1
CalStd8=100	100.00	103.22	3.22	3.22	.00371	.000	1
CalStd9=100	1000.0	996.78	-3.22	-.322	.03581	.000	1

Sample Name: Blank Acquired: 10/10/2016 13:37:14 Type: Cal
Method: DOD Calibration Updated 060614(v1648) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	As1890	Ba2335	Ba4934	Be3130	Ca3158	Ca3968	Cd2265	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
Avg	**.000**	**.000**	**.000**	**.000**	**.000**	**.005**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**
Stddev	.00	.00	.00	.000	.000	.000	.00	.000	.000	.000	.00	.000
%RSD	32.5	144.	20.3	108.	13.0	.719	3.36	6.09	1.90	34.0	62.1	115.

Elem	Cr2055	Cr2677	Cu2247	Fe2343	Fe2599	Mg2790	Mg2802	Mn2576	Mn2593	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	Cts/S
Avg	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.412**	**.000**	**.000**	**.000**
Stddev	.00	.000	.00	.000	.000	.00	.000	.00	.088	.000	.00	.00
%RSD	50.7	267.	37.7	2.32	.413	40.4	1.58	27.2	21.4	31.8	19.2	39.4

Elem	Pb2169	Pb2203	Sb2068	Sb2175	Se2062	Se1960	Tl1908	V_2908	V_2924	Zn2062	Zn2138	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
Avg	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**
Stddev	.00	.000	.00	.000	.00	.000	.00	.000	.000	.000	.000	.00
%RSD	.142	55.7	.759	370.	196.	264.	49.8	99.9	125.	139.	161.	63.1

Elem	Sn1899	B_2497	Li6707
Units	Cts/S	Cts/S	Cts/S
Avg	**.000**	**.000**	**.000**
Stddev	.00	.000	.000
%RSD	241.	9.13	123.

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**954950.**	**68197.**	**15153.**
Stddev	3918.	571.	29.
%RSD	.41028	.83792	.19101

Sample Name: CalStd1=0.25 Acquired: 10/10/2016 13:43:58 Type: Cal
Method: DOD Calibration Updated 060614(v1648) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Be3130
Units	Cts/S
Avg	.000
Stddev	.00
%RSD	5.50

Int. Std.	Y_3242
Units	Cts/S
Avg	964720.
Stddev	2887.
%RSD	.29924

Sample Name: CalStd2=0.5 Acquired: 10/10/2016 13:50:43 Type: Cal
Method: DOD Calibration Updated 060614(v1648) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Be3130	Cd2265
Units	Cts/S	Cts/S
Avg	.000	.000
Stddev	.00	.000
%RSD	23.9	24.3

Int. Std.	Y_3242	Y_2243
Units	Cts/S	Cts/S
Avg	966910.	15216.
Stddev	1591.	24.
%RSD	.16453	.15951

Sample Name: CalStd3=1 Acquired: 10/10/2016 13:57:34 Type: Cal
Method: DOD Calibration Updated 060614(v1648) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Ba2335	Be3130	Cd2265	Co2286	Cr2055	Cu2247	Ni2316	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.000**	**.000**	**.000**	**.001**	**.000**	**.000**	**.000**	**.000**	**.000**
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	462.	11.3	4.83	3.40	16.6	11.4	78.8	214.	9.88

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**957950.**	**69082.**	**15149.**
Stddev	3692.	500.	15.
%RSD	.38539	.72448	.10003

Sample Name: CalStd4=5 Acquired: 10/10/2016 14:04:16 Type: Cal
Method: DOD Calibration Updated 060614(v1648) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	As1890	Ba2335	Be3130	Cd2265	Co2286	Cr2055	Cr2677	Cu2247	Mn2576	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
Avg	**.000**	**.001**	**.000**	**.003**	**.001**	**.001**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	38.9	1.64	.685	2.61	2.98	2.73	7.50	10.6	1.93	10.9	5.50	18.9

Elem	Sb2175	Zn2138	Sr4077
Units	Cts/S	Cts/S	Cts/S
Avg	**.000**	**.000**	**.001**
Stddev	.000	.000	.000
%RSD	49.6	1.33	2.95

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**962650.**	**69331.**	**15094.**
Stddev	3723.	331.	17.
%RSD	.38670	.47791	.11299

Sample Name: CalStd5=10 Acquired: 10/10/2016 14:11:02 Type: Cal
Method: DOD Calibration Updated 060614(v1648) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	As1937	Ba2335	Be3130	Cd2265	Co2286	Cr2055	Cr2677	Cu2247	Mn2576	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
Avg	**.000**	**.000**	**.001**	**.001**	**.004**	**.002**	**.002**	**.000**	**.001**	**.000**	**.000**	**.000**
Stddev	.000	.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	5.50	154.	2.47	.457	.922	3.14	1.97	3.51	2.82	1.28	7.07	3.61

Elem	Pb2169	Pb2203	Sb2068	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	B_2497	Li6707
Units	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**	**.001**	**.000**	**.000**
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	27.3	2.90	35.0	24.1	38.2	19.9	3.03	2.42	1.54	3.12	17.3

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**964230.**	**69510.**	**15167.**
Stddev	3347.	306.	19.
%RSD	.34715	.43997	.12603

Sample Name: CalStd6=20 Acquired: 10/10/2016 14:17:47 Type: Cal
Method: DOD Calibration Updated 060614(v1648) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ba2335	Cu2247	Mn2576	Mo2045	Sb2175	V_2924
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.003**	**.002**	**.000**	**.000**	**.001**	**.000**
Stddev	.000	.000	.000	.000	.000	.000
%RSD	.584	1.31	1.18	.896	8.23	2.10

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**961840.**	**69236.**	**15187.**
Stddev	5221.	330.	41.
%RSD	.54280	.47628	.27208

Sample Name: CalStd7=50 Acquired: 10/10/2016 14:24:27 Type: Cal
Method: DOD Calibration Updated 060614(v1648) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	As1937	Ba2335	Cd2265	Co2286	Cr2055	Cr2677	Cu2247	Mn2576	Mo2045	Ni2316	Sb2068	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
Avg	**.000**	**.006**	**.025**	**.011**	**.010**	**.000**	**.005**	**.001**	**.000**	**.000**	**.001**	**.000**
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	20.7	.442	.084	.848	.612	2.46	1.22	1.37	1.25	1.24	4.51	2.73

Elem	V_2924	Zn2138	Sn1899
Units	Cts/S	Cts/S	Cts/S
Avg	**.000**	**.000**	**.000**
Stddev	.000	.000	.000
%RSD	.991	.810	3.70

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**954460.**	**69439.**	**15101.**
Stddev	5563.	384.	36.
%RSD	.58285	.55260	.23934

Sample Name: CalStd8=100 Acquired: 10/10/2016 14:31:08 Type: Cal
Method: DOD Calibration Updated 060614(v1648) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	As1937	As1890	Ba2335	Ba4934	Be3130	Ca3968	Cd2265	Co2286	Co2388	Cr2055	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
Avg	**.001**	**.001**	**.000**	**.012**	**.011**	**.011**	**.012**	**.050**	**.021**	**.000**	**.020**	**.001**
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	1.84	2.20	8.19	.364	.624	1.21	.440	.449	.346	1.96	.238	1.82

Elem	Cu2247	Mg2802	Mn2576	Mo2045	Ni2216	Ni2316	Pb2169	Pb2203	Sb2175	Se2062	Se1960	Tl1908
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	**.011**	**.008**	**.001**	**.000**	**.000**	**.000**	**.001**	**.004**	**.003**	**.000**	**.001**	**.001**
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	.183	1.26	1.42	.807	.251	.282	1.57	2.18	1.00	16.9	4.77	1.22

Elem	V_2908	V_2924	Zn2138	Sr4077	Sn1899	B_2497	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.000**	**.001**	**.000**	**.010**	**.001**	**.001**	**.002**
Stddev	.000	.000	.000	.000	.000	.000	.000
%RSD	4.22	.907	.234	.945	1.65	.216	1.91

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**964370.**	**68993.**	**15155.**
Stddev	1084.	413.	13.
%RSD	.11242	.59846	.08737

Sample Name: CalStd9=1000 Acquired: 10/10/2016 14:37:41 Type: Cal
Method: DOD Calibration Updated 060614(v1648) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Al3961	As1937	As1890	Ba2335	Ba4934	Be3130	Ca3158	Ca3968	Cd2265	Co2286	Co2388	Cr2055
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	**.001**	**.008**	**.003**	**.119**	**.062**	**.105**	**.000**	**.092**	**.475**	**.212**	**.003**	**.191**
Stddev	.000	.000	.000	.000	.001	.001	.000	.000	.000	.000	.000	.000
%RSD	1.95	.481	.449	.374	.905	.660	2.41	.388	.078	.048	.479	.006

Elem	Cr2677	Cu2247	Fe2343	Fe2599	Mg2790	Mg2802	Mn2576	Mn2593	Mo2045	Ni2216	Ni2316	Pb2169
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	**.006**	**.105**	**.001**	**.001**	**.000**	**.070**	**.012**	**468.**	**.001**	**.003**	**.003**	**.015**
Stddev	.000	.000	.000	.000	.000	.001	.000	1.	.000	.000	.000	.000
%RSD	.897	.190	.541	.169	4.71	.732	.391	.133	.647	1.03	.784	.619

Elem	Pb2203	Sb2068	Sb2175	Se2062	Se1960	Tl1908	V_2908	V_2924	Zn2062	Zn2138	Sr4077	Sn1899
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	**.037**	**.023**	**.025**	**.003**	**.007**	**.011**	**.000**	**.008**	**.156**	**.003**	**.103**	**.009**
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.001	.000
%RSD	.175	.276	.192	2.82	.555	.263	1.66	.410	.248	1.18	.730	.938

Elem	B_2497	Li6707
Units	Cts/S	Cts/S
Avg	**.006**	**.020**
Stddev	.000	.000
%RSD	.475	.663

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**957740.**	**69243.**	**15243.**
Stddev	8775.	662.	19.
%RSD	.91626	.95670	.12274

Sample Name: CalStd10=10000 Acquired: 10/10/2016 14:43:38 Type: Cal
Method: DOD Calibration Updated 060614(v1648) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Al3961	As1937	As1890	Ba4934	Ca3158	Ca3968	Co2286	Co2388	Cr2055	Cr2677	Cu2247	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
Avg	**.015**	**.084**	**.029**	**.566**	**.003**	**.902**	**2.08**	**.031**	**1.88**	**.065**	**1.02**	**.007**
Stddev	.000	.000	.000	.000	.000	.002	.00	.000	.00	.000	.00	.000
%RSD	1.27	.482	.111	.056	.547	.169	.174	.083	.225	.150	.287	.789

Elem	Fe2599	Mg2790	Mg2802	Mn2576	Mn2593	Mo2045	Ni2216	Ni2316	Pb2169	Pb2203	Sb2068	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
Avg	**.007**	**.001**	**.645**	**.119**	**4550.**	**.008**	**.029**	**.028**	**.142**	**.364**	**.227**	**.248**
Stddev	.000	.000	.002	.000	2.	.000	.000	.000	.000	.001	.001	.001
%RSD	1.15	1.21	.358	.349	.048	.162	.135	.133	.311	.401	.259	.368

Elem	Se2062	Se1960	Tl1908	V_2908	V_2924	Zn2062	Zn2138	Sr4077	Sn1899	B_2497	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.025**	**.071**	**.111**	**.001**	**.085**	**1.50**	**.032**	**1.02**	**.090**	**.065**	**.201**
Stddev	.000	.000	.000	.000	.000	.00	.000	.00	.000	.000	.000
%RSD	.209	.149	.410	.061	.072	.131	.146	.015	.240	.570	.064

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**921470.**	**68673.**	**14830.**
Stddev	1298.	76.	34.
%RSD	.14086	.11070	.22747

Sample Name: CalStd11-100k Acquired: 10/10/2016 14:49:29 Type: Cal
Method: DOD Calibration Updated 060614(v1648) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Cr2055	Mn2593	Pb2169	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**17.2**	**45400.**	**1.45**	**13.8**
Stddev	.0	387.	.01	.0
%RSD	.154	.852	.351	.137

Int. Std.	Y_3710	Y_2243
Units	Cts/S	Cts/S
Avg	**69286.**	**14727.**
Stddev	282.	35.
%RSD	.40765	.23751

Sample Name: CalStd12-100000 Acquired: 10/10/2016 14:56:13 Type: Cal
Method: DOD Calibration Updated 060614(v1648) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Al3961	Ca3158	Fe2599	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.150**	**.035**	**.067**	**.006**
Stddev	.000	.000	.001	.000
%RSD	.189	.123	1.02	.485

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**909950.**	**68343.**	**14334.**
Stddev	1905.	264.	24.
%RSD	.20936	.38623	.16795

Sample Name: CalStd13=500000 Acquired: 10/10/2016 15:03:06 Type: Cal
Method: DOD Calibration Updated 060614(v1648) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Al3961	Ca3158	Fe2343	Fe2599	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.760**	**.165**	**.242**	**.307**	**.032**
Stddev	.005	.001	.001	.001	.000
%RSD	.622	.588	.447	.443	1.45

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**859940.**	**64989.**	**13200.**
Stddev	34.	536.	1.
%RSD	.00396	.82478	.00380

Sample Name: CalStd14-1000k Acquired: 10/10/2016 15:10:13 Type: Cal
Method: DOD Calibration Updated 060614(v1648) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Al3961	Ca3158	Fe2343	Fe2599	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.49**	**.318**	**.381**	**.563**	**.062**
Stddev	.00	.001	.005	.002	.000
%RSD	.039	.224	1.36	.333	.340

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**814420.**	**63488.**	**12337.**
Stddev	673.	223.	39.
%RSD	.08269	.35138	.31583

Sample Name: icv Acquired: 10/10/2016 15:23:59 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1890	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Co2388	Cr2677	Cu2247	Fe2343
Avg	**50.0**	**11900.**	**2020.**	**1970.**	**47.8**	**6330.**	**48.8**	**507.**	**495.**	**198.**	**244.**	**5100.**
Stddev	.6	164.	9.	24.	.1	125.	.2	3.	2.	1.	2.	4.
%RSD	1.15	1.38	.445	1.21	.198	1.98	.337	.539	.434	.335	.669	.081
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Fe2599	Mg2790	Mn2576	Mn2593	Mo2045	Ni2216	Ni2316	Pb2169	Pb2203	Sb2068	Sb2175	Se2062
Avg	**5660.**	**10300.**	**510.**	**482.**	**519.**	**485.**	**489.**	**510.**	**498.**	**502.**	**507.**	**2000.**
Stddev	24.	68.	.	2.	1.	.	.	1.	2.	1.	4.	24.
%RSD	.417	.661	.005	.401	.104	.065	.094	.125	.316	.286	.842	1.22
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Tl1908	V_2908	V_2924	Zn2062	Zn2138	Sr4077	Sn1899	B_2497	Li6707
Avg	**1980.**	**492.**	**501.**	**527.**	**507.**	**511.**	**527.**	**497.**	**510.**
Stddev	7.	14.	1.	2.	2.	7.	2.	1.	4.
%RSD	.349	2.82	.146	.344	.301	1.38	.438	.273	.702
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: icv Acquired: 10/10/2016 15:23:59 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**955980.**	**68832.**	**15030.**
Stddev	1300.	130.	21.
%RSD	.13602	.18929	.14148

Sample Name: ICVLL Acquired: 10/10/2016 15:30:14 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Cd2265	Co2286	Cr2677	Cu2247	Fe2599		Mg2802
Avg	**49.2**	**1360.**	**62.7**	**32.7**	**13.4**	**16.6**	**32.0**	**32.5**	**31.6**	**1070.**		**1680.**
Stddev	.6	18.	3.5	.3	.1	.1	.1	.2	.8	7.		9.
%RSD	1.18	1.33	5.56	1.01	.474	.761	.460	.733	2.44	.679		.524
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	Mn2576	Mo2045	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899	B_2497
Avg	**33.3**	**31.6**	**28.6**	**31.0**	**66.4**	**67.6**	**61.4**	**33.0**	**33.0**	**32.3**	**157.**	**62.9**
Stddev	.1	.6	.5	1.2	2.4	1.1	1.2	.5	.2	.3	4.	.4
%RSD	.331	1.79	1.70	3.96	3.56	1.57	1.91	1.50	.630	.958	2.51	.621
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	Li6707
Avg	**61.8**
Stddev	1.8
%RSD	2.95
Check ?	Chk Pass
Value	
Range	

Sample Name: ICVLL Acquired: 10/10/2016 15:30:14 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**955740.**	**68979.**	**14985.**
Stddev	5737.	495.	18.
%RSD	.60023	.71758	.11830

Sample Name: icb Acquired: 10/10/2016 15:43:36 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3968	Cd2265	Co2286	Cr2677	Cu2247	Fe2599	Mg2802
Avg	**1.24**	**23.2**	**-3.99**	**-.004**	**.034**	**5.36**	**-.067**	**.266**	**-.030**	**-.002**	**-16.8**	**4.59**
Stddev	.72	16.7	3.39	.152	.019	.28	.071	.193	.375	.382	7.9	.50
%RSD	57.8	72.0	85.1	3640.	54.0	5.15	105.	72.4	1250.	21600.	46.8	10.8
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Mn2576	Mo2045	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899	B_2497
Avg	**.202**	**.000**	**-3.41**	**.639**	**.220**	**4.39**	**-1.61**	**.368**	**-.643**	**.043**	**-3.69**	**-.091**
Stddev	.065	.44	.38	1.69	.702	5.51	2.00	.466	.128	.160	2.04	.455
%RSD	32.4	415000.	11.1	264.	320.	126.	124.	127.	19.9	370.	55.4	498.
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Li6707
Avg	**.681**
Stddev	.891
%RSD	131.
Check ?	None
Value	
Range	

Sample Name: icb Acquired: 10/10/2016 15:43:36 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**969550.**	**68645.**	**15141.**
Stddev	12542.	214.	40.
%RSD	1.2936	.31175	.26543

Sample Name: icsa Acquired: 10/10/2016 15:57:03 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3158	Cd2265	Co2286	Cr2677	Cu2247	Fe2599
Avg	**.000**	**492000.**	**-.010**	**.001**	**.126**	**479000.**	**-.001**	**.005**	**.000**	**-.122**	**460000.**
Stddev	4.28	3880.	432.	9.56	.056	3720.	7.62	12.4	10.4	33.1	2410.
%RSD	.000	.789	4280000.	1480000.	44.1	.777	531000.	233000.	18e6	27200.	.524
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit											
Low Limit											

Elem	Mg2790	Mn2576	Mo2045	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077
Avg	**513000.**	**.072**	**.000**	**-.004**	**.016**	**.134**	**-.005**	**-.335**	**-.005**	**.002**	**.000**
Stddev	3980.	.645	11.2	10.0	102.	179.	271.	105.	4.95	11.7	.197
%RSD	.776	892.	2680000.	234000.	619000.	133000.	5770000.	31400.	96100.	719000.	997000.
Check ?	None	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	Sn1899	B_2497	Li6707
Avg	**.388**	**.074**	**.000**
Stddev	175.	6.30	1.67
%RSD	45100.	8450.	5700000.
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Sample Name: icsa Acquired: 10/10/2016 15:57:03 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**798980.**	**65865.**	**11566.**
Stddev	20288.	20.	69.
%RSD	2.5392	.03065	.59295

Sample Name: icsab Acquired: 10/10/2016 16:03:20 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	As1890	Ba2335	Be3130	Ca3158	Cd2265	Co2286	Co2388	Cr2055
Avg	**528.**	**468000.**	**452.**	**415.**	**463.**	**472.**	**488000.**	**443.**	**447.**	**412.**	**462.**
Stddev	6.	6040.	14.	17.	2.	6.	4120.	1.	1.	9.	1.
%RSD	1.18	1.29	3.18	4.05	.444	1.37	.843	.191	.131	2.25	.212
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	Cu2247	Fe2599	Mg2790	Mn2576	Mo2045	Ni2216	Ni2316	Pb2169	Pb2203	Sb2068
Avg	**439.**	**407.**	**478000.**	**448000.**	**449.**	**439.**	**427.**	**422.**	**539.**	**427.**	**478.**
Stddev	5.	4.	5540.	6150.	7.	6.	7.	6.	16.	2.	5.
%RSD	1.21	.882	1.16	1.37	1.49	1.29	1.67	1.37	3.04	.522	1.03
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	Sb2175	Se2062	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899	B_2497	Li6707
Avg	**512.**	**476.**	**473.**	**412.**	**487.**	**421.**	**475.**	**421.**	**439.**	**491.**
Stddev	1.	50.	1.	3.	10.	6.	6.	4.	8.	9.
%RSD	.109	10.4	.187	.673	1.97	1.53	1.18	1.04	1.72	1.93
Check ?	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: 10/10/2016 16:03:20 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**914240.**	**68915.**	**13802.**
Stddev	14344.	304.	31.
%RSD	1.5689	.44052	.22669

Sample Name: ICVLL ag Acquired: 10/10/2016 16:10:53 Type: Unk
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3968	Cd2265	Co2286	Cr2677	Cu2247	Fe2599	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
Avg	**11.3**	**136.**	**-6.75**	**.187**	**.068**	**43.7**	**-.231**	**.045**	**.324**	**.733**	**454.**	**24.0**
Stddev	.6	76.	2.33	.234	.011	15.0	.181	.118	.098	.294	511.	.7
%RSD	5.30	56.0	34.4	125.	16.4	34.4	78.4	261.	30.4	40.0	112.	3.11

Elem	Mn2576	Mo2045	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899	B_2497
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	**.234**	**1.01**	**-1.65**	**.843**	**1.70**	**-8.15**	**-.874**	**-1.17**	**-.470**	**.053**	**-1.11**	**-.883**
Stddev	.150	.54	.14	2.04	1.75	4.07	.746	.41	.108	.056	.61	.200
%RSD	64.0	54.1	8.67	242.	103.	50.0	85.4	34.8	23.0	106.	55.3	22.7

Elem	Li6707
Units	ug/L
Avg	**-1.88**
Stddev	.50
%RSD	26.6

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**1019900.**	**71559.**	**15688.**
Stddev	3728.	389.	47.
%RSD	.36547	.54424	.29879

Sample Name: ccv1 Acquired: 10/11/2016 03:27:09 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1890	Ba4934	Be3130	Cd2265	Co2388	Cr2055	Cu2247	Fe2343	Fe2599	Mg2790
Avg	**468.**	**4790.**	**4480.**	**4480.**	**463.**	**462.**	**4690.**	**4650.**	**4600.**	**4660.**	**5430.**	**4670.**
Stddev	.	13.	37.	13.	.	2.	3.	19.	18.	37.	280.	20.
%RSD	.091	.266	.825	.295	.011	.401	.057	.411	.383	.802	5.15	.421
Check ?	None	Chk Pass	Chk Pass		Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Mn2593	Mo2045	Ni2216	Pb2169	Sb2068	Se2062	Tl1908	V_2908	Zn2062	Sr4077	Sn1899	B_2497
Avg	**4590.**	**4550.**	**4690.**	**4670.**	**4730.**	**4730.**	**4650.**	**4510.**	**4580.**	**4560.**	**4490.**	**4640.**
Stddev	15.	1.	3.	15.	8.	21.	24.	23.	8.	22.	27.	.
%RSD	.325	.028	.054	.315	.173	.439	.512	.504	.173	.487	.603	.001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None	Chk Pass
Value												
Range												

Elem	Li6707
Avg	**4820.**
Stddev	.
%RSD	.004
Check ?	None
Value	
Range	

Sample Name: ccv1 Acquired: 10/11/2016 03:27:09 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**971500.**	**71305.**	**15352.**
Stddev	7.	237.	31.
%RSD	.00072	.33179	.20219

Sample Name: ccv2 Acquired: 10/11/2016 03:33:00 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	As1890	Ba2335	Ba4934	Be3130	Ca3968	Cd2265	Co2286	Co2388	Cr2055
Avg	**50.4**	**528.**	**478.**	**469.**	**468.**	**467.**	**48.5**	**480.**	**48.6**	**472.**	**475.**	**483.**
Stddev	.9	4.	7.	2.	2.	1.	.1	1.	.3	2.	2.	1.
%RSD	1.77	.849	1.44	.376	.529	.315	.172	.218	.682	.329	.332	.279
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Cr2677	Cu2247	Fe2599	Mg2802	Mn2576	Mn2593	Mo2045	Ni2216	Ni2316	Pb2169	Pb2203	Sb2068
Avg	**476.**	**470.**	**538.**	**499.**	**485.**	**465.**	**462.**	**474.**	**483.**	**485.**	**477.**	**486.**
Stddev	1.	2.	22.	2.	1.	3.	1.	1.	1.	3.	3.	3.
%RSD	.241	.425	4.04	.325	.183	.605	.157	.193	.119	.670	.597	.600
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	Sb2175	Se2062	Se1960	Tl1908	V_2924	Zn2062	Zn2138	Sr4077	Sn1899	B_2497	Li6707
Avg	**476.**	**525.**	**484.**	**479.**	**458.**	**474.**	**477.**	**472.**	**465.**	**480.**	**491.**
Stddev	4.	14.	6.	5.	2.	2.	1.	1.	6.	2.	5.
%RSD	.807	2.63	1.26	1.12	.472	.523	.224	.237	1.35	.502	.918
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: ccv2 Acquired: 10/11/2016 03:33:00 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**975110.**	**70064.**	**15276.**
Stddev	3647.	178.	24.
%RSD	.37401	.25421	.15502

Sample Name: ccb Acquired: 10/11/2016 03:39:16 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3968	Cd2265	Co2286	Cr2677	Cu2247	Fe2599	Mg2802
Avg	**1.32**	**20.7**	**-8.85**	**.022**	**.037**	**3.93**	**-.097**	**.194**	**.612**	**.450**	**2.92**	**1.73**
Stddev	.32	11.7	4.57	.238	.029	.78	.065	.128	.155	.451	3.27	.01
%RSD	24.5	56.5	51.6	1060.	78.4	19.8	66.9	66.2	25.3	100.	112.	.792
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Mn2576	Mo2045	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899	B_2497
Avg	**.390**	**1.53**	**-1.45**	**-.403**	**-1.34**	**-4.25**	**-.699**	**-1.28**	**-.323**	**.532**	**-2.46**	**4.57**
Stddev	.186	.55	.29	.835	.70	4.90	1.72	.30	.056	.587	1.57	.39
%RSD	47.7	36.2	20.0	207.	52.5	116.	245.	23.5	17.3	110.	63.9	8.59
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Li6707
Avg	**-3.13**
Stddev	2.93
%RSD	93.7
Check ?	None
Value	
Range	

Sample Name: ccb Acquired: 10/11/2016 03:39:16 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**973500.**	**69570.**	**15225.**
Stddev	3644.	111.	36.
%RSD	.37433	.15959	.23692

Sample Name: lcss59424 Acquired: 10/11/2016 04:13:10 Type: Unk
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1890	Ba4934	Be3130	Ca3968	Cd2265	Co2388	Cr2677	Cu2247	Fe2599	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
Avg	**89.2**	**3880.**	**3530.**	**3700.**	**90.4**	**28.5**	**87.7**	**927.**	**372.**	**447.**	**2630.**	**10.2**
Stddev	1.2	60.	13.	19.	.5	1.8	.4	8.	2.	1.	789.	.3
%RSD	1.30	1.55	.355	.500	.557	6.36	.402	.857	.579	.312	30.0	2.68

Elem	Mn2576	Mn2593	Mo2045	Ni2216	Ni2316	Pb2169	Pb2203	Sb2068	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	ug/L
Avg	**920.**	**876.**	**1870.**	**924.**	**932.**	**918.**	**905.**	**905.**	**3480.**	**3600.**	**888.**	**910.**
Stddev	6.	7.	14.	7.	6.	5.	3.	6.	27.	17.	8.	5.
%RSD	.640	.841	.767	.791	.693	.577	.333	.668	.764	.459	.910	.575

Elem	Zn2062	Zn2138	Sr4077	Sn1899	B_2497	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**888.**	**886.**	**1890.**	**1830.**	**.263**	**2020.**
Stddev	1.	7.	11.	11.	.560	5.
%RSD	.140	.779	.597	.600	213.	.272

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**955900.**	**67612.**	**15072.**
Stddev	5592.	525.	51.
%RSD	.58503	.77717	.34025

Sample Name: mbs59424 Acquired: 10/11/2016 04:19:14 Type: Unk
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3968	Cd2265	Co2286	Cr2677	Cu2247	Fe2599	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
Avg	**1.58**	**42.2**	**-21.0**	**.349**	**.019**	**20.7**	**-.276**	**-.344**	**.696**	**.600**	**35.8**	**8.44**
Stddev	.26	23.2	3.0	.202	.015	.5	.100	.206	.223	.262	16.8	.07
%RSD	16.6	55.0	14.2	57.7	79.0	2.20	36.3	59.8	32.0	43.6	47.0	.826

Elem	Mn2576	Mo2045	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899	B_2497
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	**1.13**	**1.99**	**-1.97**	**.348**	**-1.81**	**-7.88**	**-.410**	**-1.02**	**.345**	**.973**	**4.92**	**.488**
Stddev	.06	.47	.07	1.28	1.39	3.76	2.06	.13	.119	1.28	2.66	.403
%RSD	4.89	23.5	3.58	367.	76.9	47.7	503.	13.2	34.4	132.	54.1	82.6

Elem	Li6707
Units	ug/L
Avg	**.148**
Stddev	.678
%RSD	460.

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**969720.**	**68577.**	**15059.**
Stddev	5227.	357.	82.
%RSD	.53899	.52103	.54176

Sample Name: 784783 Acquired: 10/11/2016 04:26:02 Type: Unk
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Cr2055	Cr2677	Cu2247
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**-1.81**	**246000.**	**88.6**	**1210.**	**2.76**	**109000.**	**-21.8**	**134.**	**481.**	**469.**	**285.**
Stddev	1.00	1760.	4.6	7.	.05	1320.	.2	.	1.	3.	3.
%RSD	55.3	.716	5.20	.594	1.68	1.22	.925	.176	.117	.672	1.11

Elem	Fe2599	Mg2790	Mn2593	Mo2045	Ni2216	Ni2316	Pb2169	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	**526000.**	**27300.**	**7270.**	**12.8**	**153.**	**140.**	**13800.**	**10.3**	**39.1**	**20.9**	**856.**
Stddev	2970.	397.	42.	1.1	1.	1.	47.	2.2	7.1	3.5	15.
%RSD	.564	1.46	.584	8.82	.955	.532	.341	21.7	18.1	16.9	1.72

Elem	V_2924	Zn2062	Sr4077	Sn1899	B_2497	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**1000.**	**1270.**	**253.**	**40.4**	**129.**	**219.**
Stddev	3.1	1.	1.	4.5	3.	4.
%RSD	.314	.112	.532	11.2	2.55	1.68

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**909540.**	**68314.**	**14217.**
Stddev	6754.	295.	20.
%RSD	.74258	.43227	.14240

Sample Name: 784852 Acquired: 10/11/2016 04:32:46 Type: Unk
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Cr2055	Cr2677	Cu2247
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**-2.18**	**266000.**	**96.1**	**1300.**	**3.21**	**104000.**	**-23.8**	**140.**	**540.**	**535.**	**285.**
Stddev	.25	1310.	10.5	6.	.02	766.	.6	1.	1.	11.	2.
%RSD	11.6	.491	10.9	.455	.695	.733	2.62	.450	.156	2.05	.815

Elem	Fe2599	Mg2790	Mn2593	Mo2045	Ni2216	Ni2316	Pb2169	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	**566000.**	**28900.**	**7670.**	**12.6**	**161.**	**149.**	**16000.**	**11.0**	**54.4**	**25.4**	**943.**
Stddev	3340.	218.	61.	1.1	5.	4.	41.	3.4	8.4	2.9	22.
%RSD	.590	.755	.799	9.05	3.12	2.68	.258	30.8	15.4	11.5	2.30

Elem	Zn2062	Sr4077	Sn1899	B_2497	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**1270.**	**251.**	**41.2**	**62.5**	**230.**
Stddev	2.	1.	4.6	5.9	4.
%RSD	.182	.558	11.2	9.42	1.94

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**898190.**	**68396.**	**14217.**
Stddev	22826.	368.	11.
%RSD	2.5413	.53803	.07461

Sample Name: 784853 Acquired: 10/11/2016 04:39:31 Type: Unk
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Cr2677	Cu2247	Fe2599
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**-.575**	**148000.**	**45.4**	**1400.**	**.783**	**44100.**	**-14.7**	**98.8**	**370.**	**102.**	**325000.**
Stddev	.574	1120.	9.4	9.	.024	594.	.5	.3	2.	1.	2580.
%RSD	100.0	.756	20.6	.611	3.01	1.35	3.58	.273	.613	.572	.794

Elem	Mg2790	Mn2593	Mo2045	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2908	V_2924	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	**15100.**	**6560.**	**9.90**	**66.7**	**293.**	**13.3**	**33.7**	**8.86**	**541.**	**638.**	**440.**
Stddev	225.	48.	1.05	.8	2.	1.4	7.5	1.16	14.	2.	1.
%RSD	1.49	.727	10.6	1.27	.784	10.7	22.4	13.1	2.66	.271	.132

Elem	Zn2138	Sr4077	Sn1899	B_2497	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**441.**	**78.1**	**33.8**	**107.**	**76.8**
Stddev	2.	.5	1.2	2.	2.3
%RSD	.496	.663	3.50	2.05	3.06

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**931910.**	**68349.**	**14603.**
Stddev	4967.	304.	29.
%RSD	.53296	.44478	.19852

Sample Name: I784853 Acquired: 10/11/2016 04:46:29 Type: Unk
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3158	Cd2265	Co2286	Cr2677	Cu2247	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
Avg	**.912**	**31400.**	**9.45**	**290.**	**.184**	**5790.**	**-3.98**	**21.0**	**77.3**	**20.9**	**68400.**	**68600.**
Stddev	.361	338.	5.39	2.	.024	146.	.20	.1	.9	.5	424.	517.
%RSD	39.6	1.08	57.0	.795	12.9	2.53	5.02	.494	1.12	2.24	.620	.754

Elem	Mg2790	Mn2593	Mo2045	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899
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	**3450.**	**1410.**	**2.74**	**12.1**	**62.6**	**1.82**	**5.34**	**2.79**	**131.**	**101.**	**15.6**	**5.06**
Stddev	89.	11.	.55	.5	1.3	1.25	3.41	1.62	1.	.	.2	3.91
%RSD	2.59	.798	20.2	4.22	2.06	68.4	63.8	58.3	.482	.390	1.34	77.2

Elem	B_2497	Li6707
Units	ug/L	ug/L
Avg	**24.7**	**11.5**
Stddev	.3	2.8
%RSD	1.36	24.3

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**983440.**	**69631.**	**15434.**
Stddev	1517.	263.	27.
%RSD	.15422	.37822	.17768

Sample Name: ccv1 Acquired: 10/11/2016 04:53:08 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1890	Ba4934	Be3130	Cd2265	Co2388	Cr2055	Cu2247	Fe2343	Fe2599	Mg2790
Avg	**470.**	**4780.**	**4510.**	**4560.**	**464.**	**465.**	**4690.**	**4700.**	**4620.**	**4700.**	**5050.**	**4690.**
Stddev	1.	25.	22.	19.	2.	.	24.	10.	7.	21.	35.	40.
%RSD	.208	.516	.498	.407	.358	.093	.517	.213	.153	.456	.685	.863
Check ?	None	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	Mn2593	Mo2045	Ni2216	Pb2169	Sb2068	Se2062	Tl1908	V_2908	Zn2062	Sr4077	Sn1899	B_2497
Avg	**4540.**	**4570.**	**4710.**	**4670.**	**4740.**	**4770.**	**4690.**	**4510.**	**4600.**	**4630.**	**4560.**	**4690.**
Stddev	10.	3.	5.	10.	8.	12.	8.	17.	7.	10.	10.	4.
%RSD	.217	.067	.107	.215	.169	.254	.166	.378	.155	.214	.211	.076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None	Chk Pass
Value												
Range												

Elem	Li6707
Avg	**4920.**
Stddev	.
%RSD	.001
Check ?	None
Value	
Range	

Sample Name: ccv1 Acquired: 10/11/2016 04:53:08 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**962220.**	**70059.**	**15230.**
Stddev	1359.	222.	20.
%RSD	.14126	.31702	.13175

Sample Name: ccv2 Acquired: 10/11/2016 04:58:58 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	As1890	Ba2335	Ba4934	Be3130	Ca3968	Cd2265	Co2286	Co2388	Cr2055
Avg	**50.1**	**552.**	**491.**	**476.**	**474.**	**477.**	**48.1**	**482.**	**48.8**	**474.**	**471.**	**487.**
Stddev	.1	12.	7.	2.	.	4.	.4	2.	.0	1.	1.	1.
%RSD	.148	2.24	1.40	.446	.103	.892	.810	.367	.092	.122	.177	.192
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Cr2677	Cu2247	Fe2599	Mg2802	Mn2576	Mn2593	Mo2045	Ni2216	Ni2316	Pb2169	Pb2203	Sb2068
Avg	**472.**	**475.**	**536.**	**493.**	**480.**	**466.**	**460.**	**472.**	**480.**	**492.**	**484.**	**491.**
Stddev	4.	2.	21.	1.	4.	6.	2.	.	1.	1.	1.	1.
%RSD	.818	.461	3.93	.171	.737	1.36	.396	.085	.250	.277	.206	.248
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	Sb2175	Se2062	Se1960	Tl1908	V_2908	V_2924	Zn2062	Zn2138	Sr4077	Sn1899	B_2497	Li6707
Avg	**480.**	**540.**	**491.**	**481.**	**452.**	**454.**	**475.**	**475.**	**477.**	**472.**	**477.**	**496.**
Stddev	1.	7.	6.	4.	1.	1.	.	.	2.	.	.	7.
%RSD	.153	1.36	1.32	.766	.322	.258	.084	.041	.366	.088	.029	1.36
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: ccv2 Acquired: 10/11/2016 04:58:58 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**981910.**	**70136.**	**15177.**
Stddev	1568.	270.	30.
%RSD	.15966	.38488	.19459

Sample Name: ccb Acquired: 10/11/2016 05:05:14 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3968	Cd2265	Co2286	Cr2677	Cu2247	Fe2599	Mg2802
Avg	**1.64**	**22.7**	**-4.18**	**.097**	**.067**	**3.65**	**-.263**	**.251**	**.999**	**.561**	**-4.72**	**1.52**
Stddev	.34	14.6	4.63	.146	.016	.83	.058	.136	.296	.232	16.4	.02
%RSD	20.4	64.4	111.	150.	23.4	22.7	22.3	54.0	29.7	41.4	346.	1.59
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Mn2576	Mo2045	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899	B_2497
Avg	**.571**	**1.96**	**-1.74**	**1.49**	**-.940**	**-3.87**	**-.771**	**-1.25**	**-.148**	**.588**	**-2.09**	**4.01**
Stddev	.150	.23	.33	1.06	1.59	4.13	1.18	.28	.165	.578	.73	.14
%RSD	26.3	11.6	19.2	70.7	169.	107.	153.	22.6	111.	98.4	35.0	3.53
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Li6707
Avg	**-2.49**
Stddev	2.26
%RSD	90.9
Check ?	None
Value	
Range	

Sample Name: ccb Acquired: 10/11/2016 05:05:14 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**976400.**	**70136.**	**15171.**
Stddev	3437.	441.	22.
%RSD	.35196	.62911	.14299

Sample Name: dup784853 Acquired: 10/11/2016 05:12:02 Type: Unk
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Cr2677	Cu2247	Fe2599
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**-1.13**	**125000.**	**35.5**	**1170.**	**-.055**	**38500.**	**-12.6**	**72.3**	**348.**	**86.3**	**283000.**
Stddev	.79	671.	3.0	7.	.038	515.	.2	.2	2.	1.0	2540.
%RSD	69.6	.539	8.45	.592	70.3	1.34	1.63	.272	.526	1.11	.899

Elem	Mg2790	Mn2593	Mo2045	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2908	V_2924	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	**13400.**	**4710.**	**8.65**	**56.3**	**216.**	**11.2**	**25.4**	**11.3**	**474.**	**557.**	**423.**
Stddev	192.	41.	.79	.5	1.	2.3	5.3	2.6	2.	4.	1.
%RSD	1.44	.866	9.17	.850	.663	20.3	20.9	23.2	.364	.711	.212

Elem	Zn2138	Sr4077	Sn1899	B_2497	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**429.**	**72.4**	**31.6**	**46.8**	**67.1**
Stddev	3.	.1	2.2	.7	2.0
%RSD	.676	.152	6.88	1.56	2.93

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**923070.**	**68462.**	**14470.**
Stddev	5890.	165.	55.
%RSD	.63810	.24064	.38076

Sample Name: mss784853 Acquired: 10/11/2016 05:19:01 Type: Unk
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1890	Ba4934	Be3130	Ca3158	Cd2265	Co2388	Cr2055	Cr2677	Cu2247
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**89.1**	**227000.**	**3530.**	**5070.**	**92.5**	**42500.**	**70.2**	**981.**	**801.**	**790.**	**557.**
Stddev	.3	1510.	10.	30.	.3	441.	.6	2.	1.	2.	1.
%RSD	.341	.664	.285	.583	.279	1.04	.913	.199	.171	.248	.223

Elem	Fe2599	Mg2790	Mn2593	Mo2045	Ni2216	Ni2316	Pb2169	Sb2175	Se2062	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	**315000.**	**17900.**	**6180.**	**1740.**	**1010.**	**994.**	**1220.**	**292.**	**3250.**	**3340.**	**1460.**
Stddev	2700.	232.	73.	5.	1.	3.	9.	5.	47.	10.	22.
%RSD	.855	1.30	1.18	.271	.129	.310	.738	1.71	1.45	.300	1.53

Elem	Zn2062	Sr4077	Sn1899	B_2497	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**1390.**	**1960.**	**1620.**	**113.**	**2230.**
Stddev	5.	10.	7.	1.	11.
%RSD	.327	.494	.434	.677	.475

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**921240.**	**68153.**	**14446.**
Stddev	1361.	508.	29.
%RSD	.14777	.74514	.20293

Sample Name: msds784853 Acquired: 10/11/2016 05:25:33 Type: Unk
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1890	Ba4934	Be3130	Ca3158	Cd2265	Co2388	Cr2055	Cr2677	Cu2247
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**88.5**	**206000.**	**3540.**	**4890.**	**92.1**	**39300.**	**71.8**	**978.**	**749.**	**734.**	**537.**
Stddev	.6	1180.	27.	26.	.3	359.	.3	2.	2.	1.	3.
%RSD	.642	.573	.763	.523	.310	.914	.417	.168	.248	.139	.510

Elem	Fe2599	Mg2790	Mn2593	Mo2045	Ni2216	Ni2316	Pb2169	Sb2175	Se2062	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	**285000.**	**16400.**	**5640.**	**1760.**	**997.**	**986.**	**1190.**	**316.**	**3310.**	**3360.**	**1400.**
Stddev	1710.	104.	65.	6.	4.	4.	7.	3.	17.	13.	10.
%RSD	.599	.637	1.16	.367	.366	.356	.584	1.07	.514	.379	.684

Elem	Zn2062	Sr4077	Sn1899	B_2497	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**1340.**	**1950.**	**1630.**	**68.0**	**2200.**
Stddev	3.	10.	6.	1.4	13.
%RSD	.252	.493	.370	2.08	.575

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**930900.**	**68848.**	**14515.**
Stddev	1824.	438.	20.
%RSD	.19595	.63667	.13511

Sample Name: pdss784853 Acquired: 10/11/2016 05:32:06 Type: Unk
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1890	Ba4934	Be3130	Ca3158	Cd2265	Co2388	Cr2055	Cr2677	Cu2247
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**93.7**	**123000.**	**3870.**	**4760.**	**93.2**	**405000.**	**74.3**	**947.**	**706.**	**679.**	**518.**
Stddev	1.5	621.	30.	21.	.8	4540.	.5	9.	2.	6.	4.
%RSD	1.60	.505	.773	.445	.808	1.12	.711	.955	.344	.874	.711

Elem	Fe2599	Mg2790	Mn2593	Mo2045	Ni2216	Ni2316	Pb2169	Sb2068	Se2062	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	**263000.**	**174000.**	**4760.**	**1850.**	**942.**	**922.**	**1220.**	**974.**	**3680.**	**3310.**	**1390.**
Stddev	1680.	1310.	39.	8.	5.	5.	9.	4.	24.	13.	7.
%RSD	.637	.754	.820	.447	.552	.503	.697	.425	.652	.403	.470

Elem	Zn2062	Sr4077	Sn1899	B_2497	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**1240.**	**1910.**	**1740.**	**32.2**	**2240.**
Stddev	4.	10.	3.	.4	6.
%RSD	.347	.532	.187	1.25	.278

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**883260.**	**66828.**	**13568.**
Stddev	4165.	396.	25.
%RSD	.47151	.59328	.18692

Sample Name: 784854 Acquired: 10/11/2016 05:38:33 Type: Unk
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Cr2055	Cr2677	Cu2247
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**-1.69**	**209000.**	**82.2**	**1110.**	**6.93**	**92800.**	**-20.6**	**179.**	**454.**	**440.**	**277.**
Stddev	.19	1370.	7.7	3.	.06	1030.	1.1	1.	2.	1.	3.
%RSD	11.1	.656	9.36	.275	.863	1.12	5.55	.547	.443	.307	1.13

Elem	Fe2599	Mg2790	Mn2593	Mo2045	Ni2216	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	**510000.**	**38300.**	**12400.**	**7.49**	**214.**	**203.**	**278.**	**19.6**	**47.4**	**21.5**	**665.**
Stddev	6090.	381.	143.	.19	.	1.	2.	2.1	7.5	3.8	8.
%RSD	1.19	.994	1.15	2.58	.203	.509	.653	10.5	15.7	17.5	1.18

Elem	V_2924	Zn2062	Zn2138	Sr4077	Sn1899	B_2497	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**809.**	**717.**	**730.**	**216.**	**39.1**	**136.**	**332.**
Stddev	4.	1.	3.	1.	2.6	2.	3.
%RSD	.523	.153	.416	.249	6.64	1.52	.932

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**913790.**	**68820.**	**14133.**
Stddev	2471.	132.	36.
%RSD	.27041	.19218	.25760

Sample Name: 784855 Acquired: 10/11/2016 05:45:33 Type: Unk
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Cr2677	Cu2247	Fe2599
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**.306**	**165000.**	**43.5**	**1200.**	**5.42**	**68400.**	**-11.1**	**95.3**	**357.**	**157.**	**334000.**
Stddev	1.17	518.	14.0	3.	.07	558.	.6	.4	1.	1.	926.
%RSD	381.	.314	32.2	.232	1.34	.817	5.00	.414	.302	.419	.277

Elem	Mg2790	Mn2593	Mo2045	Ni2316	Pb2169	Pb2203	Sb2175	Se1960	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	**29100.**	**5600.**	**12.5**	**78.3**	**651.**	**552.**	**10.0**	**29.8**	**10.8**	**523.**	**628.**
Stddev	234.	46.	.7	.2	4.	2.	1.6	5.5	4.8	6.	2.
%RSD	.803	.830	5.75	.294	.685	.420	16.1	18.4	44.8	1.16	.274

Elem	Zn2062	Zn2138	Sr4077	Sn1899	B_2497	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**659.**	**670.**	**129.**	**34.2**	**112.**	**102.**
Stddev	1.	4.	.	3.9	1.	3.
%RSD	.145	.639	.288	11.3	.761	2.46

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**929220.**	**69471.**	**14463.**
Stddev	4088.	263.	20.
%RSD	.43995	.37927	.13717

Sample Name: ccv1 Acquired: 10/11/2016 06:18:51 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1890	Ba4934	Be3130	Cd2265	Co2388	Cr2055	Cu2247	Fe2343	Fe2599	Mg2790
Avg	**472.**	**4800.**	**4570.**	**4490.**	**462.**	**463.**	**4700.**	**4660.**	**4620.**	**4590.**	**5140.**	**4530.**
Stddev	3.	47.	4.	33.	6.	1.	59.	4.	1.	64.	78.	13.
%RSD	.577	.977	.083	.728	1.35	.194	1.25	.082	.027	1.40	1.52	.278
Check ?	None	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	Mn2593	Mo2045	Ni2216	Pb2169	Sb2068	Se2062	Tl1908	V_2908	Zn2062	Sr4077	Sn1899	B_2497
Avg	**4550.**	**4530.**	**4690.**	**4740.**	**4780.**	**4800.**	**4710.**	**4490.**	**4600.**	**4570.**	**4490.**	**4630.**
Stddev	7.	20.	26.	14.	13.	5.	16.	68.	8.	32.	1.	47.
%RSD	.158	.451	.545	.296	.279	.099	.345	1.52	.178	.709	.016	1.01
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None	Chk Pass
Value												
Range												

Elem	Li6707
Avg	**4910.**
Stddev	22.
%RSD	.445
Check ?	None
Value	
Range	

Sample Name: ccv1 Acquired: 10/11/2016 06:18:51 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**974440.**	**71078.**	**15256.**
Stddev	7375.	423.	44.
%RSD	.75687	.59573	.29155

Sample Name: ccv2 Acquired: 10/11/2016 06:24:41 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	As1890	Ba2335	Ba4934	Be3130	Ca3968	Cd2265	Co2286	Co2388	Cr2055
Avg	**50.6**	**533.**	**491.**	**464.**	**475.**	**464.**	**48.4**	**485.**	**48.9**	**474.**	**476.**	**486.**
Stddev	.6	6.	2.	5.	1.	6.	.1	4.	.4	1.	2.	1.
%RSD	1.28	1.05	.506	1.13	.242	1.21	.163	.783	.744	.221	.319	.301
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Cr2677	Cu2247	Fe2599	Mg2802	Mn2576	Mn2593	Mo2045	Ni2216	Ni2316	Pb2169	Pb2203	Sb2068
Avg	**475.**	**475.**	**515.**	**500.**	**488.**	**458.**	**463.**	**474.**	**482.**	**502.**	**482.**	**493.**
Stddev	1.	2.	20.	1.	1.	4.	.	1.	.	1.	.	4.
%RSD	.255	.374	3.89	.224	.293	.783	.061	.308	.049	.218	.093	.777
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	Sb2175	Se2062	Se1960	Tl1908	V_2908	V_2924	Zn2062	Zn2138	Sr4077	Sn1899	B_2497	Li6707
Avg	**483.**	**527.**	**492.**	**489.**	**450.**	**457.**	**476.**	**479.**	**470.**	**466.**	**476.**	**494.**
Stddev	4.	6.	3.	3.	8.	2.	2.	.	5.	3.	2.	6.
%RSD	.891	1.10	.637	.532	1.71	.510	.407	.055	1.10	.690	.400	1.19
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: ccv2 Acquired: 10/11/2016 06:24:41 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**980300.**	**70134.**	**15182.**
Stddev	488.	511.	24.
%RSD	.04978	.72825	.15902

Sample Name: ccb Acquired: 10/11/2016 06:30:57 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3968	Cd2265	Co2286	Cr2677	Cu2247	Fe2599	Mg2802
Avg	**1.32**	**33.5**	**-2.24**	**.262**	**.062**	**5.81**	**-.108**	**.416**	**1.02**	**1.28**	**-.882**	**2.19**
Stddev	.65	14.2	3.50	.119	.023	1.25	.074	.149	.45	.79	19.1	.20
%RSD	48.9	42.3	156.	45.3	36.4	21.6	68.5	35.9	43.7	61.8	2170.	9.06
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Mn2576	Mo2045	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899	B_2497
Avg	**.755**	**2.37**	**-1.68**	**.511**	**-.762**	**-6.36**	**-.194**	**-1.10**	**-.169**	**.789**	**-.717**	**4.53**
Stddev	.111	.23	.04	.539	1.81	1.35	1.58	.25	.097	.826	1.63	.61
%RSD	14.7	9.90	2.56	105.	237.	21.2	817.	22.4	57.5	105.	227.	13.4
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Li6707
Avg	**-3.61**
Stddev	1.15
%RSD	31.8
Check ?	None
Value	
Range	

Sample Name: ccb Acquired: 10/11/2016 06:30:57 Type: QC
Method: DOD Calibration Updated 060614(v1648) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

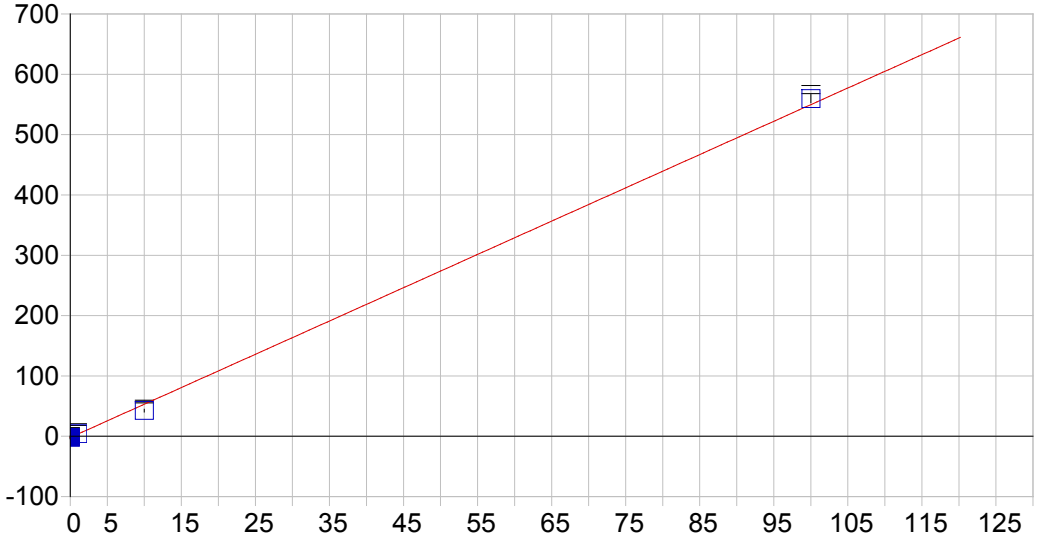
Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**965940.**	**69540.**	**15247.**
Stddev	32614.	298.	41.
%RSD	3.3764	.42863	.26615

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	Status	Resl Slope
Ag 328.068 {103}	10/17/2016 15:00:44	10/14/2016 09:05:54	Linear	1/Conc	-2.050261	5.517348	0.000000	1.000000	0.998113	0.159829	0.669804	2.232681	OK.	1.000000
Al 309.271 {109}	10/17/2016 15:00:44	10/14/2016 09:33:05	Curvilin	None	0.000158	0.000000	0.000000	1.000000	1.000000	0.000009	11.849338	39.497792	OK.	1.000000
Al 396.152 { 85}	10/17/2016 15:00:44	10/14/2016 09:48:41	Curvilin	1/Var	-0.000014	0.000001	0.000000	1.000000	0.999998	0.000004	6.215598	20.718661	OK.	1.000000
Al 167.079 {502}	10/17/2016 15:00:44	10/14/2016 09:11:54	Linear	1/Var	0.000164	0.000020	0.000000	1.000000	0.999836	0.000076	0.853641	2.845472	OK.	1.000000
As 193.759 {474}	10/17/2016 15:00:44	10/14/2016 09:19:02	Linear	1/Var	-0.000105	0.000009	0.000000	1.000000	0.999994	0.000042	4.422798	14.742661	OK.	1.000000
As 189.042 {479}	10/17/2016 15:00:44	10/14/2016 09:19:02	Linear	1/Conc	0.000035	0.000003	0.000000	1.000000	0.999888	0.000000	9.585819	31.952730	OK.	1.000000
Ba 233.527 {445}	10/17/2016 15:00:44	10/14/2016 09:11:54	Linear	1/Conc	0.000014	0.000128	0.000000	1.000000	0.999703	0.000004	0.231703	0.772342	OK.	1.000000
Ba 455.403 { 74}	10/17/2016 15:00:44	10/14/2016 09:19:02	Linear	None	0.000099	0.000020	0.000000	1.000000	0.999999	0.000083	0.214671	0.715570	OK.	1.000000
Ba 493.409 { 68}	10/17/2016 15:00:44	10/14/2016 09:19:02	Linear	1/Var	0.004864	0.000032	0.000000	1.000000	0.999928	0.000147	0.620200	2.067333	OK.	1.000000
Be 313.042 {108}	10/17/2016 15:00:44	10/14/2016 09:11:54	Linear	1/Conc	-0.000125	0.000099	0.000000	1.000000	0.999978	0.000000	0.036461	0.121538	OK.	1.000000
Be 234.861 {144}	10/17/2016 15:00:44	10/14/2016 09:11:54	Linear	1/Conc	-0.000000	0.000003	0.000000	1.000000	0.999999	0.000000	0.238687	0.795622	OK.	1.000000
Ca 315.887 {107}	10/17/2016 15:00:44	10/14/2016 09:48:41	Linear	1/Var	0.000032	0.000000	0.000000	1.000000	0.999107	0.000027	7.081257	23.604188	OK.	1.000000
Ca 317.933 {106}	10/17/2016 15:00:44	10/14/2016 09:48:41	Curvilin	1/Conc	0.001348	0.000001	0.000000	1.000000	0.999820	0.000033	2.494359	8.314530	OK.	1.000000
Ca 393.366 { 86}	10/17/2016 15:00:44	10/14/2016 09:11:54	Linear	1/Conc	0.001185	0.000088	0.000000	1.000000	0.999872	0.000026	0.035784	0.119281	OK.	1.000000
Ca 396.847 { 85}	10/17/2016 15:00:44	10/14/2016 09:19:02	Linear	1/Conc	0.000943	0.000067	0.000000	1.000000	0.999852	0.000054	0.077663	0.258877	OK.	1.000000
Cd 226.502 {449}	10/17/2016 15:00:44	10/14/2016 09:11:54	Linear	1/Conc	-0.000025	0.000353	0.000000	1.000000	0.999871	0.000005	0.149391	0.497968	OK.	1.000000
Cd 228.802 {447}	10/17/2016 15:00:44	10/14/2016 09:11:54	Linear	1/Conc	0.000229	0.000474	0.000000	1.000000	0.999914	0.000006	0.141813	0.472711	OK.	1.000000
Co 228.616 {447}	10/17/2016 15:00:44	10/14/2016 09:19:02	Linear	1/Conc	-0.000154	0.000248	0.000000	1.000000	0.999813	0.000018	0.243527	0.811755	OK.	1.000000
Co 238.892 {141}	10/17/2016 15:00:44	10/14/2016 09:19:02	Linear	1/Var	0.000002	0.000003	0.000000	1.000000	0.999915	0.000006	0.688812	2.296039	OK.	1.000000
Cr 205.560 {464}	10/17/2016 15:00:44	10/14/2016 09:26:04	Linear	1/Conc	0.000013	0.000157	0.000000	1.000000	0.999638	0.000050	0.231211	0.770702	OK.	1.000000
Cr 267.716 {126}	10/17/2016 15:00:44	10/14/2016 09:19:02	Linear	1/Var	0.000002	0.000006	0.000000	1.000000	0.999865	0.000004	0.497772	1.659242	OK.	1.000000
Cu 224.700 {450}	10/17/2016 15:00:44	10/14/2016 09:19:02	Curvilin	1/Conc	-0.000024	0.000097	-0.000000	1.000000	0.999991	0.000002	0.550888	1.836292	OK.	1.000000
Cu 324.754 {104}	10/17/2016 15:00:44	10/14/2016 09:26:04	Linear	None	-0.000253	0.000002	0.000000	1.000000	0.999976	0.000761	1.808276	6.027586	OK.	1.000000
Cu 327.396 {103}	10/17/2016 15:00:44	10/14/2016 09:26:04	Curvilin	1/Conc	-0.000002	0.000002	0.000000	1.000000	0.999992	0.000000	3.179218	10.597392	Warnin	1.000000
Fe 234.349 {144}	10/17/2016 15:00:44	10/14/2016 09:48:41	Full Fit	1/Var	0.000038	0.000001	0.000000	0.980000	0.999927	0.000002	1.163302	3.877675	OK.	1.000000
Fe 239.562 {140}	10/17/2016 15:00:44	10/14/2016 09:48:41	Curvilin	1/Conc	0.000007	0.000001	0.000000	1.000000	0.999999	0.000001	2.158155	7.193851	OK.	1.000000
Fe 259.940 {129}	10/17/2016 15:00:44	10/14/2016 09:48:41	Curvilin	1/Var	0.000023	0.000001	0.000000	1.000000	0.999966	0.000008	1.997275	6.657584	OK.	1.000000
Mg 202.582 {466}	10/17/2016 15:00:44	10/14/2016 09:48:41	Curvilin	1/Conc	-0.000044	0.000013	-0.000000	1.000000	0.999974	0.000150	3.131022	10.436739	OK.	1.000000
Mg 279.079 {121}	10/17/2016 15:00:44	10/14/2016 09:48:41	Full Fit	1/Var	0.000001	0.000000	0.000000	1.000000	0.999966	0.000005	19.143928	63.813092	OK.	1.000000
Mg 280.270 {120}	10/17/2016 15:00:44	10/14/2016 09:19:02	Linear	1/Var	0.000962	0.000073	0.000000	1.000000	0.999138	0.000111	0.027155	0.090516	OK.	1.000000
Mn 257.610 {131}	10/17/2016 15:00:44	10/14/2016 09:19:02	Linear	1/Conc	0.000007	0.000013	0.000000	1.000000	0.999664	0.000003	0.114004	0.380015	OK.	1.000000
Mn 259.373 {130}	10/17/2016 15:00:44	10/14/2016 09:26:04	Linear	1/Var	0.000005	0.000005	0.000000	1.000000	0.999951	0.000003	0.308133	1.027109	OK.	1.000000
Mo 202.030 {466}	10/17/2016 15:00:44	10/14/2016 09:11:55	Linear	1/Conc	-0.000000	0.000087	0.000000	1.000000	0.999878	0.000004	0.380836	1.269453	OK.	1.000000
Mo 204.598 {464}	10/17/2016 15:00:44	10/14/2016 09:19:02	Curvilin	1/Conc	0.000001	0.000001	-0.000000	1.000000	0.999992	0.000000	0.640112	2.133708	OK.	1.000000
Mo 204.598 {465}	10/17/2016 15:00:44	10/14/2016 09:19:02	Linear	1/Conc	-0.000000	0.000001	0.000000	1.000000	0.999982	0.000000	0.767880	2.559600	OK.	1.000000
Ni 221.647 {452}	10/17/2016 15:00:44	10/14/2016 09:19:02	Linear	None	0.000055	0.000003	0.000000	1.000000	0.999985	0.000090	0.370097	1.233658	OK.	1.000000
Ni 231.604 {445}	10/17/2016 15:00:44	10/14/2016 09:19:02	Linear	1/Conc	-0.000001	0.000003	0.000000	1.000000	0.999846	0.000000	0.384445	1.281482	OK.	1.000000
Pb 216.999 {455}	10/17/2016 15:00:44	10/14/2016 09:26:04	Linear	1/Var	0.000116	0.000015	0.000000	1.000000	0.999786	0.000215	3.821930	12.739768	OK.	1.000000
Pb 220.353 {453}	10/17/2016 15:00:44	10/14/2016 09:19:02	Linear	1/Conc	0.000053	0.000033	0.000000	1.000000	0.999739	0.000007	2.162294	7.207647	OK.	1.000000
Pb 220.353 {153}	10/17/2016 15:00:44	10/14/2016 09:26:04	Linear	1/Conc	0.000182	0.000010	0.000000	1.000000	0.999974	0.000010	9.167176	30.557253	OK.	1.000000
Sb 206.833 {463}	10/17/2016 15:00:44	10/14/2016 09:19:02	Linear	1/Conc	-0.000058	0.000022	0.000000	1.000000	0.999937	0.000003	1.973871	6.579570	OK.	1.000000
Sb 217.581 {455}	10/17/2016 15:00:44	10/14/2016 09:19:03	Linear	1/Conc	-0.000053	0.000023	0.000000	1.000000	0.999870	0.000003	2.164430	7.214767	OK.	1.000000
Se 196.090 {472}	10/17/2016 15:00:44	10/14/2016 09:19:03	Linear	1/Conc	0.000024	0.000006	0.000000	1.000000	0.999890	0.000001	4.836785	16.122618	OK.	1.000000
Se 206.279 {463}	10/17/2016 15:00:44	10/14/2016 09:19:03	Curvilin	1/Conc	0.000053	0.000002	-0.000000	1.000000	0.999879	0.000002	19.202806	64.009355	OK.	1.000000
Se 196.090 {471}	10/17/2016 15:00:44	10/14/2016 09:19:03	Linear	1/Conc	-0.000024	0.000007	0.000000	1.000000	0.999829	0.000002	4.809935	16.033117	OK.	1.000000
Tl 190.856 {476}	10/17/2016 15:00:44	10/14/2016 09:19:03	Curvilin	1/Conc	-0.000113	0.000016	-0.000000	1.000000	0.999992	0.000001	2.512867	8.376224	OK.	1.000000

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	Status	Resl Slope
Tl 190.856 {477}	10/17/2016 15:00:44	10/14/2016 09:19:03	Curvilin	1/Var	-0.000045	0.000011	-0.000000	1.000000	0.999995	0.000027	2.965215	9.884049	OK.	1.000000
V 290.882 {116}	10/17/2016 15:00:44	10/14/2016 09:19:03	Linear	1/Conc	0.000012	0.000001	0.000000	1.000000	0.999993	0.000000	2.237068	7.456893	OK.	1.000000
V 292.402 {115}	10/17/2016 15:00:44	10/14/2016 09:19:03	Linear	1/Conc	-3.521567	8.728781	0.000000	1.000000	0.999901	1.533887	0.495726	1.652421	OK.	1.000000
Zn 206.200 {463}	10/17/2016 15:00:44	10/14/2016 09:26:04	Linear	1/Var	0.000032	0.000139	0.000000	1.000000	0.999146	0.000709	0.303414	1.011378	OK.	1.000000
Zn 213.856 {458}	10/17/2016 15:00:44	10/14/2016 09:19:03	Linear	1/Var	0.000003	0.000003	0.000000	1.000000	0.999424	0.000006	0.172781	0.575937	OK.	1.000000
Y 324.228 {104}*	10/17/2016 15:00:44	10/14/2016 08:11:22	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000
Y 371.030 { 91}*	10/17/2016 15:00:44	10/14/2016 08:11:22	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000
Y 224.306 {451}*	10/17/2016 15:00:44	10/14/2016 08:11:22	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000
Na 588.995 { 57}	10/17/2016 15:00:44	10/14/2016 09:33:05	Linear	1/Conc	0.002754	0.000003	0.000000	1.000000	1.000000	0.000000	3.529113	11.763711	OK.	1.000000
Si 251.611 {134}	10/17/2016 15:00:44	10/14/2016 09:33:05	Linear	1/Conc	0.000011	0.000001	0.000000	1.000000	1.000000	0.000000	3.984774	13.282582	OK.	1.000000
Ti 334.941 {101}	10/17/2016 15:00:44	10/14/2016 09:19:03	Linear	1/Conc	-0.000001	0.000004	0.000000	1.000000	0.999978	0.000000	0.896940	2.989800	OK.	1.000000
Sr 407.771 { 83}	10/17/2016 15:00:44	10/14/2016 09:19:03	Linear	1/Var	1.802027	57.790466	0.000000	1.000000	0.999438	16.615525	0.062959	0.209864	OK.	1.000000
Sn 189.989 {478}	10/17/2016 15:00:44	10/14/2016 09:19:03	Linear	1/Var	0.000053	0.000007	0.000000	1.000000	0.999765	0.000119	3.249945	10.833148	OK.	1.000000
B 249.678 {135}	10/17/2016 15:00:44	10/14/2016 09:19:03	Linear	1/Conc	0.000001	0.000002	0.000000	1.000000	0.999990	0.000000	1.222323	4.074409	OK.	1.000000
B 249.773 {135}	10/17/2016 15:00:44	10/14/2016 09:19:03	Linear	1/Conc	0.000009	0.000005	0.000000	1.000000	0.999994	0.000000	0.517721	1.725736	OK.	1.000000
Li 670.784 { 50}	10/17/2016 15:00:44	10/14/2016 09:19:03	Linear	1/Var	0.000050	0.000014	0.000000	1.000000	0.999986	0.000009	1.145194	3.817313	OK.	1.000000
K 766.490 { 44}	10/17/2016 15:00:44	10/14/2016 09:33:05	Linear	1/Conc	0.000034	0.000001	0.000000	1.000000	1.000000	0.000000	26.213562	87.378539	OK.	1.000000
P 213.618 {457}	10/17/2016 15:00:44	10/14/2016 09:33:05	Linear	1/Conc	-0.000002	0.000000	0.000000	1.000000	0.999747	0.000001	19.157634	63.858781	OK.	1.000000
S 182.034 {485}	10/17/2016 15:00:44	10/14/2016 09:33:05	Linear	1/Var	0.000022	0.000005	0.000000	1.000000	0.999997	0.000073	5.523757	18.412522	OK.	1.000000
W 239.709 {140}	10/17/2016 15:00:44	10/14/2016 09:33:05	Linear	1/Conc	-0.000001	0.000000	0.000000	1.000000	1.000000	0.000000	24.092298	80.307660	OK.	1.000000
Hg 184.950 {482}	10/17/2016 15:00:44	10/14/2016 09:11:55	Linear	1/Conc	0.000082	0.000044	0.000000	1.000000	0.999961	0.000007	0.756372	2.521242	OK.	1.000000
Hg 194.227 {473}	10/17/2016 15:00:44	10/14/2016 09:11:55	Linear	1/Conc	-0.000002	0.000033	0.000000	1.000000	0.999967	0.000005	0.939387	3.131289	OK.	1.000000

Element, Wavelength and Order	ope	QC Norm	
	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.000000	1	0
Al 309.271 {109}	0.000000	1	0
Al 396.152 { 85}	0.000000	1	0
Al 167.079 {502}	0.000000	1	0
As 193.759 {474}	0.000000	1	0
As 189.042 {479}	0.000000	1	0
Ba 233.527 {445}	0.000000	1	0
Ba 455.403 { 74}	0.000000	1	0
Ba 493.409 { 68}	0.000000	1	0
Be 313.042 {108}	0.000000	1	0
Be 234.861 {144}	0.000000	1	0
Ca 315.887 {107}	0.000000	1	0
Ca 317.933 {106}	0.000000	1	0
Ca 393.366 { 86}	0.000000	1	0
Ca 396.847 { 85}	0.000000	1	0
Cd 226.502 {449}	0.000000	1	0
Cd 228.802 {447}	0.000000	1	0
Co 228.616 {447}	0.000000	1	0
Co 238.892 {141}	0.000000	1	0
Cr 205.560 {464}	0.000000	1	0
Cr 267.716 {126}	0.000000	1	0
Cu 224.700 {450}	0.000000	1	0
Cu 324.754 {104}	0.000000	1	0
Cu 327.396 {103}	0.000000	1	0
Fe 234.349 {144}	0.000000	1	0
Fe 239.562 {140}	0.000000	1	0
Fe 259.940 {129}	0.000000	1	0
Mg 202.582 {466}	0.000000	1	0
Mg 279.079 {121}	0.000000	1	0
Mg 280.270 {120}	0.000000	1	0
Mn 257.610 {131}	0.000000	1	0
Mn 259.373 {130}	0.000000	1	0
Mo 202.030 {466}	0.000000	1	0
Mo 204.598 {464}	0.000000	1	0
Mo 204.598 {465}	0.000000	1	0
Ni 221.647 {452}	0.000000	1	0
Ni 231.604 {445}	0.000000	1	0
Pb 216.999 {455}	0.000000	1	0
Pb 220.353 {453}	0.000000	1	0
Pb 220.353 {153}	0.000000	1	0
Sb 206.833 {463}	0.000000	1	0
Sb 217.581 {455}	0.000000	1	0
Se 196.090 {472}	0.000000	1	0
Se 206.279 {463}	0.000000	1	0
Se 196.090 {471}	0.000000	1	0
Tl 190.856 {476}	0.000000	1	0

Element, Wavelength and Order	ope	QC Norm	
	Y-int	Slope factor	Offset
Tl 190.856 {477}	0.000000	1	0
V 290.882 {116}	0.000000	1	0
V 292.402 {115}	0.000000	1	0
Zn 206.200 {463}	0.000000	1	0
Zn 213.856 {458}	0.000000	1	0
Y 324.228 {104}*	0.000000	1	0
Y 371.030 { 91}*	0.000000	1	0
Y 224.306 {451}*	0.000000	1	0
Na 588.995 { 57}	0.000000	1	0
Si 251.611 {134}	0.000000	1	0
Ti 334.941 {101}	0.000000	1	0
Sr 407.771 { 83}	0.000000	1	0
Sn 189.989 {478}	0.000000	1	0
B 249.678 {135}	0.000000	1	0
B 249.773 {135}	0.000000	1	0
Li 670.784 { 50}	0.000000	1	0
K 766.490 { 44}	0.000000	1	0
P 213.618 {457}	0.000000	1	0
S 182.034 {485}	0.000000	1	0
W 239.709 {140}	0.000000	1	0
Hg 184.950 {482}	0.000000	1	0
Hg 194.227 {473}	0.000000	1	0

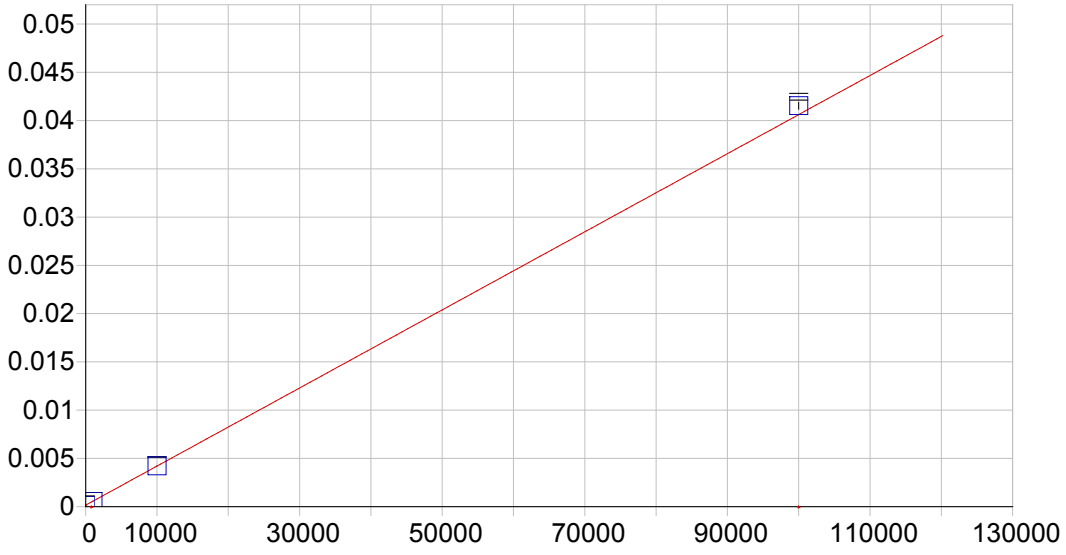


Ag 328.068 {103}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-2.050261	Re-Slope:	1.000000
A1 (Gain):	5.517348	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998113	Status:	OK.
Std Error of Est:	0.159829		
Predicted MDL:	0.669804		
Predicted MQL:	2.232681		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00005	.000	.000	-2.0500	2.21	1
CalStd5=10	10.000	8.0728	-1.93	-19.3	42.490	2.18	1
CalStd8=100	100.00	101.80	1.80	1.80	559.61	6.67	1
CalStd3=1	1.0000	1.1274	.127	12.7	4.1700	1.35	1

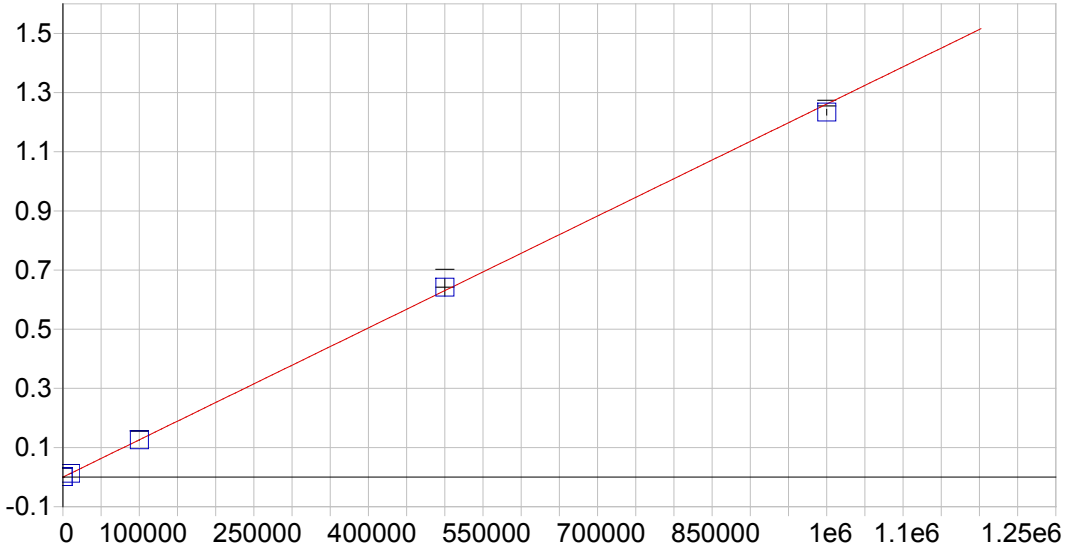


Al 309.271 {109}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Curvilinear	Weighting:	None

A0 (Offset):	0.000158	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000009		
Predicted MDL:	11.849338		
Predicted MQL:	39.497792		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-14.444	-14.4	.000	.00015	.000	1
CalStd10=10	10000.	10021.	20.9	.209	.00421	.000	1
CalStd9=100	1000.0	1016.4	16.4	1.64	.00057	.000	1
CalStd12-100	100000.	102270.	2270.	2.27	.04154	.000	1

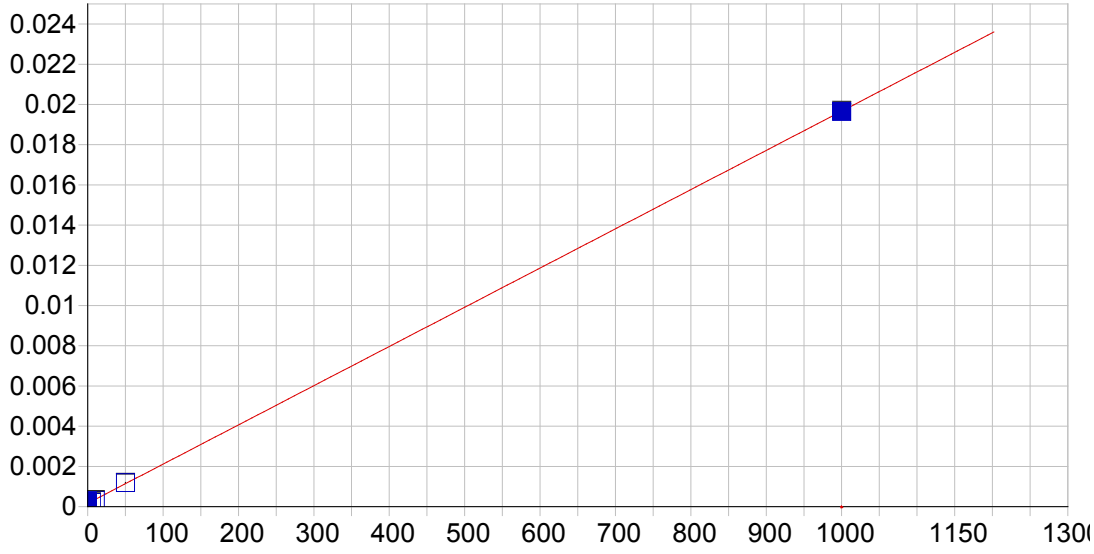


Al 396.152 { 85}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Curvilinear	Weighting:	1/Var

A0 (Offset):	-0.000014	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999998	Status:	OK.
Std Error of Est:	0.000004		
Predicted MDL:	6.215598		
Predicted MQL:	20.718661		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.04928	.049	.000	-.00001	.000	1
CalStd14-100	1000000.	978430.	-21600.	-2.16	1.2339	.010	1
CalStd13=50	500000.	508940.	8940.	1.79	.64183	.030	1
CalStd10=10	10000.	9998.8	-1.22	-.012	.01260	.000	1
CalStd12-100	100000.	99725.	-275.	-.275	.12575	.001	1
CalStd9=100	1000.0	999.36	-.644	-.064	.00125	.000	1

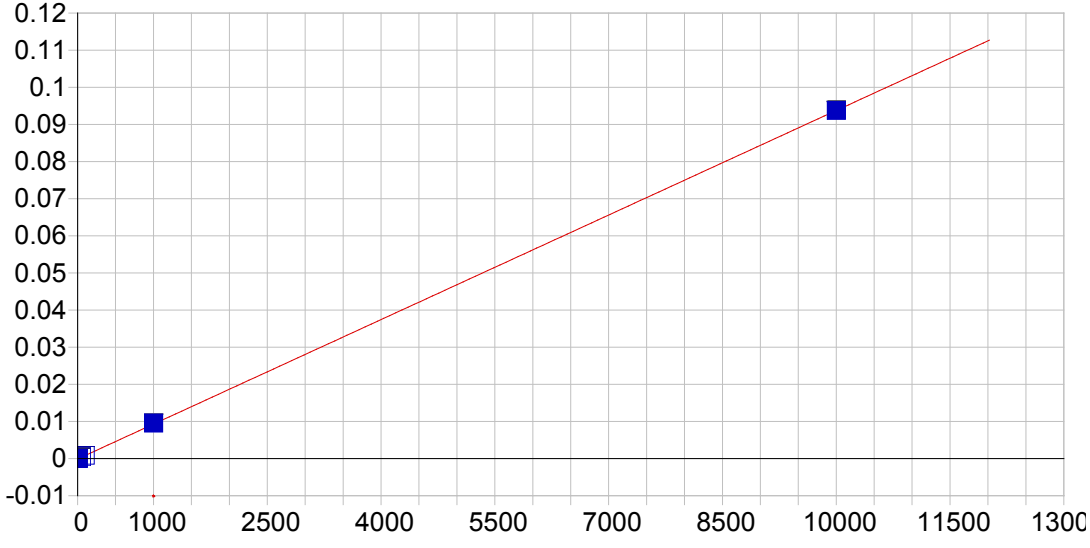


Al 167.079 {502}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000164	Re-Slope:	1.000000
A1 (Gain):	0.000020	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999836	Status:	OK.
Std Error of Est:	0.000076		
Predicted MDL:	0.853641		
Predicted MQL:	2.845472		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	6.4650	6.46	.000	.00029	.000	1
CalStd9=100	1000.0	998.99	-1.01	-.101	.01966	.000	1
CalStd5=10	10.000	8.1273	-1.87	-18.7	.00032	.000	1
CalStd4=5	5.0000	2.5183	-2.48	-49.6	.00021	.000	1
CalStd7=50	50.000	52.691	2.69	5.38	.00119	.000	1

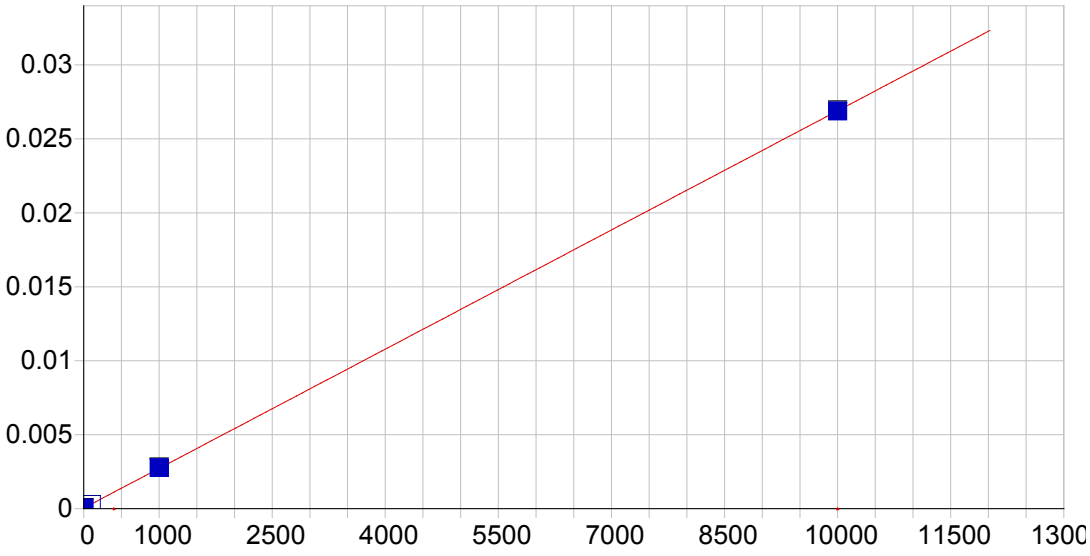


As 193.759 {474}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	-0.000105	Re-Slope:	1.000000
A1 (Gain):	0.000009	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999994	Status:	OK.
Std Error of Est:	0.000042		
Predicted MDL:	4.422798		
Predicted MQL:	14.742661		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-1.3914	-1.39	.000	-.00012	.000	1
CalStd9=100	1000.0	1028.1	28.1	2.81	.00955	.000	1
CalStd7=50	50.000	54.957	4.96	9.91	.00041	.000	1
CalStd5=10	10.000	9.1417	-.858	-8.58	-.00002	.000	1
CalStd8=100	100.00	103.90	3.90	3.90	.00087	.000	1
CalStd10=10	10000.	9997.1	-2.91	-.029	.09381	.000	1

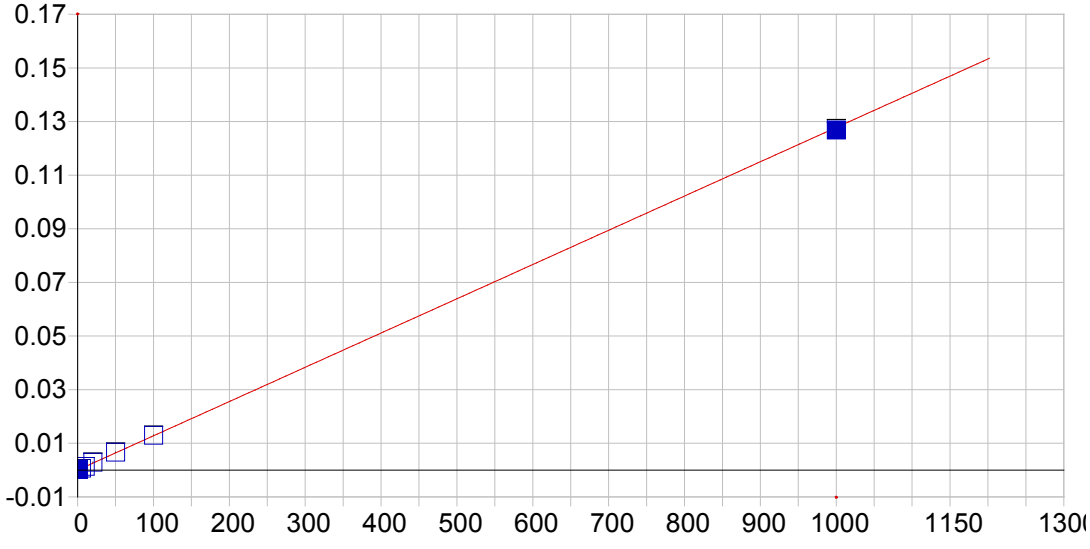


As 189.042 {479}

Date of Fit: 10/18/2016 09:46:49 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset):	0.000035	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999888	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	9.585819		
Predicted MQL:	31.952730		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00328	.003	.000	.00003	.000	1
CalStd9=100	1000.0	1017.4	17.4	1.74	.00277	.000	1
CalStd10=10	10000.	9990.6	-9.43	-.094	.02688	.000	1
CalStd8=100	100.00	95.177	-4.82	-4.82	.00029	.000	1
CalStd4=5	5.0000	1.8785	-3.12	-62.4	.00004	.000	1

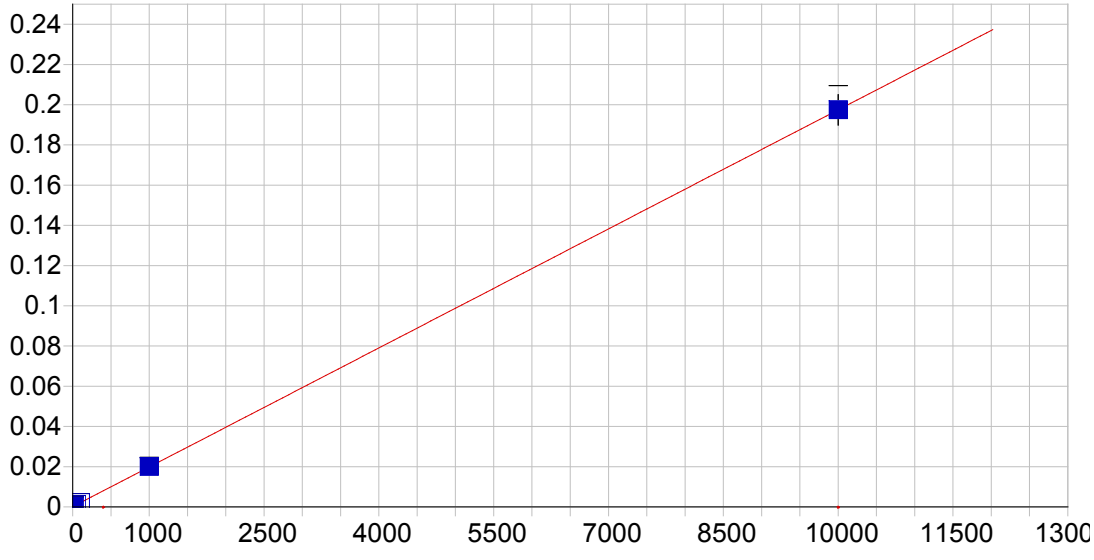


Ba 233.527 {445}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000014	Re-Slope:	1.000000
A1 (Gain):	0.000128	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999703	Status:	OK.
Std Error of Est:	0.000004		
Predicted MDL:	0.231703		
Predicted MQL:	0.772342		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00066	-.001	.000	.00001	.000	1
CalStd7=50	50.000	52.022	2.02	4.04	.00666	.000	1
CalStd5=10	10.000	10.683	.683	6.83	.00138	.000	1
CalStd6=20	20.000	22.692	2.69	13.5	.00291	.000	1
CalStd8=100	100.00	101.38	1.38	1.38	.01297	.000	1
CalStd4=5	5.0000	5.2789	.279	5.58	.00069	.000	1
CalStd9=100	1000.0	992.60	-7.40	-.740	.12683	.001	1
CalStd3=1	1.0000	1.3535	.354	35.4	.00019	.000	1

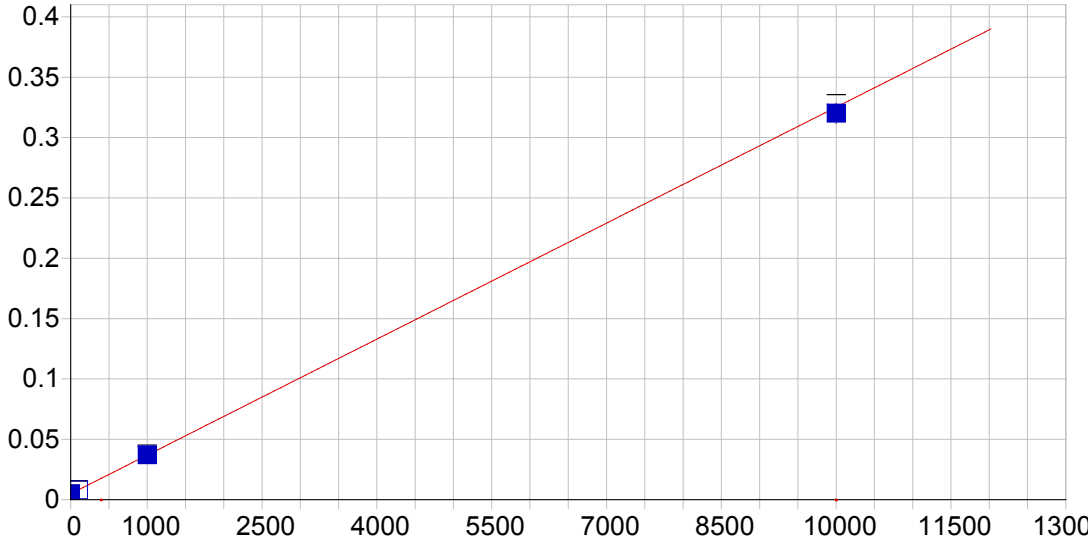


Ba 455.403 { 74}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	None

A0 (Offset):	0.000099	Re-Slope:	1.000000
A1 (Gain):	0.000020	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999999	Status:	OK.
Std Error of Est:	0.000083		
Predicted MDL:	0.214671		
Predicted MQL:	0.715570		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-2.1975	-2.20	.000	.00006	.000	1
CalStd7=50	50.000	49.338	-.662	-1.32	.00107	.000	1
CalStd5=10	10.000	8.1669	-1.83	-18.3	.00026	.000	1
CalStd6=20	20.000	19.651	-.349	-1.74	.00049	.000	1
CalStd8=100	100.00	100.17	.172	.172	.00208	.000	1
CalStd4=5	5.0000	2.8275	-2.17	-43.4	.00015	.000	1
CalStd9=100	1000.0	1010.2	10.2	1.02	.02004	.000	1
CalStd3=1	1.0000	-1.1611	-2.16	-216.	.00008	.000	1
CalStd10=10	10000.	9999.0	-1.02	-.010	.19745	.008	1

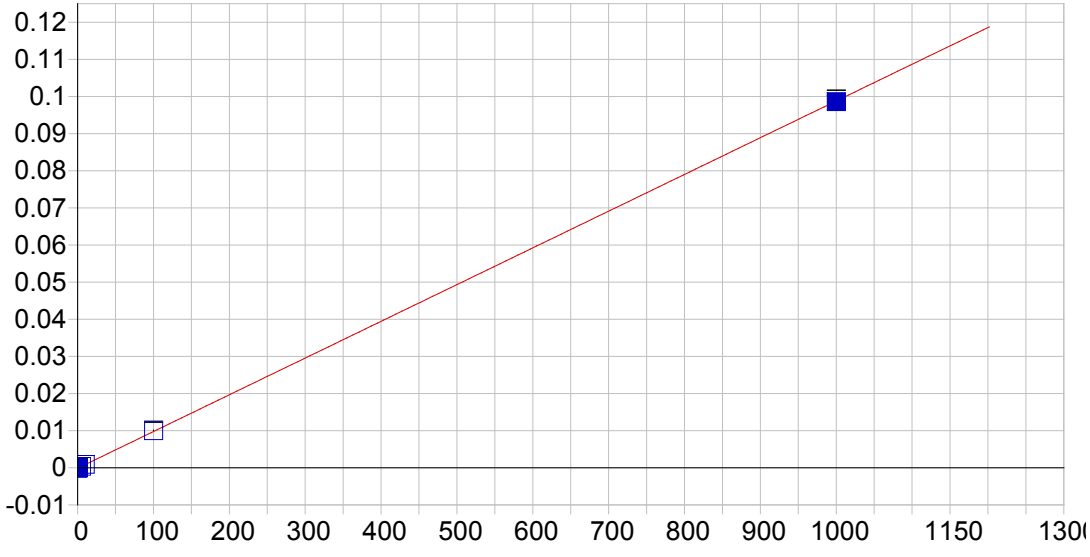


Ba 493.409 { 68}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.004864	Re-Slope:	1.000000
A1 (Gain):	0.000032	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999928	Status:	OK.
Std Error of Est:	0.000147		
Predicted MDL:	0.620200		
Predicted MQL:	2.067333		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-2.1165	-2.12	.000	.00480	.000	1
CalStd9=100	1000.0	1005.3	5.29	.529	.03707	.001	1
CalStd8=100	100.00	101.42	1.42	1.42	.00811	.000	1
CalStd10=10	10000.	9840.0	-160.	-1.60	.32012	.008	1

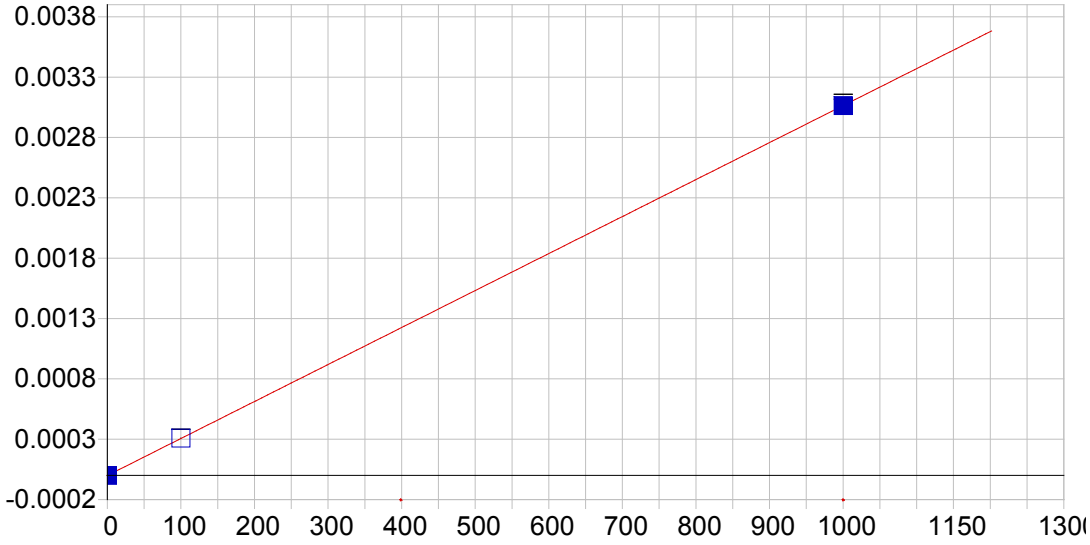


Be 313.042 {108}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000125	Re-Slope:	1.000000
A1 (Gain):	0.000099	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999978	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	0.036461		
Predicted MQL:	0.121538		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00006	.000	.000	-.00013	.000	1
CalStd5=10	10.000	10.143	.143	1.43	.00088	.000	1
CalStd8=100	100.00	101.89	1.89	1.89	.00995	.000	1
CalStd2=0.5	.50000	.52387	.024	4.77	-.00007	.000	1
CalStd4=5	5.0000	5.0687	.069	1.37	.00038	.000	1
CalStd1=0.25	.25000	.27415	.024	9.66	-.00010	.000	1
CalStd9=100	1000.0	997.81	-2.19	-.219	.09857	.001	1
CalStd3=1	1.0000	1.0353	.035	3.53	-.00002	.000	1

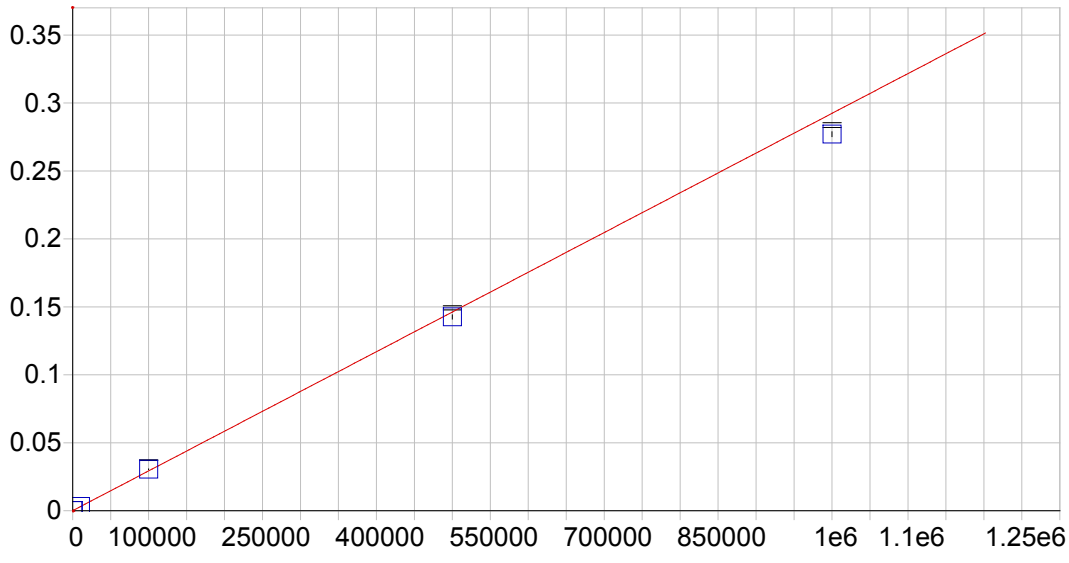


Be 234.861 {144}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999999	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	0.238687		
Predicted MQL:	0.795622		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00044	.000	.000	.00000	.000	1
CalStd9=100	1000.0	999.51	-.486	-.049	.00306	.000	1
CalStd8=100	100.00	100.49	.486	.486	.00031	.000	1

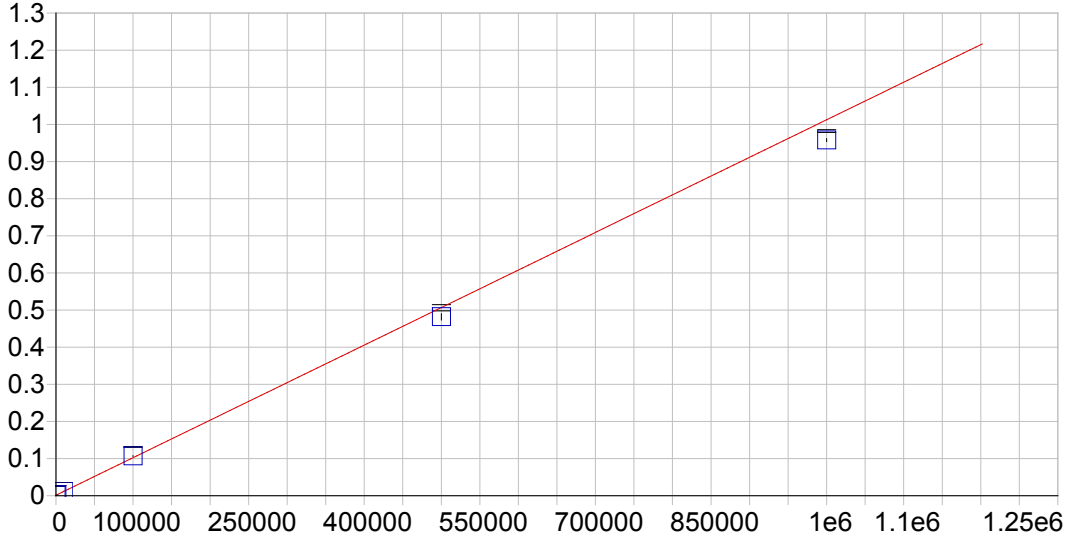


Ca 315.887 {107}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000032	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999107	Status:	OK.
Std Error of Est:	0.000027		
Predicted MDL:	7.081257		
Predicted MQL:	23.604188		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-11.547	-11.5	.000	.00003	.000	1
CalStd10=10	10000.	10316.	316.	3.16	.00305	.000	1
CalStd13=50	500000.	487490.	-12500.	-2.50	.14255	.002	1
CalStd14-100	1000000.	947410.	-52600.	-5.26	.27701	.002	1
CalStd9=100	1000.0	1041.8	41.8	4.18	.00034	.000	1
CalStd12-100	100000.	104230.	4230.	4.23	.03050	.000	1

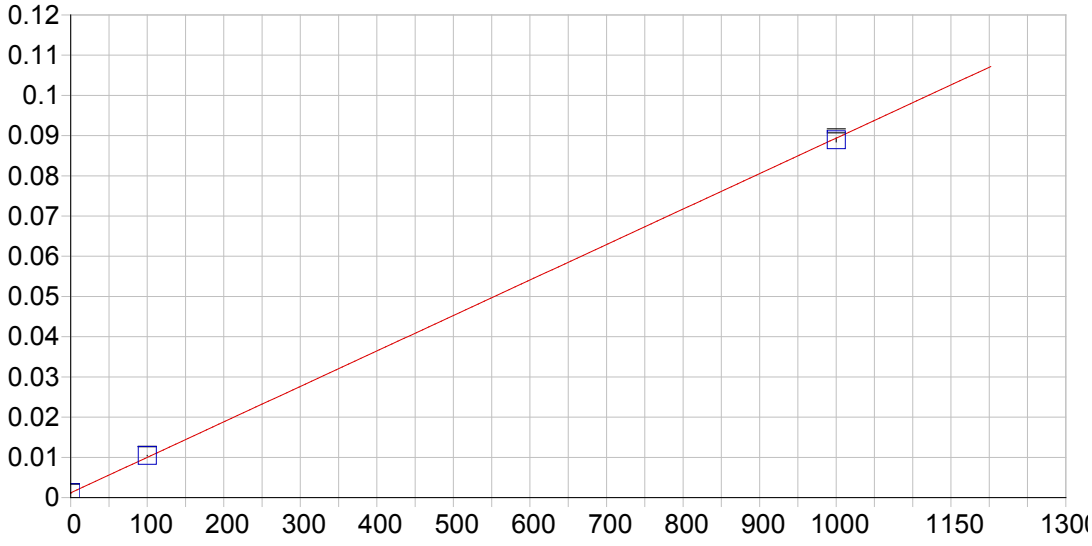


Ca 317.933 {106}

Date of Fit: 10/18/2016 09:46:49 Type of Fit: Curvilinear Weighting: 1/Conc

A0 (Offset):	0.001348	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999820	Status:	OK.
Std Error of Est:	0.000033		
Predicted MDL:	2.494359		
Predicted MQL:	8.314530		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.23183	-.232	.000	.00135	.000	1
CalStd10=10	10000.	10386.	386.	3.86	.01185	.000	1
CalStd13=50	500000.	475130.	-24900.	-4.97	.48176	.008	1
CalStd14-100	1000000.	946040.	-54000.	-5.40	.95790	.004	1
CalStd9=100	1000.0	1157.7	158.	15.8	.00252	.000	1
CalStd12-100	100000.	104490.	4490.	4.49	.10700	.001	1

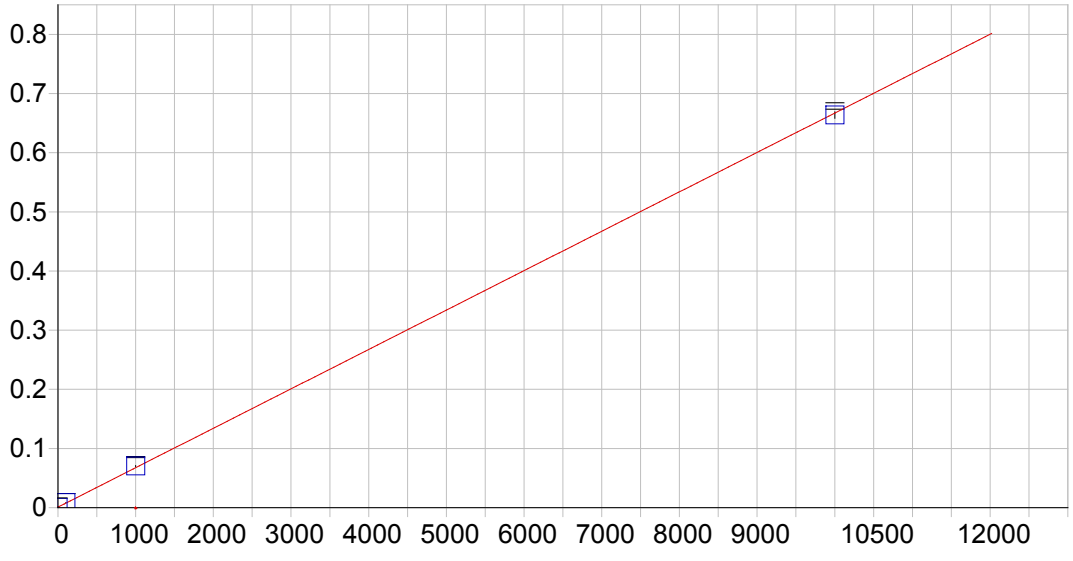


Ca 393.366 { 86}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001185	Re-Slope:	1.000000
A1 (Gain):	0.000088	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999872	Status:	OK.
Std Error of Est:	0.000026		
Predicted MDL:	0.035784		
Predicted MQL:	0.119281		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00455	-.005	.000	.00119	.000	1
CalStd9=100	1000.0	994.94	-5.06	-.506	.08892	.001	1
CalStd8=100	100.00	105.06	5.06	5.06	.01045	.000	1

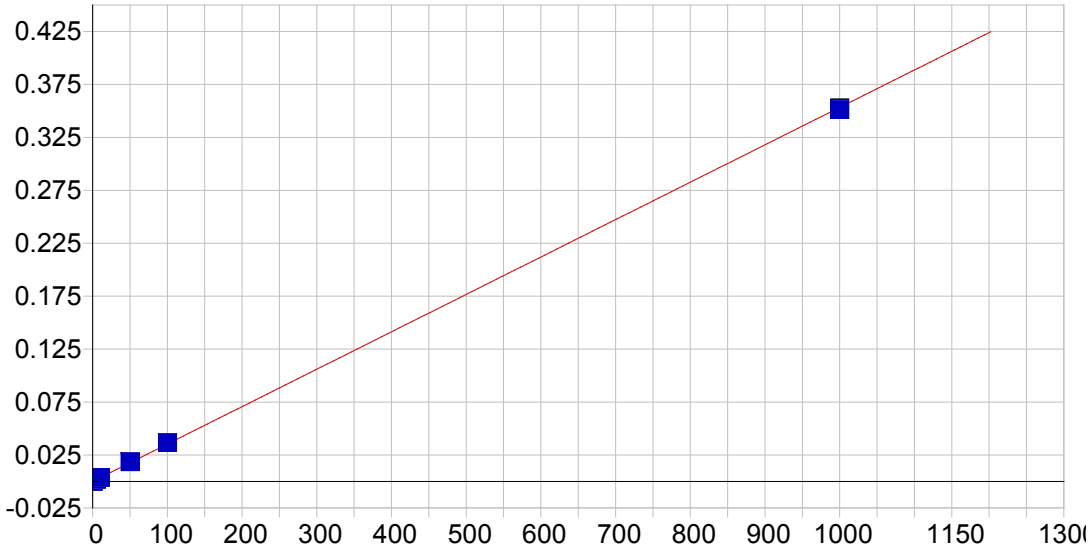


Ca 396.847 { 85}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000943	Re-Slope:	1.000000
A1 (Gain):	0.000067	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999852	Status:	OK.
Std Error of Est:	0.000054		
Predicted MDL:	0.077663		
Predicted MQL:	0.258877		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.01547	-.015	.000	.00094	.000	1
CalStd10=10	10000.	9948.3	-51.7	-.517	.66358	.005	1
CalStd8=100	100.00	112.03	12.0	12.0	.00840	.000	1
CalStd9=100	1000.0	1039.6	39.6	3.96	.07019	.001	1

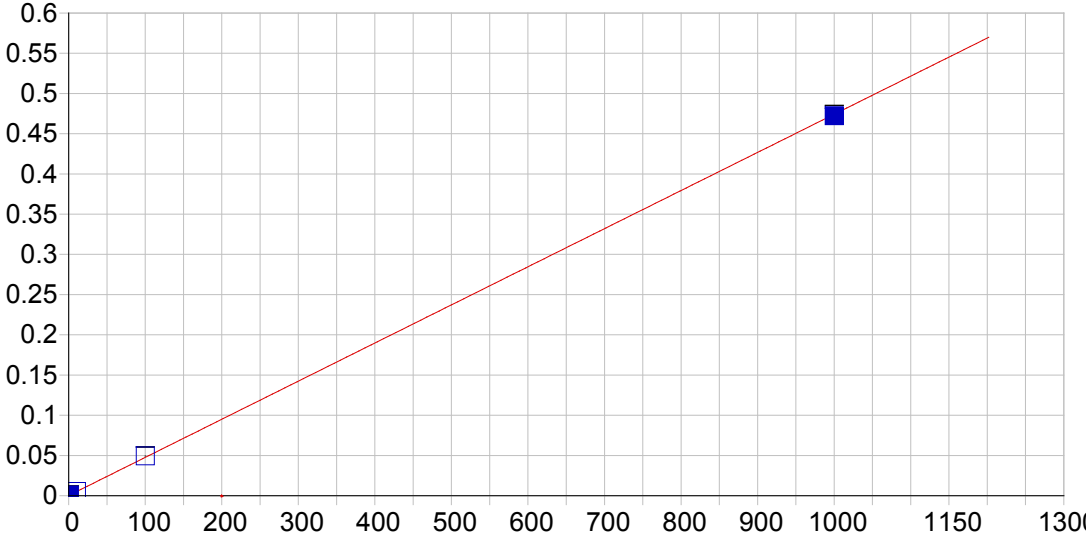


Cd 226.502 {449}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000025	Re-Slope:	1.000000
A1 (Gain):	0.000353	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999871	Status:	OK.
Std Error of Est:	0.000005		
Predicted MDL:	0.149391		
Predicted MQL:	0.497968		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00008	.000	.000	-.00003	.000	1
CalStd7=50	50.000	52.239	2.24	4.48	.01843	.000	1
CalStd3=1	1.0000	.90989	-.090	-9.01	.00030	.000	1
CalStd2=0.5	.50000	.53100	.031	6.20	.00016	.000	1
CalStd4=5	5.0000	5.3179	.318	6.36	.00185	.000	1
CalStd8=100	100.00	103.35	3.35	3.35	.03649	.000	1
CalStd5=10	10.000	10.431	.431	4.31	.00366	.000	1
CalStd9=100	1000.0	993.72	-6.28	-.628	.35116	.001	1

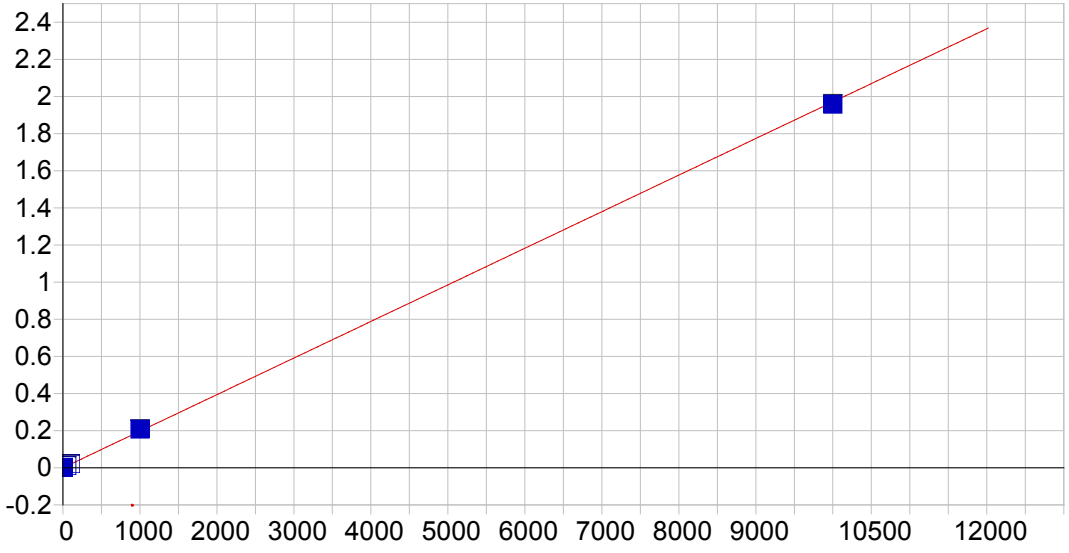


Cd 228.802 {447}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000229	Re-Slope:	1.000000
A1 (Gain):	0.000474	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999914	Status:	OK.
Std Error of Est:	0.000006		
Predicted MDL:	0.141813		
Predicted MQL:	0.472711		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00017	.000	.000	.00023	.000	1
CalStd9=100	1000.0	995.83	-4.17	-.417	.47217	.002	1
CalStd8=100	100.00	103.55	3.55	3.55	.04931	.000	1
CalStd2=0.5	.50000	.54972	.050	9.94	.00049	.000	1
CalStd3=1	1.0000	1.1629	.163	16.3	.00078	.000	1
CalStd5=10	10.000	10.410	.410	4.10	.00516	.000	1

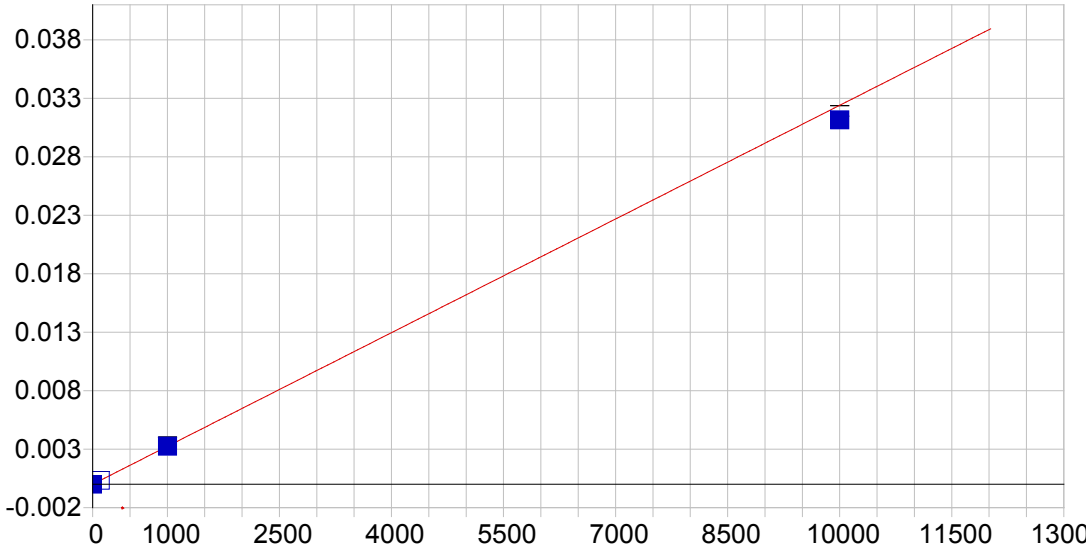


Co 228.616 {447}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000158	Re-Slope:	1.000000
A1 (Gain):	0.000197	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999800	Status:	OK.
Std Error of Est:	0.000015		
Predicted MDL:	0.279545		
Predicted MQL:	0.931816		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00055	-.001	.000	-.00016	.000	1
CalStd7=50	50.000	54.694	4.69	9.39	.01062	.000	1
CalStd5=10	10.000	11.003	1.00	10.0	.00201	.000	1
CalStd4=5	5.0000	5.4796	.480	9.59	.00092	.000	1
CalStd8=100	100.00	106.56	6.56	6.56	.02084	.000	1
CalStd9=100	1000.0	1054.5	54.5	5.45	.20766	.001	1
CalStd3=1	1.0000	1.1425	.143	14.3	.00007	.000	1
CalStd10=10	10000.	9932.7	-67.3	-.673	1.9574	.004	1

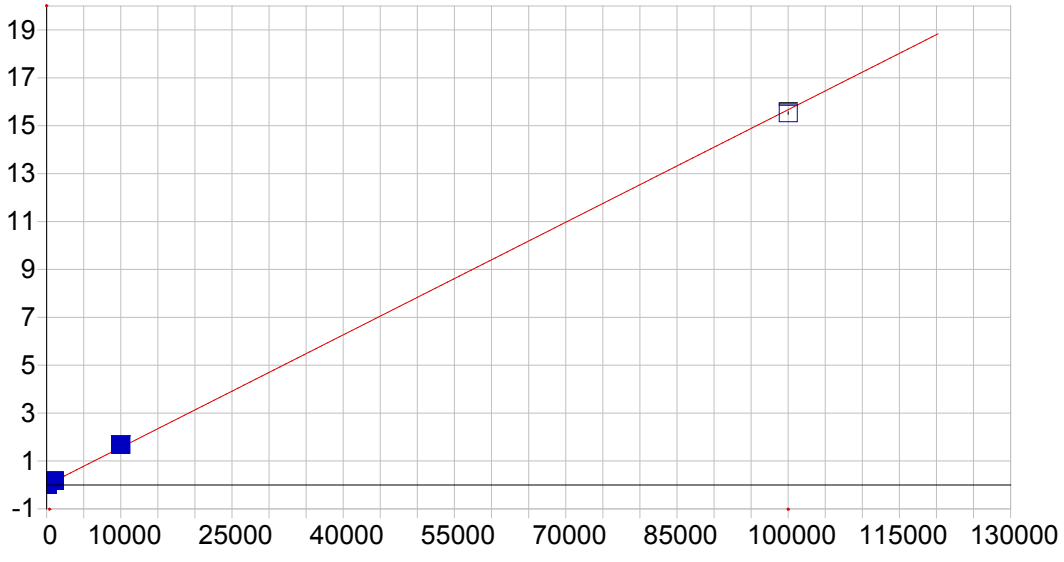


Co 238.892 {141}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000002	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999915	Status:	OK.
Std Error of Est:	0.000006		
Predicted MDL:	0.688812		
Predicted MQL:	2.296039		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.24826	-.248	.000	.00000	.000	1
CalStd9=100	1000.0	1003.0	2.96	.296	.00325	.000	1
CalStd10=10	10000.	9612.4	-388.	-3.88	.03115	.000	1
CalStd8=100	100.00	100.76	.763	.763	.00033	.000	1

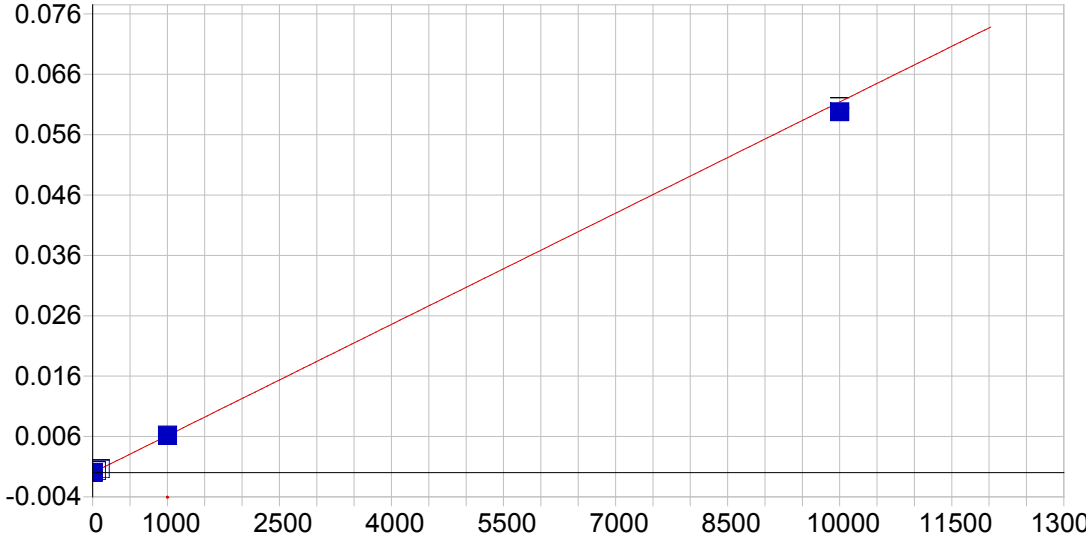


Cr 205.560 {464}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000013	Re-Slope:	1.000000
A1 (Gain):	0.000157	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999638	Status:	OK.
Std Error of Est:	0.000050		
Predicted MDL:	0.231211		
Predicted MQL:	0.770702		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00073	-.001	.000	.00001	.000	1
CalStd5=10	10.000	11.481	1.48	14.8	.00181	.000	1
CalStd7=50	50.000	58.533	8.53	17.1	.00918	.000	1
CalStd9=100	1000.0	1135.4	135.	13.5	.17791	.001	1
CalStd8=100	100.00	114.77	14.8	14.8	.01800	.000	1
CalStd4=5	5.0000	5.5596	.560	11.2	.00088	.000	1
CalStd3=1	1.0000	.95716	-.043	-4.28	.00016	.000	1
CalStd11-100	100000.	99127.	-873.	-.873	15.532	.052	1
CalStd10=10	10000.	10712.	712.	7.12	1.6785	.002	1

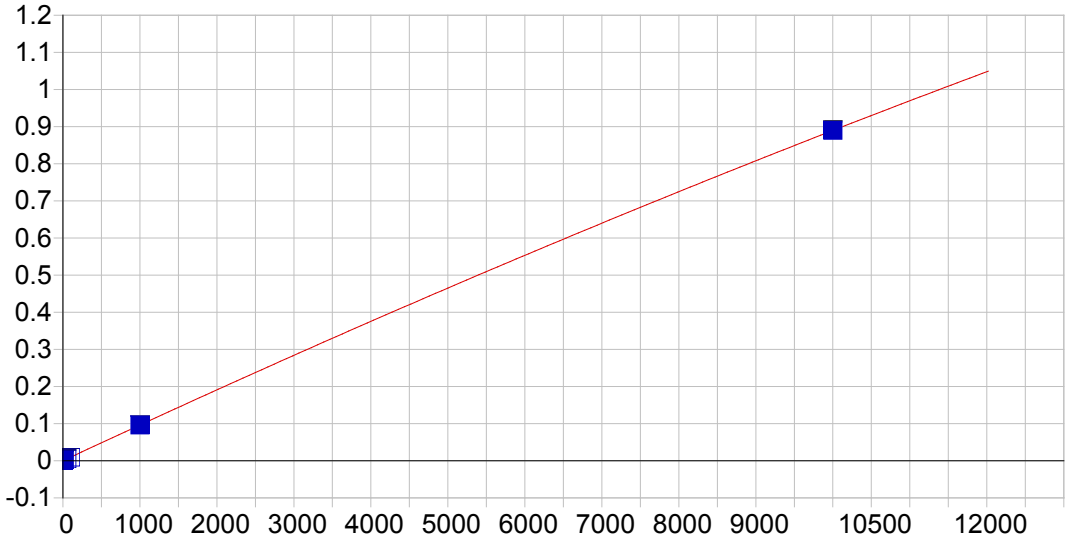


Cr 267.716 {126}

Date of Fit: 10/18/2016 09:46:49 Type of Fit: Linear Weighting: 1/Var

A0 (Offset):	0.000002	Re-Slope:	1.000000
A1 (Gain):	0.000006	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999865	Status:	OK.
Std Error of Est:	0.000004		
Predicted MDL:	0.497772		
Predicted MQL:	1.659242		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.18732	.187	.000	.00000	.000	1
CalStd5=10	10.000	10.183	.183	1.83	.00006	.000	1
CalStd7=50	50.000	50.841	.841	1.68	.00031	.000	1
CalStd9=100	1000.0	998.88	-1.12	-.112	.00614	.000	1
CalStd8=100	100.00	101.04	1.04	1.04	.00062	.000	1
CalStd4=5	5.0000	4.5625	-.437	-8.75	.00003	.000	1
CalStd10=10	10000.	9731.5	-269.	-2.69	.05977	.001	1

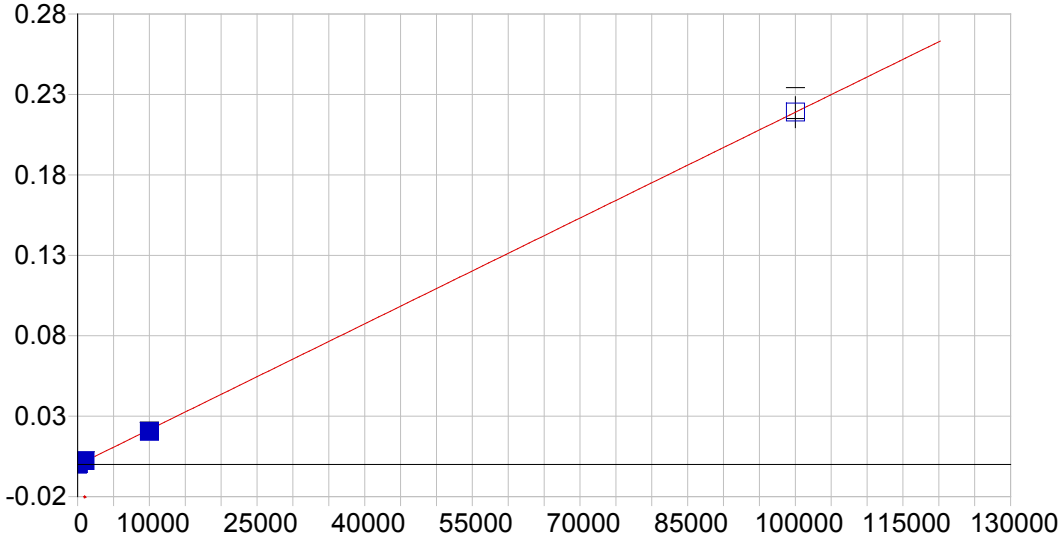


Cu 224.700 {450}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Curvilinear	Weighting:	1/Conc

A0 (Offset):	-0.000024	Re-Slope:	1.000000
A1 (Gain):	0.000097	Y-int:	0.000000
A2 (Curvature):	-0.000000		
n (Exponent):	1.000000		
Correlation:	0.999991	Status:	OK.
Std Error of Est:	0.000002		
Predicted MDL:	0.550888		
Predicted MQL:	1.836292		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00034	.000	.000	-.00002	.000	1
CalStd9=100	1000.0	997.95	-2.05	-.205	.09612	.000	1
CalStd7=50	50.000	50.575	.575	1.15	.00489	.000	1
CalStd8=100	100.00	99.605	-.395	-.395	.00964	.000	1
CalStd5=10	10.000	9.9290	-.071	-.710	.00094	.000	1
CalStd10=10	10000.	10000.	.241	.002	.88995	.002	1
CalStd4=5	5.0000	5.0891	.089	1.78	.00047	.000	1
CalStd6=20	20.000	21.366	1.37	6.83	.00205	.000	1
CalStd3=1	1.0000	1.2567	.257	25.7	.00010	.000	1

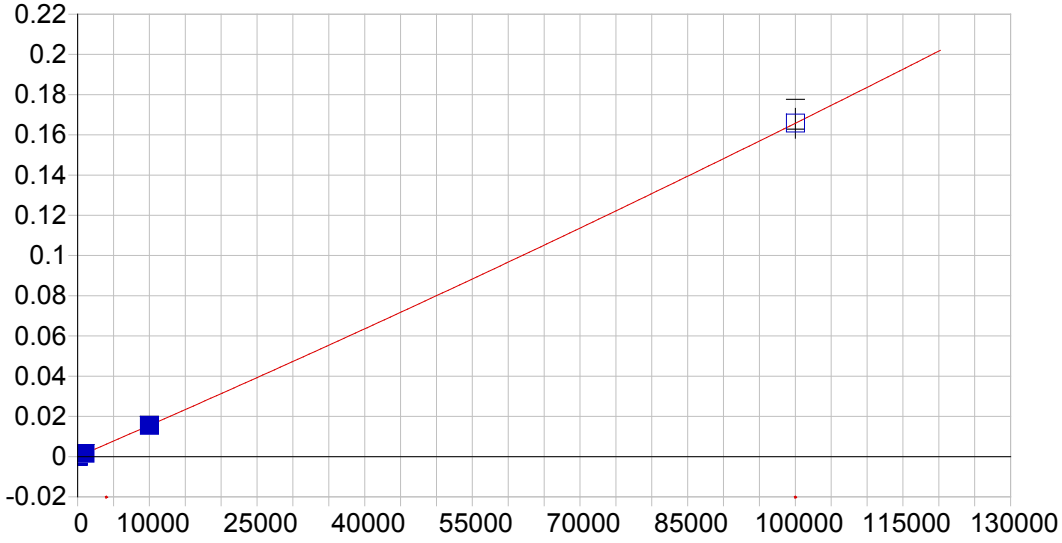


Cu 324.754 {104}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	None

A0 (Offset):	-0.000253	Re-Slope:	1.000000
A1 (Gain):	0.000002	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999976	Status:	OK.
Std Error of Est:	0.000761		
Predicted MDL:	1.808276		
Predicted MQL:	6.027586		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	169.46	169.	.000	.00012	.000	1
CalStd9=100	1000.0	1142.5	143.	14.3	.00225	.000	1
CalStd8=100	100.00	267.59	168.	168.	.00033	.000	1
CalStd10=10	10000.	9468.9	-531.	-5.31	.02050	.000	1
CalStd11-100	100000.	100050.	51.5	.052	.21903	.010	1

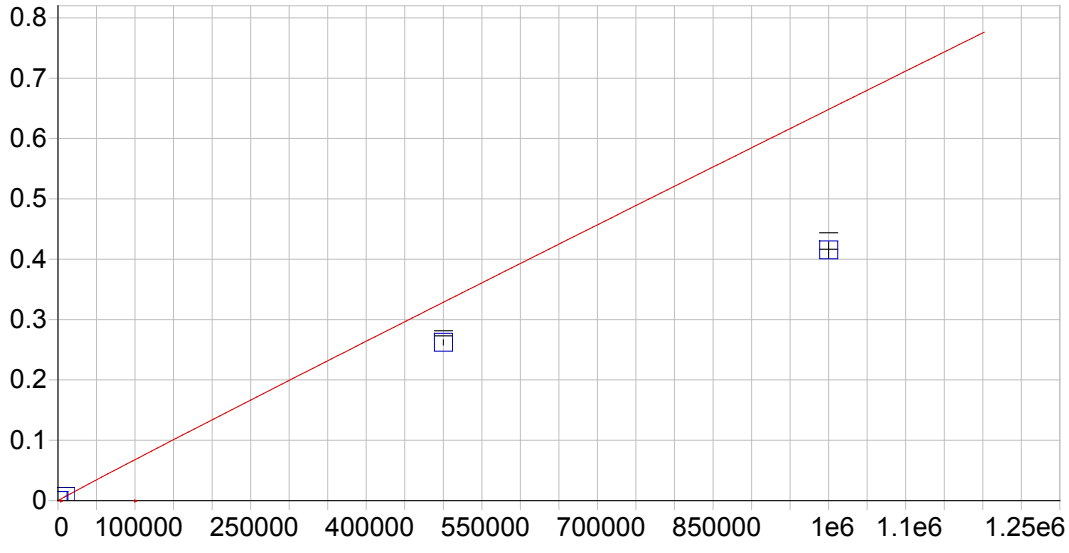


Cu 327.396 {103}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Curvilinear	Weighting:	1/Conc

A0 (Offset):	-0.000002	Re-Slope:	1.000000
A1 (Gain):	0.000002	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999992	Status:	Warning Positive Curvature
Std Error of Est:	0.000000		
Predicted MDL:	3.179218		
Predicted MQL:	10.597392		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00277	.003	.000	.00000	.000	1
CalStd6=20	20.000	17.961	-2.04	-10.2	.00003	.000	1
CalStd7=50	50.000	46.991	-3.01	-6.02	.00007	.000	1
CalStd8=100	100.00	98.997	-1.00	-1.00	.00015	.000	1
CalStd9=100	1000.0	1037.2	37.2	3.72	.00160	.000	1
CalStd10=10	10000.	9966.2	-33.8	-.338	.01549	.000	1
CalStd11-100	100000.	100000.	2.66	.003	.16578	.007	1

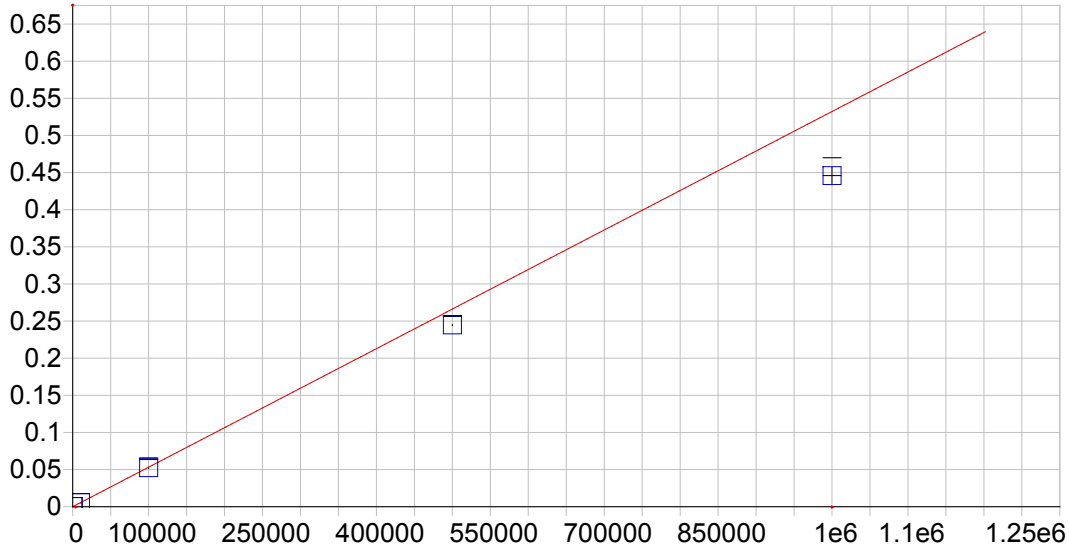


Fe 234.349 {144}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Full Fit	Weighting:	1/Var

A0 (Offset):	0.000038	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	0.980000		
Correlation:	0.999927	Status:	OK.
Std Error of Est:	0.000002		
Predicted MDL:	1.163302		
Predicted MQL:	3.877675		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.02685	.027	.000	.00004	.000	1
CalStd10=10	10000.	10214.	214.	2.14	.00729	.000	1
CalStd13=50	500000.	396980.	-103000.	-20.6	.26214	.004	1
CalStd14-100	1000000.	634660.	-365000.	-36.5	.41515	.014	1
CalStd9=100	1000.0	995.84	-4.16	-.416	.00078	.000	1

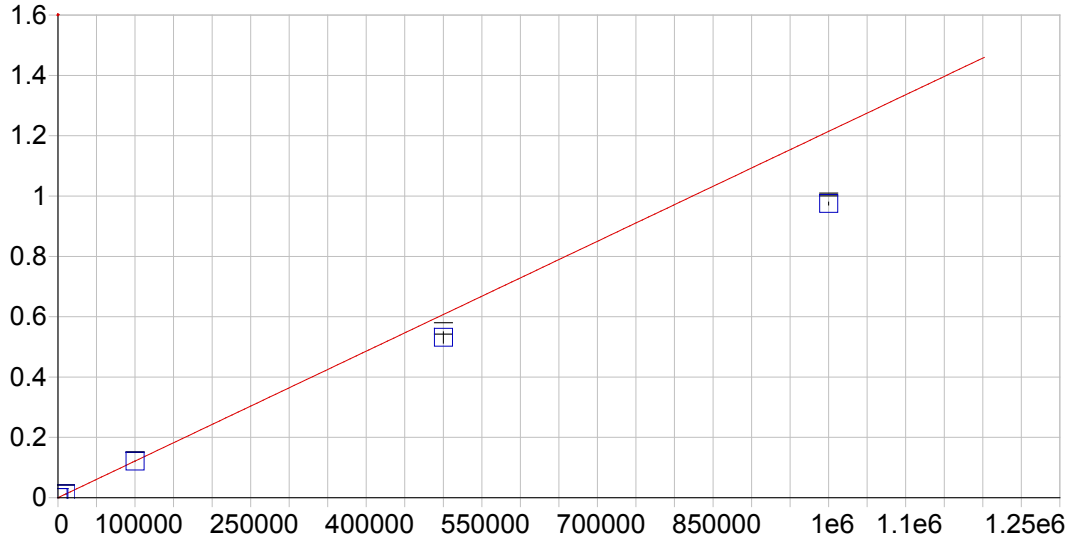


Fe 239.562 {140}

Date of Fit: 10/18/2016 09:46:49 Type of Fit: Curvilinear Weighting: 1/Conc

A0 (Offset):	0.000007	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999999	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	2.158155		
Predicted MQL:	7.193851		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.03834	.038	.000	.00001	.000	1
CalStd10=10	10000.	9817.5	-183.	-1.83	.00523	.000	1
CalStd13=50	500000.	459560.	-40400.	-8.09	.24457	.001	1
CalStd14-100	1000000.	837290.	-163000.	-16.3	.44559	.012	1
CalStd9=100	1000.0	976.90	-23.1	-2.31	.00053	.000	1
CalStd12-100	100000.	98465.	-1530.	-1.53	.05241	.001	1

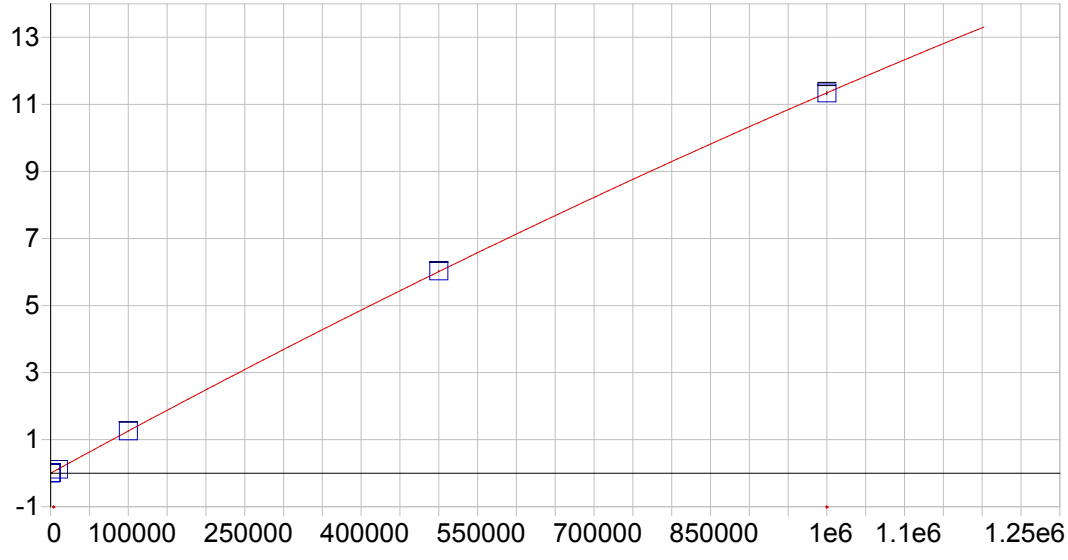


Fe 259.940 {129}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Curvilinear	Weighting:	1/Var

A0 (Offset):	0.000023	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999966	Status:	OK.
Std Error of Est:	0.000008		
Predicted MDL:	1.997275		
Predicted MQL:	6.657584		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.06734	-.067	.000	.00002	.000	1
CalStd10=10	10000.	9915.4	-84.6	-.846	.01206	.000	1
CalStd13=50	500000.	437420.	-62600.	-12.5	.53121	.019	1
CalStd14-100	1000000.	803040.	-197000.	-19.7	.97521	.005	1
CalStd9=100	1000.0	1011.1	11.1	1.11	.00125	.000	1
CalStd12-100	100000.	99609.	-391.	-.391	.12099	.001	1

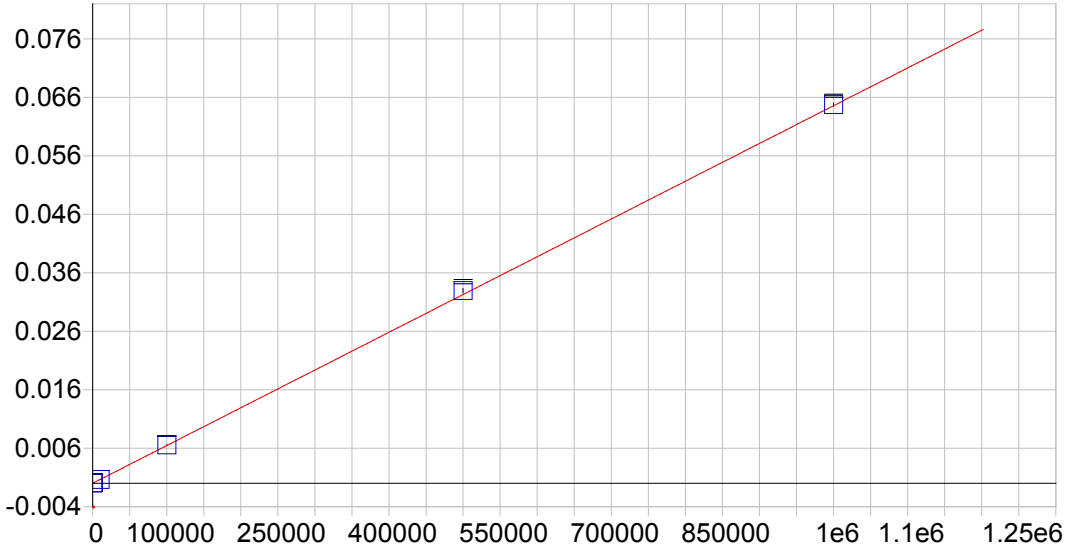


Mg 202.582 {466}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Curvilinear	Weighting:	1/Conc

A0 (Offset):	-0.000044	Re-Slope:	1.000000
A1 (Gain):	0.000013	Y-int:	0.000000
A2 (Curvature):	-0.000000		
n (Exponent):	1.000000		
Correlation:	0.999974	Status:	OK.
Std Error of Est:	0.000150		
Predicted MDL:	3.131022		
Predicted MQL:	10.436739		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.08993	.090	.000	-.00004	.000	1
CalStd13=50	500000.	501540.	1540.	.307	6.0297	.016	1
CalStd10=10	10000.	9192.4	-808.	-8.08	.11662	.000	1
CalStd14-100	1000000.	999120.	-879.	-.088	11.337	.048	1
CalStd12-100	100000.	100140.	142.	.142	1.2585	.003	1
CalStd9=100	1000.0	987.22	-12.8	-1.28	.01250	.000	1

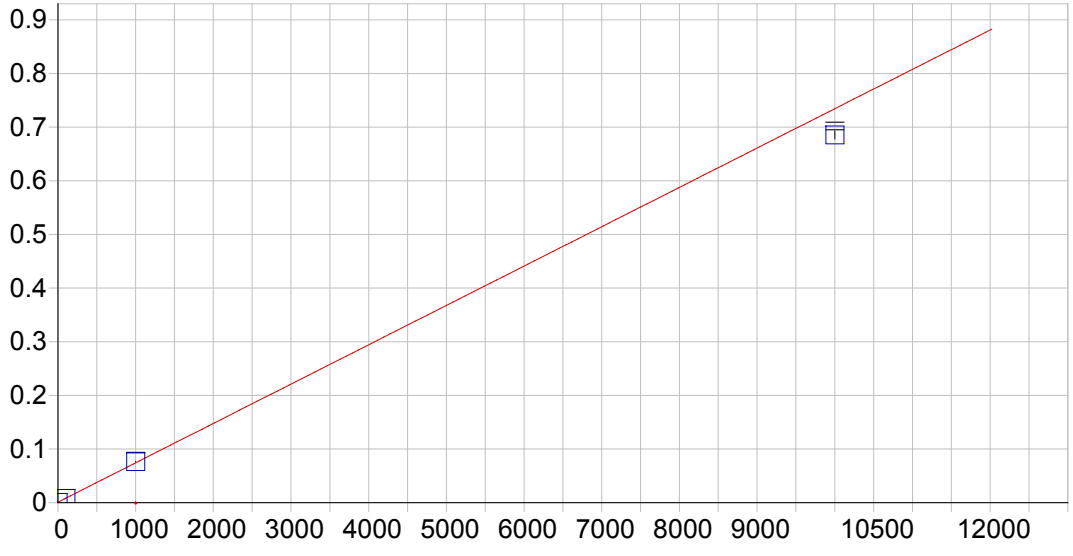


Mg 279.079 {121}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Full Fit	Weighting:	1/Var

A0 (Offset):	0.000001	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999966	Status:	OK.
Std Error of Est:	0.000005		
Predicted MDL:	19.143928		
Predicted MQL:	63.813092		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	.00000	.000	1
CalStd13=50	500000.	510030.	10000.	2.01	.03294	.000	1
CalStd10=10	10000.	9921.5	-78.5	-.785	.00064	.000	1
CalStd14-100	1000000.	1002600.	2570.	.257	.06474	.000	1
CalStd12-100	100000.	101210.	1210.	1.21	.00654	.000	1
CalStd9=100	1000.0	1023.8	23.8	2.38	.00007	.000	1

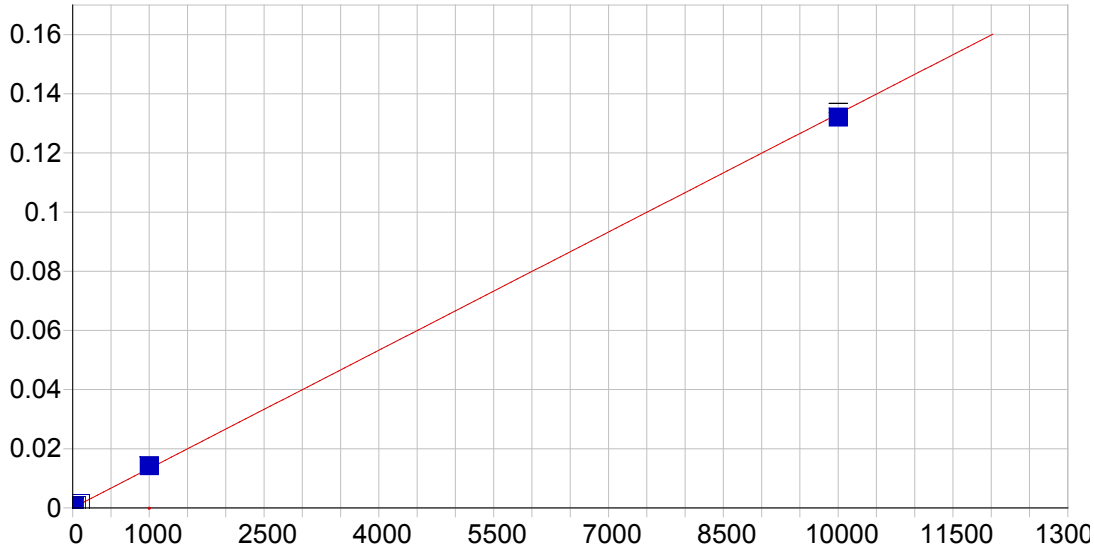


Mg 280.270 {120}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000962	Re-Slope:	1.000000
A1 (Gain):	0.000073	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999138	Status:	OK.
Std Error of Est:	0.000111		
Predicted MDL:	0.027155		
Predicted MQL:	0.090516		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00314	-.003	.000	.00096	.000	1
CalStd9=100	1000.0	1028.3	28.3	2.83	.07638	.000	1
CalStd10=10	10000.	9329.8	-670.	-6.70	.68521	.007	1
CalStd8=100	100.00	98.370	-1.63	-1.63	.00818	.000	1

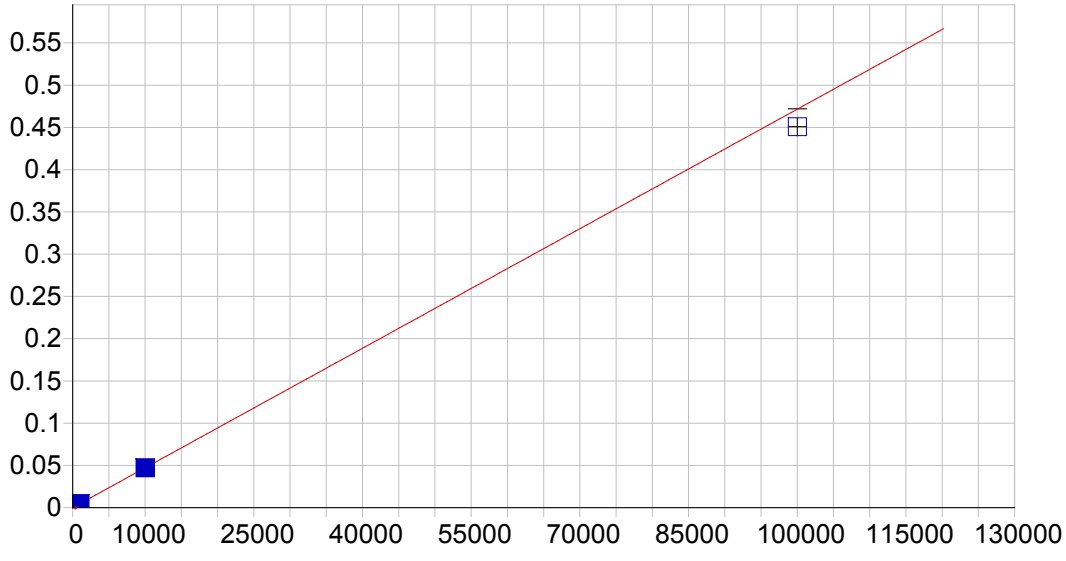


Mn 257.610 {131}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000007	Re-Slope:	1.000000
A1 (Gain):	0.000013	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999664	Status:	OK.
Std Error of Est:	0.000003		
Predicted MDL:	0.114004		
Predicted MQL:	0.380015		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00317	-.003	.000	.00001	.000	1
CalStd5=10	10.000	11.073	1.07	10.7	.00015	.000	1
CalStd7=50	50.000	55.894	5.89	11.8	.00075	.000	1
CalStd6=20	20.000	23.792	3.79	19.0	.00032	.000	1
CalStd8=100	100.00	109.76	9.76	9.76	.00147	.000	1
CalStd4=5	5.0000	5.3237	.324	6.47	.00008	.000	1
CalStd9=100	1000.0	1065.3	65.3	6.53	.01420	.000	1
CalStd10=10	10000.	9913.8	-86.2	-.862	.13210	.002	1

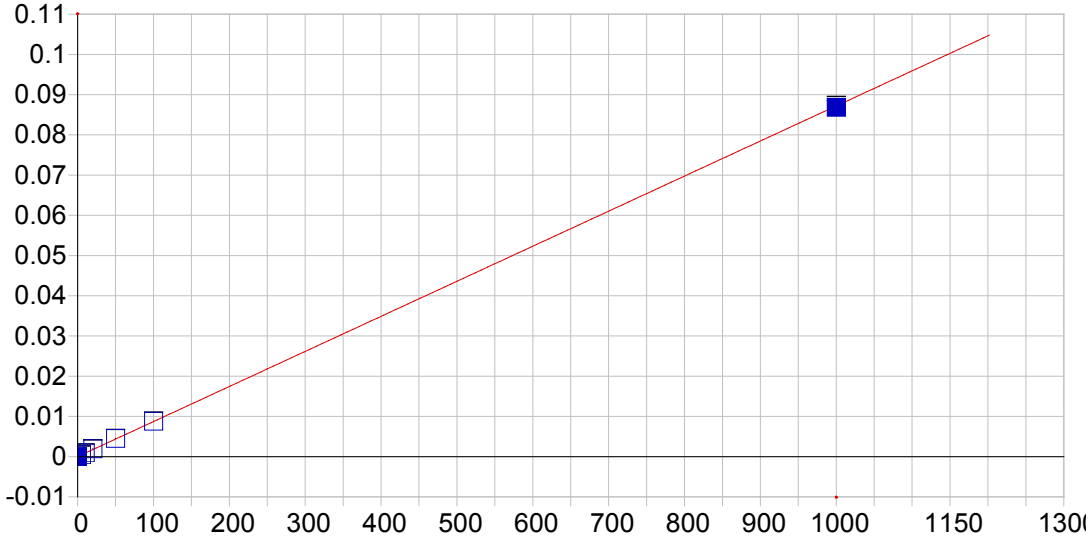


Mn 259.373 {130}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000005	Re-Slope:	1.000000
A1 (Gain):	0.000005	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999951	Status:	OK.
Std Error of Est:	0.000003		
Predicted MDL:	0.308133		
Predicted MQL:	1.027109		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00534	-.005	.000	.00000	.000	1
CalStd10=10	10000.	9965.1	-34.9	-.349	.04707	.000	1
CalStd11-100	100000.	95562.	-4440.	-4.44	.45066	.011	1
CalStd9=100	1000.0	1013.4	13.4	1.34	.00479	.000	1

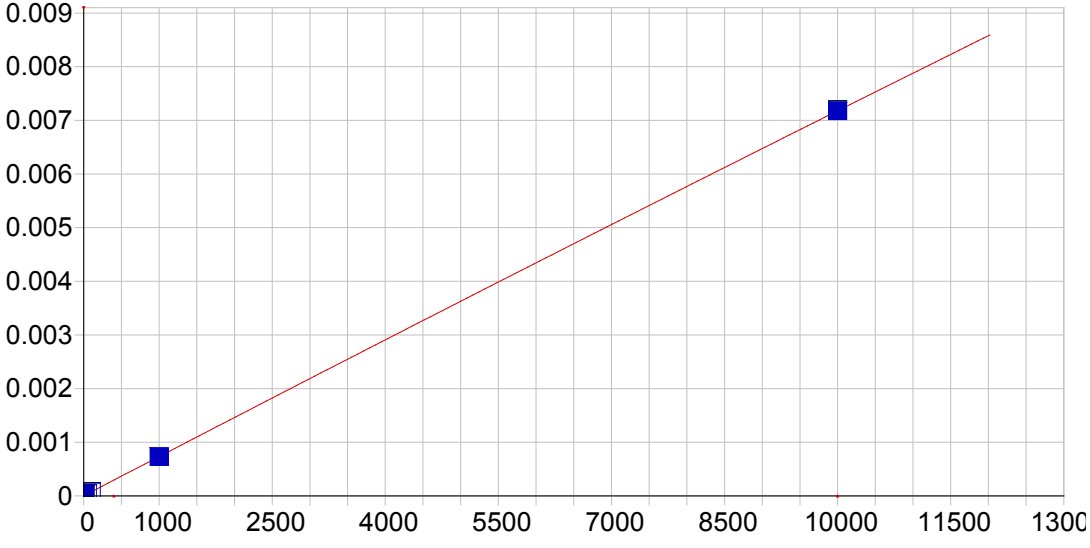


Mo 202.030 {466}

Date of Fit: 10/18/2016 09:46:49 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset):	-0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000087	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999878	Status:	OK.
Std Error of Est:	0.000004		
Predicted MDL:	0.380836		
Predicted MQL:	1.269453		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00061	-.001	.000	.00000	.000	1
CalStd7=50	50.000	51.406	1.41	2.81	.00448	.000	1
CalStd6=20	20.000	22.073	2.07	10.4	.00192	.000	1
CalStd5=10	10.000	10.191	.191	1.91	.00089	.000	1
CalStd8=100	100.00	100.83	.826	.826	.00879	.000	1
CalStd4=5	5.0000	4.8313	-.169	-3.37	.00042	.000	1
CalStd9=100	1000.0	995.67	-4.33	-.433	.08682	.001	1

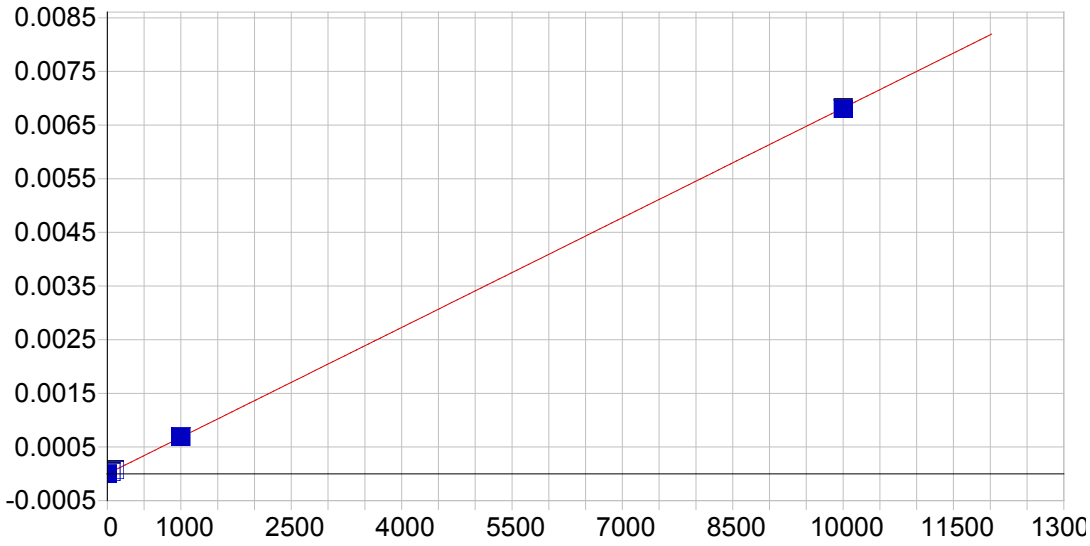


Mo 204.598 {464}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Curvilinear	Weighting:	1/Conc

A0 (Offset):	0.000001	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	-0.000000		
n (Exponent):	1.000000		
Correlation:	0.999992	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	0.640112		
Predicted MQL:	2.133708		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00083	-.001	.000	.00000	.000	1
CalStd7=50	50.000	50.637	.637	1.27	.00004	.000	1
CalStd6=20	20.000	21.689	1.69	8.44	.00002	.000	1
CalStd5=10	10.000	10.051	.051	.511	.00001	.000	1
CalStd8=100	100.00	99.973	-.027	-.027	.00007	.000	1
CalStd4=5	5.0000	5.3384	.338	6.77	.00001	.000	1
CalStd9=100	1000.0	997.01	-2.99	-.299	.00073	.000	1
CalStd10=10	10000.	10000.	.304	.003	.00718	.000	1

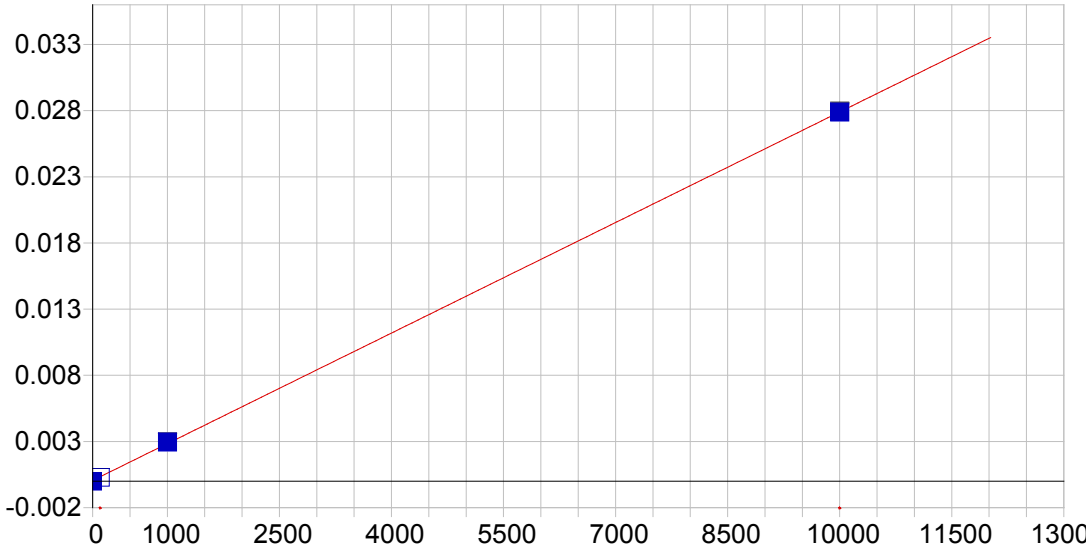


Mo 204.598 {465}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999982	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	0.767880		
Predicted MQL:	2.559600		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00366	-.004	.000	.00000	.000	1
CalStd9=100	1000.0	1015.6	15.6	1.56	.00069	.000	1
CalStd10=10	10000.	9980.3	-19.7	-.197	.00681	.000	1
CalStd7=50	50.000	51.833	1.83	3.67	.00004	.000	1
CalStd8=100	100.00	102.29	2.29	2.29	.00007	.000	1

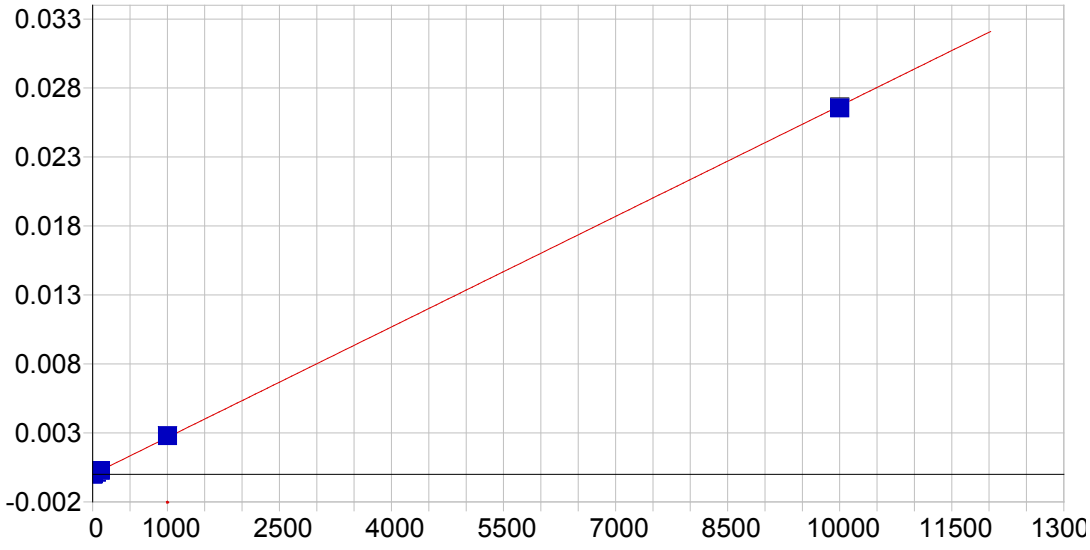


Ni 221.647 {452}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	None

A0 (Offset):	0.000055	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999985	Status:	OK.
Std Error of Est:	0.000090		
Predicted MDL:	0.370097		
Predicted MQL:	1.233658		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-20.005	-20.0	.000	.00000	.000	1
CalStd10=10	10000.	9996.3	-3.70	-.037	.02789	.000	1
CalStd8=100	100.00	85.246	-14.8	-14.8	.00029	.000	1
CalStd9=100	1000.0	1038.5	38.5	3.85	.00295	.000	1

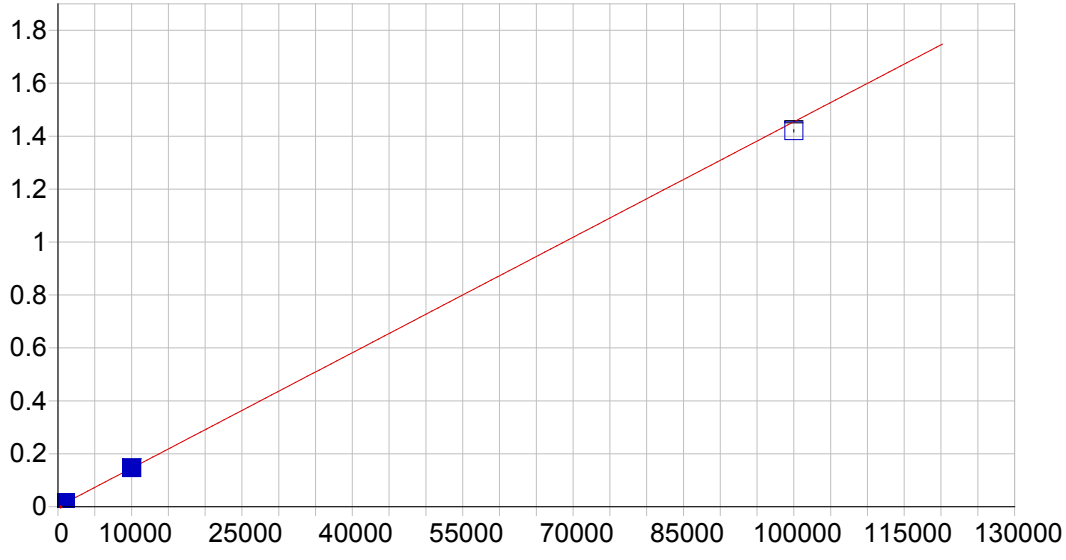


Ni 231.604 {445}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000001	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999846	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	0.384445		
Predicted MQL:	1.281482		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00081	-.001	.000	.00000	.000	1
CalStd7=50	50.000	53.559	3.56	7.12	.00014	.000	1
CalStd5=10	10.000	10.654	.654	6.54	.00003	.000	1
CalStd8=100	100.00	105.05	5.05	5.05	.00028	.000	1
CalStd4=5	5.0000	5.5162	.516	10.3	.00001	.000	1
CalStd9=100	1000.0	1047.7	47.7	4.77	.00280	.000	1
CalStd3=1	1.0000	1.4825	.482	48.2	.00000	.000	1
CalStd10=10	10000.	9942.1	-57.9	-.579	.02655	.000	1

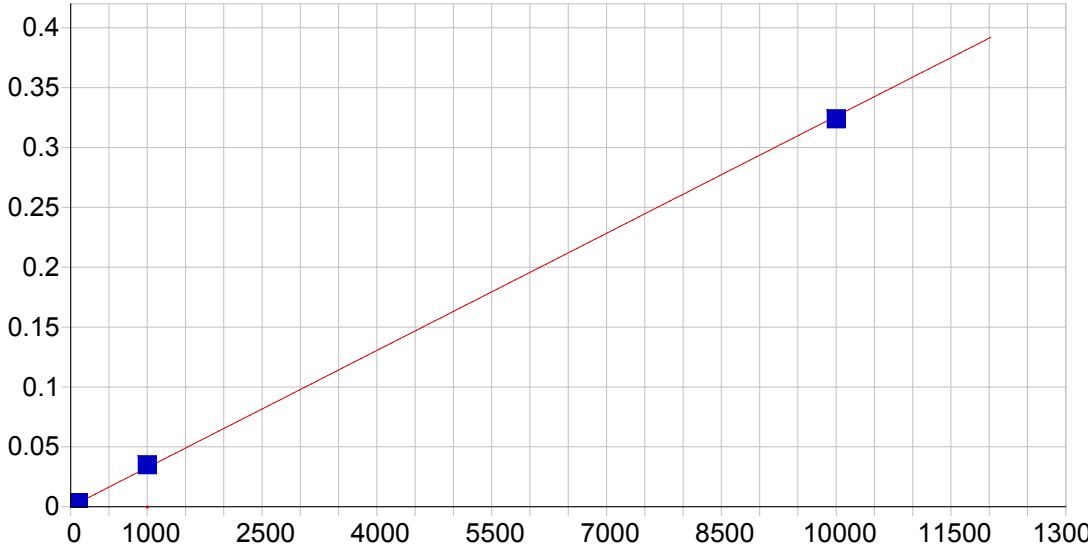


Pb 216.999 {455}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000116	Re-Slope:	1.000000
A1 (Gain):	0.000015	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999786	Status:	OK.
Std Error of Est:	0.000215		
Predicted MDL:	3.821930		
Predicted MQL:	12.739768		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-2.2251	-2.23	.000	.00008	.000	1
CalStd9=100	1000.0	1068.9	68.9	6.89	.01568	.000	1
CalStd10=10	10000.	10076.	75.7	.757	.14680	.000	1
CalStd11-100	100000.	97651.	-2350.	-2.35	1.4201	.004	1
CalStd8=100	100.00	100.41	.412	.412	.00158	.000	1
CalStd5=10	10.000	7.9716	-2.03	-20.3	.00023	.000	1

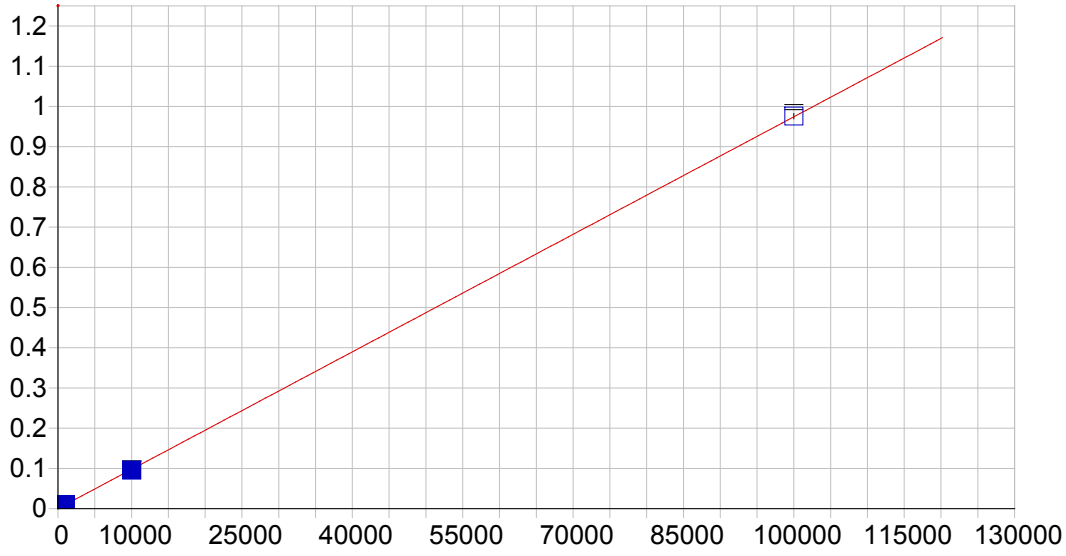


Pb 220.353 {453}

Date of Fit: 10/18/2016 09:46:49 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset):	0.000053	Re-Slope:	1.000000
A1 (Gain):	0.000033	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999739	Status:	OK.
Std Error of Est:	0.000007		
Predicted MDL:	2.162294		
Predicted MQL:	7.207647		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00024	.000	.000	.00005	.000	1
CalStd5=10	10.000	9.1476	-.852	-8.52	.00035	.000	1
CalStd8=100	100.00	108.45	8.45	8.45	.00359	.000	1
CalStd4=5	5.0000	4.9430	-.057	-1.14	.00021	.000	1
CalStd9=100	1000.0	1066.8	66.8	6.68	.03484	.000	1
CalStd10=10	10000.	9925.6	-74.4	-.744	.32373	.000	1

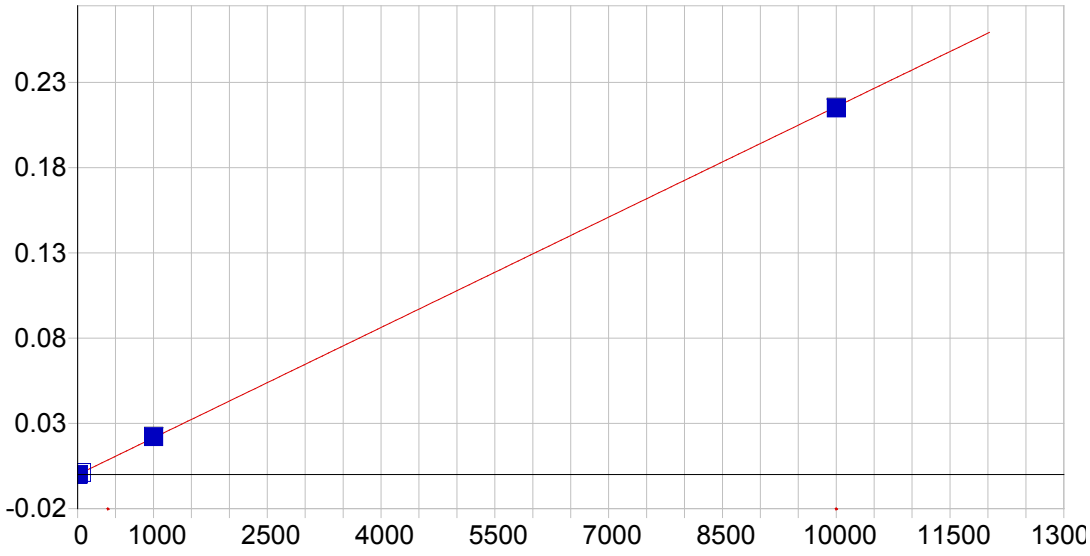


Pb 220.353 {153}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000182	Re-Slope:	1.000000
A1 (Gain):	0.000010	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999974	Status:	OK.
Std Error of Est:	0.000010		
Predicted MDL:	9.167176		
Predicted MQL:	30.557253		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00744	-.007	.000	.00018	.000	1
CalStd9=100	1000.0	1036.9	36.9	3.69	.01028	.000	1
CalStd10=10	10000.	9803.3	-197.	-1.97	.09566	.001	1
CalStd8=100	100.00	105.56	5.56	5.56	.00121	.000	1
CalStd11-100	100000.	100150.	154.	.154	.97580	.006	1

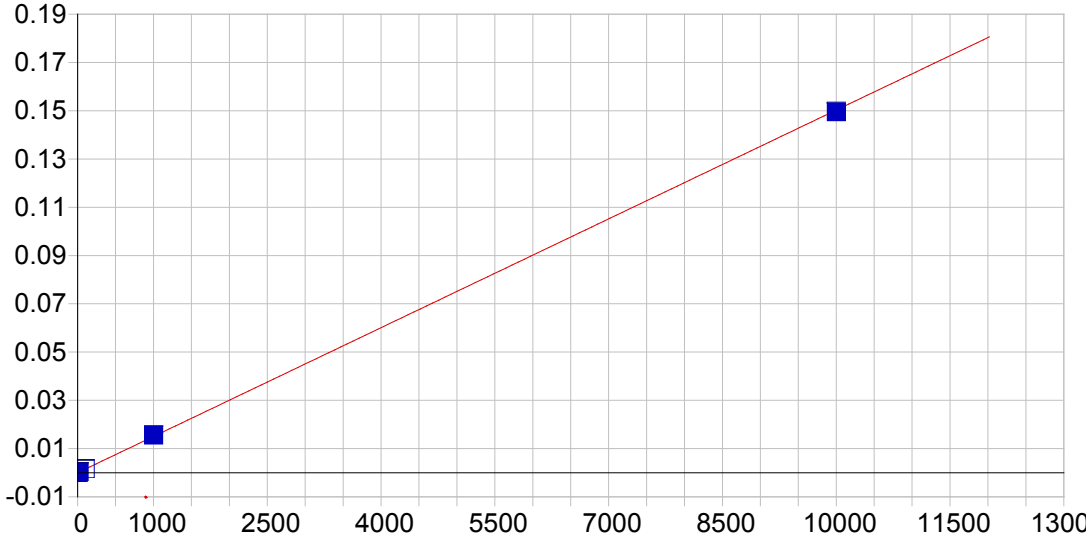


Sb 206.833 {463}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000058	Re-Slope:	1.000000
A1 (Gain):	0.000022	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999937	Status:	OK.
Std Error of Est:	0.000003		
Predicted MDL:	1.973871		
Predicted MQL:	6.579570		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00082	-.001	.000	-.00006	.000	1
CalStd9=100	1000.0	1031.0	31.0	3.10	.02219	.000	1
CalStd5=10	10.000	9.7711	-.229	-2.29	.00015	.000	1
CalStd7=50	50.000	53.890	3.89	7.78	.00110	.000	1
CalStd10=10	10000.	9965.3	-34.7	-.347	.21502	.000	1

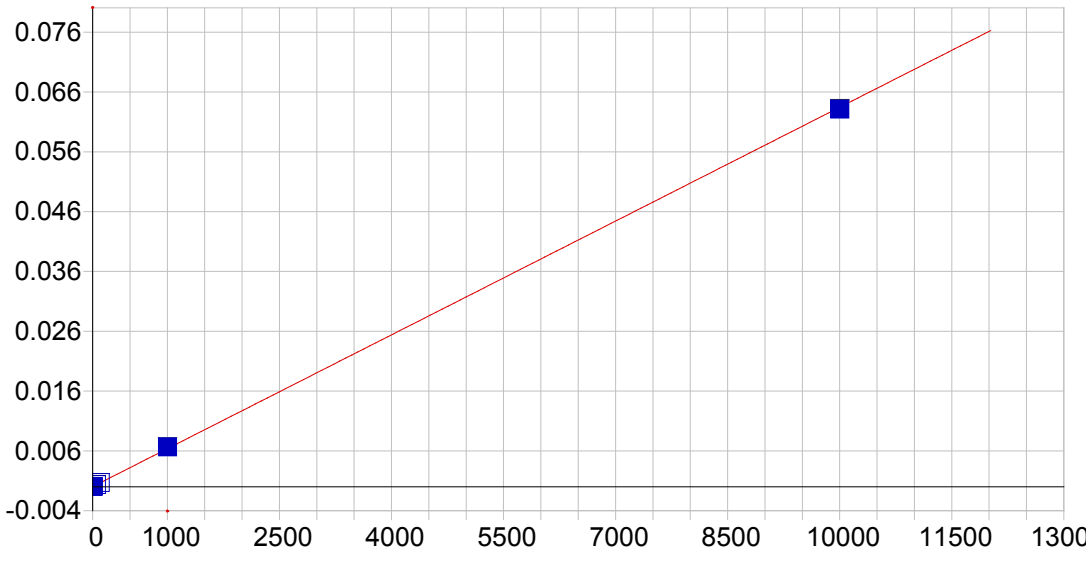


Sb 217.581 {455}

Date of Fit: 10/18/2016 09:46:49 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset):	-0.000016	Re-Slope:	1.000000
A1 (Gain):	0.000015	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999872	Status:	OK.
Std Error of Est:	0.000002		
Predicted MDL:	3.261338		
Predicted MQL:	10.871127		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00309	-.003	.000	-.00002	.000	1
CalStd9=100	1000.0	1037.7	37.7	3.77	.01558	.000	1
CalStd6=20	20.000	23.211	3.21	16.1	.00033	.000	1
CalStd5=10	10.000	11.197	1.20	12.0	.00015	.000	1
CalStd8=100	100.00	104.55	4.55	4.55	.00156	.000	1
CalStd4=5	5.0000	6.2976	1.30	26.0	.00008	.000	1
CalStd10=10	10000.	9952.1	-47.9	-.479	.14952	.000	1

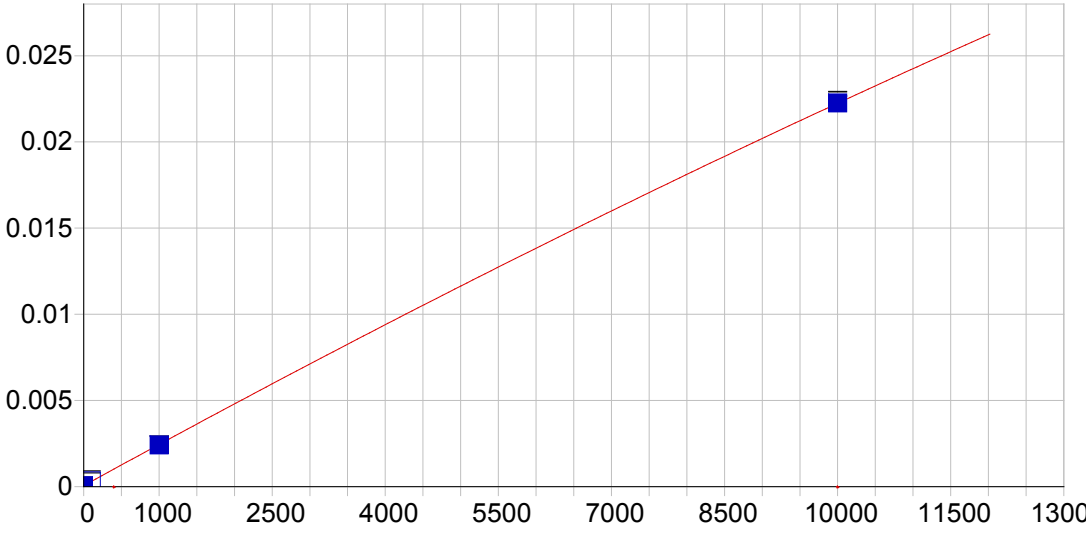


Se 196.090 {472}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000024	Re-Slope:	1.000000
A1 (Gain):	0.000006	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999890	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	4.836785		
Predicted MQL:	16.122618		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00039	.000	.000	.00002	.000	1
CalStd7=50	50.000	50.837	.837	1.67	.00035	.000	1
CalStd9=100	1000.0	1043.6	43.6	4.36	.00664	.000	1
CalStd5=10	10.000	9.3268	-.673	-6.73	.00008	.000	1
CalStd8=100	100.00	105.09	5.09	5.09	.00069	.000	1
CalStd10=10	10000.	9951.1	-48.9	-.489	.06311	.000	1

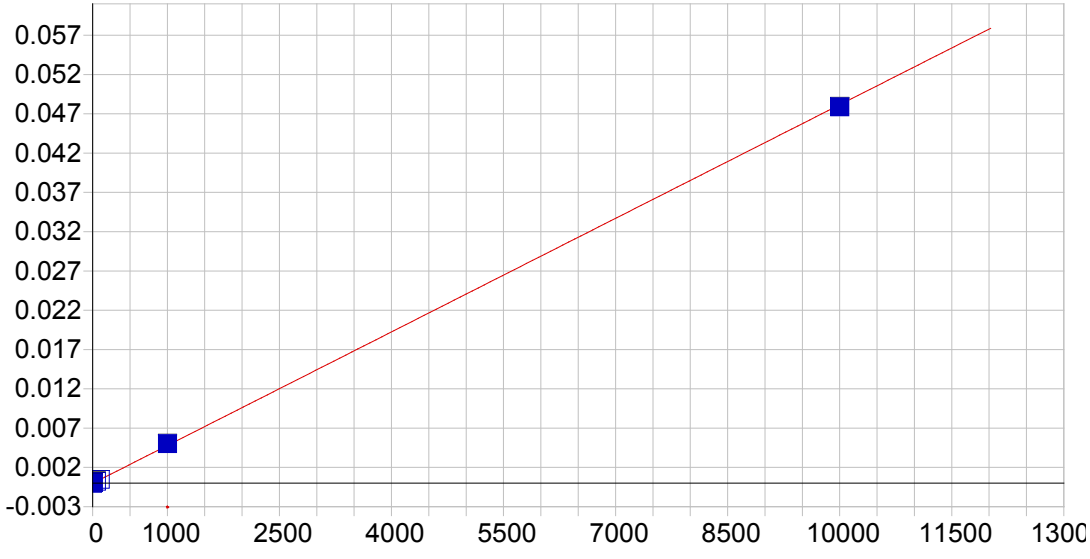


Se 206.279 {463}

Date of Fit: 10/18/2016 09:46:49 Type of Fit: Curvilinear Weighting: 1/Conc

A0 (Offset):	0.000053	Re-Slope:	1.000000
A1 (Gain):	0.000002	Y-int:	0.000000
A2 (Curvature):	-0.000000		
n (Exponent):	1.000000		
Correlation:	0.999879	Status:	OK.
Std Error of Est:	0.000002		
Predicted MDL:	19.202806		
Predicted MQL:	64.009355		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.01280	-.013	.000	.00005	.000	1
CalStd9=100	1000.0	983.97	-16.0	-1.60	.00241	.000	1
CalStd10=10	10000.	10002.	1.71	.017	.02228	.000	1
CalStd8=100	100.00	114.39	14.4	14.4	.00033	.000	1

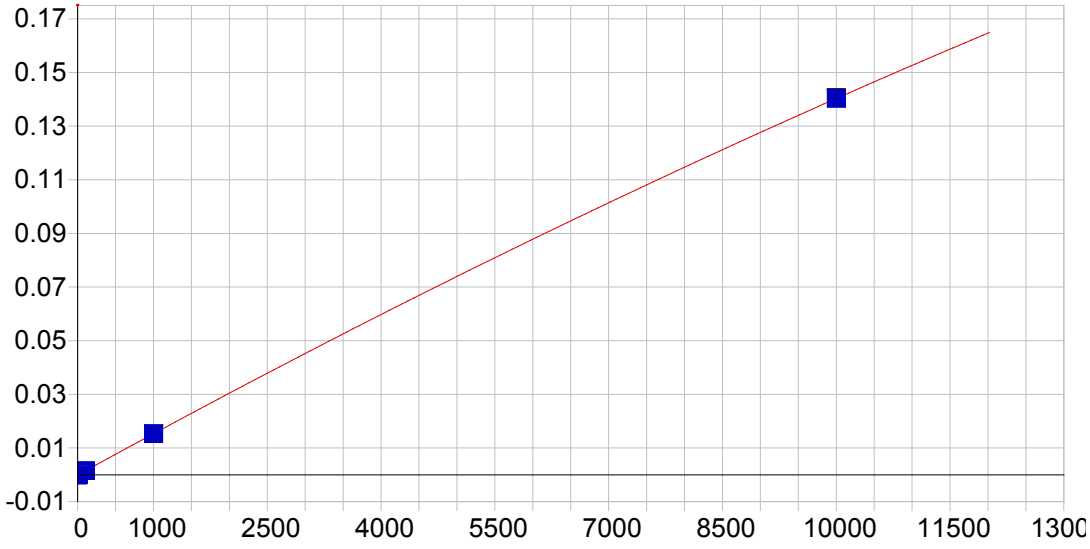


Se 196.090 {471}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000030	Re-Slope:	1.000000
A1 (Gain):	0.000005	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999810	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	6.224823		
Predicted MQL:	20.749411		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00505	-.005	.000	-.00003	.000	1
CalStd7=50	50.000	53.677	3.68	7.35	.00023	.000	1
CalStd9=100	1000.0	1046.8	46.8	4.68	.00501	.000	1
CalStd5=10	10.000	13.367	3.37	33.7	.00003	.000	1
CalStd8=100	100.00	105.37	5.37	5.37	.00048	.000	1
CalStd10=10	10000.	9940.7	-59.3	-.593	.04785	.000	1

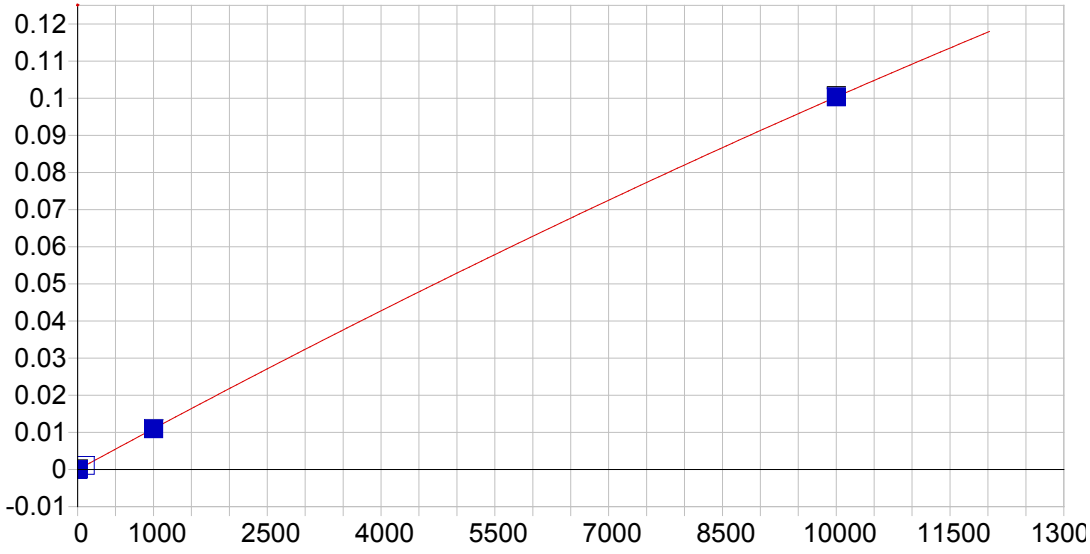


Tl 190.856 {476}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Curvilinear	Weighting:	1/Conc

A0 (Offset):	-0.000113	Re-Slope:	1.000000
A1 (Gain):	0.000016	Y-int:	0.000000
A2 (Curvature):	-0.000000		
n (Exponent):	1.000000		
Correlation:	0.999992	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	2.512867		
Predicted MQL:	8.376224		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00091	.001	.000	-.00011	.000	1
CalStd9=100	1000.0	999.12	-.882	-.088	.01530	.000	1
CalStd8=100	100.00	101.89	1.89	1.89	.00147	.000	1
CalStd5=10	10.000	8.9074	-1.09	-10.9	.00003	.000	1
CalStd10=10	10000.	10000.	.086	.001	.14031	.000	1

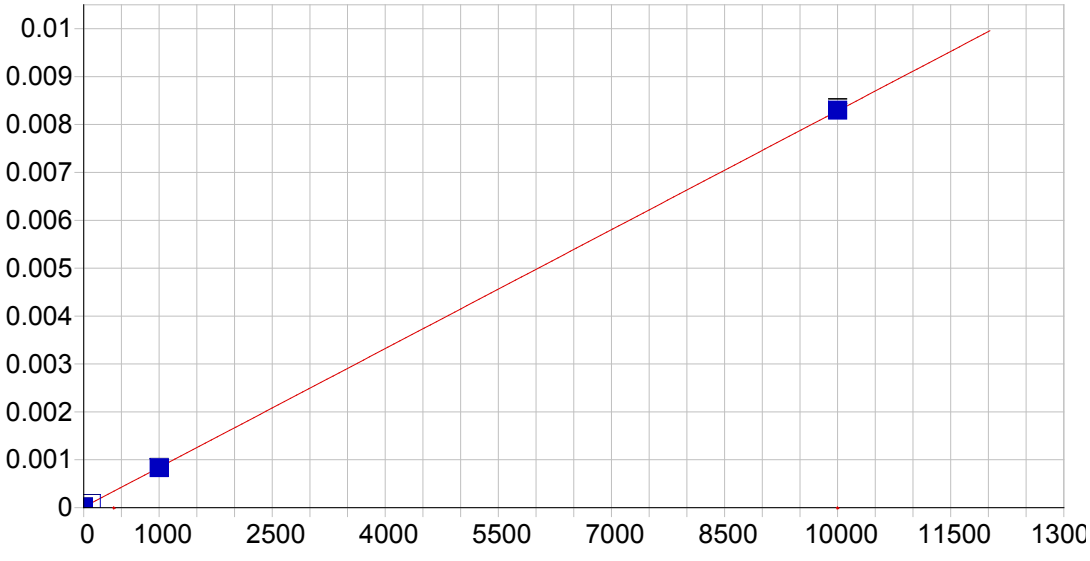


Tl 190.856 {477}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Curvilinear	Weighting:	1/Var

A0 (Offset):	-0.000045	Re-Slope:	1.000000
A1 (Gain):	0.000011	Y-int:	0.000000
A2 (Curvature):	-0.000000		
n (Exponent):	1.000000		
Correlation:	0.999995	Status:	OK.
Std Error of Est:	0.000027		
Predicted MDL:	2.965215		
Predicted MQL:	9.884049		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-1.3998	-1.40	.000	-.00006	.000	1
CalStd9=100	1000.0	997.75	-2.25	-.225	.01095	.000	1
CalStd8=100	100.00	101.77	1.77	1.77	.00109	.000	1
CalStd5=10	10.000	10.943	.943	9.43	.00008	.000	1
CalStd10=10	10000.	10000.	.295	.003	.10034	.000	1

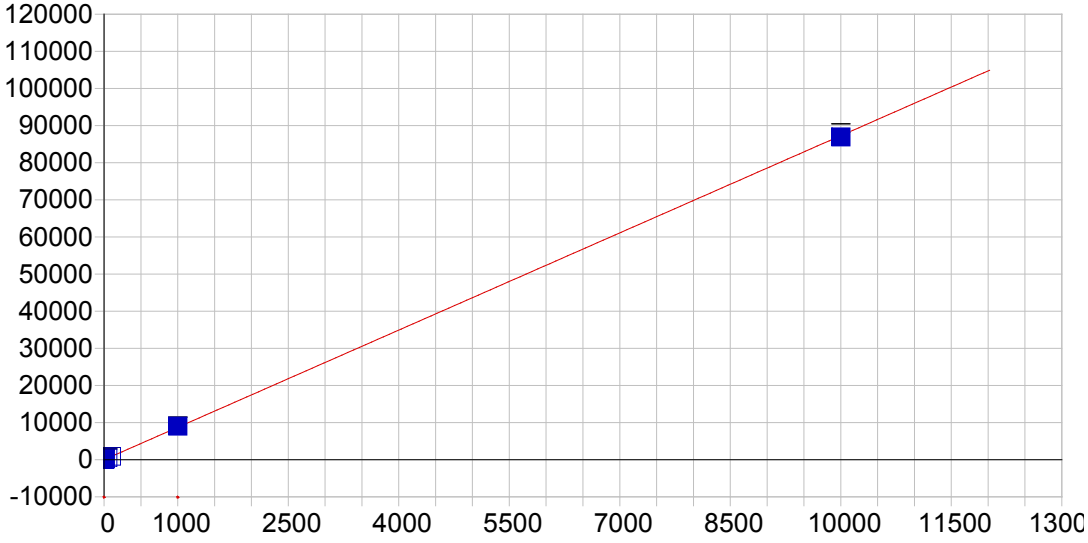


V 290.882 {116}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000012	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999993	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	2.237068		
Predicted MQL:	7.456893		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00266	.003	.000	.00001	.000	1
CalStd9=100	1000.0	989.61	-10.4	-1.04	.00083	.000	1
CalStd10=10	10000.	10012.	12.1	.121	.00830	.000	1
CalStd8=100	100.00	98.255	-1.74	-1.74	.00009	.000	1

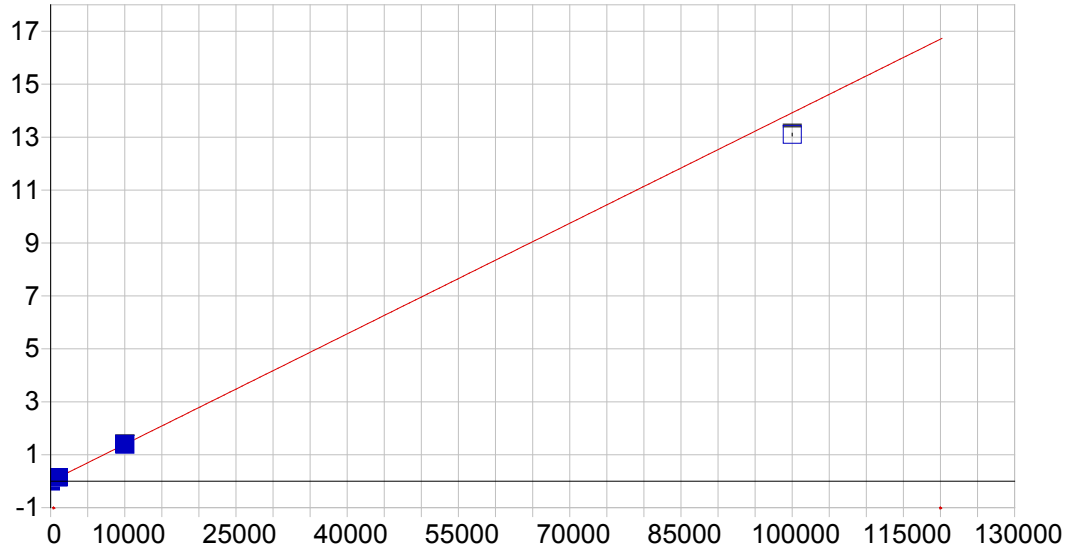


V 292.402 {115}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-3.521567	Re-Slope:	1.000000
A1 (Gain):	8.728781	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999901	Status:	OK.
Std Error of Est:	1.533887		
Predicted MDL:	0.495726		
Predicted MQL:	1.652421		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00326	-.003	.000	-3.5500	5.48	1
CalStd7=50	50.000	53.474	3.47	6.95	463.24	5.07	1
CalStd9=100	1000.0	1033.1	33.1	3.31	9012.3	68.1	1
CalStd6=20	20.000	22.868	2.87	14.3	196.09	2.04	1
CalStd5=10	10.000	10.342	.342	3.42	86.750	3.89	1
CalStd8=100	100.00	105.01	5.01	5.01	913.09	13.9	1
CalStd10=10	10000.	9955.2	-44.8	-.448	86878.	1140.	1

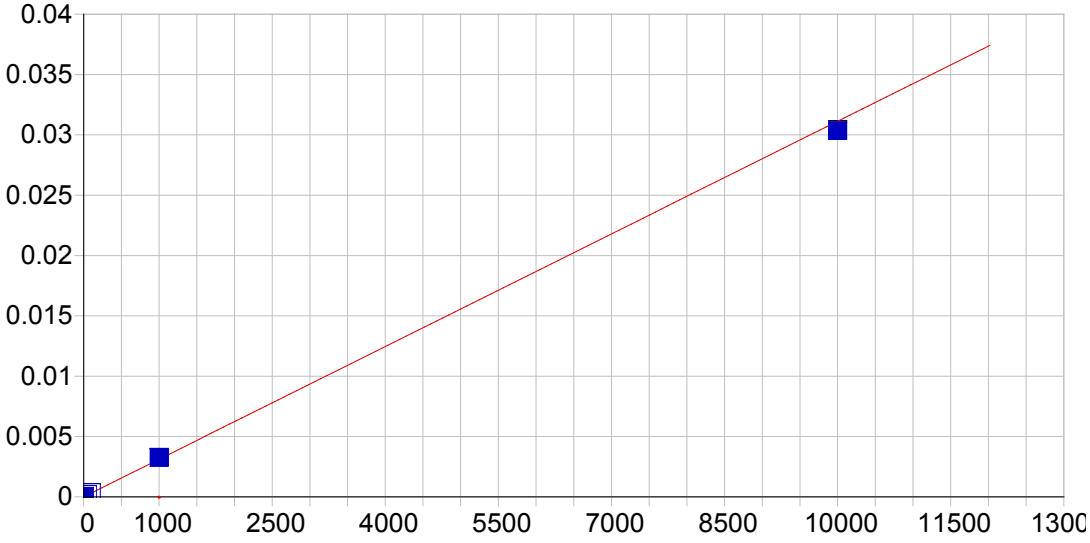


Zn 206.200 {463}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000032	Re-Slope:	1.000000
A1 (Gain):	0.000139	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999146	Status:	OK.
Std Error of Est:	0.000709		
Predicted MDL:	0.303414		
Predicted MQL:	1.011378		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CalStd10=10	10000.	9998.4	-1.61	-.016	1.3918	.003	1
Blank	.00000	-.10552	-.106	.000	.00002	.000	1
CalStd9=100	1000.0	1062.9	62.9	6.29	.14799	.001	1
CalStd11-100	100000.	94092.	-5910.	-5.91	13.097	.050	1

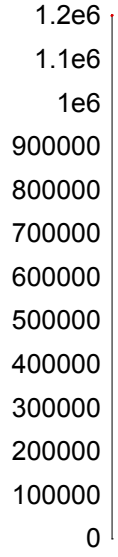


Zn 213.856 {458}

Date of Fit: 10/18/2016 09:46:49 Type of Fit: Linear Weighting: 1/Var

A0 (Offset):	0.000003	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999424	Status:	OK.
Std Error of Est:	0.000006		
Predicted MDL:	0.172781		
Predicted MQL:	0.575937		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.37864	-.379	.000	.00000	.000	1
CalStd8=100	100.00	104.12	4.12	4.12	.00033	.000	1
CalStd7=50	50.000	52.966	2.97	5.93	.00017	.000	1
CalStd5=10	10.000	10.287	.287	2.87	.00004	.000	1
CalStd9=100	1000.0	1043.4	43.4	4.34	.00325	.000	1
CalStd4=5	5.0000	4.8460	-.154	-3.08	.00002	.000	1
CalStd10=10	10000.	9749.6	-250.	-2.50	.03035	.000	1

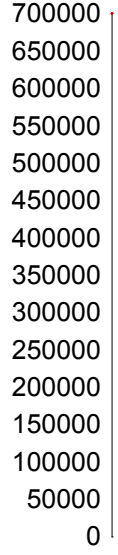


Y 324.228 {104}*

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	1085500.	2270.	1



Y 371.030 { 91}*

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

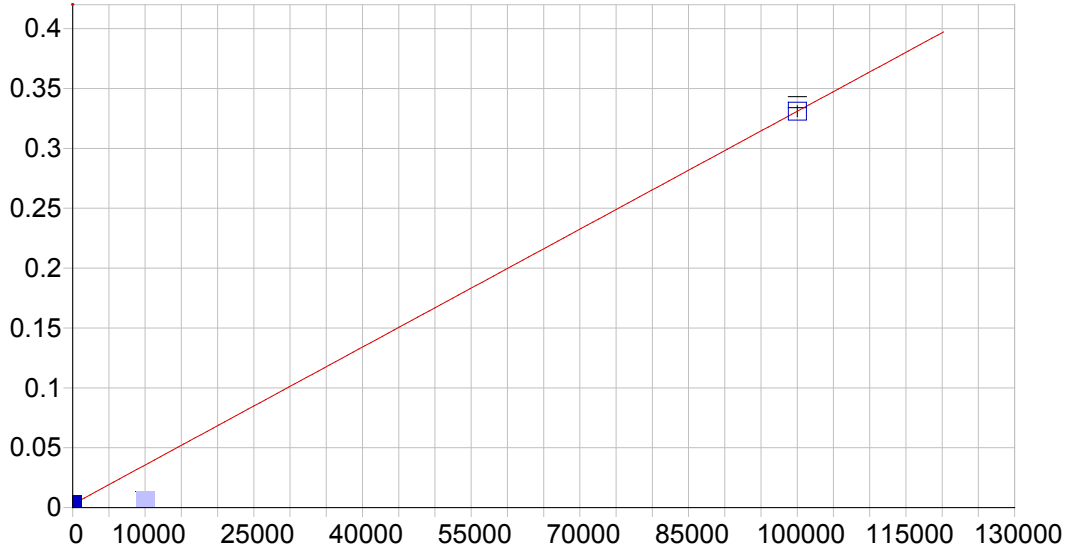
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	626300.	26500.	1

Y 224.306 {451}*

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	15990.	39.8	1

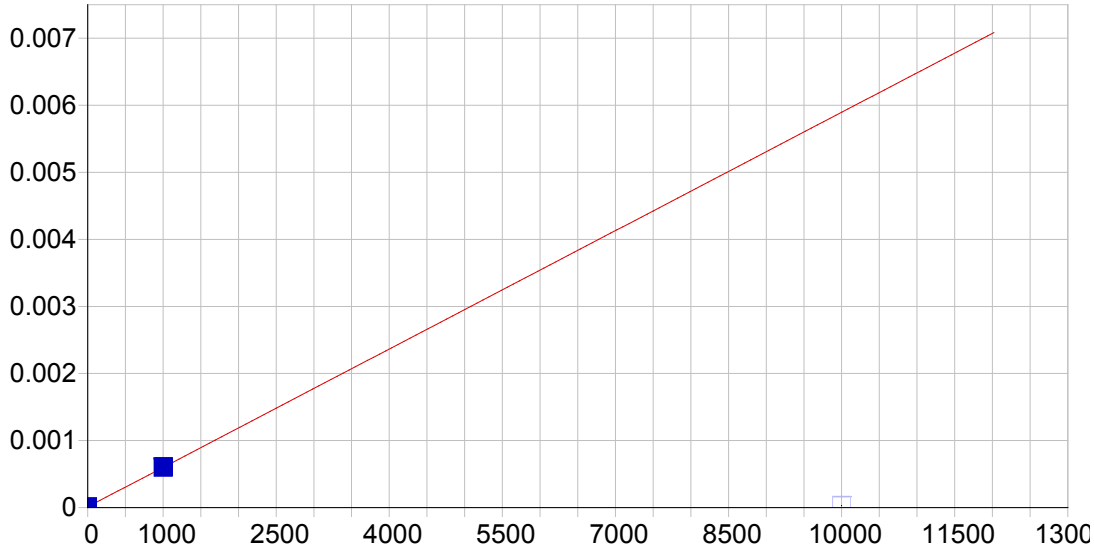


Na 588.995 { 57}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002754	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	3.529113		
Predicted MQL:	11.763711		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	.00275	.000	1
CalStd9=100	10000.	951.34	-9050.	-90.5	.00588	.000	0
CalStd12-100	100000.	100000.	.000	.000	.33101	.005	1

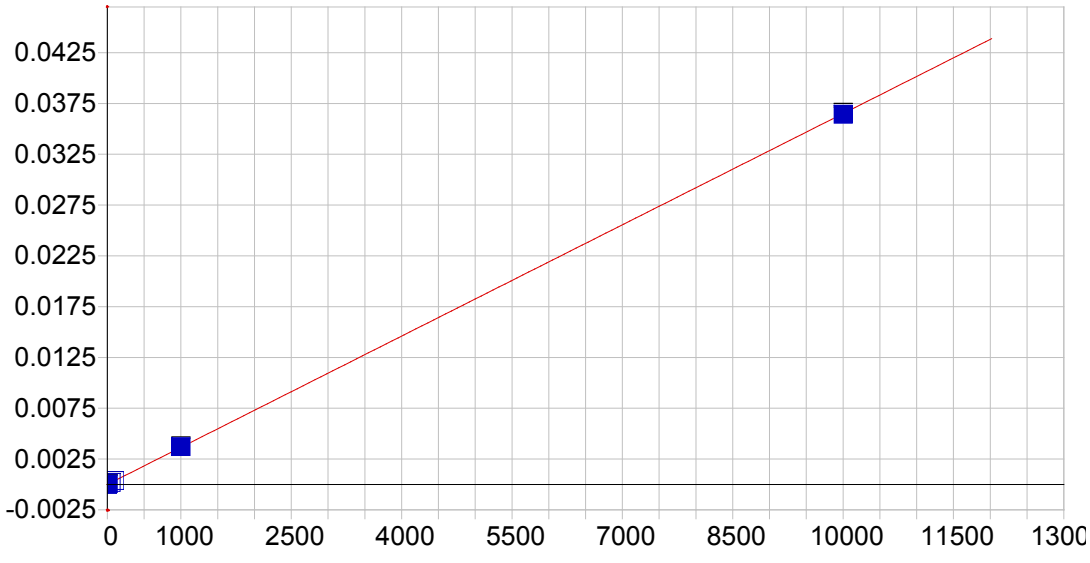


Si 251.611 {134}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000011	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	3.984774		
Predicted MQL:	13.282582		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	.00001	.000	1
CalStd9=100	1000.0	1000.0	.000	.000	.00060	.000	1
CalStd12-100	10000.	32.535	-9970.	-99.7	.00003	.000	0

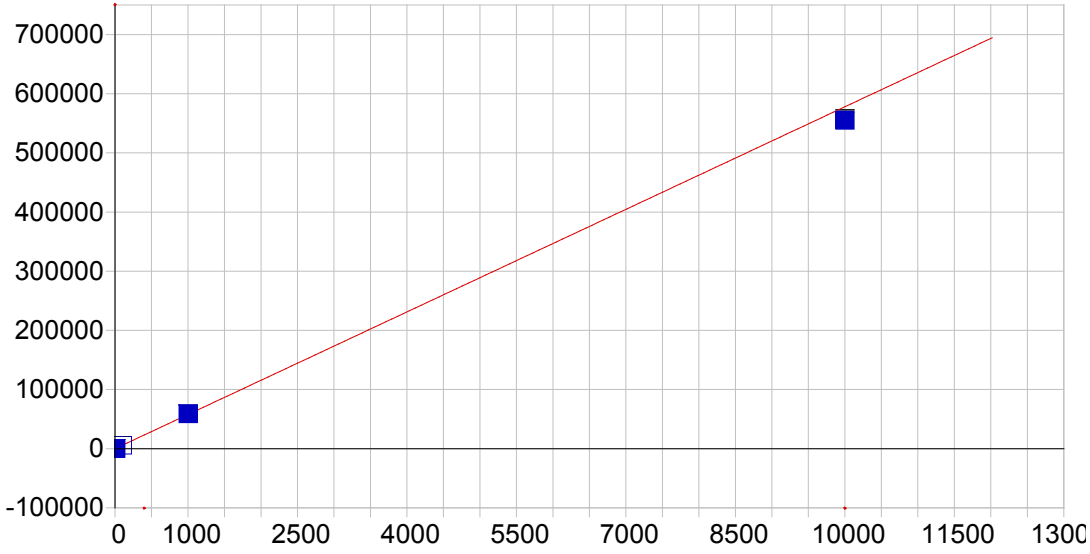


Ti 334.941 {101}

Date of Fit: 10/18/2016 09:46:49 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset):	-0.000001	Re-Slope:	1.000000
A1 (Gain):	0.000004	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999978	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	0.896940		
Predicted MQL:	2.989800		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00015	.000	.000	.00000	.000	1
CalStd5=10	10.000	9.8338	-.166	-1.66	.00003	.000	1
CalStd8=100	100.00	102.83	2.83	2.83	.00037	.000	1
CalStd9=100	1000.0	1017.0	17.0	1.70	.00371	.000	1
CalStd10=10	10000.	9978.7	-21.3	-.213	.03643	.000	1
CalStd7=50	50.000	51.795	1.80	3.59	.00019	.000	1
CalStd4=5	5.0000	4.8387	-.161	-3.23	.00002	.000	1

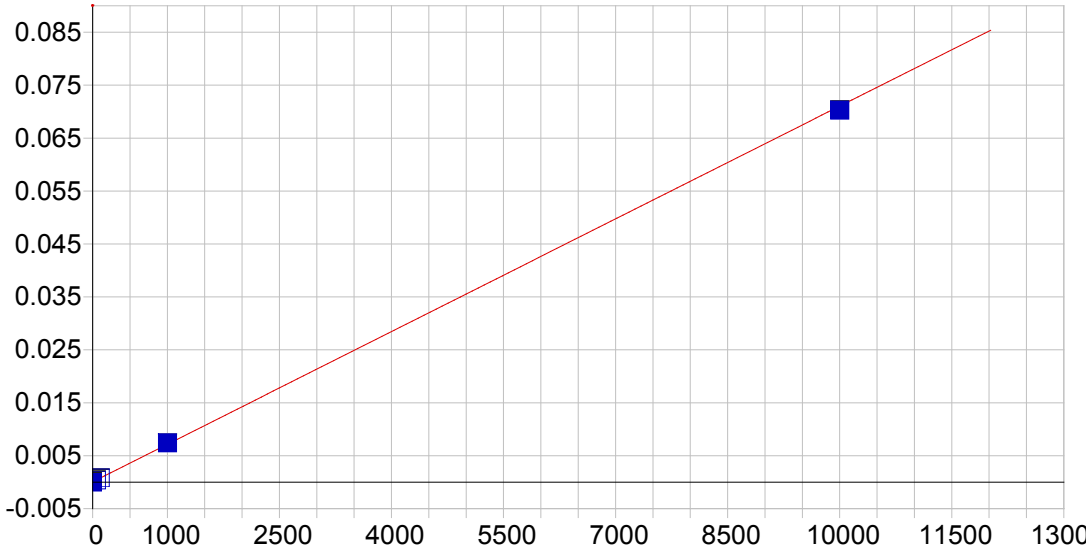


Sr 407.771 { 83}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	1.802027	Re-Slope:	1.000000
A1 (Gain):	57.790466	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999438	Status:	OK.
Std Error of Est:	16.615525		
Predicted MDL:	0.062959		
Predicted MQL:	0.209864		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.12509	-.125	.000	-5.4268	2.01	1
CalStd3=1	1.0000	.85039	-.150	-15.0	50.946	4.25	1
CalStd4=5	5.0000	4.7091	-.291	-5.82	273.94	3.01	1
CalStd5=10	10.000	10.089	.089	.888	584.84	1.14	1
CalStd8=100	100.00	102.82	2.82	2.82	5943.7	28.7	1
CalStd9=100	1000.0	1017.3	17.3	1.73	58794.	412.	1
CalStd10=10	10000.	9604.3	-396.	-3.96	555050.	2030.	1

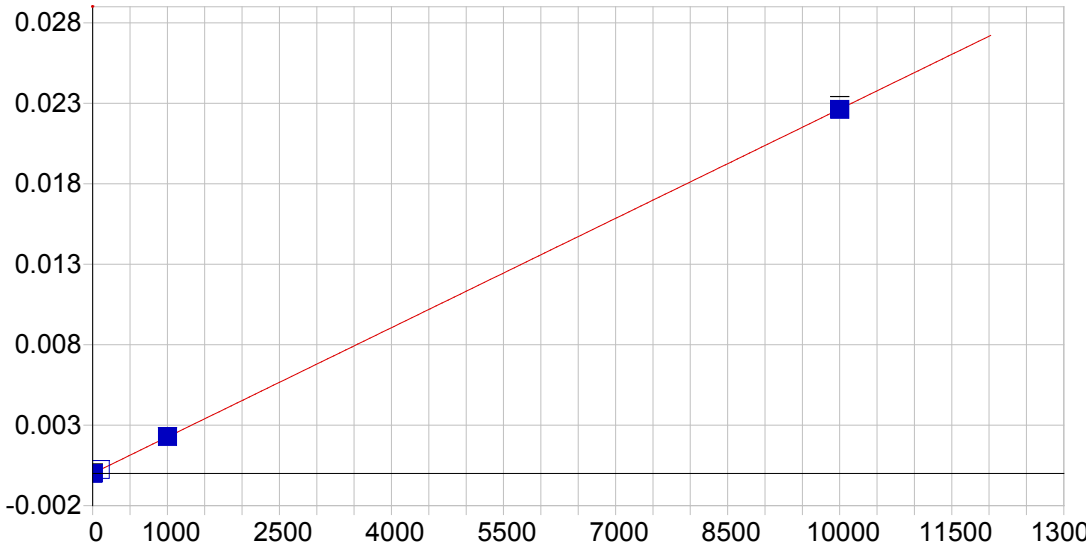


Sn 189.989 {478}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000053	Re-Slope:	1.000000
A1 (Gain):	0.000007	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999765	Status:	OK.
Std Error of Est:	0.000119		
Predicted MDL:	3.249945		
Predicted MQL:	10.833148		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-6.1566	-6.16	.000	.00001	.000	1
CalStd10=10	10000.	9890.3	-110.	-1.10	.07026	.000	1
CalStd9=100	1000.0	1036.2	36.2	3.62	.00741	.000	1
CalStd8=100	100.00	100.59	.585	.585	.00077	.000	1
CalStd7=50	50.000	47.293	-2.71	-5.41	.00039	.000	1

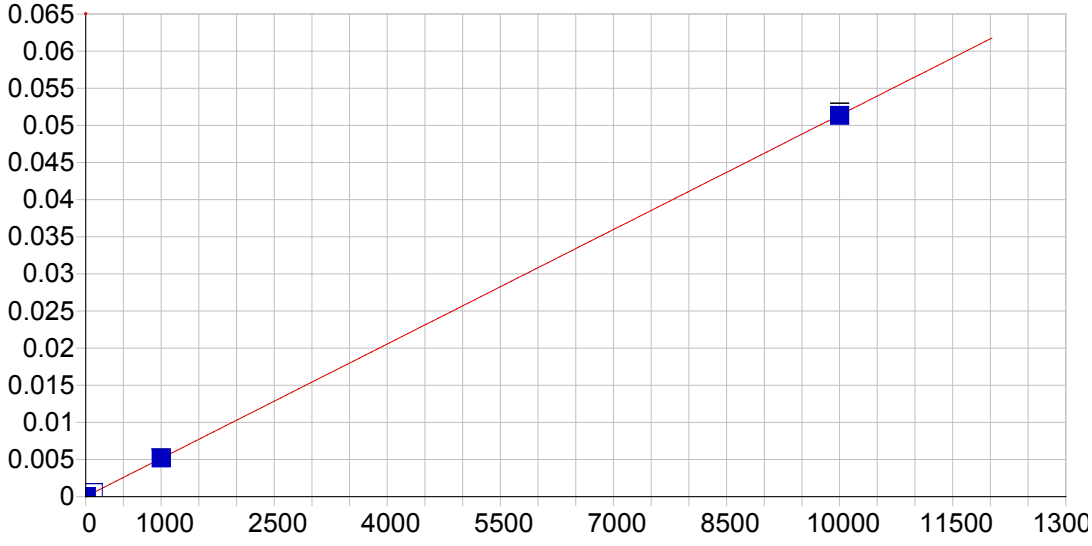


B 249.678 {135}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000001	Re-Slope:	1.000000
A1 (Gain):	0.000002	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999990	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	1.222323		
Predicted MQL:	4.074409		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00029	.000	.000	.00000	.000	1
CalStd8=100	100.00	103.92	3.92	3.92	.00024	.000	1
CalStd5=10	10.000	9.8347	-.165	-1.65	.00002	.000	1
CalStd9=100	1000.0	1007.6	7.56	.756	.00228	.000	1
CalStd10=10	10000.	9988.7	-11.3	-.113	.02261	.000	1

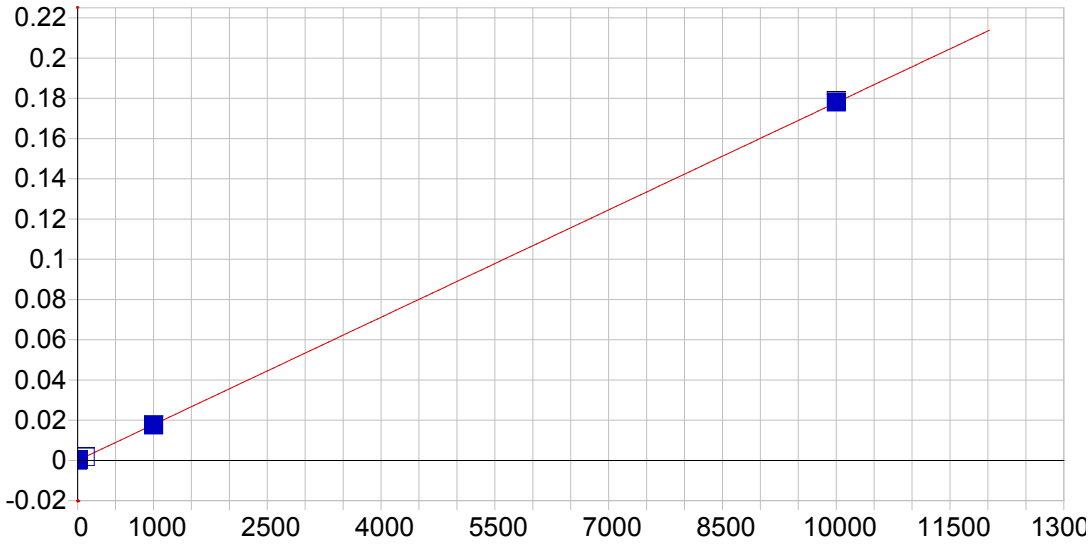


B 249.773 {135}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000009	Re-Slope:	1.000000
A1 (Gain):	0.000005	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999994	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	0.517721		
Predicted MQL:	1.725736		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00027	.000	.000	.00001	.000	1
CalStd8=100	100.00	100.32	.325	.325	.00052	.000	1
CalStd5=10	10.000	9.6055	-.395	-3.95	.00006	.000	1
CalStd9=100	1000.0	1009.9	9.86	.986	.00520	.000	1
CalStd10=10	10000.	9990.2	-9.79	-.098	.05135	.000	1

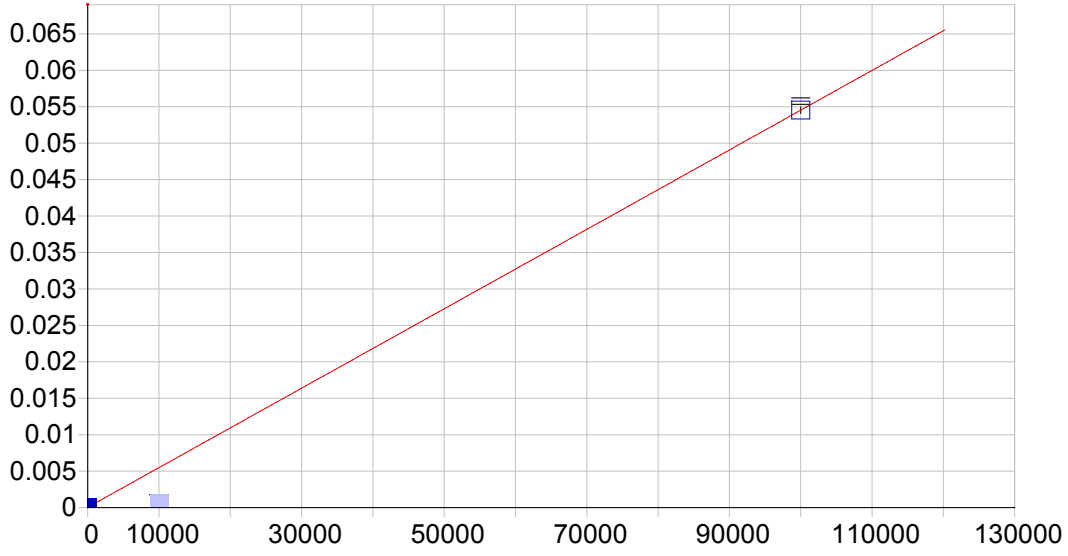


Li 670.784 { 50}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000001	Re-Slope:	1.000000
A1 (Gain):	0.000018	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999992	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	0.894249		
Predicted MQL:	2.980831		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00001	.000	.000	.00000	.000	1
CalStd5=10	10.000	10.217	.217	2.17	.00018	.000	1
CalStd8=100	100.00	99.090	-.910	-.910	.00176	.000	1
CalStd9=100	1000.0	987.43	-12.6	-1.26	.01757	.000	1
CalStd10=10	10000.	10013.	13.3	.133	.17814	.001	1

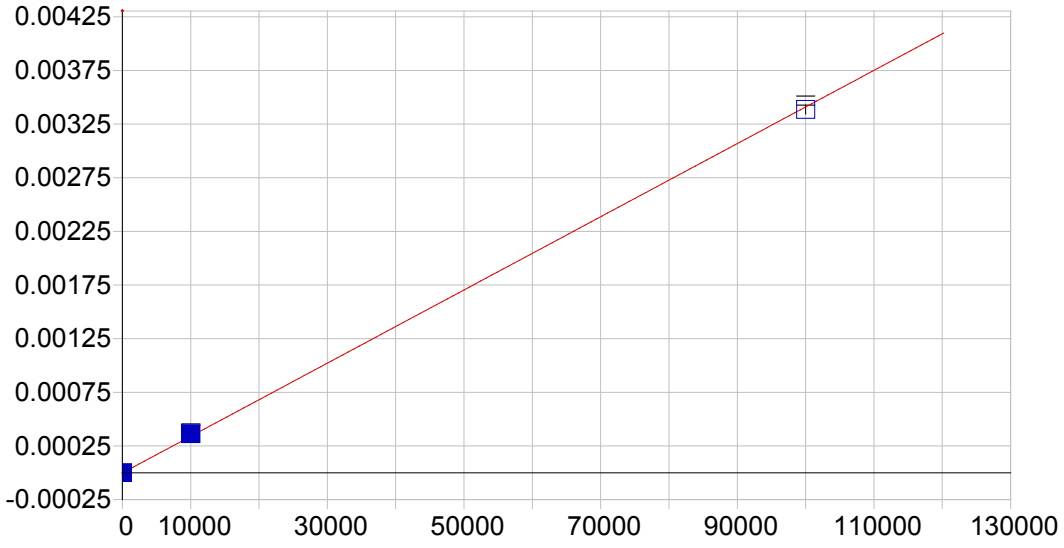


K 766.490 { 44}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000034	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	26.213562		
Predicted MQL:	87.378539		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	.00003	.000	1
CalStd9=100	10000.	918.94	-9080.	-90.8	.00053	.000	0
CalStd12-100	100000.	100000.	.000	.000	.05453	.000	1

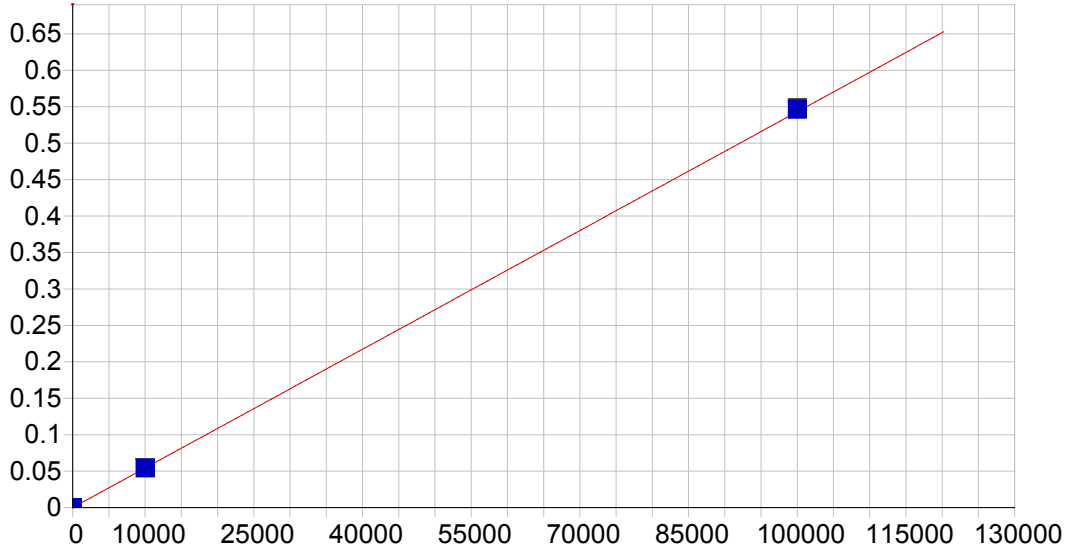


P 213.618 {457}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000002	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999747	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	19.157634		
Predicted MQL:	63.858781		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.64006	-.640	.000	.00000	.000	1
CalStd9=100	10000.	10711.	711.	7.11	.00036	.000	1
CalStd12-100	100000.	99289.	-711.	-.711	.00339	.000	1

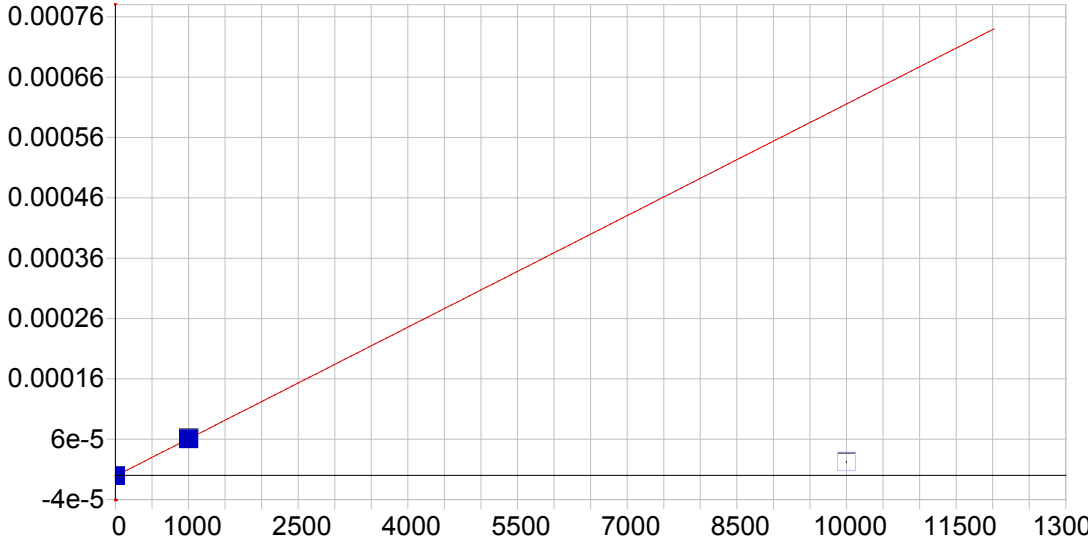


S 182.034 {485}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000022	Re-Slope:	1.000000
A1 (Gain):	0.000005	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999997	Status:	OK.
Std Error of Est:	0.000073		
Predicted MDL:	5.523757		
Predicted MQL:	18.412522		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.84445	.844	.000	.00003	.000	1
CalStd12-100	100000.	100620.	620.	.620	.54646	.002	1
CalStd9=100	10000.	9991.2	-8.84	-.088	.05428	.000	1

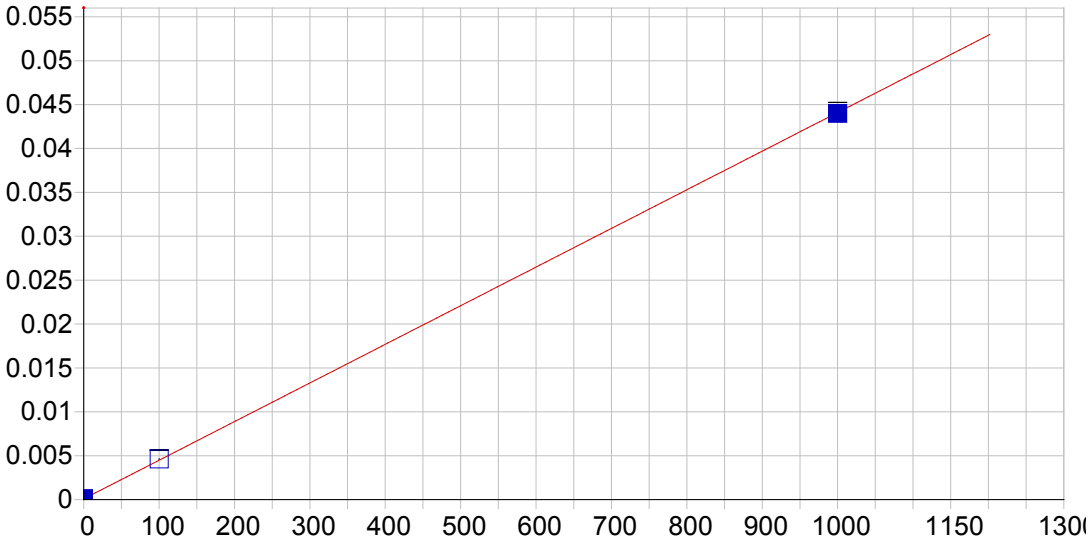


W 239.709 {140}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000001	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	24.092298		
Predicted MQL:	80.307660		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	.00000	.000	1
CalStd9=100	1000.0	1000.0	.000	.000	.00006	.000	1
CalStd12-100	10000.	383.07	-9620.	-96.2	.00002	.000	0

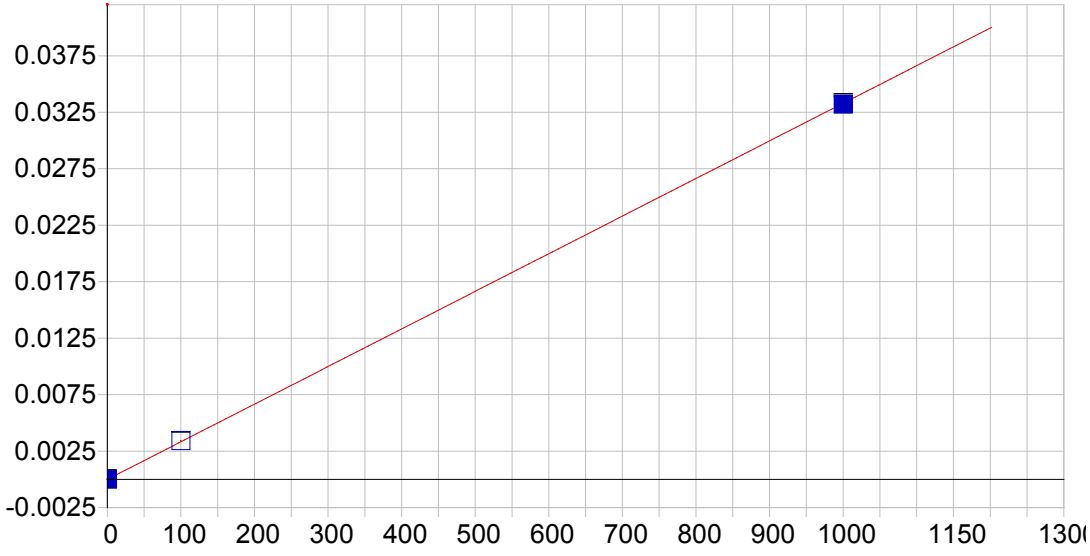


Hg 184.950 {482}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000082	Re-Slope:	1.000000
A1 (Gain):	0.000044	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999961	Status:	OK.
Std Error of Est:	0.000007		
Predicted MDL:	0.756372		
Predicted MQL:	2.521242		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00252	-.003	.000	.00008	.000	1
CalStd8=100	100.00	102.80	2.80	2.80	.00461	.000	1
CalStd9=100	1000.0	997.20	-2.80	-.280	.04397	.000	1



Hg 194.227 {473}

Date of Fit:	10/18/2016 09:46:49	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000002	Re-Slope:	1.000000
A1 (Gain):	0.000033	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999967	Status:	OK.
Std Error of Est:	0.000005		
Predicted MDL:	0.939387		
Predicted MQL:	3.131289		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00229	-.002	.000	.00000	.000	1
CalStd8=100	100.00	102.55	2.55	2.55	.00341	.000	1
CalStd9=100	1000.0	997.45	-2.55	-.255	.03321	.000	1

Sample Name: Blank Acquired: 10/14/2016 08:04:40 Type: Cal
Method: DOD Calibration Updated 060614(v1654) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	As1890	Ba2335	Ba4934	Be3130	Ca3158	Ca3933	Cd2265	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
Avg	**-2.05**	**.000**	**.000**	**.000**	**.000**	**.005**	**.000**	**.000**	**.001**	**.000**	**.000**	**.000**
Stddev	2.21	.00	.00	.000	.000	.000	.00	.000	.000	.00	.00	.000
%RSD	108.	35.4	9.93	39.4	136.	3.74	1.59	6.84	6.35	113.	22.5	228.

Elem	Cr2055	Cr2677	Cu2247	Fe2343	Fe2599	Mg2790	Mg2802	Mn2576	Mn2593	Mo2020	Mo2045	Ni2216
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**	**.001**	**.000**	**.000**	**.000**	**.000**	**.000**
Stddev	.000	.000	.00	.000	.000	.000	.000	.000	.000	.00	.000	.00
%RSD	234.	136.	173.	1.28	9.30	299.	.963	7.49	14.2	7800.	36.6	84.5

Elem	Ni2316	Pb2169	Pb2203	Sb2068	Sb2175	Se2062	Se1960	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
Avg	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**-3.55**	**.000**	**.000**
Stddev	.00	.000	.000	.00	.00	.000	.00	.00	.000	5.48	.000	.000
%RSD	123.	84.9	25.6	58.5	326.	34.6	57.0	30.8	12.2	154.	122.	20.2

Elem	Sr4077	Sn1899	Li6707
Units	Cts/S	Cts/S	Cts/S
Avg	**-5.43**	**.000**	**.000**
Stddev	2.01	.000	.000
%RSD	37.0	105.	1250.

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**1085500.**	**626300.**	**15990.**
Stddev	2274.	26539.	40.
%RSD	.20946	4.2374	.24911

Sample Name: CalStd1=0.25 Acquired: 10/14/2016 08:11:25 Type: Cal
Method: DOD Calibration Updated 060614(v1654) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Be3130
Units	Cts/S
Avg	.000
Stddev	.00
%RSD	2.35

Int. Std.	Y_3242
Units	Cts/S
Avg	1093900.
Stddev	16686.
%RSD	1.5254

Sample Name: CalStd2=0.5 Acquired: 10/14/2016 08:18:15 Type: Cal
Method: DOD Calibration Updated 060614(v1654) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Be3130	Cd2265
Units	Cts/S	Cts/S
Avg	**.000**	**.000**
Stddev	.00	.000
%RSD	6.61	28.9

Int. Std.	Y_3242	Y_2243
Units	Cts/S	Cts/S
Avg	**1083200.**	**15987.**
Stddev	24789.	15.
%RSD	2.2886	.09159

Sample Name: CalStd3=1 Acquired: 10/14/2016 08:25:06 Type: Cal
Method: DOD Calibration Updated 060614(v1654) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Ba2335	Be3130	Cd2265	Co2286	Cr2055	Cu2247	Ni2316	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**4.17**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**50.9**
Stddev	1.35	.000	.00	.000	.000	.000	.000	.000	4.3
%RSD	32.4	11.3	3.13	9.14	31.6	10.1	51.4	24.5	8.35

Int. Std.	Y_3242	Y_2243
Units	Cts/S	Cts/S
Avg	**1089300.**	**16066.**
Stddev	6794.	28.
%RSD	.62370	.17349

Sample Name: CalStd4=5 Acquired: 10/14/2016 08:31:59 Type: Cal
Method: DOD Calibration Updated 060614(v1654) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	As1890	Ba2335	Be3130	Cd2265	Co2286	Cr2055	Cr2677	Cu2247	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
Avg	**.000**	**.001**	**.000**	**.002**	**.001**	**.001**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	31.1	1.65	.901	.997	3.88	3.72	6.39	.423	1.85	5.23	.750	4.46

Elem	Pb2203	Sb2175	Zn2138	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.000**	**.000**	**.000**	**274.**
Stddev	.000	.000	.000	3.
%RSD	30.3	20.3	1.95	1.10

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**1082000.**	**621830.**	**16136.**
Stddev	4078.	11047.	48.
%RSD	.37685	1.7766	.29858

Sample Name: CalStd5=10 Acquired: 10/14/2016 08:38:52 Type: Cal
Method: DOD Calibration Updated 060614(v1654) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	As1937	Ba2335	Be3130	Cd2265	Co2286	Cr2055	Cr2677	Cu2247	Mn2576	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
Avg	**42.5**	**.000**	**.001**	**.001**	**.004**	**.002**	**.002**	**.000**	**.001**	**.000**	**.001**	**.000**
Stddev	2.2	.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	5.14	144.	.973	.484	1.07	1.45	2.54	3.55	3.21	.834	3.27	5.20

Elem	Ni2316	Pb2169	Pb2203	Sb2068	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Li6707
Units	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**	**86.8**	**.000**	**585.**	**.000**
Stddev	.000	.000	.000	.000	.000	.000	.000	3.9	.000	1.	.000
%RSD	2.14	8.26	17.1	28.9	19.4	57.3	44.6	4.49	1.82	.195	11.6

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**1084100.**	**620840.**	**16094.**
Stddev	3709.	11980.	58.
%RSD	.34210	1.9296	.35883

Sample Name: CalStd6=20 Acquired: 10/14/2016 08:45:42 Type: Cal
Method: DOD Calibration Updated 060614(v1654) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ba2335	Cu2247	Mn2576	Mo2020	Mo2045	Sb2175	V_2924
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.003**	**.002**	**.000**	**.002**	**.000**	**.000**	**196.**
Stddev	.000	.000	.000	.000	.000	.000	2.
%RSD	.785	1.82	1.17	1.26	2.70	7.20	1.04

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**1088300.**	**613000.**	**16097.**
Stddev	11180.	2766.	48.
%RSD	1.0273	.45125	.30098

Sample Name: CalStd7=50 Acquired: 10/14/2016 08:52:31 Type: Cal
Method: DOD Calibration Updated 060614(v1654) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	As1937	Ba2335	Cd2265	Co2286	Cr2055	Cr2677	Cu2247	Mn2576	Mo2020	Mo2045	Ni2316	Sb2068
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**	**.007**	**.018**	**.011**	**.009**	**.000**	**.005**	**.001**	**.004**	**.000**	**.000**	**.001**
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	8.34	.565	.318	.463	.458	1.21	.979	1.17	.903	.429	1.21	2.28

Elem	Se1960	V_2924	Zn2138	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.000**	**463.**	**.000**	**.000**
Stddev	.000	5.	.000	.000
%RSD	16.3	1.09	1.02	6.24

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**1083300.**	**615190.**	**16183.**
Stddev	9271.	10616.	35.
%RSD	.85581	1.7256	.21887

Sample Name: CalStd8=100 Acquired: 10/14/2016 08:59:17 Type: Cal
Method: DOD Calibration Updated 060614(v1654) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	As1937	As1890	Ba2335	Ba4934	Be3130	Ca3933	Cd2265	Co2286	Co2388	Cr2055	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
Avg	**560.**	**.001**	**.000**	**.013**	**.008**	**.010**	**.010**	**.036**	**.021**	**.000**	**.018**	**.001**
Stddev	7.	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	1.19	3.46	3.42	.742	2.13	1.65	.620	.340	.572	.989	.433	1.31

Elem	Cu2247	Mg2802	Mn2576	Mo2020	Mo2045	Ni2216	Ni2316	Pb2169	Pb2203	Sb2175	Se2062	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
Avg	**.010**	**.008**	**.001**	**.009**	**.000**	**.000**	**.000**	**.002**	**.004**	**.002**	**.000**	**.000**
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	.372	1.60	1.41	.236	.834	.293	.770	1.56	1.72	2.82	19.3	6.04

Elem	Tl1908	V_2908	V_2924	Zn2138	Sr4077	Sn1899	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.001**	**.000**	**913.**	**.000**	**5940.**	**.001**	**.002**
Stddev	.000	.000	14.	.000	29.	.000	.000
%RSD	2.04	.884	1.52	.504	.482	1.51	2.19

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**1080800.**	**614650.**	**16190.**
Stddev	4076.	13187.	47.
%RSD	.37709	2.1455	.29135

Sample Name: CalStd9=1000 Acquired: 10/14/2016 09:05:58 Type: Cal
Method: DOD Calibration Updated 060614(v1654) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Al3961	As1937	As1890	Ba2335	Ba4934	Be3130	Ca3158	Ca3933	Cd2265	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
Avg	**.001**	**.010**	**.003**	**.127**	**.037**	**.099**	**.000**	**.089**	**.351**	**.208**	**.003**
Stddev	.000	.000	.000	.001	.001	.001	.000	.001	.001	.001	.000
%RSD	1.31	.989	1.07	.453	1.36	.709	1.38	.572	.408	.442	.489

Elem	Cr2055	Cr2677	Cu2247	Fe2343	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
Avg	**.178**	**.006**	**.096**	**.001**	**.001**	**.000**	**.076**	**.014**	**.005**	**.087**	**.001**
Stddev	.001	.000	.000	.000	.000	.000	.000	.000	.000	.001	.000
%RSD	.564	.744	.433	.610	1.55	2.34	.578	.506	.646	.585	.221

Elem	Ni2216	Ni2316	Pb2169	Pb2203	Sb2068	Sb2175	Se2062	Se1960	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
Avg	**.003**	**.003**	**.016**	**.035**	**.022**	**.016**	**.002**	**.005**	**.011**	**.001**	**9010.**
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	68.
%RSD	.272	.223	.779	.275	.682	.893	1.31	.922	.674	.826	.756

Elem	Zn2062	Zn2138	Sr4077	Sn1899	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.148**	**.003**	**58800.**	**.007**	**.018**
Stddev	.001	.000	412.	.000	.000
%RSD	.346	.327	.701	.316	1.42

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**1073800.**	**616800.**	**16251.**
Stddev	1498.	9629.	53.
%RSD	.13950	1.5612	.32787

Sample Name: CalStd10=10000 Acquired: 10/14/2016 09:11:59 Type: Cal
Method: DOD Calibration Updated 060614(v1654) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Al3961	As1937	As1890	Ba4934	Ca3158	Co2286	Co2388	Cr2055	Cr2677	Cu2247
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.013**	**.094**	**.027**	**.320**	**.003**	**1.96**	**.031**	**1.68**	**.060**	**.890**
Stddev	.000	.000	.000	.008	.000	.00	.000	.00	.001	.002
%RSD	.426	.094	.238	2.48	.568	.210	1.45	.109	1.42	.175

Elem	Fe2343	Fe2599	Mg2790	Mg2802	Mn2576	Mn2593	Mo2045	Ni2216	Ni2316	Pb2169
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.007**	**.012**	**.001**	**.685**	**.132**	**.047**	**.007**	**.028**	**.027**	**.147**
Stddev	.000	.000	.000	.007	.002	.000	.000	.000	.000	.000
%RSD	1.37	.515	.574	1.03	1.19	.396	.200	.214	.202	.215

Elem	Pb2203	Sb2068	Sb2175	Se2062	Se1960	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
Avg	**.324**	**.215**	**.150**	**.022**	**.048**	**.100**	**.008**	**86900.**	**1.39**	**.030**
Stddev	.000	.000	.000	.000	.000	.000	.000	1140.	.00	.000
%RSD	.066	.147	.134	.561	.156	.253	.575	1.31	.236	.215

Elem	Sr4077	Sn1899	Li6707
Units	Cts/S	Cts/S	Cts/S
Avg	**555000.**	**.070**	**.178**
Stddev	2030.	.000	.001
%RSD	.366	.183	.398

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**1033000.**	**606800.**	**15907.**
Stddev	1938.	3764.	21.
%RSD	.18756	.62036	.13350

Sample Name: CalStd11-100k Acquired: 10/14/2016 09:19:07 Type: Cal
Method: DOD Calibration Updated 060614(v1654) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Cr2055	Mn2593	Pb2169	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**15.5**	**.451**	**1.42**	**13.1**
Stddev	.1	.011	.00	.1
%RSD	.335	2.35	.308	.380

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**1056200.**	**592740.**	**15823.**
Stddev	3598.	22383.	47.
%RSD	.34066	3.7762	.29997

Sample Name: CalStd12-100000 Acquired: 10/14/2016 09:26:08 Type: Cal
Method: DOD Calibration Updated 060614(v1654) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Al3961	Ca3158	Fe2599	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.126**	**.031**	**.121**	**.007**
Stddev	.001	.000	.001	.000
%RSD	.867	.779	.816	.883

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**1022100.**	**601770.**	**15533.**
Stddev	18705.	6758.	21.
%RSD	1.8301	1.1230	.13561

Sample Name: CalStd13=500000 Acquired: 10/14/2016 09:33:10 Type: Cal
Method: DOD Calibration Updated 060614(v1654) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Al3961	Ca3158	Fe2343	Fe2599	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.642**	**.143**	**.262**	**.531**	**.033**
Stddev	.030	.002	.004	.019	.000
%RSD	4.69	1.06	1.58	3.55	1.13

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**951720.**	**578360.**	**14423.**
Stddev	1476.	5501.	44.
%RSD	.15511	.95115	.30429

Sample Name: CalStd14-1000k Acquired: 10/14/2016 09:40:46 Type: Cal
Method: DOD Calibration Updated 060614(v1654) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Al3961	Ca3158	Fe2343	Fe2599	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.23**	**.277**	**.415**	**.975**	**.065**
Stddev	.01	.002	.014	.005	.000
%RSD	.783	.631	3.27	.497	.410

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**926370.**	**561880.**	**13624.**
Stddev	27180.	1788.	41.
%RSD	2.9341	.31826	.30417

Sample Name: icv Acquired: 10/14/2016 09:55:36 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1890	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Co2388	Cr2677	Cu2247	Fe2343
Avg	**49.2**	**12000.**	**2080.**	**2020.**	**49.9**	**10400.**	**47.5**	**515.**	**501.**	**202.**	**244.**	**5140.**
Stddev	.5	276.	12.	51.	.5	226.	.1	2.	3.	3.	2.	52.
%RSD	1.09	2.30	.597	2.51	1.05	2.18	.208	.313	.684	1.29	.635	1.01
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Fe2599	Mg2790	Mn2576	Mn2593	Mo2020	Mo2045	Ni2216	Ni2316	Pb2169	Pb2203	Sb2068	Sb2175
Avg	**5010.**	**10200.**	**522.**	**502.**	**510.**	**537.**	**504.**	**519.**	**516.**	**510.**	**512.**	**501.**
Stddev	128.	210.	6.	8.	2.	7.	6.	6.	3.	2.	1.	4.
%RSD	2.56	2.05	1.08	1.51	.372	1.35	1.18	1.24	.598	.431	.160	.754
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Se2062	Tl1908	V_2908	V_2924	Zn2062	Zn2138	Sr4077	Sn1899	Li6707
Avg	**1950.**	**1960.**	**508.**	**512.**	**514.**	**525.**	**518.**	**539.**	**520.**
Stddev	15.	12.	9.	6.	1.	6.	3.	6.	11.
%RSD	.785	.617	1.87	1.21	.188	1.09	.642	1.17	2.16
Check ?	None	None	None	None	None	None	None	None	None
Value									
Range									

Sample Name: icv Acquired: 10/14/2016 09:55:36 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**1044600.**	**604320.**	**16344.**
Stddev	12545.	10292.	5.
%RSD	1.2010	1.7031	.02967

Sample Name: ICVLL Acquired: 10/14/2016 10:02:20 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3158	Ca3933	Cd2265	Co2286	Cr2677	Cu2247	Fe2599
Avg	**47.6**	**1280.**	**59.2**	**31.6**	**13.5**	**1670.**	**1590.**	**16.2**	**32.1**	**32.0**	**30.7**	**958.**
Stddev	.6	21.	7.3	.4	.2	33.	19.	.2	.4	.5	.2	13.
%RSD	1.32	1.65	12.3	1.12	1.72	1.96	1.18	1.29	1.25	1.50	.552	1.35
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	Mg2790	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899
Avg	**1630.**	**33.0**	**30.9**	**33.0**	**32.0**	**66.7**	**70.8**	**58.6**	**33.6**	**33.4**	**32.4**	**155.**
Stddev	16.	.6	.5	.7	1.2	1.3	5.3	.9	.3	.4	.2	3.
%RSD	.985	1.71	1.72	2.17	3.58	1.90	7.46	1.62	.999	1.23	.729	2.11
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	Li6707
Avg	**63.6**
Stddev	1.4
%RSD	2.17
Check ?	Chk Pass
Value	
Range	

Sample Name: ICVLL Acquired: 10/14/2016 10:02:20 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**1055400.**	**597700.**	**16253.**
Stddev	13220.	8399.	75.
%RSD	1.2526	1.4053	.46341

Sample Name: icb Acquired: 10/14/2016 10:15:56 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3933	Cd2265	Co2286	Cr2677	Cu2247	Fe2599	Mg2802
Avg	**.625**	**1.29**	**-.951**	**.103**	**.039**	**-7.20**	**.088**	**.068**	**-.375**	**-.349**	**-13.1**	**-9.59**
Stddev	.580	4.19	1.27	.101	.020	.24	.097	.113	.219	.155	2.2	.03
%RSD	92.7	324.	133.	97.8	51.4	3.37	111.	167.	58.5	44.5	16.7	.342
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899	Li6707
Avg	**-.326**	**-.100**	**.222**	**-.904**	**.751**	**1.27**	**.913**	**.242**	**-.643**	**-.069**	**-6.34**	**.144**
Stddev	.126	.569	.488	1.14	4.17	2.46	1.72	.093	.101	.069	1.72	.568
%RSD	38.6	571.	220.	126.	556.	194.	189.	38.2	15.7	101.	27.1	396.
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**1049400.**	**590250.**	**16488.**
Stddev	10476.	7738.	62.
%RSD	.99835	1.3110	.37602

Sample Name: icsa Acquired: 10/14/2016 10:29:47 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3158	Cd2265	Co2286	Cr2677	Cu2247	Fe2599
Avg	**.913**	**523000.**	**-.038**	**-.015**	**-.102**	**496000.**	**.006**	**-.740**	**.120**	**-.148**	**432000.**
Stddev	.602	24700.	18.6	.185	.027	7690.	.710	.463	.911	2.76	13900.
%RSD	65.9	4.73	48900.	1250.	26.8	1.55	12400.	62.5	758.	1860.	3.22
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit											
Low Limit											

Elem	Mg2790	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077
Avg	**535000.**	**.000**	**-.396**	**-.364**	**-.106**	**.006**	**.025**	**.240**	**.000**	**.001**	**.000**
Stddev	7660.	.69	.924	.484	3.12	4.78	12.4	2.28	1.62	.977	.132
%RSD	1.43	1000000.	233.	133.	2940.	85800.	49200.	948.	489000.	182000.	8740000.
Check ?	None	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	Sn1899	Li6707
Avg	**.000**	**-.438**
Stddev	5.98	1.02
%RSD	1450000.	234.
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Sample Name: icsa Acquired: 10/14/2016 10:29:47 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**933270.**	**556150.**	**14516.**
Stddev	4283.	8344.	40.
%RSD	.45897	1.5003	.27870

Sample Name: icsab Acquired: 10/14/2016 10:37:26 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	As1890	Ba2335	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Co2388
Avg	**484.**	**529000.**	**499.**	**466.**	**440.**	**447.**	**509.**	**506000.**	**449.**	**445.**	**405.**
Stddev	3.	5190.	15.	15.	1.	6.	13.	3880.	2.	3.	10.
%RSD	.689	.980	3.09	3.24	.338	1.39	2.48	.766	.531	.592	2.49
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	Cr2055	Cr2677	Cu2247	Fe2599	Mg2790	Mn2576	Mo2020	Mo2045	Ni2216	Ni2316	Pb2169
Avg	**498.**	**460.**	**430.**	**441000.**	**547000.**	**457.**	**447.**	**481.**	**436.**	**434.**	**550.**
Stddev	3.	12.	3.	15400.	4930.	12.	3.	8.	10.	8.	5.
%RSD	.587	2.68	.659	3.49	.901	2.70	.705	1.68	2.26	1.90	.961
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	Sb2068	Sb2175	Se1960	Tl1908	V_2908	V_2924	Zn2062	Zn2138	Sr4077	Sn1899
Avg	**421.**	**495.**	**468.**	**446.**	**507.**	**415.**	**427.**	**405.**	**488.**	**467.**	**476.**
Stddev	4.	6.	10.	12.	8.	10.	4.	1.	10.	2.	10.
%RSD	.947	1.13	2.03	2.57	1.48	2.41	.974	.312	2.05	.379	2.10
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: 10/14/2016 10:37:26 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Li6707
Avg	**580.**
Stddev	7.
%RSD	1.22

Check ?	Chk Pass
Value	
Range	

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**938750.**	**550260.**	**14459.**
Stddev	18688.	4799.	60.
%RSD	1.9907	.87210	.41321

Sample Name: ICVLL ag Acquired: 10/14/2016 10:46:06 Type: Unk
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3933	Cd2265	Co2286	Cr2677	Cu2247	Fe2599	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
Avg	**11.1**	**19.0**	**.445**	**.367**	**.037**	**-3.19**	**.078**	**-.159**	**-.448**	**-.268**	**60.6**	**-3.09**
Stddev	.6	18.2	3.45	.182	.022	.59	.069	.095	.574	.233	67.5	.25
%RSD	4.96	95.7	777.	49.5	57.7	18.3	88.3	59.7	128.	86.8	111.	8.13

Elem	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899	Li6707
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	**-.384**	**.267**	**.292**	**-2.28**	**-.285**	**1.39**	**-1.19**	**-.087**	**-.142**	**-.102**	**-5.33**	**.232**
Stddev	.021	.340	.301	1.53	2.16	3.37	1.39	.263	.145	.037	1.81	.376
%RSD	5.43	128.	103.	66.9	755.	243.	117.	303.	102.	36.7	34.0	162.

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**1032800.**	**579590.**	**16550.**
Stddev	3005.	10371.	59.
%RSD	.29098	1.7894	.35598

Sample Name: ccv1 Acquired: 10/14/2016 20:57:49 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1890	Ba4934	Be3130	Ca3158	Cd2265	Co2388	Cr2055	Cu2247	Fe2343	Fe2599
Avg	**471.**	**5270.**	**4920.**	**5270.**	**506.**	**5110.**	**461.**	**4800.**	**5070.**	**4940.**	**5090.**	**4970.**
Stddev	5.	112.	46.	113.	11.	106.	3.	108.	35.	41.	114.	115.
%RSD	1.04	2.12	.926	2.15	2.08	2.07	.670	2.25	.697	.830	2.24	2.32
Check ?	None	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	Ni2216	Pb2169	Sb2068	Se2062	Tl1908	V_2908	Zn2062	Sr4077	Sn1899
Avg	**5100.**	**5060.**	**5200.**	**5080.**	**4820.**	**4940.**	**4960.**	**4940.**	**5200.**	**4810.**	**4850.**	**5240.**
Stddev	119.	85.	118.	113.	44.	41.	69.	40.	86.	32.	52.	39.
%RSD	2.33	1.67	2.27	2.23	.911	.825	1.39	.818	1.65	.665	1.07	.740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value												
Range												

Elem	Li6707
Avg	**5280.**
Stddev	118.
%RSD	2.23
Check ?	None
Value	
Range	

Sample Name: ccv1 Acquired: 10/14/2016 20:57:49 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**988230.**	**560300.**	**15930.**
Stddev	21733.	6572.	57.
%RSD	2.1992	1.1728	.35596

Sample Name: ccv2 Acquired: 10/14/2016 21:04:09 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	As1890	Ba2335	Ba4934	Be3130	Ca3933	Cd2265	Co2286	Co2388	Cr2055
Avg	**51.6**	**538.**	**481.**	**516.**	**482.**	**545.**	**53.6**	**513.**	**50.0**	**520.**	**502.**	**543.**
Stddev	.5	21.	3.	12.	5.	18.	.9	8.	.6	5.	8.	6.
%RSD	.951	3.80	.556	2.23	1.13	3.31	1.64	1.56	1.21	1.05	1.56	1.15
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Cr2677	Cu2247	Fe2599	Mg2802	Mn2576	Mn2593	Mo2020	Mo2045	Ni2216	Ni2316	Pb2169	Pb2203
Avg	**512.**	**504.**	**497.**	**514.**	**512.**	**518.**	**489.**	**526.**	**511.**	**534.**	**510.**	**516.**
Stddev	9.	4.	11.	8.	8.	9.	5.	10.	10.	9.	2.	5.
%RSD	1.73	.782	2.29	1.57	1.59	1.78	1.08	1.84	1.87	1.75	.431	.937
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	Sb2068	Sb2175	Se2062	Se1960	Tl1908	V_2908	V_2924	Zn2062	Zn2138	Sr4077	Sn1899	Li6707
Avg	**521.**	**478.**	**498.**	**517.**	**510.**	**524.**	**534.**	**511.**	**525.**	**501.**	**542.**	**538.**
Stddev	5.	5.	23.	5.	4.	8.	2.	5.	9.	8.	7.	17.
%RSD	.954	1.15	4.62	.946	.820	1.49	.364	.982	1.72	1.66	1.21	3.11
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: ccv2 Acquired: 10/14/2016 21:04:09 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**1006900.**	**565510.**	**15825.**
Stddev	16610.	8562.	85.
%RSD	1.6496	1.5140	.53581

Sample Name: ccb Acquired: 10/14/2016 21:10:33 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3933	Cd2265	Co2286	Cr2677	Cu2247	Fe2599	Mg2802
Avg	**.513**	**.415**	**-.927**	**.208**	**.008**	**-10.3**	**-.055**	**.062**	**-.643**	**-.739**	**-14.2**	**-10.2**
Stddev	.188	4.82	3.81	.155	.026	.4	.047	.094	.143	.254	1.3	.1
%RSD	36.7	1160.	410.	74.3	331.	4.17	84.5	152.	22.2	34.4	8.94	.615
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899	Li6707
Avg	**-.489**	**.490**	**-.111**	**-2.19**	**.025**	**5.15**	**-2.04**	**1.50**	**-.736**	**-.057**	**-7.57**	**2.12**
Stddev	.029	.358	.601	.71	2.08	1.22	.46	.52	.146	.042	2.68	.90
%RSD	5.88	73.1	539.	32.6	8400.	23.8	22.6	34.7	19.8	74.6	35.4	42.4
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**1012400.**	**565890.**	**15892.**
Stddev	13264.	21523.	68.
%RSD	1.3101	3.8035	.42909

Sample Name: lcss59503 Acquired: 10/14/2016 21:31:04 Type: Unk
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1890	Ba4934	Be3130	Ca3158	Cd2265	Co2388	Cr2055	Cr2677	Cu2247
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**85.8**	**4210.**	**4000.**	**4170.**	**99.3**	**193000.**	**85.8**	**926.**	**406.**	**389.**	**455.**
Stddev	1.1	66.	43.	79.	3.0	2790.	.6	29.	5.	12.	5.
%RSD	1.31	1.56	1.08	1.89	3.05	1.44	.659	3.12	1.25	3.02	1.07

Elem	Fe2599	Mg2790	Mn2576	Mn2593	Mo2045	Ni2216	Ni2316	Pb2169	Pb2203	Sb2068	Se2062
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**1970.**	**99300.**	**953.**	**866.**	**2120.**	**939.**	**955.**	**937.**	**897.**	**970.**	**3770.**
Stddev	29.	1320.	27.	33.	31.	15.	15.	8.	8.	14.	54.
%RSD	1.49	1.33	2.79	3.81	1.47	1.61	1.57	.878	.841	1.40	1.43

Elem	Tl1908	V_2908	V_2924	Zn2062	Zn2138	Sr4077	Sn1899	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**3490.**	**1060.**	**975.**	**918.**	**978.**	**1910.**	**2030.**	**2110.**
Stddev	34.	32.	15.	9.	16.	38.	21.	40.
%RSD	.979	3.04	1.58	.934	1.62	1.97	1.01	1.91

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**935580.**	**550970.**	**14767.**
Stddev	17558.	18754.	136.
%RSD	1.8767	3.4039	.92146

Sample Name: mbs59503 Acquired: 10/14/2016 21:37:34 Type: Unk
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3933	Cd2265	Co2286	Cr2677	Cu2247	Fe2599	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
Avg	**1.52**	**12.5**	**-4.22**	**.331**	**.026**	**3.16**	**.023**	**-.035**	**-.650**	**-.348**	**-2.54**	**-5.02**
Stddev	.28	4.1	1.67	.191	.016	1.39	.119	.246	.365	.153	1.40	.23
%RSD	18.2	33.2	39.7	57.6	61.9	44.1	517.	702.	56.1	44.0	55.3	4.48

Elem	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899	Li6707
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	**-.093**	**.416**	**-.049**	**.873**	**-1.03**	**7.52**	**-.669**	**1.74**	**.121**	**-.060**	**-4.36**	**1.89**
Stddev	.032	.270	.131	.797	1.08	5.74	2.87	.48	.134	.037	.50	.56
%RSD	34.7	64.9	265.	91.3	105.	76.3	430.	27.4	111.	61.9	11.5	29.6

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**1021800.**	**577000.**	**16065.**
Stddev	4348.	15185.	54.
%RSD	.42552	2.6316	.33844

Sample Name: 784496 Acquired: 10/14/2016 21:44:29 Type: Unk
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Cr2055	Cr2677	Cu2247
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**-4.93**	**282000.**	**73.8**	**2610.**	**17.1**	**94300.**	**-2.97**	**139.**	**624.**	**621.**	**271.**
Stddev	.43	18400.	19.0	175.	.7	6570.	4.01	2.	5.	29.	8.
%RSD	8.67	6.52	25.8	6.69	4.24	6.97	135.	1.09	.839	4.60	2.92

Elem	Fe2599	Mg2790	Mn2593	Mo2020	Ni2216	Ni2316	Pb2169	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	**406000.**	**40400.**	**19800.**	**23.5**	**298.**	**301.**	**17100.**	**199.**	**26.8**	**-5.12**	**862.**
Stddev	24900.	2760.	1060.	1.4	17.	15.	119.	7.	14.0	4.01	43.
%RSD	6.12	6.83	5.36	6.03	5.68	4.99	.695	3.28	52.4	78.3	5.03

Elem	V_2924	Zn2062	Zn2138	Sr4077	Sn1899	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**835.**	**770.**	**889.**	**313.**	**45.7**	**177.**
Stddev	6.	7.	44.	4.	1.3	12.
%RSD	.740	.967	4.95	1.38	2.83	6.96

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**906180.**	**555380.**	**15113.**
Stddev	43546.	32346.	72.
%RSD	4.8054	5.8242	.47574

Sample Name: I784496 Acquired: 10/14/2016 21:51:36 Type: Unk
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Cr2677	Cu2247
Units	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**	**120000.**	**-31.1**	**493.**	**1090.**	**5.04**	**40800.**	**-16.0**	**31.3**	**185.**	**35.2**
Stddev	.70	10700.	5.3	60.	93.	.50	3490.	.9	3.9	17.	7.0
%RSD	59.8	8.96	16.9	12.2	8.58	10.0	8.57	5.42	12.6	9.25	19.9

Elem	Fe2599	Mg2790	Mn2593	Mo2020	Ni2316	Pb2169	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
Avg	**181000.**	**17500.**	**8060.**	**11.2**	**67.3**	**3780.**	**60.3**	**48.7**	**-.905**	**280.**	**178.**
Stddev	15100.	1480.	665.	.6	7.1	487.	5.4	3.2	2.58	28.	19.
%RSD	8.30	8.48	8.25	5.61	10.5	12.9	8.94	6.62	285.	9.89	10.8

Elem	Sr4077	Sn1899	Li6707
Units	ug/L	ug/L	ug/L
Avg	**136.**	**6.89**	**68.6**
Stddev	13.	1.02	5.9
%RSD	9.48	14.8	8.59

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**991810.**	**572240.**	**16033.**
Stddev	20330.	7116.	93.
%RSD	2.0498	1.2434	.58053

Sample Name: dup784496 Acquired: 10/14/2016 21:58:34 Type: Unk
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Cr2055	Cr2677	Cu2247
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**-5.54**	**282000.**	**94.3**	**2600.**	**17.5**	**93200.**	**1.47**	**144.**	**637.**	**633.**	**288.**
Stddev	.32	10300.	13.4	98.	.2	3530.	1.51	1.	3.	5.	3.
%RSD	5.74	3.65	14.2	3.75	1.39	3.79	102.	.510	.429	.752	1.14

Elem	Fe2599	Mg2790	Mn2593	Mo2020	Ni2216	Ni2316	Pb2169	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	**392000.**	**40300.**	**19400.**	**21.6**	**212.**	**214.**	**16400.**	**168.**	**24.6**	**-3.75**	**855.**
Stddev	12000.	1560.	308.	.6	2.	1.	26.	1.	6.3	3.23	14.
%RSD	3.07	3.86	1.59	2.87	1.11	.552	.158	.637	25.6	86.1	1.60

Elem	V_2924	Zn2062	Zn2138	Sr4077	Sn1899	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**887.**	**789.**	**874.**	**316.**	**45.2**	**177.**
Stddev	9.	5.	5.	4.	2.9	5.
%RSD	1.06	.581	.527	1.27	6.43	3.09

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**947080.**	**566410.**	**15223.**
Stddev	3571.	16766.	56.
%RSD	.37701	2.9601	.36869

Sample Name: mss784496 Acquired: 10/14/2016 22:05:41 Type: Unk
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1890	Ba4934	Be3130	Ca3158	Cd2265	Co2388	Cr2055	Cu2247	Fe2599
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**79.8**	**400000.**	**3860.**	**6850.**	**117.**	**285000.**	**81.3**	**996.**	**1070.**	**729.**	**409000.**
Stddev	2.0	2410.	46.	282.	3.	2550.	2.1	27.	9.	8.	7840.
%RSD	2.55	.604	1.19	4.11	2.77	.897	2.55	2.75	.841	1.14	1.92

Elem	Mg2790	Mn2593	Mo2045	Ni2216	Pb2169	Sb2068	Sb2175	Se2062	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	**144000.**	**20500.**	**1910.**	**1140.**	**18600.**	**557.**	**533.**	**3300.**	**3040.**	**1980.**	**1780.**
Stddev	1160.	243.	15.	7.	165.	7.	6.	41.	28.	17.	12.
%RSD	.801	1.18	.762	.659	.888	1.27	1.20	1.23	.905	.853	.655

Elem	Sr4077	Sn1899	Li6707
Units	ug/L	ug/L	ug/L
Avg	**2240.**	**1760.**	**2590.**
Stddev	21.	19.	17.
%RSD	.925	1.06	.671

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**927680.**	**562650.**	**14813.**
Stddev	3736.	5227.	83.
%RSD	.40272	.92894	.55772

Sample Name: msds784496 Acquired: 10/14/2016 22:12:48 Type: Unk
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1890	Ba4934	Be3130	Ca3158	Cd2265	Co2388	Cr2055	Cu2247	Fe2599
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**79.5**	**399000.**	**3870.**	**6830.**	**112.**	**280000.**	**83.2**	**966.**	**1110.**	**809.**	**396000.**
Stddev	.5	6270.	12.	220.	2.	2940.	1.5	18.	6.	6.	6020.
%RSD	.663	1.57	.307	3.22	1.80	1.05	1.80	1.88	.549	.780	1.52

Elem	Mg2790	Mn2593	Mo2045	Ni2216	Pb2169	Sb2068	Sb2175	Se2062	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	**142000.**	**20400.**	**1850.**	**1110.**	**36700.**	**772.**	**708.**	**3350.**	**3050.**	**1930.**	**1790.**
Stddev	1680.	349.	30.	17.	246.	6.	7.	45.	22.	33.	10.
%RSD	1.18	1.71	1.61	1.54	.668	.790	.949	1.35	.734	1.73	.547

Elem	Sr4077	Sn1899	Li6707
Units	ug/L	ug/L	ug/L
Avg	**2260.**	**1780.**	**2570.**
Stddev	12.	13.	45.
%RSD	.534	.737	1.74

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**956260.**	**570090.**	**14785.**
Stddev	16561.	7009.	64.
%RSD	1.7319	1.2295	.43541

Sample Name: pdss784496 Acquired: 10/14/2016 22:19:49 Type: Unk
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1890	Ba4934	Be3130	Ca3158	Cd2265	Co2388	Cr2055	Cr2677	Cu2247
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**79.1**	**277000.**	**4100.**	**6470.**	**110.**	**454000.**	**84.7**	**941.**	**998.**	**915.**	**701.**
Stddev	.8	2270.	68.	175.	2.	4560.	2.7	22.	17.	22.	15.
%RSD	1.02	.820	1.67	2.70	2.23	1.00	3.18	2.33	1.68	2.41	2.15

Elem	Fe2599	Mg2790	Mn2593	Mo2020	Ni2216	Pb2169	Sb2068	Se2062	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	**372000.**	**232000.**	**18800.**	**21.3**	**1060.**	**16800.**	**1180.**	**3600.**	**3080.**	**1830.**	**1590.**
Stddev	13500.	2080.	448.	1.1	18.	304.	19.	112.	52.	44.	28.
%RSD	3.62	.899	2.38	4.98	1.65	1.81	1.61	3.12	1.67	2.39	1.78

Elem	Sr4077	Sn1899	Li6707
Units	ug/L	ug/L	ug/L
Avg	**299.**	**37.0**	**192.**
Stddev	2.	3.5	3.
%RSD	.637	9.58	1.30

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**940190.**	**564990.**	**14452.**
Stddev	20769.	2905.	161.
%RSD	2.2090	.51410	1.1166

Sample Name: ccv1 Acquired: 10/14/2016 22:27:14 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1890	Ba4934	Be3130	Ca3158	Cd2265	Co2388	Cr2055	Cu2247	Fe2343	Fe2599
Avg	**484.**	**5260.**	**4950.**	**5220.**	**514.**	**5140.**	**464.**	**4890.**	**5110.**	**4940.**	**5220.**	**5040.**
Stddev	4.	59.	26.	55.	5.	60.	2.	48.	18.	15.	53.	94.
%RSD	.891	1.12	.516	1.05	.960	1.16	.466	.990	.361	.299	1.02	1.87
Check ?	None	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	Ni2216	Pb2169	Sb2068	Se2062	Tl1908	V_2908	Zn2062	Sr4077	Sn1899
Avg	**5100.**	**5060.**	**5200.**	**5080.**	**4850.**	**4960.**	**4960.**	**4950.**	**5200.**	**4880.**	**4940.**	**5230.**
Stddev	59.	57.	38.	31.	19.	14.	18.	13.	60.	18.	46.	12.
%RSD	1.16	1.13	.735	.614	.398	.290	.366	.254	1.16	.374	.926	.219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value												
Range												

Elem	Li6707
Avg	**5240.**
Stddev	51.
%RSD	.971
Check ?	None
Value	
Range	

Sample Name: ccv1 Acquired: 10/14/2016 22:27:14 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**1007100.**	**573950.**	**16134.**
Stddev	4384.	8493.	44.
%RSD	.43528	1.4797	.27211

Sample Name: ccv2 Acquired: 10/14/2016 22:33:34 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	As1890	Ba2335	Be3130	Ca3933	Cd2265	Co2286	Co2388	Cr2055	Cr2677
Avg	**51.5**	**546.**	**480.**	**509.**	**476.**	**53.7**	**512.**	**49.4**	**514.**	**502.**	**534.**	**514.**
Stddev	.3	19.	6.	10.	3.	.8	13.	.3	2.	9.	3.	7.
%RSD	.490	3.55	1.27	2.00	.610	1.58	2.62	.617	.475	1.78	.469	1.45
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Cu2247	Fe2599	Mg2802	Mn2576	Mn2593	Mo2020	Mo2045	Ni2216	Ni2316	Pb2169	Pb2203	Sb2068
Avg	**499.**	**510.**	**514.**	**509.**	**519.**	**482.**	**530.**	**512.**	**535.**	**502.**	**509.**	**512.**
Stddev	2.	16.	10.	9.	14.	3.	8.	7.	8.	3.	2.	2.
%RSD	.481	3.22	1.92	1.78	2.68	.538	1.46	1.32	1.47	.647	.392	.383
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	Sb2175	Se2062	Se1960	Tl1908	V_2908	V_2924	Zn2062	Zn2138	Sr4077	Sn1899	Li6707
Avg	**470.**	**496.**	**517.**	**504.**	**526.**	**539.**	**509.**	**526.**	**503.**	**536.**	**549.**
Stddev	2.	9.	8.	4.	15.	5.	3.	8.	7.	4.	20.
%RSD	.496	1.87	1.57	.747	2.91	1.000	.612	1.46	1.31	.733	3.72
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: ccv2 Acquired: 10/14/2016 22:33:34 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**1008800.**	**556220.**	**16087.**
Stddev	15474.	14753.	43.
%RSD	1.5338	2.6524	.26625

Sample Name: ccb Acquired: 10/14/2016 22:39:57 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3933	Cd2265	Co2286	Cr2677	Cu2247	Fe2599	Mg2802
Avg	**.979**	**4.35**	**-1.99**	**.277**	**.014**	**-9.86**	**-.085**	**.133**	**-.184**	**-.421**	**-13.4**	**-9.68**
Stddev	.361	1.16	.81	.118	.053	.45	.093	.246	.361	.447	2.5	.10
%RSD	36.9	26.6	40.7	42.6	370.	4.59	110.	185.	196.	106.	18.3	.982
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899	Li6707
Avg	**-.365**	**.274**	**-.069**	**-.454**	**1.43**	**5.20**	**-.630**	**1.49**	**-.666**	**-.004**	**-7.84**	**1.84**
Stddev	.090	.367	.136	1.13	1.22	5.08	2.20	.49	.038	.092	2.37	.46
%RSD	24.7	134.	197.	249.	85.1	97.7	350.	33.2	5.63	2400.	30.2	24.8
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**1013700.**	**559720.**	**16045.**
Stddev	21884.	11418.	43.
%RSD	2.1589	2.0399	.27108

Sample Name: 784515 Acquired: 10/14/2016 22:46:52 Type: Unk
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Cr2055	Cr2677	Cu2247
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**-5.94**	**269000.**	**86.2**	**2550.**	**16.8**	**86600.**	**.490**	**148.**	**688.**	**663.**	**248.**
Stddev	.67	5630.	9.6	60.	.9	1580.	.955	2.	10.	38.	3.
%RSD	11.3	2.09	11.2	2.35	5.22	1.83	195.	1.32	1.52	5.76	1.23

Elem	Fe2599	Mg2790	Mn2593	Mo2020	Ni2216	Ni2316	Pb2169	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	**404000.**	**31700.**	**20200.**	**20.8**	**171.**	**173.**	**6660.**	**26.9**	**15.1**	**-1.19**	**861.**
Stddev	14900.	572.	1390.	.4	14.	12.	92.	3.5	8.5	2.41	67.
%RSD	3.69	1.81	6.85	1.76	8.34	7.02	1.38	13.0	56.4	202.	7.77

Elem	V_2924	Zn2062	Zn2138	Sr4077	Sn1899	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**859.**	**848.**	**942.**	**293.**	**34.4**	**156.**
Stddev	8.	12.	74.	2.	4.9	3.
%RSD	.973	1.40	7.87	.623	14.2	2.19

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**936480.**	**571080.**	**15065.**
Stddev	62321.	10847.	104.
%RSD	6.6549	1.8994	.69308

Sample Name: 784516 Acquired: 10/14/2016 22:54:00 Type: Unk
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Cr2055	Cr2677	Cu2247
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**2.03**	**282000.**	**104.**	**2630.**	**16.4**	**72700.**	**.549**	**155.**	**628.**	**583.**	**816.**
Stddev	.48	3160.	16.	31.	.3	620.	.824	.	3.	14.	7.
%RSD	23.9	1.12	15.4	1.20	1.90	.854	150.	.179	.506	2.38	.839

Elem	Fe2599	Mg2790	Mn2593	Mo2020	Ni2216	Ni2316	Pb2169	Sb2068	Sb2175	Se1960	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	**406000.**	**30400.**	**19200.**	**22.3**	**193.**	**197.**	**205000.**	**637.**	**367.**	**25.1**	**-10.1**
Stddev	3200.	253.	471.	.8	4.	4.	534.	3.	7.	15.6	3.5
%RSD	.789	.832	2.45	3.44	2.24	2.17	.261	.489	1.83	62.1	34.6

Elem	V_2908	V_2924	Zn2062	Zn2138	Sr4077	Sn1899	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**849.**	**895.**	**881.**	**930.**	**280.**	**46.8**	**161.**
Stddev	24.	3.	5.	21.	2.	3.5	2.
%RSD	2.79	.375	.560	2.21	.705	7.49	1.51

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**978000.**	**564510.**	**15139.**
Stddev	22098.	6092.	27.
%RSD	2.2595	1.0792	.17844

Sample Name: 785308 Acquired: 10/14/2016 23:01:08 Type: Unk
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Cr2055	Cu2247
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**-1.66**	**381000.**	**125.**	**4220.**	**11.9**	**1640000.**	**26.1**	**137.**	**1150.**	**408.**
Stddev	.64	7220.	11.	93.	.1	46700.	1.4	2.	10.	5.
%RSD	38.6	1.90	9.10	2.20	1.13	2.86	5.43	1.25	.875	1.11

Elem	Fe2599	Mg2790	Mn2593	Mo2020	Ni2216	Ni2316	Pb2169	Pb2203	Sb2175	Se1960
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**625000.**	**1040000.**	**9190.**	**38.1**	**647.**	**609.**	**820.**	**463.**	**11.9**	**-35.2**
Stddev	9920.	18100.	85.	.6	4.	3.	11.	5.	7.2	12.7
%RSD	1.59	1.73	.925	1.70	.599	.549	1.37	1.14	60.9	36.2

Elem	Tl1908	V_2908	Zn2062	Sr4077	Sn1899	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**3.83**	**1190.**	**1000.**	**913.**	**47.0**	**381.**
Stddev	2.29	3.	8.	10.	3.8	8.
%RSD	59.8	.219	.773	1.04	8.03	2.09

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**837960.**	**538380.**	**13048.**
Stddev	1640.	10660.	78.
%RSD	.19571	1.9800	.59749

Sample Name: 785309 Acquired: 10/14/2016 23:08:23 Type: Unk
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Cr2055	Cr2677
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**-1.71**	**415000.**	**158.**	**6070.**	**11.9**	**1420000.**	**19.8**	**139.**	**839.**	**781.**
Stddev	.27	6690.	15.	45.	.2	50300.	1.2	1.	4.	8.
%RSD	16.0	1.61	9.38	.738	1.34	3.55	6.16	.498	.511	1.07

Elem	Cu2247	Fe2599	Mg2790	Mn2593	Mo2020	Ni2216	Ni2316	Pb2169	Pb2203	Sb2175
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**367.**	**654000.**	**886000.**	**10000.**	**33.0**	**435.**	**401.**	**853.**	**477.**	**12.1**
Stddev	5.	14000.	21000.	92.4	2.1	4.	3.	6.	3.	4.6
%RSD	1.38	2.14	2.37	.924	6.25	.976	.783	.677	.709	37.9

Elem	Se1960	Tl1908	V_2908	Zn2062	Sr4077	Sn1899	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**-24.3**	**3.62**	**1190.**	**1380.**	**852.**	**42.0**	**455.**
Stddev	12.2	2.47	12.	6.	11.	3.6	12.
%RSD	50.1	68.4	.966	.430	1.27	8.58	2.60

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**848060.**	**538220.**	**13243.**
Stddev	6674.	6705.	61.
%RSD	.78695	1.2457	.46133

Sample Name: 785310 Acquired: 10/14/2016 23:15:46 Type: Unk
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Cr2055	Cr2677
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**-1.38**	**412000.**	**104.**	**4980.**	**11.4**	**1750000.**	**14.8**	**129.**	**733.**	**715.**
Stddev	.79	21100.	29.	273.	.6	87600.	4.5	1.	5.	39.
%RSD	57.2	5.12	28.1	5.49	5.20	5.00	30.1	1.00	.733	5.41

Elem	Cu2247	Fe2599	Mg2790	Mn2593	Mo2020	Ni2216	Ni2316	Pb2169	Pb2203	Sb2175
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**311.**	**614000.**	**1100000.**	**9030.**	**30.1**	**479.**	**436.**	**722.**	**428.**	**13.8**
Stddev	10.	38000.	56100.	627.	1.6	25.	24.	33.	1.	6.3
%RSD	3.19	6.20	5.08	6.95	5.28	5.18	5.38	4.59	.252	45.5

Elem	Se1960	Tl1908	V_2908	V_2924	Zn2062	Sr4077	Sn1899	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**-16.7**	**3.68**	**1200.**	**986.**	**905.**	**897.**	**38.0**	**390.**
Stddev	16.7	3.71	79.	10.	8.	4.	4.6	21.
%RSD	99.8	101.	6.55	1.04	.843	.416	12.0	5.50

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**810920.**	**509430.**	**13157.**
Stddev	45607.	26819.	41.
%RSD	5.6241	5.2645	.30782

Sample Name: ccv1 Acquired: 10/14/2016 23:58:17 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1890	Ba4934	Be3130	Ca3158	Cd2265	Co2388	Cr2055	Cu2247	Fe2343	Fe2599
Avg	**482.**	**5370.**	**4930.**	**5330.**	**513.**	**5210.**	**465.**	**4880.**	**5130.**	**4960.**	**5220.**	**5200.**
Stddev	5.	115.	49.	114.	.	111.	5.	7.	63.	66.	12.	224.
%RSD	1.05	2.13	.991	2.14	.031	2.14	1.15	.145	1.22	1.34	.228	4.31
Check ?	None	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	Ni2216	Pb2169	Sb2068	Se2062	Tl1908	V_2908	Zn2062	Sr4077	Sn1899
Avg	**5190.**	**5050.**	**5220.**	**5090.**	**4880.**	**4970.**	**4970.**	**4940.**	**5190.**	**4900.**	**4900.**	**5210.**
Stddev	111.	87.	87.	80.	64.	61.	65.	56.	88.	56.	37.	63.
%RSD	2.14	1.73	1.67	1.56	1.31	1.22	1.30	1.13	1.70	1.13	.754	1.22
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value												
Range												

Elem	Li6707
Avg	**5320.**
Stddev	113.
%RSD	2.12
Check ?	None
Value	
Range	

Sample Name: ccv1 Acquired: 10/14/2016 23:58:17 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**1001500.**	**559920.**	**16051.**
Stddev	16910.	13543.	113.
%RSD	1.6885	2.4188	.70220

Sample Name: ccv2 Acquired: 10/15/2016 00:04:37 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	As1890	Ba2335	Ba4934	Be3130	Ca3933	Cd2265	Co2286	Co2388	Cr2055
Avg	**52.7**	**549.**	**480.**	**516.**	**481.**	**546.**	**53.8**	**514.**	**49.8**	**520.**	**505.**	**542.**
Stddev	1.0	26.	1.	6.	2.	38.	1.2	8.	.4	2.	9.	2.
%RSD	1.97	4.72	.207	1.10	.486	7.02	2.30	1.54	.720	.466	1.74	.443
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Cr2677	Cu2247	Fe2599	Mg2802	Mn2576	Mn2593	Mo2020	Mo2045	Ni2216	Ni2316	Pb2169	Pb2203
Avg	**514.**	**503.**	**516.**	**517.**	**516.**	**523.**	**490.**	**527.**	**511.**	**538.**	**508.**	**515.**
Stddev	11.	2.	23.	12.	12.	8.	2.	7.	6.	6.	4.	1.
%RSD	2.10	.337	4.44	2.35	2.36	1.53	.371	1.26	1.14	1.06	.762	.142
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	Sb2068	Sb2175	Se2062	Se1960	Tl1908	V_2908	V_2924	Zn2062	Zn2138	Sr4077	Sn1899	Li6707
Avg	**519.**	**480.**	**495.**	**523.**	**504.**	**524.**	**540.**	**515.**	**525.**	**506.**	**539.**	**538.**
Stddev	4.	4.	16.	2.	5.	8.	9.	3.	6.	4.	4.	32.
%RSD	.780	.755	3.29	.411	.919	1.45	1.67	.519	1.20	.798	.697	6.02
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: ccv2 Acquired: 10/15/2016 00:04:37 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**1010400.**	**567260.**	**15932.**
Stddev	11630.	29231.	30.
%RSD	1.1510	5.1530	.19082

Sample Name: ccb Acquired: 10/15/2016 00:11:01 Type: QC
Method: DOD Calibration Updated 060614(v1654) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3933	Cd2265	Co2286	Cr2677	Cu2247	Fe2599	Mg2802
Avg	**1.06**	**-1.35**	**-11.8**	**.170**	**-.040**	**-10.5**	**-.119**	**.001**	**-.211**	**-.391**	**-10.4**	**-9.93**
Stddev	.22	3.73	1.7	.183	.040	.4	.132	.214	.288	.335	3.5	.03
%RSD	21.1	276.	14.3	108.	101.	3.46	111.	21800.	136.	85.6	33.6	.284
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Mn2576	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899	Li6707
Avg	**-.323**	**.390**	**-.418**	**-1.08**	**.397**	**1.17**	**-.027**	**1.49**	**-.706**	**.049**	**-6.46**	**.464**
Stddev	.054	.093	.263	1.65	1.65	3.47	1.25	.21	.075	.156	1.40	1.00
%RSD	16.8	23.9	62.9	153.	415.	295.	4590.	14.1	10.7	320.	21.7	216.
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

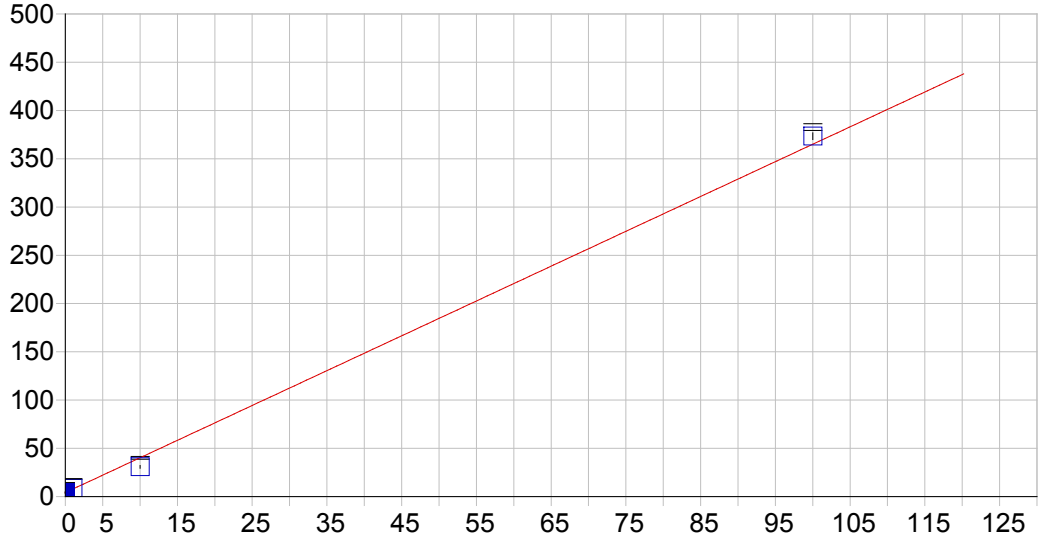
Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**1012300.**	**568290.**	**15871.**
Stddev	6349.	13360.	48.
%RSD	.62722	2.3510	.30190

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	Status	Resl Slope
Ag 328.068 {103}	10/20/2016 10:29:12	10/18/2016 08:27:05	Linear	1/Conc	4.165194	3.608666	0.000000	1.000000	0.996297	0.146646	0.775528	2.585094	OK.	1.000000
Al 309.271 {109}	10/20/2016 10:29:12	10/18/2016 08:54:32	Curvilin	None	0.000248	0.000001	0.000000	1.000000	1.000000	0.000012	10.533829	35.112764	OK.	1.000000
Al 396.152 { 85}	10/20/2016 10:29:12	10/18/2016 09:09:57	Full Fit	1/Var	-0.000007	0.000002	0.000000	1.000000	0.999992	0.000005	4.616014	15.386712	OK.	1.000000
Al 167.079 {502}	10/20/2016 10:29:12	10/18/2016 08:33:15	Linear	1/Var	0.000149	0.000021	0.000000	1.000000	0.995717	0.000079	0.908653	3.028843	OK.	1.000000
As 193.759 {474}	10/20/2016 10:29:12	10/18/2016 08:40:14	Linear	1/Var	-0.000079	0.000011	0.000000	1.000000	0.999953	0.000031	3.947607	13.158691	OK.	1.000000
As 189.042 {479}	10/20/2016 10:29:12	10/18/2016 08:40:14	Linear	1/Conc	0.000014	0.000003	0.000000	1.000000	0.999037	0.000001	9.395967	31.319888	OK.	1.000000
Ba 233.527 {445}	10/20/2016 10:29:12	10/18/2016 08:33:15	Linear	1/Conc	0.000044	0.000148	0.000000	1.000000	0.999857	0.000003	0.219218	0.730726	OK.	1.000000
Ba 455.403 { 74}	10/20/2016 10:29:12	10/18/2016 08:40:14	Linear	None	-0.000007	0.000024	0.000000	1.000000	0.999998	0.000169	0.144377	0.481255	OK.	1.000000
Ba 493.409 { 68}	10/20/2016 10:29:12	10/18/2016 08:40:14	Linear	1/Var	0.004944	0.000049	0.000000	1.000000	0.999974	0.000161	0.459255	1.530850	OK.	1.000000
Be 313.042 {108}	10/20/2016 10:29:12	10/18/2016 08:33:15	Linear	1/Conc	-0.000127	0.000108	0.000000	1.000000	0.999995	0.000000	0.039584	0.131946	OK.	1.000000
Be 234.861 {144}	10/20/2016 10:29:12	10/18/2016 08:33:15	Linear	1/Conc	-0.000000	0.000003	0.000000	1.000000	1.000000	0.000000	0.285550	0.951833	OK.	1.000000
Ca 315.887 {107}	10/20/2016 10:29:12	10/18/2016 09:09:57	Linear	1/Var	0.000037	0.000000	0.000000	1.000000	0.999905	0.000003	6.011769	20.039228	OK.	1.000000
Ca 317.933 {106}	10/20/2016 10:29:12	10/18/2016 09:09:57	Curvilin	1/Conc	0.002027	0.000001	0.000000	1.000000	0.999889	0.000037	2.097465	6.991550	OK.	1.000000
Ca 393.366 { 86}	10/20/2016 10:29:12	10/18/2016 08:33:16	Linear	1/Conc	0.000451	0.000106	0.000000	1.000000	0.998784	0.000095	0.024571	0.081902	OK.	1.000000
Ca 396.847 { 85}	10/20/2016 10:29:12	10/18/2016 08:40:15	Linear	1/Conc	0.000475	0.000105	0.000000	1.000000	0.999562	0.000146	0.058747	0.195822	OK.	1.000000
Cd 226.502 {449}	10/20/2016 10:29:12	10/18/2016 08:33:16	Linear	1/Conc	0.000003	0.000393	0.000000	1.000000	0.999855	0.000006	0.143116	0.477052	OK.	1.000000
Cd 228.802 {447}	10/20/2016 10:29:12	10/18/2016 08:33:16	Linear	1/Conc	0.000344	0.000402	0.000000	1.000000	0.999938	0.000004	0.176066	0.586887	OK.	1.000000
Co 228.616 {447}	10/20/2016 10:29:12	10/18/2016 08:40:15	Linear	1/Conc	-0.000166	0.000218	0.000000	1.000000	0.999793	0.000017	0.292627	0.975423	OK.	1.000000
Co 238.892 {141}	10/20/2016 10:29:12	10/18/2016 08:40:15	Linear	1/Var	0.000000	0.000004	0.000000	1.000000	0.999988	0.000001	0.642219	2.140731	OK.	1.000000
Cr 205.560 {464}	10/20/2016 10:29:12	10/18/2016 08:47:23	Linear	1/Conc	-0.000095	0.000178	0.000000	1.000000	0.999356	0.000076	0.219814	0.732713	OK.	1.000000
Cr 267.716 {126}	10/20/2016 10:29:12	10/18/2016 08:40:15	Linear	1/Var	0.000000	0.000006	0.000000	1.000000	0.999964	0.000002	0.480889	1.602962	OK.	1.000000
Cu 224.700 {450}	10/20/2016 10:29:12	10/18/2016 08:40:15	Curvilin	1/Conc	-0.000112	0.000117	-0.000000	1.000000	0.999954	0.000004	0.489915	1.633051	OK.	1.000000
Cu 324.754 {104}	10/20/2016 10:29:12	10/18/2016 08:47:23	Linear	None	-0.000377	0.000003	0.000000	1.000000	0.999978	0.001085	1.412040	4.706800	OK.	1.000000
Cu 327.396 {103}	10/20/2016 10:29:12	10/18/2016 08:47:23	Curvilin	1/Conc	-0.000053	0.000002	0.000000	1.000000	0.999977	0.000001	3.480789	11.602631	Warnin	1.000000
Fe 234.349 {144}	10/20/2016 10:29:12	10/18/2016 09:09:57	Full Fit	1/Var	0.000032	0.000001	0.000000	0.970000	0.999813	0.000003	1.063387	3.544624	OK.	1.000000
Fe 239.562 {140}	10/20/2016 10:29:12	10/18/2016 09:09:57	Curvilin	1/Conc	0.000004	0.000001	0.000000	1.000000	0.999941	0.000010	1.862406	6.208020	OK.	1.000000
Fe 259.940 {129}	10/20/2016 10:29:12	10/18/2016 09:09:58	Curvilin	1/Var	0.000002	0.000000	0.000000	1.000000	0.999848	0.000008	7.516926	25.056420	OK.	1.000000
Mg 202.582 {466}	10/20/2016 10:29:12	10/18/2016 09:09:58	Curvilin	1/Conc	-0.000139	0.000014	-0.000000	1.000000	0.999845	0.000412	2.935896	9.786321	OK.	1.000000
Mg 279.079 {121}	10/20/2016 10:29:12	10/18/2016 09:09:58	Curvilin	1/Var	-0.000000	0.000000	0.000000	1.000000	0.999838	0.000002	16.389902	54.633005	OK.	1.000000
Mg 280.270 {120}	10/20/2016 10:29:12	10/18/2016 08:40:15	Linear	1/Var	0.000229	0.000084	0.000000	1.000000	0.999473	0.000014	0.023525	0.078417	OK.	1.000000
Mn 257.610 {131}	10/20/2016 10:29:12	10/18/2016 08:40:15	Linear	1/Conc	-0.000000	0.000003	0.000000	1.000000	0.999928	0.000000	0.571573	1.905244	OK.	1.000000
Mn 259.373 {130}	10/20/2016 10:29:12	10/18/2016 08:47:24	Full Fit	1/Conc	0.000001	0.000003	-0.000000	1.010000	1.000000	0.000000	0.347967	1.159891	OK.	1.000000
Mo 202.030 {466}	10/20/2016 10:29:12	10/18/2016 08:33:16	Linear	1/Conc	0.000008	0.000099	0.000000	1.000000	0.999899	0.000004	0.361269	1.204229	OK.	1.000000
Mo 204.598 {464}	10/20/2016 10:29:12	10/18/2016 08:40:15	Curvilin	1/Conc	0.000001	0.000001	0.000000	1.000000	0.999981	0.000000	0.694937	2.316457	OK.	1.000000
Mo 204.598 {465}	10/20/2016 10:29:12	10/18/2016 08:40:15	Linear	1/Conc	-0.000000	0.000001	0.000000	1.000000	0.999987	0.000000	0.703295	2.344316	OK.	1.000000
Ni 221.647 {452}	10/20/2016 10:29:12	10/18/2016 08:40:15	Linear	None	0.000031	0.000003	0.000000	1.000000	0.999996	0.000050	0.346120	1.153734	OK.	1.000000
Ni 231.604 {445}	10/20/2016 10:29:12	10/18/2016 08:40:15	Linear	1/Conc	-0.000000	0.000003	0.000000	1.000000	0.999967	0.000000	0.363583	1.211943	OK.	1.000000
Pb 216.999 {455}	10/20/2016 10:29:12	10/18/2016 08:47:24	Linear	1/Var	0.000191	0.000017	0.000000	1.000000	0.999320	0.000160	3.420242	11.400808	OK.	1.000000
Pb 220.353 {453}	10/20/2016 10:29:12	10/18/2016 08:40:15	Linear	1/Conc	0.000032	0.000038	0.000000	1.000000	0.999782	0.000007	1.977477	6.591589	OK.	1.000000
Pb 220.353 {153}	10/20/2016 10:29:12	10/18/2016 08:47:24	Linear	1/Conc	0.000152	0.000010	0.000000	1.000000	0.999946	0.000015	9.387097	31.290322	OK.	1.000000
Sb 206.833 {463}	10/20/2016 10:29:12	10/18/2016 08:40:16	Linear	1/Conc	-0.000091	0.000026	0.000000	1.000000	0.999965	0.000003	1.749965	5.833217	OK.	1.000000
Sb 217.581 {455}	10/20/2016 10:29:12	10/18/2016 08:40:16	Linear	1/Conc	-0.000022	0.000028	0.000000	1.000000	0.999952	0.000002	1.887165	6.290550	OK.	1.000000
Se 196.090 {472}	10/20/2016 10:29:12	10/18/2016 08:40:16	Linear	1/Conc	0.000009	0.000007	0.000000	1.000000	0.999837	0.000002	4.555603	15.185344	OK.	1.000000
Se 206.279 {463}	10/20/2016 10:29:12	10/18/2016 08:40:16	Curvilin	1/Conc	-0.000019	0.000002	-0.000000	1.000000	0.999998	0.000000	22.326341	74.421137	OK.	1.000000
Se 196.090 {471}	10/20/2016 10:29:12	10/18/2016 08:40:16	Linear	1/Conc	0.000049	0.000008	0.000000	1.000000	0.999921	0.000001	4.491697	14.972323	OK.	1.000000
Tl 190.856 {476}	10/20/2016 10:29:12	10/18/2016 08:40:16	Curvilin	1/Conc	-0.000053	0.000018	-0.000000	1.000000	0.999999	0.000000	2.371531	7.905103	OK.	1.000000

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	Status	Resl Slope
Tl 190.856 {477}	10/20/2016 10:29:12	10/18/2016 08:40:16	Curvilin	1/Var	-0.000016	0.000013	-0.000000	1.000000	0.999951	0.000037	2.840236	9.467452	OK.	1.000000
V 290.882 {116}	10/20/2016 10:29:12	10/18/2016 08:40:16	Linear	1/Conc	0.000010	0.000001	0.000000	1.000000	0.999922	0.000001	1.701152	5.670506	OK.	1.000000
V 292.402 {115}	10/20/2016 10:29:12	10/18/2016 08:40:16	Linear	1/Var	0.000002	0.000007	0.000000	1.000000	0.999450	0.000009	0.572089	1.906964	OK.	1.000000
Zn 206.200 {463}	10/20/2016 10:29:12	10/18/2016 08:47:24	Linear	1/Var	-0.000053	0.000141	0.000000	1.000000	0.999321	0.000310	0.322486	1.074953	OK.	1.000000
Zn 213.856 {458}	10/20/2016 10:29:12	10/18/2016 08:40:16	Linear	1/Var	0.000001	0.000003	0.000000	1.000000	0.999962	0.000001	0.160201	0.534002	OK.	1.000000
Y 324.228 {104}*	10/20/2016 10:29:12	10/18/2016 07:32:01	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000
Y 371.030 { 91}*	10/20/2016 10:29:12	10/18/2016 07:32:01	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000
Y 224.306 {451}*	10/20/2016 10:29:12	10/18/2016 07:32:01	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000
Na 588.995 { 57}	10/20/2016 10:29:12	10/18/2016 08:54:32	Linear	1/Conc	0.001064	0.000003	0.000000	1.000000	0.962764	0.001684	2.641383	8.804611	OK.	1.000000
Si 251.611 {134}	10/20/2016 10:29:12	10/18/2016 08:54:32	Linear	1/Conc	0.000015	0.000000	0.000000	1.000000	0.309825	0.000034	46.453391	154.844635	OK.	1.000000
Ti 334.941 {101}	10/20/2016 10:29:12	10/18/2016 08:40:16	Linear	1/Conc	-0.000000	0.000006	0.000000	1.000000	0.999951	0.000000	0.695056	2.316853	OK.	1.000000
Sr 407.771 { 83}	10/20/2016 10:29:12	10/18/2016 08:40:16	Linear	1/Conc	-0.000057	0.000145	0.000000	1.000000	0.999945	0.000006	0.046690	0.155633	OK.	1.000000
Sn 189.989 {478}	10/20/2016 10:29:12	10/18/2016 08:40:16	Linear	1/Var	0.000046	0.000011	0.000000	1.000000	0.999839	0.000039	2.311154	7.703845	OK.	1.000000
B 249.678 {135}	10/20/2016 10:29:12	10/18/2016 08:40:16	Linear	1/Conc	-0.000000	0.000003	0.000000	1.000000	0.999938	0.000000	1.062723	3.542411	OK.	1.000000
B 249.773 {135}	10/20/2016 10:29:12	10/18/2016 08:40:16	Linear	1/Conc	0.000010	0.000006	0.000000	1.000000	0.999979	0.000001	0.463453	1.544843	OK.	1.000000
Li 670.784 { 50}	10/20/2016 10:29:12	10/18/2016 08:40:16	Linear	1/Var	0.000003	0.000025	0.000000	1.000000	0.999961	0.000017	0.713009	2.376698	OK.	1.000000
K 766.490 { 44}	10/20/2016 10:29:12	10/18/2016 08:54:32	Linear	1/Conc	-0.000015	0.000001	0.000000	1.000000	0.962429	0.000365	23.251906	77.506353	OK.	1.000000
P 213.618 {457}	10/20/2016 10:29:12	10/18/2016 08:54:32	Linear	1/Conc	-0.000002	0.000000	0.000000	1.000000	0.999867	0.000001	16.110684	53.702281	OK.	1.000000
S 182.034 {485}	10/20/2016 10:29:12	10/18/2016 08:54:32	Linear	1/Var	0.000048	0.000006	0.000000	1.000000	0.999998	0.000016	5.723375	19.077918	OK.	1.000000
W 239.709 {140}	10/20/2016 10:29:12	10/18/2016 08:54:32	Linear	1/Conc	-0.000000	0.000000	0.000000	1.000000	0.417818	0.000003	158.973997	529.913325	OK.	1.000000
Hg 184.950 {482}	10/20/2016 10:29:12	10/18/2016 08:33:18	Linear	1/Conc	0.000053	0.000048	0.000000	1.000000	0.999966	0.000007	0.774386	2.581285	OK.	1.000000
Hg 194.227 {473}	10/20/2016 10:29:12	10/18/2016 08:33:18	Linear	1/Conc	-0.000106	0.000039	0.000000	1.000000	0.999946	0.000007	0.903266	3.010888	OK.	1.000000

Element, Wavelength and Order	ope	QC Norm	
	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.000000	1	0
Al 309.271 {109}	0.000000	1	0
Al 396.152 { 85}	0.000000	1	0
Al 167.079 {502}	0.000000	1	0
As 193.759 {474}	0.000000	1	0
As 189.042 {479}	0.000000	1	0
Ba 233.527 {445}	0.000000	1	0
Ba 455.403 { 74}	0.000000	1	0
Ba 493.409 { 68}	0.000000	1	0
Be 313.042 {108}	0.000000	1	0
Be 234.861 {144}	0.000000	1	0
Ca 315.887 {107}	0.000000	1	0
Ca 317.933 {106}	0.000000	1	0
Ca 393.366 { 86}	0.000000	1	0
Ca 396.847 { 85}	0.000000	1	0
Cd 226.502 {449}	0.000000	1	0
Cd 228.802 {447}	0.000000	1	0
Co 228.616 {447}	0.000000	1	0
Co 238.892 {141}	0.000000	1	0
Cr 205.560 {464}	0.000000	1	0
Cr 267.716 {126}	0.000000	1	0
Cu 224.700 {450}	0.000000	1	0
Cu 324.754 {104}	0.000000	1	0
Cu 327.396 {103}	0.000000	1	0
Fe 234.349 {144}	0.000000	1	0
Fe 239.562 {140}	0.000000	1	0
Fe 259.940 {129}	0.000000	1	0
Mg 202.582 {466}	0.000000	1	0
Mg 279.079 {121}	0.000000	1	0
Mg 280.270 {120}	0.000000	1	0
Mn 257.610 {131}	0.000000	1	0
Mn 259.373 {130}	0.000000	1	0
Mo 202.030 {466}	0.000000	1	0
Mo 204.598 {464}	0.000000	1	0
Mo 204.598 {465}	0.000000	1	0
Ni 221.647 {452}	0.000000	1	0
Ni 231.604 {445}	0.000000	1	0
Pb 216.999 {455}	0.000000	1	0
Pb 220.353 {453}	0.000000	1	0
Pb 220.353 {153}	0.000000	1	0
Sb 206.833 {463}	0.000000	1	0
Sb 217.581 {455}	0.000000	1	0
Se 196.090 {472}	0.000000	1	0
Se 206.279 {463}	0.000000	1	0
Se 196.090 {471}	0.000000	1	0
Tl 190.856 {476}	0.000000	1	0

Element, Wavelength and Order	ope	QC Norm	
	Y-int	Slope factor	Offset
Tl 190.856 {477}	0.000000	1	0
V 290.882 {116}	0.000000	1	0
V 292.402 {115}	0.000000	1	0
Zn 206.200 {463}	0.000000	1	0
Zn 213.856 {458}	0.000000	1	0
Y 324.228 {104}*	0.000000	1	0
Y 371.030 { 91}*	0.000000	1	0
Y 224.306 {451}*	0.000000	1	0
Na 588.995 { 57}	0.000000	1	0
Si 251.611 {134}	0.000000	1	0
Ti 334.941 {101}	0.000000	1	0
Sr 407.771 { 83}	0.000000	1	0
Sn 189.989 {478}	0.000000	1	0
B 249.678 {135}	0.000000	1	0
B 249.773 {135}	0.000000	1	0
Li 670.784 { 50}	0.000000	1	0
K 766.490 { 44}	0.000000	1	0
P 213.618 {457}	0.000000	1	0
S 182.034 {485}	0.000000	1	0
W 239.709 {140}	0.000000	1	0
Hg 184.950 {482}	0.000000	1	0
Hg 194.227 {473}	0.000000	1	0

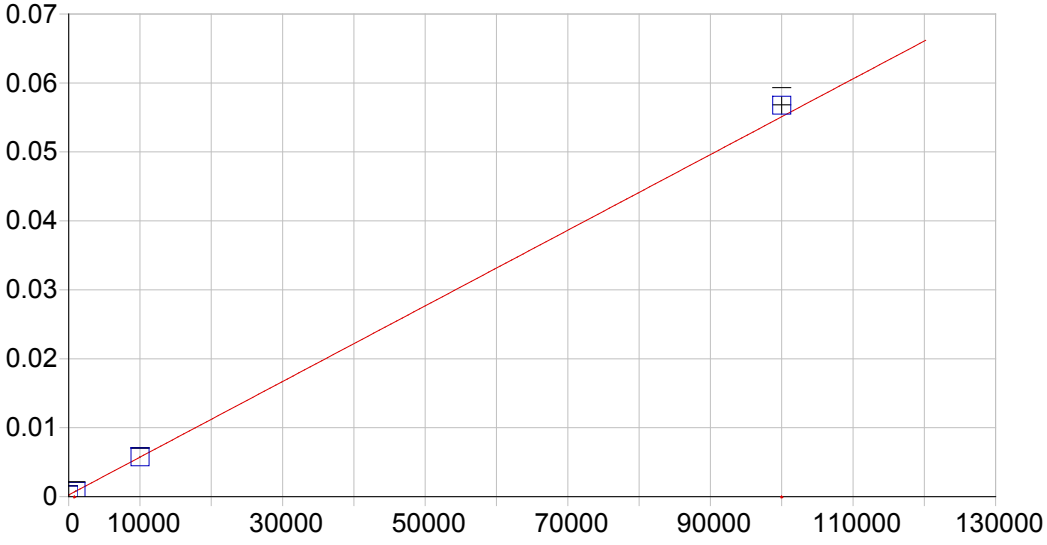


Ag 328.068 {103}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	4.165194	Re-Slope:	1.000000
A1 (Gain):	3.608666	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.996297	Status:	OK.
Std Error of Est:	0.146646		
Predicted MDL:	0.775528		
Predicted MQL:	2.585094		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00005	.000	.000	4.1650	.718	1
CalStd5=10	10.000	7.3794	-2.62	-26.2	30.795	1.35	1
CalStd8=100	100.00	102.33	2.33	2.33	373.43	3.51	1
CalStd3=1	1.0000	1.2927	.293	29.3	8.8300	.464	1

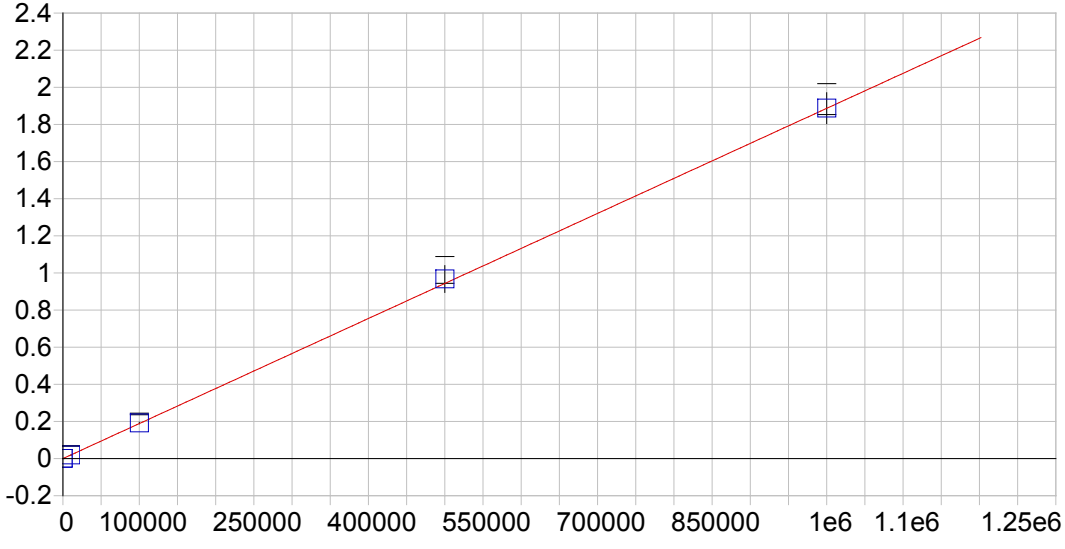


Al 309.271 {109}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Curvilinear	Weighting:	None

A0 (Offset):	0.000248	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000012		
Predicted MDL:	10.533829		
Predicted MQL:	35.112764		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-14.922	-14.9	.000	.00024	.000	1
CalStd10=10	10000.	10028.	28.1	.281	.00575	.000	1
CalStd9=100	1000.0	1017.0	17.0	1.70	.00081	.000	1
CalStd12-100	100000.	103000.	3000.	3.00	.05675	.001	1

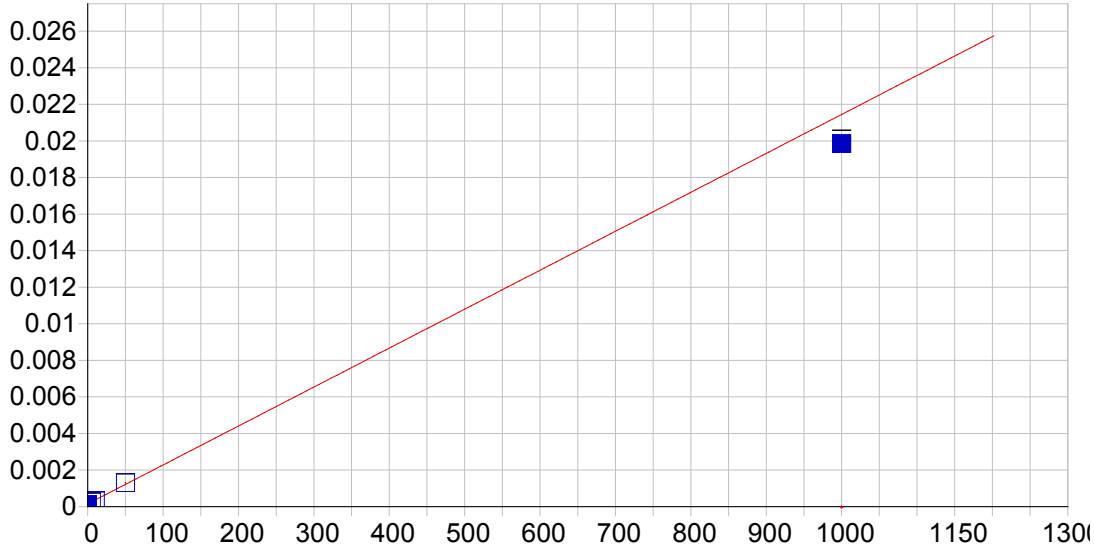


Al 396.152 { 85}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Full Fit	Weighting:	1/Var

A0 (Offset):	-0.000007	Re-Slope:	1.000000
A1 (Gain):	0.000002	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999992	Status:	OK.
Std Error of Est:	0.000005		
Predicted MDL:	4.616014		
Predicted MQL:	15.386712		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00329	.003	.000	-.00001	.000	1
CalStd14-100	1000000.	1000400.	428.	.043	1.8876	.084	1
CalStd13=50	500000.	512580.	12600.	2.52	.96711	.072	1
CalStd10=10	10000.	9991.4	-8.57	-.086	.01884	.000	1
CalStd12-100	100000.	101410.	1410.	1.41	.19133	.004	1
CalStd9=100	1000.0	1007.9	7.89	.789	.00189	.000	1

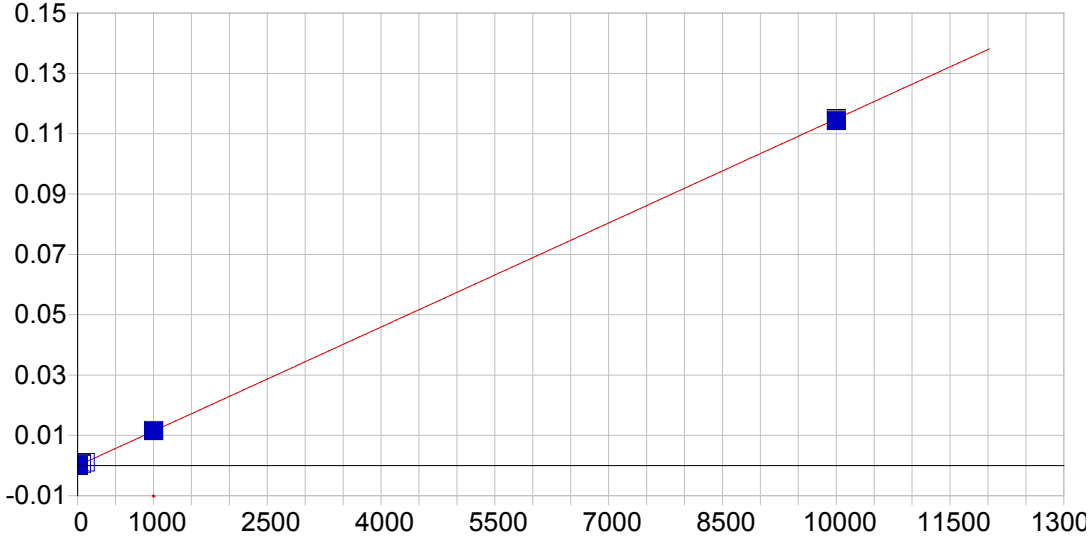


Al 167.079 {502}

Date of Fit: 10/20/2016 10:29:12 Type of Fit: Linear Weighting: 1/Var

A0 (Offset):	0.000149	Re-Slope:	1.000000
A1 (Gain):	0.000021	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.995717	Status:	OK.
Std Error of Est:	0.000079		
Predicted MDL:	0.908653		
Predicted MQL:	3.028843		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-1.3128	-1.31	.000	.00012	.000	1
CalStd9=100	1000.0	924.88	-75.1	-7.51	.01986	.000	1
CalStd5=10	10.000	8.4210	-1.58	-15.8	.00033	.000	1
CalStd4=5	5.0000	5.0103	.010	.207	.00026	.000	1
CalStd7=50	50.000	54.298	4.30	8.60	.00131	.000	1

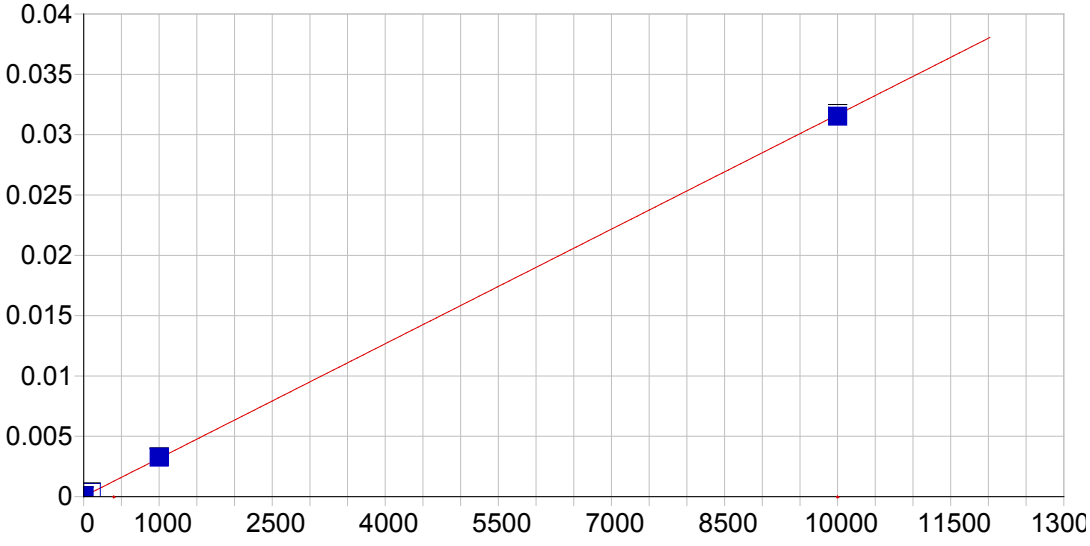


As 193.759 {474}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	-0.000079	Re-Slope:	1.000000
A1 (Gain):	0.000011	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999953	Status:	OK.
Std Error of Est:	0.000031		
Predicted MDL:	3.947607		
Predicted MQL:	13.158691		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-2.7286	-2.73	.000	-.00011	.000	1
CalStd9=100	1000.0	1008.3	8.32	.832	.01153	.000	1
CalStd7=50	50.000	49.399	-.601	-1.20	.00049	.000	1
CalStd5=10	10.000	7.5676	-2.43	-24.3	.00001	.000	1
CalStd8=100	100.00	102.02	2.02	2.02	.00109	.000	1
CalStd10=10	10000.	9944.0	-56.0	-.560	.11437	.001	1

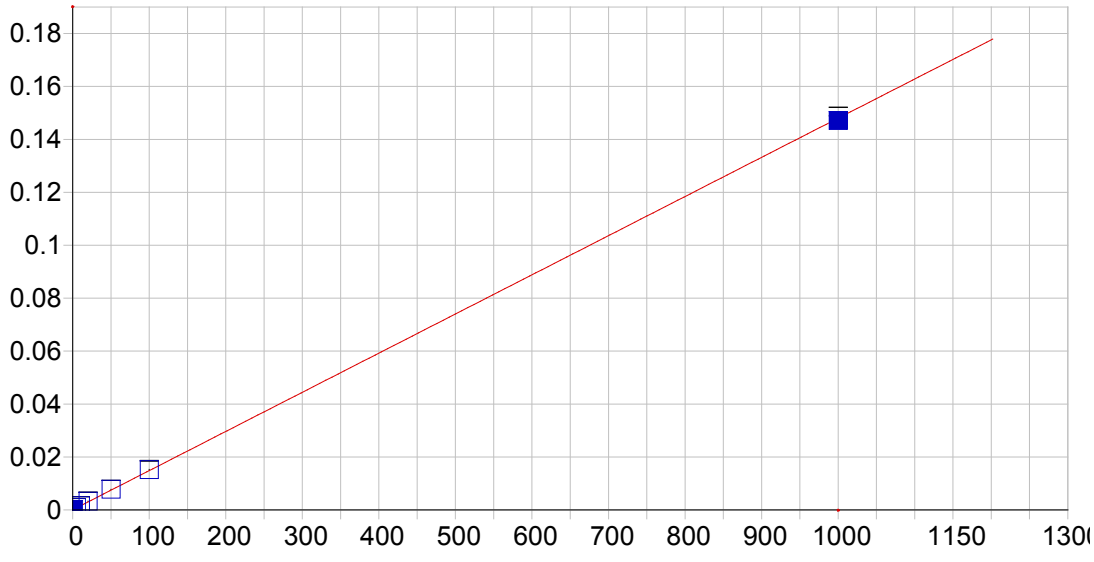


As 189.042 {479}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000014	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999037	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	9.395967		
Predicted MQL:	31.319888		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.01049	-.010	.000	.00001	.000	1
CalStd9=100	1000.0	1025.8	25.8	2.58	.00326	.000	1
CalStd10=10	10000.	9956.0	-44.0	-.440	.03153	.000	1
CalStd8=100	100.00	108.20	8.20	8.20	.00036	.000	1
CalStd4=5	5.0000	14.970	9.97	199.	.00006	.000	1

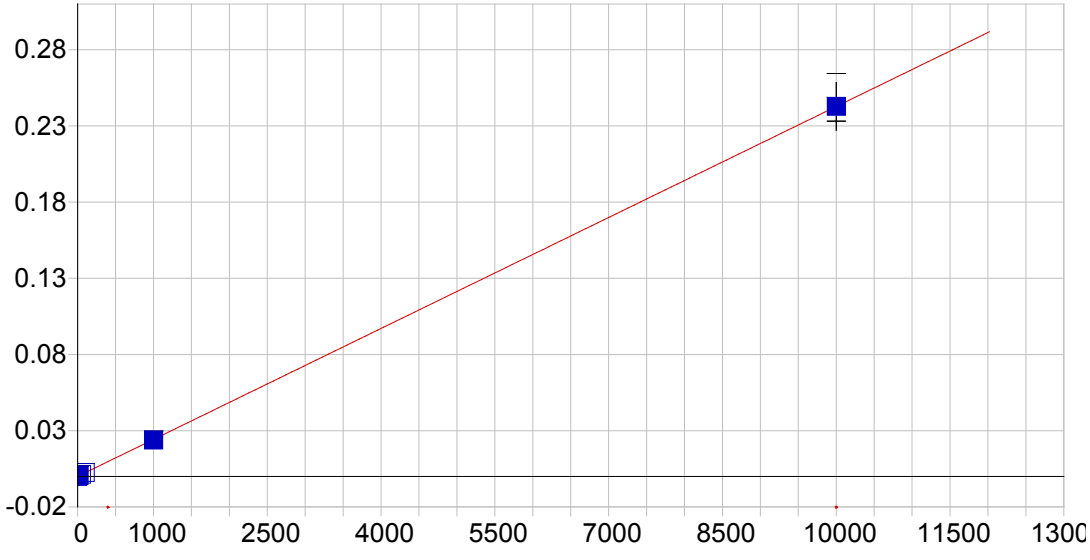


Ba 233.527 {445}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000044	Re-Slope:	1.000000
A1 (Gain):	0.000148	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999857	Status:	OK.
Std Error of Est:	0.000003		
Predicted MDL:	0.219218		
Predicted MQL:	0.730726		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00026	.000	.000	.00004	.000	1
CalStd7=50	50.000	52.055	2.06	4.11	.00775	.000	1
CalStd5=10	10.000	10.095	.095	.951	.00154	.000	1
CalStd6=20	20.000	21.738	1.74	8.69	.00326	.000	1
CalStd8=100	100.00	102.06	2.06	2.06	.01515	.000	1
CalStd4=5	5.0000	5.3062	.306	6.12	.00083	.000	1
CalStd9=100	1000.0	993.70	-6.30	-.630	.14708	.002	1
CalStd3=1	1.0000	1.0426	.043	4.26	.00020	.000	1

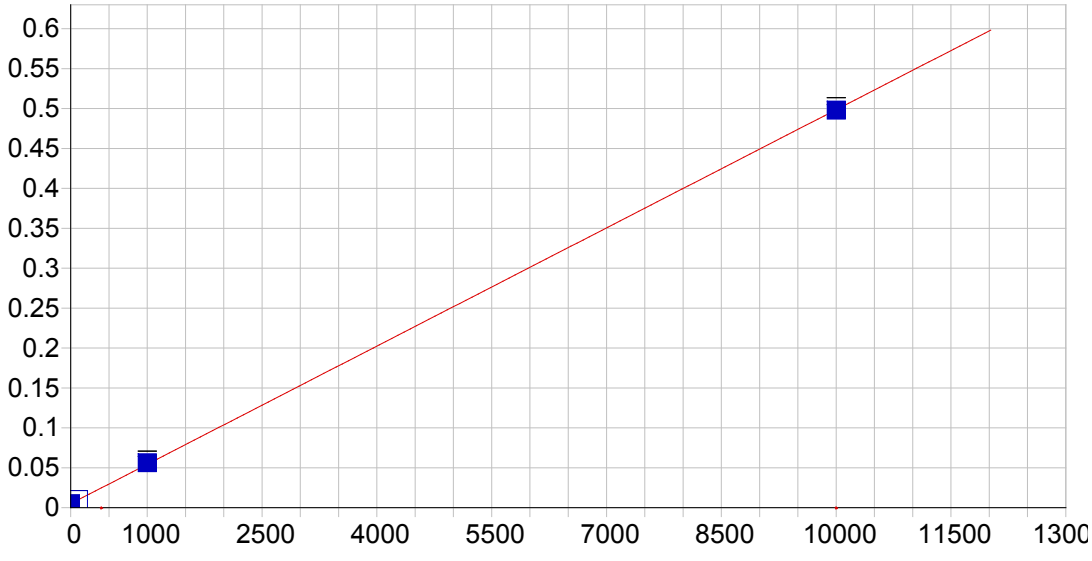


Ba 455.403 { 74}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	None

A0 (Offset):	-0.000007	Re-Slope:	1.000000
A1 (Gain):	0.000024	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999998	Status:	OK.
Std Error of Est:	0.000169		
Predicted MDL:	0.144377		
Predicted MQL:	0.481255		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	1.8831	1.88	.000	.00004	.000	1
CalStd7=50	50.000	53.085	3.08	6.17	.00128	.000	1
CalStd5=10	10.000	11.983	1.98	19.8	.00028	.000	1
CalStd6=20	20.000	23.864	3.86	19.3	.00057	.000	1
CalStd8=100	100.00	100.71	.713	.713	.00244	.000	1
CalStd4=5	5.0000	7.0133	2.01	40.3	.00016	.000	1
CalStd9=100	1000.0	982.78	-17.2	-1.72	.02385	.000	1
CalStd3=1	1.0000	2.9857	1.99	199.	.00007	.000	1
CalStd10=10	10000.	10002.	1.69	.017	.24279	.016	1

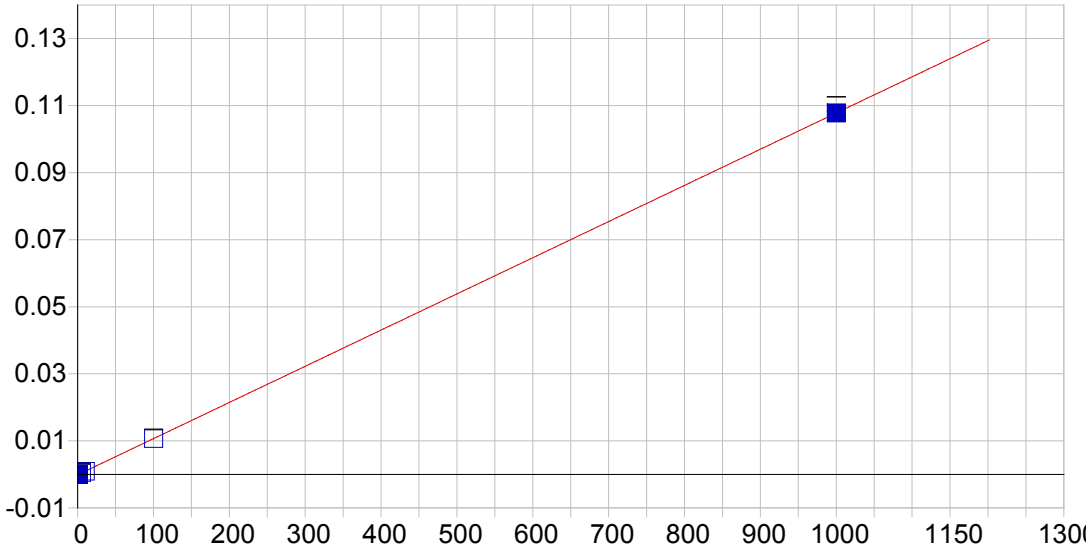


Ba 493.409 { 68}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.004944	Re-Slope:	1.000000
A1 (Gain):	0.000049	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999974	Status:	OK.
Std Error of Est:	0.000161		
Predicted MDL:	0.459255		
Predicted MQL:	1.530850		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-1.6248	-1.62	.000	.00486	.000	1
CalStd9=100	1000.0	1038.0	38.0	3.80	.05619	.003	1
CalStd8=100	100.00	101.64	1.64	1.64	.00996	.000	1
CalStd10=10	10000.	9985.7	-14.3	-.143	.49796	.004	1

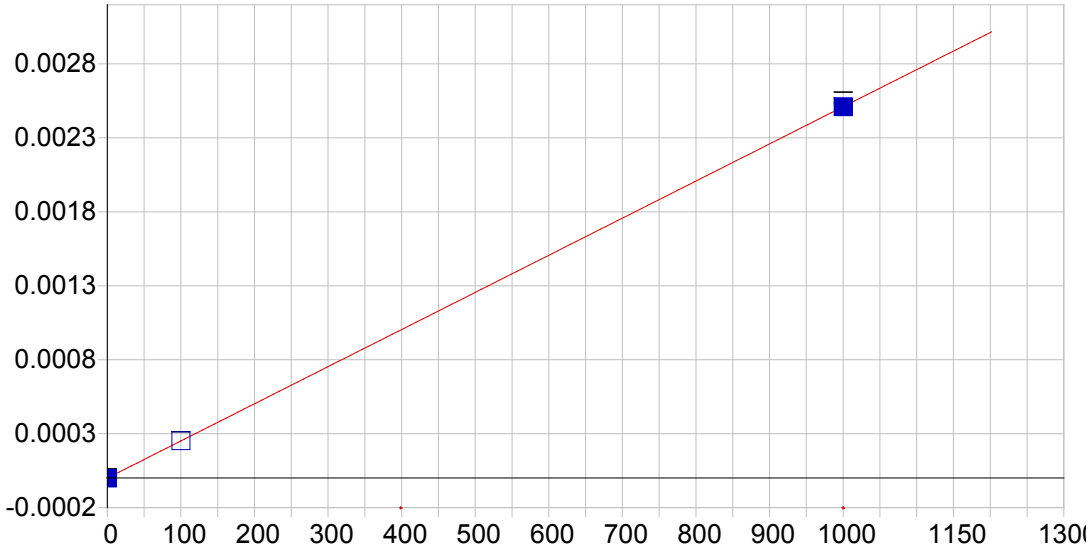


Be 313.042 {108}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000127	Re-Slope:	1.000000
A1 (Gain):	0.000108	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999995	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	0.039584		
Predicted MQL:	0.131946		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00006	.000	.000	-.00013	.000	1
CalStd5=10	10.000	10.021	.021	.211	.00095	.000	1
CalStd8=100	100.00	100.26	.260	.260	.01069	.000	1
CalStd2=0.5	.50000	.44833	-.052	-10.3	-.00008	.000	1
CalStd4=5	5.0000	4.9684	-.032	-.633	.00041	.000	1
CalStd1=0.25	.25000	.22037	-.030	-11.9	-.00010	.000	1
CalStd9=100	1000.0	999.86	-.140	-.014	.10778	.002	1
CalStd3=1	1.0000	.97178	-.028	-2.82	-.00002	.000	1

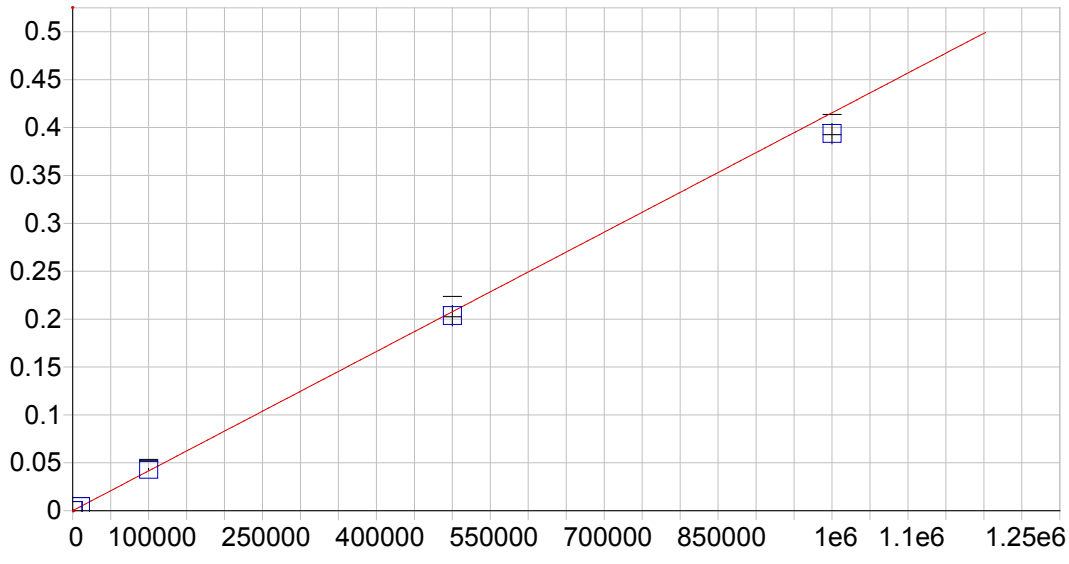


Be 234.861 {144}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	0.285550		
Predicted MQL:	0.951833		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00026	.000	.000	.00000	.000	1
CalStd9=100	1000.0	999.71	-.294	-.029	.00251	.000	1
CalStd8=100	100.00	100.29	.294	.294	.00025	.000	1

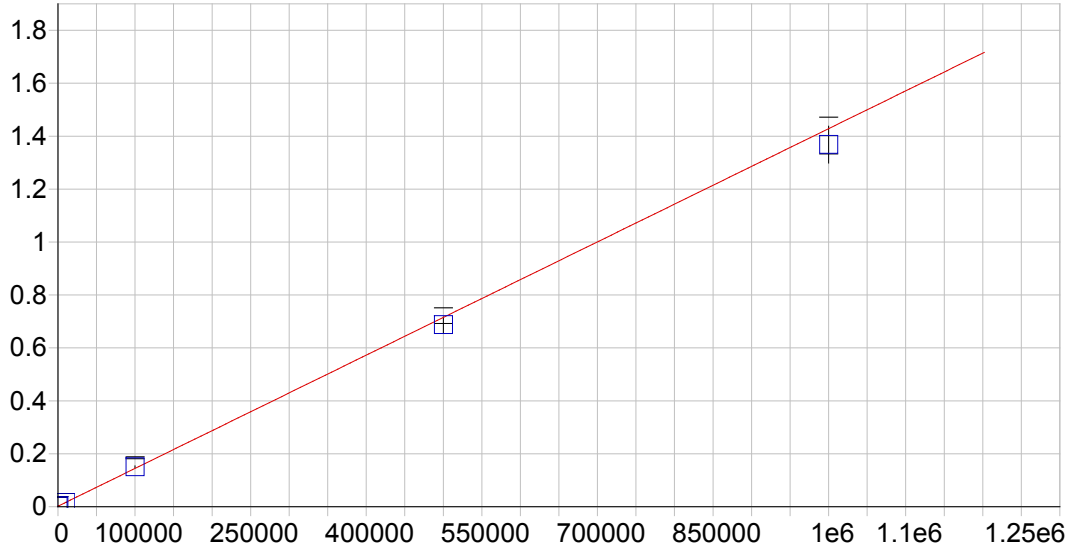


Ca 315.887 {107}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000037	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999905	Status:	OK.
Std Error of Est:	0.000003		
Predicted MDL:	6.011769		
Predicted MQL:	20.039228		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.07089	-.071	.000	.00004	.000	1
CalStd10=10	10000.	10007.	6.77	.068	.00419	.000	1
CalStd13=50	500000.	490170.	-9830.	-1.97	.20364	.011	1
CalStd14-100	1000000.	947710.	-52300.	-5.23	.39368	.011	1
CalStd9=100	1000.0	1038.2	38.2	3.82	.00047	.000	1
CalStd12-100	100000.	103610.	3610.	3.61	.04308	.001	1

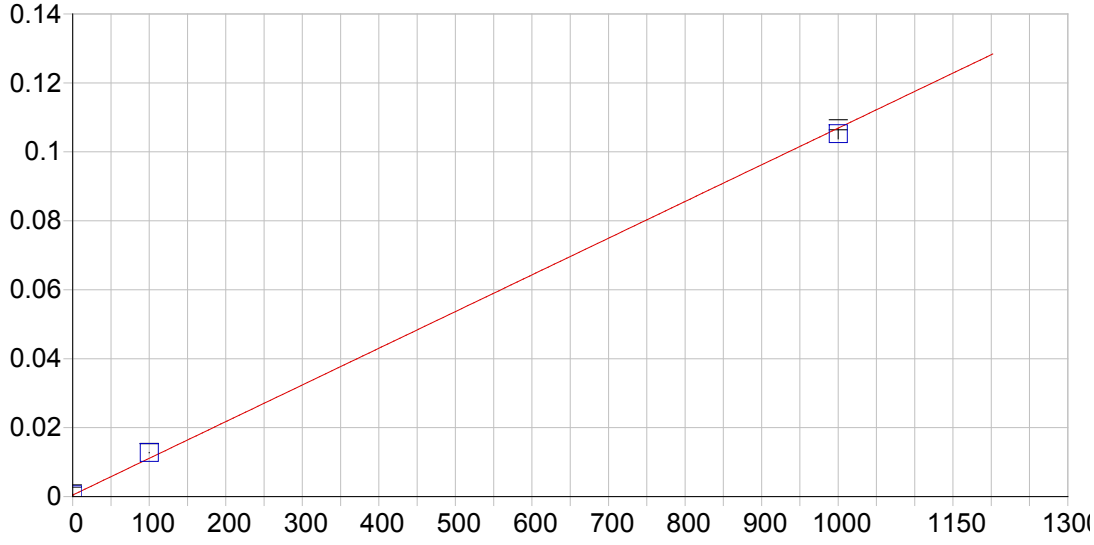


Ca 317.933 {106}

Date of Fit: 10/20/2016 10:29:12 Type of Fit: Curvilinear Weighting: 1/Conc

A0 (Offset):	0.002027	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999889	Status:	OK.
Std Error of Est:	0.000037		
Predicted MDL:	2.097465		
Predicted MQL:	6.991550		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00845	.008	.000	.00203	.000	1
CalStd10=10	10000.	9927.9	-72.1	-.721	.01619	.000	1
CalStd13=50	500000.	480760.	-19200.	-3.85	.68779	.030	1
CalStd14-100	1000000.	957750.	-42300.	-4.23	1.3682	.069	1
CalStd9=100	1000.0	965.91	-34.1	-3.41	.00340	.000	1
CalStd12-100	100000.	103990.	3990.	3.99	.15037	.003	1

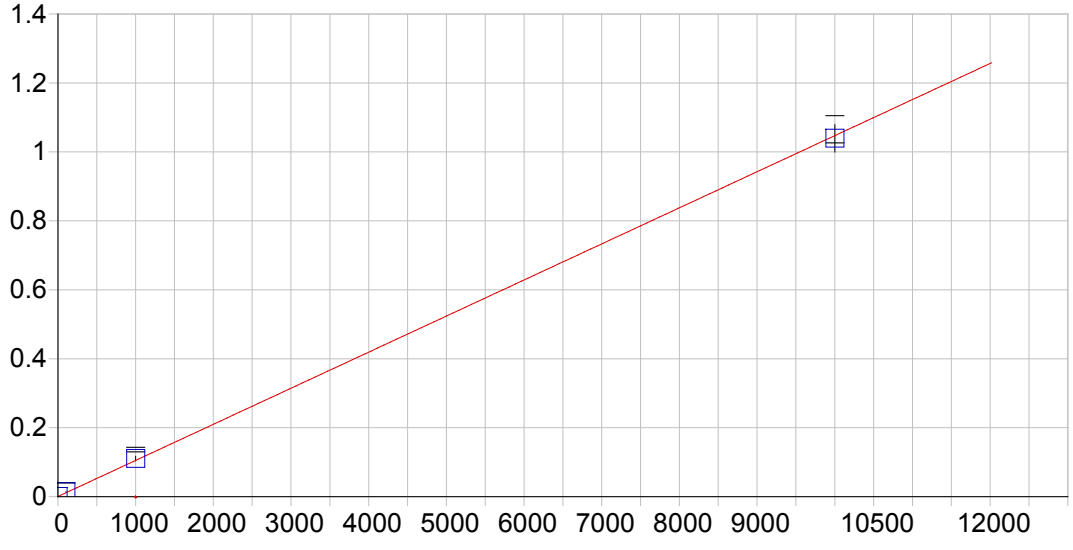


Ca 393.366 { 86}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000451	Re-Slope:	1.000000
A1 (Gain):	0.000106	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998784	Status:	OK.
Std Error of Est:	0.000095		
Predicted MDL:	0.024571		
Predicted MQL:	0.081902		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.01404	-.014	.000	.00045	.000	1
CalStd9=100	1000.0	984.40	-15.6	-1.56	.10523	.001	1
CalStd8=100	100.00	115.60	15.6	15.6	.01275	.000	1

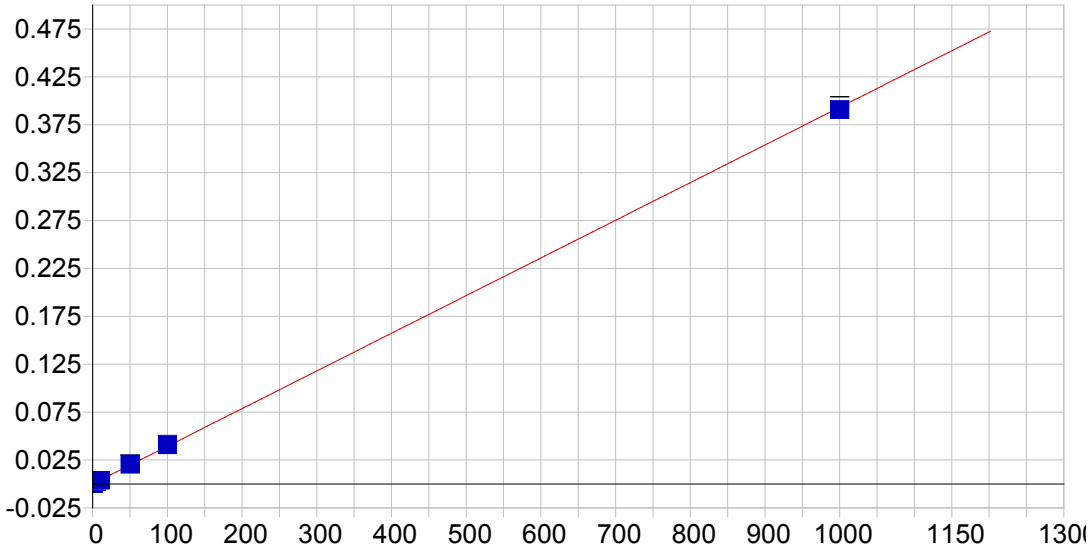


Ca 396.847 { 85}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000475	Re-Slope:	1.000000
A1 (Gain):	0.000105	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999562	Status:	OK.
Std Error of Est:	0.000146		
Predicted MDL:	0.058747		
Predicted MQL:	0.195822		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.03004	-.030	.000	.00047	.000	1
CalStd10=10	10000.	9924.3	-75.7	-.757	1.0393	.040	1
CalStd8=100	100.00	125.80	25.8	25.8	.01364	.000	1
CalStd9=100	1000.0	1049.9	49.9	4.99	.11037	.007	1

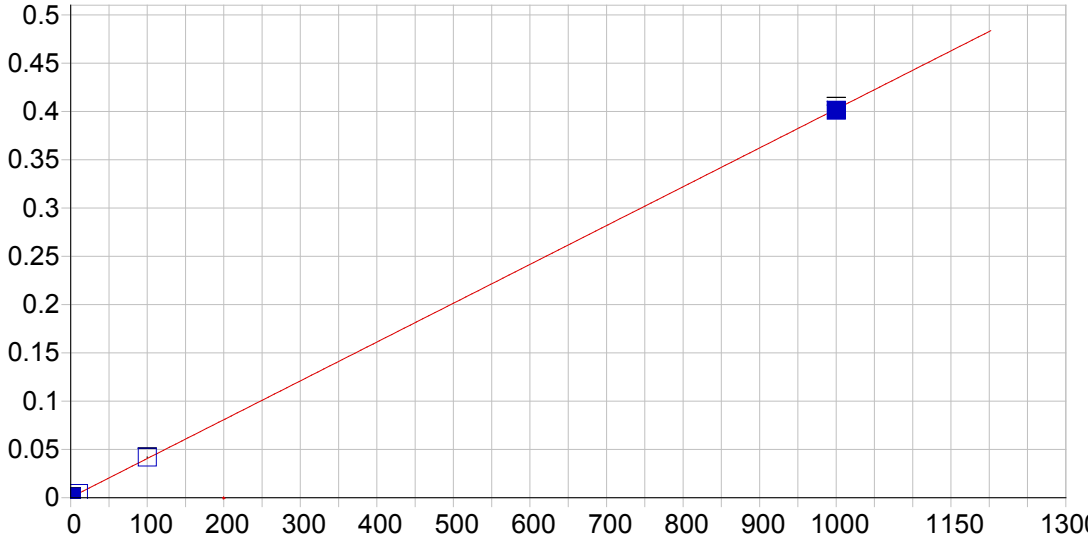


Cd 226.502 {449}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000003	Re-Slope:	1.000000
A1 (Gain):	0.000393	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999855	Status:	OK.
Std Error of Est:	0.000006		
Predicted MDL:	0.143116		
Predicted MQL:	0.477052		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00015	.000	.000	.00000	.000	1
CalStd7=50	50.000	52.311	2.31	4.62	.02057	.000	1
CalStd3=1	1.0000	1.1859	.186	18.6	.00047	.000	1
CalStd2=0.5	.50000	.49824	-.002	-.353	.00020	.000	1
CalStd4=5	5.0000	5.2044	.204	4.09	.00205	.000	1
CalStd8=100	100.00	103.81	3.81	3.81	.04083	.000	1
CalStd5=10	10.000	10.021	.021	.213	.00394	.000	1
CalStd9=100	1000.0	993.47	-6.53	-.653	.39077	.004	1

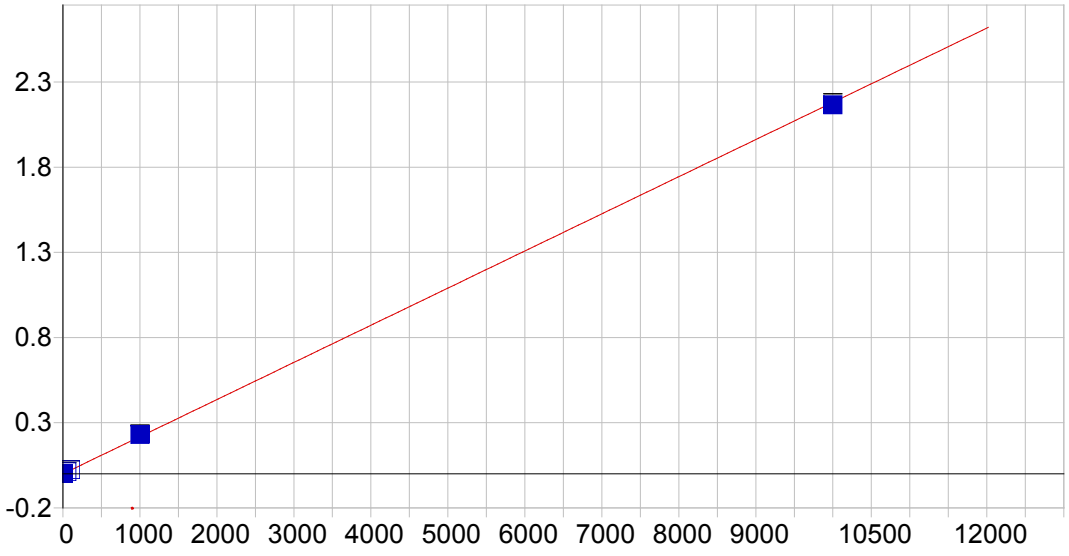


Cd 228.802 {447}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000344	Re-Slope:	1.000000
A1 (Gain):	0.000402	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999938	Status:	OK.
Std Error of Est:	0.000004		
Predicted MDL:	0.176066		
Predicted MQL:	0.586887		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00009	.000	.000	.00034	.000	1
CalStd9=100	1000.0	996.98	-3.02	-.302	.40115	.004	1
CalStd8=100	100.00	103.35	3.35	3.35	.04190	.000	1
CalStd2=0.5	.50000	.44973	-.050	-10.1	.00052	.000	1
CalStd3=1	1.0000	.91537	-.085	-8.46	.00071	.000	1
CalStd5=10	10.000	9.8020	-.198	-1.98	.00428	.000	1

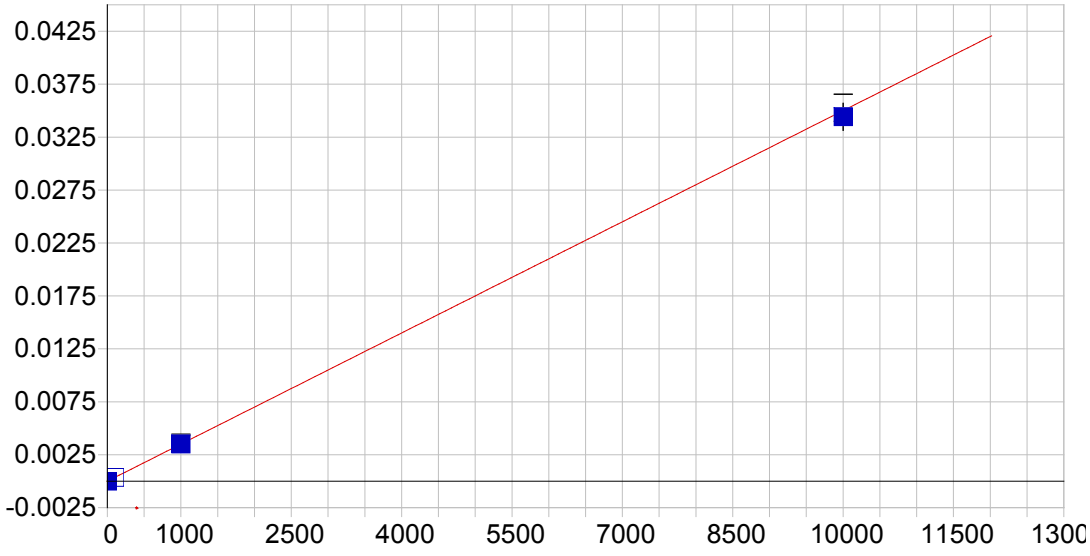


Co 228.616 {447}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000166	Re-Slope:	1.000000
A1 (Gain):	0.000218	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999793	Status:	OK.
Std Error of Est:	0.000017		
Predicted MDL:	0.292627		
Predicted MQL:	0.975423		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00058	-.001	.000	-.00017	.000	1
CalStd7=50	50.000	54.356	4.36	8.71	.01169	.000	1
CalStd5=10	10.000	10.438	.438	4.38	.00211	.000	1
CalStd4=5	5.0000	5.2850	.285	5.70	.00099	.000	1
CalStd8=100	100.00	106.65	6.65	6.65	.02309	.000	1
CalStd9=100	1000.0	1056.8	56.8	5.68	.23027	.002	1
CalStd3=1	1.0000	1.2737	.274	27.4	.00011	.000	1
CalStd10=10	10000.	9931.2	-68.8	-.688	2.1653	.012	1

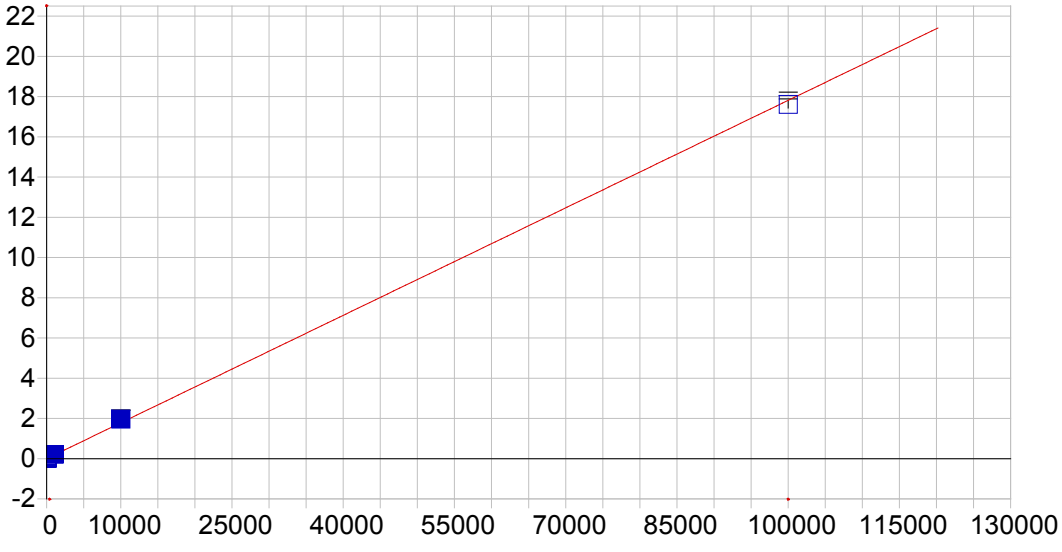


Co 238.892 {141}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000004	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999988	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	0.642219		
Predicted MQL:	2.140731		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.01613	-.016	.000	.00000	.000	1
CalStd9=100	1000.0	1002.3	2.31	.231	.00351	.000	1
CalStd10=10	10000.	9833.8	-166.	-1.66	.03443	.001	1
CalStd8=100	100.00	100.09	.093	.093	.00035	.000	1

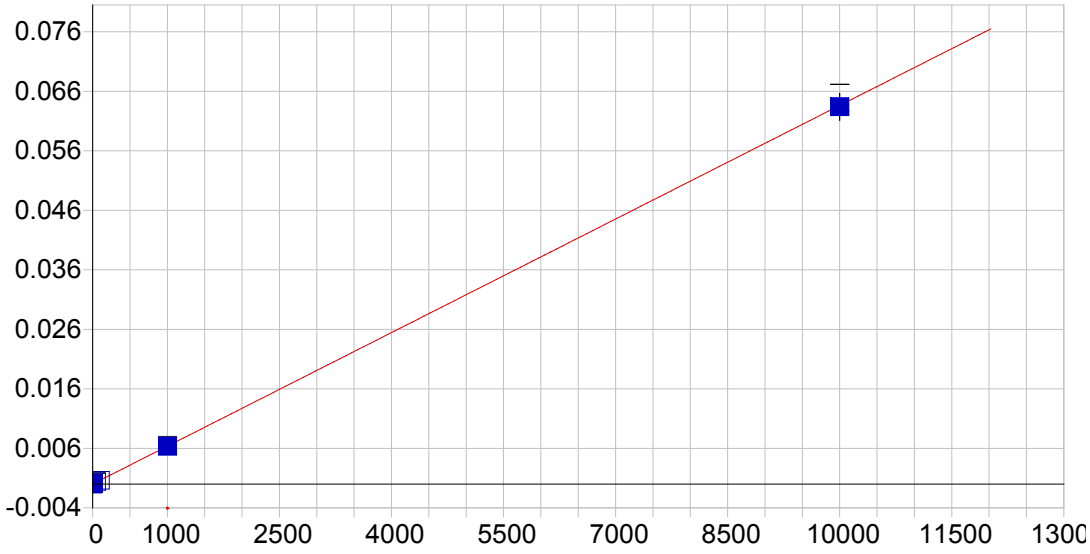


Cr 205.560 {464}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000095	Re-Slope:	1.000000
A1 (Gain):	0.000178	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999356	Status:	OK.
Std Error of Est:	0.000076		
Predicted MDL:	0.219814		
Predicted MQL:	0.732713		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00159	-.002	.000	-.00010	.000	1
CalStd5=10	10.000	11.661	1.66	16.6	.00198	.000	1
CalStd7=50	50.000	60.359	10.4	20.7	.01066	.000	1
CalStd9=100	1000.0	1159.7	160.	16.0	.20647	.002	1
CalStd8=100	100.00	118.05	18.0	18.0	.02093	.000	1
CalStd4=5	5.0000	6.0481	1.05	21.0	.00098	.000	1
CalStd3=1	1.0000	1.5806	.581	58.1	.00019	.000	1
CalStd11-100	100000.	98820.	-1180.	-1.18	17.601	.171	1
CalStd10=10	10000.	10988.	988.	9.88	1.9571	.010	1

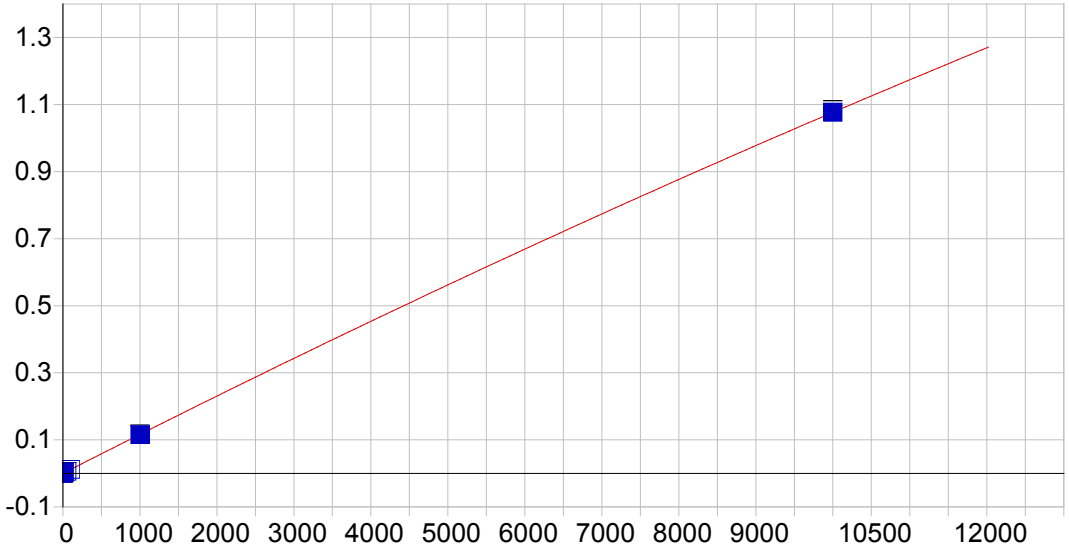


Cr 267.716 {126}

Date of Fit: 10/20/2016 10:29:12 Type of Fit: Linear Weighting: 1/Var

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000006	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999964	Status:	OK.
Std Error of Est:	0.000002		
Predicted MDL:	0.480889		
Predicted MQL:	1.602962		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.30205	-.302	.000	.00000	.000	1
CalStd5=10	10.000	9.8610	-.139	-1.39	.00006	.000	1
CalStd7=50	50.000	51.977	1.98	3.95	.00033	.000	1
CalStd9=100	1000.0	996.67	-3.33	-.333	.00634	.000	1
CalStd8=100	100.00	99.919	-.081	-.081	.00064	.000	1
CalStd4=5	5.0000	5.0825	.082	1.65	.00003	.000	1
CalStd10=10	10000.	9966.3	-33.7	-.337	.06340	.002	1

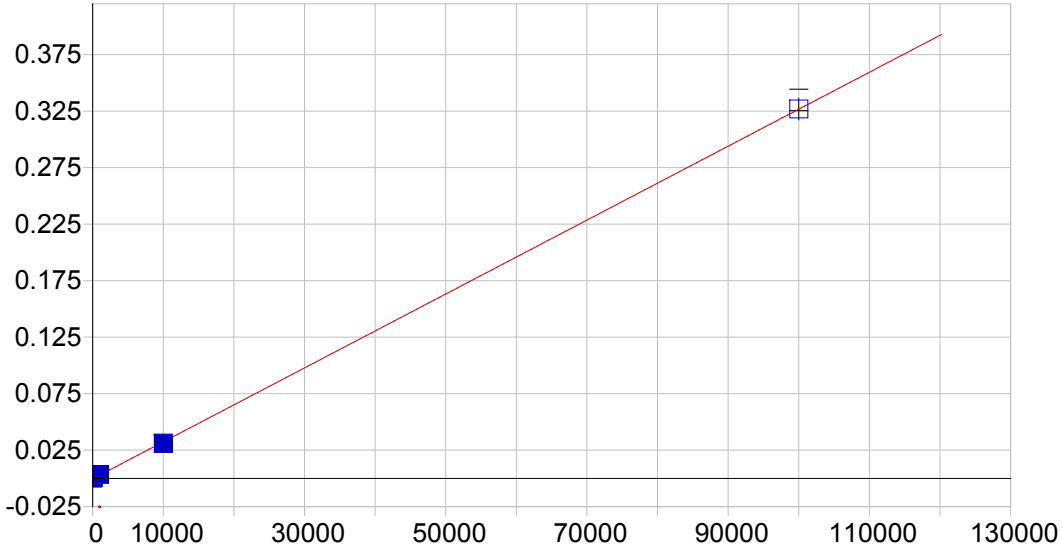


Cu 224.700 {450}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Curvilinear	Weighting:	1/Conc

A0 (Offset):	-0.000112	Re-Slope:	1.000000
A1 (Gain):	0.000117	Y-int:	0.000000
A2 (Curvature):	-0.000000		
n (Exponent):	1.000000		
Correlation:	0.999954	Status:	OK.
Std Error of Est:	0.000004		
Predicted MDL:	0.489915		
Predicted MQL:	1.633051		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00097	-.001	.000	-.00011	.000	1
CalStd9=100	1000.0	993.86	-6.14	-.614	.11550	.001	1
CalStd7=50	50.000	51.676	1.68	3.35	.00594	.000	1
CalStd8=100	100.00	100.86	.859	.859	.01170	.000	1
CalStd5=10	10.000	10.291	.291	2.91	.00109	.000	1
CalStd10=10	10000.	10001.	.696	.007	1.0773	.008	1
CalStd4=5	5.0000	5.1190	.119	2.38	.00049	.000	1
CalStd6=20	20.000	21.719	1.72	8.60	.00243	.000	1
CalStd3=1	1.0000	1.7962	.796	79.6	.00010	.000	1

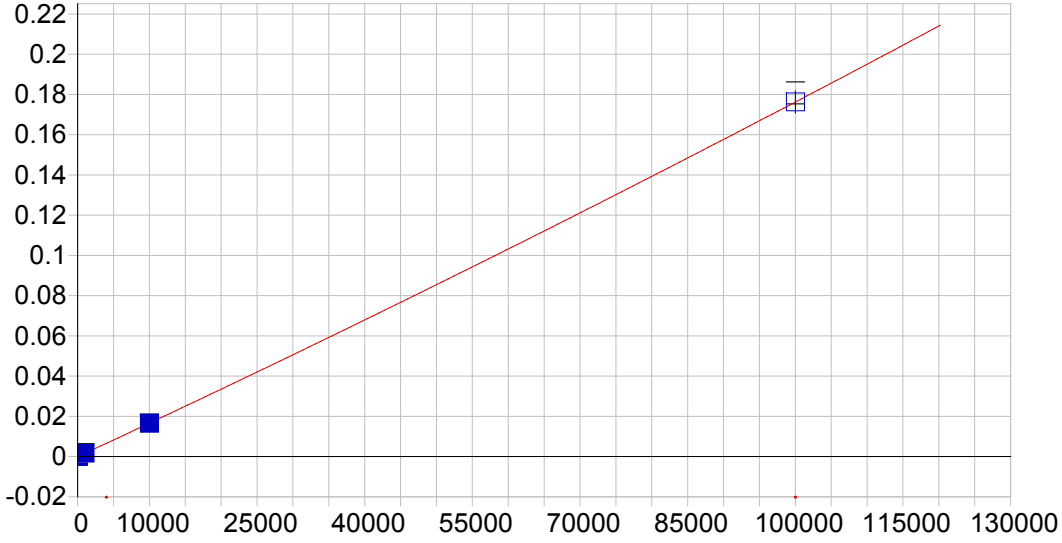


Cu 324.754 {104}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	None

A0 (Offset):	-0.000377	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999978	Status:	OK.
Std Error of Est:	0.001085		
Predicted MDL:	1.412040		
Predicted MQL:	4.706800		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	162.68	163.	.000	.00016	.000	1
CalStd9=100	1000.0	1138.0	138.	13.8	.00335	.000	1
CalStd8=100	100.00	257.42	157.	157.	.00047	.000	1
CalStd10=10	10000.	9492.7	-507.	-5.07	.03067	.000	1
CalStd11-100	100000.	100050.	49.2	.049	.32685	.010	1

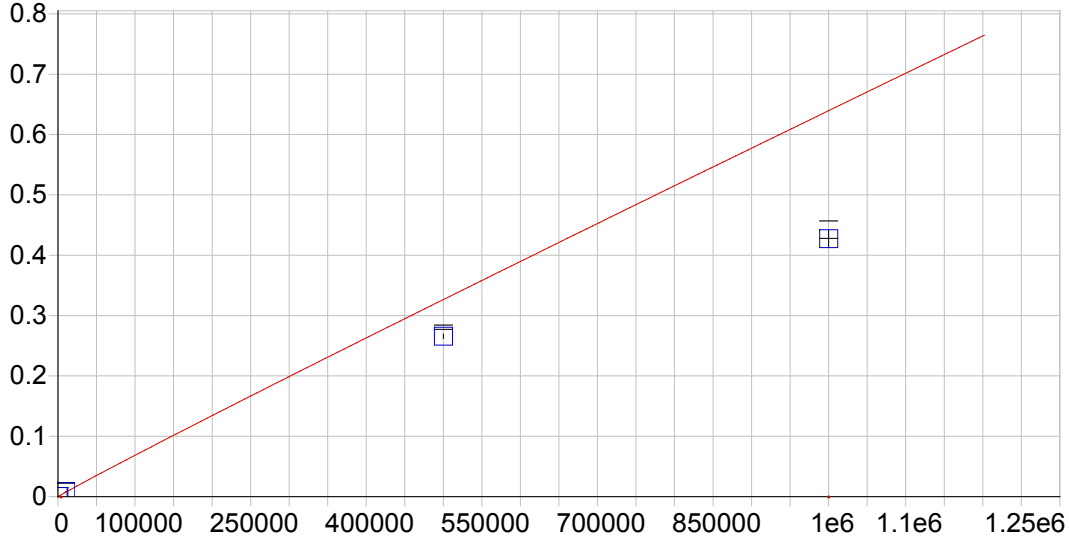


Cu 327.396 {103}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Curvilinear	Weighting:	1/Conc

A0 (Offset):	-0.000053	Re-Slope:	1.000000
A1 (Gain):	0.000002	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999977	Status:	Warning Positive Curvature
Std Error of Est:	0.000001		
Predicted MDL:	3.480789		
Predicted MQL:	11.602631		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00867	-.009	.000	-.00005	.000	1
CalStd6=20	20.000	22.900	2.90	14.5	-.00001	.000	1
CalStd7=50	50.000	59.146	9.15	18.3	.00005	.000	1
CalStd8=100	100.00	106.10	6.10	6.10	.00012	.000	1
CalStd9=100	1000.0	1052.4	52.4	5.24	.00169	.000	1
CalStd10=10	10000.	9923.1	-76.9	-.769	.01650	.000	1
CalStd11-100	100000.	100010.	6.43	.006	.17627	.005	1

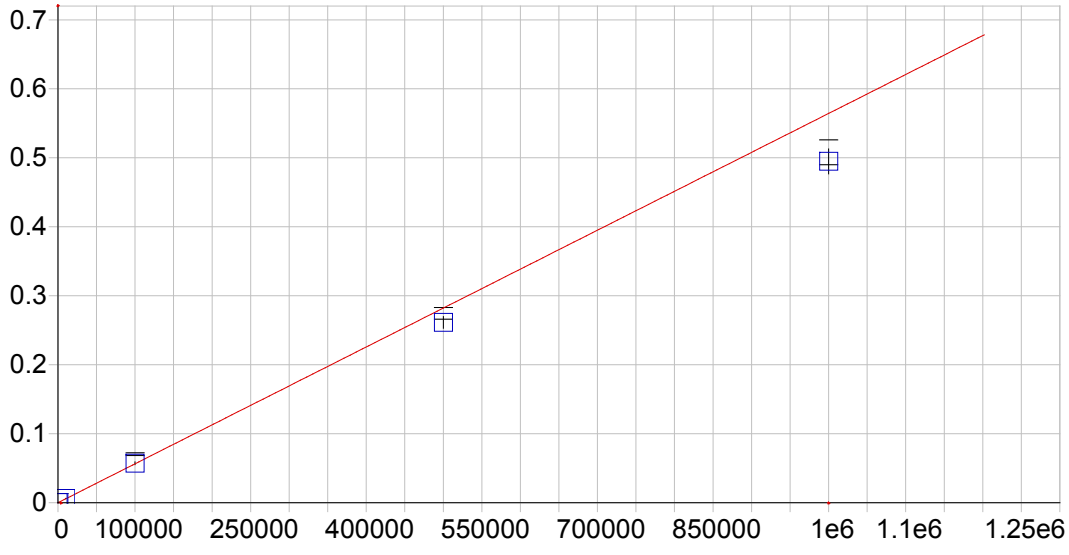


Fe 234.349 {144}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Full Fit	Weighting:	1/Var

A0 (Offset):	0.000032	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	0.970000		
Correlation:	0.999813	Status:	OK.
Std Error of Est:	0.000003		
Predicted MDL:	1.063387		
Predicted MQL:	3.544624		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00242	.002	.000	.00003	.000	1
CalStd10=10	10000.	10590.	590.	5.90	.00780	.000	1
CalStd13=50	500000.	404280.	-95700.	-19.1	.26573	.004	1
CalStd14-100	1000000.	659750.	-340000.	-34.0	.42730	.014	1
CalStd9=100	1000.0	996.08	-3.92	-.392	.00082	.000	1

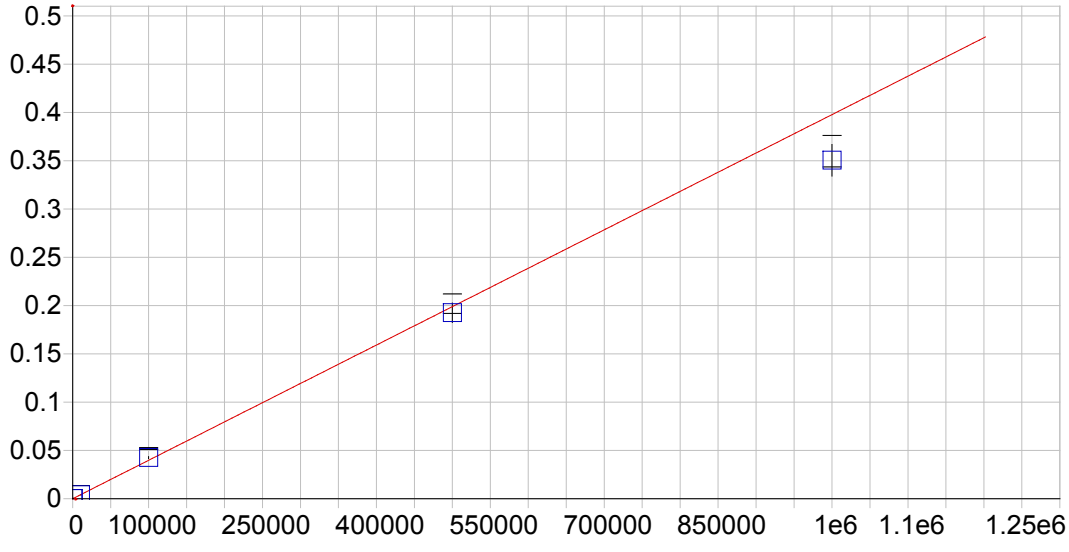


Fe 239.562 {140}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Curvilinear	Weighting:	1/Conc

A0 (Offset):	0.000004	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999941	Status:	OK.
Std Error of Est:	0.000010		
Predicted MDL:	1.862406		
Predicted MQL:	6.208020		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.07820	-.078	.000	.00000	.000	1
CalStd10=10	10000.	10464.	464.	4.64	.00591	.000	1
CalStd13=50	500000.	463080.	-36900.	-7.38	.26132	.008	1
CalStd14-100	1000000.	876950.	-123000.	-12.3	.49488	.018	1
CalStd9=100	1000.0	1013.6	13.6	1.36	.00058	.000	1
CalStd12-100	100000.	101280.	1280.	1.28	.05716	.002	1

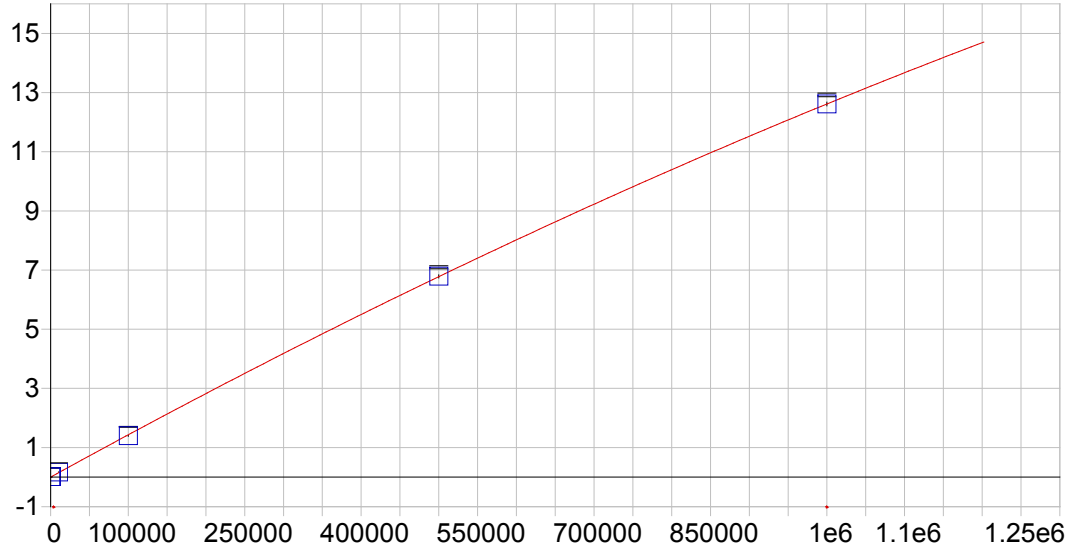


Fe 259.940 {129}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Curvilinear	Weighting:	1/Var

A0 (Offset):	0.000002	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999848	Status:	OK.
Std Error of Est:	0.000008		
Predicted MDL:	7.516926		
Predicted MQL:	25.056420		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.16981	.170	.000	.00000	.000	1
CalStd10=10	10000.	9955.8	-44.2	-.442	.00396	.000	1
CalStd13=50	500000.	483970.	-16000.	-3.21	.19250	.010	1
CalStd14-100	1000000.	881070.	-119000.	-11.9	.35045	.016	1
CalStd9=100	1000.0	1013.7	13.7	1.37	.00041	.000	1
CalStd12-100	100000.	107160.	7160.	7.16	.04263	.001	1

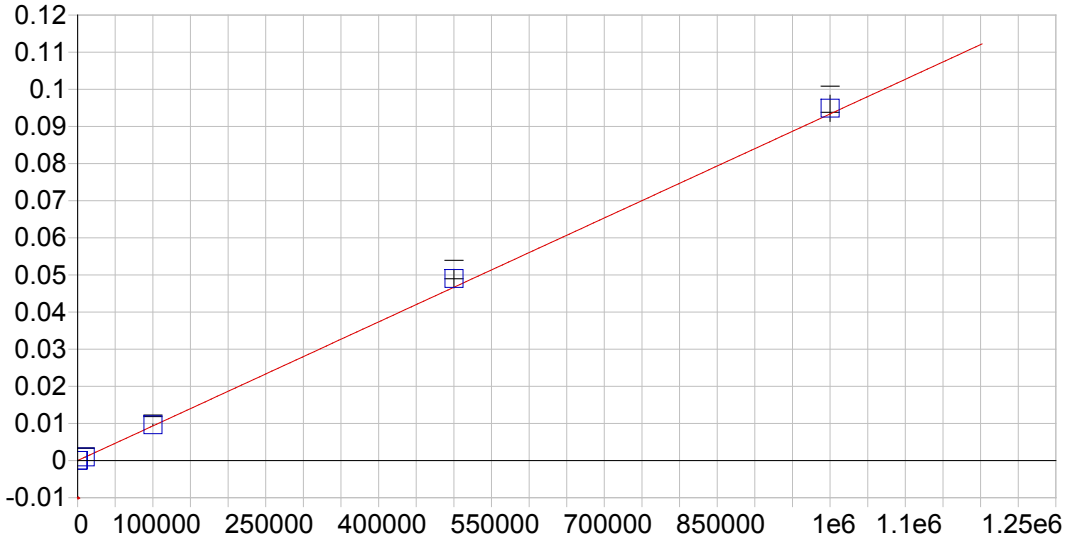


Mg 202.582 {466}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Curvilinear	Weighting:	1/Conc

A0 (Offset):	-0.000139	Re-Slope:	1.000000
A1 (Gain):	0.000014	Y-int:	0.000000
A2 (Curvature):	-0.000000		
n (Exponent):	1.000000		
Correlation:	0.999845	Status:	OK.
Std Error of Est:	0.000412		
Predicted MDL:	2.935896		
Predicted MQL:	9.786321		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.17419	-.174	.000	-.00014	.000	1
CalStd13=50	500000.	500760.	763.	.153	6.7871	.049	1
CalStd10=10	10000.	11860.	1860.	18.6	.17150	.001	1
CalStd14-100	1000000.	999850.	-146.	-.015	12.614	.060	1
CalStd12-100	100000.	97514.	-2490.	-2.49	1.3954	.013	1
CalStd9=100	1000.0	1011.7	11.7	1.17	.01452	.000	1

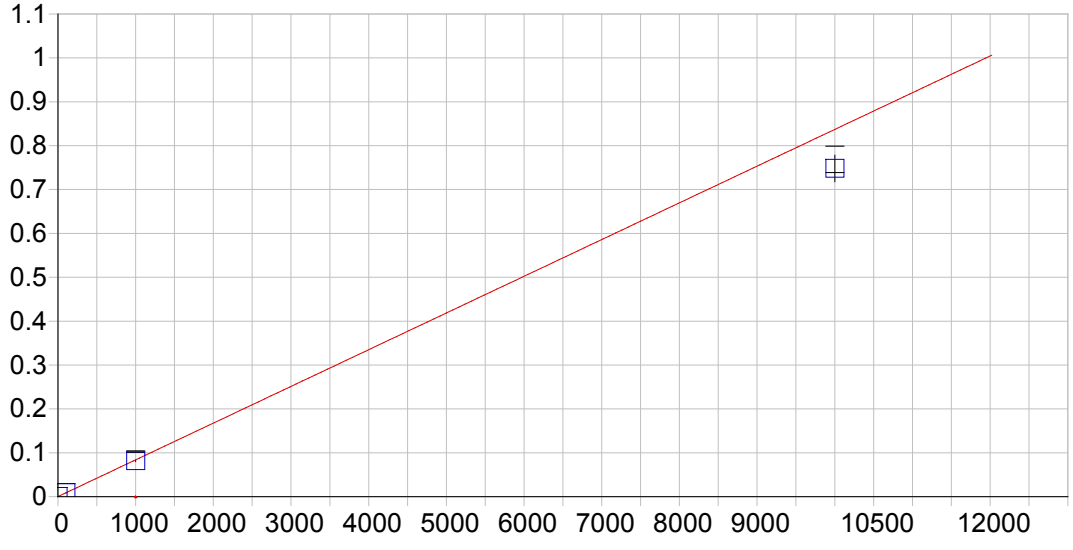


Mg 279.079 {121}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Curvilinear	Weighting:	1/Var

A0 (Offset):	-0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999838	Status:	OK.
Std Error of Est:	0.000002		
Predicted MDL:	16.389902		
Predicted MQL:	54.633005		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00708	-.007	.000	.00000	.000	1
CalStd13=50	500000.	524920.	24900.	4.98	.04901	.003	1
CalStd10=10	10000.	9892.9	-107.	-1.07	.00092	.000	1
CalStd14-100	1000000.	1016300.	16300.	1.63	.09489	.004	1
CalStd12-100	100000.	103070.	3070.	3.07	.00962	.000	1
CalStd9=100	1000.0	1021.7	21.7	2.17	.00009	.000	1

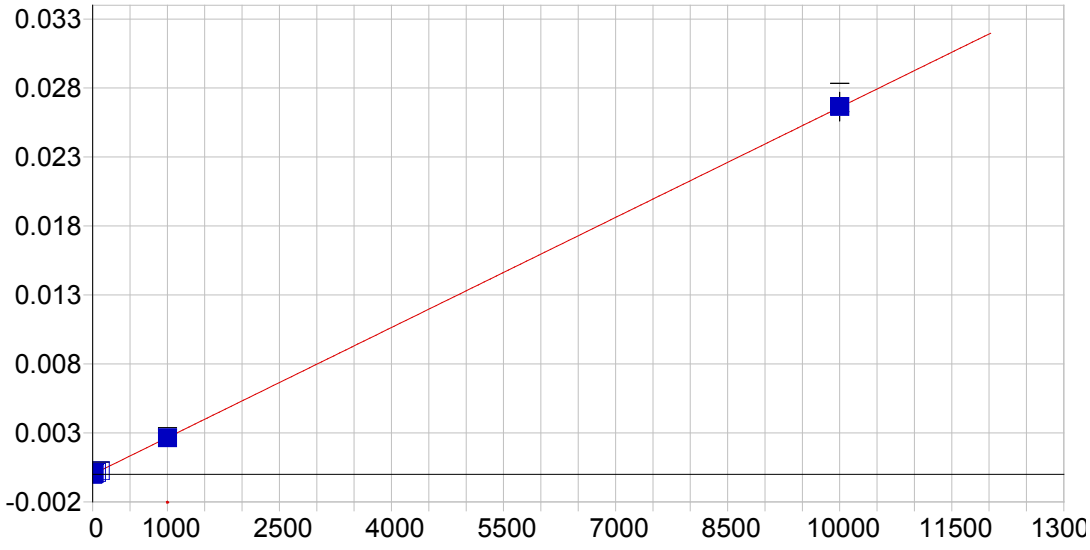


Mg 280.270 {120}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000229	Re-Slope:	1.000000
A1 (Gain):	0.000084	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999473	Status:	OK.
Std Error of Est:	0.000014		
Predicted MDL:	0.023525		
Predicted MQL:	0.078417		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00149	-.001	.000	.00023	.000	1
CalStd9=100	1000.0	975.60	-24.4	-2.44	.08186	.002	1
CalStd10=10	10000.	8938.4	-1060.	-10.6	.74817	.030	1
CalStd8=100	100.00	101.78	1.78	1.78	.00875	.000	1

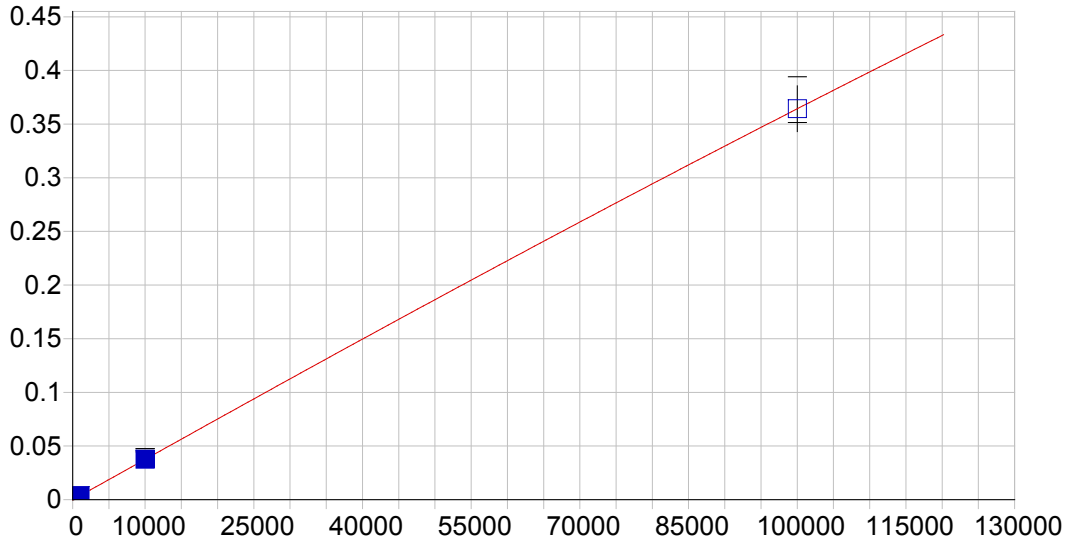


Mn 257.610 {131}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999928	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	0.571573		
Predicted MQL:	1.905244		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00181	.002	.000	.00000	.000	1
CalStd5=10	10.000	9.5353	-.465	-4.65	.00003	.000	1
CalStd7=50	50.000	47.816	-2.18	-4.37	.00013	.000	1
CalStd6=20	20.000	20.082	.082	.411	.00005	.000	1
CalStd8=100	100.00	88.569	-11.4	-11.4	.00024	.000	1
CalStd4=5	5.0000	4.2132	-.787	-15.7	.00001	.000	1
CalStd9=100	1000.0	994.64	-5.36	-.536	.00265	.000	1
CalStd10=10	10000.	10020.	20.1	.201	.02666	.001	1

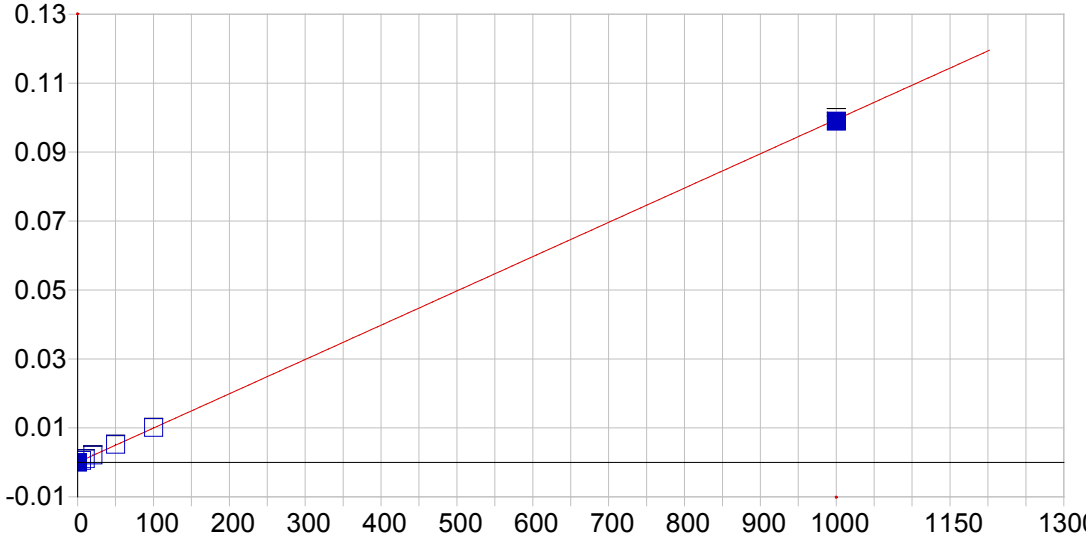


Mn 259.373 {130}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Full Fit	Weighting:	1/Conc

A0 (Offset):	0.000001	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	-0.000000		
n (Exponent):	1.010000		
Correlation:	1.000000	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	0.347967		
Predicted MQL:	1.159891		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00074	.001	.000	.00000	.000	1
CalStd10=10	10000.	10001.	.750	.008	.03758	.001	1
CalStd11-100	100000.	100000.	-.071	.000	.36428	.021	1
CalStd9=100	1000.0	999.29	-.709	-.071	.00369	.000	1

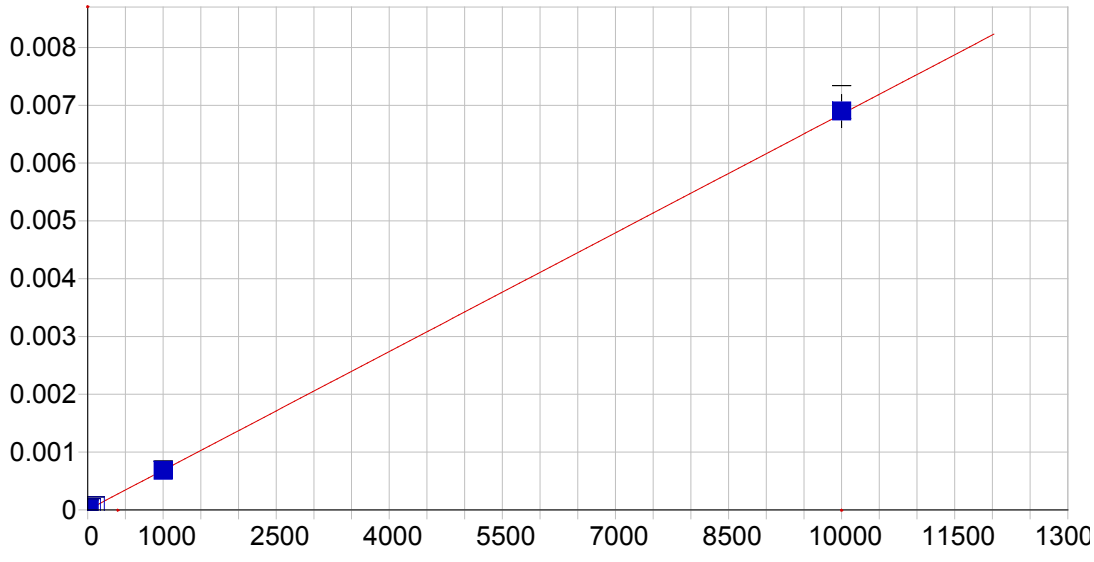


Mo 202.030 {466}

Date of Fit: 10/20/2016 10:29:12 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset):	0.000008	Re-Slope:	1.000000
A1 (Gain):	0.000099	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999899	Status:	OK.
Std Error of Est:	0.000004		
Predicted MDL:	0.361269		
Predicted MQL:	1.204229		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00091	-.001	.000	.00001	.000	1
CalStd7=50	50.000	52.136	2.14	4.27	.00519	.000	1
CalStd6=20	20.000	21.300	1.30	6.50	.00213	.000	1
CalStd5=10	10.000	10.156	.156	1.56	.00102	.000	1
CalStd8=100	100.00	101.45	1.45	1.45	.01010	.000	1
CalStd4=5	5.0000	5.2492	.249	4.98	.00053	.000	1
CalStd9=100	1000.0	994.71	-5.29	-.529	.09892	.001	1

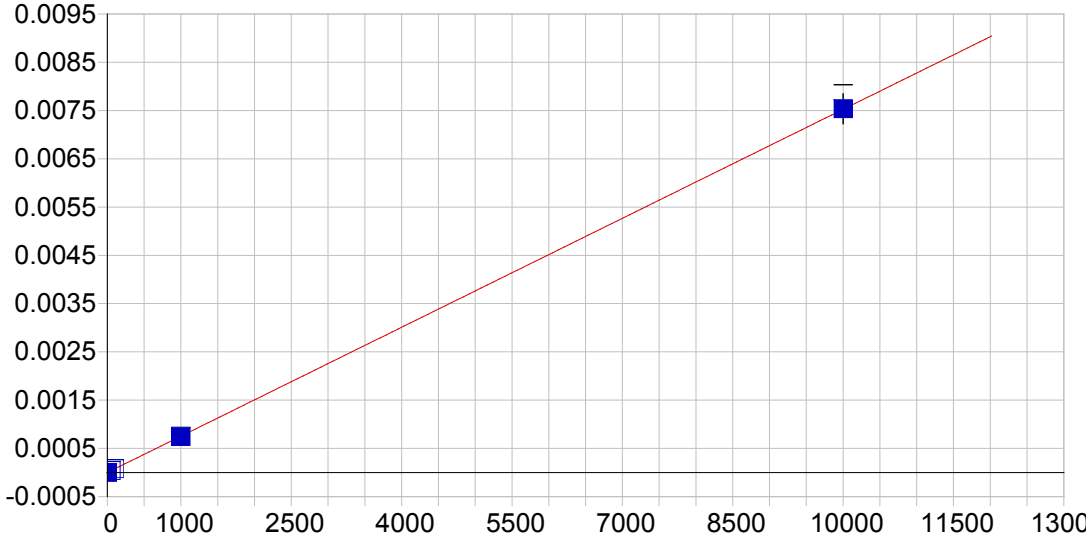


Mo 204.598 {464}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Curvilinear	Weighting:	1/Conc

A0 (Offset):	0.000001	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999981	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	0.694937		
Predicted MQL:	2.316457		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00046	.000	.000	.00000	.000	1
CalStd7=50	50.000	51.548	1.55	3.10	.00004	.000	1
CalStd6=20	20.000	22.022	2.02	10.1	.00002	.000	1
CalStd5=10	10.000	9.3368	-.663	-6.63	.00001	.000	1
CalStd8=100	100.00	100.13	.127	.127	.00007	.000	1
CalStd4=5	5.0000	4.2154	-.785	-15.7	.00000	.000	1
CalStd9=100	1000.0	998.29	-1.71	-.171	.00068	.000	1
CalStd10=10	10000.	10076.	76.2	.762	.00690	.000	1

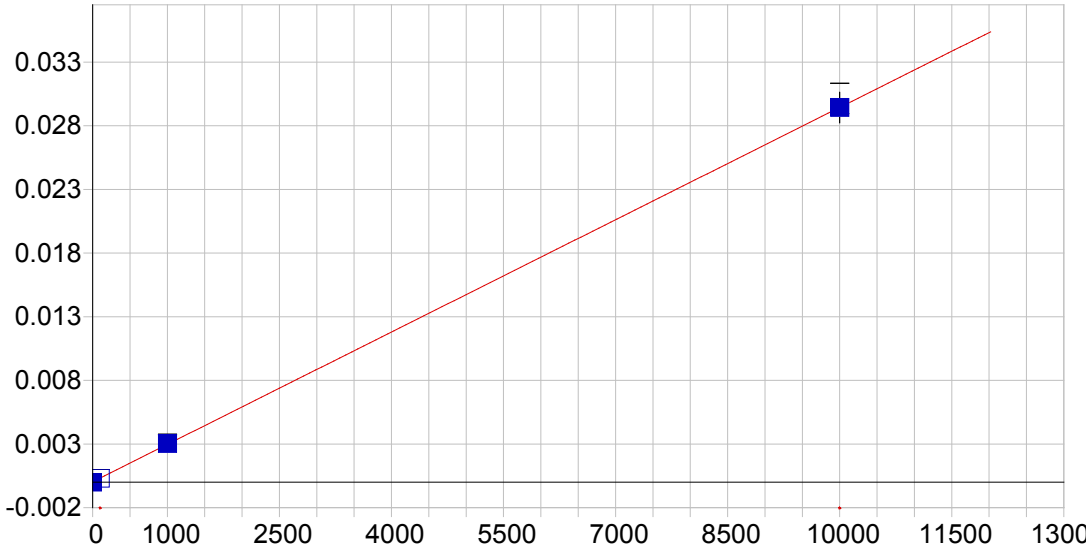


Mo 204.598 {465}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999987	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	0.703295		
Predicted MQL:	2.344316		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00012	.000	.000	.00000	.000	1
CalStd9=100	1000.0	984.38	-15.6	-1.56	.00074	.000	1
CalStd10=10	10000.	10015.	14.9	.149	.00754	.000	1
CalStd7=50	50.000	50.936	.936	1.87	.00004	.000	1
CalStd8=100	100.00	99.790	-.210	-.210	.00007	.000	1

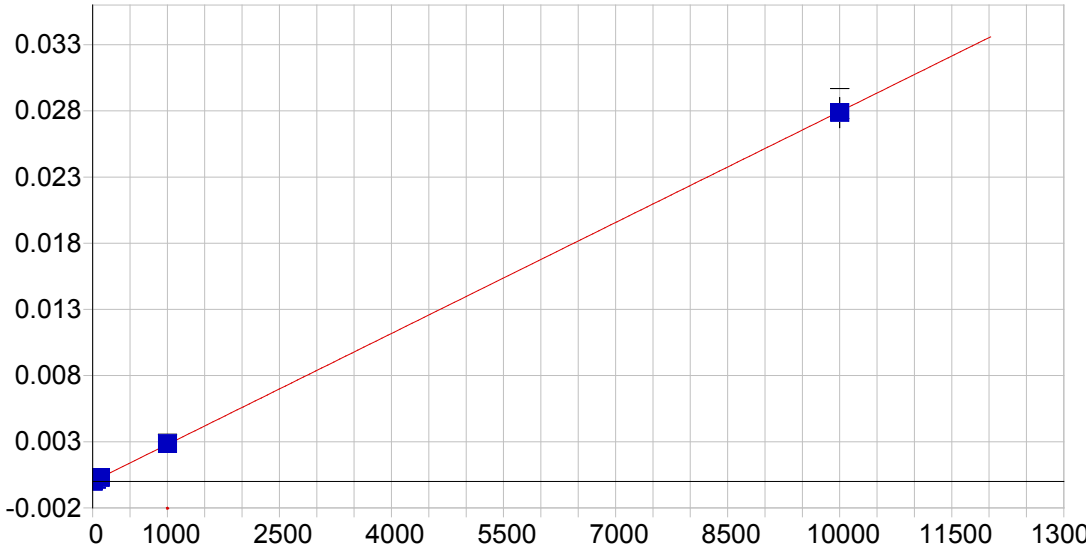


Ni 221.647 {452}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	None

A0 (Offset):	0.000031	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999996	Status:	OK.
Std Error of Est:	0.000050		
Predicted MDL:	0.346120		
Predicted MQL:	1.153734		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-10.538	-10.5	.000	.00000	.000	1
CalStd10=10	10000.	9998.1	-1.94	-.019	.02943	.001	1
CalStd8=100	100.00	92.324	-7.68	-7.68	.00030	.000	1
CalStd9=100	1000.0	1020.2	20.2	2.02	.00303	.000	1

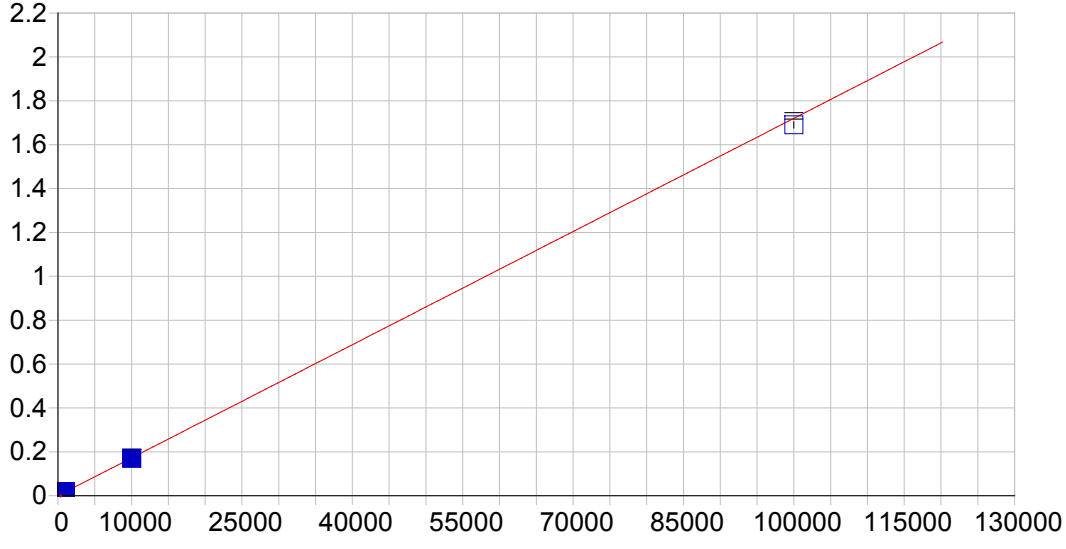


Ni 231.604 {445}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999967	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	0.363583		
Predicted MQL:	1.211943		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00018	.000	.000	.00000	.000	1
CalStd7=50	50.000	52.418	2.42	4.84	.00015	.000	1
CalStd5=10	10.000	10.164	.164	1.64	.00003	.000	1
CalStd8=100	100.00	102.11	2.11	2.11	.00028	.000	1
CalStd4=5	5.0000	5.1364	.136	2.73	.00001	.000	1
CalStd9=100	1000.0	1022.2	22.2	2.22	.00286	.000	1
CalStd3=1	1.0000	1.0506	.051	5.06	.00000	.000	1
CalStd10=10	10000.	9972.9	-27.1	-.271	.02788	.001	1

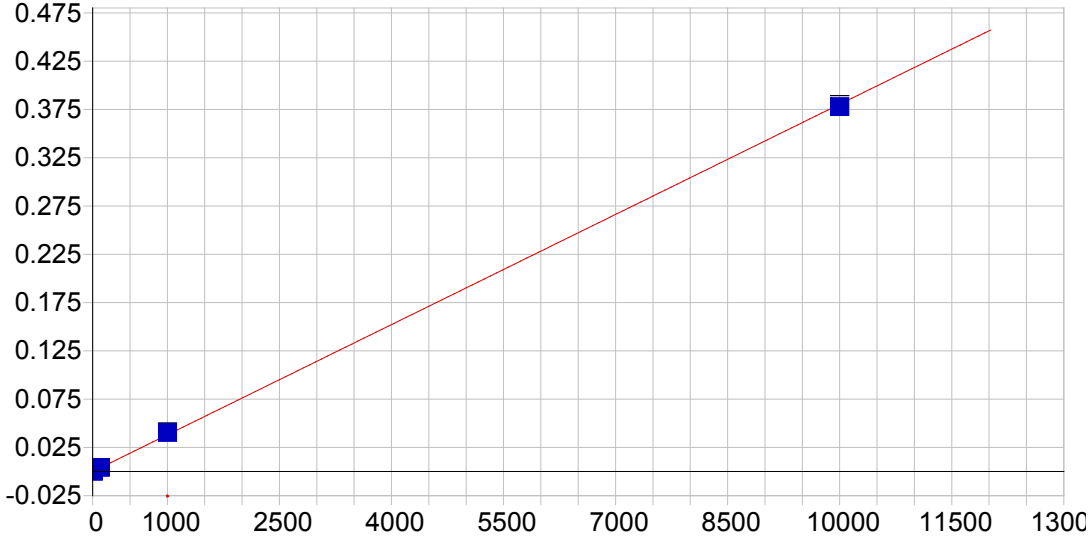


Pb 216.999 {455}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000191	Re-Slope:	1.000000
A1 (Gain):	0.000017	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999320	Status:	OK.
Std Error of Est:	0.000160		
Predicted MDL:	3.420242		
Predicted MQL:	11.400808		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-3.7589	-3.76	.000	.00013	.000	1
CalStd9=100	1000.0	1084.1	84.1	8.41	.01886	.000	1
CalStd10=10	10000.	9839.0	-161.	-1.61	.16967	.001	1
CalStd11-100	100000.	98250.	-1750.	-1.75	1.6900	.014	1
CalStd8=100	100.00	102.33	2.33	2.33	.00195	.000	1
CalStd5=10	10.000	8.1864	-1.81	-18.1	.00033	.000	1

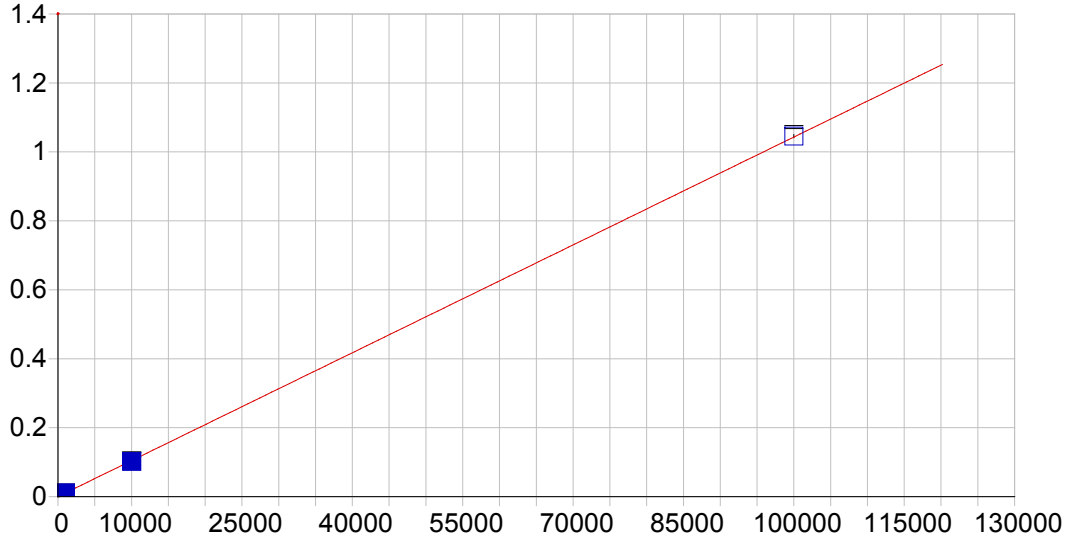


Pb 220.353 {453}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000032	Re-Slope:	1.000000
A1 (Gain):	0.000038	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999782	Status:	OK.
Std Error of Est:	0.000007		
Predicted MDL:	1.977477		
Predicted MQL:	6.591589		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00044	.000	.000	.00003	.000	1
CalStd5=10	10.000	9.4526	-.547	-5.47	.00039	.000	1
CalStd8=100	100.00	109.46	9.46	9.46	.00420	.000	1
CalStd4=5	5.0000	4.9841	-.016	-.317	.00022	.000	1
CalStd9=100	1000.0	1058.9	58.9	5.89	.04031	.001	1
CalStd10=10	10000.	9932.2	-67.8	-.678	.37781	.002	1

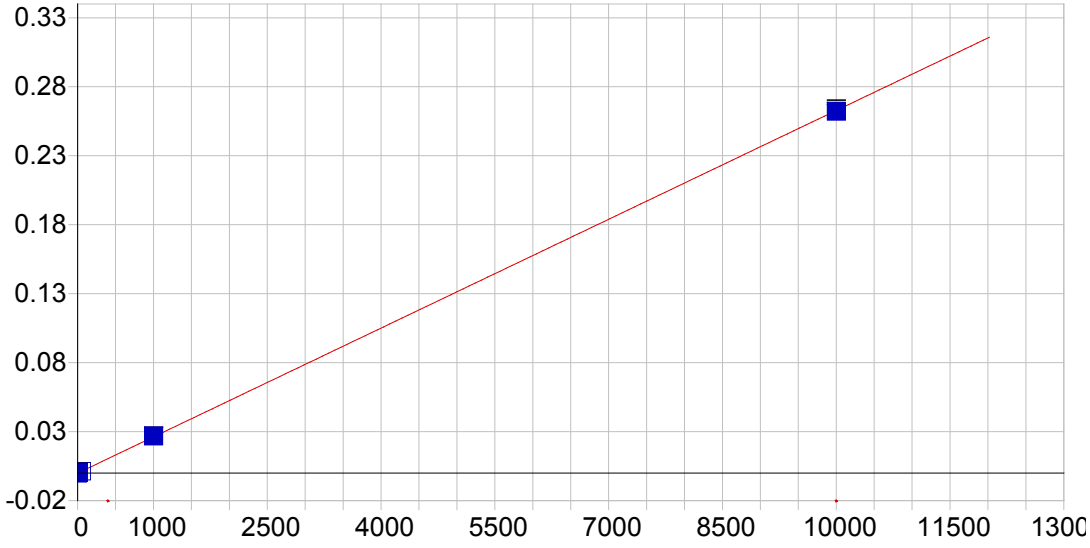


Pb 220.353 {153}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000152	Re-Slope:	1.000000
A1 (Gain):	0.000010	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999946	Status:	OK.
Std Error of Est:	0.000015		
Predicted MDL:	9.387097		
Predicted MQL:	31.290322		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.01646	-.016	.000	.00015	.000	1
CalStd9=100	1000.0	1016.3	16.3	1.63	.01075	.000	1
CalStd10=10	10000.	9716.5	-284.	-2.84	.10147	.001	1
CalStd8=100	100.00	117.41	17.4	17.4	.00138	.000	1
CalStd11-100	100000.	100250.	250.	.250	1.0457	.004	1

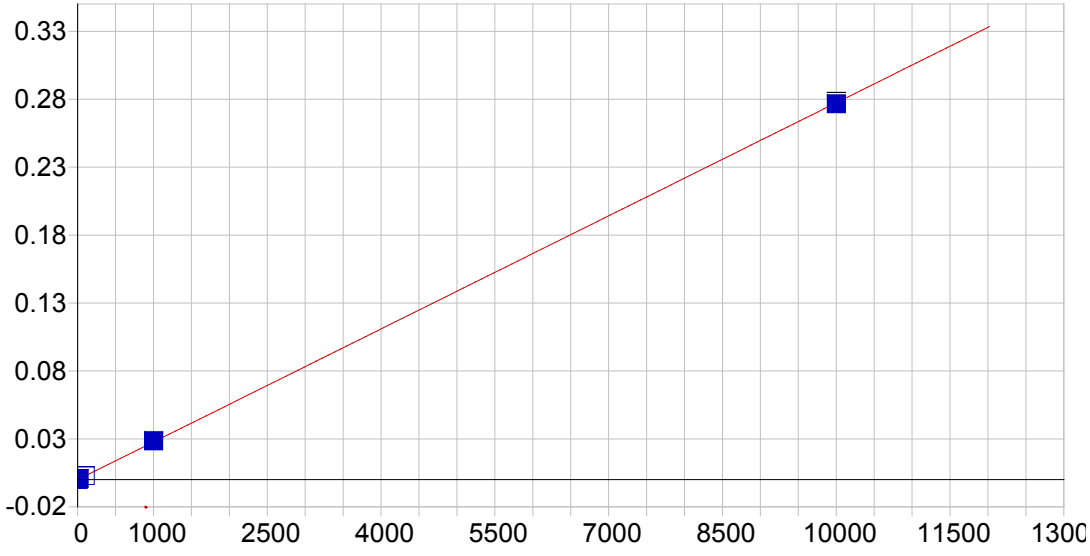


Sb 206.833 {463}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000091	Re-Slope:	1.000000
A1 (Gain):	0.000026	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999965	Status:	OK.
Std Error of Est:	0.000003		
Predicted MDL:	1.749965		
Predicted MQL:	5.833217		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	-.00009	.000	1
CalStd9=100	1000.0	1019.8	19.8	1.98	.02672	.000	1
CalStd5=10	10.000	9.1126	-.887	-8.87	.00015	.000	1
CalStd7=50	50.000	53.535	3.53	7.07	.00132	.000	1
CalStd10=10	10000.	9977.5	-22.5	-.225	.26222	.002	1

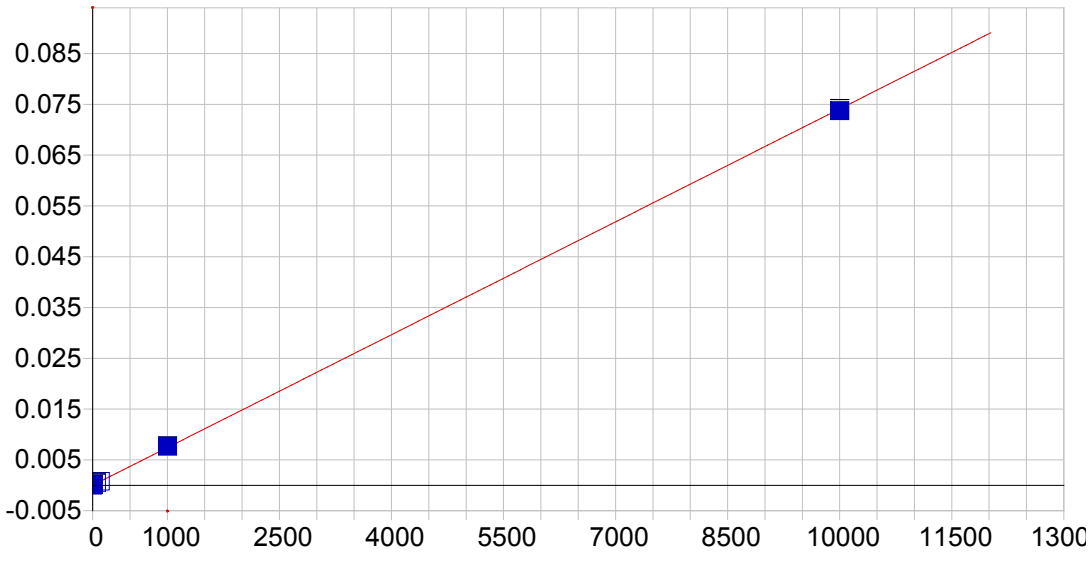


Sb 217.581 {455}

Date of Fit: 10/20/2016 10:29:12 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset):	-0.000022	Re-Slope:	1.000000
A1 (Gain):	0.000028	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999952	Status:	OK.
Std Error of Est:	0.000002		
Predicted MDL:	1.887165		
Predicted MQL:	6.290550		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00130	-.001	.000	-.00002	.000	1
CalStd9=100	1000.0	1025.5	25.5	2.55	.02843	.000	1
CalStd6=20	20.000	21.726	1.73	8.63	.00058	.000	1
CalStd5=10	10.000	10.268	.268	2.68	.00026	.000	1
CalStd8=100	100.00	103.64	3.64	3.64	.00285	.000	1
CalStd4=5	5.0000	5.4378	.438	8.76	.00013	.000	1
CalStd10=10	10000.	9968.4	-31.6	-.316	.27651	.002	1

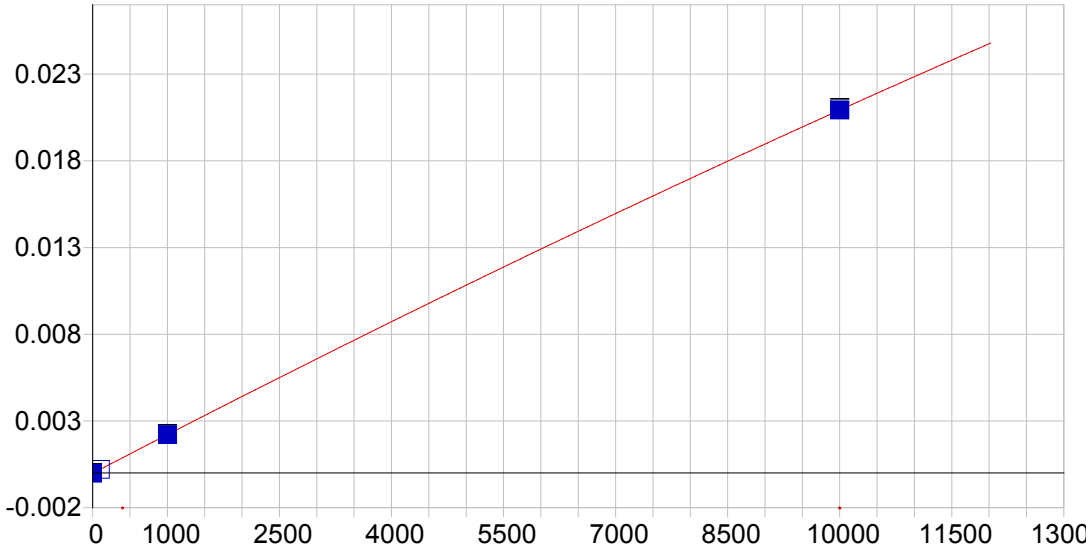


Se 196.090 {472}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000009	Re-Slope:	1.000000
A1 (Gain):	0.000007	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999837	Status:	OK.
Std Error of Est:	0.000002		
Predicted MDL:	4.555603		
Predicted MQL:	15.185344		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00154	-.002	.000	.00001	.000	1
CalStd7=50	50.000	59.003	9.00	18.0	.00045	.000	1
CalStd9=100	1000.0	1034.3	34.3	3.43	.00767	.000	1
CalStd5=10	10.000	8.7830	-1.22	-12.2	.00007	.000	1
CalStd8=100	100.00	106.66	6.66	6.66	.00080	.000	1
CalStd10=10	10000.	9951.2	-48.8	-.488	.07371	.000	1

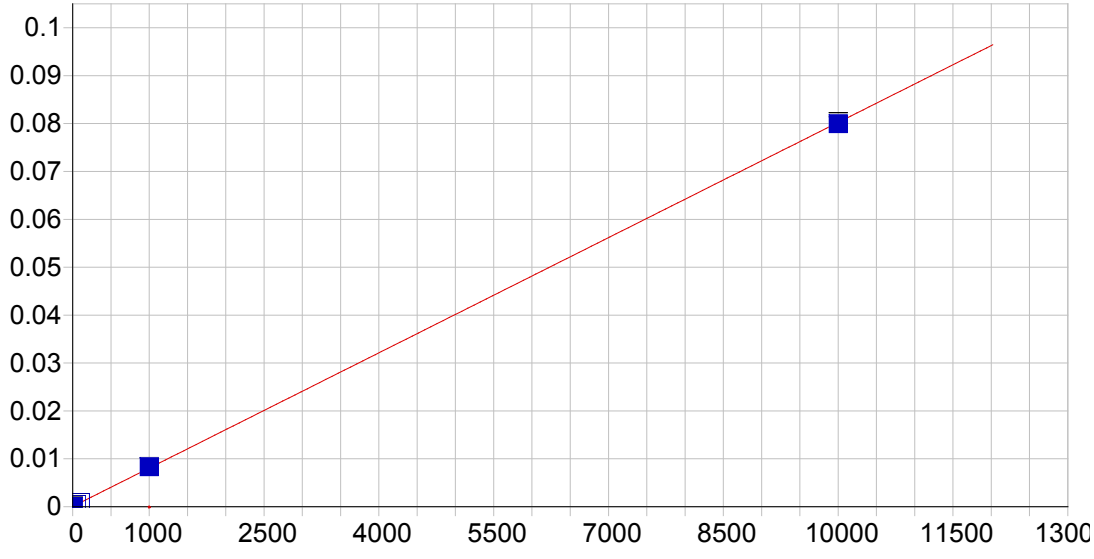


Se 206.279 {463}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Curvilinear	Weighting:	1/Conc

A0 (Offset):	-0.000019	Re-Slope:	1.000000
A1 (Gain):	0.000002	Y-int:	0.000000
A2 (Curvature):	-0.000000		
n (Exponent):	1.000000		
Correlation:	0.999998	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	22.326341		
Predicted MQL:	74.421137		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00157	-.002	.000	-.00002	.000	1
CalStd9=100	1000.0	998.04	-1.96	-.196	.00221	.000	1
CalStd10=10	10000.	10000.	.203	.002	.02096	.000	1
CalStd8=100	100.00	101.77	1.77	1.77	.00021	.000	1

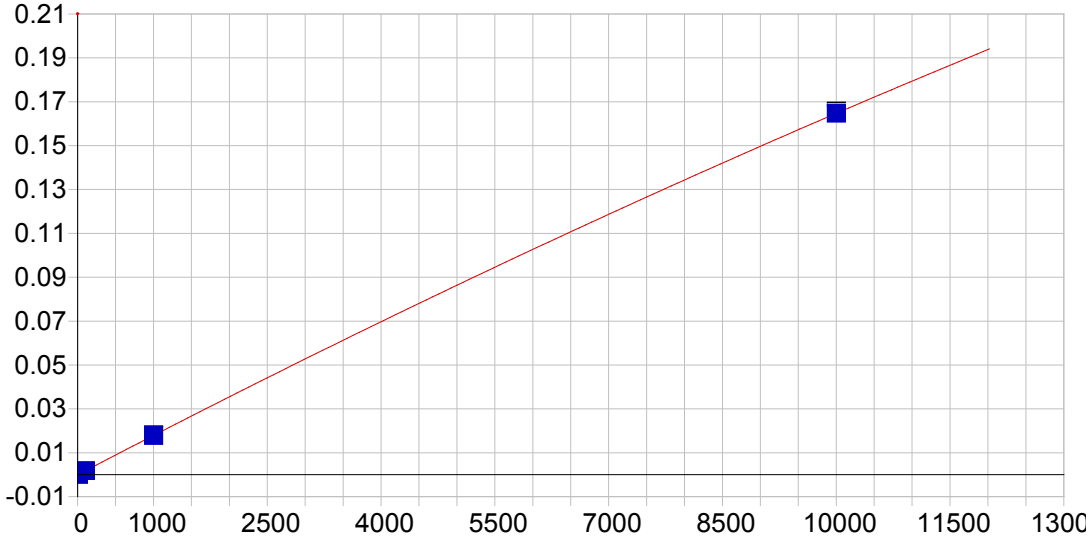


Se 196.090 {471}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000049	Re-Slope:	1.000000
A1 (Gain):	0.000008	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999921	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	4.491697		
Predicted MQL:	14.972323		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00083	.001	.000	.00005	.000	1
CalStd7=50	50.000	51.881	1.88	3.76	.00047	.000	1
CalStd9=100	1000.0	1030.9	30.9	3.09	.00831	.000	1
CalStd5=10	10.000	8.0504	-1.95	-19.5	.00011	.000	1
CalStd8=100	100.00	104.70	4.70	4.70	.00089	.000	1
CalStd10=10	10000.	9964.4	-35.6	-.356	.07994	.000	1

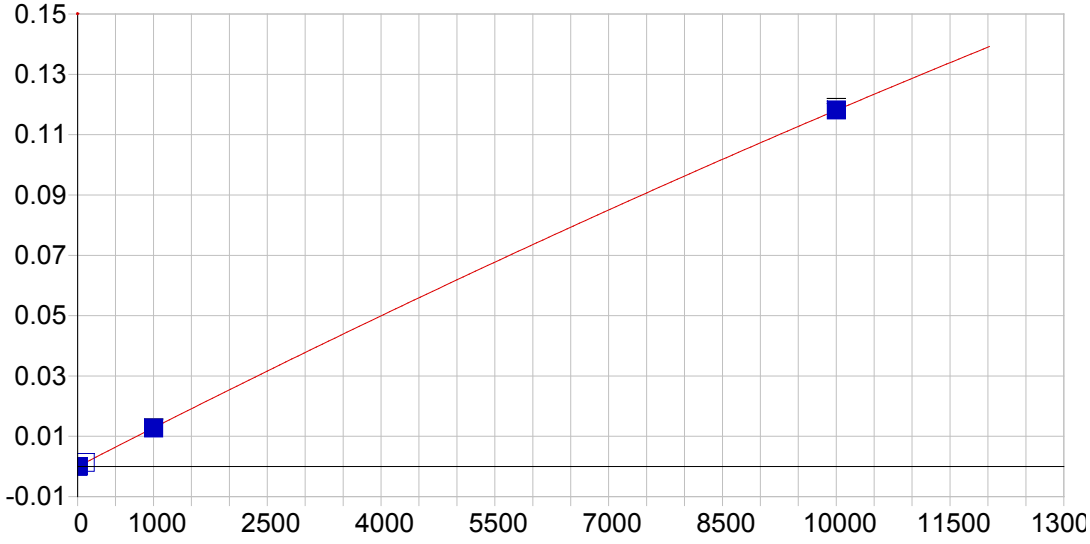


Tl 190.856 {476}

Date of Fit: 10/20/2016 10:29:12 Type of Fit: Curvilinear Weighting: 1/Conc

A0 (Offset):	-0.000053	Re-Slope:	1.000000
A1 (Gain):	0.000018	Y-int:	0.000000
A2 (Curvature):	-0.000000		
n (Exponent):	1.000000		
Correlation:	0.999999	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	2.371531		
Predicted MQL:	7.905103		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00002	.000	.000	-.00005	.000	1
CalStd9=100	1000.0	998.43	-1.57	-.157	.01785	.000	1
CalStd8=100	100.00	101.52	1.52	1.52	.00178	.000	1
CalStd5=10	10.000	9.8819	-.118	-1.18	.00013	.000	1
CalStd10=10	10000.	10000.	.169	.002	.16472	.001	1

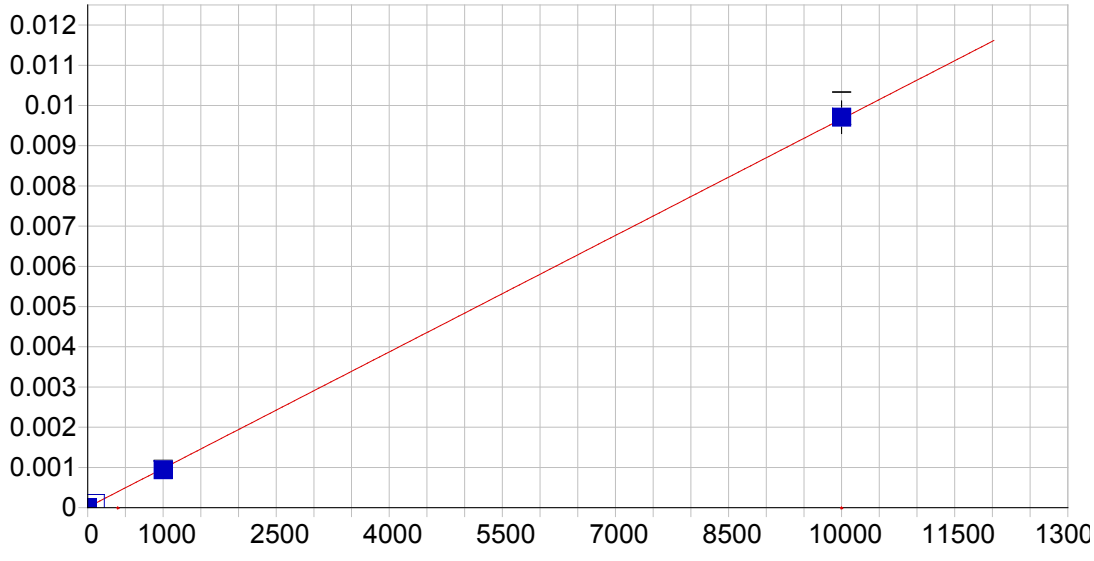


Tl 190.856 {477}

Date of Fit: 10/20/2016 10:29:12 Type of Fit: Curvilinear Weighting: 1/Var

A0 (Offset):	-0.000016	Re-Slope:	1.000000
A1 (Gain):	0.000013	Y-int:	0.000000
A2 (Curvature):	-0.000000		
n (Exponent):	1.000000		
Correlation:	0.999951	Status:	OK.
Std Error of Est:	0.000037		
Predicted MDL:	2.840236		
Predicted MQL:	9.467452		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.85766	-.858	.000	-.00003	.000	1
CalStd9=100	1000.0	993.36	-6.64	-.664	.01273	.000	1
CalStd8=100	100.00	101.64	1.64	1.64	.00130	.000	1
CalStd5=10	10.000	7.5846	-2.42	-24.2	.00008	.000	1
CalStd10=10	10000.	10004.	3.85	.039	.11813	.001	1

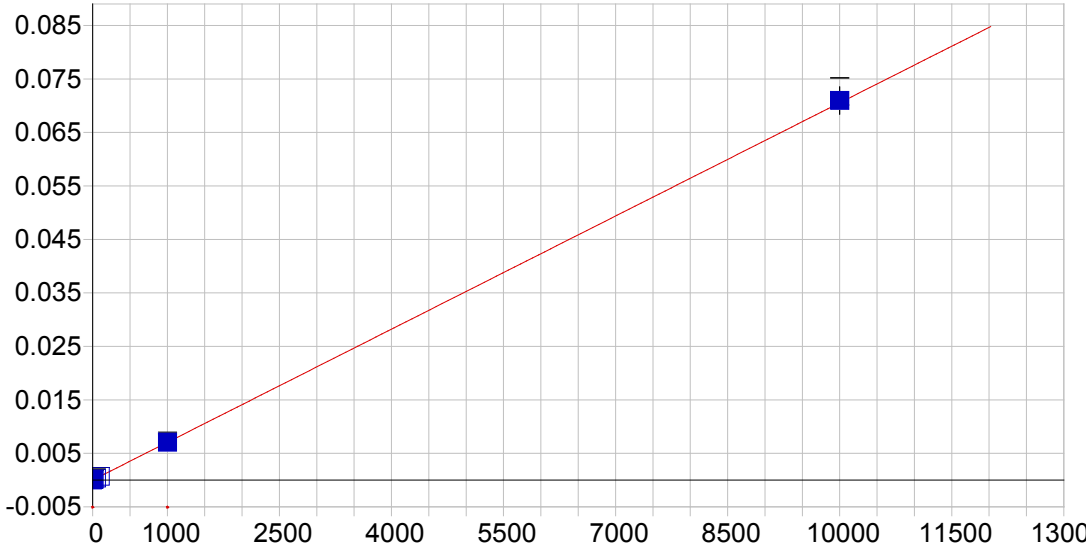


V 290.882 {116}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000010	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999922	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	1.701152		
Predicted MQL:	5.670506		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00647	.006	.000	.00001	.000	1
CalStd9=100	1000.0	961.59	-38.4	-3.84	.00094	.000	1
CalStd10=10	10000.	10041.	41.5	.415	.00971	.000	1
CalStd8=100	100.00	96.953	-3.05	-3.05	.00010	.000	1

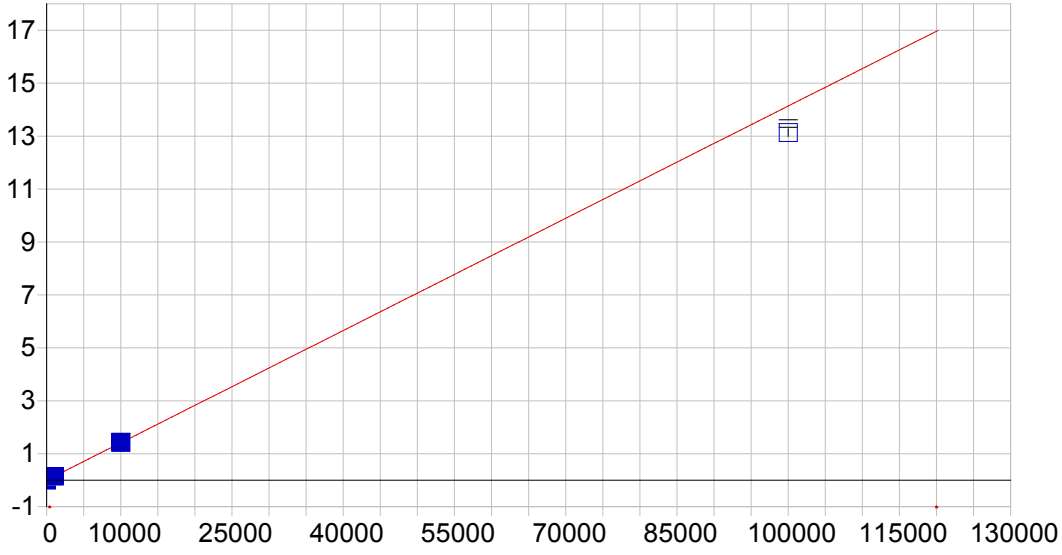


V 292.402 {115}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000002	Re-Slope:	1.000000
A1 (Gain):	0.000007	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999450	Status:	OK.
Std Error of Est:	0.000009		
Predicted MDL:	0.572089		
Predicted MQL:	1.906964		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.58634	-.586	.000	.00000	.000	1
CalStd7=50	50.000	51.957	1.96	3.91	.00037	.000	1
CalStd9=100	1000.0	1002.9	2.87	.287	.00708	.000	1
CalStd6=20	20.000	22.054	2.05	10.3	.00016	.000	1
CalStd5=10	10.000	10.048	.048	.477	.00007	.000	1
CalStd8=100	100.00	98.323	-1.68	-1.68	.00070	.000	1
CalStd10=10	10000.	10061.	60.7	.607	.07096	.003	1

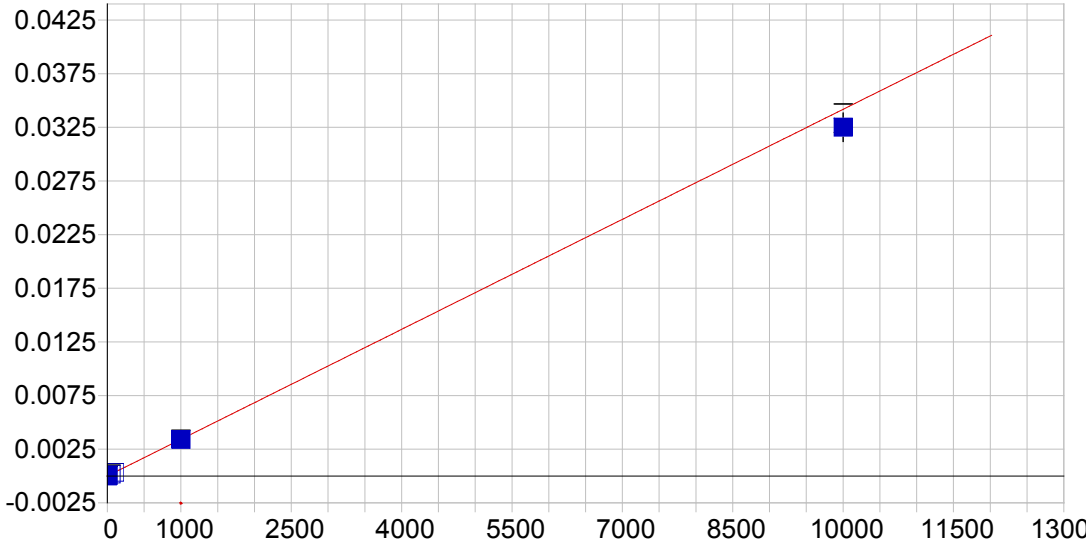


Zn 206.200 {463}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	-0.000053	Re-Slope:	1.000000
A1 (Gain):	0.000141	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999321	Status:	OK.
Std Error of Est:	0.000310		
Predicted MDL:	0.322486		
Predicted MQL:	1.074953		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
CalStd10=10	10000.	10051.	51.1	.511	1.4209	.007	1
Blank	.00000	-.01426	-.014	.000	-.00005	.000	1
CalStd9=100	1000.0	1066.9	66.9	6.69	.15077	.002	1
CalStd11-100	100000.	92885.	-7110.	-7.11	13.130	.142	1

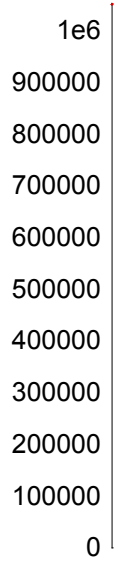


Zn 213.856 {458}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000001	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999962	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	0.160201		
Predicted MQL:	0.534002		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.11218	-.112	.000	.00000	.000	1
CalStd8=100	100.00	100.14	.137	.137	.00034	.000	1
CalStd7=50	50.000	51.960	1.96	3.92	.00018	.000	1
CalStd5=10	10.000	10.135	.135	1.35	.00004	.000	1
CalStd9=100	1000.0	995.38	-4.62	-.462	.00340	.000	1
CalStd4=5	5.0000	5.2572	.257	5.14	.00002	.000	1
CalStd10=10	10000.	9509.1	-491.	-4.91	.03251	.001	1

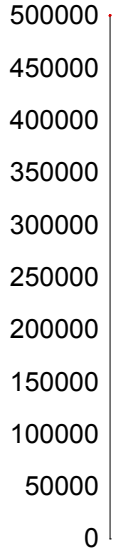


Y 324.228 {104}*

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	949680.	10100.	1

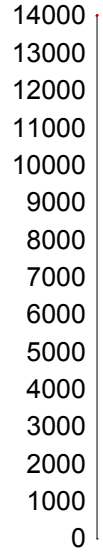


Y 371.030 { 91}*

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	405840.	15800.	1

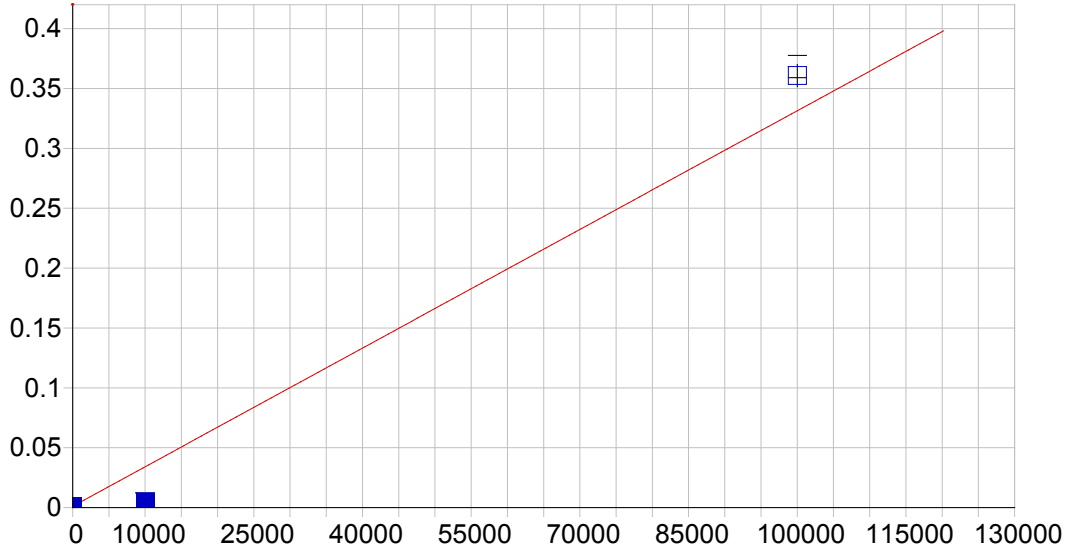


Y 224.306 {451}*

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00000	.000	.000	13040.	71.6	1

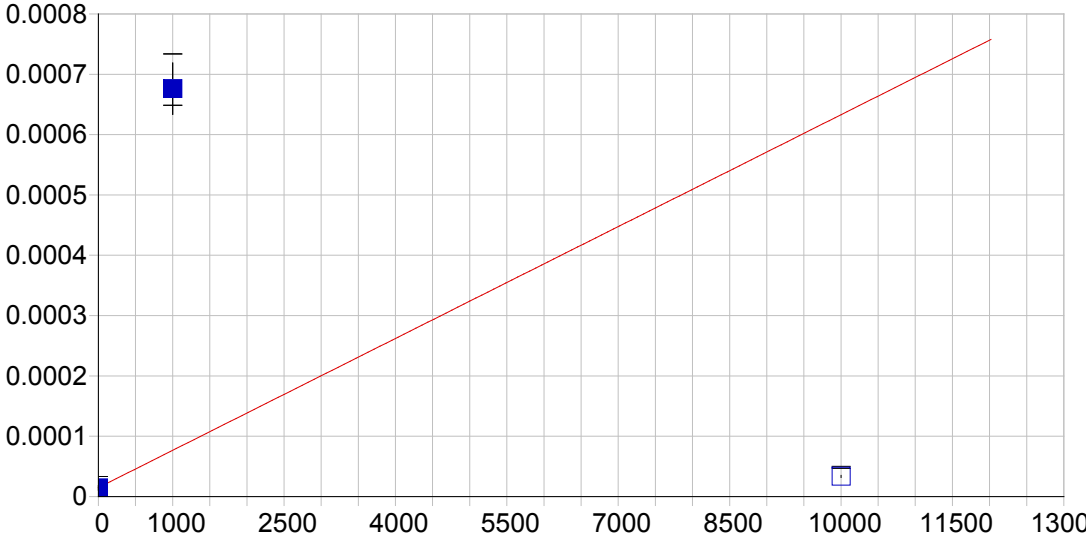


Na 588.995 { 57}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001064	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.962764	Status:	OK.
Std Error of Est:	0.001684		
Predicted MDL:	2.641383		
Predicted MQL:	8.804611		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	7.9873	7.99	.000	.00109	.000	1
CalStd9=100	10000.	1125.2	-8870.	-88.7	.00478	.000	1
CalStd12-100	100000.	108870.	8870.	8.87	.36075	.009	1

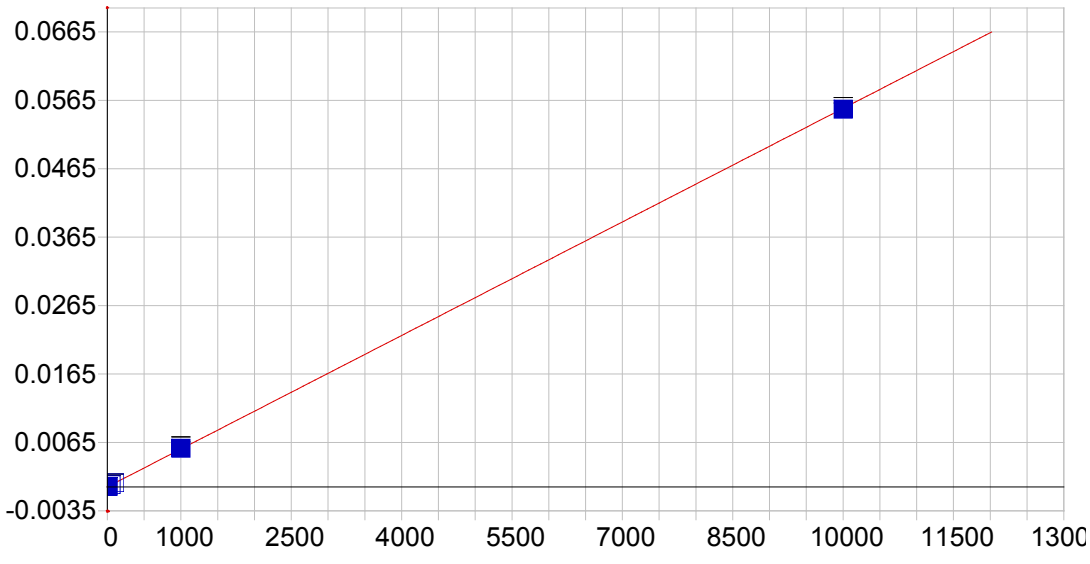


Si 251.611 {134}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000015	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.309825	Status:	OK.
Std Error of Est:	0.000034		
Predicted MDL:	46.453391		
Predicted MQL:	154.844635		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-8.7293	-8.73	.000	.00001	.000	1
CalStd9=100	1000.0	10699.	9700.	970.	.00068	.000	1
CalStd12-100	10000.	301.94	-9700.	-97.0	.00003	.000	1

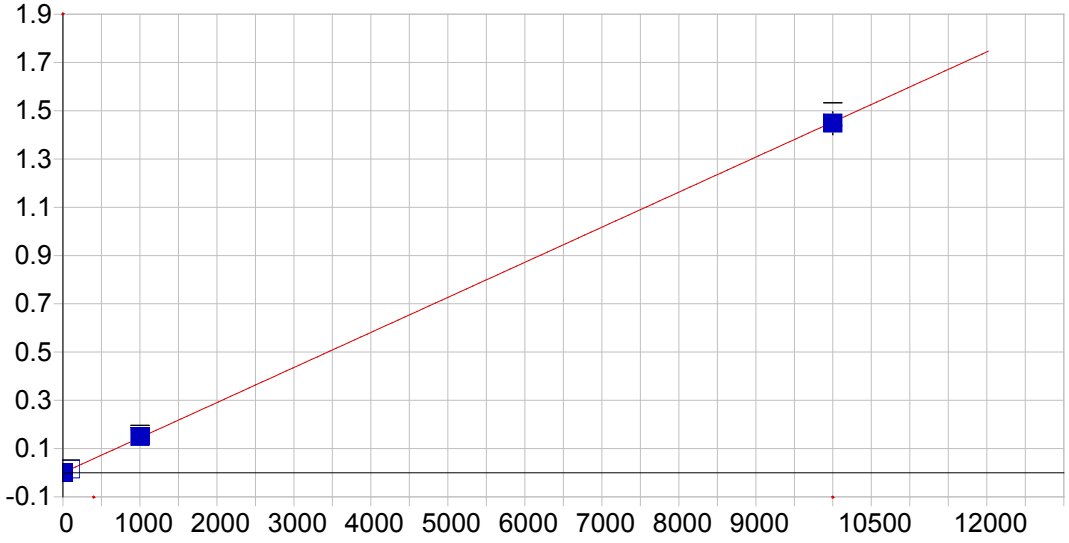


Ti 334.941 {101}

Date of Fit: 10/20/2016 10:29:12 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset):	-0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000006	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999951	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	0.695056		
Predicted MQL:	2.316853		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00122	-.001	.000	.00000	.000	1
CalStd5=10	10.000	9.9151	-.085	-.849	.00005	.000	1
CalStd8=100	100.00	102.15	2.15	2.15	.00056	.000	1
CalStd9=100	1000.0	1017.4	17.4	1.74	.00563	.000	1
CalStd10=10	10000.	9974.5	-25.5	-.255	.05519	.000	1
CalStd7=50	50.000	55.568	5.57	11.1	.00031	.000	1
CalStd4=5	5.0000	5.5228	.523	10.5	.00003	.000	1

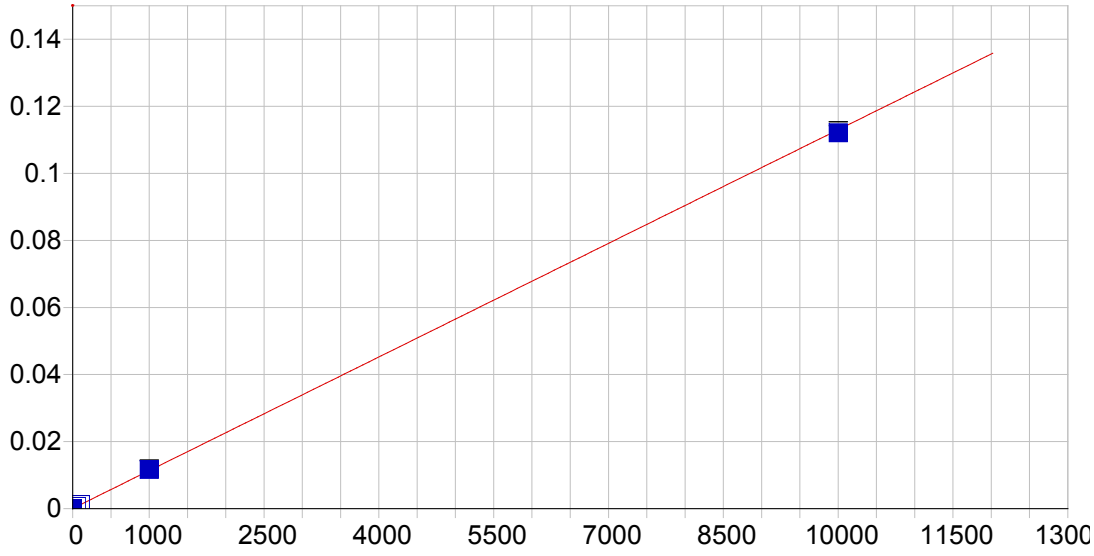


Sr 407.771 { 83}

Date of Fit: 10/20/2016 10:29:12 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset):	-0.000057	Re-Slope:	1.000000
A1 (Gain):	0.000145	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999945	Status:	OK.
Std Error of Est:	0.000006		
Predicted MDL:	0.046690		
Predicted MQL:	0.155633		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00029	.000	.000	-.00006	.000	1
CalStd3=1	1.0000	1.1013	.101	10.1	.00010	.000	1
CalStd4=5	5.0000	5.4247	.425	8.49	.00073	.000	1
CalStd5=10	10.000	10.310	.310	3.10	.00144	.000	1
CalStd8=100	100.00	104.60	4.60	4.60	.01514	.000	1
CalStd9=100	1000.0	1028.9	28.9	2.89	.14948	.009	1
CalStd10=10	10000.	9965.6	-34.4	-.344	1.4483	.047	1

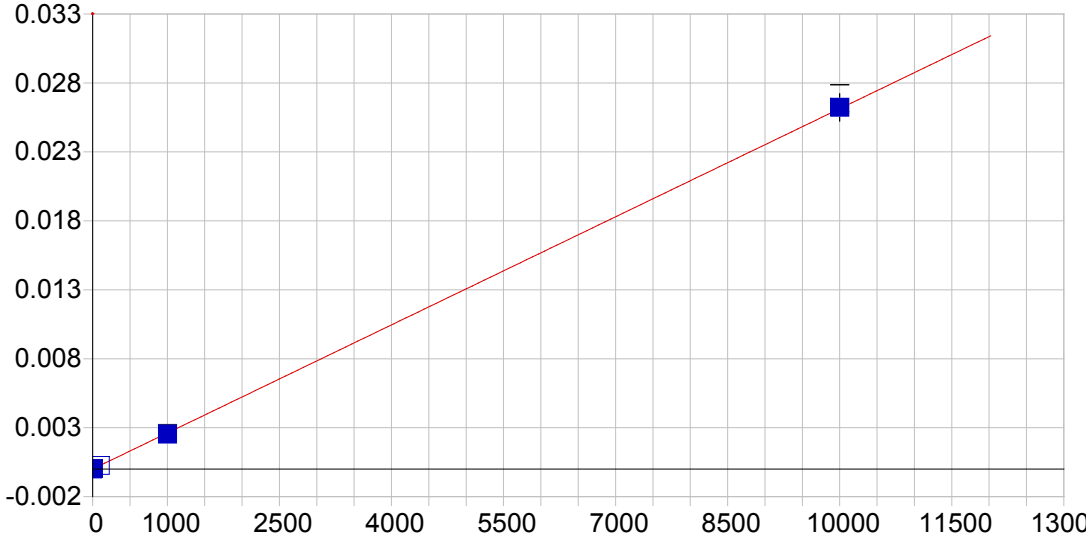


Sn 189.989 {478}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000046	Re-Slope:	1.000000
A1 (Gain):	0.000011	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999839	Status:	OK.
Std Error of Est:	0.000039		
Predicted MDL:	2.311154		
Predicted MQL:	7.703845		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-2.5848	-2.58	.000	.00002	.000	1
CalStd10=10	10000.	9917.7	-82.3	-.823	.11209	.001	1
CalStd9=100	1000.0	1028.6	28.6	2.86	.01167	.000	1
CalStd8=100	100.00	101.80	1.80	1.80	.00120	.000	1
CalStd7=50	50.000	50.965	.965	1.93	.00062	.000	1

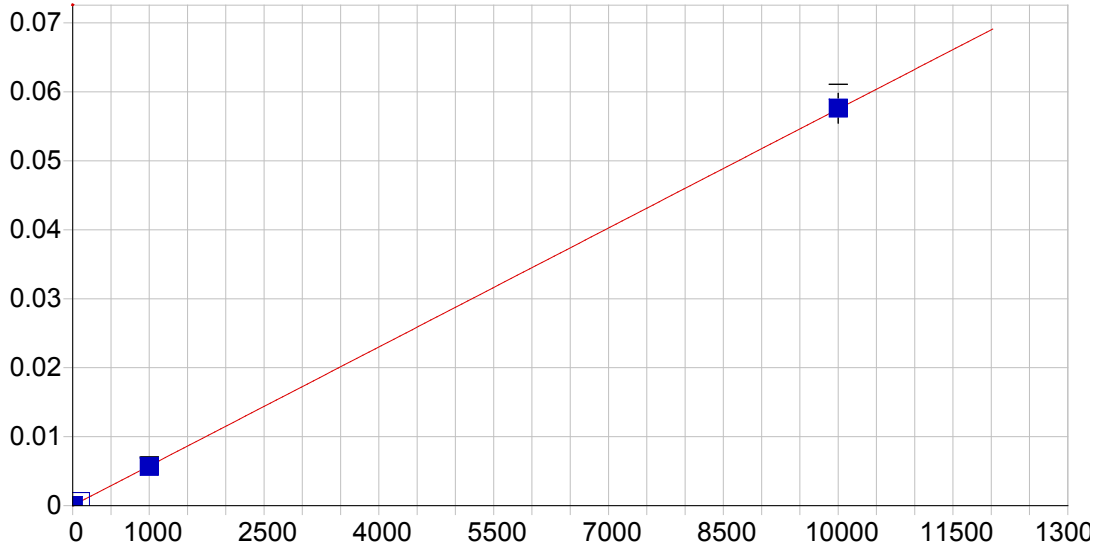


B 249.678 {135}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000003	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999938	Status:	OK.
Std Error of Est:	0.000000		
Predicted MDL:	1.062723		
Predicted MQL:	3.542411		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00112	.001	.000	.00000	.000	1
CalStd8=100	100.00	98.300	-1.70	-1.70	.00026	.000	1
CalStd5=10	10.000	9.3585	-.641	-6.41	.00002	.000	1
CalStd9=100	1000.0	965.72	-34.3	-3.43	.00252	.000	1
CalStd10=10	10000.	10037.	36.6	.366	.02623	.001	1

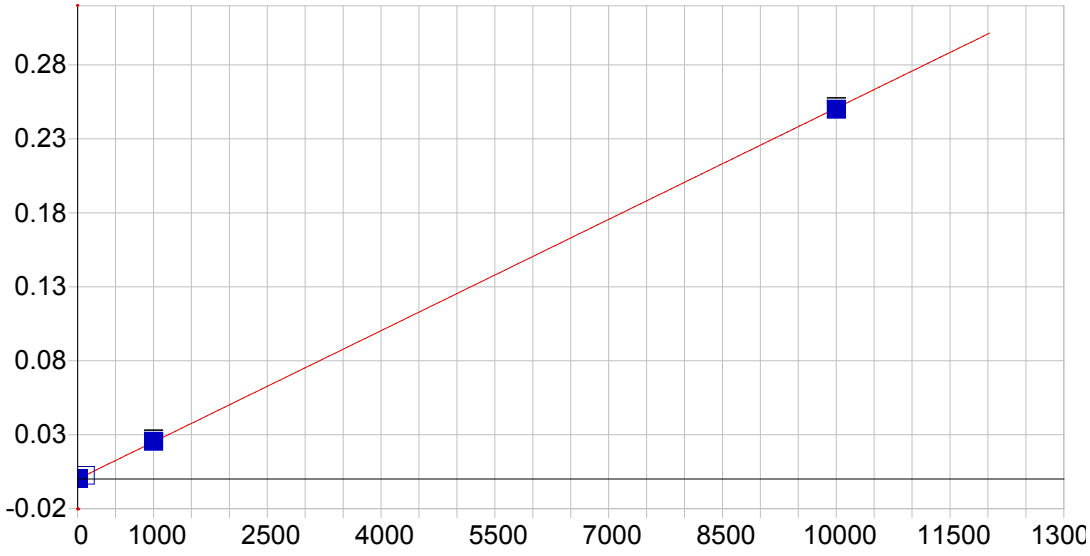


B 249.773 {135}

Date of Fit: 10/20/2016 10:29:12 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset):	0.000010	Re-Slope:	1.000000
A1 (Gain):	0.000006	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999979	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	0.463453		
Predicted MQL:	1.544843		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	.00150	.002	.000	.00001	.000	1
CalStd8=100	100.00	97.382	-2.62	-2.62	.00057	.000	1
CalStd5=10	10.000	8.8932	-1.11	-11.1	.00006	.000	1
CalStd9=100	1000.0	984.62	-15.4	-1.54	.00567	.000	1
CalStd10=10	10000.	10019.	19.1	.191	.05765	.002	1

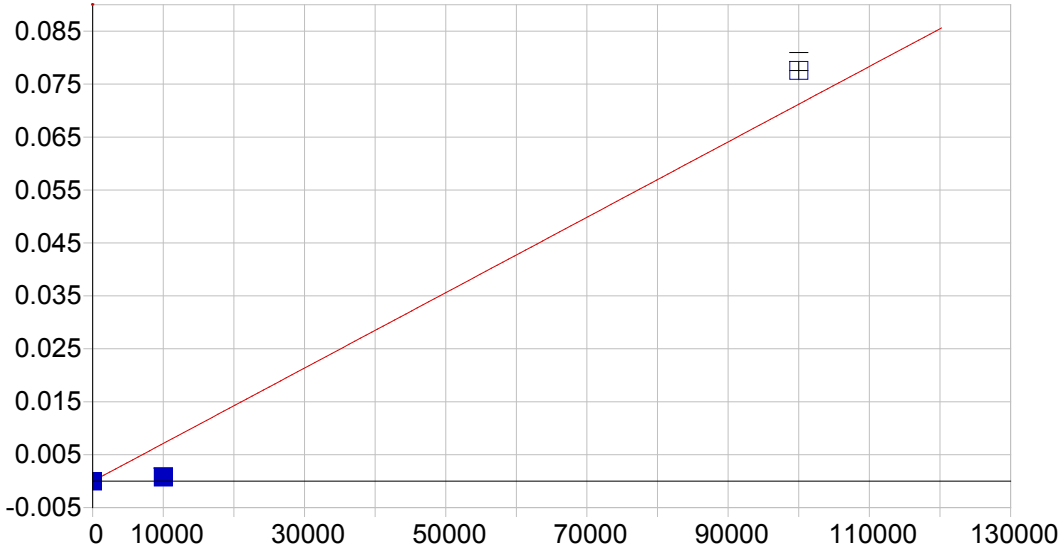


Li 670.784 { 50}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Var

A0 (Offset):	0.000003	Re-Slope:	1.000000
A1 (Gain):	0.000025	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999961	Status:	OK.
Std Error of Est:	0.000017		
Predicted MDL:	0.713009		
Predicted MQL:	2.376698		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.20675	-.207	.000	.00000	.000	1
CalStd5=10	10.000	10.168	.168	1.68	.00026	.000	1
CalStd8=100	100.00	102.24	2.24	2.24	.00257	.000	1
CalStd9=100	1000.0	1015.5	15.5	1.55	.02547	.002	1
CalStd10=10	10000.	9968.4	-31.6	-.316	.25001	.002	1

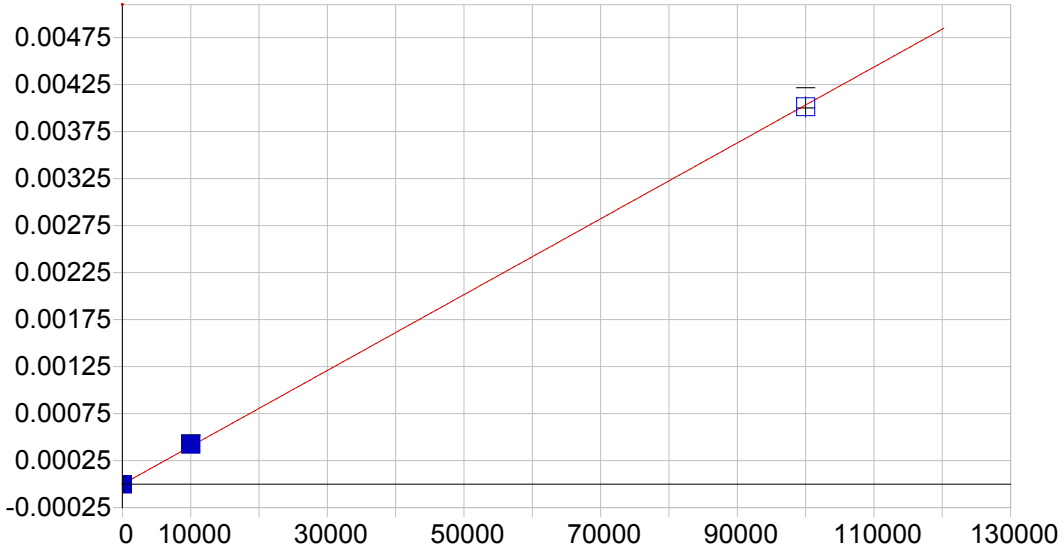


K 766.490 { 44}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000015	Re-Slope:	1.000000
A1 (Gain):	0.000001	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.962429	Status:	OK.
Std Error of Est:	0.000365		
Predicted MDL:	23.251906		
Predicted MQL:	77.506353		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	8.0254	8.03	.000	-.00001	.000	1
CalStd9=100	10000.	1083.0	-8920.	-89.2	.00076	.000	1
CalStd12-100	100000.	108920.	8920.	8.92	.07756	.002	1

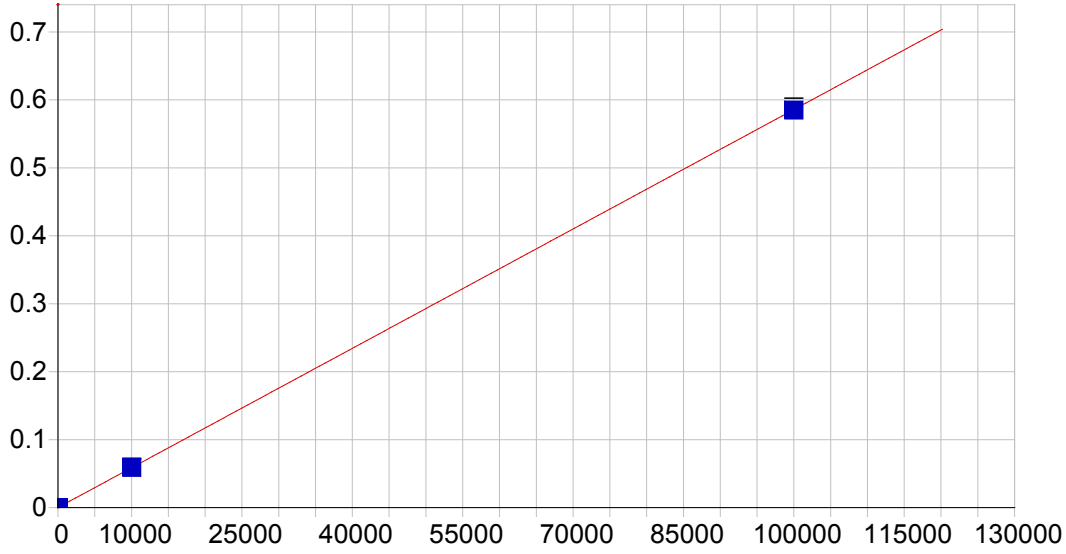


P 213.618 {457}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000002	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999867	Status:	OK.
Std Error of Est:	0.000001		
Predicted MDL:	16.110684		
Predicted MQL:	53.702281		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.46353	-.464	.000	.00000	.000	1
CalStd9=100	10000.	10515.	515.	5.15	.00042	.000	1
CalStd12-100	100000.	99485.	-515.	-.515	.00401	.000	1

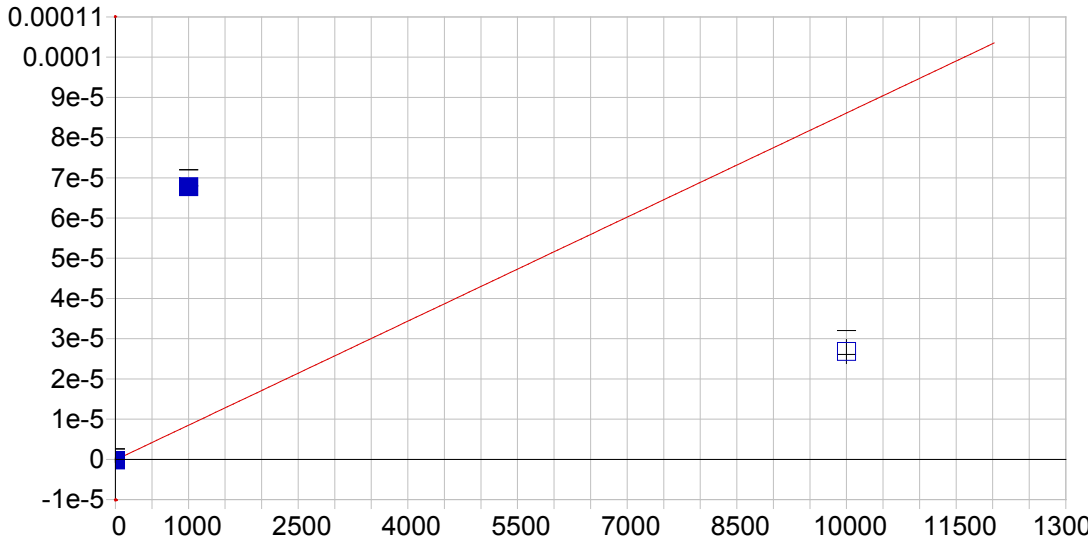


S 182.034 {485}

Date of Fit: 10/20/2016 10:29:12 Type of Fit: Linear Weighting: 1/Var

A0 (Offset):	0.000048	Re-Slope:	1.000000
A1 (Gain):	0.000006	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999998	Status:	OK.
Std Error of Est:	0.000016		
Predicted MDL:	5.723375		
Predicted MQL:	19.077918		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.05712	-.057	.000	.00005	.000	1
CalStd12-100	100000.	99863.	-137.	-.137	.58489	.004	1
CalStd9=100	10000.	10025.	24.7	.247	.05876	.001	1

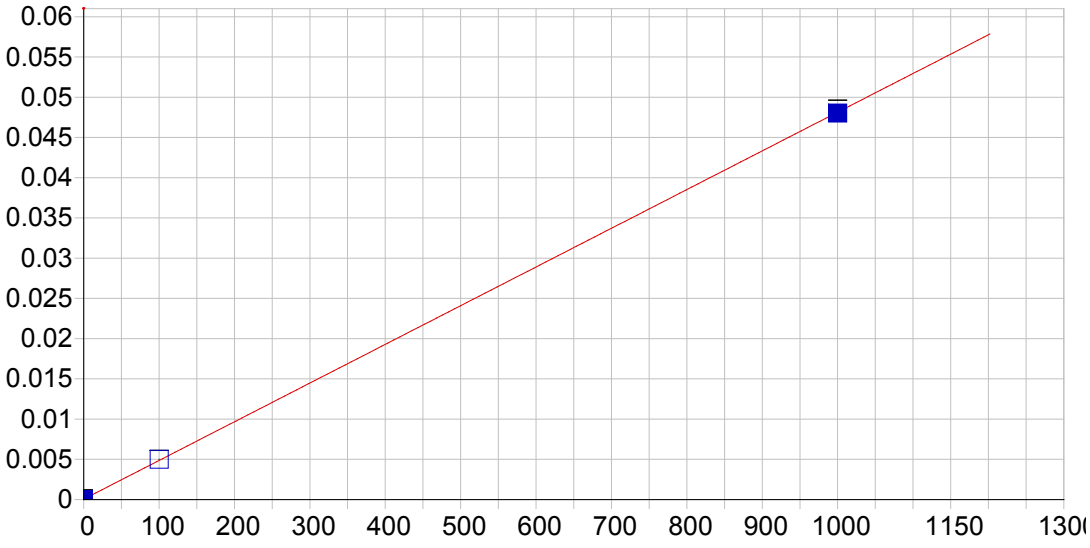


W 239.709 {140}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.417818	Status:	OK.
Std Error of Est:	0.000003		
Predicted MDL:	158.973997		
Predicted MQL:	529.913325		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-6.1848	-6.18	.000	.00000	.000	1
CalStd9=100	1000.0	7872.5	6870.	687.	.00007	.000	1
CalStd12-100	10000.	3123.0	-6880.	-68.8	.00003	.000	1

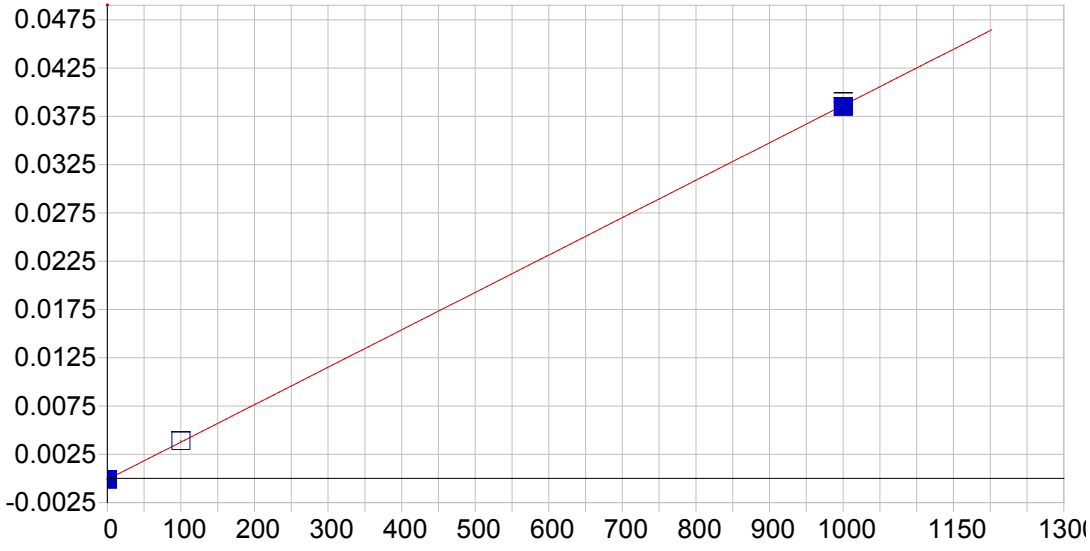


Hg 184.950 {482}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000053	Re-Slope:	1.000000
A1 (Gain):	0.000048	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999966	Status:	OK.
Std Error of Est:	0.000007		
Predicted MDL:	0.774386		
Predicted MQL:	2.581285		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00234	-.002	.000	.00005	.000	1
CalStd8=100	100.00	102.60	2.60	2.60	.00499	.000	1
CalStd9=100	1000.0	997.40	-2.60	-.260	.04801	.001	1



Hg 194.227 {473}

Date of Fit:	10/20/2016 10:29:12	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000106	Re-Slope:	1.000000
A1 (Gain):	0.000039	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999946	Status:	OK.
Std Error of Est:	0.000007		
Predicted MDL:	0.903266		
Predicted MQL:	3.010888		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
Blank	.00000	-.00296	-.003	.000	-.00011	.000	1
CalStd8=100	100.00	103.29	3.29	3.29	.00390	.000	1
CalStd9=100	1000.0	996.71	-3.29	-.329	.03851	.000	1

Sample Name: Blank Acquired: 10/18/2016 07:25:11 Type: Cal
Method: DOD Calibration Updated 060614(v1658) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	As1890	Ba2335	Ba4934	Be3130	Ca3158	Ca3933	Cd2265	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
Avg	**4.16**	**.000**	**.000**	**.000**	**.000**	**.005**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**
Stddev	.72	.00	.00	.000	.000	.000	.00	.000	.000	.000	.00	.000
%RSD	17.2	57.8	29.2	92.3	39.2	3.94	1.71	2.66	66.0	1730.	23.5	391.

Elem	Cr2055	Cr2677	Cu2247	Fe2343	Fe2599	Mg2790	Mg2802	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	Cts/S
Avg	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**
Stddev	.00	.00	.00	.000	.000	.00	.000	.000	.000	.000	.00	.00
%RSD	16.1	268.	40.3	1.96	77.8	153.	1.16	49.8	346.	36.2	353.	125.

Elem	Pb2169	Pb2203	Sb2068	Sb2175	Se2062	Se1960	Tl1908	V_2908	V_2924	Zn2062	Zn2138	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
Avg	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**
Stddev	.000	.000	.00	.00	.00	.000	.00	.000	.00	.00	.000	.00
%RSD	49.1	289.	62.2	80.1	189.	19.6	90.6	15.9	170.	43.8	154.	8.90

Elem	Sn1899	B_2497	Li6707
Units	Cts/S	Cts/S	Cts/S
Avg	**.000**	**.000**	**.000**
Stddev	.000	.000	.00
%RSD	82.5	8.54	652.

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**949680.**	**405840.**	**13040.**
Stddev	10058.	15789.	72.
%RSD	1.0591	3.8903	.54898

Sample Name: CalStd1=0.25 Acquired: 10/18/2016 07:32:04 Type: Cal
Method: DOD Calibration Updated 060614(v1658) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Be3130
Units	Cts/S
Avg	.000
Stddev	.00
%RSD	3.74

Int. Std.	Y_3242
Units	Cts/S
Avg	939760.
Stddev	17501.
%RSD	1.8622

Sample Name: CalStd2=0.5 Acquired: 10/18/2016 07:38:59 Type: Cal
Method: DOD Calibration Updated 060614(v1658) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Be3130	Cd2265
Units	Cts/S	Cts/S
Avg	**.000**	**.000**
Stddev	.00	.000
%RSD	4.60	22.1

Int. Std.	Y_3242	Y_2243
Units	Cts/S	Cts/S
Avg	**936790.**	**13126.**
Stddev	22138.	41.
%RSD	2.3632	.31060

Sample Name: CalStd3=1 Acquired: 10/18/2016 07:45:54 Type: Cal
Method: DOD Calibration Updated 060614(v1658) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Ba2335	Be3130	Cd2265	Co2286	Cr2055	Cu2247	Ni2316	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**8.83**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**
Stddev	.46	.000	.00	.000	.000	.000	.000	.000	.000
%RSD	5.25	12.7	25.3	9.09	36.4	14.7	57.9	20.5	3.86

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**938390.**	**401390.**	**13014.**
Stddev	29421.	17014.	38.
%RSD	3.1352	4.2389	.29369

Sample Name: CalStd4=5 Acquired: 10/18/2016 07:52:51 Type: Cal
Method: DOD Calibration Updated 060614(v1658) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	As1890	Ba2335	Be3130	Cd2265	Co2286	Cr2055	Cr2677	Cu2247	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
Avg	**.000**	**.001**	**.000**	**.002**	**.001**	**.001**	**.000**	**.000**	**.001**	**.000**	**.000**	**.000**
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	33.0	2.17	3.30	.991	3.80	1.86	6.66	13.7	5.32	10.5	1.89	43.6

Elem	Sb2175	Zn2138	Sr4077
Units	Cts/S	Cts/S	Cts/S
Avg	**.000**	**.000**	**.001**
Stddev	.000	.000	.000
%RSD	42.9	4.55	2.85

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**936000.**	**397190.**	**13028.**
Stddev	41741.	10937.	18.
%RSD	4.4595	2.7534	.14173

Sample Name: CalStd5=10 Acquired: 10/18/2016 07:59:47 Type: Cal
Method: DOD Calibration Updated 060614(v1658) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	As1937	Ba2335	Be3130	Cd2265	Co2286	Cr2055	Cr2677	Cu2247	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
Avg	**30.8**	**.000**	**.002**	**.001**	**.004**	**.002**	**.002**	**.000**	**.001**	**.001**	**.000**	**.000**
Stddev	1.4	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	4.38	836.	2.13	4.67	.409	2.03	1.69	5.04	4.05	1.92	6.97	2.26

Elem	Pb2169	Pb2203	Sb2068	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	B_2497	Li6707
Units	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**	**.001**	**.000**	**.000**
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	7.02	3.36	35.2	5.91	11.2	35.9	6.14	2.24	1.35	5.34	6.51

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**929140.**	**411760.**	**13025.**
Stddev	33026.	5955.	45.
%RSD	3.5545	1.4463	.34545

Sample Name: CalStd6=20 Acquired: 10/18/2016 08:06:44 Type: Cal
Method: DOD Calibration Updated 060614(v1658) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ba2335	Cu2247	Mo2020	Mo2045	Sb2175	V_2924
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.003**	**.002**	**.002**	**.000**	**.001**	**.000**
Stddev	.000	.000	.000	.000	.000	.000
%RSD	1.33	1.72	.984	2.34	7.25	4.39

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**926290.**	**406420.**	**13099.**
Stddev	30877.	5190.	22.
%RSD	3.3334	1.2769	.16442

Sample Name: CalStd7=50 Acquired: 10/18/2016 08:13:34 Type: Cal
Method: DOD Calibration Updated 060614(v1658) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	As1937	Ba2335	Cd2265	Co2286	Cr2055	Cr2677	Cu2247	Mo2020	Mo2045	Ni2316	Sb2068	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
Avg	**.000**	**.008**	**.021**	**.012**	**.011**	**.000**	**.006**	**.005**	**.000**	**.000**	**.001**	**.000**
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	3.18	.526	.195	.753	.407	3.08	.501	1.21	2.22	2.71	3.58	2.79

Elem	V_2924	Zn2138	Sn1899
Units	Cts/S	Cts/S	Cts/S
Avg	**.000**	**.000**	**.001**
Stddev	.000	.000	.000
%RSD	2.57	2.95	1.64

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**946690.**	**388890.**	**13067.**
Stddev	21774.	13807.	11.
%RSD	2.3000	3.5505	.08590

Sample Name: CalStd8=100 Acquired: 10/18/2016 08:20:22 Type: Cal
Method: DOD Calibration Updated 060614(v1658) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	As1937	As1890	Ba2335	Ba4934	Be3130	Ca3933	Cd2265	Co2286	Co2388	Cr2055	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
Avg	**373.**	**.001**	**.000**	**.015**	**.010**	**.011**	**.013**	**.041**	**.023**	**.000**	**.021**	**.001**
Stddev	4.	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	.939	1.91	7.40	.852	1.99	1.11	.273	.821	.624	1.18	.429	.572

Elem	Cu2247	Mg2802	Mo2020	Mo2045	Ni2216	Ni2316	Pb2169	Pb2203	Sb2175	Se2062	Se1960	Tl1908
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	**.012**	**.009**	**.010**	**.000**	**.000**	**.000**	**.002**	**.004**	**.003**	**.000**	**.001**	**.001**
Stddev	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
%RSD	.599	1.02	.497	.208	.460	.473	1.49	1.90	2.07	9.23	1.70	1.44

Elem	V_2908	V_2924	Zn2138	Sr4077	Sn1899	B_2497	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.000**	**.001**	**.000**	**.015**	**.001**	**.001**	**.003**
Stddev	.000	.000	.000	.000	.000	.000	.000
%RSD	2.44	1.26	.423	2.13	2.35	.872	1.75

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**955450.**	**414360.**	**13056.**
Stddev	6289.	7071.	38.
%RSD	.65824	1.7066	.29030

Sample Name: CalStd9=1000 Acquired: 10/18/2016 08:27:10 Type: Cal
Method: DOD Calibration Updated 060614(v1658) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Al3961	As1937	As1890	Ba2335	Ba4934	Be3130	Ca3158	Ca3933	Cd2265	Co2286	Co2388	Cr2055
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	**.002**	**.012**	**.003**	**.147**	**.056**	**.108**	**.000**	**.105**	**.391**	**.230**	**.004**	**.206**
Stddev	.000	.000	.000	.002	.003	.002	.000	.001	.004	.002	.000	.002
%RSD	6.58	.720	1.02	1.09	5.99	1.96	5.56	1.37	1.04	1.07	1.99	1.16

Elem	Cr2677	Cu2247	Fe2343	Fe2599	Mg2790	Mg2802	Mn2593	Mo2020	Mo2045	Ni2216	Ni2316	Pb2169
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	**.006**	**.115**	**.001**	**.000**	**.000**	**.082**	**.004**	**.099**	**.001**	**.003**	**.003**	**.019**
Stddev	.000	.001	.000	.000	.000	.002	.000	.001	.000	.000	.000	.000
%RSD	1.92	1.10	1.76	7.04	6.36	1.84	1.38	1.08	.656	.729	.492	1.18

Elem	Pb2203	Sb2068	Sb2175	Se2062	Se1960	Tl1908	V_2908	V_2924	Zn2062	Zn2138	Sr4077	Sn1899
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	**.040**	**.027**	**.028**	**.002**	**.008**	**.013**	**.001**	**.007**	**.151**	**.003**	**.149**	**.012**
Stddev	.001	.000	.000	.000	.000	.000	.000	.000	.002	.000	.009	.000
%RSD	1.41	.908	1.13	3.03	.856	.912	1.34	2.35	1.11	.595	6.07	1.11

Elem	B_2497	Li6707
Units	Cts/S	Cts/S
Avg	**.006**	**.025**
Stddev	.000	.002
%RSD	1.95	6.05

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**936250.**	**411120.**	**12965.**
Stddev	9276.	21293.	79.
%RSD	.99080	5.1792	.60771

Sample Name: CalStd10=10000 Acquired: 10/18/2016 08:33:21 Type: Cal
Method: DOD Calibration Updated 060614(v1658) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Al3961	As1937	As1890	Ba4934	Ca3158	Co2286	Co2388	Cr2055	Cr2677	Cu2247	Fe2343	Fe2599
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	**.019**	**.114**	**.032**	**.498**	**.004**	**2.17**	**.034**	**1.96**	**.063**	**1.08**	**.008**	**.004**
Stddev	.000	.001	.000	.004	.000	.01	.001	.01	.002	.01	.000	.000
%RSD	.590	.527	.721	.875	.551	.541	3.72	.536	3.55	.706	3.50	.524

Elem	Mg2790	Mg2802	Mn2593	Mo2045	Ni2216	Ni2316	Pb2169	Pb2203	Sb2068	Sb2175	Se2062	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
Avg	**.001**	**.748**	**.038**	**.007**	**.029**	**.028**	**.170**	**.378**	**.262**	**.277**	**.021**	**.080**
Stddev	.000	.030	.001	.000	.001	.001	.001	.002	.002	.002	.000	.000
%RSD	1.43	4.02	3.95	4.12	4.05	4.06	.718	.561	.594	.656	.530	.541

Elem	Tl1908	V_2908	V_2924	Zn2062	Zn2138	Sr4077	Sn1899	B_2497	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.118**	**.010**	**.071**	**1.42**	**.033**	**1.45**	**.112**	**.058**	**.250**
Stddev	.001	.000	.003	.01	.001	.05	.001	.002	.002
%RSD	.721	4.14	3.56	.472	4.10	3.26	.524	3.74	.640

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**883290.**	**411290.**	**12721.**
Stddev	36182.	3271.	49.
%RSD	4.0962	.79539	.38888

Sample Name: CalStd11-100k Acquired: 10/18/2016 08:40:20 Type: Cal
Method: DOD Calibration Updated 060614(v1658) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Cr2055	Mn2593	Pb2169	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**17.6**	**.364**	**1.69**	**13.1**
Stddev	.2	.021	.01	.1
%RSD	.972	5.85	.852	1.08

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**888090.**	**400800.**	**12761.**
Stddev	35784.	12507.	56.
%RSD	4.0293	3.1204	.44001

Sample Name: CalStd12-100000 Acquired: 10/18/2016 08:47:28 Type: Cal
Method: DOD Calibration Updated 060614(v1658) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Al3961	Ca3158	Fe2599	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.191**	**.043**	**.043**	**.010**
Stddev	.004	.001	.001	.000
%RSD	2.23	2.42	2.29	2.32

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**880450.**	**390970.**	**12474.**
Stddev	28234.	9912.	79.
%RSD	3.2068	2.5353	.63119

Sample Name: CalStd13=500000 Acquired: 10/18/2016 08:54:36 Type: Cal
Method: DOD Calibration Updated 060614(v1658) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Al3961	Ca3158	Fe2343	Fe2599	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.967**	**.204**	**.266**	**.193**	**.049**
Stddev	.072	.011	.004	.010	.003
%RSD	7.44	5.22	1.32	5.24	5.10

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**844660.**	**379620.**	**11643.**
Stddev	24352.	19313.	50.
%RSD	2.8831	5.0873	.42774

Sample Name: CalStd14-1000k Acquired: 10/18/2016 09:02:04 Type: Cal
Method: DOD Calibration Updated 060614(v1658) Mode: IR Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Al3961	Ca3158	Fe2343	Fe2599	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.89**	**.394**	**.427**	**.350**	**.095**
Stddev	.08	.011	.014	.016	.004
%RSD	4.43	2.67	3.35	4.68	3.70

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**779940.**	**366740.**	**10875.**
Stddev	22694.	12318.	32.
%RSD	2.9097	3.3587	.29872

Sample Name: icv Acquired: 10/18/2016 09:16:57 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1890	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Co2388	Cr2677	Cu2247	Fe2343
Avg	**49.0**	**12100.**	**2090.**	**2090.**	**50.8**	**10400.**	**48.9**	**521.**	**521.**	**209.**	**246.**	**5410.**
Stddev	.3	172.	12.	29.	2.2	178.	.4	3.	26.	10.	2.	253.
%RSD	.652	1.42	.577	1.37	4.41	1.72	.861	.518	4.96	4.81	.680	4.68
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Mg2790	Mn2593	Mo2020	Mo2045	Ni2216	Ni2316	Pb2169	Pb2203	Sb2068	Sb2175	Se2062	Tl1908
Avg	**10300.**	**515.**	**523.**	**547.**	**516.**	**522.**	**530.**	**521.**	**517.**	**524.**	**1930.**	**1990.**
Stddev	166.	17.	3.	25.	25.	25.	4.	4.	3.	3.	14.	17.
%RSD	1.61	3.33	.640	4.62	4.86	4.72	.668	.682	.519	.607	.716	.854
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	V_2908	V_2924	Zn2062	Zn2138	Sr4077	Sn1899	B_2497	Li6707
Avg	**506.**	**518.**	**529.**	**518.**	**535.**	**536.**	**531.**	**531.**
Stddev	19.	26.	3.	24.	7.	3.	26.	7.
%RSD	3.68	5.05	.652	4.70	1.31	.543	4.95	1.28
Check ?	None	None	None	None	None	None	None	None
Value								
Range								

Sample Name: icv Acquired: 10/18/2016 09:16:57 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**909850.**	**409460.**	**13136.**
Stddev	41256.	9995.	38.
%RSD	4.5344	2.4409	.29139

Sample Name: ICVLL Acquired: 10/18/2016 09:23:46 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3158	Ca3933	Cd2265	Co2286	Cr2677	Cu2247	Fe2599
Avg	**46.9**	**1230.**	**62.9**	**31.1**	**13.2**	**1580.**	**1540.**	**16.2**	**31.6**	**31.6**	**30.8**	**910.**
Stddev	.6	14.	2.0	.5	.3	27.	31.	.2	.5	.7	.3	10.
%RSD	1.32	1.18	3.19	1.67	2.11	1.71	1.98	1.10	1.48	2.22	.976	1.12
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	Mg2790	Mn2593	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899
Avg	**1560.**	**31.9**	**30.8**	**31.9**	**32.5**	**64.2**	**62.7**	**56.1**	**31.7**	**32.6**	**32.5**	**152.**
Stddev	19.	.5	.4	.4	2.0	1.0	3.8	2.6	1.6	.8	.4	2.
%RSD	1.21	1.44	1.21	1.22	6.31	1.59	6.09	4.64	4.98	2.39	1.15	1.59
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	B_2497	Li6707
Avg	**63.5**	**61.3**
Stddev	1.5	.6
%RSD	2.41	1.01
Check ?	Chk Pass	Chk Pass
Value		
Range		

Sample Name: ICVLL Acquired: 10/18/2016 09:23:46 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**937810.**	**418090.**	**13174.**
Stddev	18071.	4144.	93.
%RSD	1.9270	.99125	.70952

Sample Name: icb Acquired: 10/18/2016 09:37:36 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3933	Cd2265	Co2286	Cr2677	Cu2247	Fe2599	Mg2802
Avg	**-.212**	**.560**	**-1.17**	**-.195**	**-.041**	**-.761**	**.125**	**-.102**	**-.334**	**.295**	**4.47**	**.833**
Stddev	.313	3.24	.84	.101	.018	.109	.144	.270	.168	.273	3.80	.193
%RSD	148.	578.	72.2	51.6	43.9	14.3	115.	265.	50.3	92.5	85.1	23.1
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Mn2593	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899	B_2497
Avg	**-.032**	**.017**	**-.177**	**-1.45**	**-1.74**	**-2.90**	**-2.18**	**-.360**	**-.048**	**-.040**	**-3.95**	**.866**
Stddev	.243	.216	.446	1.75	1.59	2.83	1.66	.886	.158	.053	1.70	.599
%RSD	770.	1230.	252.	121.	91.3	97.6	76.2	246.	328.	131.	43.1	69.2
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Li6707
Avg	**.284**
Stddev	.378
%RSD	133.
Check ?	None
Value	
Range	

Sample Name: icb Acquired: 10/18/2016 09:37:36 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**944540.**	**389610.**	**13207.**
Stddev	14191.	15033.	56.
%RSD	1.5024	3.8586	.42630

Sample Name: icsa Acquired: 10/18/2016 09:51:38 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3158	Cd2265	Co2286	Cr2677	Cu2247	Fe2343
Avg	**.000**	**513000.**	**.006**	**.000**	**-.163**	**476000.**	**.002**	**.011**	**.000**	**-.151**	**398000.**
Stddev	.88	18900.	10.9	.403	.057	13200.	2.00	.429	.37	3.64	9240.
%RSD	795e15	3.70	181000.	10e6	35.2	2.77	112000.	3940.	7820000.	2420.	2.32
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit											
Low Limit											

Elem	Mg2790	Mn2593	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077
Avg	**516000.**	**.249**	**.000**	**-.680**	**-.164**	**.001**	**.003**	**-.379**	**.000**	**.001**	**.000**
Stddev	13800.	18.0	.921	.151	1.98	4.07	5.16	3.90	.314	.536	.346
%RSD	2.68	7230.	353000.	22.2	1210.	524000.	172000.	1030.	999000.	87500.	2460000.
Check ?	None	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	Sn1899	B_2497	Li6707
Avg	**-.277**	**.017**	**3.52**
Stddev	3.93	2.87	.73
%RSD	1420.	17100.	20.7
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Sample Name: icsa Acquired: 10/18/2016 09:51:38 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**839360.**	**389090.**	**11696.**
Stddev	18564.	8170.	49.
%RSD	2.2117	2.0998	.41780

Sample Name: icsab Acquired: 10/18/2016 09:59:06 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	As1890	Ba2335	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Co2388
Avg	**496.**	**530000.**	**517.**	**492.**	**461.**	**445.**	**513.**	**498000.**	**463.**	**451.**	**438.**
Stddev	2.	23100.	26.	10.	3.	8.	26.	8340.	2.	3.	21.
%RSD	.499	4.36	5.04	1.97	.725	1.85	5.00	1.67	.444	.655	4.73
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	Cr2055	Cr2677	Cu2247	Fe2343	Mg2790	Mn2593	Mo2020	Mo2045	Ni2216	Ni2316	Pb2169
Avg	**533.**	**477.**	**423.**	**427000.**	**540000.**	**536.**	**465.**	**495.**	**450.**	**439.**	**498.**
Stddev	5.	23.	6.	24100.	9250.	44.	6.	24.	23.	22.	23.
%RSD	.905	4.76	1.41	5.65	1.71	8.14	1.39	4.86	5.09	4.97	4.66
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	Sb2068	Sb2175	Se1960	Tl1908	V_2908	V_2924	Zn2062	Zn2138	Sr4077	Sn1899
Avg	**434.**	**507.**	**516.**	**496.**	**510.**	**424.**	**479.**	**422.**	**492.**	**511.**	**453.**
Stddev	5.	7.	5.	11.	11.	20.	24.	3.	25.	10.	6.
%RSD	1.17	1.31	.917	2.29	2.24	4.72	5.06	.706	5.15	1.91	1.34
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: 10/18/2016 09:59:06 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	B_2497	Li6707
Avg	**501.**	**545.**
Stddev	21.	11.
%RSD	4.12	2.05
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**821200.**	**393730.**	**11664.**
Stddev	37516.	7566.	40.
%RSD	4.5685	1.9216	.34201

Sample Name: ICVLL ag Acquired: 10/18/2016 10:07:02 Type: Unk
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3933	Cd2265	Co2286	Cr2677	Cu2247	Fe2599	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
Avg	**10.1**	**40.7**	**-3.21**	**.041**	**-.037**	**9.27**	**.032**	**-.196**	**-.066**	**.152**	**185.**	**5.44**
Stddev	.9	46.9	2.37	.086	.061	1.31	.112	.222	.618	.371	199.	.58
%RSD	8.98	115.	73.9	210.	163.	14.2	348.	113.	934.	244.	107.	10.7

Elem	Mn2593	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899	B_2497
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	**.210**	**.283**	**-.189**	**-.088**	**.407**	**-1.91**	**-1.02**	**.004**	**.821**	**.035**	**-4.23**	**.669**
Stddev	.109	.185	.259	2.46	2.22	3.46	1.54	.593	.142	.047	2.06	.124
%RSD	51.7	65.3	137.	2780.	546.	181.	150.	15000.	17.3	133.	48.7	18.5

Elem	Li6707
Units	ug/L
Avg	**-.792**
Stddev	.511
%RSD	64.5

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**932820.**	**410520.**	**13382.**
Stddev	36187.	13510.	57.
%RSD	3.8794	3.2908	.42779

Sample Name: ccv1 Acquired: 10/18/2016 17:15:15 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1890	Ba4934	Be3130	Ca3158	Cd2265	Co2388	Cr2055	Cu2247	Fe2343	Mg2790
Avg	**480.**	**5040.**	**4890.**	**5000.**	**486.**	**4910.**	**463.**	**5040.**	**5150.**	**4840.**	**5470.**	**4990.**
Stddev	2.	68.	13.	78.	10.	58.	1.	102.	11.	12.	115.	37.
%RSD	.332	1.35	.260	1.57	2.00	1.19	.151	2.02	.206	.238	2.10	.747
Check ?	None	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	Mn2593	Mo2045	Ni2216	Pb2169	Sb2068	Se2062	Tl1908	V_2908	Zn2062	Sr4077	Sn1899	B_2497
Avg	**4990.**	**5050.**	**5250.**	**4690.**	**4830.**	F **4420.**	**4890.**	**5140.**	**4980.**	**5140.**	**4800.**	**5250.**
Stddev	115.	134.	138.	24.	13.	11.	21.	113.	13.	117.	8.	102.
%RSD	2.30	2.65	2.64	.511	.264	.254	.423	2.19	.266	2.27	.162	1.93
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	None	Chk Pass
Value						5000.						
Range						-10.4%						

Elem	Li6707
Avg	**4920.**
Stddev	77.
%RSD	1.56
Check ?	None
Value	
Range	

Sample Name: ccv1 Acquired: 10/18/2016 17:15:15 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**894470.**	**408600.**	**13798.**
Stddev	21979.	4830.	35.
%RSD	2.4572	1.1820	.25466

Sample Name: ccv2 Acquired: 10/18/2016 17:21:40 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	As1890	Ba2335	Be3130	Ca3933	Cd2265	Co2286	Cr2677	Cu2247	Fe2599
Avg	**53.3**	**532.**	**467.**	**515.**	**479.**	**51.4**	**512.**	**50.1**	**486.**	**541.**	**494.**	**455.**
Stddev	.7	19.	4.	5.	1.	.5	3.	.4	3.	7.	3.	15.
%RSD	1.36	3.49	.817	.895	.199	1.01	.661	.824	.544	1.30	.633	3.25
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Mg2802	Mn2593	Mo2020	Ni2316	Pb2203	Sb2175	Se2062	Se1960	Tl1908	V_2924	Zn2138	Sr4077
Avg	**506.**	**523.**	**479.**	**542.**	**504.**	**507.**	**491.**	**499.**	**506.**	**472.**	**521.**	**543.**
Stddev	6.	4.	2.	7.	5.	4.	19.	8.	4.	4.	6.	18.
%RSD	1.11	.697	.468	1.26	.896	.750	3.77	1.51	.765	.847	1.22	3.35
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	Sn1899	B_2497	Li6707
Avg	**506.**	**546.**	**528.**
Stddev	3.	7.	18.
%RSD	.496	1.22	3.48
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Sample Name: ccv2 Acquired: 10/18/2016 17:21:40 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**913960.**	**392610.**	**13779.**
Stddev	10775.	12281.	47.
%RSD	1.1790	3.1280	.34104

Sample Name: ccb Acquired: 10/18/2016 17:28:05 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3933	Cd2265	Co2286	Cr2677	Cu2247	Fe2599	Mg2802
Avg	**.909**	**-2.88**	**-.922**	**-.028**	**.017**	**-.022**	**.173**	**-.001**	**-.412**	**.349**	**-.981**	**.591**
Stddev	.279	1.30	4.26	.094	.065	.572	.027	.194	.770	.500	4.78	.037
%RSD	30.7	45.2	462.	334.	374.	2640.	15.6	21900.	187.	143.	487.	6.31
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Mn2593	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899	B_2497
Avg	**.200**	**.457**	**.118**	**-.029**	**.247**	**-3.22**	**-1.36**	**.338**	**-.130**	**.211**	**-3.36**	**10.1**
Stddev	.206	.137	.344	1.21	.544	4.15	1.57	.269	.067	.152	1.14	.3
%RSD	103.	30.0	291.	4140.	220.	129.	116.	79.6	51.1	71.8	33.9	2.75
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Li6707
Avg	**.480**
Stddev	1.03
%RSD	216.
Check ?	None
Value	
Range	

Sample Name: ccb Acquired: 10/18/2016 17:28:05 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**913710.**	**403370.**	**13915.**
Stddev	18465.	13254.	84.
%RSD	2.0209	3.2857	.60017

Sample Name: pdss784496 Acquired: 10/18/2016 17:55:57 Type: Unk
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba4934	Be3130	Ca3158	Cd2265	Co2286	Cr2055	Cr2677	Cu2247
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**-8.18**	**289000.**	**82.5**	**2550.**	**16.1**	**94600.**	**-9.07**	**130.**	**647.**	**656.**	**246.**
Stddev	.47	2830.	3.4	33.	.1	1350.	2.35	1.	2.	8.	5.
%RSD	5.68	.979	4.08	1.28	.889	1.43	25.9	.397	.333	1.20	2.19

Elem	Fe2343	Mg2790	Mn2593	Mo2045	Ni2216	Ni2316	Pb2169	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	**419000.**	**41500.**	**18800.**	**2160.**	**318.**	**304.**	**16700.**	**164.**	**21.6**	**-6.95**	**826.**
Stddev	11700.	542.	359.	38.	6.	6.	25.	2.	4.0	2.78	14.
%RSD	2.79	1.31	1.91	1.77	2.01	1.99	.147	1.51	18.6	40.0	1.70

Elem	V_2924	Zn2062	Zn2138	Sr4077	Sn1899	B_2497	Li6707
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avg	**813.**	**823.**	**883.**	**2570.**	**1980.**	**67.4**	**2450.**
Stddev	10.	2.	15.	27.	8.	4.5	26.
%RSD	1.28	.208	1.66	1.06	.424	6.61	1.07

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**846950.**	**390000.**	**13137.**
Stddev	16008.	6834.	51.
%RSD	1.8901	1.7524	.38626

Sample Name: 784516 Acquired: 10/18/2016 18:02:35 Type: Unk
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 10
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3158	Cd2265	Co2286	Cr2677	Cu2247	Fe2343	Mg2790
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	**-.004**	**32900.**	**7.57**	**220.**	**1.58**	**8680.**	**-2.81**	**14.6**	**62.5**	**74.3**	**49200.**	**3730.**
Stddev	.432	2650.	2.81	2.	.03	682.	.26	.1	1.7	1.0	1320.	290.
%RSD	10200.	8.04	37.1	.947	2.10	7.86	9.27	.598	2.77	1.34	2.69	7.78

Elem	Mn2593	Mo2020	Ni2316	Pb2169	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899	B_2497
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	**2230.**	**2.01**	**20.8**	**20000.**	**29.7**	**1.84**	**-1.16**	**82.4**	**95.1**	**34.6**	**-.821**	**4.43**
Stddev	158.	.31	1.0	126.	1.4	5.02	1.87	2.2	2.9	2.8	2.38	.33
%RSD	7.10	15.6	4.95	.634	4.55	273.	161.	2.69	3.07	8.17	290.	7.47

Elem	Li6707
Units	ug/L
Avg	**15.7**
Stddev	1.5
%RSD	9.82

Int. Std.	Y_3242	Y_3710	Y_2243
Units	Cts/S	Cts/S	Cts/S
Avg	**931440.**	**405380.**	**14141.**
Stddev	12243.	8680.	86.
%RSD	1.3144	2.1412	.60703

Sample Name: ccv1 Acquired: 10/18/2016 18:44:41 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1890	Ba4934	Be3130	Ca3158	Cd2265	Co2388	Cr2055	Cu2247	Fe2343	Mg2790
Avg	**487.**	**5150.**	**5020.**	**5060.**	**496.**	**5130.**	**483.**	**5080.**	**5380.**	**4960.**	**5500.**	**5160.**
Stddev	2.	120.	24.	158.	12.	93.	2.	147.	27.	25.	160.	116.
%RSD	.427	2.34	.471	3.12	2.51	1.81	.483	2.89	.498	.507	2.92	2.25
Check ?	None	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	Mn2593	Mo2045	Ni2216	Pb2169	Sb2068	Se2062	Tl1908	V_2908	Zn2062	Sr4077	Sn1899	B_2497
Avg	**5020.**	**5170.**	**5340.**	**4860.**	**4980.**	**4610.**	**5020.**	**5110.**	**5190.**	**5240.**	**4990.**	**5250.**
Stddev	103.	121.	130.	32.	30.	60.	28.	96.	12.	182.	19.	146.
%RSD	2.05	2.35	2.43	.657	.602	1.30	.554	1.88	.221	3.48	.374	2.79
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None	Chk Pass
Value												
Range												

Elem	Li6707
Avg	**5010.**
Stddev	122.
%RSD	2.44
Check ?	None
Value	
Range	

Sample Name: ccv1 Acquired: 10/18/2016 18:44:41 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**902940.**	**403060.**	**13678.**
Stddev	21971.	10874.	74.
%RSD	2.4333	2.6980	.53979

Sample Name: ccv2 Acquired: 10/18/2016 18:51:19 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Ba4934	Be3130	Ca3933	Cd2265	Co2286	Cr2677	Cu2247	Fe2599
Avg	**53.4**	**530.**	**478.**	**492.**	**544.**	**52.0**	**505.**	**51.5**	**499.**	**541.**	**503.**	**464.**
Stddev	1.1	1.	3.	6.	7.	.3	.	.7	3.	3.	4.	2.
%RSD	2.08	.119	.683	1.24	1.35	.619	.083	1.39	.690	.622	.881	.535
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Mg2802	Mn2593	Mo2020	Ni2316	Pb2203	Sb2175	Se2062	Se1960	Tl1908	V_2924	Zn2138	Sr4077
Avg	**506.**	**522.**	**490.**	**545.**	**520.**	**516.**	**483.**	**507.**	**513.**	**479.**	**524.**	**542.**
Stddev	5.	2.	4.	4.	6.	5.	19.	.	7.	10.	1.	5.
%RSD	1.04	.462	.798	.795	1.22	.912	4.01	.040	1.37	2.05	.241	.968
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	Sn1899	B_2497	Li6707
Avg	**522.**	**540.**	**525.**
Stddev	8.	4.	5.
%RSD	1.55	.711	.861
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Sample Name: ccv2 Acquired: 10/18/2016 18:51:19 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**930340.**	**397480.**	**13773.**
Stddev	214.	4515.	99.
%RSD	.02296	1.1359	.71970

Sample Name: ccb Acquired: 10/18/2016 18:57:44 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Elem	Ag3280	Al3961	As1937	Ba2335	Be3130	Ca3933	Cd2265	Co2286	Cr2677	Cu2247	Fe2599	Mg2802
Avg	**.677**	**-2.71**	**-1.34**	**.173**	**.039**	**-1.10**	**.154**	**.245**	**-.278**	**.201**	**6.59**	**-.169**
Stddev	.082	1.79	2.18	.108	.016	.54	.124	.242	.315	.241	6.69	.094
%RSD	12.1	66.2	163.	62.3	41.8	49.0	80.3	98.7	113.	120.	101.	55.4
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

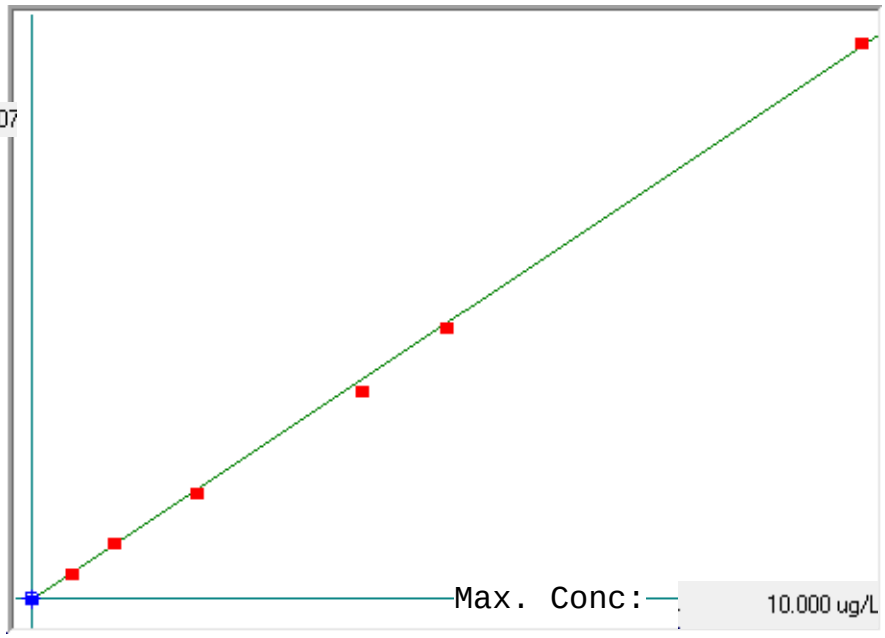
Elem	Mn2593	Mo2020	Ni2316	Pb2203	Sb2175	Se1960	Tl1908	V_2924	Zn2138	Sr4077	Sn1899	B_2497
Avg	**-.001**	**.454**	**-.091**	**.306**	**.483**	**-2.39**	**-.732**	**.332**	**-.225**	**.208**	**-4.06**	**6.71**
Stddev	.397	.092	.146	1.22	1.75	2.03	1.87	.595	.184	.179	1.60	.37
%RSD	57300.	20.3	160.	398.	362.	84.9	255.	179.	81.7	86.0	39.5	5.48
Check ?	None	None	None	None	None	None	None	None	None	None	None	None
Value												
Range												

Elem	Li6707
Avg	**.128**
Stddev	.400
%RSD	312.
Check ?	None
Value	
Range	

Sample Name: ccb Acquired: 10/18/2016 18:57:44 Type: QC
Method: DOD Calibration Updated 060614(v1658) Mode: CONC Corr. Factor: 1.000000
User: NAH ICAP6500: Prep Batch: Post Digestion dilution: 1
Comment:

Int. Std.	Y_3242	Y_3710	Y_2243
Avg	**935950.**	**407520.**	**13856.**
Stddev	22998.	5735.	67.
%RSD	2.4572	1.4072	.48498

CVAA SOIL



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B= 2.6005e-004

C= 4.3683e-002

Rho= 0.9996093

Accept= Accepted

Accepted Date=

10/14/16 08:43

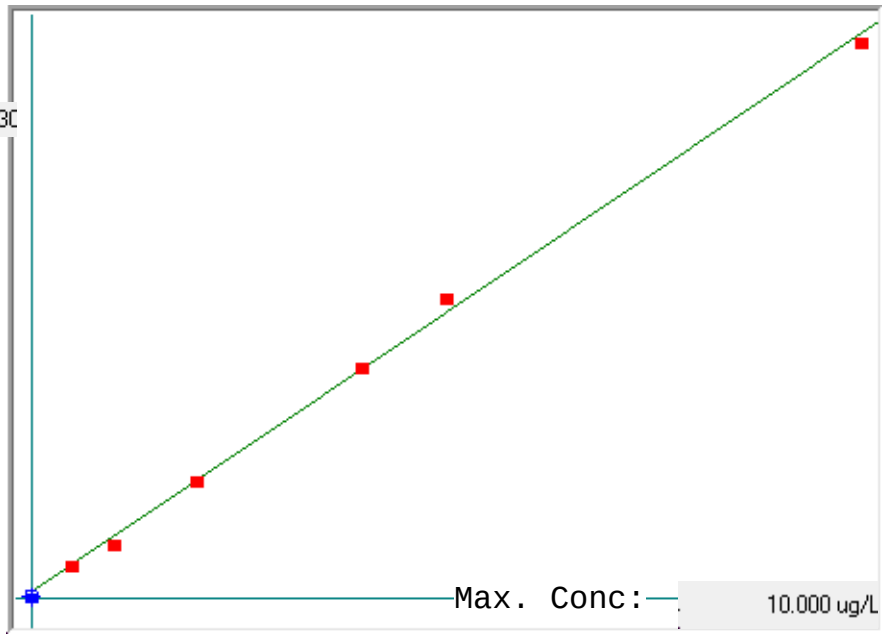
Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
Calibration Blank	0.000	0.051	0.051	29	4.323	23	29	33	34	
0.5	0.500	0.529	0.029	1867	3.8 %	1767	1843	1905	1956	
1.0	1.000	1.085	0.085	4005	4.0 %	3784	3935	4097	4206	
2.0	2.000	1.980	-0.020	7446	3.7 %	7057	7335	7597	7797	
4.0	4.000	3.804	-0.196	14459	3.4 %	13767	14265	14721	15084	
5.0	5.000	4.966	-0.034	18929	2.8 %	18152	18759	19240	19566	
10.0	10.000	10.083	0.083	38606	2.5 %	37224	38311	39120	39771	

101416SO PDF

Method: CVAA SOIL Operator: Admin Date of Analysis: 14 Oct 2016 07:28:56

Sample ID	Date	Element	Units	Extended ID	LT Mean Conc
Calibration Blank	14 Oct 2016 08:28:07	Hg	ug/L		29.750
0.5	14 Oct 2016 08:30:16	Hg	ug/L		1867.750
1.0	14 Oct 2016 08:32:28	Hg	ug/L		4005.500
2.0	14 Oct 2016 08:34:39	Hg	ug/L		7446.500
4.0	14 Oct 2016 08:36:50	Hg	ug/L		14459.250
5.0	14 Oct 2016 08:39:01	Hg	ug/L		18929.250
10.0	14 Oct 2016 08:41:11	Hg	ug/L		38606.500
ICV	14 Oct 2016 08:49:50	Hg	ug/L		3.275
ICB	14 Oct 2016 08:52:00	Hg	ug/L		0.021
MRL	14 Oct 2016 08:54:08	Hg	ug/L		0.819
786357 LCSS59469	14 Oct 2016 08:56:17	Hg	ug/L		2.187
786356 MBS59469	14 Oct 2016 08:58:26	Hg	ug/L		-0.001
785311	14 Oct 2016 09:00:35	Hg	ug/L		0.124
DUP785311	14 Oct 2016 09:02:45	Hg	ug/L		0.173
MSS785311	14 Oct 2016 09:04:54	Hg	ug/L		2.433
MSDS785311	14 Oct 2016 09:07:03	Hg	ug/L		2.259
786375 LCSS59476	14 Oct 2016 09:09:13	Hg	ug/L		1.981
786374 MBS59476	14 Oct 2016 09:11:24	Hg	ug/L		-0.009
785439	14 Oct 2016 09:13:34	Hg	ug/L		0.670
CCV	14 Oct 2016 09:27:05	Hg	ug/L		3.146
CCB	14 Oct 2016 09:29:13	Hg	ug/L		-0.018
DUP785439	14 Oct 2016 09:31:23	Hg	ug/L		0.661
MSS785439	14 Oct 2016 09:33:33	Hg	ug/L		2.326
MSDS785439	14 Oct 2016 09:35:44	Hg	ug/L		3.244
785455	14 Oct 2016 09:37:54	Hg	ug/L		0.529
785456	14 Oct 2016 09:40:04	Hg	ug/L		0.628
785457	14 Oct 2016 09:42:13	Hg	ug/L		0.544
785458	14 Oct 2016 09:44:23	Hg	ug/L		0.604
786369 MBS59473	14 Oct 2016 09:48:41	Hg	ug/L		-0.017
784783	14 Oct 2016 09:50:51	Hg	ug/L		1.200
CCV	14 Oct 2016 09:53:01	Hg	ug/L		3.104
CCB	14 Oct 2016 09:55:09	Hg	ug/L		-0.011
784852	14 Oct 2016 09:57:19	Hg	ug/L		1.380
784853	14 Oct 2016 09:59:29	Hg	ug/L		0.799
DUP784853	14 Oct 2016 10:01:39	Hg	ug/L		0.702
MSS784853	14 Oct 2016 10:03:50	Hg	ug/L		3.407
MSDS784853	14 Oct 2016 10:06:01	Hg	ug/L		3.313
784854	14 Oct 2016 10:08:11	Hg	ug/L		0.683
784855	14 Oct 2016 10:10:21	Hg	ug/L		0.809
MRL	14 Oct 2016 10:12:30	Hg	ug/L		0.334
MDL	14 Oct 2016 10:14:40	Hg	ug/L		0.203
786370 LCSS59473	14 Oct 2016 10:16:49	Hg	ug/L		2.190
CCV	14 Oct 2016 10:18:59	Hg	ug/L		3.043
CCB	14 Oct 2016 10:21:08	Hg	ug/L		-0.015
786351 LCSS59468	14 Oct 2016 10:23:17	Hg	ug/L		2.098
786350 MBS59468	14 Oct 2016 10:25:27	Hg	ug/L		-0.008
783659	14 Oct 2016 10:27:36	Hg	ug/L	5	0.556
MSS783659	14 Oct 2016 10:29:47	Hg	ug/L	5	1.096
MSDS783659	14 Oct 2016 10:31:57	Hg	ug/L	5	0.853
PDSS783659	14 Oct 2016 10:34:08	Hg	ug/L	5	0.547
783916	14 Oct 2016 10:36:19	Hg	ug/L		2.339
784030	14 Oct 2016 10:38:29	Hg	ug/L		1.025
785330	14 Oct 2016 10:40:39	Hg	ug/L		0.911
786086	14 Oct 2016 10:42:48	Hg	ug/L		2.098
CCV	14 Oct 2016 10:44:58	Hg	ug/L		3.331
CCB	14 Oct 2016 10:47:07	Hg	ug/L		0.044
CCV	14 Oct 2016 10:48:31	Hg	ug/L		2.768
CCB	14 Oct 2016 10:50:40	Hg	ug/L		-0.040
786238	14 Oct 2016 10:52:49	Hg	ug/L		0.006
786240	14 Oct 2016 10:54:58	Hg	ug/L		0.006
786241	14 Oct 2016 10:57:08	Hg	ug/L		0.742
CCV	14 Oct 2016 10:59:18	Hg	ug/L		2.825
CCB	14 Oct 2016 11:01:26	Hg	ug/L		-0.051

CVAA SOIL



A= 0.0000e+000

B= 4.5615e-004

C= -1.1113e-001

Rho= 0.9992326

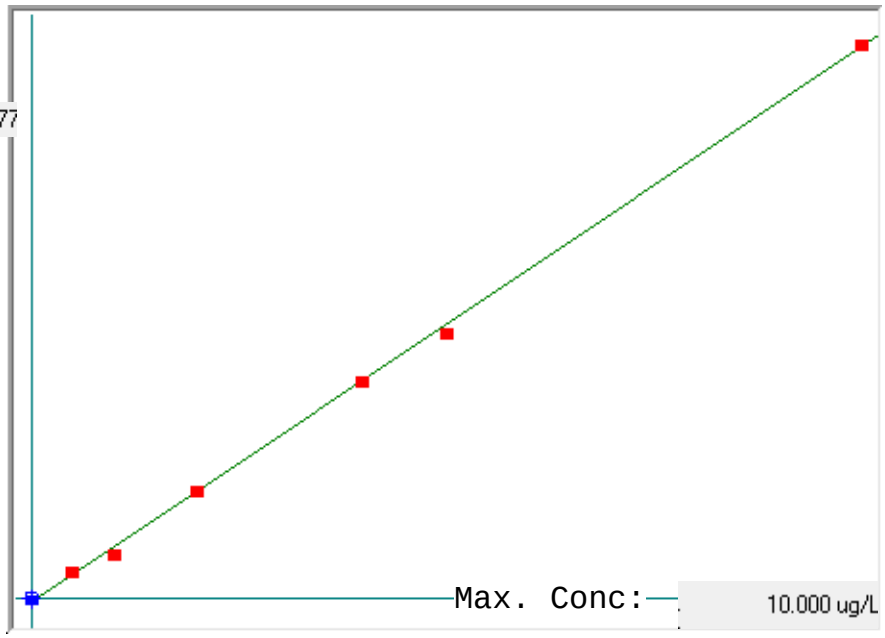
Accept= Accepted

Accepted Date=

10/18/16 08:13

Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
Calibration Blank	0.000	-0.062	-0.062	108	2.586	107	109	105	112	
0.5	0.500	0.506	0.006	1353	2.5 %	1301	1351	1372	1390	
1.0	1.000	0.883	-0.117	2179	2.6 %	2090	2173	2214	2239	
2.0	2.000	2.017	0.017	4664	3.0 %	4457	4627	4748	4827	
4.0	4.000	4.045	0.045	9111	2.6 %	8775	9025	9237	9407	
5.0	5.000	5.265	0.265	11784	2.4 %	11379	11677	11933	12150	
10.0	10.000	9.846	-0.154	21829	2.3 %	21081	21687	22113	22437	

CVAA SOIL



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B= 3.1494e-004

C= 7.9661e-002

Rho= 0.9996810

Accept= Accepted

Accepted Date=

10/18/16 12:52

Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
Calibration Blank	0.000	0.051	0.051	-89	7.124	-79	-87	-97	-95	
0.5	0.500	0.588	0.088	1613	4.4 %	1510	1587	1659	1697	
1.0	1.000	0.879	-0.121	2538	4.2 %	2381	2504	2604	2664	
2.0	2.000	2.053	0.053	6264	4.3 %	5868	6182	6432	6575	
4.0	4.000	4.001	0.001	12450	3.6 %	11833	12269	12670	13031	
5.0	5.000	4.872	-0.128	15217	3.8 %	14398	15033	15495	15945	
10.0	10.000	10.056	0.056	31676	4.1 %	29880	31127	32338	33362	

101816SO PDF

Method: CVAA SOIL Operator: Admin Date of Analysis: 18 Oct 2016 07:16:16

Sample ID	Date	Element	Units	Extended ID	LT Mean Conc
Calibration Blank	18 Oct 2016 07:57:54	Hg	ug/L		108.250
0.5	18 Oct 2016 08:00:03	Hg	ug/L		1353.500
1.0	18 Oct 2016 08:02:15	Hg	ug/L		2179.000
2.0	18 Oct 2016 08:04:26	Hg	ug/L		4664.750
4.0	18 Oct 2016 08:06:37	Hg	ug/L		9111.000
5.0	18 Oct 2016 08:08:48	Hg	ug/L		11784.750
10.0	18 Oct 2016 08:11:00	Hg	ug/L		21829.500
ICV	18 Oct 2016 08:13:11	Hg	ug/L		2.971
ICB	18 Oct 2016 08:15:23	Hg	ug/L		-0.319
MRL	18 Oct 2016 08:17:34	Hg	ug/L		0.185
788745 MBS59544	18 Oct 2016 08:21:52	Hg	ug/L		-0.187
784496	18 Oct 2016 08:24:02	Hg	ug/L		0.959
DUP784496	18 Oct 2016 08:26:11	Hg	ug/L		0.898
MSS784496	18 Oct 2016 08:28:20	Hg	ug/L		3.063
MSDS784496	18 Oct 2016 08:30:30	Hg	ug/L		2.965
784515	18 Oct 2016 08:32:41	Hg	ug/L		0.794
784516	18 Oct 2016 08:34:51	Hg	ug/L		0.745
785308	18 Oct 2016 08:37:02	Hg	ug/L		0.739
CCV	18 Oct 2016 08:39:12	Hg	ug/L		3.260
CCB	18 Oct 2016 08:41:20	Hg	ug/L		-0.307
785309	18 Oct 2016 08:43:31	Hg	ug/L		0.795
785310	18 Oct 2016 08:45:42	Hg	ug/L		0.895
788756 LCSS59546	18 Oct 2016 08:47:53	Hg	ug/L		2.173
788755 MBS59546	18 Oct 2016 08:50:03	Hg	ug/L		-0.305
788660	18 Oct 2016 08:52:14	Hg	ug/L		0.368
788661	18 Oct 2016 08:54:23	Hg	ug/L		0.377
788662	18 Oct 2016 08:56:33	Hg	ug/L		0.216
788663	18 Oct 2016 08:58:42	Hg	ug/L		0.189
788664	18 Oct 2016 09:00:52	Hg	ug/L		0.390
788666	18 Oct 2016 09:03:02	Hg	ug/L		0.626
CCV	18 Oct 2016 09:05:12	Hg	ug/L		3.146
CCB	18 Oct 2016 09:07:20	Hg	ug/L		-0.332
788667	18 Oct 2016 09:09:31	Hg	ug/L		0.638
788668	18 Oct 2016 09:11:42	Hg	ug/L		0.318
788669	18 Oct 2016 09:13:52	Hg	ug/L		0.105
788670	18 Oct 2016 09:16:03	Hg	ug/L		0.129
788671	18 Oct 2016 09:18:14	Hg	ug/L		0.310
788672	18 Oct 2016 09:20:24	Hg	ug/L		0.207
788673	18 Oct 2016 09:22:33	Hg	ug/L		0.166
788674	18 Oct 2016 09:24:43	Hg	ug/L		0.356
788675	18 Oct 2016 09:26:52	Hg	ug/L		0.305
788676	18 Oct 2016 09:29:02	Hg	ug/L		0.274
CCV	18 Oct 2016 09:31:11	Hg	ug/L		2.934
CCB	18 Oct 2016 09:33:20	Hg	ug/L		-0.326
788677	18 Oct 2016 09:35:31	Hg	ug/L		0.317
788678	18 Oct 2016 09:37:41	Hg	ug/L		0.304
788679	18 Oct 2016 09:39:51	Hg	ug/L		0.133
788680	18 Oct 2016 09:42:01	Hg	ug/L		0.287
DUP788680	18 Oct 2016 09:44:11	Hg	ug/L		0.251
MSS788680	18 Oct 2016 09:46:22	Hg	ug/L		2.497
MSDS788680	18 Oct 2016 09:48:34	Hg	ug/L		2.158
788761 LCSS59547	18 Oct 2016 09:50:45	Hg	ug/L		1.649
777760 MBS59547	18 Oct 2016 09:52:57	Hg	ug/L		-0.268
788683	18 Oct 2016 09:55:09	Hg	ug/L		0.246
CCV	18 Oct 2016 09:57:19	Hg	ug/L		2.798
CCB	18 Oct 2016 09:59:27	Hg	ug/L		-0.334
DUP788683	18 Oct 2016 10:01:39	Hg	ug/L		0.252
MSS788683	18 Oct 2016 10:03:48	Hg	ug/L		2.252
MSDS788683	18 Oct 2016 10:05:58	Hg	ug/L		2.027
788684	18 Oct 2016 10:08:10	Hg	ug/L		-0.078
788685	18 Oct 2016 10:10:22	Hg	ug/L		0.245
788751 LCSS59545	18 Oct 2016 10:12:32	Hg	ug/L		1.706
788750 MBS59545	18 Oct 2016 10:14:43	Hg	ug/L		-0.262
787438	18 Oct 2016 10:16:56	Hg	ug/L		2.006
787440	18 Oct 2016 10:19:07	Hg	ug/L		3.102

101816SO PDF

Method: CVAA SOIL Operator: Admin Date of Analysis: 18 Oct 2016 07:16:16

Sample ID	Date	Element	Units	Extended ID	LT Mean Conc
787441	18 Oct 2016 10:21:19	Hg	ug/L		0.657
CCV	18 Oct 2016 10:28:52	Hg	ug/L		2.963
CCB	18 Oct 2016 10:31:00	Hg	ug/L		-0.332
DUP787441	18 Oct 2016 10:33:11	Hg	ug/L		1.312
MSS787441	18 Oct 2016 10:35:21	Hg	ug/L		2.924
MSDS787441	18 Oct 2016 10:37:32	Hg	ug/L		2.350
787442	18 Oct 2016 10:39:44	Hg	ug/L		4.709
787443	18 Oct 2016 10:41:57	Hg	ug/L		1.451
787444	18 Oct 2016 10:49:08	Hg	ug/L		0.537
787447	18 Oct 2016 10:51:19	Hg	ug/L		0.499
787448	18 Oct 2016 10:53:29	Hg	ug/L		2.066
787449	18 Oct 2016 10:55:41	Hg	ug/L		0.295
787450	18 Oct 2016 10:57:53	Hg	ug/L		0.254
CCV	18 Oct 2016 11:03:35	Hg	ug/L		2.827
CCB	18 Oct 2016 11:05:44	Hg	ug/L		-0.366
MRL	18 Oct 2016 11:07:55	Hg	ug/L		0.103
MDL	18 Oct 2016 11:10:05	Hg	ug/L		-0.033
CCV	18 Oct 2016 11:17:49	Hg	ug/L		2.787
CCB	18 Oct 2016 11:19:57	Hg	ug/L		-0.303
Calibration Blank	18 Oct 2016 12:36:51	Hg	ug/L		-71.600
0.5	18 Oct 2016 12:39:21	Hg	ug/L		1613.250
1.0	18 Oct 2016 12:41:32	Hg	ug/L		2538.250
2.0	18 Oct 2016 12:43:44	Hg	ug/L		6264.250
4.0	18 Oct 2016 12:45:55	Hg	ug/L		12450.750
5.0	18 Oct 2016 12:48:05	Hg	ug/L		15217.750
10.0	18 Oct 2016 12:50:15	Hg	ug/L		31676.750
ICV	18 Oct 2016 12:52:27	Hg	ug/L		2.693
ICB	18 Oct 2016 12:54:36	Hg	ug/L		-0.013
788746 LCSS59544	18 Oct 2016 12:56:44	Hg	ug/L		1.929
CCV	18 Oct 2016 12:58:54	Hg	ug/L		2.906
CCB	18 Oct 2016 13:01:02	Hg	ug/L		-0.060

METALS
LOGBOOK
DOCUMENTS

MICP SOIL QSM Analytical Run
131140 on 10/26/2016

Date Analyzed: _____ Date Reviewed: _____

Date Entered: _____ Date Validated: _____

COC	ORDER	SAMPLE DECRIPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	787528						MICP SOIL QSM				
				ICV				0			
	787529						MICP SOIL QSM				
				ICVLL				0			
	787530						MICP SOIL QSM				
				ICB				0			
	787531						MICP SOIL QSM				
				ICSA				0			
	787532						MICP SOIL QSM				
				ICSAB				0			
	787533						MICP SOIL QSM				
				ICVLL				0			
	787534						MICP SOIL QSM				
				CCV1				0			
	787535						MICP SOIL QSM				
				CCV2				0			
	787536						MICP SOIL QSM				
				CCB				0			
	785241						ICP METALS LIST 2 QSM 5.0				
				LCSS				59424			
	785241						ICP QSM 5.0				
				LCSS				59424			
	785240						ICP METALS LIST 2 QSM 5.0				
				MBS				59424			
	785240						ICP QSM 5.0				
				MBS				59424			
122724	784783		10/06/2016 1505		BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP METALS LIST 2 QSM 5.0		S		**4**
		RFAAP-FGMR-SSD-001						59424			
122724	784783		10/06/2016 1505		BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP QSM 5.0		S		**4**
		RFAAP-FGMR-SSD-001						59424			
122724	784852		10/06/2016 1515		BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP METALS LIST 2 QSM 5.0		S		**4**
		RFAAP-FGMR-DUP1						59424			
122724	784852		10/06/2016 1515		BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP QSM 5.0		S		**4**
		RFAAP-FGMR-DUP1						59424			
122724	784853		10/06/2016 1530		BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP METALS LIST 2 QSM 5.0		S		**4**
		RFAAP-FGMR-SSD-002		Designated MS/MSD				59424			
122724	784853		10/06/2016 1530		BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP QSM 5.0		S		**4**
		RFAAP-FGMR-SSD-002		Designated MS/MSD				59424			

Matrix: S-Soil Slg-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

MICP SOIL QSM Analytical Run
131140 on 10/26/2016

Date Analyzed: _____ Date Reviewed: _____

Date Entered: _____ Date Validated: _____

COC	ORDER	SAMPLE DECRIPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)		CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	787537							ICP METALS LIST 2 QSM 5.0				
				L	784853				0			
	787537							ICP QSM 5.0				
				L	784853				0			
	787538							MICP SOIL QSM				
				CCV1					0			
	787539							MICP SOIL QSM				
				CCV2					0			
	787540							MICP SOIL QSM				
				CCB					0			
	785242		10/06/2016 1530					ICP METALS LIST 2 QSM 5.0				
		RFAAP-FGMR-SSD-002		DUP	784853				59424			
	785242		10/06/2016 1530					ICP QSM 5.0				
		RFAAP-FGMR-SSD-002		DUP	784853				59424			
	785243		10/06/2016 1530					ICP METALS LIST 2 QSM 5.0				
		RFAAP-FGMR-SSD-002		MSS	784853				59424			
	785243		10/06/2016 1530					ICP QSM 5.0				
		RFAAP-FGMR-SSD-002		MSS	784853				59424			
	785244		10/06/2016 1530					ICP METALS LIST 2 QSM 5.0				
		RFAAP-FGMR-SSD-002		MSDS	785243				59424			
	785244		10/06/2016 1530					ICP QSM 5.0				
		RFAAP-FGMR-SSD-002		MSDS	785243				59424			
	787541							ICP METALS LIST 2 QSM 5.0				
				PDSS	784853				0			
	787541							ICP QSM 5.0				
				PDSS	784853				0			
122724	784854		10/06/2016 1550			BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP METALS LIST 2 QSM 5.0		S	**4**	
		RFAAP-FGMR-SSD-003							59424			
122724	784854		10/06/2016 1550			BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP QSM 5.0		S	**4**	
		RFAAP-FGMR-SSD-003							59424			
122724	784855		10/06/2016 1610			BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP METALS LIST 2 QSM 5.0		S	**4**	
		RFAAP-FGMR-SSD-004							59424			
122724	784855		10/06/2016 1610			BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP QSM 5.0		S	**4**	
		RFAAP-FGMR-SSD-004							59424			
	787542							MICP SOIL QSM				
				CCV1					0			
	787543							MICP SOIL QSM				
				CCV2					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

MICP SOIL QSM Analytical Run
131140 on 10/26/2016

Date Analyzed: _____ Date Reviewed: _____

Date Entered: _____ Date Validated: _____

COC	ORDER	SAMPLE DECRIPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	787544						MICP SOIL QSM				
				CCB				0			

39 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

MICP SOIL QSM Analytical Run
131318 on 10/26/2016

Date Analyzed: _____ Date Reviewed: _____

Date Entered: _____ Date Validated: _____

COC	ORDER	SAMPLE DECRIPTION	SAMPLE DATE/ TIME		QC TYPE (Parent Sample)		CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	790077								MICP SOIL QSM				
					ICV					0			
	790078								MICP SOIL QSM				
					ICVLL					0			
	790079								MICP SOIL QSM				
					ICB					0			
	790080								MICP SOIL QSM				
					ICSA					0			
	790081								MICP SOIL QSM				
					ICSAB					0			
	790082								MICP SOIL QSM				
					ICVLL					0			
	790083								MICP SOIL QSM				
					CCV1					0			
	790084								MICP SOIL QSM				
					CCV2					0			
	790085								MICP SOIL QSM				
					CCB					0			
	787350								ICP METALS LIST 2 QSM 5.0				
					LCSS					59503			
	787350								ICP QSM 5.0				
					LCSS					59503			
	787349								ICP METALS LIST 2 QSM 5.0				
					MBS					59503			
	787349								ICP QSM 5.0				
					MBS					59503			
122704	784496		10/04/2016	1000			BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP METALS LIST 2 QSM 5.0		S	**4**	
		RFAAP-FGMR-SSI-001A								59503			
122704	784496		10/04/2016	1000			BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP QSM 5.0		S	**4**	
		RFAAP-FGMR-SSI-001A								59503			
	790086								ICP METALS LIST 2 QSM 5.0				
					L	784496				0			
	790086								ICP QSM 5.0				
					L	784496				0			
	787351		10/04/2016	1000					ICP METALS LIST 2 QSM 5.0				
		RFAAP-FGMR-SSI-001A			DUP	784496				59503			
	787351		10/04/2016	1000					ICP QSM 5.0				
		RFAAP-FGMR-SSI-001A			DUP	784496				59503			

Matrix: S-Soil Slg-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

MICP SOIL QSM Analytical Run
131318 on 10/26/2016

Date Analyzed: _____ Date Reviewed: _____

Date Entered: _____ Date Validated: _____

COC	ORDER	SAMPLE DECRIPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)		CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	787352		10/04/2016 1000					ICP METALS LIST 2 QSM 5.0				
		RFAAP-FGMR-SSI-001A		MSS	784496				59503			
	787352		10/04/2016 1000					ICP QSM 5.0				
		RFAAP-FGMR-SSI-001A		MSS	784496				59503			
	787353		10/04/2016 1000					ICP METALS LIST 2 QSM 5.0				
		RFAAP-FGMR-SSI-001A		MSDS	787352				59503			
	787353		10/04/2016 1000					ICP QSM 5.0				
		RFAAP-FGMR-SSI-001A		MSDS	787352				59503			
	790087							ICP QSM 5.0				
				PDSS	784496				0			
	790088							MICP SOIL QSM				
				CCV1					0			
	790089							MICP SOIL QSM				
				CCV2					0			
	790090							MICP SOIL QSM				
				CCB					0			
122704	784515		10/04/2016 1000			BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP METALS LIST 2 QSM 5.0		S		**4**
		RFAAP-FGMR-SSI-001B							59503			
122704	784515		10/04/2016 1000			BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP QSM 5.0		S		**4**
		RFAAP-FGMR-SSI-001B							59503			
122704	784516		10/04/2016 1000			BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP METALS LIST 2 QSM 5.0		S		**4**
		RFAAP-FGMR-SSI-001C							59503			
122704	784516		10/04/2016 1000			BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP QSM 5.0		S		**4**
		RFAAP-FGMR-SSI-001C							59503			
122746	785308		10/07/2016 0850			BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP METALS LIST 2 QSM 5.0		S		**4**
		RFAAP-FGMR-SSI-002A							59503			
122746	785308		10/07/2016 0850			BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP QSM 5.0		S		**4**
		RFAAP-FGMR-SSI-002A							59503			
122746	785309		10/07/2016 0850			BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP METALS LIST 2 QSM 5.0		S		**4**
		RFAAP-FGMR-SSI-002B							59503			
122746	785309		10/07/2016 0850			BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP QSM 5.0		S		**4**
		RFAAP-FGMR-SSI-002B							59503			
122746	785310		10/07/2016 0850			BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP METALS LIST 2 QSM 5.0		S		**4**
		RFAAP-FGMR-SSI-002C							59503			
122746	785310		10/07/2016 0850			BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP QSM 5.0		S		**4**
		RFAAP-FGMR-SSI-002C							59503			
	790091							MICP SOIL QSM				
				CCV1					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

MICP SOIL QSM Analytical Run
131318 on 10/26/2016

Date Analyzed: _____ Date Reviewed: _____

Date Entered: _____ Date Validated: _____

COC	ORDER	SAMPLE DECRIPTION	SAMPLE DATE/ TIME		QC TYPE (Parent Sample)		CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	790092								MICP SOIL QSM				
					CCV2					0			
	790093								MICP SOIL QSM				
					CCB					0			
	791709								MICP SOIL QSM				
					ICV					0			
	791710								MICP SOIL QSM				
					ICVLL					0			
	791711								MICP SOIL QSM				
					ICB					0			
	791712								MICP SOIL QSM				
					ICSA					0			
	791713								MICP SOIL QSM				
					ICSAB					0			
	791714								MICP SOIL QSM				
					ICVLL					0			
	791715								MICP SOIL QSM				
					CCV1					0			
	791716								MICP SOIL QSM				
					CCV2					0			
	791717								MICP SOIL QSM				
					CCB					0			
	790087								ICP METALS LIST 2 QSM 5.0				
					PDSS	784496				0			
	790087								ICP QSM 5.0				
RERUN					PDSS	784496				0			
122704	784516		10/04/2016	1000			BERING SEA ENVIRONMENTAL	RADFORD AAP	ICP QSM 5.0		S		**4**
RERUN		RFAAP-FGMR-SSI-001C								59503			
	791718								MICP SOIL QSM				
					CCV1					0			
	791719								MICP SOIL QSM				
					CCV2					0			
	791720								MICP SOIL QSM				
					CCB					0			

55 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

MERCURY QSM SOIL 5.0 Analytical Run
131258 on 10/26/2016

Date Analyzed: _____ Date Reviewed: _____

Date Entered: _____ Date Validated: _____

COC	ORDER	SAMPLE DECRIPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	788152						MERCURY QSM SOIL 5.0				
				ICV				0			
	788153						MERCURY QSM SOIL 5.0				
				ICB				0			
	788155						MERCURY QSM SOIL 5.0				
				CCV				0			
	788156						MERCURY QSM SOIL 5.0				
				CCB				0			
	786369						MERCURY QSM 5.0				
				MBS				59473			
122724	784783		10/06/2016 1505		BERING SEA ENVIRONMENTAL	RADFORD AAP	MERCURY QSM 5.0		S	**4**	
		RFAAP-FGMR-SSD-001						59473			
	788157						MERCURY QSM SOIL 5.0				
				CCV				0			
	788158						MERCURY QSM SOIL 5.0				
				CCB				0			
122724	784852		10/06/2016 1515		BERING SEA ENVIRONMENTAL	RADFORD AAP	MERCURY QSM 5.0		S	**4**	
		RFAAP-FGMR-DUP1						59473			
122724	784853		10/06/2016 1530		BERING SEA ENVIRONMENTAL	RADFORD AAP	MERCURY QSM 5.0		S	**4**	
		RFAAP-FGMR-SSD-002		Designated MS/MSD				59473			
	786371		10/06/2016 1530				MERCURY QSM 5.0				
		RFAAP-FGMR-SSD-002		DUP 784853				59473			
	786372		10/06/2016 1530				MERCURY QSM 5.0				
		RFAAP-FGMR-SSD-002		MSS 784853				59473			
	786373		10/06/2016 1530				MERCURY QSM 5.0				
		RFAAP-FGMR-SSD-002		MSDS 786372				59473			
122724	784854		10/06/2016 1550		BERING SEA ENVIRONMENTAL	RADFORD AAP	MERCURY QSM 5.0		S	**4**	
		RFAAP-FGMR-SSD-003						59473			
122724	784855		10/06/2016 1610		BERING SEA ENVIRONMENTAL	RADFORD AAP	MERCURY QSM 5.0		S	**4**	
		RFAAP-FGMR-SSD-004						59473			
	786370						MERCURY QSM 5.0				
				LCSS				59473			
	788161						MERCURY QSM SOIL 5.0				
				CCV				0			
	788162						MERCURY QSM SOIL 5.0				
				CCB				0			

18 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

MERCURY QSM SOIL 5.0 Analytical Run
131437 on 10/26/2016

Date Analyzed: _____ Date Reviewed: _____

Date Entered: _____ Date Validated: _____

COC	ORDER	SAMPLE DECRIPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)		CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	790261							MERCURY QSM SOIL 5.0				
				ICV					0			
	790262							MERCURY QSM SOIL 5.0				
				ICB					0			
	788745							MERCURY QSM 5.0				
				MBS					59544			
122704	784496		10/04/2016 1000			BERING SEA ENVIRONMENTAL	RADFORD AAP	MERCURY QSM 5.0		S	**4**	
		RFAAP-FGMR-SSI-001A							59544			
	788747		10/04/2016 1000					MERCURY QSM 5.0				
		RFAAP-FGMR-SSI-001A		DUP	784496				59544			
	788748		10/04/2016 1000					MERCURY QSM 5.0				
		RFAAP-FGMR-SSI-001A		MSS	784496				59544			
	788749		10/04/2016 1000					MERCURY QSM 5.0				
		RFAAP-FGMR-SSI-001A		MSDS	788748				59544			
122704	784515		10/04/2016 1000			BERING SEA ENVIRONMENTAL	RADFORD AAP	MERCURY QSM 5.0		S	**4**	
		RFAAP-FGMR-SSI-001B							59544			
122704	784516		10/04/2016 1000			BERING SEA ENVIRONMENTAL	RADFORD AAP	MERCURY QSM 5.0		S	**4**	
		RFAAP-FGMR-SSI-001C							59544			
122746	785308		10/07/2016 0850			BERING SEA ENVIRONMENTAL	RADFORD AAP	MERCURY QSM 5.0		S	**4**	
		RFAAP-FGMR-SSI-002A							59544			
	790264							MERCURY QSM SOIL 5.0				
				CCV					0			
	790265							MERCURY QSM SOIL 5.0				
				CCB					0			
122746	785309		10/07/2016 0850			BERING SEA ENVIRONMENTAL	RADFORD AAP	MERCURY QSM 5.0		S	**4**	
		RFAAP-FGMR-SSI-002B							59544			
122746	785310		10/07/2016 0850			BERING SEA ENVIRONMENTAL	RADFORD AAP	MERCURY QSM 5.0		S	**4**	
		RFAAP-FGMR-SSI-002C							59544			
	790266							MERCURY QSM SOIL 5.0				
				CCV					0			
	790267							MERCURY QSM SOIL 5.0				
				CCB					0			
	790280							MERCURY QSM SOIL 5.0				
				ICV					0			
	790281							MERCURY QSM SOIL 5.0				
				ICB					0			
	788746							MERCURY QSM 5.0				
				LCSS					59544			

Matrix: S-Soil Slg-Sludge GW-GroundWater M-Misc Waste SW-Surface Water A-Air WW-WasteWater DW-Drinking Water SD=Sediment Leachate=LE

MERCURY QSM SOIL 5.0 Analytical Run
131437 on 10/26/2016

Date Analyzed: _____ Date Reviewed: _____

Date Entered: _____ Date Validated: _____

COC	ORDER	SAMPLE DECRIPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
	790282						MERCURY QSM SOIL 5.0				
				CCV				0			
	790283						MERCURY QSM SOIL 5.0				
				CCB				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

PREP WORKSHEET
on 10/26/2016

Prep Batch **59,424** Date Prepped: 10/10/2016 Prepped By LJF

Folder #	Order	QC Type	Link	Test	Matrix	Volume	Weight	Initial Volume	SDG Level	Notes
	785240	MBS		ICP METALS LIST 2	SOLID	50	2.00			
	785240	MBS		ICP QSM 5.0	SOLID	50	2.00			
	785241	LCSS		ICP METALS LIST 2	SOLID	50	2.00			
	785241	LCSS		ICP QSM 5.0	SOLID	50	2.00			
122724	784783			ICP QSM 5.0	SOIL	50	2.03		4	
	784783			ICP METALS LIST 2	SOIL	50	2.03		4	
	784852			ICP METALS LIST 2	SOIL	50	2.13		4	
	784852			ICP QSM 5.0	SOIL	50	2.13		4	
	784853	*		ICP METALS LIST 2	SOIL	50	2.12		4	
	784853	*		ICP QSM 5.0	SOIL	50	2.12		4	
	784854			ICP METALS LIST 2	SOIL	50	2.12		4	
	784854			ICP QSM 5.0	SOIL	50	2.12		4	
	784855			ICP METALS LIST 2	SOIL	50	1.92		4	
	784855			ICP QSM 5.0	SOIL	50	1.92		4	
	785242	DUP	784853	ICP METALS LIST 2	SOIL	50	1.98			
	785242	DUP	784853	ICP QSM 5.0	SOIL	50	1.98			
	785243	MSS	784853	ICP METALS LIST 2	SOIL	50	2.04			

PREP WORKSHEET
on 10/26/2016

Folder #	Order	QC Type	Link	Test	Matrix	Volume	Weight	Initial Volume	SDG Level	Notes
	785243	MSS	784853	ICP QSM 5.0	SOIL	50	2.04			
	785244	MSDS	785243	ICP METALS LIST 2	SOIL	50	1.93			
	785244	MSDS	785243	ICP QSM 5.0	SOIL	50	1.93			

Notes:_____

PREP WORKSHEET
on 10/26/2016

Prep Batch **59,503** Date Prepped: 10/13/2016 Prepped By LJF

Folder #	Order	QC Type	Link	Test	Matrix	Volume	Weight	Initial Volume	SDG Level	Notes
	787349	MBS		ICP METALS LIST 2	SOLID	50	2.00			
	787349	MBS		ICP QSM 5.0	SOLID	50	2.00			
	787350	LCSS		ICP METALS LIST 2	SOLID	50	2.00			
	787350	LCSS		ICP QSM 5.0	SOLID	50	2.00			
122704	784496			ICP METALS LIST 2	SOIL	50	1.91		4	
	784496			ICP QSM 5.0	SOIL	50	1.91		4	
	784515			ICP QSM 5.0	SOIL	50	1.96		4	
	784515			ICP METALS LIST 2	SOIL	50	1.96		4	
	784516			ICP METALS LIST 2	SOIL	50	1.99		4	
	784516			ICP QSM 5.0	SOIL	50	1.99		4	
	784516			ICP QSM 5.0	SOIL	50	1.99		4	
122746	785308			ICP METALS LIST 2	SOIL	50	1.97		4	
	785308			ICP QSM 5.0	SOIL	50	1.97		4	
	785309			ICP METALS LIST 2	SOIL	50	2.10		4	
	785309			ICP QSM 5.0	SOIL	50	2.10		4	
	785310			ICP METALS LIST 2	SOIL	50	2.06		4	
	785310			ICP QSM 5.0	SOIL	50	2.06		4	

PREP WORKSHEET
on 10/26/2016

Folder #	Order	QC Type	Link	Test	Matrix	Volume	Weight	Initial Volume	SDG Level	Notes
	787351	DUP	784496	ICP METALS LIST 2	SOIL	50	1.93			
	787351	DUP	784496	ICP QSM 5.0	SOIL	50	1.93			
	787352	MSS	784496	ICP METALS LIST 2	SOIL	50	1.98			
	787352	MSS	784496	ICP QSM 5.0	SOIL	50	1.98			
	787353	MSDS	787352	ICP METALS LIST 2	SOIL	50	1.96			
	787353	MSDS	787352	ICP QSM 5.0	SOIL	50	1.96			

Notes:_____

PREP WORKSHEET
on 10/26/2016

Prep Batch **59,473** Date Prepped: 10/12/2016 Prepped By LJF

Folder #	Order	QC Type	Link	Test	Matrix	Volume	Weight	Initial Volume	SDG Level	Notes
	786369	MBS		MERCURY QSM 5.0	SOLID	25	0.60			
	786370	LCSS		MERCURY QSM 5.0	SOLID	25	0.60			
122724	784783			MERCURY QSM 5.0	SOIL	25	0.57		4	
	784852			MERCURY QSM 5.0	SOIL	25	0.57		4	
	784853	*		MERCURY QSM 5.0	SOIL	25	0.57		4	
	784854			MERCURY QSM 5.0	SOIL	25	0.55		4	
	784855			MERCURY QSM 5.0	SOIL	25	0.57		4	
	786371	DUP	784853	MERCURY QSM 5.0	SOIL	25	0.55			
	786372	MSS	784853	MERCURY QSM 5.0	SOIL	25	0.55			
	786373	MSDS	786372	MERCURY QSM 5.0	SOIL	25	0.60			

Notes:_____

PREP WORKSHEET
on 10/26/2016

Prep Batch **59,544** Date Prepped: 10/17/2016 Prepped By LJF

Folder #	Order	QC Type	Link	Test	Matrix	Volume	Weight	Initial Volume	SDG Level	Notes
	788745	MBS		MERCURY QSM 5.0	SOLID	25	0.60			
	788746	LCSS		MERCURY QSM 5.0	SOLID	25	0.60			
122704	784496			MERCURY QSM 5.0	SOIL	25	0.57		4	
	784515			MERCURY QSM 5.0	SOIL	25	0.58		4	
	784516			MERCURY QSM 5.0	SOIL	25	0.55		4	
122746	785308			MERCURY QSM 5.0	SOIL	25	0.56		4	
	785309			MERCURY QSM 5.0	SOIL	25	0.57		4	
	785310			MERCURY QSM 5.0	SOIL	25	0.57		4	
	788747	DUP	784496	MERCURY QSM 5.0	SOIL	25	0.57			
	788748	MSS	784496	MERCURY QSM 5.0	SOIL	25	0.58			
	788749	MSDS	788748	MERCURY QSM 5.0	SOIL	25	0.57			

Notes:_____

Metals Digestion Bench Sheet

(Prep Methods 3010, 3020, 3005, & 3050)

Program: QSM

*Matrix: SOIL

3010= ICP Liquids
3020= GFAA Liquids
3005= Sb Liquids
3050= ICP/GFAA Solids
7060/7740= GFAA, As & Se Liquids

Prep Batch #:	59424
Prep Method:	3050
Analyst:	LJF
Date:	10/10/2016
Start Time:	06:00

Prep Analyst: LJF

Balance ID: WCB03

End Date: 10/10/2016

End Time: 10:00

Digestion Tube Lot #: J237316-6560

Block Used: A

Cell Position for Temp. Check: D-1

Initial-DigestionTemp (ºC): 93.3

Final-Digestion Temp (ºC): 93.3

Reagent:	Ref. #
Nitric Acid:	AB.626
Hydrochloric Acid:	AB.624
Hydrogen Peroxide:	AB.620

Sample			(Solids) Sample Weight (g)	(Liquids) Sample Volume (ml)	Final Volume (ml)
785240	(MB)		2.00		50
785241	(LCS)		2.00		50
784783			2.03		50
784852			2.13		50
784853			2.12		50
784854			2.12		50
784855			1.92		50
					50
					50
					50
					50
					50
					50
					50
					50
					50
					50
					50
					50
					50
					50
					50
					50
					50
					50
785242	(DUP) if applicable		1.98		50
785243	(MS)	Parent Sample	2.04		50
785244	(MSD)	784853	1.93		50
	(DUP) if applicable				50
	(MS)	Parent Sample			50
	(MSD)				50
Leave >>	(DUP) if applicable				50
blank	(MS)	Parent Sample			50
if N/A	(MSD)				50

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. #
1	M12938
0.1	M12677
0.1	M12672
0.1	M12670
0.1	M12669

LCS Spike Amount (ml)	Spike Ref. #
1	M12938
0.1	M12677
0.1	M12672
0.1	M12670
0.1	M12669

Reviewed By/Date:

Metals Digestion Bench Sheet

(Prep Methods 3010, 3020, 3005, & 3050)

Program: QSM

*Matrix: SOIL

3010= ICP Liquids
3020= GFAA Liquids
3005= Sb Liquids
3050= ICP/GFAA Solids
7060/7740= GFAA, As & Se Liquids

Prep Batch #:	59503
Prep Method:	3050
Analyst:	LJF
Date:	10/13/2016
Start Time:	10:00

Prep Analyst: LJF

Balance ID: WCB03

End Date: 10/13/2016

End Time: 14:00

Digestion Tube Lot #: J237316-6560

Block Used: A

Cell Position for Temp. Check: B-4

Initial-DigestionTemp (ºC): 92.3

Final-Digestion Temp (ºC): 92.3

Reagent:	Ref. #
Nitric Acid:	AB.626
Hydrochloric Acid:	AB.624
Hydrogen Peroxide:	AB.620

Sample			(Solids) Sample Weight (g)	(Liquids) Sample Volume (ml)	Final Volume (ml)
787349	(MB)		2.00		50
787350	(LCS)		2.00		50
784496			1.91		50
784515			1.96		50
784516			1.99		50
785308			1.97		50
785309			2.10		50
785310			2.06		50
					50
					50
					50
					50
					50
					50
					50
					50
					50
					50
					50
					50
					50
					50
					50
					50
787351	(DUP) if applicable		1.93		50
787352	(MS)	Parent Sample	1.98		50
787353	(MSD)	784496	1.96		50
	(DUP) if applicable				50
	(MS)				50
	(MSD)				50
Leave >>	(DUP) if applicable				50
blank	(MS)	Parent Sample			50
if N/A	(MSD)				50

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. #
1	M12938
0.1	M12669
0.1	M12677
0.1	M12672
0.1	M12670
0.5	M12951

LCS Spike Amount (ml)	Spike Ref. #
1	M12938
0.1	M12669
0.1	M12677
0.1	M12672
0.1	M12670
0.5	M12951

Reviewed By/Date: _____

FMT12-03

Mercury Digestion Bench Sheet

(Prep Methods 7470A & 7471A)

CCV ID: M12972
ICV/LCSW ID: M12971

*Matrix: SOIL
Balance ID: WCB03

7470A= Hg Liquids
7471A= Hg Solids

Prep Batch #:	59473
Prep Method:	7471A
Analyst:	LJF
Date:	10/12/2016
Start Time:	10:00

End Date: 10/12/2016
End Time: 10:30

Digestion Tube Lot #: 6416053
Block Used: A
Cell Position for Temp. Check: D-5
Initial-DigestionTemp (ºC): 90.2
Final-Digestion Temp (ºC): 90.2
Additional KMnO4 added (ml):
Aqua Regia added (ml) 1.25
Calibration Stds: M12969

Reagent:	Ref. #
HNO3:	AB.628
H2SO4:	AB.605
NaCl/Hydrox.SO4:	M12858
KMnO4:	M12965
K2S2O8:	M12830
Aqua-Regia:	M12987

	Sample ID			(Solids) Sample Weight (g)	(Liquids) Sample Volume (ml)	Final Volume (ml)
	786369	(MB)		0.60		25
	786370	(LCS)		0.60		25
	784783			0.57		25
	784852	**Comments:**		0.57		25
	784853			0.57		25
	784854			0.55		25
	784855			0.57		25
						25
						25
						25
						25
						25
						25
						25
						25
						25
						25
						25
						25
						25
						25
						25
						25
	786371	(DUP)		0.55		25
	786372	(MS)	Parent Sample	0.55		25
	786373	(MSD)	784853	0.60		25
		(MS)	Parent Sample			25
Leave >>		(MSD)				25
blank		(MS)	Parent Sample			25
		(MSD)				25
		(MS)	Parent Sample			25
		(MSD)				25
if N/A						25

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. #
0.5	100ug/L	M12970

B: Spike Amount (ml)	Spike Conc. (ug/L)	Spike Ref. #

Reviewed By/Date:

FMT12-03

Mercury Digestion Bench Sheet

(Prep Methods 7470A & 7471A)

CCV ID: M12972
ICV/LCSW ID: M12971

*Matrix: SOIL
Balance ID: WCB03

7470A= Hg Liquids
7471A= Hg Solids

Prep Batch #:	59544
Prep Method:	7471A
Analyst:	LJF
Date:	10/17/2016
Start Time:	10:00

End Date: 10/17/2016
End Time: 10:30

Digestion Tube Lot #: 6416053
Block Used: B
Cell Position for Temp. Check: D-3
Initial-DigestionTemp (ºC): 94.2
Final-Digestion Temp (ºC): 94.2
Additional KMnO4 added (ml):
Aqua Regia added (ml) 1.25
Calibration Stds: M12969

Reagent:	Ref. #
HNO3:	AB.628
H2SO4:	AB.605
NaCl/Hydrox.SO4:	M12858
KMnO4:	M12979
K2S2O8:	M12830
Aqua-Regia:	M12997

Sample ID			(Solids) Sample Weight (g)	(Liquids) Sample Volume (ml)	Final Volume (ml)
788745	(MB)		0.60		25
788746	(LCS)		0.60		25
784496			0.57		25
784515	**Comments:**		0.58		25
784516			0.55		25
785308			0.56		25
785309			0.57		25
785310			0.57		25
					25
					25
					25
					25
					25
					25
					25
					25
					25
					25
					25
					25
					25
					25
					25
					25
788747	(DUP)		0.57		25
788748	(MS)	Parent Sample	0.58		25
788749	(MSD)	784496	0.57		25
Leave >>	(MS)	Parent Sample			25
blank	(MSD)				25
	(MS)	Parent Sample			25
	(MSD)				25
					25
if N/A					25

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. #
0.5	100ug/L	M12970

B: Spike Amount (ml)	Spike Conc. (ug/L)	Spike Ref. #

Reviewed By/Date:

iCAP 6000/6500 Data Review Checklist	Analysis Date: 10-10-16	Data File: 001Results	Date of review: 10/14/16
Cal Std ID: 172889 LIMS #: 131140	Analyst: [illegible]	Reviewer: MDS	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)

QC Parameters : 6010 / 200.8 / QSM / Other	YES	NO	YES	NO	Comments:
1) Calibration linearity: r > 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 LOD	✓		✓		
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#: 59424 Dig. Meth. 3050	✓		✓		
LCS - generated limits or project specific limits	✓		✓		
MB - <LOD or ≤ ½ RL	✓	✓	✓	✓	Sn > LOD < ½ RL "B", Mn, Mo, Ag > LOD < ½ RL "B"
Spiked samples in batch:					
a) 784853 matrix = S	✓	✓	✓	✓	LCS invalid
b) matrix =					Dup fail Co, Pb, Mn "J" invalid.
c) matrix =					MS, MSD fail
PDS: ±15% / 20% / 25% Sample#: A	✓	✓	✓	✓	PDS fail Cd, Cr, Mn, V "M"
Prep Batch ID#: Dig. Meth.					Cr + V not flagged because PDS not applicable due to L+ MS/MSD being acceptable
LCS - generated limits or project specific limits					
MB - <LOD or ≤ ½ RL					
Spiked samples in batch:					
a) matrix =					
b) matrix =					
c) matrix =					
PDS: ±15% / 20% / 25% Sample#:					
Prep Batch ID#: Dig. Meth.					
LCS - generated limits or project specific limits					
MB - <LOD or ≤ ½ RL					
Spiked samples in batch:					
a) matrix =					
b) matrix =					
c) matrix =					
PDS: ±15% / 20% / 25% Sample#:					
Prep Batch ID#: Dig. Meth.					
LCS - generated limits or project specific limits					
MB - <LOD or ≤ ½ RL					
Spiked samples in batch:					
a) matrix =					
b) matrix =					
c) matrix =					
PDS: ±15% / 20% / 25% Sample#:					

iCAP 6000 / 6500 Data Review Checklist	Analysis Date: 10-14-16	Data File: 001es-cc	Date of review: 10/20/16
Cal Std ID: 112889 LIMS # : 131318	Analyst: KT	Reviewer: MDS	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)			

QC Parameters : 6010 / 200.7 / OSM / Other	YES	NO	YES	NO	Comments:
1) Calibration linearity: r ≥ 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 LOD	✓		✓		
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	Comments:
Prep Batch ID#: 59503 Dig. Meth. 3050	✓		✓		
LCS - generated limits or project specific limits	✓		✓		
MB - <LOD or ≤ ½ RL	✓	✓	✓	✓	Se, Ag >100 <½ RL, V >100 or results >10x MB.
Spiked samples in batch:					
a) 784496 matrix = S	✓	✓	✓	✓	L Cantures Invalids
b) matrix =					Ddp invalid
c) matrix =					MS, MSD failures
PDS: ±15% / 20% / 25% Sample#: A	✓	✓	✓	✓	Ag, Cr, Mn, Ni, Pb, Tl, Zn "M"
Prep Batch ID#: Dig. Meth.					
LCS - generated limits or project specific limits					
MB - <LOD or ≤ ½ RL					
Spiked samples in batch:					
a) matrix =					
b) matrix =					
c) matrix =					
PDS: ±15% / 20% / 25% Sample#:					
Prep Batch ID#: Dig. Meth.					
LCS - generated limits or project specific limits					
MB - <LOD or ≤ ½ RL					
Spiked samples in batch:					
a) matrix =					
b) matrix =					
c) matrix =					
PDS: ±15% / 20% / 25% Sample#:					
Prep Batch ID#: Dig. Meth.					
LCS - generated limits or project specific limits					
MB - <LOD or ≤ ½ RL					
Spiked samples in batch:					
a) matrix =					
b) matrix =					
c) matrix =					
PDS: ±15% / 20% / 25% Sample#:					

Zn not qualified because L, MS, + MSD acceptable

GFAA / FLAA / CVAA Data Review checklist		Method: 200.9	7000 series AA	245.1 & 245.2	245.7	7470a / 7471a
Instrumentation: 4 10/14/16 SF	4 10/17/16 SF THERMO M SERIES AA		CETAC Hg ANALYZER			
Analysis Date: 10/13/16	Data File: 101316050	Date Review: 10-14-16	Analyte: Hg			
Cal Std ID: M12960	LIMS #: 131258	Analyst: SF	Reviewer:	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)						

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	Comments:
Prep Batch ID#: 59493 Dig. Meth. 7471A	✓		✓		
LCS - generated limits or project specific limits	✓		✓		
MB - <LOD / <2.2X LOD / ≤ ½RL	✓		✓		
Spiked samples in batch:					
a) 784853 matrix = Soil	✓	✓	✓	✓	MS, MSD from "11"
b)_____ matrix = _____					
c)_____ matrix = _____					
d)_____ matrix = _____					
e) 101316 SF matrix = _____ 10/13/16 SF					
PDS: ±15% 20% / 25% Sample# 784853	✓				
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 = _____					
PDS: ±15% / 20% / 25% Sample#_____					
MSA Performed? Yes No					

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		CETAC Hg ANALYZER			
Analysis Date: 10/18/16	Data File: 10181650		Date Review: 10-17-16	Analyte: ~~Hg~~		
Cal Std ID: M1969	LIMS # : 131437	Analyst: EF	Reviewer: JA	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)

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	Comments:
Prep Batch ID#: 579544 Dig. Meth. 7471A	✓		✓		
LCS - generated limits or project specific limits	✓		✓		
MB - <LOD / <2.2X LOD / ≤ ½RL	✓		✓		
Spiked samples in batch:					
a) 784496 matrix = Soil	✓	✓	✓	–	Dup Invalid
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 = _____					
PDS: ±15% / 20% / 25% Sample#_____					
MSA Performed? Yes No					

CT Laboratories, LLC

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
10-10-16	1142 / 1007 1533		D0061 16	DOOCalu	130679, 130937, 130968, 131004 130914, 130913, 130918, 130917 130961 13006, 131007, 130985, 130959, 300		M12889	V1631 V1632 V1633	
10-10-16	0947 / 10/11/16 1525		D1010 16	DOOCalu	131042, 131126, 130959 131061 10-06-16 131141 131060 131122 131064 131140 131067 131124 130959 300		M12889	V1634 V1636 V1640 V1638 V1639 V1647 V1648	
10-11-16	1533 / 1914		D011 16	DOOCalu	131154 131211 131170 131214 131150 130937	300	M12889	V1649	
10-13-16	1102 / 0527		D101316	DOOCalu	131156, 130968 131197 131177, 131199, 131195 131207, 06, 131203	300	M12889	V1650	
10-14-16	0804 / 10-15-16 0837		D101416	DOOCalu	131310, 131309, 131337 131300, 131303, 131302 131322, 131318, 13135, 16	300	M12889	V1654 V1651 V1652	
10-17-16	1134 / 2302		D101716	DOOCalu	131150 131389 131346 131388 131374	300	M12889	V1655	
10-18-16	0725 / 1945		D101816	DOOCalu	131468 131441 131443 131439	300	M12889	V1656 V1657 V1658	
10-19-16	0754 / 0305		D101916	DOOCalu	131472 131492 131424 131491 131471	300	M12889	V1660 V1661 V1659	
10/20/16	1317 / 1804		D102016	DOOCalu	131587 131601	300	M12889	V1662	
10/21/16	0927 / 10-22-16 1514		D102116	DOOCalu	131614, 131613 131611, 131596, 97	300	M12889	V1663 V1665	
10/22/16	/		D102216	DOOCalu		300	M12889		
			D10231 16	As+Pb		300	M12889		
10-24-16	0659 / 1351		D102416	DOOCalu	131705, 131706, 131707 131647	300	M12889	V1664	

10-23-16

Comments: _____

_____

Checked By / Date: _____

CT Laboratories

Mercury Analyzer Instrument Run Log

Instrument ID: ~~Cetac M-6000A~~ 05/31/16 LSF Teledyne HydraII

Analysis Date	Start Time	End Time	Analyst	LIMS Run # (s)	Method File ID #	Cal. Std. ID #	Lamp Current (mA)	Analysis Tube Lot #	Comments
08/17/16	06:34	09:35	LSF	128728, 128723, 128725 08/17/16 LSF	08171650	M12912	77.86	250298	Sncl2: M12918
08/17/16	09:56	12:08	LSF	128734 128736, 128740, 128738	08176WA	M12912	77.86	250298	Sncl2: M12918
08/18/16	11:41	14:03	LSF	128815, 128816	08186WA	M12912	77.86	250298	Sncl2: M12918
08/22/16	06:55	07:35	LSF	08/22/16 LSF ~~128828~~ 128826	08221650	M12912	77.86	250298	Sncl2: M12918
08/24/16	07:28	08:09	LSF	129069	0824 16WA	M12912	77.86	250298	Sncl2: M12918
08/31/16	09:35	15:06	LSF	129319, 129324, 129325 129316, 129317, 129318, 129320	~~08316WA~~ ~~08311650~~	M12912	77.86	250298	Sncl2: M12918
09/01/16	09:14	11:29 24 09/01/16 LSF	LSF	129363, 129362, 129345,	08/31/16 LSF 09011650	M12912	77.86	250298	Sncl2: M12918
09/02/16	09:17	11:04	LSF	129484 129488, 129489, 129490	09026WA	M12917	77.86	250298	Sncl2: M12918
09/09/16	08:03	12:04	LSF	129724, 129729 129723, 129720, 129721	09096WA	M12912	77.86	250298	Sncl2: M12918
09/12/16	14:11	17:01	LSF	129764, 129766, 129765, 129777	09126WA	M12912	77.86	250298	Sncl2: M12918
09/13/16	06:59	11:19	LSF	129891 129892, 129888, 129890, 129886	09136WA	M12912	77.86	250298	Sncl2: M12918
09/19/16	08:00	10:30	LSF	130186 130188, 130187, 130189, 130190	09196WA	M12969	77.86	250298	Sncl2: M12975
09/19/16	11:04	13:08	LSF	130194, 130193	09196SO	M12969	77.86	250298	Sncl2: M12975
09/22/16	07:39	10:06	LSF	130339, 130336, 130335, 130344	09226WA	M12969	77.86	250298	Sncl2: M12975
09/22/16	10:50	11:42	LSF	130350	09226SO	M12969	77.86	250298	Sncl2: M12975
09/29/16	06:55	08:50	LSF	130735, 130733, 130734, 130736	09296WA	M12969	77.86	250298	Sncl2: M12975
10/03/16	07:51	09:57	LSF	130868, 130867	10036SO	M12969	77.86	250298	Sncl2: M12975
10/07/16	07:08	07:59	LSF	131038, 131037, 131040	10076SO	M12969	77.86	250298	Sncl2: M12975
10/12/16	07:40	10:38	LSF	131193, 131192, 131191, 131190	10126WA	M12969	77.86	250298	Sncl2: M12975
10/13/16	08:28	11:01	LSF	131258, 131259, 131243, 131257	10136SO	M12969	77.86	250298	Sncl2: M12975
10/18/16	07:57	13:01	LSF	131437 10/18/16 LSF 131418, 131441, ~~131442~~, 131459	10186SO	M12969	77.86	250298	Sncl2: M12975
10/14/16	08:28	11:01	LSF	131247, 131757, 131758	10146WA	M12969	77.86	250298	Sncl2: M12975
10/19/16	09:31	12:19	LSF	131418, 131411, 131412	10196SO	M12969	77.86	250298	Sncl2: M12975
10/20/16	07:34	10:47	LSF	131568, ~~131569~~ 131571 131570, 131572, 131573	10206WA	M12969	77.86	250298	Sncl2: M12975

10/20/16 LSF

Reviewed By/Date: _____

Type	Date/Time	Message	User name	Application	Sequence Name
	10/10/2016 13:36:54	Autosampler Run Started	NAH	Analyst	
	10/10/2016 13:37:14	Running Blank (1)	NAH	Analyst	S_DOD Calibration
	10/10/2016 13:43:58	Running CalStd1=0.25 (2)	NAH	Analyst	S_DOD Calibration
	10/10/2016 13:45:56	Closing will close the method and all associated samples.	NAH	Analyst	
	10/10/2016 13:50:43	Running CalStd2=0.5 (3)	NAH	Analyst	S_DOD Calibration
	10/10/2016 13:57:34	Running CalStd3=1 (4)	NAH	Analyst	S_DOD Calibration
	10/10/2016 14:03:41	Closing will close the method and all associated samples.	NAH	Analyst	
	10/10/2016 14:04:16	Running CalStd4=5 (5)	NAH	Analyst	S_DOD Calibration
	10/10/2016 14:11:02	Running CalStd5=10 (6)	NAH	Analyst	S_DOD Calibration
	10/10/2016 14:17:47	Running CalStd6=20 (7)	NAH	Analyst	S_DOD Calibration
	10/10/2016 14:24:27	Running CalStd7=50 (8)	NAH	Analyst	S_DOD Calibration
	10/10/2016 14:31:08	Running CalStd8=100 (9)	NAH	Analyst	S_DOD Calibration
	10/10/2016 14:37:41	Running CalStd9=1000 (10)	NAH	Analyst	S_DOD Calibration
	10/10/2016 14:43:38	Running CalStd10=10000 (11)	NAH	Analyst	S_DOD Calibration
	10/10/2016 14:49:29	Running CalStd11-100k (12)	NAH	Analyst	S_DOD Calibration
	10/10/2016 14:56:13	Running CalStd12-100000 (13)	NAH	Analyst	S_DOD Calibration
	10/10/2016 15:03:06	Running CalStd13=500000 (14)	NAH	Analyst	S_DOD Calibration
	10/10/2016 15:10:13	Running CalStd14-1000k (15)	NAH	Analyst	S_DOD Calibration
	10/10/2016 15:17:08	Running blkrinse (22)	NAH	Analyst	S_DOD Calibration
	10/10/2016 15:23:59	Running icv (16)	NAH	Analyst	S_DOD Calibration
	10/10/2016 15:30:14	Running ICVLL (25)	NAH	Analyst	S_DOD Calibration
	10/10/2016 15:36:51	Running icb (17)	NAH	Analyst	S_DOD Calibration
	10/10/2016 15:43:36	Running icb (17)	NAH	Analyst	S_DOD Calibration
	10/10/2016 15:50:22	Running MRL (24)	NAH	Analyst	S_DOD Calibration
	10/10/2016 15:57:03	Running icsa (20)	NAH	Analyst	S_DOD Calibration
	10/10/2016 16:03:20	Running icsab (21)	NAH	Analyst	S_DOD Calibration
	10/10/2016 16:10:53	Running ICVLL ag (1)	NAH	Analyst	S_DOD Calibration
	10/10/2016 16:17:36	Running 785066 (21)	NAH	Analyst	S_DOD Calibration
	10/10/2016 16:24:48	Running msw785066 (22)	NAH	Analyst	S_DOD Calibration
	10/10/2016 16:31:20	Running msdw785066 (23)	NAH	Analyst	S_DOD Calibration
	10/10/2016 16:37:54	Running 785067 (24)	NAH	Analyst	S_DOD Calibration
	10/10/2016 16:45:02	Running 785068 (25)	NAH	Analyst	S_DOD Calibration
	10/10/2016 16:51:48	Running 785069 (26)	NAH	Analyst	S_DOD Calibration
	10/10/2016 16:58:59	Running 785089 (27)	NAH	Analyst	S_DOD Calibration
	10/10/2016 17:06:01	Running 785090 (28)	NAH	Analyst	S_DOD Calibration
	10/10/2016 17:13:12	Running 785091 (29)	NAH	Analyst	S_DOD Calibration
	10/10/2016 17:20:11	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	10/10/2016 17:26:00	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	10/10/2016 17:32:15	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	10/10/2016 17:39:01	Running 785092 (30)	NAH	Analyst	S_DOD Calibration
	10/10/2016 17:46:13	Running 785093 (31)	NAH	Analyst	S_DOD Calibration
	10/10/2016 17:53:11	Running 785095 (32)	NAH	Analyst	S_DOD Calibration
	10/10/2016 18:00:22	Running 785097 (33)	NAH	Analyst	S_DOD Calibration
	10/10/2016 18:07:32	Running msw785097 (34)	NAH	Analyst	S_DOD Calibration
	10/10/2016 18:14:03	Running msdw785097 (35)	NAH	Analyst	S_DOD Calibration
	10/10/2016 18:20:35	Running lcswtclp (36)	NAH	Analyst	S_DOD Calibration
	10/10/2016 18:27:10	Running mbwtclp (37)	NAH	Analyst	S_DOD Calibration
	10/10/2016 18:33:55	Running 781336 (38)	NAH	Analyst	S_DOD Calibration
	10/10/2016 18:41:05	Running msw781336 (39)	NAH	Analyst	S_DOD Calibration
	10/10/2016 18:47:48	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	10/10/2016 18:53:36	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	10/10/2016 18:59:50	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	10/10/2016 19:06:37	Running 782255 (40)	NAH	Analyst	S_DOD Calibration

Type	Date/Time	Message	User name	Application	Sequence Name
	10/10/2016 19:13:20	Running 783773 (41)	NAH	Analyst	S_DOD Calibration
	10/10/2016 19:20:32	Running lcsw59402 (42)	NAH	Analyst	S_DOD Calibration
	10/10/2016 19:27:01	Running mbw59402 (43)	NAH	Analyst	S_DOD Calibration
	10/10/2016 19:33:48	Running 783920 (44)	NAH	Analyst	S_DOD Calibration
	10/10/2016 19:40:51	Running l783920 (45)	NAH	Analyst	S_DOD Calibration
	10/10/2016 19:48:02	Running dup783920 (46)	NAH	Analyst	S_DOD Calibration
	10/10/2016 19:55:06	Running msw783920 (47)	NAH	Analyst	S_DOD Calibration
	10/10/2016 20:01:59	Running msdw783920 (48)	NAH	Analyst	S_DOD Calibration
	10/10/2016 20:08:50	Running pdsw783920 (49)	NAH	Analyst	S_DOD Calibration
	10/10/2016 20:15:19	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	10/10/2016 20:21:07	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	10/10/2016 20:27:22	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	10/10/2016 20:34:09	Running lcsw59395 (50)	NAH	Analyst	S_DOD Calibration
	10/10/2016 20:40:59	Running mbw59395 (51)	NAH	Analyst	S_DOD Calibration
	10/10/2016 20:47:45	Running 783935 (52)	NAH	Analyst	S_DOD Calibration
	10/10/2016 20:54:57	Running msw783935 (53)	NAH	Analyst	S_DOD Calibration
	10/10/2016 21:01:44	Running msdw783935 (54)	NAH	Analyst	S_DOD Calibration
	10/10/2016 21:08:33	Running pdsw783935 (55)	NAH	Analyst	S_DOD Calibration
	10/10/2016 21:15:04	Running 783936 (56)	NAH	Analyst	S_DOD Calibration
	10/10/2016 21:22:14	Running 783995 (57)	NAH	Analyst	S_DOD Calibration
	10/10/2016 21:29:24	Running 783996 (58)	NAH	Analyst	S_DOD Calibration
	10/10/2016 21:36:35	Running lcsw59397 96 (59)	NAH	Analyst	S_DOD Calibration
	10/10/2016 21:43:22	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	10/10/2016 21:49:11	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	10/10/2016 21:55:25	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	10/10/2016 22:02:13	Running mbw59397 96 (60)	NAH	Analyst	S_DOD Calibration
	10/10/2016 22:09:00	Running 783606 (61)	NAH	Analyst	S_DOD Calibration
	10/10/2016 22:16:09	Running msw783606 (62)	NAH	Analyst	S_DOD Calibration
	10/10/2016 22:22:54	Running msdw783606 (63)	NAH	Analyst	S_DOD Calibration
	10/10/2016 22:29:39	Running pdsw783606 (64)	NAH	Analyst	S_DOD Calibration
	10/10/2016 22:36:09	Running 783680 (65)	NAH	Analyst	S_DOD Calibration
	10/10/2016 22:43:20	Running msw783680 (66)	NAH	Analyst	S_DOD Calibration
	10/10/2016 22:50:08	Running msdw783680 (67)	NAH	Analyst	S_DOD Calibration
	10/10/2016 22:56:54	Running pdsw783680 (68)	NAH	Analyst	S_DOD Calibration
	10/10/2016 23:03:25	Running 784031 (69)	NAH	Analyst	S_DOD Calibration
	10/10/2016 23:10:22	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	10/10/2016 23:16:10	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	10/10/2016 23:22:25	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	10/10/2016 23:29:12	Running 784032 (70)	NAH	Analyst	S_DOD Calibration
	10/10/2016 23:36:25	Running lcss59413 (71)	NAH	Analyst	S_DOD Calibration
	10/10/2016 23:42:59	Running mbs59413 (72)	NAH	Analyst	S_DOD Calibration
	10/10/2016 23:49:42	Running 782951 (73)	NAH	Analyst	S_DOD Calibration
	10/10/2016 23:56:34	Running l782951 (74)	NAH	Analyst	S_DOD Calibration
	10/11/2016 00:03:29	Running dup782951 (75)	NAH	Analyst	S_DOD Calibration
	10/11/2016 00:10:19	Running mss782951 (76)	NAH	Analyst	S_DOD Calibration
	10/11/2016 00:17:12	Running msds782951 (77)	NAH	Analyst	S_DOD Calibration
	10/11/2016 00:23:54	Running pdss782951 (78)	NAH	Analyst	S_DOD Calibration
	10/11/2016 00:30:34	Running 782952 (79)	NAH	Analyst	S_DOD Calibration
	10/11/2016 00:37:09	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	10/11/2016 00:42:57	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	10/11/2016 00:49:13	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	10/11/2016 00:56:01	Running 782953 (80)	NAH	Analyst	S_DOD Calibration
	10/11/2016 01:02:57	Running 782954 (81)	NAH	Analyst	S_DOD Calibration

Type	Date/Time	Message	User name	Application	Sequence Name
	10/11/2016 01:09:49	Running 782955 (82)	NAH	Analyst	S_DOD Calibration
	10/11/2016 01:16:45	Running lcss59412 (83)	NAH	Analyst	S_DOD Calibration
	10/11/2016 01:23:13	Running mbs59412 (84)	NAH	Analyst	S_DOD Calibration
	10/11/2016 01:29:57	Running 783271 (85)	NAH	Analyst	S_DOD Calibration
	10/11/2016 01:36:50	Running 783916 (86)	NAH	Analyst	S_DOD Calibration
	10/11/2016 01:43:22	Running mss783916 (87)	NAH	Analyst	S_DOD Calibration
	10/11/2016 01:49:29	Running msds783916 (88)	NAH	Analyst	S_DOD Calibration
	10/11/2016 01:55:37	Running pdss783916 (89)	NAH	Analyst	S_DOD Calibration
	10/11/2016 02:01:46	Running ccv1 (28)	NAH	Analyst	S_DOD Calibration
	10/11/2016 02:07:37	Running ccv2 (26)	NAH	Analyst	S_DOD Calibration
	10/11/2016 02:13:52	Running ccb (27)	NAH	Analyst	S_DOD Calibration
	10/11/2016 02:20:40	Running ab 628 (90)	NAH	Analyst	S_DOD Calibration
	10/11/2016 02:27:28	Running lcss56425 (91)	NAH	Analyst	S_DOD Calibration
	10/11/2016 02:33:43	Running mbs59425 (92)	NAH	Analyst	S_DOD Calibration
	10/11/2016 02:40:29	Running 784784 (93)	NAH	Analyst	S_DOD Calibration
	10/11/2016 02:47:14	Running l784784 (94)	NAH	Analyst	S_DOD Calibration
	10/11/2016 02:54:00	Running dup784784 (95)	NAH	Analyst	S_DOD Calibration
	10/11/2016 03:00:44	Running mss784784 (96)	NAH	Analyst	S_DOD Calibration
	10/11/2016 03:07:18	Running msds784784 (97)	NAH	Analyst	S_DOD Calibration
	10/11/2016 03:13:52	Running pdss784784 (98)	NAH	Analyst	S_DOD Calibration
	10/11/2016 03:20:20	Running 784785 (99)	NAH	Analyst	S_DOD Calibration
	10/11/2016 03:27:09	Running ccv1 (28)	NAH	Analyst	S_DOD Calibration
	10/11/2016 03:33:00	Running ccv2 (26)	NAH	Analyst	S_DOD Calibration
	10/11/2016 03:39:16	Running ccb (27)	NAH	Analyst	S_DOD Calibration
	10/11/2016 03:46:03	Running 784786 (100)	NAH	Analyst	S_DOD Calibration
	10/11/2016 03:52:51	Running 784787 (101)	NAH	Analyst	S_DOD Calibration
	10/11/2016 03:59:38	Running 784788 (102)	NAH	Analyst	S_DOD Calibration
	10/11/2016 04:06:24	Running 784789 (103)	NAH	Analyst	S_DOD Calibration
	10/11/2016 04:13:10	Running lcss59424 (104)	NAH	Analyst	S_DOD Calibration
	10/11/2016 04:19:14	Running mbs59424 (105)	NAH	Analyst	S_DOD Calibration
	10/11/2016 04:26:02	Running 784783 (106)	NAH	Analyst	S_DOD Calibration
	10/11/2016 04:32:46	Running 784852 (107)	NAH	Analyst	S_DOD Calibration
	10/11/2016 04:39:31	Running 784853 (108)	NAH	Analyst	S_DOD Calibration
	10/11/2016 04:46:29	Running l784853 (109)	NAH	Analyst	S_DOD Calibration
	10/11/2016 04:53:08	Running ccv1 (28)	NAH	Analyst	S_DOD Calibration
	10/11/2016 04:58:58	Running ccv2 (26)	NAH	Analyst	S_DOD Calibration
	10/11/2016 05:05:14	Running ccb (27)	NAH	Analyst	S_DOD Calibration
	10/11/2016 05:12:02	Running dup784853 (110)	NAH	Analyst	S_DOD Calibration
	10/11/2016 05:19:01	Running mss784853 (111)	NAH	Analyst	S_DOD Calibration
	10/11/2016 05:25:33	Running msds784853 (112)	NAH	Analyst	S_DOD Calibration
	10/11/2016 05:32:06	Running pdss784853 (113)	NAH	Analyst	S_DOD Calibration
	10/11/2016 05:38:33	Running 784854 (114)	NAH	Analyst	S_DOD Calibration
	10/11/2016 05:45:33	Running 784855 (115)	NAH	Analyst	S_DOD Calibration
	10/11/2016 05:52:24	Running ab677 (2)	NAH	Analyst	S_DOD Calibration
	10/11/2016 05:59:06	Running lcss59441 (3)	NAH	Analyst	S_DOD Calibration
	10/11/2016 06:05:37	Running mbs59441 (4)	NAH	Analyst	S_DOD Calibration
	10/11/2016 06:12:19	Running 785311 (5)	NAH	Analyst	S_DOD Calibration
	10/11/2016 06:18:51	Running ccv1 (28)	NAH	Analyst	S_DOD Calibration
	10/11/2016 06:24:41	Running ccv2 (26)	NAH	Analyst	S_DOD Calibration
	10/11/2016 06:30:57	Running ccb (27)	NAH	Analyst	S_DOD Calibration
	10/11/2016 06:37:44	Running l785311 (6)	NAH	Analyst	S_DOD Calibration
	10/11/2016 06:44:36	Running dup785311 (7)	NAH	Analyst	S_DOD Calibration
	10/11/2016 06:51:09	Running mss785311 (8)	NAH	Analyst	S_DOD Calibration

Type	Date/Time	Message	User name	Application	Sequence Name
	10/14/2016 02:03:09	Running 786633 (80)	NAH	Analyst	S_DOD Calibration
	10/14/2016 02:10:22	Running 786634 (81)	NAH	Analyst	S_DOD Calibration
	10/14/2016 02:17:44	Running 786850 (82)	NAH	Analyst	S_DOD Calibration
	10/14/2016 02:24:43	Running 786851 (83)	NAH	Analyst	S_DOD Calibration
	10/14/2016 02:31:37	Running 786852 (84)	NAH	Analyst	S_DOD Calibration
	10/14/2016 02:38:49	Running 786853 (85)	NAH	Analyst	S_DOD Calibration
	10/14/2016 02:45:40	Running 786854 (86)	NAH	Analyst	S_DOD Calibration
	10/14/2016 02:52:31	Running ccv1 (28)	NAH	Analyst	S_DOD Calibration
	10/14/2016 02:58:48	Running ccv2 (26)	NAH	Analyst	S_DOD Calibration
	10/14/2016 03:05:12	Running ccb (27)	NAH	Analyst	S_DOD Calibration
	10/14/2016 03:12:07	Running 786855 (87)	NAH	Analyst	S_DOD Calibration
	10/14/2016 03:18:58	Running 786856 (88)	NAH	Analyst	S_DOD Calibration
	10/14/2016 03:25:54	Running 786857 (89)	NAH	Analyst	S_DOD Calibration
	10/14/2016 03:32:54	Running 786858 (90)	NAH	Analyst	S_DOD Calibration
	10/14/2016 03:39:49	Running msw786858 (91)	NAH	Analyst	S_DOD Calibration
	10/14/2016 03:46:29	Running msdw786858 (92)	NAH	Analyst	S_DOD Calibration
	10/14/2016 03:53:10	Running 755902 (93)	NAH	Analyst	S_DOD Calibration
	10/14/2016 03:59:58	Running 785311 (98)	NAH	Analyst	S_DOD Calibration
	10/14/2016 04:06:51	Running l785311 (99)	NAH	Analyst	S_DOD Calibration
	10/14/2016 04:14:01	Running dup785311 (100)	NAH	Analyst	S_DOD Calibration
	10/14/2016 04:20:53	Running ccv1 (28)	NAH	Analyst	S_DOD Calibration
	10/14/2016 04:27:11	Running ccv2 (26)	NAH	Analyst	S_DOD Calibration
	10/14/2016 04:33:36	Running ccb (27)	NAH	Analyst	S_DOD Calibration
	10/14/2016 04:40:30	Running mss785311 (101)	NAH	Analyst	S_DOD Calibration
	10/14/2016 04:47:20	Running msds785311 (102)	NAH	Analyst	S_DOD Calibration
	10/14/2016 04:54:08	Running pdss785311 (103)	NAH	Analyst	S_DOD Calibration
	10/14/2016 05:00:47	Running 782213 (104)	NAH	Analyst	S_DOD Calibration
	10/14/2016 05:08:00	Running MRL (24)	NAH	Analyst	S_DOD Calibration
	10/14/2016 05:14:50	Running ccv1 (28)	NAH	Analyst	S_DOD Calibration
	10/14/2016 05:21:08	Running ccv2 (26)	NAH	Analyst	S_DOD Calibration
	10/14/2016 05:27:31	Running ccb (27)	NAH	Analyst	S_DOD Calibration
	10/14/2016 05:34:27	Plasma extinguished successfully	NAH	Analyst	
	10/14/2016 05:34:27	Plasma off	NAH	iTEVA Control Center	
	10/14/2016 05:34:29	Autosampler Run Completed	NAH	Analyst	S_DOD Calibration
	10/14/2016 06:54:54	Plasma On	NAH	iTEVA Control Center	
	10/14/2016 06:54:58	Plasma ignition successful	NAH	Analyst	
	10/14/2016 06:55:44	D33534 - Debug:Wavelength check : x = 1.746, y =2.295	NAH	Analyst	
	10/14/2016 07:52:29	Autosampler Run Started	NAH	Analyst	
	10/14/2016 07:52:29	Sequence Started	NAH	Analyst	S_DOD Calibration
	10/14/2016 07:52:50	Running Blank (1)	NAH	Analyst	S_DOD Calibration
	10/14/2016 07:53:02	Autosampler Run Completed	NAH	Analyst	S_DOD Calibration
	10/14/2016 08:04:19	Autosampler Run Started	NAH	Analyst	
	10/14/2016 08:04:19	Sequence Started	NAH	Analyst	S_DOD Calibration
	10/14/2016 08:04:40	Running Blank (1)	NAH	Analyst	S_DOD Calibration
	10/14/2016 08:11:25	Running CalStd1=0.25 (2)	NAH	Analyst	S_DOD Calibration
	10/14/2016 08:18:15	Running CalStd2=0.5 (3)	NAH	Analyst	S_DOD Calibration
	10/14/2016 08:25:06	Running CalStd3=1 (4)	NAH	Analyst	S_DOD Calibration
	10/14/2016 08:31:59	Running CalStd4=5 (5)	NAH	Analyst	S_DOD Calibration
	10/14/2016 08:38:52	Running CalStd5=10 (6)	NAH	Analyst	S_DOD Calibration
	10/14/2016 08:45:42	Running CalStd6=20 (7)	NAH	Analyst	S_DOD Calibration
	10/14/2016 08:52:31	Running CalStd7=50 (8)	NAH	Analyst	S_DOD Calibration
	10/14/2016 08:59:17	Running CalStd8=100 (9)	NAH	Analyst	S_DOD Calibration
	10/14/2016 09:05:58	Running CalStd9=1000 (10)	NAH	Analyst	S_DOD Calibration

Type	Date/Time	Message	User name	Application	Sequence Name
	10/14/2016 09:11:59	Running CalStd10=10000 (11)	NAH	Analyst	S_DOD Calibration
	10/14/2016 09:19:07	Running CalStd11-100k (12)	NAH	Analyst	S_DOD Calibration
	10/14/2016 09:26:08	Running CalStd12-100000 (13)	NAH	Analyst	S_DOD Calibration
	10/14/2016 09:33:10	Running CalStd13=500000 (14)	NAH	Analyst	S_DOD Calibration
	10/14/2016 09:40:46	Running CalStd14-1000k (15)	NAH	Analyst	S_DOD Calibration
	10/14/2016 09:48:46	Running blkrinse (22)	NAH	Analyst	S_DOD Calibration
	10/14/2016 09:55:36	Running icv (16)	NAH	Analyst	S_DOD Calibration
	10/14/2016 10:02:20	Running ICVLL (25)	NAH	Analyst	S_DOD Calibration
	10/14/2016 10:09:04	Running icb (17)	NAH	Analyst	S_DOD Calibration
	10/14/2016 10:15:56	Running icb (17)	NAH	Analyst	S_DOD Calibration
	10/14/2016 10:19:57	Closing will close the method and all associated samples.	NAH	Analyst	
	10/14/2016 10:22:57	Running MRL (24)	NAH	Analyst	S_DOD Calibration
	10/14/2016 10:29:47	Running icsa (20)	NAH	Analyst	S_DOD Calibration
	10/14/2016 10:37:26	Running icsab (21)	NAH	Analyst	S_DOD Calibration
	10/14/2016 10:46:06	Running ICVLL ag (1)	NAH	Analyst	S_DOD Calibration
	10/14/2016 10:52:58	Running 787423 (2)	NAH	Analyst	S_DOD Calibration
	10/14/2016 11:00:13	Running 787424 (3)	NAH	Analyst	S_DOD Calibration
	10/14/2016 11:07:31	Running 787425 (4)	NAH	Analyst	S_DOD Calibration
	10/14/2016 11:14:44	Running 787427 (5)	NAH	Analyst	S_DOD Calibration
	10/14/2016 11:22:09	Running 787428 (6)	NAH	Analyst	S_DOD Calibration
	10/14/2016 11:29:28	Running 787429 (7)	NAH	Analyst	S_DOD Calibration
	10/14/2016 11:38:34	Running 787430 (8)	NAH	Analyst	S_DOD Calibration
	10/14/2016 11:39:38	Closing will close the method and all associated samples.	NAH	Analyst	
	10/14/2016 11:45:56	Running 787431 (9)	NAH	Analyst	S_DOD Calibration
	10/14/2016 11:52:55	Running 787432 (10)	NAH	Analyst	S_DOD Calibration
	10/14/2016 12:00:15	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	10/14/2016 12:06:35	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	10/14/2016 12:12:58	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	10/14/2016 12:19:53	Running msw787432 (11)	NAH	Analyst	S_DOD Calibration
	10/14/2016 12:26:39	Running msdw787432 (12)	NAH	Analyst	S_DOD Calibration
	10/14/2016 12:33:27	Running 787671 (13)	NAH	Analyst	S_DOD Calibration
	10/14/2016 12:40:44	Running 787673 (14)	NAH	Analyst	S_DOD Calibration
	10/14/2016 12:48:02	Running lcsw59399 (15)	NAH	Analyst	S_DOD Calibration
	10/14/2016 12:54:55	Running mbw59399 (16)	NAH	Analyst	S_DOD Calibration
	10/14/2016 13:01:49	Running 783549 (17)	NAH	Analyst	S_DOD Calibration
	10/14/2016 13:09:08	Running 783555 (18)	NAH	Analyst	S_DOD Calibration
	10/14/2016 13:16:23	Running 783556 (19)	NAH	Analyst	S_DOD Calibration
	10/14/2016 13:21:32	Closing will close the method and all associated samples.	NAH	Analyst	
	10/14/2016 13:23:40	Running l783556 (21)	NAH	Analyst	S_DOD Calibration
	10/14/2016 13:28:34	Closing will close the method and all associated samples.	NAH	Analyst	
	10/14/2016 13:30:56	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	10/14/2016 13:37:17	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	10/14/2016 13:40:46	Closing will close the method and all associated samples.	NAH	Analyst	
	10/14/2016 13:43:40	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	10/14/2016 13:50:35	Running dup783556 (22)	NAH	Analyst	S_DOD Calibration
	10/14/2016 13:57:30	Running msw783556 (23)	NAH	Analyst	S_DOD Calibration
	10/14/2016 14:04:27	Running msdw783556 (24)	NAH	Analyst	S_DOD Calibration
	10/14/2016 14:11:13	Running pdsw783556 (25)	NAH	Analyst	S_DOD Calibration
	10/14/2016 14:18:21	Running 783557 (20)	NAH	Analyst	S_DOD Calibration
	10/14/2016 14:25:43	Running 784895 (26)	NAH	Analyst	S_DOD Calibration
	10/14/2016 14:32:58	Running 785422 (27)	NAH	Analyst	S_DOD Calibration
	10/14/2016 14:40:14	Running 785424 (28)	NAH	Analyst	S_DOD Calibration
	10/14/2016 14:47:32	Running lcsw59477 (29)	NAH	Analyst	S_DOD Calibration

Type	Date/Time	Message	User name	Application	Sequence Name
	10/14/2016 14:54:08	Running mbw59477 (30)	NAH	Analyst	S_DOD Calibration
	10/14/2016 15:01:01	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	10/14/2016 15:07:21	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	10/14/2016 15:13:45	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	10/14/2016 15:20:39	Running 786216 (31)	NAH	Analyst	S_DOD Calibration
	10/14/2016 15:27:41	Running 786218 (32)	NAH	Analyst	S_DOD Calibration
	10/14/2016 15:34:49	Running 786220 (33)	NAH	Analyst	S_DOD Calibration
	10/14/2016 15:42:08	Running l786220 (34)	NAH	Analyst	S_DOD Calibration
	10/14/2016 15:49:14	Running dup786220 (35)	NAH	Analyst	S_DOD Calibration
	10/14/2016 15:56:09	Running msw786220 (36)	NAH	Analyst	S_DOD Calibration
	10/14/2016 16:02:59	Running msdw786220 (37)	NAH	Analyst	S_DOD Calibration
	10/14/2016 16:09:44	Running pdsw786220 (38)	NAH	Analyst	S_DOD Calibration
	10/14/2016 16:16:51	Running 786222 (39)	NAH	Analyst	S_DOD Calibration
	10/14/2016 16:23:54	Running 786225 (40)	NAH	Analyst	S_DOD Calibration
	10/14/2016 16:30:55	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	10/14/2016 16:37:15	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	10/14/2016 16:43:38	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	10/14/2016 16:50:32	Running lcsw59475 (41)	NAH	Analyst	S_DOD Calibration
	10/14/2016 16:57:10	Running mbw59475 (42)	NAH	Analyst	S_DOD Calibration
	10/14/2016 17:04:03	Running 786214 (43)	NAH	Analyst	S_DOD Calibration
	10/14/2016 17:11:19	Running 786217 (44)	NAH	Analyst	S_DOD Calibration
	10/14/2016 17:18:20	Running 786219 (45)	NAH	Analyst	S_DOD Calibration
	10/14/2016 17:25:28	Running l786219 (46)	NAH	Analyst	S_DOD Calibration
	10/14/2016 17:32:27	Running dup786219 (47)	NAH	Analyst	S_DOD Calibration
	10/14/2016 17:39:32	Running msw786219 (48)	NAH	Analyst	S_DOD Calibration
	10/14/2016 17:46:20	Running msdw786219 (49)	NAH	Analyst	S_DOD Calibration
	10/14/2016 17:53:13	Running pdsw786219 (50)	NAH	Analyst	S_DOD Calibration
	10/14/2016 18:00:09	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	10/14/2016 18:06:29	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	10/14/2016 18:12:50	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	10/14/2016 18:19:44	Running 786221 (51)	NAH	Analyst	S_DOD Calibration
	10/14/2016 18:26:43	Running 786224 (52)	NAH	Analyst	S_DOD Calibration
	10/14/2016 18:33:36	Running lcsw59502 (53)	NAH	Analyst	S_DOD Calibration
	10/14/2016 18:40:13	Running mbw59502 (54)	NAH	Analyst	S_DOD Calibration
	10/14/2016 18:47:08	Running 786279 (55)	NAH	Analyst	S_DOD Calibration
	10/14/2016 18:54:04	Running l786279 (56)	NAH	Analyst	S_DOD Calibration
	10/14/2016 19:01:17	Running dup786279 (57)	NAH	Analyst	S_DOD Calibration
	10/14/2016 19:08:14	Running msw786279 (58)	NAH	Analyst	S_DOD Calibration
	10/14/2016 19:14:57	Running msdw786279 (59)	NAH	Analyst	S_DOD Calibration
	10/14/2016 19:21:41	Running pdsw786279 (60)	NAH	Analyst	S_DOD Calibration
	10/14/2016 19:28:26	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	10/14/2016 19:34:43	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	10/14/2016 19:41:05	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	10/14/2016 19:47:59	Running lcsw59472 70 (61)	NAH	Analyst	S_DOD Calibration
	10/14/2016 19:54:54	Running mbw59472 70 (62)	NAH	Analyst	S_DOD Calibration
	10/14/2016 20:01:48	Running 786076 (63)	NAH	Analyst	S_DOD Calibration
	10/14/2016 20:08:47	Running msw786076 (64)	NAH	Analyst	S_DOD Calibration
	10/14/2016 20:15:58	Running msdw786076 (65)	NAH	Analyst	S_DOD Calibration
	10/14/2016 20:22:59	Running pdsw786076 (66)	NAH	Analyst	S_DOD Calibration
	10/14/2016 20:30:00	Running 786077 (67)	NAH	Analyst	S_DOD Calibration
	10/14/2016 20:36:28	Running 786825 (68)	NAH	Analyst	S_DOD Calibration
	10/14/2016 20:43:30	Running 786881 (69)	NAH	Analyst	S_DOD Calibration
	10/14/2016 20:50:59	Running msw786881 (70)	NAH	Analyst	S_DOD Calibration

Type	Date/Time	Message	User name	Application	Sequence Name
	10/14/2016 20:57:49	Running ccv1 (28)	NAH	Analyst	S_DOD Calibration
	10/14/2016 21:04:09	Running ccv2 (26)	NAH	Analyst	S_DOD Calibration
	10/14/2016 21:10:33	Running ccb (27)	NAH	Analyst	S_DOD Calibration
	10/14/2016 21:17:28	Running msdw786881 (71)	NAH	Analyst	S_DOD Calibration
	10/14/2016 21:24:16	Running pdsw786881 (72)	NAH	Analyst	S_DOD Calibration
	10/14/2016 21:31:04	Running lcss59503 (73)	NAH	Analyst	S_DOD Calibration
	10/14/2016 21:37:34	Running mbs59503 (74)	NAH	Analyst	S_DOD Calibration
	10/14/2016 21:44:29	Running 784496 (75)	NAH	Analyst	S_DOD Calibration
	10/14/2016 21:51:36	Running l784496 (76)	NAH	Analyst	S_DOD Calibration
	10/14/2016 21:58:34	Running dup784496 (77)	NAH	Analyst	S_DOD Calibration
	10/14/2016 22:05:41	Running mss784496 (78)	NAH	Analyst	S_DOD Calibration
	10/14/2016 22:12:48	Running msds784496 (79)	NAH	Analyst	S_DOD Calibration
	10/14/2016 22:19:49	Running pdss784496 (80)	NAH	Analyst	S_DOD Calibration
	10/14/2016 22:27:14	Running ccv1 (28)	NAH	Analyst	S_DOD Calibration
	10/14/2016 22:33:34	Running ccv2 (26)	NAH	Analyst	S_DOD Calibration
	10/14/2016 22:39:57	Running ccb (27)	NAH	Analyst	S_DOD Calibration
	10/14/2016 22:46:52	Running 784515 (81)	NAH	Analyst	S_DOD Calibration
	10/14/2016 22:54:00	Running 784516 (82)	NAH	Analyst	S_DOD Calibration
	10/14/2016 23:01:08	Running 785308 (83)	NAH	Analyst	S_DOD Calibration
	10/14/2016 23:08:23	Running 785309 (84)	NAH	Analyst	S_DOD Calibration
	10/14/2016 23:15:46	Running 785310 (85)	NAH	Analyst	S_DOD Calibration
	10/14/2016 23:22:57	Running lcss59504 (86)	NAH	Analyst	S_DOD Calibration
	10/14/2016 23:29:11	Running mbs59504 (87)	NAH	Analyst	S_DOD Calibration
	10/14/2016 23:36:03	Running 785468 (88)	NAH	Analyst	S_DOD Calibration
	10/14/2016 23:43:35	Running l785468 (89)	NAH	Analyst	S_DOD Calibration
	10/14/2016 23:50:42	Running dup785468 (90)	NAH	Analyst	S_DOD Calibration
	10/14/2016 23:58:17	Running ccv1 (28)	NAH	Analyst	S_DOD Calibration
	10/15/2016 00:04:37	Running ccv2 (26)	NAH	Analyst	S_DOD Calibration
	10/15/2016 00:11:01	Running ccb (27)	NAH	Analyst	S_DOD Calibration
	10/15/2016 00:17:56	Running mss785468 (91)	NAH	Analyst	S_DOD Calibration
	10/15/2016 00:25:22	Running msds785468 (92)	NAH	Analyst	S_DOD Calibration
	10/15/2016 00:32:46	Running pdss785468 (93)	NAH	Analyst	S_DOD Calibration
	10/15/2016 00:40:20	Running 785469 (94)	NAH	Analyst	S_DOD Calibration
	10/15/2016 00:47:57	Running 785470 (95)	NAH	Analyst	S_DOD Calibration
	10/15/2016 00:55:36	Running 785471 (96)	NAH	Analyst	S_DOD Calibration
	10/15/2016 01:03:18	Running 785472 (97)	NAH	Analyst	S_DOD Calibration
	10/15/2016 01:11:03	Running 785473 (98)	NAH	Analyst	S_DOD Calibration
	10/15/2016 01:18:55	Running 785474 (99)	NAH	Analyst	S_DOD Calibration
	10/15/2016 01:26:47	Running 785475 (100)	NAH	Analyst	S_DOD Calibration
	10/15/2016 01:34:31	Running ccv1 (28)	NAH	Analyst	S_DOD Calibration
	10/15/2016 01:40:50	Running ccv2 (26)	NAH	Analyst	S_DOD Calibration
	10/15/2016 01:47:14	Running ccb (27)	NAH	Analyst	S_DOD Calibration
	10/15/2016 01:54:10	Running 785476 (101)	NAH	Analyst	S_DOD Calibration
	10/15/2016 02:01:46	Running 785477 (102)	NAH	Analyst	S_DOD Calibration
	10/15/2016 02:09:18	Running 785478 (103)	NAH	Analyst	S_DOD Calibration
	10/15/2016 02:17:00	Running 785479 (104)	NAH	Analyst	S_DOD Calibration
	10/15/2016 02:24:46	Running 785480 (105)	NAH	Analyst	S_DOD Calibration
	10/15/2016 02:32:33	Running 785481 (106)	NAH	Analyst	S_DOD Calibration
	10/15/2016 02:40:19	Running 785482 (107)	NAH	Analyst	S_DOD Calibration
	10/15/2016 02:48:04	Running 785483 (108)	NAH	Analyst	S_DOD Calibration
	10/15/2016 02:55:52	Running 785484 (109)	NAH	Analyst	S_DOD Calibration
	10/15/2016 03:03:39	Running 785485 (110)	NAH	Analyst	S_DOD Calibration
	10/15/2016 03:11:26	Running ccv1 (28)	NAH	Analyst	S_DOD Calibration

Type	Date/Time	Message	User name	Application	Sequence Name
	10/18/2016 07:25:11	Running Blank (1)	NAH	Analyst	S_DOD Calibration
	10/18/2016 07:32:04	Running CalStd1=0.25 (2)	NAH	Analyst	S_DOD Calibration
	10/18/2016 07:38:59	Running CalStd2=0.5 (3)	NAH	Analyst	S_DOD Calibration
	10/18/2016 07:45:54	Running CalStd3=1 (4)	NAH	Analyst	S_DOD Calibration
	10/18/2016 07:52:51	Running CalStd4=5 (5)	NAH	Analyst	S_DOD Calibration
	10/18/2016 07:59:47	Running CalStd5=10 (6)	NAH	Analyst	S_DOD Calibration
	10/18/2016 08:06:44	Running CalStd6=20 (7)	NAH	Analyst	S_DOD Calibration
	10/18/2016 08:13:34	Running CalStd7=50 (8)	NAH	Analyst	S_DOD Calibration
	10/18/2016 08:20:22	Running CalStd8=100 (9)	NAH	Analyst	S_DOD Calibration
	10/18/2016 08:23:16	Closing will close the method and all associated samples.	NAH	Analyst	
	10/18/2016 08:24:28	Closing will close the method and all associated samples.	NAH	Analyst	
	10/18/2016 08:27:10	Running CalStd9=1000 (10)	NAH	Analyst	S_DOD Calibration
	10/18/2016 08:33:21	Running CalStd10=10000 (11)	NAH	Analyst	S_DOD Calibration
	10/18/2016 08:40:20	Running CalStd11-100k (12)	NAH	Analyst	S_DOD Calibration
	10/18/2016 08:47:28	Running CalStd12-100000 (13)	NAH	Analyst	S_DOD Calibration
	10/18/2016 08:54:36	Running CalStd13=500000 (14)	NAH	Analyst	S_DOD Calibration
	10/18/2016 09:02:04	Running CalStd14-1000k (15)	NAH	Analyst	S_DOD Calibration
	10/18/2016 09:10:02	Running blkrinse (22)	NAH	Analyst	S_DOD Calibration
	10/18/2016 09:16:57	Running icv (16)	NAH	Analyst	S_DOD Calibration
	10/18/2016 09:23:46	Running ICVLL (25)	NAH	Analyst	S_DOD Calibration
	10/18/2016 09:30:39	Running icb (17)	NAH	Analyst	S_DOD Calibration
	10/18/2016 09:37:36	Running icb (17)	NAH	Analyst	S_DOD Calibration
	10/18/2016 09:44:45	Running MRL (24)	NAH	Analyst	S_DOD Calibration
	10/18/2016 09:51:38	Running icsa (20)	NAH	Analyst	S_DOD Calibration
	10/18/2016 09:55:25	Closing will close the method and all associated samples.	NAH	Analyst	
	10/18/2016 09:59:06	Running icsab (21)	NAH	Analyst	S_DOD Calibration
	10/18/2016 10:07:02	Running ICVLL ag (1)	NAH	Analyst	S_DOD Calibration
	10/18/2016 10:13:58	Running lcsw59551 (2)	NAH	Analyst	S_DOD Calibration
	10/18/2016 10:20:57	Running mbw59551 (3)	NAH	Analyst	S_DOD Calibration
	10/18/2016 10:27:56	Running 788070 (4)	NAH	Analyst	S_DOD Calibration
	10/18/2016 10:35:17	Running l788070 (5)	NAH	Analyst	S_DOD Calibration
	10/18/2016 10:42:32	Running dup788070 (6)	NAH	Analyst	S_DOD Calibration
	10/18/2016 10:49:52	Running msw788070 (7)	NAH	Analyst	S_DOD Calibration
	10/18/2016 10:56:48	Running msdw788070 (8)	NAH	Analyst	S_DOD Calibration
	10/18/2016 11:03:42	Running pdsw788070 (9)	NAH	Analyst	S_DOD Calibration
	10/18/2016 11:10:20	Running lcsw59555 (10)	NAH	Analyst	S_DOD Calibration
	10/18/2016 11:17:04	Closing will close the method and all associated samples.	NAH	Analyst	
	10/18/2016 11:17:25	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	10/18/2016 11:23:45	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	10/18/2016 11:30:10	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	10/18/2016 11:30:26	Closing will close the method and all associated samples.	NAH	Analyst	
	10/18/2016 11:37:09	Running mbw59555 (11)	NAH	Analyst	S_DOD Calibration
	10/18/2016 11:44:06	Running 788686 (12)	NAH	Analyst	S_DOD Calibration
	10/18/2016 11:51:12	Running l788686 (13)	NAH	Analyst	S_DOD Calibration
	10/18/2016 11:58:09	Running dup788686 (14)	NAH	Analyst	S_DOD Calibration
	10/18/2016 12:05:05	Running msw788686 (15)	NAH	Analyst	S_DOD Calibration
	10/18/2016 12:12:10	Running msdw788686 (16)	NAH	Analyst	S_DOD Calibration
	10/18/2016 12:19:14	Running pdsw788686 (17)	NAH	Analyst	S_DOD Calibration
	10/18/2016 12:25:55	Running lcsw59554 (18)	NAH	Analyst	S_DOD Calibration
	10/18/2016 12:32:35	Running mbw59554 (19)	NAH	Analyst	S_DOD Calibration
	10/18/2016 12:39:30	Running 788094 (20)	NAH	Analyst	S_DOD Calibration
	10/18/2016 12:46:36	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	10/18/2016 12:52:56	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration

Type	Date/Time	Message	User name	Application	Sequence Name
	10/18/2016 12:59:21	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	10/18/2016 13:06:19	Running l788094 (21)	NAH	Analyst	S_DOD Calibration
	10/18/2016 13:13:37	Running dup788094 (22)	NAH	Analyst	S_DOD Calibration
	10/18/2016 13:20:42	Running msw788094 (23)	NAH	Analyst	S_DOD Calibration
	10/18/2016 13:27:38	Running msdw788094 (24)	NAH	Analyst	S_DOD Calibration
	10/18/2016 13:34:30	Running pdsw788094 (25)	NAH	Analyst	S_DOD Calibration
	10/18/2016 13:41:06	Running 788781 (26)	NAH	Analyst	S_DOD Calibration
	10/18/2016 13:48:02	Running 788782 (27)	NAH	Analyst	S_DOD Calibration
	10/18/2016 13:55:23	Running 788783 (28)	NAH	Analyst	S_DOD Calibration
	10/18/2016 14:02:29	Running 788784 (29)	NAH	Analyst	S_DOD Calibration
	10/18/2016 14:09:26	Running 788785 (30)	NAH	Analyst	S_DOD Calibration
	10/18/2016 14:16:31	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	10/18/2016 14:22:58	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	10/18/2016 14:29:23	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	10/18/2016 14:36:21	Running 788786 (31)	NAH	Analyst	S_DOD Calibration
	10/18/2016 14:43:19	Running 788787 (32)	NAH	Analyst	S_DOD Calibration
	10/18/2016 14:50:16	Running 788788 (33)	NAH	Analyst	S_DOD Calibration
	10/18/2016 14:53:06	Closing will close the method and all associated samples.	NAH	Analyst	
	10/18/2016 14:57:13	Running 788789 (34)	NAH	Analyst	S_DOD Calibration
	10/18/2016 15:04:11	Running 788793 (35)	NAH	Analyst	S_DOD Calibration
	10/18/2016 15:06:41	Closing will close the method and all associated samples.	NAH	Analyst	
	10/18/2016 15:11:09	Running 788794 (36)	NAH	Analyst	S_DOD Calibration
	10/18/2016 15:18:12	Running 788795 (37)	NAH	Analyst	S_DOD Calibration
	10/18/2016 15:25:13	Running 788796 (38)	NAH	Analyst	S_DOD Calibration
	10/18/2016 15:32:16	Running 788797 (39)	NAH	Analyst	S_DOD Calibration
	10/18/2016 15:39:19	Running 788798 (40)	NAH	Analyst	S_DOD Calibration
	10/18/2016 15:46:22	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	10/18/2016 15:52:41	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	10/18/2016 15:59:06	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	10/18/2016 16:06:04	Running 788799 (41)	NAH	Analyst	S_DOD Calibration
	10/18/2016 16:13:07	Running 788800 (42)	NAH	Analyst	S_DOD Calibration
	10/18/2016 16:20:14	Running msw788800 (43)	NAH	Analyst	S_DOD Calibration
	10/18/2016 16:26:57	Running msdw788800 (44)	NAH	Analyst	S_DOD Calibration
	10/18/2016 16:33:37	Running 788801 (45)	NAH	Analyst	S_DOD Calibration
	10/18/2016 16:40:38	Running 788802 (46)	NAH	Analyst	S_DOD Calibration
	10/18/2016 16:47:50	Running 788803 (47)	NAH	Analyst	S_DOD Calibration
	10/18/2016 16:54:54	Running 788804 (48)	NAH	Analyst	S_DOD Calibration
	10/18/2016 17:01:56	Running msw788804 (49)	NAH	Analyst	S_DOD Calibration
	10/18/2016 17:08:36	Running msdw788804 (50)	NAH	Analyst	S_DOD Calibration
	10/18/2016 17:15:15	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	10/18/2016 17:21:40	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	10/18/2016 17:28:05	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	10/18/2016 17:35:02	Running 788805 (51)	NAH	Analyst	S_DOD Calibration
	10/18/2016 17:42:03	Running new tube1 (52)	NAH	Analyst	S_DOD Calibration
	10/18/2016 17:49:00	Running new tube2 (53)	NAH	Analyst	S_DOD Calibration
	10/18/2016 17:55:57	Running pdss784496 (54)	NAH	Analyst	S_DOD Calibration
	10/18/2016 18:02:35	Running 784516 (55)	NAH	Analyst	S_DOD Calibration
	10/18/2016 18:09:40	Running 787440 (56)	NAH	Analyst	S_DOD Calibration
	10/18/2016 18:16:46	Running 787441 (57)	NAH	Analyst	S_DOD Calibration
	10/18/2016 18:23:40	Running l787441 (58)	NAH	Analyst	S_DOD Calibration
	10/18/2016 18:30:52	Running dup787441 (59)	NAH	Analyst	S_DOD Calibration
	10/18/2016 18:37:47	Running mss787441 (60)	NAH	Analyst	S_DOD Calibration
	10/18/2016 18:44:41	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration

Type	Date/Time	Message	User name	Application	Sequence Name
	10/18/2016 18:51:19	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration
	10/18/2016 18:57:44	Running ccb (19)	NAH	Analyst	S_DOD Calibration
	10/18/2016 19:04:42	Running msds787441 (61)	NAH	Analyst	S_DOD Calibration
	10/18/2016 19:11:40	Running pdss787441 (62)	NAH	Analyst	S_DOD Calibration
	10/18/2016 19:18:32	Running 787443 (63)	NAH	Analyst	S_DOD Calibration
	10/18/2016 19:25:38	Running MRL (24)	NAH	Analyst	S_DOD Calibration
	10/18/2016 19:32:31	Running ccv1 (28)	NAH	Analyst	S_DOD Calibration
	10/18/2016 19:39:05	Running ccv2 (26)	NAH	Analyst	S_DOD Calibration
	10/18/2016 19:45:30	Running ccb (27)	NAH	Analyst	S_DOD Calibration
	10/18/2016 19:52:30	Plasma extinguished successfully	NAH	Analyst	
	10/18/2016 19:52:31	Plasma off	NAH	iTEVA Control Center	
	10/18/2016 19:52:32	Autosampler Run Completed	NAH	Analyst	S_DOD Calibration
	10/19/2016 06:44:43	Plasma On	NAH	iTEVA Control Center	
	10/19/2016 06:44:48	Plasma ignition successful	NAH	Analyst	
	10/19/2016 06:45:27	D33534 - Debug:Wavelength check : x = 1.755, y =2.328	NAH	Analyst	
	10/19/2016 07:54:03	Sequence Started	NAH	Analyst	S_DOD Calibration
	10/19/2016 07:54:03	Autosampler Run Started	NAH	Analyst	
	10/19/2016 07:54:23	Running Blank (1)	NAH	Analyst	S_DOD Calibration
	10/19/2016 08:01:17	Running CalStd1=0.25 (2)	NAH	Analyst	S_DOD Calibration
	10/19/2016 08:08:31	Running CalStd2=0.5 (3)	NAH	Analyst	S_DOD Calibration
	10/19/2016 08:15:33	Running CalStd3=1 (4)	NAH	Analyst	S_DOD Calibration
	10/19/2016 08:22:31	Running CalStd4=5 (5)	NAH	Analyst	S_DOD Calibration
	10/19/2016 08:29:27	Running CalStd5=10 (6)	NAH	Analyst	S_DOD Calibration
	10/19/2016 08:36:20	Running CalStd6=20 (7)	NAH	Analyst	S_DOD Calibration
	10/19/2016 08:43:10	Running CalStd7=50 (8)	NAH	Analyst	S_DOD Calibration
	10/19/2016 08:49:59	Running CalStd8=100 (9)	NAH	Analyst	S_DOD Calibration
	10/19/2016 08:56:45	Running CalStd9=1000 (10)	NAH	Analyst	S_DOD Calibration
	10/19/2016 09:02:50	Running CalStd10=10000 (11)	NAH	Analyst	S_DOD Calibration
	10/19/2016 09:10:00	Running CalStd11-100k (12)	NAH	Analyst	S_DOD Calibration
	10/19/2016 09:17:04	Running CalStd12-100000 (13)	NAH	Analyst	S_DOD Calibration
	10/19/2016 09:24:13	Running CalStd13=500000 (14)	NAH	Analyst	S_DOD Calibration
	10/19/2016 09:31:58	Running CalStd14-1000k (15)	NAH	Analyst	S_DOD Calibration
	10/19/2016 09:40:04	Running blkrinse (22)	NAH	Analyst	S_DOD Calibration
	10/19/2016 09:46:59	Running icv (16)	NAH	Analyst	S_DOD Calibration
	10/19/2016 09:53:45	Running ICVLL (25)	NAH	Analyst	S_DOD Calibration
	10/19/2016 10:00:33	Running icb (17)	NAH	Analyst	S_DOD Calibration
	10/19/2016 10:07:30	Running icb (17)	NAH	Analyst	S_DOD Calibration
	10/19/2016 10:14:27	Running MRL (24)	NAH	Analyst	S_DOD Calibration
	10/19/2016 10:21:28	Running icsa (20)	NAH	Analyst	S_DOD Calibration
	10/19/2016 10:26:54	Closing will close the method and all associated samples.	NAH	Analyst	
	10/19/2016 10:29:13	Running icsab (21)	NAH	Analyst	S_DOD Calibration
	10/19/2016 10:37:22	Running ICVLL ag (1)	NAH	Analyst	S_DOD Calibration
	10/19/2016 10:44:16	Running lcss59580 (2)	NAH	Analyst	S_DOD Calibration
	10/19/2016 10:50:56	Running mbs59580 (3)	NAH	Analyst	S_DOD Calibration
	10/19/2016 10:58:49	Running 788660 (4)	NAH	Analyst	S_DOD Calibration
	10/19/2016 11:05:50	Running 788661 (5)	NAH	Analyst	S_DOD Calibration
	10/19/2016 11:12:52	Running 788662 (6)	NAH	Analyst	S_DOD Calibration
	10/19/2016 11:19:56	Running 788663 (7)	NAH	Analyst	S_DOD Calibration
	10/19/2016 11:26:55	Running 788664 (8)	NAH	Analyst	S_DOD Calibration
	10/19/2016 11:33:59	Running 788666 (9)	NAH	Analyst	S_DOD Calibration
	10/19/2016 11:41:22	Running 788667 (10)	NAH	Analyst	S_DOD Calibration
	10/19/2016 11:48:43	Running ccv1 (23)	NAH	Analyst	S_DOD Calibration
	10/19/2016 11:55:22	Running ccv2 (18)	NAH	Analyst	S_DOD Calibration

		Instrument:	CETAC
Standard Log #:	M13006	Standard:	Hg CCV
Analyst:	LJF	Concentration:	3.0 ug/L Hg
Prep Date:	10/25/2016	Expiration Date:	08/18/2017
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12788 *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:	CETAC
Standard Log #:	M13007	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	10/25/2016	Expiration Date:	10/25/2016
Prep:	Carefully mixed **3** parts HCl AB.631 with **1** part HNO_3 AB.628 in a hood.		

		Instrument:	CETAC
Standard Log #:	M13008	Reagent:	Stannous Chloride Solution
Analyst:	LJF		
Prep Date:	10/25/2016	Expiration Date:	04/25/2017
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H_2O, added **70 mL** hydrochloric acid AB.631 and dissolved **100 g** Stannous chloride M12926 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M13003	Standard:	Hg ICAL
Analyst:	LJF	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	10/25/2016	Expiration Date:	08/18/2017
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12788 *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:	CETAC
Standard Log #:	M13004	Standard:	Alt. Source Working Std.
Analyst:	LJF	Concentrations:	10,000 and 100 ug/L
Prep Date:	10/25/2016	Expiration Date:	05/30/2017
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** of Hg (1000 mg/L) M12856 *100 ug/L Std.* - **1 mL** of Hg (*10,000 ug/L working Std.*)		

		Instrument:	CETAC
Standard Log #:	M13005	Standard:	Hg ICV/LCS
Analyst:	LJF	Concentration:	3 ug/L
Prep Date:	10/25/2016	Expiration Date:	05/30/2017
Prep:	Into a 100 mL volumetric flask, pipetted **3 mL** of Hg (*100 ug/L working Std.*) M12856 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	GFAA
Standard Log #:	M13000	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	10/25/2016	Expiration Date:	06/01/2017
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)) M12862 and brought to volume with Milli-Q H_2O. (1% HNO_3)		

		Instrument:	GFAA
Standard Log #:	M13001	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	10/25/2016	Expiration Date:	06/01/2017
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)) M12862 and brought to volume with Milli-Q DI H_2O. (1% HNO_3)		

		Instrument:	GFAA
Standard Log #:	M13002	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	10/25/2016	Expiration Date:	06/01/2017
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)) M12863 and brought to volume with Milli-Q DI H_2O. (1% HNO_3)		

Standard ID#:	M12999	Vendor:	Environmental Express
Analyst:	MDS	Chemical:	Pd Matrix Modifier
Date Received:	10/20/2016	Lot #:	1616501
Expiration Date (if any):	10/17/2017	Catalog #:	HP1900-100

Standard ID#:	M12998	Vendor:	LabChem
Analyst:	LJF	Chemical:	STANNOUS CHLORIDE
Date Received:	10/19/2016	Lot #:	F267-16
Expiration Date (if any):		Catalog #:	LC251701

		Instrument:	ICP 6000
Standard Log #:	M12995	Standard:	B&Si ICAL
Analyst:	MDS	Concentrations:	50, 200, 1000, 2000 and 10,000 ug/L (B, Si)
Prep Date:	10/17/2016	Expiration Date:	04/15/2017
Prep:	Into five, 1 L volumetric flasks, pipetted the following from stock standards B (1000 mg/L) M12957 and Si (1000 mg/L) M12675 and brought up to volume using milli-Q H_2O. *50 ug/L std.* - **0.05 mL** of each *200 ug/L std.* - **0.2 mL** of each *1000 ug/L std.* -**1.0 mL** of each, also used for Continuing Calibration Verification *2000 ug/L std.* - **2.0 mL** of each *10,000 ug/L std.* -**10 mL** of each		

		Instrument:	ICP 6000
Standard Log #:	M12996	Standard:	B & Si ICSAB
Analyst:	MDS	Concentrations:	500,000 µg/L (Al, Ca, Fe, Mg) 500 µg/L (B,Si)
Prep Date:	10/17/2016	Expiration Date:	04/15/2017
Prep:	Into a 100 mL volumetric flask, pipetted **10 mL** of Interferents A custom stock (5000 mg/L Al, Ca, Mg and 2000 mg/L Fe) M12910, **0.05 mL** of B (1000 µg/mL) M12957, **0.05 mL** of Si (1000 µg/mL) M12675 and **3 mL** of Fe (10,000 mg/L) M12992 and brought up to volume using Milli-Q H_2O.		

		Instrument:	CETAC
Standard Log #:	M12997	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	10/17/2016	Expiration Date:	10/17/2016
Prep:	Carefully mixed **3** parts HCl AB.629 with **1** part HNO_3 AB.628 in a hood.		

Standard ID#:	M12992	Vendor:	CPI
Analyst:	NAH	Chemical:	Fe 10000 mg/L
Date Received:	10/13/2016	Lot #:	16I080
Expiration Date (if any):	04/07/2018	Catalog #:	P/N 4400-10M261

Standard ID#:	M12993	Vendor:	CPI
Analyst:	NAH	Chemical:	Al 10000 mg/L
Date Received:	10/13/2016	Lot #:	16B102
Expiration Date (if any):	04/07/2018	Catalog #:	P/N 4400-10M11

Standard ID#:	M12994	Vendor:	CPI
Analyst:	NAH	Chemical:	Y 10000 mg/L
Date Received:	10/13/2016	Lot #:	16I092
Expiration Date (if any):	04/07/2018	Catalog #:	P/N 4400-10M671

Standard ID#:	M12988	Vendor:	CPI
Analyst:	NAH	Chemical:	K 10000 mg/L
Date Received:	10/13/2016	Lot #:	16I165
Expiration Date (if any):	04/07/2018	Catalog #:	P/N 4400-10M411

Standard ID#:	M12989	Vendor:	CPI
Analyst:	NAH	Chemical:	Zn
Date Received:	10/13/2016	Lot #:	16H186
Expiration Date (if any):	04/07/2018	Catalog #:	P/N 4400-10M411

Standard ID#:	M12990	Vendor:	CPI
Analyst:	NAH	Chemical:	Mg 10000 mg/L
Date Received:	1013/2016	Lot #:	16I168
Expiration Date (if any):	04/07/2018	Catalog #:	P/N 4400-10311

Standard ID#:	M12991	Vendor:	CPI
Analyst:	NAH	Chemical:	Ca 10000 mg/L
Date Received:	10/13/2016	Lot #:	16I091
Expiration Date (if any):	04/07/2018	Catalog #:	P/N 4400-10M91

		Instrument:	CETAC
Standard Log #:	M12987	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	10/12/2016	Expiration Date:	10/12/2016
Prep:	Carefully mixed **3** parts HCl AB.629 with **1** part HNO_3 AB.628 in a hood.		

		Instrument:	ICP 6000
Standard Log #:	M12984	Standard:	NaK ICV
Analyst:	MDS	Concentrations:	100 mg/L (Na, K)
Prep Date:	10/11/2016	Expiration Date:	04/15/2017
Prep:	Into a 250 mL volumetric flask, pipetted **2.5 mL** of K (10,000 mg/L) M12946 and Na (10,000 mg/L) M12679 and brought up to volume using Milli-Q H_2O. (2% HNO_3)		

		Instrument:	ICP 6000
Standard Log #:	M12985	Standard:	Na,K ICVLL
Analyst:	MDS	Concentrations:	3 mg/L (Na,K)
Prep Date:	10/11/2016	Expiration Date:	04/15/2017
Prep:	Into a 500 mL volumetric flask, pipetted **0.15 mL** of Na (10,000 µg/mL) M12679 and **0.15 mL** K (10,000 µg/mL) M12946 and brought to volume with Milli-Q H_2O. (2% HNO_3)		

Standard Log #:	M12986	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	10/11/2016	Expiration Date:	10/11/2017
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.534 and **128.6 mL** 10N NaOH M12938. Dilute to 20 L and mix.		

		Instrument:	ICP 6000
Standard Log #:	M12981	Standard:	Na & K ICAL
Analyst:	MDS	Concentrations:	0.5, 1, 5, 10, 50, 100, and 200 mg/L (Na,K)
Prep Date:	10/11/2016	Expiration Date:	02/12/2017
Prep:	Into seven, 200 mL volumetric flasks, pipetted the following from Na (1000 µg/mL) M12607 and K (1000 µg/mL) M12608 and brought up to volume using milli-Q H_2O. (2% HNO_3) *0.5 mg/L std.* - **0.1 mL** of each *1.0 mg/L std.* - **0.2 mL** of each *5.0 mg/L std.* - **1.0 mL** of each *10 mg/L std.* - **2.0 mL** of each *50 mg/L std.* - **10 mL** of each *100 mg/L std.* -**20 mL** of each, also used for Continuing Calibration Verification *200 mg/L std.* - **40 mL** of each		

		Instrument:	ICP 6000
Standard Log #:	M12982	Standard:	NaK ICSAB
Analyst:	MDS	Concentrations:	500 mg/L (Al, Ca, Fe, Mg) 100 mg/L (Na, K)
Prep Date:	10/11/2016	Expiration Date:	04/15/2017
Prep:	Into a 250 mL volumetric flask, pipetted **25 mL** of Interferents A custom stock (5000 mg/L Al, Ca, Mg and 2000 mg/L Fe) M12910, **2.5 mL** of K (10,000 mg/L) M12946, **2.5 mL** of Na (10,000 mg/L) M12679 and **7.5 mL** of Fe (10,000 mg/L) M12949 and brought up to volume using Milli-Q H_2O. (2% HNO_3)		

		Instrument:	ICP 6000
Standard Log #:	M12983	Standard:	Na,K MRL
Analyst:	MDS	Concentrations:	1 mg/L (Na,K)
Prep Date:	10/11/2016	Expiration Date:	02/12/2017
Prep:	Into a 500 mL volumetric flask, pipetted **0.5 mL** of Na (1000 µg/mL) M12607 and **0.5 mL** K (1000 µg/mL) M12608 and brought to volume with Milli-Q H_2O. (2% HNO_3)		

Standard Log #:	M12979	Reagent:	Potassium Permanganate Solution
Analyst:	LJF		
Prep Date:	10/10/2016	Expiration Date:	04/10/2017
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium permanganate M12277 and brought up to volume.		

Standard Log #:	M12980	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	10/10/2016	Expiration Date:	10/10/2017
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.534 and **128.6 mL** 10N NaOH M12938. Dilute to 20 L and mix.		

Standard Log #:	M12978	Instrument:	GFAA
Analyst:	MDS	Reagent:	Pd/Mg Matrix Modifier
Prep Date:	10/07/2016	Expiration Date:	07/31/2017
Prep:	Into a 50 mL volumetric flask, partially filled with milli-Q H_2O, pipetted **15 mL** Pd Modifier MM12584 and **10 mL** Mg (10,000 mg/L) M12884 and brought up to volume.		

Standard ID#:	M12977	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	09/23/2016	Lot #:	39-001CR
Expiration Date (if any):	09/30/2016	Catalog #:	XSPIKE-1-250

		Instrument:	CETAC
Standard Log #:	M12976	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	09/21/2016	Expiration Date:	09/21/2016
Prep:	Carefully mixed **3** parts HCl AB.624 with **1** part HNO_3 AB.626 in a hood.		

		Instrument:	CETAC
Standard Log #:	M12972	Standard:	Hg CCV
Analyst:	LJF	Concentration:	3.0 ug/L Hg
Prep Date:	09/16/2016	Expiration Date:	08/18/2017
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M112788 *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:	CETAC
Standard Log #:	M12973	Standard:	Hg MRL
Analyst:	LJF	Concentration:	0.2 ug/L Hg
Prep Date:	09/16/2016	Expiration Date:	05/30/2017
Prep:	Into a 100 mL volumetric flask, pipetted **0.2 mL** of Hg (*100 ug/L working std.*) M12856 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	CETAC
Standard Log #:	M12974	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	09/16/2016	Expiration Date:	09/16/2016
Prep:	Carefully mixed **3** parts HCl AB.623 with **1** part HNO_3 AB.626 in a hood.		

		Instrument:	CETAC
Standard Log #:	M12975	Reagent:	Stannous Chloride Solution
Analyst:	LJF		
Prep Date:	09/16/2016	Expiration Date:	03/16/2017
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H_2O, added **70 mL** hydrochloric acid AB.623 and dissolved **100 g** Stannous chloride M12864 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M12969	Standard:	Hg ICAL
Analyst:	LJF	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	09/16/2016	Expiration Date:	08/18/2017
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12788 *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:	CETAC
Standard Log #:	M12970	Standard:	Alt. Source Working Std.
Analyst:	LJF	Concentrations:	10,000 and 100 ug/L
Prep Date:	09/16/2016	Expiration Date:	05/30/2017
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** of Hg (1000 mg/L) M12856 *100 ug/L Std.* - **1 mL** of Hg (*10,000 ug/L working Std.*)		

		Instrument:	CETAC
Standard Log #:	M12971	Standard:	Hg ICV/LCS
Analyst:	LJF	Concentration:	3 ug/L
Prep Date:	09/16/2016	Expiration Date:	05/30/2017
Prep:	Into a 100 mL volumetric flask, pipetted **3 mL** of Hg (*100 ug/L working Std.*) M12856 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

Standard Log #:	M12967	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	09/15/2016	Expiration Date:	09/15/2017
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.534 and **128.6 mL** 10N NaOH M12938. Dilute to 20 L and mix.		

Standard Log #:	M12968	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	09/15/2016	Expiration Date:	09/15/2017
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.534 and **128.6 mL** 10N NaOH M12938. Dilute to 20 L and mix.		

Standard Log #:	M12965	Reagent:	Potassium Permanganate Solution
Analyst:	LJF		
Prep Date:	09/14/2016	Expiration Date:	0314/2017
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium permanganate M12277 and brought up to volume.		

Standard Log #:	M12966	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	09/14/2016	Expiration Date:	09/14/2017
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.534 and **128.6 mL** 10N NaOH M12938. Dilute to 20 L and mix.		

Standard ID#:	M12964	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Std
Date Received:	09/13/2016	Lot #:	1-136WG
Expiration Date (if any):	09/30/2017	Catalog #:	XCTWI-5-500

		Instrument:	CETAC
Standard Log #:	M12963	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	09/08/2016	Expiration Date:	09/08/2017
Prep:	Carefully mixed **3** parts HCl AB.624 with **1** part HNO_3 AB.625 in a hood.		

Standard Log #:	M12961	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	09/06/2016	Expiration Date:	09/06/2017
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.534 and **128.6 mL** 10N NaOH M12938. Dilute to 20 L and mix.		

Standard ID#:	M12962	Vendor:	Environmental Express
Analyst:	NAH	Chemical:	Yttrium 10,000 ug/mL
Date Received:	09/06/2016	Lot #:	1518025
Expiration Date (if any):	03/01/2016	Catalog #:	HP10M67-1

Standard Log #:	M12959	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	09/01/2016	Expiration Date:	09/01/2017
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.534 and **128.6 mL** 10N NaOH M12938. Dilute to 20 L and mix.		

Standard Log #:	M12960	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	09/01/2016	Expiration Date:	09/01/2017
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.534 and **128.6 mL** 10N NaOH M12938. Dilute to 20 L and mix.		

Standard ID#:	M12956	Vendor:	CPI
Analyst:	NAH	Chemical:	K 1000 mg/L
Date Received:	08/31/2016	Lot #:	16E154
Expiration Date (if any):	02/23/2018	Catalog #:	P/N4400-1000411

Standard ID#:	M12957	Vendor:	CPI
Analyst:	NAH	Chemical:	B 1000 mg/L
Date Received:	08/31/2016	Lot #:	16D064
Expiration Date (if any):	02/23/2018	Catalog #:	P/N S4400-100074

Standard ID#:	M12958	Vendor:	CPI
Analyst:	NAH	Chemical:	AS 1000 mg/L
Date Received:	08/31/2016	Lot #:	16H061
Expiration Date (if any):	02/23/2018	Catalog #:	P/N S4400-100031

		Instrument:	CETAC
Standard Log #:	M12955	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	08/30/2016	Expiration Date:	08/30/2016
Prep:	Carefully mixed **3** parts HCl AB.624 with **1** part HNO_3 AB.625 in a hood.		

		Instrument:	ICP
Standard Log #:	M12954	Standard:	As Pb ICV1
Analyst:	NAH	Concentrations:	5000 ug/L (As,Pb)
Prep Date:	08/22/2016	Expiration Date:	11/11/2017
Prep:	Into a 1 L volumetric flask, pipetted **5 mL** of As (1000 mg/L) M12860 and **0.5 mL** Pb (10,000 mg/L) M12861 and brought to volume with Milli-Q H_2O. (2% HNO_3, 2% HCl)		

		Instrument:	CETAC
Standard Log #:	M12953	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	08/18/2016	Expiration Date:	08/18/2016
Prep:	Carefully mixed **3** parts HCl AB.623 with **1** part HNO_3 AB.622 in a hood.		

		Instrument:	CETAC
Standard Log #:	M12952	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	08/16/2016	Expiration Date:	08/16/2016
Prep:	Carefully mixed **3** parts HCl AB.623 with **1** part HNO_3 AB.622 in a hood.		

Standard ID#:	M12951	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance Std Ca, Mg, & Na
Date Received:	08/11/2016	Lot #:	38-096CR
Expiration Date (if any):	08/30/2017	Catalog #:	XCTWI-1-500

Standard Log #:	M12950	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	08/09/2016	Expiration Date:	08/08/2017
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.534 and **128.6 mL** 10N NaOH M12938. Dilute to 20 L and mix.		

Standard ID#:	M12945	Vendor:	CPI
Analyst:	NAH	Chemical:	Copper 10,000 ug/mL
Date Received:	08/04/2016	Lot #:	16C137
Expiration Date (if any):	01/29/2018	Catalog #:	S4400-10M141

Standard ID#:	M12946	Vendor:	CPI
Analyst:	NAH	Chemical:	Potassium 10,000 ug/mL
Date Received:	08/04/2016	Lot #:	16D218
Expiration Date (if any):	01/29/2018	Catalog #:	4400-10M411

Standard ID#:	M12947	Vendor:	CPI
Analyst:	NAH	Chemical:	Magnesium 10,000 ug/mL
Date Received:	08/04/2016	Lot #:	16E106
Expiration Date (if any):	01/29/2018	Catalog #:	4400-10M311

Standard ID#:	M12948	Vendor:	CPI
Analyst:	NAH	Chemical:	Aluminum 10,000 ug/mL
Date Received:	08/04/2016	Lot #:	16B102
Expiration Date (if any):	01/29/2018	Catalog #:	4400-10M11

Standard ID#:	M12949	Vendor:	CPI
Analyst:	NAH	Chemical:	Iron 10,000 ug/mL
Date Received:	08/04/2016	Lot #:	16F173
Expiration Date (if any):	01/29/2018	Catalog #:	4400-10M261

		Instrument:	CETAC
Standard Log #:	M12940	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	08/04/2016	Expiration Date:	08/04/2016
Prep:	Carefully mixed **3** parts HCl AB.623 with **1** part HNO_3 AB.622 in a hood.		

Standard ID#:	M12941	Vendor:	CPI
Analyst:	NAH	Chemical:	Chromium 10,000 ug/mL
Date Received:	08/04/2016	Lot #:	13D123
Expiration Date (if any):	01/29/2018	Catalog #:	S4400-10M121

Standard ID#:	M12942	Vendor:	CPI
Analyst:	NAH	Chemical:	Calcium 10,000 ug/mL
Date Received:	08/04/2016	Lot #:	16E067
Expiration Date (if any):	01/29/2018	Catalog #:	4400-10M91

Standard ID#:	M12943	Vendor:	CPI
Analyst:	NAH	Chemical:	Silicon 1000 ug/mL
Date Received:	08/04/2016	Lot #:	16D134
Expiration Date (if any):	01/29/2018	Catalog #:	S4400-1000504F

Standard ID#:	M12944	Vendor:	CPI
Analyst:	NAH	Chemical:	Manganese 10,000 ug/mL
Date Received:	08/04/2016	Lot #:	16B024
Expiration Date (if any):	01/29/2018	Catalog #:	S4400-10M321

Standard Log #:	M12938b	Reagent:	10N NaOH
Analyst:	LJF		
Prep Date:	08/03/2016	Expiration Date:	02/03/2017
Prep:	Into a 1 L volumetric flask, added **400 g** NaOH W38729 and brought up to volume.		

Standard Log #:	M12939	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	08/03/2016	Expiration Date:	08/03/2017
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.534 and **128.6 mL** 10N NaOH M12938b. Dilute to 20 L and mix.		

Standard ID#:	M12938	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	07/27/2016	Lot #:	2-46MKB
Expiration Date (if any):	07/20/2017	Catalog #:	XSPIKE-1-250

Standard Log #:	M12937	Reagent:	Potassium Permanganate Solution
Analyst:	LJF		
Prep Date:	07/26/2016	Expiration Date:	01/26/2017
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium permanganate M12277 and brought up to volume.		

Standard Log #:	M12936	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	07/20/2016	Expiration Date:	07/20/2016
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.534 and **128.6 mL** 10N NaOH M12878. Dilute to 20 L and mix.		

Standard Log #:	M12935	Instrument:	ICP 6500
Analyst:	NAH	Standard:	LOQ 3050 DOD Metals Spiking S
Prep Date:	07/14/2016	Expiration Date:	11/29/2016

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	4	M12599	1000	0.2
Al	9.6	M12885	**10000**	0.048
As	32	M12860	1000	1.6
Ba	2	M12473	1000	0.1
Be	1.6	M12667	1000	0.08
Ca	56	M12886	**10000**	0.28
Cd	1.6	M12674	1000	0.08
Co	9.6	M12678	1000	0.48
Cr	5.6	M12470	**10000**	0.028
Cu	16	M12472	**10000**	0.08
Fe	72	M12887	**10000**	0.36
Mg	32	M12884	**10000**	0.16
Mn	6	M12533	**10000**	0.03
Mo	9.6	M12677	1000	0.48
Ni	4.8	M12681	1000	0.24
Pb	10	M12861	**10000**	0.05
Sb	32	M12602	1000	1.6
Se	16	M12600	1000	0.8
Tl	19	M12668	1000	0.95
V	3.2	M12676	1000	0.16
Zn	12	M12680	**10000**	0.06

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 #:	M12934	Instrument:	ICP
Analyst:	NAH	Standard:	LOQ 3050 L2 Spiking Solution
Prep Date:	07/14/2016	Expiration Date:	04/15/2017

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3)

Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted
Li	14.4	M12672	1000	0.72
Sn	20	M12669	1000	1
Sr	3.2	M12670	1000	0.16
Ti	9.6	M12671	1000	0.48
W	24	M12673	1000	1.2

Of this base standard, pipetted **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M12933	Instrument:	ICP
Analyst:	NAH	Standard:	LOQ 3050 S Spiking Solution
Prep Date:	07/14/2016	Expiration Date:	05/30/2017

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3)

Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted
S	240	M12876	10000	1.2

Of this base standard, pipetted **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M12932	Instrument:	ICP
Analyst:	NAH	Standard:	LOQ 3050 k&na Spiking Solution
Prep Date:	07/14/2016	Expiration Date:	04/15/2017

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3)

Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted
K	2640	M12883	10000	13.2
Na	960	M12679	10000	4.8

Of this base standard, pipetted **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M12931	Instrument:	ICP
Analyst:	NAH	Standard:	LOQ 3050 B&Si Spiking Solution
Prep Date:	07/14/2016	Expiration Date:	04/15/2017

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3)

Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted
B	52	M12471	1000	2.6
Si	192	M12675	1000	9.6

Of this base standard, pipetted **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M12930	Instrument:	ICP 6500
Analyst:	NAH	Standard:	LOQ 3010 DOD Metals Spiking S
Prep Date:	07/14/2016	Expiration Date:	11/29/2016

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	4	M12599	1000	0.2
Al	36	M12885	**10000**	0.18
As	24	M12860	1000	1.2
Ba	1.8	M12473	1000	0.09
Be	0.6	M12667	1000	0.03
Ca	100	M12886	**10000**	0.5
Cd	2.0	M12674	1000	0.1
Co	4	M12678	1000	0.2
Cr	4	M12470	**10000**	0.02
Cu	7	M12472	**10000**	0.035
Fe	100	M12887	**10000**	0.5
Mg	40	M12884	**10000**	0.2
Mn	4	M12533	**10000**	0.02
Mo	7	M12677	1000	0.35
Ni	6	M12681	1000	0.2
Pb	4	M12861	**10000**	0.02
Sb	12	M12602	1000	0.6
Se	13	M12600	1000	0.65
Tl	20	M12668	1000	0.75
V	5	M12676	1000	0.25
Zn	10	M12680	**10000**	0.05

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 #:	M12929	Instrument:	ICP
Analyst:	NAH	Standard:	LOQ 3010 k&na Spiking Solution
Prep Date:	07/14/2016	Expiration Date:	04/15/2017

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3)

Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted
K	500	M12883	10000	2.5
Na	600	M12679	10000	3

Of this base standard, pipetted **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M12929B	Instrument:	ICP
Analyst:	NAH	Standard:	LOQ 3010 L2 Spiking Solution
Prep Date:	07/14/2016	Expiration Date:	04/15/2017

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3)

Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted
Li	10	M12672	1000	0.5
Sn	10	M12669	1000	0.5
Sr	2	M12670	1000	0.1
Ti	8	M12671	1000	0.8
W	36	M12673	1000	1.8

Of this base standard, pipetted **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M12928	Instrument:	ICP
Analyst:	NAH	Standard:	LOQ 3010 S Spiking Solution
Prep Date:	07/14/2016	Expiration Date:	05/30/2017

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3)

Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted
S	200	M12876	10000	1.0

Of this base standard, pipetted **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M12927	Instrument:	ICP
Analyst:	NAH	Standard:	LOQ 3010 B&Si Spiking Solution
Prep Date:	07/14/2016	Expiration Date:	04/15/2017

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3)

Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted
B	16	M12471	1000	0.8
Si	200	M12675	1000	10

Of this base standard, pipetted **1 mL** into a 50 mL digestion tube for a digested working standard.

		Instrument:	ICP 6000
Standard Log #:	M12924	Standard:	B & Si ICSAB
Analyst:	MDS	Concentrations:	500,000 µg/L (Al, Ca, Fe, Mg) 500 µg/L (B,Si)
Prep Date:	07/14/2016	Expiration Date:	10/15/2016
Prep:	Into a 100 mL volumetric flask, pipetted **10 mL** of Interferents A custom stock (5000 mg/L Al, Ca, Mg and 2000 mg/L Fe) M12733 , **0.05 mL** of B (1000 µg/mL) M12471 , **0.05 mL** of Si (1000 µg/mL) M12675 and **3 mL** of Fe (10,000 mg/L) M12887 and brought up to volume using Milli-Q H_2O.		

		Instrument:	CETAC
Standard Log #:	M12925	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	07/14/2016	Expiration Date:	07/14/2016
Prep:	Carefully mixed **3** parts HCl AB.621 with **1** part HNO_3 AB.622 in a hood.		

Standard ID#:	M12926	Vendor:	LabChem
Analyst:	LJF	Chemical:	STANNOUS CHLORIDE
Date Received:	07/14/2016	Lot #:	F161-11
Expiration Date (if any):		Catalog #:	LC251701

Standard Log #:	M12923	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	07/13/2016	Expiration Date:	07/13/2017
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.534 and **128.6 mL** 10N NaOH M12878. Dilute to 20 L and mix.		

		Instrument:	GFAA
Standard Log #:	M12921	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:	07/12/2016	Expiration Date:	02/10/2017
Prep:	Into a 100 mL volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. **1.5 mL** of Sb (1000 mg/L) M12602 **1.0 mL** of As (1000 mg/L) M12860 **2.0 mL** of Se (1000 mg/L) M12600 **0.045 mL** of Pb (10,000 mg/L) M12861 **0.4 mL** of Tl (1000 mg/L) M12668 From this diluted standard solution, pipetted **10 mL** into a 1 L volumetric flask and brought up to volume with Milli-Q H_2O to make the spiking solution. (1% HNO_3) *Pipette **1 mL** spiking solution into 50 mL H_2O 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 #:	M12922	Reagent:	Potassium Permanganate Solution
Analyst:	LJF		
Prep Date:	07/12/2016	Expiration Date:	01/12/2017
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium permanganate M12277 and brought up to volume.		

		Instrument:	GFAA
Standard Log #:	M12920	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:	07/12/2016	Expiration Date:	02/10/2017
Prep:	Into a 200 mL volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. **1.2 mL** of Sb (1000 mg/L) M12602 **3.2 mL** of As (1000 mg/L) M12860 **3.2 mL** of Se (1000 mg/L) M12600 **0.08 mL** of Pb (10,000 mg/L) M12861 **1.0 mL** of Tl (1000 mg/L) M12668 From this diluted standard solution, pipetted **10 mL** into a 1 L volumetric flask and brought up to volume with Milli-Q H_2O to make the spiking solution. (1% HNO_3) *Pipette **1 mL** spiking solution into 50 mL H_2O 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:	ICP 6000
Standard Log #:	M12919	Standard:	Na,K MRL
Analyst:	MDS	Concentrations:	1 mg/L (Na,K)
Prep Date:	07/08/2016	Expiration Date:	02/12/2017
Prep:	Into a 500 mL volumetric flask, pipetted **0.5 mL** of Na (1000 µg/mL) M12607 and **0.5 mL** K (1000 µg/mL) M12608 and brought to volume with Milli-Q H_2O. (2% HNO_3)		

		Instrument:	CETAC
Standard Log #:	M12915	Standard:	Hg CCV
Analyst:	LJF	Concentration:	3.0 ug/L Hg
Prep Date:	07/07/2016	Expiration Date:	08/18/2017
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12788 *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:	CETAC
Standard Log #:	M12916	Standard:	Hg MRL
Analyst:	LJF	Concentration:	0.2 ug/L Hg
Prep Date:	07/07/2016	Expiration Date:	05/30/2017
Prep:	Into a 100 mL volumetric flask, pipetted **0.2 mL** of Hg (*100 ug/L working std.*) M12856 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	CETAC
Standard Log #:	M12917	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	07/07/2016	Expiration Date:	07/07/2016
Prep:	Carefully mixed **3** parts HCl AB.621 with **1** part HNO_3 AB.622 in a hood.		

		Instrument:	CETAC
Standard Log #:	M12918	Reagent:	Stannous Chloride Solution
Analyst:	LJF		
Prep Date:	07/07/2016	Expiration Date:	11/06/2016
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H_2O, added **70 mL** hydrochloric acid AB.621 and dissolved **100 g** Stannous chloride M12802 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M12912	Standard:	Hg ICAL
Analyst:	LJF	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	07/07/2016	Expiration Date:	08/18/2017
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12788 *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:	CETAC
Standard Log #:	M12913	Standard:	Alt. Source Working Std.
Analyst:	LJF	Concentrations:	10,000 and 100 ug/L
Prep Date:	07/07/2016	Expiration Date:	05/30/2017
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** of Hg (1000 mg/L) M12856 *100 ug/L Std.* - **1 mL** of Hg (*10,000 ug/L working Std.*)		

		Instrument:	CETAC
Standard Log #:	M12914	Standard:	Hg ICV/LCS
Analyst:	LJF	Concentration:	3 ug/L
Prep Date:	07/07/2016	Expiration Date:	05/30/2017
Prep:	Into a 100 mL volumetric flask, pipetted **3 mL** of Hg (*100 ug/L working Std.*) M12856 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	CETAC
Standard Log #:	M12911	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	06/28/2016	Expiration Date:	06/28/2016
Prep:	Carefully mixed **3** parts HCl AB.621 with **1** part HNO_3 AB.622 in a hood.		

Standard ID#:	M12909	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance Standard 23 meta
Date Received:	06/27/2016	Lot #:	2-18MKB
Expiration Date (if any):	06/30/2017	Catalog #:	XCTWI-5-500

Standard ID#:	M12910	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Interference A
Date Received:	06/27/2016	Lot #:	12-165YPX
Expiration Date (if any):	06/30/2016	Catalog #:	INT-A1

		Instrument:	CETAC
Standard Log #:	M12906	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	06/21/2016	Expiration Date:	06/21/2016
Prep:	Carefully mixed **3** parts HCl AB.621 with **1** part HNO_3 AB.622 in a hood.		

		Instrument:	CETAC
Standard Log #:	M12907	Reagent:	Stannous Chloride Solution
Analyst:	LJF		
Prep Date:	06/21/2016	Expiration Date:	11/06/2016
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H_2O, added **70 mL** hydrochloric acid AB.621 and dissolved **100 g** Stannous chloride M12802 and brought up to volume.		

Standard ID#:	M12908	Vendor:	AMCO Clear
Analyst:	NAH	Chemical:	Amco clear turbidity std 2.0 NTU
Date Received:	06/21/2016	Lot #:	C583585
Expiration Date (if any):	7/2017	Catalog #:	#8008

		Instrument:	CETAC
Standard Log #:	M12904	Standard:	Hg CCV
Analyst:	LJF	Concentration:	3.0 ug/L Hg
Prep Date:	06/21/2016	Expiration Date:	08/18/2017
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12788 *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:	CETAC
Standard Log #:	M12905	Standard:	Hg MRL
Analyst:	LJF	Concentration:	0.2 ug/L Hg
Prep Date:	06/21/2016	Expiration Date:	05/30/2017
Prep:	Into a 100 mL volumetric flask, pipetted **0.2 mL** of Hg (*100 ug/L working std.*) M12856 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	CETAC
Standard Log #:	M12901	Standard:	Hg ICAL
Analyst:	LJF	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	06/21/2016	Expiration Date:	08/18/2017
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12788 *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:	CETAC
Standard Log #:	M12902	Standard:	Alt. Source Working Std.
Analyst:	LJF	Concentrations:	10,000 and 100 ug/L
Prep Date:	06/21/2016	Expiration Date:	05/30/2017
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** of Hg (1000 mg/L) M12856 *100 ug/L Std.* - **1 mL** of Hg (*10,000 ug/L working Std.*)		

		Instrument:	CETAC
Standard Log #:	M12903	Standard:	Hg ICV/LCS
Analyst:	LJF	Concentration:	3 ug/L
Prep Date:	06/21/2016	Expiration Date:	05/30/2017
Prep:	Into a 100 mL volumetric flask, pipetted **3 mL** of Hg (*100 ug/L working Std.*) M12856 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

Standard ID#:	M12900	Vendor:	HACH
Analyst:	NAH	Chemical:	StablCal Standard, 200 NTU or FNU
Date Received:	06/17/2016	Lot #:	A6036
Expiration Date (if any):	02/2018	Catalog #:	2660449

Standard Log #:	M12899	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	06/16/2016	Expiration Date:	06/16/2017
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.534 and **128.6 mL** 10N NaOH W38729. Dilute to 20 L and mix.		

Standard Log #:	M12898	Reagent:	Potassium Permanganate Solution
Analyst:	LJF		
Prep Date:	06/13/2016	Expiration Date:	12/13/2016
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium permanganate M12277 and brought up to volume.		

		Instrument:	ICP 6500
Standard Log #:	M12896	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:	06/09/2016	Expiration Date:	10/2016
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) M12769 and **5.0 mL** of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) M12882 and brought up to volume with milli-Q H_2O.		

		Instrument:	ICP 6500
Standard Log #:	M12897	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:	06/09/2016	Expiration Date:	10/2016
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) M12769 and **0.5 mL** of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) M12882 and brought up to volume with milli-Q H_2O.		

		Instrument:	ICP 6500
Standard Log #:	M12894	Standard:	DOD MRL
Analyst:	NAH	Concentrations:	4 ug/L: Be. 5 ug/L: Cd. 10 ug/L: Ag, Ba, Co, Cr, Cu, Mn, Mo. Ni, Pb, V, Zn, Sr, and Ti. 20 ug/L: Sb, As, Se, Tl, Li, Sn and B. 50 ug/L: W. 100 ug/L: Si. 300 ug/L: Fe. 400 ug/L Fe. 500 ug/L: S, Ca and Mg. 1000 ug/L: K and Na.
Prep Date:	06/09/2016	Expiration Date:	10/2016
Prep:	Into a 500 mL volumetric flask, pipetted **10 mL** of MRL Base STD M12893 and brought to volume with Milli-Q H_2O. (5% HNO_3 & 5% HCL)		

		Instrument:	ICP 6500
Standard Log #:	M12895	Standard:	ICVLL
Analyst:	NAH	Concentrations:	12 ug/L: Be. 15 ug/L: Cd. 30 ug/L: Ag, Ba, Co, Cr, Cu, Mn, Mo. Ni, Pb, V, Zn, Sr, and Ti. 60 ug/L: Sb, As, Se, Tl, Li, Sn and B. 150 ug/L: W. 300 ug/L: Si. 900 ug/L: Fe. 1200 ug/L Al. 1500 ug/L: S, Ca and Mg. 3000 ug/L: K and Na.
Prep Date:	06/09/2016	Expiration Date:	10/2016
Prep:	Into a 500 mL volumetric flask, pipetted 30 **mL** of MRL Base STD M12893 and brought to volume with Milli-Q H_2O. (5% HNO_3 & 5% HCL)		

MRL BASE STD M12893

Analyst NAH

Prep Date 06/09/2016

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	M12599	1000	1	02/10/2017
Al	400	M12885	10000	2	12/01/2017
Ba	10	M12473	1000	0.5	10/15/2016
Be	4	M12667	1000	0.2	04/15/2017
Cd	5	M12674	1000	0.25	04/15/2017
Co	10	M12678	1000	0.5	04/15/2017
Cr	10	M12470	10000	0.05	10/15/2016
Cu	10	M12472	10000	0.05	10/15/2016
Mg	500	M12884	10000	2.5	12/01/2017
Mn	10	M12533	10000	0.05	11/29/2016
Mo	10	M12677	1000	0.5	04/15/2017
Ni	10	M12681	1000	0.5	04/15/2017
Pb	10	M12861	10000	0.05	11/11/2017
Sb	20	M12602	1000	1	02/10/2017
V	10	M12676	1000	0.5	04/15/2017
Zn	10	M12680	10000	0.05	04/15/2017
K	1000	M12883	10000	5	12/01/2017
Na	1000	M12679	10000	5	04/15/2017
As	20	M12860	1000	1	11/11/2017
Ca	500	M12886	10000	2.5	12/01/2017
Fe	300	M12887	10000	1.5	12/01/2017
Se	20	M12600	1000	1	02/10/2017
Tl	20	M12668	1000	1	04/15/2017
Si	100	M12675	1000	5	04/15/2017
B	20	M12471	1000	1	10/15/2016
Li	20	M12672	1000	1	04/15/2017
W	50	M12673	1000	2.5	04/15/2017
Ti	10	M12671	1000	0.5	04/15/2017
Sr	10	M12670	1000	0.5	04/15/2017
Sn	50	M12669	1000	2.5	04/15/2017
S	300	M12876	10000	1.5	05/30/2017

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.

Expiration Date:
10/2016

		Instrument:	ICP 6500
Standard Log #:	M12892	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
Prep Date:	06/09/2016	Expiration Date:	12/2016
Prep:	Into a 500 mL volumetric flask, pipetted **50 mL** Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M12733 , **15 mL** Fe (10,000 mg/L) M12887 , **2.5 mL** of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M12769 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) M12882 and brought up to volume with milli-Q H_2O.		

		Instrument:	ICP 6500
Standard Log #:	M12890	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:	06/09/2016	Expiration Date:	10/2016
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with milli-Q H_2O. **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)) M12819, **2 mL** Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M12733, **0.5 mL** Mo (1000 mg/L) M12677, **0.5 mL** B (1000 mg/L) M12471, **0.5 mL** Sr (1000 mg/L) M12670, **0.5 mL** Li (1000 mg/L) M12672, **0.5 mL** Sn (1000 mg/L) M12669 and **0.5 mL** Ti (1000 mg/L) M12671.		

		Instrument:	ICP 6500
Standard Log #:	M12891	Standard:	ICSA
Analyst:	NAH	Concentrations:	**500,000 ug/L** Al, Ca, Fe, Mg
Prep Date:	06/09/2016	Expiration Date:	12/2016
Prep:	Into a 500 mL volumetric flask, pipetted **50 mL** Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M12733 and **15 mL** Fe (10000 mg/L) M12887 and brought up to volume with milli-Q H_2O.		

		Instrument:	ICP 6500
Standard Log #:	M12889	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:	06/09/2016	Expiration Date:	02/28/2017

Prep:

Using 1 L volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O.
(5% HNO_3, 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) M12769, **10 mL** of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M12882 and **1 mL** of Si (1000 mg/L) M12675.
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) M12883.
100k ug/L Std. - **10 mL** of Cu (10,000 mg/L) M12472, **10 mL** of Mn (10,000 mg/L) M12533, **10 mL** of Cr (10,000 mg/L) M12470, **10 mL** Pb (10,000 mg/L) M12861, **10 mL** of Zn (10,000 mg/L) M12680 and **10 mL** of Na (10,000 mg/L) M12679.
100,000 ug/L Std. - **10 mL** of Mg (10,000 mg/L) M12884, **10 mL** of Fe (10,000 mg/L) M12887, **10 mL** of Ca (10,000 mg/L) M12886 and **10 mL** Al (10,000 mg/L) M12885.
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 ID#:	M12886	Vendor:	CPI
Analyst:	NAH	Chemical:	Ca 10,000 mg/L
Date Received:	06/08/2016	Lot #:	16E067
Expiration Date (if any):	12/01/2017	Catalog #:	4400-10M91

Standard ID#:	M12887	Vendor:	CPI
Analyst:	NAH	Chemical:	Fe 10,000 mg/L
Date Received:	06/08/2016	Lot #:	16D220
Expiration Date (if any):	12/01/2017	Catalog #:	4400-10M261

Standard ID#:	M12888	Vendor:	CPI
Analyst:	NAH	Chemical:	Y 10,000 mg/L
Date Received:	06/01/2016	Lot #:	16E033
Expiration Date (if any):	12/01/2017	Catalog #:	4400-10M671

Standard ID#:	M12882	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	06/08/2016	Lot #:	37-058CR
Expiration Date (if any):	06/30/2017	Catalog #:	XCTWI-4-500

Standard ID#:	M12883	Vendor:	CPI
Analyst:	NAH	Chemical:	K 10,000 mg/L
Date Received:	06/08/2016	Lot #:	16D014
Expiration Date (if any):	12/01/2017	Catalog #:	4400-10M411

Standard ID#:	M12884	Vendor:	CPI
Analyst:	NAH	Chemical:	Mg 10,000 mg/L
Date Received:	06/08/2016	Lot #:	16E106
Expiration Date (if any):	12/01/2017	Catalog #:	4400-10M311

Standard ID#:	M12885	Vendor:	CPI
Analyst:	NAH	Chemical:	Al 10,000 mg/L
Date Received:	06/08/2016	Lot #:	16B102
Expiration Date (if any):	12/01/2017	Catalog #:	4400-10M11

Standard Log #:	M12879	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	06/06/2016	Expiration Date:	06/06/2017
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.534 and **128.6 mL** 10N NaOH W38729. Dilute to 20 L and mix.		

Standard Log #:	M12880	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	06/06/2016	Expiration Date:	06/06/2017
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.534 and **128.6 mL** 10N NaOH W38729. Dilute to 20 L and mix.		

Standard Log #:	M12881	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	06/06/2016	Expiration Date:	06/06/2017
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.534 and **128.6 mL** 10N NaOH W38729. Dilute to 20 L and mix.		

Standard ID#:	M12876	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Sulfur 10,000 mg/L
Date Received:	06/06/2016	Lot #:	AJ16-45SY
Expiration Date (if any):	05/30/2016	Catalog #:	PLS9-3Y

Standard ID#:	M12877	Vendor:	FISHER
Analyst:	LJF	Chemical:	SODIUM CHLORIDE
Date Received:	06/06/2016	Lot #:	158648
Expiration Date (if any):		Catalog #:	S271-500

Standard Log #:	M12878	Reagent:	10N NaOH
Analyst:	LJF		
Prep Date:	06/06/2016	Expiration Date:	06/06/2017
Prep:	Into a 1 L volumetric flask, added **400 g** NaOH W38729 and brought up to volume.		

Standard Log #:	M12875	Standard:	GFAA Instrument Check
Analyst:	MDS	Final Concentration:	10 µg/L As 6 µg/L Pb 22 µg/L Tl 24 µg/L Sb, Se 0.8 µg/L Ag
Prep Date:	06/03/16	Expiration Date:	02/10/17

Into six, 100 mL volumetric flasks, add the following and bring up to volume with milli-Q H_2O.

Element	Volume Pipetted (mL)	Standard Conc. (µg/mL)	Standard ID	New Conc. (µg/L)
As	1	1000	M12860	10,000
Pb	0.1	10,000	M12861	10,000
Tl	1	1000	M12668	10,000
Se	1	1000	M12600	10,000
Sb	1	1000	M12602	10,000
Ag	0.1	1000	M12599	1000

Into a 1 L volumetric flask, add the following and bring up to volume with Milli-Q H_20. (1% HNO_3)

Element	Volume Pipetted (mL)	Standard Conc. (µg/L)	New Conc. (µg/L)
As	1	10,000	10
Pb	0.6	10,000	6
Tl	2.2	10,000	22
Se	2.4	10,000	24
Sb	2.4	10,000	24
Ag	0.8	1000	0.8

Standard ID#:	M12873	Vendor:	CPI
Analyst:	NAH	Chemical:	Sodium 1000 mg/L
Date Received:	06/03/16	Lot #:	16D063
Expiration Date (if any):	11/27/17	Catalog #:	4400-1000521

Standard ID#:	M12874	Vendor:	CPI
Analyst:	NAH	Chemical:	Potassium 1000 mg/L
Date Received:	06/03/16	Lot #:	16B100
Expiration Date (if any):	11/27/17	Catalog #:	4400-1000411

		Instrument:	ICP 6000
Standard Log #:	M12871	Standard:	Na & K ICAL
Analyst:	MDS	Concentrations:	0.5, 1, 5, 10, 50, 100, and 200 mg/L (Na,K)
Prep Date:	06/02/16	Expiration Date:	02/12/17
Prep:	Into seven, 200 mL volumetric flasks, pipetted the following from Na (1000 µg/mL) M12607 and K (1000 µg/mL) M12608 and brought up to volume using milli-Q H_2O. (2% HNO_3) *0.5 mg/L std.* - **0.1 mL** of each *1.0 mg/L std.* - **0.2 mL** of each *5.0 mg/L std.* - **1.0 mL** of each *10 mg/L std.* - **2.0 mL** of each *50 mg/L std.* - **10 mL** of each *100 mg/L std.* -**20 mL** of each, also used for Continuing Calibration Verification *200 mg/L std.* - **40 mL** of each		

Standard ID#:	M12872	Vendor:	SCP Science Plasma Cal
Analyst:	NAH	Chemical:	Sulfur 10,000 mg/L
Date Received:	06/02/16	Lot #:	S160222009
Expiration Date (if any):	11/2017	Catalog #:	140-060-161

		Instrument:	GFAA
Standard Log #:	M12868	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	06/01/16	Expiration Date:	06/01/17
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)) M12862 and brought to volume with Milli-Q H_2O. (1% HNO_3)		

		Instrument:	GFAA
Standard Log #:	M12869	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	06/01/16	Expiration Date:	06/01/17
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)) M12862 and brought to volume with Milli-Q DI H_2O. (1% HNO_3)		

		Instrument:	GFAA
Standard Log #:	M12870	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	06/01/16	Expiration Date:	06/01/17
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)) M12863 and brought to volume with Milli-Q DI H_2O. (1% HNO_3)		

Standard ID#:	M12867	Vendor:	SpexCertiprep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	05-27-2016	Lot #:	37-024CR
Expiration Date (if any):	05/20/2017	Catalog #:	XSPIKE-1-250

Standard ID#:	M12866	Vendor:	Fisher, distributer (saint-gobain, manu
Analyst:	NAH	Chemical:	Chemware Ultra pure PTFE Boiling St
Date Received:	05/23/2016	Lot #:	5608-6E001
Expiration Date (if any):		Catalog #:	0919120

Standard ID#:	M12864	Vendor:	LabChem
Analyst:	LJF	Chemical:	STANNOUS CHLORIDE
Date Received:	05/19/2016	Lot #:	F120-15
Expiration Date (if any):		Catalog #:	LC251701

Standard Log #:	M12865	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	05/20/2016	Expiration Date:	05/20/2017
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.534 and **128.6 mL** 10N NaOH M12645. Dilute to 20 L and mix.		

Standard ID#:	M12862	Vendor:	Inorganic Ventures
Analyst:	MDS	Chemical:	GFAA ICAL/CCV
Date Received:	05/19/2016	Lot #:	J2-MEB581070
Expiration Date (if any):	06/01/2017	Catalog #:	CTI-SPK-1

Standard ID#:	M12863	Vendor:	Inorganic Ventures
Analyst:	MDS	Chemical:	GFAA ICV/SPIKE
Date Received:	05/19/2016	Lot #:	J2-MEB581069
Expiration Date (if any):	06/01/2017	Catalog #:	CTI-GFCAL-1

Standard ID#:	M12860	Vendor:	CPI
Analyst:	NAH	Chemical:	Arsenic 1000 mg/L
Date Received:	05/17/2016	Lot #:	16B070
Expiration Date (if any):	11/11/2017	Catalog #:	S4400-100031

Standard ID#:	M12861	Vendor:	CPI
Analyst:	NAH	Chemical:	Lead 10,000 mg/L
Date Received:	05/17/2016	Lot #:	16D240
Expiration Date (if any):	11/11/2017	Catalog #:	4400-10M281

Standard ID#:	M12859	Vendor:	Alfa Aesar Specpure
Analyst:	MDS	Chemical:	Nickel Nitrate Matrix Modifier
Date Received:	05/12/2016	Lot #:	921812Q
Expiration Date (if any):	06/30/2017	Catalog #:	39043

Standard ID#:	M12856	Vendor:	SPEX CertPrep
Analyst:	LJF	Chemical:	Hg
Date Received:	05/10/2016	Lot #:	CL8-144HGY
Expiration Date (if any):	05/30/2017	Catalog #:	CLHG4-2Y

Standard Log #:	M12857	Reagent:	Potassium Permanganate Solution
Analyst:	LJF		
Prep Date:	05/10/2016	Expiration Date:	11/10/2016
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium permanganate M12277 and brought up to volume.		

Standard Log #:	M12858	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	LJF		
Prep Date:	05/10/2016	Expiration Date:	11/10/2016
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H_2O, dissolved **60 g** NaCl M12403 and **60 g** hydroxylamine sulfate M12610 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M12852	Standard:	Hg CCV
Analyst:	LJF	Concentration:	3.0 ug/L Hg
Prep Date:	05/06/2016	Expiration Date:	08/18/2017
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12788 *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:	CETAC
Standard Log #:	M12853	Standard:	Hg MRL
Analyst:	LJF	Concentration:	0.2 ug/L Hg
Prep Date:	05/06/2016	Expiration Date:	06/30/2016
Prep:	Into a 100 mL volumetric flask, pipetted **0.2 mL** of Hg (*100 ug/L working std.*) M12532 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	CETAC
Standard Log #:	M12854	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	05/06/2016	Expiration Date:	05/06/2016
Prep:	Carefully mixed **3** parts HCl AB.618 with **1** part HNO_3 AB.619 in a hood.		

		Instrument:	CETAC
Standard Log #:	M12855	Reagent:	Stannous Chloride Solution
Analyst:	LJF		
Prep Date:	05/06/2016	Expiration Date:	11/06/2016
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H_2O, added **70 mL** hydrochloric acid AB.618 and dissolved **100 g** Stannous chloride M12802 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M12849	Standard:	Hg ICAL
Analyst:	LJF	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/06/2016	Expiration Date:	08/18/2016
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12788 *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:	CETAC
Standard Log #:	M12850	Standard:	Alt. Source Working Std.
Analyst:	LJF	Concentrations:	10,000 and 100 ug/L
Prep Date:	05/06/2016	Expiration Date:	06/30/2016
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** of Hg (1000 mg/L) M12532 *100 ug/L Std.* - **1 mL** of Hg (*10,000 ug/L working Std.*)		

		Instrument:	CETAC
Standard Log #:	M12851	Standard:	Hg ICV/LCS
Analyst:	LJF	Concentration:	3 ug/L
Prep Date:	05/06/2016	Expiration Date:	06/30/2016
Prep:	Into a 100 mL volumetric flask, pipetted **3 mL** of Hg (*100 ug/L working Std.*) M12532 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	ICP 6000
Standard Log #:	M12848	Standard:	List 2 ICSAB
Analyst:	MDS	Concentrations:	500,000 µg/L (Al, Ca, Fe, Mg) 500 µg/L (Li, Sn, Sr, Ti, W)
Prep Date:	05/04/16	Expiration Date:	12/30/16
Prep:	Into a 200 mL volumetric flask, pipetted **20 mL** of Interferents A custom stock (5000 mg/L Al, Ca, Mg and 2000 mg/L Fe) M12733, **6 mL** of Fe (10,000 mg/L) M12745, **0.1 mL** of Li (1000 µg/mL) M12672, **0.1 mL** of Sn (1000 µg/mL) M12669, **0.1 mL** of Sr (1000 µg/mL) M12670, **0.1 mL** of Ti (1000 µg/mL) M12671, and **0.1 mL** of W (1000 µg/mL) M12673 and brought up to volume using Milli-Q H_2O. (0.5% HNO_3, 0.5% HCl)		

		Instrument:	GFAA
Standard Log #:	M12846	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	04/29/16	Expiration Date:	06/01/16
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)) M12504 and brought to volume with Milli-Q DI H_2O. (1% HNO_3)		

		Instrument:	GFAA
Standard Log #:	M12847	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	04/29/16	Expiration Date:	06/01/16
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)) M12505 and brought to volume with Milli-Q DI H_2O. (1% HNO_3)		

Standard ID#:	M12843	Vendor:	FISHER
Analyst:	LJF	Chemical:	HYDROXYLAMINE SULFATE
Date Received:	04/28/16	Lot #:	161238
Expiration Date (if any):		Catalog #:	H331-500

		Instrument:	ICP 6000
Standard Log #:	M12844	Standard:	B&Si ICV
Analyst:	MDS	Concentrations:	1000 ug/L (B, Si)
Prep Date:	04/29/16	Expiration Date:	02/28/17
Prep:	Into a 1 L volumetric flask, pipetted **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) M12769 and **1.0 mL** Si (1000 mg/L) M12675 and brought up to volume using milli-Q H_2O.		

		Instrument:	GFAA
Standard Log #:	M12845	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	04/29/16	Expiration Date:	06/01/16
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)) M12504 and brought to volume with Milli-Q H_2O. (1% HNO_3)		

		Instrument:	ICP 6000
Standard Log #:	M12841	Standard:	NaK ICV
Analyst:	MDS	Concentrations:	100 mg/L (Na, K)
Prep Date:	04/22/2016	Expiration Date:	04/15/2017
Prep:	Into a 250 mL volumetric flask, pipetted **2.5 mL** of K (10,000 mg/L) M12744 and Na (10,000 mg/L) M12679 and brought up to volume using Milli-Q H_2O. (2% HNO_3)		

		Instrument:	ICP 6000
Standard Log #:	M12842	Standard:	NaK ICSAB
Analyst:	MDS	Concentrations:	500 mg/L (Al, Ca, Fe, Mg) 100 mg/L (Na, K)
Prep Date:	04/22/2016	Expiration Date:	12/30/2016
Prep:	Into a 250 mL volumetric flask, pipetted **25 mL** of Interferents A custom stock (5000 mg/L Al, Ca, Mg and 2000 mg/L Fe) M12733, **2.5 mL** of K (10,000 mg/L) M12744, **2.5 mL** of Na (10,000 mg/L) M12679 and **7.5 mL** of Fe (10,000 mg/L) M12745 and brought up to volume using Milli-Q H_2O. (2% HNO_3)		

Standard Log #:	M12840	Instrument:	ICP
Analyst:	NAH	Standard:	LOQ 3050 S Spiking Solution
Prep Date:	04/19/2016	Expiration Date:	10/2016

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3)

Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted
S	240	M12770	10000	1.2

Of this base standard, pipetted **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M12839	Instrument:	ICP
Analyst:	NAH	Standard:	LOQ 3010 S Spiking Solution
Prep Date:	04/19/2016	Expiration Date:	10/2016

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3)

Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted
S	200	M12770	10000	1.0

Of this base standard, pipetted **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M12838	Instrument:	ICP
Analyst:	NAH	Standard:	LOQ 3050 B&Si Spiking Solution
Prep Date:	04/19/2016	Expiration Date:	10/2016

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3)

Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted
B	52	M12471	1000	2.6
Si	192	M12675	1000	9.6

Of this base standard, pipetted **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M12837	Instrument:	ICP
Analyst:	NAH	Standard:	LOQ 3010 B&Si Spiking Solution
Prep Date:	04/19/2016	Expiration Date:	10/2016

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3)

Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted
B	16	M12471	1000	0.8
Si	200	M12675	1000	10

Of this base standard, pipetted **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M12836	Instrument:	ICP
Analyst:	NAH	Standard:	LOQ 3050 k&na Spiking Solution
Prep Date:	04/19/2016	Expiration Date:	10/2016

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3)

Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted
K	2640	M12744	10000	13.2
Na	960	M12679	10000	4.8

Of this base standard, pipetted **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M12835	Instrument:	ICP
Analyst:	NAH	Standard:	LOQ 3010 k&na Spiking Solution
Prep Date:	04/19/2016	Expiration Date:	10/2016

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3)

Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted
K	500	M12744	10000	2.5
Na	600	M12679	10000	3

Of this base standard, pipetted **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M12834	Instrument:	ICP
Analyst:	NAH	Standard:	LOQ 3050 L2 Spiking Solution
Prep Date:	04/19/2016	Expiration Date:	10/2016

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3)

Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted
Li	14.4	M12672	1000	0.72
Sn	20	M12669	1000	1
Sr	3.2	M12670	1000	0.16
Ti	9.6	M12671	1000	0.48
W	24	M12673	1000	1.2

Of this base standard, pipetted **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M12833	Instrument:	ICP
Analyst:	NAH	Standard:	LOQ 3010 L2 Spiking Solution
Prep Date:	04/19/2016	Expiration Date:	10/2016

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3)

Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted
Li	10	M12672	1000	0.5
Sn	10	M12669	1000	0.5
Sr	2	M12670	1000	0.1
Ti	8	M12671	1000	0.8
W	36	M12673	1000	1.8

Of this base standard, pipetted **1 mL** into a 50 mL digestion tube for a digested working standard.

Standard Log #:	M12832	Instrument:	ICP 6500
Analyst:	NAH	Standard:	LOQ 3050 DOD Metals Spiking S
Prep Date:	0419/2016	Expiration Date:	10/2016

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	4	M12599	1000	0.2
Al	9.6	M12713	**10000**	0.048
As	32	M12315	1000	1.6
Ba	2	M12473	1000	0.1
Be	1.6	M12667	1000	0.08
Ca	56	M12716	**10000**	0.28
Cd	1.6	M12674	1000	0.08
Co	9.6	M12678	1000	0.48
Cr	5.6	M12470	**10000**	0.028
Cu	16	M12472	**10000**	0.08
Fe	72	M12745	**10000**	0.36
Mg	32	M12715	**10000**	0.16
Mn	6	M12733	**10000**	0.03
Mo	9.6	M12677	1000	0.48
Ni	4.8	M12681	1000	0.24
Pb	10	M12313	**10000**	0.05
Sb	32	M12602	1000	1.6
Se	16	M12600	1000	0.8
Tl	19	M12668	1000	0.95
V	3.2	M12676	1000	0.16
Zn	12	M12680	**10000**	0.06

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 #:	M12831	Instrument:	ICP 6500
Analyst:	NAH	Standard:	LOQ 3010 DOD Metals Spiking S
Prep Date:	04/19/2016	Expiration Date:	10/2016

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	4	M12599	1000	0.2
Al	36	M12713	**10000**	0.18
As	24	M12315	1000	1.2
Ba	1.8	M12473	1000	0.09
Be	0.6	M12667	1000	0.03
Ca	100	M12716	**10000**	0.5
Cd	2.0	M12674	1000	0.1
Co	4	M12678	1000	0.2
Cr	4	M12470	**10000**	0.02
Cu	7	M12472	**10000**	0.035
Fe	100	M12745	**10000**	0.5
Mg	40	M12715	**10000**	0.2
Mn	4	M12533	**10000**	0.02
Mo	7	M12677	1000	0.35
Ni	6	M12681	1000	0.2
Pb	4	M12313	**10000**	0.02
Sb	12	M12602	1000	0.6
Se	13	M12600	1000	0.65
Tl	20	M12668	1000	0.75
V	5	M12676	1000	0.25
Zn	10	M12680	**10000**	0.05

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 #:	M12830	Reagent:	Potassium Persulfate Solution
Analyst:	LJF		
Prep Date:	041916	Expiration Date:	101916
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium persulfate M11748 and brought up to volume.		

Standard Log #:	M12827	Reagent:	Potassium Permanganate Solution
Analyst:	LJF		
Prep Date:	041816	Expiration Date:	101816
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium permanganate M12277 and brought up to volume.		

Standard ID#:	M12828	Vendor:	Environmental Express
Analyst:	NAH	Chemical:	Yttrium 10,000 ug/mL
Date Received:	04/18/2016	Lot #:	1518025
Expiration Date (if any):	10/14/2017	Catalog #:	hp10m67-1

Standard ID#:	M12829	Vendor:	CPI
Analyst:	NAH	Chemical:	Yttrium 10,000 ug/mL
Date Received:	04/18/2016	Lot #:	16a118
Expiration Date (if any):	10/12/2017	Catalog #:	4400-10m671

		Instrument:	CETAC
Standard Log #:	M12823	Standard:	Hg CCV
Analyst:	LJF	Concentration:	3.0 ug/L Hg
Prep Date:	041816	Expiration Date:	063016
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12788 *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:	CETAC
Standard Log #:	M12824	Standard:	Hg MRL
Analyst:	LJF	Concentration:	0.2 ug/L Hg
Prep Date:	041816	Expiration Date:	063016
Prep:	Into a 100 mL volumetric flask, pipetted **0.2 mL** of Hg (*100 ug/L working std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	CETAC
Standard Log #:	M12825	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	041816	Expiration Date:	010118
Prep:	Carefully mixed **3** parts HCl AB.618 with **1** part HNO_3 AB.617 in a hood.		

		Instrument:	CETAC
Standard Log #:	M12826	Reagent:	Stannous Chloride Solution
Analyst:	LJF		
Prep Date:	041816	Expiration Date:	101816
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H_2O, added **70 mL** hydrochloric acid AB.618 and dissolved **100 g** Stannous chloride M12802 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M12820	Standard:	Hg ICAL
Analyst:	LJF	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	041816	Expiration Date:	081817
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12788 *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:	CETAC
Standard Log #:	M12821	Standard:	Alt. Source Working Std.
Analyst:	LJF	Concentrations:	10,000 and 100 ug/L
Prep Date:	041816	Expiration Date:	063016
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** of Hg (1000 mg/L) M12532 *100 ug/L Std.* - **1 mL** of Hg (*10,000 ug/L working Std.*)		

		Instrument:	CETAC
Standard Log #:	M12822	Standard:	Hg ICV/LCS
Analyst:	LJF	Concentration:	3 ug/L
Prep Date:	041816	Expiration Date:	063016
Prep:	Into a 100 mL volumetric flask, pipetted **3 mL** of Hg (*100 ug/L working Std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

Standard ID#:	M12819	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custom Assurance Std
Date Received:	04/12/2016	Lot #:	36-051CR
Expiration Date (if any):	4/30/2017	Catalog #:	XSPIKE-1-250

		Instrument:	CETAC
Standard Log #:	M12816	Reagent:	Stannous Chloride Solution
Analyst:	LJF		
Prep Date:	04/01/16	Expiration Date:	02/26/17
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H_2O, added **70 mL** hydrochloric acid AB.615 and dissolved **100 g** Stannous chloride M12789 and brought up to volume.		

Standard Log #:	M12817	Reagent:	Potassium Permanganate Solution
Analyst:	LJF		
Prep Date:	04/01/16	Expiration Date:	10/01/16
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium permanganate M12277 and brought up to volume.		

Standard Log #:	M12818	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	LJF		
Prep Date:	04/01/16	Expiration Date:	10/01/16
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H_2O, dissolved **60 g** NaCl M12403 and **60 g** hydroxylamine sulfate M12610 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M12813	Standard:	Hg CCV
Analyst:	LJF	Concentration:	3.0 ug/L Hg
Prep Date:	04/01/16	Expiration Date:	08/18/17
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12788 *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:	CETAC
Standard Log #:	M12814	Standard:	Hg MRL
Analyst:	LJF	Concentration:	0.2 ug/L Hg
Prep Date:	04/01/16	Expiration Date:	06/30/16
Prep:	Into a 100 mL volumetric flask, pipetted **0.2 mL** of Hg (*100 ug/L working std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	CETAC
Standard Log #:	M12815	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	04/01/16	Expiration Date:	10/01/17
Prep:	Carefully mixed **3** parts HCl AB.615 with **1** part HNO_3 AB.614 in a hood.		

		Instrument:	CETAC
Standard Log #:	M12810	Standard:	Hg ICAL
Analyst:	LJF	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	04/01/16	Expiration Date:	08/18/17
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12788 *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:	CETAC
Standard Log #:	M12811	Standard:	Alt. Source Working Std.
Analyst:	LJF	Concentrations:	10,000 and 100 ug/L
Prep Date:	04/01/16	Expiration Date:	06/30/16
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** of Hg (1000 mg/L) M12532 *100 ug/L Std.* - **1 mL** of Hg (*10,000 ug/L working Std.*)		

		Instrument:	CETAC
Standard Log #:	M12812	Standard:	Hg ICV/LCS
Analyst:	LJF	Concentration:	3 ug/L
Prep Date:	04/01/16	Expiration Date:	06/30/16
Prep:	Into a 100 mL volumetric flask, pipetted **3 mL** of Hg (*100 ug/L working Std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

Standard Log #:	M12809	Instrument:	ICP 6500
Analyst:	MDS	Standard:	MDL 21 Metals Spiking Solution
Prep Date:	03/22/2016	Expiration Date:	06/02/2016

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (5% HNO_3, 5% HCl)

Analyte	MDL Conc. (ug/L)	Std. ID #	Std Conc	Volume (mL) pipetted into 1 L
Ag	5	M12599	1000	0.25
Al	10	M12713	**10000**	0.05
As	20	M12315	1000	1
Ba	2	M12473	1000	0.1
Be	0.5	M12667	1000	0.025
Ca	50	M12716	**10000**	0.25
Cd	0.5	M12674	1000	0.025
Co	2.5	M12678	1000	0.125
Cr	50	M12470	**10000**	0.25
Cu	10	M12472	**10000**	0.05
Fe	40	M12714	**10000**	0.2
Mg	25	M12715	**10000**	0.125
Mn	5	M12533	**10000**	0.025
Mo	2.5	M12677	1000	0.125
Ni	5	M12681	1000	0.25
Pb	10	M12313	**10000**	0.05
Sb	20	M12602	1000	1
Se	20	M12600	1000	1
Tl	20	M12668	1000	1
V	5	M12676	1000	0.25
Zn	5	M12680	**10000**	0.025

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 #:	M12808	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	03/17/16	Expiration Date:	03/17/17
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.534 and **128.6 mL** 10N NaOH M12645. Dilute to 20 L and mix.		

		Instrument:	GFAA
Standard Log #:	M12805	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	03/15/2016	Expiration Date:	06/01/2016
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)) M12504 and brought to volume with Milli-Q H_2O. (1% HNO_3)		

		Instrument:	GFAA
Standard Log #:	M12806	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	03/15/2016	Expiration Date:	06/01/2016
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)) M12504 and brought to volume with Milli-Q DI H_2O. (1% HNO_3)		

		Instrument:	GFAA
Standard Log #:	M12807	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	03/15/2016	Expiration Date:	06/01/2016
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)) M12505 and brought to volume with Milli-Q DI H_2O. (1% HNO_3)		

Standard ID#:	M12802	Vendor:	LabChem
Analyst:	LJF	Chemical:	STANNOUS CHLORIDE
Date Received:	03/09/16	Lot #:	F053-07
Expiration Date (if any):		Catalog #:	LC251701

Standard Log #:	M12803	Reagent:	Potassium Permanganate Solution
Analyst:	LJF		
Prep Date:	03/09/16	Expiration Date:	09/09/17
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium permanganate M12277 and brought up to volume.		

Standard ID#:	M12804	Vendor:	CPI
Analyst:	NAH	Chemical:	Arsenic 10,000 mg/L
Date Received:	03/09/16	Lot #:	14A276
Expiration Date (if any):	09/03/17	Catalog #:	S4400-10M31

		Instrument:	ICP 6000
Standard Log #:	M12800	Standard:	L2 ICV
Analyst:	MDS	Concentrations:	1000 µg/L (Li, Sn, Sr, Ti, W)
Prep Date:	03/08/2016	Expiration Date:	04/15/2017
Prep:	Into a 1 L volumetric flask, pipetted **1.0 mL** of the following and brought up to volume using milli-Q H_2O. (0.5% HNO_3, 0.5% HCl) Li (1000 µg/mL) M12672 Sn (1000 µg/mL) M12669 Sr (1000 µg/mL) M12670 Ti (1000 µg/mL) M12671 W (1000 µg/mL) M12784		

		Instrument:	ICP 6000
Standard Log #:	M12801	Standard:	List 2 MRL/ICVLL Prep Solution
Analyst:	MDS	Concentrations:	5000 µg/L (W) 1000 µg/L (Li, Sn) 500 µg/L (Ti, Sr)
Prep Date:	03/08/2016	Expiration Date:	04/15/2017

Prep:

Analyte	MRL/ICVLL Conc. (µg/L)	Standard ID	Std. Conc. (µg/mL)	Volume (mL) Pipetted into 1 L	Expiration Date
Li	20/60	M12672	1000	1	04/15/2017
W	100/300	M12784	1000	5	08/11/2017
Ti	10/30	M12671	1000	0.5	04/15/2017
Sr	10/30	M12670	1000	0.5	04/15/2017
Sn	20/60	M12669	1000	1	04/15/2017

Pipette **10 mL** into a 500 mL volumetric flask to create a working MRL std. or **1 mL** into a 50 mL digestion tube for a digested MRL standard. Pipette **30 mL** into 500 mL for a working ICVLL std. or **3 mL** into a 50 mL digestion tube for a digested ICVLL standard.

(0.5% HNO_3, 0.5% HCl)

Standard Log #:	M12798	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	03/07/16	Expiration Date:	03/07/17
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.579 and **128.6 mL** 10N NaOH M12645. Dilute to 20 L and mix.		

Standard Log #:	M12799	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	03/07/16	Expiration Date:	03/07/17
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.579 and **128.6 mL** 10N NaOH M12645. Dilute to 20 L and mix.		

Standard Log #:	M12797	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	LJF		
Prep Date:	02/29/16	Expiration Date:	08/29/16
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H_2O, dissolved **60 g** NaCl M12403 and **60 g** hydroxylamine sulfate M12548 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M12793	Standard:	Hg CCV
Analyst:	LJF	Concentration:	3.0 ug/L Hg
Prep Date:	02/26/16	Expiration Date:	08/18/17
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12788 *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:	CETAC
Standard Log #:	M12794	Standard:	Hg MRL
Analyst:	LJF	Concentration:	0.2 ug/L Hg
Prep Date:	02/26/16	Expiration Date:	06/30/16
Prep:	Into a 100 mL volumetric flask, pipetted **0.2 mL** of Hg (*100 ug/L working std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	CETAC
Standard Log #:	M12795	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	02/26/16	Expiration Date:	10/01/17
Prep:	Carefully mixed **3** parts HCl AB.615 with **1** part HNO_3 AB.614 in a hood.		

		Instrument:	CETAC
Standard Log #:	M12796	Reagent:	Stannous Chloride Solution
Analyst:	LJF		
Prep Date:	02/26/16	Expiration Date:	02/26/17
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H_2O, added **70 mL** hydrochloric acid AB.615 and dissolved **100 g** Stannous chloride M12789 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M12790	Standard:	Hg ICAL
Analyst:	LJF	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	02/26/16	Expiration Date:	08/18/17
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12788 *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:	CETAC
Standard Log #:	M12791	Standard:	Alt. Source Working Std.
Analyst:	LJF	Concentrations:	10,000 and 100 ug/L
Prep Date:	02/26/16	Expiration Date:	06/30/16
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** of Hg (1000 mg/L) M12532 *100 ug/L Std.* - **1 mL** of Hg (*10,000 ug/L working Std.*)		

		Instrument:	CETAC
Standard Log #:	M12792	Standard:	Hg ICV/LCS
Analyst:	LJF	Concentration:	3 ug/L
Prep Date:	02/26/16	Expiration Date:	06/30/16
Prep:	Into a 100 mL volumetric flask, pipetted **3 mL** of Hg (*100 ug/L working Std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

Standard ID#:	M12787	Vendor:	CPI
Analyst:	NAH	Chemical:	Yttrium 10,000 mg/L
Date Received:	02/24/2016	Lot #:	16A118
Expiration Date (if any):	08/18/2017	Catalog #:	4400-10M671

Standard ID#:	M12788	Vendor:	CPI
Analyst:	NAH	Chemical:	Mercury 1000 mg/L
Date Received:	02/24/2016	Lot #:	15J139
Expiration Date (if any):	08/18/2017	Catalog #:	S4400-1000331

Standard ID#:	M12789	Vendor:	LabChem
Analyst:	LJF	Chemical:	STANNOUS CHLORIDE
Date Received:	02/24/16	Lot #:	F053-07
Expiration Date (if any):		Catalog #:	LC251701

Standard Log #:	M12786	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	02/22/16	Expiration Date:	02/22/17
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.579 and **128.6 mL** 10N NaOH M12645. Dilute to 20 L and mix.		

Standard Log #:	M12785	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	02/18/16	Expiration Date:	02/18/17
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.579 and **128.6 mL** 10N NaOH M12645. Dilute to 20 L and mix.		

Standard Log #:	M12783	Reagent:	Potassium Permanganate Solution
Analyst:	LJF		
Prep Date:	02/16/16	Expiration Date:	08/16/16
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium permanganate M12277 and brought up to volume.		

Standard ID#:	M12784	Vendor:	CPI
Analyst:	NAH	Chemical:	Tungsten
Date Received:	02/16/2016	Lot #:	15k204
Expiration Date (if any):	08/11/2017	Catalog #:	S4400-1000633

		Instrument:	CETAC
Standard Log #:	M12780	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	02/15/16	Expiration Date:	10/01/17
Prep:	Carefully mixed **3** parts HCl AB.615 with **1** part HNO_3 AB.614 in a hood.		

		Instrument:	CETAC
Standard Log #:	M12781	Reagent:	Stannous Chloride Solution
Analyst:	LJF		
Prep Date:	02/15/16	Expiration Date:	08/12/16
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H_2O, added **70 mL** hydrochloric acid AB.615 and dissolved **100 g** Stannous chloride M12731 and brought up to volume.		

Standard ID#:	M12782	Vendor:	ALFA AESAR
Analyst:	LJF	Chemical:	TIN CHLORIDE DIH
Date Received:	02/11/16	Lot #:	W03B012
Expiration Date (if any):		Catalog #:	11536

		Instrument:	CETAC
Standard Log #:	M12777	Standard:	Hg ICV/LCS
Analyst:	LJF	Concentration:	3 ug/L
Prep Date:	02/15/16	Expiration Date:	06/30/16
Prep:	Into a 100 mL volumetric flask, pipetted **3 mL** of Hg (*100 ug/L working Std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	CETAC
Standard Log #:	M12778	Standard:	Hg CCV
Analyst:	LJF	Concentration:	3.0 ug/L Hg
Prep Date:	02/15/16	Expiration Date:	02/26/16
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12179 *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:	CETAC
Standard Log #:	M12779	Standard:	Hg MRL
Analyst:	LJF	Concentration:	0.2 ug/L Hg
Prep Date:	02/15/16	Expiration Date:	06/30/16
Prep:	Into a 100 mL volumetric flask, pipetted **0.2 mL** of Hg (*100 ug/L working std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

Standard Log #:	M12774	Reagent:	Potassium Persulfate Solution
Analyst:	LJF		
Prep Date:	02/15/16	Expiration Date:	08/15/16
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium persulfate M12774 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M12775	Standard:	Hg ICAL
Analyst:	LJF	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	02/15/16	Expiration Date:	02/26/16
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12179 *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:	CETAC
Standard Log #:	M12776	Standard:	Alt. Source Working Std.
Analyst:	LJF	Concentrations:	10,000 and 100 ug/L
Prep Date:	02/15/16	Expiration Date:	06/30/16
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** of Hg (1000 mg/L) M12532 *100 ug/L Std.* - **1 mL** of Hg (*10,000 ug/L working Std.*)		

Standard ID#:	M12773	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance std-spike
Date Received:	02/12/16	Lot #:	35-054CR
Expiration Date (if any):	02/28/2016	Catalog #:	XSPIKE-1-250

Standard ID#:	M12770	Vendor:	SPEX CertiPrep
Analyst:	MDS	Chemical:	Sulfur 10,000 µg/mL
Date Received:	02/09/2016	Lot #:	AJ16-45SY
Expiration Date (if any):	02/28/2017	Catalog #:	PLS9-3Y

		Instrument:	ICP 6000
Standard Log #:	M12771	Standard:	Sulfur ICAL
Analyst:	MDS	Concentrations:	1000 10,000 100,000 1000K µg/L (S)
Prep Date:	02/09/2016	Expiration Date:	02/28/2017
Prep:	Into four, 100 mL volumetric flasks, pipetted the following from stock standard S (10,000 µg/mL) M12770 and brought up to volume using milli-Q H_2O. *1000 ug/L std.* - **0.01 mL** *10,000 ug/L std.* - **0.1 mL** *100,000 ug/L std.* -**1.0 mL**, also used as the CCV *1000K ug/L std.* - **10 mL**		

		Instrument:	ICP 6000
Standard Log #:	M12772	Standard:	Sulfur ICV
Analyst:	MDS	Concentrations:	100,000 µg/L (S)
Prep Date:	02/09/2016	Expiration Date:	08/13/2016
Prep:	Into a 100 mL volumetric flask, pipetted **1.0 mL** of S (10,000 µg/mL) M12371 and brought up to volume using Milli-Q H_2O.		

Standard ID#:	M12769	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	02/08/2016	Lot #:	11-035WL
Expiration Date (if any):	02/28/2017	Catalog #:	XCTWI-5-500

		Instrument:	ICP 6000
Standard Log #:	M12766	Standard:	List 2 ICSAB
Analyst:	MDS	Concentrations:	500,000 µg/L (Al, Ca, Fe, Mg) 500 µg/L (Li, Sn, Sr, Ti, W)
Prep Date:	02/04/2016	Expiration Date:	12/30/2016
Prep:	Into a 200 mL volumetric flask, pipetted **20 mL** of Interferents A custom stock (5000 mg/L Al, Ca, Mg and 2000 mg/L Fe) M12733, **6 mL** of Fe (10,000 mg/L) M12714, **0.1 mL** of Li (1000 µg/mL) M12672, **0.1 mL** of Sn (1000 µg/mL) M12669, **0.1 mL** of Sr (1000 µg/mL) M12670, **0.1 mL** of Ti (1000 µg/mL) M12671, and **0.1 mL** of W (1000 µg/mL) M12673 and brought up to volume using Milli-Q H_2O. (0.5% HNO_3, 0.5% HCl)		

		Instrument:	ICP 6000
Standard Log #:	M12767	Standard:	List 2 MRL/ICVLL Prep Solution
Analyst:	MDS	Concentrations:	5000 µg/L (W) 1000 µg/L (Li, Sn) 500 µg/L (Ti, Sr)
Prep Date:	02/04/2016	Expiration Date:	02/06/2016

Prep:

Analyte	MRL/ICVLL Conc. (µg/L)	Standard ID	Std. Conc. (µg/mL)	Volume (mL) Pipetted into 1 L	Expiration Date
Li	20/60	M12672	1000	1	04/15/2017
W	100/300	M12163	1000	5	02/06/2016
Ti	10/30	M12671	1000	0.5	04/15/2017
Sr	10/30	M12670	1000	0.5	04/15/2017
Sn	20/60	M12669	1000	1	04/15/2017

Pipette **10 mL** into a 500 mL volumetric flask to create a working MRL std. or **1 mL** into a 50 mL digestion tube for a digested MRL standard. Pipette **30 mL** into 500 mL for a working ICVLL std. or **3 mL** into a 50 mL digestion tube for a digested ICVLL standard.

(0.5% HNO_3, 0.5% HCl)

Standard ID#:	M12768	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custum Assurance Std Ca,Mg,Na
Date Received:	02/04/2016	Lot #:	11-022WL
Expiration Date (if any):	01/30/2017	Catalog #:	XTTWI-1-500

		Instrument:	ICP
Standard Log #:	M12764	Standard:	L2 ICAL
Analyst:	MDS	Concentrations:	1 (µg/L) 10 (µg/L) 100 (µg/L) 1000 (µg/L) 10,000 (µg/L)
Prep Date:	02/04/2016	Expiration Date:	11/30/2016

Prep:

Standard Conc. (ug/L)	Pipette the following:
1	**0.01 mL** of Custom Assurance Standard XCTWI-5-500 M12703 and **0.001 mL** W (1000 µg/mL) M12673 into 1L = *1 µg/L*
10	**0.10 mL** of Custom Assurance Standard XCTWI-5-500 M12703 and **0.01 mL** W (1000 µg/mL) M12673 into 1L = *10 µg/L*
100	**1 mL** of Custom Assurance Standard XCTWI-5-500 M12703 and **0.1 mL** W (1000 µg/mL) M12673 into 1L = *100 µg/L*
1000 (CCV)	**2 mL** of Custom Assurance Standard XCTWI-5-500 M12703 and **0.2 mL** W (1000 µg/mL) M12673 into 200mL = *1000 µg/L*
10000	**20 mL** of Custom Assurance Standard XCTWI-5-500 M12703 and **2 mL** W (1000 µg/mL) M12673 into 200mL = *10000 µg/L*

		Instrument:	ICP 6000
Standard Log #:	M12765	Standard:	L2 ICV
Analyst:	MDS	Concentrations:	1000 µg/L (Li, Sn, Sr, Ti, W)
Prep Date:	02/04/2016	Expiration Date:	02/06/2016

Prep:

Into a 1 L volumetric flask, pipetted **1.0 mL** of the following and brought up to volume using milli-Q H_2O. (0.5% HNO_3, 0.5% HCl)

Li (1000 µg/mL) M12672
Sn (1000 µg/mL) M12669
Sr (1000 µg/mL) M12670
Ti (1000 µg/mL) M12671
W (1000 µg/mL) M12163

Standard Log #:	M12763	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	LJF		
Prep Date:	02/03/16	Expiration Date:	08/03/16
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H_2O, dissolved **60 g** NaCl M12403 and **60 g** hydroxylamine sulfate M12548 and brought up to volume.		

Standard Log #:	M12762	Reagent:	Potassium Persulfate Solution
Analyst:	LJF		
Prep Date:	01/29/16	Expiration Date:	07/29/16
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium persulfate M11748 and brought up to volume.		

Standard Log #:	M12761	Reagent:	Potassium Permanganate Solution
Analyst:	LJF		
Prep Date:	01/28/16	Expiration Date:	07/28/16
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium permanganate M12277 and brought up to volume.		

Standard Log #:	M12760	Instrument:	GFAA
Analyst:	MDS	Standard:	MDL Spiking Solution
Prep Date:	01/25/2016	Expiration Date:	06/02/2016

Prep:

Into a 1 L volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. (2% HNO_3)

Analyte	Final MDL Conc. (ug/L)	Std. ID #	Std. Conc. (mg/L)	Volume (mL) pipetted
Ag	0.2	M12599	1000	0.01
As	2	M12315	1000	0.1
Pb	2	M12313	10000	0.01
Sb	2	M12602	1000	0.1
Se	2	M12600	1000	0.1
Tl	2	M12668	1000	0.1

Of this base standard, pipetted **1 mL** into a 50 mL digestion tube for a digested working standard.

		Instrument:	CETAC
Standard Log #:	M12757	Standard:	Hg MRL
Analyst:	LJF	Concentration:	0.2 ug/L Hg
Prep Date:	01/19/16	Expiration Date:	06/30/16
Prep:	Into a 100 mL volumetric flask, pipetted **0.2 mL** of Hg (*100 ug/L working std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	CETAC
Standard Log #:	M12758	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	01/19/16	Expiration Date:	09/01/17
Prep:	Carefully mixed **3** parts HCl AB.611 with **1** part HNO_3 AB.609 in a hood.		

		Instrument:	CETAC
Standard Log #:	M12759	Reagent:	Stannous Chloride Solution
Analyst:	LJF		
Prep Date:	01/19/16	Expiration Date:	08/12/16
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H_2O, added **70 mL** hydrochloric acid AB.611 and dissolved **100 g** Stannous chloride M12731 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M12755	Standard:	Hg ICV/LCS
Analyst:	LJF	Concentration:	3 ug/L
Prep Date:	01/19/16	Expiration Date:	06/30/16
Prep:	Into a 100 mL volumetric flask, pipetted **3 mL** of Hg (*100 ug/L working Std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	CETAC
Standard Log #:	M12756	Standard:	Hg CCV
Analyst:	LJF	Concentration:	3.0 ug/L Hg
Prep Date:	01/19/16	Expiration Date:	02/26/16
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12179 *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 #:	M12752	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	01/19/16	Expiration Date:	01/19/17
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.579 and **128.6 mL** 10N NaOH M12645. Dilute to 20 L and mix.		

		Instrument:	CETAC
Standard Log #:	M12753	Standard:	Hg ICAL
Analyst:	LJF	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	01/19/16	Expiration Date:	02/26/16
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12179 *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:	CETAC
Standard Log #:	M12754	Standard:	Alt. Source Working Std.
Analyst:	LJF	Concentrations:	10,000 and 100 ug/L
Prep Date:	01/19/16	Expiration Date:	06/30/16
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** of Hg (1000 mg/L) M12532 *100 ug/L Std.* - **1 mL** of Hg (*10,000 ug/L working Std.*)		

Standard Log #:	M12751	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	LJF		
Prep Date:	011116	Expiration Date:	071116
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H_2O, dissolved **60 g** NaCl M12403 and **60 g** hydroxylamine sulfate M12548 and brought up to volume.		

		Instrument:	GFAA
Standard Log #:	M12750	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:	01/05/2016	Expiration Date:	06/02/2016
Prep:	Into a 100 mL volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. **1.5 mL** of Sb (1000 mg/L) M12602 **1.0 mL** of As (1000 mg/L) M12315 **2.0 mL** of Se (1000 mg/L) M12600 **0.045 mL** of Pb (10,000 mg/L) M12313 **0.4 mL** of Tl (1000 mg/L) M12668 From this diluted standard solution, pipetted **10 mL** into a 1 L volumetric flask and brought up to volume with Milli-Q H_2O to make the spiking solution. (1% HNO_3) *Pipette **1 mL** spiking solution into 50 mL H_2O 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 #:	M12748	Reagent:	Potassium Permanganate Solution
Analyst:	LJF		
Prep Date:	010516	Expiration Date:	070516
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium permanganate M12277 and brought up to volume.		

		Instrument:	GFAA
Standard Log #:	M12749	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:	01/05/2016	Expiration Date:	06/02/2016
Prep:	Into a 200 mL volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. **1.2 mL** of Sb (1000 mg/L) M12602 **3.2 mL** of As (1000 mg/L) M12315 **3.2 mL** of Se (1000 mg/L) M12600 **0.08 mL** of Pb (10,000 mg/L) M12313 **1.0 mL** of Tl (1000 mg/L) M12668 From this diluted standard solution, pipetted **10 mL** into a 1 L volumetric flask and brought up to volume with Milli-Q H_2O to make the spiking solution. (1% HNO_3) *Pipette **1 mL** spiking solution into 50 mL H_2O 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)		

Standard Log #:	M12747	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	123015	Expiration Date:	123016
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.579 and **128.6 mL** 10N NaOH M12645. Dilute to 20 L and mix.		

		Instrument:	ICP 6000
Standard Log #:	M12744b	Standard:	B&Si ICAL
Analyst:	MDS	Concentrations:	50, 200, 1000, 2000 and 10,000 ug/L (B, Si)
Prep Date:	12/21/2015	Expiration Date:	10/15/2016
Prep:	Into five, 1 L volumetric flasks, pipetted the following from stock standards B (1000 mg/L) M12471 and Si (1000 mg/L) M12601 and brought up to volume using milli-Q H_2O. *50 ug/L std.* - **0.05 mL** of each *200 ug/L std.* - **0.2 mL** of each *1000 ug/L std.* -**1.0 mL** of each, also used for Continuing Calibration Verification *2000 ug/L std.* - **2.0 mL** of each *10,000 ug/L std.* -**10 mL** of each		

		Instrument:	ICP 6000
Standard Log #:	M12745b	Standard:	B & Si ICSAB
Analyst:	MDS	Concentrations:	500,000 µg/L (Al, Ca, Fe, Mg) 500 µg/L (B,Si)
Prep Date:	12/22/2015	Expiration Date:	06/30/2016
Prep:	Into a 100 mL volumetric flask, pipetted **10 mL** of Interferents A custom stock (5000 mg/L Al, Ca, Mg and 2000 mg/L Fe) M12529, **0.05 mL** of B (1000 µg/mL) M12471, **0.05 mL** of Si (1000 µg/mL) M12601 and **3 mL** of Fe (10,000 mg/L) M12714 and brought up to volume using Milli-Q H_2O.		

Standard Log #:	M12746b	Instrument:	GFAA
Analyst:	MDS	Reagent:	Pd/Mg Matrix Modifier
Prep Date:	12/22/2015	Expiration Date:	05/18/2017
Prep:	Into a 50 mL volumetric flask, partially filled with milli-Q H_2O, pipetted **15 mL** Pd Modifier M12584 and **10 mL** Mg (10,000 mg/L) M12715 and brought up to volume.		

Standard ID#:	M12744	Vendor:	CPI
Analyst:	NAH	Chemical:	potassium 10,000 mg/L
Date Received:	12/21/2015	Lot #:	15L015
Expiration Date (if any):	06/08/2017	Catalog #:	4400-10M411

Standard ID#:	M12745	Vendor:	CPI
Analyst:	NAH	Chemical:	iron 10,000 mg/L
Date Received:	12/21/2015	Lot #:	15H243
Expiration Date (if any):	06/08/2017	Catalog #:	4400-10M261

Standard ID#:	M12746	Vendor:	CPI
Analyst:	NAH	Chemical:	Y 10,000 mg/L
Date Received:	12/21/2015	Lot #:	15E153
Expiration Date (if any):	06/08/2017	Catalog #:	4400-10M671

		Instrument:	CETAC
Standard Log #:	M12740	Standard:	Hg CCV
Analyst:	LJF	Concentration:	3.0 ug/L Hg
Prep Date:	12/21/15	Expiration Date:	02/26/16
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12179 *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:	CETAC
Standard Log #:	M12741	Standard:	Hg MRL
Analyst:	LJF	Concentration:	0.2 ug/L Hg
Prep Date:	12/21/15	Expiration Date:	06/30/16
Prep:	Into a 100 mL volumetric flask, pipetted **0.2 mL** of Hg (*100 ug/L working std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	CETAC
Standard Log #:	M12742	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	12/21/15	Expiration Date:	09/01/17
Prep:	Carefully mixed **3** parts HCl AB.611 with **1** part HNO_3 AB.609 in a hood.		

		Instrument:	CETAC
Standard Log #:	M12743	Reagent:	Stannous Chloride Solution
Analyst:	LJF		
Prep Date:	12/21/15	Expiration Date:	08/12/16
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H_2O, added **70 mL** hydrochloric acid AB.611 and dissolved **100 g** Stannous chloride M12731 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M12737	Standard:	Hg ICAL
Analyst:	LJF	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	12/21/15	Expiration Date:	02/26/16
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12179 *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:	CETAC
Standard Log #:	M12738	Standard:	Alt. Source Working Std.
Analyst:	LJF	Concentrations:	10,000 and 100 ug/L
Prep Date:	12/21/15	Expiration Date:	06/30/16
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** of Hg (1000 mg/L) M12532 *100 ug/L Std.* - **1 mL** of Hg (*10,000 ug/L working Std.*)		

		Instrument:	CETAC
Standard Log #:	M12739	Standard:	Hg ICV/LCS
Analyst:	LJF	Concentration:	3 ug/L
Prep Date:	12/21/15	Expiration Date:	06/30/16
Prep:	Into a 100 mL volumetric flask, pipetted **3 mL** of Hg (*100 ug/L working Std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

Standard Log #:	M12734	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	121715	Expiration Date:	121716
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.579 and **128.6 mL** 10N NaOH M12645. Dilute to 20 L and mix.		

Standard Log #:	M12735	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	LJF		
Prep Date:	121715	Expiration Date:	061716
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H_2O, dissolved **60 g** NaCl M12403 and **60 g** hydroxylamine sulfate M12548 and brought up to volume.		

Standard Log #:	M12736	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	121715	Expiration Date:	121716
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.579 and **128.6 mL** 10N NaOH M12645. Dilute to 20 L and mix.		

Standard Log #:	M12730	Reagent:	Potassium Permanganate Solution
Analyst:	LJF		
Prep Date:	12/14/15	Expiration Date:	06/14/16
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium permanganate M12277 and brought up to volume.		

Standard ID#:	M12731	Vendor:	MACRON
Analyst:	LJF	Chemical:	STANNOUS CHLORIDE
Date Received:	12/10/15	Lot #:	0000119473
Expiration Date (if any):	08/12/16	Catalog #:	8176-04

Standard ID#:	M12732	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	12-14-2015	Lot #:	34-008CR
Expiration Date (if any):	12-30-2016	Catalog #:	XSPIKE-1-250

Standard ID#:	M12733	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Interference A
Date Received:	12-14-2015	Lot #:	12-165YPX
Expiration Date (if any):	12-30-2016	Catalog #:	INT-A1

		Instrument:	ICP 6000
Standard Log #:	M12729	Standard:	Na,K MRL
Analyst:	MDS	Concentrations:	1 mg/L (Na,K)
Prep Date:	12/07/2015	Expiration Date:	06/03/2015
Prep:	Into a 500 mL volumetric flask, pipetted **0.5 mL** of Na (1000 µg/mL) M12377 and **0.5 mL** K (1000 µg/mL) M12378 and brought to volume with Milli-Q H_2O. (2% HNO_3)		

Standard Log #:	M12725	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	LJF		
Prep Date:	120415	Expiration Date:	060416
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H_2O, dissolved **60 g** NaCl M12403 and **60 g** hydroxylamine sulfate M12548 and brought up to volume.		

Standard Log #:	M12726	Reagent:	Potassium Permanganate Solution
Analyst:	LJF		
Prep Date:	120415	Expiration Date:	060416
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium permanganate M12277 and brought up to volume.		

		Instrument:	ICP
Standard Log #:	M12727	Standard:	As Pb ICV1
Analyst:	MDS	Concentrations:	5000 ug/L (As,Pb)
Prep Date:	12/04/2015	Expiration Date:	03/26/2016
Prep:	Into a 1 L volumetric flask, pipetted **0.5 mL** of As (10,000 mg/L) M12213 and **0.5 mL** Pb (10,000 mg/L) M12313 and brought to volume with Milli-Q H_2O. (2% HNO_3, 2% HCl)		

Standard Log #:	M12728	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	120415	Expiration Date:	120416
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.579 and **128.6 mL** 10N NaOH M12645. Dilute to 20 L and mix.		

		Instrument:	CETAC
Standard Log #:	M12721	Standard:	Hg CCV
Analyst:	LJF	Concentration:	3.0 ug/L Hg
Prep Date:	120215	Expiration Date:	022616
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12179 *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:	CETAC
Standard Log #:	M12722	Standard:	Hg MRL
Analyst:	LJF	Concentration:	0.2 ug/L Hg
Prep Date:	120215	Expiration Date:	063016
Prep:	Into a 100 mL volumetric flask, pipetted **0.2 mL** of Hg (*100 ug/L working std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	CETAC
Standard Log #:	M12723	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	120215	Expiration Date:	040117
Prep:	Carefully mixed **3** parts HCl AB.607 with **1** part HNO_3 AB.609 in a hood.		

		Instrument:	CETAC
Standard Log #:	M12724	Reagent:	Stannous Chloride Solution
Analyst:	LJF		
Prep Date:	120215	Expiration Date:	120915
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H_2O, added **70 mL** hydrochloric acid AB.607 and dissolved **100 g** Stannous chloride M12549 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M12718	Standard:	Hg ICAL
Analyst:	LJF	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	120215	Expiration Date:	022616
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12179 *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:	CETAC
Standard Log #:	M12719	Standard:	Alt. Source Working Std.
Analyst:	LJF	Concentrations:	10,000 and 100 ug/L
Prep Date:	120215	Expiration Date:	063016
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** of Hg (1000 mg/L) M12532 *100 ug/L Std.* - **1 mL** of Hg (*10,000 ug/L working Std.*)		

		Instrument:	CETAC
Standard Log #:	M12720	Standard:	Hg ICV/LCS
Analyst:	LJF	Concentration:	3 ug/L
Prep Date:	120215	Expiration Date:	063016
Prep:	Into a 100 mL volumetric flask, pipetted **3 mL** of Hg (*100 ug/L working Std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	ICP 6500
Standard Log #:	M12717	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:	12-01-2015	Expiration Date:	06-16
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with milli-Q H_2O. **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)) M12653, **2 mL** Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M12529, **0.5 mL** Mo (1000 mg/L) M12677, **0.5 mL** B (1000 mg/L) M12471, **0.5 mL** Sr (1000 mg/L) M12670, **0.5 mL** Li (1000 mg/L) M12672, **0.5 mL** Sn (1000 mg/L) M12669 and **0.5 mL** Ti (1000 mg/L) M12671.		

Standard ID#:	M12713	Vendor:	CPI
Analyst:	NAH	Chemical:	Al 10,000 mg/L
Date Received:	12/01/2015	Lot #:	15l132
Expiration Date (if any):	05/18/2017	Catalog #:	p/n 4400-10m11

Standard ID#:	M12714	Vendor:	CPI
Analyst:	NAH	Chemical:	Fe 10,000 mg/L
Date Received:	12/01/2015	Lot #:	15H243
Expiration Date (if any):	05/18/2017	Catalog #:	p/n 4400-10m261

Standard ID#:	M12715	Vendor:	CPI
Analyst:	NAH	Chemical:	Mg 10,000 mg/L
Date Received:	12-01-2015	Lot #:	15G077
Expiration Date (if any):	5-18-2015	Catalog #:	p/n 4400-10m311

Standard ID#:	M12716	Vendor:	CPI
Analyst:	NAH	Chemical:	Ca 10,000 mg/L
Date Received:	12-01-2015	Lot #:	15k045
Expiration Date (if any):	5-18-2015	Catalog #:	p/n 4400-10m91

		Instrument:	ICP 6500
Standard Log #:	M12710	Standard:	ICVLL
Analyst:	NAH	Concentrations:	12 ug/L: Be. 15 ug/L: Cd. 30 ug/L: Ag, Ba, Co, Cr, Cu, Mn, Mo. Ni, Pb, V, Zn, Sr, and Ti. 60 ug/L: Sb, As, Se, Tl, Li, Sn and B. 150 ug/L: W. 300 ug/L: Si. 900 ug/L: Fe. 1200 ug/L Al. 1500 ug/L: S, Ca and Mg. 3000 ug/L: K and Na.
Prep Date:	12/01/2015	Expiration Date:	06/2016
Prep:	Into a 500 mL volumetric flask, pipetted 30 **mL** of MRL Base STD M12709 and brought to volume with Milli-Q H_2O. (5% HNO_3 & 5% HCL)		

		Instrument:	ICP 6500
Standard Log #:	M12711	Standard:	ICSA
Analyst:	NAH	Concentrations:	**500,000 ug/L** Al, Ca, Fe, Mg
Prep Date:	12/01/2015	Expiration Date:	06/2016
Prep:	Into a 500 mL volumetric flask, pipetted **50 mL** Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M12529 and **15 mL** Fe (10000 mg/L) M12603 and brought up to volume with milli-Q H_2O.		

		Instrument:	ICP 6500
Standard Log #:	M12712	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
Prep Date:	12/01/2015	Expiration Date:	06/2016
Prep:	Into a 500 mL volumetric flask, pipetted **50 mL** Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M12529, **15 mL** Fe (10,000 mg/L) M12603, **2.5 mL** of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M12530 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) M12558 and brought up to volume with milli-Q H_2O.		

MRL BASE STD M12709

Analyst NAH

Prep Date 12-01-2015

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	M12599	1000	1	-
Al	400	M12605	10000	2	-
Ba	10	M12473	1000	0.5	-
Be	4	M12667	1000	0.2	-
Cd	5	M12674	1000	0.25	-
Co	10	M12678	1000	0.5	-
Cr	10	M12470	10000	0.05	-
Cu	10	M12472	10000	0.05	-
Mg	500	M12606	10000	2.5	-
Mn	10	M12533	10000	0.05	-
Mo	10	M12677	1000	0.5	---
Ni	10	M12681	1000	0.5	--
Pb	10	M12313	10000	0.05	--
Sb	20	M12602	1000	1	--
V	10	M12676	1000	0.5	--
Zn	10	M12680	10000	0.05	--
K	1000	M12608	10000	5	--
Na	1000	M12607	10000	5	--
As	20	M12315	1000	1	--
Ca	500	M12604	10000	2.5	--
Fe	300	M12603	10000	1.5	--
Se	20	M12600	1000	1	--
Tl	20	M12668	1000	1	--
Si	100	M12601	1000	5	--
B	20	M12471	1000	1	--
Li	20	M12672	1000	1	--
W	50	M12673	1000	2.5	--
Ti	10	M12671	1000	0.5	--
Sr	10	M12670	1000	0.5	--
Sn	50	M12669	1000	2.5	--
S	300	M12371	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.

Expiration Date: 10/2016

		Instrument:	ICP 6500
Standard Log #:	M12706	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:	12/01/2015	Expiration Date:	06/2016
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) M12558 and **5.0 mL** of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) M12530 and brought up to volume with milli-Q H_2O.		

		Instrument:	ICP 6500
Standard Log #:	M12707	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:	12/01/2015	Expiration Date:	06/2016
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) M12558 and **0.5 mL** of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) M12830 and brought up to volume with milli-Q H_2O.		

		Instrument:	ICP 6500
Standard Log #:	M12708	Standard:	DOD MRL
Analyst:	NAH	Concentrations:	4 ug/L: Be. 5 ug/L: Cd. 10 ug/L: Ag, Ba, Co, Cr, Cu, Mn, Mo. Ni, Pb, V, Zn, Sr, and Ti. 20 ug/L: Sb, As, Se, Tl, Li, Sn and B. 50 ug/L: W. 100 ug/L: Si. 300 ug/L: Fe. 400 ug/L Al. 500 ug/L: S, Ca and Mg. 1000 ug/L: K and Na.
Prep Date:	12/01/2015	Expiration Date:	06/2016
Prep:	Into a 500 mL volumetric flask, pipetted **10 mL** of MRL Base STD M12709 and brought to volume with Milli-Q H_2O. (5% HNO_3 & 5% HCL)		

		Instrument:	ICP 6000
Standard Log #:	M12704	Standard:	Na & K ICAL
Analyst:	MDS	Concentrations:	0.5, 1, 5, 10, 50, 100, and 200 mg/L (Na,K)
Prep Date:	12/01/2015	Expiration Date:	07/03/2016
Prep:	Into seven, 200 mL volumetric flasks, pipetted the following from Na (1000 µg/mL) M12377 and K (1000 µg/mL) M12378 and brought up to volume using milli-Q H_2O. (2% HNO_3) *0.5 mg/L std.* - **0.1 mL** of each *1.0 mg/L std.* - **0.2 mL** of each *5.0 mg/L std.* - **1.0 mL** of each *10 mg/L std.* - **2.0 mL** of each *50 mg/L std.* - **10 mL** of each *100 mg/L std.* -**20 mL** of each, also used for Continuing Calibration Verification *200 mg/L std.* - **40 mL** of each		

		Instrument:	ICP 6500
Standard Log #:	M12705	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:	12/01/2015	Expiration Date:	06/2016
Prep:	Using 1 L volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (5% HNO_3, 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) M12558, **10 mL** of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M12530 and **1 mL** of Si (1000 mg/L) M12601. *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) M12609. *100k ug/L Std.* - **10 mL** of Cu (10,000 mg/L) M12472, **10 mL** of Mn (10,000 mg/L) M12533, **10 mL** of Cr (10,000 mg/L) M12470, **10 mL** Pb (10,000 mg/L) M12313, **10 mL** of Zn (10,000 mg/L) M12680 and **10 mL** of Na (10,000 mg/L) M12679. *100,000 ug/L Std.* - **10 mL** of Mg (10,000 mg/L) M12606, **10 mL** of Fe (10,000 mg/L) M12603, **10 mL** of Ca (10,000 mg/L) M12490 and **10 mL** Al (10,000 mg/L) M12605. *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:	ICP 6000
Standard Log #:	M12701	Standard:	W ICAL and CCV
Analyst:	MDS	Concentrations:	100, 1000, and 10,000 µg/L (W)
Prep Date:	11/23/15	Expiration Date:	04/15/17
Prep:	Into four, 1 L volumetric flasks, pipetted the following from W (1000 µg/mL) M12673 and brought up to volume using milli-Q H_2O. (0.5% HNO_3, 0.5% HCl) *100 µg/L std.* - **0.1 mL** *1000 µg/L std.* - **1.0 mL** - also used for Continuing Calibration Verification *10,000 µg/L std.* - **10 mL**		

		Instrument:	ICP 6000
Standard Log #:	M12702	Standard:	W ICV
Analyst:	MDS	Concentrations:	1000 µg/L (W)
Prep Date:	11/23/15	Expiration Date:	02/06/16
Prep:	Into a 1 L volumetric flask, pipetted **1.0 mL** of W (1000 µg/mL) M12163 and brought up to volume using milli-Q H_2O. (0.5% HNO_3, 0.5% HCl)		

Standard ID#:	M12703	Vendor:	Spex CertiPrep
Analyst:	NAH	Chemical:	Custum Assurance Standard
Date Received:	11/19/2015	Lot #:	33-195CR
Expiration Date (if any):	11/30/2016	Catalog #:	XCTWI-5-500

Standard Log #:	M12700	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	11/20/15	Expiration Date:	11/20/16
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.579 and **128.6 mL** 10N NaOH M12645. Dilute to 20 L and mix.		

Standard Log #:	M12699	Standard:	GFAA Instrument Check
Analyst:	MDS	Final Concentration:	10 µg/L As 6 µg/L Pb 22 µg/L Tl 24 µg/L Sb, Se 0.8 µg/L Ag
Prep Date:	11/12/15	Expiration Date:	06/02/16

Into six, 100 mL volumetric flasks, add the following and bring up to volume with milli-Q H_2O.

Element	Volume Pipetted (mL)	Standard Conc. (µg/mL)	Standard ID	New Conc. (µg/L)
As	1	1000	M12315	10,000
Pb	0.1	10,000	M12313	10,000
Tl	1	1000	M12668	10,000
Se	1	1000	M12600	10,000
Sb	1	1000	M12602	10,000
Ag	0.1	1000	M12599	1000

Into a 1 L volumetric flask, add the following and bring up to volume with Milli-Q H_20. (1% HNO_3)

Element	Volume Pipetted (mL)	Standard Conc. (µg/L)	New Conc. (µg/L)
As	1	10,000	10
Pb	0.6	10,000	6
Tl	2.2	10,000	22
Se	2.4	10,000	24
Sb	2.4	10,000	24
Ag	0.8	1000	0.8

		Instrument:	ICP 6000
Standard Log #:	M12695	Standard:	NaK ICV
Analyst:	MDS	Concentrations:	100 mg/L (Na, K)
Prep Date:	11/11/15	Expiration Date:	02/12/17
Prep:	Into a 250 mL volumetric flask, pipetted **2.5 mL** of K (10,000 mg/L) M12609 and Na (10,000 mg/L) M12679 and brought up to volume using Milli-Q H_2O. (2% HNO_3)		

		Instrument:	ICP 6000
Standard Log #:	M12696	Standard:	Na,K ICVLL
Analyst:	MDS	Concentrations:	3 mg/L (Na,K)
Prep Date:	11/11/15	Expiration Date:	02/12/17
Prep:	Into a 500 mL volumetric flask, pipetted **0.15 mL** of Na (10,000 µg/mL) M12679 and **0.15 mL** K (10,000 µg/mL) M12609 and brought to volume with Milli-Q H_2O. (2% HNO_3)		

		Instrument:	ICP 6000
Standard Log #:	M12697	Standard:	NaK ICSAB
Analyst:	MDS	Concentrations:	500 mg/L (Al, Ca, Fe, Mg) 100 mg/L (Na, K)
Prep Date:	11/11/15	Expiration Date:	06/30/16
Prep:	Into a 250 mL volumetric flask, pipetted **25 mL** of Interferents A custom stock (5000 mg/L Al, Ca, Mg and 2000 mg/L Fe) M12529, **2.5 mL** of K (10,000 mg/L) M12609, **2.5 mL** of Na (10,000 mg/L) M12679 and **7.5 mL** of Fe (10,000 mg/L) M12603 and brought up to volume using Milli-Q H_2O. (2% HNO_3)		

Standard Log #:	M12698	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	LJF		
Prep Date:	11/11/15	Expiration Date:	05/11/16
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H_2O, dissolved **60 g** NaCl M12403 and **60 g** hydroxylamine sulfate M12548 and brought up to volume.		

		Instrument:	GFAA
Standard Log #:	M12693	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	11/02/2015	Expiration Date:	06/01/2016
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)) M12505 and brought to volume with Milli-Q DI H_2O. (1% HNO_3)		

		Instrument:	ICP 6000
Standard Log #:	M12694	Standard:	List 2 ICSAB
Analyst:	MDS	Concentrations:	500,000 µg/L (Al, Ca, Fe, Mg) 500 µg/L (Li, Sn, Sr, Ti, W)
Prep Date:	11/02/2015	Expiration Date:	02/06/2016
Prep:	Into a 200 mL volumetric flask, pipetted **20 mL** of Interferents A custom stock (5000 mg/L Al, Ca, Mg and 2000 mg/L Fe) M12529, **6 mL** of Fe (10,000 mg/L) M12603, **0.1 mL** of Li (1000 µg/mL) M12672, **0.1 mL** of Sn (1000 µg/mL) M12669, **0.1 mL** of Sr (1000 µg/mL) M12670, **0.1 mL** of Ti (1000 µg/mL) M12671, and **0.1 mL** of W (1000 µg/mL) M12163 and brought up to volume using Milli-Q H_2O. (0.5% HNO_3, 0.5% HCl)		

Standard ID#:	M12690	Vendor:	MACRON
Analyst:	LJF	Chemical:	STANNOUS CHLORIDE
Date Received:	11/02/15	Lot #:	0000119473
Expiration Date (if any):	08/12/16	Catalog #:	8176-04

		Instrument:	GFAA
Standard Log #:	M12691	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	11/02/2015	Expiration Date:	06/01/2016
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)) M12504 and brought to volume with Milli-Q H_2O. (1% HNO_3)		

		Instrument:	GFAA
Standard Log #:	M12692	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	11/02/2015	Expiration Date:	06/01/2016
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)) M12504 and brought to volume with Milli-Q DI H_2O. (1% HNO_3)		

		Instrument:	CETAC
Standard Log #:	M12688	Reagent:	Stannous Chloride Solution
Analyst:	LJF		
Prep Date:	10/27/15	Expiration Date:	08/12/16
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H_2O, added **70 mL** hydrochloric acid AB.607 and dissolved **100 g** Stannous chloride M12649 and brought up to volume.		

Standard Log #:	M12689	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	LJF		
Prep Date:	10/27/15	Expiration Date:	04/27/16
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H_2O, dissolved **60 g** NaCl M12270 and **60 g** hydroxylamine sulfate M12548 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M12685	Standard:	Hg CCV
Analyst:	LJF	Concentration:	3.0 ug/L Hg
Prep Date:	10/27/15	Expiration Date:	02/26/16
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12179 *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:	CETAC
Standard Log #:	M12686	Standard:	Hg MRL
Analyst:	LJF	Concentration:	0.2 ug/L Hg
Prep Date:	10/27/15	Expiration Date:	06/30/16
Prep:	Into a 100 mL volumetric flask, pipetted **0.2 mL** of Hg (*100 ug/L working std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	CETAC
Standard Log #:	M12687	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	10/27/15	Expiration Date:	06/30/15
Prep:	Carefully mixed **3** parts HCl AB.607 with **1** part HNO_3 AB.606 in a hood.		

		Instrument:	CETAC
Standard Log #:	M12682	Standard:	Hg ICAL
Analyst:	LJF	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	10/27/15	Expiration Date:	02/26/16
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12179 *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:	CETAC
Standard Log #:	M12683	Standard:	Alt. Source Working Std.
Analyst:	LJF	Concentrations:	10,000 and 100 ug/L
Prep Date:	10/27/15	Expiration Date:	02/26/16
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** of Hg (1000 mg/L) M12179 *100 ug/L Std.* - **1 mL** of Hg (*10,000 ug/L working Std.*)		

		Instrument:	CETAC
Standard Log #:	M12684	Standard:	Hg ICV/LCS
Analyst:	LJF	Concentration:	3 ug/L
Prep Date:	10/27/15	Expiration Date:	02/26/16
Prep:	Into a 100 mL volumetric flask, pipetted **3 mL** of Hg (*100 ug/L working Std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

Standard ID#:	M12677	Vendor:	CPI INTERNATIONAL
Analyst:	LJF	Chemical:	Mo 1000 ug/L
Date Received:	10/21/15	Lot #:	15G130
Expiration Date (if any):	04/15/17	Catalog #:	S4400-1000343

Standard ID#:	M12678	Vendor:	CPI INTERNATIONAL
Analyst:	LJF	Chemical:	Co 1000 ug/L
Date Received:	10/21/15	Lot #:	15I020
Expiration Date (if any):	04/15/17	Catalog #:	S4400-1000131

Standard ID#:	M12679	Vendor:	CPI INTERNATIONAL
Analyst:	LJF	Chemical:	Na 10,000 ug/L
Date Received:	10/21/15	Lot #:	15I102
Expiration Date (if any):	04/15/17	Catalog #:	4400-10M521

Standard ID#:	M12680	Vendor:	CPI INTERNATIONAL
Analyst:	LJF	Chemical:	Zn 10,000 ug/L
Date Received:	10/21/15	Lot #:	15H234
Expiration Date (if any):	04/15/17	Catalog #:	S4400-10M681

Standard ID#:	M12681	Vendor:	CPI INTERNATIONAL
Analyst:	LJF	Chemical:	Ni 1000 ug/L
Date Received:	10/21/15	Lot #:	15G129
Expiration Date (if any):	04/15/17	Catalog #:	S4400-1000361

Standard ID#:	M12672	Vendor:	CPI INTERNATIONAL
Analyst:	LJF	Chemical:	Li 1000ug/L
Date Received:	10/21/15	Lot #:	15I044
Expiration Date (if any):	04/15/17	Catalog #:	S4400-1000291

Standard ID#:	M12673	Vendor:	CPI INTERNATIONAL
Analyst:	LJF	Chemical:	W 1000ug/L
Date Received:	10/21/15	Lot #:	15F057
Expiration Date (if any):	04/15/17	Catalog #:	S4400-100633

Standard ID#:	M12674	Vendor:	CPI INTERNATIONAL
Analyst:	LJF	Chemical:	Cd 1000ug/L
Date Received:	10/21/15	Lot #:	15G138
Expiration Date (if any):	04/15/17	Catalog #:	S4400-100081

Standard ID#:	M12675	Vendor:	CPI INTERNATIONAL
Analyst:	LJF	Chemical:	Si 1000 ug/L
Date Received:	10/21/15	Lot #:	15H045
Expiration Date (if any):	04/15/17	Catalog #:	S4400-1000504F

Standard ID#:	M12676	Vendor:	CPI INTERNATIONAL
Analyst:	LJF	Chemical:	V 1000 ug/L
Date Received:	10/21/15	Lot #:	15H133
Expiration Date (if any):	04/15/17	Catalog #:	S4400-1000651

Standard ID#:	M12667	Vendor:	CPI INTERNATIONAL
Analyst:	LJF	Chemical:	Be 1000ug/L
Date Received:	10/21/15	Lot #:	15I030
Expiration Date (if any):	04/15/17	Catalog #:	S4400-100051

Standard ID#:	M12668	Vendor:	CPI INERNATIONAL
Analyst:	LJF	Chemical:	Tl 1000ug/L
Date Received:	10/21/15	Lot #:	15F051
Expiration Date (if any):	04/15/17	Catalog #:	S4400-1000581

Standard ID#:	M12669	Vendor:	CPI INTERNATIONAL
Analyst:	LJF	Chemical:	Sn 1000ug/L
Date Received:	10/21/15	Lot #:	15H126
Expiration Date (if any):	04/15/17	Catalog #:	S4400-1000613

Standard ID#:	M12670	Vendor:	CPI INTERNATIONAL
Analyst:	LJF	Chemical:	Sr 1000ug/L
Date Received:	10/21/15	Lot #:	15F052
Expiration Date (if any):	04/15/17	Catalog #:	S4400-1000531

Standard ID#:	M12671	Vendor:	CPI INTERNATIONAL
Analyst:	LJF	Chemical:	Tl 100ug/L
Date Received:	10/21/15	Lot #:	15G013
Expiration Date (if any):	04/15/17	Catalog #:	S4400-1000623

		Instrument:	ICP 6000
Standard Log #:	M12666	Standard:	B&Si ICV
Analyst:	MDS	Concentrations:	1000 ug/L (B, Si)
Prep Date:	10/21/2015	Expiration Date:	03/2016
Prep:	Into a 1 L volumetric flask, pipetted **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) M12558 and **1.0 mL** Si (1000 mg/L) M11919 and brought up to volume using milli-Q H_2O.		

		Instrument:	CETAC
Standard Log #:	M12662	Standard:	Hg CCV
Analyst:	LJF	Concentration:	3.0 ug/L Hg
Prep Date:	10/16/15	Expiration Date:	02/26/16
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12179 *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:	CETAC
Standard Log #:	M12663	Standard:	Hg MRL
Analyst:	LJF	Concentration:	0.2 ug/L Hg
Prep Date:	10/16/15	Expiration Date:	06/30/16
Prep:	Into a 100 mL volumetric flask, pipetted **0.2 mL** of Hg (*100 ug/L working std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	CETAC
Standard Log #:	M12664	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	10/16/15	Expiration Date:	07/01/17
Prep:	Carefully mixed **3** parts HCl AB.607 with **1** part HNO_3 AB.606 in a hood.		

		Instrument:	CETAC
Standard Log #:	M12665	Reagent:	Stannous Chloride Solution
Analyst:	LJF		
Prep Date:	10/16/15	Expiration Date:	08/12/16
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H_2O, added **70 mL** hydrochloric acid AB.607 and dissolved **100 g** Stannous chloride M12649 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M12659	Standard:	Hg ICAL
Analyst:	LJF	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	10/16/15	Expiration Date:	02/26/16
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12179 *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:	CETAC
Standard Log #:	M12660	Standard:	Alt. Source Working Std.
Analyst:	LJF	Concentrations:	10,000 and 100 ug/L
Prep Date:	10/16/15	Expiration Date:	06/30/16
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** of Hg (1000 mg/L) M12532 *100 ug/L Std.* - **1 mL** of Hg (*10,000 ug/L working Std.*)		

		Instrument:	CETAC
Standard Log #:	M12661	Standard:	Hg ICV/LCS
Analyst:	LJF	Concentration:	3 ug/L
Prep Date:	10/16/15	Expiration Date:	06/30/16
Prep:	Into a 100 mL volumetric flask, pipetted **3 mL** of Hg (*100 ug/L working Std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	GFAA
Standard Log #:	M12657	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:	10/12/2015	Expiration Date:	11/08/2015
Prep:	Into a 200 mL volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. **1.2 mL** of Sb (1000 mg/L) M12602 **3.2 mL** of As (1000 mg/L) M12315 **3.2 mL** of Se (1000 mg/L) M12600 **0.08 mL** of Pb (10,000 mg/L) M12313 **1.0 mL** of Tl (1000 mg/L) M11997 From this diluted standard solution, pipetted **10 mL** into a 1 L volumetric flask and brought up to volume with Milli-Q H_2O to make the spiking solution. (1% HNO_3) *Pipette **1 mL** spiking solution into 50 mL H_2O 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 #:	M12658	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:	10/12/2015	Expiration Date:	11/08/2015
Prep:	Into a 100 mL volumetric flask, pipetted the following and brought up to volume with Milli-Q H_2O. **1.5 mL** of Sb (1000 mg/L) M12602 **1.0 mL** of As (1000 mg/L) M12315 **2.0 mL** of Se (1000 mg/L) M12600 **0.045 mL** of Pb (10,000 mg/L) M12313 **0.4 mL** of Tl (1000 mg/L) M11997 From this diluted standard solution, pipetted **10 mL** into a 1 L volumetric flask and brought up to volume with Milli-Q H_2O to make the spiking solution. (1% HNO_3) *Pipette **1 mL** spiking solution into 50 mL H_2O 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)		

		Instrument:	GFAA
Standard Log #:	M12655	Standard:	LODW/LOQW Ag Spiking Sol'n
Analyst:	MDS	Concentrations:	10 ug/L (Ag)
Prep Date:	10/12/2015	Expiration Date:	02/10/2017
Prep:	Into a 100 mL volumetric flask, pipetted **0.1 mL** of Ag (1000mg/L) M12599 and brought to volume with Milli-Q H_2O to make a 1000 ug/L Ag std. Into a 1 L volumetric flask, pipetted **10 mL** of Ag (*1000 ug/L*) std. and brought to volume with Milli-Q H_2O. (1% HNO_3) *Pipette **1 mL** spiking solution into 50 mL H_2O for LOD (*0.2 ug/L*) and **2 mL** spiking solution for LOQ (*0.4 ug/L*)		

		Instrument:	GFAA
Standard Log #:	M12656	Standard:	LODS/LOQS Ag Spiking Sol'n
Analyst:	MDS	Concentration:	6 ug/L (Ag)
Prep Date:	10/12/2015	Expiration Date:	02/10/2017
Prep:	Into a 200 mL volumetric flask, pipetted **0.12 mL** of Ag (1000 mg/L) M12599 and brought up to volume with Milli-Q H_2O. From this diluted standard solution, pipetted **10 mL** into a 1 L volumetric flask and brought up to volume with Milli-Q H_2O to make the spiking solution. (1% HNO_3) *Pipette **2 mL** spiking solution into 50 mL H_2O for LOD *(0.24 ug/L)* and **4 mL** spiking solution for LOQ *(0.48 ug/L)*		

Standard ID#:	M12652	Vendor:	SIGMA-ALDRICH
Analyst:	LJF	Chemical:	POTASSIUM PERSULFATE
Date Received:	10/09/2015	Lot #:	MKBV6966V
Expiration Date (if any):	10/09/2016	Catalog #:	216224

Standard ID#:	M12653	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custom Assurance Standard
Date Received:	10/09/2015	Lot #:	33-28CR
Expiration Date (if any):	10/30/2016	Catalog #:	XSPIKE-1-250

Standard ID#:	M12654	Vendor:	AMCO Clear
Analyst:	NAH	Chemical:	turbidity standard 2.0 ntu
Date Received:	10/09/2015	Lot #:	C580865
Expiration Date (if any):	10/30/2016	Catalog #:	8008

Standard Log #:	M12651	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	10/08/15	Expiration Date:	10/08/16
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.579 and **128.6 mL** 10N NaOH M12645. Dilute to 20 L and mix.		

Standard Log #:	M12650	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	10/07/15	Expiration Date:	10/07/16
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.579 and **128.6 mL** 10N NaOH M12645. Dilute to 20 L and mix.		

Standard Log #:	M12648	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	10/02/15	Expiration Date:	10/02/16
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.579 and **128.6 mL** 10N NaOH M12645. Dilute to 20 L and mix.		

Standard ID#:	M12649	Vendor:	MACRON
Analyst:	LJF	Chemical:	STANNOUS CHLORIDE
Date Received:	10/02/15	Lot #:	119473
Expiration Date (if any):	08/12/16	Catalog #:	8176-04

Standard Log #:	M12646	Reagent:	Potassium Persulfate Solution
Analyst:	LJF		
Prep Date:	10/01/15	Expiration Date:	04/01/16
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium persulfate M11748 and brought up to volume.		

Standard Log #:	M12647	Reagent:	Potassium Permanganate Solution
Analyst:	LJF		
Prep Date:	10/01/15	Expiration Date:	04/01/16
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium permanganate M12277 and brought up to volume.		

Standard Log #:	M12645	Reagent:	10N NaOH
Analyst:	LJF		
Prep Date:	09/29/15	Expiration Date:	09/29/16
Prep:	Into a 1 L volumetric flask, added **400 g** NaOH M12543 and brought up to volume.		

Standard Log #:	M12644	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	09/28/15	Expiration Date:	09/28/16
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.579 and **128.6 mL** 10N NaOH M12543. Dilute to 20 L and mix.		

Standard Log #:	M12641	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	MDS	pH:	4.93 ± 0.05
Prep Date:	09/24/2015	Expiration Date:	06/18/2016
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.579 and **128.6 mL** 10N NaOH M12543. Dilute to 20 L and mix.		

Standard Log #:	M12642	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	MDS	pH:	4.93 ± 0.05
Prep Date:	09/24/2015	Expiration Date:	06/18/2016
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.579 and **128.6 mL** 10N NaOH M12543. Dilute to 20 L and mix.		

Standard Log #:	M12643	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	LJF		
Prep Date:	09/24/15	Expiration Date:	03/24/16
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H_2O, dissolved **60 g** NaCl M12270 and **60 g** hydroxylamine sulfate M12548 and brought up to volume.		

Standard Log #:	M12638	Standard:	GFAA Instrument Check
Analyst:	MDS	Final Concentration:	10 µg/L As 6 µg/L Pb 22 µg/L Tl 24 µg/L Sb, Se 0.8 µg/L Ag
Prep Date:	09/22/2015	Expiration Date:	11/08/2015

Into six, 100 mL volumetric flasks, add the following and bring up to volume with milli-Q H_2O.

Element	Volume Pipetted (mL)	Standard Conc. (µg/mL)	Standard ID	New Conc. (µg/L)
As	1	1000	M12315	10,000
Pb	0.1	10,000	M12313	10,000
Tl	1	1000	M11997	10,000
Se	1	1000	M12600	10,000
Sb	1	1000	M12602	10,000
Ag	0.1	1000	M12599	1000

Into a 1 L volumetric flask, add the following and bring up to volume with Milli-Q H_20. (1% HNO_3)

Element	Volume Pipetted (mL)	Standard Conc. (µg/L)	New Conc. (µg/L)
As	1	10,000	10
Pb	0.6	10,000	6
Tl	2.2	10,000	22
Se	2.4	10,000	24
Sb	2.4	10,000	24
Ag	0.8	1000	0.8

		Instrument:	GFAA
Standard Log #:	M12639	Standard:	As Spiking Solution
Analyst:	MDS	Concentration:	10 ug/mL (As)
Prep Date:	09/22/2015	Expiration Date:	06/02/2016
Prep:	Into a 100 mL volumetric flask, pipetted **1.0 mL** of As (1000 mg/L) M12315 and brought to volume with Milli-Q DI H_2O. (3% HNO_3) *Pipette **0.075 mL** of spiking solution into 50 mL DI or sample for a final spike concentration of 15 ug/L		

		Instrument:	GFAA
Standard Log #:	M12640	Standard:	As/Se Spiking Solution
Analyst:	MDS	Concentration:	10 ug/mL (As,Se)
Prep Date:	09/22/2015	Expiration Date:	06/02/2016
Prep:	Into a 100 mL volumetric flask, pipetted **1.0 mL** of As (1000 mg/L) M12315 and **1.0 mL** of Se (1000 mg/L) M12600 and brought to volume with Milli-Q DI H_2O. (3% HNO_3) *Pipette **0.075 mL** of spiking solution into 50 mL DI or sample for a final spike concentration of 15 ug/L		

		Instrument:	CETAC
Standard Log #:	M12636	Reagent:	Stannous Chloride Solution
Analyst:	LJF		
Prep Date:	09/18/15	Expiration Date:	12/09/15
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H_2O, added **70 mL** hydrochloric acid AB.604 and dissolved **100 g** Stannous chloride M12549 and brought up to volume.		

Standard Log #:	M12637	Reagent:	Potassium Permanganate Solution
Analyst:	LJF		
Prep Date:	09/18/15	Expiration Date:	03/18/16
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium permanganate M12277 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M12633	Standard:	Hg CCV
Analyst:	LJF	Concentration:	3.0 ug/L Hg
Prep Date:	09/18/15	Expiration Date:	02/26/15
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12179 *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:	CETAC
Standard Log #:	M12634	Standard:	Hg MRL
Analyst:	LJF	Concentration:	0.2 ug/L Hg
Prep Date:	09/18/15	Expiration Date:	06/30/16
Prep:	Into a 100 mL volumetric flask, pipetted **0.2 mL** of Hg (*100 ug/L working std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	CETAC
Standard Log #:	M12635	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	09/18/15	Expiration Date:	04/01/17
Prep:	Carefully mixed **3** parts HCl AB.604 with **1** part HNO_3 AB.603 in a hood.		

		Instrument:	CETAC
Standard Log #:	M12630	Standard:	Hg ICAL
Analyst:	LJF	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	09/18/15	Expiration Date:	02/26/15
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12179 *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:	CETAC
Standard Log #:	M12631	Standard:	Alt. Source Working Std.
Analyst:	LJF	Concentrations:	10,000 and 100 ug/L
Prep Date:	09/18/15	Expiration Date:	06/30/16
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** of Hg (1000 mg/L) M12532 *100 ug/L Std.* - **1 mL** of Hg (*10,000 ug/L working Std.*)		

		Instrument:	CETAC
Standard Log #:	M12632	Standard:	Hg ICV/LCS
Analyst:	LJF	Concentration:	3 ug/L
Prep Date:	09/18/15	Expiration Date:	06/30/16
Prep:	Into a 100 mL volumetric flask, pipetted **3 mL** of Hg (*100 ug/L working Std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

Standard Log #:	M12628	Reagent:	10N NaOH
Analyst:	LJF		
Prep Date:	09/16/15	Expiration Date:	09/16/16
Prep:	Into a 1 L volumetric flask, added **400 g** NaOH M11852 and brought up to volume.		

Standard ID#:	M12629	Vendor:	GR ACS
Analyst:	LJF	Chemical:	SODIUM CHLORIDE
Date Received:	09/16/15	Lot #:	x131a
Expiration Date (if any):		Catalog #:	C710L50

		Instrument:	Hach 2100 turbidity meter
Standard Log #:	M12627	Standard:	Turbity ICAL
Analyst:	NAH	Concentrations:	20, 100, 200 ntu
Prep Date:	9/11/2015	Expiration Date:	08/2016
Prep:	Using the hach vials , pipet the following: *20 ntu Std.* = **1 ml** M12186 and 9 mls DI H20. *100 ntu Std.* = **5 mls** M12186 and 5 mls DI H20. *200 ntu Std.* = ***10 mls*** M12186 *and* 0 mls DI H20.		

Standard Log #:	M12626	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	09/10/15	Expiration Date:	09/10/16
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.577 and **128.6 mL** 10N NaOH M12543. Dilute to 20 L and mix.		

Standard Log #:	M12625	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	09/09/15	Expiration Date:	09/09/16
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.577 and **128.6 mL** 10N NaOH M12543. Dilute to 20 L and mix.		

		Instrument:	CETAC
Standard Log #:	M12622	Reagent:	Stannous Chloride Solution
Analyst:	LJF		
Prep Date:	09/03/15	Expiration Date:	12/09/15
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H_2O, added **70 mL** hydrochloric acid AB.604 and dissolved **100 g** Stannous chloride M12549 and brought up to volume.		

Standard Log #:	M12623	Reagent:	NaCl Hydroxylamine Sulfate
Analyst:	LJF		
Prep Date:	09/03/15	Expiration Date:	03/03/16
Prep:	Into a 500 mL volumetric flask, partially filled with milli-Q H_2O, dissolved **60 g** NaCl M12270 and **60 g** hydroxylamine sulfate M11798 and brought up to volume.		

Standard Log #:	M12624	Reagent:	Potassium Permanganate Solution
Analyst:	LJF		
Prep Date:	09/03/15	Expiration Date:	03/03/16
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium permanganate M12277 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M12619	Standard:	Hg CCV
Analyst:	LJF	Concentration:	3.0 ug/L Hg
Prep Date:	09/03/15	Expiration Date:	02/26/15
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12179 *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:	CETAC
Standard Log #:	M12620	Standard:	Hg MRL
Analyst:	LJF	Concentration:	0.2 ug/L Hg
Prep Date:	09/03/15	Expiration Date:	06/30/16
Prep:	Into a 100 mL volumetric flask, pipetted **0.2 mL** of Hg (*100 ug/L working std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	CETAC
Standard Log #:	M12621	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	09/03/15	Expiration Date:	04/01/17
Prep:	Carefully mixed **3** parts HCl AB.604 with **1** part HNO_3 AB.603 in a hood.		

		Instrument:	CETAC
Standard Log #:	M12616	Standard:	Hg ICAL
Analyst:	LJF	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	09/03/15	Expiration Date:	02/26/15
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12179 *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:	CETAC
Standard Log #:	M12617	Standard:	Alt. Source Working Std.
Analyst:	LJF	Concentrations:	10,000 and 100 ug/L
Prep Date:	09/03/15	Expiration Date:	06/30/16
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** of Hg (1000 mg/L) M12532 *100 ug/L Std.* - **1 mL** of Hg (*10,000 ug/L working Std.*)		

		Instrument:	CETAC
Standard Log #:	M12618	Standard:	Hg ICV/LCS
Analyst:	LJF	Concentration:	3 ug/L
Prep Date:	09/03/15	Expiration Date:	06/30/16
Prep:	Into a 100 mL volumetric flask, pipetted **3 mL** of Hg (*100 ug/L working Std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

Standard ID#:	M12615	Vendor:	SPEX Certiprep
Analyst:	NAH	Chemical:	Custum Assurance Standard
Date Received:	09/01/2015	Lot #:	32-105CR
Expiration Date (if any):	09/20/2015	Catalog #:	XSPIKE-1-250

		Instrument:	ICP 6000
Standard Log #:	M12614	Standard:	NaK ICSAB
Analyst:	MDS	Concentrations:	500 mg/L (Al, Ca, Fe, Mg) 100 mg/L (Na, K)
Prep Date:	08/31/15	Expiration Date:	11/08/15
Prep:	Into a 250 mL volumetric flask, pipetted **25 mL** of Interferents A custom stock (5000 mg/L Al, Ca, Mg and 2000 mg/L Fe) M12529, **2.5 mL** of K (10,000 mg/L) M12474, **2.5 mL** of Na (10,000 mg/L) M12010 and **7.5 mL** of Fe (10,000 mg/L) M12489 and brought up to volume using Milli-Q H_2O. (2% HNO_3)		

Standard Log #:	M12613	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	08/27/15	Expiration Date:	08/27/16
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.579 and **128.6 mL** 10N NaOH M12543. Dilute to 20 L and mix.		

Standard ID#:	M12612	Vendor:	CPI
Analyst:	NAH	Chemical:	Yttrium 10000 ug/mL
Date Received:	08/27/15	Lot #:	15E153
Expiration Date (if any):	02/20/17	Catalog #:	4400-10M671

Standard Log #:	M12611	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	08/24/15	Expiration Date:	08/24/16
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.579 and **128.6 mL** 10N NaOH M12543. Dilute to 20 L and mix.		

Standard ID#:	M12607	Vendor:	CPI
Analyst:	NAH	Chemical:	SODIUM 1000ug/mL
Date Received:	08/19/2015	Lot #:	15F159
Expiration Date (if any):	02/12/2017	Catalog #:	4400-1000521

Standard ID#:	M12608	Vendor:	CPI
Analyst:	NAH	Chemical:	POTASSIUM 1000ug/mL
Date Received:	08/19/2015	Lot #:	15E009
Expiration Date (if any):	02/12/2017	Catalog #:	4400-1000411

Standard ID#:	M12609	Vendor:	CPI
Analyst:	NAH	Chemical:	POTASSIUM 10000ug/mL
Date Received:	08/19/2015	Lot #:	15E086
Expiration Date (if any):	02/12/2017	Catalog #:	4400-10M411

Standard ID#:	M12610	Vendor:	ALFA AESAR
Analyst:	LJF	Chemical:	HYDROXYLAMINE SULFATE
Date Received:	08/20/15	Lot #:	Z16A019
Expiration Date (if any):		Catalog #:	88944

Standard ID#:	M12602	Vendor:	CPI
Analyst:	NAH	Chemical:	ANTIMONY 1000 ug/ml
Date Received:	08-14-2015	Lot #:	15D168
Expiration Date (if any):	02-10-2017	Catalog #:	S4400-100023

Standard ID#:	M12603	Vendor:	CPI
Analyst:	NAH	Chemical:	IRON 10000 ug/ml
Date Received:	08-14-2015	Lot #:	15C057
Expiration Date (if any):	02-10-2017	Catalog #:	4400-10M261

Standard ID#:	M12604	Vendor:	CPI
Analyst:	NAH	Chemical:	CALCIUM 10000 ug/ml
Date Received:	08-14-2015	Lot #:	15G076
Expiration Date (if any):	02-10-2017	Catalog #:	4400-10M91

Standard ID#:	M12605	Vendor:	CPI
Analyst:	NAH	Chemical:	ALUMINUM 10000 ug/ml
Date Received:	08-14-2015	Lot #:	15E015
Expiration Date (if any):	02-10-2017	Catalog #:	4400-10M11

Standard ID#:	M12606	Vendor:	CPI
Analyst:	NAH	Chemical:	MAGNESIUM 10000 ug/ml
Date Received:	08-14-2015	Lot #:	15G077
Expiration Date (if any):	02-10-2015	Catalog #:	4400-10M311

Standard ID#:	M12599	Vendor:	CPI
Analyst:	NAH	Chemical:	SILVER 1000 ug/ml
Date Received:	8-14-2015	Lot #:	15H040
Expiration Date (if any):	02-10-2017	Catalog #:	S4400-1000511

Standard ID#:	M12600	Vendor:	CPI
Analyst:	NAH	Chemical:	SELENIUM 1000 ug/ml
Date Received:	08-14-2015	Lot #:	15E095
Expiration Date (if any):	2-10-2017	Catalog #:	S4400-1000491

Standard ID#:	M12601	Vendor:	CPI
Analyst:	NAH	Chemical:	SILICON 1000 ug/ml
Date Received:	08-14-2015	Lot #:	15F050
Expiration Date (if any):	02-10-2017	Catalog #:	S4400-1000504F

		Instrument:	CETAC
Standard Log #:	M12596	Standard:	Hg CCV
Analyst:	LJF	Concentration:	3.0 ug/L Hg
Prep Date:	08/13/15	Expiration Date:	02/26/16
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12179 *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:	CETAC
Standard Log #:	M12597	Standard:	Hg MRL
Analyst:	LJF	Concentration:	0.2 ug/L Hg
Prep Date:	08/13/15	Expiration Date:	06/30/16
Prep:	Into a 100 mL volumetric flask, pipetted **0.2 mL** of Hg (*100 ug/L working std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

		Instrument:	CETAC
Standard Log #:	M12598	Reagent:	Hg Aqua Regia
Analyst:	LJF		
Prep Date:	08/13/15	Expiration Date:	04/01/17
Prep:	Carefully mixed **3** parts HCl AB.604 with **1** part HNO_3 AB.603 in a hood.		

		Instrument:	CETAC
Standard Log #:	M12599a	Reagent:	Stannous Chloride Solution
Analyst:	LJF		
Prep Date:	08/13/15	Expiration Date:	12/09/15
Prep:	Into a 1 L volumetric flask, partially filled with 400 mL milli-Q H_2O, added **70 mL** hydrochloric acid AB.604 and dissolved **100 g** Stannous chloride M12549 and brought up to volume.		

		Instrument:	CETAC
Standard Log #:	M12593	Standard:	Hg ICAL
Analyst:	LJF	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	08/13/15	Expiration Date:	02/26/15
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12179 *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:	CETAC
Standard Log #:	M12594	Standard:	Alt. Source Working Std.
Analyst:	LJF	Concentrations:	10,000 and 100 ug/L
Prep Date:	08/13/15	Expiration Date:	06/30/16
Prep:	Into two, 100 mL volumetric flasks, pipetted the following and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** of Hg (1000 mg/L) M12532 *100 ug/L Std.* - **1 mL** of Hg (*10,000 ug/L working Std.*)		

		Instrument:	CETAC
Standard Log #:	M12595	Standard:	Hg ICV/LCS
Analyst:	LJF	Concentration:	3 ug/L
Prep Date:	08/13/15	Expiration Date:	06/30/15
Prep:	Into a 100 mL volumetric flask, pipetted **3 mL** of Hg (*100 ug/L working Std.*) M12552 and brought up to volume using Milli-Q H_2O. (0.2% HNO_3, 0.2% HCl)		

Standard Log #:	M12588	Instrument:	GFAA
Analyst:	MDS	Reagent:	Pd/Mg Matrix Modifier
Prep Date:	08/10/15	Expiration Date:	10/23/16
Prep:	Into a 50 mL volumetric flask, partially filled with milli-Q H_2O, pipetted **15 mL** Pd Modifier M12584 and **10 mL** Mg (10,000 mg/L) M12488 and brought up to volume.		

		Instrument:	ICP 6500
Standard Log #:	M12586	Standard:	ICSA
Analyst:	NAH	Concentrations:	**500,000 ug/L** Al, Ca, Fe, Mg
Prep Date:	08/05/15	Expiration Date:	07/16
Prep:	Into a 500 mL volumetric flask, pipetted **50 mL** Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M12529 and **15 mL** Fe (10000 mg/L) M12489 and brought up to volume with milli-Q H_2O.		

		Instrument:	ICP 6500
Standard Log #:	M12587	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
Prep Date:	08/05/15	Expiration Date:	07/16
Prep:	Into a 500 mL volumetric flask, pipetted **50 mL** Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M12529 , **15 mL** Fe (10,000 mg/L) M12489 , **2.5 mL** of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M12530 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) M12558 and brought up to volume with milli-Q H_2O.		

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Standard ID#:	M12584	Vendor:	Environmental Express
Analyst:	MDS	Chemical:	GFAA Pd Matrix Modifier
Date Received:	08/05/15	Lot #:	1421912
Expiration Date (if any):	07/31/17	Catalog #:	HP1900-100

		Instrument:	ICP 6500
Standard Log #:	M12585	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:	08/05/15	Expiration Date:	11/15
Prep:	Into a 1 L volumetric flask, pipetted the following and brought up to volume with milli-Q H_2O. **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)) M12574, **2 mL** Interferents A Standard ((5000 mg/L Al, Ca, Mg) (2000 mg/L Fe)) M12529, **0.5 mL** Mo (1000 mg/L) M12008, **0.5 mL** B (1000 mg/L) M12471, **0.5 mL** Sr (1000 mg/L) M11999, **0.5 mL** Li (1000 mg/L) M11998, **0.5 mL** Sn (1000 mg/L) M11996 and **0.5 mL** Ti (1000 mg/L) M12003.		

		Instrument:	ICP 6500
Standard Log #:	M12582	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:	08/03/15	Expiration Date:	7/30/16
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) M12558 and **5.0 mL** of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) M12530 and brought up to volume with milli-Q H_2O.		

		Instrument:	ICP 6500
Standard Log #:	M12583	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:	08/03/2015	Expiration Date:	7/30/16
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) M12558 and **0.5 mL** of Custom Assurance Std. #3 XCTWI-4-500 (100 mg/L Ag, Be, Cd) M12530 and brought up to volume with milli-Q H_2O.		

		Instrument:	ICP 6500
Standard Log #:	M12581	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:	08/03/15	Expiration Date:	11/2015

Prep:

Using 1 L volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O.
(5% HNO_3, 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) M12558, **10 mL** of Custom Assurance Std. #3 (100 mg/L Ag, Be, Cd) M12530 and **1 mL** of Si (1000 mg/L) M11919.
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) M12474.
100k ug/L Std. - **10 mL** of Cu (10,000 mg/L) M12472, **10 mL** of Mn (10,000 mg/L) M12533, **10 mL** of Cr (10,000 mg/L) M12470, **10 mL** Pb (10,000 mg/L) M12313, **10 mL** of Zn (10,000 mg/L) M12005 and **10 mL** of Na (10,000 mg/L) M12010.
100,000 ug/L Std. - **10 mL** of Mg (10,000 mg/L) M12488, **10 mL** of Fe (10,000 mg/L) M12489, **10 mL** of Ca (10,000 mg/L) M12490 and **10 mL** Al (10,000 mg/L) M12400.
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 #:	M12579	Reagent:	Potassium Permanganate Solution
Analyst:	LJF		
Prep Date:	07/24/15	Expiration Date:	01/24/16
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium permanganate M11285 and brought up to volume.		

		Instrument:	GFAA
Standard Log #:	M12576	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	07/23/2015	Expiration Date:	06/01/2016
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)) M12504 and brought to volume with Milli-Q H_2O. (1% HNO_3)		

		Instrument:	GFAA
Standard Log #:	M12577	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	07/23/2015	Expiration Date:	06/01/2016
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)) M12504 and brought to volume with Milli-Q DI H_2O. (1% HNO_3)		

		Instrument:	GFAA
Standard Log #:	M12578	Standard:	ICV/LCS Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	07/23/2015	Expiration Date:	06/01/2016
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)) M12505 and brought to volume with Milli-Q DI H_2O. (1% HNO_3)		

Standard ID#:	M12574	Vendor:	SpexCertiprep
Analyst:	NAH	Chemical:	Custum Assurance Std
Date Received:	07/21/2015	Lot #:	31-138CR
Expiration Date (if any):	07/30/2016	Catalog #:	XSPIKE-1-500

Standard ID#:	M12575	Vendor:	SpexCertiprep
Analyst:	NAH	Chemical:	Custum Assurance Std
Date Received:	07/21/2015	Lot #:	07-30-2016
Expiration Date (if any):	07/30/2015	Catalog #:	XCTWI-1-500

		Instrument:	ICP 6000
Standard Log #:	M12559	Standard:	B&Si ICAL
Analyst:	MDS	Concentrations:	50, 200, 1000, 2000 and 10,000 ug/L (B, Si)
Prep Date:	07/15/2015	Expiration Date:	11/08/2015
Prep:	Into five, 1 L volumetric flasks, pipetted the following from stock standards B (1000 mg/L) M12471 and Si (1000 mg/L) M12007 and brought up to volume using milli-Q H_2O. *50 ug/L std.* - **0.05 mL** of each *200 ug/L std.* - **0.2 mL** of each *1000 ug/L std.* -**1.0 mL** of each, also used for Continuing Calibration Verification *2000 ug/L std.* - **2.0 mL** of each *10,000 ug/L std.* -**10 mL** of each		

		Instrument:	ICP 6000
Standard Log #:	M12560	Standard:	B&Si CCV
Analyst:	MDS	Concentrations:	1000 ug/L (B, Si)
Prep Date:	07/15/2015	Expiration Date:	11/08/2015
Prep:	Into a 1 L volumetric flask, pipetted **1.0 mL** B (1000 mg/L) M12471 and **1.0 mL** Si (1000 mg/L) M12007 and brought up to volume using milli-Q H_2O.		

		Instrument:	ICP 6000
Standard Log #:	M12561	Standard:	B & Si ICSAB
Analyst:	MDS	Concentrations:	500,000 µg/L (Al, Ca, Fe, Mg) 500 µg/L (B,Si)
Prep Date:	07/15/2015	Expiration Date:	11/08/2015
Prep:	Into a 100 mL volumetric flask, pipetted **10 mL** of Interferents A custom stock (5000 mg/L Al, Ca, Mg and 2000 mg/L Fe) M12529, **0.05 mL** of B (1000 µg/mL) M12471, **0.05 mL** of Si (1000 µg/mL) M12007 and **3 mL** of Fe (10,000 mg/L) M12489 and brought up to volume using Milli-Q H_2O.		

Standard ID#:	M12558	Vendor:	Spex Certiprep
Analyst:	NAH	Chemical:	Custum Assurance Standard
Date Received:	07/13/2015	Lot #:	9-105WL
Expiration Date (if any):	07/30/2016	Catalog #:	XCTWI-5-500

Standard ID#:	M12548	Vendor:	Alfa Aesar
Analyst:	LJF	Chemical:	Hydroxylamine Sulfate
Date Received:	07/08/15	Lot #:	Z16A019
Expiration Date (if any):	N/A	Catalog #:	88944

Standard ID#:	M12549	Vendor:	MACRON
Analyst:	LJF	Chemical:	Stannous Chloride
Date Received:	07/08/15	Lot #:	0000111217
Expiration Date (if any):	12/09/15	Catalog #:	8176-04

Standard Log #:	M12543	Reagent:	10N NaOH
Analyst:	LJF		
Prep Date:	06/18/15	Expiration Date:	06/18/16
Prep:	Into a 1 L volumetric flask, added **400 g** NaOH M11852 and brought up to volume.		

Standard Log #:	M12544	Reagent:	TCLP EXTRACTION FLUID #1
Analyst:	LJF	pH:	4.93 ± 0.05
Prep Date:	06/18/15	Expiration Date:	06/18/16
Prep:	Into a 20 L carboy filled with 19 L of DI H_2O, add **114 mL** Glacial acetic acid AB.579 and **128.6 mL** 10N NaOH M12543. Dilute to 20 L and mix.		

Standard ID#:	M12529	Vendor:	SPEX Certiprep
Analyst:	NAH	Chemical:	Interference-A
Date Received:	06/04/2015	Lot #:	12-101YPX
Expiration Date (if any):	06/30/2016	Catelog #:	INT-A1

Standard ID#:	M12530	Vendor:	SPEX Certiprep
Analyst:	NAH	Chemical:	Custom Assurance STD (3) Ag,Be,Cd
Date Received:	06/04/2015	Lot #:	30-152CR
Expiration Date (if any):	06/30/2016	Catelog #:	XCTWI-4-500

Standard ID#:	M12531	Vendor:	SPEX Certiprep
Analyst:	NAH	Chemical:	Custom Assurance STD (23)
Date Received:	06/04/2015	Lot #:	30-153CR
Expiration Date (if any):	06/30/2016	Catelog #:	XCTWI-5-500

Standard ID#:	M12532	Vendor:	SPEX Certiprep
Analyst:	NAH	Chemical:	Mercury 1000 mg/L
Date Received:	06/04/2015	Lot #:	CL7-180HGY
Expiration Date (if any):	06/30/2016	Catelog #:	CLHG4-2Y

Standard ID#:	M12533	Vendor:	CPI
Analyst:	NAH	Chemical:	Mn 10000 mg/L
Date Received:	06/04/2015	Lot #:	15E180
Expiration Date (if any):	11/29/2016	Catelog #:	P/N S4400-10M321

Standard ID#:	M12518	Vendor:	Alfa Aesar Specpure
Analyst:	MDS	Chemical:	GFAA Nickel Nitrate Modifier
Date Received:	05/29/2015	Lot #:	785159H
Expiration Date (if any):	11/30/2016	Catelog #:	39043

		Instrument:	GFAA
Standard Log #:	M12519	Standard:	Calibration Std.
Analyst:	MDS	Concentrations:	25 ug/L (As, Pb, Sb, Se, Tl) 3.75 ug/L (Ag)
Prep Date:	05/29/2015	Expiration Date:	06/01/2016
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)) M12504 and brought to volume with Milli-Q H_2O. (1% HNO_3)		

		Instrument:	GFAA
Standard Log #:	M12520	Standard:	CCV Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.5 ug/L (Ag)
Prep Date:	05/29/2015	Expiration Date:	06/01/2016
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)) M12504 and brought to volume with Milli-Q DI H_2O. (1% HNO_3)		

		Instrument:	GFAA
Standard Log #:	M12521	Standard:	ICV/Spike Std.
Analyst:	MDS	Concentrations:	10 ug/L (As, Pb, Sb, Se, Tl) 1.0 ug/L (Ag)
Prep Date:	05/29/2015	Expiration Date:	06/01/2016
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)) M12505 and brought to volume with Milli-Q DI H_2O. (1% HNO_3)		

		Instrument:	CETAC
Standard Log #:	M12507	Standard:	Hg ICAL
Analyst:	LJF	Concentrations:	10,000, 100, 0.5, 1, 2, 4, 5, 10 ug/L
Prep Date:	05/27/15	Expiration Date:	02/26/16
Prep:	Using 100 mL volumetric flasks, pipetted the following and brought up to volume using milli-Q H_2O. (0.2% HNO_3, 0.2% HCl) *10,000 ug/L Std.* - **1 mL** Hg (1000 mg/L) M12179 *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:	ICP 6000
Standard Log #:	M12508	Standard:	NaK ICSAB
Analyst:	MDS	Concentrations:	500 mg/L (Al, Ca, Fe, Mg) 100 mg/L (Na, K)
Prep Date:	05/27/2015	Expiration Date:	08/30/2015
Prep:	Into a 250 mL volumetric flask, pipetted **25 mL** of Interferents A custom stock (5000 mg/L Al, Ca, Mg and 2000 mg/L Fe) M12164, **2.5 mL** of K (10,000 mg/L) M12474, **2.5 mL** of Na (10,000 mg/L) M12010 and **7.5 mL** of Fe (10,000 mg/L) M12401 and brought up to volume using Milli-Q H_2O. (2% HNO_3)		

Standard ID#:	M12504	Vendor:	Inorganic Ventures
Analyst:	MDS	Chemical:	GFAA ICAL/CCV Standard
Date Received:	05/26/2015	Lot #:	J2-MEB581070
Expiration Date (if any):	06/01/2016	Catelog #:	CTI-SPK-1

Standard ID#:	M12505	Vendor:	Inorganic Ventures
Analyst:	MDS	Chemical:	GFAA ICV/Spiking Standard
Date Received:	05/26/2015	Lot #:	J2-MEB581069
Expiration Date (if any):	06/01/2016	Catelog #:	CTI-GFCAL-1

Standard ID#:	M12502	Vendor:	SpexCertiprep
Analyst:	NAH	Chemical:	Custum assurance standard
Date Received:	05-19-2015	Lot #:	30-096CR
Expiration Date (if any):	05-30-2016	Catelog #:	XSPIKE-1-250

Standard Log #:	M12501	Reagent:	Potassium Persulfate Solution
Analyst:	LJF		
Prep Date:	05/14/15	Expiration Date:	11/14/15
Prep:	Into a 1 L volumetric flask, partially filled with milli-Q H_2O, dissolved **50 g** potassium persulfate M10987 and brought up to volume.		

#M12488 5-5-15 - Mg 10,000mg/L CPI Lot 15C248 ex 10/2016.

#M12489 5-5-15 - Fe 10,000mg/L CPI Lot 15C290 ex 10/16.

#M12490 5-5-15 Ca 10,000mg/L CPI Lot 15A007 ex 10/16.

#M12491 05/06/15C3F TCLP Extraction Fluid #1: Fill a 20L carboy w/19L D.I. H2O. Add 114mL Glacial Acetic Acid (AB 579) and 128.6mL of 5N NaOH (#M12797). Dilute to 20L w/D.I. H2O and mix. pH = 4.93 ± 0.05

Exp: 05/06/16

#M12492 05/06/15C3F SPLP Extraction Fluid #2 west: Fill a 20L carboy with D.I. H2O and adjust pH to 5.00 ± 0.05 with (#M12457) 60/40 HNO_3, H_2SO_4 mix w/v mix.

Exp: 05/06/16

#M12493 05/11/15C3F	Hg Working Stds: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 0.5ml of 100ug/L Hg into 100ml = 0.5ug/L Hg 1.0ml of 100ug/L Hg into 100ml = 1.0ug/L Hg 2.0ml of 100ug/L Hg into 100ml = 2.0ug/L Hg 4.0ml of 100ug/L Hg into 100ml = 4.0ug/L Hg 5.0ml of 100ug/L Hg ino 100ml =5.0ug/L Hg 10.0ml of 100ug/L Hg into 100ml = 10.0ug/L Hg
#M12494 05/11/15C3F	Hg Alt Source Working Std: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M9063) into 100ml = 10mg/L Hg 1.0ml of 10mg/L into 100ml = 100ug/L Hg
#M12495 05/11/15C3F	Hg ICV / LCSW (0.2% HNO3, HCl)	3.0ml of 100ug/L Hg (#M12494) into 100ml = 3.0ug/L Hg
#M12496 05/11/15C3F	Hg CCV (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 3.0ml of 100ug/L Hg into 100ml = 3.0ug/L Hg
#M12497 05/11/15C3F	Hg MRL: (0.2% HNO3, HCl)	0.2ml of 100ug/L Hg (#M12494) into 100ml = 0.2ug/L Hg
#M12498 05/11/15C3F	Hg Aqua Regia Reagent:	"Carefully" in hood, mix 3 parts HCl (AB: 553) with 1part HNO3 (AB: 554)
#M12499 05/11/15C3F	Stannous Chloride Reagent:	Into a 1000 mL volumetric flask, dissolve 100g Stannous Chloride (#M12799 in 70 mL HCl (AB: 553). Bring up to volume with D.I. Water.

#M12468
4/22/15
MDS

		Instrument:	ICP 6000
Standard Log #:	M12468	Standard:	Na,K ICVLL
Analyst:	MDS	Concentrations:	3 mg/L (Na,K)
Prep Date:	04/22/2015	Expiration Date:	11/8/2015
Prep:	Into a 500 mL volumetric flask, pipetted **0.15 mL** of Na (10,000 µg/mL) M12010 and **0.15 mL** K (10,000 µg/mL) M12294 and brought to volume with Milli-Q H_2O. (2% HNO_3)		

#M12469
4/22/15
MDS

		Instrument:	ICP 6000
Standard Log #:	M12469	Standard:	Na,K MRL
Analyst:	MDS	Concentrations:	1 mg/L (Na,K)
Prep Date:	04/22/2015	Expiration Date:	04/29/2016
Prep:	Into a 500 mL volumetric flask, pipetted **0.5 mL** of Na (1000 µg/mL) M12296 and **0.5 mL** K (1000 µg/mL) M12295 and brought to volume with Milli-Q H_2O. (2% HNO_3)		

M12470 4-24-15 Cr 10,000 mg/L CPI lot # 13D123. ex oct/2016

M12471 4-24-15 Boron 1000 mg/L CPI lot # 15D007. ex oct/2016

M12472 Cu 10,000 mg/L CPI lot # 15B087. ex oct/2016

M12473 Ba 1000 mg/L CPI lot # 15C142. ex oct/2016

M12474 K 10,000 mg/L CPI lot # 15D114. ex oct/2016

#M12475
04/24/15
MDS

Standard Log #:	M12475	Instrument:	GFAA
Analyst:	MDS	Reagent:	Pd/Mg Matrix Modifier
Prep Date:	04/24/2015	Expiration Date:	08/07/2015
Prep:	Into a 50 mL volumetric flask, partially filled with milli-Q H_2O, pipetted **15 mL** Pd Modifier M12158 and **10 mL** Mg (10,000 mg/L) M12314 and brought up to volume.		

#M12459 04/20/15 CSF	Hg Working Stds: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 0.5ml of 100ug/L Hg into 100ml = 0.5ug/L Hg 1.0ml of 100ug/L Hg into 100ml = 1.0ug/L Hg 2.0ml of 100ug/L Hg into 100ml = 2.0ug/L Hg 4.0ml of 100ug/L Hg into 100ml = 4.0ug/L Hg 5.0ml of 100ug/L Hg ino 100ml =5.0ug/L Hg 10.0ml of 100ug/L Hg into 100ml = 10.0ug/L Hg
#M12460 04/20/15 CSF	Hg Alt Source Working Std: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M9063) into 100ml = 10mg/L Hg 1.0ml of 10mg/L into 100ml = 100ug/L Hg
#M12461 04/20/15 CSF	Hg ICV / LCSW (0.2% HNO3, HCl)	3.0ml of 100ug/L Hg (#M12460) into 100ml = 3.0ug/L Hg
#M12462 04/20/15 CSF	Hg CCV (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 3.0ml of 100ug/L Hg into 100ml = 3.0ug/L Hg
#M12463 04/20/15 CSF	Hg MRL: (0.2% HNO3, HCl)	0.2ml of 100ug/L Hg (#M12460) into 100ml = 0.2ug/L Hg
#M12464 04/20/15 CSF	Hg Aqua Regia Reagent:	"Carefully" in hood, mix 3 parts HCl (AB: 553) with 1part HNO3 (AB: 554)
#M12465 04/20/15 CSF	Stannous Chloride Reagent:	Into a 1000 mL volumetric flask, dissolve 100g Stannous Chloride (#M12299) in 70 mL HCl (AB: 553). Bring up to volume with D.I. Water.

#M12466 04/22/15 CSF NaCl Hydroxylamine Sulfate Reagent: Dissolve 60g NaCl (#M11799) and 60g hydroxylamine sulfate (#M12096) in 500ml of Milli-Q H2O.
Exp: 10/22/15

#M12467
04/22/15
MDS

		Instrument:	ICP 6000
Standard Log #:	M12467	Standard:	Na & K ICAL
Analyst:	MDS	Concentrations:	0.5, 1, 5, 10, 50, 100, and 200 mg/L (Na,K)
Prep Date:	04/22/2015	Expiration Date:	04/29/2016
Prep:	Into seven, 200 mL volumetric flasks, pipetted the following from Na (1000 µg/mL) M12296 and K (1000 µg/mL) M12295 and brought up to volume using milli-Q H_2O. (2% HNO_3) *0.5 mg/L std.* - **0.1 mL** of each *1.0 mg/L std.* - **0.2 mL** of each *5.0 mg/L std.* - **1.0 mL** of each *10 mg/L std.* - **2.0 mL** of each *50 mg/L std.* - **10 mL** of each *100 mg/L std.* -**20 mL** of each, also used for Continuing Calibration Verification *200 mg/L std.* - **40 mL** of each		

#M12453 04/07/15 13F
LOQ Check
3050 QSM DOD

3050 LOQ Spiking Solution
Base SPIKE PREPARATION 50x

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	LOQ (ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L
K	2640	M12294	10000	13.2
Na	960	M12010	10000	4.8

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.

Expires: 8-Nov

#M12454 04/07/15 13F
LOQ Check
3050 QSM DOD

3050 LOQ Spiking Solution
Base SPIKE PREPARATION 50x

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	LOQ (ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L
B	52	M11763	1000	2.6
Si	192	M12007	1000	9.6

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.

Expires: 13-May

M12455 4/8/15 JA Environmental Express 4, 10,000mg/L lot# 1418108. exp pmd. 10/16

#M12456 04/14/15 13F potassium permanganate Soln: 50g potassium permanganate (#M11285) dissolve into 1,000mL of D.I. H_2O.
Exp: 10/14/15

#M12457 04/15/15 13F SPLP Ext. Fluid Acid mixture: In to a 200 mL vol. flask, add 12g H_2SO_4 (AB.598) and 8g conc. HNO_3 (AB.596). Bring up to volume with D.I. H_2O.
Exp: 04/15/16

#M12458 04/16/15 13F SPLP Extraction Fluid West #2: Fill a 2 L carboy with D.I. H_2O and adjust pH to 5.00 ± 0.05 with #M12457) 60/40 HNO_3, H_2SO_4 mix w/v mix.
Exp: 04/16/16

#M12449 04/07/15 13F
LOQ Check
3010 QSM DOD

3010 LOQ Spiking Solution
Base SPIKE PREPARATION 50x

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	LOQ (ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L
B	16	M11763	1000	0.8
Si	200	M12007	1000	10

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.

Expires: 13-May

#M12450 04/07/15 13F
LOQ Check
3050 QSM DOD

3050 LOQ Spiking Solution
Base SPIKE PREPARATION 50x

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	LOQ (ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L
Li	14.4	M11998	1000	0.72
Sn	20	M11996	1000	1
Sr	3.2	M11999	1000	0.16
Ti	9.6	M12003	1000	0.48
W	24	M12001	1000	1.2

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.

Expires: 8-Nov

#M12451 04/07/15 13F
LOQ Check
3050 QSM DOD

3050 LOQ Spiking Solution
Base SPIKE PREPARATION 50x

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	LOQ (ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L
Ag	4	M11908	1000	0.2
Al	9.6	M12312	10000	0.048
As	32	M12315	1000	1.6
Ba	2	M11768	1000	0.1
Be	1.6	M12006	1000	0.08
Ca	56	M12310	10000	0.28
Cd	1.6	M12002	1000	0.08
Co	9.6	M1200	1000	0.48
Cr	5.6	M11767	10000	0.028
Cu	16	M11764	10000	0.08
Fe	72	M1231	10000	0.36
Mg	32	M12314	10000	0.16
Mn	6	M11829	10000	0.03
Mo	9.6	M12008	1000	0.48
Ni	4.8	M12004	1000	0.24
Pb	10	M12313	10000	0.05
Sb	32	M11909	1000	1.6
Se	16	M11911	1000	0.8
Tl	19	M11997	1000	0.95
V	3.2	M12009	1000	0.16
Zn	12	M12005	10000	0.06

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.

Expires: 13-May

#M12452 04/07/15 13F
LOQ Check
3050 QSM DOD

3050 LOQ Spiking Solution
Base SPIKE PREPARATION 50x

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	LOQ (ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L
S	240	M11679	10000	1.2

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

#M12445 04/06/15 L3F
LOQ Check
3010 GSM DoD

3010 LOQ Spiking Solution
Base SPIKE PREPARATION 50x

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	LOQ (ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L
Li	10	M11998	1000	0.5
Sn	10	M11996	1000	0.5
Sr	2	M11999	1000	0.1
Ti	8	M12003	1000	0.4
W	36	M12163	1000	1.8

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.

Expires: 8-Nov

#M12446 04/06/15 L3F
LOQ Check
3010 GSM DoD

3010 LOQ Spiking Solution
Base SPIKE PREPARATION 50x

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	LOQ (ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L
K	500	M12294	10000	2.5
Na	600	M12010	10000	3

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.

Expires: 8-Nov

List 2 MRL/ICVLL Base SPIKE PREPARATION 50x

#M12395
02/23/15 MDS

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	MRL (ug/L)	ICVLL (ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) pipet into 1	Expired Date
Li	20	60	M11998	1000	1	11/08/2015
W	100	300	M12163	1000	5	02/06/2016
Ti	10	30	M12003	1000	0.5	11/08/2015
Sr	10	30	M11999	1000	0.5	11/08/2015
Sn	20	60	M11996	1000	1	11/08/2015

0.5% HNO_3
0.5% HCl

Pipette 10 mL into a 500 mL volumetric flask to create a [redacted] working MRL std. or 1 mL into a 50 mL digestion tube for a digested MRL working standard. Pipette 30 mL into 500mL for ICVLL Working

#M12396
02/23/15 MDS

List 2 MRL

Into a 500 mL volumetric flask, pipetted 10 mL of #M12395 and brought to volume with milli-Q H20.
Exp. 11/08/2015 0.5% HNO3, 0.5% HCl

#M12397
02/23/15 MDS

List 2 ICVLL

Into a 500 mL volumetric flask, pipetted 30 mL of #M12395 and brought to volume with milli-Q H20.
Exp. 11/08/2015 0.5% HNO3, 0.5% HCl

#M12398 02/23/15 I3F NaCl Hydroxylaminosulfate Reagent: Dissolve 60g NaCl (#M11799) and 60g hydroxylemine sulfate (#M11798) in 500mL of milli-Q H_2O.
Exp: 08/23/15

#M12399 02/24/15 I3F Potassium permanganate Soln: 50g potassium permanganate (#M11785) dissolve into 1,000mL of D.I. H_2O.
Exp: 08/24/15

#M12400 2-25-15 JJ Al 10,000 mg/L CPI Lot# HK153 ex 7/2016

#M12401 JJ 2-25-15 Fe 10,000mg/L CPI Lot# HJ165 7/2016

#M12402 02/26/15 I3F Stannous Chloride (Amacrun) lot# 0000096553
02/26/15 I5F

#M12403 02/26/15 I5F Sodium Chloride (Fisher) lot# 145475
02/26/15 I5F

#M12404 03/04/15 I5F TCLP Extraction Fluid #1: Fill a 20L carboy w/19L D.I. H_2O. Add 114mL Glacial Acetic Acid (AB579) and 128.6mL of 10N NaOH (#M12297). Dilute to 20L w/D.I. H_2O and mix.
pH = 4.93 ± 0.05

#M12405 03/04/15 I5F TCLP Extraction Fluid #1: Fill a 20L Carboy w/19L D.I. H_2O 03/04/15 I5F Add 114mL Glacial Acetic Acid (AB579) and 128.6mL of 10N NaOH (#M12297). Dilute to 20L w/D.I. H_2O and mix.
pH = 4.93 ± 0.05

#M12383 02/19/15 CF TCLP Extraction Fluid #1: Fill a 20L carboy w/ 19L D.I. H2O. Add 11.4mL Glacial Acetic Acid (AB: 578) and 128.6mL of 10N NaOH (#M7492). Dilute to 20L w/ D.I. H2O and mix. pH=4.93 ± 0.05

#M12384 02/19/15 CF	Hg Working Stds: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 0.5ml of 100ug/L Hg into 100ml = 0.5ug/L Hg 1.0ml of 100ug/L Hg into 100ml = 1.0ug/L Hg 2.0ml of 100ug/L Hg into 100ml = 2.0ug/L Hg 4.0ml of 100ug/L Hg into 100ml = 4.0ug/L Hg 5.0ml of 100ug/L Hg ino 100ml =5.0ug/L Hg 10.0ml of 100ug/L Hg into 100ml = 10.0ug/L Hg
#M12385 02/19/15 CF	Hg Alt Source Working Std: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M9063) into 100ml = 10mg/L Hg 1.0ml of 10mg/L into 100ml = 100ug/L Hg
#M12386 02/19/15 CF	Hg ICV / LCSW (0.2% HNO3, HCl)	3.0ml of 100ug/L Hg (#M12385) into 100ml = 3.0ug/L Hg
#M12387 02/19/15 CF	Hg CCV (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 3.0ml of 100ug/L Hg into 100ml = 3.0ug/L Hg
#M12388 02/19/15 CF	Hg MRL: (0.2% HNO3, HCl)	0.2ml of 100ug/L Hg (#M12385) into 100ml = 0.2ug/L Hg
#M12389 02/19/15 CF	Hg Aqua Regia Reagent:	"Carefully" in hood, mix 3 parts HCl (AB: 553) with 1part HNO3 (AB: 554)
#M12390 02/19/15 CF	Stannous Chloride Reagent:	Into a 1000 mL volumetric flask, dissolve 100g Stannous Chloride (#M12299) in 70 mL HCl (AB: 553). Bring up to volume with D.I. Water.

ICAP Working Standards List 2

.5% HNO3 .5%HCL

#M12391 02/23/15 MDS

Standard name — Pipetted the following respectively:

1	0.01mL of #M12316 and 0.001mL #M12001 into 1L = 1 ug/L
10	0.10mL of #M12316 and 0.01mL #M12001 into 1L = 10 ug/L
100	1mL of #M12316 and 0.1mL #M12001 into 1L = 100 ug/L
1000	2 mL of #M12316 and 0.2 mL #M12001 into 200 mL = 1000 ug/L
10000	20mL of #M12316 and 2mL #M12001 into 200mL = 10000 ug/L

Brought up to mark with milli-Q H20 Exp. 11/08/2015

#M12392 02/23/15 MDS — Continuing Calibration Standard (CCV)

Into a 200mL volumetric flask pipetted 2mL of #M12316 and 0.2mL #M12001 = 1000 ug/L
Brought up to mark with milli-Q H20 Exp. 11/08/2015 0.5% HNO3, 0.5% HCl

#M12393 02/23/15 MDS — Initial Calibration Standard (ICV) List 2

Into a 1 liter volumetric flask pipetted 1mL of #M12003, M11999, M11996, M11998, M12163
Brought up to mark with milli-Q H20 Exp. 11/08/2015 0.5% HNO3, 0.5% HCl

#M12394 02/23/15 MDS — ICASB List 2

Into a 200 mL volumetric flask, pipetted 20 mL Interferents A #M12164, 6 mL Fe (10,000 µg/mL) #M12311, and 0.1 mL of 1000mg/L Ti, Sr, Sn, Li, and W #M12003, M11999, M11996, M11998, and M12001 respectively.
Brought up to mark with milli-Q H20 Exp. 08/30/2015 0.5% HNO3, 0.5% HCl

M12378 2-10-15 K 1000mg/L CLI Lot# 14L175 exp 7/16.

Standard Log #:	M12379	Standard:	GFAA Instrument Check
Analyst:	MDS	Final Concentration:	10 µg/L As 6 µg/L Pb 22 µg/L Tl 24 µg/L Sb, Se 0.8 µg/L Ag
Prep Date:	02/17/2015	Expiration Date:	09/18/2015

#M12379
MDS
02/17/15

Into six, 100 mL volumetric flasks, add the following and bring up to volume with milli-Q H_2O.

Element	Volume Pipetted (mL)	Standard Conc. (µg/mL)	Standard ID	New Conc. (µg/L)
As	1	1000	M12315	10,000
Pb	0.1	10,000	M12313	10,000
Tl	1	1000	M11997	10,000
Se	1	1000	M11911	10,000
Sb	1	1000	M11909	10,000
Ag	0.1	1000	M11908	1000

Into a 1 L volumetric flask, add the following and bring up to volume with Milli-Q H20. (1% HNO3)

Element	Volume Pipetted (mL)	Standard Conc. (µg/L)	Final Conc. (µg/L)
As	1	10,000	10
Pb	0.6	10,000	6
Tl	2.2	10,000	22
Se	2.4	10,000	24
Sb	2.4	10,000	24
Ag	0.8	1000	0.8

#M12380 - Custom Assurance Std - Spex Certiprep
2-17-15

#M12381 02/17/15 SF TCLP Extraction Fluid #1: Fill a 20L carboy w/19L D.I. H20. Add 114mL Glacial Acetic Acid (AB579) and 128.6mL of 10N NaOH (#M12292). Dilute to 20L w/D.I. H20 and mix. pH = 4.93 ± 0.05
Exp: 02/17/16

#M12382 02/17/15 SF TCLP Extraction Fluid #1: Fill a 20L carboy w/19L D.I. H20. Add 114mL Glacial Acetic Acid (AB579) and 128.6mL of 10N NaOH (#M12292). Dilute to 20L w/D.I. H20 and mix. pH = 4.93 ± 0.05
Exp: 02/17/16

#M12364 02/04/15 LSF	Hg Working Stds: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 0.5ml of 100ug/L Hg into 100ml = 0.5ug/L Hg 1.0ml of 100ug/L Hg into 100ml = 1.0ug/L Hg 2.0ml of 100ug/L Hg into 100ml = 2.0ug/L Hg 4.0ml of 100ug/L Hg into 100ml = 4.0ug/L Hg 5.0ml of 100ug/L Hg ino 100ml =5.0ug/L Hg 10.0ml of 100ug/L Hg into 100ml = 10.0ug/L Hg
#M12365 02/04/15 LSF	Hg Alt Source Working Std: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M9063) into 100ml = 10mg/L Hg 1.0ml of 10mg/L into 100ml = 100ug/L Hg
#M12366 02/04/15 LSF	Hg ICV / LCSW (0.2% HNO3, HCl)	3.0ml of 100ug/L Hg (#M 12365) into 100ml = 3.0ug/L Hg
#M12367 02/04/15 LSF	Hg CCV (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 3.0ml of 100ug/L Hg into 100ml = 3.0ug/L Hg
#M12368 02/04/15 LSF	Hg MRL: (0.2% HNO3, HCl)	0.2ml of 100ug/L Hg (#M12365) into 100ml = 0.2ug/L Hg
#M12369 02/04/15 LSF	Hg Aqua Regia Reagent:	"Carefully" in hood, mix 3 parts HCl (AB: 553) with 1part HNO3 (AB: 554)
#M12370 02/04/15 LSF	Stannous Chloride Reagent:	Into a 1000 mL volumetric flask, dissolve 100g Stannous Chloride (#M 11995 in 70 mL HCl (AB: 553). Bring up to volume with D.I. Water.

#M12371 2-5-15 ZA Sulfur 10,000mg/L SPC Science lot# S140717006 ex 4/16.

#M12372 02/05/15 LSF TCLP Extraction Fluid#1: Fill a 2oL carboy w/ 19L D.I. H2O. Add 114ml Glacial Acetic Acid (AB: 579) and 128.6 mL of 10N NaOH (#M12291). Dilute to 20L w/ D.I. H2O and mix. pH = 4.93 ± 0.05
Exp: 02/05/16

#M12373 02/05/15 LSF TCLP Extraction Fluid#1: Fill a 2oL carboy w/ 19L D.I. H2O. Add 114ml Glacial Acetic Acid (AB: 579) and 128.6mL of 10N NaOH (#M12291). Dilute to 20L w/ D.I. H2O and mix. pH = 4.93 ± 0.05
Exp: 02/05/16

#M12374 2/5/15 Custom Assurance Std 100ug/ml 23 Lot# 8-91WL ex 1/16

#M12375 02/10/15 LSF 10N NaOH: Into a 1L flask, add 400g NaOH (#M11852) and bring up to volume with D.I. H2O.
Exp: 08/10/15

#M12376 02/10/15 LSF Potassium permanganate soln: 50g potassium permanganate (#M11285) dissolve into 1,000 mL of D.I. H2O.
Exp: 08/10/15

#M12377 ZA 2.10.15 Na 1000mg/L CPI Lot# 142083. ex 7/16.

#M12352 01/20/15 13F Potassium permanganate soln: 50g potassium permanganate (#M11285) dissolve into 1,000mL of D.I. H2O
Exp: 07/20/15

#M12353 01-22-15 MOS · S ICAL - Into 4, 100 mL vol. Flasks, pipetted the following and brought up to volume with milli-Q H2O. exp. 01-30-16
0.01 mL S (10,000ug/mL) # M12350 = 1000ug/L S
0.1 mL S (10,000ug/mL) # M12350 = 10,000ug/L S
Used as CCV → 1.0 mL S (10,000ug/mL) # M12350 = 100,000ug/L S
10 mL S (10,000ug/mL) # M12350 = 1000K ug/L S

#M12354 01-22-15 MOS S ICV - Into a 100mL vol. flask, pipetted 1.0mL S(10,000ug/mL) #M11828 and brought to volume with milli-Q H2O. exp. 01-30-15

#M12355 01/27/15 13F	Hg Working Stds: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 0.5ml of 100ug/L Hg into 100ml = 0.5ug/L Hg 1.0ml of 100ug/L Hg into 100ml = 1.0ug/L Hg 2.0ml of 100ug/L Hg into 100ml = 2.0ug/L Hg 4.0ml of 100ug/L Hg into 100ml = 4.0ug/L Hg 5.0ml of 100ug/L Hg ino 100ml =5.0ug/L Hg 10.0ml of 100ug/L Hg into 100ml = 10.0ug/L Hg
#M12356 01/27/15 13F	Hg Alt Source Working Std: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M9063) into 100ml = 10mg/L Hg 1.0ml of 10mg/L into 100ml = 100ug/L Hg
#M12357 01/27/15 13F	Hg ICV / LCSW (0.2% HNO3, HCl)	3.0ml of 100ug/L Hg (#M12356) into 100ml = 3.0ug/L Hg
#M12358 01/27/15 13F	Hg CCV (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 3.0ml of 100ug/L Hg into 100ml = 3.0ug/L Hg
#M12359 01/27/15 13F	Hg MRL: (0.2% HNO3, HCl)	0.2ml of 100ug/L Hg (#M12356) into 100ml = 0.2ug/L Hg
#M12360 01/27/15 13F	Hg Aqua Regia Reagent:	"Carefully" in hood, mix 3 parts HCl (AB: 553) with 1part HNO3 (AB: 554)
#M12361 01/27/15 13F	Stannous Chloride Reagent:	Into a 1000 mL volumetric flask, dissolve 100g Stannous Chloride (#M11995) in 70 mL HCl (AB: 553). Bring up to volume with D.I. Water.

#M12362 01/27/15 13F NaCl Hydroxylamine Sulfate Reagent: Dissolve 60g NaCl (#M11799) and 60g hydroxylamine sulfate (#M11798) in 500mL of Milli-Q H2O.
Exp: 07/27/15

#M12363 01/30/15 13F TCLP Extraction Fluid #1: Fill a 20L carboy w/ 19L D.I. H2O. Add 114mL Glacial Acetic Acid (AB: 579) and 128.6mL of 10N NaOH (#M12792). Dilute to 20L w/ D.I. H2O and mix. pH = 4.93 ± 0.05
Exp: 01/30/16 01/30/15 13F

#M12340 1-9-15
5% HCl
5% HNO3

3050 MDL Spiking Solution
Base SPIKE PREPARATION 50x

Into a 1000 mL Volumetric Flask, pipet the following:

Analyte	MDL (ug/L)	Std ID #	Std Conc (mg/L)	Amount (mL) to pipet into 1 L
K	500	#M12294	10000	2.5
Na	500	#M12010	10000	2.5

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.

EXPIRES 11/15

#M12341 01-14-15 MMS GFAA LOD/LOQ Check Water Working Std. (Ag Only) - Into a 100mL vol. Flask, pipetted 0.1mL Ag (1000ug/mL) #M11908 and brought up to volume using milli-Q H2O. exp. 09-18-15

#M12342 01-14-15 MMS GFAA LOD/LOQ Water Spiking Solution (Ag Only) - Into a 1L vol. Flask, pipetted 10mL #M12341 and brought up to volume using milli-Q H2O. (1% HNO3) exp. 09-18-15

#M12343 01/19/15 SF Hg Working Stds: (0.2% HNO3, HCl)
1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg
1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg
0.5ml of 100ug/L Hg into 100ml = 0.5ug/L Hg
1.0ml of 100ug/L Hg into 100ml = 1.0ug/L Hg
2.0ml of 100ug/L Hg into 100ml = 2.0ug/L Hg
4.0ml of 100ug/L Hg into 100ml = 4.0ug/L Hg
5.0ml of 100ug/L Hg ino 100ml =5.0ug/L Hg
10.0ml of 100ug/L Hg into 100ml = 10.0ug/L Hg

#M12344 01/19/15 SF Hg Alt Source Working Std: (0.2% HNO3, HCl)
1.0ml of 1000mg/L Hg (#M9063) into 100ml = 10mg/L Hg
1.0ml of 10mg/L into 100ml = 100ug/L Hg

#M12345 01/19/15 SF Hg ICV / LCSW (0.2% HNO3, HCl)
3.0ml of 100ug/L Hg (#M12344) into 100ml = 3.0ug/L Hg

#M12346 01/19/15 SF Hg CCV (0.2% HNO3, HCl)
1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg
1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg
3.0ml of 100ug/L Hg into 100ml = 3.0ug/L Hg

#M12347 01/19/15 SF Hg MRL: (0.2% HNO3, HCl)
0.2ml of 100ug/L Hg (#M12344) into 100ml = 0.2ug/L Hg

#M12348 01/19/15 SF Hg Aqua Regia Reagent:
"Carefully" in hood, mix 3 parts HCl (AB: 553) with 1part HNO3 (AB: 554)

#M12349 01/19/15 SF Stannous Chloride Reagent:
Into a 1000 mL volumetric flask, dissolve 100g Stannous Chloride (#M11995) in 70 mL HCl (AB: 553). Bring up to volume with D.I. Water.

#M12350 1-19-15 Spex Certiprep S 10,000 mg/L Lot # AH15-85SY exp 1/16

#M12351 01/19/15 SF TCLP Extraction Fluid #1: Fill a 20L carboy w/ 19L D.I. H2O. Add 114mL Glacial Acetic Acid (AB. 579) and 128.6mL of 10N NaOH (#M12292). Dilute to 20L w/ D.I. H2O and mix. pH = 4.93 ± 0.05

Exp: ~~09~~ 01/19/16
01/19/15 SF

#M12310 12-9-14 10,000 mg/L Ca CPI Lot# 14K204 ex 6/16

#M12311 12-9-14 10,000 mg/L Fe CPI Lot# 14J165 ex 6/16

#M12312 12-9-14 10,000 mg/L Al CPI Lot # 14H211 ex 6/16

#M12313 12-9-14 10,000 mg/L Pb CPI Lot #140135 ex 6/16

#M12314 12-9-14 10,000 mg/L Mg CPI Lot # 14K161 ex 6/16

#M12315 12-9-14 1000 mg/L As CPI Lot # 131194 ex 6/16

#M12316 12-9-14 Custom Assurance Std CPI Ex Centriprep lot 27-185CR ex 12/15

#M12317 12-09-14 mas GFAA Se Spike (10ng/mL) - Into a 100mL vol. Flask, pipetted 1.0mL Se (1000mg/mL) #M11911 + brought to volume with DI H_2O. (3% HNO_3) Exp. 09/18/15

#M12318 12/09/14 lsf TCLP Extraction Fluid #1: Fill a 7L carboy w/ 1gL D.I. H_2O. Add 11.4mL Glacial Acetic Acid (AB5379) and 128.6mL of 10N NaOH (#M12292) Dilute to 7L with D.I. H_2O and mix. pH = 4.93 ± 0.05 Exp: 12/09/15

#M12319 12/12/14 lsf potassium permanganate Soln: 50g potassium permanganate (#M11285) dissolve into 1,000mL of D.I. H_2O. Exp: 06/12/15

#M12320 12-15-14 Custom Assurance Std Spex Centriprep Lot 27-232CR XCTWT-1-500

#M12321 12-15-14 Custom Assurance Std Spex Centriprep Lot 27-231CR XSpike-1-250

#M12322 12/15/14 lsf TCLP Extraction Fluid #1: Fill a 7L Carboy w/ 1gL D.I. H_2O. Add 11.4mL Glacial Acetic Acid (AB5379) and 128.6mL of 10N NaOH (#M12292) Dilute to 7L with D.I. H_2O and mix. pH = 4.93 ± 0.05 Exp: 12/15/15

#M12323 12-22-14 mas GFAA Pd/Mg Matrix Modifier - Into a 50mL vol. Flask, pipetted 15mL of Pd Modifier #M12158 + 10mL of Mg (10,000mg/mL) #M12113 + brought up to volume using milli-Q H_2O. (2% HNO_3) exp. 8/7/15

#M12295 11-21-14 K 1000ug/ml CPI Lot 141165 Exp 4/16

#M12296 11-21-14 Na 1000mg/L CPI Lot 141167 Exp 4/16

#M12297 11/24/14 SF Potassium permanganate Soln: 50g potassium permanganate (#M11285) dissolved Exp: 05/24/15 into 1000mL of D.I. H2O.

#M12298 11/24/14 SF Stannous Chloride (Macron) Lot# 0000082282

#M12299 11-25-14 JT ICV 1 As + Pb. Into 1 Liter Vol flask pipet 5mL #M11912, 0.5mL #M11682. Bring up to mark w/ DI H2O.

#M12300 11/25/14 SF Stannous Chloride (Macron) Lot# 0000090643

#M12301 12/02/14 SF TCLP Extraction Fluid #1: Fill a 20L carboy w/ 19L D.I. H2O. Add 114mL Glacial Acetic Acid (AB: 579) and 128.6mL of 10N NaOH (#M12292). Dilute to 20L with D.I. H2O and mix. pH = 4.93 ± 0.05. Exp: 12/02/15

#M12302 12/05/14 SF — Hg Working Stds: (0.2% HNO3, HCl)

- 1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg
- 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg
- 0.5ml of 100ug/L Hg into 100ml = 0.5ug/L Hg
- 1.0ml of 100ug/L Hg into 100ml = 1.0ug/L Hg
- 2.0ml of 100ug/L Hg into 100ml = 2.0ug/L Hg
- 4.0ml of 100ug/L Hg into 100ml = 4.0ug/L Hg
- 5.0ml of 100ug/L Hg ino 100ml =5.0ug/L Hg
- 10.0ml of 100ug/L Hg into 100ml = 10.0ug/L Hg

#M12303 12/05/14 SF — Hg Alt Source Working Std: (0.2% HNO3, HCl)

- 1.0ml of 1000mg/L Hg (#M9063) into 100ml = 10mg/L Hg
- 1.0ml of 10mg/L into 100ml = 100ug/L Hg

#M12304 12/05/14 SF — Hg ICV / LCSW (0.2% HNO3, HCl)

- 3.0ml of 100ug/L Hg (#M12303) into 100ml = 3.0ug/L Hg

#M12305 12/05/14 SF — Hg CCV (0.2% HNO3, HCl)

- 1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg
- 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg
- 3.0ml of 100ug/L Hg into 100ml = 3.0ug/L Hg

#M12306 12/05/14 SF — Hg MRL: (0.2% HNO3, HCl)

- 0.2ml of 100ug/L Hg (#M12303) into 100ml = 0.2ug/L Hg

#M12307 12/05/14 SF — Hg Aqua Regia Reagent: "Carefully" in hood, mix 3 parts HCl (AB: 553) with 1part HNO3 (AB: 554)

#M12308 12/05/14 SF — Stannous Chloride Reagent: Into a 1000 mL volumetric flask, dissolve 100g Stannous Chloride (#M11995) in 70 mL HCl (AB: 553). Bring up to volume with D.I. Water.

#M12309 12/09/14 SF NaCl Hydroxylamine Sulfate Reagent: Dissolve 60g NaCl (#M11799) and 60g hydroxylamine sulfate (#M11798) in 500mL of milli-a H2O. Exp: 06/09/15

#M12282
11-13-14 MMS

ICASB List 2

Into a 200 mL volumetric flask, pipetted 20 mL Interferents A #M12082 and 0.1 mL of 1000mg/L Ti, Sr, Sn, Li, and W #M12003, M11999, M11996, M11998, and M12001 respectively. Brought up to mark with milli-Q H20 Exp. 06/30/2015

#M12283 Yttrium 10,000 ug/mL Environmental Express Lot#1418108
11-14-14

#M12284 11/14/14 ISF	Hg Working Stds: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 0.5ml of 100ug/L Hg into 100ml = 0.5ug/L Hg 1.0ml of 100ug/L Hg into 100ml = 1.0ug/L Hg 2.0ml of 100ug/L Hg into 100ml = 2.0ug/L Hg 4.0ml of 100ug/L Hg into 100ml = 4.0ug/L Hg 5.0ml of 100ug/L Hg ino 100ml =5.0ug/L Hg 10.0ml of 100ug/L Hg into 100ml = 10.0ug/L Hg
#M12285 11/14/14 ISF	Hg Alt Source Working Std: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M9063) into 100ml = 10mg/L Hg 1.0ml of 10mg/L into 100ml = 100ug/L Hg
#M12286 11/14/14 ISF	Hg ICV / LCSW (0.2% HNO3, HCl)	3.0ml of 100ug/L Hg (#M 12285) into 100ml = 3.0ug/L Hg
#M12287 11/14/14 ISF	Hg CCV (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 3.0ml of 100ug/L Hg into 100ml = 3.0ug/L Hg
#M12288 11/14/14 ISF	Hg MRL: (0.2% HNO3, HCl)	0.2ml of 100ug/L Hg (#M 12285) into 100ml = 0.2ug/L Hg
#M12289 11/14/14 ISF	Hg Aqua Regia Reagent:	"Carefully" in hood, mix 3 parts HCl (AB: 553) with 1part HNO3 (AB: 554)
#M12290 11/14/14 ISF	Stannous Chloride Reagent:	Into a 1000 mL volumetric flask, dissolve 100g Stannous Chloride (#M11995) in 70 mL HCl (AB: 553). Bring up to volume with D.I. Water.

#M12291 11/15/14 ISF NaCl Hydroxylamine Sulfate Reagent: Dissolve 60g NaCl (#M11799) and 60g hydroxylamine sulfate (#M11782) in 500ml of milli-Q H2O.
Exp: 05/15/15

#M12292 11/20/14 ISF 10N NaOH: Into a 1L flask, add 400g NaOH (#M11145) and bring up to volume with D.I. H2O.
Exp: 05/20/15

#M12293 11/20/14 ISF TCLP Extraction Fluid #1: Fill a 20L carboy w/19L D.I. H2O. Add 114ml Glacial Acetic Acid (AB: 579) and 128.6ml of 10N NaOH (#M12292). Dilute to 20L with D.I. H2O and mix. pH = 4.93 ± 0.05
Exp: 11/20/15

#M12294 11-21-14 K 10,000 ug/mL CPI Lot 146213 ex 4/29/16

11/04/14 15F

#M12271 TCLP Extraction Fluid #1: Fill a 20L carboy w/ 19L D.I. H2O. Add 114mL Glacial Acetic Acid (AB: 579) and 128.6mL 10N NaOH (#M11955). Dilute to 20L with D.I. H2O and mix. pH = 4.93 ± 0.05

Exp: 05/11/04/14
11/04/14 15F

#M12272 11/05/14 15F	Hg Working Stds: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 0.5ml of 100ug/L Hg into 100ml = 0.5ug/L Hg 1.0ml of 100ug/L Hg into 100ml = 1.0ug/L Hg 2.0ml of 100ug/L Hg into 100ml = 2.0ug/L Hg 4.0ml of 100ug/L Hg into 100ml = 4.0ug/L Hg 5.0ml of 100ug/L Hg ino 100ml =5.0ug/L Hg 10.0ml of 100ug/L Hg into 100ml = 10.0ug/L Hg
#M12273 11/05/14 15F	Hg Alt Source Working Std: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M9063) into 100ml = 10mg/L Hg 1.0ml of 10mg/L into 100ml = 100ug/L Hg
#M12274 11/05/14 15F	Hg ICV / LCSW (0.2% HNO3, HCl)	3.0ml of 100ug/L Hg (#M12273) into 100ml = 3.0ug/L Hg
#M12275 11/05/14 15F	Hg CCV (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 3.0ml of 100ug/L Hg into 100ml = 3.0ug/L Hg
#M12276 11/05/14 15F	Hg MRL: (0.2% HNO3, HCl)	0.2ml of 100ug/L Hg (#M12273) into 100ml = 0.2ug/L Hg
#M12277 11/05/14 15F	Hg Aqua Regia Reagent:	"Carefully" in hood, mix 3 parts HCl (AB: 553) with 1part HNO3 (AB: 554)
#M12276 11/05/14 15F	Stannous Chloride Reagent:	Into a 1000mL volumetric flask, dissolve 100g Stannous Chloride (#M11985) in 70 mL HCl (AB: 553). Bring up to volume with D.I. Water.

#M12277 11/07/14 15F Potassium permanganate (Fisher) Lot# 138790A

#M12278 11/13/14 15F potassium permanganate soln: 50g potassium permanganate (#M11285) dissolve into 1000mL of D.I. H2O.
Exp: 05/13/15

ICAP Working Standards List 2

#M12279
11-13-14 MMS

.5% HNO3 .5%HCL

Standard name	Pipetted the following respectively:
1	0.01mL of #M12165 and 0.001mL #M12001 into 1L = 1 ug/L
10	0.10mL of #M12165 and 0.01mL #M12001 into 1L = 10 ug/L
100	1mL of #M12165 and 0.1mL #M12001 into 1L = 100 ug/L
1000	2mL of #M12165 and 0.2mL #M12001 into 200mL = 1000 ug/L
10000	20mL of #M12165 and 2mL #M12001 into 200mL = 10000 ug/L

Brought up to mark with milli-Q H20 Exp. 08/30/2015

#M12280
11-13-14 MMS

Continuing Calibration Standard (CCV)

Into a 200mL volumetric flask pipetted 2mL of #M12165 and 0.2mL #M12001 = 1000 ug/L
Brought up to mark with milli-Q H20 Exp. 08/30/2015

#M12281
11-13-14 MMS

Initial Calibration Standard (ICV) List 2

Into a 1 liter volumetric flask pipetted 1mL of #M12003, M11999, M11996, M11998 and M12163
Brought up to mark with milli-Q H20 Exp. 11/08/2015

#M122258 10/22/14 SF potassium permanganate soln: 50g potassium permanganate (#M11285) dissolve into 1,000ml of D.I. H2O.
Exp: 04/22/15

#M122259 10/27/14 SF Stannous Chloride (Macron) lot#0000087461

M122260 10/28/14 ICV/LCS boron and silicon

Into a one liter volmetric flask pipet 10ml of #M12165 and 1.0 ml #M11919

Bring up to mark with DI H2O

#M122261 10/28/14 SF	Hg Working Stds: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 0.5ml of 100ug/L Hg into 100ml = 0.5ug/L Hg 1.0ml of 100ug/L Hg into 100ml = 1.0ug/L Hg 2.0ml of 100ug/L Hg into 100ml = 2.0ug/L Hg 4.0ml of 100ug/L Hg into 100ml = 4.0ug/L Hg 5.0ml of 100ug/L Hg ino 100ml =5.0ug/L Hg 10.0ml of 100ug/L Hg into 100ml = 10.0ug/L Hg
#M122262 10/28/14 SF	Hg Alt Source Working Std: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M9063) into 100ml = 10mg/L Hg 1.0ml of 10mg/L into 100ml = 100ug/L Hg
#M122263 10/28/14 SF	Hg ICV / LCSW (0.2% HNO3, HCl)	3.0ml of 100ug/L Hg (#M122262) into 100ml = 3.0ug/L Hg
#M122264 10/28/14 SF	Hg CCV (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 3.0ml of 100ug/L Hg into 100ml = 3.0ug/L Hg
#M122265 10/28/14 SF	Hg MRL: (0.2% HNO3, HCl)	0.2ml of 100ug/L Hg (#M122262) into 100ml = 0.2ug/L Hg
#M122266 10/28/14 SF	Hg Aqua Regia Reagent:	"Carefully" in hood, mix 3 parts HCl (AB: 553) with 1part HNO3 (AB: 554)
#M122267 10/28/14 SF	Stannous Chloride Reagent:	Into a 1000 mL volumetric flask, dissolve 100g Stannous Chloride (#M11795) in 70 mL HCl (AB: 553). Bring up to volume with D.I. Water.

#M122268 10/29/14 SF potassium permanganate soln: 50g potassium permanganate (#M11285) dissolve into 1,000ml of D.I. H2O.
Exp: 04/29/15

#M122269 10/29/14 SF NaCl Hydroxylamine sulfate Reagent: Dissolve 60g NaCl (#M11799) and 60g hydroxylamine sulfate (#M11798) in 500ml of milli-Q H2O.
Exp: 04/29/14

#M122270 11/04/14 SF Sodium Chloride (Fisher) lot#142463

#M12210 10/02/14/SF TCLP Extraction Fluid #1: Fill 10/02/14/SF into a 20L carboy w/ 19L D.I. H_2O. Add 114mL Glacial Acetic Acid (#M10/09/14/SF AB: 599) and 128.6mL 10 N NaOH (#M11955). Dilute to 20L with D.I. H_2O and mix pH = 4.93 ± 0.05
Exp: 10/02/15

#M12211 10/6/14 JH Custom Assurance Std Spex CertiPrep Lot # 26-201CR. exp 9/15

#M12212 10/6/14 JH Potassium 10,000 CPI Lot# 146213 exp 3/16

#M12213 10/6/14 JH Arsenic 10,000 CPI Lot# 132089 exp 3/16

#M12214 10/06/14/SF	Hg Working Stds: (0.2% HNO_3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 0.5ml of 100ug/L Hg into 100ml = 0.5ug/L Hg 1.0ml of 100ug/L Hg into 100ml = 1.0ug/L Hg 2.0ml of 100ug/L Hg into 100ml = 2.0ug/L Hg 4.0ml of 100ug/L Hg into 100ml = 4.0ug/L Hg 5.0ml of 100ug/L Hg ino 100ml =5.0ug/L Hg 10.0ml of 100ug/L Hg into 100ml = 10.0ug/L Hg
#M12215 10/06/14/SF	Hg Alt Source Working Std: (0.2% HNO_3, HCl)	1.0ml of 1000mg/L Hg (#M9063) into 100ml = 10mg/L Hg 1.0ml of 10mg/L into 100ml = 100ug/L Hg
#M12216 10/06/14/SF	Hg ICV / LCSW (0.2% HNO_3, HCl)	3.0ml of 100ug/L Hg (#M 12215) into 100ml = 3.0ug/L Hg
#M12217 10/06/14/SF	Hg CCV (0.2% HNO_3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 3.0ml of 100ug/L Hg into 100ml = 3.0ug/L Hg
#M12218 10/06/14/SF	Hg MRL: (0.2% HNO_3, HCl)	0.2ml of 100ug/L Hg (#M 12215) into 100ml = 0.2ug/L Hg
#M12219 10/06/14/SF	Hg Aqua Regia Reagent:	"Carefully" in hood, mix 3 parts HCl (AB: 553) with 1part HNO_3 (AB: 554)
#M12220 10/06/14/SF	Stannous Chloride Reagent:	Into a 1000 mL volumetric flask, dissolve 100g Stannous Chloride (#M 11975) in 70 mL HCl (AB: 553). Bring up to volume with D.I. Water.

#M12221 10/06/14/SF Potassium Permanganate Soln: 50g Potassium permanganate (#M11285) dissolve into 1000mL of D.I. H_2O.
Exp: 04/06/15

#M12222 10/06/14 MOS GFAA LOD/LOQ check Water Working Std (Ag Only) - Into a 100mL vol. Flask, pipetted 0.1mL Ag (1000ug/mL) #M11908 and brought up to volume using milli-Q H_2O. (1% HNO_3) exp. 09/18/15

#M12223 10/06/14 MOS GFAA LOD/LOQ Water Spiking Soln (Ag Only) - Into a 1L vol. Flask, pipetted 10mL #M12222 and brought up to volume using milli-Q H_2O. (1% HNO_3) exp. 09/18/15

~~#M12149 08/28/14 I3F Stannous chloride lot#~~ 08/28/14 I3F

#M12179 9-4-15 Hg 1000 ug/mL CPI lot# 14F110.

#M12180 09/04/14 I4F	Hg Working Stds: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 0.5ml of 100ug/L Hg into 100ml = 0.5ug/L Hg 1.0ml of 100ug/L Hg into 100ml = 1.0ug/L Hg 2.0ml of 100ug/L Hg into 100ml = 2.0ug/L Hg 4.0ml of 100ug/L Hg into 100ml = 4.0ug/L Hg 5.0ml of 100ug/L Hg ino 100ml =5.0ug/L Hg 10.0ml of 100ug/L Hg into 100ml = 10.0ug/L Hg
#M12181 09/04/14 I3F	Hg Alt Source Working Std: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M9063) into 100ml = 10mg/L Hg 1.0ml of 10mg/L into 100ml = 100ug/L Hg
#M12182 09/04/14 I3F	Hg ICV / LCSW (0.2% HNO3, HCl)	3.0ml of 100ug/L Hg (#M12181) into 100ml = 3.0ug/L Hg
#M12183 09/04/14 I3F	Hg CCV (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 3.0ml of 100ug/L Hg into 100ml = 3.0ug/L Hg
#M12184 09/04/14 I5F	Hg MRL: (0.2% HNO3, HCl)	0.2ml of 100ug/L Hg (#M12181) into 100ml = 0.2ug/L Hg
#M12185 09/04/14 I5F	Hg Aqua Regia Reagent:	"Carefully" in hood, mix 3 parts HCl (AB: 553) with 1part HNO3 (AB: 554)
#M12186 09/04/14 I3F	Stannous Chloride Reagent:	Into a 1000 mL volumetric flask, dissolve 100g Stannous Chloride (#M11995) in 70 mL HCl (AB: 553). Bring up to volume with D.I. Water.

#M12185 09/05/14 I5F TCLP Extraction Fluid #1: Fill a 20L carboy w/19L DI H_2O. Add 114ml Glacial Acetic Acid (AB:579) and 128.6ml 10N NaOH (#M11955). Dilute to 20L with DI H_2O and mix. pH = 4.93 ± 0.05

Exp: 09/05/15

#M12186 9-9-14 StablCal Standard 200 ntu turbidity Hach lot #A4216 exp 8/16

#M12187 9-9-14 Turbidity Working Stds → into 3 Hach Vials =>

~~pipet 1, 5 # 9-9-14~~

~~1mls → 9mls DH # 9-9-14~~

1 ml #M12186 → 9mls DI H_2O = 20 ntu

5 mls M12186 → 5 mls DI H_2O = 100 ntu

10 Ø #9-9-14 mls M12186 → 0 ml DI H_2O = 200 ntu

#M12157 TMOS
08-06-14

ICAP Working Standards Boron & Silicon

Standard name	Into a 1L volumetric flask, pipetted the following respectively:
50	0.05mL of #M11763 and 0.05mL #M12007 = 50 ug/L
200	0.2mL of #M11763 and 0.2mL #M12007 = 100 ug/L
1000	1.0mL of #M11763 and 1.0mL #M12007 = 1000 ug/L
2000	2.0mL of #M11763 and 2.0mL #M12007 = 1000 ug/L
10000	10.0mL of #M11763 and 10.0mL #M12007 = 10000 ug/L

Expires: 05/13/2015

Continuing Calibration Standard (CCV)
Into a 1L volumetric flask, pipetted 1.0mL of #M11763 and 1.0mL #M12007 = 1000 ug/L
Brought up to volume with DI H20. Expires 05/13/2015

#M12158 TMOS 08/11/14: 1% Pd GFAA matrix modifier. Environmental Express Lot# 1421912
Expires: 08/07/15

#M12159 TMOS 08/11/14: 1% Nickel Nitrate GFAA matrix Modifier. Alfa Aesar Lot# 41-55398TD

#M12160 08/12/14 CSF Triscolyt (Mettler Toledo) lot# 17134C

#M12161 08/12/14 CSF TCLP Extraction Fluid #1: ~~In to~~ a 2oz Carboy w/ 1.92 D.I. H2O. Add 1.14mL Glacial Acetic Acid (AB-579) and 28.6mL 1.0N NaOH (#M11955). Dilute to 2oz with D.I. H2O and mix pH = 4.93 ± 0.05
Exp: 08/12/15

#M12162 8-13-14 Potassium 1000 mg/L CPI lot#14F193 ex 2/16.

#M12163 8-13-14 Tungsten std. CPI Lot# 14F230 ex 2/16

#M12164 8-13-14 Interference A Spex Certiprep Lot# 11-384PX ex 8/15

#M12165 8-13-14 Custom Assurance Std Spex Certiprep Lot# 7-93WL ex 8/15

#M12134 MOS
07-21-14

Working Standards for Sodium and Potassium - Into seven, 200 mL volumetric flasks, pipetted the following from #M11719 and #M11722 and brought up to volume using milli-Q H_2O. (2% HNO_3)

0.5 mg/L std - 0.1 mL of each
1.0 mg/L std - 0.2 mL of each
5.0 mg/L std - 1.0 mL of each
10.0 mg/L std - 2.0 mL of each
50.0 mg/L std -10 mL of each
100 mg/L std - 20 mL of each, used for Continuing Calibration Standard (CCV)
200 mg/L std - 40 mL of each
Expires: 04/24/15

#M12135 MOS
07-21-14

Initial Calibration Standard (ICV) - Into a 250 mL volumetric flask, pipetted 2.5 mL of #M12010 and #M12011 and brought up to volume using milli-Q H_2O. (2% HNO_3)
Expires: 11/08/2015

#M12136 MOS
07-21-14

ICAP 6000 ICSAB Standard for Sodium and Potassium – Into a 250 mL volumetric flask, pipetted 25 mL of #M11776 and 2.5 mL of each #M12010 & #M12011 and brought to volume using milli-Q H_2O. (2% HNO_3) 7.5mL of #M11915
Expires: 12/30/14

#M12137 MOS
07-22-14

TCLP Extraction Fluid #1 – Into a 20L carboy, added 114mL Glacial Acetic acid #AB586 + 128.6mL 10N NaOH #M12086 + brought to volume w/ D.I H_2O. Mix. pH = 4.93 ± 0.05

#M12138 07/30/14 SF	Hg Working Stds: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 0.5ml of 100ug/L Hg into 100ml = 0.5ug/L Hg 1.0ml of 100ug/L Hg into 100ml = 1.0ug/L Hg 2.0ml of 100ug/L Hg into 100ml = 2.0ug/L Hg 4.0ml of 100ug/L Hg into 100ml = 4.0ug/L Hg 5.0ml of 100ug/L Hg ino 100ml =5.0ug/L Hg 10.0ml of 100ug/L Hg into 100ml = 10.0ug/L Hg
#M12139 07/30/14 SF	Hg Alt Source Working Std: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M9063) into 100ml = 10mg/L Hg 1.0ml of 10mg/L into 100ml = 100ug/L Hg
#M12140 07/30/14 SF	Hg ICV / LCSW (0.2% HNO3, HCl)	3.0ml of 100ug/L Hg (#M12139) into 100ml = 3.0ug/L Hg
#M12141 07/30/14 SF	Hg CCV (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 3.0ml of 100ug/L Hg into 100ml = 3.0ug/L Hg

#M12105 07/08/14/SF	Hg Working Stds: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 0.5ml of 100ug/L Hg into 100ml = 0.5ug/L Hg 1.0ml of 100ug/L Hg into 100ml = 1.0ug/L Hg 2.0ml of 100ug/L Hg into 100ml = 2.0ug/L Hg 4.0ml of 100ug/L Hg into 100ml = 4.0ug/L Hg 5.0ml of 100ug/L Hg ino 100ml =5.0ug/L Hg 10.0ml of 100ug/L Hg into 100ml = 10.0ug/L Hg
#M12106 07/08/14/SF	Hg Alt Source Working Std: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M9063) into 100ml = 10mg/L Hg 1.0ml of 10mg/L into 100ml = 100ug/L Hg
#M12107 07/08/14/SF	Hg ICV / LCSW (0.2% HNO3, HCl)	3.0ml of 100ug/L Hg (#M12106) into 100ml = 3.0ug/L Hg
#M12108 07/08/14/SF	Hg CCV (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 3.0ml of 100ug/L Hg into 100ml = 3.0ug/L Hg
#M12109 07/08/14/SF	Hg MRL: (0.2% HNO3, HCl)	0.2ml of 100ug/L Hg (#M12106) into 100ml = 0.2ug/L Hg
#M12110 07/08/14/SF	Hg Aqua Regia Reagent:	"Carefully" in hood, mix 3 parts HCl (AB: 553) with 1part HNO3 (AB: 554)
#M12111 07/08/14/SF	Stannous Chloride Reagent:	Into a 1000 mL volumetric flask, dissolve 100g Stannous Chloride (#M1995) in 70 mL HCl (AB: 553). Bring up to volume with D.I. Water.

#M12112 7-10-14 Ca 10,000 mg/L CPI Lot # 14D176 exp 1/16
D

#M12113 7-10-14 Mg 10,000 mg/L CPI Lot # 14F190 exp 1/16

#M12114 07/11/14/SF	Hg Working Stds: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 0.5ml of 100ug/L Hg into 100ml = 0.5ug/L Hg 1.0ml of 100ug/L Hg into 100ml = 1.0ug/L Hg 2.0ml of 100ug/L Hg into 100ml = 2.0ug/L Hg 4.0ml of 100ug/L Hg into 100ml = 4.0ug/L Hg 5.0ml of 100ug/L Hg ino 100ml =5.0ug/L Hg 10.0ml of 100ug/L Hg into 100ml = 10.0ug/L Hg
#M12115 07/11/14/SF	Hg Alt Source Working Std: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M9063) into 100ml = 10mg/L Hg 1.0ml of 10mg/L into 100ml = 100ug/L Hg
#M12116 07/11/14/SF	Hg ICV / LCSW (0.2% HNO3, HCl)	3.0ml of 100ug/L Hg (#M12115) into 100ml = 3.0ug/L Hg
#M12117 07/11/14/SF	Hg CCV (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 3.0ml of 100ug/L Hg into 100ml = 3.0ug/L Hg
#M12118 07/11/14/SF	Hg MRL: (0.2% HNO3, HCl)	0.2ml of 100ug/L Hg (#M12115) into 100ml = 0.2ug/L Hg
#M12119 07/11/14/SF	Hg Aqua Regia Reagent:	"Carefully" in hood, mix 3 parts HCl (AB: 553) with 1part HNO3 (AB: 554)
#M12120 07/11/14/SF	Stannous Chloride Reagent:	Into a 1000 mL volumetric flask, dissolve 100g Stannous Chloride (#M1995) in 70 mL HCl (AB: 553). Bring up to volume with D.I. Water.

#M12079 06/18/14 CSF NaCl Hydroxylamine sulfate Reagent: Dissolve 60g NaCl (#M11799) and 60g hydroxylamine sulfate (#M11998) in 500mL of milli-Q H2O
Exp: 12/18/14

ICAP Working Standards W Only

.5% HNO3 .5%HCL

#M12080 06/19/14 MDS

Standard name	Pipetted the following respectively:
100	0.1mL #M12001 into 1L = 100 ug/L
1000 M12080	1mL #M12001 into 1L = 1000 ug/L
10000	10mL #M12001 into 1L = 10000 ug/L
	Bring up to mark with milli-Q H2O Exp. 11/08/15

Continuing Calibration Standard (CCV) M12080
Into a 1L volumetric flask pipetted 1mL #M12001 = 1000 ug/L
Bring up to mark with milli-Q H2O Exp. 11/08/15

#M12081 06/19/14 MDS

Initial Calibration Standard (ICV) W Only M12081
Into a 1 liter volumetric flask pipetted 1mL of #M11365
Bring up to mark with milli-Q H20 Exp. ~~04/23/15~~ 04/20/14
MDS 06/19/14

#M12082 6-23-14 ZA Spex Certiprep INT-A Lot # 11-38YPX exp 6/15,

#M12083 ZB 6-23-14 Spex Certprep Cust. Assurance std T Hardness + Na exp 6/15.

#M12084 ZA 6-23-14 TCLP Extraction fluid into 20 liter carboy, Add 114ml Glacial acetic Acid (AB-558) + 128.6 mls 10N NaOH #M11955 Dilute up to 20L with DI H2O & mix pH=4.93±.05

#M12085 ZA 6-23-14 TCLP Extraction fluid into 20 Liter carboy add 114ml Glacial acetic Acid (AB-558), + 128.6 mls 10N NaOH #M11955 Dilute up to 20L with DI H2O & Mix ph=4.93±.05

#M12086 ZA 6-23-14 10N NaOH into 1 Liter vol dissolve 400g Sodium Hydroxide #M11145. Bring up to mark w/DI H2O exp 6-23-15.

#M12087 CSF 06/25/14 Potassium permanganate Soln: 50g potassium permanganate (#M11785) dissolve into 1,000mL of D.I. H2O.
Exp: 12/25/14

#M12002 05/13/14 LSF Cadmium 1,000mg/L CPI Lot#14A402 Exp: 11/08/15

#M12003 05/13/14 LSF Titanium 1,000mg/L CPI Lot#13H001 Exp: 11/08/15

#M12004 05/13/14 LSF Nickel 1,000mg/L CPI Lot#14D214 Exp: 11/08/15

#M12005 05/13/14 LSF Zinc ~~1,000~~ 10,000 05/13/14 LSF mg/L CPI Lot#14A199 Exp: 11/08/15

#M12006 05/13/14 LSF Beryllium 1,000mg/L CPI Lot#14D241 Exp: 11/08/15

#M12007 05/13/14 LSF Silicon 1,000mg/L CPI Lot#132019 Exp: 11/08/15

#M12008 05/13/14 LSF Molybdenum 1,000mg/L CPI Lot#148183 Exp: 11/08/15

#M12009 05/13/14 LSF Vanadium 1,000mg/L CPI Lot#14A107 Exp: 11/08/15

#M12010 05/13/14 LSF Sodium 10,000mg/L CPI Lot#148243 Exp: 11/08/15

#M12011 05/13/14 LSF Potassium 10,000mg/L CPI Lot#14C131 Exp: 11/08/15

#M12012 05/14/14 LSF Potassium permanganate soln: 50g potassium permanganate (#M11785) dissolve into 1,000mL of D.I. H_2O.
Exp: 11/14/14

#M12013 05/14/14 LSF	Hg Working Stds: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 0.5ml of 100ug/L Hg into 100ml = 0.5ug/L Hg 1.0ml of 100ug/L Hg into 100ml = 1.0ug/L Hg 2.0ml of 100ug/L Hg into 100ml = 2.0ug/L Hg 4.0ml of 100ug/L Hg into 100ml = 4.0ug/L Hg 5.0ml of 100ug/L Hg ino 100ml =5.0ug/L Hg 10.0ml of 100ug/L Hg into 100ml = 10.0ug/L Hg
#M12014 05/14/14 LSF	Hg Alt Source Working Std: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M9063) into 100ml = 10mg/L Hg 1.0ml of 10mg/L into 100ml = 100ug/L Hg
#M12015 05/14/14 LSF	Hg ICV / LCSW (0.2% HNO3, HCl)	3.0ml of 100ug/L Hg (#M12014) into 100ml = 3.0ug/L Hg
#M12016 05/14/14 LSF	Hg CCV (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 3.0ml of 100ug/L Hg into 100ml = 3.0ug/L Hg
#M12017 05/14/14 LSF	Hg MRL: (0.2% HNO3, HCl)	0.2ml of 100ug/L Hg (#M12014) into 100ml = 0.2ug/L Hg
#M12018 05/14/14 LSF	Hg Aqua Regia Reagent:	"Carefully" in hood, mix 3 parts HCl (AB: 553) with 1part HNO3 (AB: 554)
#M12019 05/14/14 LSF	Stannous Chloride Reagent:	Into a 1000 mL volumetric flask, dissolve 100g Stannous Chloride (#M11779) in 70 mL HCl (AB: 553). Bring up to volume with D.I. Water.

#M 11986 05/08/14 SF NaCl Hydroxylamine Sulfate Reagent: Dissolve into 1 Liter NaCl (#M11799) and 1 Liter Hydroxylamine Sulfate (#M11998) in 500ml Milli-Q H2O.

Exp: 11/08/14

#M11987 05/09/14 SF	Hg Working Stds: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 0.5ml of 100ug/L Hg into 100ml = 0.5ug/L Hg 1.0ml of 100ug/L Hg into 100ml = 1.0ug/L Hg 2.0ml of 100ug/L Hg into 100ml = 2.0ug/L Hg 4.0ml of 100ug/L Hg into 100ml = 4.0ug/L Hg 5.0ml of 100ug/L Hg ino 100ml =5.0ug/L Hg 10.0ml of 100ug/L Hg into 100ml = 10.0ug/L Hg
#M11988 05/09/14 SF	Hg Alt Source Working Std: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M9063) into 100ml = 10mg/L Hg 1.0ml of 10mg/L into 100ml = 100ug/L Hg
#M11989 05/09/14 SF	Hg ICV / LCSW (0.2% HNO3, HCl)	3.0ml of 100ug/L Hg (#M 11988) into 100ml = 3.0ug/L Hg
#M11990 05/09/14 SF	Hg CCV (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 3.0ml of 100ug/L Hg into 100ml = 3.0ug/L Hg
#M11991 05/09/14 SF	Hg MRL: (0.2% HNO3, HCl)	0.2ml of 100ug/L Hg (#M 11988) into 100ml = 0.2ug/L Hg
#M11992 05/09/14 SF	Hg Aqua Regia Reagent:	"Carefully" in hood, mix 3 parts HCl (AB: 553) with 1part HNO3 (AB: 554)
#M11993 05/09/14 SF	Stannous Chloride Reagent:	Into a 1000 mL volumetric flask, dissolve 100g Stannous Chloride (#M11749 in 70 mL HCl (AB: 553). Bring up to volume with D.I. Water.

#M11994 05/12/14 SF TCLP Extraction Fluid #1: Fill a 20L carboy w/ 19.2 D.I. H2O. Add 114ml Glacial Acetic Acid (AB.579) and 128.6mL 10 N NaOH (#M11955), Dilute to 20L with D.I. H2O and mix. pH = 4.93 ± 0.05 05/11/14 SF

Exp: 05/12/15

#M11995 05/13/14 SF Stannous Chloride (Macron) lot #0000076357 Exp: 02/14/15

#M11996 05/13/14 SF Tin 1,000 mg/L CPI lot # 13H238 Exp: 11/08/15

#M11997 05/13/14 SF Thallium 1,000mg/L CPI lot # 13I105 Exp: 11/08/15

#M11998 05/13/14 SF Lithium 1,000 mg/L CPI lot # 14E049 Exp: 11/08/15

#M11999 05/13/14 SF Strontium 1,000mg/L CPI lot # 14C002 Exp: 11/08/15

#M12000 05/13/14 SF Cobalt 1,000mg/L CPI lot # 14D005 Exp: 11/08/15

#M12001 05/13/14 SF Tungsten 1,000mg/L CPI lot # 13H199 Exp: 11/08/15

#M11917 4-1-14 $ ICV(###) ent 100 ml vol flask pipet M11679 from 10mls = 100,000 =100,000ug/L $ exp 5/15

#M11918 04/02/14/SF Potassium permanganate soln: 50g potassium permanganate (#M11285) dissolve into 1,000ml of D.I. H2O. EXP: 10/02/14 04/02/14/SF

M11919 4-2-14 Si 1000 mg/L Std Fisher Lot # 141902 exp 3/16

M11920 4-2-14 AMCO Clear turbidity std 20 nta exp Lot# C4674160 ex 3/15.

#M11921 04/03/14/SF Potassium persulfate: 50g potassium persulfate (#M10987) dissolve into 1000 ml of D.I. H2O. EXP: 10/03/14 04/03/14/SF

#M11922 04/04/14/SF	Hg Working Stds: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 0.5ml of 100ug/L Hg into 100ml = 0.5ug/L Hg 1.0ml of 100ug/L Hg into 100ml = 1.0ug/L Hg 2.0ml of 100ug/L Hg into 100ml = 2.0ug/L Hg 4.0ml of 100ug/L Hg into 100ml = 4.0ug/L Hg 5.0ml of 100ug/L Hg ino 100ml =5.0ug/L Hg 10.0ml of 100ug/L Hg into 100ml = 10.0ug/L Hg
#M11923 04/04/14/SF	Hg Alt Source Working Std: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M9063) into 100ml = 10mg/L Hg 1.0ml of 10mg/L into 100ml = 100ug/L Hg
#M11924 04/04/14/SF	Hg ICV / LCSW (0.2% HNO3, HCl)	3.0ml of 100ug/L Hg (#M11923) into 100ml = 3.0ug/L Hg
#M11925 04/04/14/SF	Hg CCV (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 3.0ml of 100ug/L Hg into 100ml = 3.0ug/L Hg
#M11926 04/04/14/SF	Hg MRL: (0.2% HNO3, HCl)	0.2ml of 100ug/L Hg (#M 11923) into 100ml = 0.2ug/L Hg
#M11927 04/04/14/SF	Hg Aqua Regia Reagent:	"Carefully" in hood, mix 3 parts HCl (AB: 553) with 1part HNO3 (AB: 554)
#M11928 04/04/14/SF	Stannous Chloride Reagent:	Into a 1000 mL volumetric flask, dissolve 100g Stannous Chloride (#M11790) in 70 mL HCl (AB: 553). Bring up to volume with D.I. Water.

#M11929 04/10/14/SF NaCl Hydroxylamine Sulfate Reagent: Dissolve into 600g NaCl (#M11799) and 60g hydroxylamine Sulfate (#M11798) in 500mL Milli-Q Exp: 10/10/14

#M11930 04/11/14/SF 04/11/14/SF	Hg Working Stds: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M10563) into 100ml=10mg/L Hg 1.0ml of 10mg/L Hg into 100ml = 100ug/L Hg 0.5ml of 100ug/L Hg into 100ml = 0.5ug/L Hg 1.0ml of 100ug/L Hg into 100ml = 1.0ug/L Hg 2.0ml of 100ug/L Hg into 100ml = 2.0ug/L Hg 4.0ml of 100ug/L Hg into 100ml = 4.0ug/L Hg 5.0ml of 100ug/L Hg ino 100ml =5.0ug/L Hg 10.0ml of 100ug/L Hg into 100ml = 10.0ug/L Hg
#M11931 04/11/14/SF	Hg Alt Source Working Std: (0.2% HNO3, HCl)	1.0ml of 1000mg/L Hg (#M9063) into 100ml = 10mg/L Hg 1.0ml of 10mg/L into 100ml = 100ug/L Hg

INORGANIC
CLP FORMS
DOCUMENTS

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Sample Description

RFAAP-FGMR-DUP1

INORGANIC ANALYSIS DATA SHEET

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	79.0	Lab Sample ID:	784852
Analytical Method:	EPA 8000C	Date Received:	10/07/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131419	Analysis Date/Time	10/17/2016 12:43
Analytical Prep Batch #:		Prep. Date/Time:	
ICAL Calibration #:		Concentration Units:	%

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
SOLID	Solids, Percent	79.0		0.1	0.1	0.1	0.1

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSD-001

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	75.4	Lab Sample ID:	784783
Analytical Method:	EPA 8000C	Date Received:	10/07/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131419	Analysis Date/Time	10/17/2016 12:43
Analytical Prep Batch #:		Prep. Date/Time:	
ICAL Calibration #:		Concentration Units:	%

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
SOLID	Solids, Percent	75.4		0.1	0.1	0.1	0.1

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSD-002

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	80.3	Lab Sample ID:	784853
Analytical Method:	EPA 8000C	Date Received:	10/07/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131419	Analysis Date/Time	10/17/2016 12:43
Analytical Prep Batch #:		Prep. Date/Time:	
ICAL Calibration #:		Concentration Units:	%

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
SOLID	Solids, Percent	80.3		0.1	0.1	0.1	0.1

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSD-003

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	73.4	Lab Sample ID:	784854
Analytical Method:	EPA 8000C	Date Received:	10/07/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131419	Analysis Date/Time	10/17/2016 12:43
Analytical Prep Batch #:		Prep. Date/Time:	
ICAL Calibration #:		Concentration Units:	%

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
SOLID	Solids, Percent	73.4		0.1	0.1	0.1	0.1

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSD-004

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	79.9	Lab Sample ID:	784855
Analytical Method:	EPA 8000C	Date Received:	10/07/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131419	Analysis Date/Time	10/17/2016 12:43
Analytical Prep Batch #:		Prep. Date/Time:	
ICAL Calibration #:		Concentration Units:	%

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
SOLID	Solids, Percent	79.9		0.1	0.1	0.1	0.1

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSI-001A

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	98.6	Lab Sample ID:	784496
Analytical Method:	EPA 8000C	Date Received:	10/06/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131419	Analysis Date/Time	10/17/2016 12:43
Analytical Prep Batch #:		Prep. Date/Time:	
ICAL Calibration #:		Concentration Units:	%

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
SOLID	Solids, Percent	98.6		0.1	0.1	0.1	0.1

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSI-001B

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	98.4	Lab Sample ID:	784515
Analytical Method:	EPA 8000C	Date Received:	10/06/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131419	Analysis Date/Time	10/17/2016 12:43
Analytical Prep Batch #:		Prep. Date/Time:	
ICAL Calibration #:		Concentration Units:	%

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
SOLID	Solids, Percent	98.4		0.1	0.1	0.1	0.1

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSI-001C

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	98.5	Lab Sample ID:	784516
Analytical Method:	EPA 8000C	Date Received:	10/06/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131419	Analysis Date/Time	10/17/2016 12:43
Analytical Prep Batch #:		Prep. Date/Time:	
ICAL Calibration #:		Concentration Units:	%

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
SOLID	Solids, Percent	98.5		0.1	0.1	0.1	0.1

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSI-002A

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	97.7	Lab Sample ID:	785308
Analytical Method:	EPA 8000C	Date Received:	10/08/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131419	Analysis Date/Time	10/17/2016 12:43
Analytical Prep Batch #:		Prep. Date/Time:	
ICAL Calibration #:		Concentration Units:	%

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
SOLID	Solids, Percent	97.7		0.1	0.1	0.1	0.1

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Sample Description

RFAAP-FGMR-SSI-002B

INORGANIC ANALYSIS DATA SHEET

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	97.3	Lab Sample ID:	785309
Analytical Method:	EPA 8000C	Date Received:	10/08/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131419	Analysis Date/Time	10/17/2016 12:43
Analytical Prep Batch #:		Prep. Date/Time:	
ICAL Calibration #:		Concentration Units:	%

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
SOLID	Solids, Percent	97.3		0.1	0.1	0.1	0.1

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INORGANIC ANALYSIS DATA SHEET

Sample Description

RFAAP-FGMR-SSI-002C

Lab Name:	CT Laboratories	Contract:	BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix (soil/water):	SOIL	SDG No.:	122704
% Solids:	97.7	Lab Sample ID:	785310
Analytical Method:	EPA 8000C	Date Received:	10/08/2016
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	131419	Analysis Date/Time	10/17/2016 12:43
Analytical Prep Batch #:		Prep. Date/Time:	
ICAL Calibration #:		Concentration Units:	%

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
SOLID	Solids, Percent	97.7		0.1	0.1	0.1	0.1

CT LABORATORIES
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DUPLICATES

Sample Description

RFAAP-FGMR-SSD-002

Lab Name: CT Laboratories
Contract: BERING SEA ENVIRONMENTAL-RADFORD AAP
Matrix: SOLID
SDG No.: 122704
% Solid for Sample: 80.3
Concentration Units: %
Analytical Prep Batch # 1
Analytical Preparation Date/Time 0
Analytical Run #: 131419
ICAL Calibration #:
Sample #: 790194
Parent Sample #: 784853

Analysis Type *Initial Analysis*

Analyte	Analysis Date/Tim		RPD Limit	Original Parent Conc. (S)	C	Duplicate Conc. (D)	C	RPD	Q	M
Solids, Percent	10/17/2016	12:43	8	80.3		79.5		1		GRA

INORGANICS
RAW DATA
DOCUMENTS

TOTAL SOLIDS (PERCENT)

LIMS #: 131419

Start Date:	**10/17/2016**	**Start Time:**	12:43		**Analyst:**	AMA
	Sample ID#	**Dish#**	**Tared Weight g** *(D)*	**Wet Weight g** *(E)*	**Dry Weight g** *(F)*	**RESULTS % TOTAL SOLIDS**
1)	784496	C0442893	2.60	15.32	15.14	98.6%
2)	784515	C0442892	2.55	15.88	15.67	98.4%
3)	784516	C0442898	2.58	16.24	16.04	98.5%
4)	784783	C0442899	2.55	19.94	15.66	75.4%
5)	784852	C0442853	2.60	19.66	16.07	79.0%
6)	784854	C0442854	2.60	17.01	13.18	73.4%
7)	784855	C0442855	2.57	16.21	13.47	79.9%
8)	785308	C0442900	2.59	15.72	15.42	97.7%
9)	785309	C0442851	2.58	16.53	16.16	97.3%
10)	785310	C0442852	2.62	15.61	15.31	97.7%
11)						0.0%
12)						0.0%
13)						0.0%
14)						0.0%
15)						0.0%
16)						0.0%
17)						0.0%
18)						0.0%
19)						0.0%
*20)	784853	C0442856	2.59	17.85	14.84	80.3%
Dup 20)	784853	C0442857	2.58	16.98	14.03	79.5%

Dry Weight = Sample + Dish (gms)		* 2nd Reading,	14.84	
Wet Weight = Sample + Dish (gms)			Set RPD:	1.0%
	Balance: VOB-01			
			*mg Difference	0

Stop Date:	10/18/2016
Stop Time:	10:54

Calculations

*2nd reading must be within 50mg of the 1st

% Total Solids = ((*F-D*)/(*E-D*))*100

RPD, % = Absolute value of…((Sample-Dup % TS)/(Average%TS))*100

INORGANICS
LOGBOOK
DOCUMENTS

WSOLIDS Analytical Run
131419 on 10/18/2016

Date Analyzed: _____ Date Reviewed: _____

Date Entered: _____ Date Validated: _____

COC	ORDER	SAMPLE DECRIPTION	SAMPLE DATE/ TIME	QC TYPE (Parent Sample)	CLIENT	PROJECT	TEST	PREP BATCH	MATRIX	DEL	RUSH
122704	784496		10/04/2016 1000		BERING SEA ENVIRONMENTAL	RADFORD AAP	SOLIDS,PERCENT		S	**4**	
		RFAAP-FGMR-SSI-001A									
122704	784515		10/04/2016 1000		BERING SEA ENVIRONMENTAL	RADFORD AAP	SOLIDS,PERCENT		S	**4**	
		RFAAP-FGMR-SSI-001B									
122704	784516		10/04/2016 1000		BERING SEA ENVIRONMENTAL	RADFORD AAP	SOLIDS,PERCENT		S	**4**	
		RFAAP-FGMR-SSI-001C									
122724	784783		10/06/2016 1505		BERING SEA ENVIRONMENTAL	RADFORD AAP	SOLIDS,PERCENT		S	**4**	
		RFAAP-FGMR-SSD-001									
122724	784852		10/06/2016 1515		BERING SEA ENVIRONMENTAL	RADFORD AAP	SOLIDS,PERCENT		S	**4**	
		RFAAP-FGMR-DUP1									
122724	784853		10/06/2016 1530		BERING SEA ENVIRONMENTAL	RADFORD AAP	SOLIDS,PERCENT		S	**4**	
		RFAAP-FGMR-SSD-002		Designated MS/MSD							
122724	784854		10/06/2016 1550		BERING SEA ENVIRONMENTAL	RADFORD AAP	SOLIDS,PERCENT		S	**4**	
		RFAAP-FGMR-SSD-003									
122724	784855		10/06/2016 1610		BERING SEA ENVIRONMENTAL	RADFORD AAP	SOLIDS,PERCENT		S	**4**	
		RFAAP-FGMR-SSD-004									
122746	785308		10/07/2016 0850		BERING SEA ENVIRONMENTAL	RADFORD AAP	SOLIDS,PERCENT		S	**4**	
		RFAAP-FGMR-SSI-002A									
122746	785309		10/07/2016 0850		BERING SEA ENVIRONMENTAL	RADFORD AAP	SOLIDS,PERCENT		S	**4**	
		RFAAP-FGMR-SSI-002B									
122746	785310		10/07/2016 0850		BERING SEA ENVIRONMENTAL	RADFORD AAP	SOLIDS,PERCENT		S	**4**	
		RFAAP-FGMR-SSI-002C									
	790194		10/06/2016 1530				SOLIDS,PERCENT				
		RFAAP-FGMR-SSD-002		DUP 784853				0			

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

FWC26-10 Data Review Checklist

		Method: Percent Solids SW846-8000C	Independent Data Review Checklist		Balance: VOB-01
LIMS Run #(s)	**Analysis Date**	**Analyst / Data Interpreter**	**Independent Reviewer**	**Date of Review**	**Approved? (Yes or No)**
131419, 131420, 131421, 131422, 131423, 131424, 131426, 131427, 131428, 131429, 131431	10/17/2016	AMA	RLD	10/18/2016	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. Were samples analyzed within hold time?	14 days or program/project specific	Yes		Yes		Qualify data prepared after hold time
2. Were samples dried overnight?	> 8hours	Yes		Yes		If No: place samples back into oven for mimium of 8 hours of total dry time.
3. Were drying start and stop times recorded?	---	Yes		Yes		If No: record times and temperatures
4. Were duplicates analyzed at the appropriate frequency?	1 per 20 of similar matrix or at program/project specific frequency	Yes		Yes		If No: reprep samples with appropreate frequency for a duplicate.
5. Were the duplicates within acceptable limits?	Within in-house or program/project specific QC limits	Yes		Yes		If No: reprep and reanalyze samples or qualify parent sample result (Y).
6. Are all samples on the job lists accounted for?	---	Yes		Yes		If No: analyze samples that were were missed.
7. Were nonconformities (if applicable) documented in the NCR spreadsheet?		Yes		Yes		If No: Enter nonformities into the NCR spreadsheet before data review/validation.

SUBCONTRACTED ANALYSIS DOCUMENTS

Microbac

Laboratory Report Number: L16100571

Eric Korthals
CT Laboratories
1230 Lange Court
Baraboo, WI 53913

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Emily Yoak – Client Services Specialist
(740) 373-4071
emily.yoak@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on October 20 2016

Leslie Bucina – Managing Director

State of Origin: MI
Accrediting Authority: N/A ID:N/A
QAPP: DOD Ver 5.0

Microbac

Lab Report #: L16100571
Lab Project #: 2694.005
Project Name: CT Labs DOD
Lab Contact: Emily Yoak

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00114396	I	0.0		1Z1A4A851340347126	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac

Lab Report #: L16100571
Lab Project #: 2694.005
Project Name: CT Labs DOD
Lab Contact: Emily Yoak

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
RFAAP-FGMR-SSI-001A	L16100571-01	10/04/2016 10:00	10/12/2016 09:37
RFAAP-FGMR-SSI-001B	L16100571-02	10/04/2016 10:00	10/12/2016 09:37
RFAAP-FGMR-SSI-001C	L16100571-03	10/04/2016 10:00	10/12/2016 09:37

Microbac REPORT L16100571
PREPARED FOR CT Laboratories
WORK ID:

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1.0 Summary Data

1.1 Narratives

Login Number: L16100571
Department: General Chromatography
Analyst: John W. Richards Jr.

METHOD

Analysis SW-846 6850

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: The MS/MSD results were not associated with this sample delivery group.

SAMPLES

Samples: All acceptance criteria were met.

Internal Standards: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak 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. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal: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 area counts for the target compound.

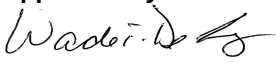
Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes 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 should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 118296
Approved By: Wade DeLong



1.2 Certificate of Analysis

Microbac

Lab Report #: L16100571
Lab Project #: 2694.005
Project Name: CT Labs DOD
Lab Contact: Emily Yoak

Certificate of Analysis

Sample #:	L16100571-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSI-001A	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 21:17
Collect Date:	10/04/2016 10:00	**Dilution:**	1	**File ID:**	1LM.LM37372
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	98.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.97	U	3.94	1.97	0.985

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L16100571-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSI-001B	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 21:36
Collect Date:	10/04/2016 10:00	**Dilution:**	1	**File ID:**	1LM.LM37373
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	97.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.99	U	3.97	1.99	0.993

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L16100571-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSI-001C	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 21:55
Collect Date:	10/04/2016 10:00	**Dilution:**	1	**File ID:**	1LM.LM37374
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	98.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.02	U	4.04	2.02	1.01

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16100571
Lab Project #: 2694.005
Project Name: CT Labs DOD
Lab Contact: Emily Yoak

Sample #: L16100571-01 **Client ID:** RFAAP-FGMR-SSI-001A **Matrix:** Soil **Collect Date:** 10/04/2016 10:00

Analyte	Result	Units	Qualifier
Percent Solids	98.1	weight %	

Sample #: L16100571-02 **Client ID:** RFAAP-FGMR-SSI-001B **Matrix:** Soil **Collect Date:** 10/04/2016 10:00

Analyte	Result	Units	Qualifier
Percent Solids	97.9	weight %	

Sample #: L16100571-03 **Client ID:** RFAAP-FGMR-SSI-001C **Matrix:** Soil **Collect Date:** 10/04/2016 10:00

Analyte	Result	Units	Qualifier
Percent Solids	98.1	weight %	

2.0 Full Sample Data Package

2.1 General Chromatography Data

2.1.1 6850 LC/MS Data

2.1.1.1 Summary Data

Login Number: L16100571
Department: General Chromatography
Analyst: John W. Richards Jr.

METHOD

Analysis SW-846 6850

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: The MS/MSD results were not associated with this sample delivery group.

SAMPLES

Samples: All acceptance criteria were met.

Internal Standards: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak 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. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal: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 area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes 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 should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

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Narrative ID: 118296
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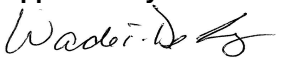


Certificate of Analysis

Sample #:	L16100571-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSI-001A	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 21:17
Collect Date:	10/04/2016 10:00	**Dilution:**	1	**File ID:**	1LM.LM37372
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	98.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.97	U	3.94	1.97	0.985

U	Analyte was not detected. The concentration is below the reported LOD.

Sample #:	L16100571-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSI-001B	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 21:36
Collect Date:	10/04/2016 10:00	**Dilution:**	1	**File ID:**	1LM.LM37373
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	97.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.99	U	3.97	1.99	0.993

U	Analyte was not detected. The concentration is below the reported LOD.

Sample #:	L16100571-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSI-001C	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 21:55
Collect Date:	10/04/2016 10:00	**Dilution:**	1	**File ID:**	1LM.LM37374
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	98.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.02	U	4.04	2.02	1.01

U	Analyte was not detected. The concentration is below the reported LOD.

2.1.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD78252
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 08
Date/Time Extracted: 10/17/16/18:00
Witness: CAS 10/17/16

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG587950
Analytical Work Group: WG587968
Run ID: R4793776

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL022
Reagent: Tubes Lot #: RGT37813
Reagent: Sand Lot #: COA18813
Other: IS Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ IS Amount	Amount Spike	Final Volume	Extract Color	Comments
1	WG587950-01	6850		5.0018g	0.250ml	1.0ml	50ml		MCT(10,000.us)(2ug/kg)
2	WG587950-02	↓		5.0054g	↓	NA	↓		Blank
3	WG587950-03			5.0024g		1.0ml			LCS(2ug/kg)
4	L16100003-01			5.0026g		0.5ml			LOD(1ug/kg)
5	L16100005-01			5.0046g		1.0ml			LOQ(2ug/kg)
6	-10			5.0081g		1.0ml			LOQ(2ug/kg)
7	L16100569-01			5.1354g		NA			
8	-02			5.1319g		NA			
9	-03 RS			5.0466g		NA			WG587950-04 Ref
10	-04 MS			5.0599g		1.0ml			WG587950-05 MS (@2ug/kg)
11	-05 MSD			5.0475g		1.0ml			WG587950-06 MSD (@2ug/kg)
12	-06			5.1806g		NA			
13	-07			5.2517g		NA			
14	L16100570-01			5.1117g		NA			
15	-02			5.0786g		NA			
16	-03			5.0458g		NA			
17	L16100571-01			5.1727g		NA			
18	-02			5.1445g		NA			
19	-03	↓		5.0358g	↓	NA	↓		
20									
21									
22				JWR 10/17/16					
23									
24									

Reviewed by: Wade T. Daly 10-18-16

Analytical WG587968 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1408 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG587950-01 MCT		
-02 Blank	1.54	
-03 LCS	1.45	
L16100003-01 LOD	1.16	
L16100005-01 LOQ	1.49	
-10 LOQ	1.56	
L16100569-01	36.6	
-02	32.7	
-03 RS	28.2	
-04 MS	25.7	
-05 MSD	22.1	
-06	22.9	
-07	21.9	
L16100570-01	170.4	
-02	182.1	
-03	185.7	
L16100571-01	70.3	
-02	56.0	
-03	42.5	

Analyst: John Richards

Date/Time: 10/18/16 / 1330

DCN#121590

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA
Analytical WG567013 (soils)
Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Wade D

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 101816_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 160109254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA
Analytical WG587968 (soils)
Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD78249 LCS STD: STD78251 MS/MSD STD: STD78251

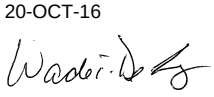
Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM37350	WG587969-01 CCB	1	1		10/18/16 14:20
2	1LM.LM37351	WG587969-02 CCV (1.0ug/L)	1	1	STD78249	10/18/16 14:39
3	1LM.LM37352	WG587968-07 MRL (2.0ug/kg)	7	1	STD78249	10/18/16 14:58
4	1LM.LM37353	WG587968-01 MCT (2.0ug/kg)	7	1	STD78251	10/18/16 15:17
5	1LM.LM37354	WG587968-02 BLANK	7	1		10/18/16 15:36
6	1LM.LM37355	WG587968-03 LCS (2.0ug/kg)	7	1	STD78251	10/18/16 15:55
7	1LM.LM37356	L16100005-01 LOQ (2.0ug/kg)	7	1	STD78251	10/18/16 16:14
8	1LM.LM37357	L16100005-10 LOQ (2.0ug/kg)	7	1	STD78251	10/18/16 16:33
9	1LM.LM37358	L16100003-01 LOD (1.0ug/kg)	7	1	STD78251	10/18/16 16:52
10	1LM.LM37359	L16100569-01	7	1		10/18/16 17:11
11	1LM.LM37360	L16100569-02	7	1		10/18/16 17:30
12	1LM.LM37361	L16100569-06	7	1		10/18/16 17:49
13	1LM.LM37362	L16100569-07	7	1		10/18/16 18:08
14	1LM.LM37363	WG587969-03 CCV (1.0ug/L)	1	1	STD78249	10/18/16 18:27
15	1LM.LM37364	WG587968-08 MRL (2.0ug/kg)	7	1	STD78249	10/18/16 18:45
16	1LM.LM37365	WG587969-04 CCB	1	1		10/18/16 19:04
17	1LM.LM37366	L16100569-03 RS	7	1		10/18/16 19:23
18	1LM.LM37367	L16100569-04 MS	7	1	STD78251	10/18/16 19:42
19	1LM.LM37368	L16100569-05 MSD	7	1	STD78251	10/18/16 20:01
20	1LM.LM37369	L16100570-01	7	1		10/18/16 20:20
21	1LM.LM37370	L16100570-02	7	1		10/18/16 20:39
22	1LM.LM37371	L16100570-03	7	1		10/18/16 20:58
23	1LM.LM37372	L16100571-01	7	1		10/18/16 21:17
24	1LM.LM37373	L16100571-02	7	1		10/18/16 21:36
25	1LM.LM37374	L16100571-03	7	1		10/18/16 21:55
26	1LM.LM37375	WG587969-05 CCV (1.0ug/L)	1	1	STD78249	10/18/16 22:14
27	1LM.LM37376	WG587968-09 MRL (2.0ug/kg)	7	1	STD78249	10/18/16 22:33
28	1LM.LM37377	WG587969-06 CCB	1	1		10/18/16 22:52

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 20-OCT-16



Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016

John Richards

Secondary Reviewer:
05-MAY-2016

Wade D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 18-OCT-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 78190
Analytical Workgroups: L16100003(LOD), 0005(LOQ), 0569, 0570, 0571 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
20-OCT-2016
John Richards

Secondary Reviewer:
20-OCT-2016
Wade D

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-20-2016 13:36:17

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 **AAB#:** WG587968

Login Number: L16100571

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
RFAAP-FGMR-SSI-001A	01	10/04/16					10/17/2016	13.3	28		10/18/16	1.1	28	
RFAAP-FGMR-SSI-001B	02	10/04/16					10/17/2016	13.3	28		10/18/16	1.2	28	
RFAAP-FGMR-SSI-001C	03	10/04/16					10/17/2016	13.3	28		10/18/16	1.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4985023
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L16100571
Work Group: WG587968
Blank File ID: 1LM.LM37354
Blank Sample ID: WG587968-02
Prep Date: 10/17/16 18:00
Instrument ID: LCMS1
Analyzed Date: 10/18/16 15:36
Method: 6850
Analyst: JWR

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG587968-07	1LM.LM37352	10/18/16 14:58	01
MCT	WG587968-01	1LM.LM37353	10/18/16 15:17	01
LCS	WG587968-03	1LM.LM37355	10/18/16 15:55	01
QCMRL	WG587968-08	1LM.LM37364	10/18/16 18:45	01
RFAAP-FGMR-SSI-001A	L16100571-01	1LM.LM37372	10/18/16 21:17	01
RFAAP-FGMR-SSI-001B	L16100571-02	1LM.LM37373	10/18/16 21:36	01
RFAAP-FGMR-SSI-001C	L16100571-03	1LM.LM37374	10/18/16 21:55	01
QCMRL	WG587968-09	1LM.LM37376	10/18/16 22:33	01

Report Name: BLANK_SUMMARY
PDF File ID: 4985024
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16100571 Prep Date: 10/17/16 18:00 Sample ID: WG587968-02
Instrument ID: LCMS1 Run Date: 10/18/16 15:36 Prep Method: 6850
File ID: 1LM.LM37354 Analyst: JWR Method: 6850
Workgroup (AAB#): WG587968 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.999	4.00	0.999	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4985025
20-OCT-2016 13:52

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16100571 **Run Date:** 10/18/2016 **Sample ID:** WG587968-03
Instrument ID: LCMS1 **Run Time:** 15:55 **Prep Method:** 6850
File ID: 1LM.LM37355 **Analyst:** JWR **Method:** 6850
Workgroup (AAB#): WG587968 **Matrix:** Soil **Units:** ug/kg
QC Key: DOD5 **Lot#:** STD78251 **Cal ID:** LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	1.93	96.5	84 - 121	

LCS - Modified 03/06/2008
PDF File ID: 4985026
Report generated: 10/20/2016 13:52

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16100571
Analytical Method: 6850
ICAL Workgroup: WG567320
Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4985151
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16100571
Analytical Method: 6850
Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4985151
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16100571
Analytical Method: 6850
Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4985151
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16100571
Analytical Method: 6850
Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4985151
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16100571 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD5
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4985152
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16100571 Run Date: 10/18/2016 Sample ID: WG587969-01

Instrument ID: LCMS1 Run Time: 14:20 Method: 6850

File ID: 1LM.LM37350 Analyst: JWR Units: ug/L

Workgroup (AAB#): WG587968 Cal ID: LCMS1 - 03-MAY-16

Matrix: WATER QAPP: DOD5

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4985029
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16100571 Run Date: 10/18/2016 Sample ID: WG587969-04

Instrument ID: LCMS1 Run Time: 19:04 Method: 6850

File ID: 1LM.LM37365 Analyst: JWR Units: ug/L

Workgroup (AAB#): WG587968 Cal ID: LCMS1 - 03-MAY-16

Matrix: WATER QAPP: DOD5

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4985029
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16100571 Run Date: 10/18/2016 Sample ID: WG587969-06

Instrument ID: LCMS1 Run Time: 22:52 Method: 6850

File ID: 1LM.LM37377 Analyst: JWR Units: ug/L

Workgroup (AAB#): WG587968 Cal ID: LCMS1 - 03-MAY-16

Matrix: WATER QAPP: DOD5

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4985029
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16100571 Run Date: 10/18/2016 Sample ID: WG587969-02

Instrument ID: LCMS1 Run Time: 14:39 Method: 6850

File ID: 1LM.LM37351 Analyst: JWR QC Key: DOD5

Workgroup (AAB#): WG587968 Cal ID: LCMS1 - 03-MAY-16

Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.944	ug/kg	1.59	5.60	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008

PDF File ID: 4985028

Report generated 10/20/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16100571 Run Date: 10/18/2016 Sample ID: WG587969-03
Instrument ID: LCMS1 Run Time: 18:27 Method: 6850
File ID: 1LM.LM37363 Analyst: JWR QC Key: DOD5
Workgroup (AAB#): WG587968 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.993	ug/kg	1.68	0.700	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4985028
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16100571 Run Date: 10/18/2016 Sample ID: WG587969-05

Instrument ID: LCMS1 Run Time: 22:14 Method: 6850

File ID: 1LM.LM37375 Analyst: JWR QC Key: DOD5

Workgroup (AAB#): WG587968 Cal ID: LCMS1 - 03-MAY-16

Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.956	ug/kg	1.61	4.40	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008

PDF File ID: 4985028

Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16100571 Run Date: 10/18/2016 Sample ID: WG587968-07

Instrument ID: LCMS1 Run Time: 14:58 Prep Method: 6850

File ID: 1LM.LM37352 Analyst: JWR Method: 6850

Workgroup (AAB#): WG587968 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.07	104	70 - 130	

QCMRL - Modified 03/06/2007

PDF File ID: 4985027

Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16100571 Run Date: 10/18/2016 Sample ID: WG587968-08

Instrument ID: LCMS1 Run Time: 18:45 Prep Method: 6850

File ID: 1LM.LM37364 Analyst: JWR Method: 6850

Workgroup (AAB#): WG587968 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.19	110	70 - 130	

QCMRL - Modified 03/06/2007

PDF File ID: 4985027

Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number:	L16100571	**Run Date:**	10/18/2016	**Sample ID:**	WG587968-09
Instrument ID:	LCMS1	**Run Time:**	22:33	**Prep Method:**	6850
File ID:	1LM.LM37376	**Analyst:**	JWR	**Method:**	6850
Workgroup (AAB#):	WG587968	**Matrix:**	Soil	**Units:**	ug/kg
Contract #:		**Cal ID:**	LCMS1-03-MAY-16		

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.10	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4985027
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16100571
Instrument ID: LCMS1
Workgroup (AAB#): WG587968

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16100571-01	1.00	01	446000
L16100571-02	1.00	01	448000
L16100571-03	1.00	01	451000
WG587968-02	1.00	01	419000
WG587968-03	1.00	01	401000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4985030
Report generated 10/20/2016 13:52

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**	6850	**Samplenum:**	L16100571-01
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37372
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 21:17	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	4580	1410	3.25	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**	6850	**Samplenum:**	L16100571-02
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37373
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 21:36	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	4570	2280	2.00	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**	6850	**Samplenum:**	L16100571-03
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37374
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 21:55	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	4460	1740	2.56	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**	6850	**Samplenum:**	WG587968-01
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37353
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 15:17	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	27000	10000	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**	6850	**Samplenum:**	WG587968-02
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37354
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 15:36	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**	6850	**Samplenum:**	WG587968-03
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37355
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 15:55	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	26500	9900	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**	6850	**Samplenum:**	WG587968-07
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37352
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 14:58	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28800	11200	2.57	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**	6850	**Samplenum:**	WG587968-08
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37364
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 18:45	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34400	12000	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**	6850	**Samplenum:**	WG587968-09
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37376
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 22:33	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35700	13200	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**		**Samplenum:**	WG587969-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37350
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	10/18/2016 14:20	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**		**Samplenum:**	WG587969-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37351
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	10/18/2016 14:39	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	133000	47800	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**		**Samplenum:**	WG587969-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37363
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	10/18/2016 18:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	154000	50900	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**		**Samplenum:**	WG587969-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37365
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	10/18/2016 19:04	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**		**Samplenum:**	WG587969-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37375
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	10/18/2016 22:14	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	159000	56300	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100571	**Prep Method:**		**Samplenum:**	WG587969-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37377
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	10/18/2016 22:52	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.1.1.3 Sample Data

Data File	LM37372.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 9:17:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

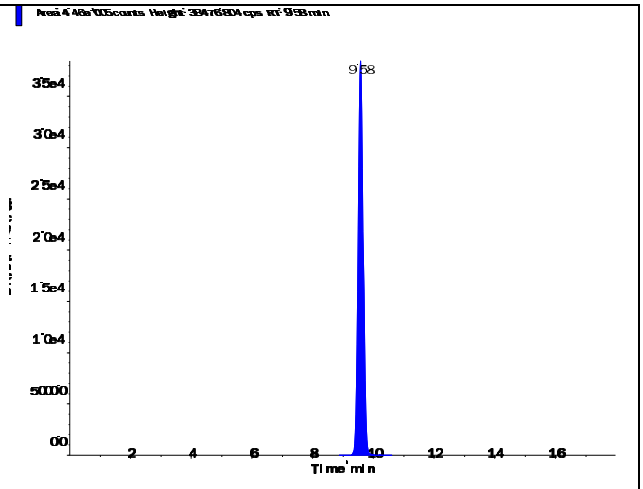
Sample Name	L16100571-01	**Injection Vial**	20.00
Data File	LM37372.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 9:17:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	L16100571-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.460e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.580e+03	9.58	N/A	0.0267
Perchlorate conf	1.410e+03	9.56	N/A	0.0079

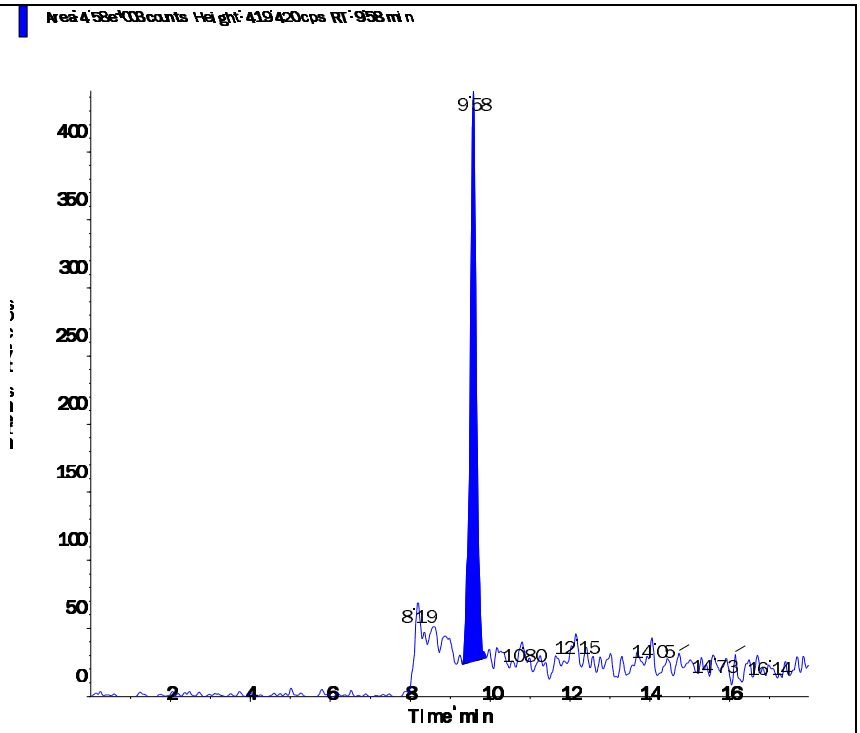
O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



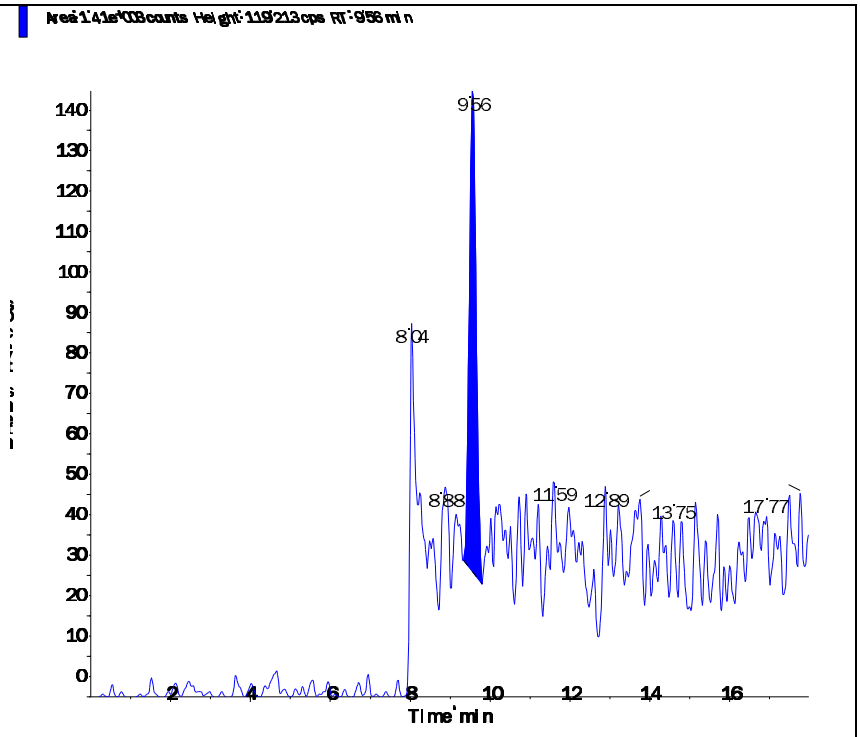
Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.58 (9.84) min
Calculated conc:	0.0267 ng/ml
Area Ratio:	0.01
Sample Type:	(Unknown)



Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.56 (9.84) min
Calculated conc:	0.0079 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)



Data File	LM37373.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 9:36:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

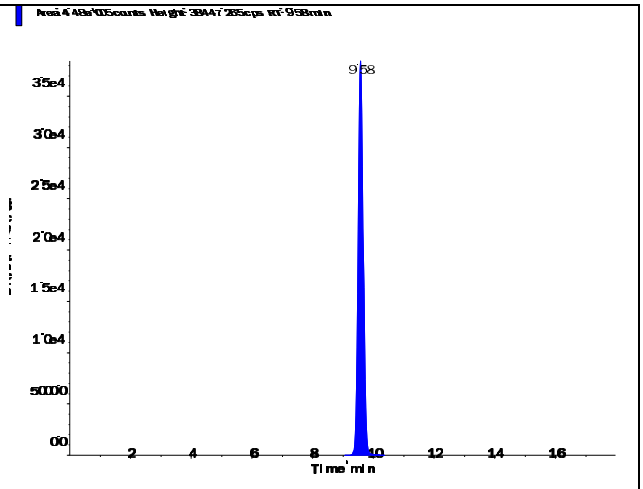
Sample Name	L16100571-02	**Injection Vial**	21.00
Data File	LM37373.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 9:36:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	L16100571-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

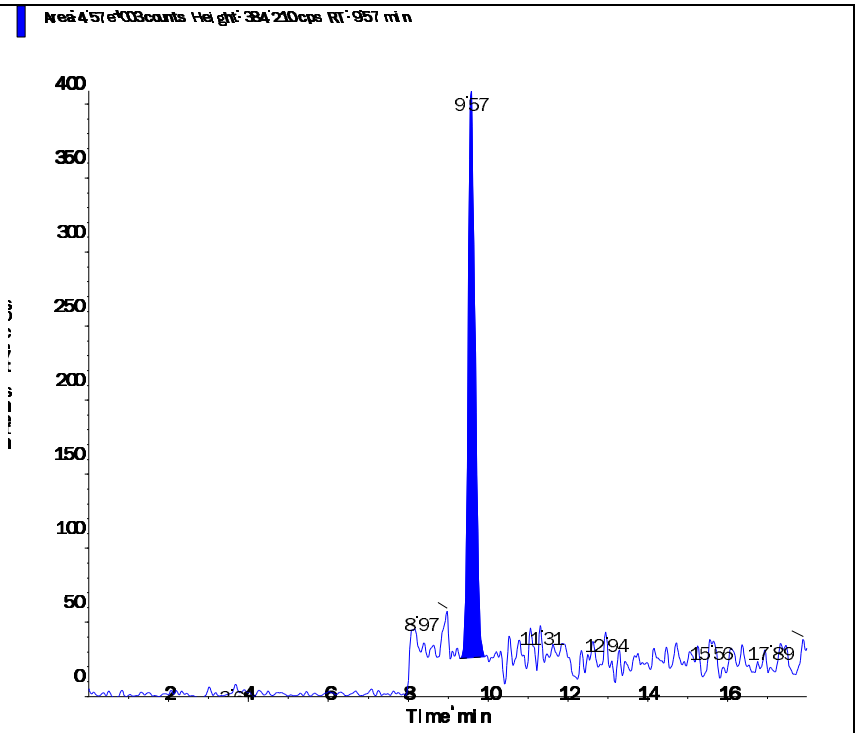
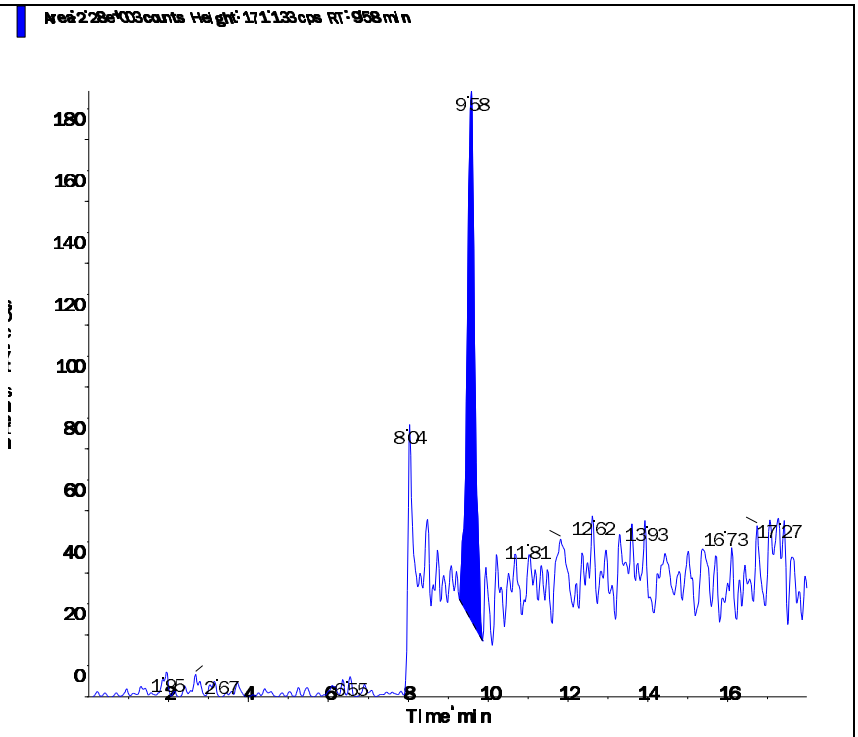
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.480e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.570e+03	9.57	N/A	0.0266
Perchlorate conf	2.280e+03	9.58	N/A	0.0252

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.57 (9.84) min Calculated conc: 0.0266 ng/ml Area Ratio: 0.01 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.58 (9.84) min Calculated conc: 0.0252 ng/ml Area Ratio: 0.005 Sample Type: (Unknown)	

Data File	LM37374.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 9:55:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

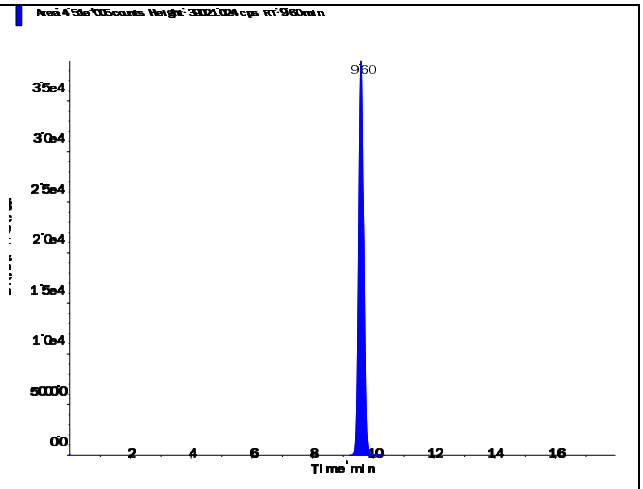
Sample Name	L16100571-03	**Injection Vial**	22.00
Data File	LM37374.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 9:55:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	L16100571-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

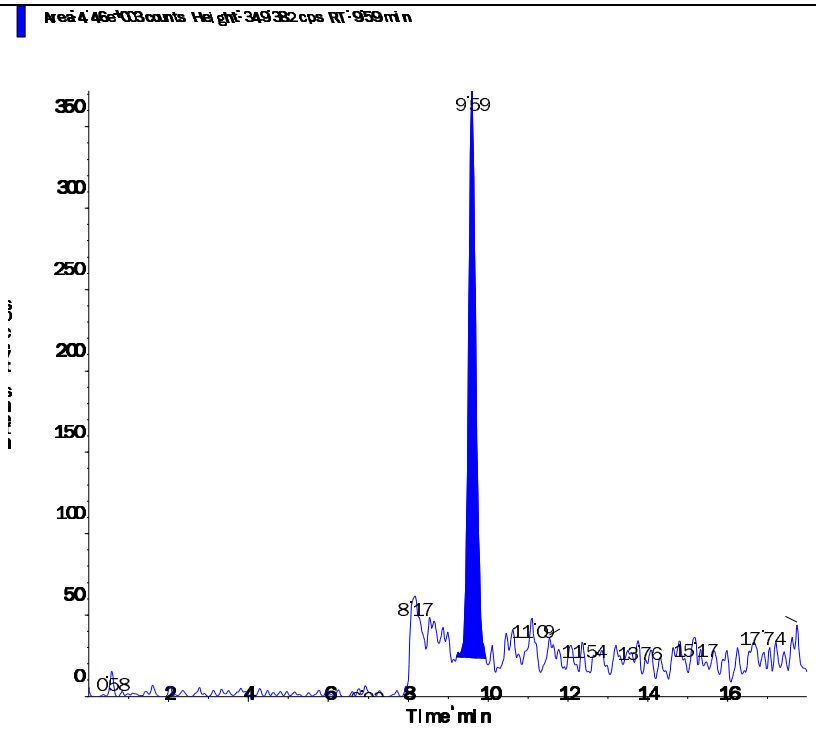
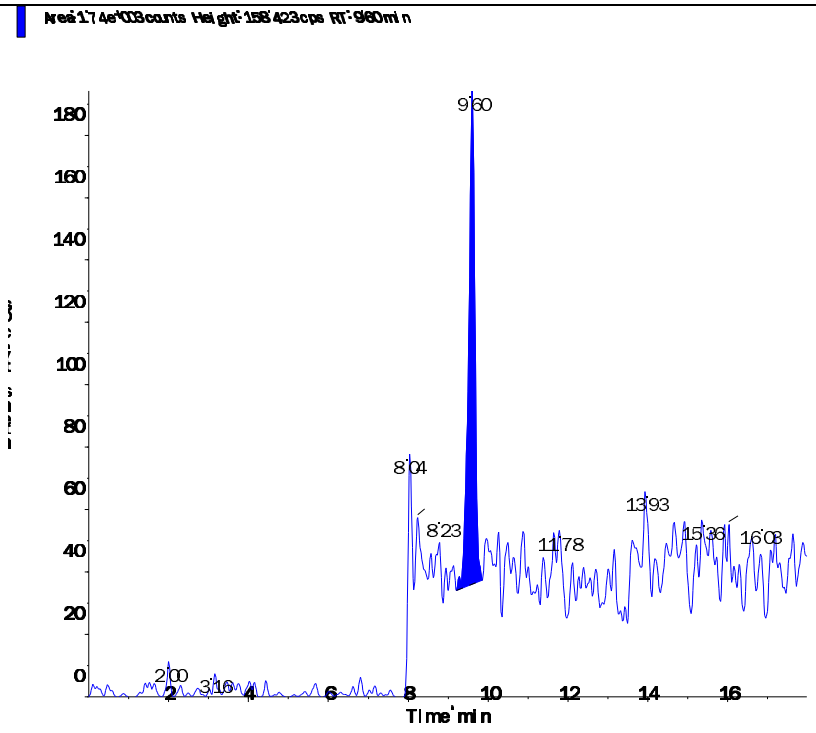
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.460e+03	9.59	N/A	0.0256
Perchlorate conf	1.740e+03	9.60	N/A	0.0142

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.59 (9.84) min Calculated conc: 0.0256 ng/ml Area Ratio: 0.01 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.60 (9.84) min Calculated conc: 0.0142 ng/ml Area Ratio: 0.004 Sample Type: (Unknown)	

2.1.1.4 Standards Data

Data File	LM34686.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

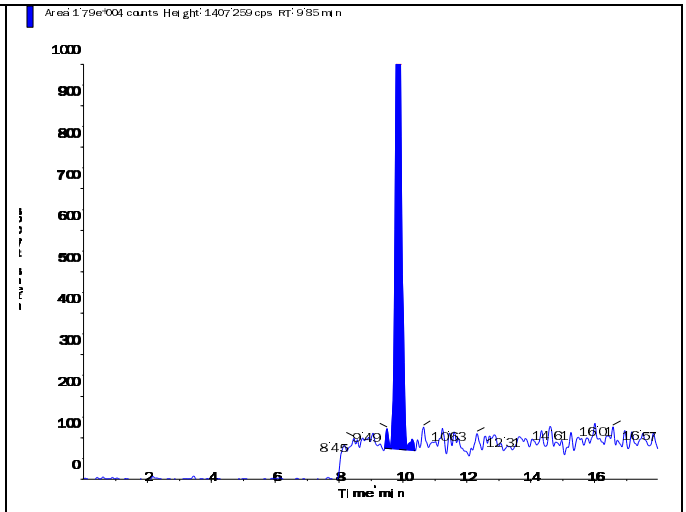
Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

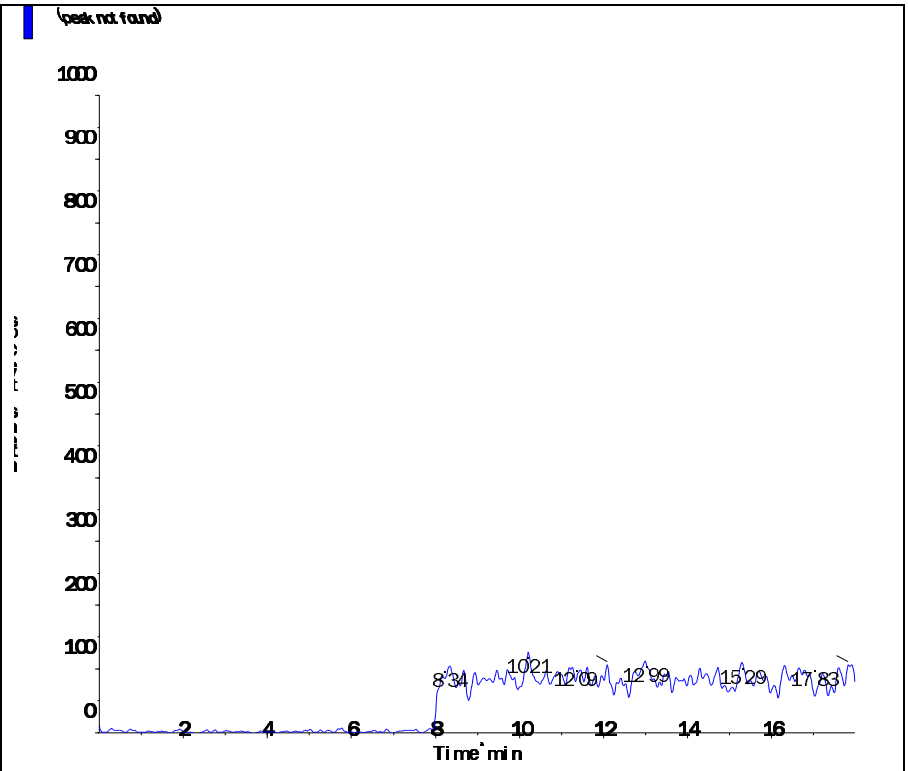
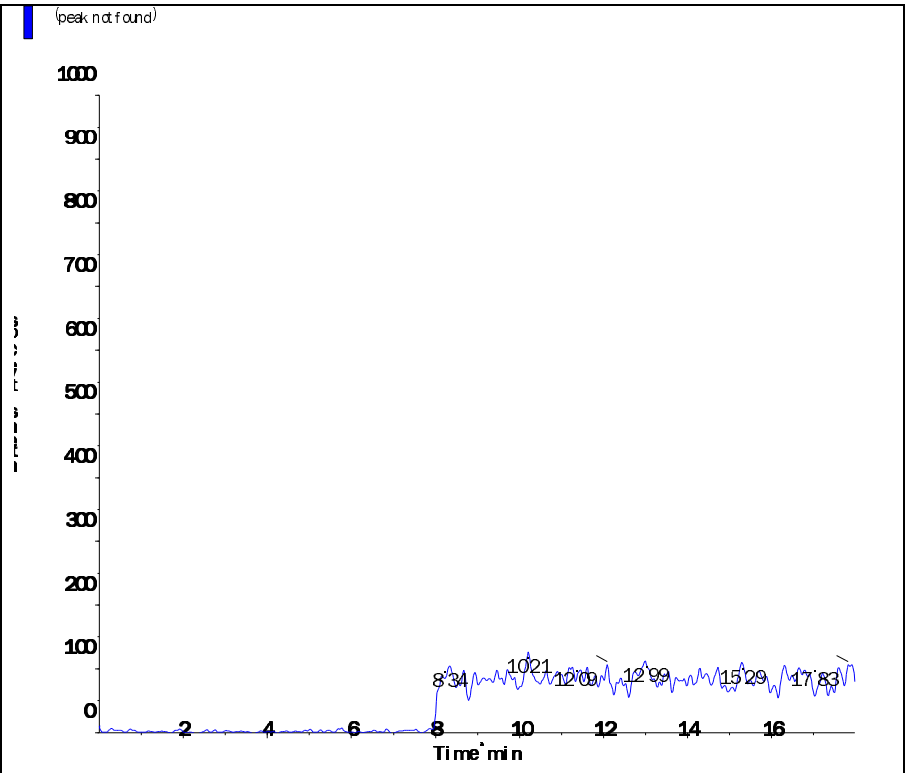
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



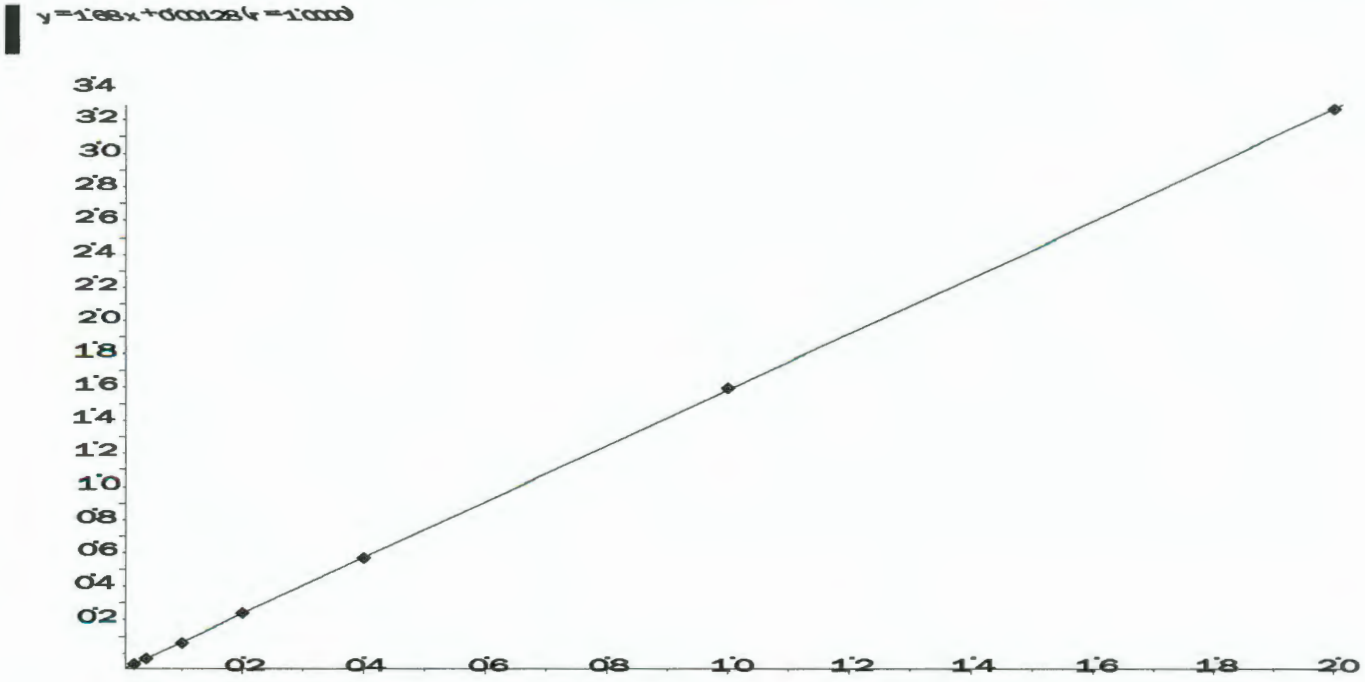
Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

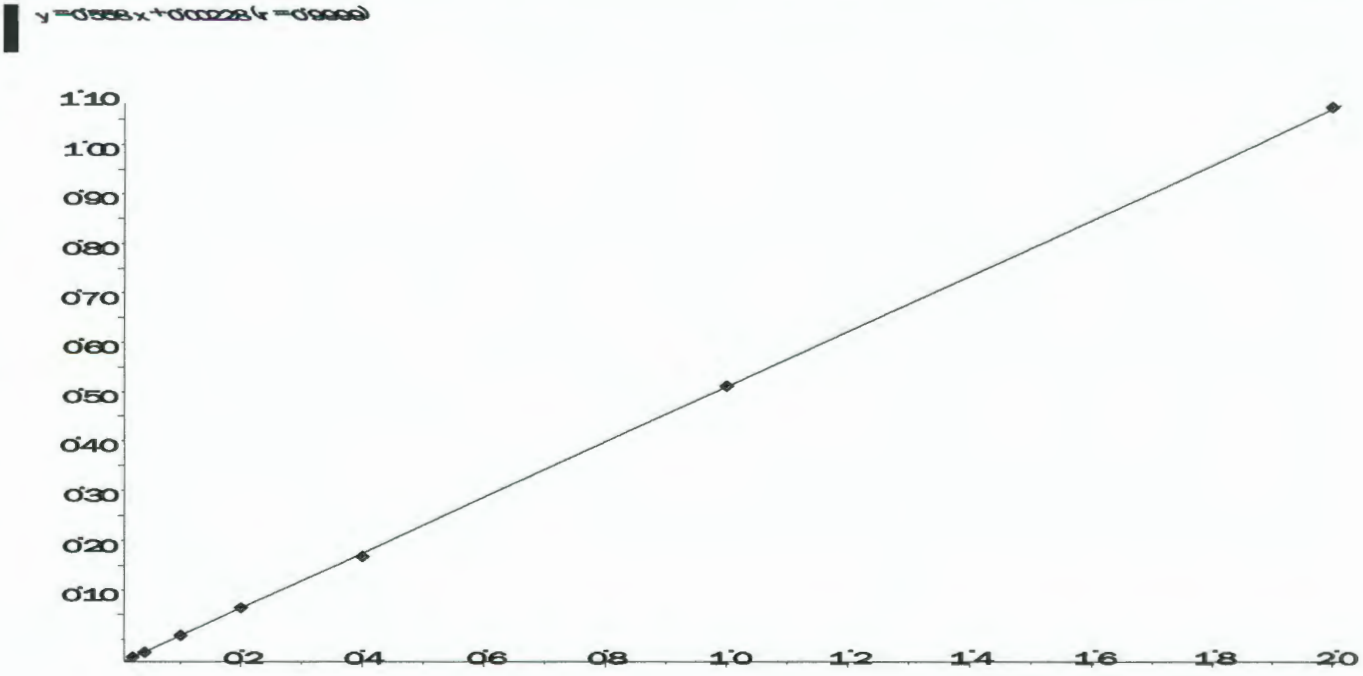


Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A



Data File	LM34687.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

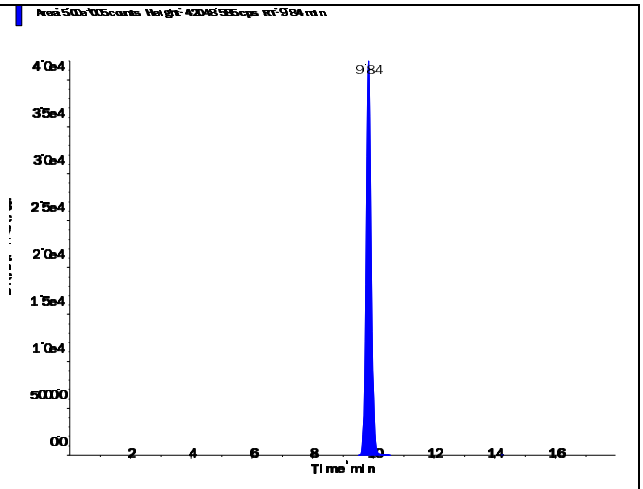
Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

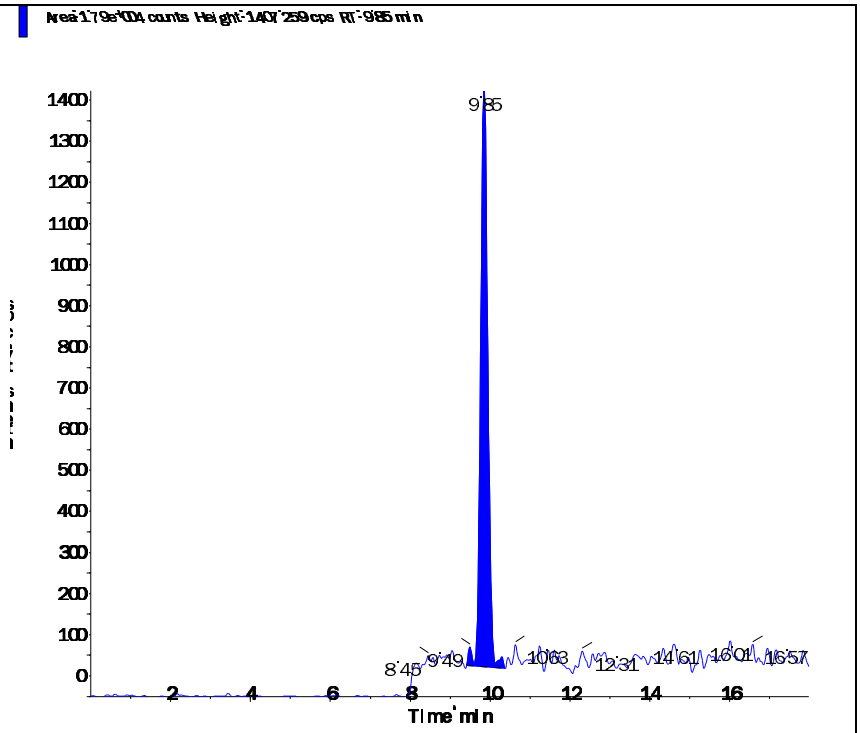
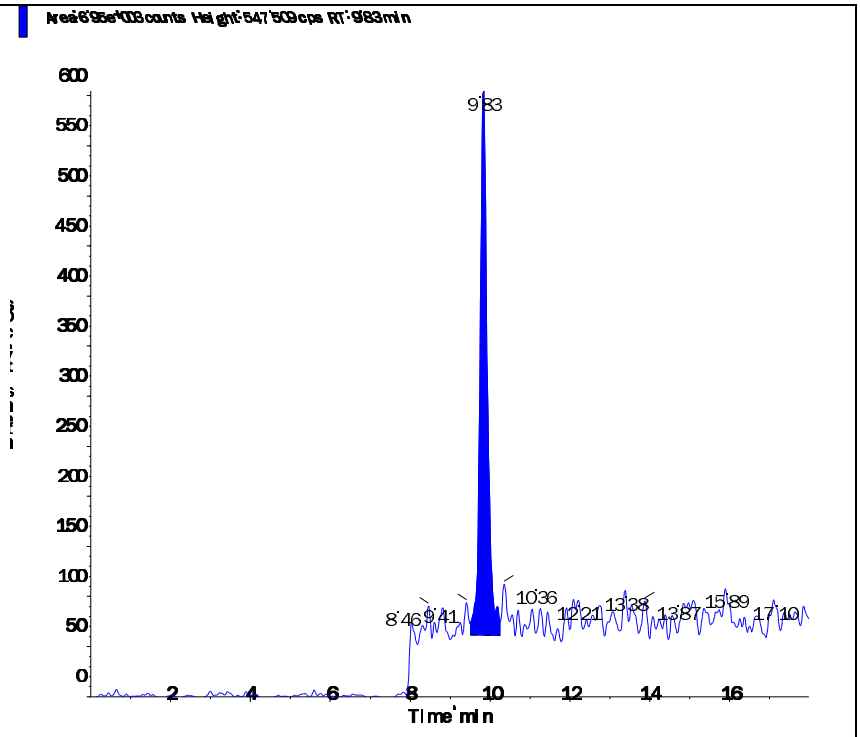
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.103 ng/ml Area Ratio: 0.036 Sample Type: (Standard)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 0.104 ng/ml Area Ratio: 0.014 Sample Type: (Standard)	

Data File	LM34688.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

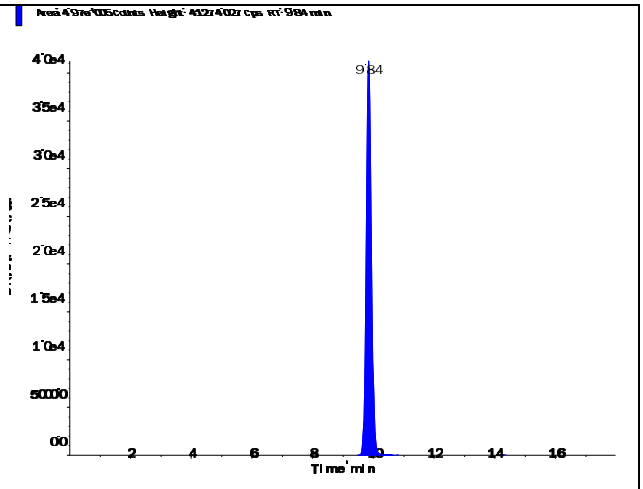
Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

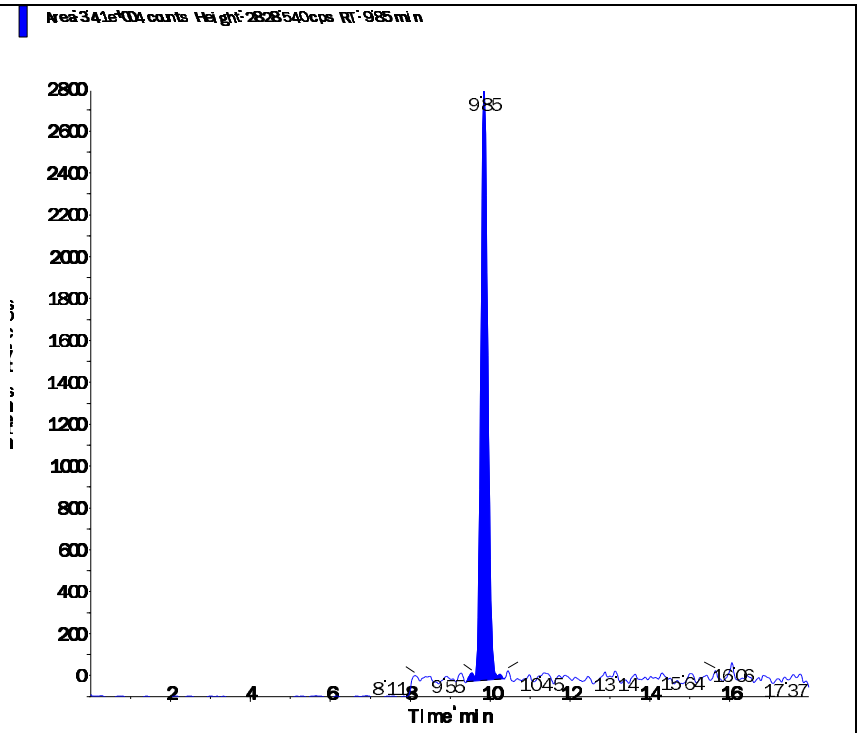
O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Standard)



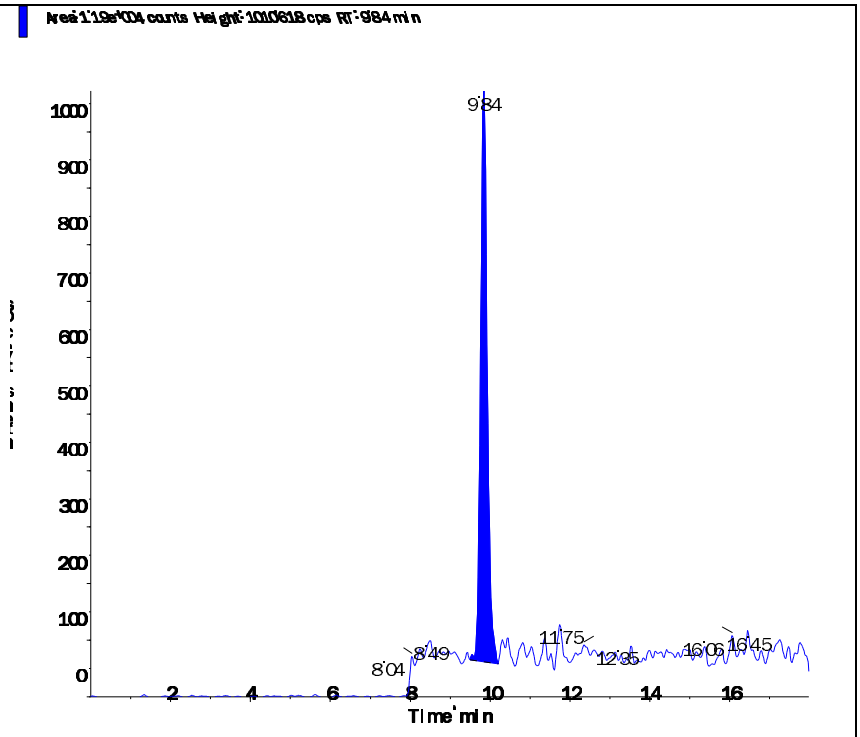
Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)



Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)



Data File	LM34689.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

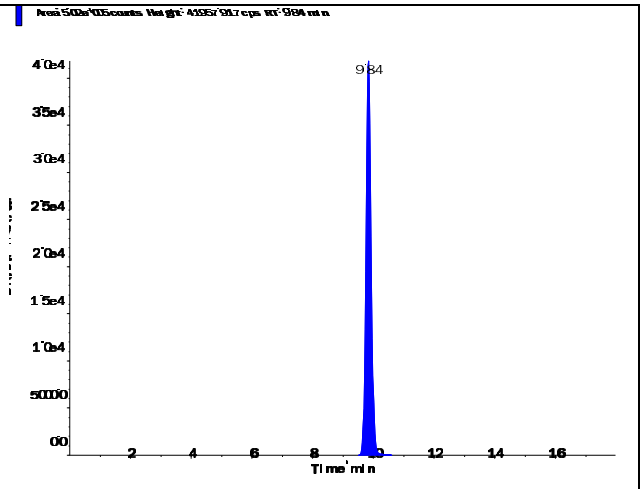
Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

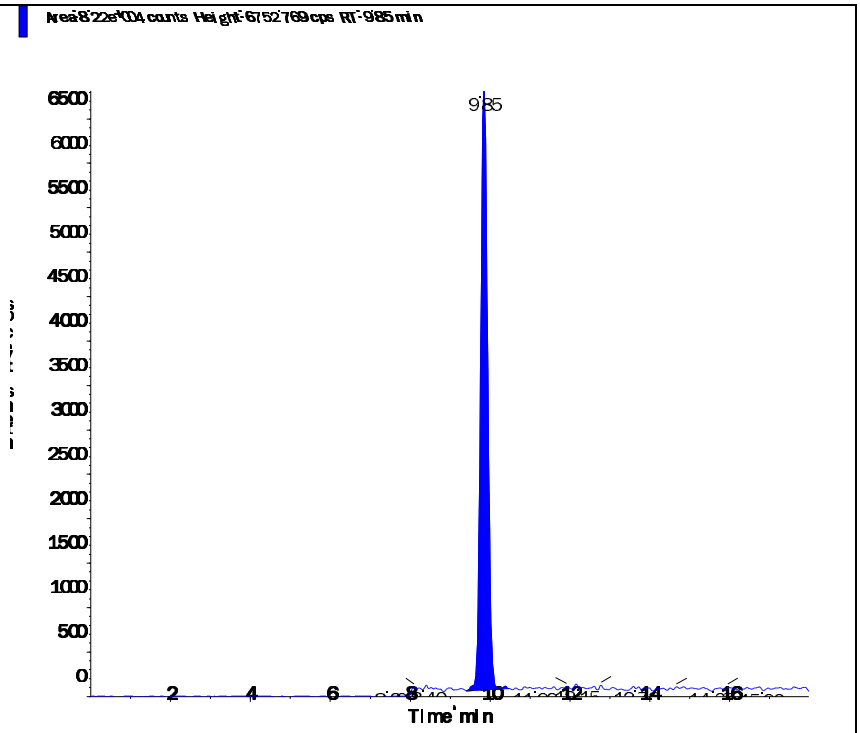
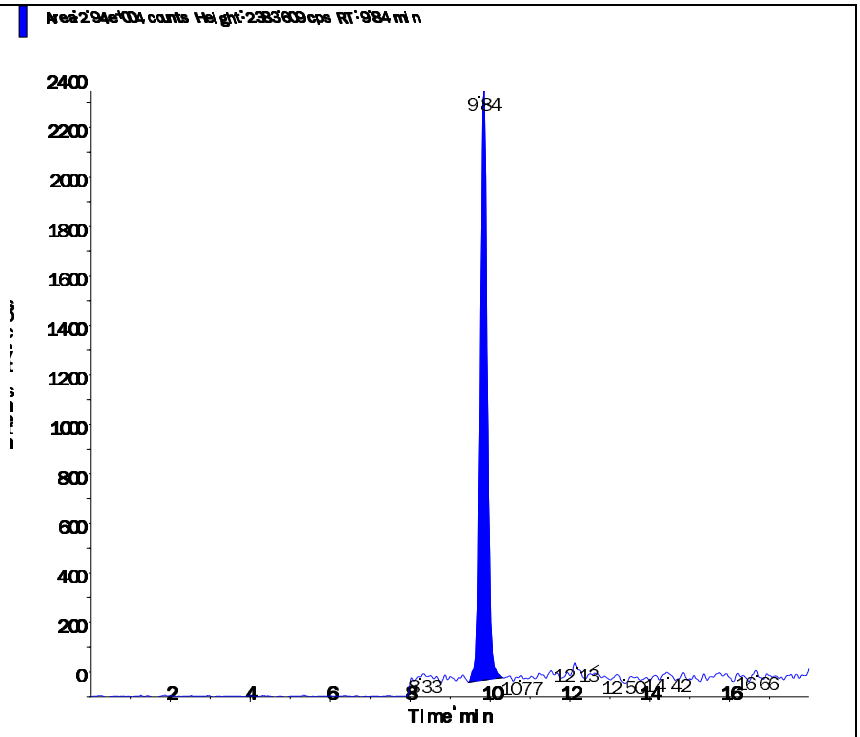
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.483 ng/ml Area Ratio: 0.164 Sample Type: (Standard)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 0.503 ng/ml Area Ratio: 0.058 Sample Type: (Standard)	

Data File	LM34690.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

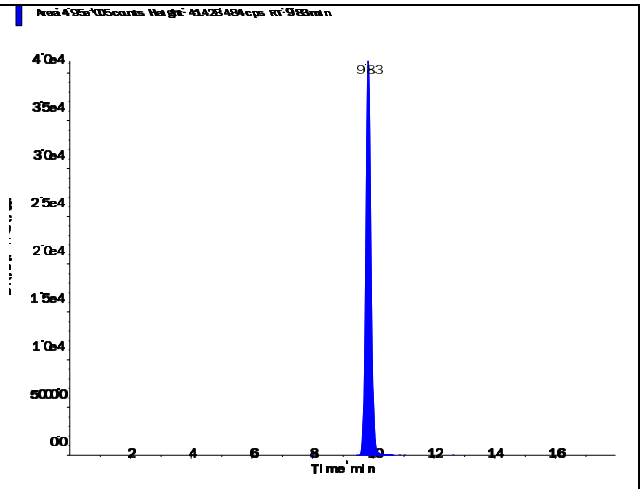
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

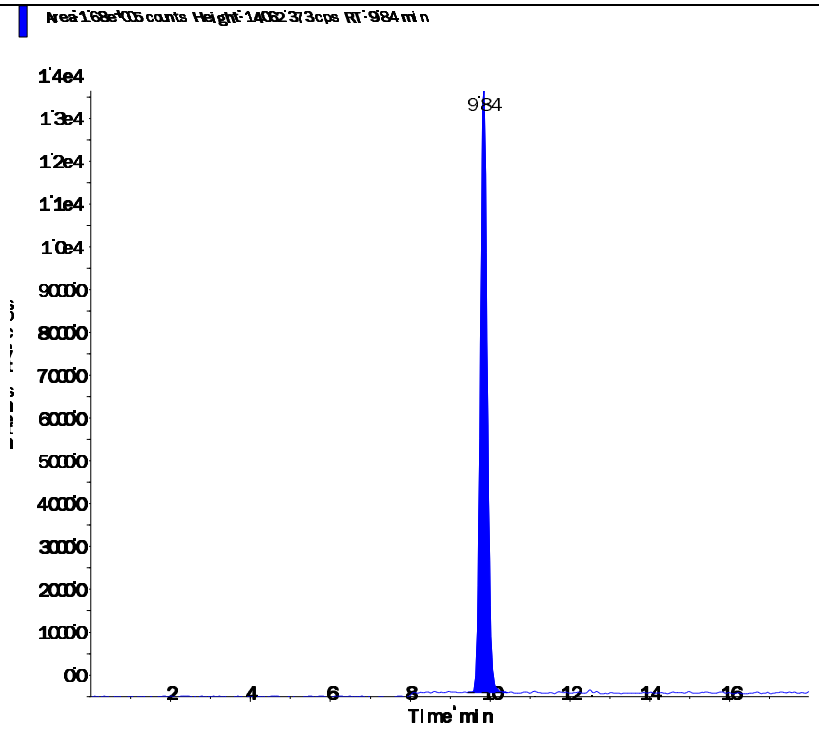
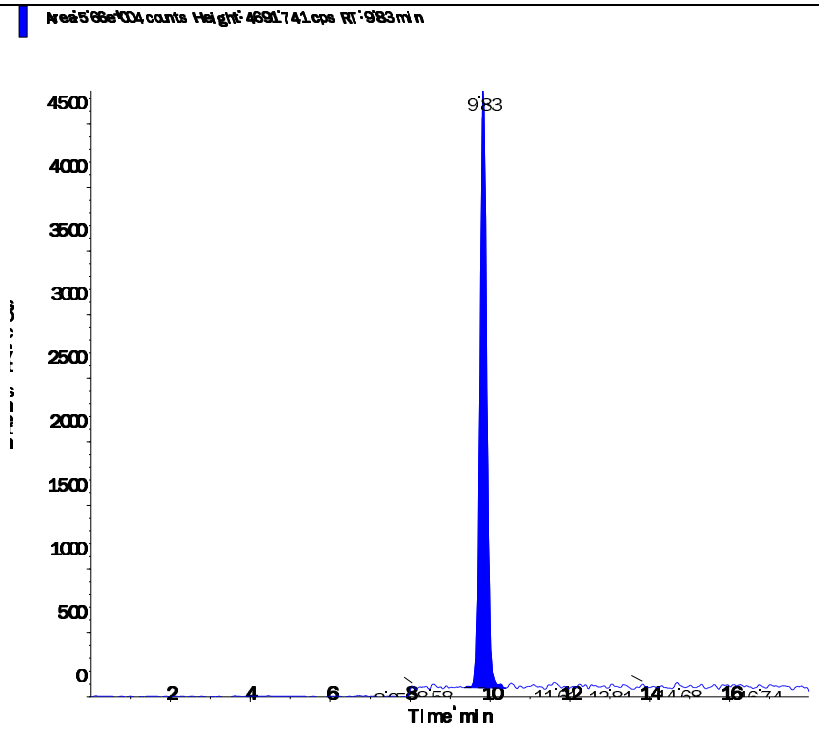
O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.339 Sample Type: (Standard)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.00 ng/ml Area Ratio: 0.114 Sample Type: (Standard)	

s.dataFile Page 2 of 2

Data File	LM34691.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

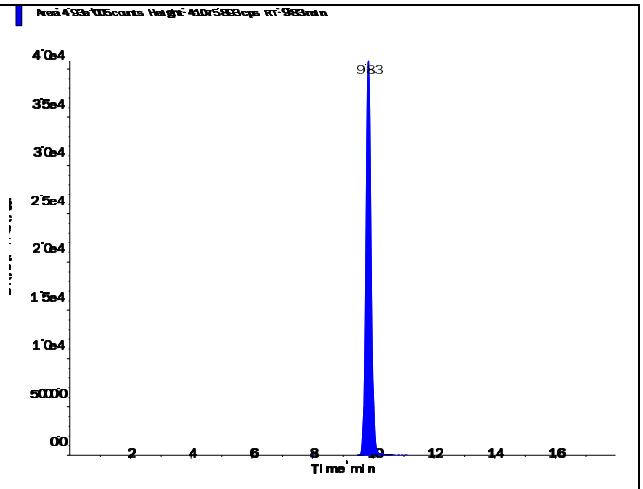
Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

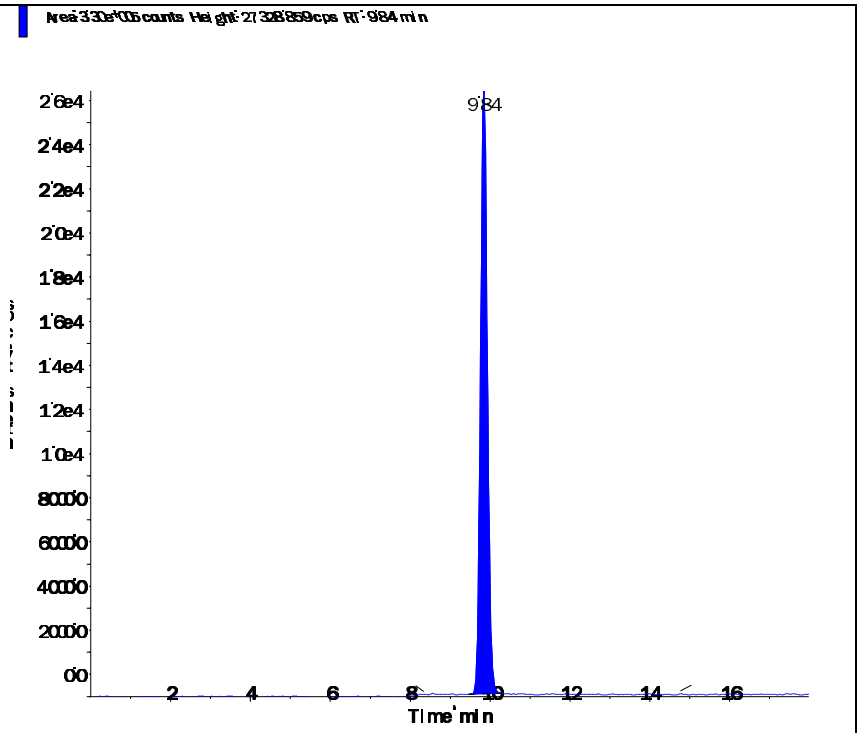
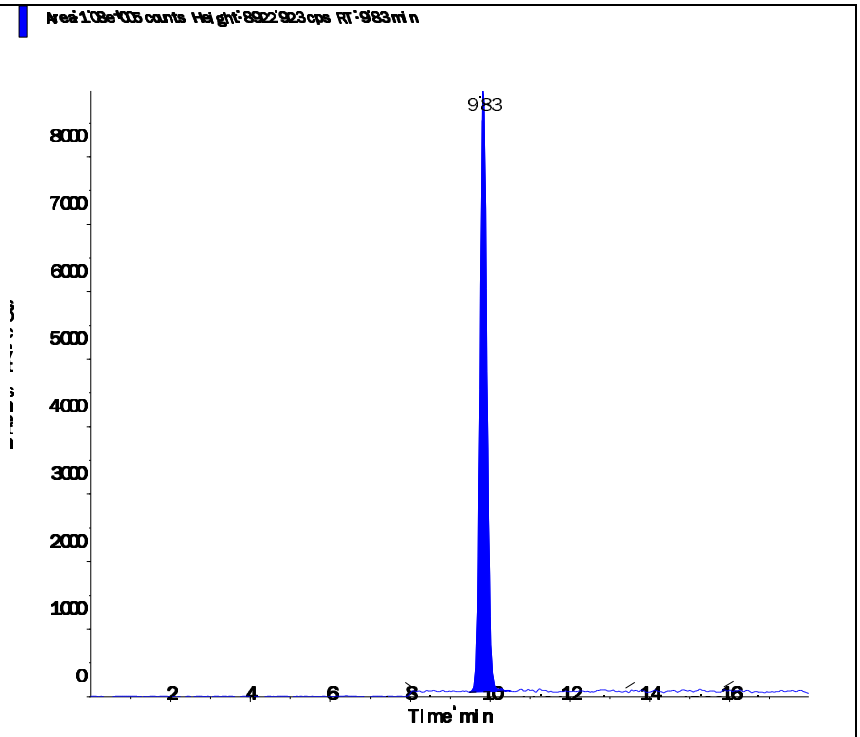
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	

Data File	LM34692.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

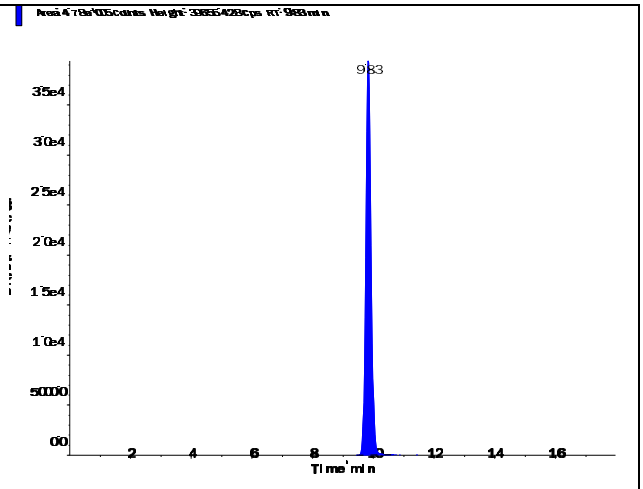
Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

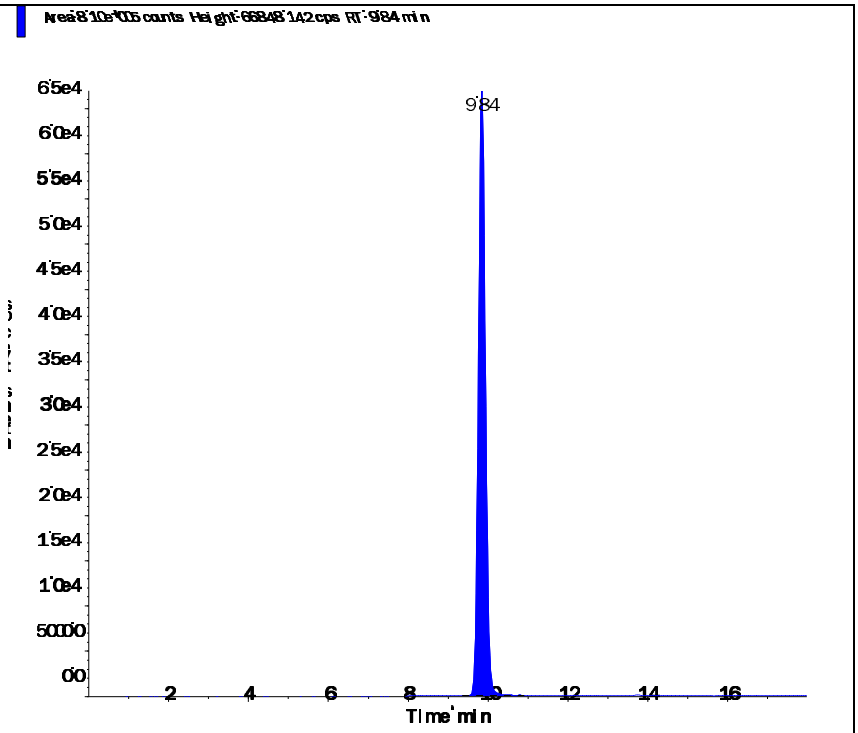
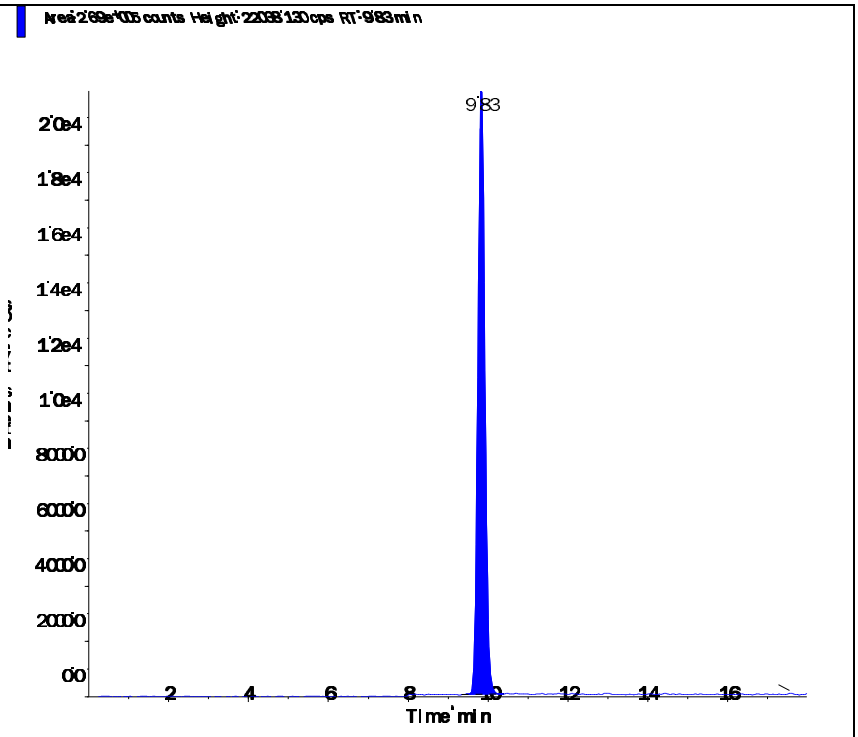
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 5.04 ng/ml Area Ratio: 1.695 Sample Type: (Standard)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 5.02 ng/ml Area Ratio: 0.562 Sample Type: (Standard)	

Data File	LM34693.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

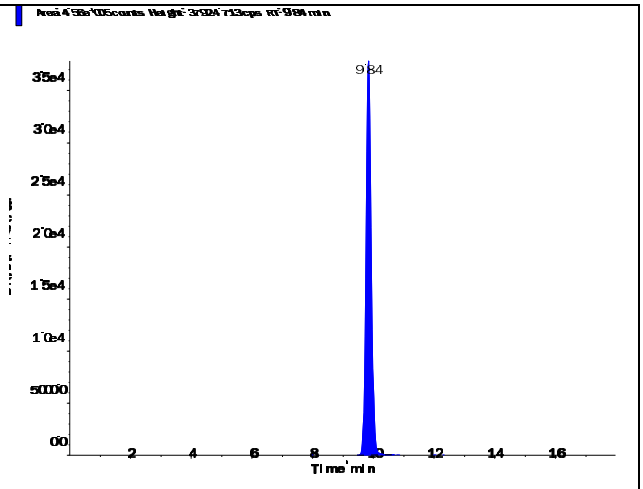
Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

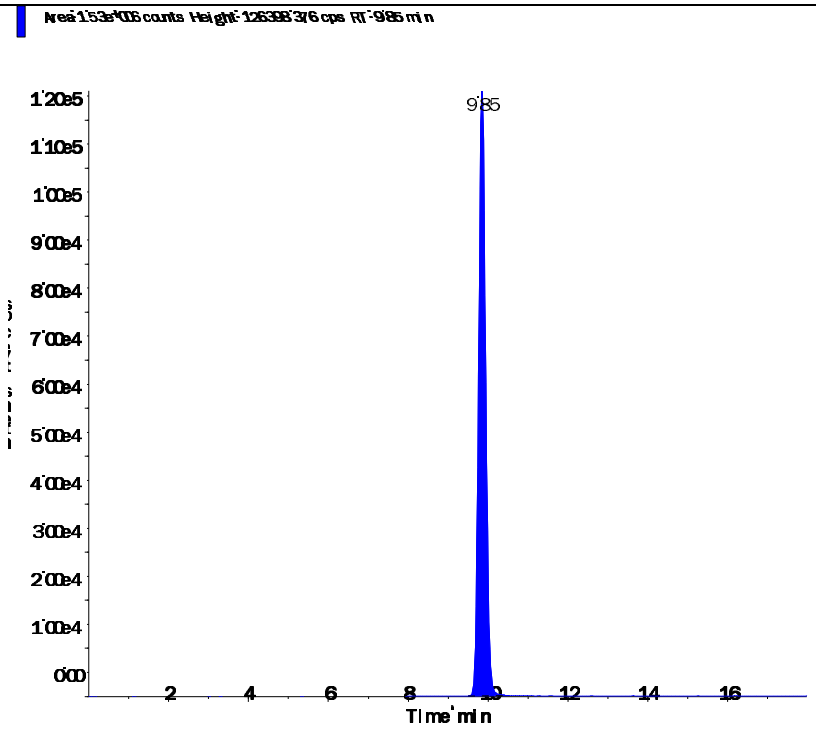
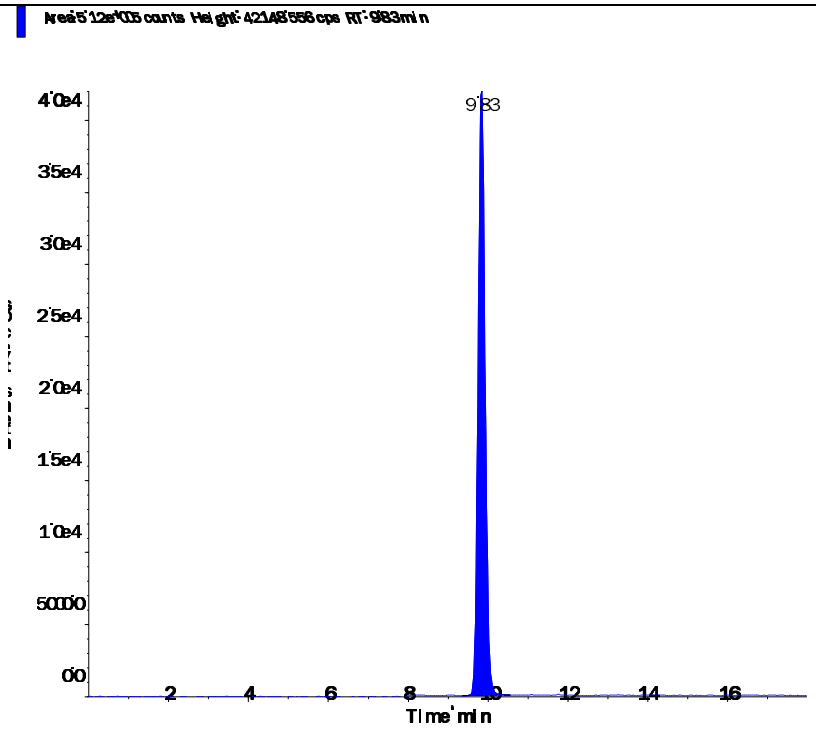
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

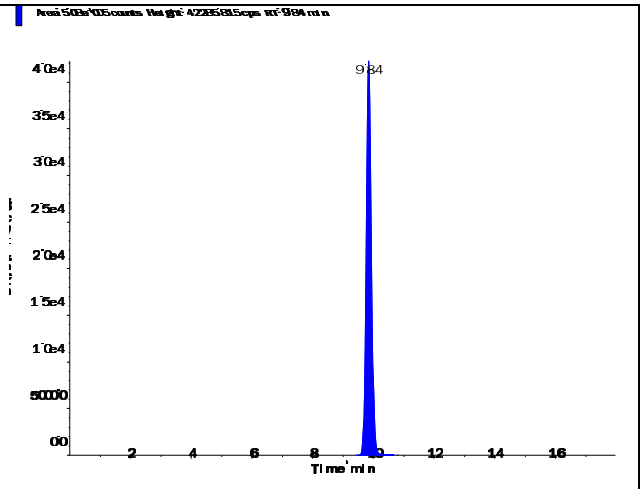
Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

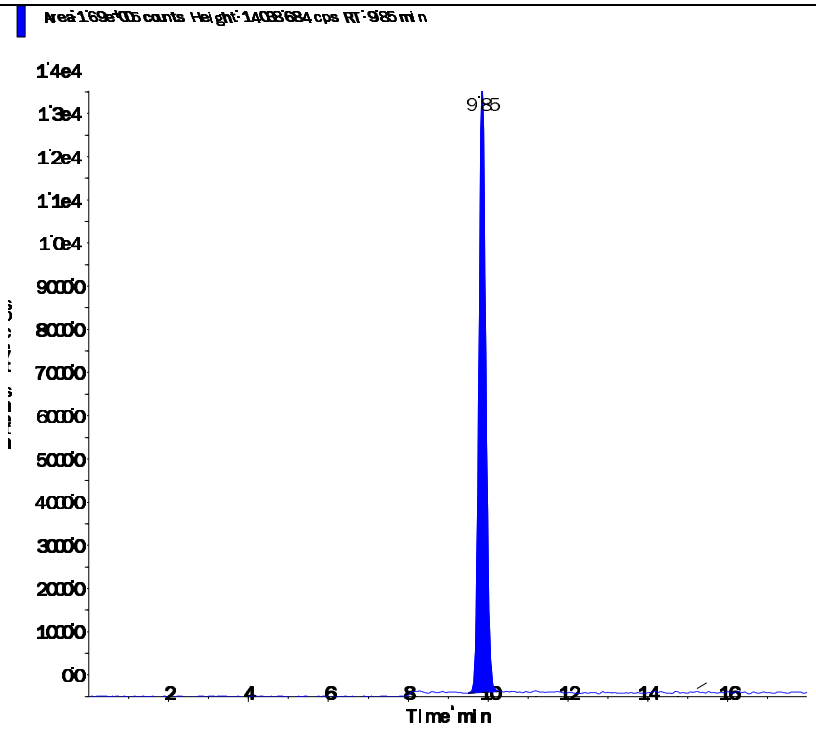
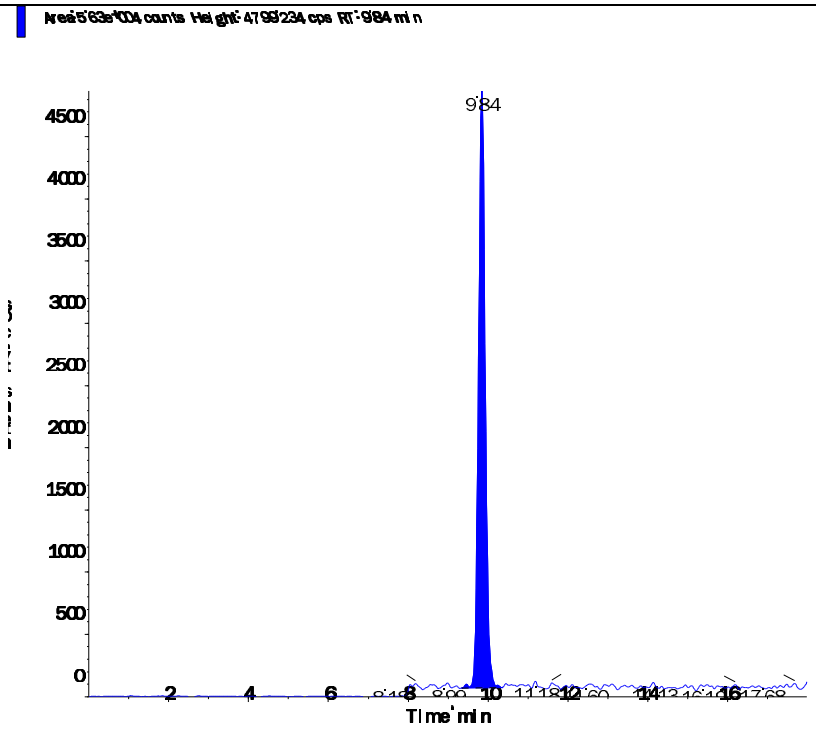
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Quality Control)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.985 ng/ml Area Ratio: 0.332 Sample Type: (Quality Control)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 0.973 ng/ml Area Ratio: 0.111 Sample Type: (Quality Control)	

Data File	LM37351.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 2:39:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

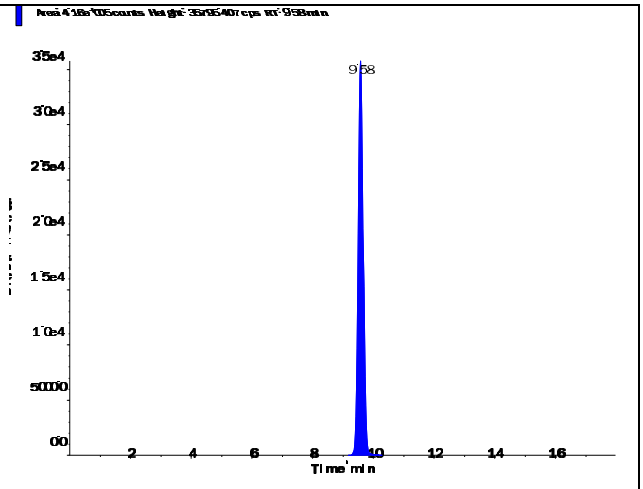
Sample Name	WG587969-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM37351.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 2:39:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587969-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD78249	**Weight to Volume**	0.00

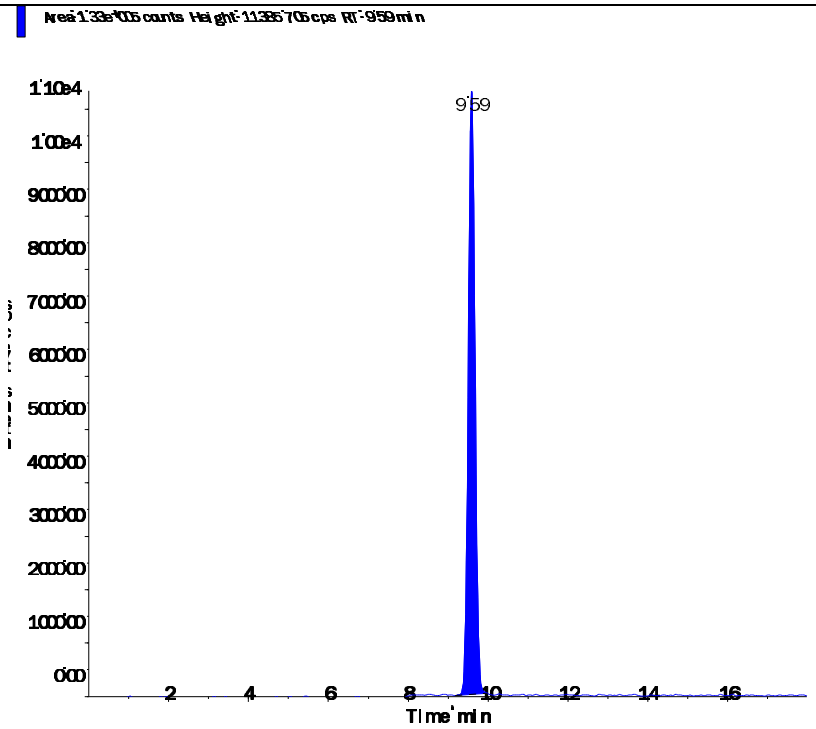
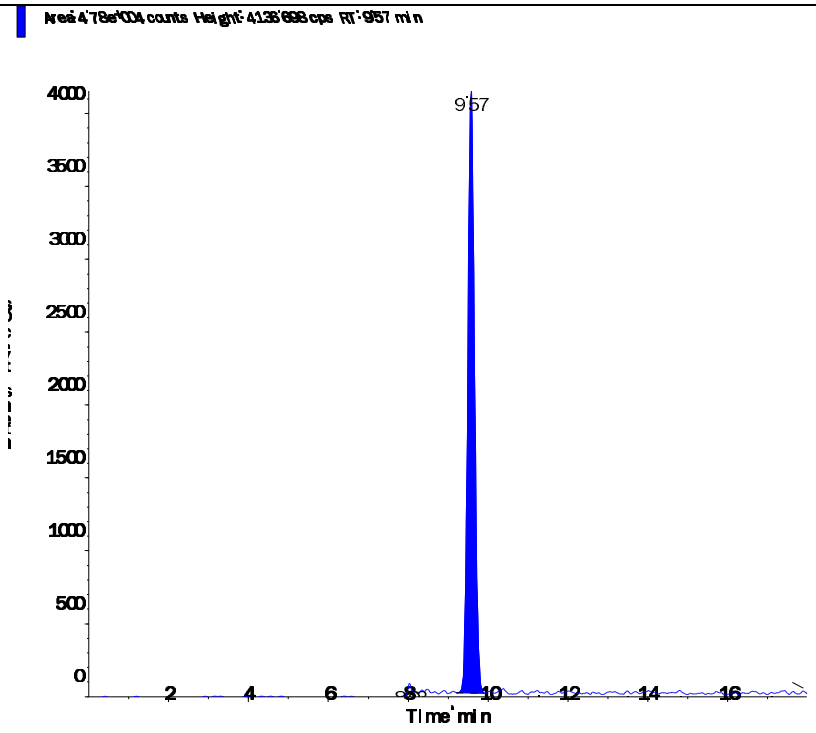
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.160e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.330e+05	9.59	1.00	0.944
Perchlorate conf	4.780e+04	9.57	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Quality Control)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.59 (9.84) min Calculated conc: 0.944 ng/ml Area Ratio: 0.319 Sample Type: (Quality Control)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.57 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.115 Sample Type: (Quality Control)	

Data File	LM37363.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 6:27:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

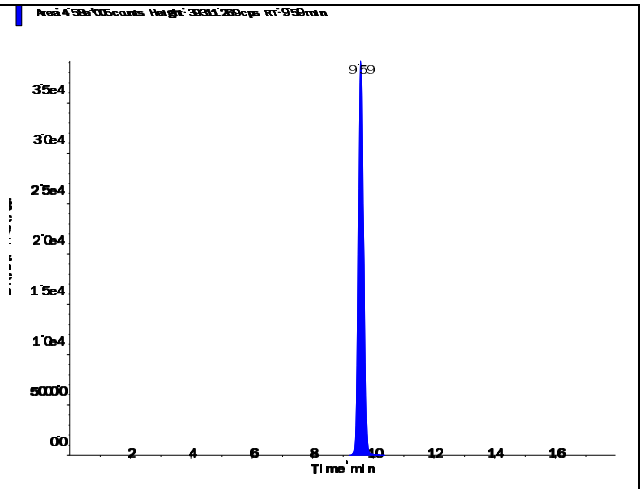
Sample Name	WG587969-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM37363.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 6:27:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587969-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD78249	**Weight to Volume**	0.00

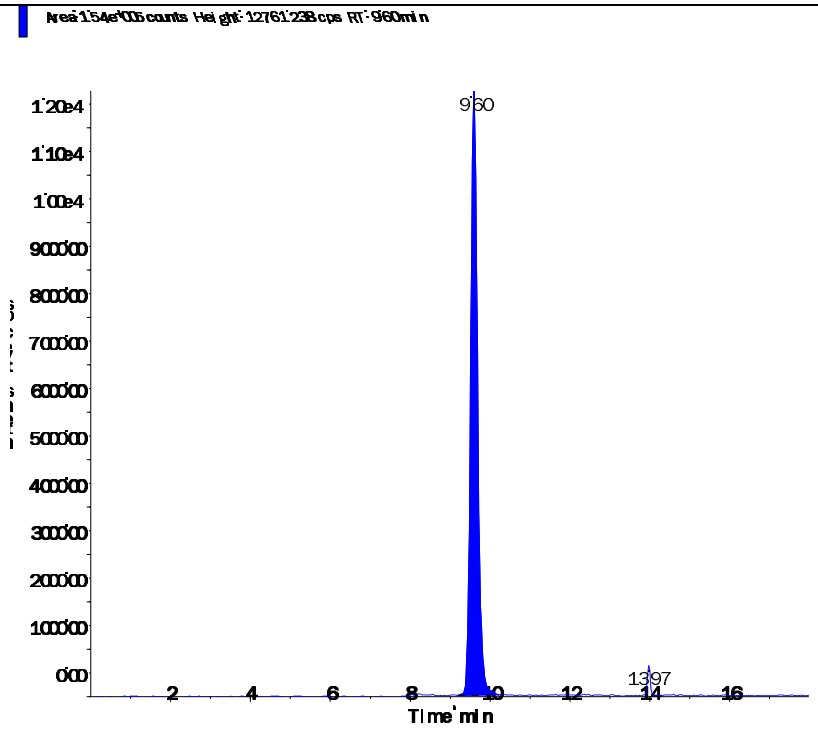
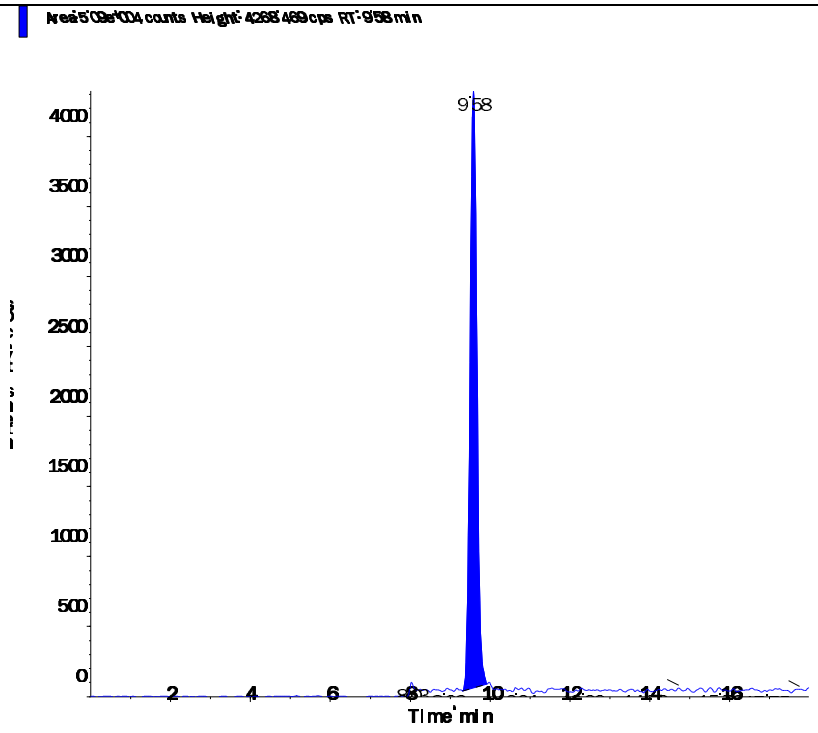
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.540e+05	9.60	1.00	0.993
Perchlorate conf	5.090e+04	9.58	1.00	0.975

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Quality Control)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.60 (9.84) min Calculated conc: 0.993 ng/ml Area Ratio: 0.335 Sample Type: (Quality Control)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.58 (9.84) min Calculated conc: 0.975 ng/ml Area Ratio: 0.111 Sample Type: (Quality Control)	

Data File	LM37375.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 10:14:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

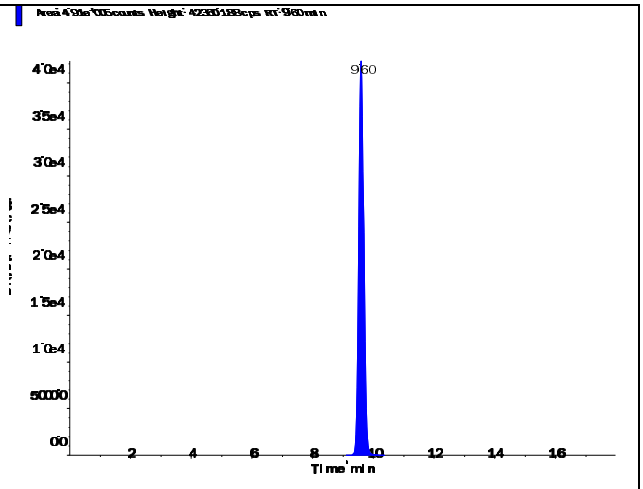
Sample Name	WG587969-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM37375.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 10:14:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587969-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD78249	**Weight to Volume**	0.00

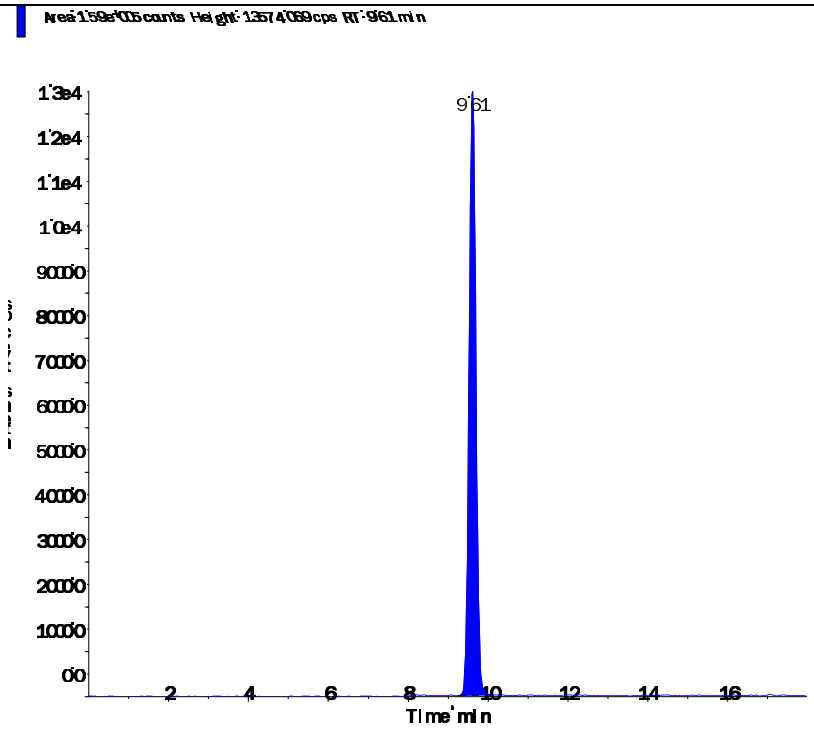
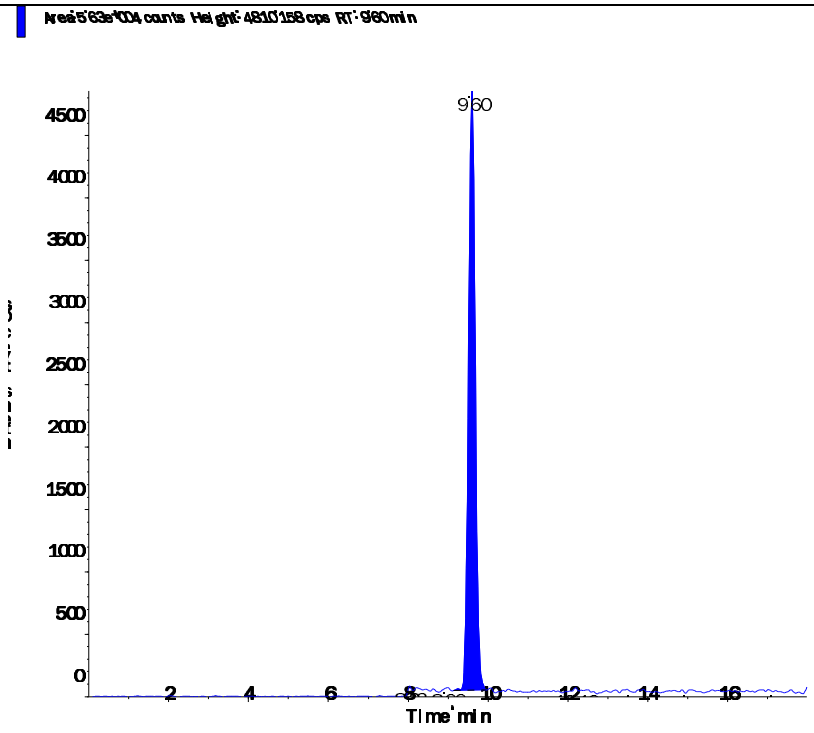
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.590e+05	9.61	1.00	0.956
Perchlorate conf	5.630e+04	9.60	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Quality Control)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.61 (9.84) min Calculated conc: 0.956 ng/ml Area Ratio: 0.323 Sample Type: (Quality Control)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.60 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.115 Sample Type: (Quality Control)	

Data File	LM37352.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 2:58:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

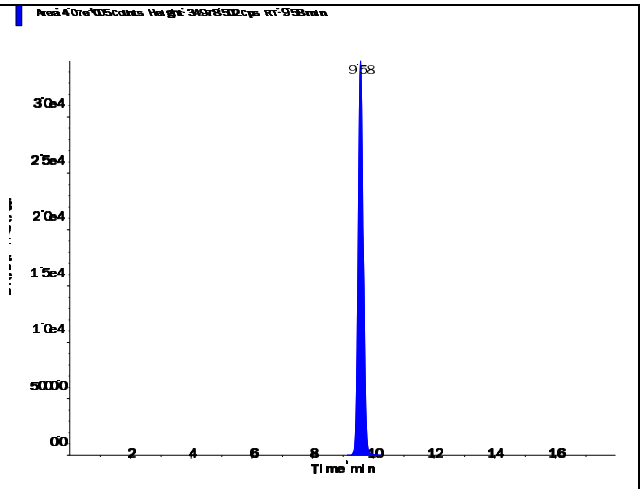
Sample Name	WG587968-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM37352.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 2:58:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD78249	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.070e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.880e+04	9.59	N/A	0.207
Perchlorate conf	1.120e+04	9.58	N/A	0.225

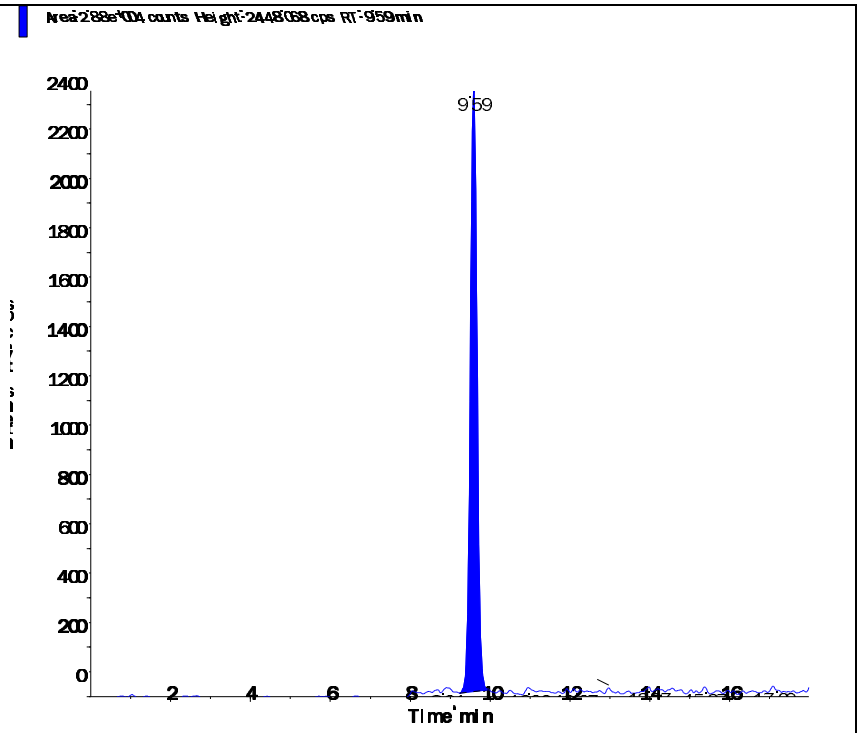
O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



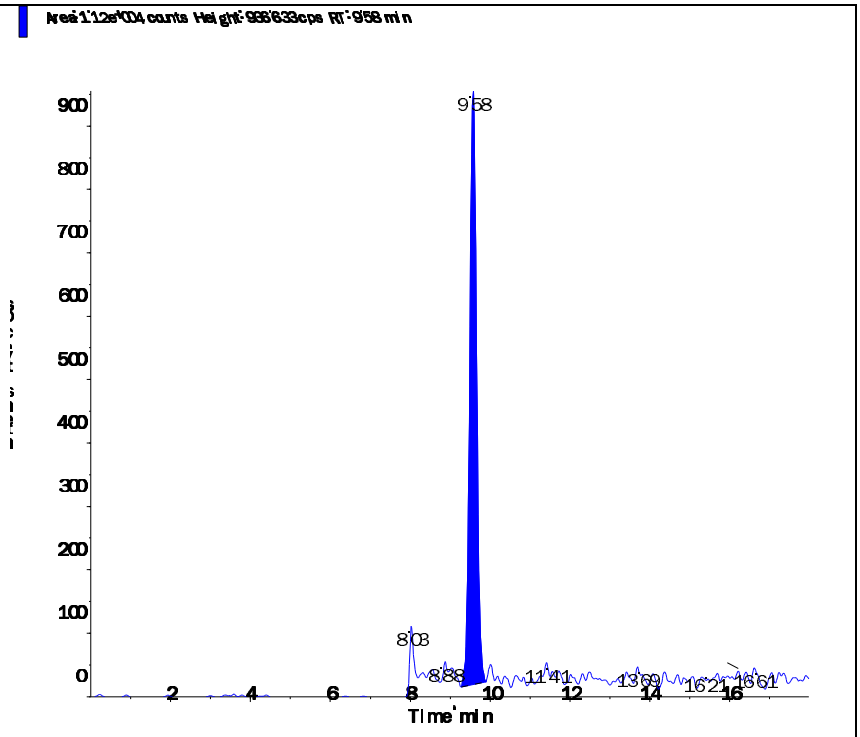
Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)



Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.58 (9.84) min
Calculated conc:	0.225 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)



Data File	LM37364.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 6:45:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

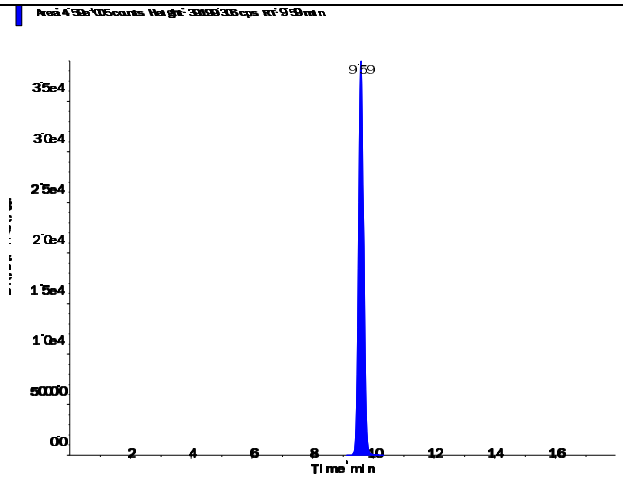
Sample Name	WG587968-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM37364.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 6:45:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD78249	**Weight to Volume**	0.00

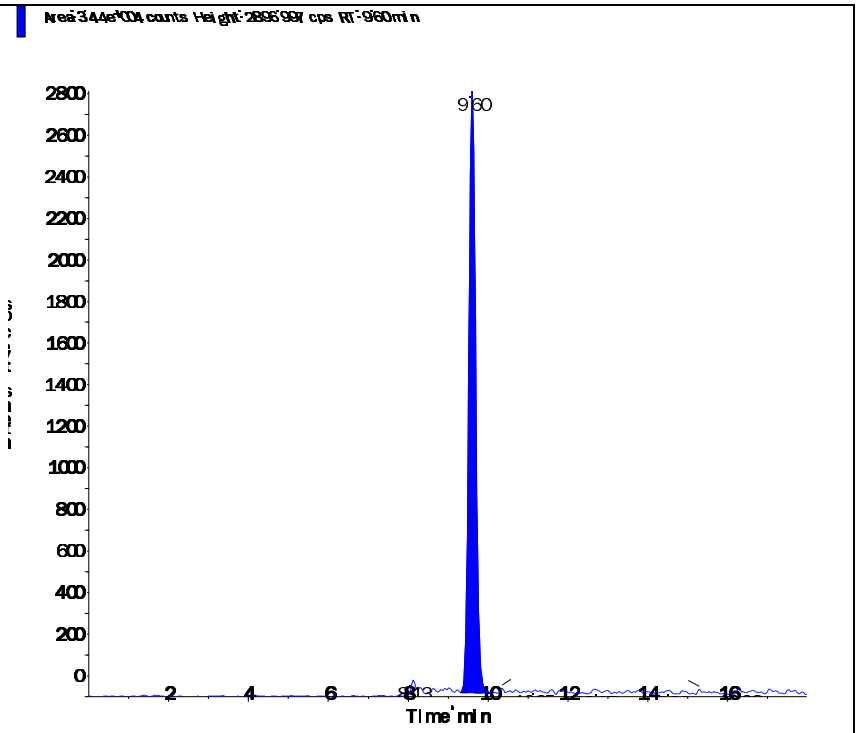
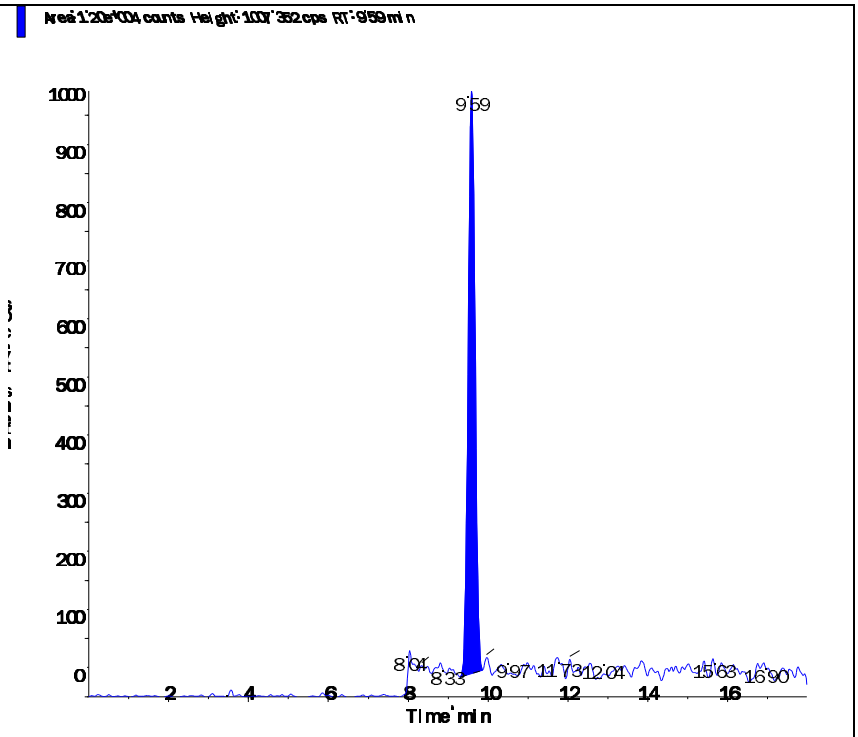
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.590e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.440e+04	9.60	N/A	0.219
Perchlorate conf	1.200e+04	9.59	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.60 (9.84) min Calculated conc: 0.219 ng/ml Area Ratio: 0.075 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.59 (9.84) min Calculated conc: 0.214 ng/ml Area Ratio: 0.026 Sample Type: (Unknown)	

Data File	LM37376.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 10:33:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

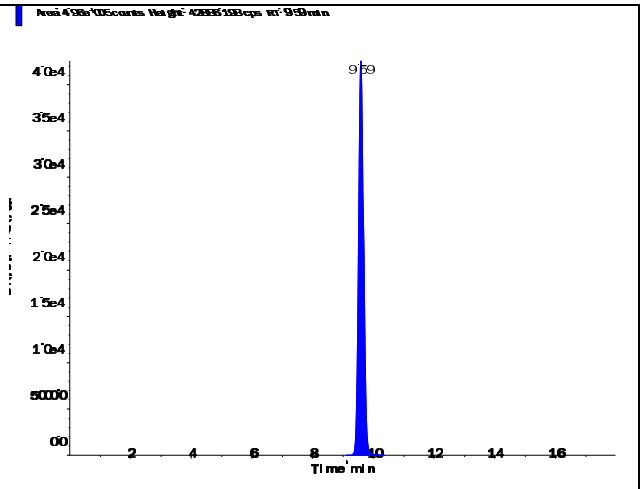
Sample Name	WG587968-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM37376.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 10:33:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD78249	**Weight to Volume**	0.00

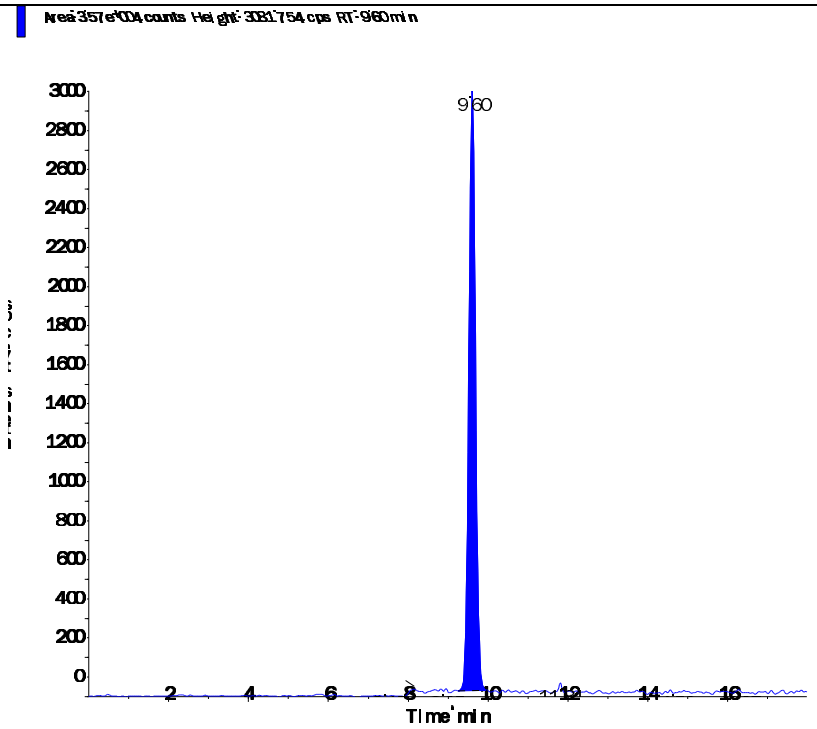
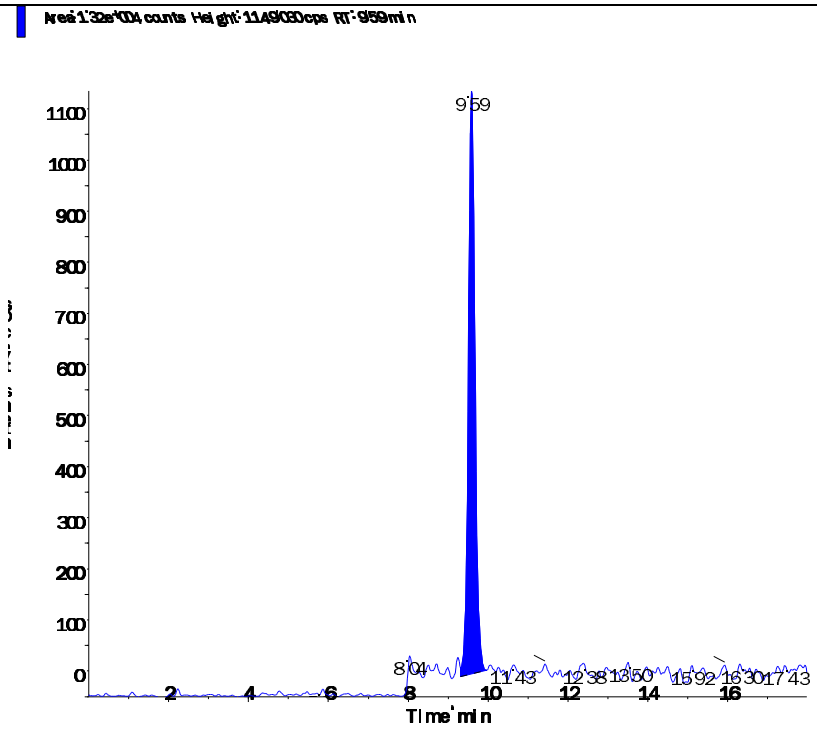
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.570e+04	9.60	N/A	0.21
Perchlorate conf	1.320e+04	9.59	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.60 (9.84) min Calculated conc: 0.21 ng/ml Area Ratio: 0.072 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.59 (9.84) min Calculated conc: 0.218 ng/ml Area Ratio: 0.027 Sample Type: (Unknown)	

Data File	LM37350.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 2:20:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

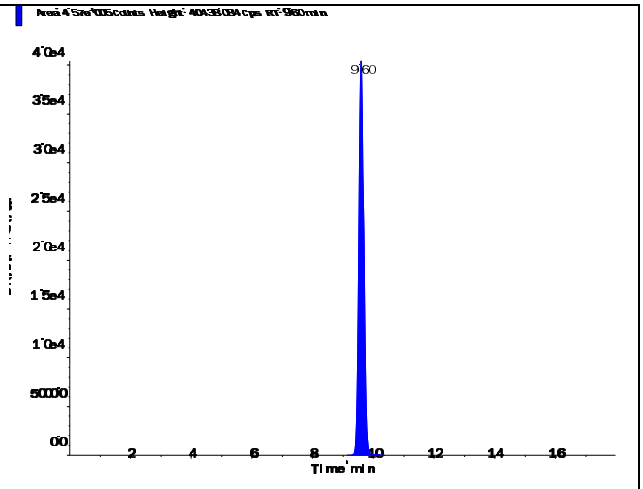
Sample Name	WG587969-01 CCB	**Injection Vial**	1.00
Data File	LM37350.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 2:20:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587969-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.570e+05	9.60	5.00	-

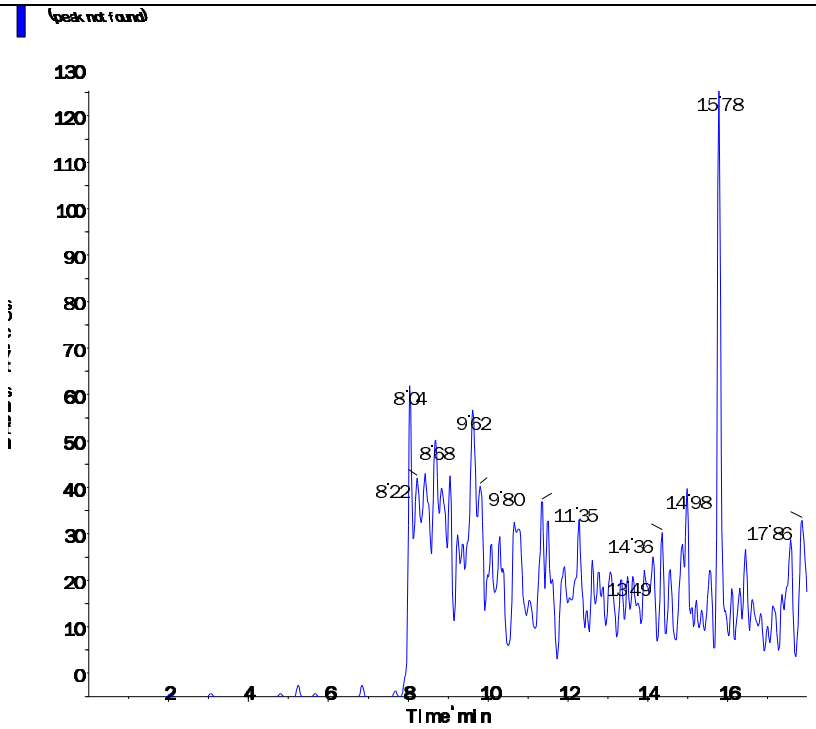
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

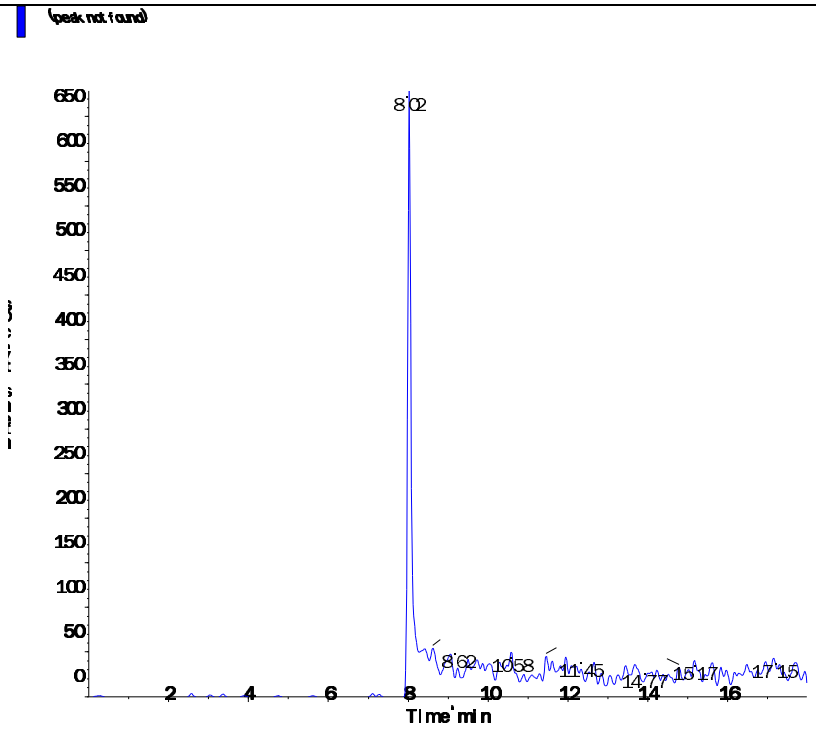
RT (Exp. RT): 9.60(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): Calculated conc: Area Ratio: Sample Type:	 0.00 (9.84) min No Peak ng/ml 0.00 (Unknown)



Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): Calculated conc: Area Ratio: Sample Type:	 0.00 (9.84) min No Peak ng/ml 0.00 (Unknown)



Data File	LM37365.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 7:04:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

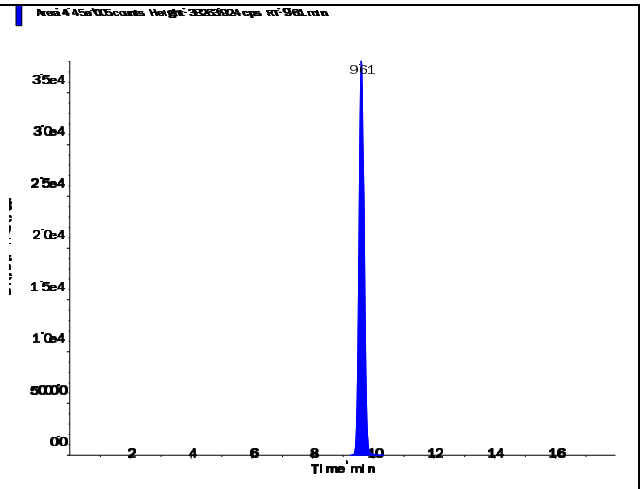
Sample Name	WG587969-04 CCB	**Injection Vial**	1.00
Data File	LM37365.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 7:04:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587969-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

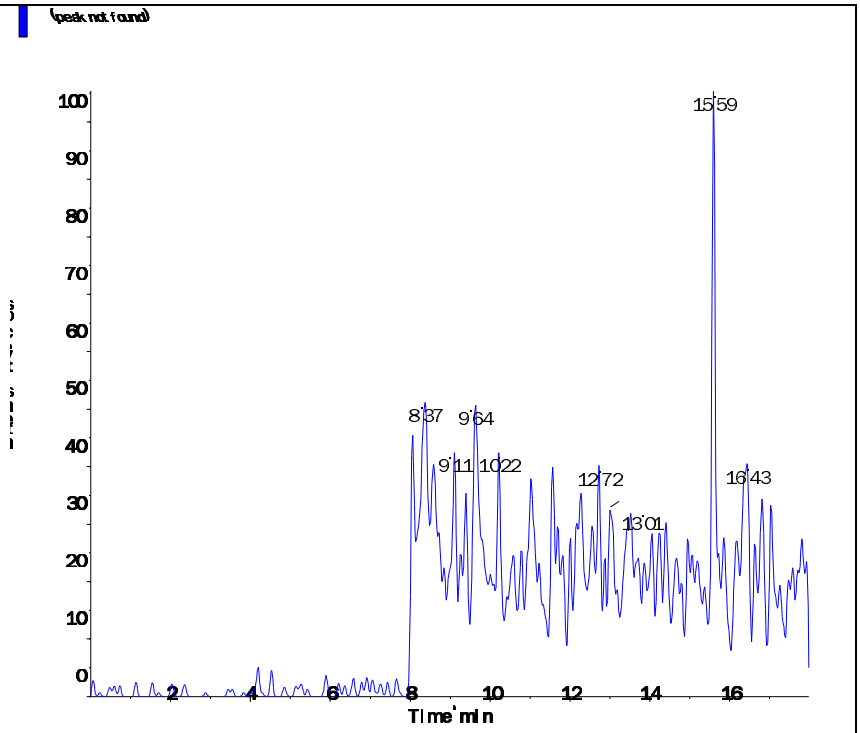
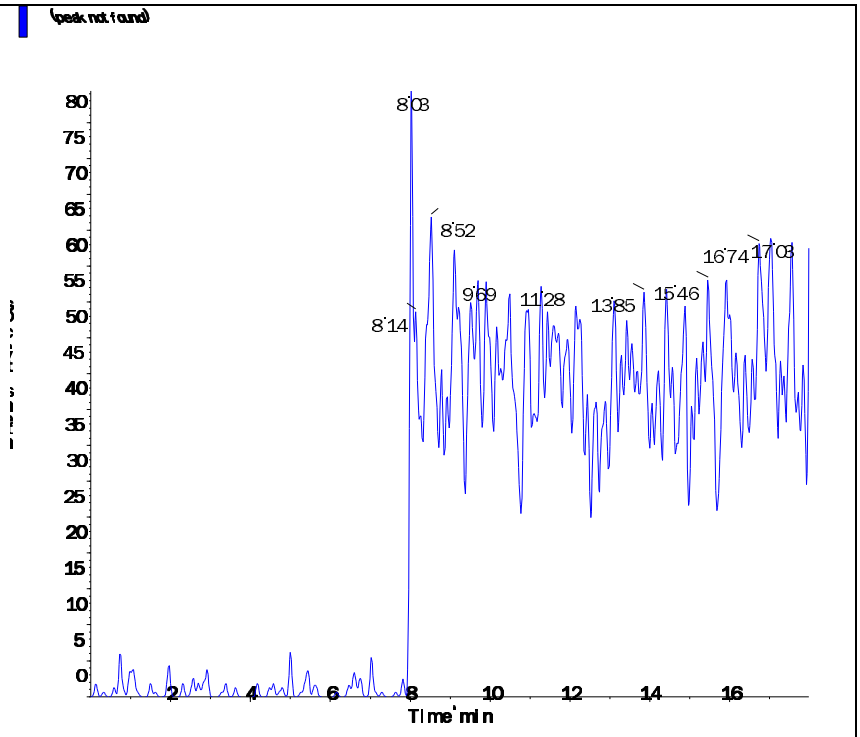
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	

Data File	LM37377.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 10:52:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

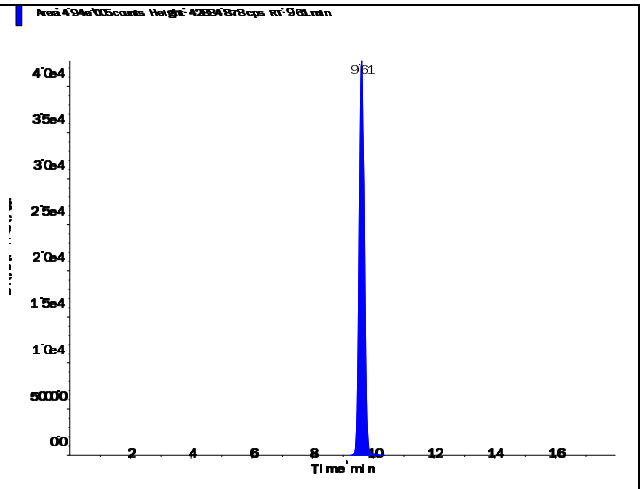
Sample Name	WG587969-06 CCB	**Injection Vial**	1.00
Data File	LM37377.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 10:52:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587969-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

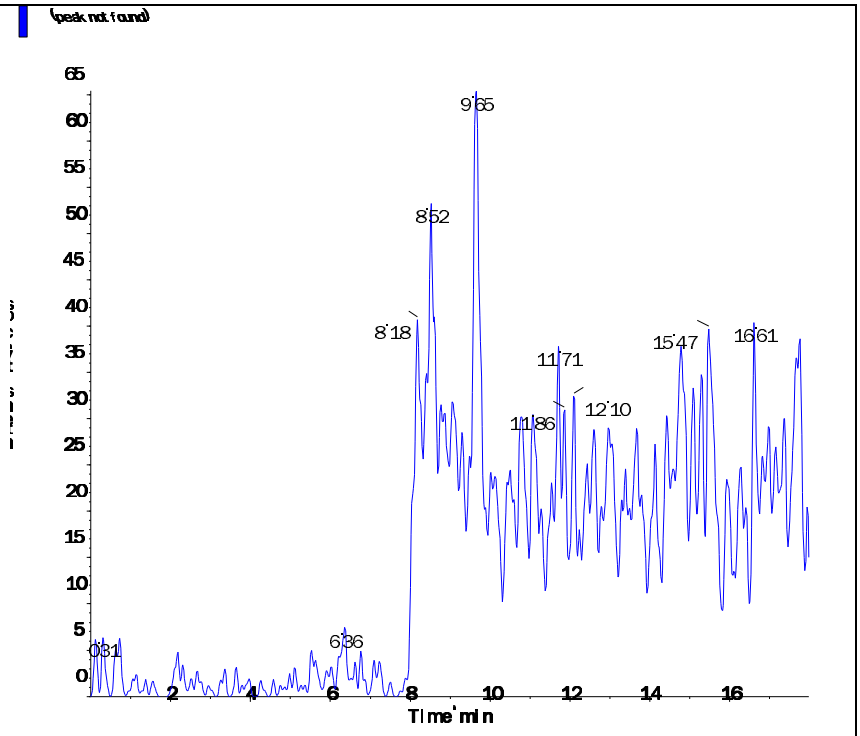
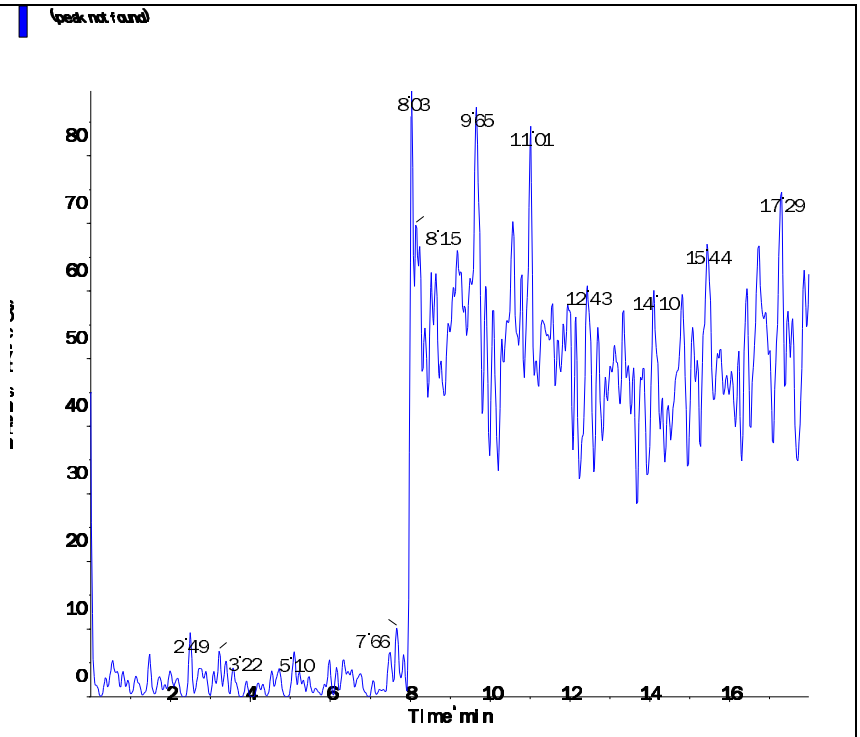
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.940e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	

Data File	LM37353.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 3:17:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

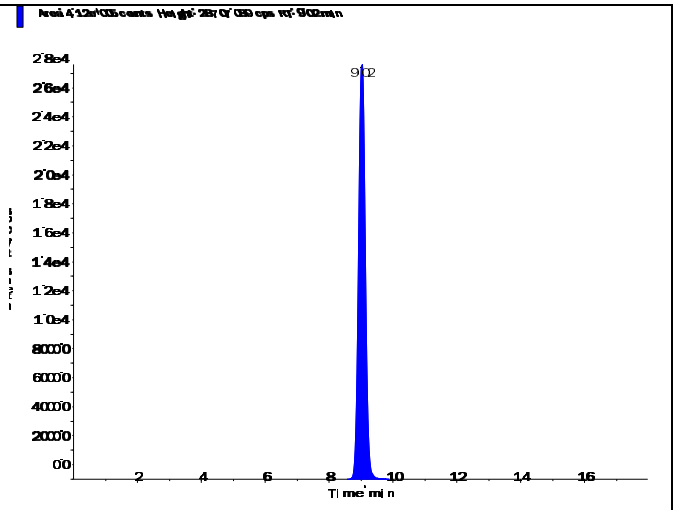
Sample Name	WG587968-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM37353.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 3:17:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD78251	**Weight to Volume**	0.00

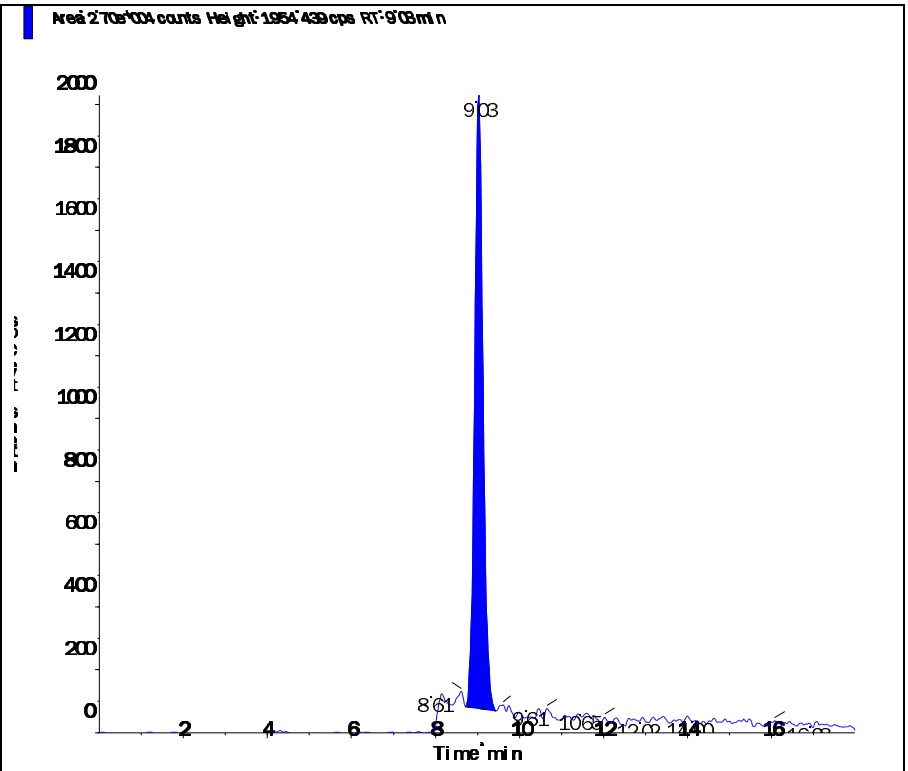
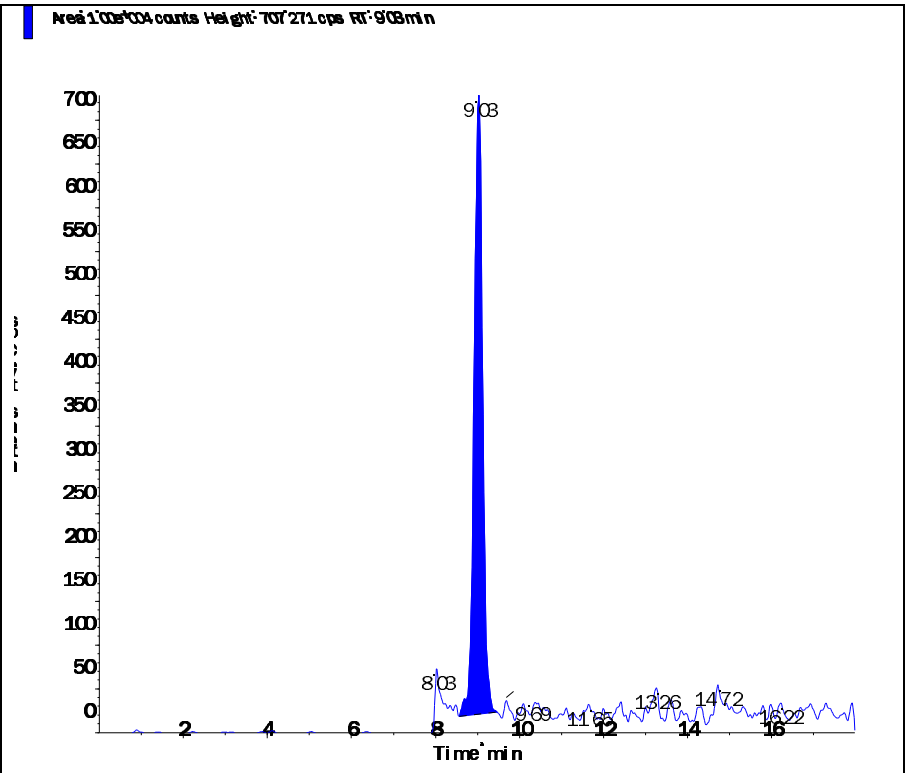
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.120e+05	9.02	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.700e+04	9.03	N/A	0.191
Perchlorate conf	1.000e+04	9.03	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.02(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

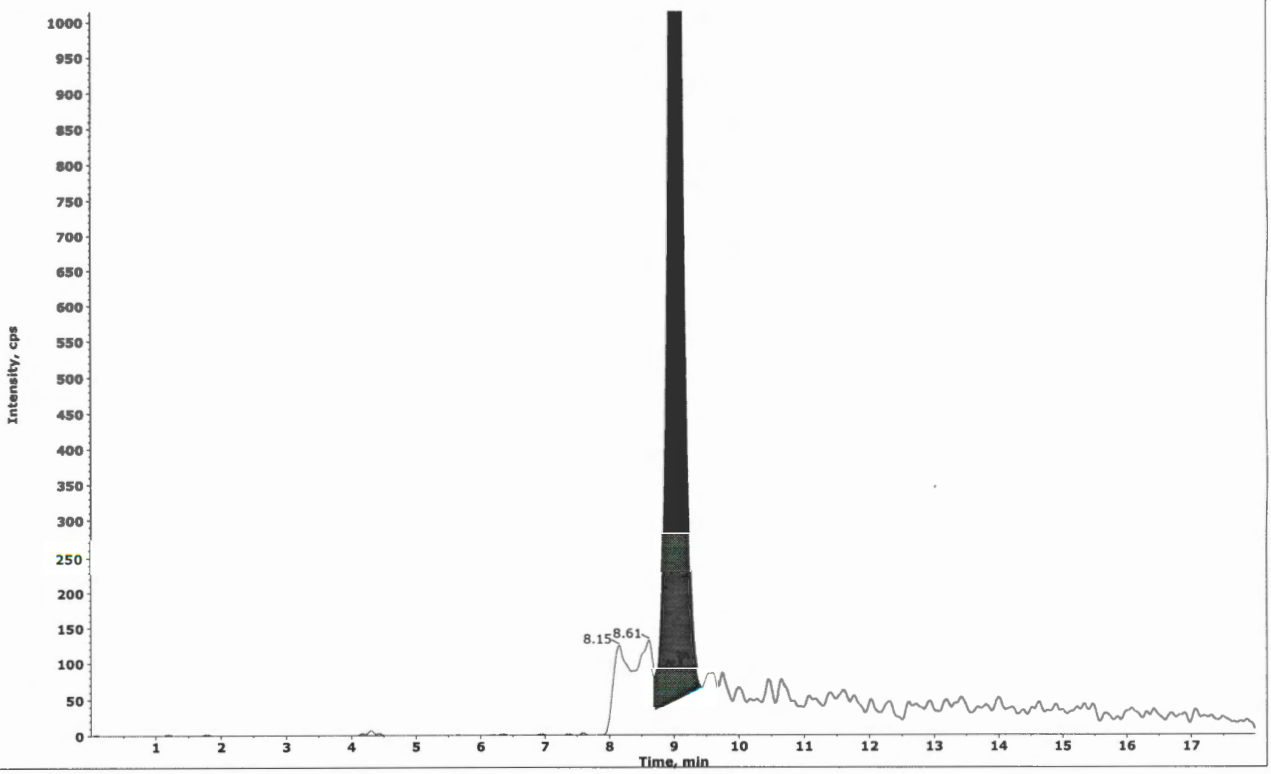


Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.03 (9.84) min Calculated conc: 0.191 ng/ml Area Ratio: 0.065 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.03 (9.84) min Calculated conc: 0.197 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	

Printing Time: 4:26:23 PM
Printing Date: Tuesday, October 18, 2016

Sample Name: "WG587968-01 MCT (2.0ug/kg)" Sample ID: "WG587968-01" File: "LM37353.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD78251" Annotation: ""

Sample Index:	2	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.198	ug/L
Acq. Date:	10/18/2016	
Acq. Time:	3:17:41 PM	
Modified:	No	
Proc. Algorithm:	Analyst Classic	
Bunching Factor:	2	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Sep. Width:	0.20	
Sep. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.84	min
Use Relative RT:	Yes	
Int. Type:	Valley	
Retention Time:	9.03	min
Area:	2.80e+004	counts
Height:	1980.538	cps
Start Time:	8.708	min
End Time:	9.437	min



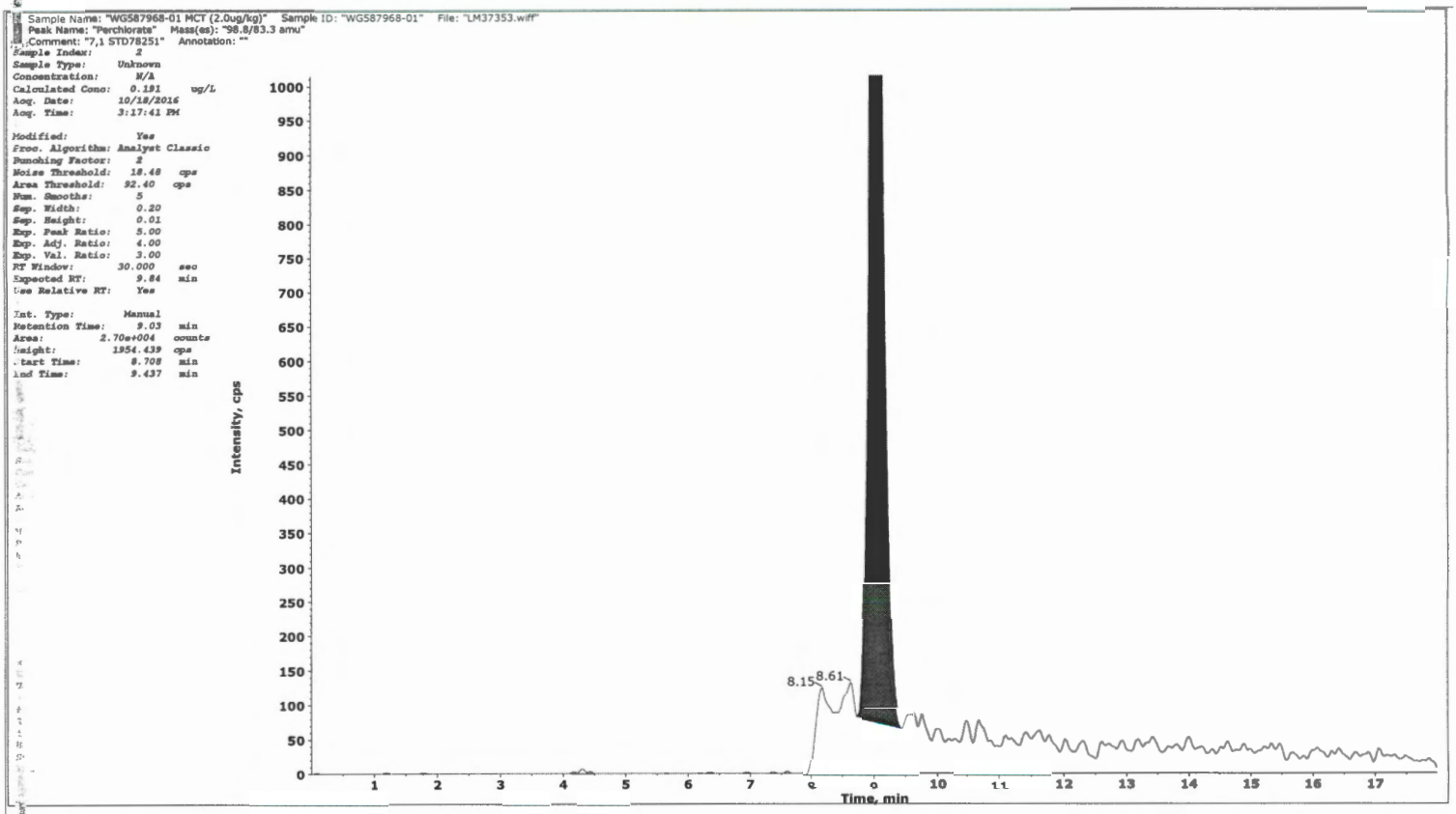
Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 4:27:53 PM
Printing Date: Tuesday, October 18, 2016

Sample Name: "WG587968-01 MCT (2.0ug/kg)" Sample ID: "WG587968-01" File: "LM37353.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD78251" Annotation: ""
Sample Index: 2
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.191 ug/L
Acq. Date: 10/18/2016
Acq. Time: 3:17:41 PM

Modified: Yes
Proc. Algorithm: Analyst Classic
Punching Factor: 2
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Manual
Retention Time: 9.03 min
Area: 2.70e+004 counts
Height: 1954.439 cps
Start Time: 8.708 min
End Time: 9.437 min



#4
JWR/10/18/16

WD
10-20-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.1.1.5 Raw QC Data

Data File	LM37354.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 3:36:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

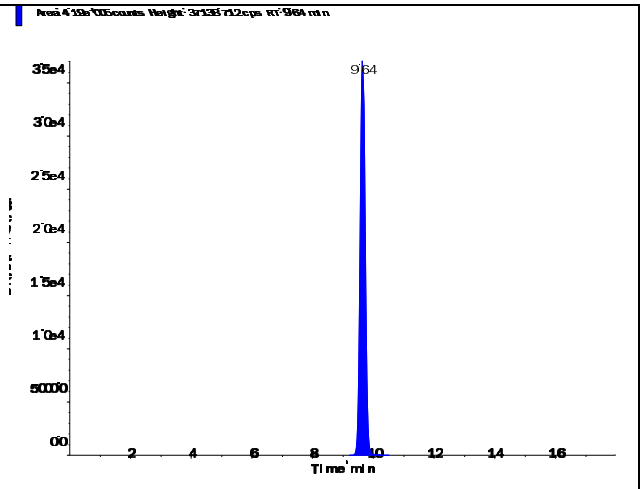
Sample Name	WG587968-02 BLANK	**Injection Vial**	5.00
Data File	LM37354.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 3:36:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

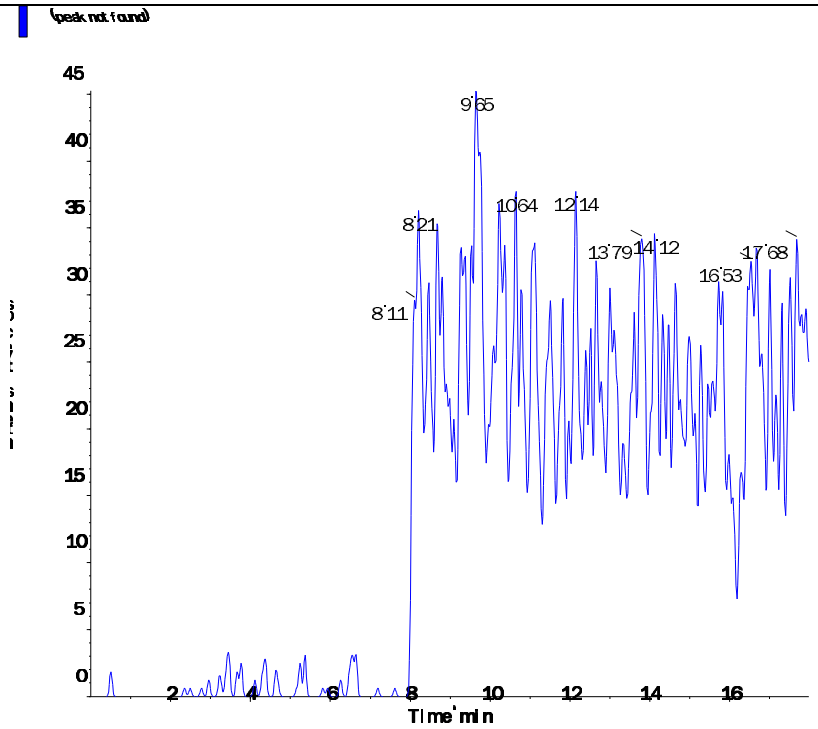
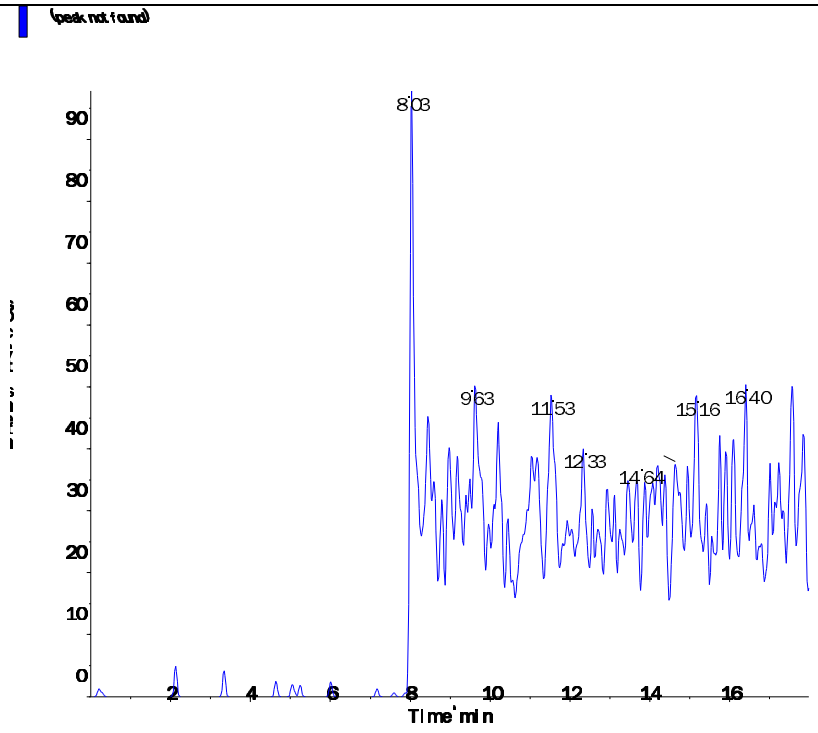
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.190e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	

Data File	LM37355.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 3:55:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

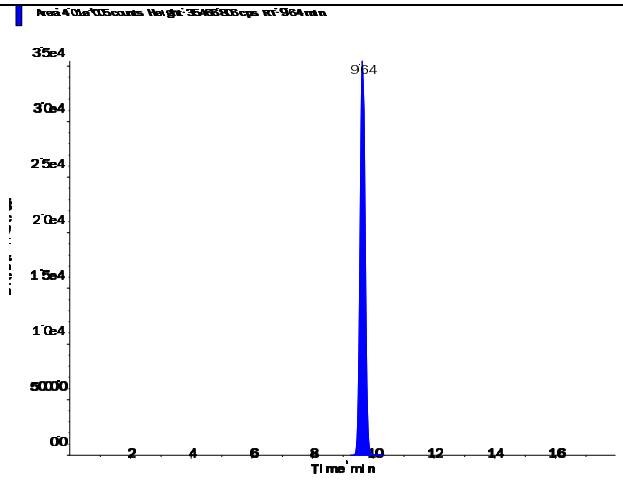
Sample Name	WG587968-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM37355.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 3:55:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD78251	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.010e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.650e+04	9.65	N/A	0.193
Perchlorate conf	9.900e+03	9.64	N/A	0.201

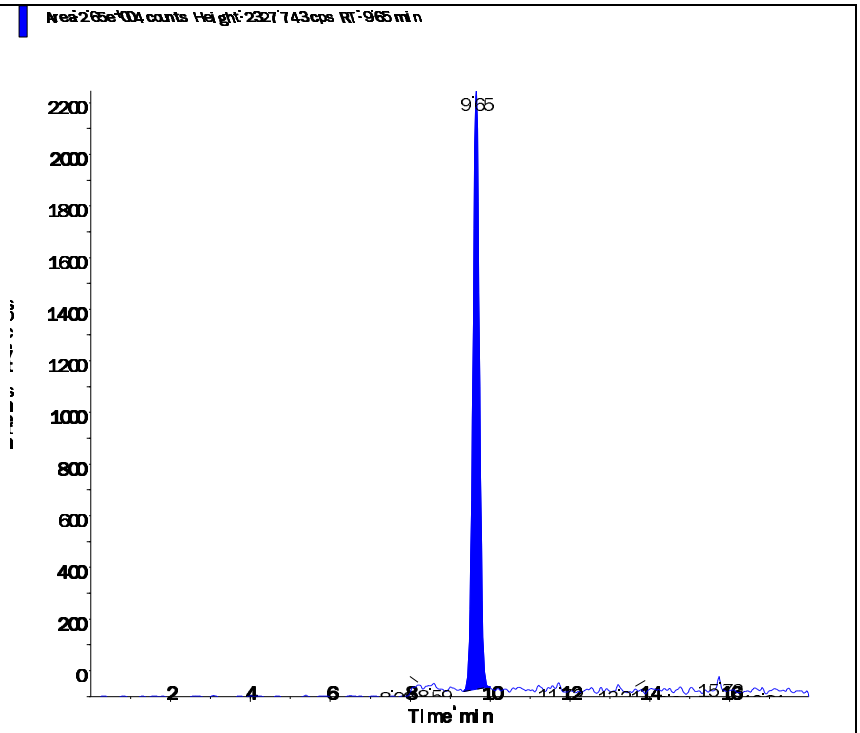
O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



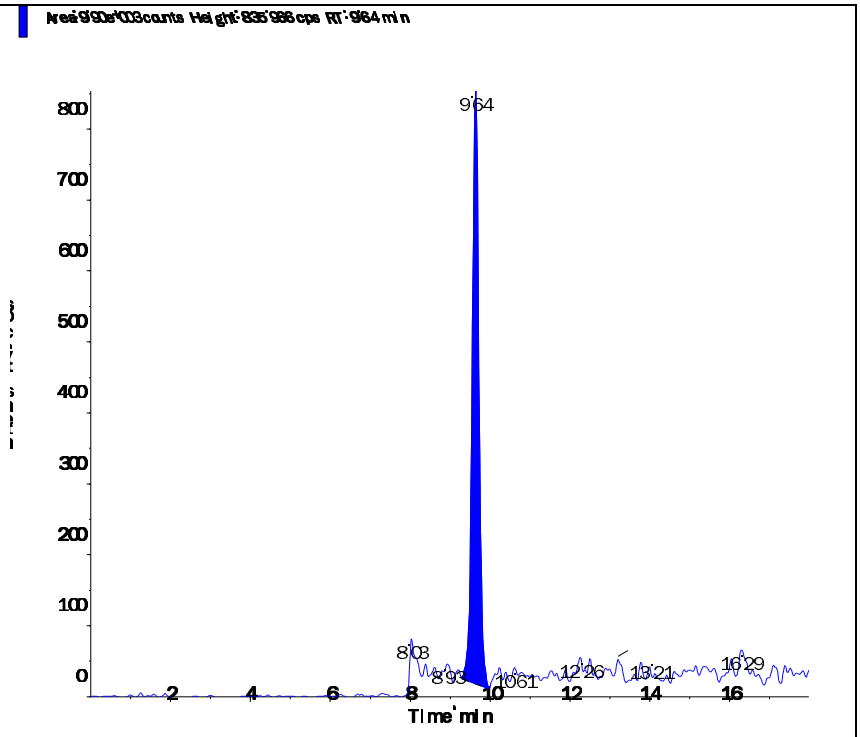
Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.066
Sample Type:	(Unknown)



Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)



2.2 General Chemistry Data

2.2.1 Percent Solids Data

2.2.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#):WG587520 Analyst:ERP ADT(on):10/13/2015 14:00
Method:D2216-90 Instrument:BAL017 ADT(off):10/14/2016 07:19
SOP:K0003 Rev:14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16100420-01	1.294	21.766	20.444			93.54	
L16100420-02	1.28	18.876	17.578			92.62	
L16100420-03	1.289	21.763	19.891			90.86	
L16100420-06	1.277	22.086	20.277			91.31	
L16100420-07	1.285	22.137	20.894			94.04	
L16100569-01	1.287	19.998	14.722			71.80	
L16100569-02	1.284	14.003	10.582			73.10	
L16100569-03	1.285	20.564	15.247			72.42	
L16100569-04	1.285	20.564	15.247			72.42	
L16100569-05	1.285	20.564	15.247			72.42	
L16100569-06	1.278	11.061	6.841			56.86	
L16100569-07	1.285	10.213	6.948			63.43	
L16100570-01	1.285	11.939	11.63			97.10	
L16100570-02	1.295	10.382	10.036			96.19	
L16100570-03	1.299	11.09	10.782			96.85	
L16100571-01	1.297	11.239	11.049			98.09	
L16100571-02	1.284	10.402	10.211			97.91	
L16100571-03	1.284	12.049	11.849			98.14	
L16100597-01	1.282	24.975	22.121			87.95	
L16100604-01	1.277	16.114	4.29			20.31	
L16100605-01	1.279	8.02	4.411			46.46	
L16100606-01	1.281	28.082	25.696			91.10	
L16100606-02	1.283	27.004	24.998			92.20	
L16100631-01	1.288	25.29	22.855			89.86	
WG587520-01	1.284	10.402	10.211			97.91	2.095
WG587520-02	1.284	12.049	11.849			98.14	1.858
WG587520-03	1.286	10.351	10.167			97.97	2.030
WG587520-04	1.279	10.59	10.412			98.09	1.912

Analyst: Erin Potter

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4974779
Report generated: 10/14/2016 07:24

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
October 20, 2016

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001 – BIO-CHEM TESTING WVDEP 220	002 – REIC Consultants, Inc. WVDEP 060
003 – Sturm Environmental	004 – MICROBAC PITTSBURGH
005 – ES LABORATORIES	006 – ALCOSAN LABORATORIES
007 – ALS LABORATORIES	008 – BENCHMARK LABORATORIES
010 – MICROBAC CHICAGOLAND	AC – AMBER R. CARMICHAEL
ADC – ANTHONY D. CANTER	ADG – APRIL D. GREENE
AED – ALLEN E. DAVIS	ALS – ADRIANE L. STEED
AMA – ALEXANDRA M. ALFRED	AWE – ANDREW W. ESSIG
AZH – AFTER HOURS	BJO – BRIAN J. OGDEN
BKT – BRENDAN TORRENCE	BLG – BRENDA L. GREENWALT
BNB – Brandi N. Bentley	BRG – BRENDA R. GREGORY
CAA – CASSIE A. AUGENSTEIN	CAF – CHERYL A. FLOWERS
CAS – Craig A. Smith	CEB – CHAD E. BARNES
CJQ – Cameron J. Quick	CLC – CHRYS L. CRAWFORD
CLS – CARA L. STRICKLER	CLW – CHARISSA L. WINTERS
CPD – CHAD P. DAVIS	CSH – CHRIS S. HILL
CV – Carl Volkman	DAK – DEAN A. KETELSEN
DCM – DAVID C. MERCKLE	DEV – DAVID E. VANDENBERG
DIH – DEANNA I. HESSON	DLB – DAVID L. BUMGARNER
DLP – DOROTHY L. PAYNE	DSM – DAVID S. MOSSOR
ECL – ERIC C. LAWSON	EMW – ERIC M. WILKEN
ENY – EMILY N. YOAK	ERP – ERIN R. PORTER
FJB – FRANCES J. BOLDEN	HDD – HANAH D. DAWKINS
JDH – JUSTIN D. HESSON	JDS – JARED D. SMITH
JKP – JACQUELINE K. PARSONS	JLD – JESSICA L. DELONG
JLL – JOHN L. LENT	JMW – JEANA M. WHITE
JTP – JOSHUA T. PEMBERTON	JWR – JOHN W. RICHARDS
JWS – JACK W. SHEAVES	JYH – JI Y. HU
KAK – KATHY A. KIRBY	KAT – KATHY A. TUCKER
KDD – Katelyn D. Daley	KDW – KATHRYN D. WELCH
KEB – KATIE E. BARNES	KHR – KIM H. RHODES
KKB – KERRI K. BUCK	KRA – KATHY R. ALBERTSON
KRB – KAELY R. BECKER	KRP – KATHY R. PARSONS
LJH – Lacey J. Hendershot	LKN – LINDA K. NEDEFF
LLS – LARRY L. STEPHENS	LSB – LESLIE S. BUCINA
MAP – MARLA A. PORTER	MBK – MORGAN B. KNOWLTON
MDA – MIKE D. ALBERTSON	MDC – MIKE D. COCHRAN
MES – MARY E. SCHILLING	MMB – MAREN M. BEERY
MRT – MICHELLE R. TAYLOR	MSW – MATT S. WILSON
NPH – Natalie P. Hart	PDM – PIERCE D. MORRIS
PIT – MICROBAC WARRENDALE	QX – QIN XU
RAH – ROY A. HALSTEAD	REK – BOB E. KYER
RLB – BOB BUCHANAN	RNP – RICK N. PETTY
SAV – SARAH A. VANDENBERG	SCB – SARAH C. BOGOLIN
SDC – SHALYN D. CONLEY	SLM – STEPHANIE L. MOSSBURG
SLP – SHERI L. PFALZGRAF	TB – TODD BOYLE
TGF – TIM G. FELTON	TMB – TIFFANY M. BAILEY
TMM – TAMMY M. MORRIS	VC – VICKI COLLIER
WJB – WILL J. BEASLEY	WTD – WADE T. DELONG
XXX – UNAVAILABLE OR SUBCONTRACT	

Microbac Laboratories Inc.
List of Valid Qualifiers
October 20, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
>,H1	Result is greater than the associated numerical value. Sample analysis performed past holding time.
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound

Qualkey: DOD

TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

L16100571 / Revision: 0 / 139 total pages

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 # 122704 MICROBAC *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: **Microbac**
158 Starlight Drive
Marietta, OH 45750

Return Invoice and Results to: **bszymanski@ctlaboratories.com**

CTLaboratories
Brett M Szymanski
1230 Lange Court
Baraboo WI 53913

Date Due: Standard TAT *RUSH TURNAROUND NEEDED? Y or (N) (Circle One)*

Project Name: RADFORD AAP **Project State:** VA

Analytical/QC Criteria: NONE INDICATED STATE (DOD QSM-5.0) NELAP (Circle one) OTHER_____

Report results as EDD? N (Y) (Circle one and indicate type: Excel) Data Deliverable Package LEVEL: IV

CTLabs ID#	Sample Date/Time	Matrix	Sample Description	Analyses / Method		Cost
784496	10/04/2016 1000	SOIL	RFAAP-FGMR-SSI-001A	PERCHLORATE	SW6850	
784515	10/04/2016 1000	SOIL	RFAAP-FGMR-SSI-001B	PERCHLORATE	SW6850	
784516	10/04/2016 1000	SOIL	RFAAP-FGMR-SSI-001C	PERCHLORATE	SW6850	

Relinquished by: Brett Szymanski Date/Time: 10/11/2016 15:50

Received by:_____ Date/Time:_____ Receipt Temperature (C) _____

COMMENTS:

Microbac OVD
Received: 10/12/2016 09:37
By: BRENDA GREGORY
221000092010

Brenda Gregory

REPORT ALL SOLIDS ON A DRY WEIGHT BASIS UNLESS OTHERWISE INDICATED

Generated: 10/20/2016 16:38

MICROBAC

Cooler ID 2010

COOLER TEMP >6° C LOG

SAMPLE ID	Bottle 1 °C	Bottle 2 °C	Bottle 3 °C	Bottle 4 °C	Bottle 5 °C	Bottle 6 °C

BLG 10-12-16

pH Exceptions

pH Lot # N/A

SAMPLE ID	Bottle 1	Bottle 2	Bottle 3	Bottle 4	Bottle 5	Bottle 6

BLG 10-12-16

PRESERVATIVE EXCEPTIONS

☑ NONE

__ AS NOTED

BLG 10/12/16

Document Control # 1957
Last 10-07-2016

Issued to: Document Master File

Internal Chain of Custody Report

Login: L16100571
Account: 2694
Project: 2694.005
Samples: 3
Due Date: 21-OCT-2016

Samplenum	Container ID	Products
L16100571-01	813812	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-OCT-2016 10:19	CLS		
2	PREP	W1	DIG	13-OCT-2016 13:51	ERP	BRG	
3	STORE	DIG	W1	13-OCT-2016 14:12	BRG	ERP	
4	ANALYZ	W1	SEM	17-OCT-2016 16:51	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-OCT-2016 19:34	JWR	ERP	
6	STORE	SEM	A2	19-OCT-2016 09:47	BRG	JWR	

***Sample extract/digestate/leachate**

Samplenum	Container ID	Products
L16100571-02	813813	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-OCT-2016 10:19	CLS		
2	PREP	W1	DIG	13-OCT-2016 13:51	ERP	BRG	
3	STORE	DIG	W1	13-OCT-2016 14:12	BRG	ERP	
4	ANALYZ	W1	SEM	17-OCT-2016 16:51	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-OCT-2016 19:34	JWR	ERP	
6	STORE	SEM	A2	19-OCT-2016 09:47	BRG	JWR	

***Sample extract/digestate/leachate**

Samplenum	Container ID	Products
L16100571-03	813814	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-OCT-2016 10:19	CLS		
2	PREP	W1	DIG	13-OCT-2016 13:51	ERP	BRG	
3	STORE	DIG	W1	13-OCT-2016 14:12	BRG	ERP	
4	ANALYZ	W1	SEM	17-OCT-2016 16:51	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-OCT-2016 19:34	JWR	ERP	
6	STORE	SEM	A2	19-OCT-2016 09:47	BRG	JWR	

***Sample extract/digestate/leachate**

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac

Laboratory Report Number: L16100569

Eric Korthals
CT Laboratories
1230 Lange Court
Baraboo, WI 53913

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Emily Yoak – Client Services Specialist
(740) 373-4071
emily.yoak@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on October 20 2016

Leslie Bucina – Managing Director

State of Origin: MI
Accrediting Authority: N/A ID:N/A
QAPP: DOD Ver 5.0

Microbac

Lab Report #: L16100569
Lab Project #: 2694.005
Project Name: CT Labs DOD
Lab Contact: Emily Yoak

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00114396	I	0.0		1Z1A4A851340347126	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac

Lab Report #: L16100569
Lab Project #: 2694.005
Project Name: CT Labs DOD
Lab Contact: Emily Yoak

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
RFAAP-FGMR-SSD-001	L16100569-01	10/06/2016 15:05	10/12/2016 09:37
RFAAP-FGMR-DUP1	L16100569-02	10/06/2016 15:15	10/12/2016 09:37
RFAAP-FGMR-SSD-002	L16100569-03	10/06/2016 15:30	10/12/2016 09:37
RFAAP-FGMR-SSD-002	L16100569-04	10/06/2016 15:30	10/12/2016 09:37
RFAAP-FGMR-SSD-002	L16100569-05	10/06/2016 15:30	10/12/2016 09:37
RFAAP-FGMR-SSD-003	L16100569-06	10/06/2016 15:50	10/12/2016 09:37
RFAAP-FGMR-SSD-004	L16100569-07	10/06/2016 16:10	10/12/2016 09:37

Microbac REPORT L16100569
PREPARED FOR CT Laboratories
WORK ID:

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1.0 Summary Data

1.1 Narratives

Login Number: L16100569
Department: General Chromatography
Analyst: John W. Richards Jr.

METHOD

Analysis SW-846 6850

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

Internal Standards: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak 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. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal: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 area counts for the target compound.

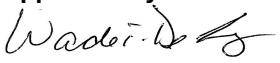
Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes 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 should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 118294
Approved By: Wade DeLong



1.2 Certificate of Analysis

Microbac

Lab Report #: L16100569
Lab Project #: 2694.005
Project Name: CT Labs DOD
Lab Contact: Emily Yoak

Certificate of Analysis

Sample #:	L16100569-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSD-001	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 17:11
Collect Date:	10/06/2016 15:05	**Dilution:**	1	**File ID:**	1LM.LM37359
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	71.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.72	U	5.42	2.72	1.36

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L16100569-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-DUP1	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 17:30
Collect Date:	10/06/2016 15:15	**Dilution:**	1	**File ID:**	1LM.LM37360
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	73.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.66	U	5.33	2.66	1.33

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L16100569-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSD-002	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 19:23
Collect Date:	10/06/2016 15:30	**Dilution:**	1	**File ID:**	1LM.LM37366
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	72.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.74	U	5.47	2.74	1.37

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L16100569-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSD-002	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 19:42
Collect Date:	10/06/2016 15:30	**Dilution:**	1	**File ID:**	1LM.LM37367
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	72.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.66	J	5.46	2.72	1.36

J	Estimated value ; the analyte concentration was less than the LOQ.

Certificate of Analysis

Sample #:	L16100569-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSD-002	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 20:01
Collect Date:	10/06/2016 15:30	**Dilution:**	1	**File ID:**	1LM.LM37368
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	72.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.68	J	5.47	2.74	1.37

J	Estimated value ; the analyte concentration was less than the LOQ.

Certificate of Analysis

Sample #:	L16100569-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSD-003	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 17:49
Collect Date:	10/06/2016 15:50	**Dilution:**	1	**File ID:**	1LM.LM37361
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	56.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.40	U	6.79	3.40	1.70

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L16100569-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSD-004	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 18:08
Collect Date:	10/06/2016 16:10	**Dilution:**	1	**File ID:**	1LM.LM37362
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	63.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.00	U	6.00	3.00	1.50

U	Analyte was not detected. The concentration is below the reported LOD.

Sample #: L16100569-01 **Client ID:** RFAAP-FGMR-SSD-001 **Matrix:** Soil **Collect Date:** 10/06/2016 15:05

Analyte	Result	Units	Qualifier
Percent Solids	71.8	weight %	

Sample #: L16100569-02 **Client ID:** RFAAP-FGMR-DUP1 **Matrix:** Soil **Collect Date:** 10/06/2016 15:15

Analyte	Result	Units	Qualifier
Percent Solids	73.1	weight %	

Sample #: L16100569-03 **Client ID:** RFAAP-FGMR-SSD-002 **Matrix:** Soil **Collect Date:** 10/06/2016 15:30

Analyte	Result	Units	Qualifier
Percent Solids	72.4	weight %	

Sample #: L16100569-04 **Client ID:** RFAAP-FGMR-SSD-002 **Matrix:** Soil **Collect Date:** 10/06/2016 15:30

Analyte	Result	Units	Qualifier
Percent Solids	72.4	weight %	

Sample #: L16100569-05 **Client ID:** RFAAP-FGMR-SSD-002 **Matrix:** Soil **Collect Date:** 10/06/2016 15:30

Analyte	Result	Units	Qualifier
Percent Solids	72.4	weight %	

Sample #: L16100569-06 **Client ID:** RFAAP-FGMR-SSD-003 **Matrix:** Soil **Collect Date:** 10/06/2016 15:50

Analyte	Result	Units	Qualifier
Percent Solids	56.9	weight %	

Sample #: L16100569-07 **Client ID:** RFAAP-FGMR-SSD-004 **Matrix:** Soil **Collect Date:** 10/06/2016 16:10

Analyte	Result	Units	Qualifier
Percent Solids	63.4	weight %	

2.0 Full Sample Data Package

2.1 General Chromatography Data

2.1.1 6850 LC/MS Data

2.1.1.1 Summary Data

Login Number: L16100569
Department: General Chromatography
Analyst: John W. Richards Jr.

METHOD

Analysis SW-846 6850

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

Internal Standards: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak 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. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal: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 area counts for the target compound.

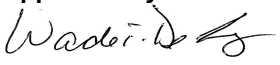
Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes 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 should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 118294
Approved By: Wade DeLong



Certificate of Analysis

Sample #:	L16100569-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSD-001	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 17:11
Collect Date:	10/06/2016 15:05	**Dilution:**	1	**File ID:**	1LM.LM37359
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	71.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.72	U	5.42	2.72	1.36

U	Analyte was not detected. The concentration is below the reported LOD.

Sample #:	L16100569-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-DUP1	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 17:30
Collect Date:	10/06/2016 15:15	**Dilution:**	1	**File ID:**	1LM.LM37360
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	73.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.66	U	5.33	2.66	1.33

U	Analyte was not detected. The concentration is below the reported LOD.

Sample #:	L16100569-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSD-002	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 19:23
Collect Date:	10/06/2016 15:30	**Dilution:**	1	**File ID:**	1LM.LM37366
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	72.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.74	U	5.47	2.74	1.37

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L16100569-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSD-002	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 19:42
Collect Date:	10/06/2016 15:30	**Dilution:**	1	**File ID:**	1LM.LM37367
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	72.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.66	J	5.46	2.72	1.36

J	Estimated value ; the analyte concentration was less than the LOQ.

Sample #:	L16100569-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSD-002	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 20:01
Collect Date:	10/06/2016 15:30	**Dilution:**	1	**File ID:**	1LM.LM37368
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	72.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.68	J	5.47	2.74	1.37

J	Estimated value ; the analyte concentration was less than the LOQ.

Sample #:	L16100569-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSD-003	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 17:49
Collect Date:	10/06/2016 15:50	**Dilution:**	1	**File ID:**	1LM.LM37361
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	56.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.40	U	6.79	3.40	1.70

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L16100569-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSD-004	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 18:08
Collect Date:	10/06/2016 16:10	**Dilution:**	1	**File ID:**	1LM.LM37362
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	63.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.00	U	6.00	3.00	1.50

U	Analyte was not detected. The concentration is below the reported LOD.

2.1.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD78252
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 08
Date/Time Extracted: 10/17/16/18:00
Witness: CAS 10/17/16

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG587950
Analytical Work Group: WG587968
Run ID: R4793776

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL022
Reagent: Tubes Lot #: RGT37813
Reagent: Sand Lot #: COA18813
Other: IS Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ IS Amount	Amount Spike	Final Volume	Extract Color	Comments
1	WG587950-01	6850		5.0018g	0.250ml	1.0ml	50ml		MCT(10,000.us)(2ug/kg)
2	WG587950-02	↓		5.0054g	↓	NA	↓		Blank
3	WG587950-03			5.0024g		1.0ml			LCS(2ug/kg)
4	L16100003-01			5.0026g		0.5ml			LOD(1ug/kg)
5	L16100005-01			5.0046g		1.0ml			LOQ(2ug/kg)
6	-10			5.0081g		1.0ml			LOQ(2ug/kg)
7	L16100569-01			5.1354g		NA			
8	-02			5.1319g		NA			
9	-03 RS			5.0466g		NA			WG587950-04 Ref
10	-04 MS			5.0599g		1.0ml			WG587950-05 MS (@2ug/kg)
11	-05 MSD			5.0475g		1.0ml			WG587950-06 MSD (@2ug/kg)
12	-06			5.1806g		NA			
13	-07			5.2517g		NA			
14	L16100570-01			5.1117g		NA			
15	-02			5.0786g		NA			
16	-03			5.0458g		NA			
17	L16100571-01			5.1727g		NA			
18	-02			5.1445g		NA			
19	-03	↓		5.0358g	↓	NA	↓		
20									
21									
22				JWR 10/17/16					
23									
24									

Reviewed by: Wade T. Daly 10-18-16

Analytical WG587968 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1408 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG587950-01 MCT		
-02 Blank	1.54	
-03 LCS	1.45	
L16100003-01 LOD	1.16	
L16100005-01 LOQ	1.49	
-10 LOQ	1.56	
L16100569-01	36.6	
-02	32.7	
-03 RS	28.2	
-04 MS	25.7	
-05 MSD	22.1	
-06	22.9	
-07	21.9	
L16100570-01	170.4	
-02	182.1	
-03	185.7	
L16100571-01	70.3	
-02	56.0	
-03	42.5	

Analyst: John Richards

Date/Time: 10/18/16 / 1330

DCN#121590

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA
Analytical WG567013 (soils)
Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

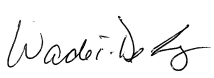
Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16



Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Analytical WG567013 (soils)

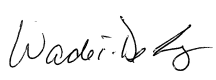
Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16



Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 101816_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 160109254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA
Analytical WG587968 (soils)
Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD78249 LCS STD: STD78251 MS/MSD STD: STD78251

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM37350	WG587969-01 CCB	1	1		10/18/16 14:20
2	1LM.LM37351	WG587969-02 CCV (1.0ug/L)	1	1	STD78249	10/18/16 14:39
3	1LM.LM37352	WG587968-07 MRL (2.0ug/kg)	7	1	STD78249	10/18/16 14:58
4	1LM.LM37353	WG587968-01 MCT (2.0ug/kg)	7	1	STD78251	10/18/16 15:17
5	1LM.LM37354	WG587968-02 BLANK	7	1		10/18/16 15:36
6	1LM.LM37355	WG587968-03 LCS (2.0ug/kg)	7	1	STD78251	10/18/16 15:55
7	1LM.LM37356	L16100005-01 LOQ (2.0ug/kg)	7	1	STD78251	10/18/16 16:14
8	1LM.LM37357	L16100005-10 LOQ (2.0ug/kg)	7	1	STD78251	10/18/16 16:33
9	1LM.LM37358	L16100003-01 LOD (1.0ug/kg)	7	1	STD78251	10/18/16 16:52
10	1LM.LM37359	L16100569-01	7	1		10/18/16 17:11
11	1LM.LM37360	L16100569-02	7	1		10/18/16 17:30
12	1LM.LM37361	L16100569-06	7	1		10/18/16 17:49
13	1LM.LM37362	L16100569-07	7	1		10/18/16 18:08
14	1LM.LM37363	WG587969-03 CCV (1.0ug/L)	1	1	STD78249	10/18/16 18:27
15	1LM.LM37364	WG587968-08 MRL (2.0ug/kg)	7	1	STD78249	10/18/16 18:45
16	1LM.LM37365	WG587969-04 CCB	1	1		10/18/16 19:04
17	1LM.LM37366	L16100569-03 RS	7	1		10/18/16 19:23
18	1LM.LM37367	L16100569-04 MS	7	1	STD78251	10/18/16 19:42
19	1LM.LM37368	L16100569-05 MSD	7	1	STD78251	10/18/16 20:01
20	1LM.LM37369	L16100570-01	7	1		10/18/16 20:20
21	1LM.LM37370	L16100570-02	7	1		10/18/16 20:39
22	1LM.LM37371	L16100570-03	7	1		10/18/16 20:58
23	1LM.LM37372	L16100571-01	7	1		10/18/16 21:17
24	1LM.LM37373	L16100571-02	7	1		10/18/16 21:36
25	1LM.LM37374	L16100571-03	7	1		10/18/16 21:55
26	1LM.LM37375	WG587969-05 CCV (1.0ug/L)	1	1	STD78249	10/18/16 22:14
27	1LM.LM37376	WG587968-09 MRL (2.0ug/kg)	7	1	STD78249	10/18/16 22:33
28	1LM.LM37377	WG587969-06 CCB	1	1		10/18/16 22:52

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 20-OCT-16

Microbac Laboratories Inc.

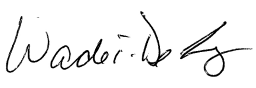
Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016

Secondary Reviewer:
05-MAY-2016



CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 18-OCT-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 78190
Analytical Workgroups: L16100003(LOD), 0005(LOQ), 0569, 0570, 0571 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
20-OCT-2016

Secondary Reviewer:
20-OCT-2016

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-20-2016 13:36:17

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG587968

Login Number: L16100569

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
RFAAP-FGMR-SSD-001	01	10/06/16					10/17/2016	11.1	28		10/18/16	1	28	
RFAAP-FGMR-DUP1	02	10/06/16					10/17/2016	11.1	28		10/18/16	1	28	
RFAAP-FGMR-SSD-002	03	10/06/16					10/17/2016	11.1	28		10/18/16	1.1	28	
RFAAP-FGMR-SSD-002	04	10/06/16					10/17/2016	11.1	28		10/18/16	1.1	28	
RFAAP-FGMR-SSD-002	05	10/06/16					10/17/2016	11.1	28		10/18/16	1.1	28	
RFAAP-FGMR-SSD-003	06	10/06/16					10/17/2016	11.1	28		10/18/16	1	28	
RFAAP-FGMR-SSD-004	07	10/06/16					10/17/2016	11.1	28		10/18/16	1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4984987
Report generated 10/20/2016 13:51

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L16100569
Work Group: WG587968
Blank File ID: 1LM.LM37354
Blank Sample ID: WG587968-02
Prep Date: 10/17/16 18:00
Instrument ID: LCMS1
Analyzed Date: 10/18/16 15:36
Method: 6850
Analyst: JWR

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG587968-07	1LM.LM37352	10/18/16 14:58	01
MCT	WG587968-01	1LM.LM37353	10/18/16 15:17	01
LCS	WG587968-03	1LM.LM37355	10/18/16 15:55	01
RFAAP-FGMR-SSD-001	L16100569-01	1LM.LM37359	10/18/16 17:11	01
RFAAP-FGMR-DUP1	L16100569-02	1LM.LM37360	10/18/16 17:30	01
RFAAP-FGMR-SSD-003	L16100569-06	1LM.LM37361	10/18/16 17:49	01
RFAAP-FGMR-SSD-004	L16100569-07	1LM.LM37362	10/18/16 18:08	01
QCMRL	WG587968-08	1LM.LM37364	10/18/16 18:45	01
RFAAP-FGMR-SSD-002	L16100569-03	1LM.LM37366	10/18/16 19:23	01
RFAAP-FGMR-SSD-002	L16100569-04	1LM.LM37367	10/18/16 19:42	01
RFAAP-FGMR-SSD-002	L16100569-05	1LM.LM37368	10/18/16 20:01	01
QCMRL	WG587968-09	1LM.LM37376	10/18/16 22:33	01

Report Name: BLANK_SUMMARY
PDF File ID: 4984988
Report generated 10/20/2016 13:51

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16100569 Prep Date: 10/17/16 18:00 Sample ID: WG587968-02
Instrument ID: LCMS1 Run Date: 10/18/16 15:36 Prep Method: 6850
File ID: 1LM.LM37354 Analyst: JWR Method: 6850
Workgroup (AAB#): WG587968 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.999	4.00	0.999	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4984991
20-OCT-2016 13:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16100569 **Run Date:** 10/18/2016 **Sample ID:** WG587968-03
Instrument ID: LCMS1 **Run Time:** 15:55 **Prep Method:** 6850
File ID: 1LM.LM37355 **Analyst:** JWR **Method:** 6850
Workgroup (AAB#): WG587968 **Matrix:** Soil **Units:** ug/kg
QC Key: DOD5 **Lot#:** STD78251 **Cal ID:** LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	1.93	96.5	84 - 121	

LCS - Modified 03/06/2008
PDF File ID: 4984992
Report generated: 10/20/2016 13:51

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum:L16100569 Cal ID:LCMS1- 03-MAY-16 Worknum:WG587968

Instrument ID:LCMS1 Contract #: Prep Method:6850

Parent ID:L16100569-03 File ID:1LM.LM37366 Dil:1 Method:6850

Sample ID:L16100569-04 MS File ID:1LM.LM37367 Dil:1 Matrix:Soil

Sample ID:L16100569-05 MSD File ID:1LM.LM37368 Dil:1 Units:ug/kg

Percent Solid:72.4

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	U	2.73	2.66	97.5	2.74	2.68	98	0.757	84 - 121	15	

* FAILS %REC LIMIT

FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008

PDF File ID: 4984994

Report generated 10/20/2016 13:51

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16100569
Analytical Method: 6850
ICAL Workgroup: WG567320
Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4985121
Report generated 10/20/2016 13:51

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16100569
Analytical Method: 6850
Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4985121
Report generated 10/20/2016 13:51

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16100569
Analytical Method: 6850
Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4985121
Report generated 10/20/2016 13:51

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16100569
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4985121
Report generated 10/20/2016 13:51

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16100569 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD5
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4985122
Report generated 10/20/2016 13:51

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16100569 Run Date: 10/18/2016 Sample ID: WG587969-01

Instrument ID: LCMS1 Run Time: 14:20 Method: 6850

File ID: 1LM.LM37350 Analyst: JWR Units: ug/L

Workgroup (AAB#): WG587968 Cal ID: LCMS1 - 03-MAY-16

Matrix: WATER QAPP: DOD5

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4985000
Report generated 10/20/2016 13:51

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16100569 Run Date: 10/18/2016 Sample ID: WG587969-04

Instrument ID: LCMS1 Run Time: 19:04 Method: 6850

File ID: 1LM.LM37365 Analyst: JWR Units: ug/L

Workgroup (AAB#): WG587968 Cal ID: LCMS1 - 03-MAY-16

Matrix: WATER QAPP: DOD5

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4985000
Report generated 10/20/2016 13:51

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16100569 Run Date: 10/18/2016 Sample ID: WG587969-06

Instrument ID: LCMS1 Run Time: 22:52 Method: 6850

File ID: 1LM.LM37377 Analyst: JWR Units: ug/L

Workgroup (AAB#): WG587968 Cal ID: LCMS1 - 03-MAY-16

Matrix: WATER QAPP: DOD5

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4985000
Report generated 10/20/2016 13:51

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16100569 Run Date: 10/18/2016 Sample ID: WG587969-02

Instrument ID: LCMS1 Run Time: 14:39 Method: 6850

File ID: 1LM.LM37351 Analyst: JWR QC Key: DOD5

Workgroup (AAB#): WG587968 Cal ID: LCMS1 - 03-MAY-16

Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.944	ug/kg	1.59	5.60	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008

PDF File ID: 4984999

Report generated 10/20/2016 13:51

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16100569 Run Date: 10/18/2016 Sample ID: WG587969-03
Instrument ID: LCMS1 Run Time: 18:27 Method: 6850
File ID: 1LM.LM37363 Analyst: JWR QC Key: DOD5
Workgroup (AAB#): WG587968 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.993	ug/kg	1.68	0.700	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4984999
Report generated 10/20/2016 13:51

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16100569 Run Date: 10/18/2016 Sample ID: WG587969-05
Instrument ID: LCMS1 Run Time: 22:14 Method: 6850
File ID: 1LM.LM37375 Analyst: JWR QC Key: DOD5
Workgroup (AAB#): WG587968 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.956	ug/kg	1.61	4.40	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4984999
Report generated 10/20/2016 13:51

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16100569 Run Date: 10/18/2016 Sample ID: WG587968-07

Instrument ID: LCMS1 Run Time: 14:58 Prep Method: 6850

File ID: 1LM.LM37352 Analyst: JWR Method: 6850

Workgroup (AAB#): WG587968 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.07	104	70 - 130	

QCMRL - Modified 03/06/2007

PDF File ID: 4984997

Report generated 10/20/2016 13:51

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number:	L16100569	**Run Date:**	10/18/2016	**Sample ID:**	WG587968-08
Instrument ID:	LCMS1	**Run Time:**	18:45	**Prep Method:**	6850
File ID:	1LM.LM37364	**Analyst:**	JWR	**Method:**	6850
Workgroup (AAB#):	WG587968	**Matrix:**	Soil	**Units:**	ug/kg
Contract #:		**Cal ID:**	LCMS1-03-MAY-16		

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.19	110	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4984997
Report generated 10/20/2016 13:51

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number:	L16100569	**Run Date:**	10/18/2016	**Sample ID:**	WG587968-09
Instrument ID:	LCMS1	**Run Time:**	22:33	**Prep Method:**	6850
File ID:	1LM.LM37376	**Analyst:**	JWR	**Method:**	6850
Workgroup (AAB#):	WG587968	**Matrix:**	Soil	**Units:**	ug/kg
Contract #:		**Cal ID:**	LCMS1-03-MAY-16		

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.10	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4984997
Report generated 10/20/2016 13:51

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16100569
Instrument ID: LCMS1
Workgroup (AAB#): WG587968

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16100569-01	1.00	01	381000
L16100569-02	1.00	01	356000
L16100569-03	1.00	01	329000
L16100569-04	1.00	01	333000
L16100569-05	1.00	01	353000
L16100569-06	1.00	01	316000
L16100569-07	1.00	01	377000
WG587968-02	1.00	01	419000
WG587968-03	1.00	01	401000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4985001
Report generated 10/20/2016 13:51

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**	6850	**Samplenum:**	L16100569-01
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37359
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 17:11	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	946	471	2.01	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**	6850	**Samplenum:**	L16100569-02
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37360
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 17:30	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1280	869	1.47	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**	6850	**Samplenum:**	L16100569-03
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37366
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 19:23	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**	6850	**Samplenum:**	L16100569-04
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37367
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 19:42	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	22300	8910	2.50	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**	6850	**Samplenum:**	L16100569-05
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37368
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 20:01	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	23700	8500	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**	6850	**Samplenum:**	L16100569-06
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37361
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 17:49	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	960	797	1.20	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**	6850	**Samplenum:**	L16100569-07
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37362
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 18:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2770	1380	2.01	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**	6850	**Samplenum:**	WG587968-01
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37353
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 15:17	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	27000	10000	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**	6850	**Samplenum:**	WG587968-02
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37354
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 15:36	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**	6850	**Samplenum:**	WG587968-03
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37355
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 15:55	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	26500	9900	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**	6850	**Samplenum:**	WG587968-07
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37352
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 14:58	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28800	11200	2.57	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**	6850	**Samplenum:**	WG587968-08
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37364
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 18:45	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34400	12000	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**	6850	**Samplenum:**	WG587968-09
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37376
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 22:33	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35700	13200	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**		**Samplenum:**	WG587969-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37350
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	10/18/2016 14:20	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**		**Samplenum:**	WG587969-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37351
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	10/18/2016 14:39	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	133000	47800	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**		**Samplenum:**	WG587969-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37363
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	10/18/2016 18:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	154000	50900	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**		**Samplenum:**	WG587969-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37365
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	10/18/2016 19:04	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**		**Samplenum:**	WG587969-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37375
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	10/18/2016 22:14	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	159000	56300	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100569	**Prep Method:**		**Samplenum:**	WG587969-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37377
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	10/18/2016 22:52	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.1.1.3 Sample Data

Data File	LM37359.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 5:11:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16100569-01	**Injection Vial**	10.00
Data File	LM37359.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 5:11:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	L16100569-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.810e+05	9.62	5.00	-

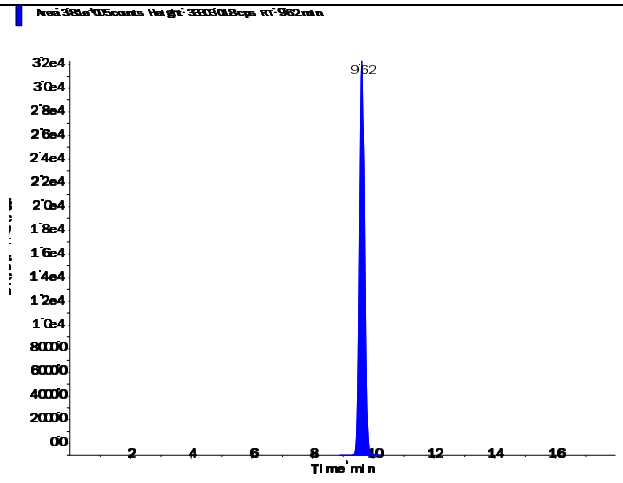
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.460e+02	9.61	N/A	0.0036
Perchlorate conf	4.710e+02	9.60	N/A	< 0

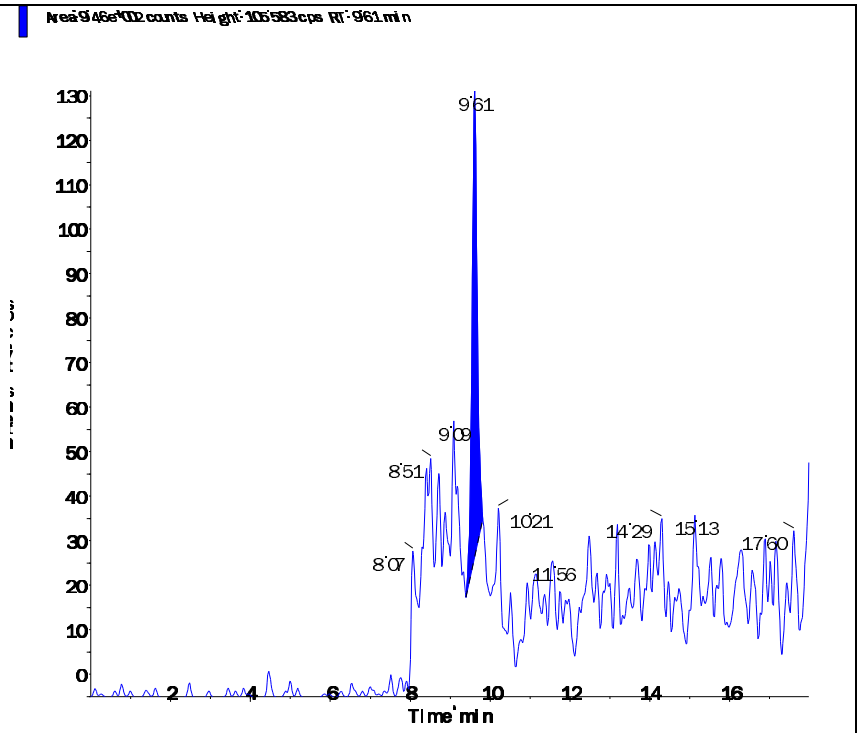
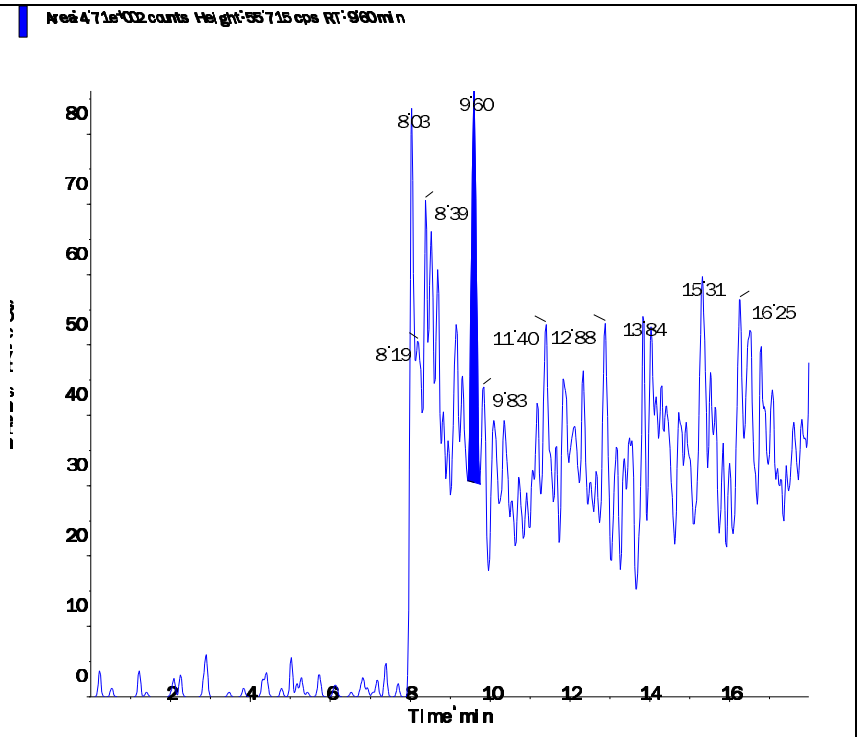
O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.61 (9.84) min Calculated conc: 0.0036 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.60 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	

Data File	LM37360.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 5:30:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

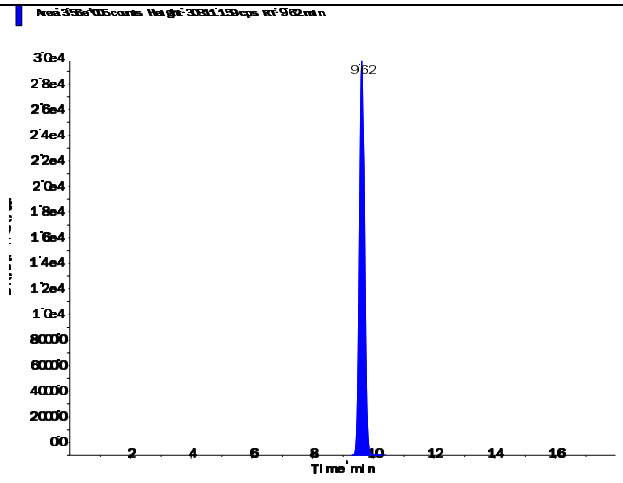
Sample Name	L16100569-02	**Injection Vial**	11.00
Data File	LM37360.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 5:30:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	L16100569-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

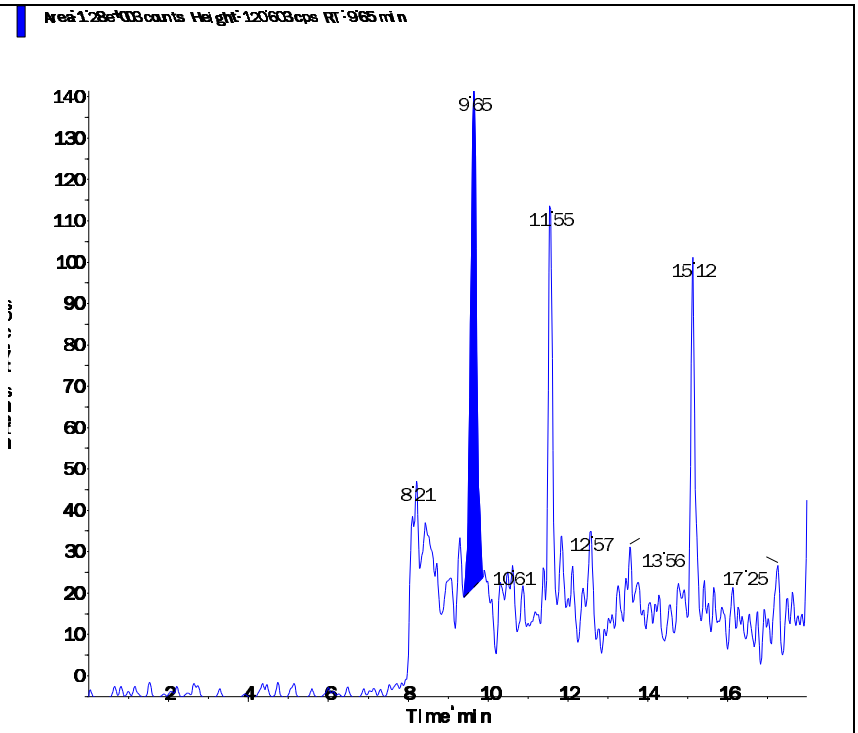
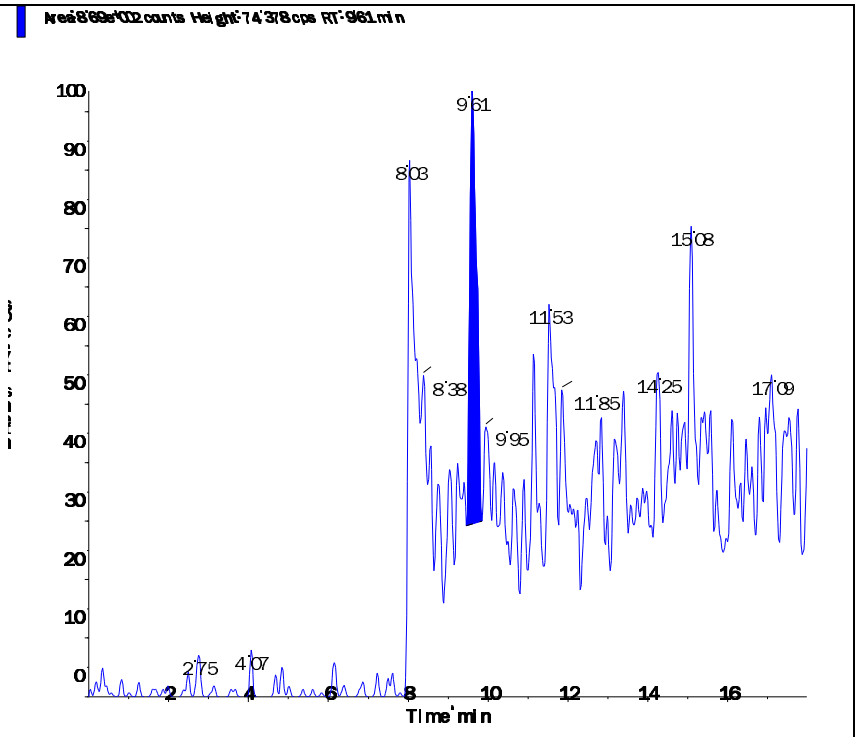
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.560e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.280e+03	9.65	N/A	0.0069
Perchlorate conf	8.690e+02	9.61	N/A	0.0014

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.65 (9.84) min Calculated conc: 0.0069 ng/ml Area Ratio: 0.004 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.61 (9.84) min Calculated conc: 0.0014 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	

Data File	LM37366.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 7:23:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16100569-03 RS	**Injection Vial**	14.00
Data File	LM37366.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 7:23:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.290e+05	9.62	5.00	-

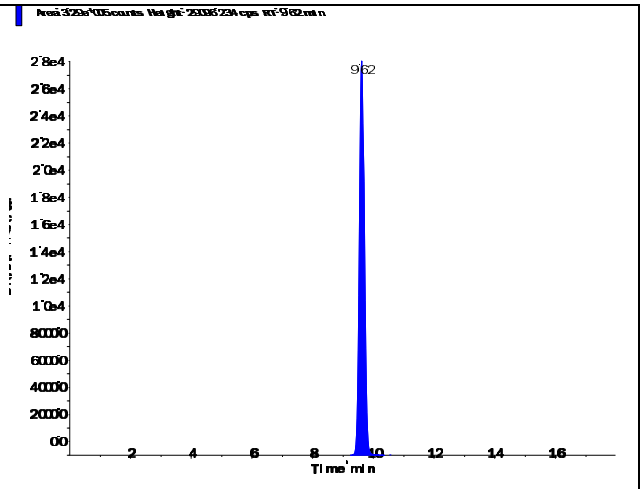
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

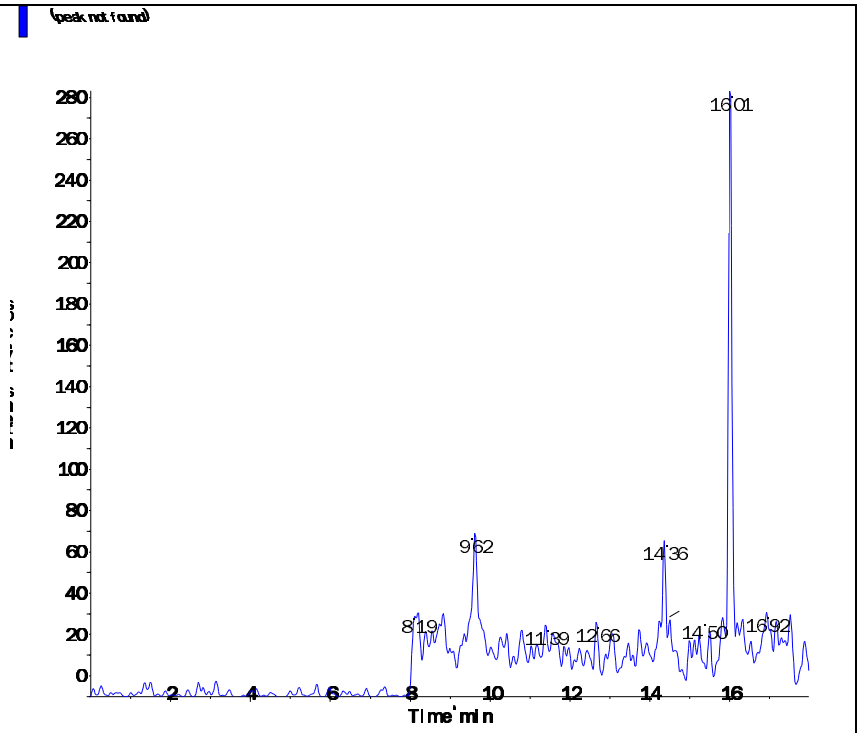
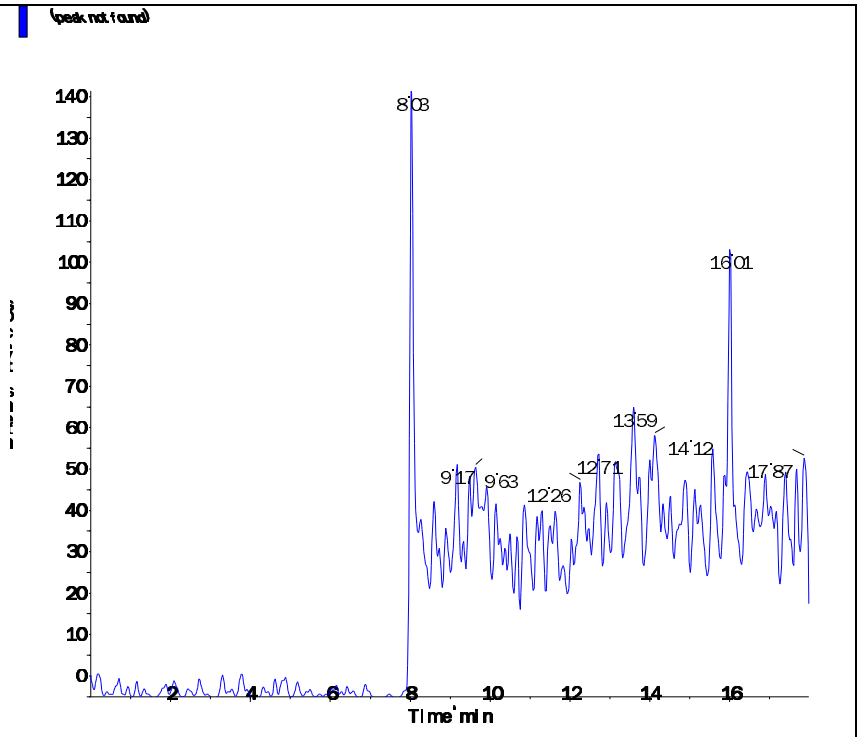
O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	

Data File	LM37367.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 7:42:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16100569-04 MS	**Injection Vial**	15.00
Data File	LM37367.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 7:42:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-05	**Dilution Factor**	1.00
Sample Comment	7,1 STD78251	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.330e+05	9.62	5.00	-

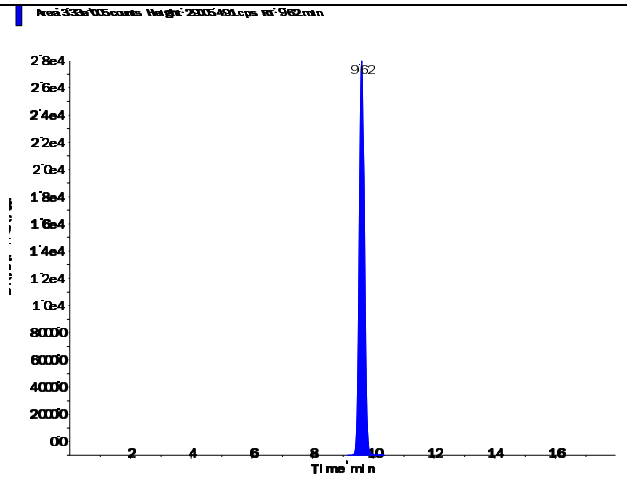
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.230e+04	9.62	N/A	0.195
Perchlorate conf	8.910e+03	9.61	N/A	0.219

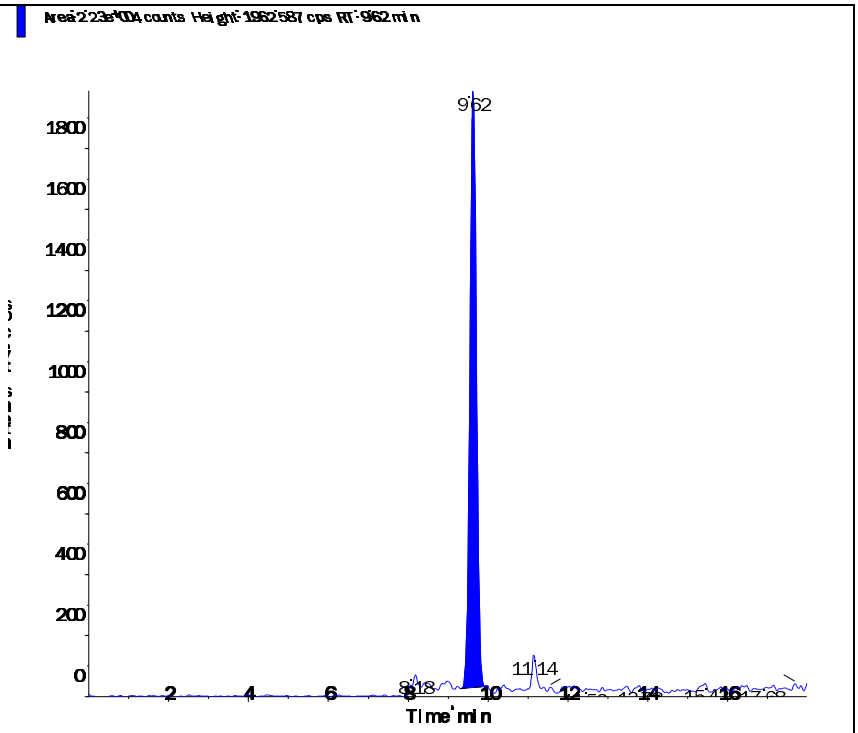
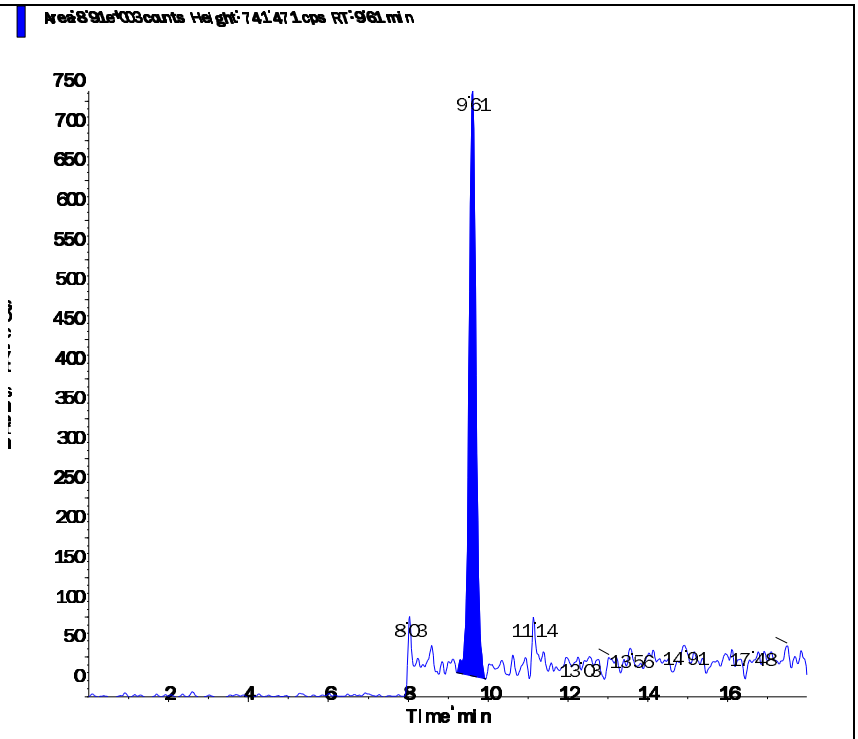
O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.62 (9.84) min Calculated conc: 0.195 ng/ml Area Ratio: 0.067 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.61 (9.84) min Calculated conc: 0.219 ng/ml Area Ratio: 0.027 Sample Type: (Unknown)	

s.dataFile Page 2 of 2

Data File	LM37368.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 8:01:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16100569-05 MSD	**Injection Vial**	16.00
Data File	LM37368.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 8:01:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-06	**Dilution Factor**	1.00
Sample Comment	7,1 STD78251	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.530e+05	9.62	5.00	-

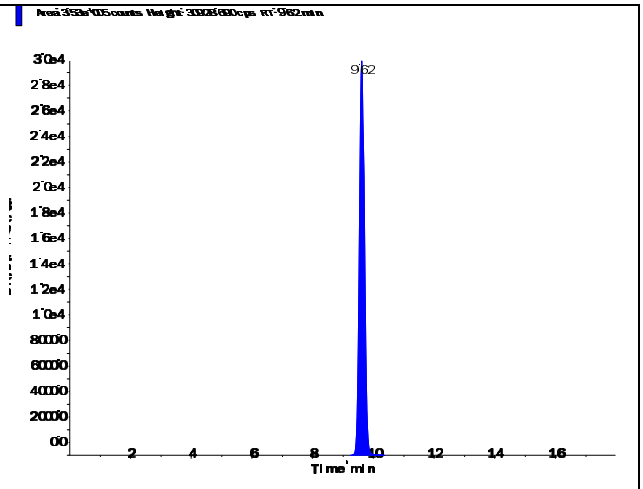
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.370e+04	9.63	N/A	0.196
Perchlorate conf	8.500e+03	9.61	N/A	0.195

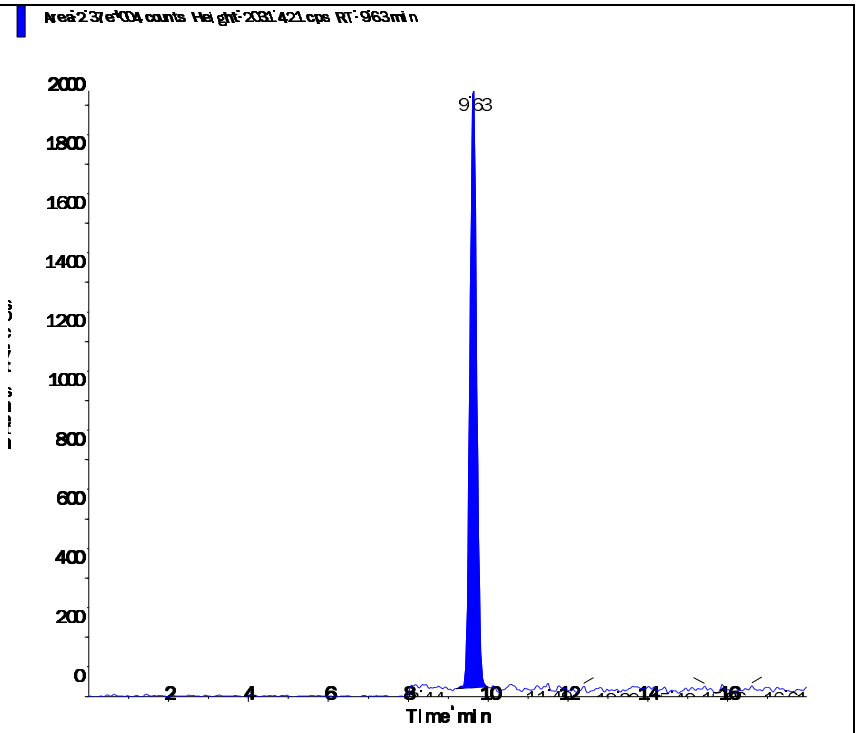
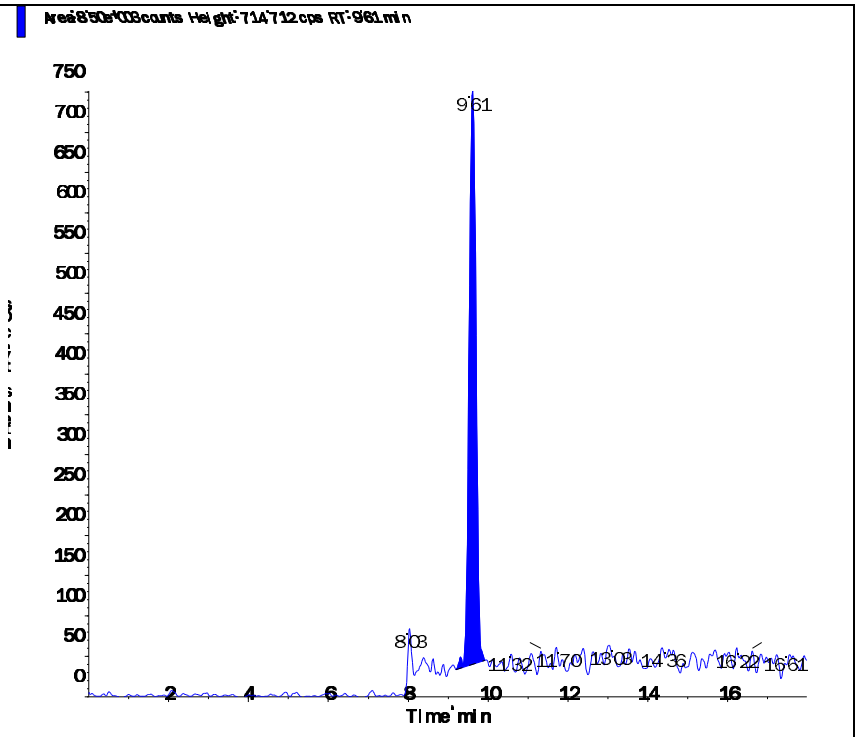
O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.63 (9.84) min Calculated conc: 0.196 ng/ml Area Ratio: 0.067 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.61 (9.84) min Calculated conc: 0.195 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	

Data File	LM37361.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 5:49:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

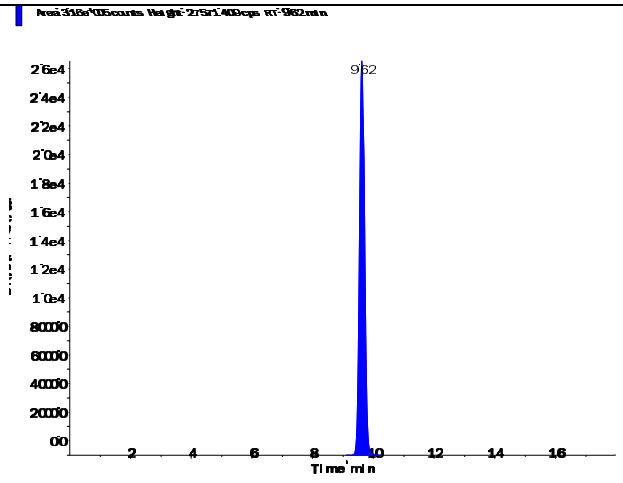
Sample Name	L16100569-06	**Injection Vial**	12.00
Data File	LM37361.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 5:49:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	L16100569-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

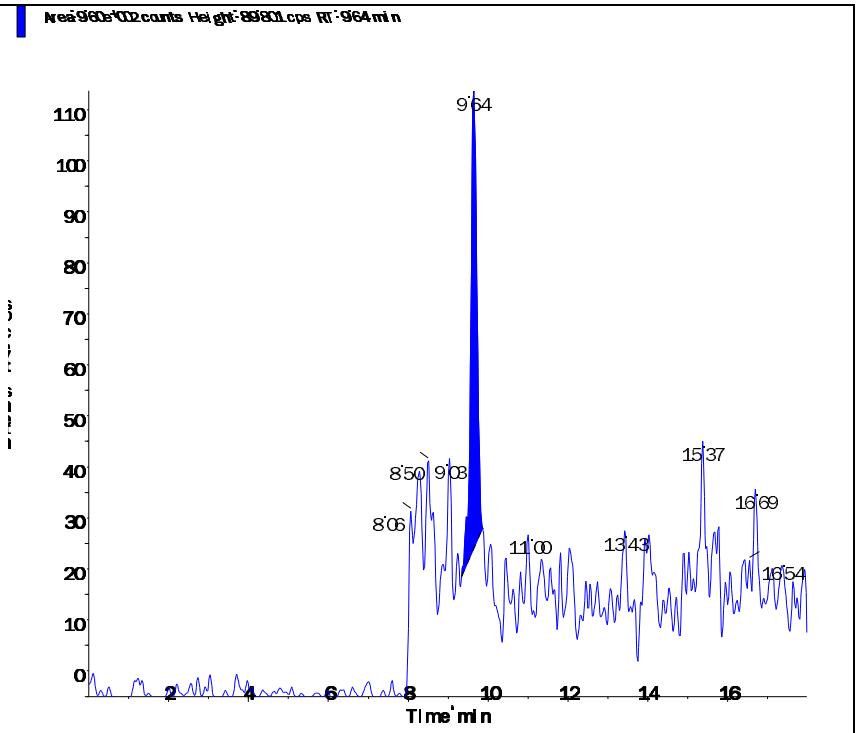
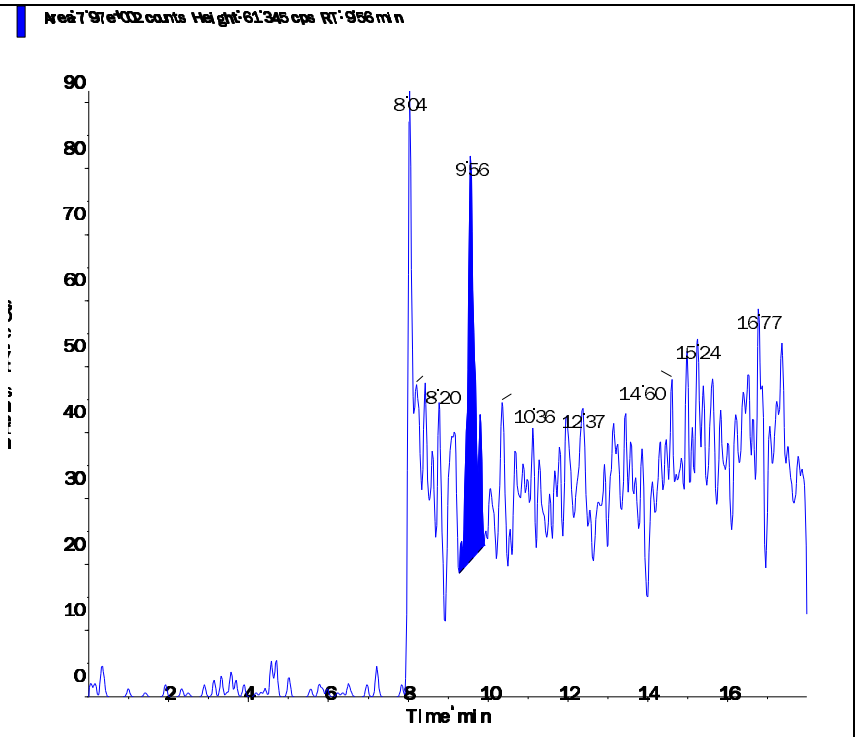
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.160e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.600e+02	9.64	N/A	0.0052
Perchlorate conf	7.970e+02	9.56	N/A	0.0021

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.64 (9.84) min Calculated conc: 0.0052 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.56 (9.84) min Calculated conc: 0.0021 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	

Data File	LM37362.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 6:08:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16100569-07	**Injection Vial**	13.00
Data File	LM37362.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 6:08:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	L16100569-07	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.770e+05	9.62	5.00	-

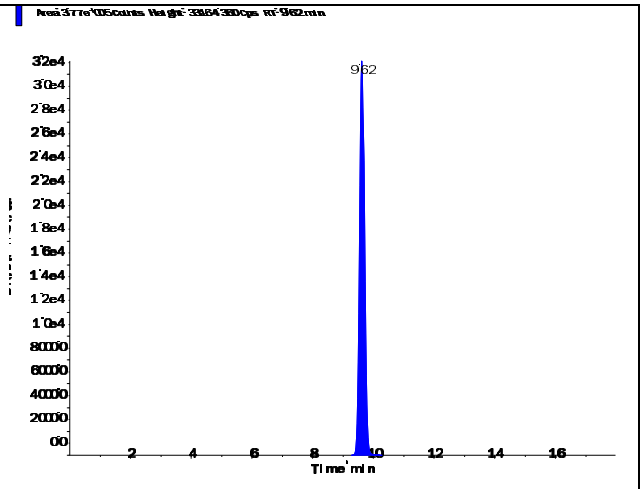
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.770e+03	9.65	N/A	0.018
Perchlorate conf	1.380e+03	9.60	N/A	0.0123

O18LP (Internal Standard)

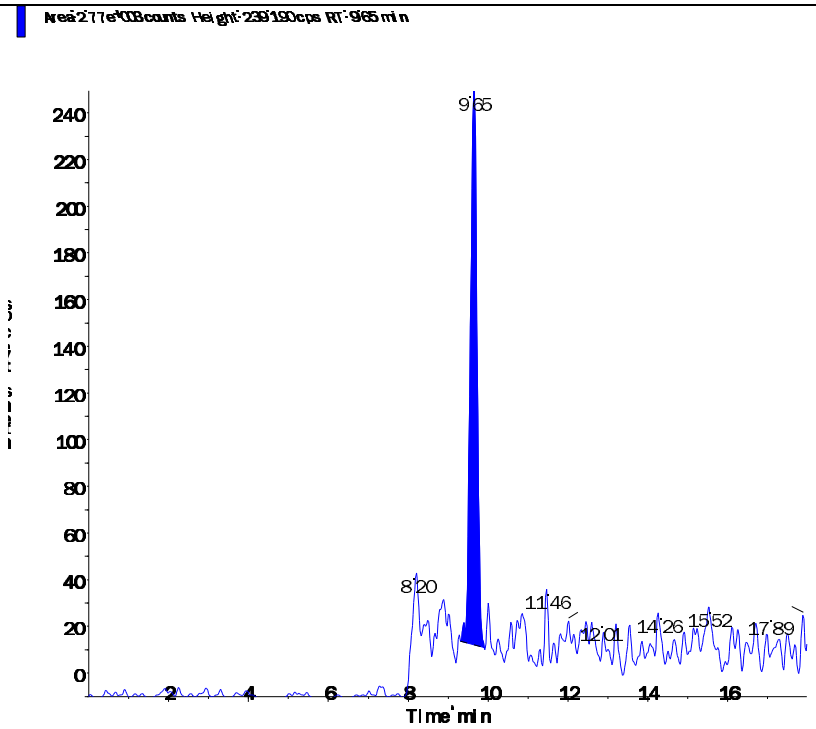
RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

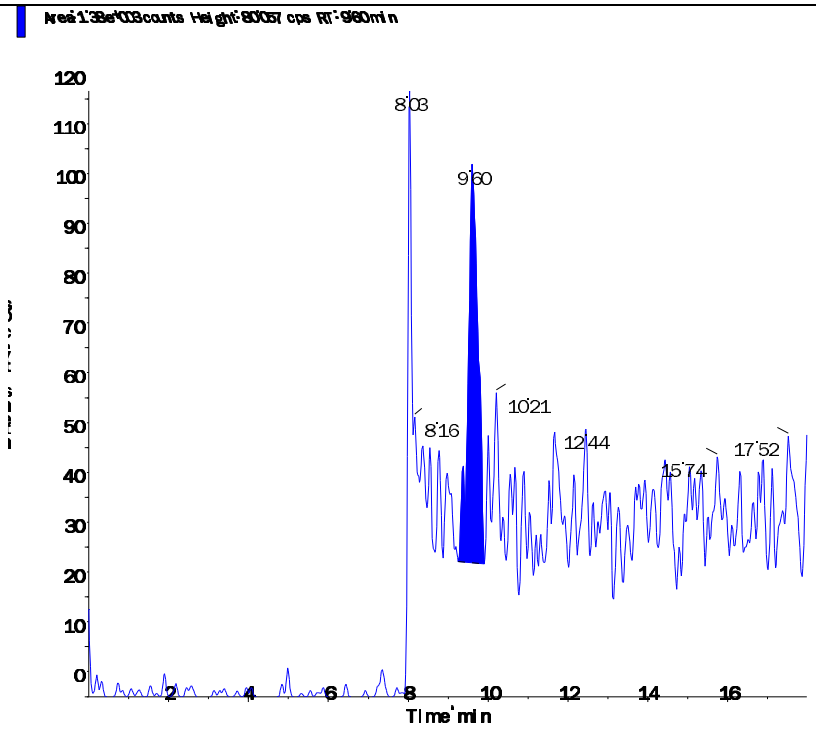
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): Calculated conc: Area Ratio: Sample Type:	9.65 (9.84) min 0.018 ng/ml 0.007 (Unknown)



Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): Calculated conc: Area Ratio: Sample Type:	9.60 (9.84) min 0.0123 ng/ml 0.004 (Unknown)



2.1.1.4 Standards Data

Data File	LM34686.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

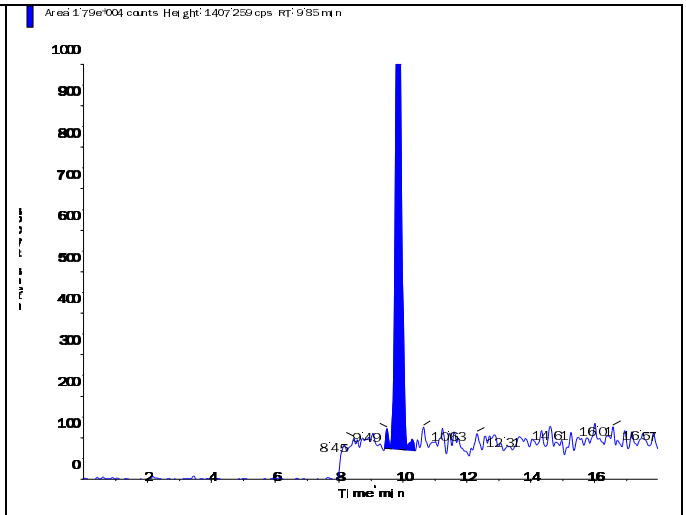
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

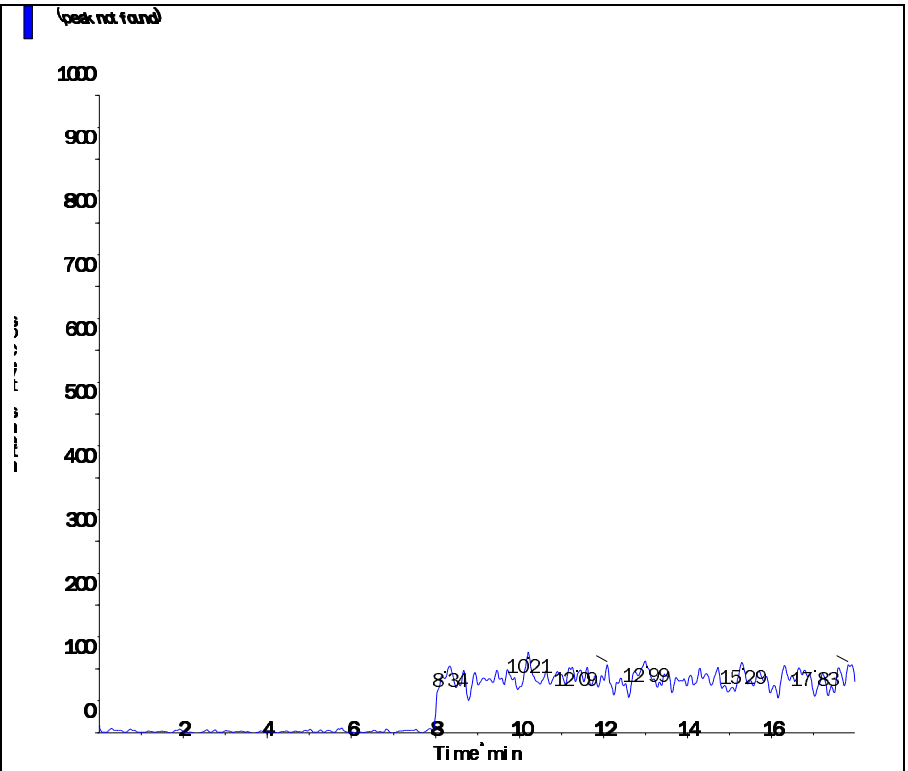
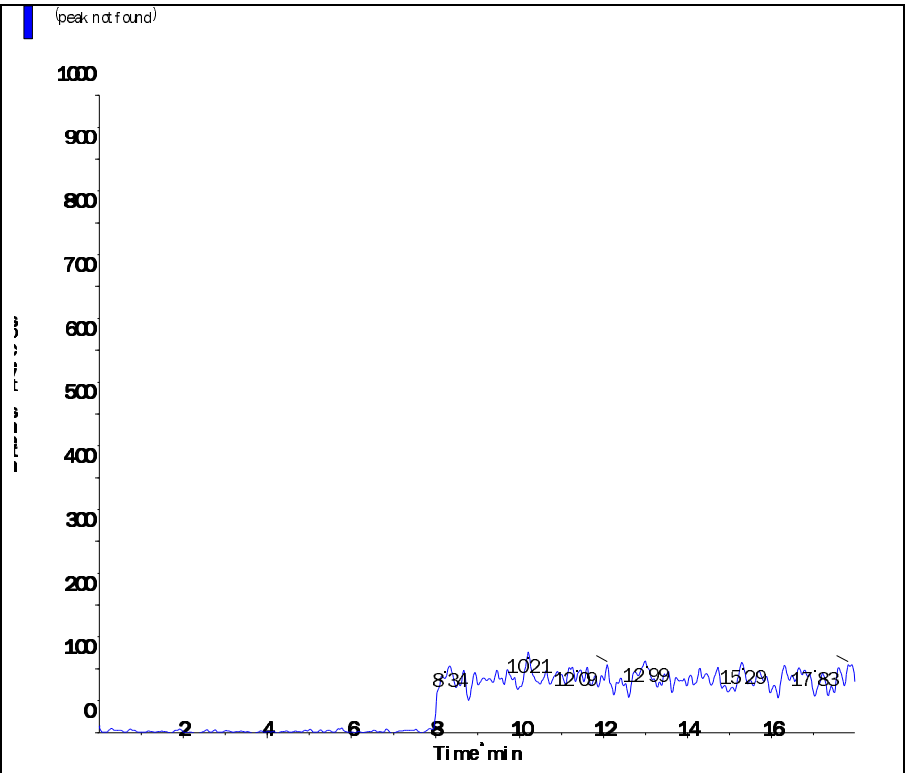
O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)



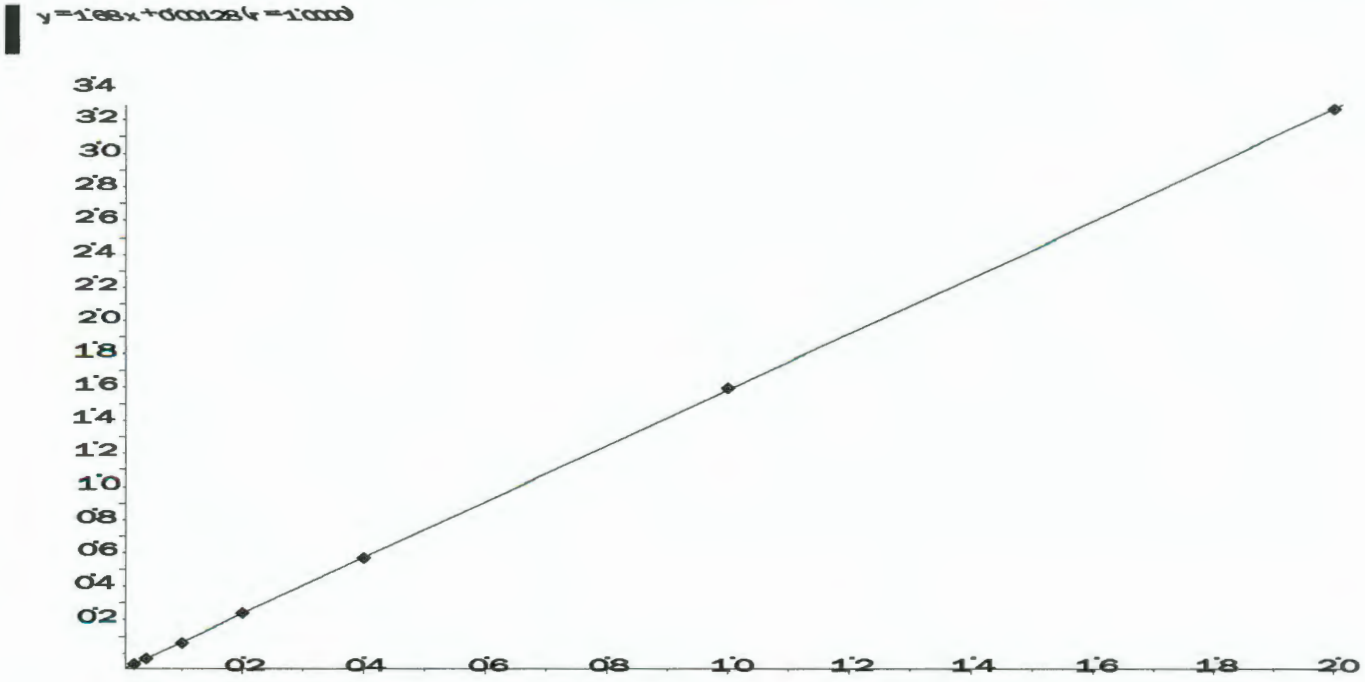
Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

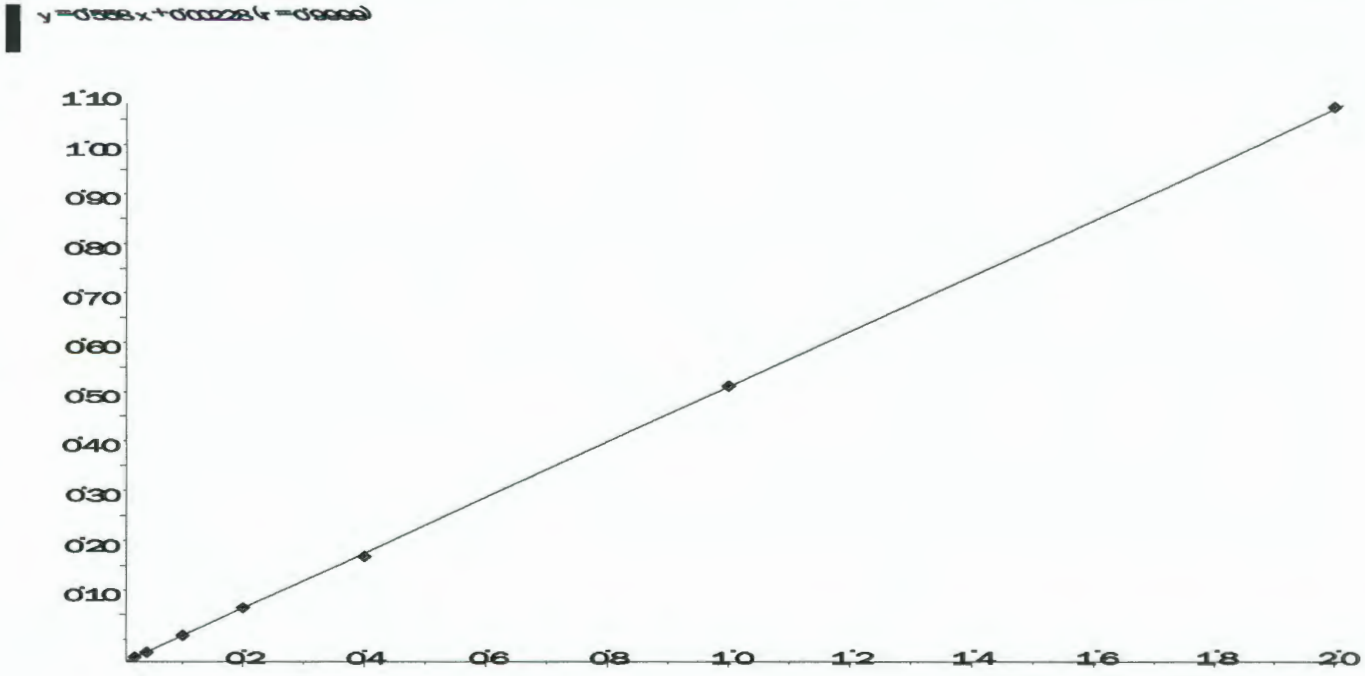


Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A



Data File	LM34687.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

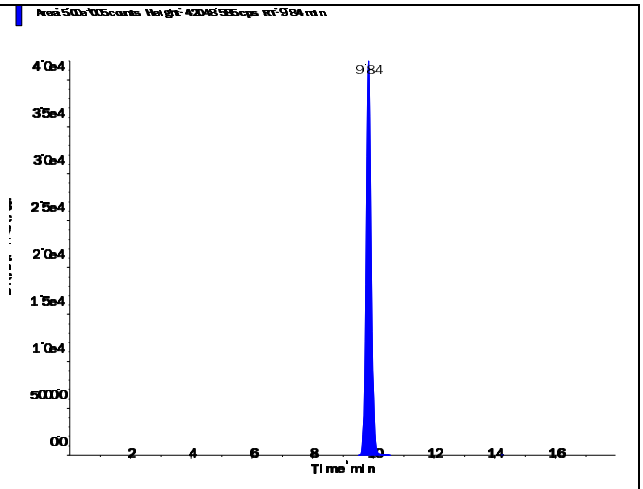
Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

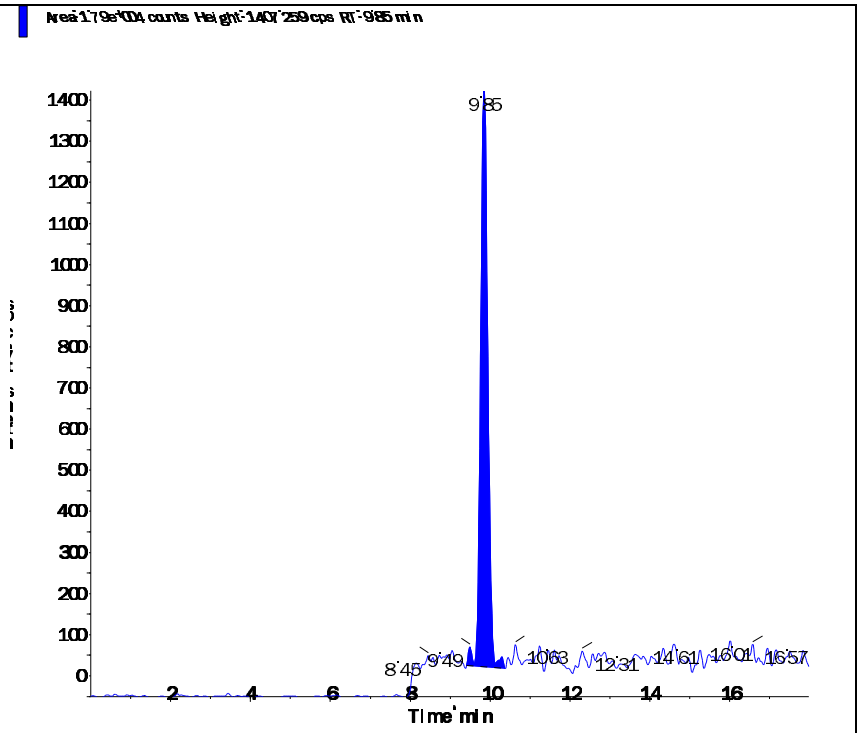
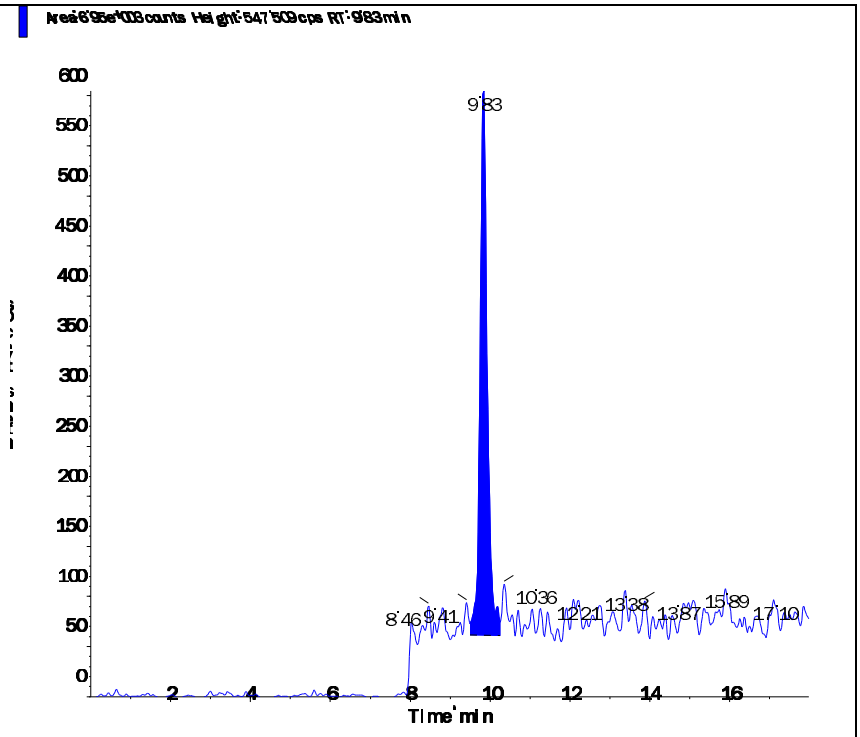
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.103 ng/ml Area Ratio: 0.036 Sample Type: (Standard)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 0.104 ng/ml Area Ratio: 0.014 Sample Type: (Standard)	

Data File	LM34688.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

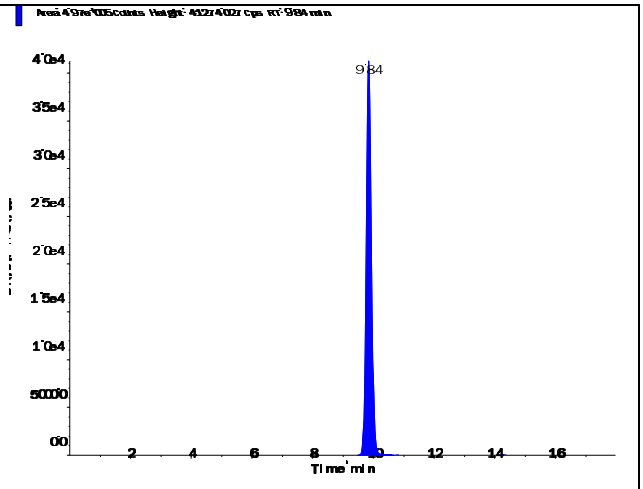
Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

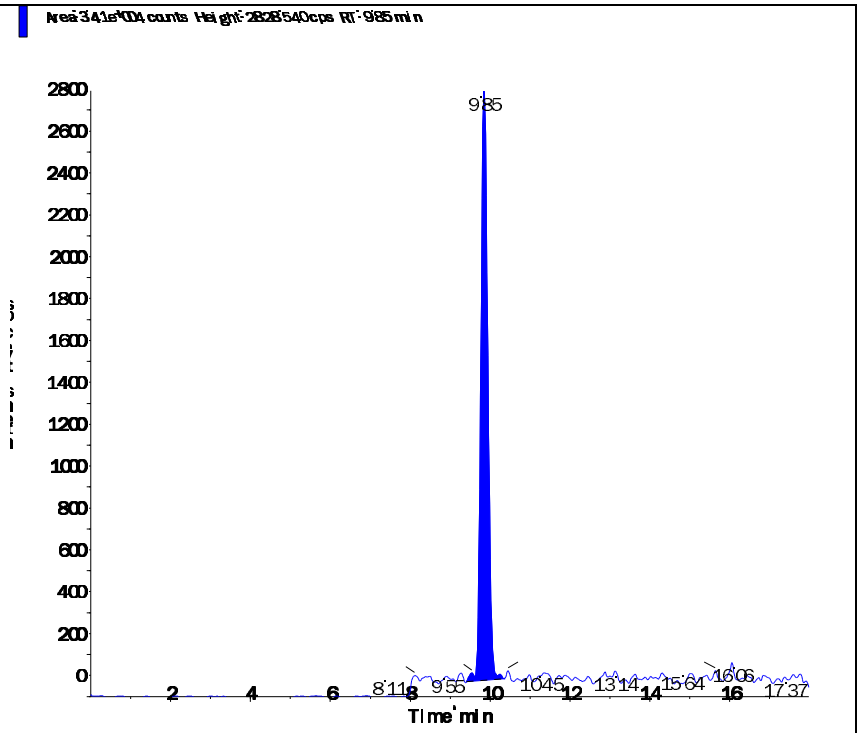
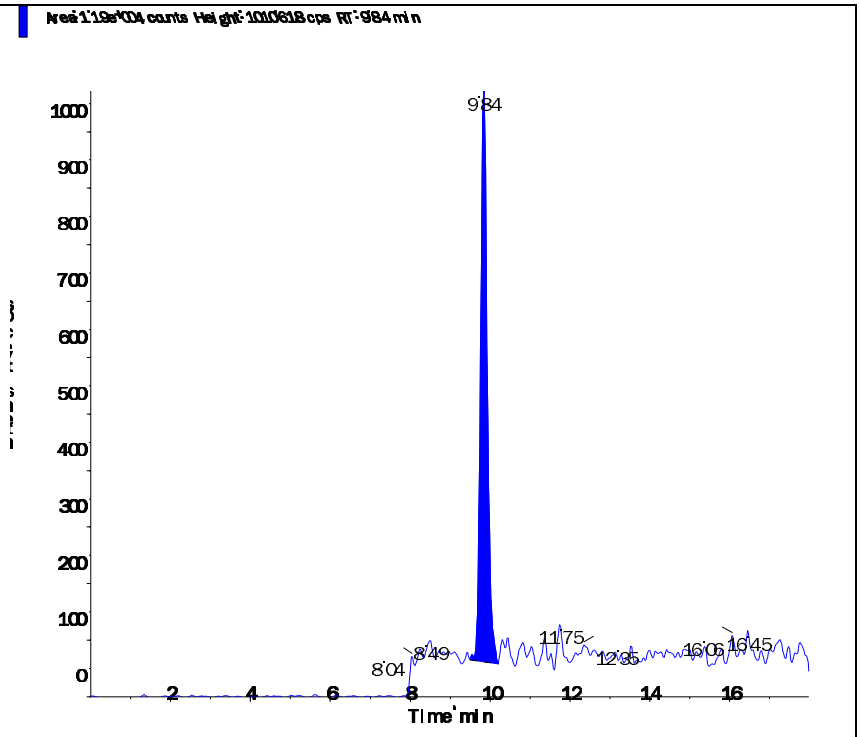
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.201 ng/ml Area Ratio: 0.069 Sample Type: (Standard)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 0.194 ng/ml Area Ratio: 0.024 Sample Type: (Standard)	

Data File	LM34689.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

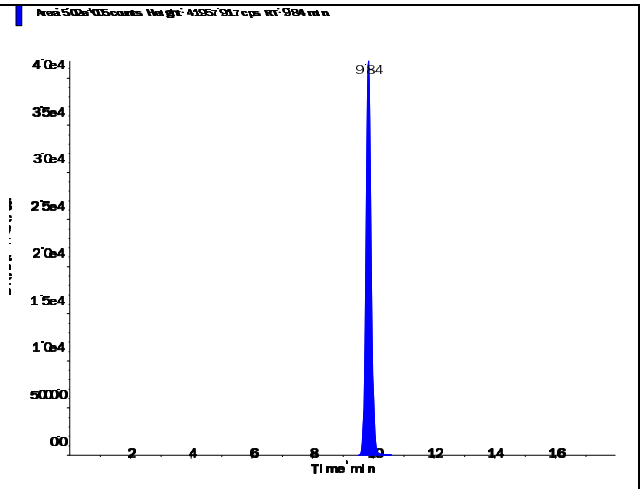
Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

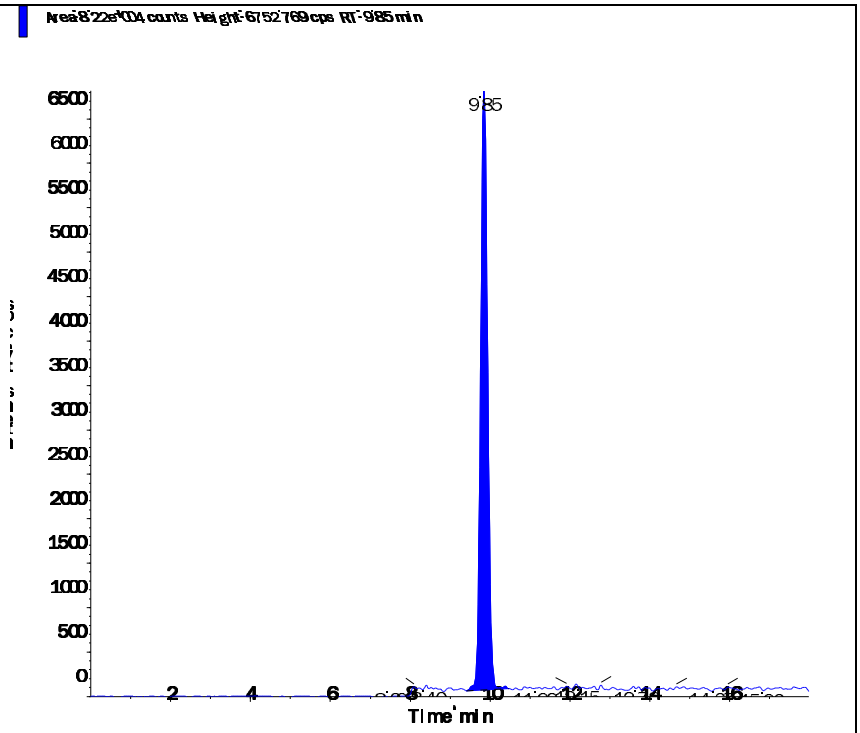
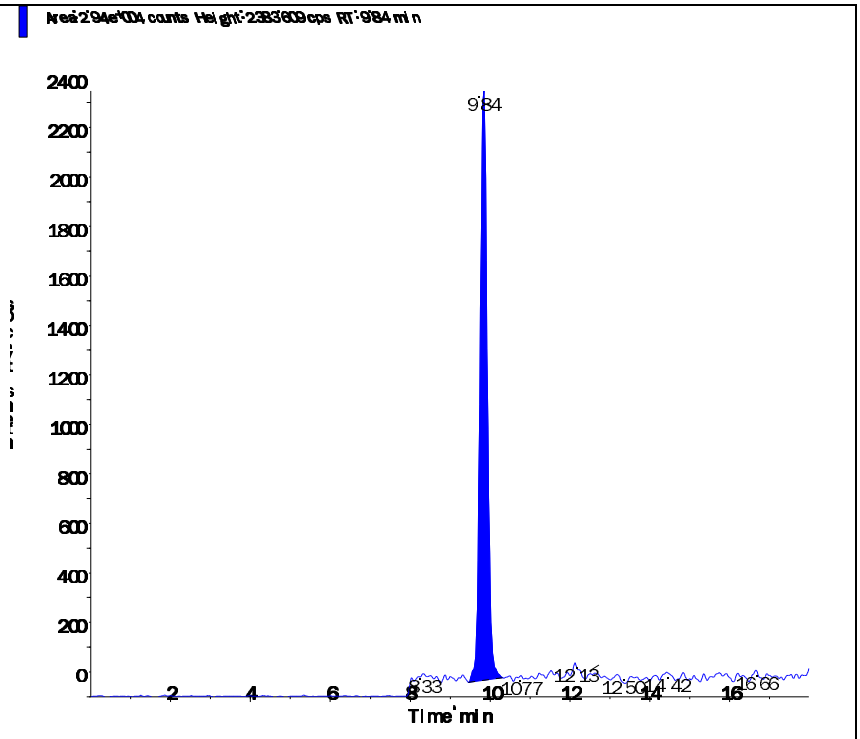
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.483 ng/ml Area Ratio: 0.164 Sample Type: (Standard)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 0.503 ng/ml Area Ratio: 0.058 Sample Type: (Standard)	

Data File	LM34690.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

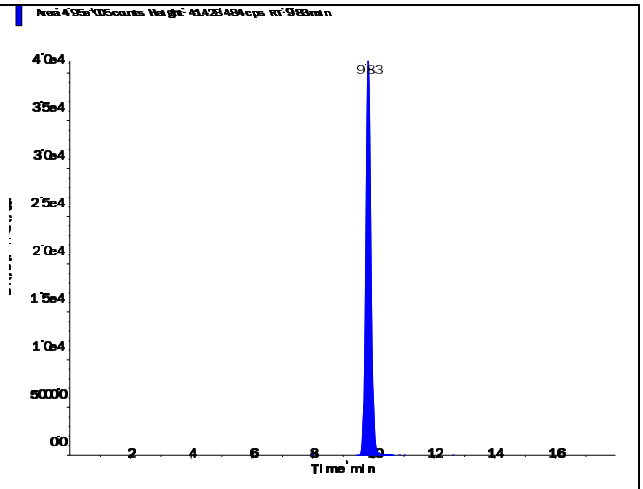
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

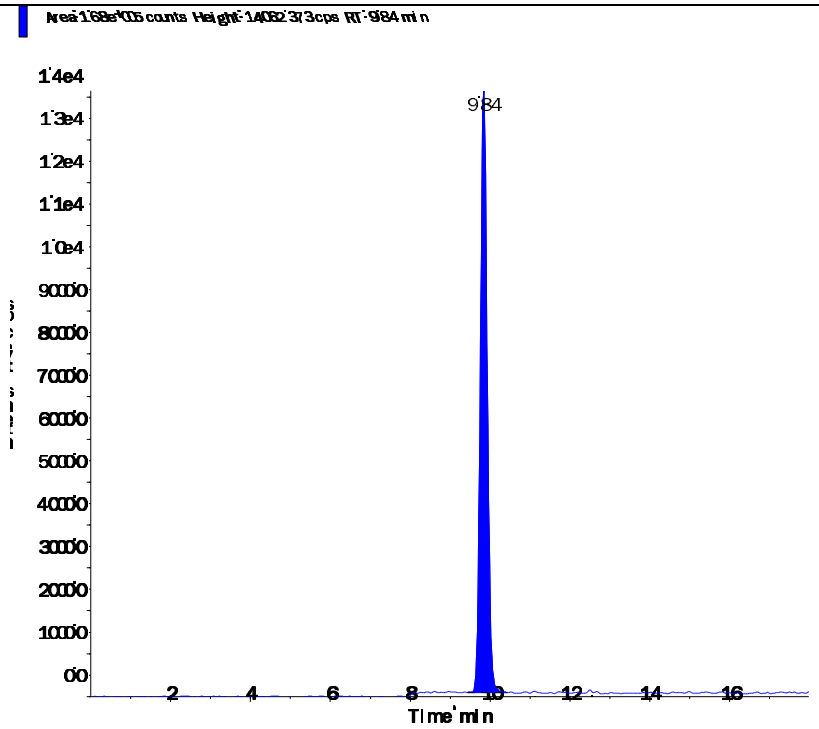
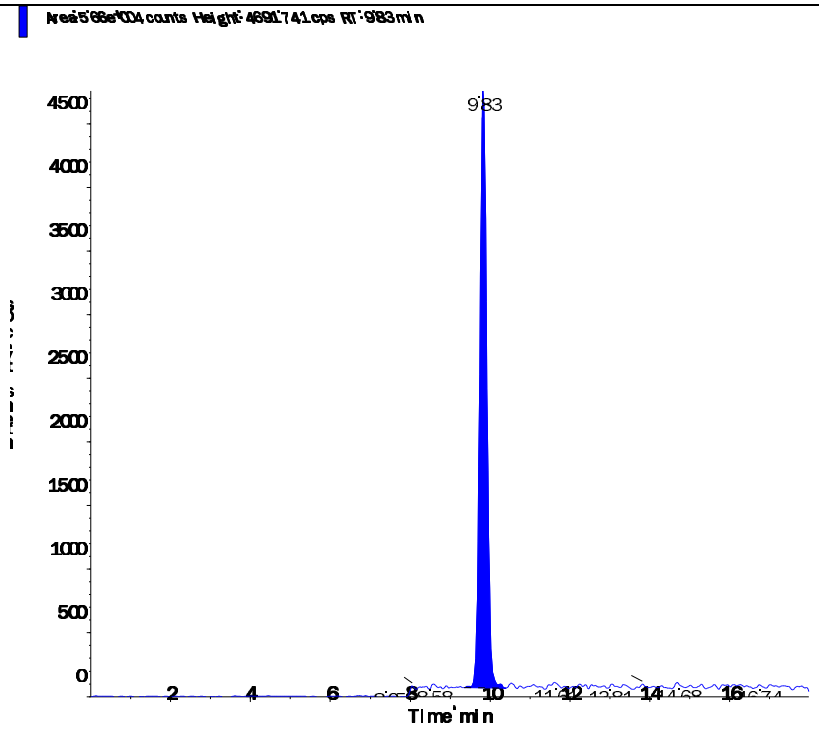
O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.339 Sample Type: (Standard)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.00 ng/ml Area Ratio: 0.114 Sample Type: (Standard)	

Data File	LM34691.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

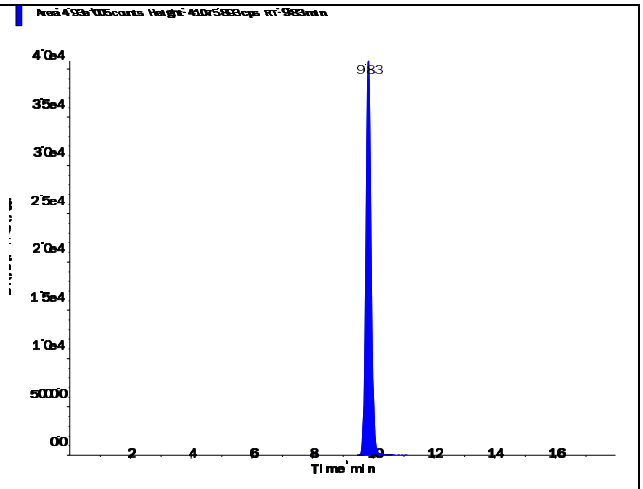
Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

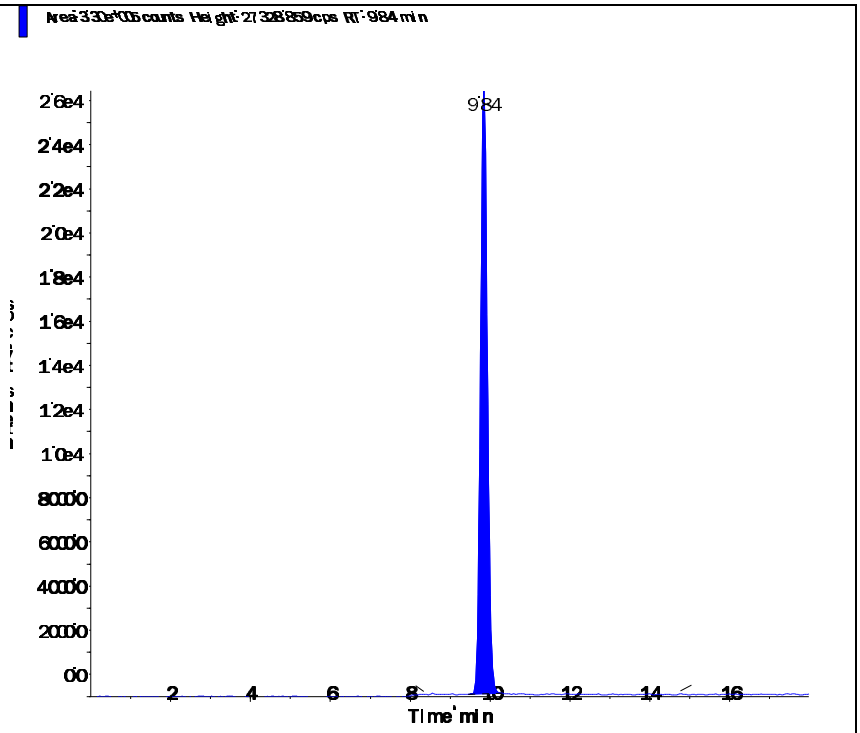
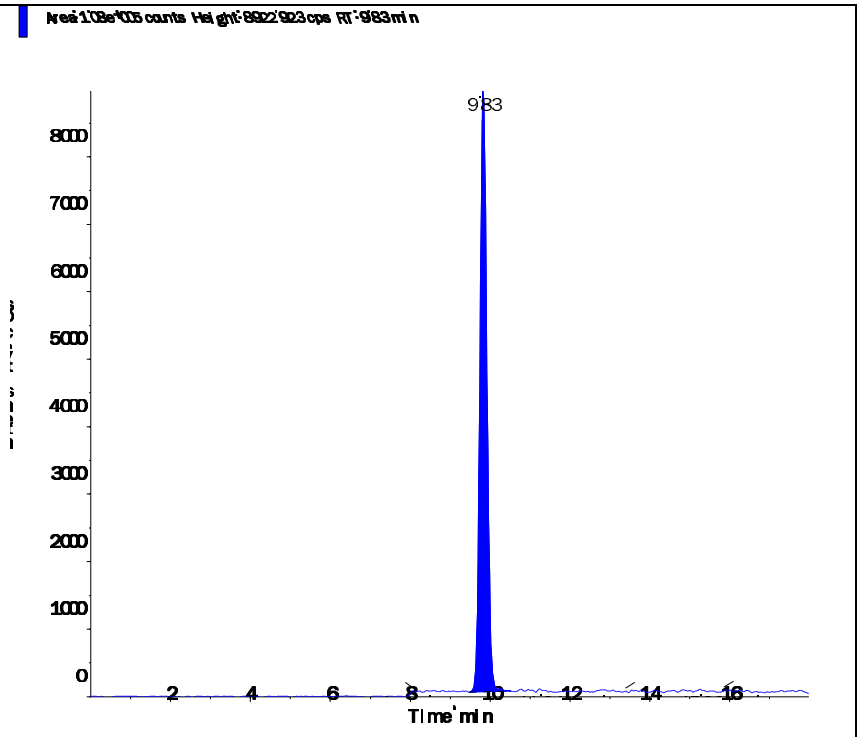
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	

Data File	LM34692.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

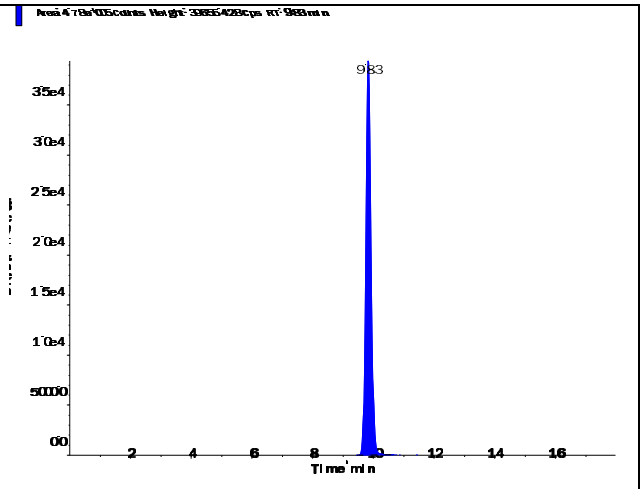
Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

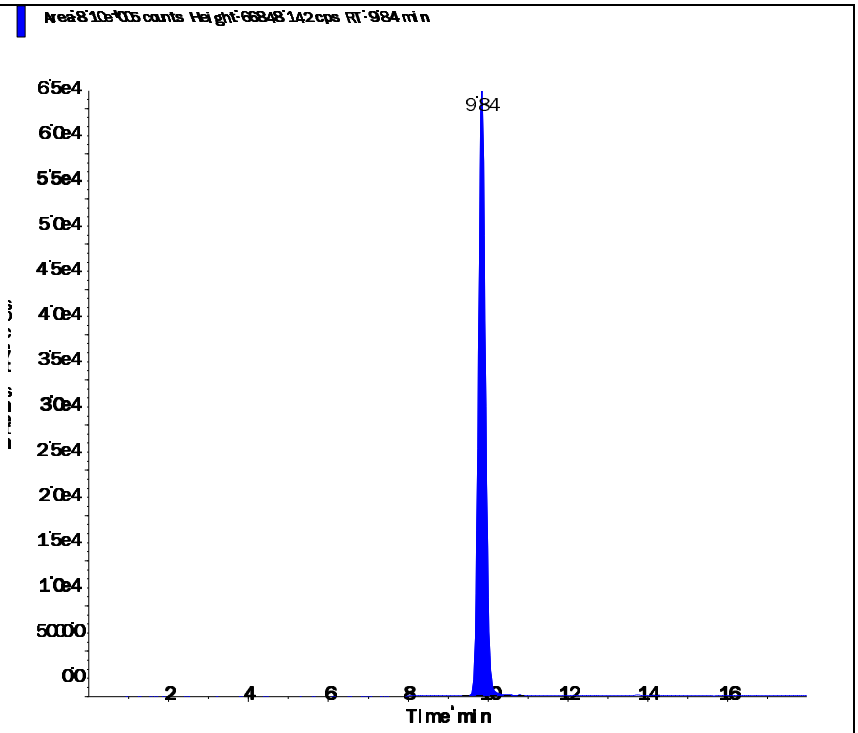
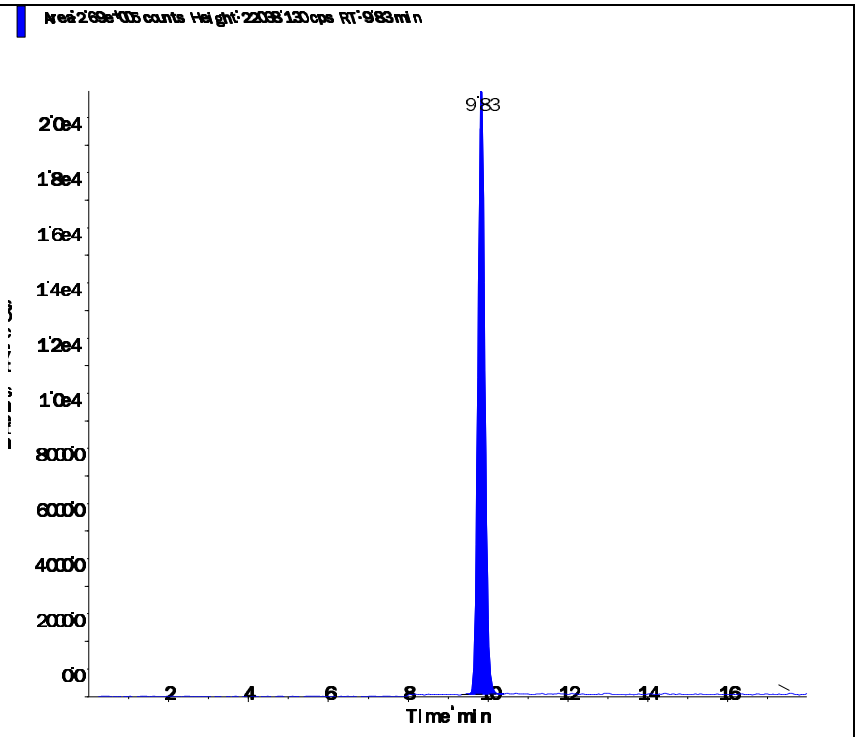
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 5.04 ng/ml Area Ratio: 1.695 Sample Type: (Standard)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 5.02 ng/ml Area Ratio: 0.562 Sample Type: (Standard)	

Data File	LM34693.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

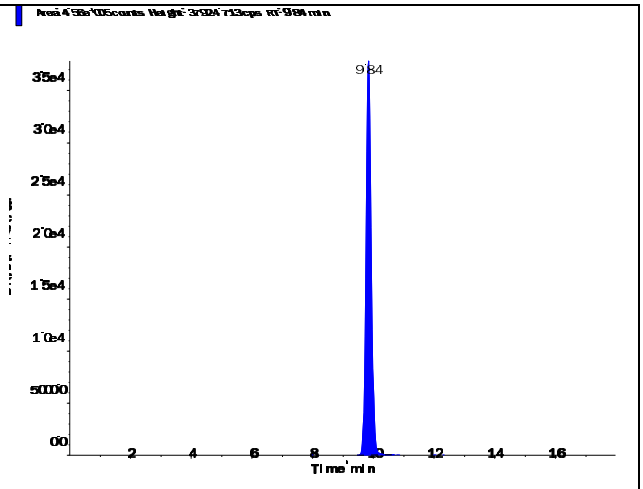
Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

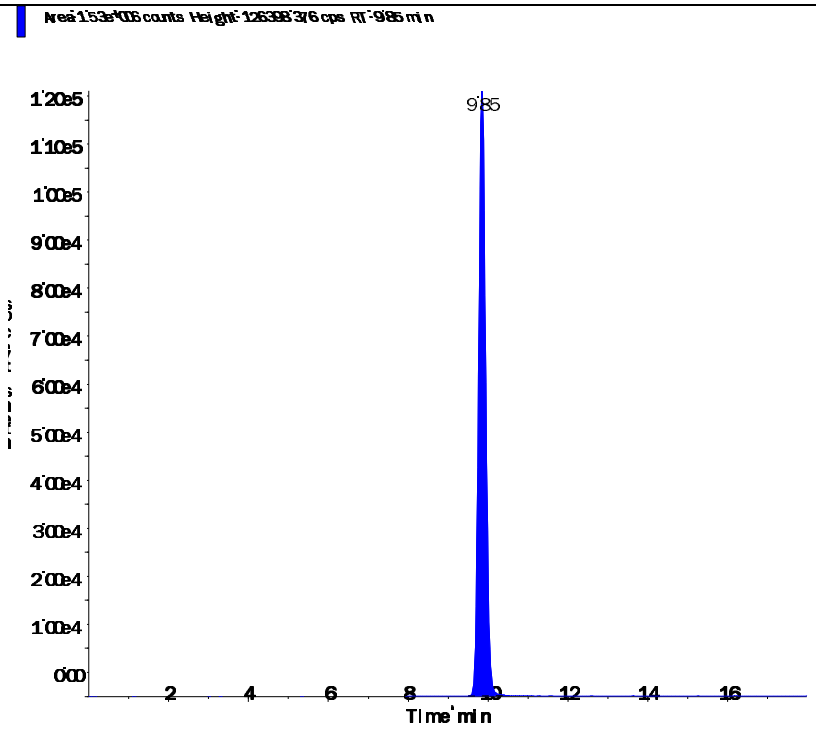
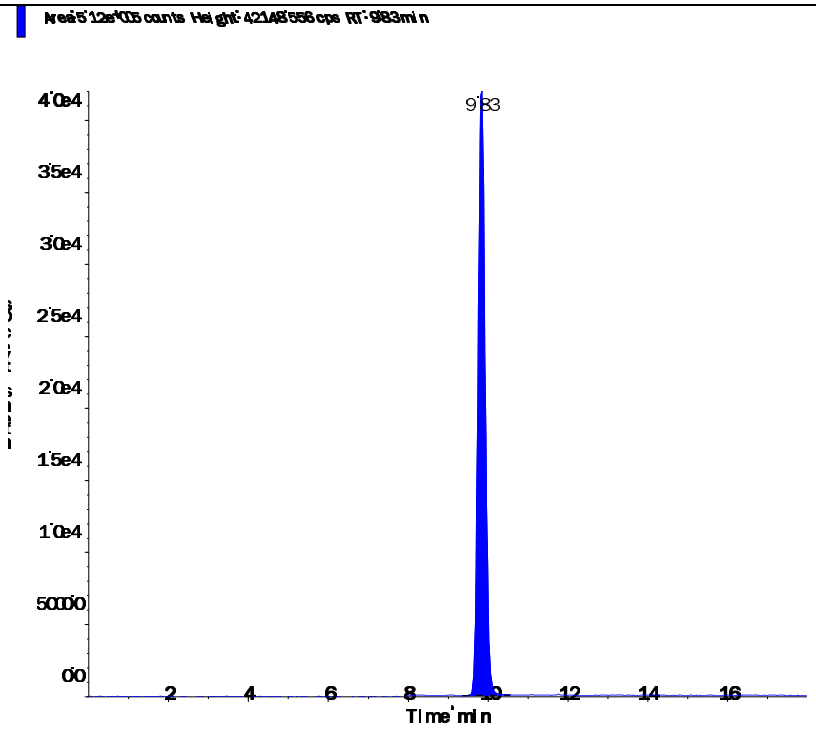
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

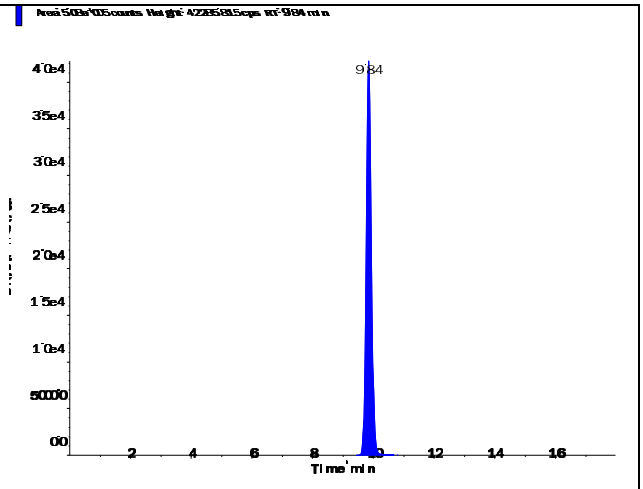
Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

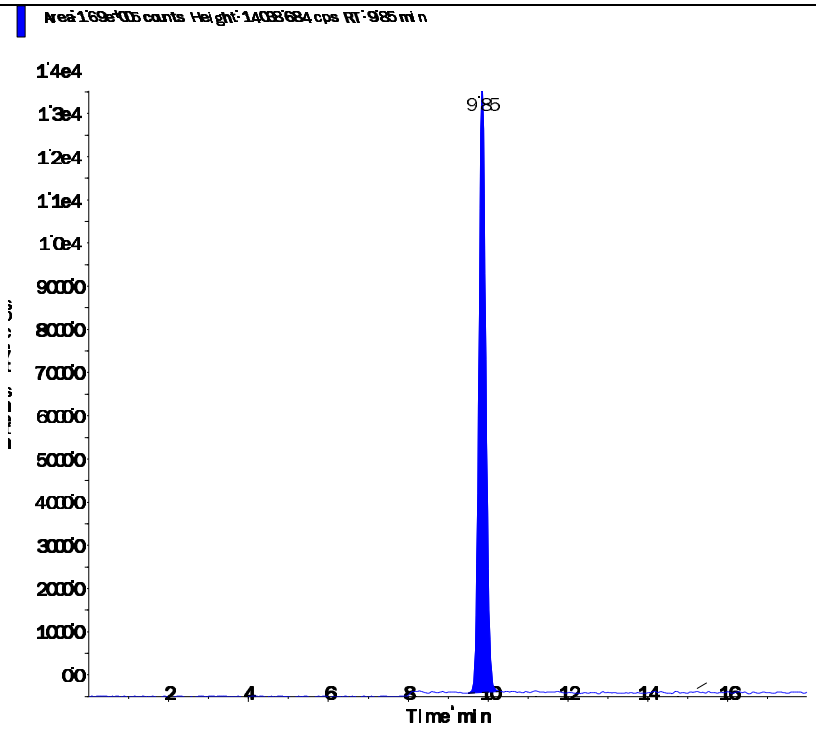
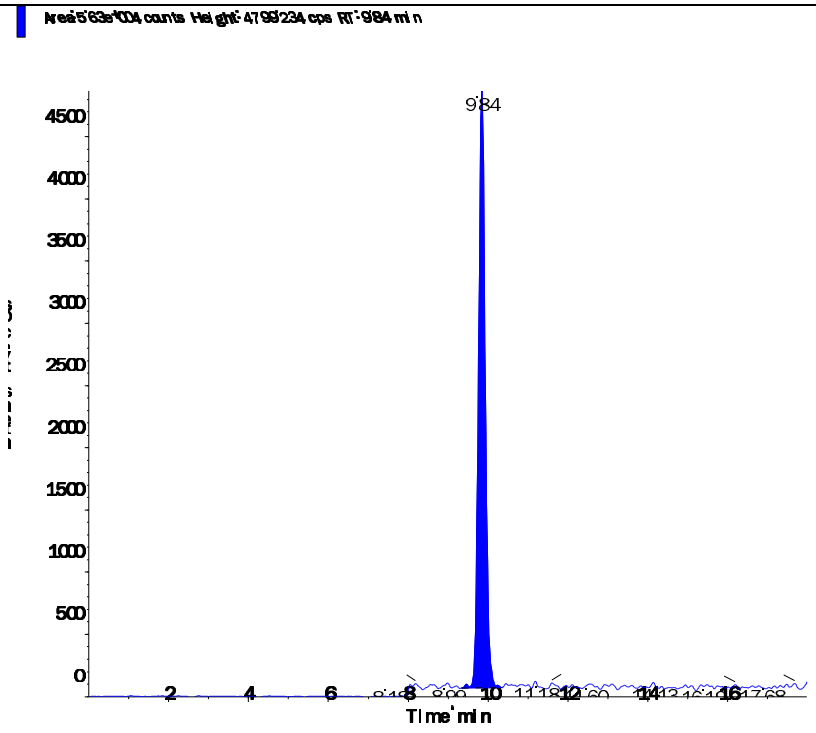
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Quality Control)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.985 ng/ml Area Ratio: 0.332 Sample Type: (Quality Control)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 0.973 ng/ml Area Ratio: 0.111 Sample Type: (Quality Control)	

Data File	LM37351.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 2:39:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG587969-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM37351.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 2:39:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587969-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD78249	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.160e+05	9.58	5.00	-

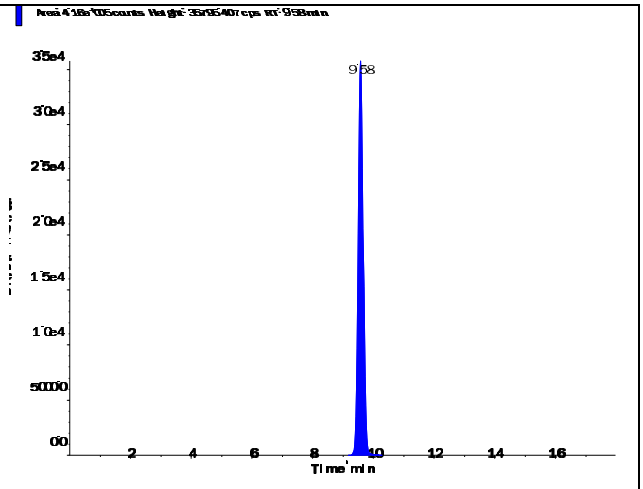
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.330e+05	9.59	1.00	0.944
Perchlorate conf	4.780e+04	9.57	1.00	1.01

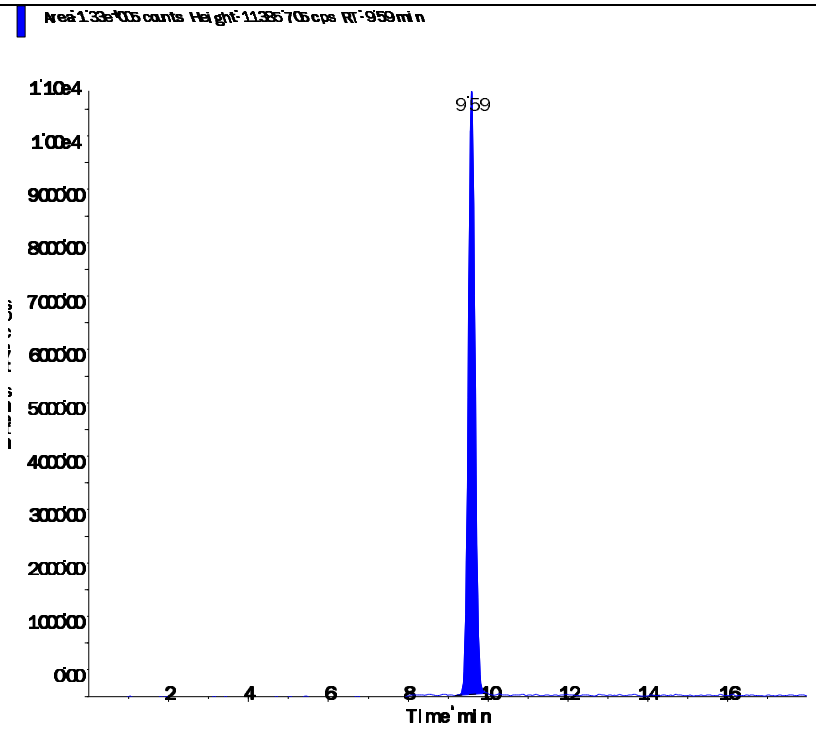
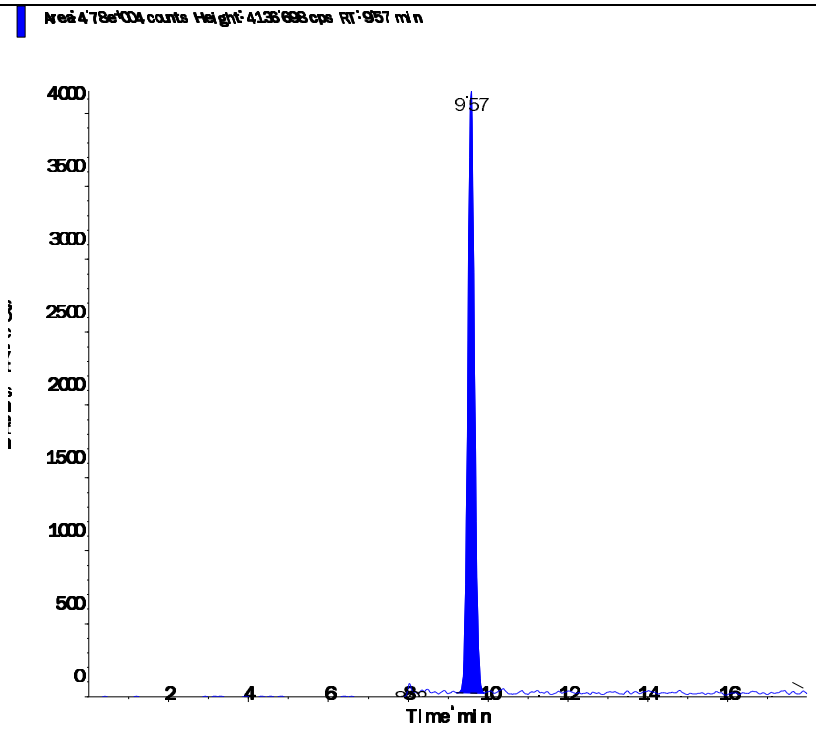
O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.59 (9.84) min Calculated conc: 0.944 ng/ml Area Ratio: 0.319 Sample Type: (Quality Control)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.57 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.115 Sample Type: (Quality Control)	

Data File	LM37363.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 6:27:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG587969-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM37363.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 6:27:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587969-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD78249	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.59	5.00	-

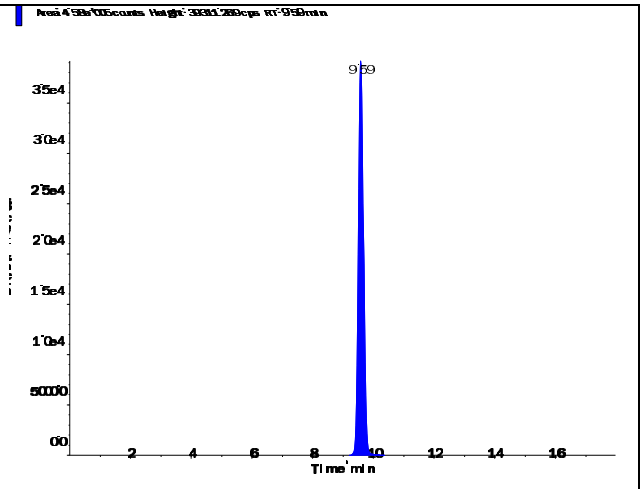
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.540e+05	9.60	1.00	0.993
Perchlorate conf	5.090e+04	9.58	1.00	0.975

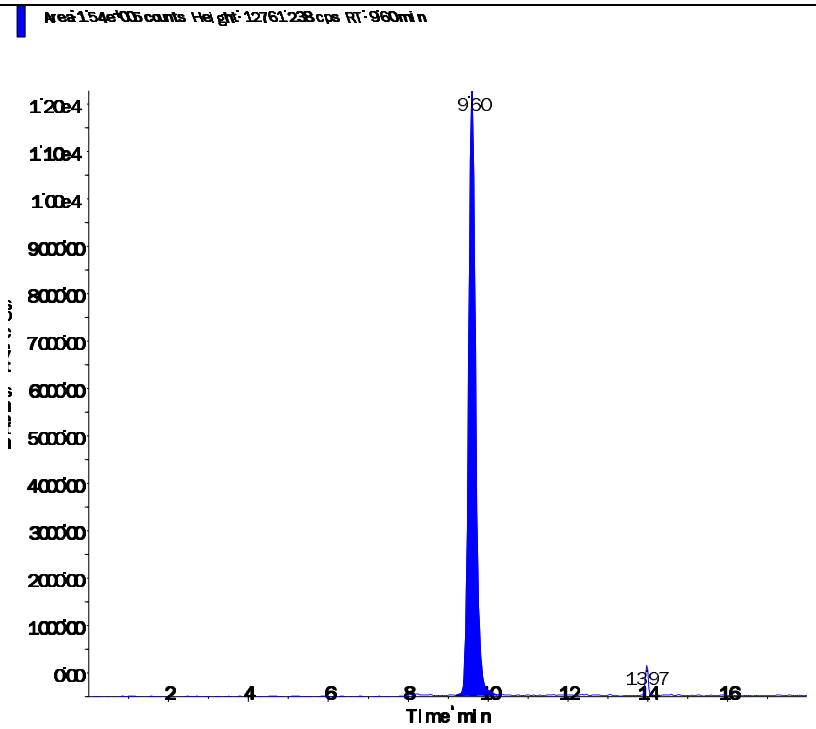
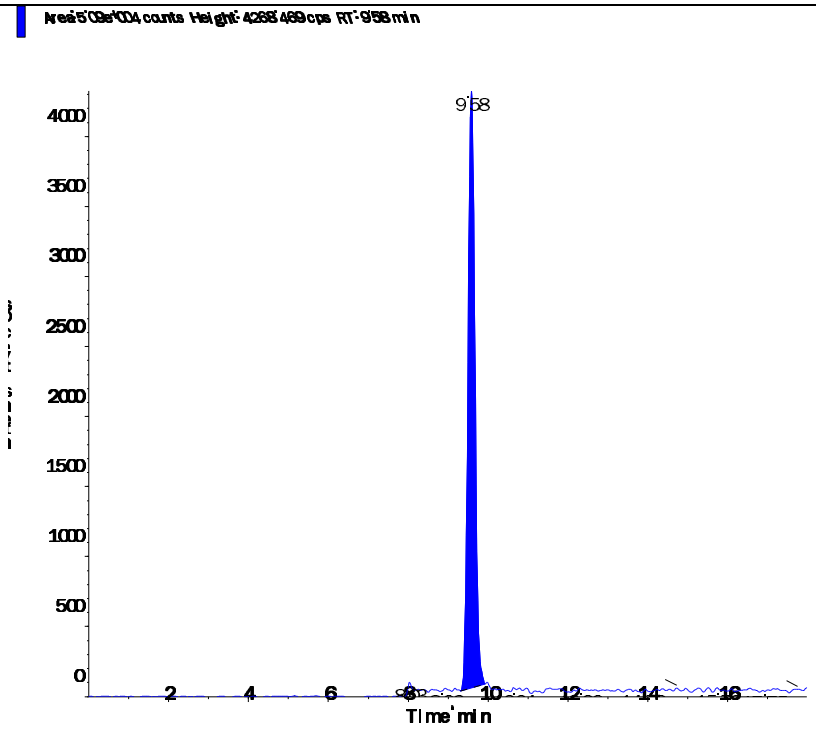
O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.60 (9.84) min Calculated conc: 0.993 ng/ml Area Ratio: 0.335 Sample Type: (Quality Control)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.58 (9.84) min Calculated conc: 0.975 ng/ml Area Ratio: 0.111 Sample Type: (Quality Control)	

Data File	LM37375.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 10:14:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

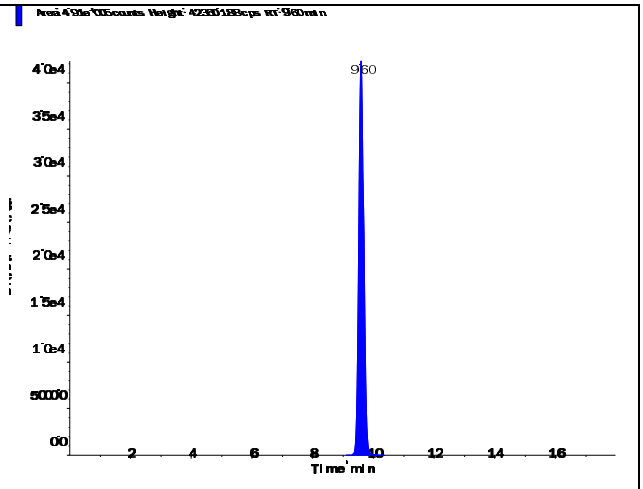
Sample Name	WG587969-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM37375.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 10:14:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587969-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD78249	**Weight to Volume**	0.00

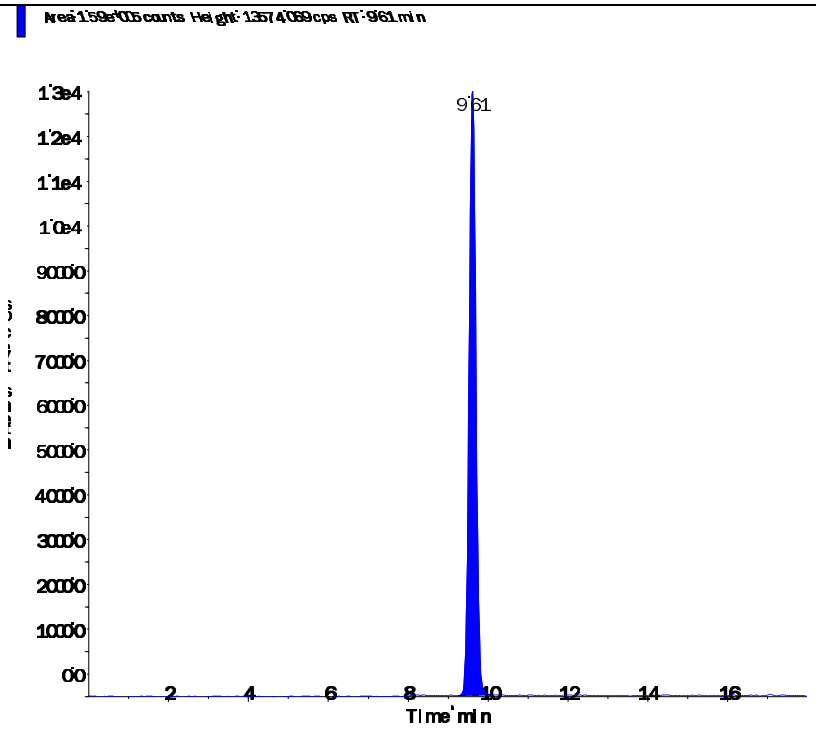
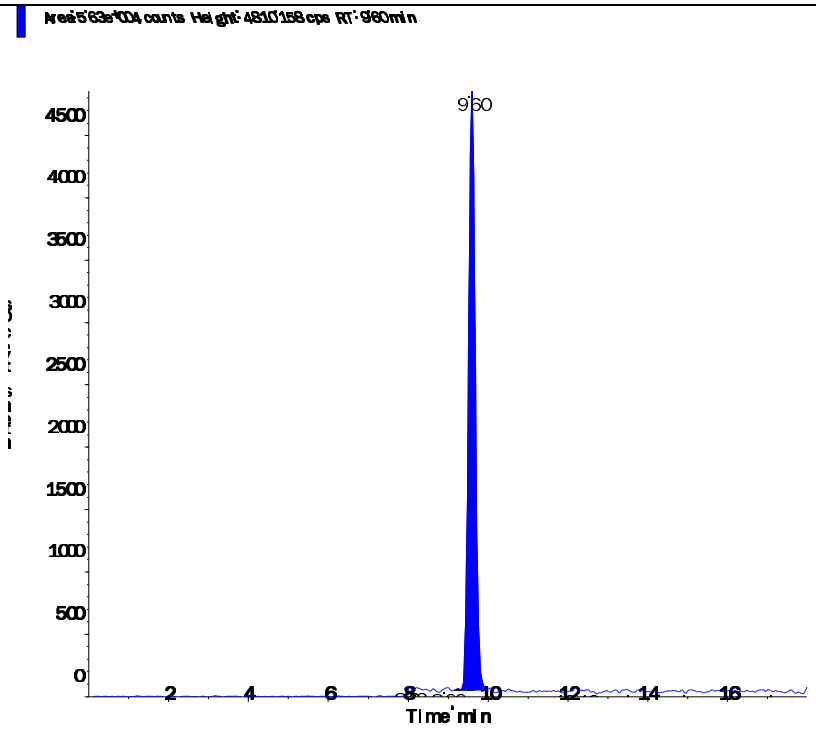
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.590e+05	9.61	1.00	0.956
Perchlorate conf	5.630e+04	9.60	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Quality Control)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.61 (9.84) min Calculated conc: 0.956 ng/ml Area Ratio: 0.323 Sample Type: (Quality Control)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.60 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.115 Sample Type: (Quality Control)	

Data File	LM37352.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 2:58:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

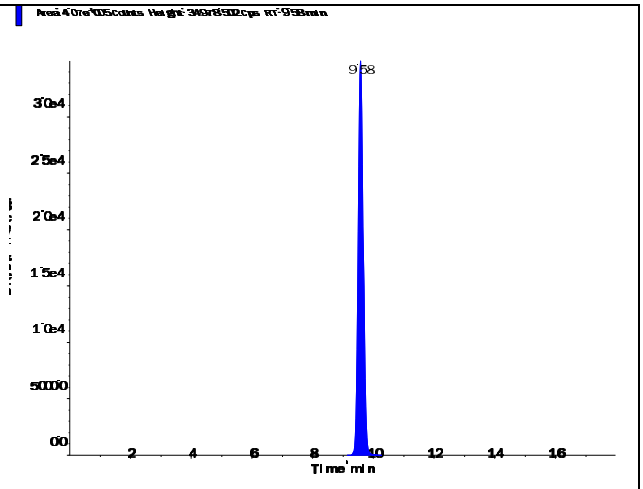
Sample Name	WG587968-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM37352.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 2:58:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD78249	**Weight to Volume**	0.00

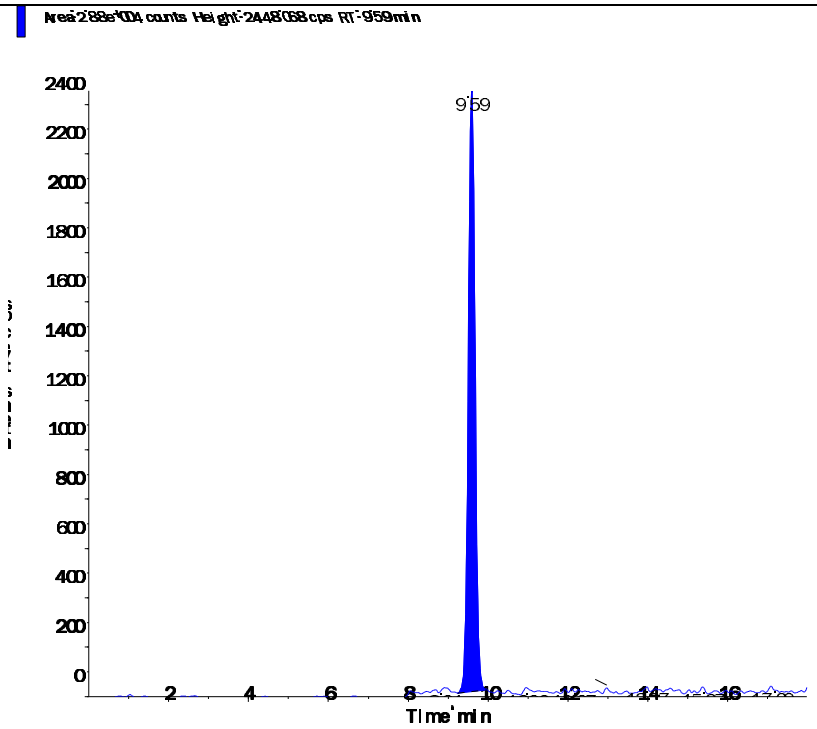
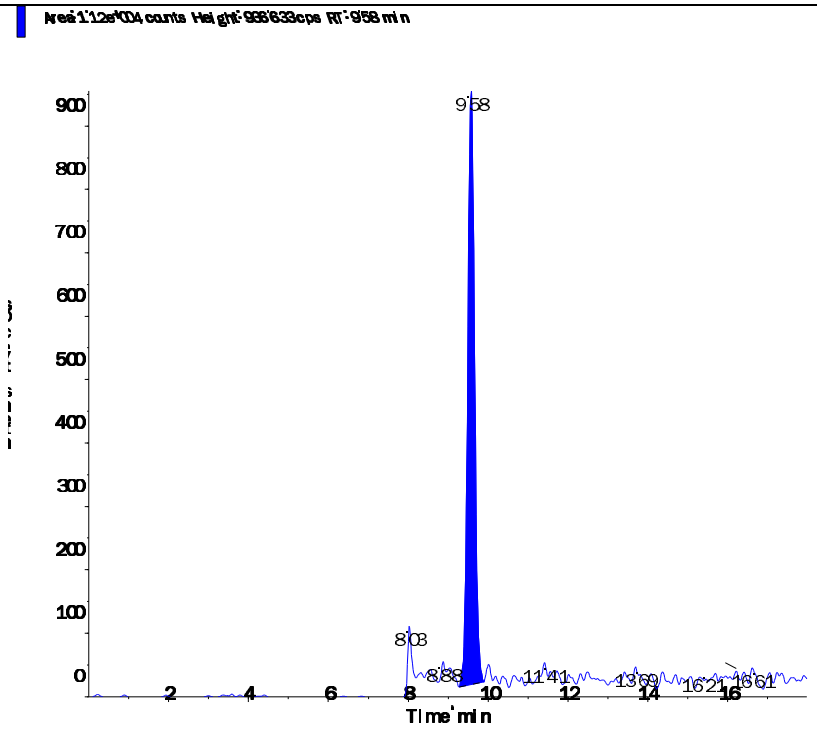
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.070e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.880e+04	9.59	N/A	0.207
Perchlorate conf	1.120e+04	9.58	N/A	0.225

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.59 (9.84) min Calculated conc: 0.207 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.58 (9.84) min Calculated conc: 0.225 ng/ml Area Ratio: 0.027 Sample Type: (Unknown)	

Data File	LM37364.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 6:45:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

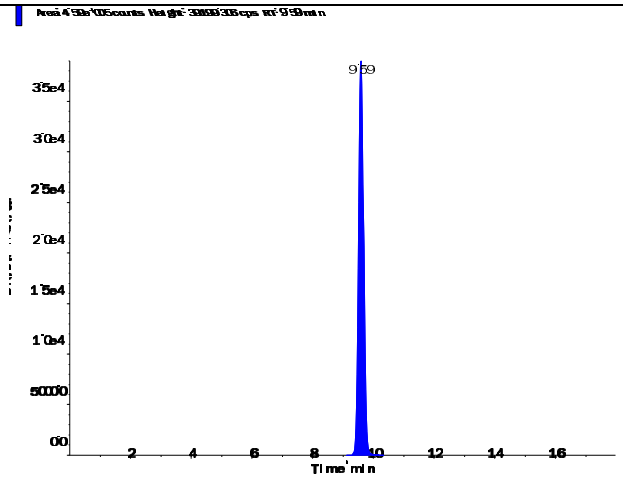
Sample Name	WG587968-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM37364.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 6:45:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD78249	**Weight to Volume**	0.00

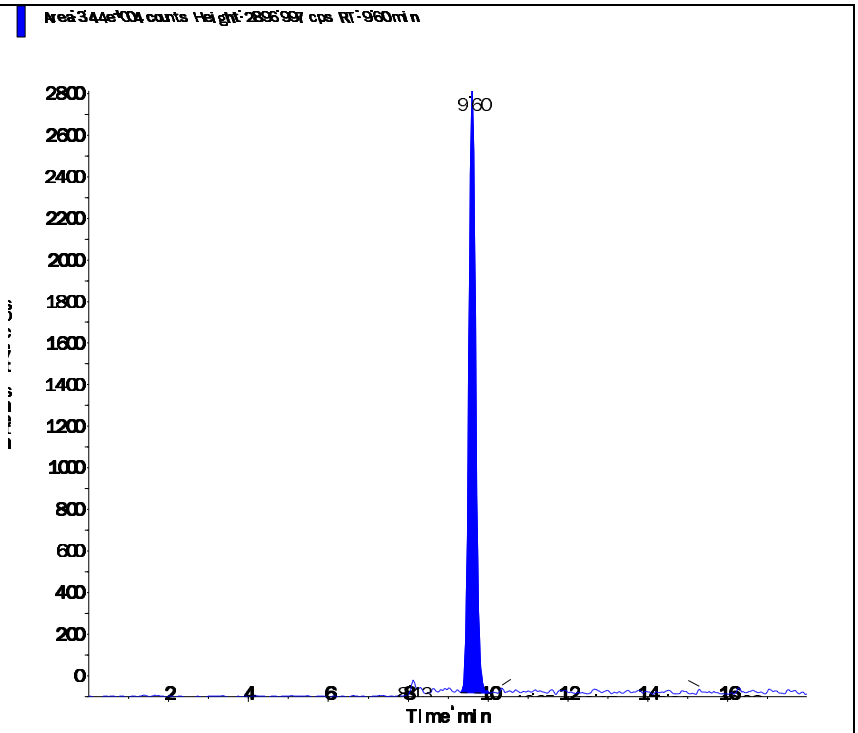
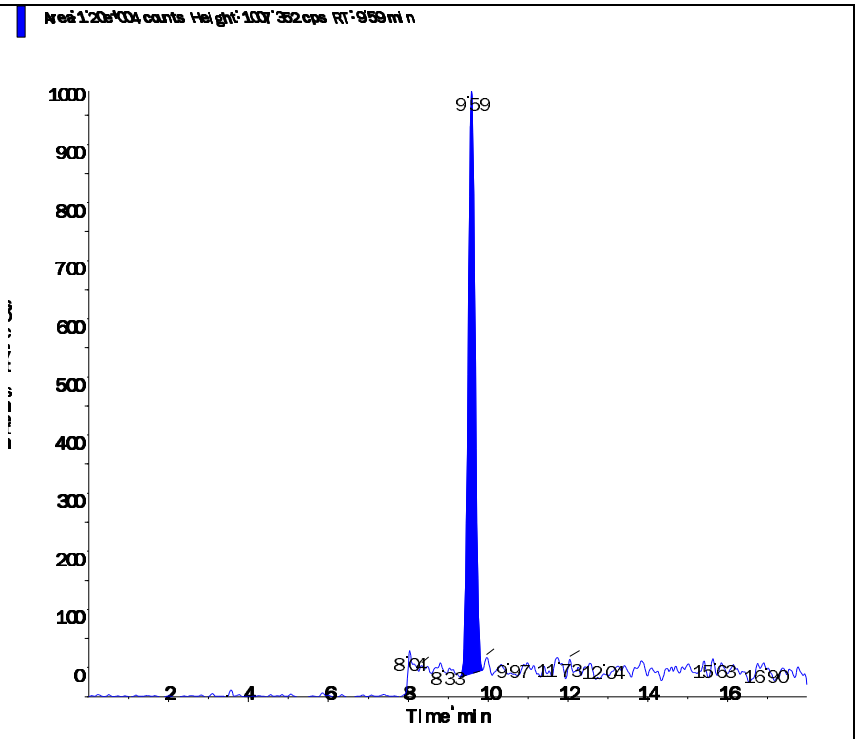
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.590e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.440e+04	9.60	N/A	0.219
Perchlorate conf	1.200e+04	9.59	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.60 (9.84) min Calculated conc: 0.219 ng/ml Area Ratio: 0.075 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.59 (9.84) min Calculated conc: 0.214 ng/ml Area Ratio: 0.026 Sample Type: (Unknown)	

Data File	LM37376.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 10:33:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

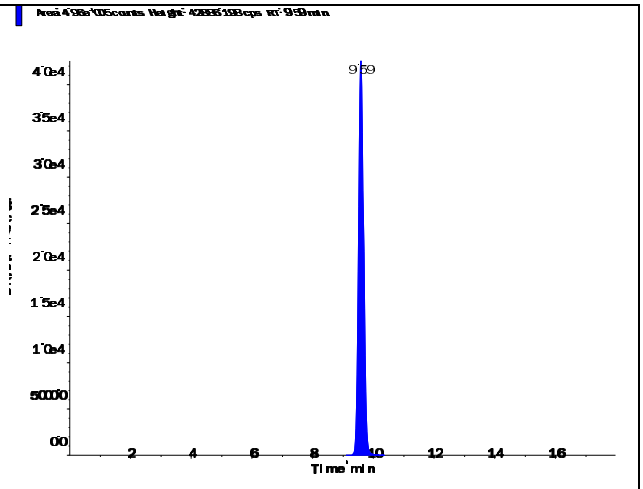
Sample Name	WG587968-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM37376.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 10:33:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD78249	**Weight to Volume**	0.00

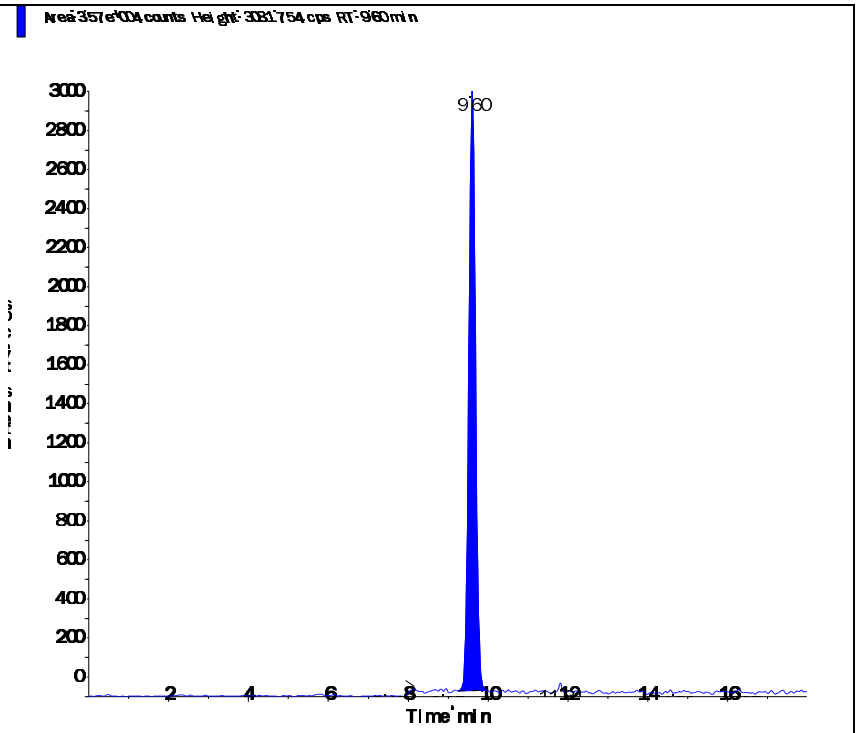
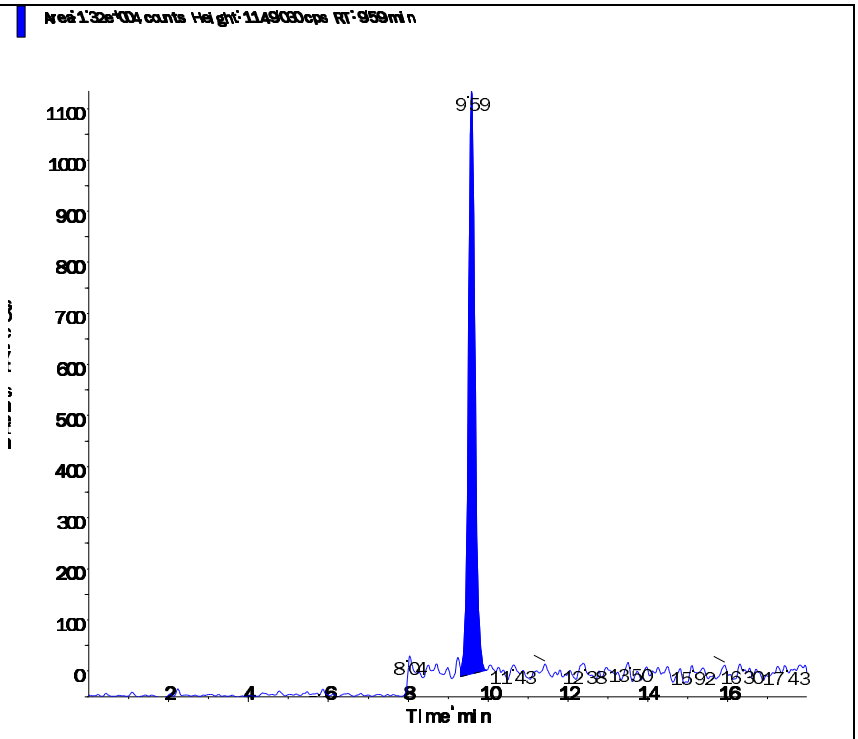
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.570e+04	9.60	N/A	0.21
Perchlorate conf	1.320e+04	9.59	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.60 (9.84) min Calculated conc: 0.21 ng/ml Area Ratio: 0.072 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.59 (9.84) min Calculated conc: 0.218 ng/ml Area Ratio: 0.027 Sample Type: (Unknown)	

Data File	LM37350.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 2:20:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

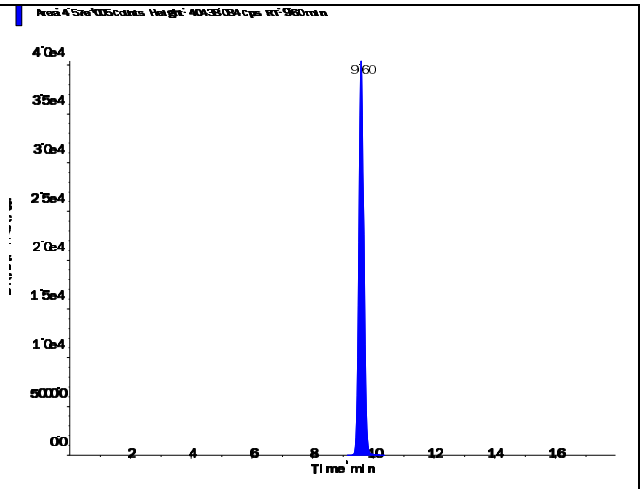
Sample Name	WG587969-01 CCB	**Injection Vial**	1.00
Data File	LM37350.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 2:20:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587969-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.570e+05	9.60	5.00	-

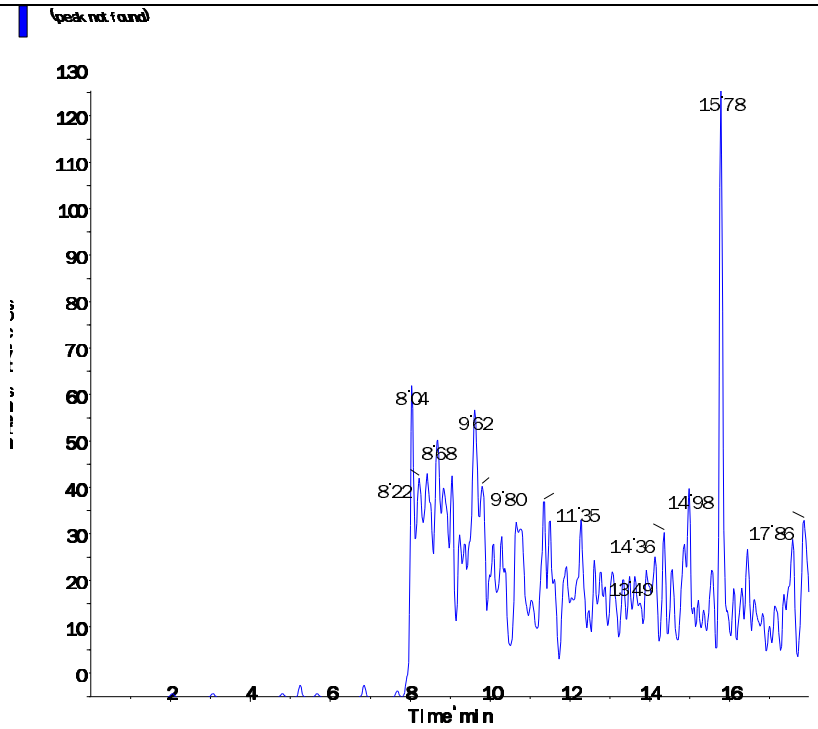
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

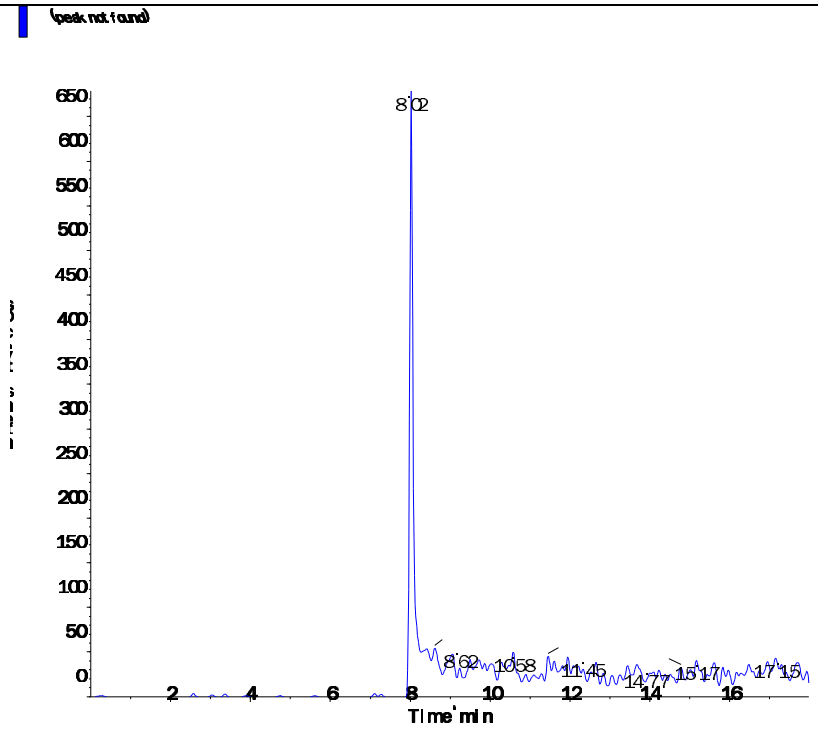
RT (Exp. RT): 9.60(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): Calculated conc: Area Ratio: Sample Type:	0.00 (9.84) min No Peak ng/ml 0.00 (Unknown)



Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): Calculated conc: Area Ratio: Sample Type:	0.00 (9.84) min No Peak ng/ml 0.00 (Unknown)



Data File	LM37365.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 7:04:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

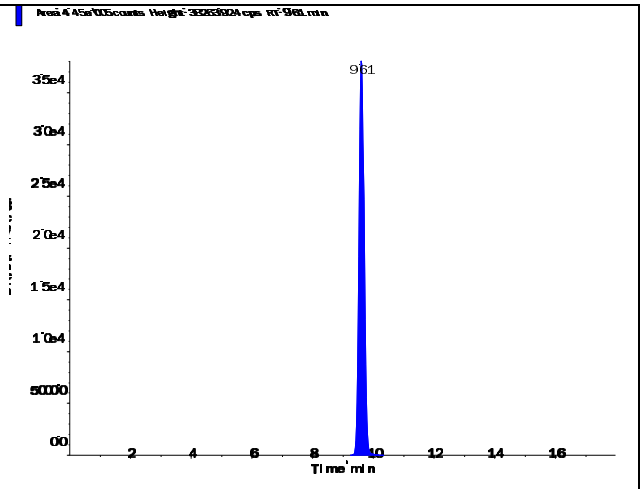
Sample Name	WG587969-04 CCB	**Injection Vial**	1.00
Data File	LM37365.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 7:04:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587969-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

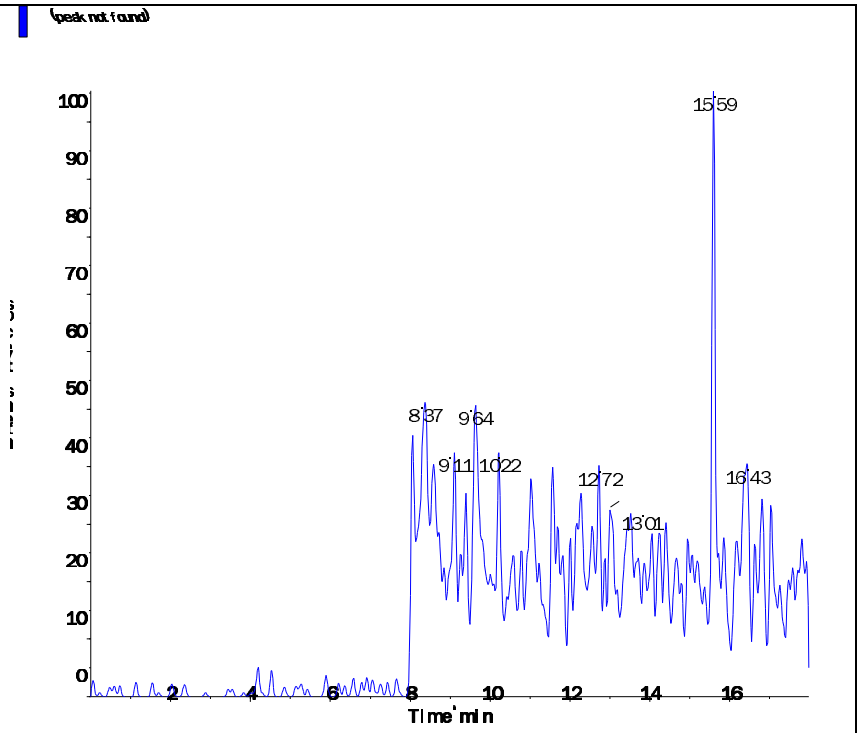
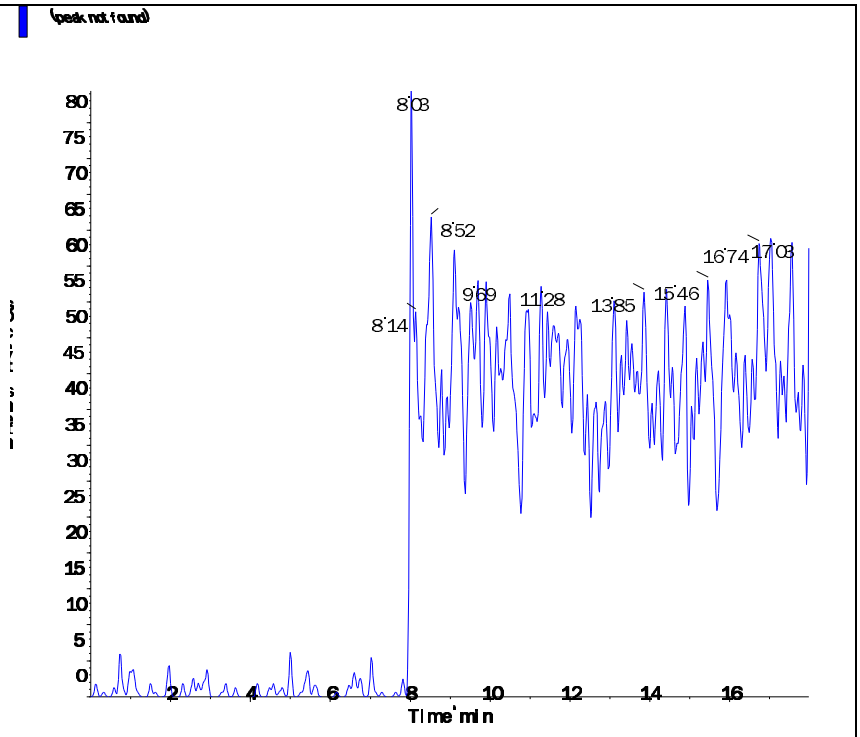
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	

Data File	LM37377.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 10:52:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

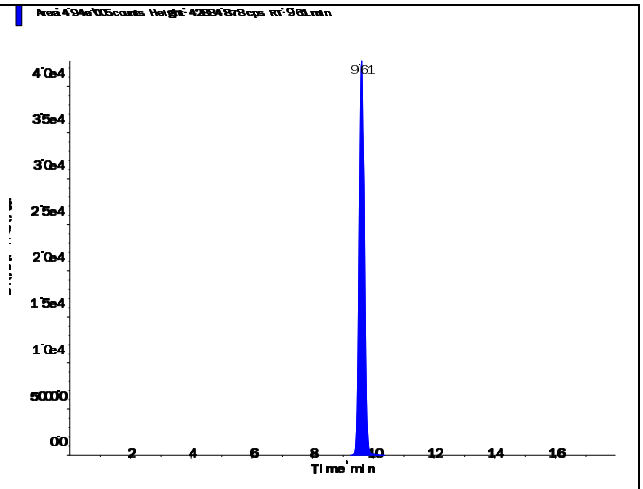
Sample Name	WG587969-06 CCB	**Injection Vial**	1.00
Data File	LM37377.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 10:52:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587969-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

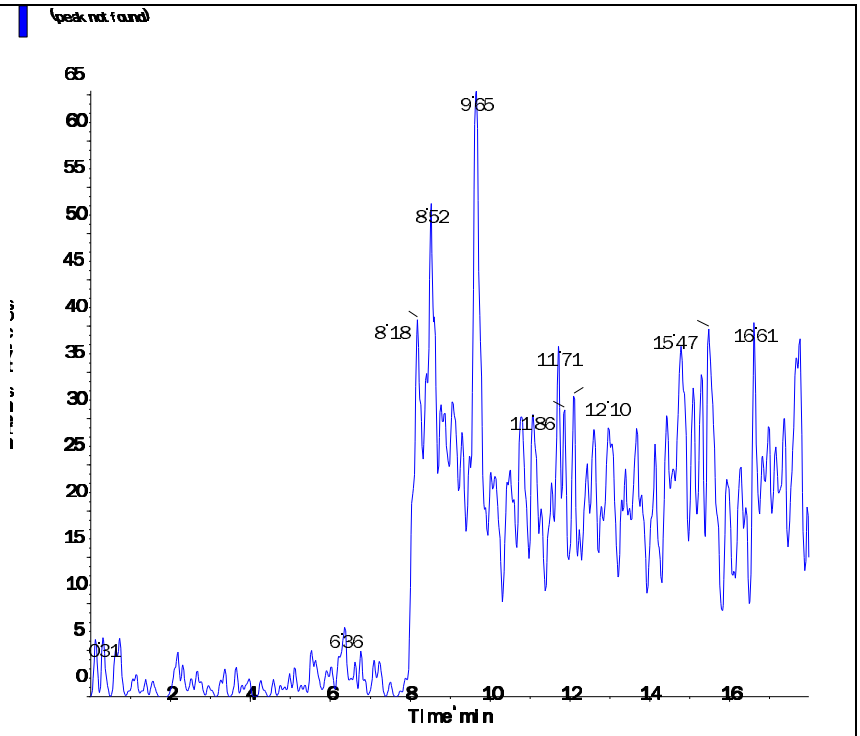
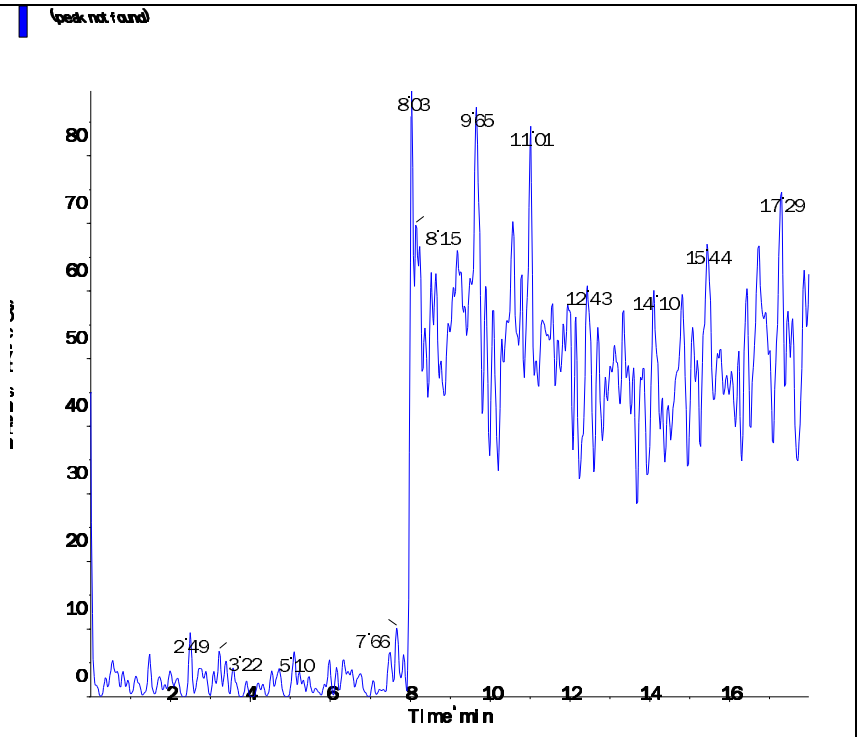
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.940e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	

Data File	LM37353.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 3:17:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

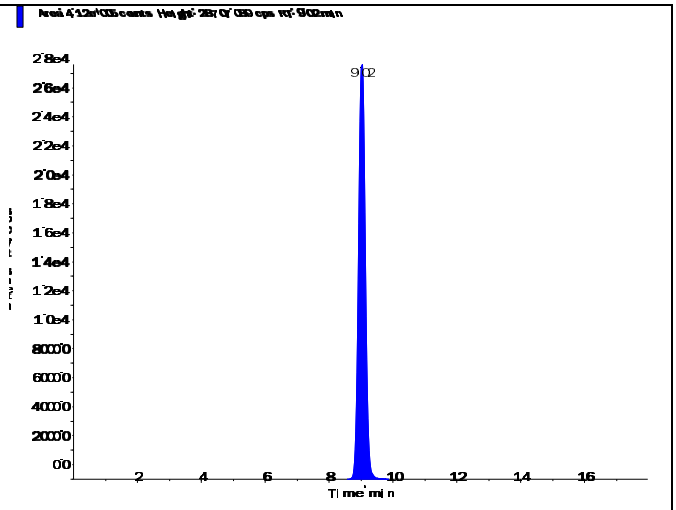
Sample Name	WG587968-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM37353.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 3:17:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD78251	**Weight to Volume**	0.00

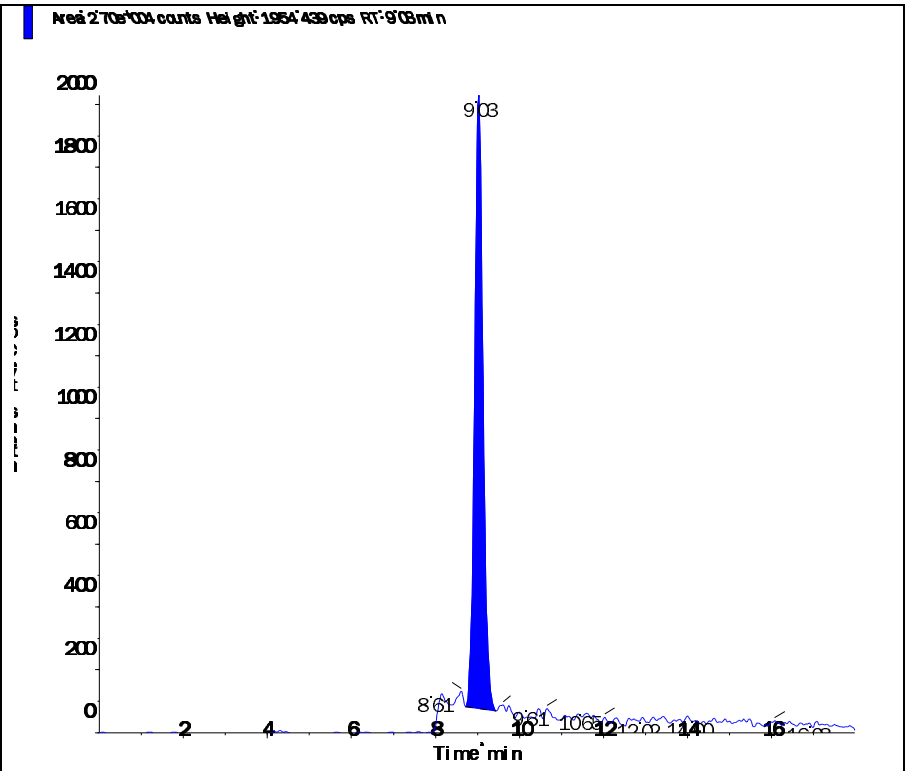
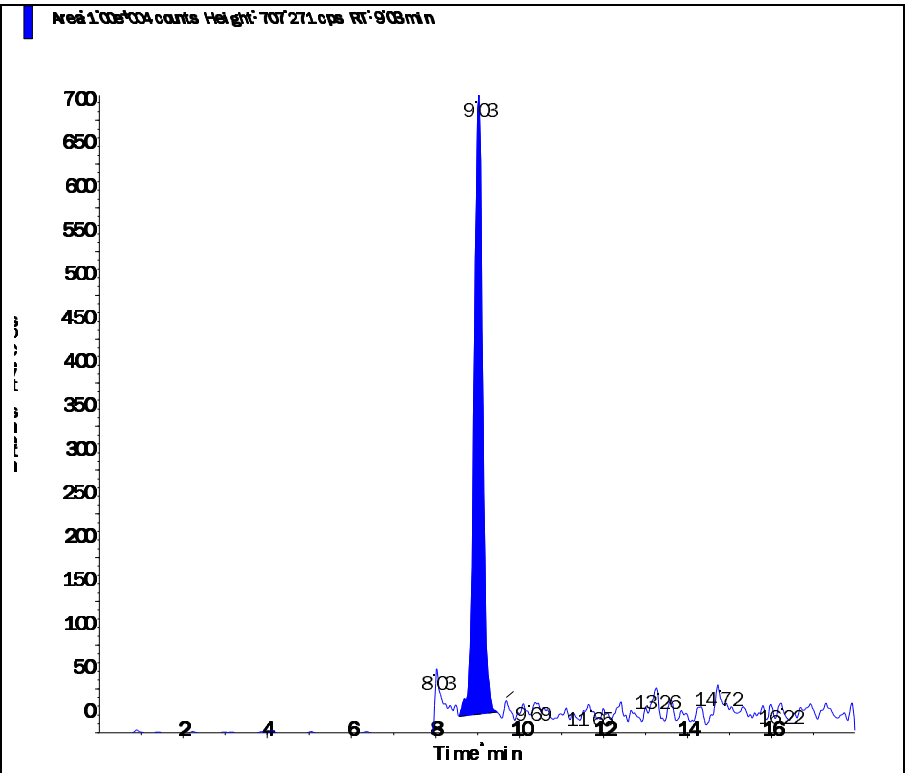
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.120e+05	9.02	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.700e+04	9.03	N/A	0.191
Perchlorate conf	1.000e+04	9.03	N/A	0.197

O18LP (Internal Standard)

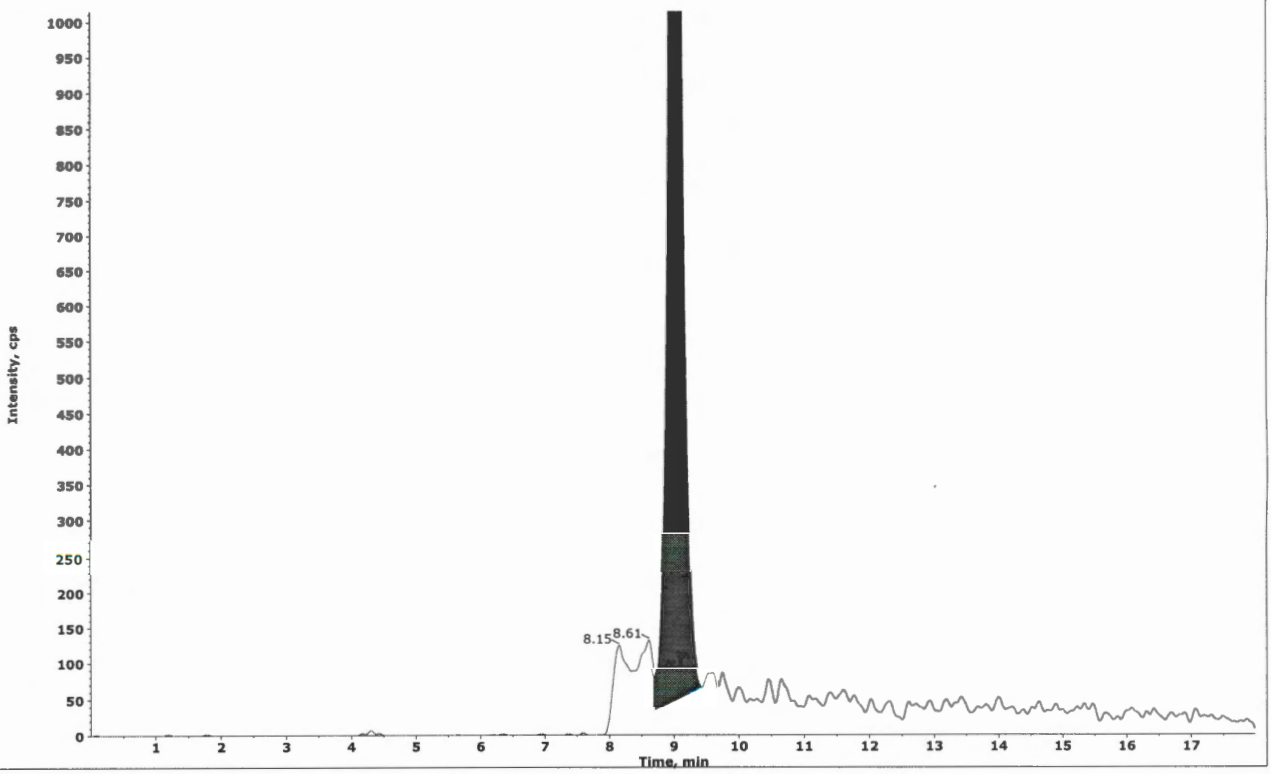
RT (Exp. RT): 9.02(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.03 (9.84) min Calculated conc: 0.191 ng/ml Area Ratio: 0.065 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.03 (9.84) min Calculated conc: 0.197 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	

Sample Name: "WG587968-01 MCT (2.0ug/kg)" Sample ID: "WG587968-01" File: "LM37353.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD78251" Annotation: ""

Sample Index:	2	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.198	ug/L
Acq. Date:	10/18/2016	
Acq. Time:	3:17:41 PM	
Modified:	No	
Proc. Algorithm:	Analyst Classic	
Bunching Factor:	2	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Sep. Width:	0.20	
Sep. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.84	min
Use Relative RT:	Yes	
Int. Type:	Valley	
Retention Time:	9.03	min
Area:	2.80e+004	counts
Height:	1980.538	cps
Start Time:	8.708	min
End Time:	9.437	min

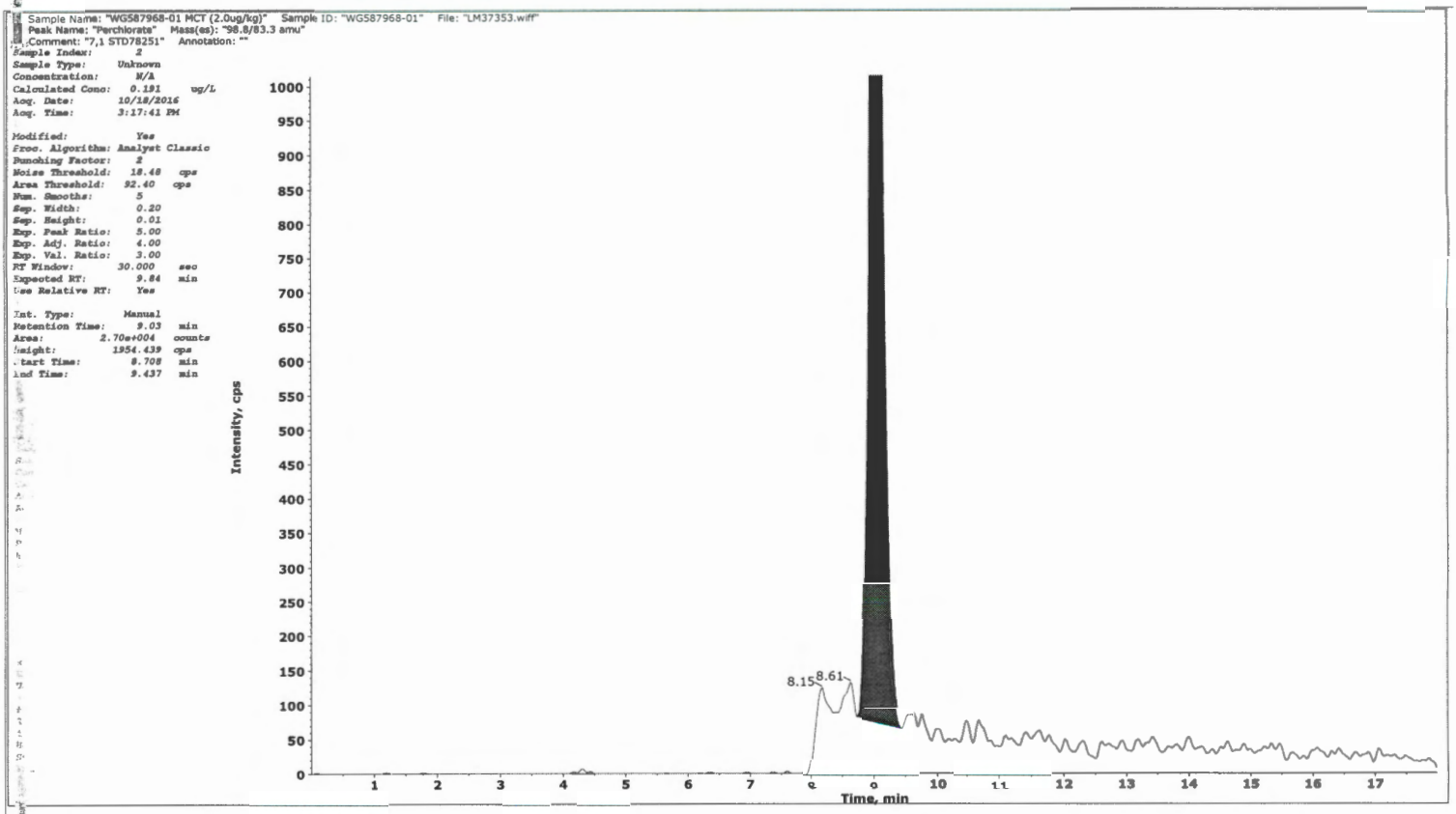


Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 4:27:53 PM
Printing Date: Tuesday, October 18, 2016

Sample Name: "WG587968-01 MCT (2.0ug/kg)" Sample ID: "WG587968-01" File: "LM37353.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD78251" Annotation: ""

Sample Index:	2	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.191	ug/L
Acq. Date:	10/18/2016	
Acq. Time:	3:17:41 PM	
Modified:	Yes	
Proc. Algorithm:	Analyst Classic	
Punching Factor:	2	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Sep. Width:	0.20	
Sep. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.84	min
Use Relative RT:	Yes	
Int. Type:	Manual	
Retention Time:	9.03	min
Area:	2.70e+004	counts
Height:	1954.439	cps
Start Time:	8.708	min
End Time:	9.437	min



#4
JWR/10/18/16

WD
10-20-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.1.1.5 Raw QC Data

Data File	LM37354.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 3:36:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

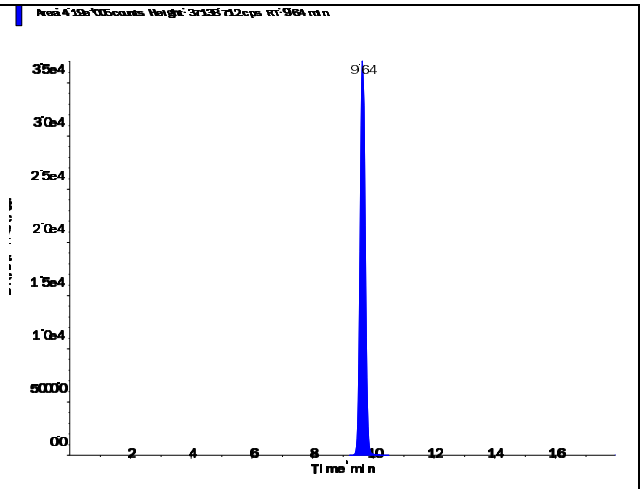
Sample Name	WG587968-02 BLANK	**Injection Vial**	5.00
Data File	LM37354.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 3:36:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.190e+05	9.64	5.00	-

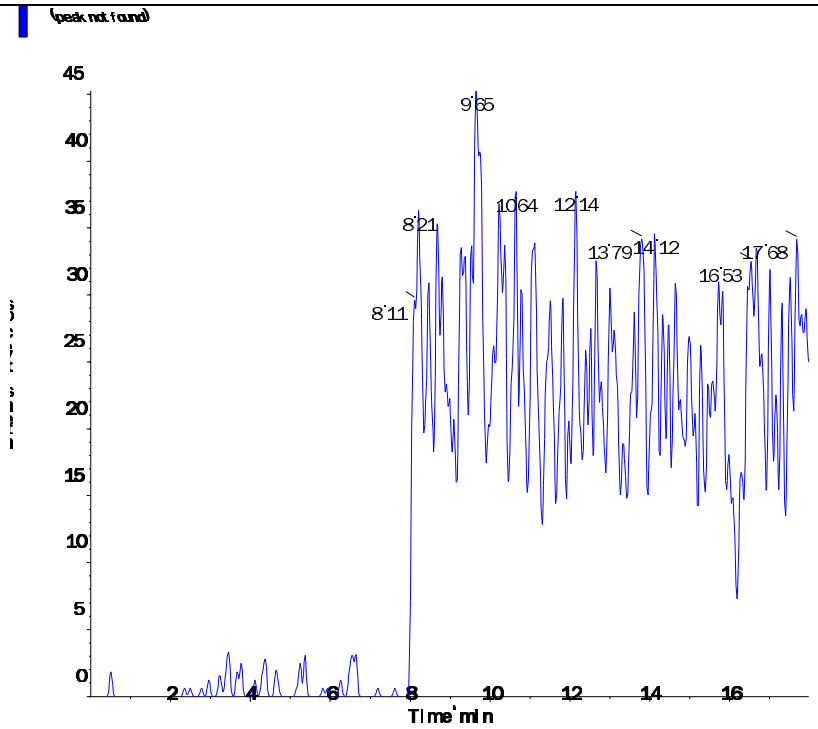
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

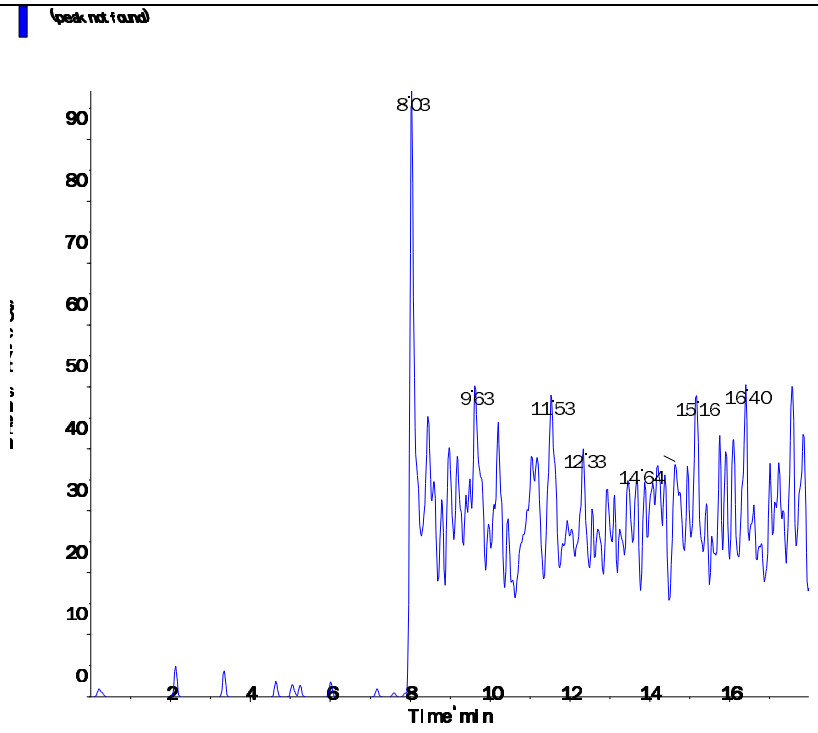
RT (Exp. RT): 9.64(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): Calculated conc: Area Ratio: Sample Type:	0.00 (9.84) min No Peak ng/ml 0.00 (Unknown)



Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): Calculated conc: Area Ratio: Sample Type:	0.00 (9.84) min No Peak ng/ml 0.00 (Unknown)



Data File	LM37355.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 3:55:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

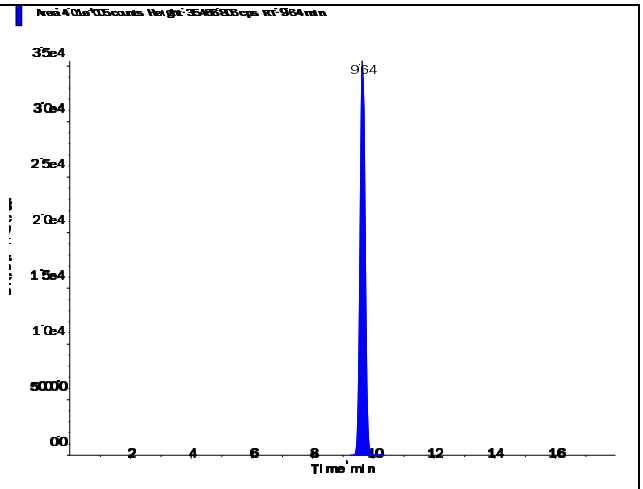
Sample Name	WG587968-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM37355.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 3:55:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD78251	**Weight to Volume**	0.00

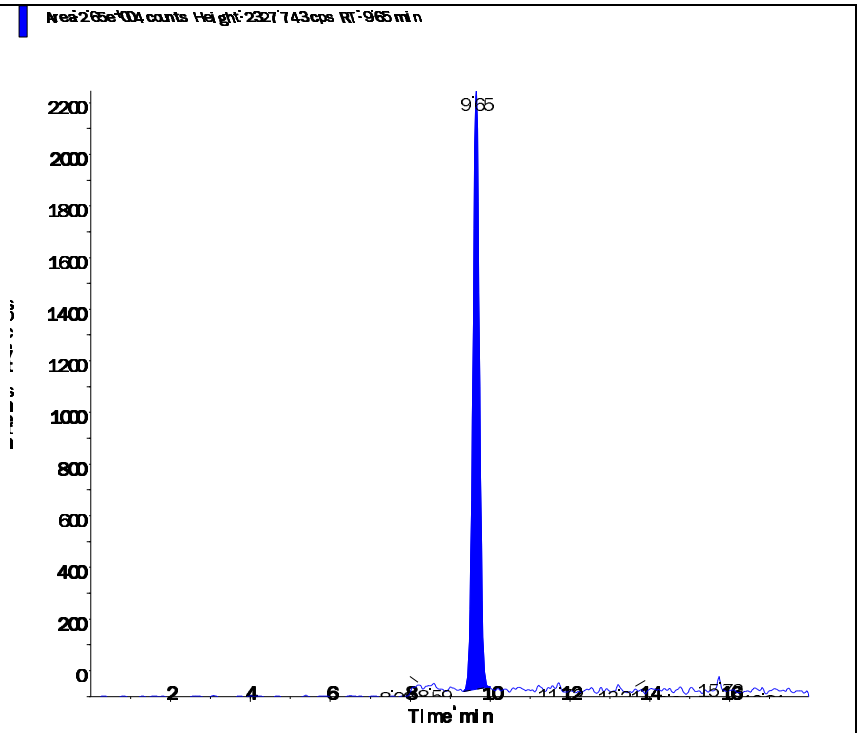
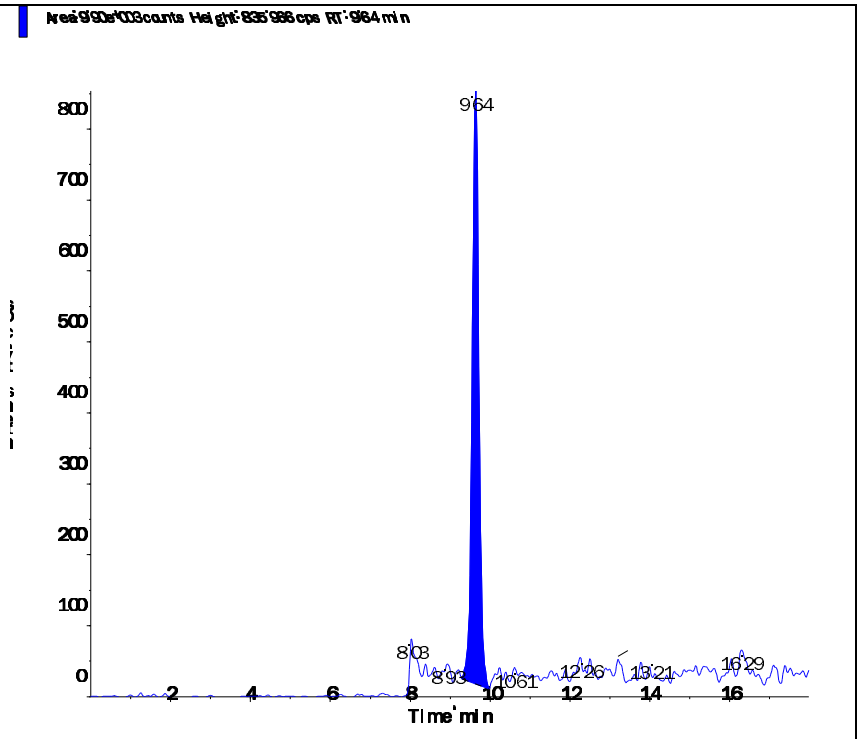
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.010e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.650e+04	9.65	N/A	0.193
Perchlorate conf	9.900e+03	9.64	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.65 (9.84) min Calculated conc: 0.193 ng/ml Area Ratio: 0.066 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.64 (9.84) min Calculated conc: 0.201 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	

2.2 General Chemistry Data

2.2.1 Percent Solids Data

2.2.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#):WG587520 Analyst:ERP ADT(on):10/13/2015 14:00
Method:D2216-90 Instrument:BAL017 ADT(off):10/14/2016 07:19
SOP:K0003 Rev:14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16100420-01	1.294	21.766	20.444			93.54	
L16100420-02	1.28	18.876	17.578			92.62	
L16100420-03	1.289	21.763	19.891			90.86	
L16100420-06	1.277	22.086	20.277			91.31	
L16100420-07	1.285	22.137	20.894			94.04	
L16100569-01	1.287	19.998	14.722			71.80	
L16100569-02	1.284	14.003	10.582			73.10	
L16100569-03	1.285	20.564	15.247			72.42	
L16100569-04	1.285	20.564	15.247			72.42	
L16100569-05	1.285	20.564	15.247			72.42	
L16100569-06	1.278	11.061	6.841			56.86	
L16100569-07	1.285	10.213	6.948			63.43	
L16100570-01	1.285	11.939	11.63			97.10	
L16100570-02	1.295	10.382	10.036			96.19	
L16100570-03	1.299	11.09	10.782			96.85	
L16100571-01	1.297	11.239	11.049			98.09	
L16100571-02	1.284	10.402	10.211			97.91	
L16100571-03	1.284	12.049	11.849			98.14	
L16100597-01	1.282	24.975	22.121			87.95	
L16100604-01	1.277	16.114	4.29			20.31	
L16100605-01	1.279	8.02	4.411			46.46	
L16100606-01	1.281	28.082	25.696			91.10	
L16100606-02	1.283	27.004	24.998			92.20	
L16100631-01	1.288	25.29	22.855			89.86	
WG587520-01	1.284	10.402	10.211			97.91	2.095
WG587520-02	1.284	12.049	11.849			98.14	1.858
WG587520-03	1.286	10.351	10.167			97.97	2.030
WG587520-04	1.279	10.59	10.412			98.09	1.912

Analyst: Erin Potter

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4974777
Report generated: 10/14/2016 07:23

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
October 20, 2016

---

001 – BIO-CHEM TESTING WVDEP 220	002 – REIC Consultants, Inc. WVDEP 060
003 – Sturm Environmental	004 – MICROBAC PITTSBURGH
005 – ES LABORATORIES	006 – ALCOSAN LABORATORIES
007 – ALS LABORATORIES	008 – BENCHMARK LABORATORIES
010 – MICROBAC CHICAGOLAND	AC – AMBER R. CARMICHAEL
ADC – ANTHONY D. CANTER	ADG – APRIL D. GREENE
AED – ALLEN E. DAVIS	ALS – ADRIANE L. STEED
AMA – ALEXANDRA M. ALFRED	AWE – ANDREW W. ESSIG
AZH – AFTER HOURS	BJO – BRIAN J. OGDEN
BKT – BRENDAN TORRENCE	BLG – BRENDA L. GREENWALT
BNB – Brandi N. Bentley	BRG – BRENDA R. GREGORY
CAA – CASSIE A. AUGENSTEIN	CAF – CHERYL A. FLOWERS
CAS – Craig A. Smith	CEB – CHAD E. BARNES
CJQ – Cameron J. Quick	CLC – CHRYS L. CRAWFORD
CLS – CARA L. STRICKLER	CLW – CHARISSA L. WINTERS
CPD – CHAD P. DAVIS	CSH – CHRIS S. HILL
CV – Carl Volkman	DAK – DEAN A. KETELSEN
DCM – DAVID C. MERCKLE	DEV – DAVID E. VANDENBERG
DIH – DEANNA I. HESSON	DLB – DAVID L. BUMGARNER
DLP – DOROTHY L. PAYNE	DSM – DAVID S. MOSSOR
ECL – ERIC C. LAWSON	EMW – ERIC M. WILKEN
ENY – EMILY N. YOAK	ERP – ERIN R. PORTER
FJB – FRANCES J. BOLDEN	HDD – HANAH D. DAWKINS
JDH – JUSTIN D. HESSON	JDS – JARED D. SMITH
JKP – JACQUELINE K. PARSONS	JLD – JESSICA L. DELONG
JLL – JOHN L. LENT	JMW – JEANA M. WHITE
JTP – JOSHUA T. PEMBERTON	JWR – JOHN W. RICHARDS
JWS – JACK W. SHEAVES	JYH – JI Y. HU
KAK – KATHY A. KIRBY	KAT – KATHY A. TUCKER
KDD – Katelyn D. Daley	KDW – KATHRYN D. WELCH
KEB – KATIE E. BARNES	KHR – KIM H. RHODES
KKB – KERRI K. BUCK	KRA – KATHY R. ALBERTSON
KRB – KAELY R. BECKER	KRP – KATHY R. PARSONS
LJH – Lacey J. Hendershot	LKN – LINDA K. NEDEFF
LLS – LARRY L. STEPHENS	LSB – LESLIE S. BUCINA
MAP – MARLA A. PORTER	MBK – MORGAN B. KNOWLTON
MDA – MIKE D. ALBERTSON	MDC – MIKE D. COCHRAN
MES – MARY E. SCHILLING	MMB – MAREN M. BEERY
MRT – MICHELLE R. TAYLOR	MSW – MATT S. WILSON
NPH – Natalie P. Hart	PDM – PIERCE D. MORRIS
PIT – MICROBAC WARRENDALE	QX – QIN XU
RAH – ROY A. HALSTEAD	REK – BOB E. KYER
RLB – BOB BUCHANAN	RNP – RICK N. PETTY
SAV – SARAH A. VANDENBERG	SCB – SARAH C. BOGOLIN
SDC – SHALYN D. CONLEY	SLM – STEPHANIE L. MOSSBURG
SLP – SHERI L. PFALZGRAF	TB – TODD BOYLE
TGF – TIM G. FELTON	TMB – TIFFANY M. BAILEY
TMM – TAMMY M. MORRIS	VC – VICKI COLLIER
WJB – WILL J. BEASLEY	WTD – WADE T. DELONG
XXX – UNAVAILABLE OR SUBCONTRACT	

Microbac Laboratories Inc.
List of Valid Qualifiers
October 20, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
>,H1	Result is greater than the associated numerical value. Sample analysis performed past holding time.
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound

Microbac Laboratories Inc.
List of Valid Qualifiers
October 20, 2016

Qualkey: DOD

TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

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 # 122724 MICROBAC

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: **Microbac**
158 Starlight Drive
Marietta, OH 45750

Return Invoice and Results to: **bszymanski@ctlaboratories.com**

CTLaboratories
Brett M Szymanski
1230 Lange Court
Baraboo WI 53913

Date Due: Standard TAT ***RUSH TURNAROUND NEEDED? Y or (N) (Circle One)***

Project Name: RADFORD AAP **Project State:** VA

Analytical/QC Criteria: NONE INDICATED STATE (DOD QSM-5.0) NELAP (Circle one) OTHER_____

Report results as EDD? N (Y) (Circle one and indicate type: Excel) Data Deliverable Package LEVEL: IV

CTLabs ID#	Sample Date/Time	Matrix	Sample Description	Analyses / Method		Cost
784783	10/06/2016 1505	SOIL	RFAAP-FGMR-SSD-001	PERCHLORATE	SW6850	
784852	10/06/2016 1515	SOIL	RFAAP-FGMR-DUP1	PERCHLORATE	SW6850	
784853	10/06/2016 1530	SOIL	RFAAP-FGMR-SSD-002 *Designated MS/MSD	PERCHLORATE	SW6850	
784854	10/06/2016 1550	SOIL	RFAAP-FGMR-SSD-003	PERCHLORATE	SW6850	
784855	10/06/2016 1610	SOIL	RFAAP-FGMR-SSD-004	PERCHLORATE	SW6850	

Relinquished by: Brett Szymanski Date/Time: 10/11/2016 15:50

Received by: _____ Date/Time: _____ Receipt Temperature (C) _____

COMMENTS:

REPORT ALL SOLIDS ON A DRY WEIGHT BASIS UNLESS OTHERWISE INDICATED

Microbac OVD
Received: 10/12/2016 09:37
By: BRENDA GREGORY 221000092011
Brenda Gregory

MICROBAC

COOLER TEMP >6° C LOG

Cooler ID 2011

SAMPLE ID	Bottle 1 °C	Bottle 2 °C	Bottle 3 °C	Bottle 4 °C	Bottle 5 °C	Bottle 6 °C

BLG 10-12-16

pH Exceptions

pH Lot # N/A

SAMPLE ID	Bottle 1	Bottle 2	Bottle 3	Bottle 4	Bottle 5	Bottle 6

BLG 10-12-16

PRESERVATIVE EXCEPTIONS

✓ NONE

__ AS NOTED

BLG 10/12/16

Document Control # 1957
Last 10-07-2016

Issued to: Document Master File

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16100569
Account: 2694
Project: 2694.005
Samples: 7
Due Date: 21-OCT-2016

Samplenum	Container ID	Products
L16100569-01	813802	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-OCT-2016 10:10	CLS		
2	PREP	W1	DIG	13-OCT-2016 13:51	ERP	BRG	
3	STORE	DIG	W1	13-OCT-2016 14:12	BRG	ERP	
4	ANALYZ	W1	SEM	17-OCT-2016 16:50	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-OCT-2016 19:34	JWR	ERP	
6	STORE	SEM	A2	19-OCT-2016 09:47	BRG	JWR	

***Sample extract/digestate/leachate**

Samplenum	Container ID	Products
L16100569-02	813803	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-OCT-2016 10:10	CLS		
2	PREP	W1	DIG	13-OCT-2016 13:51	ERP	BRG	
3	ANALYZ	W1	SEM	17-OCT-2016 16:50	JWR	BRG	
4	ANALYZ*	DIG	SEMI	17-OCT-2016 19:34	JWR	ERP	
5	STORE	SEM	A2	19-OCT-2016 09:47	BRG	JWR	

***Sample extract/digestate/leachate**

Samplenum	Container ID	Products
L16100569-03	813804	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-OCT-2016 10:10	CLS		
2	PREP	W1	DIG	13-OCT-2016 13:51	ERP	BRG	
3	STORE	DIG	W1	13-OCT-2016 14:12	BRG	ERP	
4	ANALYZ	W1	SEM	17-OCT-2016 16:50	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-OCT-2016 19:34	JWR	ERP	
6	STORE	SEM	A2	19-OCT-2016 09:47	BRG	JWR	

***Sample extract/digestate/leachate**

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16100569
Account: 2694
Project: 2694.005
Samples: 7
Due Date: 21-OCT-2016

Samplenum	Container ID	Products
L16100569-04	813805	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-OCT-2016 10:10	CLS		
2	PREP	W1	DIG	13-OCT-2016 13:51	ERP	BRG	
3	STORE	DIG	W1	13-OCT-2016 14:12	BRG	ERP	
4	ANALYZ	W1	SEM	17-OCT-2016 16:50	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-OCT-2016 19:34	JWR	ERP	
6	STORE	SEM	A2	19-OCT-2016 09:47	BRG	JWR	

***Sample extract/digestate/leachate**

Samplenum	Container ID	Products
L16100569-05	813806	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-OCT-2016 10:10	CLS		
2	PREP	W1	DIG	13-OCT-2016 13:51	ERP	BRG	
3	STORE	DIG	W1	13-OCT-2016 14:12	BRG	ERP	
4	ANALYZ	W1	SEM	17-OCT-2016 16:50	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-OCT-2016 19:34	JWR	ERP	
6	STORE	SEM	A2	19-OCT-2016 09:47	BRG	JWR	

***Sample extract/digestate/leachate**

Samplenum	Container ID	Products
L16100569-06	813807	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-OCT-2016 10:10	CLS		
2	PREP	W1	DIG	13-OCT-2016 13:51	ERP	BRG	
3	STORE	DIG	W1	13-OCT-2016 14:12	BRG	ERP	
4	ANALYZ	W1	SEM	17-OCT-2016 16:50	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-OCT-2016 19:34	JWR	ERP	
6	STORE	SEM	A2	19-OCT-2016 09:47	BRG	JWR	

***Sample extract/digestate/leachate**

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16100569
Account: 2694
Project: 2694.005
Samples: 7
Due Date: 21-OCT-2016

Samplenum	Container ID	Products
L16100569-07	813808	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-OCT-2016 10:10	CLS		
2	PREP	W1	DIG	13-OCT-2016 13:51	ERP	BRG	
3	STORE	DIG	W1	13-OCT-2016 14:12	BRG	ERP	
4	ANALYZ	W1	SEM	17-OCT-2016 16:50	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-OCT-2016 19:34	JWR	ERP	
6	STORE	SEM	A2	19-OCT-2016 09:47	BRG	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac

Laboratory Report Number: L16100570

Eric Korthals
CT Laboratories
1230 Lange Court
Baraboo, WI 53913

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Emily Yoak – Client Services Specialist
(740) 373-4071
emily.yoak@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on October 20 2016

Leslie Bucina – Managing Director

State of Origin: MI
Accrediting Authority: N/A ID:N/A
QAPP: DOD Ver 5.0

Microbac

Lab Report #: L16100570
Lab Project #: 2694.005
Project Name: CT Labs DOD
Lab Contact: Emily Yoak

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00114396	I	0.0		1Z1A4A851340347126	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac

Lab Report #: L16100570
Lab Project #: 2694.005
Project Name: CT Labs DOD
Lab Contact: Emily Yoak

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
RFAAP-FGMR-SSI-002A	L16100570-01	10/07/2016 08:50	10/12/2016 09:37
RFAAP-FGMR-SSI-002B	L16100570-02	10/07/2016 08:50	10/12/2016 09:37
RFAAP-FGMR-SSI-002C	L16100570-03	10/07/2016 08:50	10/12/2016 09:37

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16100570
PREPARED FOR CT Laboratories
WORK ID:

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1.0 Summary Data

1.1 Narratives

Login Number: L16100570
Department: General Chromatography
Analyst: John W. Richards Jr.

METHOD

Analysis SW-846 6850

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: The MS/MSD results were not associated with this sample delivery group.

SAMPLES

Samples: All acceptance criteria were met.

Internal Standards: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak 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. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal: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 area counts for the target compound.

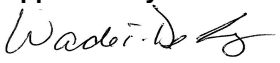
Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes 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 should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 118295
Approved By: Wade DeLong



1.2 Certificate of Analysis

Microbac

Lab Report #: L16100570
Lab Project #: 2694.005
Project Name: CT Labs DOD
Lab Contact: Emily Yoak

Certificate of Analysis

Sample #:	L16100570-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSI-002A	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 20:20
Collect Date:	10/07/2016 08:50	**Dilution:**	1	**File ID:**	1LM.LM37369
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	97.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.02	U	4.03	2.02	1.01

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L16100570-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSI-002B	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 20:39
Collect Date:	10/07/2016 08:50	**Dilution:**	1	**File ID:**	1LM.LM37370
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	96.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.36	J	4.09	2.04	1.02

J	Estimated value ; the analyte concentration was less than the LOQ.

Certificate of Analysis

Sample #:	L16100570-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSI-002C	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 20:58
Collect Date:	10/07/2016 08:50	**Dilution:**	1	**File ID:**	1LM.LM37371
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	96.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.04	U	4.09	2.04	1.02

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16100570
Lab Project #: 2694.005
Project Name: CT Labs DOD
Lab Contact: Emily Yoak

Sample #: L16100570-01 **Client ID:** RFAAP-FGMR-SSI-002A **Matrix:** Soil **Collect Date:** 10/07/2016 08:50

Analyte	Result	Units	Qualifier
Percent Solids	97.1	weight %	

Sample #: L16100570-02 **Client ID:** RFAAP-FGMR-SSI-002B **Matrix:** Soil **Collect Date:** 10/07/2016 08:50

Analyte	Result	Units	Qualifier
Percent Solids	96.2	weight %	

Sample #: L16100570-03 **Client ID:** RFAAP-FGMR-SSI-002C **Matrix:** Soil **Collect Date:** 10/07/2016 08:50

Analyte	Result	Units	Qualifier
Percent Solids	96.9	weight %	

2.0 Full Sample Data Package

2.1 General Chromatography Data

2.1.1 6850 LC/MS Data

2.1.1.1 Summary Data

Login Number: L16100570
Department: General Chromatography
Analyst: John W. Richards Jr.

METHOD

Analysis SW-846 6850

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: The MS/MSD results were not associated with this sample delivery group.

SAMPLES

Samples: All acceptance criteria were met.

Internal Standards: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak 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. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal: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 area counts for the target compound.

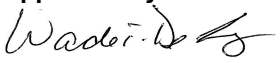
Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes 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 should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 118295
Approved By: Wade DeLong



Certificate of Analysis

Sample #:	L16100570-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSI-002A	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 20:20
Collect Date:	10/07/2016 08:50	**Dilution:**	1	**File ID:**	1LM.LM37369
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	97.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.02	U	4.03	2.02	1.01

U	Analyte was not detected. The concentration is below the reported LOD.

Sample #:	L16100570-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSI-002B	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 20:39
Collect Date:	10/07/2016 08:50	**Dilution:**	1	**File ID:**	1LM.LM37370
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	96.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.36	J	4.09	2.04	1.02

J	Estimated value ; the analyte concentration was less than the LOQ.

Sample #:	L16100570-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	RFAAP-FGMR-SSI-002C	**Prep Method:**	6850	**Prep Date:**	10/17/2016 18:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG587968	**Analyst:**	JWR	**Run Date:**	10/18/2016 20:58
Collect Date:	10/07/2016 08:50	**Dilution:**	1	**File ID:**	1LM.LM37371
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	96.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.04	U	4.09	2.04	1.02

U	Analyte was not detected. The concentration is below the reported LOD.

2.1.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD78252
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 08
Date/Time Extracted: 10/17/16/18:00
Witness: CAS 10/17/16

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG587950
Analytical Work Group: WG587968
Run ID: R4793776

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL022
Reagent: Tubes Lot #: RGT37813
Reagent: Sand Lot #: COA18813
Other: IS Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ IS Amount	Amount Spike	Final Volume	Extract Color	Comments
1	WG587950-01	6850		5.0018g	0.250ml	1.0ml	50ml		MCT(10,000.us)(2ug/kg)
2	WG587950-02	↓		5.0054g	↓	NA	↓		Blank
3	WG587950-03			5.0024g		1.0ml			LCS(2ug/kg)
4	L16100003-01			5.0026g		0.5ml			LOD(1ug/kg)
5	L16100005-01			5.0046g		1.0ml			LOQ(2ug/kg)
6	-10			5.0081g		1.0ml			LOQ(2ug/kg)
7	L16100569-01			5.1354g		NA			
8	-02			5.1319g		NA			
9	-03 RS			5.0466g		NA			WG587950-04 Ref
10	-04 MS			5.0599g		1.0ml			WG587950-05 MS (@2ug/kg)
11	-05 MSD			5.0475g		1.0ml			WG587950-06 MSD (@2ug/kg)
12	-06			5.1806g		NA			
13	-07			5.2517g		NA			
14	L16100570-01			5.1117g		NA			
15	-02			5.0786g		NA			
16	-03			5.0458g		NA			
17	L16100571-01			5.1727g		NA			
18	-02			5.1445g		NA			
19	-03	↓		5.0358g	↓	NA	↓		
20									
21									
22				JWR 10/17/16					
23									
24									

Reviewed by: Wade T. Daly 10-18-16

Analytical WG587968 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1408 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG587950-01 MCT		
-02 Blank	1.54	
-03 LCS	1.45	
L16100003-01 LOD	1.16	
L16100005-01 LOQ	1.49	
-10 LOQ	1.56	
L16100569-01	36.6	
-02	32.7	
-03 RS	28.2	
-04 MS	25.7	
-05 MSD	22.1	
-06	22.9	
-07	21.9	
L16100570-01	170.4	
-02	182.1	
-03	185.7	
L16100571-01	70.3	
-02	56.0	
-03	42.5	

Analyst: John Richards

Date/Time: 10/18/16 / 1330

DCN#121590

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA
Analytical WG567013 (soils)
Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Wade D

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 101816_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 160109254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA
Analytical WG587968 (soils)
Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD78249 LCS STD: STD78251 MS/MSD STD: STD78251

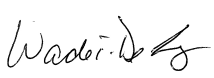
Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM37350	WG587969-01 CCB	1	1		10/18/16 14:20
2	1LM.LM37351	WG587969-02 CCV (1.0ug/L)	1	1	STD78249	10/18/16 14:39
3	1LM.LM37352	WG587968-07 MRL (2.0ug/kg)	7	1	STD78249	10/18/16 14:58
4	1LM.LM37353	WG587968-01 MCT (2.0ug/kg)	7	1	STD78251	10/18/16 15:17
5	1LM.LM37354	WG587968-02 BLANK	7	1		10/18/16 15:36
6	1LM.LM37355	WG587968-03 LCS (2.0ug/kg)	7	1	STD78251	10/18/16 15:55
7	1LM.LM37356	L16100005-01 LOQ (2.0ug/kg)	7	1	STD78251	10/18/16 16:14
8	1LM.LM37357	L16100005-10 LOQ (2.0ug/kg)	7	1	STD78251	10/18/16 16:33
9	1LM.LM37358	L16100003-01 LOD (1.0ug/kg)	7	1	STD78251	10/18/16 16:52
10	1LM.LM37359	L16100569-01	7	1		10/18/16 17:11
11	1LM.LM37360	L16100569-02	7	1		10/18/16 17:30
12	1LM.LM37361	L16100569-06	7	1		10/18/16 17:49
13	1LM.LM37362	L16100569-07	7	1		10/18/16 18:08
14	1LM.LM37363	WG587969-03 CCV (1.0ug/L)	1	1	STD78249	10/18/16 18:27
15	1LM.LM37364	WG587968-08 MRL (2.0ug/kg)	7	1	STD78249	10/18/16 18:45
16	1LM.LM37365	WG587969-04 CCB	1	1		10/18/16 19:04
17	1LM.LM37366	L16100569-03 RS	7	1		10/18/16 19:23
18	1LM.LM37367	L16100569-04 MS	7	1	STD78251	10/18/16 19:42
19	1LM.LM37368	L16100569-05 MSD	7	1	STD78251	10/18/16 20:01
20	1LM.LM37369	L16100570-01	7	1		10/18/16 20:20
21	1LM.LM37370	L16100570-02	7	1		10/18/16 20:39
22	1LM.LM37371	L16100570-03	7	1		10/18/16 20:58
23	1LM.LM37372	L16100571-01	7	1		10/18/16 21:17
24	1LM.LM37373	L16100571-02	7	1		10/18/16 21:36
25	1LM.LM37374	L16100571-03	7	1		10/18/16 21:55
26	1LM.LM37375	WG587969-05 CCV (1.0ug/L)	1	1	STD78249	10/18/16 22:14
27	1LM.LM37376	WG587968-09 MRL (2.0ug/kg)	7	1	STD78249	10/18/16 22:33
28	1LM.LM37377	WG587969-06 CCB	1	1		10/18/16 22:52

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 20-OCT-16



Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016

John Richards

Secondary Reviewer:
05-MAY-2016

Wade D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 18-OCT-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 78190
Analytical Workgroups: L16100003(LOD), 0005(LOQ), 0569, 0570, 0571 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
20-OCT-2016

John Richards

Secondary Reviewer:
20-OCT-2016

Wade D

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-20-2016 13:36:17

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 **AAB#:** WG587968

Login Number: L16100570

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
RFAAP-FGMR-SSI-002A	01	10/07/16					10/17/2016	10.4	28		10/18/16	1.1	28	
RFAAP-FGMR-SSI-002B	02	10/07/16					10/17/2016	10.4	28		10/18/16	1.1	28	
RFAAP-FGMR-SSI-002C	03	10/07/16					10/17/2016	10.4	28		10/18/16	1.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4985010
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L16100570
Blank File ID: 1LM.LM37354
Prep Date: 10/17/16 18:00
Analyzed Date: 10/18/16 15:36
Analyst: JWR

Work Group: WG587968
Blank Sample ID: WG587968-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG587968-07	1LM.LM37352	10/18/16 14:58	01
MCT	WG587968-01	1LM.LM37353	10/18/16 15:17	01
LCS	WG587968-03	1LM.LM37355	10/18/16 15:55	01
QCMRL	WG587968-08	1LM.LM37364	10/18/16 18:45	01
RFAAP-FGMR-SSI-002A	L16100570-01	1LM.LM37369	10/18/16 20:20	01
RFAAP-FGMR-SSI-002B	L16100570-02	1LM.LM37370	10/18/16 20:39	01
RFAAP-FGMR-SSI-002C	L16100570-03	1LM.LM37371	10/18/16 20:58	01
QCMRL	WG587968-09	1LM.LM37376	10/18/16 22:33	01

Report Name: BLANK_SUMMARY
PDF File ID: 4985012
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16100570 Prep Date: 10/17/16 18:00 Sample ID: WG587968-02
Instrument ID: LCMS1 Run Date: 10/18/16 15:36 Prep Method: 6850
File ID: 1LM.LM37354 Analyst: JWR Method: 6850
Workgroup (AAB#): WG587968 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.999	4.00	0.999	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4985013
20-OCT-2016 13:52

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16100570 **Run Date:** 10/18/2016 **Sample ID:** WG587968-03
Instrument ID: LCMS1 **Run Time:** 15:55 **Prep Method:** 6850
File ID: 1LM.LM37355 **Analyst:** JWR **Method:** 6850
Workgroup (AAB#): WG587968 **Matrix:** Soil **Units:** ug/kg
QC Key: DOD5 **Lot#:** STD78251 **Cal ID:** LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	1.93	96.5	84 - 121	

LCS - Modified 03/06/2008
PDF File ID: 4985014
Report generated: 10/20/2016 13:52

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16100570 **Instrument ID:** LCMS1

Analytical Method: 6850 **Initial Calibration Date:** 03-MAY-16 17:18

ICAL Workgroup: WG567320 **Column ID:** F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4985141
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16100570
Analytical Method: 6850
Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4985141
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16100570
Analytical Method: 6850
Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4985141
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16100570
Analytical Method: 6850
Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4985141
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16100570 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD5
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4985142
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16100570 Run Date: 10/18/2016 Sample ID: WG587969-01

Instrument ID: LCMS1 Run Time: 14:20 Method: 6850

File ID: 1LM.LM37350 Analyst: JWR Units: ug/L

Workgroup (AAB#): WG587968 Cal ID: LCMS1 - 03-MAY-16

Matrix: WATER QAPP: DOD5

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4985019
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16100570 Run Date: 10/18/2016 Sample ID: WG587969-04

Instrument ID: LCMS1 Run Time: 19:04 Method: 6850

File ID: 1LM.LM37365 Analyst: JWR Units: ug/L

Workgroup (AAB#): WG587968 Cal ID: LCMS1 - 03-MAY-16

Matrix: WATER QAPP: DOD5

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4985019
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16100570 Run Date: 10/18/2016 Sample ID: WG587969-06

Instrument ID: LCMS1 Run Time: 22:52 Method: 6850

File ID: 1LM.LM37377 Analyst: JWR Units: ug/L

Workgroup (AAB#): WG587968 Cal ID: LCMS1 - 03-MAY-16

Matrix: WATER QAPP: DOD5

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4985019
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16100570 Run Date: 10/18/2016 Sample ID: WG587969-02

Instrument ID: LCMS1 Run Time: 14:39 Method: 6850

File ID: 1LM.LM37351 Analyst: JWR QC Key: DOD5

Workgroup (AAB#): WG587968 Cal ID: LCMS1 - 03-MAY-16

Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.944	ug/kg	1.59	5.60	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008

PDF File ID: 4985018

Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16100570 Run Date: 10/18/2016 Sample ID: WG587969-03

Instrument ID: LCMS1 Run Time: 18:27 Method: 6850

File ID: 1LM.LM37363 Analyst: JWR QC Key: DOD5

Workgroup (AAB#): WG587968 Cal ID: LCMS1 - 03-MAY-16

Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.993	ug/kg	1.68	0.700	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008

PDF File ID: 4985018

Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16100570 Run Date: 10/18/2016 Sample ID: WG587969-05

Instrument ID: LCMS1 Run Time: 22:14 Method: 6850

File ID: 1LM.LM37375 Analyst: JWR QC Key: DOD5

Workgroup (AAB#): WG587968 Cal ID: LCMS1 - 03-MAY-16

Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.956	ug/kg	1.61	4.40	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008

PDF File ID: 4985018

Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number:	L16100570	**Run Date:**	10/18/2016	**Sample ID:**	WG587968-07
Instrument ID:	LCMS1	**Run Time:**	14:58	**Prep Method:**	6850
File ID:	1LM.LM37352	**Analyst:**	JWR	**Method:**	6850
Workgroup (AAB#):	WG587968	**Matrix:**	Soil	**Units:**	ug/kg
Contract #:		**Cal ID:**	LCMS1-03-MAY-16		

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.07	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4985016
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number:	L16100570	**Run Date:**	10/18/2016	**Sample ID:**	WG587968-08
Instrument ID:	LCMS1	**Run Time:**	18:45	**Prep Method:**	6850
File ID:	1LM.LM37364	**Analyst:**	JWR	**Method:**	6850
Workgroup (AAB#):	WG587968	**Matrix:**	Soil	**Units:**	ug/kg
Contract #:		**Cal ID:**	LCMS1-03-MAY-16		

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.19	110	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4985016
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number:	L16100570	**Run Date:**	10/18/2016	**Sample ID:**	WG587968-09
Instrument ID:	LCMS1	**Run Time:**	22:33	**Prep Method:**	6850
File ID:	1LM.LM37376	**Analyst:**	JWR	**Method:**	6850
Workgroup (AAB#):	WG587968	**Matrix:**	Soil	**Units:**	ug/kg
Contract #:		**Cal ID:**	LCMS1-03-MAY-16		

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.10	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4985016
Report generated 10/20/2016 13:52

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16100570
Instrument ID: LCMS1
Workgroup (AAB#): WG587968

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16100570-01	1.00	01	409000
L16100570-02	1.00	01	376000
L16100570-03	1.00	01	372000
WG587968-02	1.00	01	419000
WG587968-03	1.00	01	401000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4985022
Report generated 10/20/2016 13:52

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**	6850	**Samplenum:**	L16100570-01
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37369
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 20:20	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	8600	3560	2.42	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**	6850	**Samplenum:**	L16100570-02
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37370
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 20:39	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17300	5810	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**	6850	**Samplenum:**	L16100570-03
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37371
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 20:58	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	8640	3130	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**	6850	**Samplenum:**	WG587968-01
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37353
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 15:17	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	27000	10000	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**	6850	**Samplenum:**	WG587968-02
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37354
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 15:36	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**	6850	**Samplenum:**	WG587968-03
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37355
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 15:55	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	26500	9900	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**	6850	**Samplenum:**	WG587968-07
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37352
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 14:58	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28800	11200	2.57	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**	6850	**Samplenum:**	WG587968-08
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37364
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 18:45	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34400	12000	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**	6850	**Samplenum:**	WG587968-09
Instrument:	LCMS1	**Prep Date:**	10/17/2016 18:00	**File ID:**	1LM.LM37376
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG587968	**Analysis Date:**	10/18/2016 22:33	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35700	13200	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**		**Samplenum:**	WG587969-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37350
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	10/18/2016 14:20	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**		**Samplenum:**	WG587969-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37351
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	10/18/2016 14:39	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	133000	47800	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**		**Samplenum:**	WG587969-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37363
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	10/18/2016 18:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	154000	50900	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**		**Samplenum:**	WG587969-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37365
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	10/18/2016 19:04	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**		**Samplenum:**	WG587969-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37375
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	10/18/2016 22:14	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	159000	56300	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16100570	**Prep Method:**		**Samplenum:**	WG587969-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM37377
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG587968	**Analysis Date:**	10/18/2016 22:52	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.1.1.3 Sample Data

Data File	LM37369.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 8:20:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

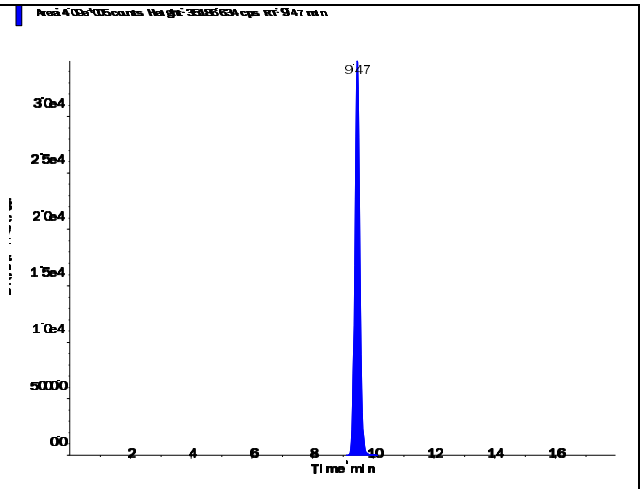
Sample Name	L16100570-01	**Injection Vial**	17.00
Data File	LM37369.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 8:20:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	L16100570-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

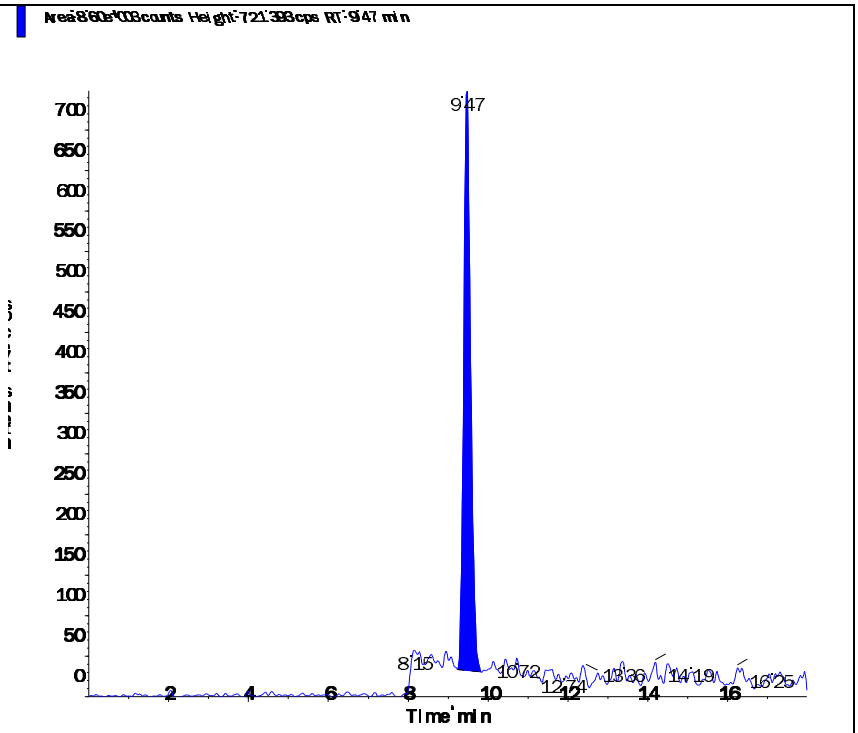
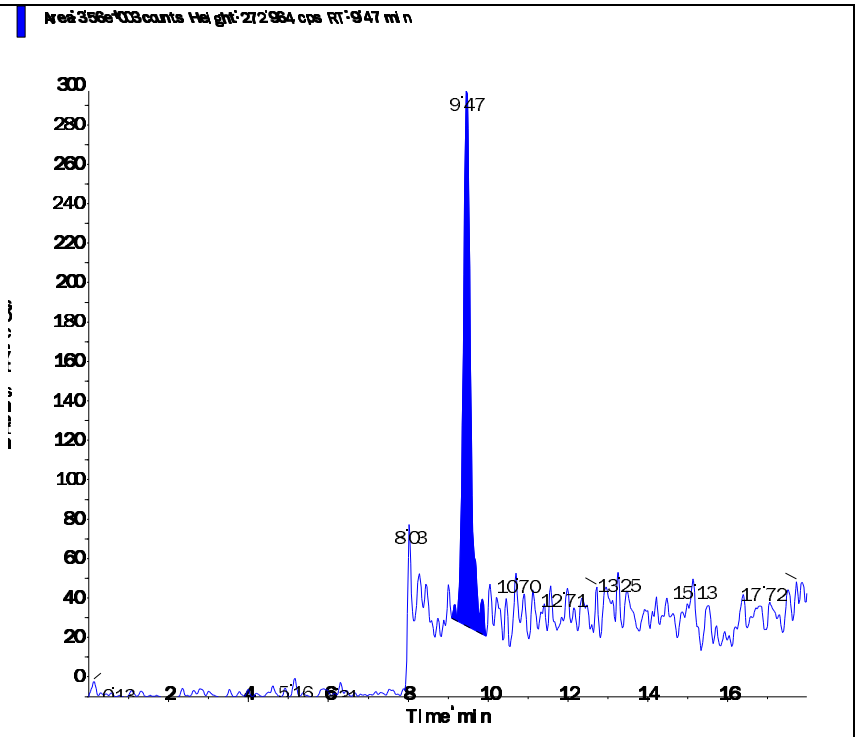
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.090e+05	9.47	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.600e+03	9.47	N/A	0.0588
Perchlorate conf	3.560e+03	9.47	N/A	0.0577

O18LP (Internal Standard)

RT (Exp. RT): 9.47(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.47 (9.84) min Calculated conc: 0.0588 ng/ml Area Ratio: 0.021 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.47 (9.84) min Calculated conc: 0.0577 ng/ml Area Ratio: 0.009 Sample Type: (Unknown)	

Data File	LM37370.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 8:39:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16100570-02	**Injection Vial**	18.00
Data File	LM37370.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 8:39:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	L16100570-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.760e+05	9.43	5.00	-

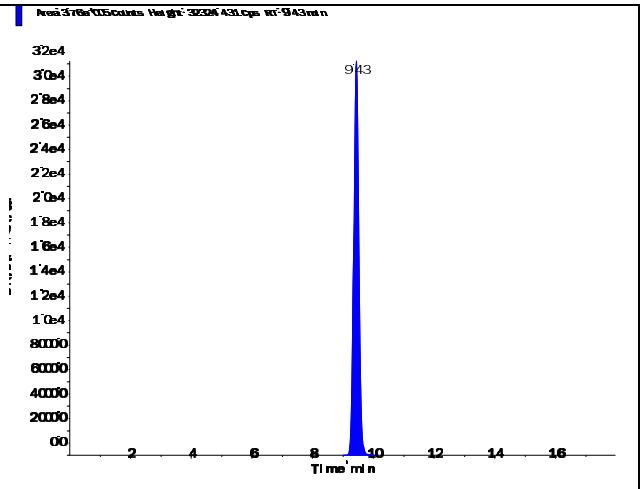
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+04	9.45	N/A	0.133
Perchlorate conf	5.810e+03	9.42	N/A	0.118

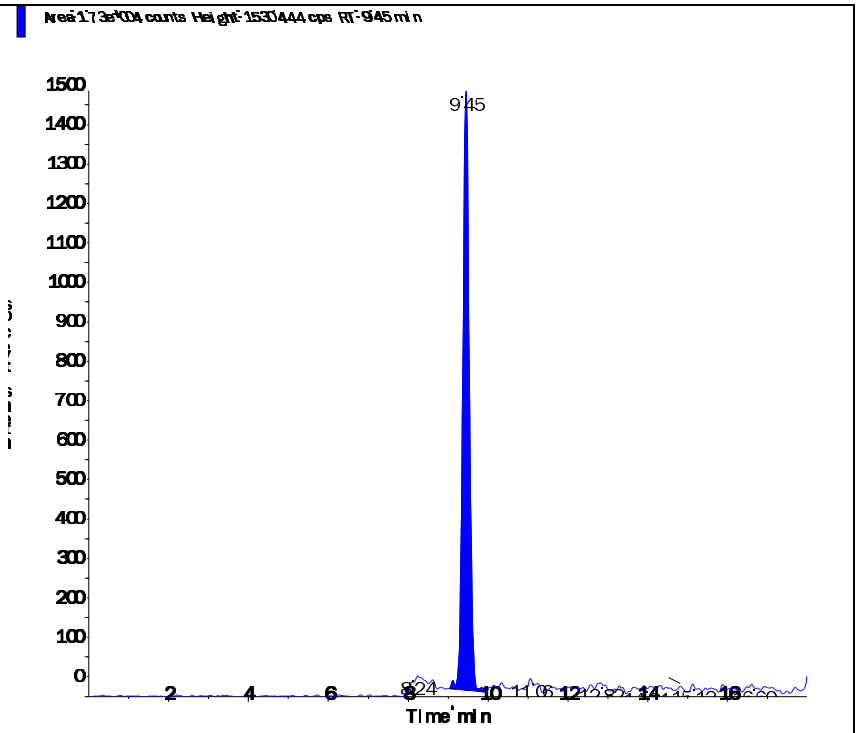
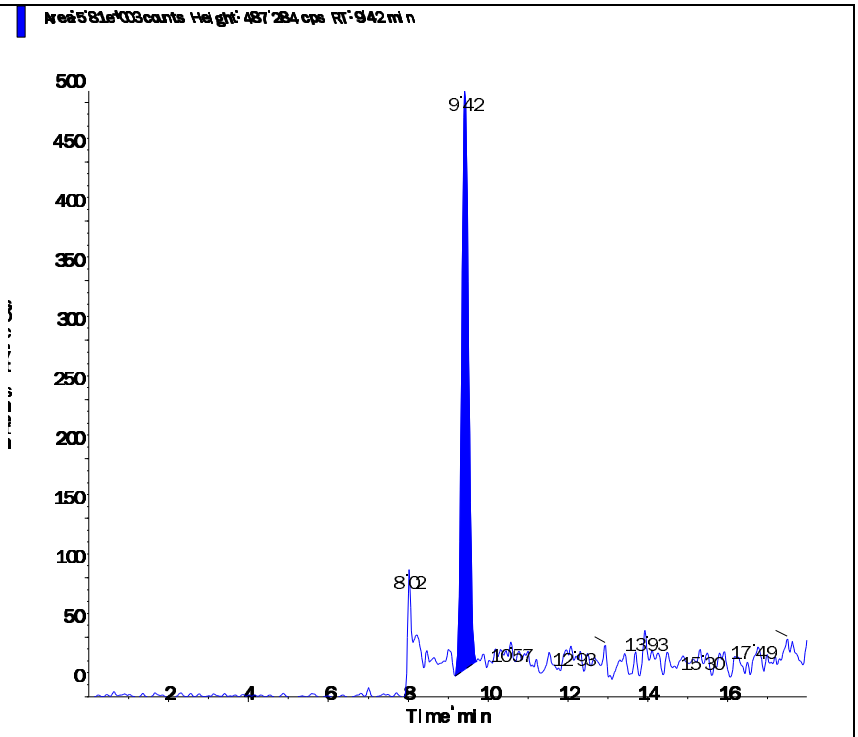
O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.45 (9.84) min Calculated conc: 0.133 ng/ml Area Ratio: 0.046 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.42 (9.84) min Calculated conc: 0.118 ng/ml Area Ratio: 0.015 Sample Type: (Unknown)	

Data File	LM37371.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 8:58:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16100570-03	**Injection Vial**	19.00
Data File	LM37371.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 8:58:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	L16100570-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.720e+05	9.43	5.00	-

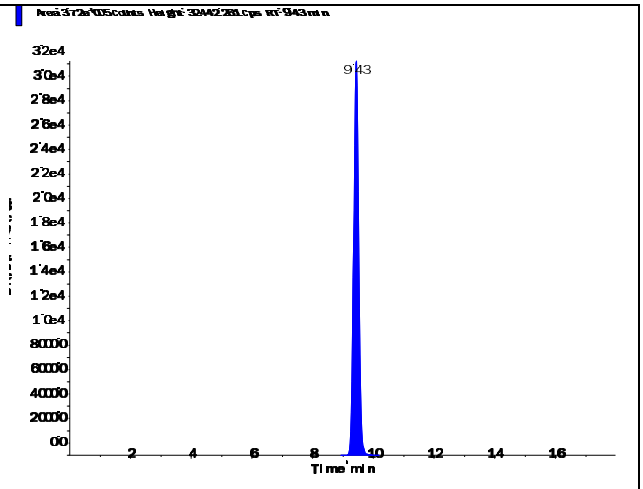
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.640e+03	9.45	N/A	0.0652
Perchlorate conf	3.130e+03	9.44	N/A	0.0549

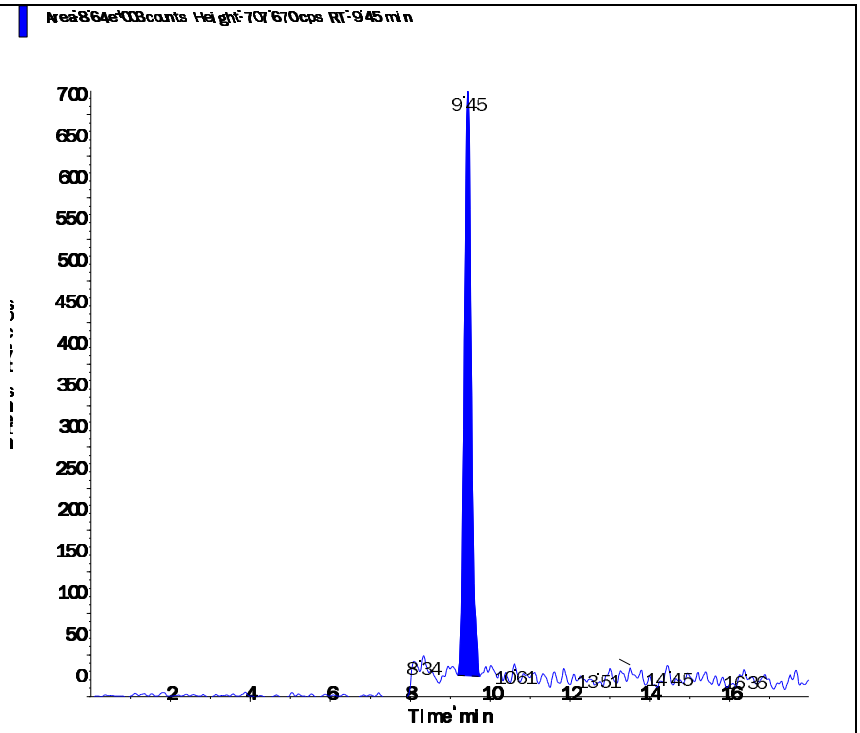
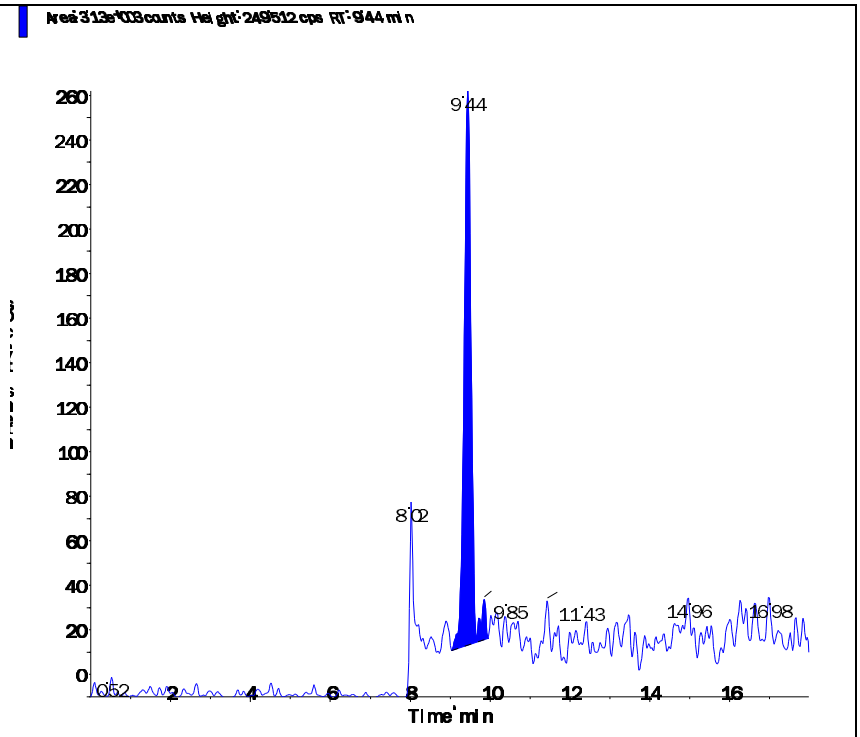
O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.45 (9.84) min Calculated conc: 0.0652 ng/ml Area Ratio: 0.023 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.44 (9.84) min Calculated conc: 0.0549 ng/ml Area Ratio: 0.008 Sample Type: (Unknown)	

2.1.1.4 Standards Data

Data File	LM34686.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

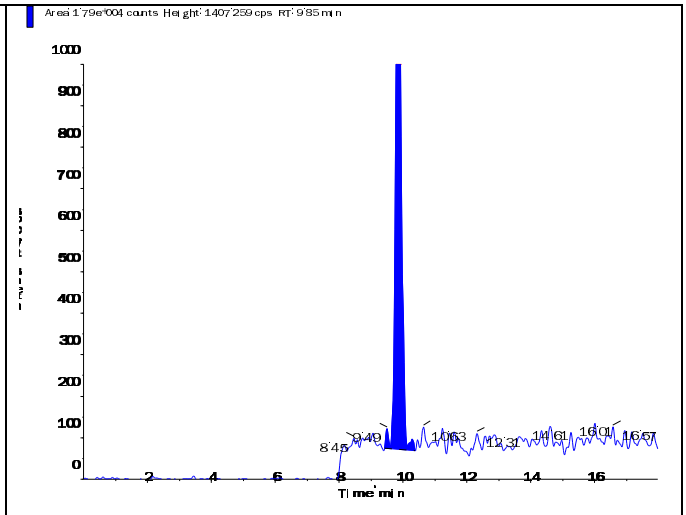
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

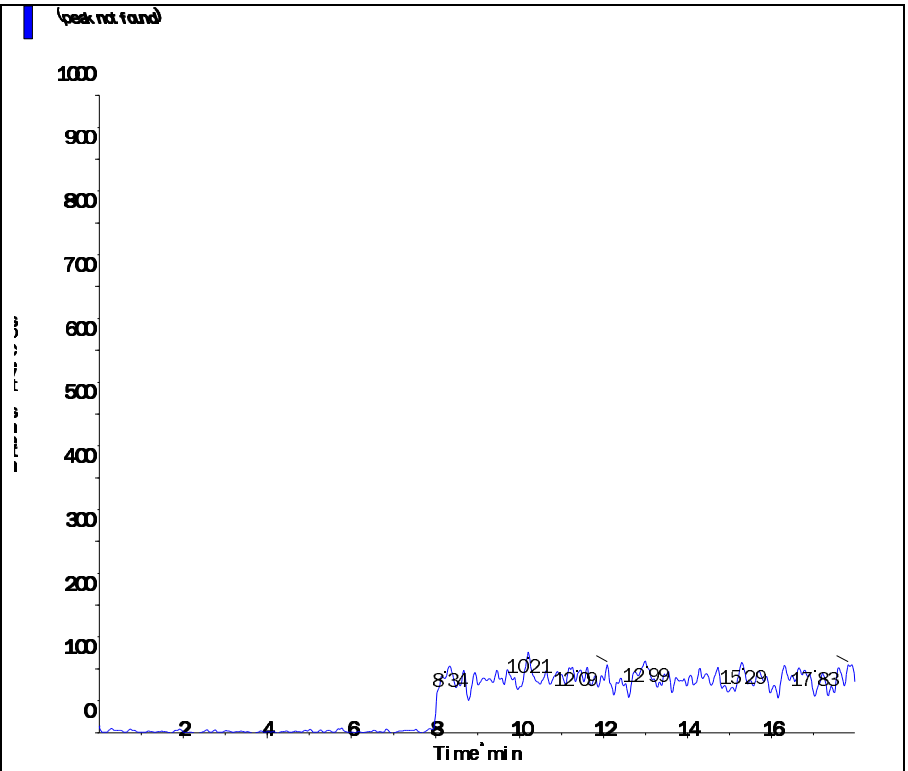
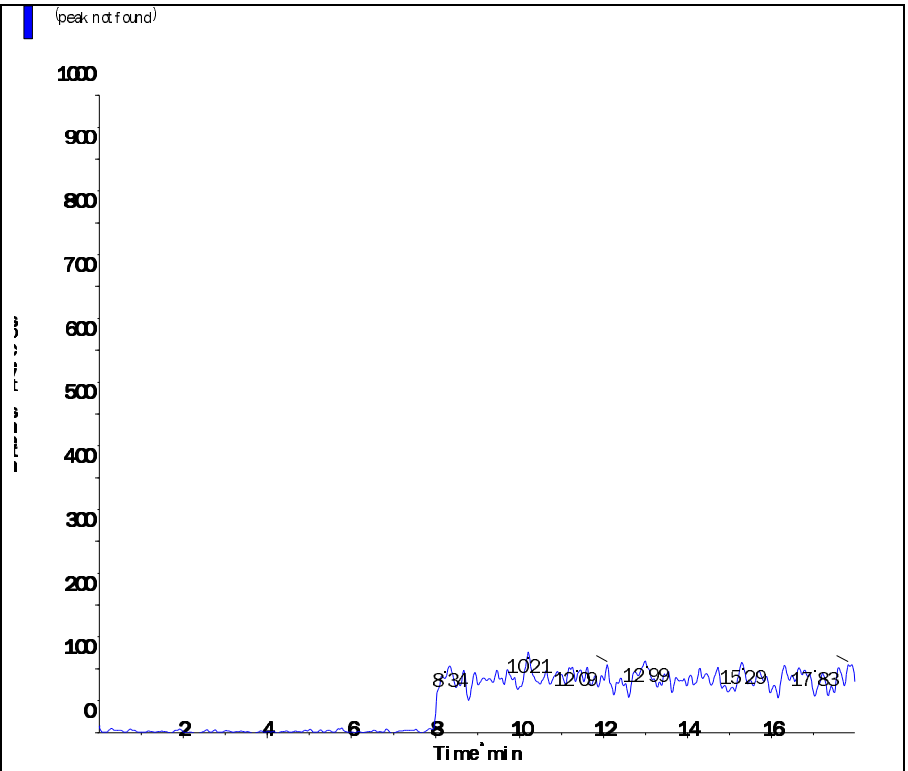
O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)



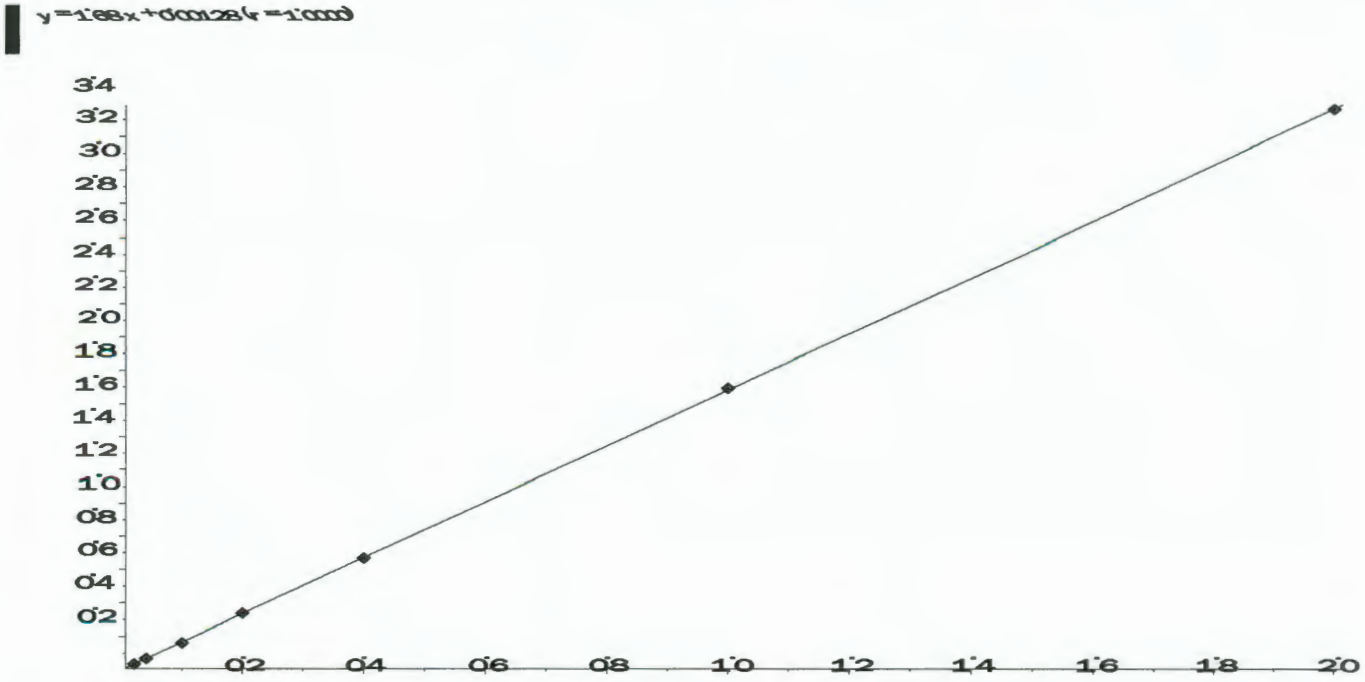
Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

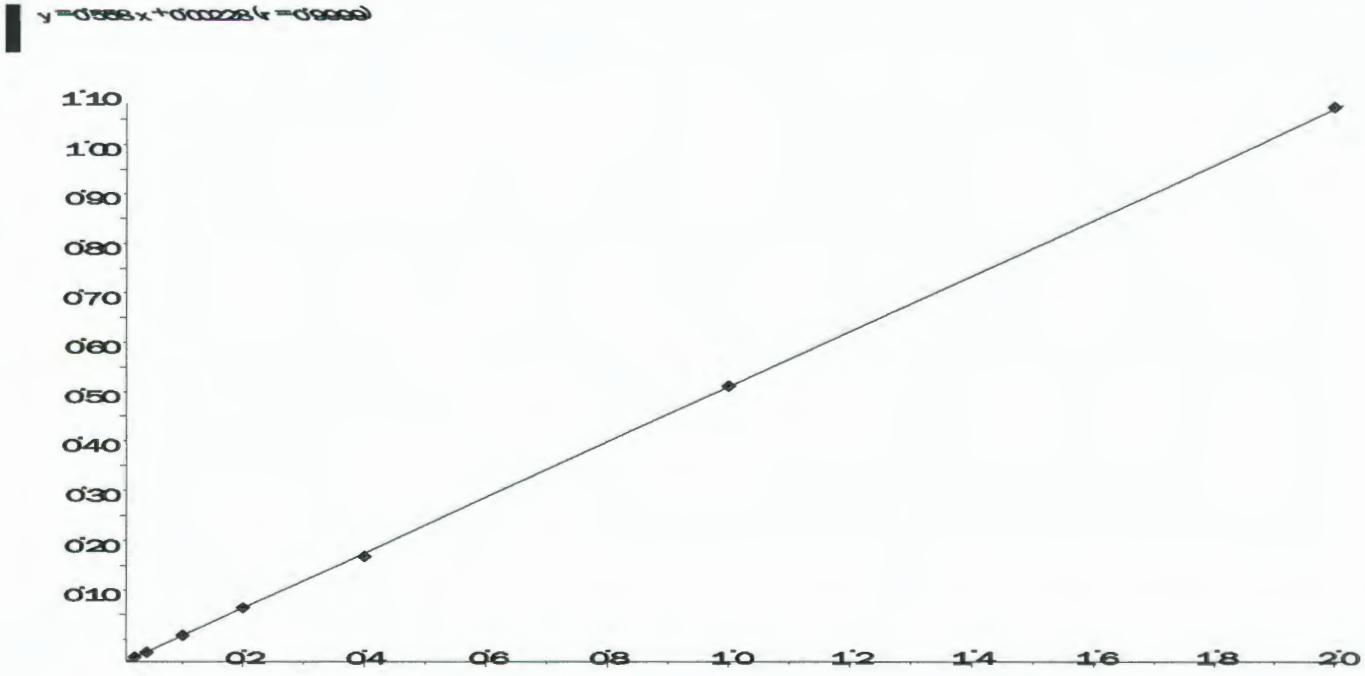


Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A



Data File	LM34687.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

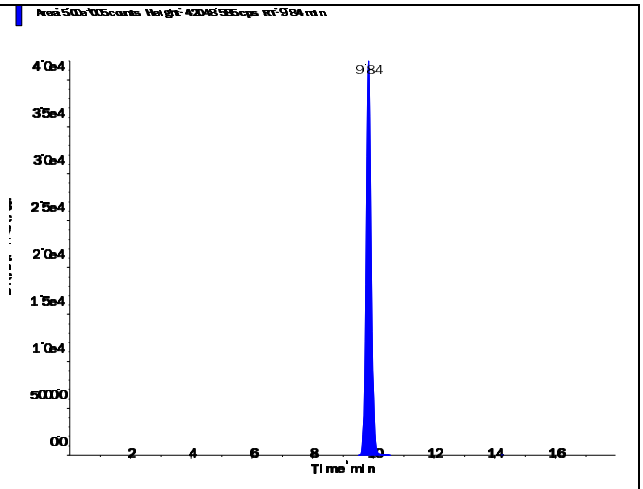
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

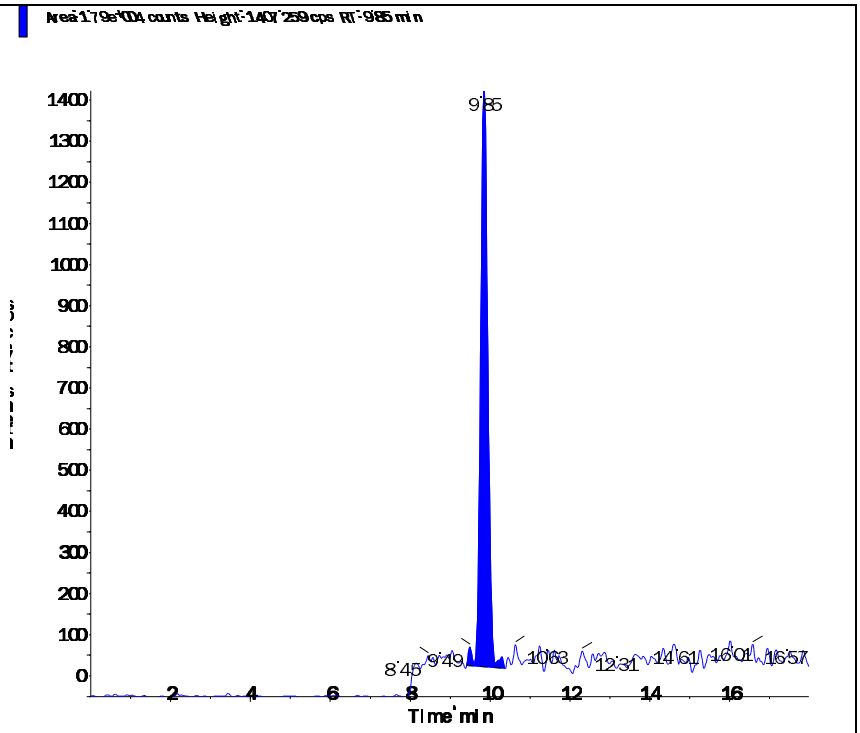
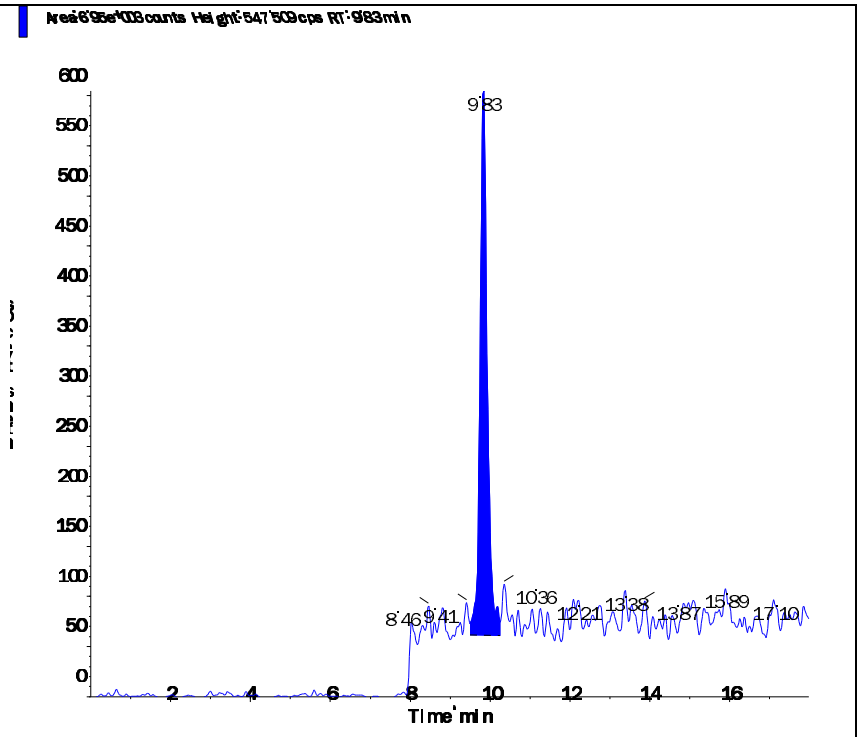
O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.103 ng/ml Area Ratio: 0.036 Sample Type: (Standard)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 0.104 ng/ml Area Ratio: 0.014 Sample Type: (Standard)	

Data File	LM34688.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

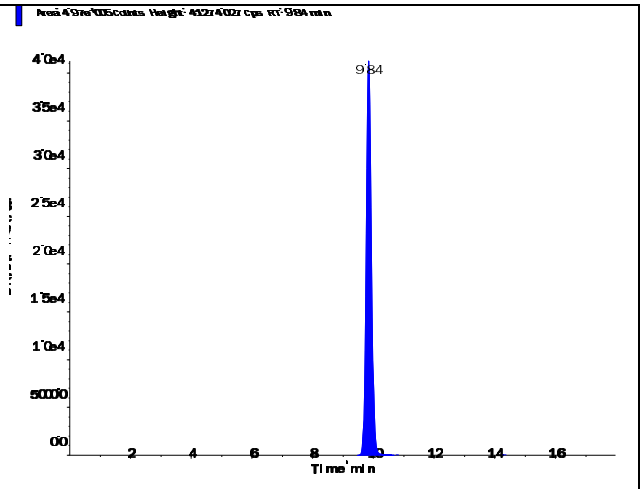
Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

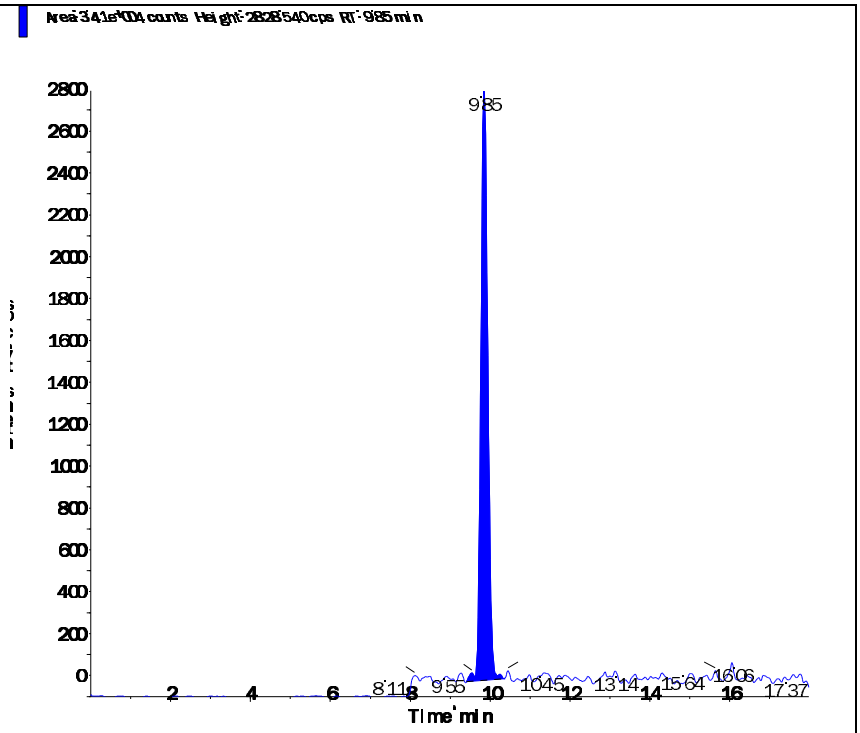
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

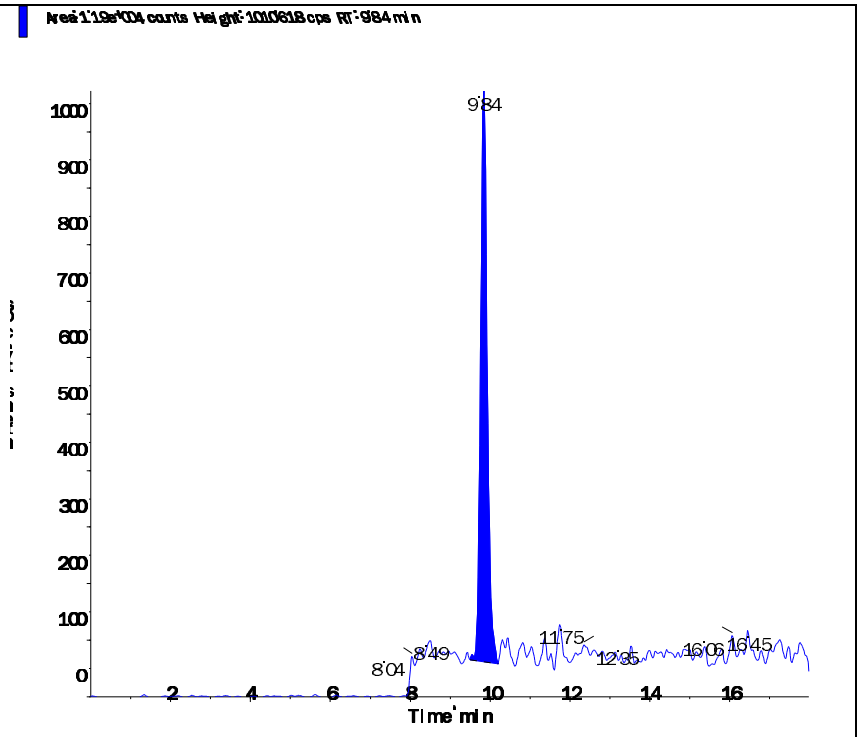
RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): Calculated conc: Area Ratio: Sample Type:	9.85 (9.84) min 0.201 ng/ml 0.069 (Standard)



Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): Calculated conc: Area Ratio: Sample Type:	9.84 (9.84) min 0.194 ng/ml 0.024 (Standard)



Data File	LM34689.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

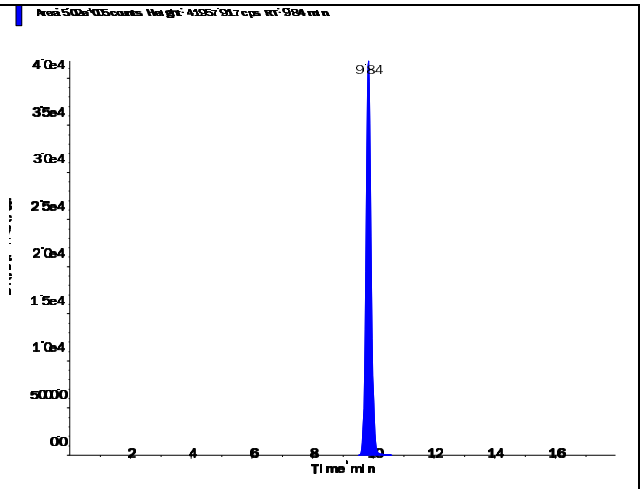
Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

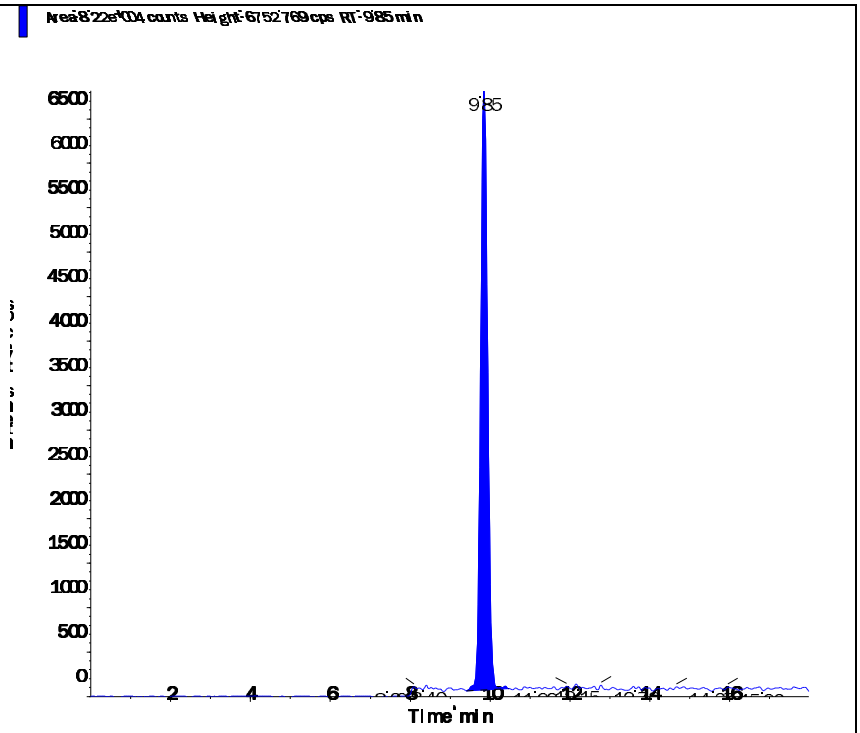
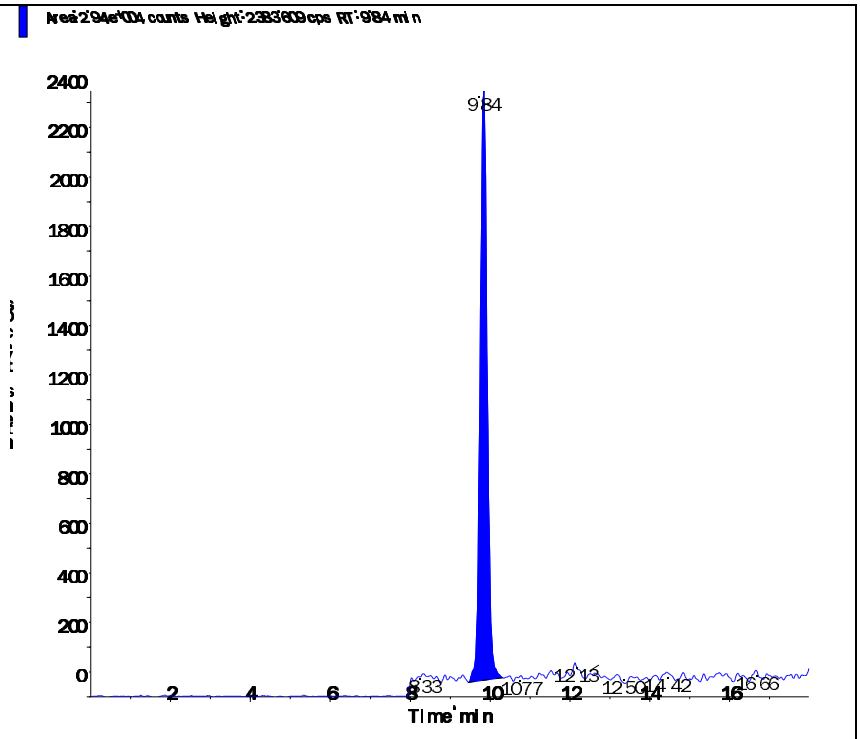
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.483 ng/ml Area Ratio: 0.164 Sample Type: (Standard)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 0.503 ng/ml Area Ratio: 0.058 Sample Type: (Standard)	

Data File	LM34690.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

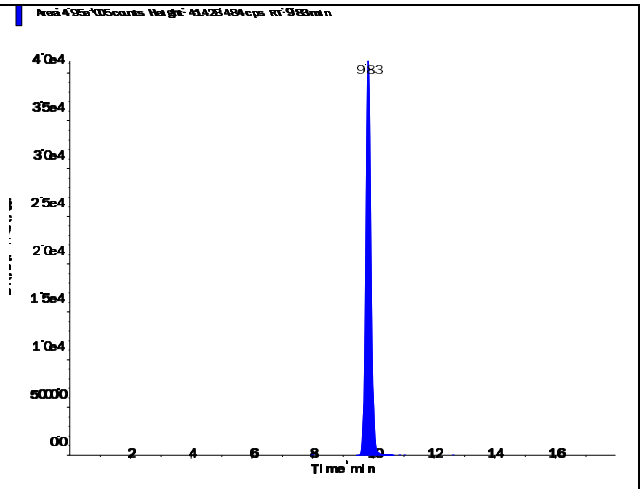
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

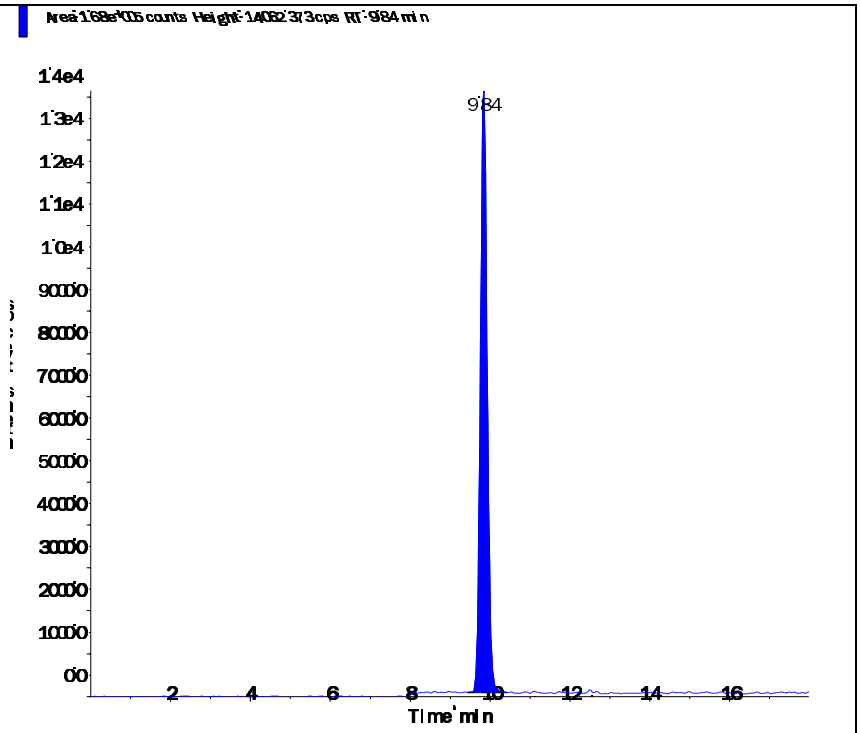
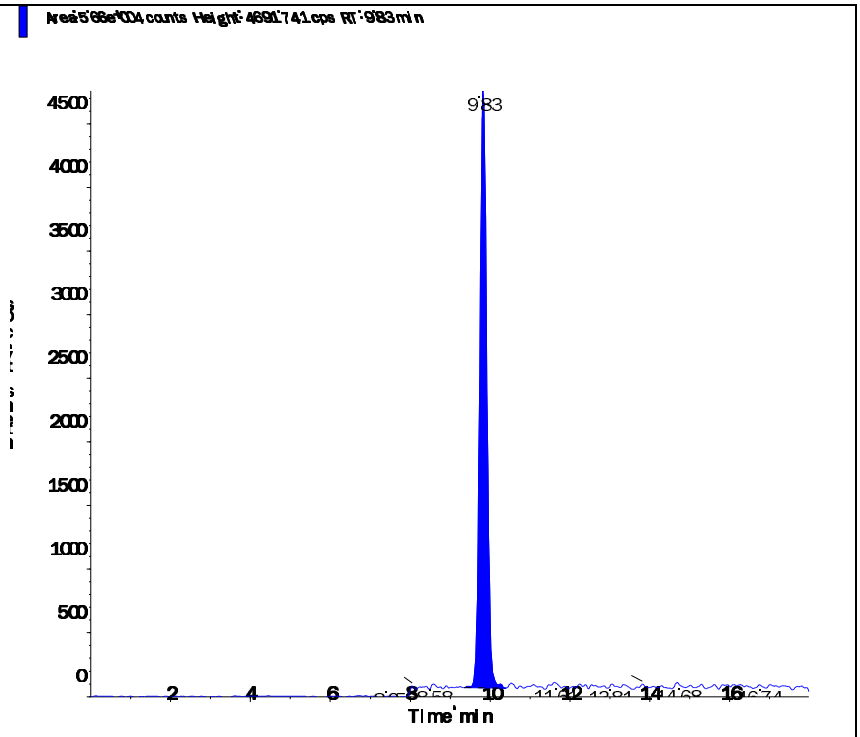
O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.339 Sample Type: (Standard)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.00 ng/ml Area Ratio: 0.114 Sample Type: (Standard)	

Data File	LM34691.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

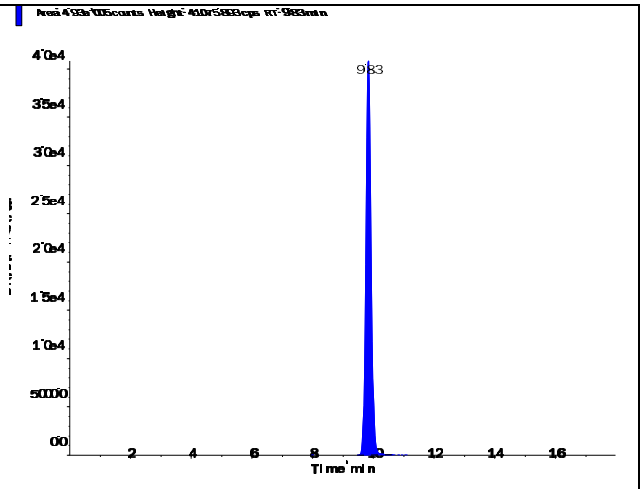
Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

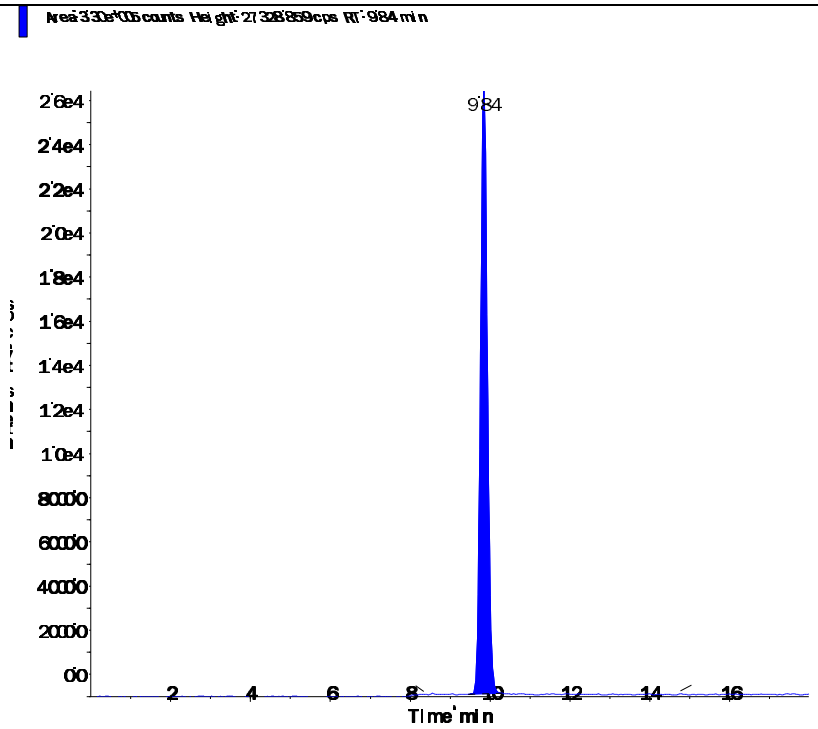
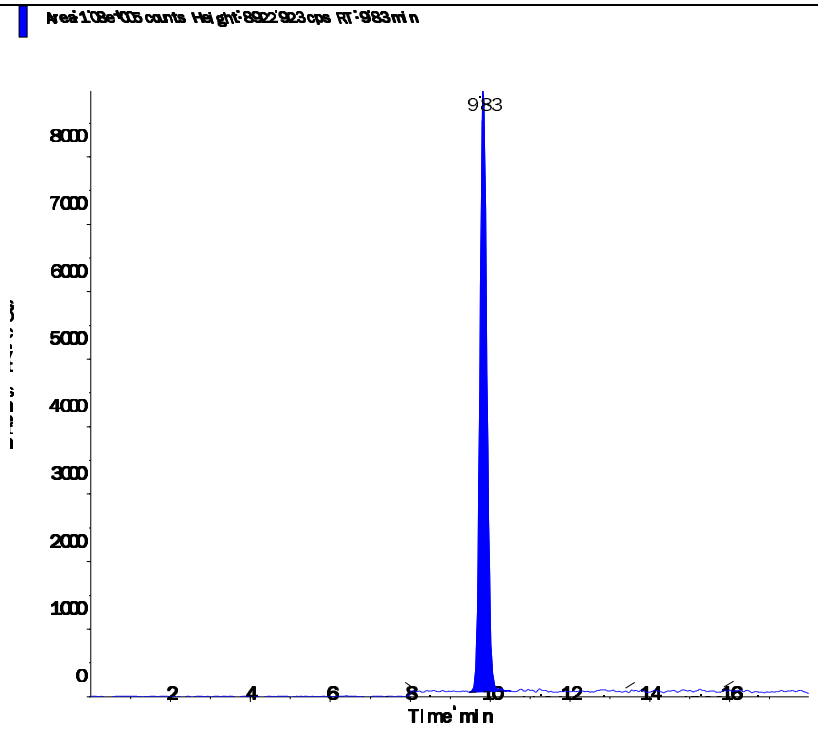
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	

Data File	LM34692.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

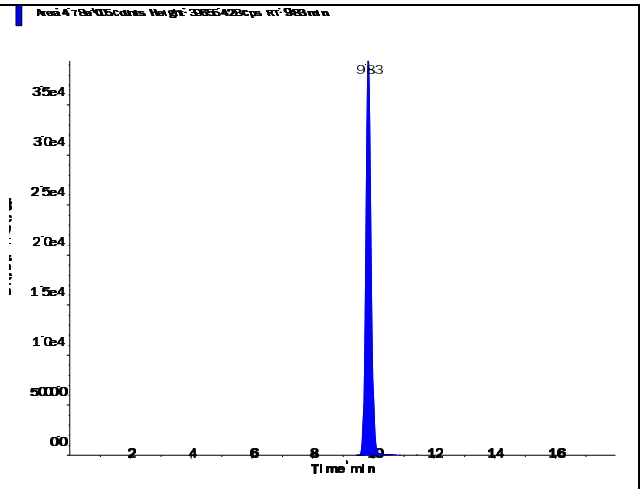
Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

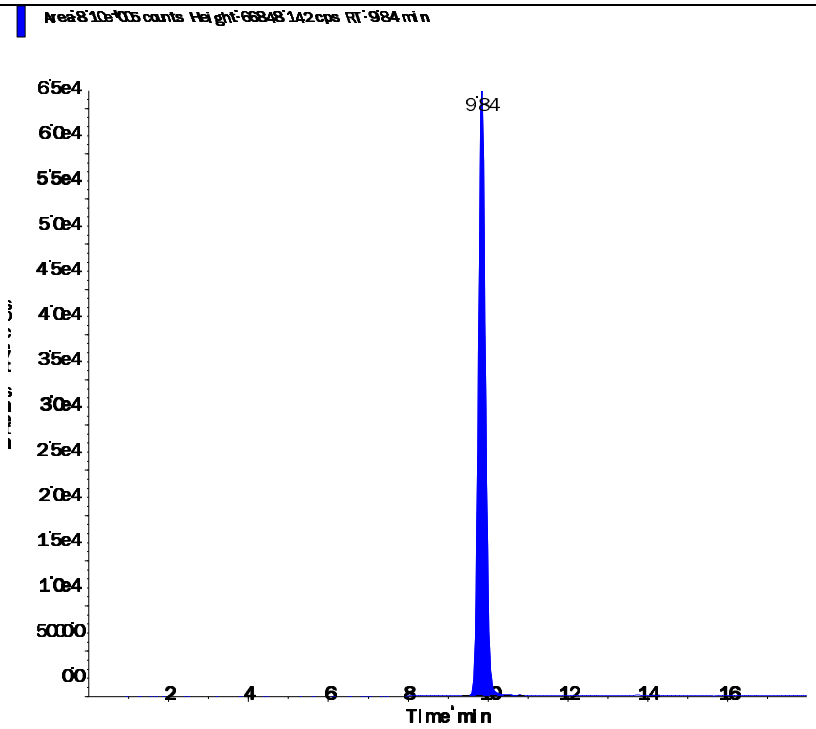
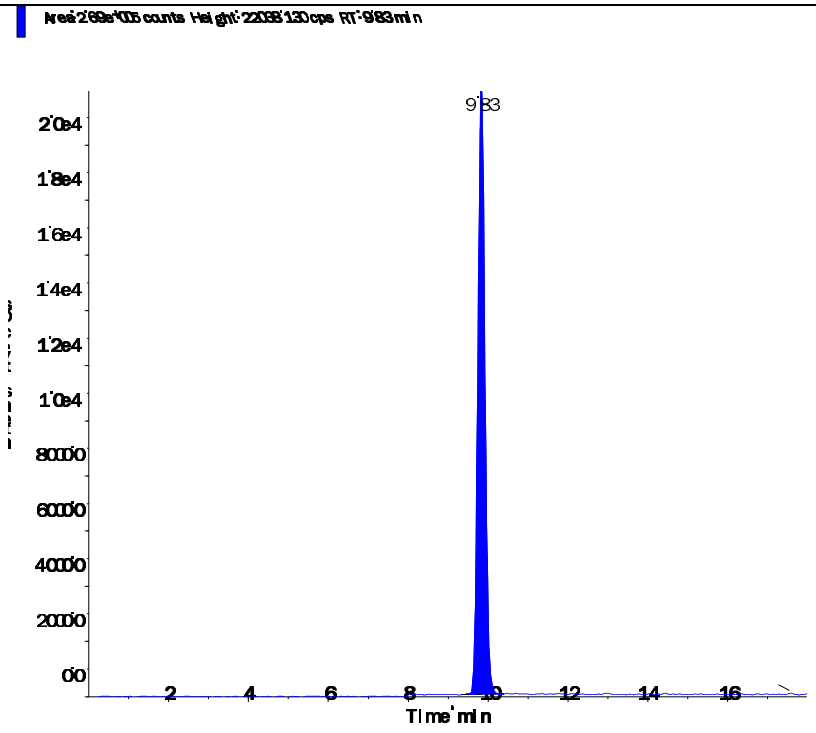
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 5.04 ng/ml Area Ratio: 1.695 Sample Type: (Standard)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 5.02 ng/ml Area Ratio: 0.562 Sample Type: (Standard)	

Data File	LM34693.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

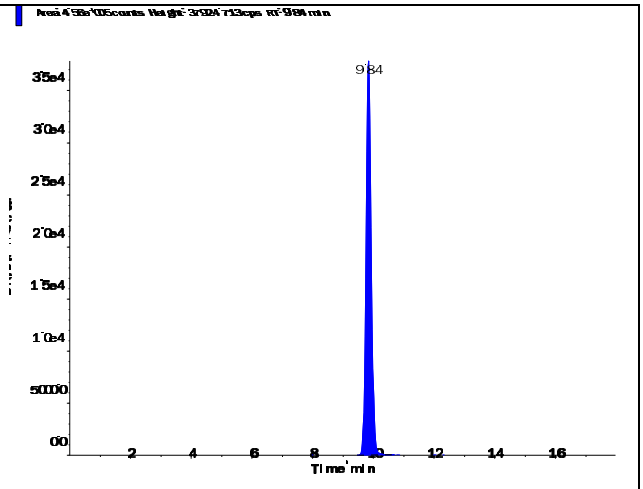
Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

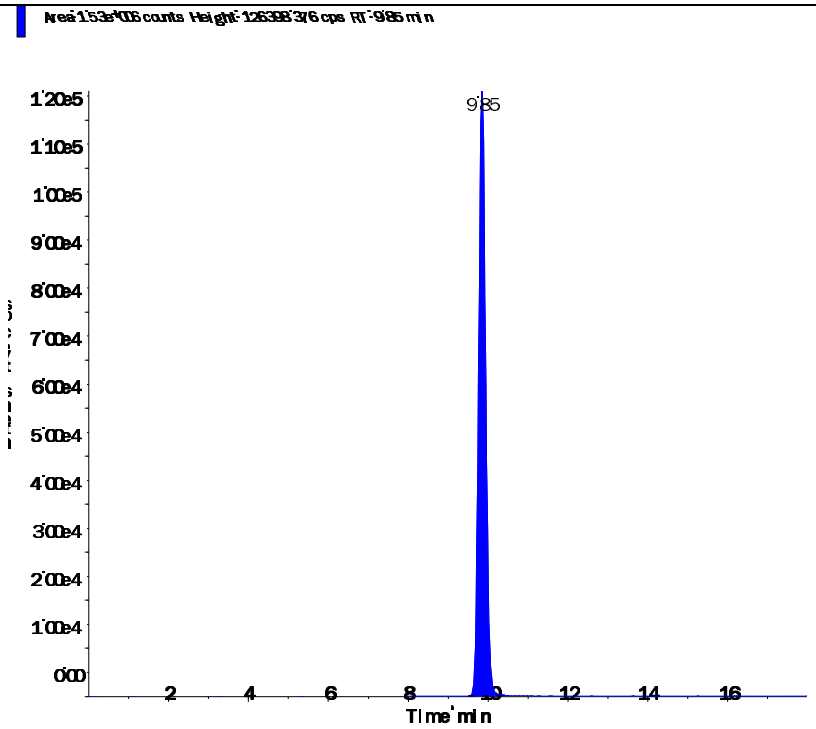
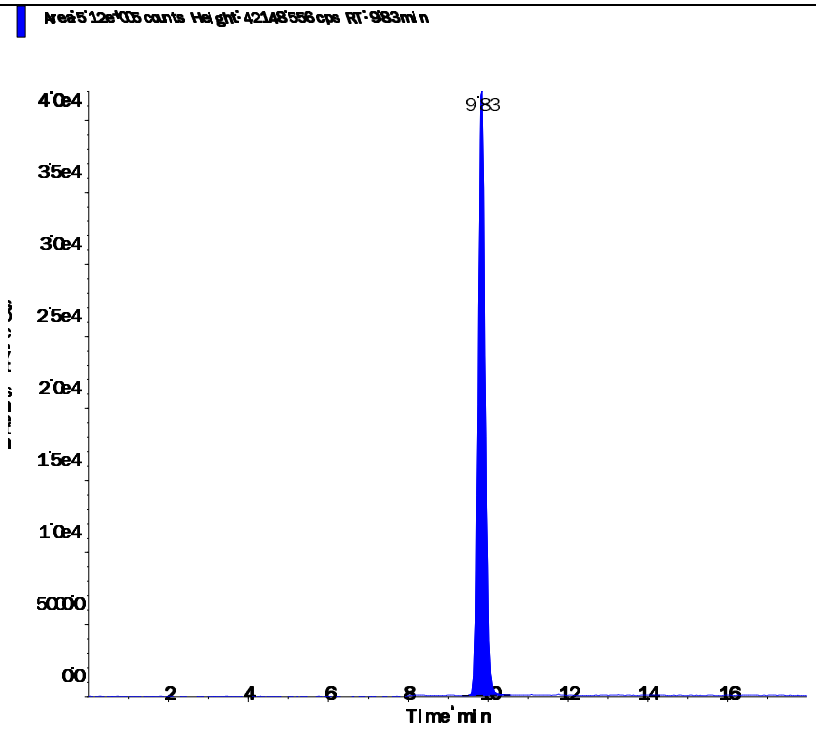
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Standard)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

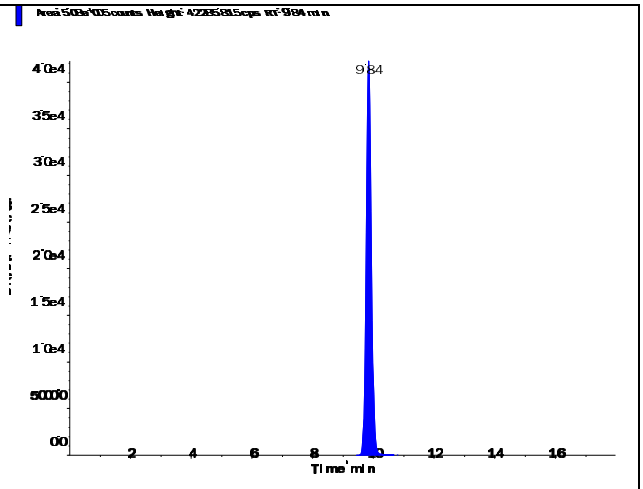
Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

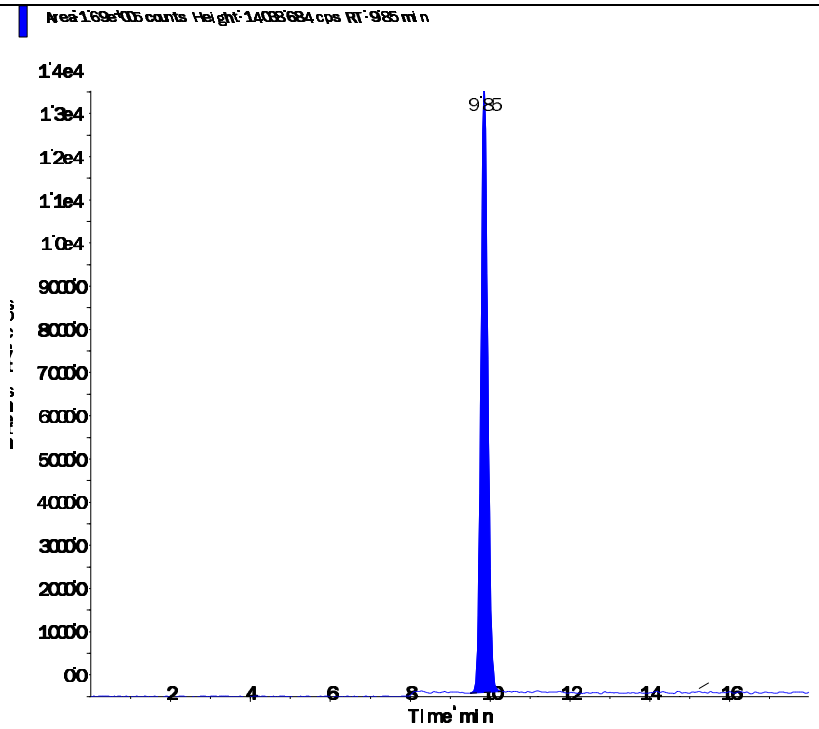
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

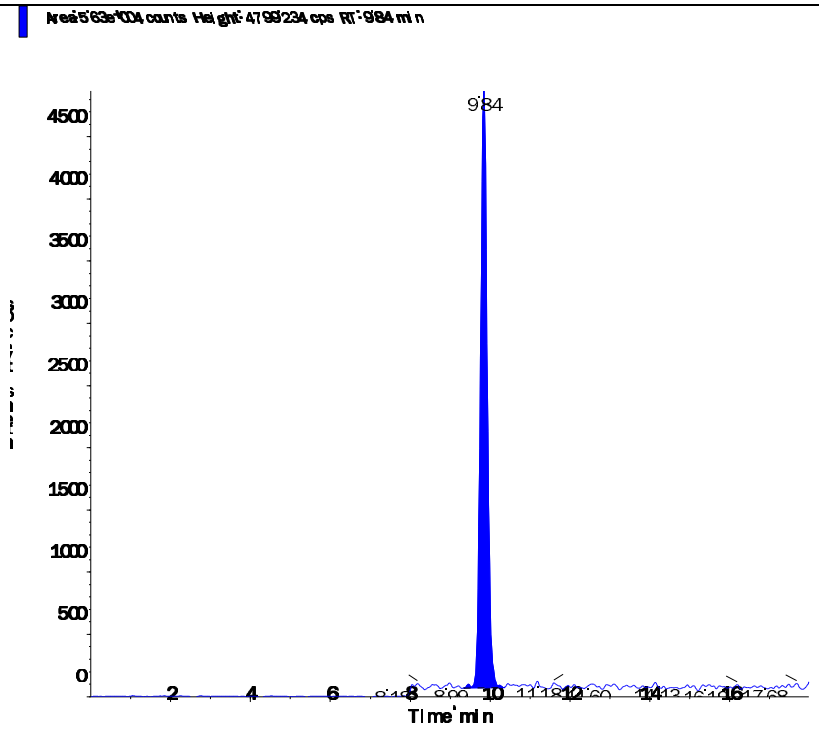
RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Quality Control)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): Calculated conc: Area Ratio: Sample Type:	9.85 (9.84) min 0.985 ng/ml 0.332 (Quality Control)



Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): Calculated conc: Area Ratio: Sample Type:	9.84 (9.84) min 0.973 ng/ml 0.111 (Quality Control)



Data File	LM37351.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 2:39:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

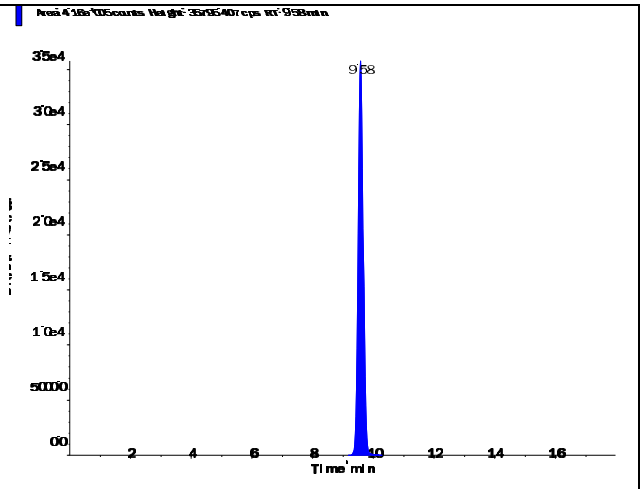
Sample Name	WG587969-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM37351.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 2:39:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587969-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD78249	**Weight to Volume**	0.00

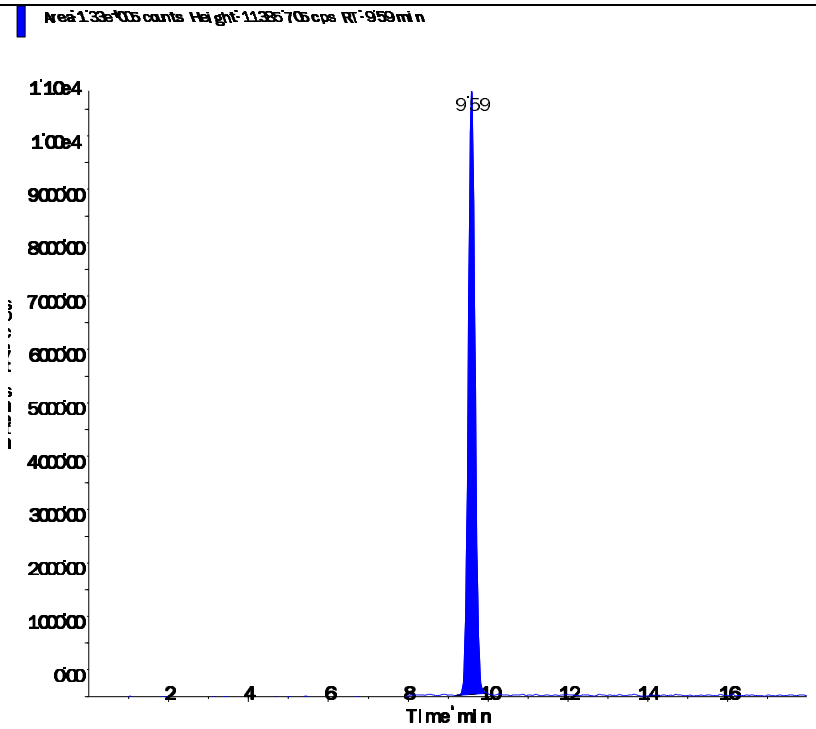
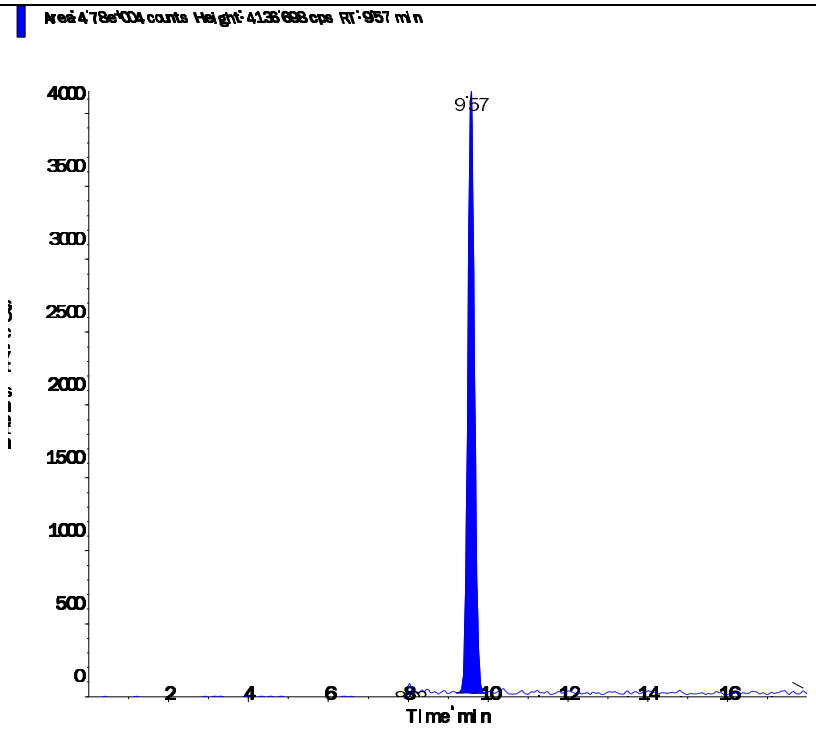
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.160e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.330e+05	9.59	1.00	0.944
Perchlorate conf	4.780e+04	9.57	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Quality Control)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.59 (9.84) min Calculated conc: 0.944 ng/ml Area Ratio: 0.319 Sample Type: (Quality Control)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.57 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.115 Sample Type: (Quality Control)	

Data File	LM37363.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 6:27:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

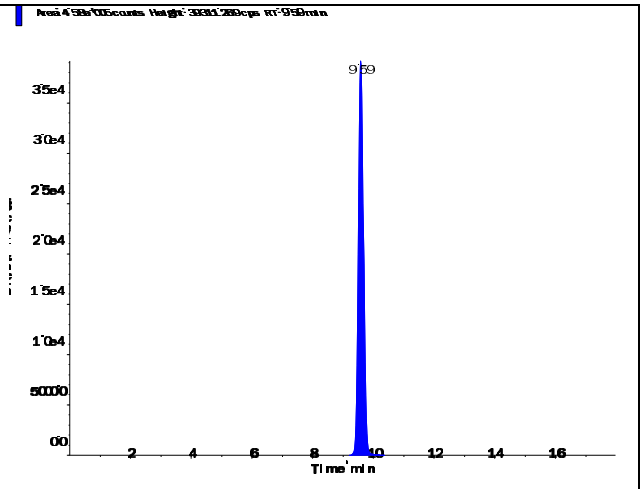
Sample Name	WG587969-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM37363.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 6:27:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587969-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD78249	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.59	5.00	-

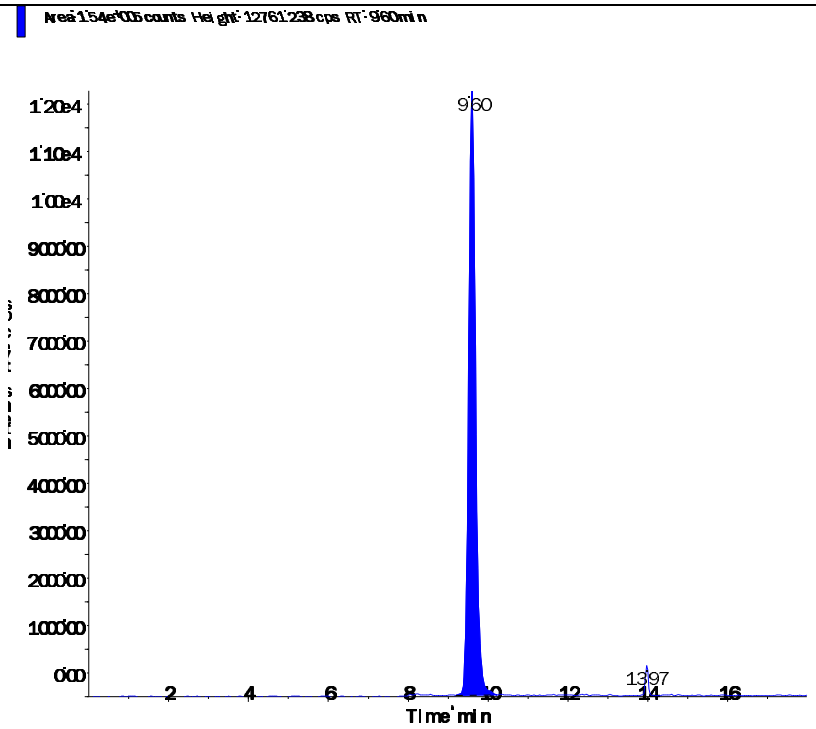
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.540e+05	9.60	1.00	0.993
Perchlorate conf	5.090e+04	9.58	1.00	0.975

O18LP (Internal Standard)

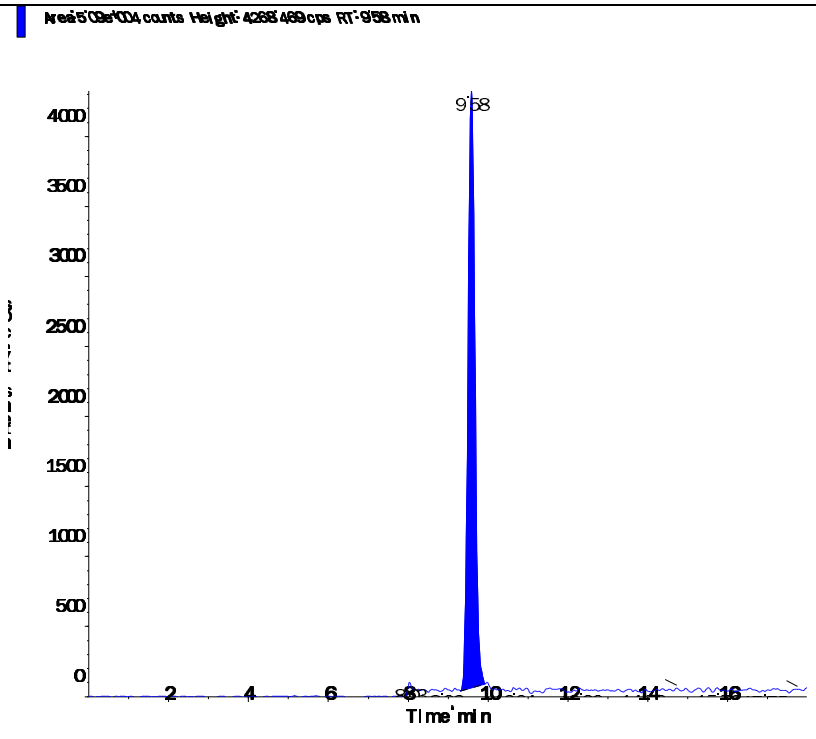
RT (Exp. RT): 9.59(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Quality Control)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): Calculated conc: Area Ratio: Sample Type:	9.60 (9.84) min 0.993 ng/ml 0.335 (Quality Control)



Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): Calculated conc: Area Ratio: Sample Type:	9.58 (9.84) min 0.975 ng/ml 0.111 (Quality Control)



Data File	LM37375.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 10:14:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

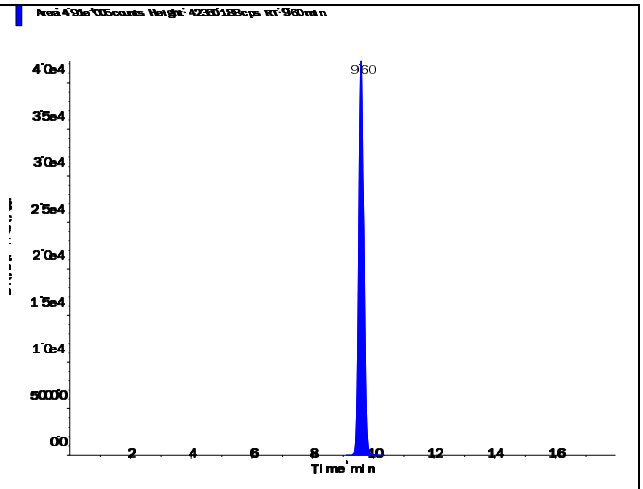
Sample Name	WG587969-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM37375.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 10:14:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587969-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD78249	**Weight to Volume**	0.00

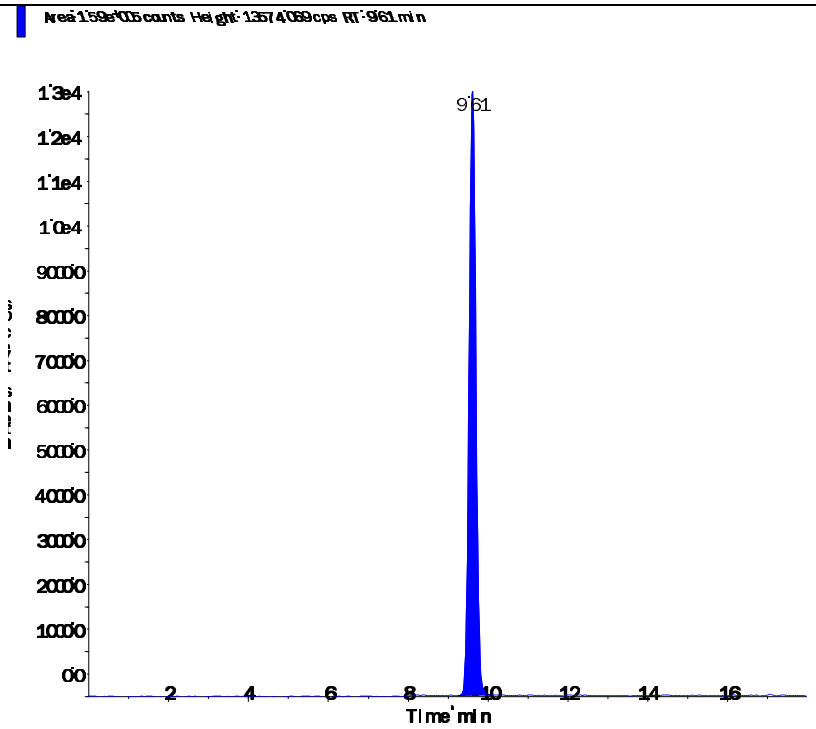
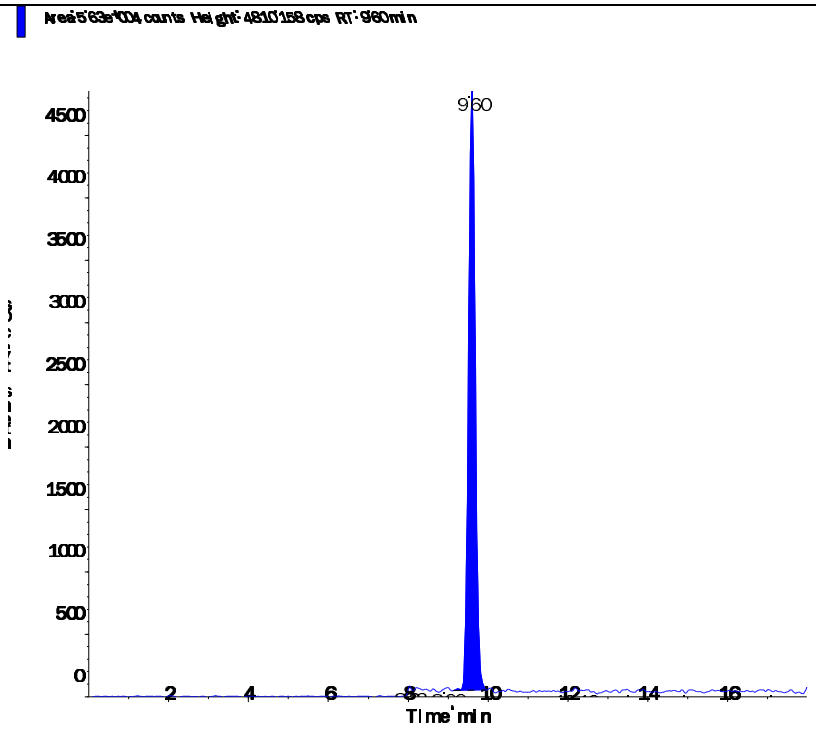
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.590e+05	9.61	1.00	0.956
Perchlorate conf	5.630e+04	9.60	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Quality Control)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.61 (9.84) min Calculated conc: 0.956 ng/ml Area Ratio: 0.323 Sample Type: (Quality Control)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.60 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.115 Sample Type: (Quality Control)	

Data File	LM37352.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 2:58:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

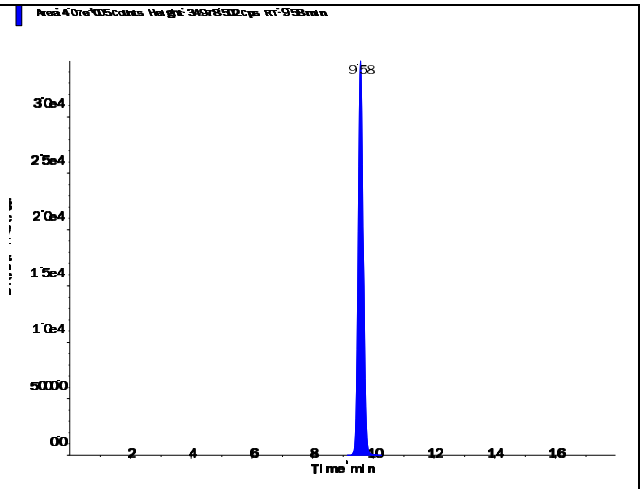
Sample Name	WG587968-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM37352.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 2:58:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD78249	**Weight to Volume**	0.00

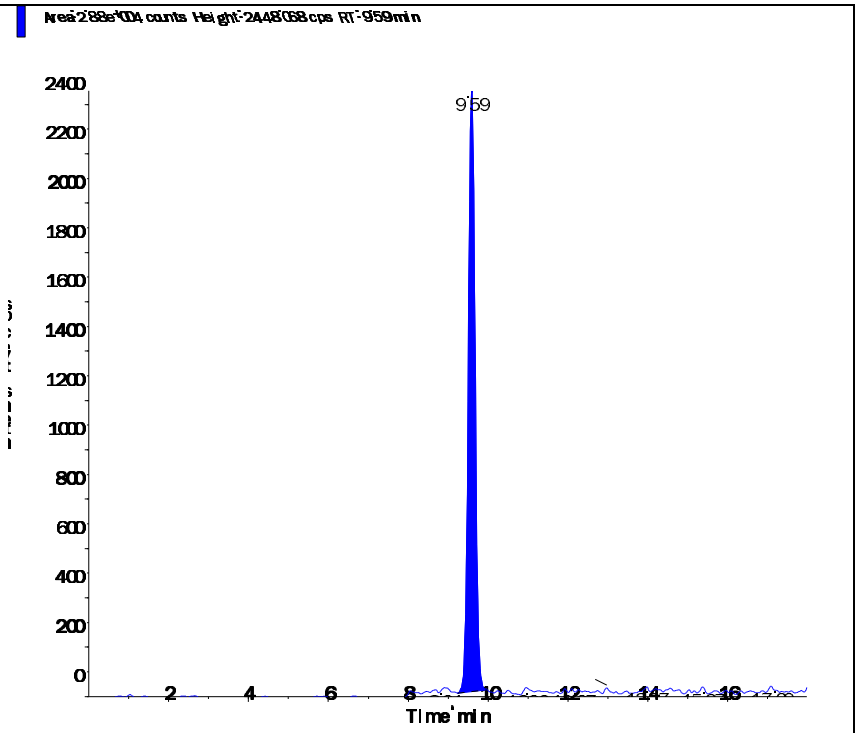
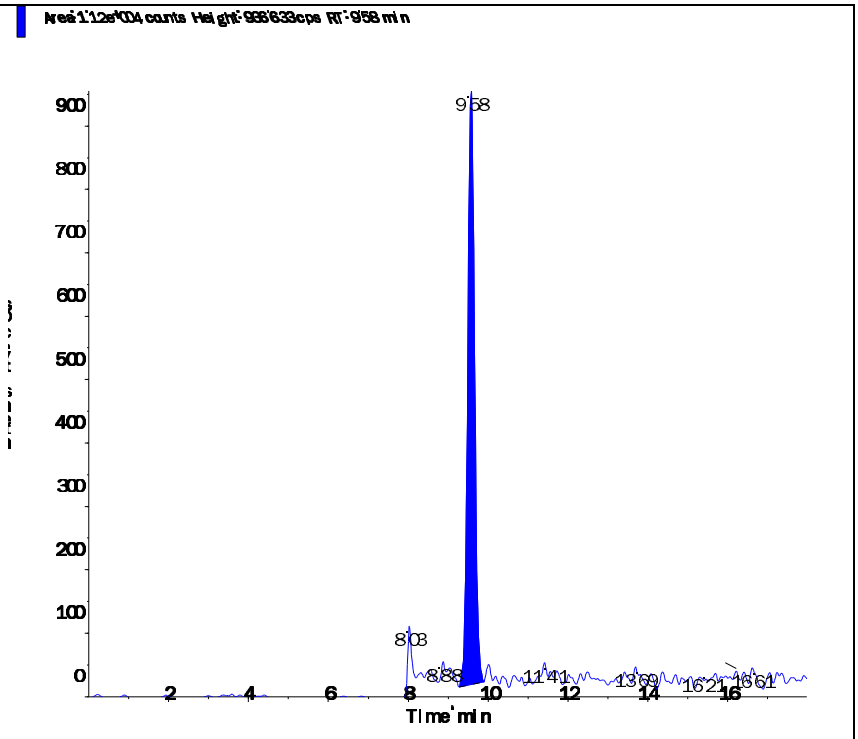
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.070e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.880e+04	9.59	N/A	0.207
Perchlorate conf	1.120e+04	9.58	N/A	0.225

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.59 (9.84) min Calculated conc: 0.207 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.58 (9.84) min Calculated conc: 0.225 ng/ml Area Ratio: 0.027 Sample Type: (Unknown)	

Data File	LM37364.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 6:45:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

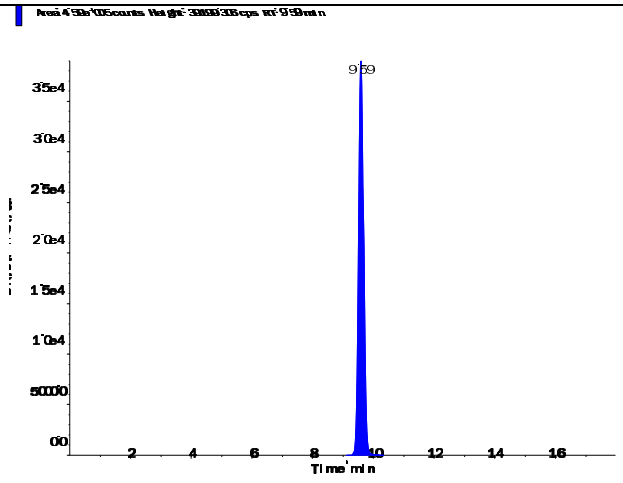
Sample Name	WG587968-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM37364.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 6:45:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD78249	**Weight to Volume**	0.00

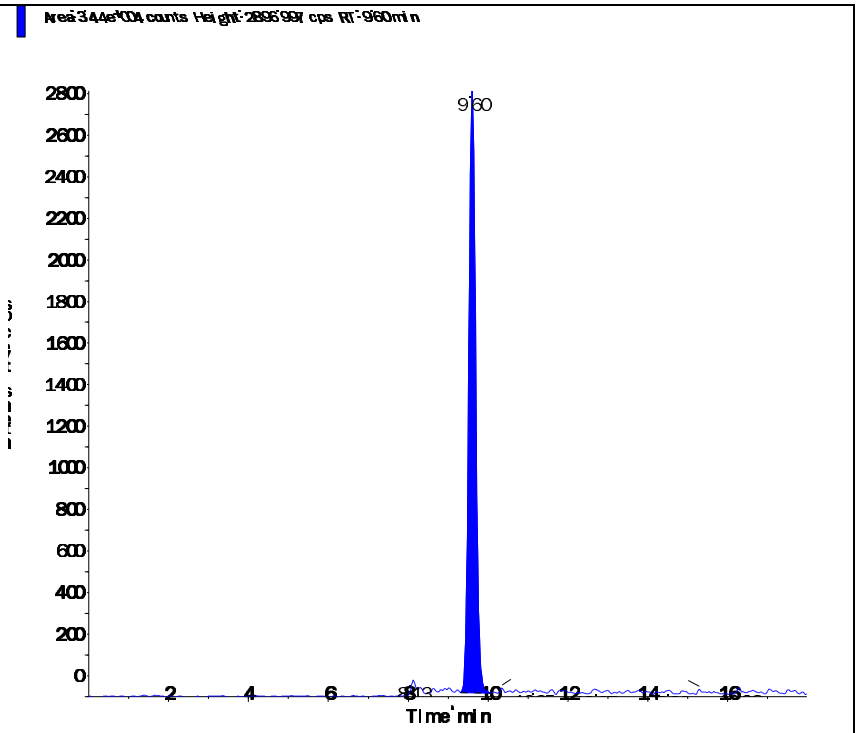
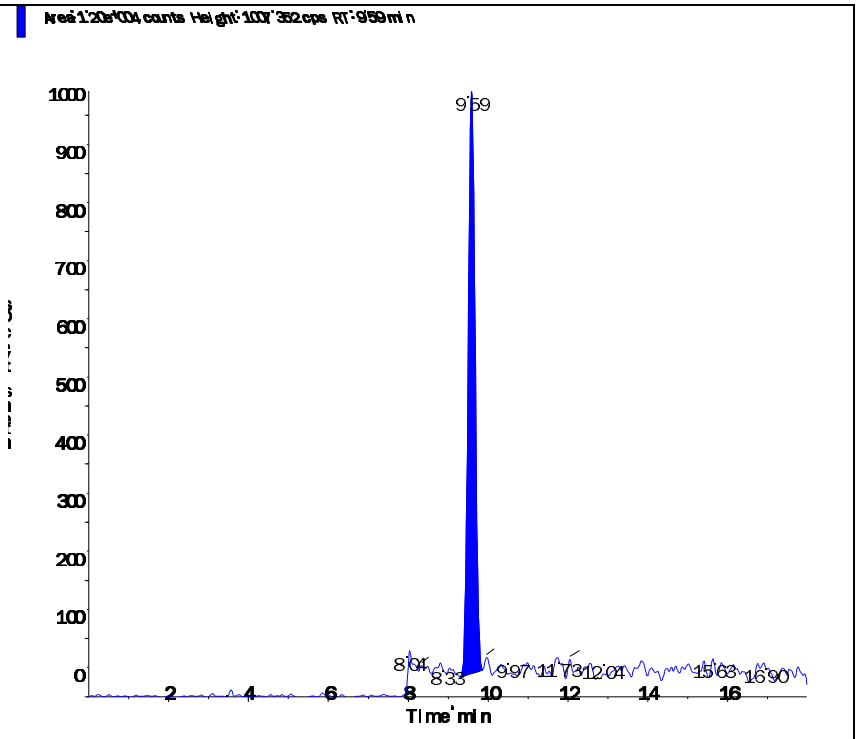
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.590e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.440e+04	9.60	N/A	0.219
Perchlorate conf	1.200e+04	9.59	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.60 (9.84) min Calculated conc: 0.219 ng/ml Area Ratio: 0.075 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.59 (9.84) min Calculated conc: 0.214 ng/ml Area Ratio: 0.026 Sample Type: (Unknown)	

Data File	LM37376.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 10:33:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

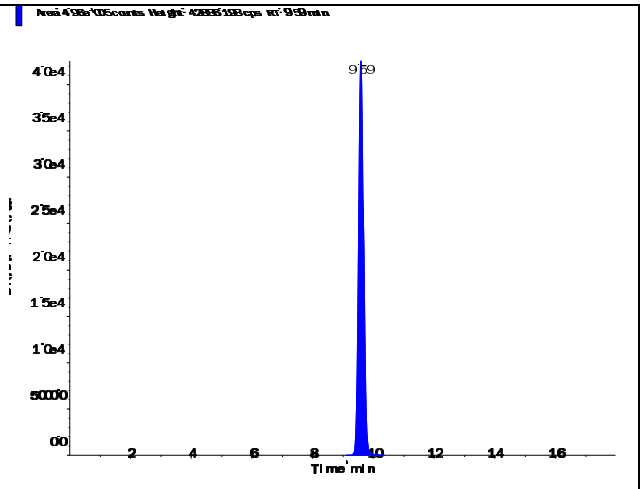
Sample Name	WG587968-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM37376.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 10:33:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD78249	**Weight to Volume**	0.00

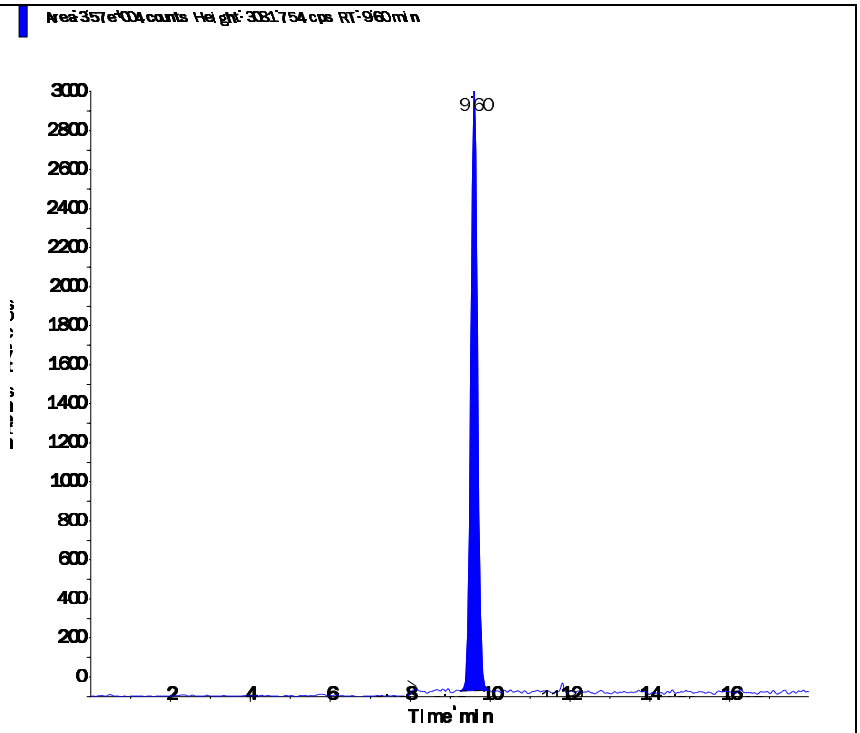
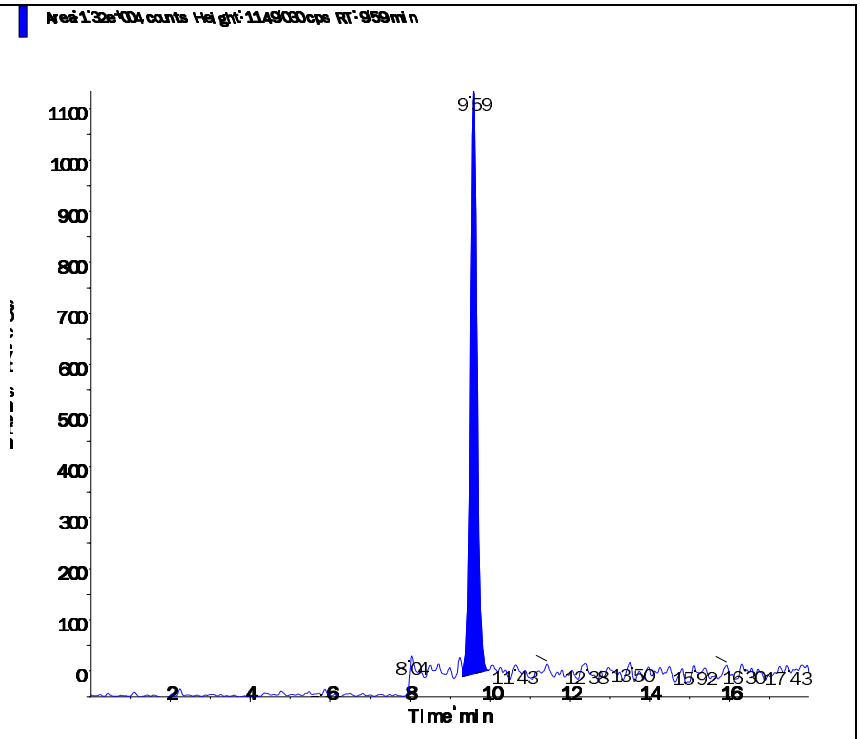
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.570e+04	9.60	N/A	0.21
Perchlorate conf	1.320e+04	9.59	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.60 (9.84) min Calculated conc: 0.21 ng/ml Area Ratio: 0.072 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.59 (9.84) min Calculated conc: 0.218 ng/ml Area Ratio: 0.027 Sample Type: (Unknown)	

Data File	LM37350.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 2:20:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

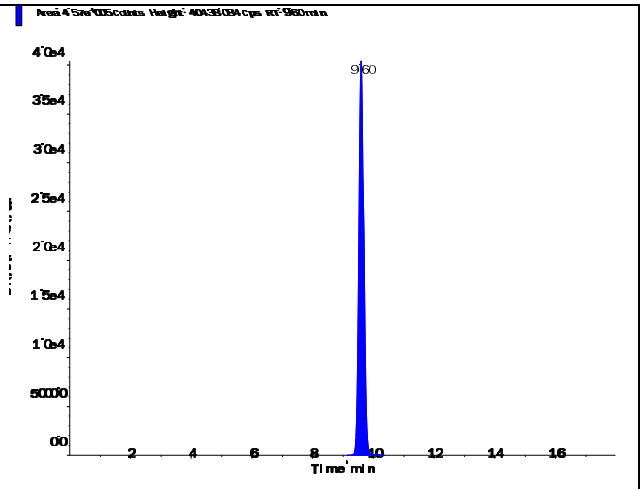
Sample Name	WG587969-01 CCB	**Injection Vial**	1.00
Data File	LM37350.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 2:20:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587969-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.570e+05	9.60	5.00	-

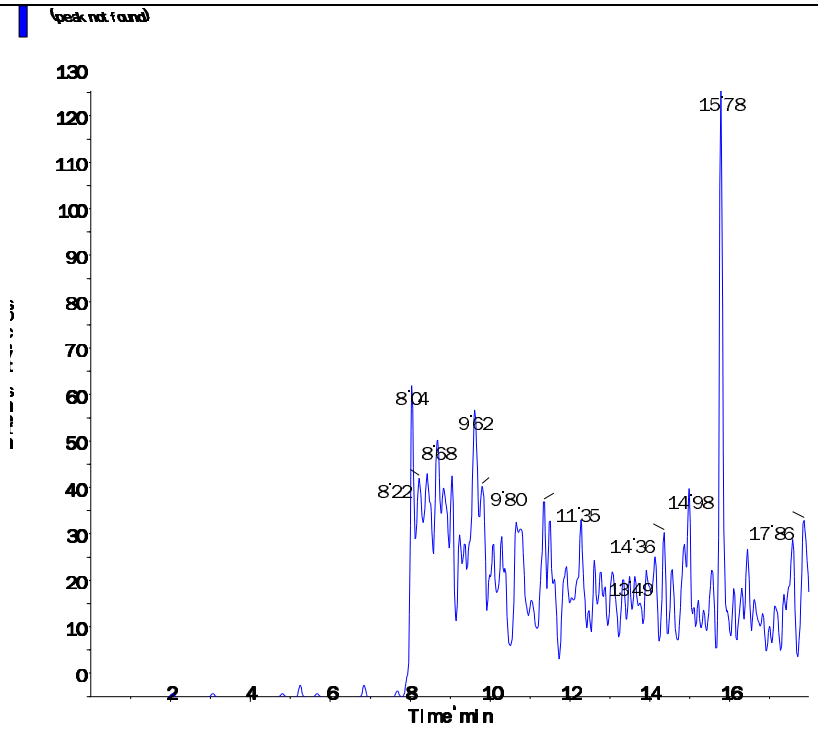
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

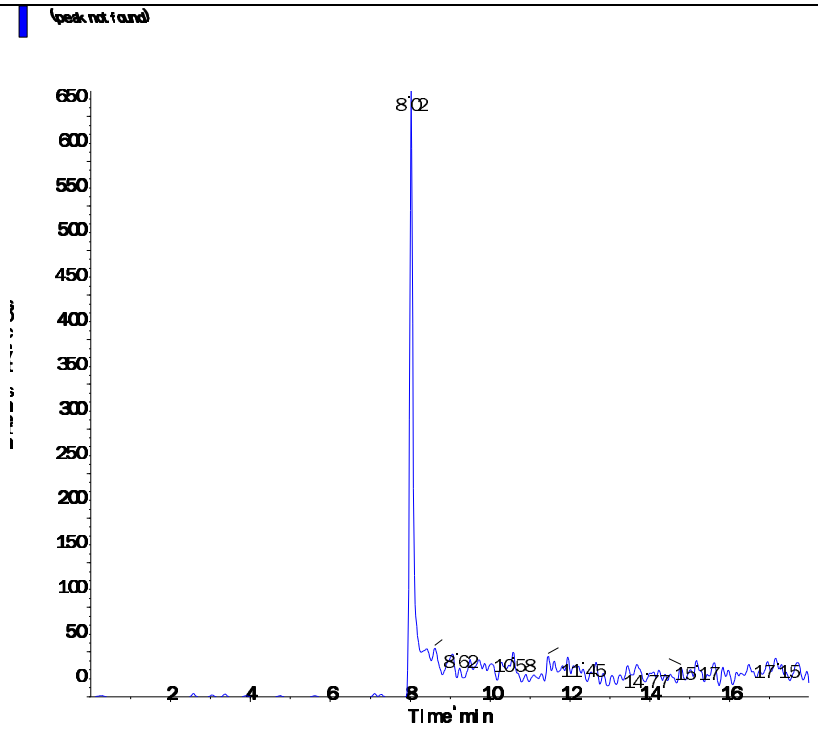
RT (Exp. RT): 9.60(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): Calculated conc: Area Ratio: Sample Type:	0.00 (9.84) min No Peak ng/ml 0.00 (Unknown)



Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): Calculated conc: Area Ratio: Sample Type:	0.00 (9.84) min No Peak ng/ml 0.00 (Unknown)



Data File	LM37365.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 7:04:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

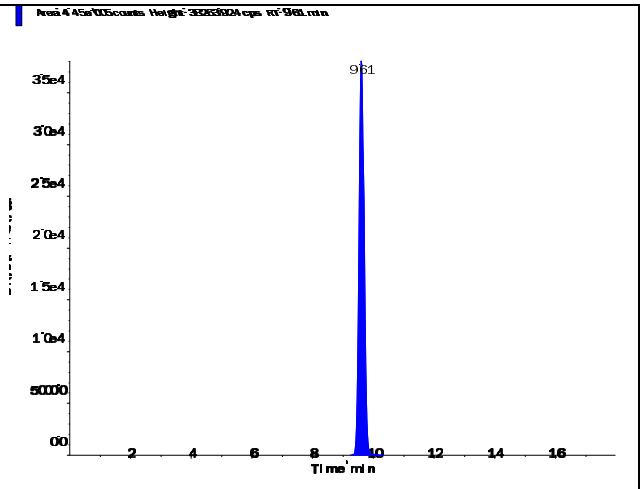
Sample Name	WG587969-04 CCB	**Injection Vial**	1.00
Data File	LM37365.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 7:04:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587969-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

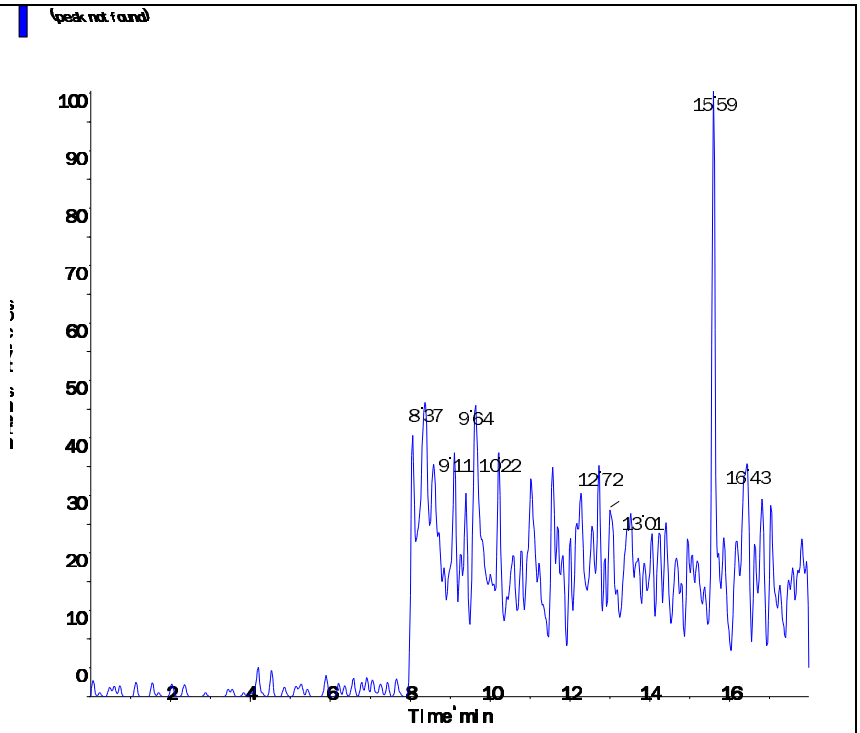
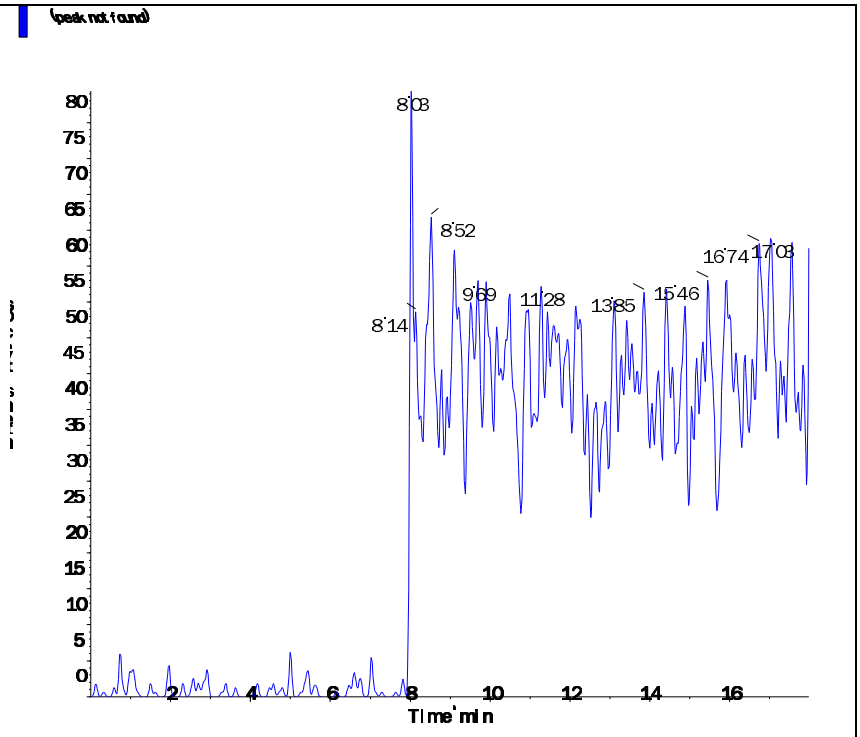
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	

Data File	LM37377.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 10:52:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

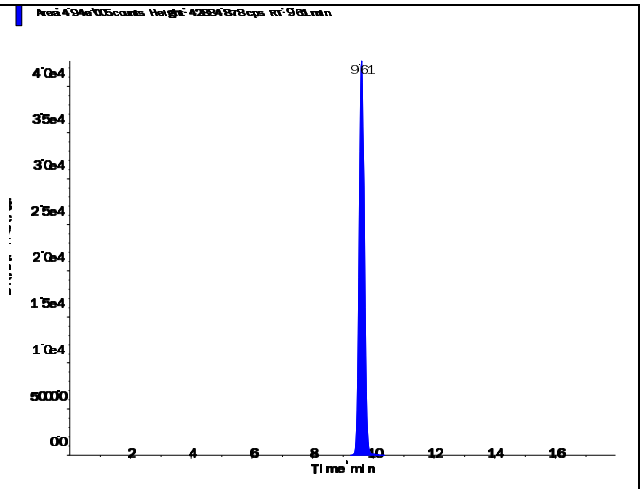
Sample Name	WG587969-06 CCB	**Injection Vial**	1.00
Data File	LM37377.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 10:52:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587969-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

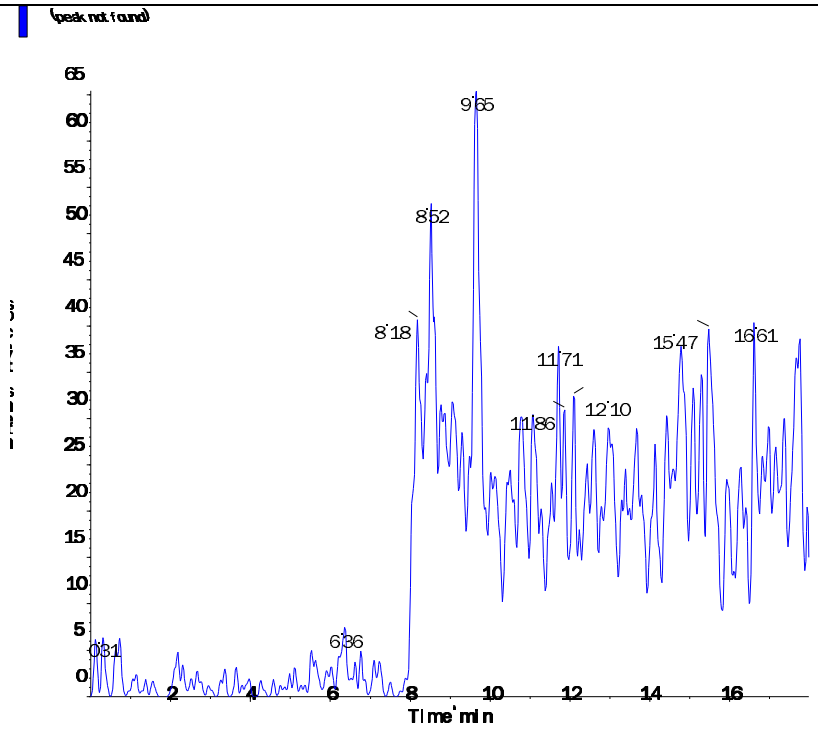
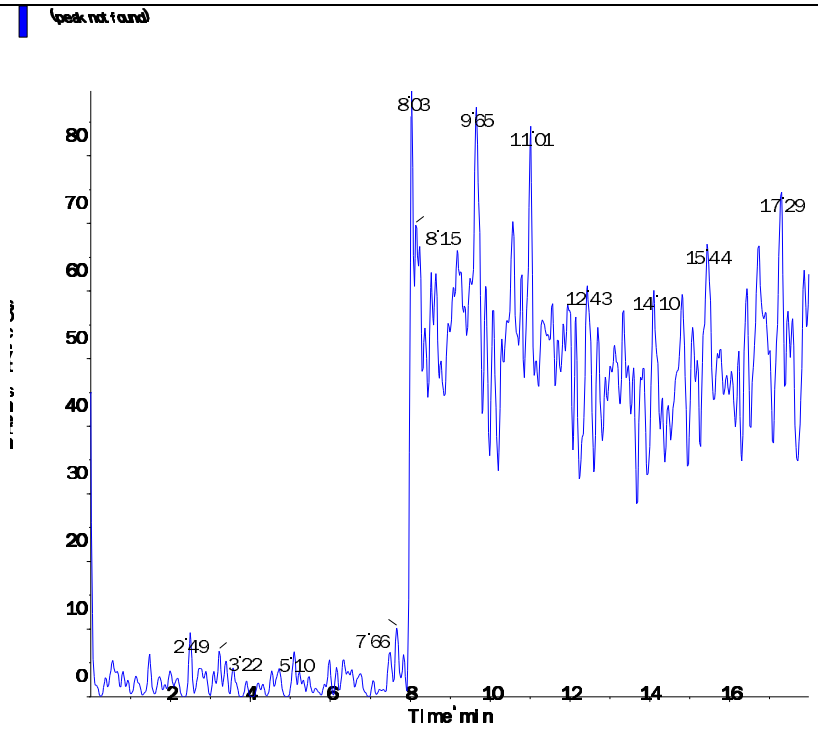
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.940e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	

Data File	LM37353.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 3:17:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

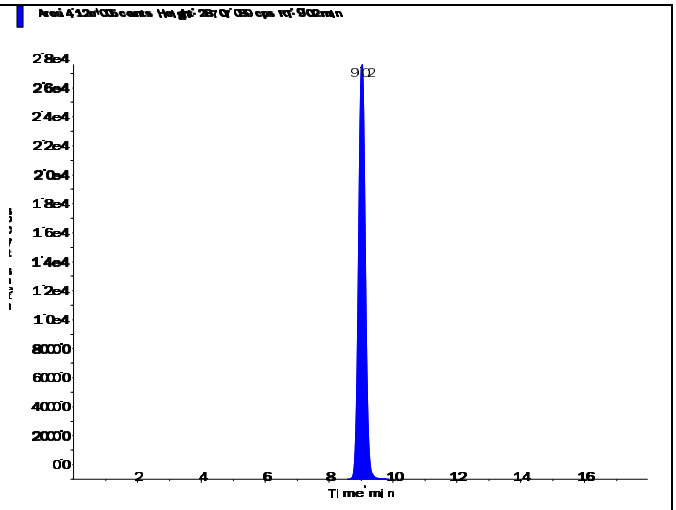
Sample Name	WG587968-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM37353.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 3:17:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD78251	**Weight to Volume**	0.00

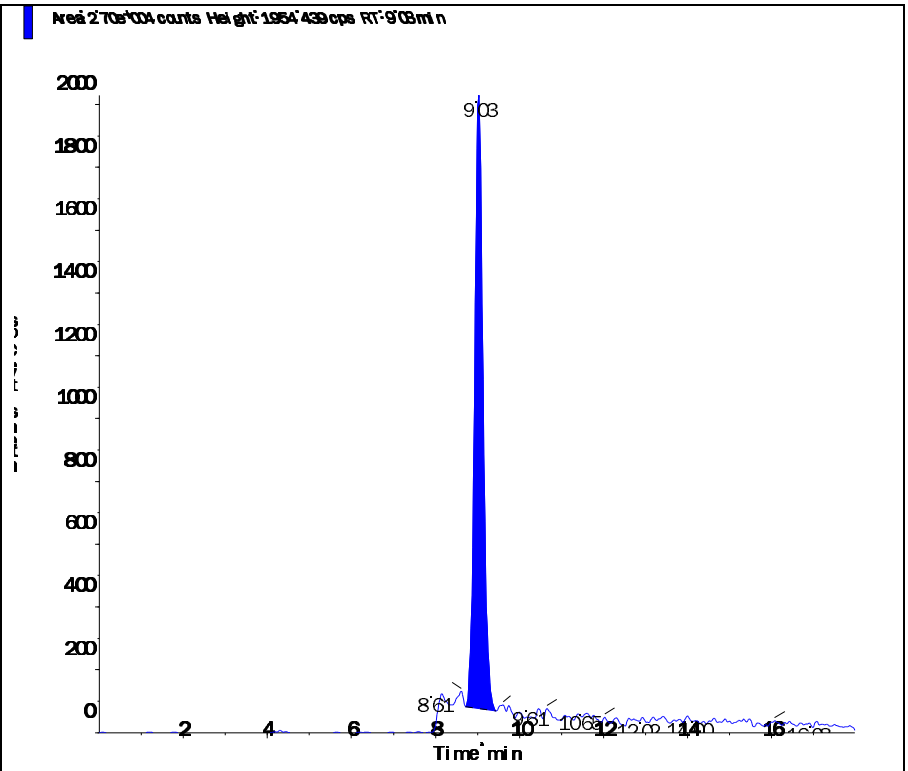
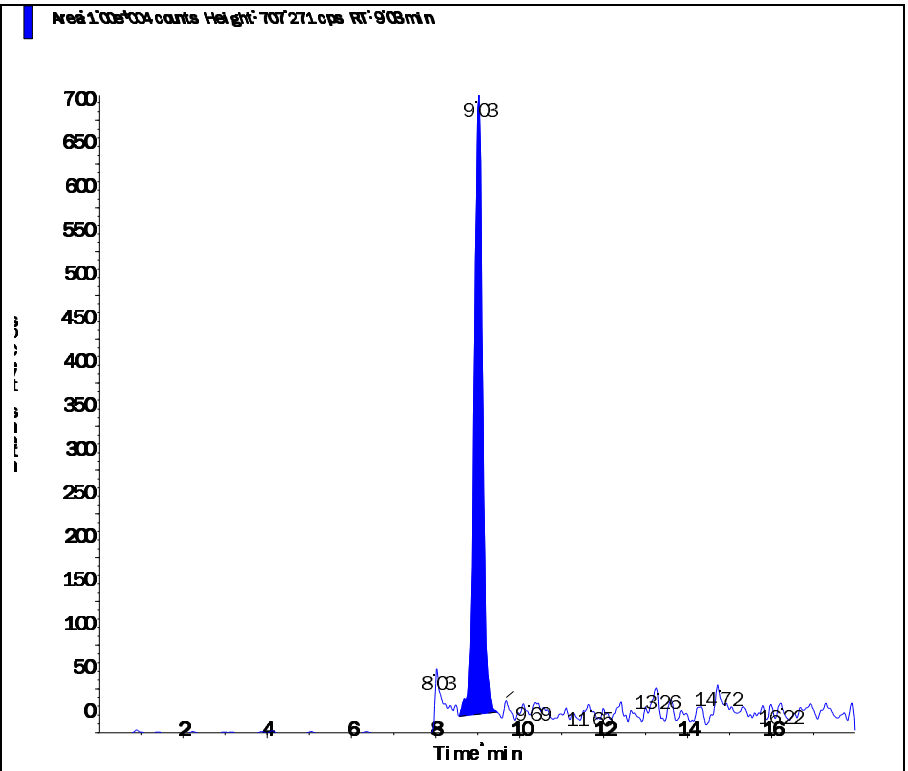
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.120e+05	9.02	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.700e+04	9.03	N/A	0.191
Perchlorate conf	1.000e+04	9.03	N/A	0.197

O18LP (Internal Standard)

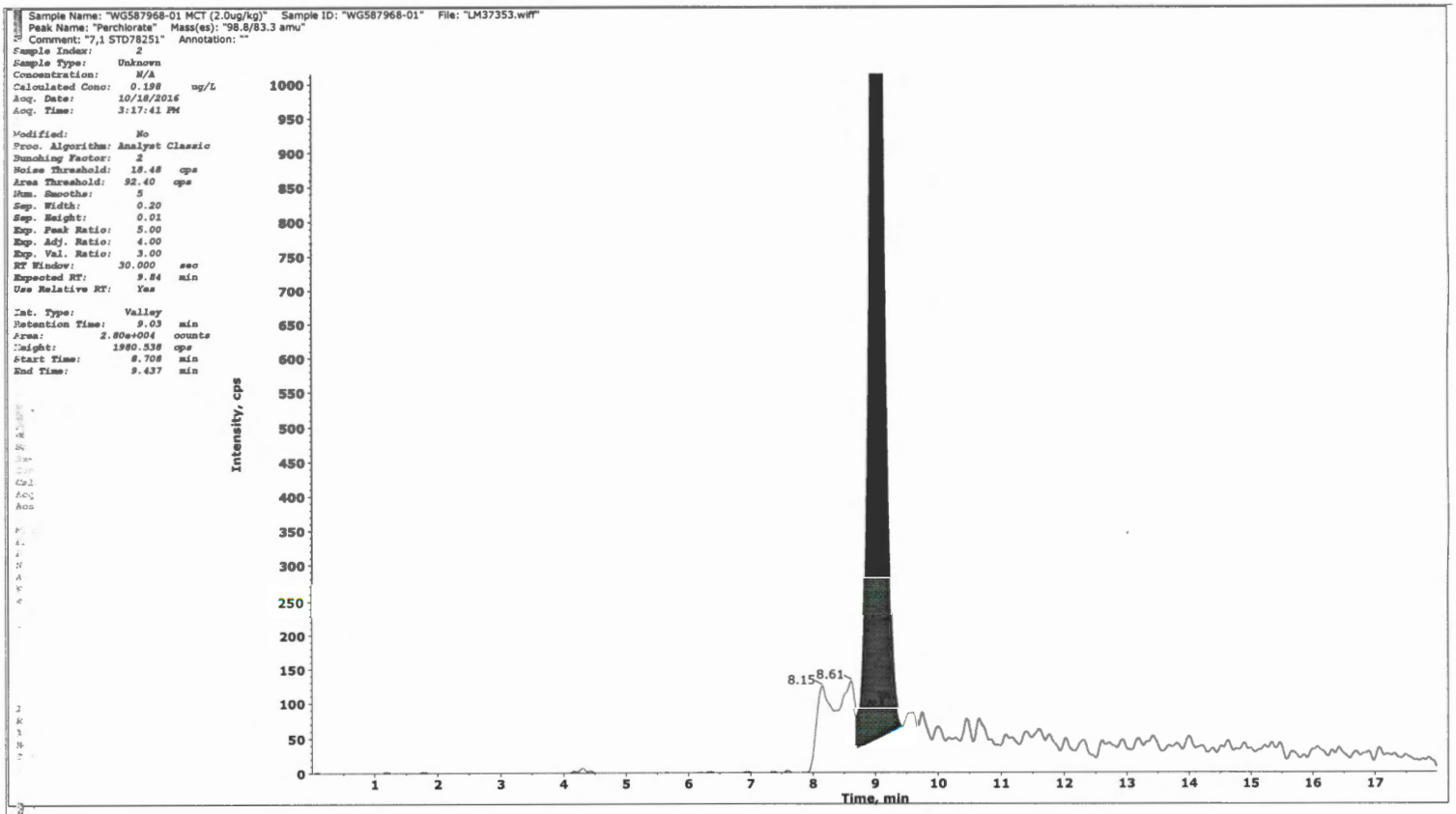
RT (Exp. RT): 9.02(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.03 (9.84) min Calculated conc: 0.191 ng/ml Area Ratio: 0.065 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.03 (9.84) min Calculated conc: 0.197 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	

Sample Name: "WG587968-01 MCT (2.0ug/kg)" Sample ID: "WG587968-01" File: "LM37353.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD78251" Annotation: ""

Sample Index:	2
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.198 ug/L
Acq. Date:	10/18/2016
Acq. Time:	3:17:41 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.03 min
Area:	2.80e+004 counts
Height:	1980.538 cps
Start Time:	8.708 min
End Time:	9.437 min

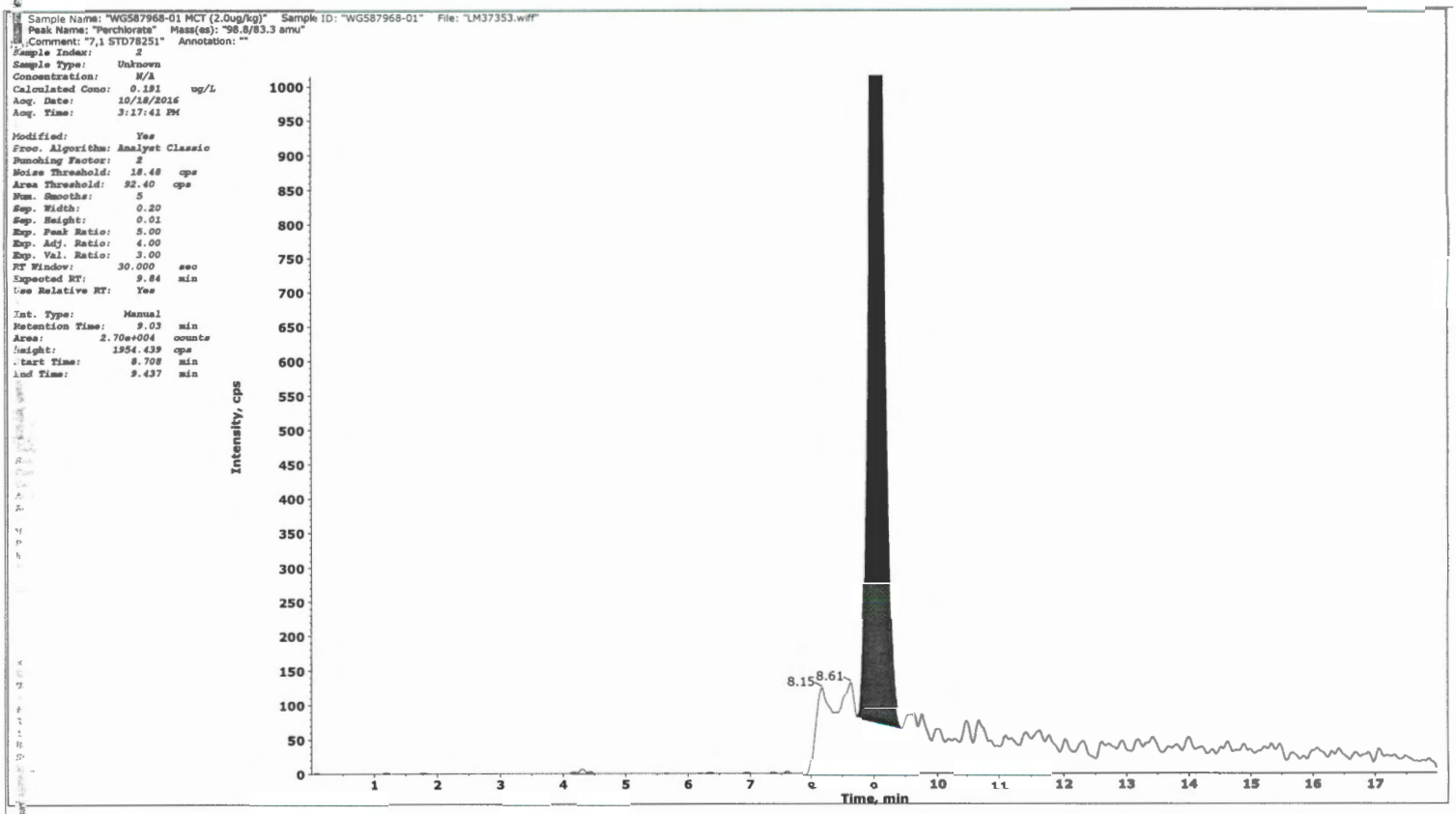


Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 4:27:53 PM
Printing Date: Tuesday, October 18, 2016

Sample Name: "WG587968-01 MCT (2.0ug/kg)" Sample ID: "WG587968-01" File: "LM37353.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD78251" Annotation: ""

Sample Index:	2	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.191	ug/L
Acq. Date:	10/18/2016	
Acq. Time:	3:17:41 PM	
Modified:	Yes	
Proc. Algorithm:	Analyst Classic	
Punching Factor:	2	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Sep. Width:	0.20	
Sep. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.84	min
Use Relative RT:	Yes	
Int. Type:	Manual	
Retention Time:	9.03	min
Area:	2.70e+004	counts
Height:	1954.439	cps
Start Time:	8.708	min
End Time:	9.437	min



#4
JWR/10/18/16

WD
10-20-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.1.1.5 Raw QC Data

Data File	LM37354.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 3:36:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

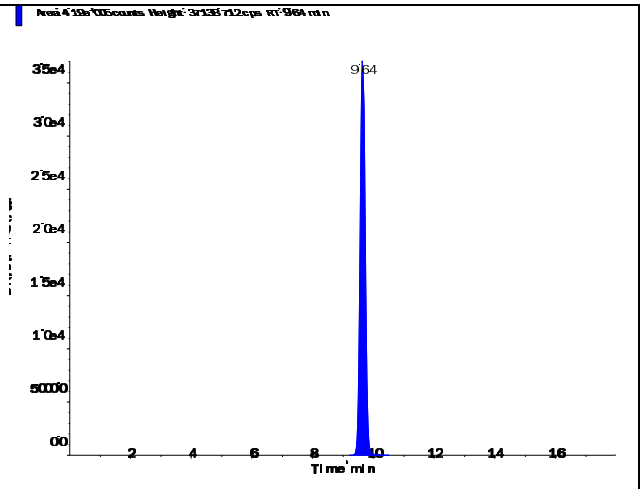
Sample Name	WG587968-02 BLANK	**Injection Vial**	5.00
Data File	LM37354.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 3:36:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

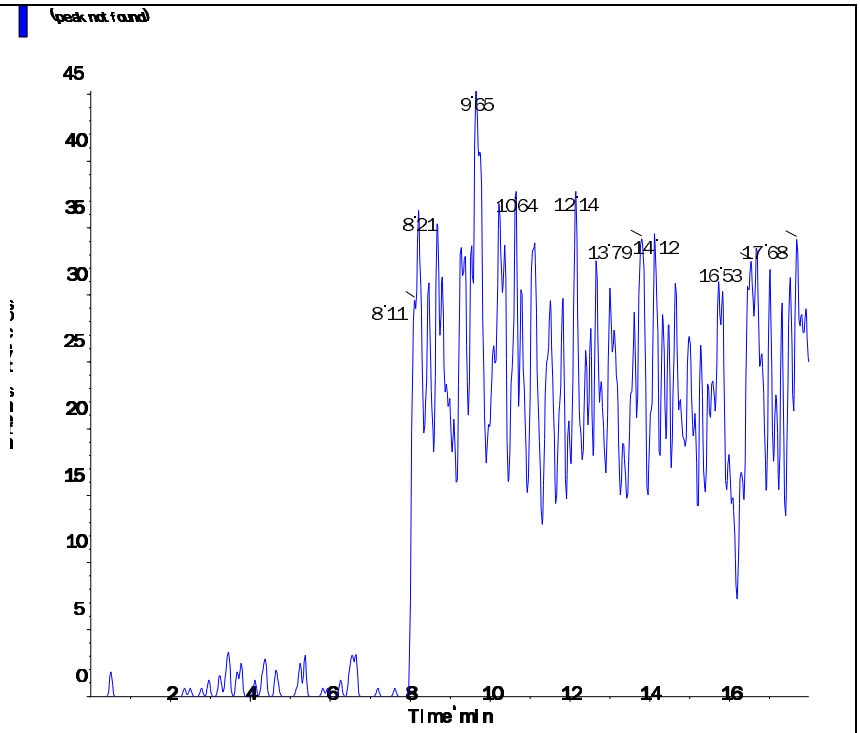
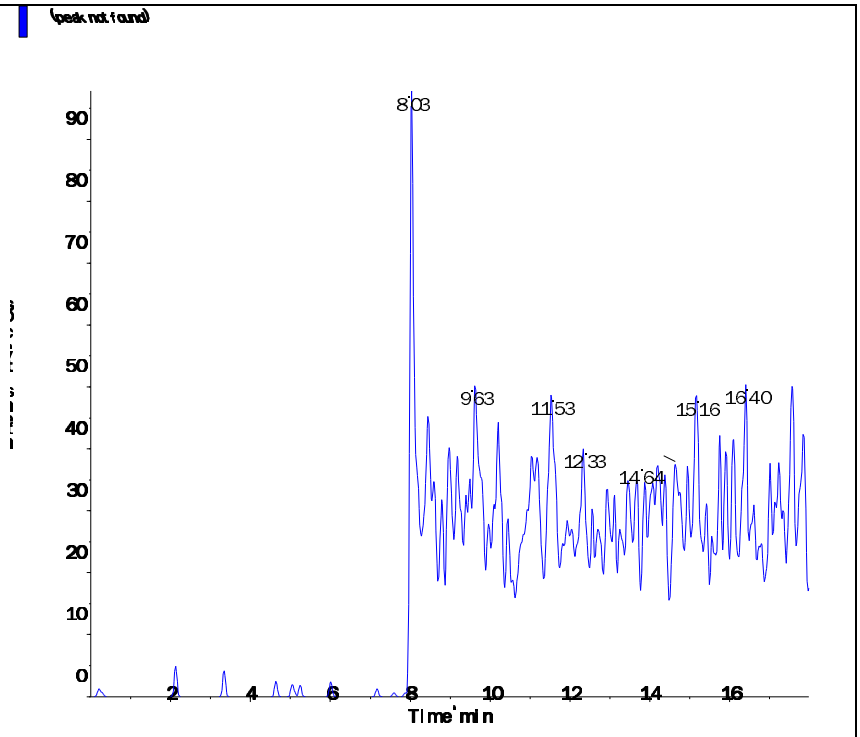
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.190e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	

Data File	LM37355.wiff	**Result Table**	101816_JWR.rdb
Acquisition Date	10/18/2016 3:55:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

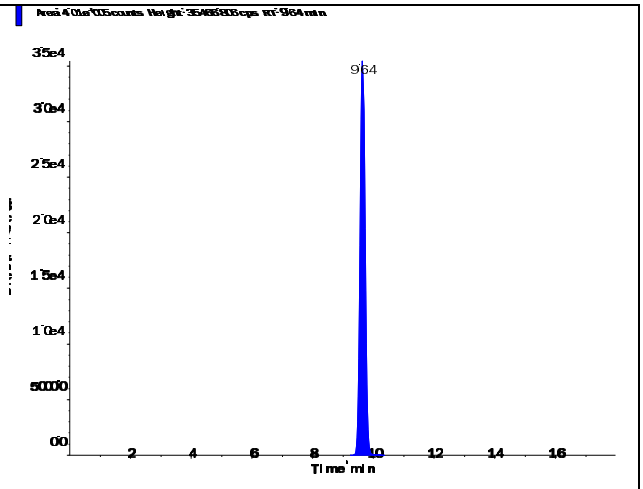
Sample Name	WG587968-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM37355.wiff	**Injection Volume**	10.00
Acquisition Date	10/18/2016 3:55:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	101816_JWR.rdb
Sample ID	WG587968-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD78251	**Weight to Volume**	0.00

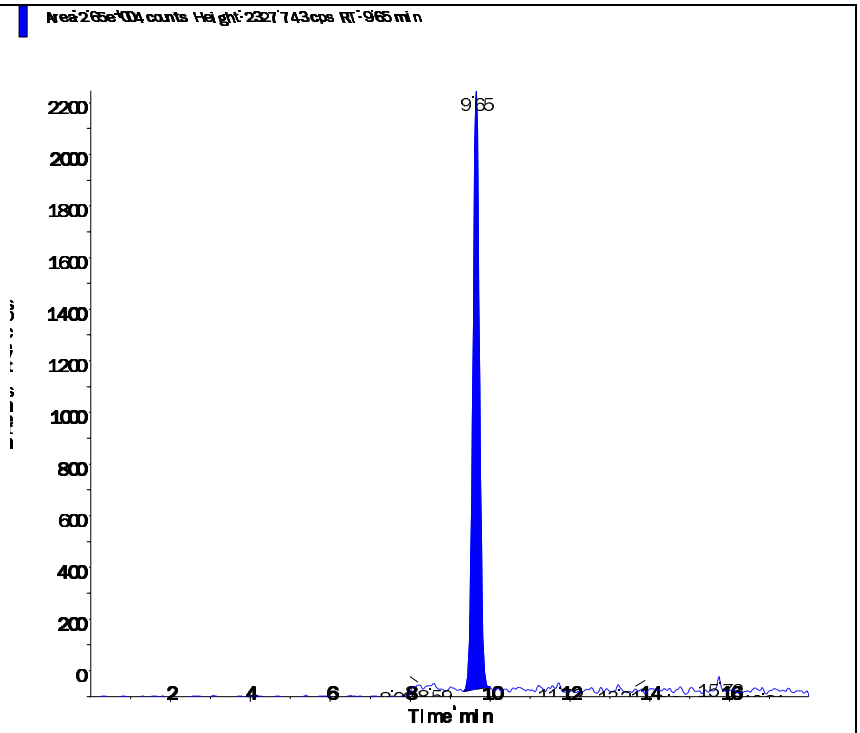
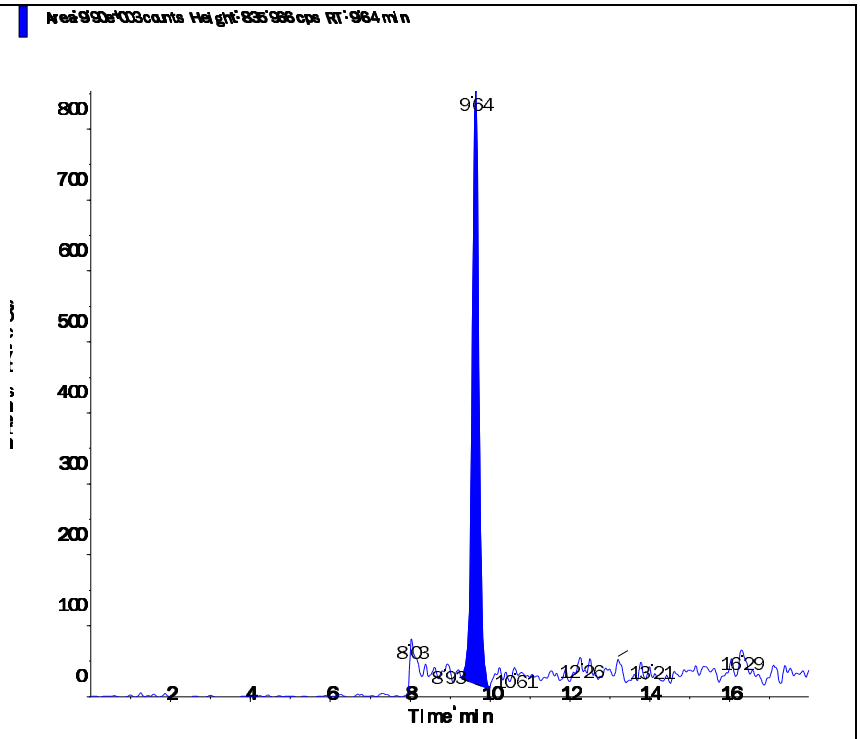
Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.010e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.650e+04	9.65	N/A	0.193
Perchlorate conf	9.900e+03	9.64	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.65 (9.84) min Calculated conc: 0.193 ng/ml Area Ratio: 0.066 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.64 (9.84) min Calculated conc: 0.201 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	

2.2 General Chemistry Data

2.2.1 Percent Solids Data

2.2.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#):WG587520 Analyst:ERP ADT(on):10/13/2015 14:00
Method:D2216-90 Instrument:BAL017 ADT(off):10/14/2016 07:19
SOP:K0003 Rev:14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16100420-01	1.294	21.766	20.444			93.54	
L16100420-02	1.28	18.876	17.578			92.62	
L16100420-03	1.289	21.763	19.891			90.86	
L16100420-06	1.277	22.086	20.277			91.31	
L16100420-07	1.285	22.137	20.894			94.04	
L16100569-01	1.287	19.998	14.722			71.80	
L16100569-02	1.284	14.003	10.582			73.10	
L16100569-03	1.285	20.564	15.247			72.42	
L16100569-04	1.285	20.564	15.247			72.42	
L16100569-05	1.285	20.564	15.247			72.42	
L16100569-06	1.278	11.061	6.841			56.86	
L16100569-07	1.285	10.213	6.948			63.43	
L16100570-01	1.285	11.939	11.63			97.10	
L16100570-02	1.295	10.382	10.036			96.19	
L16100570-03	1.299	11.09	10.782			96.85	
L16100571-01	1.297	11.239	11.049			98.09	
L16100571-02	1.284	10.402	10.211			97.91	
L16100571-03	1.284	12.049	11.849			98.14	
L16100597-01	1.282	24.975	22.121			87.95	
L16100604-01	1.277	16.114	4.29			20.31	
L16100605-01	1.279	8.02	4.411			46.46	
L16100606-01	1.281	28.082	25.696			91.10	
L16100606-02	1.283	27.004	24.998			92.20	
L16100631-01	1.288	25.29	22.855			89.86	
WG587520-01	1.284	10.402	10.211			97.91	2.095
WG587520-02	1.284	12.049	11.849			98.14	1.858
WG587520-03	1.286	10.351	10.167			97.97	2.030
WG587520-04	1.279	10.59	10.412			98.09	1.912

Analyst: Erin Potter

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4974782
Report generated: 10/14/2016 07:24

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
October 20, 2016

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001 – BIO-CHEM TESTING WVDEP 220	002 – REIC Consultants, Inc. WVDEP 060
003 – Sturm Environmental	004 – MICROBAC PITTSBURGH
005 – ES LABORATORIES	006 – ALCOSAN LABORATORIES
007 – ALS LABORATORIES	008 – BENCHMARK LABORATORIES
010 – MICROBAC CHICAGOLAND	AC – AMBER R. CARMICHAEL
ADC – ANTHONY D. CANTER	ADG – APRIL D. GREENE
AED – ALLEN E. DAVIS	ALS – ADRIANE L. STEED
AMA – ALEXANDRA M. ALFRED	AWE – ANDREW W. ESSIG
AZH – AFTER HOURS	BJO – BRIAN J. OGDEN
BKT – BRENDAN TORRENCE	BLG – BRENDA L. GREENWALT
BNB – Brandi N. Bentley	BRG – BRENDA R. GREGORY
CAA – CASSIE A. AUGENSTEIN	CAF – CHERYL A. FLOWERS
CAS – Craig A. Smith	CEB – CHAD E. BARNES
CJQ – Cameron J. Quick	CLC – CHRYS L. CRAWFORD
CLS – CARA L. STRICKLER	CLW – CHARISSA L. WINTERS
CPD – CHAD P. DAVIS	CSH – CHRIS S. HILL
CV – Carl Volkman	DAK – DEAN A. KETELSEN
DCM – DAVID C. MERCKLE	DEV – DAVID E. VANDENBERG
DIH – DEANNA I. HESSON	DLB – DAVID L. BUMGARNER
DLP – DOROTHY L. PAYNE	DSM – DAVID S. MOSSOR
ECL – ERIC C. LAWSON	EMW – ERIC M. WILKEN
ENY – EMILY N. YOAK	ERP – ERIN R. PORTER
FJB – FRANCES J. BOLDEN	HDD – HANAH D. DAWKINS
JDH – JUSTIN D. HESSON	JDS – JARED D. SMITH
JKP – JACQUELINE K. PARSONS	JLD – JESSICA L. DELONG
JLL – JOHN L. LENT	JMW – JEANA M. WHITE
JTP – JOSHUA T. PEMBERTON	JWR – JOHN W. RICHARDS
JWS – JACK W. SHEAVES	JYH – JI Y. HU
KAK – KATHY A. KIRBY	KAT – KATHY A. TUCKER
KDD – Katelyn D. Daley	KDW – KATHRYN D. WELCH
KEB – KATIE E. BARNES	KHR – KIM H. RHODES
KKB – KERRI K. BUCK	KRA – KATHY R. ALBERTSON
KRB – KAELY R. BECKER	KRP – KATHY R. PARSONS
LJH – Lacey J. Hendershot	LKN – LINDA K. NEDEFF
LLS – LARRY L. STEPHENS	LSB – LESLIE S. BUCINA
MAP – MARLA A. PORTER	MBK – MORGAN B. KNOWLTON
MDA – MIKE D. ALBERTSON	MDC – MIKE D. COCHRAN
MES – MARY E. SCHILLING	MMB – MAREN M. BEERY
MRT – MICHELLE R. TAYLOR	MSW – MATT S. WILSON
NPH – Natalie P. Hart	PDM – PIERCE D. MORRIS
PIT – MICROBAC WARRENDALE	QX – QIN XU
RAH – ROY A. HALSTEAD	REK – BOB E. KYER
RLB – BOB BUCHANAN	RNP – RICK N. PETTY
SAV – SARAH A. VANDENBERG	SCB – SARAH C. BOGOLIN
SDC – SHALYN D. CONLEY	SLM – STEPHANIE L. MOSSBURG
SLP – SHERI L. PFALZGRAF	TB – TODD BOYLE
TGF – TIM G. FELTON	TMB – TIFFANY M. BAILEY
TMM – TAMMY M. MORRIS	VC – VICKI COLLIER
WJB – WILL J. BEASLEY	WTD – WADE T. DELONG
XXX – UNAVAILABLE OR SUBCONTRACT	

Microbac Laboratories Inc.
List of Valid Qualifiers
October 20, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
>,H1	Result is greater than the associated numerical value. Sample analysis performed past holding time.
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound

Qualkey: DOD

TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

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 # 122746 MICROBAC *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: **Microbac**
158 Starlight Drive
Marietta, OH 45750

Return Invoice and Results to: **bszymanski@ctlaboratories.com**

CTLaboratories
Brett M Szymanski
1230 Lange Court
Baraboo WI 53913

Date Due: Standard TAT *RUSH TURNAROUND NEEDED? Y or (N) (Circle One)*

Project Name: RADFORD AAP **Project State:** VA

Analytical/QC Criteria: NONE INDICATED STATE (DOD QSM-5.0) NELAP (Circle one) OTHER_____

Report results as EDD? N (Y) (Circle one and indicate type: Excel) Data Deliverable Package LEVEL: IV

CTLabs ID#	Sample Date/Time	Matrix	Sample Description	Analyses / Method		Cost
785308	10/07/2016 0850	SOIL	RFAAP-FGMR-SSI-002A	PERCHLORATE	SW6850	
785309	10/07/2016 0850	SOIL	RFAAP-FGMR-SSI-002B	PERCHLORATE	SW6850	
785310	10/07/2016 0850	SOIL	RFAAP-FGMR-SSI-002C	PERCHLORATE	SW6850	

Relinquished by: Brett Szymanski Date/Time: 10/11/2016 15:50

Received by: _____ Date/Time: _____ Receipt Temperature (C) _____

COMMENTS:

Microbac OVD
Received: 10/12/2016 09:37
By: BRENDA GREGORY
221000092012

Brenda Gregory

REPORT ALL SOLIDS ON A DRY WEIGHT BASIS UNLESS OTHERWISE INDICATED

MICROBAC

Cooler ID 2012

COOLER TEMP >6° C LOG

SAMPLE ID	Bottle 1 °C	Bottle 2 °C	Bottle 3 °C	Bottle 4 °C	Bottle 5 °C	Bottle 6 °C

BLG 10-12-16

pH Exceptions

pH Lot # N/A

SAMPLE ID	Bottle 1	Bottle 2	Bottle 3	Bottle 4	Bottle 5	Bottle 6

BLG 10-12-16

PRESERVATIVE EXCEPTIONS

✓ NONE

__ AS NOTED

BLG 10/12/16

Document Control # 1957
Last 10-07-2016

Issued to: Document Master File

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16100570
Account: 2694
Project: 2694.005
Samples: 3
Due Date: 21-OCT-2016

Samplenum	Container ID	Products
L16100570-01	813809	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-OCT-2016 10:13	CLS		
2	PREP	W1	DIG	13-OCT-2016 13:51	ERP	BRG	
3	STORE	DIG	W1	13-OCT-2016 14:12	BRG	ERP	
4	ANALYZ	W1	SEM	17-OCT-2016 16:50	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-OCT-2016 19:34	JWR	ERP	
6	STORE	SEM	A2	19-OCT-2016 09:47	BRG	JWR	

***Sample extract/digestate/leachate**

Samplenum	Container ID	Products
L16100570-02	813810	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-OCT-2016 10:13	CLS		
2	PREP	W1	DIG	13-OCT-2016 13:51	ERP	BRG	
3	STORE	DIG	W1	13-OCT-2016 14:12	BRG	ERP	
4	ANALYZ	W1	SEM	17-OCT-2016 16:50	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-OCT-2016 19:34	JWR	ERP	
6	STORE	SEM	A2	19-OCT-2016 09:47	BRG	JWR	

***Sample extract/digestate/leachate**

Samplenum	Container ID	Products
L16100570-03	813811	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	12-OCT-2016 10:13	CLS		
2	PREP	W1	DIG	13-OCT-2016 13:51	ERP	BRG	
3	STORE	DIG	W1	13-OCT-2016 14:12	BRG	ERP	
4	ANALYZ	W1	SEM	17-OCT-2016 16:50	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-OCT-2016 19:34	JWR	ERP	
6	STORE	SEM	A2	19-OCT-2016 09:47	BRG	JWR	

***Sample extract/digestate/leachate**

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

CHAIN OF CUSTODY,
PM CONFIRMATION
AND
SAMPLE CONDITION FORMS
DOCUMENTS

Rev 8/2014

CHAIN OF CUSTODY

Company: BSEN
Project Contact: BONNIE MORRIS / JULIA LIU
Telephone: (907)330-9344
Project Name: RFAAP
Project #: 313010-001
Location: RADFORD, VA
Sampled By: PJW

CT LABORATORIES
1230 Lange Court, Baraboo, WI 53913
608-356-2760 Fax 608-356-2766
www.ctlaboratories.com

Folder #: 122704
Company: BERING SEA ENVIRON
Project: RADFORD AAP
Logged By: JLS PM BM

ram:
RCRA SDWA NPDES
Waste Other CERCLA

BSN-1286

Report To:
EMAIL: BMORRIS@BSENV.COM
Company: BSEN
Address: 615 E. 82ND AVE #200 ANCHORAGE, AK
Invoice To:*
EMAIL:
Company: SAME
Address:

*Party listed is responsible for payment of invoice as per CT Laboratories' terms and conditions

Client Special Instructions
PROJECT SPECIFIC SVOC LIST

Matrix:
GW – groundwater SW - surface water WW - wastewater DW - drinking water
S - soil/sediment SL - sludge A - air M - misc/waste

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%

Collection Date	Collection Time	Matrix	Grab/ Comp	Sample #	Sample ID Description	Filtered? Y/N	EXPLOSIVES	METALS	SVOC	PERCHLORATE	Total # Containers	Designated MS/MSD	CT Lab ID # (Lab use only)
							Fill in Spaces with Bottles per Test						
10/4/16	1000	S	COMP	1	RFAAP-FGMR-SSI-001A		X	X	X	X	1		784496
10/4/16	1000	S	COMP	2	RFAAP-FGMR-SSI-001B		X	X	X	X	1		784515
10/4/16	1000	S	COMP	3	RFAAP-FGMR-SSI-001C		X	X	X	X	1		784516

Relinquished By:	Date/Time	Received By:	Date/Time	Lab Use Only
E. Liu	10/5/16 1730			Ice Present (Yes) No
Received by:	Date/Time	Received for Laboratory by:	Date/Time	Temp 3.4 IR Gun # 10
			10/6/16 1406	Cooler # 5438

10/06/16 B2025

CT Laboratories Terms and Conditions

Where a purchaser (Client) places an order for laboratory, consulting or sampling services from CT Laboratories (CTL), CTL shall provide the ordered services pursuant to these Terms and Conditions, and the related Quotation, or as agreed in a negotiated contract. In the absence of a written agreement to the contrary, the Order constitutes an acceptance by the Client of CTL's offer to do business under these Terms and Conditions, and an agreement to be bound by these Terms and Conditions. No contrary or additional terms and conditions expressed in a Client's document shall be deemed to become a part of the contract created upon acceptance of these Terms and Conditions, unless accepted by CTL in advance of the start of the project and in writing.

1. ORDERS AND RECEIPT OF SAMPLES (Sample Acceptance Policy)

1.1 The Client may place the Order (i.e., specify a Scope of Work) either by submitting a purchase order to CTL in writing, by telephone (confirmed in writing) or by negotiated contract. Whichever option the Client selects for placing the Order, the Order shall not be valid unless it contains sufficient specification to enable CTL to carry out the Client's requirements. It is the policy of CT Laboratories that samples not meeting the acceptance criteria, outlined in the NELAC standards and Section 5.8.3.2 of the DOD QSM, will not be accepted by the laboratory or will be qualified on the final report. All samples submitted to the laboratory must: (1) be accompanied by proper, full and complete documentation, including sample identification, location, date and time of collection, the collector's name, type of preservation (if any), type of sample, any special comments concerning the sample and any additional pertinent fields on the chain-of-custody. In the absence of any of the required information, the laboratory will attempt to contact the client to obtain the information; if unable to obtain the necessary information, the final report will be qualified. (2) be labeled appropriately with a unique sample identification written with indelible ink on water resistant labels. If the laboratory cannot determine the identity of a sample, it will be rejected and the client will be contacted for further instructions or resampling. (3) be in an appropriate sample container. If the container is inappropriate, the client will be contacted for further instructions or resampling. If analysis is possible, the final report will be qualified. CT Laboratories can provide a sampling guide containing approved containers and preservations for analytical methods requested. (4) adhere to specified holding times. If samples are received with less than ½ the holding time remaining for the requested test, CT Laboratories will make its best effort to analyze the samples and notify the client. If holding times are exceeded, the final report will be qualified. (5) contain adequate sample volume to perform the necessary testing. If sufficient volume is not present, the sample will be rejected and the client will be contacted for further instructions or resampling. If samples show signs of damage, contamination or inadequate preservation, the client will be notified. If analysis can be performed, the final report will be qualified. If not, the samples will be rejected and the client notified for further instructions or resampling.

1.2 CT Laboratories must be supplied with complete written disclosure of the known or suspected presence of any hazardous substances, as defined by applicable federal or state law. Where any samples which were not accompanied by the required disclosure, cause interruptions in the lab's ability to process work due to contamination of instruments or work areas, the Client will be responsible for the costs of clean up and recovery.

1.3 Prior to Sample Acceptance, the entire risk of loss or damage to samples remains with the Client. In no event will CTL have any responsibility or liability for the action or inaction of any carrier shipping or delivering any sample to or from CTL's premises. Client is responsible to assure that any sample containing any hazardous substance which is to be delivered to CTL's premises will be packaged, labeled, transported and delivered properly and in accordance with applicable laws.

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 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 other, 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 profit, 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

5.1 Data or information provided to CTL or generated by services performed under this agreement shall only become the property of the Client upon receipt in full by CTL of payment for the whole Order. Ownership of any analytical method, QA/QC protocols, software programs or equipment developed by CTL for performance of work will be retained by CTL, and Client shall not disclose such information to any third party.

5.2 Data and sample materials provided by Client or at Client's request, and the result obtained by CTL shall be held in confidence (unless such information is generally available to the public or is in the public domain or Client has failed to pay CTL for all services rendered or is otherwise in breach of these Terms and Conditions), subject to any disclosure required by law or legal process.

5.3 Should the Results delivered by CTL be used by the Client or Client's client, even though subsequently determined not to meet the warranties described in these Terms and Conditions, then the compensation will be adjusted based upon mutual agreement. In no case shall the Client unreasonably withhold CTL's right to independently defend its data.

5.4 CTL reserves the right to subcontract services ordered by the Client to another laboratory or laboratories, if, in CTL's sole judgment, it is reasonably necessary, appropriate or advisable to do so, and with the Client's permission. CTL will in no way be liable for any subcontracted services and all applicable warranties, guarantees and insurance are those of the subcontracted laboratory.

5.5 CTL shall dispose of the Client's samples 30 days after the analytical report is issued, unless instructed to store them for an alternate period of time or to return such samples to the Client, in a manner consistent with U.S. Environmental Protection Agency regulations or other applicable Federal, state or local requirements. Any samples for projects that are canceled or not accepted, or for which return was requested, will be returned to the Client at their own expense. CTL reserves the right to return to the Client any sample or unused portion of a sample that is not within CTL's permitted capability or the capabilities of CTL's designated waste disposal vendor(s).

5.6 Unless a different time period is agreed to in any order under these Terms and Conditions, CTL agrees to retain all records for five (5) years.

5.7 In the event that CTL is required to respond to legal process related to services for Client, Client agrees to reimburse CTL for hourly charges for personnel involved in the response and attorney fees reasonably incurred in obtaining advice concerning the response, preparation to testify, and appearances related to the legal process, travel and all reasonable expenses associated with the litigation.

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). Any Client required changes to these limits or conditions may result in a change in cost to the Client.

7. AUDIT

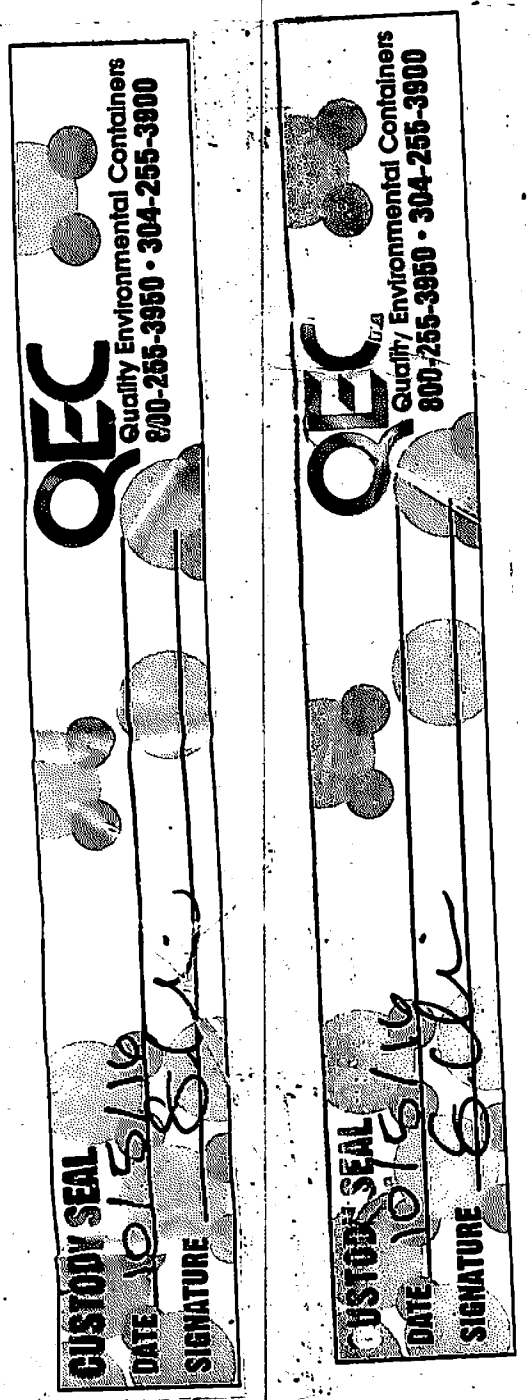
7.1 Upon prior notice to CTL, the Client may audit and inspect CTL's records and accounts covering reimbursable costs related to work done for the Client, for a period of one (1) year after completion of the work. The purpose of any such audit shall be only for verification of such costs, and CTL shall not be required to provide access to cost records where prices are expressed as fixed fees or published unit prices

code 5438

10/06/16 1320

jls

3 c/o, ir#10



ORIGIN ID:WALA (757) 256-6281
JULIA LIU

615 E 82ND AVE STE 200

ANCHORAGE, AK 99518
UNITED STATES US

SHIP DATE: 05OCT16
ACTWGT: 36.00 LB
CAD: 6992832/SSF01722
DIMS: 24x14x13 IN

BILL THIRD PARTY

Part # 156297-435 RIT2 10/15

TO CT LABORATORIES

1230 LANGE CT

BARABOO WI 53913

(608) 356-2760 REF:

INV:

PO: DEPT:

FedEx Express

THU - 06 OCT 3:00P

TRK# 0201 7842 7427 3548

STANDARD OVERNIGHT

XH MSNA

53913

WI-US MSN

Folder #: 122704

PM LOGIN CONFIRMATION

Contract #: 2842

Company: BERING SEA ENVIRONMENTAL **Project:** RADFORD AAP **Proj #:** 313010-001

Project Phase: **PO Number:** BSN-1286 **Invoice #:** 123240

Project Manager: *BMS* **Date Received:** 10/06/16 **Log Date:** 10/06/2016

Report To: S. JULIA LIU CC:
615 E. 82ND AVE
#200
ANCHORAGE, AK 99518
Phone: 757-256-6281: Fax:
Rep. E-Mail SLIU@BSENV.COM

Invoice To :S. JULIA LIU CC: SLIU@BSENV.COM
615 E. 82ND AVE
#200
ANCHORAGE, AK 99518
Phone: Fax:
EMail:

Collected By:
Collector's Phone: 757-256-6281

Arrival Temperature: 3.4 oC

SAMPLE #: 784496 **DESCR: RFAAP-FGMR-SSI-001A** **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED: 10/04/2016** **Time: 1000**

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
8	SOLIDS,PERCENT	(EPA 8000C)				10/18/2016	10/18/2016		Logged
878	SUB PERCHLORATE	(SW6850)				11/01/2016	10/18/2016		Logged
946	HOMOGEN/M.I. PREP	(LAB SOP)					10/18/2016		Logged
1185	ICP METALS LIST 2 QSM 5.0	(EPA 6010C)				04/02/2017	10/18/2016		NeedPrep
			Lithium						
			Strontium						
			Tin						
1191	ICP QSM 5.0	(EPA 6010C)				04/02/2017	10/18/2016		NeedPrep
			Antimony						
			Beryllium						
			Cadmium						
			Chromium						
			Cobalt						

Folder #: 122704 **Company:** *BERING SEA ENVIRONMENTAL* **Project:** RADFORD AAP

SAMPLE #: 784496 **DESCR:** RFAAP-FGMR-SSI-001A **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED:** 10/04/2016 **Time:** 1000

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
			Copper						
			Lead						
			Manganese						
			Molybdenum						
			Nickel						
			Selenium						
			Silver						
			Thallium						
			Vanadium						
			Zinc						
1206	MERCURY QSM 5.0	(EPA 7471B)				11/01/2016	10/18/2016		NeedPrep
1238	SVOC 8270 QSM 5	(EPA 8270D)			*Y*		10/18/2016		NeedPrep
1240	8330B EXPLOSIVES QSM 5	(EPA 8330B)					10/18/2016		NeedPrep

SAMPLE #: 784515 **DESCR:** RFAAP-FGMR-SSI-001B **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED:** 10/04/2016 **Time:** 1000

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
8	SOLIDS,PERCENT	(EPA 8000C)				10/18/2016	10/18/2016		Logged
878	SUB PERCHLORATE	(SW6850)				11/01/2016	10/18/2016		Logged
946	HOMOGEN/M.I. PREP	(LAB SOP)					10/18/2016		Logged
1185	ICP METALS LIST 2 QSM 5.0	(EPA 6010C)				04/02/2017	10/18/2016		NeedPrep
			Lithium						
			Strontium						
			Tin						
1191	ICP QSM 5.0	(EPA 6010C)				04/02/2017	10/18/2016		NeedPrep
			Antimony						
			Beryllium						

Folder #: 122704 **Company:** *BERING SEA ENVIRONMENTAL* **Project:** RADFORD AAP

SAMPLE #: 784515 **DESCR:** RFAAP-FGMR-SSI-001B **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED:** 10/04/2016 **Time:** 1000

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
			Cadmium						
			Chromium						
			Cobalt						
			Copper						
			Lead						
			Manganese						
			Molybdenum						
			Nickel						
			Selenium						
			Silver						
			Thallium						
			Vanadium						
			Zinc						
1206	MERCURY QSM 5.0	(EPA 7471B)				11/01/2016	10/18/2016		NeedPrep
1238	SVOC 8270 QSM 5	(EPA 8270D)			*Y*		10/18/2016		NeedPrep
1240	8330B EXPLOSIVES QSM 5	(EPA 8330B)					10/18/2016		NeedPrep

SAMPLE #: 784516 **DESCR:** RFAAP-FGMR-SSI-001C **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED:** 10/04/2016 **Time:** 1000

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
8	SOLIDS,PERCENT	(EPA 8000C)				10/18/2016	10/18/2016		Logged
878	SUB PERCHLORATE	(SW6850)				11/01/2016	10/18/2016		Logged
946	HOMOGEN/M.I. PREP	(LAB SOP)					10/18/2016		Logged
1185	ICP METALS LIST 2 QSM 5.0	(EPA 6010C)				04/02/2017	10/18/2016		NeedPrep
			Lithium						
			Strontium						
			Tin						

Folder #: 122704 **Company:** *BERING SEA ENVIRONMENTAL* **Project:** RADFORD AAP

SAMPLE #: 784516 **DESCR:** RFAAP-FGMR-SSI-001C **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED:** 10/04/2016 **Time:** 1000

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
1191	ICP QSM 5.0	(EPA 6010C)				04/02/2017	10/18/2016		NeedPrep
			Antimony						
			Beryllium						
			Cadmium						
			Chromium						
			Cobalt						
			Copper						
			Lead						
			Manganese						
			Molybdenum						
			Nickel						
			Selenium						
			Silver						
			Thallium						
			Vanadium						
			Zinc						
1206	MERCURY QSM 5.0	(EPA 7471B)				11/01/2016	10/18/2016		NeedPrep
1238	SVOC 8270 QSM 5	(EPA 8270D)			*Y*		10/18/2016		NeedPrep
1240	8330B EXPLOSIVES QSM 5	(EPA 8330B)					10/18/2016		NeedPrep

Folder #: 122704 **Company:** *BERING SEA ENVIRONMENTAL* **Project:** RADFORD AAP

Invoice Number: 123240 **Preliminary Invoice Estimate:** $ 1,452.00

Item	Matrix	Quantity	Price	Expedited TAT Surcharge	Total
8330B EXPLOSIVES QSM 5	SOIL	3	$ 95.00	0.00	$ 285.00
HOMOGEN/M.I. PREP	SOIL	3	$ 50.00	0.00	$ 150.00
ICP METALS LIST 2 QSM 5.0 Lithium	SOIL	3	$ 4.00	0.00	$ 12.00
ICP METALS LIST 2 QSM 5.0 Strontium	SOIL	3	$ 4.00	0.00	$ 12.00
ICP METALS LIST 2 QSM 5.0 Tin	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Antimony	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Beryllium	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Cadmium	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Chromium	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Cobalt	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Copper	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Lead	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Manganese	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Molybdenum	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Nickel	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Selenium	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Silver	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Thallium	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Vanadium	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Zinc	SOIL	3	$ 4.00	0.00	$ 12.00
MERCURY QSM 5.0	SOIL	3	$ 23.00	0.00	$ 69.00
SOLIDS,PERCENT	SOIL	3	$ 0.00	0.00	$ 0.00
SUB PERCHLORATE	SOIL	3	$ 104.00	0.00	$ 312.00
SVOC 8270 QSM 5	SOIL	3	$ 140.00	0.00	$ 420.00
Temporary Fuel Surcharge on lab supplies and services (if applicable):					$ 0.00

Bottle Information

Container	# Containers	Tests
FOR LABEL ONLY	**6**	SOIL PREP/MIX
SOLIDS	**3**	%SOL,HG,ICP
UNPRES GL	**3**	8270,EXPL,Perchlorate

CT LABORATORIES
delivering more than data from your environmental analyses

Sample Condition Report

Folder #: 122704
Client: BERING SEA ENVIRONMENTAL

Print Date / Time: 10/06/2016 14:11
Received Date / Time / By: 10/06/2016 13:20 JLS

Project Name: RADFORD AAP
Project Phase:

Log-In Date / Time / By: 10/06/2016 14:06 JLS
Project #: 313010-001 PM: BMS

Coolers: 5438
Custody Seals Present : **Y**

Temperature: 3.4 C On Ice: **Y**
COC Present:? **Y** Complete? **Y**

Seal Intact? **Y**
Ship Method: FEDEX EXPRESS
Adequate Packaging: **Y**

Numbers: DATED AND SIGNED
Tracking Number: 784274273548
Temp Blank Enclosed? **Y**

Notes: THE SAMPLES WERE RECEIVED IN GOOD CONDITION ON ICE.

TWO CUSTODY SEALS WERE PRESENT AND INTACT UPON RECEIPT, BOTH DATED 10/5/16 AND SIGNED.

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
784496 RFAAP-FGMR-SSI-001A				
	SOLIDS	1	/	%SOL,HG,ICP
	Total # of Containers of Type	**(*SOLIDS*) = 1**		
784496 RFAAP-FGMR-SSI-001A				
	UNPRES GL	1	/	8270,EXPL,Perchlorate
	Total # of Containers of Type	**(*UNPRES GL*) = 1**		
784496 RFAAP-FGMR-SSI-001A				
	FOR LABEL ONLY	1	/	SOIL PREP/MIX
	FOR LABEL ONLY	1	/	SOIL PREP/MIX
	Total # of Containers of Type	**(*FOR LABEL ONLY*) = 2**		

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
784515 RFAAP-FGMR-SSI-001B				
	SOLIDS	1	/	%SOL,HG,ICP
	Total # of Containers of Type	**(*SOLIDS*) = 1**		
784515 RFAAP-FGMR-SSI-001B				
	UNPRES GL	1	/	8270,EXPL,Perchlorate
	Total # of Containers of Type	**(*UNPRES GL*) = 1**		
784515 RFAAP-FGMR-SSI-001B				
	FOR LABEL ONLY	1	/	SOIL PREP/MIX
	FOR LABEL ONLY	1	/	SOIL PREP/MIX
	Total # of Containers of Type	**(*FOR LABEL ONLY*) = 2**		

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests

784516	RFAAP-FGMR-SSI-001C				
		SOLIDS	1	/	%SOL,HG,ICP
		Total # of Containers of Type		**(*SOLIDS*) = 1**	
784516	RFAAP-FGMR-SSI-001C				
		UNPRES GL	1	/	8270,EXPL,Perchlorate
		Total # of Containers of Type		**(*UNPRES GL*) = 1**	
784516	RFAAP-FGMR-SSI-001C				
		FOR LABEL ONLY	1	/	SOIL PREP/MIX
		FOR LABEL ONLY	1	/	SOIL PREP/MIX
		Total # of Containers of Type		**(*FOR LABEL ONLY*) = 2**	

Condition Code	*Condition Description*
1	Sample Received OK

Rev 8/2014

CHAIN OF CUSTODY

Page 1 of 1

Company: BSEN
Project Contact: BONNIE MORRIS/ JULIA LIU
Telephone: (907)330-9344
Project Name: RFAAP
Project #: 313010-09
Location: RADFORD, VA
Sampled By: PJW

CT LABORATORIES
1230 Lange Court, Baraboo, WI 53913
608-356-2760 Fax 608-356-2766
www.ctlaboratories.com

Folder #: 122724
Company: BERING SEA ENVIRON
Project: RADFORD AAP
Logged By: BVA PM BVA

Program:
QSM RCRA SDWA NPDES
Solid Waste Other CERCLA

PO # BSN-1286

Report To:
EMAIL: BMORRIS@BSEN.COM
Company: BSEN
Address: 645 E. 82ND AVE #200 ANCHORAGE AK 99518
Invoice To:*
EMAIL:
Company: SAME
Address:

*Party listed is responsible for payment of invoice as per CT Laboratories' terms and conditions

Client Special Instructions

PROJECT SPECIFIC SVOC LIST

Matrix:
GW – groundwater SW - surface water WW - wastewater DW - drinking water
S - soil/sediment SL - sludge A - air M - misc/waste

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%

Collection Date	Collection Time	Matrix	Grab/ Comp	Sample #	Sample ID Description	Filtered? Y/N	ANALYSES REQUESTED: EXPLOSIVES	METALS	SVOC	PERCHLORATE	Total # Containers	Designated MS/MSD	CT Lab ID # (Lab use only)
							Fill in Spaces with Bottles per Test						
10/6/16	1505	S	GRAB	1	RFAAP-FGMR-SSD-001		X	X	X	X	3		784783
	1515			2	RFAAP-FGMR-DUP1		X	X	X	X	3		784852
	1530			3	RFAAP-FGMR-SSD-002		X	X	X	X	9	X	784853
	1550			4	RFAAP-FGMR-SSD-003		X	X	X	X	3		784854
	1610			5	RFAAP-FGMR-SSD-004		X	X	X	X	3		784855

Relinquished By:	Date/Time	Received By:	Date/Time	Lab Use Only
	10/6/16 1720			Ice Present Yes No
Received by:	Date/Time	Received for Laboratory by:	Date/Time	Temp 1.2 IR Gun # 10
			10-7-16 1046	Cooler # 5428 1015

CT Laboratories Terms and Conditions

Where a purchaser (Client) places an order for laboratory, consulting or sampling services from CT Laboratories (CTL), CTL shall provide the ordered services pursuant to these Terms and Conditions, and the related Quotation, or as agreed in a negotiated contract. In the absence of a written agreement to the contrary, the Order constitutes an acceptance by the Client of CTL's offer to do business under these Terms and Conditions, and an agreement to be bound by these Terms and Conditions. No contrary or additional terms and conditions expressed in a Client's document shall be deemed to become a part of the contract created upon acceptance of these Terms and Conditions, unless accepted by CTL in advance of the start of the project and in writing.

1. ORDERS AND RECEIPT OF SAMPLES (Sample Acceptance Policy)

1.1 The Client may place the Order (i.e., specify a Scope of Work) either by submitting a purchase order to CTL in writing, by telephone (confirmed in writing) or by negotiated contract. Whichever option the Client selects for placing the Order, the Order shall not be valid unless it contains sufficient specification to enable CTL to carry out the Client's requirements. It is the policy of CT Laboratories that samples not meeting the acceptance criteria, outlined in the NELAC standards and Section 5.8.3.2 of the DOD QSM, will not be accepted by the laboratory or will be qualified on the final report. All samples submitted to the laboratory must: (1) be accompanied by proper, full and complete documentation, including sample identification, location, date and time of collection, the collector's name, type of preservation (if any), type of sample, any special comments concerning the sample and any additional pertinent fields on the chain-of-custody. In the absence of any of the required information, the laboratory will attempt to contact the client to obtain the information; if unable to obtain the necessary information, the final report will be qualified. (2) be labeled appropriately with a unique sample identification written with indelible ink on water resistant labels. If the laboratory cannot determine the identity of a sample, it will be rejected and the client will be contacted for further instructions or resampling. (3) be in an appropriate sample container. If the container is inappropriate, the client will be contacted for further instructions or resampling. If analysis is possible, the final report will be qualified. CT Laboratories can provide a sampling guide containing approved containers and preservations for analytical methods requested. (4) adhere to specified holding times. If samples are received with less than ½ the holding time remaining for the requested test, CT Laboratories will make its best effort to analyze the samples and notify the client. If holding times are exceeded, the final report will be qualified. (5) contain adequate sample volume to perform the necessary testing. If sufficient volume is not present, the sample will be rejected and the client will be contacted for further instructions or resampling. If samples show signs of damage, contamination or inadequate preservation, the client will be notified. If analysis can be performed, the final report will be qualified. If not, the samples will be rejected and the client notified for further instructions or resampling.

1.2 CT Laboratories must be supplied with complete written disclosure of the known or suspected presence of any hazardous substances, as defined by applicable federal or state law. Where any samples which were not accompanied by the required disclosure, cause interruptions in the lab's ability to process work due to contamination of instruments or work areas, the Client will be responsible for the costs of clean up and recovery.

1.3 Prior to Sample Acceptance, the entire risk of loss or damage to samples remains with the Client. In no event will CTL have any responsibility or liability for the action or inaction of any carrier shipping or delivering any sample to or from CTL's premises. Client is responsible to assure that any sample containing any hazardous substance which is to be delivered to CTL's premises will be packaged, labeled, transported and delivered properly and in accordance with applicable laws.

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 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 those 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 ½ 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 profit, 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

5.1 Data or information provided to CTL or generated by services performed under this agreement shall only become the property of the Client upon receipt in full by CTL of payment for the whole Order. Ownership of any analytical method, QA/QC protocols, software programs or equipment developed by CTL for performance of work will be retained by CTL, and Client shall not disclose such information to any third party.

5.2 Data and sample materials provided by Client or at Client's request, and the result obtained by CTL shall be held in confidence (unless such information is generally available to the public or is in the public domain or Client has failed to pay CTL for all services rendered or is otherwise in breach of these Terms and Conditions), subject to any disclosure required by law or legal process.

5.3 Should the Results delivered by CTL be used by the Client or Client's client, even though subsequently determined not to meet the warranties described in these Terms and Conditions, then the compensation will be adjusted based upon mutual agreement. In no case shall the Client unreasonably withhold CTL's right to independently defend its data.

5.4 CTL reserves the right to subcontract services ordered by the Client to another laboratory or laboratories, if, in CTL's sole judgment, it is reasonably necessary, appropriate or advisable to do so, and with the Client's permission. CTL will in no way be liable for any subcontracted services and all applicable warranties, guarantees and insurance are those of the subcontracted laboratory.

5.5 CTL shall dispose of the Client's samples 30 days after the analytical report is issued, unless instructed to store them for an alternate period of time or to return such samples to the Client, in a manner consistent with U.S. Environmental Protection Agency regulations or other applicable Federal, state or local requirements. Any samples for projects that are canceled or not accepted, or for which return was requested, will be returned to the Client at their own expense. CTL reserves the right to return to the Client any sample or unused portion of a sample that is not within CTL's permitted capability or the capabilities of CTL's designated waste disposal vendor(s).

5.6 Unless a different time period is agreed to in any order under these Terms and Conditions, CTL agrees to retain all records for five (5) years.

5.7 In the event that CTL is required to respond to legal process related to services for Client, Client agrees to reimburse CTL for hourly charges for personnel involved in the response and attorney fees reasonably incurred in obtaining advice concerning the response, preparation to testify, and appearances related to the legal process, travel and all reasonable expenses associated with the litigation.

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)., 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

Cooler Receipt Form

Ice Present (YES) NO

Temperature 1.2

IR Gun # 10

Initials BA

Date 10-7-16 Time 1015

Cooler #: 5428

ORIGIN ID:WALA (757) 256-6281
JULIA LIU
BSEN
615 E 82ND AVE STE 200

ANCHORAGE, AK 99518
UNITED STATES US

SHIP DATE: 06OCT16
ACTWGT: 33.30 LB
CAD: 6997114/SSFO1722
DIMS: 24x15x14 IN

BILL THIRD PARTY

TO

CT LABORATORIES
1230 LANGE CT

BARABOO WI 53913
(608) 356-2760
INV:
PO:
REF:
DEPT:

FedEx Express

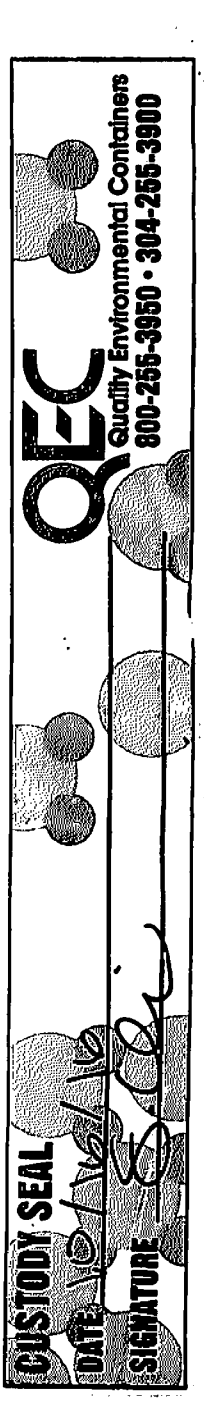
TRK# 0201 7842 8503 0135

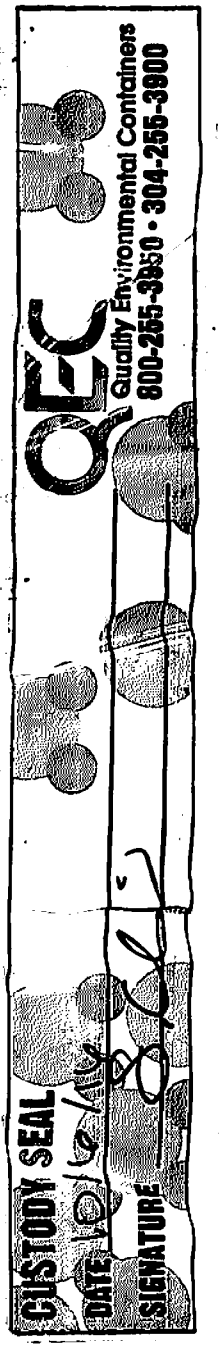
FRI - 07 OCT 3:00P
STANDARD OVERNIGHT

XH MSNA

53913
WI-US MSN

Part # 156297-435 REV 07/11





Folder #: 122724

PM LOGIN CONFIRMATION

Contract #: 2842

Company: BERING SEA ENVIRONMENTAL **Project:** RADFORD AAP **Proj #:** 313010-001

Project Phase: **PO Number:** BSN-1286 **Invoice #:** 123261

Project Manager: *BMS* **Date Received:** 10/07/16 **Log Date:** 10/07/2016

Report To: S. JULIA LIU CC:
615 E. 82ND AVE
#200
ANCHORAGE, AK 99518
Phone: 757-256-6281: Fax:
Rep. E-Mail SLIU@BSENV.COM

Invoice To :S. JULIA LIU CC: SLIU@BSENV.COM
615 E. 82ND AVE
#200
ANCHORAGE, AK 99518
Phone: Fax:
EMail:

Collected By:
Collector's Phone: 757-256-6281

Arrival Temperature: 1.2 oC

SAMPLE #: 784783 **DESCR: RFAAP-FGMR-SSD-001** **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED: 10/06/2016** **Time: 1505**

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
8	SOLIDS,PERCENT	(EPA 8000C)				10/20/2016	10/19/2016		Logged
878	SUB PERCHLORATE	(SW6850)				11/03/2016	10/19/2016		Logged
1185	ICP METALS LIST 2 QSM 5.(	(EPA 6010C)				04/04/2017	10/19/2016		NeedPrep
			Lithium						
			Strontium						
			Tin						
1191	ICP QSM 5.0	(EPA 6010C)				04/04/2017	10/19/2016		NeedPrep
			Antimony						
			Beryllium						
			Cadmium						
			Chromium						
			Cobalt						
			Copper						

Folder #: 122724 **Company:** *BERING SEA ENVIRONMENTAL* **Project:** RADFORD AAP

SAMPLE #: 784783 **DESCR:** RFAAP-FGMR-SSD-001 **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED:** 10/06/2016 **Time:** 1505

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
			Lead						
			Manganese						
			Molybdenum						
			Nickel						
			Selenium						
			Silver						
			Thallium						
			Vanadium						
			Zinc						
1206	MERCURY QSM 5.0	(EPA 7471B)				11/03/2016	10/19/2016		NeedPrep
1238	SVOC 8270 QSM 5	(EPA 8270D)			***Y***		10/19/2016		NeedPrep
1240	8330B EXPLOSIVES QSM 5	(EPA 8330B)					10/19/2016		NeedPrep

SAMPLE #: 784852 **DESCR:** RFAAP-FGMR-DUP1 **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED:** 10/06/2016 **Time:** 1515

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
8	SOLIDS,PERCENT	(EPA 8000C)				10/20/2016	10/19/2016		Logged
878	SUB PERCHLORATE	(SW6850)				11/03/2016	10/19/2016		Logged
1185	ICP METALS LIST 2 QSM 5.0	(EPA 6010C)				04/04/2017	10/19/2016		NeedPrep
			Lithium						
			Strontium						
			Tin						
1191	ICP QSM 5.0	(EPA 6010C)				04/04/2017	10/19/2016		NeedPrep
			Antimony						
			Beryllium						
			Cadmium						
			Chromium						

Folder #: 122724 **Company:** *BERING SEA ENVIRONMENTAL* **Project:** RADFORD AAP

SAMPLE #: 784852 **DESCR:** RFAAP-FGMR-DUP1 **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED:** 10/06/2016 **Time:** 1515

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
			Cobalt						
			Copper						
			Lead						
			Manganese						
			Molybdenum						
			Nickel						
			Selenium						
			Silver						
			Thallium						
			Vanadium						
			Zinc						
1206	MERCURY QSM 5.0	(EPA 7471B)				11/03/2016	10/19/2016		NeedPrep
1238	SVOC 8270 QSM 5	(EPA 8270D)			***Y***		10/19/2016		NeedPrep
1240	8330B EXPLOSIVES QSM 5	(EPA 8330B)					10/19/2016		NeedPrep

SAMPLE #: 784853 **DESCR:** RFAAP-FGMR-SSD-002 **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED:** 10/06/2016 **Time:** 1530

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
8	SOLIDS,PERCENT	(EPA 8000C)			***DESIGNATED MATRIX SPIKE***	10/20/2016	10/19/2016		Logged
878	SUB PERCHLORATE	(SW6850)			***DESIGNATED MATRIX SPIKE***	11/03/2016	10/19/2016		Logged
1185	ICP METALS LIST 2 QSM 5.0	(EPA 6010C)			***DESIGNATED MATRIX SPIKE***	04/04/2017	10/19/2016		NeedPrep
			Lithium						
			Strontium						
			Tin						
1191	ICP QSM 5.0	(EPA 6010C)			***DESIGNATED MATRIX SPIKE***	04/04/2017	10/19/2016		NeedPrep
			Antimony						
			Beryllium						

Folder #: 122724 **Company:** *BERING SEA ENVIRONMENTAL* **Project:** RADFORD AAP

SAMPLE #: 784853 **DESCR:** RFAAP-FGMR-SSD-002 **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED:** 10/06/2016 **Time:** 1530

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
			Cadmium						
			Chromium						
			Cobalt						
			Copper						
			Lead						
			Manganese						
			Molybdenum						
			Nickel						
			Selenium						
			Silver						
			Thallium						
			Vanadium						
			Zinc						
1206	MERCURY QSM 5.0	(EPA 7471B)			***DESIGNATED MATRIX SPIKE***	11/03/2016	10/19/2016		NeedPrep
1238	SVOC 8270 QSM 5	(EPA 8270D)			***Y*** ***DESIGNATED MATRIX SPIKE***		10/19/2016		NeedPrep
1240	8330B EXPLOSIVES QSM 5	(EPA 8330B)			***DESIGNATED MATRIX SPIKE***		10/19/2016		NeedPrep

SAMPLE #: 784854 **DESCR:** RFAAP-FGMR-SSD-003 **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED:** 10/06/2016 **Time:** 1550

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
8	SOLIDS,PERCENT	(EPA 8000C)				10/20/2016	10/19/2016		Logged
878	SUB PERCHLORATE	(SW6850)				11/03/2016	10/19/2016		Logged
1185	ICP METALS LIST 2 QSM 5.0	(EPA 6010C)				04/04/2017	10/19/2016		NeedPrep
			Lithium						
			Strontium						
			Tin						
1191	ICP QSM 5.0	(EPA 6010C)				04/04/2017	10/19/2016		NeedPrep

Folder #: 122724 **Company:** *BERING SEA ENVIRONMENTAL* **Project:** RADFORD AAP

SAMPLE #: 784854 **DESCR:** RFAAP-FGMR-SSD-003 **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED:** 10/06/2016 **Time:** 1550

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
			Antimony						
			Beryllium						
			Cadmium						
			Chromium						
			Cobalt						
			Copper						
			Lead						
			Manganese						
			Molybdenum						
			Nickel						
			Selenium						
			Silver						
			Thallium						
			Vanadium						
			Zinc						
1206	MERCURY QSM 5.0	(EPA 7471B)				11/03/2016	10/19/2016		NeedPrep
1238	SVOC 8270 QSM 5	(EPA 8270D)			*Y*		10/19/2016		NeedPrep
1240	8330B EXPLOSIVES QSM 5	(EPA 8330B)					10/19/2016		NeedPrep

SAMPLE #: 784855 **DESCR:** RFAAP-FGMR-SSD-004 **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED:** 10/06/2016 **Time:** 1610

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
8	SOLIDS,PERCENT	(EPA 8000C)				10/20/2016	10/19/2016		Logged
878	SUB PERCHLORATE	(SW6850)				11/03/2016	10/19/2016		Logged
1185	ICP METALS LIST 2 QSM 5.0	(EPA 6010C)				04/04/2017	10/19/2016		NeedPrep
			Lithium						
			Strontium						

Folder #: 122724 **Company:** *BERING SEA ENVIRONMENTAL* **Project:** RADFORD AAP

SAMPLE #: 784855 **DESCR:** RFAAP-FGMR-SSD-004 **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED:** 10/06/2016 **Time:** 1610

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
			Tin						
1191	ICP QSM 5.0	(EPA 6010C)				04/04/2017	10/19/2016		NeedPrep
			Antimony						
			Beryllium						
			Cadmium						
			Chromium						
			Cobalt						
			Copper						
			Lead						
			Manganese						
			Molybdenum						
			Nickel						
			Selenium						
			Silver						
			Thallium						
			Vanadium						
			Zinc						
1206	MERCURY QSM 5.0	(EPA 7471B)				11/03/2016	10/19/2016		NeedPrep
1238	SVOC 8270 QSM 5	(EPA 8270D)			***Y***		10/19/2016		NeedPrep
1240	8330B EXPLOSIVES QSM 5	(EPA 8330B)					10/19/2016		NeedPrep

Folder #: 122724 **Company:** *BERING SEA ENVIRONMENTAL* **Project:** RADFORD AAP

Invoice Number: 123261 **Preliminary Invoice Estimate:** $ 2,170.00

Item	Matrix	Quantity	Price	Expedited TAT Surcharge	Total
8330B EXPLOSIVES QSM 5	SOIL	5	$ 95.00	0.00	$ 475.00
ICP METALS LIST 2 QSM 5.0 Lithium	SOIL	5	$ 4.00	0.00	$ 20.00
ICP METALS LIST 2 QSM 5.0 Strontium	SOIL	5	$ 4.00	0.00	$ 20.00
ICP METALS LIST 2 QSM 5.0 Tin	SOIL	5	$ 4.00	0.00	$ 20.00
ICP QSM 5.0 Antimony	SOIL	5	$ 4.00	0.00	$ 20.00
ICP QSM 5.0 Beryllium	SOIL	5	$ 4.00	0.00	$ 20.00
ICP QSM 5.0 Cadmium	SOIL	5	$ 4.00	0.00	$ 20.00
ICP QSM 5.0 Chromium	SOIL	5	$ 4.00	0.00	$ 20.00
ICP QSM 5.0 Cobalt	SOIL	5	$ 4.00	0.00	$ 20.00
ICP QSM 5.0 Copper	SOIL	5	$ 4.00	0.00	$ 20.00
ICP QSM 5.0 Lead	SOIL	5	$ 4.00	0.00	$ 20.00
ICP QSM 5.0 Manganese	SOIL	5	$ 4.00	0.00	$ 20.00
ICP QSM 5.0 Molybdenum	SOIL	5	$ 4.00	0.00	$ 20.00
ICP QSM 5.0 Nickel	SOIL	5	$ 4.00	0.00	$ 20.00
ICP QSM 5.0 Selenium	SOIL	5	$ 4.00	0.00	$ 20.00
ICP QSM 5.0 Silver	SOIL	5	$ 4.00	0.00	$ 20.00
ICP QSM 5.0 Thallium	SOIL	5	$ 4.00	0.00	$ 20.00
ICP QSM 5.0 Vanadium	SOIL	5	$ 4.00	0.00	$ 20.00
ICP QSM 5.0 Zinc	SOIL	5	$ 4.00	0.00	$ 20.00
MERCURY QSM 5.0	SOIL	5	$ 23.00	0.00	$ 115.00
SOLIDS,PERCENT	SOIL	5	$ 0.00	0.00	$ 0.00
SUB PERCHLORATE	SOIL	5	$ 104.00	0.00	$ 520.00
SVOC 8270 QSM 5	SOIL	5	$ 140.00	0.00	$ 700.00
Temporary Fuel Surcharge on lab supplies and services (if applicable):					$ 0.00

Bottle Information

Container	# Containers	Tests
SOLIDS	**7**	%SOL,HG,ICP
UNPRES GL	**14**	8270,EXPL,Perchlorate

CT LABORATORIES
delivering more than data from your environmental analyses

Sample Condition Report

Folder #: 122724
Client: BERING SEA ENVIRONMENTAL

Print Date / Time: 10/07/2016 10:47
Received Date / Time / By: 10/07/2016 10:15 BNA

Project Name: RADFORD AAP
Project Phase:

Log-In Date / Time / By: 10/07/2016 10:46 BNA
Project #: 313010-001 PM: BMS

Coolers: 5428
Custody Seals Present : **Y**

Temperature: 1.2 C On Ice: **Y**
COC Present:? **Y** Complete? **Y**

Seal Intact? **Y**
Ship Method: FEDEX EXPRESS
Adequate Packaging: **Y**

Numbers: SIGNED AND DATED
Tracking Number: 0201784285030135
Temp Blank Enclosed? **Y**

Notes: THE SAMPLES WERE RECEIVED IN GOOD CONDITION ON ICE.

TWO CUSTODY SEALS WERE PRESENT AND INTACT UPON RECEIPT, BOTH DATED 10/06/16 AND SIGNED.

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
784783 RFAAP-FGMR-SSD-001				
	SOLIDS	1	/	%SOL,HG,ICP
	Total # of Containers of Type	**(*SOLIDS*) = 1**		
784783 RFAAP-FGMR-SSD-001				
	UNPRES GL	1	/	8270,EXPL,Perchlorate
	Total # of Containers of Type	**(*UNPRES GL*) = 1**		
784783 RFAAP-FGMR-SSD-001				
	UNPRES GL	1	/	SUB
	Total # of Containers of Type	**(*UNPRES GL*) = 1**		

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
784852 RFAAP-FGMR-DUP1				
	SOLIDS	1	/	%SOL,HG,ICP
	Total # of Containers of Type	**(*SOLIDS*) = 1**		
784852 RFAAP-FGMR-DUP1				
	UNPRES GL	1	/	8270,EXPL,Perchlorate
	Total # of Containers of Type	**(*UNPRES GL*) = 1**		
784852 RFAAP-FGMR-DUP1				
	UNPRES GL	1	/	SUB
	Total # of Containers of Type	**(*UNPRES GL*) = 1**		

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
784853 RFAAP-FGMR-SSD-002				

	SOLIDS	1	/	%SOL,HG,ICP
	SOLIDS	1	/	%SOL,HG,ICP
	SOLIDS	1	/	%SOL,HG,ICP
	Total # of Containers of Type	**(*SOLIDS*) =**	**3**	

784853 RFAAP-FGMR-SSD-002

UNPRES GL	1	/	8270,EXPL,Perchlorate
UNPRES GL	1	/	8270,EXPL,Perchlorate
UNPRES GL	1	/	8270,EXPL,Perchlorate
Total # of Containers of Type	**(*UNPRES GL*) =**	**3**	

784853 RFAAP-FGMR-SSD-002

UNPRES GL	1	/	SUB
UNPRES GL	1	/	SUB
UNPRES GL	1	/	SUB
Total # of Containers of Type	**(*UNPRES GL*) =**	**3**	

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests

---

784854 RFAAP-FGMR-SSD-003

SOLIDS	1	/	%SOL,HG,ICP
Total # of Containers of Type	**(*SOLIDS*) =**	**1**	

784854 RFAAP-FGMR-SSD-003

UNPRES GL	1	/	8270,EXPL,Perchlorate
Total # of Containers of Type	**(*UNPRES GL*) =**	**1**	

784854 RFAAP-FGMR-SSD-003

UNPRES GL	1	/	SUB
Total # of Containers of Type	**(*UNPRES GL*) =**	**1**	

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests

---

784855 RFAAP-FGMR-SSD-004

SOLIDS	1	/	%SOL,HG,ICP
Total # of Containers of Type	**(*SOLIDS*) =**	**1**	

784855 RFAAP-FGMR-SSD-004

UNPRES GL	1	/	8270,EXPL,Perchlorate
Total # of Containers of Type	**(*UNPRES GL*) =**	**1**	

784855 RFAAP-FGMR-SSD-004

UNPRES GL	1	/	SUB
Total # of Containers of Type	**(*UNPRES GL*) =**	**1**	

Condition Code	*Condition Description*
1	Sample Received OK

Rev 8/2014

CHAIN OF CUSTODY

Page 1 of 1

Company: BSEN
Project Contact: BONNIE MORRIS / JULIA LEE
Telephone: (907)333-9344
Project Name: RFAAP
Project #: 313010-09
Location: RADFORD, VA
Sampled By: PJW

CT LABORATORIES
1230 Lange Court, Baraboo, WI 53913
608-356-2760 Fax 608-356-2766
www.ctlaboratories.com

Folder # 122746
Company: BERING SEA ENVIRON
Project RADFORD AAP
Logged By JLS PM BM

am:
RCRA SDWA NPDES
Waste Other CERCLA

SN-1296

Report To: BONNIE MORRIS
EMAIL: BMORRIS@BSEN.COM
Company: ~~BP~~BSEN
Address: 615 E. 82ND AVE #200 ANCHORAGE, AK 99518
Invoice To:*
EMAIL:
Company: SAME
Address:

*Party listed is responsible for payment of invoice as per CT Laboratories' terms and conditions

Client Special Instructions

PROJECT SPECIFIC SVOC LIST

Matrix:
GW – groundwater SW - surface water WW - wastewater DW - drinking water
S - soil/sediment SL - sludge A - air M - misc/waste

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%

Collection Date	Collection Time	Matrix	Grab/ Comp	Sample #	Sample ID Description	Filtered? Y/N	EXPLOSIVES	METALS	SVOC	PERCHLORATE										Total # Containers	Designated MS/MSD	CT Lab ID # (Lab use only)
							Fill in Spaces with Bottles per Test															
10/1/16	0850	S	COMP	1	RFAAP-FGMR-SSI-002A		X	X	X	X										1		785308
10/1/16	0850	S	COMP	2	RFAAP-FGMR-SSI-002B		X	X	X	X										1		785309
10/1/16	0850	S	COMP	3	RFAAP-FGMR-SSI-002C		X	X	X	X										1		785310

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	10/7/16 1700		
Received by:	**Date/Time**	**Received for Laboratory by:**	**Date/Time**
		[signature]	10/8/16 0823

Lab Use Only
Ice Present (Yes) No
Temp 3.2 IR Gun # 16
Cooler # 5651

10/8/16 1010 [signature]

CT Laboratories Terms and Conditions

Where a purchaser (Client) places an order for laboratory, consulting or sampling services from CT Laboratories (CTL), CTL shall provide the ordered services pursuant to these Terms and Conditions, and the related Quotation, or as agreed in a negotiated contract. In the absence of a written agreement to the contrary, the Order constitutes an acceptance by the Client of CTL's offer to do business under these Terms and Conditions, and an agreement to be bound by these Terms and Conditions. No contrary or additional terms and conditions expressed in a Client's document shall be deemed to become a part of the contract created upon acceptance of these Terms and Conditions, unless accepted by CTL in advance of the start of the project and in writing.

1. ORDERS AND RECEIPT OF SAMPLES (Sample Acceptance Policy)

1.1 The Client may place the Order (i.e., specify a Scope of Work) either by submitting a purchase order to CTL in writing, by telephone (confirmed in writing) or by negotiated contract. Whichever option the Client selects for placing the Order, the Order shall not be valid unless it contains sufficient specification to enable CTL to carry out the Client's requirements. It is the policy of CT Laboratories that samples not meeting the acceptance criteria, outlined in the NELAC standards and Section 5.8.3.2 of the DOD QSM, will not be accepted by the laboratory or will be qualified on the final report. All samples submitted to the laboratory must: (1) be accompanied by proper, full and complete documentation, including sample identification, location, date and time of collection, the collector's name, type of preservation (if any), type of sample, any special comments concerning the sample and any additional pertinent fields on the chain-of-custody. In the absence of any of the required information, the laboratory will attempt to contact the client to obtain the information; if unable to obtain the necessary information, the final report will be qualified. (2) be labeled appropriately with a unique sample identification written with indelible ink on water resistant labels. If the laboratory cannot determine the identity of a sample, it will be rejected and the client will be contacted for further instructions or resampling. (3) be in an appropriate sample container. If the container is inappropriate, the client will be contacted for further instructions or resampling. If analysis is possible, the final report will be qualified. CT Laboratories can provide a sampling guide containing approved containers and preservations for analytical methods requested. (4) adhere to specified holding times. If samples are received with less than ½ the holding time remaining for the requested test, CT Laboratories will make its best effort to analyze the samples and notify the client. If holding times are exceeded, the final report will be qualified. (5) contain adequate sample volume to perform the necessary testing. If sufficient volume is not present, the sample will be rejected and the client will be contacted for further instructions or resampling. If samples show signs of damage, contamination or inadequate preservation, the client will be notified. If analysis can be performed, the final report will be qualified. If not, the samples will be rejected and the client notified for further instructions or resampling.

1.2 CT Laboratories must be supplied with complete, written disclosure of the known or suspected presence of any hazardous substances, as defined by applicable federal or state law. Where any samples which were not accompanied by the required disclosure, cause interruptions in the lab's ability to process work due to contamination of instruments or work areas, the Client will be responsible for the costs of clean up and recovery.

1.3 Prior to Sample Acceptance, the entire risk of loss or damage to samples remains with the Client. In no event will CTL have any responsibility or liability for the action or inaction of any carrier shipping or delivering any sample to or from CTL's premises. Client is responsible to assure that any sample containing any hazardous substance which is to be delivered to CTL's premises will be packaged, labeled, transported and delivered properly and in accordance with applicable laws.

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 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

5.1 Data or information provided to CTL or generated by services performed under this agreement shall only become the property of the Client upon receipt in full by CTL of payment for the Whole Order. Ownership of any analytical method, QA/QC protocols, software programs or equipment developed by CTL for performance of work will be retained by CTL, and Client shall not disclose such information to any third party.

5.2 Data and sample materials provided by Client or at Client's request, and the result obtained by CTL shall be held in confidence (unless such information is generally available to the public or is in the public domain or Client has failed to pay CTL for all services rendered or is otherwise in breach of these Terms and Conditions), subject to any disclosure required by law or legal process.

5.3 Should the Results delivered by CTL be used by the Client or Client's client, even though subsequently determined not to meet the warranties described in these Terms and Conditions, then the compensation will be adjusted based upon mutual agreement. In no case shall the Client unreasonably withhold CTL's right to independently defend its data.

5.4 CTL reserves the right to subcontract services ordered by the Client to another laboratory or laboratories, if, in CTL's sole judgment, it is reasonably necessary, appropriate or advisable to do so, and with the Client's permission. CTL will in no way be liable for any subcontracted services and all applicable warranties, guarantees and insurance are those of the subcontracted laboratory.

5.5 CTL shall dispose of the Client's samples 30 days after the analytical report is issued, unless instructed to store them for an alternate period of time or to return such samples to the Client, in a manner consistent with U.S. Environmental Protection Agency regulations or other applicable Federal, state or local requirements. Any samples for projects that are canceled or not accepted, or for which return was requested, will be returned to the Client at their own expense. CTL reserves the right to return to the Client any sample or unused portion of a sample that is not within CTL's permitted capability or the capabilities of CTL's designated waste disposal vendor(s).

5.6 Unless a different time period is agreed to in any order under these Terms and Conditions, CTL agrees to retain all records for five (5) years.

5.7 In the event that CTL is required to respond to legal process related to services for Client, Client agrees to reimburse CTL for hourly charges for personnel involved in the response and attorney fees reasonably incurred in obtaining advice concerning the response, preparation to testify, and appearances related to the legal process, travel and all reasonable expenses associated with the litigation.

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). 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

3.2° on ice ir#16
10/8/16 1010 jls
cooler 5651

ORIGIN ID:WALA (757) 256-6281
JULIA LIU
615 E 82ND AVE STE 200
ANCHORAGE, AK 99518
UNITED STATES US

SHIP DATE: 07OCT16
ACTWGT: 27.70 LB
CAD: 6997114/SSF01722
DIMS: 24x14x13 IN
BILL THIRD PARTY

TO CT LABORATORIES
1230 LANGE CT
BARABOO WI 53913
(608) 356-2760 REF:
INV:
PO: DEPT:

Part # 156297-447-SS-HAYES 07/17

FedEx Express

SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 0201 7842 9502 8570

XO MSNA

53913
WI-US MSN

CUSTODY SEAL
DATE 10/07/16
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

CUSTODY SEAL
DATE 10/07/16
SIGNATURE

QEC
Quality Environmental Containe
800-255-3950 • 304-255-3900

Folder #: 122746

PM LOGIN CONFIRMATION

Contract #: 2842

Company: BERING SEA ENVIRONMENTAL **Project:** RADFORD AAP **Proj #:** 313010-001

Project Phase: **PO Number:** BSN-1286 **Invoice #:** 123282

Project Manager: *BMS* **Date Received:** 10/08/16 **Log Date:** 10/10/2016

Report To: S. JULIA LIU CC:
615 E. 82ND AVE
#200
ANCHORAGE, AK 99518
Phone: 757-256-6281: Fax:
Rep. E-Mail SLIU@BSENV.COM

Invoice To :S. JULIA LIU CC: SLIU@BSENV.COM
615 E. 82ND AVE
#200
ANCHORAGE, AK 99518
Phone: Fax:
EMail:

Collected By:
Collector's Phone: 757-256-6281

Arrival Temperature: 3.2 oC

SAMPLE #: 785308 **DESCR: RFAAP-FGMR-SSI-002A** **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED: 10/07/2016** **Time: 0850**

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
8	SOLIDS,PERCENT	(EPA 8000C)				10/21/2016	10/22/2016		Logged
878	SUB PERCHLORATE	(SW6850)				11/04/2016	10/22/2016		Logged
946	HOMOGEN/M.I. PREP	(LAB SOP)					10/22/2016		Logged
1185	ICP METALS LIST 2 QSM 5.(	(EPA 6010C)				04/05/2017	10/22/2016		NeedPrep
			Lithium						
			Strontium						
			Tin						
1191	ICP QSM 5.0	(EPA 6010C)				04/05/2017	10/22/2016		NeedPrep
			Antimony						
			Beryllium						
			Cadmium						
			Chromium						
			Cobalt						

Folder #: 122746 **Company:** *BERING SEA ENVIRONMENTAL* **Project:** RADFORD AAP

SAMPLE #: 785308 **DESCR:** RFAAP-FGMR-SSI-002A **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED:** 10/07/2016 **Time:** 0850

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
			Copper						
			Lead						
			Manganese						
			Molybdenum						
			Nickel						
			Selenium						
			Silver						
			Thallium						
			Vanadium						
			Zinc						
1206	MERCURY QSM 5.0	(EPA 7471B)				11/04/2016	10/22/2016		NeedPrep
1238	SVOC 8270 QSM 5	(EPA 8270D)			*Y*		10/22/2016		NeedPrep
1240	8330B EXPLOSIVES QSM 5	(EPA 8330B)					10/22/2016		NeedPrep

SAMPLE #: 785309 **DESCR:** RFAAP-FGMR-SSI-002B **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED:** 10/07/2016 **Time:** 0850

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
8	SOLIDS,PERCENT	(EPA 8000C)				10/21/2016	10/22/2016		Logged
878	SUB PERCHLORATE	(SW6850)				11/04/2016	10/22/2016		Logged
946	HOMOGEN/M.I. PREP	(LAB SOP)					10/22/2016		Logged
1185	ICP METALS LIST 2 QSM 5.0	(EPA 6010C)				04/05/2017	10/22/2016		NeedPrep
			Lithium						
			Strontium						
			Tin						
1191	ICP QSM 5.0	(EPA 6010C)				04/05/2017	10/22/2016		NeedPrep
			Antimony						
			Beryllium						

Folder #: 122746 **Company:** *BERING SEA ENVIRONMENTAL* **Project:** RADFORD AAP

SAMPLE #: 785309 **DESCR:** RFAAP-FGMR-SSI-002B **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED:** 10/07/2016 **Time:** 0850

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
			Cadmium						
			Chromium						
			Cobalt						
			Copper						
			Lead						
			Manganese						
			Molybdenum						
			Nickel						
			Selenium						
			Silver						
			Thallium						
			Vanadium						
			Zinc						
1206	MERCURY QSM 5.0	(EPA 7471B)				11/04/2016	10/22/2016		NeedPrep
1238	SVOC 8270 QSM 5	(EPA 8270D)			*Y*		10/22/2016		NeedPrep
1240	8330B EXPLOSIVES QSM 5	(EPA 8330B)					10/22/2016		NeedPrep

SAMPLE #: 785310 **DESCR:** RFAAP-FGMR-SSI-002C **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED:** 10/07/2016 **Time:** 0850

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
8	SOLIDS,PERCENT	(EPA 8000C)				10/21/2016	10/22/2016		Logged
878	SUB PERCHLORATE	(SW6850)				11/04/2016	10/22/2016		Logged
946	HOMOGEN/M.I. PREP	(LAB SOP)					10/22/2016		Logged
1185	ICP METALS LIST 2 QSM 5.0	(EPA 6010C)				04/05/2017	10/22/2016		NeedPrep
			Lithium						
			Strontium						
			Tin						

Folder #: 122746 **Company:** *BERING SEA ENVIRONMENTAL* **Project:** RADFORD AAP

SAMPLE #: 785310 **DESCR:** RFAAP-FGMR-SSI-002C **PRIMARY / DETAILED MATRIX:** SOLID / SOIL **SAMPLED:** 10/07/2016 **Time:** 0850

CLIENT SAMPLE #: **DETAILED SITE/POINT ID INFORMATION:**

TEST#	TEST	TEST METHOD	ANALYTE	TEST GROUP	SPECIAL REQUIREMENTS	HOLD DATE	ANALYSIS DUE	RUSH	STATUS
1191	ICP QSM 5.0	(EPA 6010C)				04/05/2017	10/22/2016		NeedPrep
			Antimony						
			Beryllium						
			Cadmium						
			Chromium						
			Cobalt						
			Copper						
			Lead						
			Manganese						
			Molybdenum						
			Nickel						
			Selenium						
			Silver						
			Thallium						
			Vanadium						
			Zinc						
1206	MERCURY QSM 5.0	(EPA 7471B)				11/04/2016	10/22/2016		NeedPrep
1238	SVOC 8270 QSM 5	(EPA 8270D)			***Y***		10/22/2016		NeedPrep
1240	8330B EXPLOSIVES QSM 5	(EPA 8330B)					10/22/2016		NeedPrep

Folder #: 122746 **Company:** *BERING SEA ENVIRONMENTAL* **Project:** RADFORD AAP

Invoice Number: 123282 **Preliminary Invoice Estimate:** $ 1,452.00

Item	Matrix	Quantity	Price	Expedited TAT Surcharge	Total
8330B EXPLOSIVES QSM 5	SOIL	3	$ 95.00	0.00	$ 285.00
HOMOGEN/M.I. PREP	SOIL	3	$ 50.00	0.00	$ 150.00
ICP METALS LIST 2 QSM 5.0 Lithium	SOIL	3	$ 4.00	0.00	$ 12.00
ICP METALS LIST 2 QSM 5.0 Strontium	SOIL	3	$ 4.00	0.00	$ 12.00
ICP METALS LIST 2 QSM 5.0 Tin	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Antimony	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Beryllium	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Cadmium	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Chromium	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Cobalt	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Copper	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Lead	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Manganese	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Molybdenum	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Nickel	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Selenium	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Silver	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Thallium	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Vanadium	SOIL	3	$ 4.00	0.00	$ 12.00
ICP QSM 5.0 Zinc	SOIL	3	$ 4.00	0.00	$ 12.00
MERCURY QSM 5.0	SOIL	3	$ 23.00	0.00	$ 69.00
SOLIDS,PERCENT	SOIL	3	$ 0.00	0.00	$ 0.00
SUB PERCHLORATE	SOIL	3	$ 104.00	0.00	$ 312.00
SVOC 8270 QSM 5	SOIL	3	$ 140.00	0.00	$ 420.00
Temporary Fuel Surcharge on lab supplies and services (if applicable):					$ 0.00

Bottle Information

Container	# Containers	Tests
FOR LABEL ONLY	**6**	SOIL PREP/MIX
SOLIDS	**3**	%SOL,HG,ICP
UNPRES GL	**3**	8270,EXPL,Perchlorate

CT LABORATORIES
delivering more than data from your environmental analyses

Sample Condition Report

Folder #: 122746
Client: BERING SEA ENVIRONMENTAL

Print Date / Time: 10/10/2016 08:23
Received Date / Time / By: 10/08/2016 10:10 JLS

Project Name: RADFORD AAP
Project Phase:

Log-In Date / Time / By: 10/10/2016 08:23 JLS
Project #: 313010-001 PM: BMS

Coolers: 5651
Custody Seals Present : **Y**

Temperature: 3.2 C On Ice: **Y**
COC Present:? **Y** Complete? **Y**

Seal Intact? **Y**
Ship Method: FEDEX EXPRESS
Adequate Packaging: **Y**

Numbers: DATED AND SIGNED
Tracking Number: 784285028570
Temp Blank Enclosed? **Y**

Notes: THE SAMPLES WERE RECEIVED IN GOOD CONDITION ON ICE.

TWO CUSTODY SEALS WERE PRESENT AND INTACT UPON RECEIPT, BOTH DATED 10/07/16 AND SIGNED.

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
785308 RFAAP-FGMR-SSI-002A				
	SOLIDS	1	/	%SOL,HG,ICP
	Total # of Containers of Type	**(*SOLIDS*) = 1**		
785308 RFAAP-FGMR-SSI-002A				
	UNPRES GL	1	/	8270,EXPL,Perchlorate
	Total # of Containers of Type	**(*UNPRES GL*) = 1**		
785308 RFAAP-FGMR-SSI-002A				
	FOR LABEL ONLY	1	/	SOIL PREP/MIX
	FOR LABEL ONLY	1	/	SOIL PREP/MIX
	Total # of Containers of Type	**(*FOR LABEL ONLY*) = 2**		

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
785309 RFAAP-FGMR-SSI-002B				
	SOLIDS	1	/	%SOL,HG,ICP
	Total # of Containers of Type	**(*SOLIDS*) = 1**		
785309 RFAAP-FGMR-SSI-002B				
	UNPRES GL	1	/	8270,EXPL,Perchlorate
	Total # of Containers of Type	**(*UNPRES GL*) = 1**		
785309 RFAAP-FGMR-SSI-002B				
	FOR LABEL ONLY	1	/	SOIL PREP/MIX
	FOR LABEL ONLY	1	/	SOIL PREP/MIX
	Total # of Containers of Type	**(*FOR LABEL ONLY*) = 2**		

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests

785310	RFAAP-FGMR-SSI-002C				
		SOLIDS	1	/	%SOL,HG,ICP
		Total # of Containers of Type	**(*SOLIDS*) = 1**		
785310	RFAAP-FGMR-SSI-002C				
		UNPRES GL	1	/	8270,EXPL,Perchlorate
		Total # of Containers of Type	**(*UNPRES GL*) = 1**		
785310	RFAAP-FGMR-SSI-002C				
		FOR LABEL ONLY	1	/	SOIL PREP/MIX
		FOR LABEL ONLY	1	/	SOIL PREP/MIX
		Total # of Containers of Type	**(*FOR LABEL ONLY*) = 2**		

Condition Code	*Condition Description*
1	Sample Received OK

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Appendix B

Data Validation Report

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DATA VALIDATION AND USABILITY REPORT

EXPLOSIVES by USEPA SW-846 Method 8330B
MERCURY by USEPA SW-846 Method 7471B
METALS by USEPA SW-846 Method 6010C
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs) by USEPA SW-846 Method 8270D
PERCHLORATES by USEPA SW-846 Method 6850

Project: Radford Army Ammunitions Plant, Virginia – RI October 2016
Project/Task Number: 10021896-242801-002
Sample Data Package: 122704, 122724, 122746,
Laboratory: CT Laboratories, Baraboo, Wisconsin; Microbac Laboratories, Marietta, Ohio (Perchlorate)
Sample Matrix: Discrete Soil, ISM Soil
Sampling Dates: 04, 06 and 07 October 2016
Validation Guidelines: Project QAPP (Radford Army Ammunitions Plant, Virginia Final Work Plan, Former Gun and Mortar Range Munitions Response Site [RFAAP-002-R-01], Site Investigation [July 2016]); United States Environmental Protection Agency (USEPA) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd edition (SW-846); National Functional Guidelines for Inorganic Superfund Data Review (USEPA, August 2016); National Functional Guidelines for Superfund Organic Methods Data Review (August 2016); and professional judgment
Validation Level: Stage 2BVM (100 % of data, Stage 3VM (10% of data)
Data Reviewer: Jennifer Chandler and Lynn K. Lutz, Chemists, with HDR (Henningson, Durham, Richardson)

Sample ID	Matrix	Lab ID	Data Package	Explosives	Metals/ Mercury	SVOCs	Perchlorate
RFAAP-FGMR-SSI-001A	ISM Soil	784496	122704	X	X	X	
		L16100571-01	L16100571				X
RFAAP-FGMR-SSI-001B	ISM Soil	784515	122704	X	X	X	
		L16100571-02	L16100571				X
RFAAP-FGMR-SSI-001C	ISM Soil	784516	122704	X	X	X	
		L16100571-03	L16100571				X
RFAAP-FGMR-SSD-001	Discrete Soil	784783	122724	X	X	X	
		L16100569-01	L16100569				X
RFAAP-FGMR-DUP1	Discrete Soil	784852	122724	X	X	X	
		L16100569-02	L16100569				X
RFAAP-FGMR-SSD-002	Discrete Soil	784853	122724	X	X	X	
		L16100569-03	L16100569				X
RFAAP-FGMR-SSD-002 MS	Discrete Soil	784853MS	122724	X	X	X	
		L16100569-04	L16100569				X
RFAAP-FGMR-SSD-002 MSD	Discrete Soil	784853MSD	122724	X	X	X	
		L16100569-05	L16100569				X
RFAAP-FGMR-SSD-003	Discrete Soil	784854	122724	X	X	X	
		L16100569-06	L16100569				X
RFAAP-FGMR-SSD-004	Discrete Soil	784855	122724	X	X	X	
		L16100569-07	L16100569				X
RFAAP-FGMR-SSI-002A	ISM Soil	785308	122746	X	X	X	
		L16100570-01	L16100570				X
RFAAP-FGMR-SSI-002B	ISM Soil	785309	122746	X	X	X	
		L16100570-02	L16100570				X

Sample ID	Matrix	Lab ID	Data Package	Explosives	Metals/ Mercury	SVOCs	Perchlorate
RFAAP-FGMR-SSI-002C	ISM Soil	785310	122746	X	X	X	
		L16100570-03	L16100570				X

SUMMARY

All laboratory data were acceptable with qualification. All analyses were completed using the latest Quality Systems Manual version 5.0.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

Samples were received within the correct temperature range of 0-6°C. The chains of custody (COCs) were filled out and signed. All samples had the proper preservation.

II. HOLDING TIMES

Holding time criteria were met. No qualification was required.

Explosives: Samples were extracted within 14 days of collection and analyzed within 40 days of extraction.

Metals/Mercury: Samples were analyzed within 180 days of collection. Mercury samples were analyzed within 28 days of collection.

SVOCs: Samples were extracted/analyzed within 14/40 days of collections.

Perchlorates: Samples were analyzed within 28 days of collection.

IV. INSTRUMENT PERFORMANCE

Explosives: Not applicable.

Metals/Mercury: Not applicable.

SVOCs: DFTPP was analyzed and met method criteria. No qualification was requied.

Perchlorates: Not applicable.

V. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Explosives: Initial calibration criteria were met. No qualification was required.

Metals/Mercury: Initial calibration criteria were met. No qualification was required.

SVOCs: Initial calibration criteria were met. No qualification was required.

Perchlorate: Initial calibration criteria were met. No qualification was required.

SECOND SOURCE STANDARDS

Explosives: Second source standard criteria were met. All target results had %D values less than 20%. No qualification was required.

Metals/Mercury: Second source standard criteria were met. No qualification was required.

SVOCs: Second source standard criteria were met. No qualification was required.

Perchlorate: Second source standard criteria were met. All target results had %D values less than 15%. No qualification was required.

CONTINUING CALIBRATIONS

Explosives: All continuing calibration criteria were met. All target results had %D values less than 20%. No qualification was required.

Metals/Mercury: Initial calibration criteria were met. No qualification was required.

SVOCs: Initial calibration criteria were met. No qualification was required.

Perchlorate: All continuing calibration criteria were met. All target results had %D values less than 15%. No qualification was required.

VI. BLANKS

METHOD BLANKS

Target analytes were not detected in the method blanks except as noted below.

Explosives: Target analytes were not detected in the method blanks. The grinding blank was used as the method blank for the ISM soils.

Metals/Mercury: Calcium, iron, and silver were detected in the MB. Sample results were greater than five times the blank concentration. No further qualification was necessary.

SVOCs: SVOCs were not detected in the method blanks. No qualification was required.

Perchlorate: Perchlorate was not detected in the method blanks. No qualification was required.

INITIAL AND CONTINUING CALIBRATION BLANKS (ICB and CCB)

Explosives: Not applicable.

Metals/Mercury: Selenium, silver, chromium, molybdenum, strontium were detected in the ICBs. Chromium, lead, molybdenum, silver, strontium, copper, manganese, magnesium, and vanadium were detected in the CCBs. Sample results were qualified as estimated, as appropriate. All concentrations were greater than five times the blank concentrations; therefore, no qualification was required.

SVOCs: Not applicable.

Perchlorate: Perchlorate was not detected in the ICBs or CCBs. No qualification was required.

VII. LABORATORY CONTROL SAMPLES (LCS)

Explosives: LCS recoveries were not all within control limits. In the LCS associated with the ISM soils, the recovery of 3,5-dinitroaniline at 84% was below the control limits of 86-118%. Sample results in the associated samples (all the ISM soils) were all non-detect for this analyte and have been qualified as non-detect estimated (UJ). There are no regulatory limits listed in the QAPP for this analyte, and the results are fully usable.

Metals/Mercury: LCS recoveries were within control limits.

SVOCs: LCS recoveries were within control limits.

Perchlorate: LCS recoveries were within control limits. No qualification was required.

VIII. SURROGATES

All surrogate recoveries were within control limits except as noted below.

Explosives: One method blank surrogate was below control limits. No qualification was required for this QC sample.

Metals/Mercury: Not applicable.

SVOCs: Surrogates associated to the small compound list were within control limits. No qualification was required.

Perchlorate: Not applicable.

IX. MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)

Explosives: Sample RFAAP-FGMR-SSD-002 was designated on the COC for MS/MSD analysis, and the lab also spiked sample RFAAP-FGMR-SSI-001A from this project. Some results were outside control limits and resulted in parent sample qualification as shown in the table below.

Parent Sample	Analyte	Recovery	Control Limits	Qualification
RFAAP-FGMR-SSD-002	3,5-Dinitroaniline	77%, 73%	86-118%	UJ
	1,3,5-Trinitrobenzene	OK, 78%	80-116%	UJ
	2,4-Dinitrotoluene	OK, 73%	75-121%	UJ
RFAAP-FGMR-SSI-001A	3,5-Dinitroaniline	80%, 77%	86-118%	UJ

Metals/Mercury: Sample RFAAP-FGMR-SSD-002 was designated on the COC, for MS/MSD analysis. Cadmium and manganese were above the specified control limits, for %RPD, and were qualified as estimated (J). Mercury was also out for %RPD, and therefore was qualified as estimated. Sample RFAAP-FGMR-SSI-001A failed for the following compounds: Antimony Chromium, Cobalt, Lithium, Nickel, Silver, and Thallium; these were qualified as estimated (J/UJ).

SVOCs: Sample RFAAP-FGMR-SSD-002 was designated on the COC, for MS/MSD analysis, Di-n-butylphthalate failed RPD at 28% (Limit 20%). Sample RFAAP-FGMR-SSI-001A was also analyzed, and n-nitrosodiphenylamine and diphenylamine %RPD failed at 28% (Limit 20%). All % Recoveries were within control limits.

Perchlorate: Sample RFAAP-FGMR-SSD-002 was designated on the COC for MS/MSD analysis. Recoveries and RPDs were within control limits. No qualification was required.

X. DUPLICATES

FIELD DUPLICATES

Field duplicate samples were collected and identified in the following table.

Field Duplicate Sample	Parent Sample	Matrix	Analyses (Method #)
RFAAP-FGMR-DUP1	RFAAP-FGMR-SSD-001	ISM Soil	All

Explosives: Results in the parent and FD samples were non-detect. No qualification was required.

Metals/Mercury: Selenium was outside of the 20%RPD criteria, at 20.7%, and was qualified as estimated.

SVOCs: Results in the parent and FD samples were within the required control limits. No qualification was required.

Perchlorate: Results in the parent and FD samples were non-detect. No qualification was required.

LABORATORY DUPLICATES

Explosives: Not applicable.

Metals/Mercury: Laboratory duplicate was performed on sample RFAAP-FGMR-SSD-001. Cobalt, lead and manganese failed outside of the control limits, and were qualified as estimated (J).

SVOCs: Not applicable.

Perchlorate: Not applicable.

XI. INTERNAL STANDARDS (ISTD)

All ISTD criteria were met except as noted below.

Explosives: Not applicable.

Metals/Mercury: Not applicable.

SVOCs: All ISTD criteria were met. No qualification was required.

Perchlorate: All ISTD criteria were met. No qualification was required.

XII. POST DIGESTION SPIKE AND DILUTION TEST

Post-digestion spike (PDS) analyses and serial dilution tests were performed for lead. PDS results were within the control limits of 75-125% except as noted below. The dilution tests were not applicable unless sample results were greater than 50 times the MDL.

Explosives: Not applicable.

Metals/Mercury: PDS was analyzed with sample RFAAP-FGMR-SSD-002. Cadmium and manganese were analyzed and failed outside control limits. These two analytes were qualified as estimated (J). Serial Dilution was also analyzed on sample RFAAP-FGMR-SSI-001A. Multiple analytes were outside control limits and qualified accordingly, as estimated.

SVOCs: Not applicable.

Perchlorate: Not applicable.

XIII. INTERFERENCE CHECK SAMPLES (ICS)
ICS results were applicable to the lead analysis. Results were within control limits of 80-120% except as noted below.

Explosives: Not applicable.

Metals: Recoveries were within control limits.

SVOCs: Not applicable.

Perchlorate: Not applicable.

XIV. REPORTING LIMITS (RL) AND METHOD DETECTION LIMITS (MDL)
The RLs should be less than the project action limits (PALs) as listed in the QAPP.

Explosives: The required RLs as listed in the QAPP were met.

Metals/Mercury: The required RLs as listed in the QAPP were met.

SVOCs: The required RLs as listed in the QAPP were met.

Perchlorate: The required RLs as listed in the QAPP were met.

XV. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION
Transcription between the data package and the EDDs was verified. Sample results reported between the MDL and RL were qualified as estimated (J).

Explosives: No issues.

Metals/Mercury: No issues.

SVOCs: No issues.

Perchlorate: The lab reported one result detected below the LOD and above the DL as estimated (J) but reported two results below the LOD and above the DL as non-detect (U). The reported estimated result was corrected to non-detect (U) at the LOD.

XVI. DATA USABILITY
Data were usable as discussed below.

Explosives: No data were rejected. Data required qualification. All data are usable as qualified.

Metals/Mercury: No data were rejected. Data required minimal qualification. All data are usable as qualified.

SVOCs: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Perchlorate: No data were rejected. Data required no qualification. All data are usable.

Appendix C

Photographic Log

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Photograph 001_RFAAP_SI:
View of vegetation in DU1 in westerly direction; many down trees and logs within DU1, along with very uneven terrain.

Photograph 002_RFAAP_SI:
Facing south towards sample location SSD-001.

Photograph 003_RFAAP_SI:
View of location for discrete sample SSD-002.

Photograph 004_RFAAP_SI:
View of location for discrete sample SSD-003; appears to receive drainage from east corner of DU1.

Photograph 005_RFAAP_SI:
View of location for discrete sample SSD-004.

Photograph 006_RFAAP_SI:
View of location for discrete sample SSD-004.

Photograph 007_RFAAP_SI:
View of gravel pack at DU2; general condition for many of the increment locations.

Photograph 008_RFAAP_SI:
Utility road (gravel) running through DU2.

Photograph 009_RFAAP_SI:
View of sample location for DU2; overlying fill and gravel pack.

Photograph 010_RFAAP_SI:
Fenceline and manmade berm within original location of DU2.

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Appendix D

Field Notes

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DAILY QUALITY CONTROL REPORT

BERING SEA ENVIRONMENTAL,LLC
An Alaska Native Corporation

General

PROJECT: RFAAP Site Inspection	**LOCATION:Radford, Virginia**	
WEATHER: Sunny, 75°	**PREPARED BY: S. Julia Liu**	**DATE: 02 October 2016**

Personnel Onsite

NAME	COMPANY/AFFILIATION	NOTES
S. Julia Liu	BSEN	
Joseph Joyner	HDR	

Site Equipment

DESCRIPTION	QUANTITY	USED (Y/N)	NOTES
N/A	N/A	N/A	N/A

Material Inventory

MATERIAL	QUANTITY	UNITS	QUANTITY DELIVERED/ USED/SHIPPED OFF	NOTES
N/A	N/A	N/A	N/A	N/A

BERING SEA ENVIRONMENTAL,LLC
An Alaska Native Corporation

DAILY QUALITY CONTROL REPORT

Work Activities and Details

WORK ACTIVITES COMPLETED:

Two members of the field team mobilized to Radford, VA. The third member of the field team will mobilize on Monday, 10/3.

QC

QC ACTIVITIES COMPLETED (including calibration):

N/A

H&S

HEALTH & SAFETY INFORMATION:

N/A

Submittals

DESCRIPTION/TITLE	SUBMITTED BY	NOTES
None		

Prob./Corr. Actions

PROBLEMS ENCOUNTERED/CORRECTIVE ACTIONS TAKEN:

N/A

Other

SPECIAL NOTES/INSTRUCTIONS

Next Day

EXPECTED ACTIVITIES FOR TOMORROW:

The third member of the field team will mobilize to the site.

The field team will obtain vehicle passes and badges in the morning for the week's field activities. Area permits will be obtained. PPE (e.g. coveralls and boots) will also be obtained, per RAAP requirements. The field team will meet with Todd Huffman (NG Area) and Allen Holt to coordinate field activities for the week.

DAILY QUALITY CONTROL REPORT

BERING SEA ENVIRONMENTAL,LLC
An Alaska Native Corporation

General

PROJECT: RFAAP Site Inspection	**LOCATION:Radford, Virginia**	
WEATHER: Sunny, 75°	**PREPARED BY: S. Julia Liu**	**DATE: 03 October 2016**

Personnel Onsite

NAME	COMPANY/AFFILIATION	NOTES
S. Julia Liu	BSEN	
Joseph Joyner	HDR	
Philip Werner	HDR	

Site Equipment

DESCRIPTION	QUANTITY	USED (Y/N)	NOTES
Trimble GeoXH	1	N	
Schonstedt	1	N	
Camera	1	N	
Soil Probe	2	N	
Trowels	10	N	

Material Inventory

MATERIAL	QUANTITY	UNITS	QUANTITY DELIVERED/ USED/SHIPPED OFF	NOTES
N/A	N/A	N/A	N/A	N/A

BERING SEA ENVIRONMENTAL,LLC
An Alaska Native Corporation

DAILY QUALITY CONTROL REPORT

Work Activities and Details

WORK ACTIVITES COMPLETED:

The third member of the field team mobilized to the site.

The field team obtained vehicle passes and badges for the week's field activities.

The field team met with Allen Patton (BAE) and Jody Hawks (BAE) to obtain area permits. The field team also met with Todd Huffman (NG Area) and Allen Holt (IBL Lab) to coordinate field work for the week.

QC

QC ACTIVITIES COMPLETED (including calibration):

N/A

H&S

HEALTH & SAFETY INFORMATION:

N/A

Submittals

DESCRIPTION/TITLE	SUBMITTED BY	NOTES
None		

Prob./Corr. Actions

PROBLEMS ENCOUNTERED/CORRECTIVE ACTIONS TAKEN:

N/A

Other

SPECIAL NOTES/INSTRUCTIONS

Next Day

EXPECTED ACTIVITIES FOR TOMORROW:

Collect incremental sample from southern decision unit in the morning. Begin setting up northern decision unit in the afternoon for incremental sampling later in the week.

DAILY QUALITY CONTROL REPORT

BERING SEA ENVIRONMENTAL,LLC
An Alaska Native Corporation

General

PROJECT: RFAAP Site Inspection	**LOCATION: Radford, Virginia**	
WEATHER: Sunny, 74°	**PREPARED BY: S. Julia Liu**	**DATE: 04 October 2016**

Personnel Onsite

NAME	COMPANY/AFFILIATION	NOTES
S. Julia Liu	BSEN	
Joseph Joyner	HDR	
Philip Werner	HDR	

Site Equipment

DESCRIPTION	QUANTITY	USED (Y/N)	NOTES
Trimble GeoXH	1	Y	
Schonstedt	1	Y	
Camera	1	N	
Soil Probe	2	Y	
Trowels	10	N	

Material Inventory

MATERIAL	QUANTITY	UNITS	QUANTITY DELIVERED/ USED/SHIPPED OFF	NOTES
N/A	N/A	N/A	N/A	N/A

BERING SEA ENVIRONMENTAL,LLC
An Alaska Native Corporation

DAILY QUALITY CONTROL REPORT

Work Activities and Details

WORK ACTIVITES COMPLETED:

The field team checked in with Todd Huffman (NG Area) and Allen Holt (IBL Lab) prior to start of field work.

The field team arrived at the southern decision unit and attempted to set up the outer boundaries and lanes of the decision unit; however, the vegetation and terrain made this difficult. Instead, the field team relied on the GPS unit (Trimble GeoXH) to traverse from one increment to the next. Also, a fenceline runs through the southern portion of the decision unit.

The increments for the initial sample (RFAAP-FGMR-SSI-001A) were collected at the proposed locations. Increments for replicate sample RFAAP-FGMR-SSI-001B were collected 150° SE of the initial sample, and increments for replicate sample RFAAP-FGMR-SSI-001C were collected 240° SW of the initial sample.

Satellite connectivity decreased in the afternoon. Tree canopy in areas of the decision unit also limited satellite connectivity. Thick vegetation and uneven terrain prevented the field team from moving quickly and safely from one increment to the next.

The laboratory (CT Labs) was contacted to confirm collection of the decision unit can continue the following day. Samples will be kept chilled overnight.

The field team discussed plans for the AVS and remaining decision unit with Todd Huffman (NG Area) prior to leaving the site.

QC

QC ACTIVITIES COMPLETED (including calibration):

The incremental sample from the southern decision unit was collected in triplicate (e.g. initial sample RFAAP-FGMR-SSI-001A and replicates RFAAP-FGMR-SSI-001B and RFAAP-FGMR-SSI-001C).

H&S

HEALTH & SAFETY INFORMATION:

A tailgate safety meeting was conducted in the morning. The topics discussed are included on the sign in sheet.

Submittals

DESCRIPTION/TITLE	SUBMITTED BY	NOTES
None		

Prob./Corr. Actions

PROBLEMS ENCOUNTERED/CORRECTIVE ACTIONS TAKEN:

Thick vegetation and uneven terrain prevented the field team from moving quickly and safely between increments.

Other

SPECIAL NOTES/INSTRUCTIONS

Next Day

EXPECTED ACTIVITIES FOR TOMORROW:

Continue collection of incremental samples from southern decision unit in the morning. Conduct AVS during the slurry down time (1200 to 1430).

DAILY QUALITY CONTROL REPORT

BERING SEA ENVIRONMENTAL,LLC
An Alaska Native Corporation

General

PROJECT: RFAAP Site Inspection	**LOCATION: Radford, Virginia**	
WEATHER: Cloudy to Partly Cloudy, 68°	**PREPARED BY: S. Julia Liu**	**DATE: 05 October 2016**

Personnel Onsite

NAME	COMPANY/AFFILIATION	NOTES
S. Julia Liu	BSEN	
Joseph Joyner	HDR	
Philip Werner	HDR	

Site Equipment

DESCRIPTION	QUANTITY	USED (Y/N)	NOTES
Trimble GeoXH	1	Y	
Schonstedt	1	Y	
Camera	1	Y	
Soil Probe	2	Y	
Trowels	10	N	

Material Inventory

MATERIAL	QUANTITY	UNITS	QUANTITY DELIVERED/ USED/SHIPPED OFF	NOTES
N/A	N/A	N/A	N/A	N/A

BERING SEA ENVIRONMENTAL,LLC
An Alaska Native Corporation

DAILY QUALITY CONTROL REPORT

Work Activities and Details

WORK ACTIVITES COMPLETED:

The field team checked in with Todd Huffman (NG Area) and the IBL Lab prior to start of field work.

The field team arrived at the southern decision unit and completed collection of increments. The increments for the initial sample (RFAAP-FGMR-SSI-001A) were collected at the proposed locations, with the exception of the following:

- Increment A1 was offset 5 meters southeast of its proposed location. The proposed location was located on a mound, which appeared to be manmade.
- Increment A2 was offset 1 meter northwest from its proposed location. The proposed location was located at a pine tree.

Increments for replicate sample RFAAP-FGMR-SSI-001B were collected 150° SE of the initial sample, and increments for replicate sample RFAAP-FGMR-SSI-001C were collected 240° SW of the initial sample.

Satellite connectivity decreased in the afternoon. Tree canopy in areas of the decision unit also limited satellite connectivity. Thick vegetation and uneven terrain prevented the field team from moving quickly and safely from one increment to the next.

The field team discussed plans for the AVS and remaining decision unit with Todd Huffman (NG Area) prior to leaving the site.

The initial sample (RFAAP-FGMR-SSI-001A) and its replicates (RFAAP-FGMR-SSI-001B and RFAAP-FGMR-SSI-001C) were shipped to CT Laboratories via Fedex for next day delivery (Tracking #784274273548).

QC

QC ACTIVITIES COMPLETED (including calibration):

The incremental sample from the southern decision unit was collected in triplicate (e.g. initial sample RFAAP-FGMR-SSI-001A and replicates RFAAP-FGMR-SSI-001B and RFAAP-FGMR-SSI-001C).

H&S

HEALTH & SAFETY INFORMATION:

A tailgate safety meeting was conducted in the morning. The topics discussed are included on the sign in sheet.

Submittals

DESCRIPTION/TITLE	SUBMITTED BY	NOTES
None		

Prob./Corr. Actions

PROBLEMS ENCOUNTERED/CORRECTIVE ACTIONS TAKEN:

None.

Other

SPECIAL NOTES/INSTRUCTIONS

Next Day

EXPECTED ACTIVITIES FOR TOMORROW:

Conduct AVS and collect discrete soil samples. Begin collection of northern decision unit, if time allows.

DAILY QUALITY CONTROL REPORT

BERING SEA ENVIRONMENTAL,LLC
An Alaska Native Corporation

General

PROJECT: RFAAP Site Inspection	**LOCATION: Radford, Virginia**	
WEATHER: Cloudy to Partly Cloudy, 68°	**PREPARED BY: S. Julia Liu**	**DATE: 06 October 2016**

Personnel Onsite

NAME	COMPANY/AFFILIATION	NOTES
S. Julia Liu	BSEN	
Joseph Joyner	HDR	
Philip Werner	HDR	
Mark Sonnenberg	BAE	Escort for NG Area

Site Equipment

DESCRIPTION	QUANTITY	USED (Y/N)	NOTES
Trimble GeoXH	1	Y	
Schonstedt	1	Y	
Camera	1	Y	
Soil Probe	2	N	
Trowels	10	Y	

Material Inventory

MATERIAL	QUANTITY	UNITS	QUANTITY DELIVERED/ USED/SHIPPED OFF	NOTES
N/A	N/A	N/A	N/A	N/A

BERING SEA ENVIRONMENTAL,LLC
An Alaska Native Corporation

DAILY QUALITY CONTROL REPORT

Work Activities and Details

WORK ACTIVITES COMPLETED:

The field team checked in with Todd Huffman (NG Area) prior to start of field work. An escort was assigned to the field team for the day.

The field team conducted the planned AVS around the buildings, working in between the plant's production schedule. AVS was also conducted outside of the fence line and parallel to the New River. No munitions-related items or features were observed during the AVS.

Four discrete soil samples were collected from drainage areas around the site. Sample RFAAP-FGMR-SSD-001 and its associated field duplicate RFAAP-FGMR-DUP1 were collected from a drainage that appeared to receive runoff from the northern decision unit. Samples RFAAP-FGMR-SSD-003 and RFAAP-FGMR-SSD-004 were collected in drainages that appeared to receive runoff from the southern decision unit.

The field team discussed plans for the remaining decision unit with Todd Huffman (NG Area) prior to leaving the site.

The discrete soil samples were shipped to CT Laboratories via Fedex for next day delivery (Tracking #784285030135).

QC

QC ACTIVITIES COMPLETED (including calibration):

A field duplicate sample (RFAAP-FGMR-DUP1) was collected with sample RFAAP-FGMR-SSD-001. A MS/MSD coupled sample was collected at RFAAP-FGMR-SSD-002.

H&S

HEALTH & SAFETY INFORMATION:

A tailgate safety meeting was conducted in the morning. The topics discussed are included on the sign in sheet.

Submittals

DESCRIPTION/TITLE	SUBMITTED BY	NOTES
None		

Prob./Corr. Actions

PROBLEMS ENCOUNTERED/CORRECTIVE ACTIONS TAKEN:

None.

Other

SPECIAL NOTES/INSTRUCTIONS

Next Day

EXPECTED ACTIVITIES FOR TOMORROW:

Collect northern decision unit. Collect another discrete soil sample from a drainage area if a location is identified.

DAILY QUALITY CONTROL REPORT

BERING SEA ENVIRONMENTAL,LLC
An Alaska Native Corporation

General

PROJECT: RFAAP Site Inspection	**LOCATION: Radford, Virginia**	
WEATHER: Cloudy and Light Rain; High 64°	**PREPARED BY: S. Julia Liu**	**DATE: 07 October 2016**

Personnel Onsite

NAME	COMPANY/AFFILIATION	NOTES
S. Julia Liu	BSEN	
Joseph Joyner	HDR	
Philip Werner	HDR	
Mark Sonnenberg	BAE	Escort for NG Area

Site Equipment

DESCRIPTION	QUANTITY	USED (Y/N)	NOTES
Trimble GeoXH	1	Y	
Schonstedt	1	Y	
Camera	1	Y	
Soil Probe	2	Y	
Trowels	10	N	

Material Inventory

MATERIAL	QUANTITY	UNITS	QUANTITY DELIVERED/ USED/SHIPPED OFF	NOTES
N/A	N/A	N/A	N/A	N/A

Work Activities and Details

WORK ACTIVITES COMPLETED:

The field team checked in with Todd Huffman (NG Area) prior to start of field work. An escort was assigned to the field team for the day.

The field team arrived at the northern decision unit (DU). The proposed orientation of the DU was located partially on a berm, which appeared to be manmade. The DU was re-oriented so that the rows for the DU were oriented in an approximately north-south direction. Because the DU was reoriented, the locations of the increments were field located using a compass, tape measure, and stakes. Increments were spaced 12 meters apart along a 120 meter lane. Rows were spaced 12 meters apart. Waypoints were collected at the corners of the decision unit.

Increments for replicate sample RFAAP-FGMR-SSI-002B were collected 150° SE of the initial sample, and increments for replicate sample RFAAP-FGMR-SSI-002C were collected 240° SW of the initial sample.

After collecting 20% of the DU, the field team noted the location of a berm on the eastern side of the DU. It appeared that only five of the rows could be collected before the berm. The field team's escort indicated the berms around the DU are blasting berms. Bunkers are located on the other side of the eastern berm from the DU. The field team contacted the BSEn PM (Bonnie Morris) and described the situation. Options presented to the BSEn PM included 1) Continue collection of the DU until reaching the berm. This would result in a DU that is 120 meters by 60 meters with 50 increments. 2) Restart the collection of the DU, but space the rows 6 meters apart. This would result in a DU that is 120 meters by 60 meters but would retain the original number of increments (e.g. 100). The field team and the BSEn PM agreed to continue collection of the DU (Option 1). The fifth row of the DU was located at the base of the eastern berm.

The initial sample (RFAAP-FGMR-SSI-002A) and its replicates (RFAAP-FGMR-SSI-002B and RFAAP-FGMR-SSI-002C) were shipped to CT Laboratories via Fedex for next day delivery (Tracking #784295028570).

The field team demobed from the site.

QC

QC ACTIVITIES COMPLETED (including calibration):

The incremental sample from the northern decision unit was collected in triplicate (e.g. initial sample RFAAP-FGMR-SSI-002A and replicates RFAAP-FGMR-SSI-002B and RFAAP-FGMR-SSI-002C).

H&S

HEALTH & SAFETY INFORMATION:

A tailgate safety meeting was conducted in the morning. The topics discussed are included on the sign in sheet.

Submittals

DESCRIPTION/TITLE	SUBMITTED BY	NOTES
None		

Prob./Corr. Actions

PROBLEMS ENCOUNTERED/CORRECTIVE ACTIONS TAKEN:

Gravel pack was observed at many of the increment locations. A gravel utility road also runs through the the DU. In sample locations with gravel, gravel was removed and the sample was collected from the gravel pack.

The proposed orientation of the DU had increments located over a manmade berm. The DU was re-oriented so that increments were collected off the berm.

Manmade berms bordered the decision unit on the western, eastern, and southern sides. The field team's escort indicated the berms are blasting berms. Bunkers are located just beyond the eastern berm. The DU was sized reduced so that increments were collected off the berm.

Other

SPECIAL NOTES/INSTRUCTIONS

Next Day	EXPECTED ACTIVITIES FOR TOMORROW:
	None.

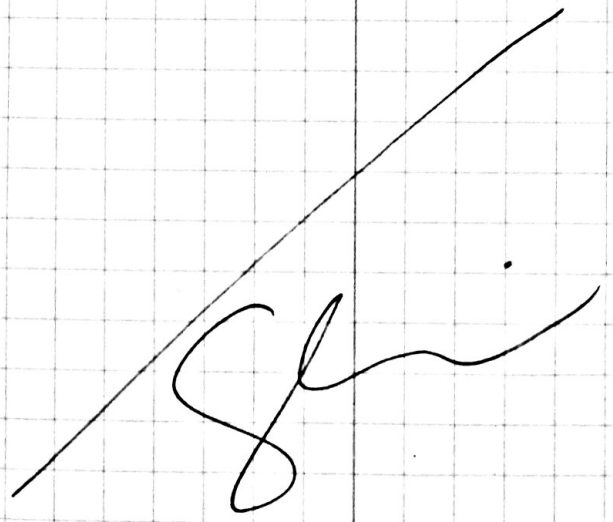
JULIA LIU

9

10/2/16 JOE JOYNER

- MOBE / TRAVEL DAY FOR JOE AND JULIA; PHIL TO TRAVEL TO SITE ON MONDAY (10/3/16)

- JOE / JULIA WILL MEET AT 0900 TO HEAD TO SITE / VISITORS CENTER FOR VEHICLE PASS / BADGE



Rite in the Rain

10

JULIA LIU PHIL WERNER
10/3/16 JOE JOYNER
SUNNY; 78 (HIGH)

0950 ARRIVED AT VISITORS CENTER FOR VEHICLE PASS AND BADGE

1100 MET WITH ALLEN PATTON/ JODY HAWKS AT VISITORS CENTER (PHIL WERNER ARRIVED AT 1115); WENT TO BLDG 200 FOR PPE (COVERALLS, BOOTS)

1200 HEADED TO NG OFFICE TO MEET TODD HUFFMAN TO PLAN FOR WEEK; AREA PERMITS

1300 MET WITH ALLEN HOLT (IBL LAB) TO COORDINATE ACTIVITIES FOR WESTERN DU; WENT TO LOOK AT AREA

1520 LEFT SITE TO PURCHASE SUPPLIES

JULIA LIU PHIL WERNER
10/4/16 JOE JOYNER
HIGH 74; MOSTLY SUNNY

0700 ARRIVED ONSITE; HEADED TO NG OFFICE TO CHECK IN W/ TODD HUFFMAN

0730 SAFETY BRIEF; NOTIFIED ALLEN HOLT WE OF START OF FIELD ACTNITIES FOR DAY AROUND DU1

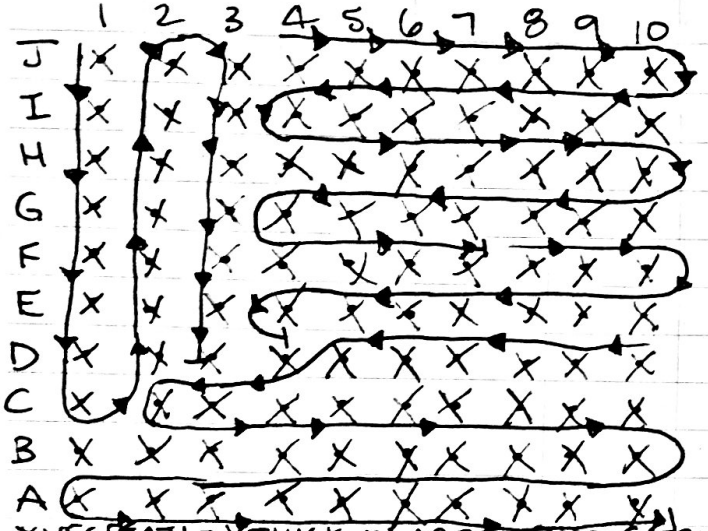
0830 ARRIVED AT DU1 FOR SETUP

1000 BEGAN COLLECTION OF DU1
REPLICATE 1B @ 150° SE
REPLICATE 1C @ 240° SW
(BOTH REPLICATES COLLECTED IM FROM PARENT SAMPLE @ ORIENTATION INDICATED)

FENCE: 37°11'20" N (RUNS
80°33'38" W THROUGH
DU)

37°11'20" N
80°33'36" W

DU 1



* VEGETATION THICK IN AREAS; POOR SATELLITE CONNECTION DUE TO CANOPY AND IN P.M.

1205 LUNCH

1255 CONTINUED COLLECTION OF DU1
- ANOMALY (SUBSURFACE) AT H8, REPLICATE IC; OFFSET TO 190° SE AND 1M FROM PARENT SAMPLE

1530 GPS DIED; RETURNED TO VEHICLE TO CHARGE - NOT CHARGED ENOUGH TO TURN BACK ON
- DROVE TO NG OFFICE TO DISCUSS

ACTIVITIES FOR TOMORROW WITH TODD HUFFMAN
- WED A.M.: COMPLETE SAMPLE COLLECTION FROM DU1
- WED P.M.: COLLECT AUS IN NG AREA

* DU2 NEAR SLURRY BLDG WILL BE COLLECTED THURS P.M. / FRI A.M.

CONFIRMED WITH CT LABS SOIL SAMPLES CAN BE HELD OVERNIGHT; COLLECTION CAN BE COMPLETED NEXT DAY AND SHIPPED

1720 LEFT SITE

Rite in the Rain

14

JULIA LIU PHIL WERNER
10/5/16 JOE JOYNER

CLOUDY TO PARTLY CLOUDY; HIGH 68°

0700 ARRIVED ONSITE; CHECKED IN AT ~~NOTIFIED~~ NG OFFICE AND IBL LAB ~~OF~~

0730 DAILY SAFETY BRIEF

0800 CONTINUED COLLECTION OF DU 1 (SEE SKETCH FROM 10/4/16)

ROWS D-A IN THICK VEGETATION, THICK CANOPY; GPS ~~DIF~~ HAVING DIFFICULTY ACQUIRING SATTELITES

- PHOTO #1 (D9): VIEW OF VEGETATION TOWARDS ROWS C-A (LOOKING WESTWARD); ALSO MANY DOWN TREES/LOGS ~~ALONG~~ AND VERY UNEVEN TERRAIN

LOSING GPS SIGNAL AS SOON AS WE'RE UNDER TREE CANOPY

1200 STOPPED COLLECTION OF DU1 AND HEADED TO NG OFFICE FOR AVS (ACCESS TO AREA LIMITED 1200 TO 1430); SLURRY

15

OPS TO START EARLY TODAY (~1300) - POSTPONE AVS TO THURS A.M. (0730)

1230-1330 LUNCH

1330 CONTINUED COLLECTION OF DU1; ISSUES WITH GPS SATELLITES CONTINUE

- INCREMENT A2 OFFSET TO 37° 11' ~~19"N~~ 19.039"N, 80° 33' 17.245W DUE TO PINE TREE AT ~~ORIG~~ PROPOSED LOCATION (1M NW)
- INCREMENT A1 OFFSET FROM POTENTIAL MANMADE MOUND 5M SE OF ~~OR~~ PROPOSED LOCATION (GPS OUT - UNABLE TO ACQUIRE COORDINATES)

1550 COMPLETED COLLECTION OF DU1; RETURNED TO VEHICLE. PACKED/PREPPED COOLER WITH ICE AND SAMPLES FOR SHIPMENT

1700 OFFSITE TO FEDEX

JULIA LIU PHIL WERNER
10/6/15 JOE JOYNER
PARTLY CLOUDY; HIGH 73°; HEAVY A.M. FOG

0730 ARRIVED ONSITE; CHECKED IN AT NG OFFICE AND WAITED FOR ESCORT FOR AVS

0750 DAILY SAFETY BRIEF; MARK SONNENBERG ESCORT FOR AVS

0820 BEGAN AVS WITH ESCORT
PUMP STATION 906-15
BLDG 9410
BLDG 9459
BLDG 9484A
BLDG 9463
BLDG 9465, 9464
BLDG 9468 - AREA RECENTLY MOWED
BLDG 9467 (GENERATOR HOUSE)
BLDG 9488
BLDG 9463 (CATCH TANK HOUSE)
BLDG 9473 (HEATER HOUSE

GENERAL AREA OF PREVIOUS FINDS
37°11'30.451N, 90°33'18.276W
(3 YRS PRIOR)

BLDG 9485, 9486 (HOLDING TANK) (DISTRIBUTION HOUSE)
BLDG 9301-2 (NITROCELLULOSE REST HOUSE
BLDG 9492 * NO MUNITIONS
BLDG 9498 FINDINGS
BLDG 3201

1215-1315: LUNCH

1315: HEADED TO GATE 19H-1 TO ACCESS AVS OUTSIDE OF FENCE; GATE IS NEAR SW END OF TRANSECT. CALLED SECURITY TO UNLOCK GATE

1330 ACCESSED OUTSIDE OF FENCE; BEGAN AVS ALONG FENCELINE (~~ADJACENT~~ PARALLEL TO RIVER)

1450 GUARD OPENED GATE 1962 AND GAINED ACCESS BACK TO FACILITY; NO MUNITIONS RELATED FINDINGS

Rite in the Rain

FOUND LOCATION FOR DISCRETE SAMPLE SSD-001 IN DRAINAGE AREA @ 1505 (FIELD DUP DUP1 @ 1515) - BRWN SILTY CLAY, MOIST, WELL SORTED

37°11'35.780"N
80°33'07.267"W } WAYPOINT 001

PHOTO #2: FACING ~~WEST~~ SOUTH TOWARDS SAMPLE LOCATION

1530 COLLECTED DISCRETE SAMPLE SSD-002 IN ~~DA~~ DRAINAGE. (AND MS/MSD); SOIL IS BRWN SILTY CLAY, MOIST, WELL SORTED

37°11'37.310"N
80°33'08.848"W } WAYPOINT 002

PHOTO #3: SOIL ~~AT~~ AT SAMPLE LOCATION

1550 COLLECTED DISCRETE SAMPLE SSD-003 IN DRAINAGE AREA

37°11'19.066"N
80°33'30.591"W } WAYPOINT 003

PHOTO #4 - SAMPLE LOCATION (~~SAMPLE~~ LOCATION APPEARS TO RECEIVE RUNOFF FROM EAST CORNER OF DU1)

1610 Collected discrete sample SSD-004 in drainage coming off NW corner of DU1.

37°11'18.096"N
80°33'39.572W } waypoint 004

PHOTO #5 - SAMPLE LOCATION
PHOTO #6 - SAME

1700 OFFSITE TO FEDEX; NO MUNITIONS RELATED ITEMS ON SURFACE AT SAMPLE LOCATIONS OR ~~EE~~ ALONG ANS

PLAN FOR 10/7: COLLECT DU2 (NORTHERN DU); COLLECT REMAINING DISCRETE SAMPLE FROM DRAINAGE IF LOCATION IDENTIFIED.

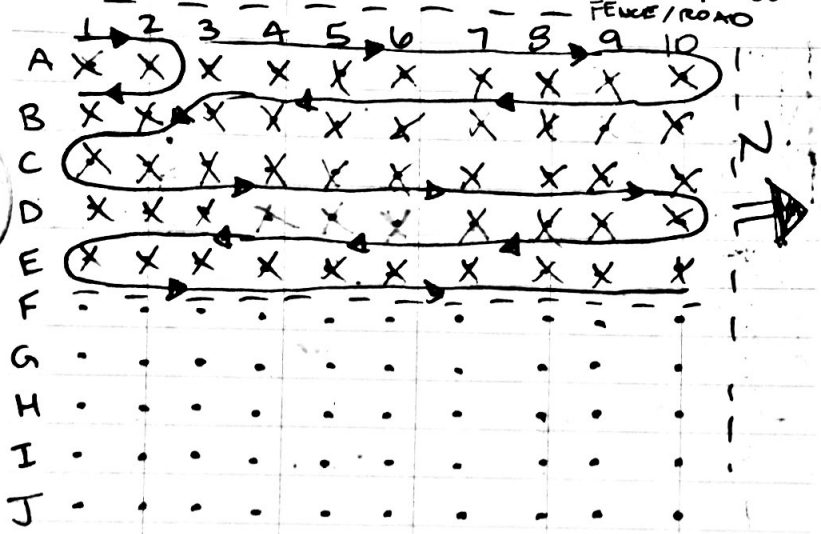
Rite in the Rain

10/7/16

CLOUDY; HIGH 64°, LIGHT RAIN A.M.

0830 ARRIVED ONSITE; CHECKED IN AT NG OFFICE, SAFETY MEETING

0850 ARRIVED AT DU2, BEGAN COLLECTION AT INCREMENT W/ESCORT



PROSPOSED ORIENTATION OF DU2 HAS INCRENTS OVER FENCELINE AND ONTOP OF MANMADE BERM; ~~ROWS~~ DU2 REORIENTED (ROWS A-J IN ~~SLIGHT~~ N-~~NW~~ DIRECTION); WAY POINTS COLLECTED AT CORNERS

~6 INCHES OF GRAVEL PACK AT INCREMENTS A1-A4; INCREMENT COLLECTED UNDER GRAVEL

WAYPOINT 5: (A1) RECORDED W/ GARMIN

WAYPOINT 6: (A10) RECORDED W/ GARMIN

~6 INCHES OF GRAVEL PACK AT INCREMENTS B1-B3; INCREMENT COLLECTED UNDER GRAVEL

PHOTO #7: GRAVEL PACK AT B3

UTILITY ROAD THROUGH DU2 (GRAVEL) - PHOTO #8

1106 TALKED TO BONNIE MORRIS (PM) RE: POTENTIAL ISSUES WITH DU2
- BLAST BERMS LOCATED ON S, W, AND E BOUNDARIES OF DU2; MANMADE AND SOURCE UNKNOWN; BUNKERS BEYOND EASTERN BERM

Rite in the Rain

- LOCATION OF BERMS PREVENTS COLLECTION OF ALL INCREMENTS AT ORIGINAL PROPOSED SIZE OF DU WITHIN LIMITS OF BERMS; CAN PROB FIT HALF OF DU (50 INCREMENTS)

OPTIONS: 1) REDUCE SIZE OF DU2 TO HALF AND HALF INCREMENT COUNT (120M X 60M; 50 INCREMENTS) OR 2) REDUCE SIZE OF DU2 AND ~~CONTINUE COLLECTION (WITH TRACKS 12 FT APART~~ MOVE TRACKS CLOSER TOGETHER TO KEEP 100 INCREMENTS (WOULD HAVE TO RESTART GO DU)

BONNIE OK WITH OPTION 1 - REDUCE SIZE OF DU2 AND CONTINUE COLLECTION; WILL END W/ 50 INCREMENTS)

1215 - 1245 LUNCH

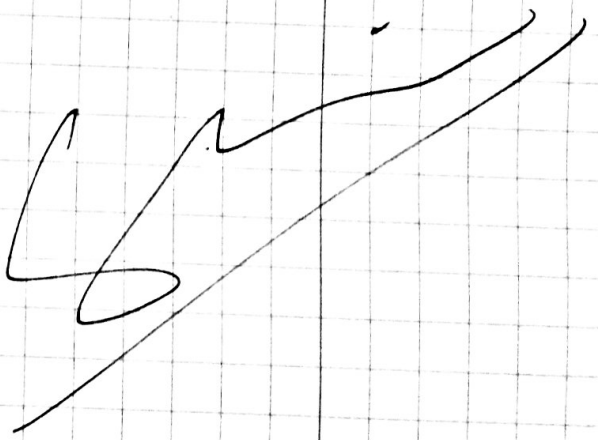
1245 CONTINUED COLLECTION OF DU2

1650 ~~COLLECTED~~ COMPLETED COLLECTION 50 INCREMENTS; DU 120M X 60M

WAYPOINT #7 (E1): RECORDED W/ GARMIN

WAYPOINT #8 (E10): RECORDED W/ GARMIN

1700 OFFSITE TO FEDEX TO SHIP SAMPLES; NO MUNITIONS RELATED DEBRIS/ FEATURES OBSERVED DURING COLLECTION OF DU



Rite in the Rain

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Appendix E

Munitions Response Site Prioritization Protocol

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Table A
MRS Background Information

DIRECTIONS: Record the background information below for the MRS to be evaluated. Much of this information is available from DoD databases, such as RMIS. If the MRS is located on a FUDS property, the suitable FUDS property information should be substituted. In the MRS summary, briefly describe the UXO, DMM, or MC that are known or suspected to be present, the exposure setting (the MRS's physical environment), any other incidental non-munitions related contaminants found at the MRS (e.g., benzene, trichloroethylene), and any potentially exposed human and ecological receptors. Include a map of the MRS, if one is available.

Munitions Response Site Name: Former Gun and Mortar Range
Component: Installation/Property Name: Radford Army Ammunition Plant
Location (City, County, State): Radford, Montgomery County, VA
Site Name (RMIS ID)/Project Name (Project No.): Former Gun and Mortar Range (RFAAP-002-R-01)

Date Information Entered/Updated: 2/23/2017
Point of Contact (Name/Phone): Bonnie Morris, (907) 330-9344
Project Phase (check only one):

☐ PA	☒ SI	☐ RI	☐ FS	☐ RD
☐ RA-C	☐ RIP	☐ RA-O	☐ RC	☐ LTM

Media Evaluated (check all that apply):

☐ Groundwater	☐ Sediment (human receptor)
☒ Surface Soil	☐ Surface Water (ecological receptor)
☐ Sediment (ecological receptor)	☐ Surface Water (human receptor)

MRS Summary: MRS Description: Describe the munitions-related activities that occurred at the installation, the dates of operation, and the UXO, DMM (by type of munition, if known) or munitions constituents (by type, if known) known or suspected to be present):

The Former Gun and Mortar Range (RFAAP-002-R-01) MRS (107 acres) comprises two adjacent ranges: the Former Gun Range (20 acres) and the Former Trench Mortar Range (87 acres). Both ranges began operations in 1941 and, based on anecdoctal evidence were discontinued after the end of World War II (WWII). Based on information gathered during the interview of RFAAP employees, the mortars tested included 4.2 inch, 60mm, and 81mm rounds. The majority of the mortars historically discovered were in the subsurface. During the pre-SI reconnaissance site walk in December 2014, a 60mm mortar was discovered lying exposed in a drainage ditch. The preponderance of information gathered during the HRR and interview process suggests that the test mortars were not filled with HE, but rather various fillers including concrete, gravel, Halowax, and possibly antifreeze. Several interviewees disclosed that one round discovered between 2011 and 2012 may have contained white phosphorus, although this was never confirmed through testing and analysis, or documented in RFAAP safety reports or explosive ordnance incident reports. Based on the evidence gathered from the HRR and interview process, there is no definitive information that clearly states that MEC has been discovered at the MRS. However, with the uncertainty surrounding the classification of munitions observed on the MRS, intact munitions should be considered as MPPEH. (SI Report Sec. 2.1)

Description of Pathways for Human and Ecological Receptors:
Human and ecological exposure pathways for MC are dermal contact, incidental ingestion, and inhalation for surface and subsurface soil and surface and subsurface sediment. Human and ecological exposure pathways for surface water are incidental ingestion and dermal contact. Food chain pathways are potentially complete for hunters and ecological receptors. (SI Report Sec. 2.1/5.3)

Description of Receptors (Human and Ecological): Potential receptors include current and future RFAAP workers, construction workers, trespassers, hunters, visitors, and biota. (SI Report Sec. 2.1/5.1)

Table 1
EHE Module: Munitions Type Data Element Table

DIRECTIONS: Below are 11 classifications of munitions and their descriptions. Circle the score(s) that correspond with **all** munitions types known or suspected to be present at the MRS.

Note: The terms *practice munitions, small arms, physical evidence,* and *historical evidence* are defined in Appendix C of the Primer.

Classification	Description	Score
Sensitive	♦ All UXO that are considered likely to function upon any interaction with exposed persons [e.g., submunitions, 40mm high-explosive (HE) grenades, white phosphorus (WP) munitions, high-explosive antitank (HEAT) munitions, and practice munitions with sensitive fuzes, but excluding all other practice munitions]. ♦ All hand grenades containing energetic filler. ♦ Bulk primary explosives, or mixtures of these with environmental media, such that the mixture poses an explosive hazard.	30
High explosive (used or damaged)	♦ All UXO containing a high-explosive filler (e.g., RDX, Composition B), that are not considered "sensitive." ♦ All DMM containing a high-explosive filler that have: ▪ Been damaged by burning or detonation ▪ Deteriorated to the point of instability.	25
Pyrotechnic (used or damaged)	♦ All UXO containing pyrotechnic fillers other than white phosphorous (e.g., flares, signals, simulators, smoke grenades). ♦ All DMM containing pyrotechnic fillers other than white phosphorous (e.g., flares, signals, simulators, smoke grenades) that have: ▪ Been damaged by burning or detonation ▪ Deteriorated to the point of instability.	20
High explosive (unused)	♦ All DMM containing a high explosive filler that: ▪ Have not been damaged by burning or detonation ▪ Are not deteriorated to the point of instability.	15
Propellant	♦ All UXO containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., a rocket motor). ♦ All DMM containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., a rocket motor) that are: ▪ Damaged by burning or detonation ▪ Deteriorated to the point of instability.	(15)
Bulk secondary high explosives, pyrotechnics, or propellant	♦ All DMM containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., a rocket motor), that are deteriorated. ♦ Bulk secondary high explosives, pyrotechnic compositions, or propellant (not contained in a munition), or mixtures of these with environmental media such that the mixture poses an explosive hazard.	10
Pyrotechnic (not used or damaged)	♦ All DMM containing a pyrotechnic fillers (i.e., red phosphorous), other than white phosphorous filler, that: ▪ Have not been damaged by burning or detonation ▪ Are not deteriorated to the point of instability.	10
Practice	♦ All UXO that are practice munitions that are not associated with a sensitive fuze. ♦ All DMM that are practice munitions that are not associated with a sensitive fuze and that have not: ▪ Been damaged by burning or detonation ▪ Deteriorated to the point o instability	(5)
Riot control	♦ All UXO or DMM containing a riot control agent filler (e.g., tear gas).	3
Small arms	♦ All used munitions or DMM that are categorized as small arms ammunition [Physical evidence or historical evidence that no other types of munitions (e.g., grenades, subcaliber training rockets, demolition charges) were used or are present on the MRS is required for selection of this category.].	2
Evidence of no munitions	♦ Following investigation of the MRS, there is physical evidence that there are no UXO or DMM present, or there is historical evidence indicating that no UXO or DMM are present.	0
MUNITIONS TYPE	**DIRECTIONS:** Record **the single highest score** from above in the box to the right (maximum score = 30).	**15**

DIRECTIONS: Document any MRS-specific data used in selecting the ***Munitions Type*** classifications in the space provided.
The Former Trench Mortar Range was used to test-fire various mortar rounds to verify the quality of propellants manufactured at the facility. Information gathered during the interview of RFAAP employees indicates the mortars tested included 4.2 inch, 60mm, and 81mm

rounds. The test mortars were not filled with HE, but rather various fillers including concrete, gravel, Halowax, and possibly antifreeze (SI Report, Sec 2.1).

Table 2

EHE Module: Source of Hazard Data Element Table

DIRECTIONS: Below are 11 classifications describing sources of explosive hazards. Circle the score(s) that correspond with **all** sources of explosive hazards known or suspected to be present at the MRS.

Note: The terms *former range, practice munitions, small arms, physical evidence,* and *historical evidence* are defined in Appendix C of the Primer.

Classification	Description	Score
Former range	♦ The MRS is a former military range where munitions (including practice munitions with sensitive fuzes) have been used. Such areas include: impact or target areas, associated buffer and safety zones, firing points, and live-fire maneuver areas.	10
Former munitions treatment (i.e., OB/OD) unit	♦ The MRS is a location where UXO or DMM (e.g., munitions, bulk explosives, bulk pyrotechnic, or bulk propellants) were burned or detonated for the purpose of treatment prior to disposal.	8
Former practice munitions range	♦ The MRS is a former military range on which only practice munitions without sensitive fuzes were used.	6
Former maneuver area	♦ The MRS is a former maneuver area where no munitions other than flares, simulators, smokes, and blanks were used. There must be evidence that no other munitions were used at the location to place an MRS into this category.	5
Former burial pit or other disposal area	♦ The MRS is a location where DMM were buried or disposed of (e.g., disposed of into a water body) without prior thermal treatment.	5
Former industrial operating facilities	♦ The MRS is a location that is a former munitions maintenance, manufacturing, or demilitarization facility.	(4)
Former firing points	♦ The MRS is a firing point, where the firing point is delineated as an MRS separate from the rest of a former military range.	4
Former missile or air defense artillery emplacements	♦ The MRS is a former missile defense or air defense artillery (ADA) emplacement not associated with a military range.	2
Former storage or transfer points	♦ The MRS is a location where munitions were stored or handled for transfer between different modes of transportation (e.g., rail to truck, truck to weapon system).	2
Former small arms range	♦ The MRS is a former military range where only small arms ammunition was used [There must be evidence that no other types of munitions (e.g., grenades) were used or are present to place an MRS into this category.].	1
Evidence of no munitions	♦ Following investigation of the MRS, there is physical evidence that no UXO or DMM are present, or there is historical evidence indicating that no UXO or DMM are present.	0
SOURCE OF HAZARD	**DIRECTIONS:** Record **the single highest score** from above in the box to the right (maximum score = 10).	**4**

DIRECTIONS: Document any MRS-specific data used in selecting the ***Source of Hazard*** classifications in the space provided. The Former Gun and Mortar Range was used between 1941 and the end of WWII to test-fire various mortar rounds to verify the quality of propellants manufactured. (SI Report Sec. 2.1)

Table 3

EHE Module: Location of Munitions Data Element Table

DIRECTIONS: Below are eight classifications of munitions locations and their descriptions. Circle the score(s) that correspond with **all** locations where munitions are located or suspected of being found at the MRS.

Note: The terms *surface, subsurface, physical evidence,* and *historical evidence* are defined in Appendix C of the Primer.

Classification	Description	Score
Confirmed surface	♦ Physical evidence indicates that there are UXO or DMM on the surface of the MRS ♦ Historical evidence (e.g., a confirmed incident report or accident report) indicates there are UXO or DMM on the surface of the MRS.	25
Confirmed subsurface, active	♦ Physical evidence indicates the presence of UXO or DMM in the subsurface of the MRS, and the geological conditions at the MRS are likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost, heat heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging) at the MRS are likely to expose UXO or DMM. ♦ Historical evidence indicates that UXO or DMM are located in the subsurface of the MRS and the geological conditions at the MRS are likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost, heat heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging) at the MRS are likely to expose UXO or DMM.	20
Confirmed subsurface, stable	♦ Physical evidence indicates the presence of UXO or DMM in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause UXO or DMM to be exposed. ♦ Historical evidence indicates that UXO or DMM are located in the subsurface of the MRS and the geological conditions at the MRS are not likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause UXO or DMM to be exposed.	15
Suspected (physical evidence)	♦ There is physical evidence (e.g., munitions debris, such fragments, penetrators, projectiles, shell casings, links, fins), other than the documented presence of UXO or DMM, indicating that UXO or DMM may be present at the MRS.	(10)
Suspected (historical evidence)	♦ There is historical evidence indicating that UXO or DMM may be present at the MRS.	5
Subsurface, physical constraint	♦ There is physical or historical evidence indicating that UXO or DMM may be present in the subsurface, but there is a physical constraint (e.g., pavement, water depth over 120 feet) preventing direct access to the UXO or DMM.	2
Small arms (regardless of location)	♦ The presence of small arms ammunition is confirmed or suspected, regardless of other factors such as geological stability [There must be evidence that no other types of munitions (e.g., grenades) were used or are present at the MRS to place an MRS into this category.].	1
Evidence of no munitions	♦ Following investigation of the MRS, there is physical evidence that there are no UXO or DMM present, or there is historical evidence indicating that no UXO or DMM are present.	0
LOCATION OF MUNITIONS	**DIRECTIONS:** Record **the single highest score** from above in the box to the right (maximum score = 25).	**10**

DIRECTIONS: Document any MRS-specific data used in selecting the ***Location of Munitions*** classifications in the space provided. Discovery of numerous mortars while constructing the Active Production and CAMBL facilities has been documented. During the pre-SI reconnaissance site walk in December 2014, a 60mm mortar was discovered lying exposed in a drainage ditch. Because the type and condition of the mortars discovered historically and during the SI process were not recorded, these finds are considered to be MPPEH and an indication that MPPEH are present on the MRS. (SI Report Sec. 2.1/5.3.1)

Table 4

EHE Module: Ease of Access Data Element Table

DIRECTIONS: Below are four classifications of barrier types that can surround an MRS and their descriptions. The barrier type is directly related to the ease of public access to any explosive materiel. Circle the score that corresponds with the ease of access to the MRS.

Note: The term *barrier* is defined in Appendix C of the Primer.

Classification	Description	Score
No barrier	♦ There is no barrier preventing access to any part of the MRS (i.e., all parts of the MRS are accessible).	10
Barrier to MRS access is incomplete	♦ There is a barrier preventing access to parts of the MRS, but not the entire MRS.	(8)
Barrier to MRS access is complete but not monitored	♦ There is a barrier preventing access to all parts of the MRS, but there is no surveillance (e.g., by a guard) to ensure that the barrier is effectively preventing access to all parts of the MRS.	5
Barrier to MRS access is complete and monitored	♦ There is a barrier preventing access to all parts of the MRS, and there is active, continual surveillance (e.g., by a guard, video monitoring) to ensure that the barrier is effectively preventing access to all parts of the MRS.	0
EASE OF ACCESS	**DIRECTIONS:** Record **<u>the single highest score</u>** from above in the box to the right (maximum score = 10).	**8**

DIRECTIONS: Document any MRS-specific data used in selecting the ***Ease of Access*** classification in the space provided. The Former Gun and Mortar Range (RFAAP-002-R-01) MRS is not completely fenced and several buildings and paved surfaces are present on the MRS. The partial fencing, structures, and pavement prevent access to only parts of the MRS. (SI Report, Sec. 5.1)

Table 5

EHE Module: Status of Property Data Element Table

DIRECTIONS: Below are three classifications of the status of a property within the Department of Defense (DoD) and their descriptions. Circle the score that corresponds with the status of property at the MRS.

Classification	Description	Score
Non-DoD control	♦ The MRS is at a location that is no longer owned by, leased to, or otherwise possessed or used by DoD. Examples are privately owned land or water bodies; land or water bodies owned or controlled by state, tribal, or local governments; and land or water bodies managed by other federal agencies.	5
Scheduled for transfer from DoD control	♦ The MRS is on land or is a water body that is owned, leased, or otherwise possessed by DoD, and DoD plans to transfer that land or water body to the control of another entity (e.g., a state, tribal, or local government; a private party; another federal agency) within 3 years from the date the rule is applied.	3
DoD control	♦ The MRS is on land or is a water body that is owned, leased, or otherwise possessed by DoD. With respect to property that is leased or otherwise possessed, DoD must control access to the MRS 24 hours per day, every day of the calendar year.	(0)
STATUS OF PROPERTY	**DIRECTIONS:** Record **<u>the single highest score</u>** from above in the box to the right (maximum score = 5).	**0**

DIRECTIONS: Document any MRS-specific data used in selecting the ***Status of Property*** classification in the space provided. RFAAP is a government-owned/contractor-operated (GOCO) facility. (SI Report Sec. 2.0)

Table 6

EHE Module: Population Density Data Element Table

DIRECTIONS: Below are three classifications of population density and their descriptions. Determine the population density per square mile that most closely corresponds with the population of the MRS, including the area within a two-mile radius of the MRS's perimeter. Select the most appropriate score.

Note: Use the U.S. Census Bureau tract data available to capture the highest population density within a two –mile radius of the perimeter of the MRS.

Classification	Description	Score
> 500 persons per square mile	♦ There are more than 500 persons per square mile in the U.S. Census Bureau tract in which the MRS is located.	5
100–500 persons per square mile	♦ There are 100 to 500 persons per square mile in the U.S. Census Bureau tract in which the MRS is located.	(3)
< 100 persons per square mile	♦ There are 100 to 500 persons per square mile in the U.S. Census Bureau tract in which the MRS is located.	1
POPULATION DENSITY	**DIRECTIONS:** Record **the single highest score** from above in the box to the right (maximum score = 5).	**3**

DIRECTIONS: Document any MRS-specific data used in selecting the ***Population Density*** classification in the space provided. US Census Bureau records cite a population of 94,392 from the 2010 US Census https://www.census.gov/quickfacts/table/PST045215/51121. The county covers 389 square miles, for a population density of 243/square mile.

Table 7

EHE Module: Population Near Hazard Data Element Table

DIRECTIONS: Below are six classifications describing the number of inhabited structures near the MRS. The number of inhabited buildings relates to the population near the hazard. Determine the number of inhabited structures within two miles of the MRS boundary and circle the score that corresponds with the associated population near the known or suspected hazard.

Note: The term *inhabited structures* is defined in Appendix C of the Primer.

Classification	Description	Score
26 or more inhabited structures	♦ There are 26 or more inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	(5)
16 to 25 inhabited structures	♦ There are 16 to 25 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	4
11 to 15 inhabited structures	♦ There are 11 to 15 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	3
6 to 10 inhabited structures	♦ There are 6 to 10 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	2
1 to 5 inhabited structures	♦ There are 1 to 5 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	1
0 inhabited structures	♦ There are no inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	0
POPULATION NEAR HAZARD	**DIRECTIONS:** Record **<u>the single highest score</u>** from above in the box to the right (maximum score = 5).	**5**

DIRECTIONS: Document any MRS-specific data used in selecting the ***Population Near Hazard*** classification in the space provided. There are approximately 2,500 buildings within a 2-mile radius, including RFAAP and residential buildings. (SI Report, Sec. 2.0)

Table 8

EHE Module: Types of Activities/Structures Data Element Table

DIRECTIONS: Below are five classifications of activities and/or inhabited structures near the hazard and their descriptions. Review the types of activities that occur and/or structures that are present within two miles of the MRS and circle the score(s) that correspond with **all** the activities/structure classifications at the MRS.

Note: The term *inhabited structure* is defined in Appendix C of the Primer.

Classification	Description	Score
Residential, educational, commercial, or subsistence	♦ Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with any of the following purposes: residential, educational, child care, critical assets (e.g., hospitals, fire and rescue, police stations, dams), hotels, commercial, shopping centers, playgrounds, community gathering areas, religious sites, or sites used for subsistence hunting, fishing, and gathering.	(5)
Parks and recreational areas	♦ Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with parks, nature preserves, or other recreational uses.	4
Agricultural, forestry	♦ Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with agriculture or forestry.	(3)
Industrial or warehousing	♦ Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with industrial activities or warehousing.	(2)
No known or recurring activities	♦ There are no known or recurring activities occurring up to two miles from the MRS's boundary or within the MRS's boundary.	1
TYPES OF ACTIVITIES/STRUCTURES	**DIRECTIONS:** Record **the single highest score** from above in the box to the right (maximum score = 5).	**5**

DIRECTIONS: Document any MRS-specific data used in selecting the ***Types of Activities/Structures*** classifications in the space provided. Land usage within 2 miles of the MRS is primarily agricultural with some residential and industrial use. (SI Report Sec. 2.0)

Table 9

EHE Module: Ecological and/or Cultural Resources Data Element Table

DIRECTIONS: Below are four classifications of ecological and/or cultural resources and their descriptions. Review the types of resources present and circle the score that corresponds with the ecological and/or cultural resource classifications at the MRS.

Note: The terms *ecological resources* and *cultural resources* are defined in Appendix C of the Primer.

Classification	Description	Score
Ecological and cultural resources present	♦ There are both ecological and cultural resources present on the MRS.	5
Ecological resources present	♦ There are ecological resources present on the MRS.	3
Cultural resources present	♦ There are cultural resources present on the MRS.	3
No ecological or cultural resources present	♦ There are no ecological resources or cultural resources present on the MRS.	(0)
ECOLOGICAL AND/OR CULTURAL RESOURCES	**DIRECTIONS:** Record **<u>the single highest score</u>** from above in the box to the right (maximum score = 5).	**0**

DIRECTIONS: Document any MRS-specific data used in selecting the ***Ecological and/or Cultural Resources*** classification in the space provided. There is no critical habitat for endangered species within the MRS boundaries or immediate surroundings. There are no cultural resources present. (SI Report Sec. 5.2)

Table 10
Determining the EHE Module Rating

DIRECTIONS:

1. From Tables 1–9, record the data element scores in the **Score** boxes to the right.
2. Add the **Score** boxes for each of the three factors and record this number in the **Value** boxes to the right.
3. Add the three **Value** boxes and record this number in the **EHE Module Total** box below.
4. Circle the appropriate range for the **EHE Module Total** below.
5. Circle the **EHE Module Rating** that corresponds to the range selected and record this value in the **EHE Module Rating** box found at the bottom of the table.

Note:
An alternative module rating may be assigned when a module letter rating is inappropriate. An alternative module rating is used when more information is needed to score one or more data elements, contamination at an MRS was previously addressed, or there is no reason to suspect contamination was ever present at an MRS.

	Source	Score	Value
Explosive Hazard Factor Data Elements			
Munitions Type	Table 1	15	19
Source of Hazard	Table 2	4	
Accessibility Factor Data Elements			
Location of Munitions	Table 3	10	18
Ease of Access	Table 4	8	
Status of Property	Table 5	0	
Receptor Factor Data Elements			
Population Density	Table 6	3	16
Population Near Hazard	Table 7	5	
Types of Activities/Structures	Table 8	5	
Ecological and /or Cultural Resources	Table 9	0	
EHE MODULE TOTAL			50

EHE Module Total	EHE Module Rating
92 to 100	A
82 to 91	B
71 to 81	C
60 to 70	D
48 to 59	(E)
38 to 47	F
less than 38	G
Alternative Module Ratings	Evaluation Pending
	No Longer Required
	No Known or Suspected Explosive Hazard
EHE MODULE RATING	E

Table 11
CHE Module: CWM Configuration Data Element Table

DIRECTIONS: Below are seven classifications of CWM configuration and their descriptions. Circle the score(s) that correspond to **all** CWM configurations known or suspected to be present at the MRS.

Note: The terms *CWM/UXO, CWM/DMM, physical evidence,* and *historical evidence* are defined in Appendix C of the Primer.

Classification	Description	Score
CWM, explosive configuration either UXO or damaged DMM	The CWM known or suspected of being present at the MRS is: ♦ Explosively configured CWM that are UXO (i.e., CWM/UXO). ♦ Explosively configured CWM that are DMM (i.e., CWM/DMM) that have been damaged.	30
CWM mixed with UXO	♦ The CWM known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged, or nonexplosively configured CWM/DMM, or CWM not configured as a munition, that are commingled with conventional munitions that are UXO.	25
CWM, explosive configuration that are undamaged DMM	♦ The CWM known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged.	20
CWM, not explosively configured or CWM, bulk container	The CWM known or suspected of being present at the MRS is: ♦ Nonexplosively configured CWM/DMM. ♦ Bulk CWM/DMM (e.g., ton container).	15
CAIS K941 and CAIS K942	♦ The CWM/DMM known or suspected of being present at the MRS is CAIS K941-toxic gas set M-1 or CAIS K942-toxic gas set M-2/E11.	12
CAIS (chemical agent identification sets)	♦ Only CAIS, other than CAIS K941 and K942, are known or suspected of being present at the MRS.	10
Evidence of no CWM	♦ Following investigation, the physical evidence indicates that CWM are not present at the MRS, or the historical evidence indicates that CWM are not present at the MRS.	(0)
CWM CONFIGURATION	**DIRECTIONS:** Record **the single highest score** from above in the box to the right (maximum score = 30).	**0**

DIRECTIONS: Document any MRS-specific data used in selecting the ***CWM Configuration*** classifications in the space provided.

Tables 12-19 are intentionally omitted per Army Guidance.

Table 20

Determining the CHE Module Rating

DIRECTIONS:

1. From Tables 11–19, record the data element scores in the **Score** boxes to the right.

2. Add the **Score** boxes for each of the three factors and record this number in the **Value** boxes to the right.

3. Add the three **Value** boxes and record this number in the **CHE Module Total** box below.

4. Circle the appropriate range for the **CHE Module Total** below.

5. Circle the **CHE Module Rating** that corresponds to the range selected and record this value in the **CHE Module Rating** box found at the bottom of the table.

Note:
An alternative module rating may be assigned when a module letter rating is inappropriate. An alternative module rating is used when more information is needed to score one or more data elements, contamination at an MRS was previously addressed, or there is no reason to suspect contamination was ever present at an MRS.

	Source	Score	Value
CWM Hazard Factor Data Elements			
CWM Configuration	Table 11		
Sources of CWM	Table 12		
Accessibility Factor Data Elements			
Location of CWM	Table 13		
Ease of Access	Table 14		
Status of Property	Table 15		
Receptor Factor Data Elements			
Population Density	Table 16		
Population Near Hazard	Table 17		
Types of Activities/Structures	Table 18		
Ecological and /or Cultural Resources	Table 19		
CHE MODULE TOTAL			

CHE Module Total	CHE Module Rating
92 to 100	A
82 to 91	B
71 to 81	C
60 to 70	D
48 to 59	E
38 to 47	F
less than 38	G
Alternative Module Ratings	Evaluation Pending
	No Longer Required
	(No Known or Suspected CWM Hazard)
CHE MODULE RATING	**No Known or Suspected CWM Hazard**

Table 21
HHE Module: Groundwater Data Element Table

Contaminant Hazard Factor (CHF)

DIRECTIONS: Record the **maximum concentrations** of all contaminants in the MRS's groundwater and their **comparison values** (from Appendix B of the Primer) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value.** Determine the **CHF** by adding the contaminant **ratios** together, including any additional groundwater contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record **CHF Value**. If there is no known or suspected MC hazard present in the groundwater, select the box at the bottom of the table.

Contaminant	Maximum Concentration (µg/L)	Comparison Value (µg/L)	Ratios
CHF Scale	**CHF Value**	**Sum the Ratios**	
CHF > 100	**H (High)**	$\text{CHF} = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	**M (Medium)**		
2 > CHF	**L (Low)**		
CONTAMINANT HAZARD FACTOR	**DIRECTIONS:** Record **the CHF Value** from above in the box to the right (maximum value = H).		

Migratory Pathway Factor

DIRECTIONS: Circle the value that corresponds most closely to the groundwater migratory pathway at the MRS.

Classification	Description	Value
Evident	Analytical data or observable evidence indicates that contamination in the groundwater is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in groundwater has moved only slightly beyond the source (i.e. tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the groundwater to a potential point of exposure (possibly due to the presence of geological structures or physical controls.)	L
MIGRATORY PATHWAY FACTOR	**DIRECTIONS:** Record **the single highest value** from above in the box to the right (maximum value = H).	

Receptor Factor

DIRECTIONS: Circle the value that corresponds most closely to the groundwater receptors at the MRS.

Classification	Description	Value
Identified	There is a threatened water supply well downgradient of the source and the groundwater is a current source of drinking water or source of water for other beneficial uses such as irrigation/agriculture (equivalent to Class I or IIA aquifer).	H
Potential	There is no threatened water supply well downgradient of the source and the ground water is currently or potentially usable for drinking water, irrigation, or agriculture (equivalent to Class I, IIA, or IIB aquifer).	M
Limited	There is no potentially threatened water supply well downgradient of the source and the groundwater is not considered a potential source of drinking water and is of limited beneficial use (equivalent to Class IIIA or IIIB aquifer, or where perched aquifer exists only).	L
RECEPTOR FACTOR	**DIRECTIONS:** Record **the single highest value** from above in the box to the right (maximum value = H).	

No Known or Suspected Groundwater MC Hazard ☐

Medium not evaluated.

Table 22
HHE Module: Surface Water – Human Endpoint Data Element Table

Contaminant Hazard Factor (CHF)

DIRECTIONS: Record the **maximum concentrations** of all contaminants in the MRS's surface water and their **comparison values** (from Appendix B of the Primer) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value.** Determine the **CHF** by adding the contaminant **ratios** together, including any additional surface water contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record **CHF Value**. If there is no known or suspected MC hazard with human endpoints present in the surface water, select the box at the bottom of the table.

Contaminant	Maximum Concentration (µg/L)	Comparison Value (µg/L)	Ratios

CHF Scale	CHF Value	Sum the Ratios	
CHF > 100	H (High)	$CHF = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		

CONTAMINANT HAZARD FACTOR	**DIRECTIONS:** Record **the CHF Value** from above in the box to the right (maximum value = H).	

Migratory Pathway Factor

DIRECTIONS: Circle the value that corresponds most closely to the surface water migratory pathway at the MRS.

Classification	Description	Value
Evident	Analytical data or observable evidence indicates that contamination in the surface water is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in surface water has moved only slightly beyond the source (i.e. tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the surface water to a potential point of exposure (possibly due to the presence of geological structures or physical controls.)	L
MIGRATORY PATHWAY FACTOR	**DIRECTIONS:** Record **the single highest value** from above in the box to the right (maximum value = H).	

Receptor Factor

DIRECTIONS: Circle the value that corresponds most closely to the surface water receptors at the MRS.

Classification	Description	Value
Identified	Identified receptors have access to surface water to which contamination has moved or can move.	H
Potential	Potential for receptors to have access to surface water to which contamination has moved or can move.	M
Limited	Little or no potential for receptors to have access to surface water to which contamination has moved or can move.	L
RECEPTOR FACTOR	**DIRECTIONS:** Record **the single highest value** from above in the box to the right (maximum value = H).	

No Known or Suspected Surface Water (Human Endpoint) MC Hazard ☐

Medium not evaluated.

Table 23
HHE Module: Sediment – Human Endpoint Data Element Table

Contaminant Hazard Factor (CHF)

DIRECTIONS: Record the **maximum concentrations** of all contaminants in the MRS's sediment and their **comparison values** (from Appendix B of the Primer) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value.** Determine the **CHF** by adding the contaminant **ratios** together, including any additional sediment contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record **CHF Value**. If there is no known or suspected MC hazard with human endpoints present in the sediment, select the box at the bottom of the table.

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
Lead	475	400	1.2
		1400	
CHF Scale	**CHF Value**	**Sum the Ratios**	1.2
CHF > 100	**H (High)**	$\text{CHF} = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	**M (Medium)**		
2 > CHF	**L (Low)**		

CONTAMINANT HAZARD FACTOR	**DIRECTIONS:** Record **the CHF Value** from above in the box to the right (maximum value = H).	L

Migratory Pathway Factor

DIRECTIONS: Circle the value that corresponds most closely to the sediment migratory pathway at the MRS.

Classification	Description	Value
Evident	Analytical data or observable evidence indicates that contamination in the sediment is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in sediment has moved only slightly beyond the source (i.e. tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	(M)
Confined	Information indicates a low potential for contaminant migration from the source via the sediment to a potential point of exposure (possibly due to the presence of geological structures or physical controls.)	L

MIGRATORY PATHWAY FACTOR	**DIRECTIONS:** Record **the single highest value** from above in the box to the right (maximum value = H).	M

Receptor Factor

DIRECTIONS: Circle the value that corresponds most closely to the sediment receptors at the MRS.

Classification	Description	Value
Identified	Identified receptors have access to sediment to which contamination has moved or can move.	(H)
Potential	Potential for receptors to have access to sediment to which contamination has moved or can move.	M
Limited	Little or no potential for receptors to have access to sediment to which contamination has moved or can move.	L

RECEPTOR FACTOR	**DIRECTIONS:** Record **the single highest value** from above in the box to the right (maximum value = H).	H

No Known or Suspected Sediment (Human Endpoint) MC Hazard ☐

Lead detected above background in one ditch sediment sample. Source unknown. Observation of mortar exposed in drainage ditch indicates erosion is occurring, but lead detection and potential erosion not considered direct evidence of lead migration. Human and biological receptors have access to surface sediment.

Table 24
HHE Module: Surface Water – Ecological Endpoint Data Element Table

Contaminant Hazard Factor (CHF)

DIRECTIONS: Record the **maximum concentrations** of all contaminants in the MRS's surface water and their **comparison values** (from Appendix B of the Primer) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value.** Determine the **CHF** by adding the contaminant **ratios** together, including any additional surface water contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record **CHF Value**. If there is no known or suspected MC hazard with ecological endpoints present in the surface water, select the box at the bottom of the table.

Contaminant	Maximum Concentration (µg/L)	Comparison Value (µg/L)	Ratios
CHF Scale	**CHF Value**	**Sum the Ratios**	
CHF > 100	**H (High)**	$\text{CHF} = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	**M (Medium)**		
2 > CHF	**L (Low)**		
CONTAMINANT HAZARD FACTOR	**DIRECTIONS:** Record **the CHF Value** from above in the box to the right (maximum value = H).		

Migratory Pathway Factor

DIRECTIONS: Circle the value that corresponds most closely to the surface water migratory pathway at the MRS.

Classification	Description	Value
Evident	Analytical data or observable evidence indicates that contamination in the surface water is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in surface water has moved only slightly beyond the source (i.e. tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the surface water to a potential point of exposure (possibly due to the presence of geological structures or physical controls.)	L
MIGRATORY PATHWAY FACTOR	**DIRECTIONS:** Record **the single highest value** from above in the box to the right (maximum value = H).	

Receptor Factor

DIRECTIONS: Circle the value that corresponds most closely to the surface water receptors at the MRS.

Classification	Description	Value
Identified	Identified receptors have access to surface water to which contamination has moved or can move.	H
Potential	Potential for receptors to have access to surface water to which contamination has moved or can move.	M
Limited	Little or no potential for receptors to have access to surface water to which contamination has moved or can move.	L
RECEPTOR FACTOR	**DIRECTIONS:** Record **the single highest value** from above in the box to the right (maximum value = H).	

No Known or Suspected Surface Water (Ecological Endpoint) MC Hazard ☐

Medium not evaluated.

Table 25
HHE Module: Sediment – Ecological Endpoint Data Element Table

Contaminant Hazard Factor (CHF)

DIRECTIONS: Record the **maximum concentrations** of all contaminants in the MRS's sediment and their **comparison values** (from Appendix B of the Primer) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value.** Determine the **CHF** by adding the contaminant **ratios** together, including any additional sediment contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record **CHF Value**. If there is no known or suspected MC hazard with ecological endpoints present in the sediment, select the box at the bottom of the table.

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
Lead	475	35.8	13.3
CHF Scale	**CHF Value**	**Sum the Ratios**	13.3
CHF > 100	**H (High)**	$\text{CHF} = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	**M (Medium)**		
2 > CHF	**L (Low)**		
CONTAMINANT HAZARD FACTOR	**DIRECTIONS:** Record **the CHF Value** from above in the box to the right (maximum value = H).		M

Migratory Pathway Factor

DIRECTIONS: Circle the value that corresponds most closely to the sediment migratory pathway at the MRS.

Classification	Description	Value
Evident	Analytical data or observable evidence indicates that contamination in the sediment is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in sediment has moved only slightly beyond the source (i.e. tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	(M)
Confined	Information indicates a low potential for contaminant migration from the source via the sediment to a potential point of exposure (possibly due to the presence of geological structures or physical controls.)	L
MIGRATORY PATHWAY FACTOR	**DIRECTIONS:** Record **the single highest value** from above in the box to the right (maximum value = H).	M

Receptor Factor

DIRECTIONS: Circle the value that corresponds most closely to the sediment receptors at the MRS.

Classification	Description	Value
Identified	Identified receptors have access to sediment to which contamination has moved or can move.	(H)
Potential	Potential for receptors to have access to sediment to which contamination has moved or can move.	M
Limited	Little or no potential for receptors to have access to sediment to which contamination has moved or can move.	L
RECEPTOR FACTOR	**DIRECTIONS:** Record **the single highest value** from above in the box to the right (maximum value = H).	H

No Known or Suspected Sediment (Ecological Endpoint) MC Hazard ☐

Lead detected above background in one ditch sediment sample. Source unknown. Observation of mortar exposed in drainage ditch indicates erosion is occurring, but lead detection and potential erosion not considered direct evidence of lead migration. Human and biological receptors have access to surface sediment.

Table 26
HHE Module: Surface Soil Data Element Table

Contaminant Hazard Factor (CHF)

DIRECTIONS: Record the **maximum concentrations** of all contaminants in the MRS's surface soil and their **comparison values** (from Appendix B of the Primer) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value.** Determine the **CHF** by adding the contaminant **ratios** together, including any additional surface soil contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record **CHF Value**. If there is no known or suspected MC hazard with present in the surface soil, select the box at the bottom of the table.

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
Lead	1,909	400	4.8
CHF Scale	**CHF Value**	**Sum the Ratios**	4.8
CHF > 100	**H (High)**	$CHF = \sum \frac{[\text{Maximum Concentration of Contaminant}]}{[\text{Comparison Value for Contaminant}]}$	
100 > CHF > 2	**M (Medium)**		
2 > CHF	**L (Low)**		
CONTAMINANT HAZARD FACTOR	**DIRECTIONS:** Record **the CHF Value** from above in the box to the right (maximum value = H).		**M**

Migratory Pathway Factor

DIRECTIONS: Circle the value that corresponds most closely to the surface soil migratory pathway at the MRS.

Classification	Description	Value
Evident	Analytical data or observable evidence indicates that contamination in the surface soil is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in surface soil has moved only slightly beyond the source (i.e. tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	(M)
Confined	Information indicates a low potential for contaminant migration from the source via the surface soil to a potential point of exposure (possibly due to the presence of geological structures or physical controls.)	L
MIGRATORY PATHWAY FACTOR	**DIRECTIONS:** Record **the single highest value** from above in the box to the right (maximum value = H).	**M**

Receptor Factor

DIRECTIONS: Circle the value that corresponds most closely to the surface soil receptors at the MRS.

Classification	Description	Value
Identified	Identified receptors have access to surface soil to which contamination has moved or can move.	(H)
Potential	Potential for receptors to have access to surface soil to which contamination has moved or can move.	M
Limited	Little or no potential for receptors to have access to surface soil to which contamination has moved or can move.	L
RECEPTOR FACTOR	**DIRECTIONS:** Record **the single highest value** from above in the box to the right (maximum value = H).	**H**

No Known or Suspected Surface Soil MC Hazard ☐

Elevated lead concentrations detected in DU 1. Vegetative cover and pavement limit migration of MC adhered to soil, but observed indication of erosion cannot rule out migration potential. Human and biological receptors have access to surface soil.

Table 27
HHE Module: Supplemental Contaminant Hazard Factor Table

Contaminant Hazard Factor (CHF)

DIRECTIONS: Only use this table if there are more than five contaminants in any given medium present at the MRS. This is a supplemental table designed to hold information about contaminants that do not fit in the previous tables. Indicate the **media** in which these contaminants are present. Then record all **contaminants**, their **maximum concentrations** and their **comparison values** (from Appendix B of the Primer) in the table below. Calculate and record the **ratio** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** for each medium on the appropriate media-specific tables.

Note: Do not add ratios from different media.

Media	Contaminant	Maximum Concentration	Comparison Value	Ratio

Table 28

Determining the HHE Module Rating

DIRECTIONS:

1. Record the letter values (H, M, L) for the **Contaminant Hazard, Migration Pathway,** and **Receptor Factors** for the media (from Tables 21-26) in the corresponding boxes below.
2. Record the media's three-letter combinations in the **Three-Letter Combination** boxes below (three-letter combinations are arranged from Hs to Ms to Ls).
3. Using the **HHE Ratings** provided below, determine each media's rating (A-G) and record the letter in the corresponding **Media Rating** box below.

Media (Source)	Contaminant Hazard Factor Value	Migratory Pathway Factor Value	Receptor Factor Value	Three-Letter Combination (Hs-Ms-Ls)	Media Rating (A-G)
Groundwater (Table 21)	NA	NA	NA	NA	NA
Surface Water/Human Endpoint (Table 22)	NA	NA	NA	NA	NA
Sediment/ Human Endpoint (Table 23)	L	M	H	LMH	D
Surface Water/Ecological Endpoint (Table 24)	NA	NA	NA	NA	NA
Sediment/Ecological Endpoint (Table 25)	M	M	H	MMH	C
Surface Soil (Table 26)	M	M	H	MMH	C

DIRECTIONS (cont.):

4. Select the single highest Media Rating (A is the highest; G is the lowest) and enter the letter in the **HHE Module Rating** box.

Note:
An alternative module rating may be assigned when a module letter rating is inappropriate. An alternative module rating is used when more information is needed to score one or more media, contamination at an MRS was previously addressed, or there is no reason to suspect contamination was ever present at an MRS.

HHE MODULE RATING	C

HHE Ratings (for reference only)

Combination	Rating
HHH	A
HHM	B
HHL	(C)
HMM	(C)
HML	D
MMM	D
HLL	E
MML	E
MLL	F
LLL	G
Alternative Module Ratings	Evaluation Pending
	No Longer Required
	No Known or Suspected MC Hazard

Table 29

MRS Priority

DIRECTIONS: In the chart below, circle the letter **rating** for each module recorded in Table 10 (EHE), Table 20 (CHE), and Table 28 (HHE). Circle the corresponding numerical **priority** for each module. If information to determine the module rating is not available, choose the appropriate alternative module rating. The MRS priority is the single highest priority; record this number in the **MRS or Alternative Priority** box at the bottom of the table.

Note: An MRS assigned Priority 1 has the highest relative priority; an MRS assigned Priority 8 has the lowest relative priority. Only an MRS with CWM known or suspected to be present can be assigned Priority 1; an MRS that has CWM known or suspected to be present cannot be assigned Priority 8.

EHE Rating	Priority	CHE Rating	Priority	HHE Rating	Priority
		A	1		
A	2	B	2	A	2
B	3	C	3	B	3
C	4	D	4	(C)	(4)
D	5	E	5	D	5
(E)	(6)	F	6	E	6
F	7	G	7	F	7
G	8			G	8
Evaluation Pending		Evaluation Pending		Evaluation Pending	
No Longer Required		No Longer Required		No Longer Required	
No Known or Suspected Explosive Hazard		(No Known or Suspected CWM Hazard)		No Known or Suspected MC Hazard	
MRS or ALTERNATIVE PRIORITY				**4**	

Appendix F

Technical Project Planning Meeting Minutes

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Former Gun Range and Trench Site Investigation and Long Term Monitoring
Radford Army Ammunition Plant, Virginia
TPP Meeting
June 13, 2016 @1430 EST

Attendees:

- Kim Gross, USACE Baltimore District PM
- Bonnie Morris, BSEn
- Sarah Skrobialowski, BSEn
- Julia Liu, BSEn
- Debbie McKinley, USACE Baltimore District
- John Coughlin, HDR, Inc.
- Phil Werner, HDR, Inc.
- Kyle Newman, VDEQ
- James Cutler, VDEQ
- James McKenna, RFAAP
- Jay Stewart, BAE
- MaryAnn Bogucki, BAE

Discussion Items:

1. Kim Gross (CENAB) and Sarah Skrobialowski (BSEn) opened the TPP Meeting and introductions were made for all participants on the webinar/conference call.
2. The purpose of the TPP meeting was to review and address questions regarding the SI Work Plan (WP) and the response to regulator comments.
3. The presence of MEC (a 60 mm practice mortar) at the MRS was established during the reconnaissance site walk performed December 2014.
    a. After much discussion, concurrence was reached between participants that VDEQ's suggestion for a "No Further Action" (NFA) finding for MEC is not appropriate based on the presumption that there will be anomalies found during AVS (the assumption is there will be cultural debris from construction activities, etc.) and the AVS can't give enough answers with enough confidence. Therefore, the assisted visual survey for MEC/MPPEH/MD should be designed to better focus the next phase, which is an RFI. Agreement was reached that the MEC program objectives would need to be reworked and approved prior to approval of the WP. It was suggested that one new objective for the AVS would be to provide information to support development of the RFI work plans, such as helping to define the boundary. VDEQ suggested using DGM, however, this is typically not done at the SI phase. Item for further discussion on the next call.
    b. The conceptual site model was discussed regarding MEC in the subsurface as a potentially complete pathway – this would include anyone performing intrusive activities.
4. The majority of the TPP meeting was spent discussing the sampling program for the SI. There was concern from VDEQ that the current proposed sampling approach (ISM) would only determine the presence or absence of diffuse MC contamination. VDEQ stated they wanted to

see clear decision points to move forward to the RFI with MC. VDEQ also stated that, if burial pits, damaged items, and/or firing points are discovered in the RFI, the MC sampling will need to be conducted at these features.

   a. VDEQ was concerned that the size of the decision units would dilute "hot spots" too much to make an adequate determination for MC contamination. The USACE suggested that the DUs were established to evaluate whether a diffuse MC release had occurred. ISM was selected because each increment has equal probability of detecting diffuse MC within the DU. VDEQ also brought up the issue that the DU needs to make sense from an exposure unit standpoint. This will need further discussion on the next call.
   b. Agreement between participants that the WP needed to clarify that an NFA finding could only be determined for diffuse MC contamination.
   c. VDEQ commented that ISM samples cannot be directly compared to discrete background sampling. VDEQ would like see what is being planned for this and, if a statistical approach is being considered then what is the approach. Participants agreed to table the discussion regarding statistical comparisons to background and RSL levels for MC sampling until a future call.

5. VDEQ brought up a concern regarding the need for an explosives safety plan (ESP). CENAB and BSEn stated the SI will employ anomaly avoidance; therefore, the contractor would neither be bringing any explosives to the site nor handling any MEC. As such, an ESP is not required. The contractor would practice the 3Rs, Recognize, Retreat, Report and procedures outlined in the Work Plan. Kim Gross (CENAB) had previously confirmed with the Baltimore OE specialist that an ESP is not required for anomaly avoidance.
6. VDEQ brought up a concern that blind seeds were not proposed during the AVS. Due to the length of the call, no concurrence was reached on this topic, but it was agreed between participants to discuss blind seeds on a future call.

Action Items:

Meeting participants agreed upon three areas for further discussion:

1. New objectives for the MEC program
2. MC sampling and statistical comparison to background levels.
3. Use of Blind Seeds during site work.